



Raycap

Surge Protection for
Low Voltage Power Systems

2 0 2 0
C A T A L O G

Table of Contents

	About Raycap	3
	Quick Product Selector	4
	Single Pole & Multi-pole Surge Protective Devices Housing Design Features	6
	Pluggable Single Pole & Multi-pole Surge Protective Devices	
	CLASS I • CLASS II • TYPE 1 • TYPE 2 • UL TYPE 4 CA	
	ProTec T1HS, ProTec T1HS-R	9
	ProTec T1H, ProTec T1H-R & ProTube T1H	37
	ProTec T1, ProTec T1-R & ProTube T1	53
	Compact Single Pole & Multi-pole Surge Protective Devices	
	CLASS I • CLASS II • TYPE 1 • TYPE 2	
	ProTec ZPS T1H & ProTec ZPS T1H-R	18
	ProBloc B, ProBloc BR & ProTube B	69
	SafeBloc B TCG, SafeBloc BR TCG & SafeTube B	101, 126
	SafeBloc B, SafeBloc BR & SafeTube B	112
	Compact Single Pole & Multi-pole Surge Protective Devices for Wind Applications	
	SafeBloc B WT TCG, SafeBloc BR WT TCG	132
	Pluggable Single Pole & Multi-pole Surge Protective Devices	
	CLASS II • TYPE 2 • UL TYPE 1 CA	
	ProTec T2H, ProTec T2H-R & ProTube T2H	137
	ProTec T2, ProTec T2-R & ProTube T2	153
	ProTec T2-ADV & ProTec T2-ADV-R	169
	SafeTec T2, SafeTec T2-R & SafeTube T2	184
	Pluggable Single Pole & Multi-pole Surge Protective Devices	
	CLASS II • TYPE 2	
	ProTec CM & ProTec CMR	201
	Pluggable Single Pole PCB Mount Surge Protective Device Sockets for AC Systems	
	CLASS II • TYPE 2	
	PCB Socket T1 & PCB Socket T2	207
	Pluggable Single Pole PCB Mount Surge Protective Device Sockets for PV Systems	
	CLASS II • TYPE 2	
	PCB Socket T1 PV & PCB Socket T2 PV	213
	Pluggable Multi-pole Surge Protective Devices	
	PHOTOVOLTAIC • TYPE 1 • TYPE 2 • UL TYPE 1 CA	
	ProTec T1-PV & ProTec T1-PV-R	220
	ProTec T2-PV & ProTec T2-PV-R	222
	Compact & Pluggable Multi-pole Surge Protective Devices for DC	
	CLASS I • CLASS II • TYPE 1 • TYPE 2 • UL TYPE 1 CA • TYPE 4 CA	
	ProBloc B DC	226
	SafeTec-T2 DC	228

- continued -

Table of Contents

- continued -

Compact & Pluggable Single Pole & Multi-pole Surge Protective Devices

CLASS III • TYPE 3

ProTec DMDR	232
ProTec DMG & ProTec DMGR	234
MPE-Mini & MPE Mini LED	236

Miscellaneous Surge Protective Devices

CLASS II • TYPE 2

Overhead Power Line Surge Protective Devices	
ProTec AQS	240
Isolating Spark Gap (ISG) Surge Protective Devices	
EPZ 100/350 EX	244

Surge Protective Devices Connection Accessories

ACCESSORIES

ProBar Busbars	248
ProTec AQS Connection Accessories	251

Counting & Monitoring Solutions

PROGRID

ProSEC II+	254
ProSLS	256
ProSCT	258
ProALARM	260

REFERENCES















Regulatory Standards	264
Surge Protective Device Components & Technology	266
Surge Protective Device Common Terminology	268
Low Voltage Power Distribution System Types	270
Product Index	272
Product Name Index	289
PCB Socket Products Combination Index	294
Order Code Index	296

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.



Quick Product Selector

Low Voltage Power Systems				U_c	I_{imp} (10/350 μ s)	I_{max} (8/20 μ s)	I_n (8/20 μ s)	Network Systems
TYPE 1 + 2	Product	Page		300V	25 kA	65 kA	25 kA	TNS, TNC, TT
	ProTec T1HS 25 kA Series	10						
	ProTec ZPS T1H Busbar System	20		300V	Up to 12.5 kA	50 kA	20 kA	TNS, TNC, TT
	ProTec T1H 12.5 kA Series	38		300V	12.5 kA	65 kA	20 kA	TNS, TNC, TT
	ProTec T1 12.5 kA Series	54		75, 150, 300, 350, 480, 750V	Up to 12.5 kA	Up to 50 kA	20 kA	TNS, TNC, TT
	ProBloc B(R) 25 kA Series 12.5 kA Series	70		150, 275, 320V	Up to 25 kA	Up to 100 kA	Up to 25 kA	TNS, TNC, TT
TYPE 2	SafeBloc B(R) 25 kA Series 12.5 kA Series	102		150, 275, 440, 750V	Up to 25 kA	Up to 80 kA	Up to 25 kA	TNS, TNC, TT
	ProTec T2H	138		300V		50 kA	20 kA	TNS, TNC, TT
	ProTec T2	154		75, 150, 300, 350, 480, 750V		Up to 50 kA	20 kA	TNS, TNC, TT
	ProTec T2 ADV	170		75, 150, 300, 350, 480V		50 kA	20 kA	TNS, TNC, TT
TYPE 1 + 2	SafeTec T2	186		75, 150, 300, 350, 480, 550, 750, 880V		Up to 50 kA	20 kA	TNS, TNC, TT
	PCB Socket T1 PCB Socket T2	214		Up to 750V	Up to 25 kA	Up to 65 kA	Up to 40 kA	AC Systems
DC TYPE 1 + 2 & TYPE 2	PCB Socket T1 PV PCB Socket T2 PV	214		Up to 750VDC	Up to 6.25 kA	Up to 40 kA	Up to 20 kA	PV Systems
	ProTec T1 PV ProTec T2 PV	220		1100 / 1500VDC	Up to I_{imp} 6.25 kA		I_n 20 kA	PV DC Side
	ProBloc B DC SafeTec T2 DC	226		1000VDC	Up to I_{Total} 12.5 kA		Up to I_{Total} 50 kA	
					I_{imp} 6.25 kA		I_n 20 kA	DC Systems
					I_{Total} 12.5 kA		I_{Total} 65 kA	

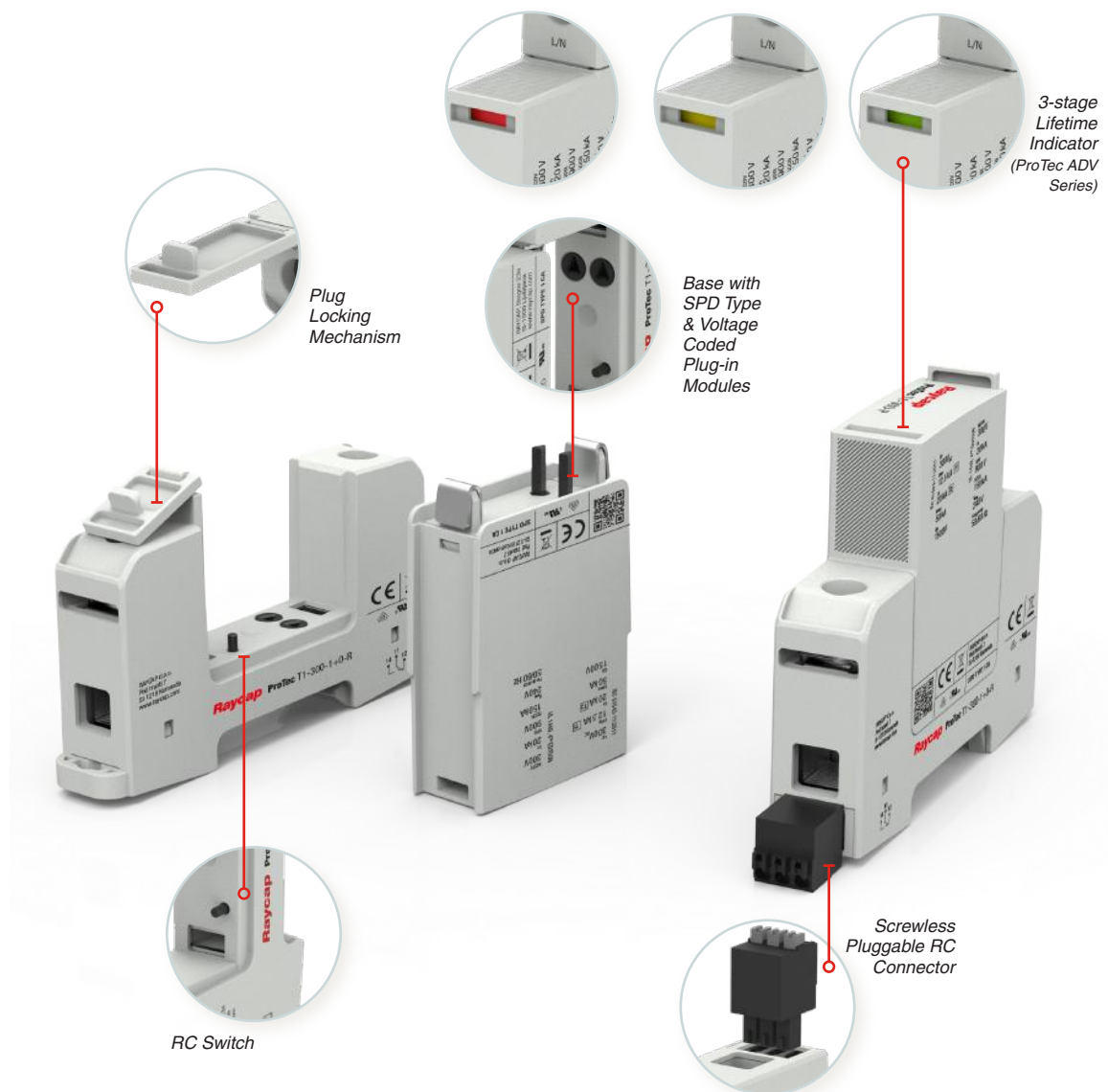
Location	Special Features		Housing	Compliance
<ul style="list-style-type: none"> • First step of protection • In front of the power meter 	<ul style="list-style-type: none"> • Hybrid Topology • TOV Immunity • Leakage current free • Vibration/Shock immunity 	<ul style="list-style-type: none"> • Easy replacement during servicing • No external fuse required up to 315A gG 	Pluggable Design	<ul style="list-style-type: none"> • IEC 61643-11:2011 • EN 61643-11:2012 • UL 1449 4th Edition
<ul style="list-style-type: none"> • First step of protection • Busbar systems • In front of the power meter 	<ul style="list-style-type: none"> • Hybrid Topology • Screwless mount type for 40mm busbar systems • TOV Immunity • Leakage current free 	<ul style="list-style-type: none"> • Optional auxiliary contacts • Optimized design for multi-metering point requirement • No external fuse required up to 315A gG 	Compact Design	<ul style="list-style-type: none"> • IEC 61643-11:2011 • EN 61643-11:2012
<ul style="list-style-type: none"> • First step of protection • In front of the power meter 	<ul style="list-style-type: none"> • Hybrid Topology • TOV Immunity • Leakage current free • Vibration/Shock immunity 	<ul style="list-style-type: none"> • Easy replacement during servicing • No external fuse required up to 315A gG 	Pluggable Design	<ul style="list-style-type: none"> • IEC 61643-11:2011 • EN 61643-11:2012 • UL 1449 4th Edition
<ul style="list-style-type: none"> • First step of protection • Behind the power meter 	<ul style="list-style-type: none"> • Basic MOV Topology • No external fuse required up to 315 A gG • SCCR 200kA 	<ul style="list-style-type: none"> • Extra high and low models • Easy replacement during servicing • Vibration/Shock immunity 	Pluggable Design	<ul style="list-style-type: none"> • IEC 61643-11:2011 • EN 61643-11:2012 • UL 1449 4th Edition
<ul style="list-style-type: none"> • First step of protection • Behind the power meter 	<ul style="list-style-type: none"> • Basic MOV Topology • Vibration/Shock immunity • Cost-optimized solution 		Compact Design	<ul style="list-style-type: none"> • IEC 61643-11:2011 • EN 61643-11:2012
<ul style="list-style-type: none"> • First step of protection • In front of the power meter 	<ul style="list-style-type: none"> • Hybrid Topology. • TOV Immunity • Leakage current free • Vibration/Shock immunity 	<ul style="list-style-type: none"> • Cost-optimized solution • No external fuse required up to 315 A gG 	Compact Design	<ul style="list-style-type: none"> • IEC 61643-11:2011 • EN 61643-11:2012
<ul style="list-style-type: none"> • Second step of protection 	<ul style="list-style-type: none"> • Hybrid Topology • TOV Immunity • Leakage current free • Vibration/Shock immunity 	<ul style="list-style-type: none"> • No external fuse required up to 315 A gG • Easy replacement during servicing 	Pluggable Design	<ul style="list-style-type: none"> • IEC 61643-11:2011 • EN 61643-11:2012 • UL 1449 4th Edition
<ul style="list-style-type: none"> • Second step of protection 	<ul style="list-style-type: none"> • Basic MOV Topology • No external fuse required up to 315 A gG • Extra high and low models 	<ul style="list-style-type: none"> • Easy replacement during servicing • Vibration/Shock immunity 	Pluggable Design	<ul style="list-style-type: none"> • IEC 61643-11:2011 • EN 61643-11:2012 • UL 1449 4th Edition
<ul style="list-style-type: none"> • Second step of protection 	<ul style="list-style-type: none"> • Early warning system (3-stage life time indicator) • No external fuse required up to 160 A gG 	<ul style="list-style-type: none"> • SCCR 200kA • Easy replacement during servicing • Vibration/Shock immunity 	Pluggable Design	<ul style="list-style-type: none"> • IEC 61643-11:2011 • EN 61643-11:2012 • UL 1449 4th Edition
<ul style="list-style-type: none"> • Second step of protection 	<ul style="list-style-type: none"> • Hybrid Topology • TOV Immunity • No external fuse required up to 315 A gG 	<ul style="list-style-type: none"> • Extra high and low models • Easy replacement during servicing • Vibration/Shock immunity 	Pluggable Design	<ul style="list-style-type: none"> • IEC 61643-11:2011 • EN 61643-11:2012 • UL 1449 4th Edition
<ul style="list-style-type: none"> • Indoor affixed to PCB 	<ul style="list-style-type: none"> • Short circuit current rating up to SCCR 25kA 	<ul style="list-style-type: none"> • Single-pole PCB Mount SPD Socket for AC System • Vibration/Shock immunity 	Pluggable Design	<ul style="list-style-type: none"> • IEC 61643-11:2011 • EN 61643-11:2012
<ul style="list-style-type: none"> • String boxes and inverters • Affixed to PCB 	<ul style="list-style-type: none"> • Maximum discharge current up to I_{max} 40kA 	<ul style="list-style-type: none"> • Single-pole PCB Mount SPD Socket for PV System • Vibration/Shock immunity 	Pluggable Design	<ul style="list-style-type: none"> • IEC 61643-31:2018 • EN 50539 11:2013 +A1:2014 • UL 1449 4th Edition
<ul style="list-style-type: none"> • DC Photovoltaic applications 	<ul style="list-style-type: none"> • Short circuit current rating of 11kA • SCCR 50kA and 65kA 	<ul style="list-style-type: none"> • Easy replacement during servicing • Vibration/Shock immunity 	Pluggable Design	<ul style="list-style-type: none"> • EN 61643-11:2012 • UL 1449 4th Edition
<ul style="list-style-type: none"> • DC applications • First and second step of protection 	<ul style="list-style-type: none"> • Type 1CA (ProBloc B 1000DC)/ Type 4CA (SafeTec T2 DC) surge protective device for DC • Vibration/Shock immunity 	<ul style="list-style-type: none"> • Maximum DC operating voltage up to 100VDC • High short circuit current rating • SCCR 50kA 	Compact / Pluggable Design	<ul style="list-style-type: none"> • UL 1449 4th Edition

Pluggable Single Pole & Multi-pole Surge Protective Devices



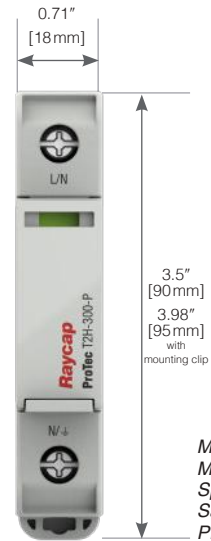
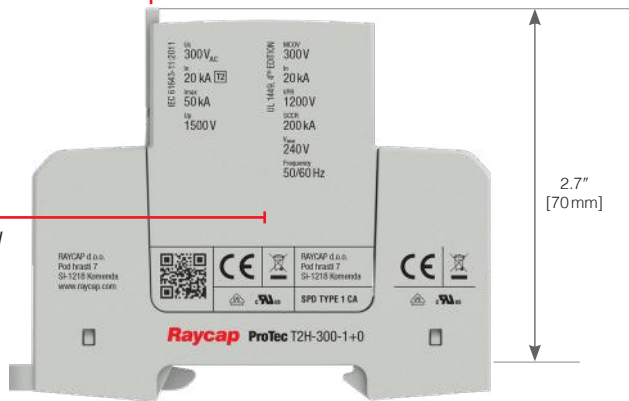
Housing Design Features

- Contemporary design
- Low residual protection level
- High durability due to redesigned thermal disconnection mechanism
- No external back-up fuse required up to 315 A
- Patented locking mechanism for secure placement in high vibration environments
- Remote signaling using tool-free remote contact
- Easily visible mechanical lifetime indicator
- Replacement plugs provide ease of installation and preventive maintenance
- Easy replacement during servicing
- Meets IEC/EN 61643-11 and UL 1449 4th Edition



Patented
Locking
Mechanism

ProTec Hybrid
Technology



Modern
Modular
Space
Saving
Profile



ProTec T1-300-1+0-R



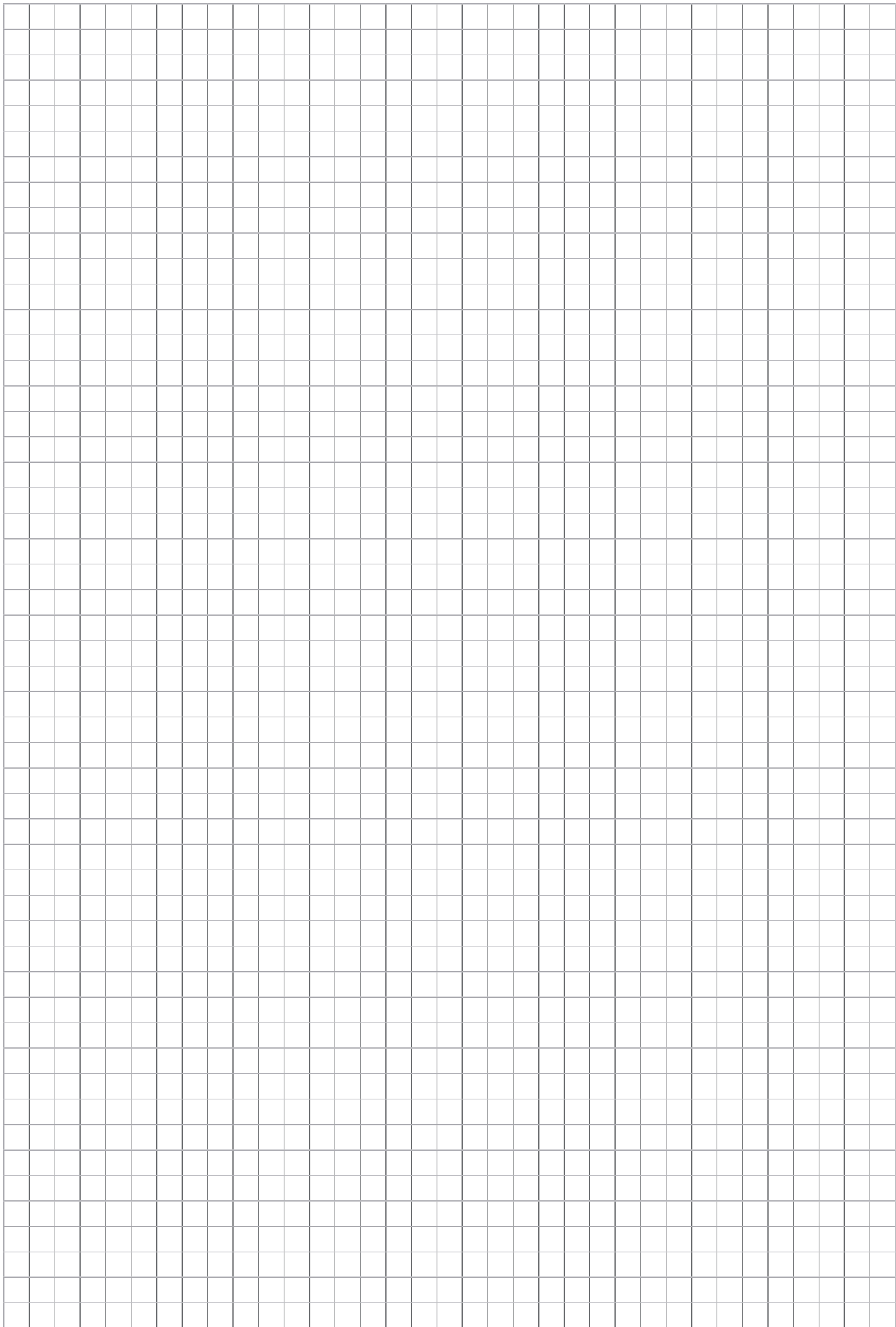
ProTec T2-300-2+0-R



ProTec T2H-300-3+0-R



ProTec T2-300-4+0-R



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



Lightning and Overvoltage Protection

ProTec T1HS



Special features:

- Leakage free hybrid topology
- High discharge capacity due to unique design impulse discharge current of 25 kA
- Energy coordinated with other ProTec families without additional cable length
- State-of-the-art thermal disconnector
- Backup fuse up to 315 A gG
- Short circuit current rating up to 50 kA
- Vibration and shock withstand capability
- All modules, also N-PE, with operating state green-red
- Optional remote contact (RC) signaling
- VDE-IEC Class I & II / EN Type 1+2 and UL Type 4CA certified



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

The Type 1+2 surge protective device contains two high rated stand-alone varistors in series with a gas discharge tube that, in combination with a state-of-the-art space-saving thermal disconnection mechanism, ensure optimal system protection under all kinds of overloads. The series connection isolates the varistor from the grid, making it suitable for use upstream of meter panels in low-voltage consumer installations while making it immune to temporary overvoltage. The operating state requires no power to operate and instantly shows the health of the surge protective indicator. Besides a visual mechanical indicator, an optional remote contact (RC) device features a three-pole remote signaling terminal to remotely monitor the operating state of the device.

Lightning and Overvoltage Protection
ProTec T1HS 3+0
 Class I • Class II • Type 1 • Type 2 • Type 4CA

25 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-C
 Mode of Protection: L-PEN
 IEC/EN/UL Category: Class I+II, Type 1+2, Type 4CA
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Pluggable Design
 Compliance: IEC 61643-11: 2011
 EN 61643-11: 2012
 UL 1449 4th Edition

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 μ s)	I_n	25 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	65 kA
Impulse Discharge Current (10/350 μ s)	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	100 A
Response Time	t_A	< 100 ns
Overcurrent Protection (max)		315 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	50 kA
TOV Withstand 120min	U_T	442 V
Number of Ports		1

UL Electrical

Maximum Continuous Operating Voltage (AC)	MCOV	300 V
Measured Limiting Voltage	MLV	1280 V
Nominal Discharge Current (8/20 μ s)	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)

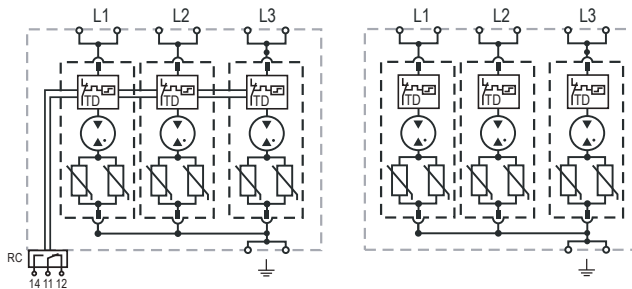
Order Information

Order Code	300
ProTec T1HS-xxx-3+0	59.0304
ProTec T1HS-xxx-3+0-R (with remote contacts)	59.0305
ProTec T1HS-xxx-P (plug)	59.0302

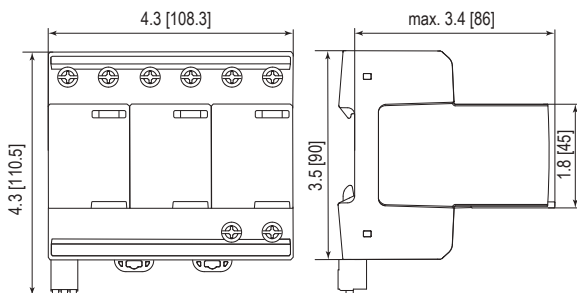
Internal Configuration

Legend

- L Line Conductor Terminal
- ⏏ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



Complete Unit Dimensions & Packaging

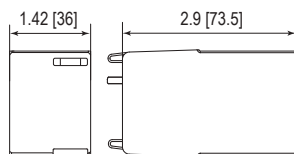
ProTec T1HS-xxx-3+0	300
Weight	pounds [grams] 1.892 [858]
ProTec T1HS-xxx-3+0-R	
Weight	pounds [grams] 1.914 [868]
DIN 43880 Dimension	6 TE / 4.3" [108.3]
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity	2 Units

Plug Internal Configuration

ProTec T1HS-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

ProTec T1HS-xxx-P	300
Weight	pounds [grams] .364 [165]
DIN 43880 Dimension	2 TE / 1.42" [36]
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity	14 Units

inches
[mm]

Lightning and Overvoltage Protection

ProTec T1HS 4+0

Class I • Class II • Type 1 • Type 2 • Type 4CA

25 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-S
 Mode of Protection: L-PE, N-PE
 IEC/EN/UL Category: Class I+II, Type 1+2, Type 4CA
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Pluggable Design
 Compliance: IEC 61643-11: 2011
 EN 61643-11: 2012
 UL 1449 4th Edition

Technical Data

ProTec T1HS-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 μ s)	I_n	25 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	65 kA
Impulse Discharge Current (10/350 μ s)	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	100 A
Response Time	t_A	< 100 ns
Overcurrent Protection (max)		315 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	50 kA
TOV Withstand 120min	U_T	442 V
Number of Ports		1

UL Electrical

Maximum Continuous Operating Voltage (AC)	MCOV	300 V
Measured Limiting Voltage	MLV	1280 V
Nominal Discharge Current (8/20 μ s)	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)

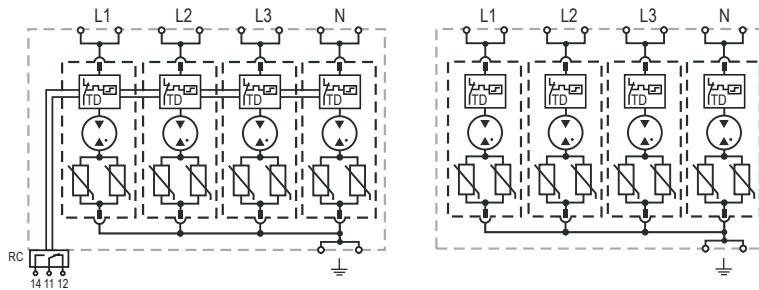
Order Information

Order Code	300
ProTec T1HS-xxx-4+0	59.0260
ProTec T1HS-xxx-4+0-R (with remote contacts)	59.0261
ProTec T1HS-xxx-P (plug)	59.0302

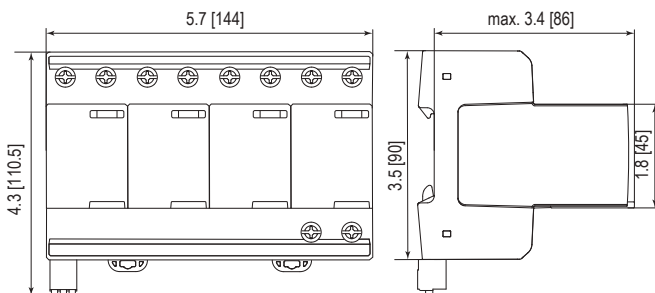
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



Complete Unit Dimensions & Packaging

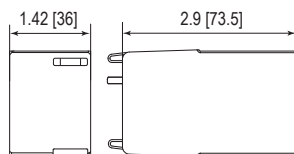
ProTec T1HS-xxx-4+0	300
Weight	pounds [grams] 2.502 [1135]
ProTec T1HS-xxx-4+0-R	
Weight	pounds [grams] 2.522 [1144]
DIN 43880 Dimension	8 TE / 5.7" [144]
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity	2 Units

Plug Internal Configuration

ProTec T1HS-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

ProTec T1HS-xxx-P	300
Weight	pounds [grams] .364 [165]
DIN 43880 Dimension	2 TE / 1.42 [36]
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity	14 Units

inches
[mm]

Lightning and Overvoltage Protection

ProTec T1HS 3+1

Class I • Class II • Type 1 • Type 2 • Type 4CA

25 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TT, TN-S
 Mode of Protection: L-N, N-PE
 IEC/EN/UL Category: Class I+II, Type 1+2, Type 4CA
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Pluggable Design
 Compliance: IEC 61643-11: 2011
 EN 61643-11: 2012
 UL 1449 4th Edition

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 μ s)	(L-N) / (N-PE) I_n	25 kA / 100 kA
Maximum Discharge Current (8/20 μ s)	(L-N) / (N-PE) I_{max}	65 kA / 130 kA
Impulse Discharge Current (10/350 μ s)	(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	100 A
Response Time	(L-N) / (N-PE) t_A	< 100 ns / < 100 ns
Overcurrent Protection (max)		315 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	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

UL Electrical

Maximum Continuous Operating Voltage (AC)	(L-N)/(N-G) MCOV	300 V / 305 V
Measured Limiting Voltage	(L-N)/(N-G) MLV	1280 V / 1000 V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-G) 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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (Solid)

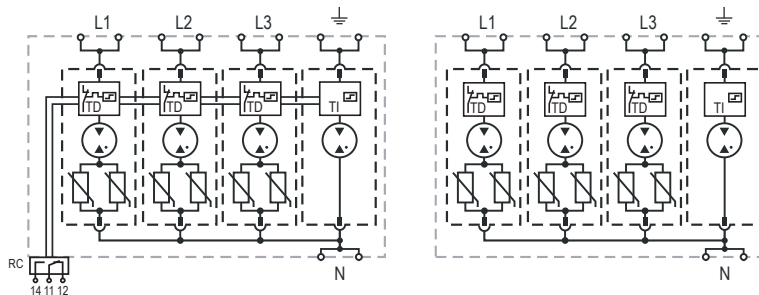
Order Information

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 (plug L-N)	59.0302
ProTube T1HS-100-P (plug N-PE)	59.0303

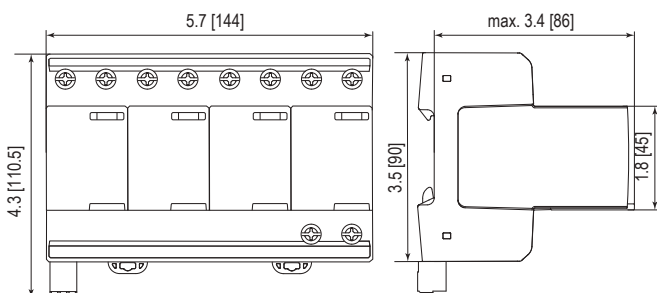
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect
- TI Thermal Indication



Complete Unit



Complete Unit Dimensions & Packaging

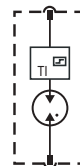
ProTec T1HS-xxx-3+1	300
Weight	pounds [grams] 2.348 [1065]
ProTec T1HS-xxx-3+1-R	
Weight	pounds [grams] 2.368 [1074]
DIN 43880 Dimension	8 TE / 5.7 [144]
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity	2 Units

Plug Internal Configuration

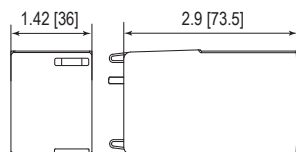
ProTec T1HS-xxx-P



ProTube T1HS-100-P



Spare Plug



Single Unit Dimensions & Packaging

ProTec T1HS-xxx-P	300
Weight	pounds [grams] .364 [165]
ProTube T1HS-100-P	100
Weight	pounds [grams] 0.209 [95]
DIN 43880 Dimension	2 TE / 1.42 [36]
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity	14 Unit

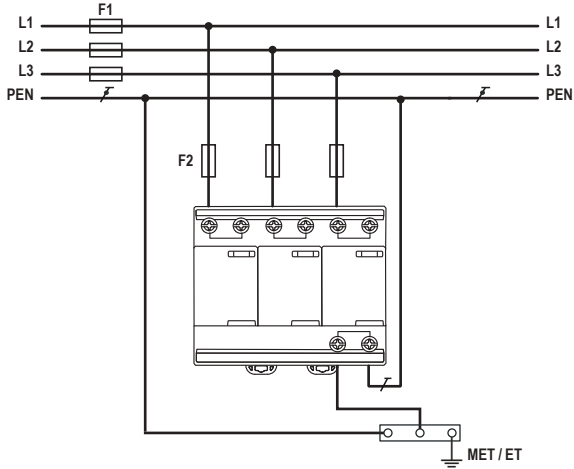
inches
[mm]

Pluggable Multi-pole SPD Connection Configurations

ProTec T1HS Series

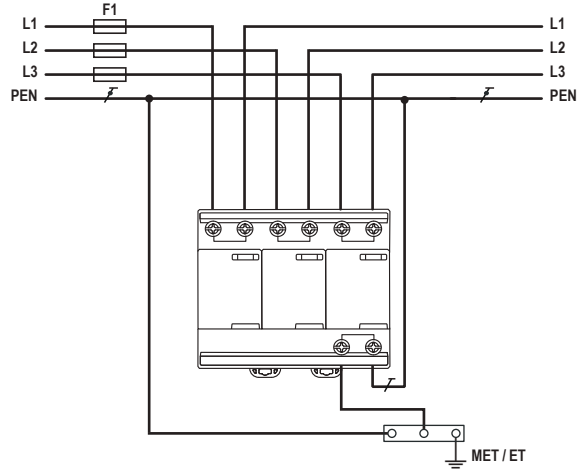
TN-C (Three-phase, 3+0)

T Connection



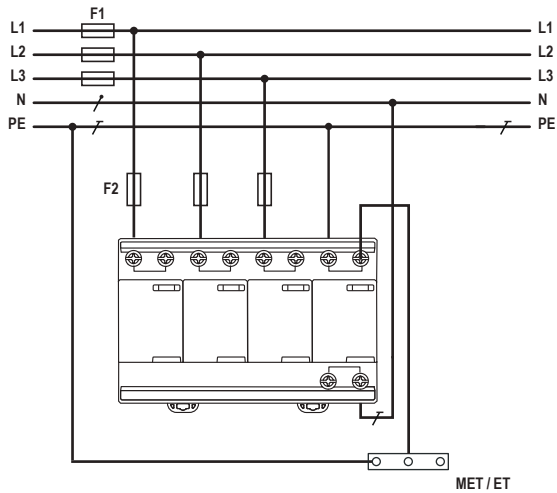
TN-C (Three-phase, 3+0)

V Connection (only if $F \leq 100\text{ A}$)



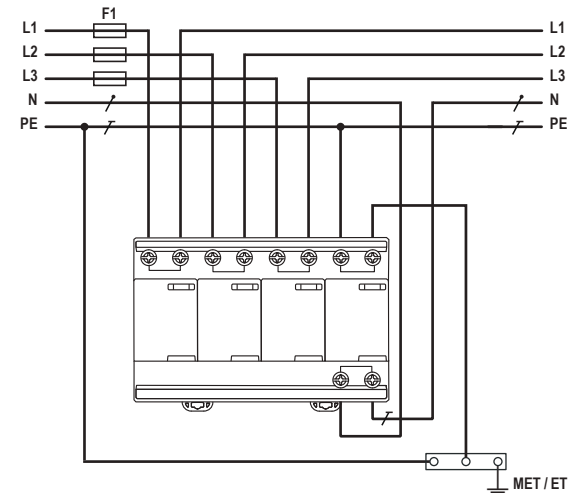
TN-S (Three-phase, 3+1)

T Connection



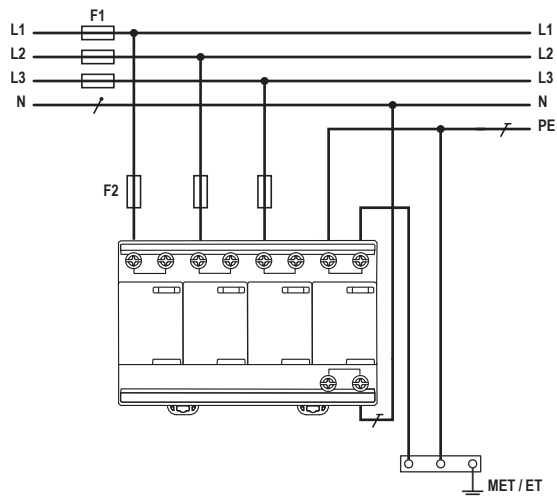
TN-S (Three-phase, 3+1)

V Connection (only if $F \leq 100\text{ A}$)



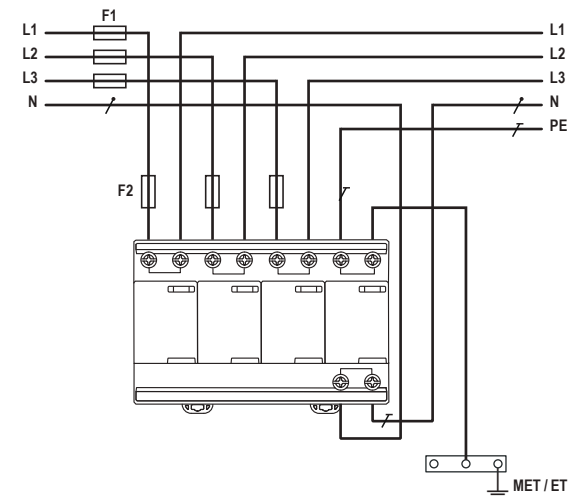
TT (Three-phase, 3+1)

T Connection



TT (Three-phase, 3+1)

V Connection (only if $F \leq 100\text{ A}$)



/ N Neutral

/ PE Protective Earth

/ PEN Protective Earth & Neutral

Overcurrent Protection Rating for I_{SCCR}

— F1 > 315 A gG → — F2 = 315 A gG

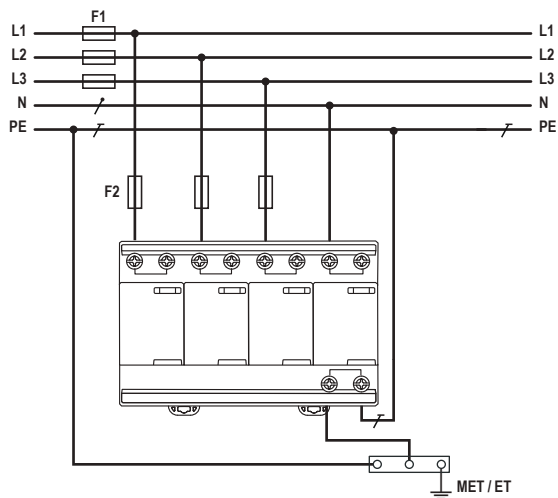
— F1 ≤ 315 A gG → ~~— F2~~

Pluggable Multi-pole SPD Connection Configurations

ProTec T1HS Series

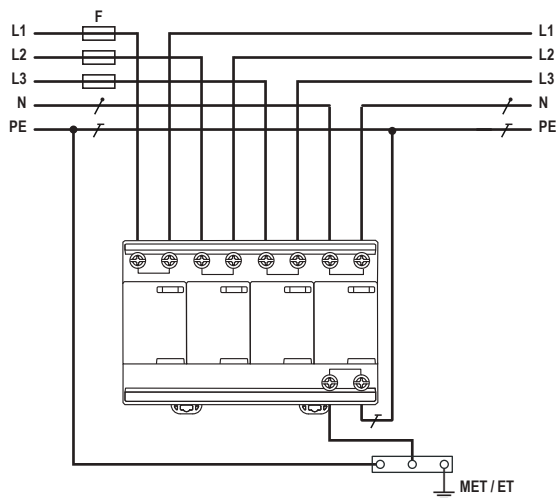
TN-S (Three-phase, 4+0)

T Connection



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

V Connection (only if $F \leq 100\text{ A}$)





/ N Neutral

/ PE Protective Earth

/ PEN Protective Earth & Neutral

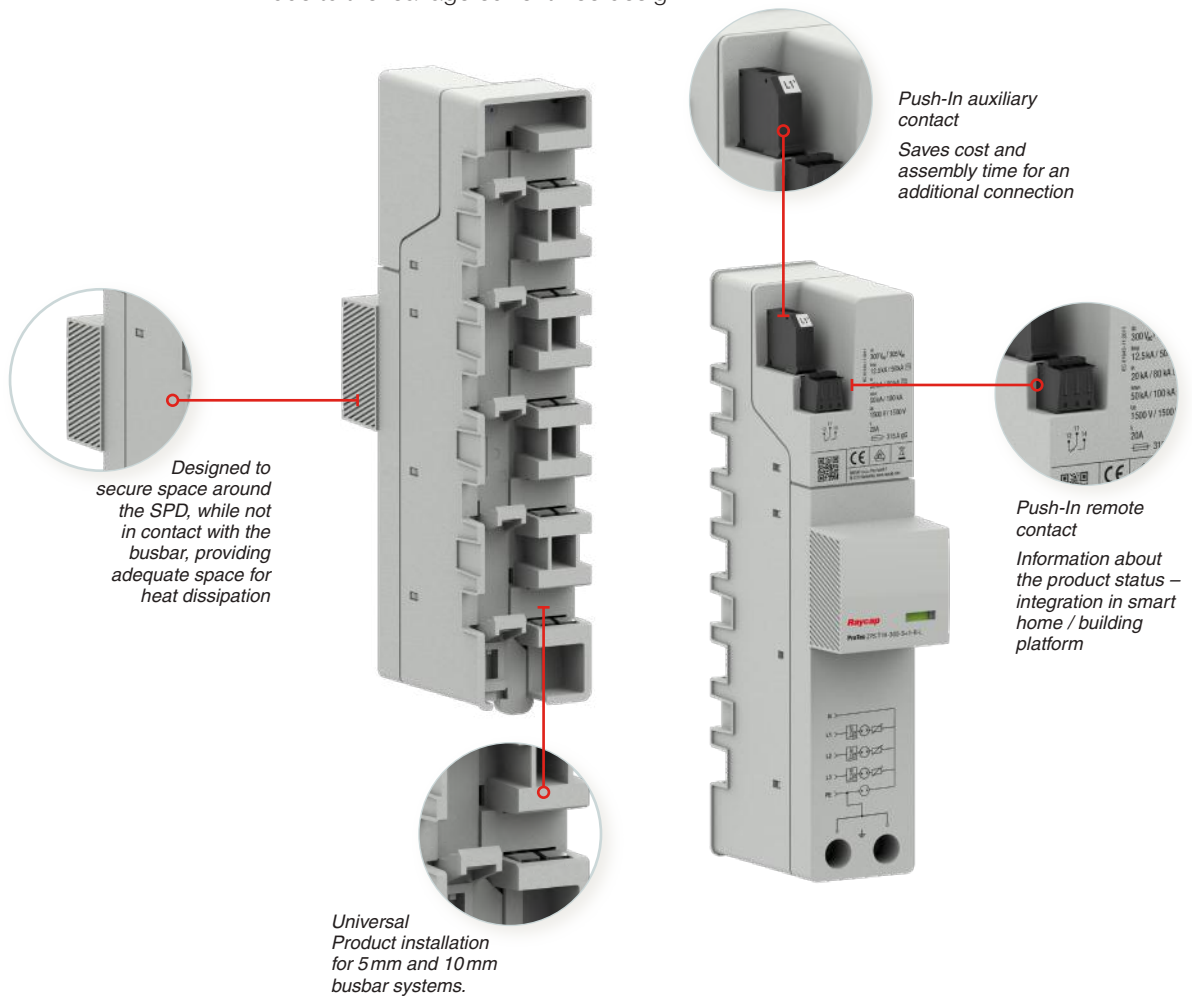
Overcurrent Protection Rating for I_{SCCR}

 $F1 > 315\text{ A gG}$ →  $F2 = 315\text{ A gG}$

 $F1 \leq 315\text{ A gG}$ →  $F2$

Installation features:

- Universal product for 5 mm and 10 mm busbar systems
- 47 mm narrow width fits between two SLS circuit breakers and also provides space for more effective heat dissipation from SLS breaker
- Compliance to German utility standard (needle test with 1 mm stick)
- Push-in auxiliary contact
- Push-in remote contact
- Pluggable installation
- Installation in front of the power meter due to the leakage current free design



Combined Lightning Current & Surge Arrester



ProTec ZPS T1H



Special features:

- Universal use in all main distribution cabinets due to the 47 mm compact design
- Designed for 40 mm busbar system cabinets
- Auxiliary power contact
- Remote contact (RC) for monitoring of SPD
- Leakage current-free technology
- Reliable mechanical end-of-life (EOL) indicator



Compliance	IEC 61643-11:2011	EN 61643-11:2012
ProTec ZPS T1H Series	✓	✓

The ProTec ZPS T1H product family is specially designed for installations in front of the power meter on 40 mm busbar connection panels. The product's simple and time saving package eliminates most wire terminations and is easy to integrate into three-phase 40 mm busbar systems. The device is equipped with a state-of-the-art thermal disconnecter and mechanically driven visual indicator system (green-red). In addition to the visual mechanical indicator, a remote contact (RC) features a three-pole remote signaling terminal to remotely monitor the operating state of the device. The surge arrester is designed to fully comply with the latest requirements of the German DIN VDE 0100-443 and 534 which regulate when and how low voltage systems need to be protected against overvoltages, and to DIN VDE AR-N 4100, the new technical connection rules for low voltage applications.

Combined Lightning Current and Surge Arrester

ProTec ZPS T1H 3+0(-R)

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

IEC/EN: Class I+II / Type 1+2

Technology: Hybrid

Leakage Current Free: Yes

Line Follow Current: No

Housing: Compact design

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

Technical Data

ProTec ZPS T1H-xxx-3+0(-R)

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 μ s)	I_n	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50 kA
Impulse Discharge Current (10/350 μ s)	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
Overcurrent Protection (max)		315 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 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 (max)		13123 ft [4000m]
Terminal Screw Torque	M_{max}	PZ2 / 39.9 lbf-in [4.5Nm]
Conductor Cross Section (max)		35 mm ² (Solid, Stranded) / 25 mm ² (Flexible) 2 AWG (Solid, Stranded) / 4 AWG (Flexible)
Mounting		40mm Busbar Systems
Degree Of Protection		IP 20*
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
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)		1.5mm ² (Solid) / 16 AWG (Solid)

Order Information

Order Code	
ProTec ZPS T1H-300-3+0	59.0900
ProTec ZPS T1H-300-3+0-R (with remote contacts)	59.0901

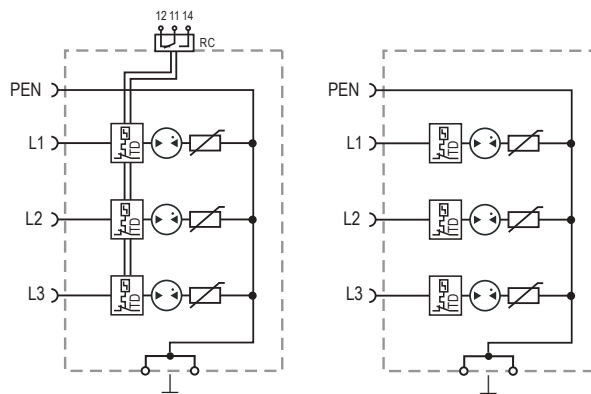
*IP 40 (in combination with cover)

ProTec ZPS T1H 3+0(-R)

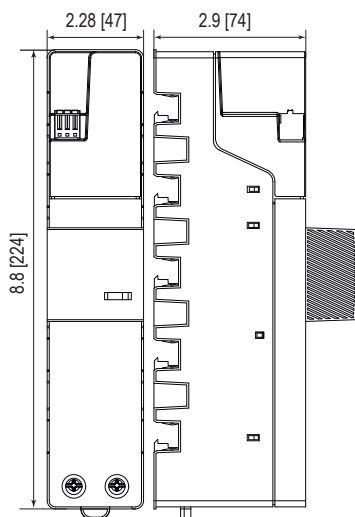
Internal Configuration

Legend

- L Line Busbar Terminal
- PEN PEN Busbar Terminal
- ⏚ Terminal for Main Earthing Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter



Complete Unit



Complete Unit Dimensions & Packaging

ProTec ZPS T1H-xxx-3+0	300
Weight	pounds [grams] 1.552 [704]
Packaging Dimensions (HxWxL)	12.5 × 13.4 × 9.5" [320 × 340 × 240 mm]
Standard Order Quantity	18 Units
ProTec ZPS T1H-xxx-3+0-R	300
Weight	pounds [grams] 1.570 [712]
Packaging Dimensions (HxWxL)	12.5 × 13.4 × 9.5" [320 × 340 × 240 mm]
Standard Order Quantity	18 Units

inches
[mm]

Combined Lightning Current and Surge Arrester

ProTec ZPS T1H 3+0(-R)-L

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

IEC/EN: Class I+II / Type 1+2

Technology: Hybrid

Leakage Current Free: Yes

Line Follow Current: No

Housing: Compact design

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

Technical Data

ProTec ZPS T1H-xxx-3+0(-R)-L

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 μ s)	I_n	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50 kA
Impulse Discharge Current (10/350 μ s)	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
Overcurrent Protection (max)		315 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 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 (max)		13123 ft [4000m]
Terminal Screw Torque	M_{max}	PZ2 / 39.9 lbf-in [4.5Nm]
Conductor Cross Section (max)		35 mm ² (Solid, Stranded) / 25 mm ² (Flexible) 2 AWG (Solid, Stranded) / 4 AWG (Flexible)
Mounting		40mm Busbar Systems
Degree Of Protection		IP 20*
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
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)		1.5mm ² (Solid) / 16 AWG (Solid)

Load Terminal (L1')

Rated Current	I_L	20A
Load Side Overcurrent Protective Device		20A gG
Wire Connection Method		Push In
Conductor Cross Section		10 AWG / 4 mm ² (Solid, Stranded, Flexible)
Stripping Length		16 mm

Order Information

Order Code		
ProTec ZPS T1H-300-3+0-L (with load terminal)		59.0902
ProTec ZPS T1H-300-3+0-R-L (with remote contacts and load terminal)		59.0903

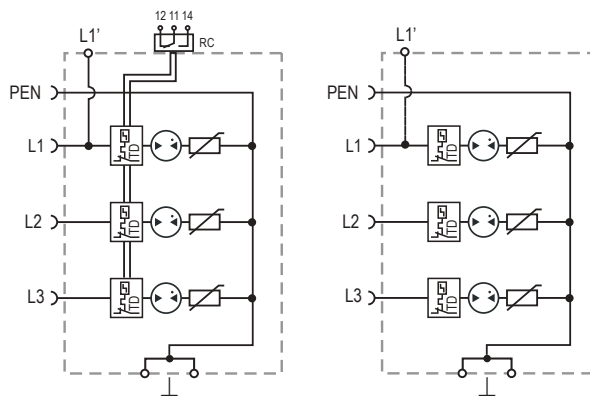
*IP 40 (in combination with cover)

ProTec ZPS T1H 3+0(-R)-L

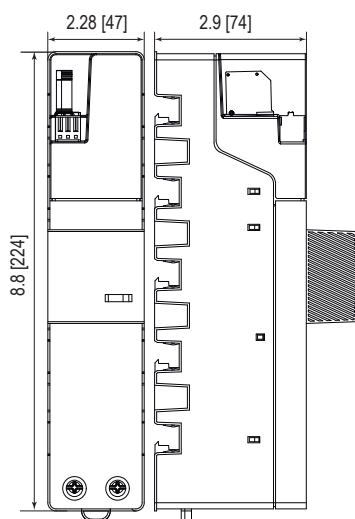
Internal Configuration

Legend

- L Line Busbar Terminal
- L1' Load Terminal
- PEN PEN Busbar Terminal
- ⏏ Terminal for Main Earthing Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



Complete Unit Dimensions & Packaging

ProTec ZPS T1H-xxx-3+0-L	300
Weight	pounds [grams] 1.570 [712]
Packaging Dimensions (HxWxL)	12.5 x 13.4 x 9.5" [320 x 340 x 240 mm]
Standard Order Quantity	18 Units
ProTec ZPS T1H-xxx-3+0-R-L	300
Weight	pounds [grams] 1.587 [720]
Packaging Dimensions (HxWxL)	12.5 x 13.4 x 9.5" [320 x 340 x 240 mm]
Standard Order Quantity	18 Units

inches
[mm]

Combined Lightning Current and Surge Arrester

ProTec ZPS T1H 3+1(-R)

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

IEC/EN: Class I+II / Type 1+2

Technology: Hybrid

Leakage Current Free: Yes

Line Follow Current: No

Housing: Compact design

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

Technical Data

ProTec ZPS T1H-xxx-3+1(-R)

IEC Electrical

Nominal AC Voltage (50/60Hz)	U_o/U_n	240 V
Maximum Continuous Operating Voltage (AC)	(L-N) U_c	300 V
	(N-PE) U_c	305 V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_n	20 kA / 80 kA
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}	50 kA / 100 kA
Impulse Discharge Current (10/350 μ s)	(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
Overcurrent Protection (max)		315 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 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 (max)		13123 ft [4000m]
Terminal Screw Torque	M_{max}	PZ2 / 39.9 lbf-in [4.5Nm]
Conductor Cross Section (max)		35mm ² (Solid, Stranded) / 25mm ² (Flexible)
		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
Mounting		40mm Busbar Systems
Degree Of Protection		IP 20*
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
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)		1.5mm ² (Solid) / 16 AWG (Solid)

Order Information

Order Code	
ProTec ZPS T1H-300-3+1	59.0908
ProTec ZPS T1H-300-3+1-R (with remote contacts)	59.0909

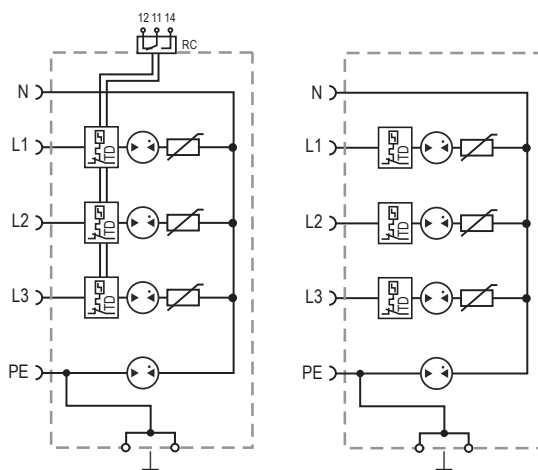
*IP 40 (in combination with cover)

ProTec ZPS T1H 3+1(-R)

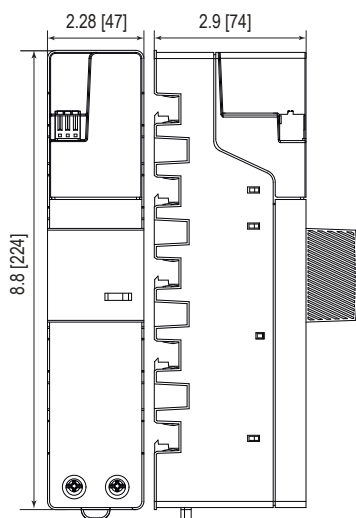
Internal Configuration

Legend

- L Line Busbar Terminal
- N Neutral Busbar Terminal
- PE PE Busbar Terminal
- ⏏ Terminal for Main Earthing Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter



Complete Unit



Complete Unit Dimensions & Packaging

ProTec ZPS T1H-xxx-3+1	300
Weight	pounds [grams] 1.640 [744]
Packaging Dimensions (HxWxL)	12.5 × 13.4 × 9.5" [320 × 340 × 240 mm]
Standard Order Quantity	18 Units
ProTec ZPS T1H-xxx-3+1-R	300
Weight	pounds [grams] 1.658 [752]
Packaging Dimensions (HxWxL)	12.5 × 13.4 × 9.5" [320 × 340 × 240 mm]
Standard Order Quantity	18 Units

inches
[mm]

Combined Lightning Current and Surge Arrester

ProTec ZPS T1H 3+1(-R)-L

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

IEC/EN: Class I+II / Type 1+2

Technology: Hybrid

Leakage Current Free: Yes

Line Follow Current: No

Housing: Compact design

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

Technical Data

ProTec ZPS T1H-xxx-3+1(-R)-L

IEC Electrical

Nominal AC Voltage (50/60Hz)	U_o/U_n	240 V
Maximum Continuous Operating Voltage (AC)	(L-N) U_c	300 V
	(N-PE) U_c	305 V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_n	20 kA / 80 kA
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}	50 kA / 100 kA
Impulse Discharge Current (10/350 μ s)	(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
Overcurrent Protection (max)		315 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 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 (max)		13123 ft [4000m]
Terminal Screw Torque	M_{max}	PZ2 / 39.9 lbf-in [4.5Nm]
Conductor Cross Section (max)		35mm ² (Solid, Stranded) / 25mm ² (Flexible)
		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
Mounting		40mm Busbar Systems
Degree Of Protection		IP 20*
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
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)		1.5mm ² (Solid) / 16 AWG (Solid)

Load Terminal (L1')

Rated Current	I_L	20A
Load Side Overcurrent Protective Device		20A gG
Wire Connection Method		Push In
Conductor Cross Section		10 AWG / 4 mm ² (Solid, Stranded, Flexible)
Stripping Length		16 mm

Order Information

Order Code		
ProTec ZPS T1H-300-3+1-L (with load terminal)		59.0910
ProTec ZPS T1H-300-3+1-R-L (with remote contacts and load terminal)		59.0911

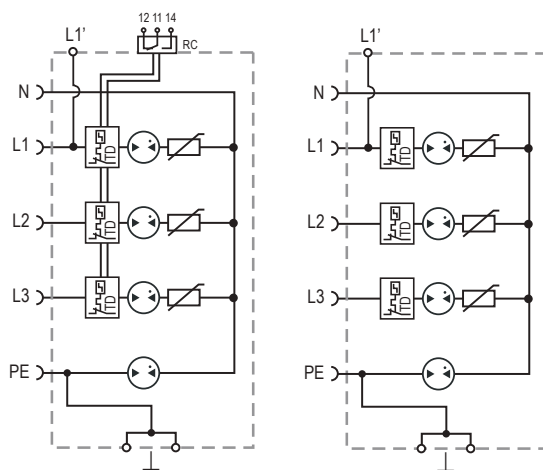
*IP 40 (in combination with cover)

ProTec ZPS T1H 3+1(-R)-L

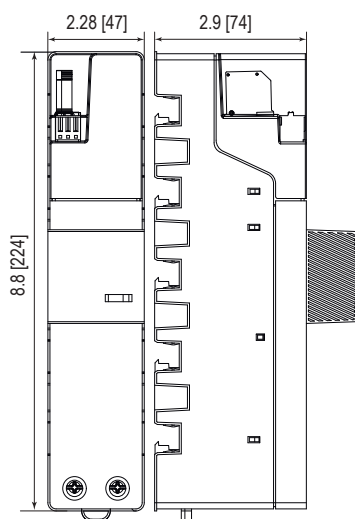
Internal Configuration

Legend

- L Line Busbar Terminal
- L1' Load Terminal
- N Neutral Busbar Terminal
- PE PE Busbar Terminal
- ⏚ Terminal for Main Earthing Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter



Complete Unit



Complete Unit Dimensions & Packaging

ProTec ZPS T1H-xxx-3+1-L	300
Weight	pounds [grams] 1.658 [752]
Packaging Dimensions (HxWxL)	12.5 x 13.4 x 9.5" [320 x 340 x 240 mm]
Standard Order Quantity	18 Units
ProTec ZPS T1H-xxx-3+1-R-L	300
Weight	pounds [grams] 1.676 [760]
Packaging Dimensions (HxWxL)	12.5 x 13.4 x 9.5" [320 x 340 x 240 mm]
Standard Order Quantity	18 Units

inches
[mm]

Combined Lightning Current and Surge Arrester

ProTec ZPS T1H 3+0 E(-R)

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

IEC/EN: Class I+II / Type 1+2

Technology: Hybrid

Leakage Current Free: Yes

Line Follow Current: No

Housing: Compact design

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

Technical Data

ProTec ZPS T1H-xxx-3+0-E(-R)

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 μ s)	I_n	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50 kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	7.5 kA
Specific Energy	W/R	14 kJ/ Ω
Charge	Q	3.75 As
Voltage Protection Level	U_p	1500V
Response Time	t_A	< 100ns
Overcurrent Protection (max)		315 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 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 (max)		13123 ft [4000m]
Terminal Screw Torque	M_{max}	PZ2 / 39.9 lbf-in [4.5Nm]
Conductor Cross Section (max)		35 mm ² (Solid, Stranded) / 25 mm ² (Flexible) 2 AWG (Solid, Stranded) / 4 AWG (Flexible)
Mounting		40mm Busbar Systems
Degree Of Protection		IP 20*
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
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)		1.5mm ² (Solid) / 16 AWG (Solid)

Order Information

Order Code	
ProTec ZPS T1H-300-3+0-E	59.0904
ProTec ZPS T1H-300-3+0-E-R (with remote contacts)	59.0905

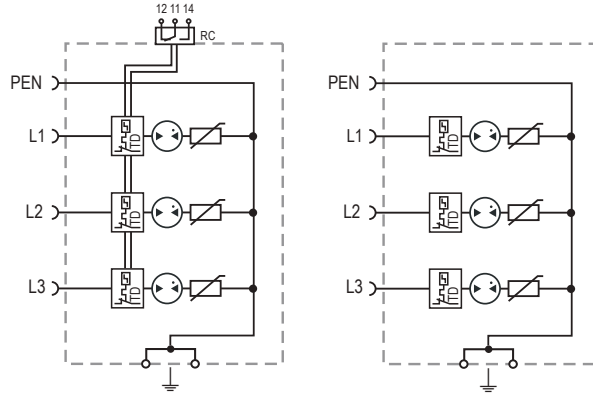
*IP 40 (in combination with cover)

ProTec ZPS T1H 3+0 E(-R)

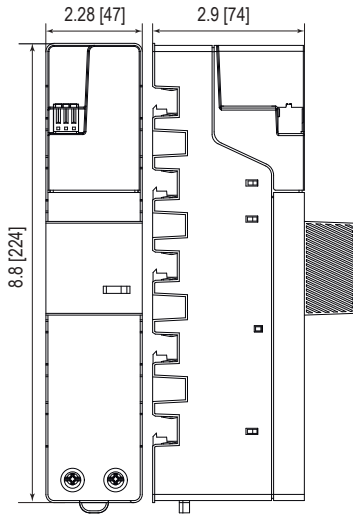
Internal Configuration

Legend

- L Line Busbar Terminal
- PEN PEN Busbar Terminal
- ⏚ Terminal for Main Earthing Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter



Complete Unit



Complete Unit Dimensions & Packaging

ProTec ZPS T1H-xxx-3+0-E	300
Weight	pounds [grams] 1.548 [702]
Packaging Dimensions (HxWxL)	12.5 x 13.4 x 9.5" [320 x 340 x 240 mm]
Standard Order Quantity	18 Units
ProTec ZPS T1H-xxx-3+0-E-R	300
Weight	pounds [grams] 1.565 [710]
Packaging Dimensions (HxWxL)	12.5 x 13.4 x 9.5" [320 x 340 x 240 mm]
Standard Order Quantity	18 Units

inches
[mm]



Applicable connection configurations can be found on page 36.

Combined Lightning Current and Surge Arrester

ProTec ZPS T1H 3+0 E(-R)-L

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

IEC/EN: Class I+II / Type 1+2

Technology: Hybrid

Leakage Current Free: Yes

Line Follow Current: No

Housing: Compact design

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

Technical Data

ProTec ZPS T1H-xxx-3+0-E(-R)-L

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 μ s)	I_n	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50 kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	7.5 kA
Specific Energy	W/R	14 kJ/ Ω
Charge	Q	3.75 As
Voltage Protection Level	U_p	1500V
Response Time	t_A	< 100ns
Overcurrent Protection (max)		315 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 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 (max)		13123 ft [4000m]
Terminal Screw Torque	M_{max}	PZ2 / 39.9 lbf-in [4.5Nm]
Conductor Cross Section (max)		35 mm ² (Solid, Stranded) / 25 mm ² (Flexible) 2 AWG (Solid, Stranded) / 4 AWG (Flexible)
Mounting		40mm Busbar Systems
Degree Of Protection		IP 20*
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
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)		1.5mm ² (Solid) / 16 AWG (Solid)

Load Terminal (L1')

Rated Current	I_L	20 A
Load Side Overcurrent Protective Device		20 A gG
Wire Connection Method		Push In
Conductor Cross Section		10 AWG / 4 mm ² (Solid, Stranded, Flexible)
Stripping Length		16 mm

Order Information

Order Code		
ProTec ZPS T1H-300-3+0-E-L (with load terminal)		59.0906
ProTec ZPS T1H-300-3+0-E-R-L (with remote contacts and load terminal)		59.0907

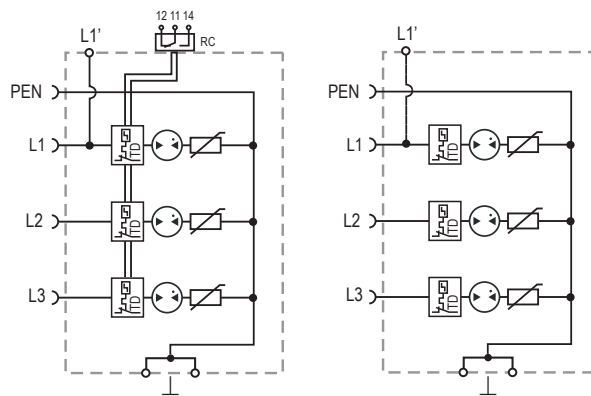
*IP 40 (in combination with cover)

ProTec ZPS T1H 3+0 E(-R)-L

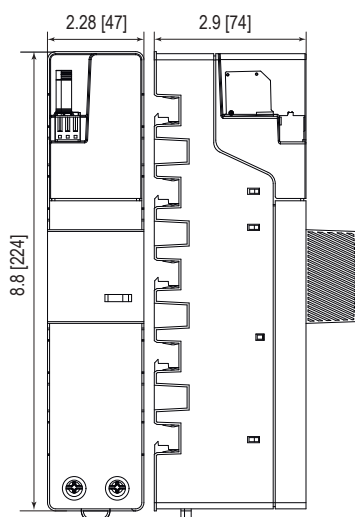
Internal Configuration

Legend

- L Line Busbar Terminal
- L1' Load Terminal
- PEN PEN Busbar Terminal
- ⏏ Terminal for Main Earthing Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter



Complete Unit



Complete Unit Dimensions & Packaging

ProTec ZPS T1H-xxx-3+0-E-L	300
Weight	pounds [grams] 1.565 [710]
Packaging Dimensions (HxWxL)	12.5 × 13.4 × 9.5" [320 × 340 × 240 mm]
Standard Order Quantity	18 Units
ProTec ZPS T1H-xxx-3+0-E-R-L	300
Weight	pounds [grams] 1.583 [718]
Packaging Dimensions (HxWxL)	12.5 × 13.4 × 9.5" [320 × 340 × 240 mm]
Standard Order Quantity	18 Units

inches
[mm]

Combined Lightning Current and Surge Arrester

ProTec ZPS T1H 3+1 E(-R)

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
IEC/EN: Class I+II / Type 1+2

Technology: Hybrid

Leakage Current Free: Yes

Line Follow Current: No

Housing: Compact design

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

Technical Data

ProTec ZPS T1H-xxx-3+1-E(-R)

IEC Electrical

Nominal AC Voltage (50/60Hz)	U_o/U_n	240 V
Maximum Continuous Operating Voltage (AC)	(L-N) U_c	300 V
	(N-PE) U_c	305 V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_n	20 kA / 80 kA
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}	50 kA / 100 kA
Impulse Discharge Current (10/350 μ s)	(L-N)/(N-PE) I_{imp}	7.5 kA / 30 kA
Specific Energy	(L-N)/(N-PE) W/R	14 kJ/ Ω / 225 kJ/ Ω
Charge	(L-N)/(N-PE) Q	3.75 As / 15As
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
Overcurrent Protection (max)		315 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 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 (max)		13123 ft [4000m]
Terminal Screw Torque	M_{max}	PZ2 / 39.9 lbf-in [4.5Nm]
Conductor Cross Section (max)		35mm ² (Solid, Stranded) / 25mm ² (Flexible)
		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
Mounting		40mm Busbar Systems
Degree Of Protection		IP 20*
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
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)		1.5mm ² (Solid) / 16 AWG (Solid)

Order Information

Order Code	
ProTec ZPS T1H-300-3+1-E	59.0912
ProTec ZPS T1H-300-3+1-E-R (with remote contacts)	59.0913

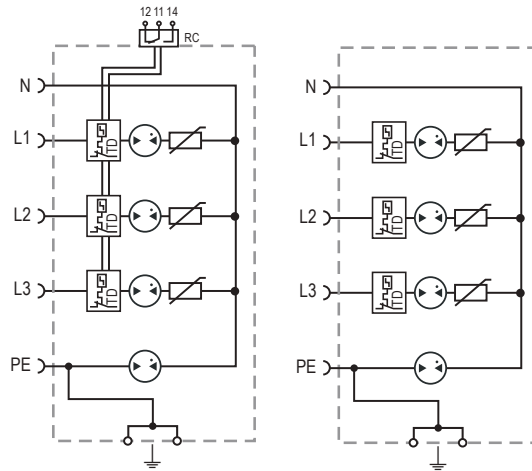
*IP 40 (in combination with cover)

ProTec ZPS T1H 3+1 E(-R)

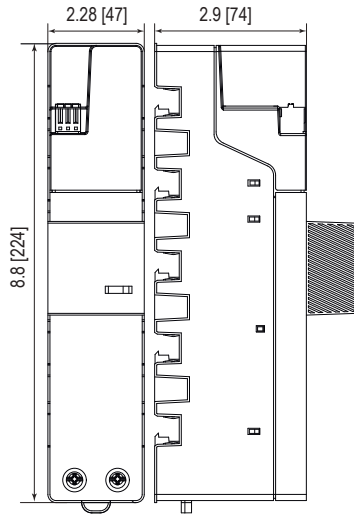
Internal Configuration

Legend

- L Line Busbar Terminal
- N Neutral Busbar Terminal
- PE PE Busbar Terminal
- ⏚ Terminal for Main Earthing Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter



Complete Unit



Complete Unit Dimensions & Packaging

ProTec ZPS T1H-xxx-3+1-E	300
Weight	pounds [grams] 1.636 [742]
Packaging Dimensions (HxWxL)	12.5 × 13.4 × 9.5" [320 × 340 × 240 mm]
Standard Order Quantity	18 Units
ProTec ZPS T1H-xxx-3+1-E-R	300
Weight	pounds [grams] 1.653 [750]
Packaging Dimensions (HxWxL)	12.5 × 13.4 × 9.5" [320 × 340 × 240 mm]
Standard Order Quantity	18 Units

inches
[mm]

Combined Lightning Current and Surge Arrester

ProTec ZPS T1H 3+1 E(-R)-L

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

IEC/EN: Class I+II / Type 1+2

Technology: Hybrid

Leakage Current Free: Yes

Line Follow Current: No

Housing: Compact design

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

Technical Data

ProTec ZPS T1H-xxx-3+1-E(-R)-L

IEC Electrical

Nominal AC Voltage (50/60Hz)	U_o/U_n	240 V
Maximum Continuous Operating Voltage (AC)	(L-N) U_c	300 V
	(N-PE) U_c	305 V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_n	20 kA / 80 kA
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}	50 kA / 100 kA
Impulse Discharge Current (10/350 μ s)	(L-N)/(N-PE) I_{imp}	7.5 kA / 30 kA
Specific Energy	(L-N)/(N-PE) W/R	14 kJ/ Ω / 225 kJ/ Ω
Charge	(L-N)/(N-PE) Q	3.75 As / 15As
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
Overcurrent Protection (max)		315 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 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 (max)		13123 ft [4000m]
Terminal Screw Torque	M_{max}	PZ2 / 39.9 lbf-in [4.5Nm]
Conductor Cross Section (max)		35mm ² (Solid, Stranded) / 25mm ² (Flexible)
		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
Mounting		40mm Busbar Systems
Degree Of Protection		IP 20*
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
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)		1.5mm ² (Solid) / 16 AWG (Solid)

Load Terminal (L1')

Rated Current	I_L	20 A
Load Side Overcurrent Protective Device		20 A gG
Wire Connection Method		Push In
Conductor Cross Section		10 AWG / 4 mm ² (Solid, Stranded, Flexible)
Stripping Length		16 mm

Order Information

Order Code		
ProTec ZPS T1H-300-3+1-E-L (with load terminal)		59.0914
ProTec ZPS T1H-300-3+1-E-R-L (with remote contacts and load terminal)		59.0915

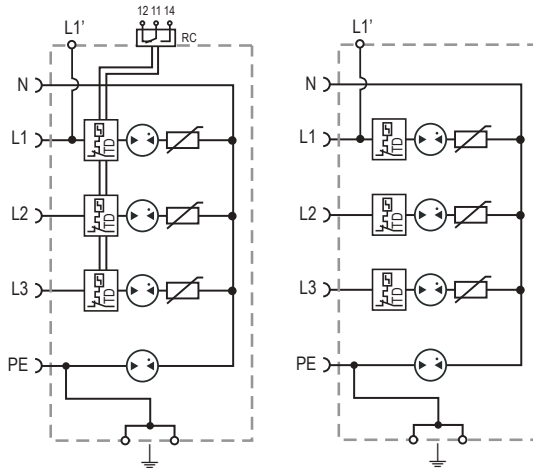
*IP 40 (in combination with cover)

ProTec ZPS T1H 3+1 E(-R)-L

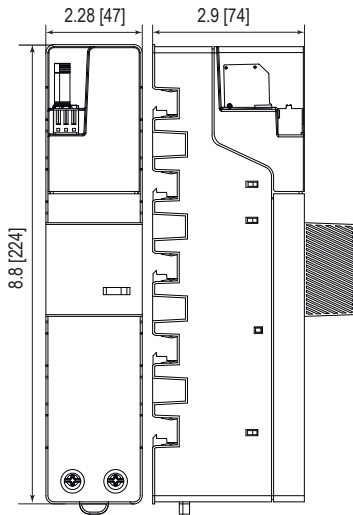
Internal Configuration

Legend

- L Line Busbar Terminal
- L1' Load Terminal
- N Neutral Busbar Terminal
- PE PE Busbar Terminal
- ⏚ Terminal for Main Earthing Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter



Complete Unit



Complete Unit Dimensions & Packaging

ProTec ZPS T1H-xxx-3+1-E-L	300
Weight	pounds [grams] 1.653 [750]
Packaging Dimensions (HxWxL)	12.5 x 13.4 x 9.5" [320 x 340 x 240 mm]
Standard Order Quantity	18 Units
ProTec ZPS T1H-xxx-3+1-E-R-L	300
Weight	pounds [grams] 1.671 [758]
Packaging Dimensions (HxWxL)	12.5 x 13.4 x 9.5" [320 x 340 x 240 mm]
Standard Order Quantity	18 Units

inches
[mm]

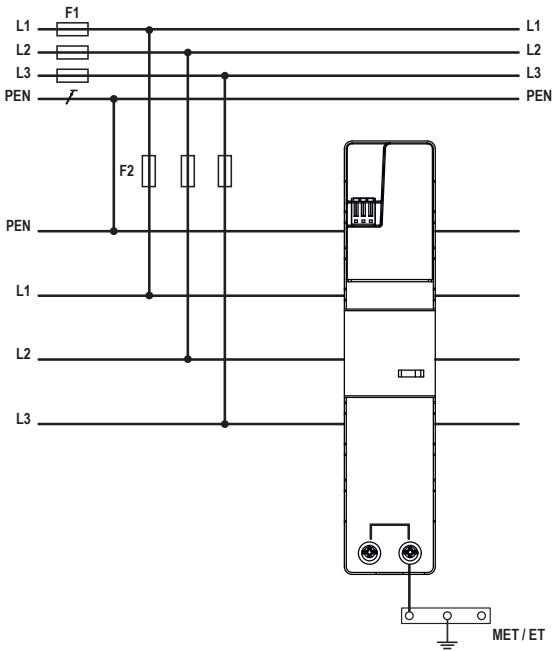


Applicable connection configurations can be found on page 36.

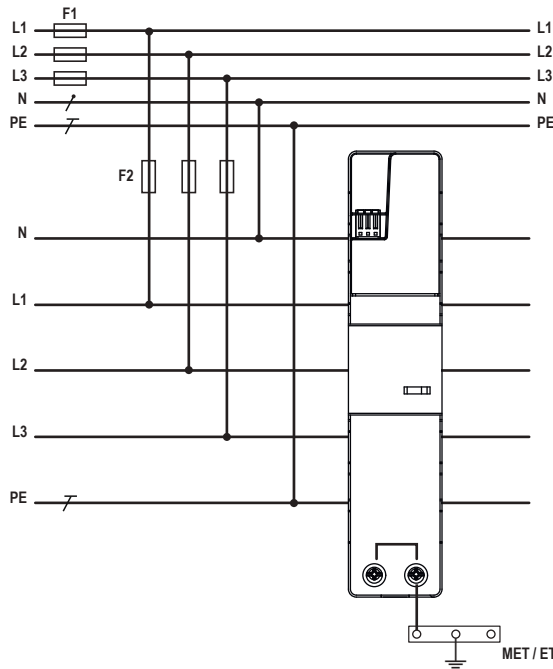
Combined Lightning Current and Surge Arrester

ProTec ZPS T1H

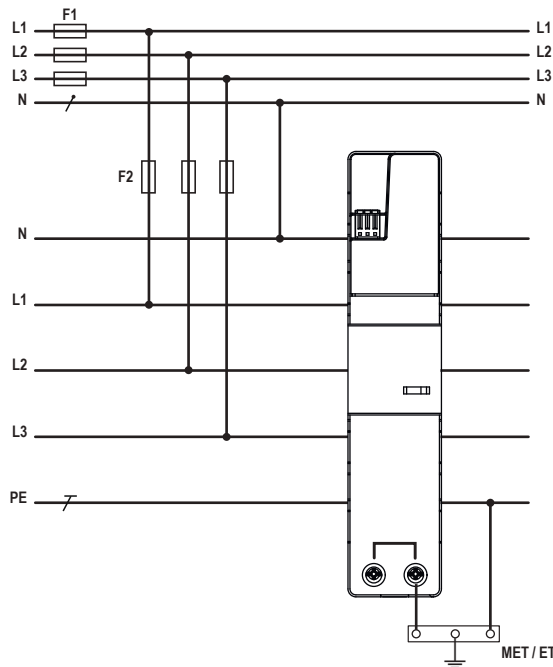
TN-C Connection



TN-S Connection



TT Connection



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

Overcurrent Protection Rating for $I_{SCCR} = 25 \text{ kA}$

$F1 > 315 \text{ A gG} \rightarrow F2 = 315 \text{ A gG}$
 $F1 \leq 315 \text{ A gG} \rightarrow \text{---} F2$

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



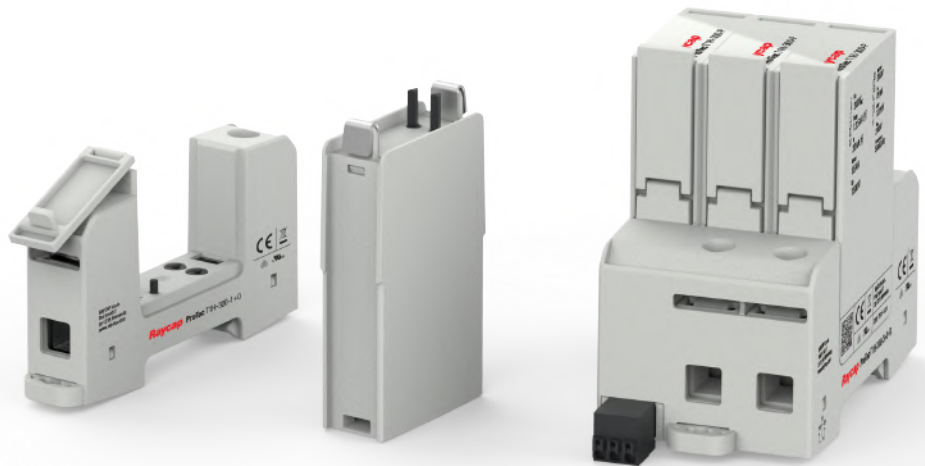
Lightning and Overvoltage Protection

ProTec T1H



Special features:

- Leakage free hybrid topology
- Energy coordinated with other ProTec families without additional cable length
- State-of-the-art thermal disconnector
- Backup fuse up to 315 A gG
- Short circuit current rating up to 50 kA
- Vibration and shock withstand capability
- All modules, also N-PE, with operating state green-red
- Optional remote contact signaling
- VDE-IEC Class I & II / EN Type 1+2 and UL Type 4CA certified



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

The ProTec T1H modular surge protection device provides high durability due to its leakage-free performance ensured by a special series connection of a varistor and a gas discharge tube. The product family is ideal as a supplement to the basic ProTec T1 product family, available for single or three-phase TN-S, TT and TN-C systems, with a maximum continuous operating voltage of 300 VAC where a complete absence of leakage current is required. With its Type 1 classification, the ProTec T1H can be installed between boundaries 0b – 1 and higher. The varistor-based protection modules feature outstanding short-circuit currents up to 50 kA_{RMS} without using a back up to a main fuse, with a nominal current of 315 A. The device can be installed upstream of meter panels in low-voltage consumer installations. An optional remote contact (RC) features a three-pole remote signaling terminal that enables remote monitoring of the device's operating state.

Lightning and Overvoltage Protection
ProTec T1H 1+0
 Class I • Class II • Type 1 • Type 2 • Type 4CA

12.5 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-S, TN-C, TT (only L-N)
 Mode of Protection: L-PE, N-PE (only TN-S), L-PEN, L-N
 IEC/EN/UL Category: Class I+II / Type 1+2 / Type 4CA
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Pluggable Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012
 UL 1449 4th Edition

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 μ s)	I_n	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	65 kA
Impulse Discharge Current (10/350 μ s)	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	< 100 ns
Overcurrent Protection (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

UL Electrical

Maximum Continuous Operating Voltage (AC)	MCOV	300 V
Measured Limiting Voltage	MLV	1220 V
Nominal Discharge Current (8/20 μ s)	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 (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 / 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)

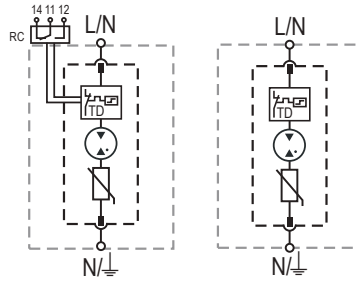
Order Information

Order Code	300
ProTec T1H-xxx-1+0	59.0310
ProTec T1H-xxx-1+0-R (with remote contacts)	59.0311
ProTec T1H-xxx-P (plug)	59.0308

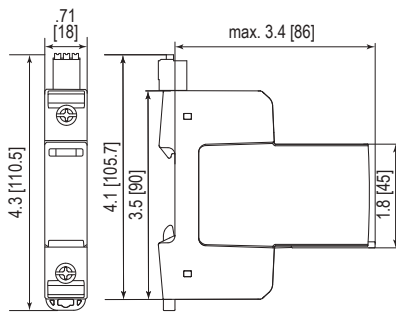
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏏ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit

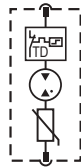


Complete Unit Dimensions & Packaging

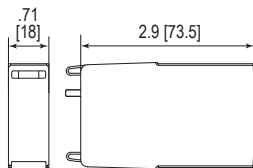
Complete Unit Dimensions & Packaging	
ProTec T1H-xxx-1+0	300
Weight	pounds [grams] .375 [170]
ProTec T1H-xxx-1+0-R	
Weight	pounds [grams] .390 [177]
DIN 43880 Dimension	1 TE / .71" [18]
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity	12 Units

Plug Internal Configuration

ProTec T1H-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

Single Unit Dimensions & Packaging	
ProTec T1H-xxx-P	300
Weight	pounds [grams] .223 [101]
DIN 43880 Dimension	1 TE / .71" [18]
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity	28 Units

inches
[mm]



Lightning and Overvoltage Protection

ProTec T1H 2+0

Class I • Class II • Type 1 • Type 2 • Type 4CA

12.5kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-S
 Mode of Protection: L-PE, N-PE
 IEC/EN/UL Category: Class I+II / Type 1+2 / Type 4CA
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Pluggable Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012
 UL 1449 4th Edition

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 μ s)	I_n	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	65 kA
Impulse Discharge Current (10/350 μ s)	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	< 100 ns
Overcurrent Protection (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

UL Electrical

Maximum Continuous Operating Voltage (AC)	MCOV	300 V
Measured Limiting Voltage	MLV	1220 V
Nominal Discharge Current (8/20 μ s)	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 (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/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)

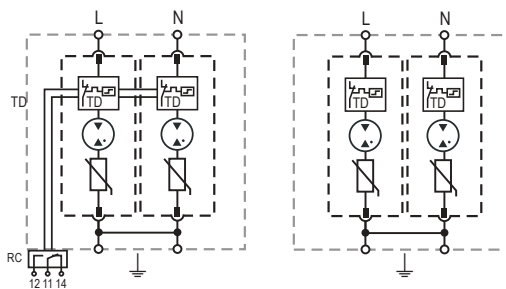
Order Information

Order Code	300
ProTec T1H-xxx-2+0	59.0312
ProTec T1H-xxx-2+0-R (with remote contacts)	59.0313
ProTec T1H-xxx-P (plug)	59.0308

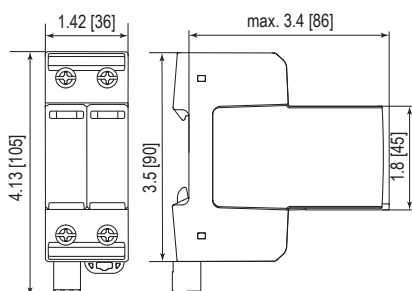
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏏ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



Complete Unit Dimensions & Packaging

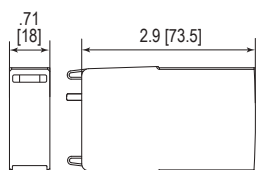
ProTec T1H-xxx-2+0	300
Weight	pounds [grams] .736 [334]
ProTec T1H-xxx-2+0-R	.756 [343]
Weight	pounds [grams] .756 [343]
DIN 43880 Dimension	2 TE / 1.42" [36]
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity	7 Units

Plug Internal Configuration

ProTec T1H-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

ProTec T1H-xxx-P	300
Weight	pounds [grams] .223 [101]
DIN 43880 Dimension	1 TE / .71" [18]
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity	28 Units

inches
[mm]



Lightning and Overvoltage Protection

ProTec T1H 3+0

Class I • Class II • Type 1 • Type 2 • Type 4CA

12.5kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-C
 Mode of Protection: L-PEN
 IEC/EN/UL Category: Class I+II / Type 1+2 / Type 4CA
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Pluggable Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012
 UL 1449 4th Edition

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 μ s)	I_n	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	65 kA
Impulse Discharge Current (10/350 μ s)	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	< 100 ns
Overcurrent Protection (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

UL Electrical

Maximum Continuous Operating Voltage (AC)	MCOV	300 V
Measured Limiting Voltage	MLV	1220 V
Nominal Discharge Current (8/20 μ s)	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 (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/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)

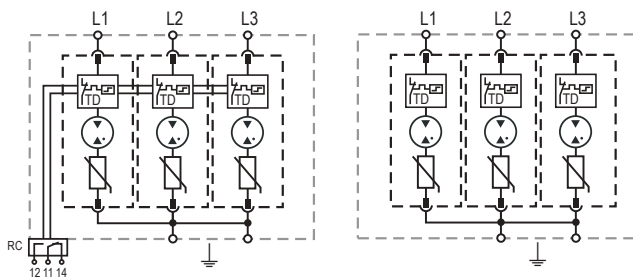
Order Information

Order Code	300
ProTec T1H-xxx-3+0	59.0314
ProTec T1H-xxx-3+0-R (with remote contacts)	59.0315
ProTec T1H-xxx-P (plug)	59.0308

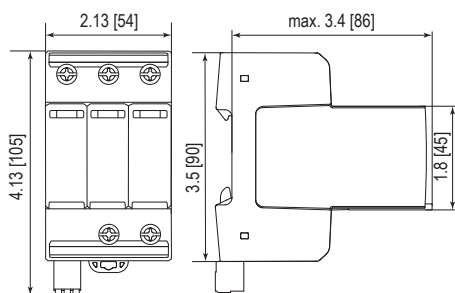
Internal Configuration

Legend

- L Line Conductor Terminal
- ⏏ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



Complete Unit Dimensions & Packaging

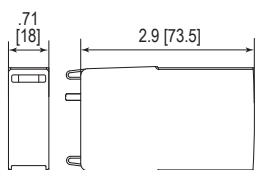
ProTec T1H-xxx-3+0		300
Weight	pounds [grams]	1.080 [490]
ProTec T1H-xxx-3+0-R		300
Weight	pounds [grams]	1.100 [499]
DIN 43880 Dimension		3 TE / 2.13" [54]
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity		5 Units

Plug Internal Configuration

ProTec T1H-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

ProTec T1H-xxx-P		300
Weight	pounds [grams]	.223 [101]
DIN 43880 Dimension		1 TE / .71" [18]
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity		28 Units

inches
[mm]

Lightning and Overvoltage Protection

ProTec T1H 4+0

Class I • Class II • Type 1 • Type 2 • Type 4CA

12.5kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-S
 Mode of Protection: L-PE, N-PE
 IEC/EN/UL Category: Class I+II / Type 1+2 / Type 4CA
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Pluggable Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012
 UL 1449 4th Edition

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 μ s)	I_n	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	65 kA
Impulse Discharge Current (10/350 μ s)	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	< 100 ns
Overcurrent Protection (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

UL Electrical

Maximum Continuous Operating Voltage (AC)	MCOV	300 V
Measured Limiting Voltage	MLV	1220 V
Nominal Discharge Current (8/20 μ s)	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 (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/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)

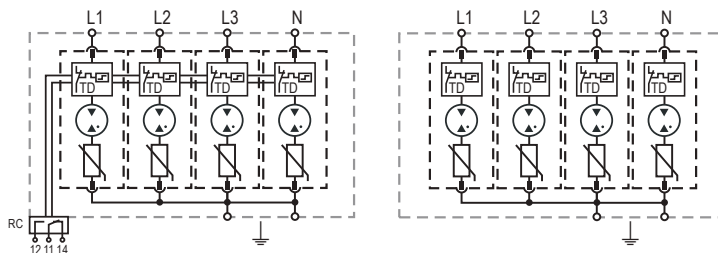
Order Information

Order Code	300
ProTec T1H-xxx-4+0	59.0316
ProTec T1H-xxx-4+0-R (with remote contacts)	59.0317
ProTec T1H-xxx-P (plug)	59.0308

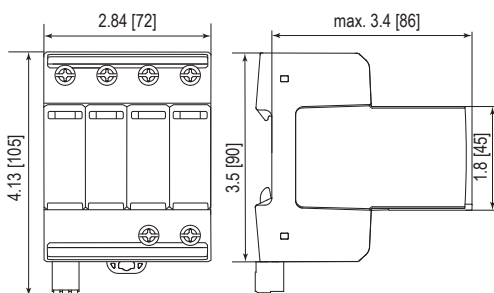
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



Complete Unit Dimensions & Packaging

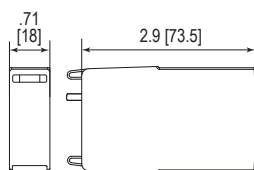
ProTec T1H-xxx-4+0		300
Weight	pounds [grams]	1.389 [630]
ProTec T1H-xxx-4+0-R		300
Weight	pounds [grams]	1.409 [639]
DIN 43880 Dimension		4 TE / 2.84" [72]
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity		4 Units

Plug Internal Configuration

ProTec T1H-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

ProTec T1H-xxx-P		300
Weight	pounds [grams]	.223 [101]
DIN 43880 Dimension		1 TE / .71" [18]
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity		28 Units

inches
[mm]



Lightning and Overvoltage Protection

ProTec T1H 1+1

Class I • Class II • Type 1 • Type 2 • Type 4CA

12.5 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TT, TN-S
 Mode of Protection: L-N, N-PE
 IEC/EN/UL Category: Class I+II / Type 1+2 / Type 4CA
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Pluggable Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012
 UL 1449 4th Edition

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 μ s)	(L-N) / (N-PE) I_n	20 kA / 50 kA
Maximum Discharge Current (8/20 μ s)	(L-N) / (N-PE) I_{max}	65 kA / 100 kA
Impulse Discharge Current (10/350 μ s)	(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	< 100 ns / < 100 ns
Overcurrent Protection (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

UL Electrical

Maximum Continuous Operating Voltage (AC)	(L-N) / (N-G) MCOV	300V / 305V
Measured Limiting Voltage	(L-N) / (N-G) MLV	1220V / 1800V
Nominal Discharge Current (8/20 μ s)	(L-N) / (N-G) I_n	20 kA / 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 (max)		13123 ft [4000m]
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		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 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 mm ² (Solid)

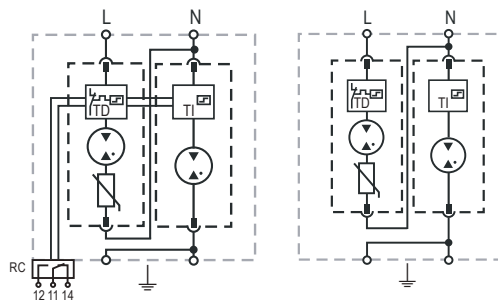
Order Information

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 (plug L-N)	59.0308
ProTube T1H-50-P (plug N-PE)	59.0309

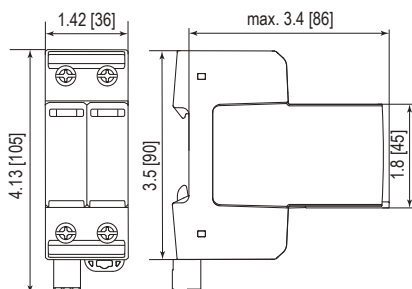
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect
- TI Thermal Indication



Complete Unit

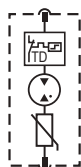


Complete Unit Dimensions & Packaging

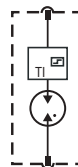
ProTec T1H-xxx-1+1		300
Weight	pounds [grams]	.730 [331]
ProTec T1H-xxx-1+1-R		300
Weight	pounds [grams]	.743 [337]
DIN 43880 Dimension		2 TE / 1.42" [36]
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity		7 Units

Plug Internal Configuration

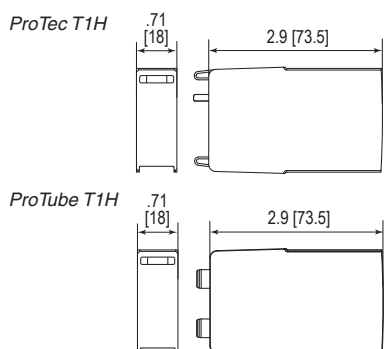
ProTec T1H-xxx-P



ProTube T1H-50-P



Spare Plug



Single Unit Dimensions & Packaging

ProTec T1H-xxx-P		300
Weight	pounds [grams]	.223 [101]
ProTube T1H-50-P		50
Weight	pounds [grams]	.214 [97]
DIN 43880 Dimension		1 TE / .71" [18]
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity		28 Units

inches
[mm]



Lightning and Overvoltage Protection

ProTec T1H 3+1

Class I • Class II • Type 1 • Type 2 • Type 4CA

12.5 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TT, TN-S
 Mode of Protection: L-N, N-PE
 IEC/EN/UL Category: Class I+II / Type 1+2 / Type 4CA
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Pluggable Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012
 UL 1449 4th Edition

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 μ s)	(L-N) / (N-PE) I_n	20 kA / 50 kA
Maximum Discharge Current (8/20 μ s)	(L-N) / (N-PE) I_{max}	65 kA / 100 kA
Impulse Discharge Current (10/350 μ s)	(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	< 100 ns / < 100 ns
Overcurrent Protection (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

UL Electrical

Maximum Continuous Operating Voltage (AC)	(L-N) / (N-G) MCOV	300 V / 305 V
Measured Limiting Voltage	(L-N) / (N-G) MLV	1220 V / 1800 V
Nominal Discharge Current (8/20 μ s)	(L-N) / (N-G) I_n	20 kA / 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 (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/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)

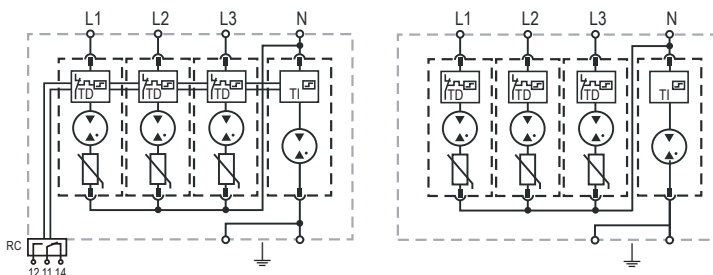
Order Information

Order Code	300
ProTec T1H-xxx-3+1	59.0320
ProTec T1H-xxx-3+1-R (with remote contacts)	59.0321
ProTec T1H-xxx-P (plug L-N)	59.0308
ProTube T1H-50-P (plug N-PE)	59.0309

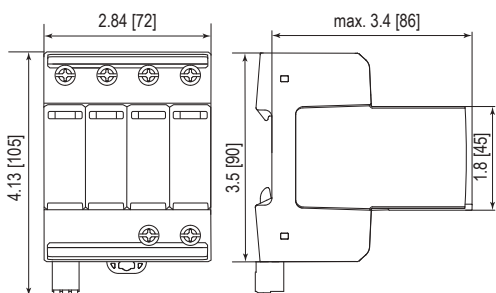
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect
- TI Thermal Indication



Complete Unit



Complete Unit Dimensions & Packaging

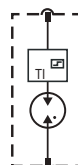
ProTec T1H-xxx-3+1		300
Weight	pounds [grams]	1.446 [656]
ProTec T1H-xxx-3+1-R		300
Weight	pounds [grams]	1.466 [665]
DIN 43880 Dimension		4 TE / 2.84 [72]
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity		4 Units

Plug Internal Configuration

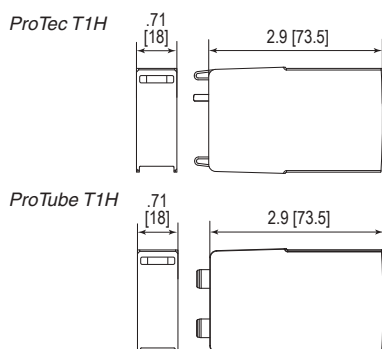
ProTec T1H-xxx-P



ProTube T1H-50-P



Spare Plug



Single Unit Dimensions & Packaging

ProTec T1H-xxx-P		300
Weight	pounds [grams]	.223 [101]
ProTube T1H-50-P		50
Weight	pounds [grams]	.214 [97]
DIN 43880 Dimension		1 TE / .71" [18]
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity		28 Units

inches
[mm]



Lightning and Overvoltage Protection
ProTube T1H 50 0+1
 Class I • Class II • Type 1 • Type 2 • Type 4CA

12.5kA Series



Location of Use: Main Distribution Boards
 Network Systems: TT, TN-S
 Mode of Protection: N-PE
 IEC/EN/UL Category: Class I+II / Type 1+2 / Type 4CA
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Pluggable Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012
 UL 1449 4th Edition

Technical Data

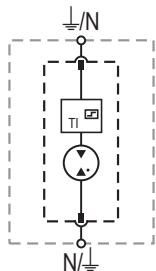
ProTube T1H-xxx-0+1		50
IEC Electrical		
Maximum Continuous Operating Voltage (AC)	U_c	305 V
Nominal Discharge Current (8/20 μ s)	I_n	50 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	100 kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	50 kA
Specific Energy	W/R	625 kJ/ Ω
Charge	Q	25 As
Voltage Protection 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
Measured Limiting Voltage	MLV	1800 V
Nominal Discharge Current (8/20 μ s)	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 (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
Order Information		
Order Code		50
ProTube T1H-xxx-0+1		59.0340
ProTube T1H-50-P (plug)		59.0309

ProTube T1H 50 0+1

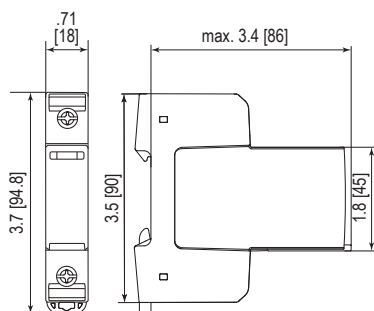
Internal Configuration

Legend

- N Neutral Conductor Terminal
- ⏏ PE/G Conductor Terminal
- TI Thermal Indication



Complete Unit

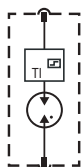


Complete Unit Dimensions & Packaging

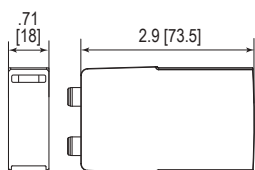
ProTube T1H-50-0+1		50
Weight	pounds [grams]	.395 [179]
DIN 43880 Dimension		1 TE / .71" [18]
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity		12 Units

Plug Internal Configuration

ProTube T1H-50-P



Spare Plug



Single Unit Dimensions & Packaging

ProTube T1H-50-P		50
Weight	pounds [grams]	.214 [97]
DIN 43880 Dimension		1 TE / .71" [18]
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity		28 Units

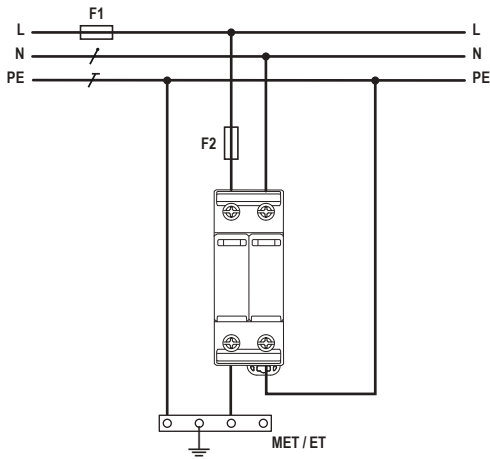
inches
[mm]



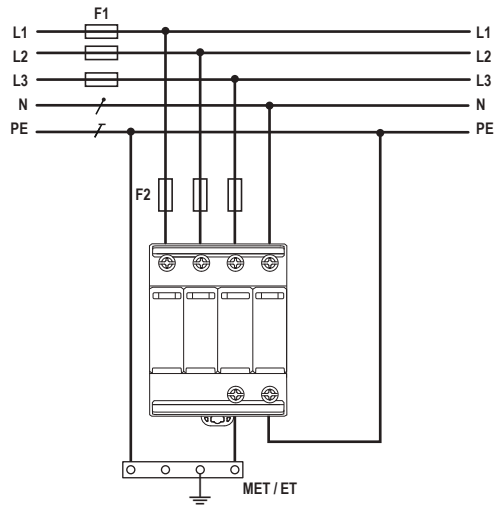
Pluggable Multi-pole SPD Connection Configurations

ProTec T1H & ProTube T1H

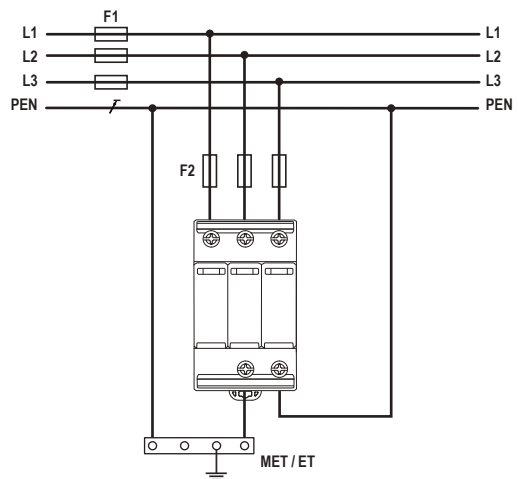
TN-S (Single-phase, 2+0, 1+1)



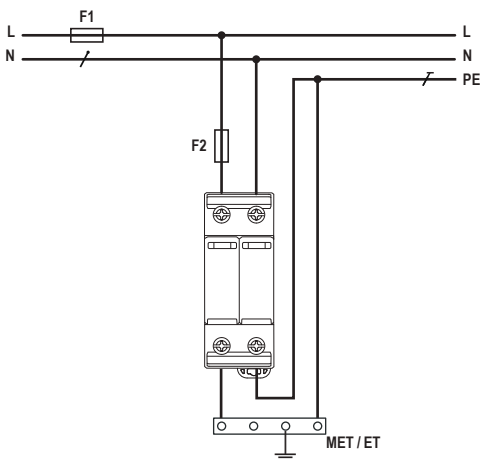
TN-S (Three-phase, 4+0, 3+1)



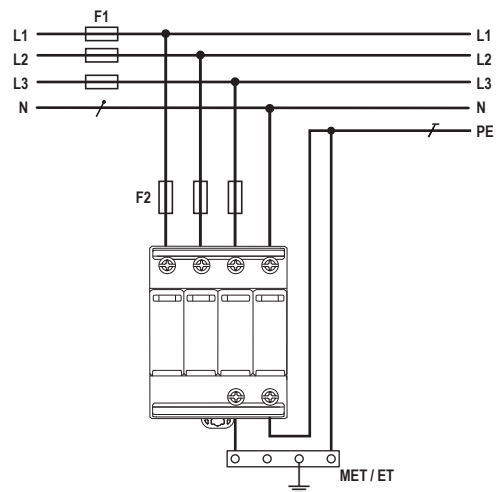
TN-C (Three-phase, 3+0)



TT (Single-phase, 1+1)



TT (Three-phase, 3+1)



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

Overcurrent Protection Rating for $I_{SCCR} = 50 \text{ kA}$

$F1 > 250 \text{ A gG} \rightarrow F2 = 250 \text{ A gG}$
 $F1 \leq 250 \text{ A gG} \rightarrow \text{---} F2$

Overcurrent Protection Rating for $I_{SCCR} = 25 \text{ kA}$

$F1 > 315 \text{ A gG} \rightarrow F2 = 315 \text{ A gG}$
 $F1 \leq 315 \text{ A gG} \rightarrow \text{---} F2$

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

Lightning and Overvoltage Protection **ProTec T1**

Special features:

- Available in a wide variety of operating voltages, 75V to 750V
- High impulse current capability using single MOV–
480V and 750V versions comes with reduced impulse current
- Sensitive state-of-the-art thermal disconnector
- Back-up fuse up to 315A gG, 750V version comes with 250A gG
- Short circuit current rating up to 50kA
- Vibration and shock withstand capability
- VDE-IEC Class I & II / EN Type 1+2 certified and Open Type 1 SPD Listed
- All modules, also N-PE, with operating state green-red
- Optional remote contact (RC) signaling



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

The ProTec T1 series offers basic protection as a Type 1 surge protective device that comes with an extended maximum continuous operating voltage range span from 75V to 750V. Due to its Type 1 classification the product can be installed between boundaries OA – 1 and higher. The varistor based protection module features outstanding short-circuit currents up to 50kA_{RMS} without using a back up to a main fuse nominal current of 315A. All modules are equipped with state-of-the-art thermal disconnector and life-status monitoring (green-red). Due to a unique vibration-proof locking mechanism design, these products are suitable for use in high vibration environments. An optional remote contact (RC) feature offers a three-pole remote signaling terminal to remotely monitor the operating state of the device.

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
 IEC/EN/UL Category: Class I+II / Type 1+2 / Type 1CA
 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	60V	120V	240V	277V	400V	600V
Maximum Continuous Operating Voltage (AC)	U_c	75V	150V	300V	350V	480V	750V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50 kA	50 kA	50 kA	50 kA	50 kA	35 kA
Impulse Discharge Current (10/350 μ s)	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	1500V	1750V	2100V	3200V
Response Time	t_A	< 25 ns					
Overcurrent Protection (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 μ s)	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

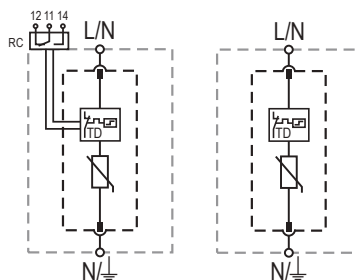
Mechanical & Environmental							
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]					
Permissible Operating Humidity	RH	5%...95%					
Altitude (max)		13123 ft [4000m]					
Terminal Screw Torque	M_{max}	39.9 lbf-in [4.5 Nm]					
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A					
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (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 (plug)		59.0001	59.0002	59.0003	59.0004	59.0005	59.0006

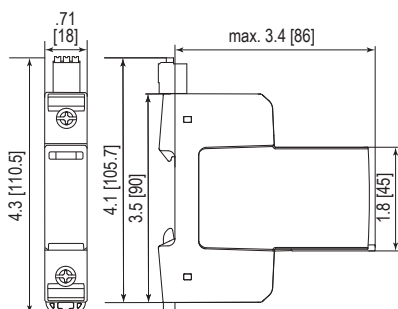
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⊥ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit

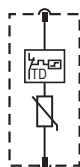


Complete Unit Dimensions & Packaging

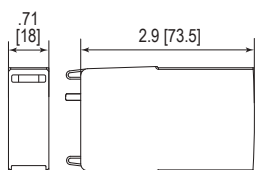
ProTec T1-xxx-1+0	75	150	300	350	480	750	
Weight	pounds	.304	.355	.381	.423	.430	.437
	grams	138	161	173	192	195	198
ProTec T1-xxx-1+0-R							
Weight	pounds	.320	.370	.397	.439	.445	.452
	grams	145	168	180	199	202	205
DIN 43880 Dimension	1 TE / .71" [18]						
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]						
Standard Order Quantity	12 Units						

Plug Internal Configuration

ProTec T1-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

ProTec T1-xxx-P	75	150	300	350	480	750	
Weight	pounds	.152	.203	.229	.271	.278	.284
	grams	69	92	104	123	126	129
DIN 43880 Dimension	1 TE / .71" [18]						
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]						
Standard Order Quantity	28 Units						



Lightning and Overvoltage Protection

ProTec T1 2+0

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

12.5 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-S
 Mode of Protection: L-PE, N-PE
 IEC/EN/UL Category: Class I+II / Type 1+2 / Type 1CA
 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 μ s)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50 kA	50 kA	50 kA	50 kA	50 kA	35 kA
Impulse Discharge Current (10/350 μ s)	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	1500V	1750V	2100V	3200V
Response Time	t_A	< 25 ns					
Overcurrent Protection (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 μ s)	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

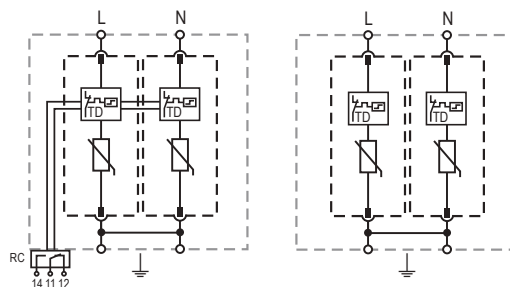
Mechanical & Environmental							
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]					
Permissible Operating Humidity	RH	5%...95%					
Altitude (max)		13123 ft [4000m]					
Terminal Screw Torque	M_{max}	39.9 lbf-in [4.5Nm]					
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A					
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (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 (plug)		59.0001	59.0002	59.0003	59.0004	59.0005	59.0006

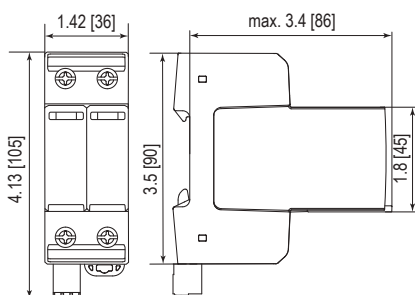
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏚ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit

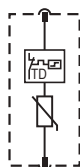


Complete Unit Dimensions & Packaging

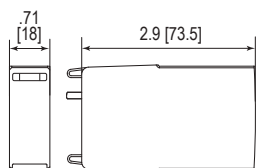
		75	150	300	350	480	750
ProTec T1-xxx-2+0							
Weight	pounds	.595	.697	.750	.833	.847	.860
	grams	270	316	340	378	384	390
ProTec T1-xxx-2+0-R							
Weight	pounds	.615	.717	.769	.853	.866	.880
	grams	279	325	349	387	393	399
DIN 43880 Dimension		2 TE / 1.42" [36]					
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]					
Standard Order Quantity		7 Units					

Plug Internal Configuration

ProTec T1-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

		75	150	300	350	480	750
ProTec T1-xxx-P							
Weight	pounds	.152	.203	.229	.271	.278	.284
	grams	69	92	104	123	126	129
DIN 43880 Dimension		1 TE / .71" [18]					
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]					
Standard Order Quantity		28 Units					



Lightning and Overvoltage Protection

12.5 kA Series

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
 IEC/EN/UL Category: Class I+II / Type 1+2 / Type 1CA
 Housing: Pluggable Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012
 UL 1449 4th Edition

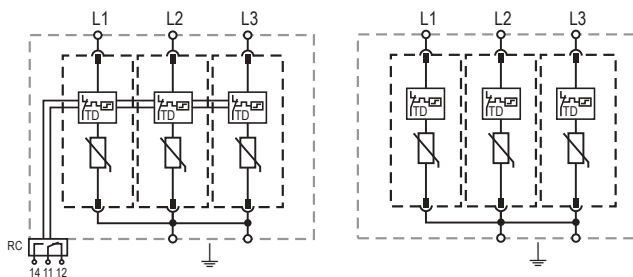
Technical Data

ProTec T1-xxx-3+0(-R)		150	300	350	480	750
IEC Electrical						
Nominal AC Voltage (50/60Hz)	U_o/U_n	120V	240V	277V	400V	600V
Maximum Continuous Operating Voltage (AC)	U_c	150V	300V	350V	480V	750V
Nominal Discharge Current (8/20 μ s)	I_n	20kA	20kA	20kA	20kA	20kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50kA	50kA	50kA	50kA	35kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	12.5kA	12.5kA	12.5kA	10kA	5kA
Specific Energy	W/R	39kJ/ Ω	39kJ/ Ω	39kJ/ Ω	25kJ/ Ω	6.25kJ/ Ω
Charge	Q	6.25As	6.25As	6.25As	5As	2.5As
Voltage Protection Level	U_p	1000V	1500V	1750V	2100V	3200V
Response Time	t_A	< 25 ns				
Overcurrent Protection (max)		315 A / 250 A gG				250 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25kA / 50kA				50kA
TOV Withstand 5s	U_T	175V	337V	403V	581V	871V
TOV 120min	U_T	229V	442V	529V	762V	1143V
	mode	Safe Fail	Safe Fail	Safe Fail	Safe Fail	Safe Fail
Number of Ports		1				
UL Electrical						
Maximum Continuous Operating Voltage (AC)	MCOV	150V	300V	350V	480V	750V
Voltage Protection Rating	VPR	600V	900V	1200V	1500V	2500V
Nominal Discharge Current (8/20 μ s)	I_n	20kA	20kA	20kA	20kA	20kA
Short-Circuit Current Rating (AC)	SCCR	200kA	150kA	150kA	200kA	150kA
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 [4000m]				
Terminal Screw Torque	M_{max}	39.9 lbf-in [4.5Nm]				
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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A				
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (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 (plug)		59.0002	59.0003	59.0004	59.0005	59.0006

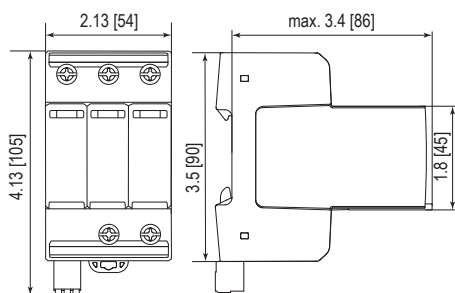
Internal Configuration

Legend

- L Line Conductor Terminal
- ⏏ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit

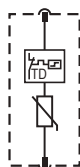


Complete Unit Dimensions & Packaging

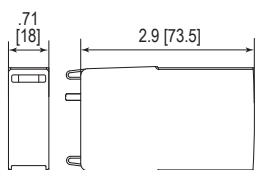
		150	300	350	480	750
ProTec T1-xxx-3+0	Weight					
	pounds	1.021	1.100	1.226	1.246	1.265
	grams	463	499	556	565	574
ProTec T1-xxx-3+0-R						
Weight	pounds	1.041	1.120	1.246	1.265	1.285
	grams	472	508	565	574	583
DIN 43880 Dimension				3 TE / 2.13" [54]		
Packaging Dimensions (HxWxL)				4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]		
Standard Order Quantity				5 Unit		

Plug Internal Configuration

ProTec T1-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

		150	300	350	480	750
ProTec T1-xxx-P	Weight					
	pounds	.203	.229	.271	.278	.284
	grams	92	104	123	126	129
DIN 43880 Dimension				1 TE / .71" [18]		
Packaging Dimensions (HxWxL)				4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]		
Standard Order Quantity				28 Units		



Lightning and Overvoltage Protection

12.5 kA Series

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
 IEC/EN/UL Category: Class I+II / Type 1+2 / Type 1CA
 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	120V	240V	277V	400V
Maximum Continuous Operating Voltage (AC)	U_c	150V	300V	350V	480V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA	20 kA	20 kA	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50 kA	50 kA	50 kA	50 kA
Impulse Discharge Current (10/350 μ s)	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	1000V	1500V	1750V	2100V
Response Time	t_A	< 25 ns			
Overcurrent Protection (max)		315 A / 250 A gG			
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA / 50 kA			
TOV Withstand 5s	U_T	175V	337V	403V	581V
TOV 120min	U_T	229V	442V	529V	762V
	mode	Safe Fail	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 μ s)	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 (max)		13123 ft [4000m]			
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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A			
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (Solid)			

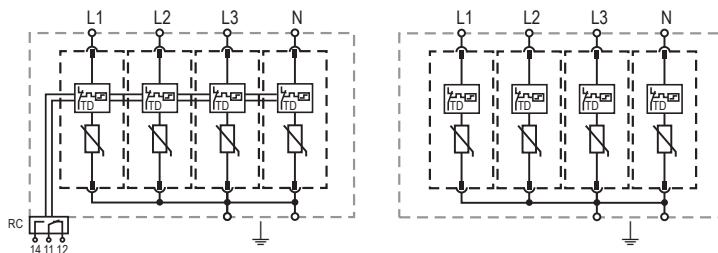
Order Information

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 (plug)	59.0002	59.0003	59.0004	59.0005

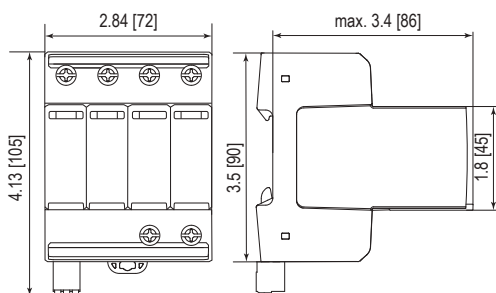
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit

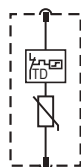


Complete Unit Dimensions & Packaging

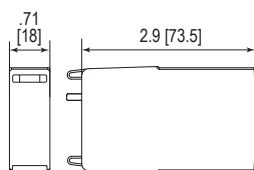
		150	300	350	480	
ProTec T1-xxx-4+0	Weight					
		pounds	1.310	1.415	1.583	1.609
		grams	594	642	718	730
ProTec T1-xxx-4+0-R						
ProTec T1-xxx-4+0-R	Weight					
		pounds	1.329	1.435	1.603	1.629
		grams	603	651	727	739
DIN 43880 Dimension		4 TE / 2.84" [72]				
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]				
Standard Order Quantity		4 Units				

Plug Internal Configuration

ProTec T1-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

		150	300	350	480	
ProTec T1-xxx-P	Weight					
		pounds	.203	.229	.271	.278
		grams	92	104	123	126
DIN 43880 Dimension		1 TE / .71" [18]				
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]				
Standard Order Quantity		28 Units				



Lightning and Overvoltage Protection

ProTec T1 1+1

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

12.5kA Series



Location of Use: Main Distribution Boards
 Network Systems: TT, TN-S
 Mode of Protection: L-N, N-PE
 IEC/EN/UL Category: Class I+II / Type 1+2 / Type 1CA
 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)	U_o/U_n	60V	120V	240V	277V
Maximum Continuous Operating Voltage	(L-N) U_c	75V	150V	300V	350V
	(N-PE) U_c	305V	305V	305V	305V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_n	20kA / 50kA			
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}	50kA / 100kA			
Impulse Discharge Current (10/350 μ s)	(L-N)/(N-PE) I_{imp}	12.5kA / 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	700V / 1500V	1000V / 1500V	1500V / 1500V	1750V / 1500V
Follow Current Interrupt Rating	(N-PE) I_{fi}	100A _{RMS}			
Response Time	(L-N)/(N-PE) t_A	< 25ns / < 100ns			
Overcurrent Protection (max)		315A / 250A gG			
Short-Circuit Current Rating (AC)	(L-N) I_{SCCR}	25kA / 50kA			
TOV Withstand 5s	(L-N) U_T	114V	175V	337V	403V
TOV 120min	(L-N) U_T mode	Withstand	229V	442V	529V
		Safe Fail	Safe Fail	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-G) MCOV	75V / 305V	150V / 305V	300V / 305V	350V / 305V
Voltage Protection Rating	(L-N)/(N-G) VPR	330V / 1200V	600V / 1200V	900V / 1200V	1200V / 1200V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-G) I_n	20kA / 20kA	20kA / 20kA	20kA / 20kA	20kA / 20kA
Short-Circuit Current Rating (AC)	(L-N) SCCR	100kA	200kA	150kA	150kA

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 [4000m]			
Terminal Screw Torque	M_{max}	39.9 lbf-in [4.5Nm]			
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)			
		35mm ² (Solid, Stranded) / 25mm ² (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 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) / 1.5mm ² (Solid)			

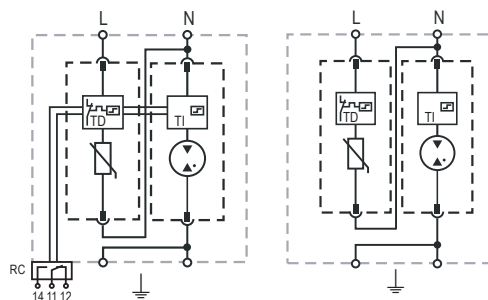
Order Information

	75	150	300	350
Order Code				
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 (plug L-N)	59.0001	59.0002	59.0003	59.0004
ProTube T1-50-P (plug N-PE)	59.0269	59.0269	59.0269	59.0269

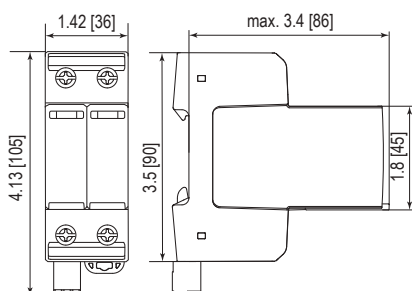
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect
- TI Thermal Indication



Complete Unit

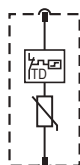


Complete Unit Dimensions & Packaging

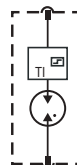
		75	150	300	350	
ProTec T1-xxx-1+1	Weight					
		pounds	.659	.710	.736	.778
		grams	299	322	334	353
<hr/>						
ProTec T1-xxx-1+1-R						
Weight		pounds	.672	.723	.750	.791
		grams	305	328	340	359
DIN 43880 Dimension		2 TE / 1.42" [36]				
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]				
Standard Order Quantity		7 Units				

Plug Internal Configuration

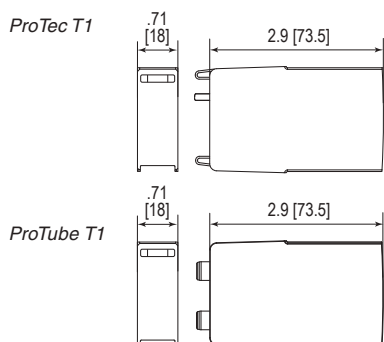
ProTec T1-xxx-P



ProTube T1-50-P



Spare Plug



Single Unit Dimensions & Packaging

		75	150	300	350	
ProTec T1-xxx-P	Weight					
		pounds	.152	.203	.229	.271
		grams	69	92	104	123
<hr/>						
ProTube T1-50-P				50		
Weight		pounds	.214			
		grams	97			
DIN 43880 Dimension		1 TE / .71" [18]				
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]				
Standard Order Quantity		28 Units				

inches
[mm]



Lightning and Overvoltage Protection

12.5kA Series

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
 IEC/EN/UL Category: Class I+II / Type 1+2 / Type 1CA
 Housing: Pluggable Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012
 UL 1449 4th Edition

Technical Data

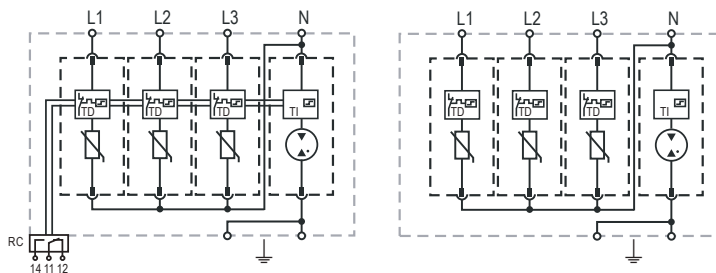
ProTec T1-xxx-3+1(-R)

		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 μ s)	(L-N)/(N-PE) I_n	20 kA / 50 kA	
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}	50 kA / 100 kA	
Impulse Discharge Current (10/350 μ s)	(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	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	
Overcurrent Protection (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 mode	442 V	529 V
		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-G) MCOV	300 V / 305 V	350 V / 305 V
Voltage Protection Rating	(L-N)/(N-G) VPR	900 V / 1200 V	1200 V / 1200 V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-G) 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 (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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A	
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 (plug L-N)		59.0003	59.0004
ProTube T1-50-P (plug N-PE)		59.0269	59.0269

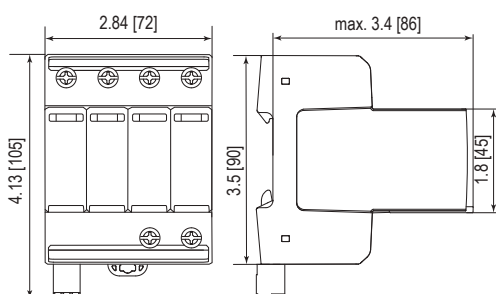
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect
- TI Thermal Indication



Complete Unit

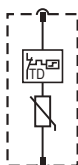


Complete Unit Dimensions & Packaging

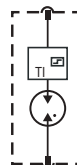
		300	350
ProTec T1-xxx-3+1	Weight	pounds 1.466	1.592
		grams 665	722
ProTec T1-xxx-3+1-R			
ProTec T1-xxx-3+1-R	Weight	pounds 1.486	1.612
		grams 674	724
DIN 43880 Dimension	4 TE / 2.84" [72]		
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]		
Standard Order Quantity	4 Units		

Plug Internal Configuration

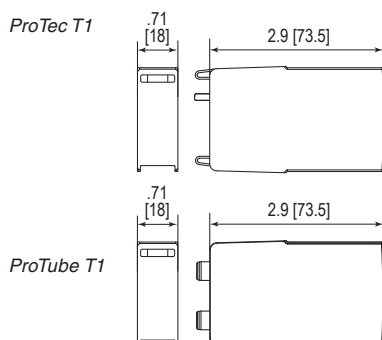
ProTec T1-xxx-P



ProTube T1-50-P



Spare Plug



Single Unit Dimensions & Packaging

		300	350
ProTec T1-xxx-P	Weight	pounds .229	.271
		grams 104	123
ProTube T1-50-P			
ProTube T1-50-P	Weight	pounds .214	
		grams 97	
DIN 43880 Dimension	1 TE / .71" [18]		
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]		
Standard Order Quantity	28 Units		

inches
[mm]

Lightning and Overvoltage Protection

ProTube T1 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
 IEC/EN/UL Category: Class I+II / Type 1+2 / Type 1CA
 Housing: Pluggable Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012
 UL 1449 4th Edition

Technical Data

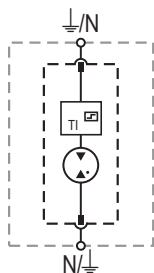
ProTube T1-xxx-0+1		50	100
IEC Electrical			
Maximum Continuous Operating Voltage	U_c	305 V	305 V
Nominal Discharge Current (8/20 μ s)	I_n	50 kA	100 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	100 kA	150 kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	50 kA	100 kA
Specific Energy	W/R	625 kJ/ Ω	2500 kJ/ Ω
Charge	Q	25 As	50 As
Voltage Protection Level	U_p	1500 V	1500 V
Follow Current Interrupt Rating	I_{fi}	100 A _{RMS}	100 A _{RMS}
Response Time	t_A	< 100 ns	< 100 ns
TOV Withstand 200ms	U_T	1200 V	1200 V
Number of Ports		1	1
UL Electrical			
Maximum Continuous Operating Voltage (AC)	MCOV	305V	305V
Voltage Protection Rating	VPR	1200V	1200V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA	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 (max)		13123 ft [4000m]	
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	100
ProTube T1-xxx-0+1		59.0276	59.0278
ProTube T1-50-P (plug)		59.0269	-
ProTube T1-100-P (plug)		-	59.0271

ProTube T1 0+1

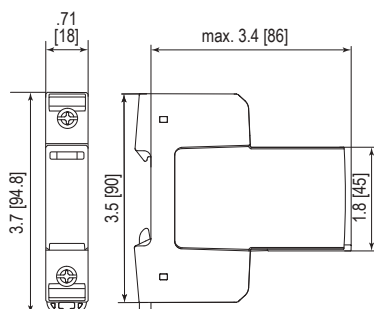
Internal Configuration

Legend

- N Neutral Conductor Terminal
- ⏏ PE/G Conductor Terminal
- TI Thermal Indication



Complete Unit

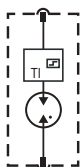


Complete Unit Dimensions & Packaging

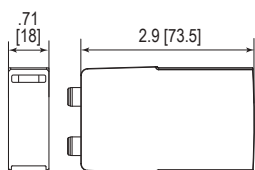
ProTube T1-xxx-0+1		50	100
Weight	pounds	.395	.434
	grams	179	197
DIN 43880 Dimension		1 TE / .71" [18]	
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]	
Standard Order Quantity		12 Units	

Plug Internal Configuration

ProTube T1-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

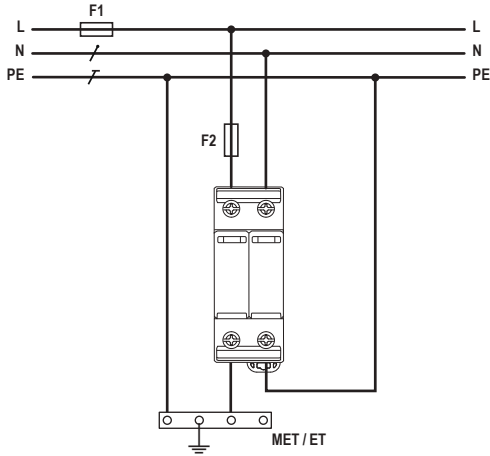
ProTube T1-xxx-P		50	100
Weight	pounds	.214	.251
	grams	97	114
DIN 43880 Dimension		1 TE / .71" [18]	
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]	
Standard Order Quantity		28 Units	



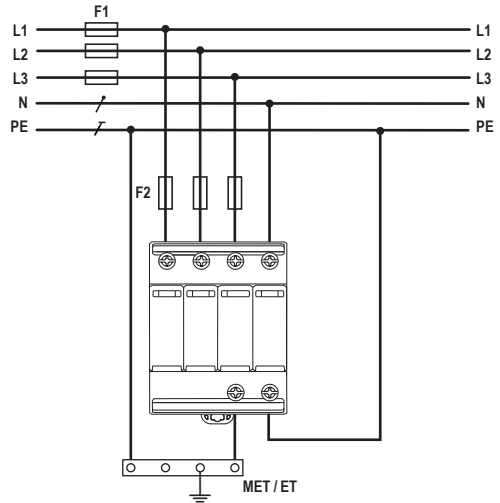
Pluggable Multi-pole SPD Connection Configurations

ProTec T1

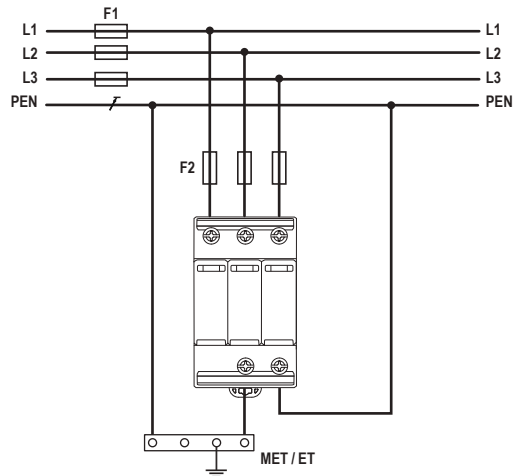
TN-S (Single-phase, 2+0, 1+1)



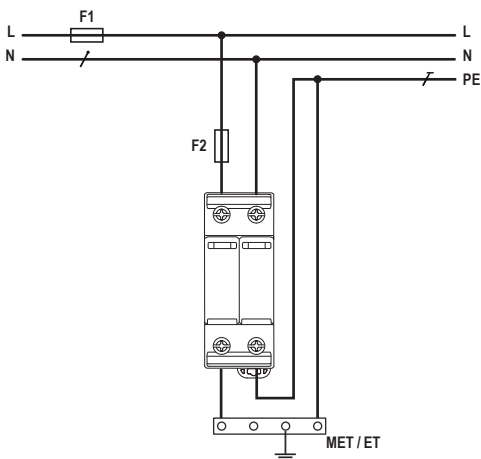
TN-S (Three-phase, 4+0, 3+1)



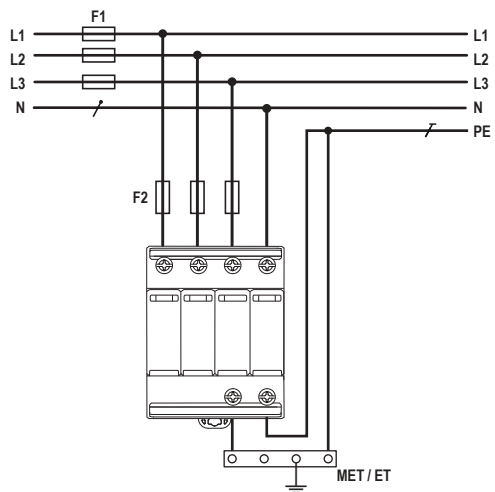
TN-C (Three-phase, 3+0)



TT (Single-phase, 1+1)



TT (Three-phase, 3+1)



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

Overcurrent Protection Rating for $I_{SCCR} = 50 \text{ kA}$

$F1 > 250 \text{ A gG} \rightarrow F2 = 250 \text{ A gG}$
 $F1 \leq 250 \text{ A gG} \rightarrow \text{---} F2$

Overcurrent Protection Rating for $I_{SCCR} = 25 \text{ kA}$

$F1 > 315 \text{ A gG} \rightarrow F2 = 315 \text{ A gG}$
 $F1 \leq 315 \text{ A gG} \rightarrow \text{---} F2$

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

Lightning and Overvoltage Protection **ProBloc B(R)**

Special features:

- Single and Multi-pole compact housing designs
- High discharge capacity thanks to unique design impulse discharge current
- High performance paired varistor combination, each with separate disconnect mechanisms
- Backup fuse up to 250 A gG
- Short circuit current rating up to 50 kA
- All modules including N-PE, with fault indication green-red
- Optional remote contact (RC) signaling
- ÖVE-IEC Class I & II / EN Type 1+2 certified



Compliance	IEC 61643-11:2011	EN 61643-11:2012
ProBloc B(R) Series	✓	✓

Raycap ProBloc B products feature compact Type 1/Type 2 single and multi-pole designs for use in a number of industrial applications. Products are available for both AC and DC power protection, and protective elements consist of high energy MOV and Gas Discharge Tube (GDT) surge protective device (SPD) technology. The ProTube versions contain only the GDT protective element. Both ProBloc and ProTube are compliant to IEC/EN safety standards.

Lightning and Overvoltage Protection
ProBloc B(R) 25 (1+0)
 Class I • Class II • Type 1 • Type 2

25 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-S, TN-C
 Mode of Protection: L-PE, L-N, N-PE, L-PEN
 IEC/EN Category: Class I+II / Type 1+2
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

ProBloc B(R) 25/xxx (1+0)

		150	275*	320*
IEC Electrical				
Nominal AC Voltage (50/60 Hz)	U_o	120V	230V	230V
Maximum Continuous Operating Voltage (AC)	U_c	150V	275V	320V
Nominal Discharge Current (8/20 μ s)	I_n		25 kA	
Maximum Discharge Current (8/20 μ s)	I_{max}		100 kA	
Impulse Discharge Current (10/350 μ s)	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
Response Time	t_A		< 25 ns	
Overcurrent Protection (max)			250 A gG	
Short-Circuit Current Rating (AC)	I_{SCCR}		50 kA	
TOV Withstand 5s	U_T	174V	334V	334V
TOV Safe Fail 120min	U_T	229V	438V	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 [3.0 Nm]		
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (Solid, Stranded) / 25mm 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		
Fault Indication		Red Flag		
Remote Contacts (RC)		Optional		
RC Switching Capacity		AC: 250V/0.5A; 125V/3A		
RC Terminal Cross Section (max)		1.5mm ² (Solid) / 16 AWG (Solid)		
RC Terminal Screw Torque	M_{max}	2.2 lbf-in [0.25 Nm]		

Order Information

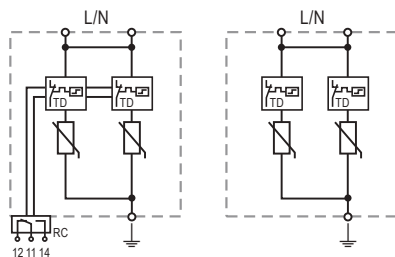
Order Code	150	275*	320*
ProBloc B 25/xxx (1+0)	56.0562	56.0564	56.0566
ProBloc BR 25/xxx (1+0) (with remote contacts)	56.0563	56.0565	56.0567

*OVE Certified

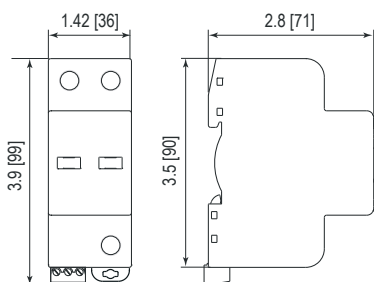
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏚ PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



Single Unit Dimensions & Packaging			
ProBloc B 25/xxx (1+0)			
		150	275*
Weight	pounds	.540	.650
	grams	245	295
DIN 43880 Dimension		2 TE / 1.42" [36]	
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]	
Standard Order Quantity		7 Units	
ProBloc BR 25/xxx (1+0)			
		150	275*
Weight	pounds	.551	.661
	grams	250	300
DIN 43880 Dimension		2 TE / 1.42" [36]	
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]	
Standard Order Quantity		7 Units	



ProBloc B

inches
[mm]



Applicable connection configurations can be found beginning on page 98.

Lightning and Overvoltage Protection
ProBloc B(R) 50 (2+0)
 Class I • Class II • Type 1 • Type 2

25 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-S
 Mode of Protection: L-PE, N-PE
 IEC/EN Category: Class I+II / Type 1+2
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

ProBloc B(R) 50/xxx (2+0)		150	275*	320*
IEC Electrical				
Nominal AC Voltage (50/60 Hz)	U_o	120V	230V	230V
Maximum Continuous Operating Voltage (AC)	U_c	150V	275V	320V
Nominal Discharge Current (8/20 μ s)	I_n		25 kA	
Maximum Discharge Current (8/20 μ s)	I_{max}		100 kA	
Impulse Discharge Current (10/350 μ s)	I_{imp}		25 kA	
Total Discharge Current (10/350 μ s)	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
Response Time	t_A		< 25 ns	
Overcurrent Protection (max)			250 A gG	
Short-Circuit Current Rating (AC)	I_{SCCR}		50 kA	
TOV Withstand 5s	U_T	174V	334V	334V
TOV Safe Fail 120min	U_T	229V	438V	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 [3.0 Nm]		
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (Solid, Stranded) / 25mm 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		
Fault Indication		Red Flag		
Remote Contacts (RC)		Optional		
RC Switching Capacity		AC: 250V/0.5A; 125V/3A		
RC Terminal Cross Section (max)		1.5mm ² (Solid) / 16 AWG (Solid)		
RC Terminal Screw Torque	M_{max}	2.2 lbf-in [0.25 Nm]		

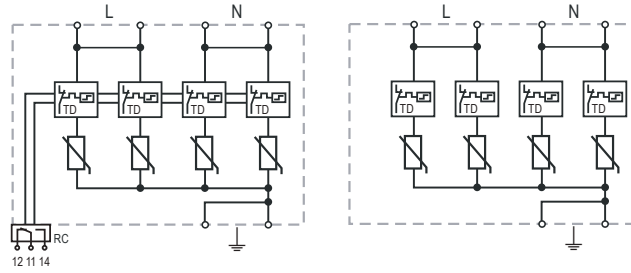
Order Information				
Order Code		150	275*	320*
ProBloc B 50/xxx (2+0)		56.0572	56.0574	56.0576
ProBloc BR 50/xxx (2+0) (with remote contacts)		56.0573	56.0575	56.0577

*OVE Certified

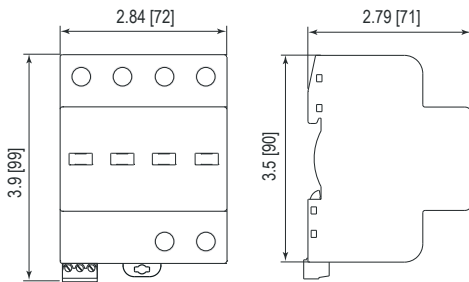
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏏ PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



Single Unit Dimensions & Packaging

		150	275*	320*
ProBloc B 50/xxx (2+0)				
Weight	pounds	1.014	1.234	1.234
	grams	460	560	560
DIN 43880 Dimension		4 TE / 2.84" [72]		
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]		
Standard Order Quantity		3 Units		
ProBloc BR 50/xxx (2+0)				
Weight	pounds	1.036	1.256	1.256
	grams	470	570	570
DIN 43880 Dimension		4 TE / 2.84" [72]		
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]		
Standard Order Quantity		3 Units		



ProBloc B

inches
[mm]



Applicable connection configurations can be found beginning on page 98.

Lightning and Overvoltage Protection
ProBloc B(R) 75 (3+0)
 Class I • Class II • Type 1 • Type 2

25 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-C
 Mode of Protection: L - PEN
 IEC/EN Category: Class I+II / Type 1+2
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

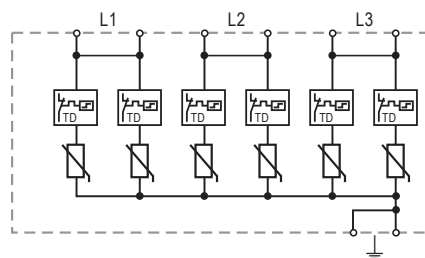
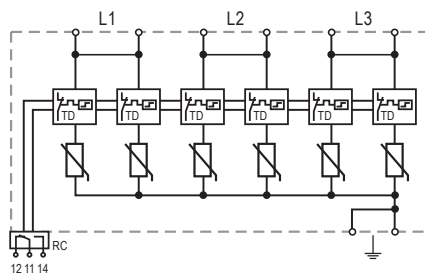
ProBloc B(R) 75/xxx (3+0)		150	275*	320*
IEC Electrical				
Nominal AC Voltage (50/60 Hz)	U_o	120V	230V	230V
Maximum Continuous Operating Voltage (AC)	U_c	150V	275V	320V
Nominal Discharge Current (8/20 μ s)	I_n		25 kA	
Maximum Discharge Current (8/20 μ s)	I_{max}		100 kA	
Impulse Discharge Current (10/350 μ s)	I_{imp}		25 kA	
Total Discharge Current (10/350 μ s)	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
Response Time	t_A		< 25 ns	
Overcurrent Protection (max)			250 A gG	
Short-Circuit Current Rating (AC)	I_{SCCR}		50 kA	
TOV Withstand 5s	U_T	174V	334V	334V
TOV Safe Fail 120min	U_T	229V	438V	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 [3.0 Nm]		
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (Solid, Stranded) / 25mm 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		
Fault Indication		Red Flag		
Remote Contacts (RC)		Optional		
RC Switching Capacity		AC: 250V/0.5A; 125V/3A		
RC Terminal Cross Section (max)		1.5mm ² (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 75/xxx (3+0)		56.0582	56.0584	56.0586
ProBloc BR 75/xxx (3+0) (with remote contacts)		56.0583	56.0585	56.0587

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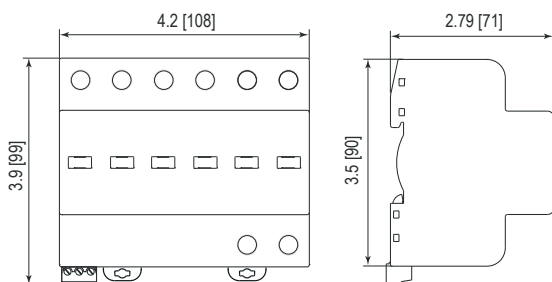
Internal Configuration

Legend

- L Line Conductor Terminal
- ⏚ PEN Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



Single Unit Dimensions & Packaging

		150	275*	320*
ProBloc B 75/xxx (3+0)				
Weight	pounds	1.521	1.851	1.851
	grams	690	840g	840
DIN 43880 Dimension		6 TE / 4.25" [108]		
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]		
Standard Order Quantity		2 Units		
ProBloc BR 75/xxx (3+0)				
Weight	pounds	1.554	1.884	1.884
	grams	705	855	855
DIN 43880 Dimension		6 TE / 4.25" [108]		
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]		
Standard Order Quantity		2 Units		



Lightning and Overvoltage Protection
ProBloc B(R) 100 (4+0)
 Class I • Class II • Type 1 • Type 2

25 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-S
 Mode of Protection: L-PE, N-PE
 IEC/EN Category: Class I+II / Type 1+2
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

ProBloc B(R) 100/xxx (4+0)		150	275*	320*
IEC Electrical				
Nominal AC Voltage (50/60 Hz)	U_o	120V	230V	230V
Maximum Continuous Operating Voltage (AC)	U_c	150V	275V	320V
Nominal Discharge Current (8/20 μ s)	I_n		25 kA	
Maximum Discharge Current (8/20 μ s)	I_{max}		100 kA	
Impulse Discharge Current (10/350 μ s)	I_{imp}		25 kA	
Total Discharge Current (10/350 μ s)	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
Response Time	t_A		< 25 ns	
Overcurrent Protection (max)			250 A gG	
Short-Circuit Current Rating (AC)	I_{SCCR}		50 kA	
TOV Withstand 5s	U_T	174V	334V	334V
TOV Safe Fail 120min	U_T	229V	438V	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 [3.0 Nm]		
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (Solid, Stranded) / 25mm 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		
Fault Indication		Red Flag		
Remote Contacts (RC)		Optional		
RC Switching Capacity		AC: 250V/0.5A; 125V/3A		
RC Terminal Cross Section (max)		1.5mm ² (Solid) / 16 AWG (Solid)		
RC Terminal Screw Torque	M_{max}	2.2 lbf-in [0.25 Nm]		

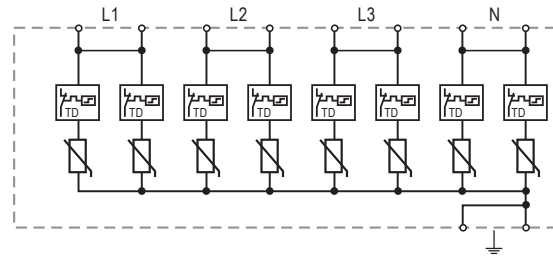
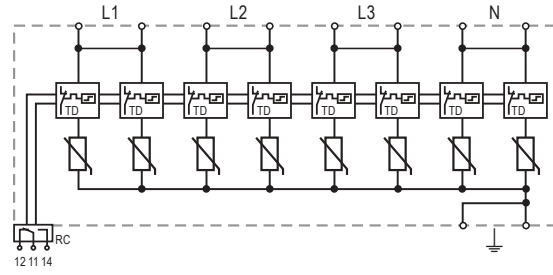
Order Information				
Order Code		150	275*	320*
ProBloc B 100/xxx (4+0)		56.0592	56.0594	56.0596
ProBloc BR 100/xxx (4+0) (with remote contacts)		56.0593	56.0595	56.0597

*OVE Certified

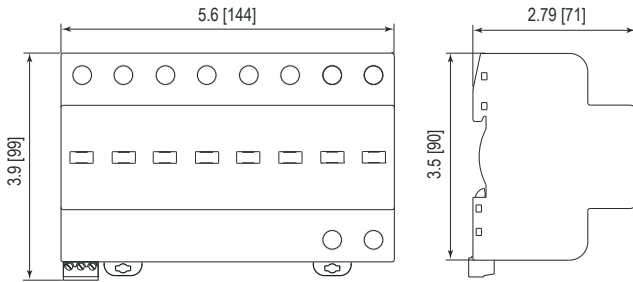
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏚ PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



Single Unit Dimensions & Packaging

		150	275*	320*
ProBloc B 100/xxx (4+0)				
Weight	pounds	2.028	2.469	2.469
	grams	920	1120	1120
DIN 43880 Dimension		8 TE / 5.66" [144]		
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]		
Standard Order Quantity		2 Units		
ProBloc BR 100/xxx (4+0)				
Weight	pounds	2.182	2.623	2.623
	grams	990	1190	1190
DIN 43880 Dimension		8 TE / 5.66" [144]		
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]		
Standard Order Quantity		2 Units		



inches
[mm]



Applicable connection configurations can be found beginning on page 98.

Lightning and Overvoltage Protection
ProBloc B(R) 50 (1+1)
 Class I • Class II • Type 1 • Type 2

25 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-S, TT
 Mode of Protection: L-N, N-PE
 IEC/EN Category: Class I+II / Type 1+2
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

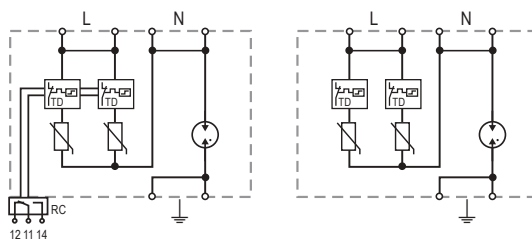
ProBloc B(R) 50/xxx (1+1)		150	275*	320*
IEC Electrical				
Nominal AC Voltage (50/60 Hz)	U_o	120V	230V	230V
Maximum Continuous Operating Voltage (AC)	(L-N) U_c	150V	275V	320V
	(N-PE) U_c		255V	
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_n		25 kA / 50 kA	
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}		100 kA / 100 kA	
Impulse Discharge Current (10/350 μ s)	(L-N)/(N-PE) I_{imp}		25 kA / 50 kA	
Total Discharge Current (10/350 μ s)	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	
Overcurrent Protection (max)	(L-N)		250 A gG	
Short-Circuit Current Rating (AC)	I_{SCCR}		50 kA	
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 [3.0 Nm]		
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)		
		35mm ² (Solid, Stranded) / 25mm 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	(L-N)/(N-PE)	Yes/No		
Fault Indication	(L-N)/(N-PE)	Red Flag/No		
Remote Contacts (RC)		Optional		
RC Switching Capacity		AC: 250V/0.5A; 125V/3A		
RC Terminal Cross Section (max)		1.5mm ² (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

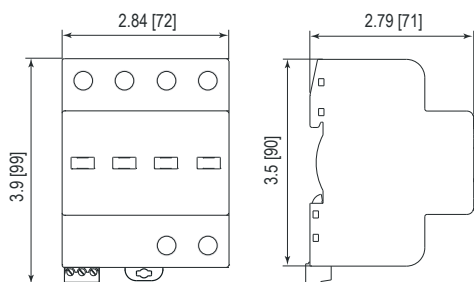
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



Single Unit Dimensions & Packaging				
ProBloc B 50/xxx (1+1)		150	275*	320*
Weight	pounds	.98	1.06	1.06
	grams	445	485	485
DIN 43880 Dimension		4 TE / 2.84" [72]		
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]		
Standard Order Quantity		3 Units		
ProBloc BR 50/xxx (1+1)		150	275*	320*
Weight	pounds	.99	1.06	1.06
	grams	450	490	490
DIN 43880 Dimension		4 TE / 2.84" [72]		
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]		
Standard Order Quantity		3 Units		



ProBloc B

inches
[mm]

Lightning and Overvoltage Protection
ProBloc B(R) 100 (3+1)
 Class I • Class II • Type 1 • Type 2

25 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-S, TT
 Mode of Protection: L-N, N-PE
 IEC/EN Category: Class I+II / Type 1+2
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

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

275*

320*

IEC Electrical

		275*	320*
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 μ s)	(L-N)/(N-PE) I_n	25 kA / 100 kA	
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}	100 kA / 100 kA	
Impulse Discharge Current (10/350 μ s)	(L-N)/(N-PE) I_{imp}	25 kA / 100 kA	
Total Discharge Current (10/350 μ s)	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	
Overcurrent Protection (max)	(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 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 (max)	M_{max}	26.5 lbf-in [3.0 Nm]	
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)	
		35mm ² (Solid, Stranded) / 25mm 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	(L-N)/(N-PE)	Yes/No	
Fault Indication	(L-N)/(N-PE)	Red Flag/No	
Remote Contacts (RC)		Optional	
RC Switching Capacity		AC: 250V/0.5A; 125V/3A	
RC Terminal Cross Section (max)		1.5mm ² (Solid) / 16 AWG (Solid)	
RC Terminal Screw Torque	M_{max}	2.2 lbf-in [0.25 Nm]	

Order Information

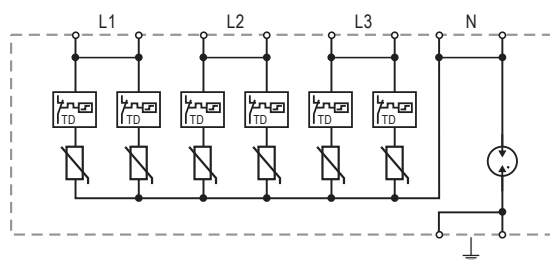
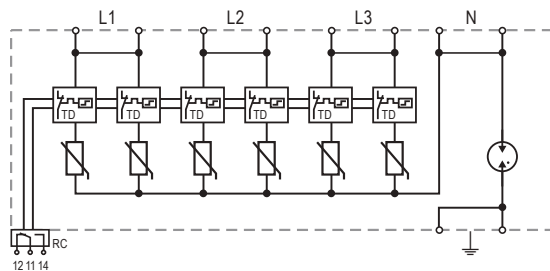
	275*	320*
Order Code		
ProBloc B 100/xxx (3+1)	56.0614	56.0616
ProBloc BR 100/xxx (3+1) (with remote contacts)	56.0615	56.0617

*OVE Certified

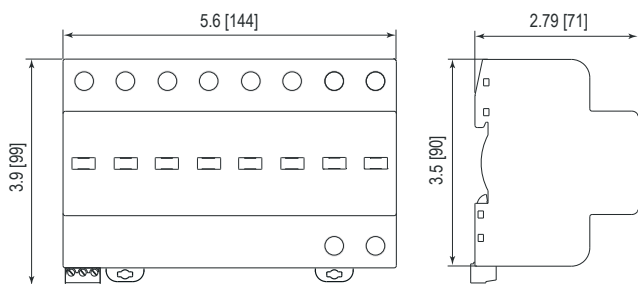
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏚ PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



Single Unit Dimensions & Packaging

		275*	320*
ProBloc B 100/xxx (3+1)			
Weight	pounds	2.50	2.50
	grams	1135	1135
DIN 43880 Dimension		8 TE / 5.66" [144]	
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]	
Standard Order Quantity		2 Units	
ProBloc BR 100/xxx (3+1)			
Weight	pounds	2.53	2.53
	grams	1150	1150
DIN 43880 Dimension		8 TE / 5.66" [144]	
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]	
Standard Order Quantity		2 Units	



inches
[mm]



Applicable connection configurations can be found beginning on page 98.

Lightning and Overvoltage Protection

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
 IEC/EN Category: Class I+II / Type 1+2
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

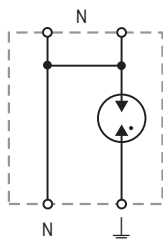
ProTube B 50/xxx		255
IEC Electrical		
Maximum Continuous Operating Voltage (AC)	U_c	255V
Nominal Discharge Current (8/20 μ s)	I_n	50 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	100 kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	50 kA
Specific Energy	W/R	625 kJ/ Ω
Charge	Q	25 As
Voltage Protection 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	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 [3.0 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (Solid, Stranded) / 25mm 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
Order Information		
Order Code		255
ProTube B 50/xxx		56.0510

ProTube B 50

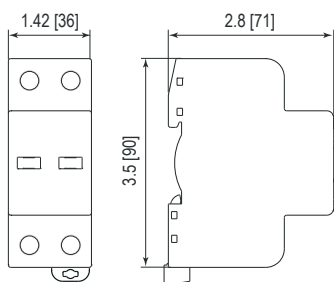
Internal Configuration

Legend

N Neutral Conductor Terminal
 ↓ PE/G Conductor Terminal



Complete Unit



Single Unit Dimensions & Packaging

ProTube B 50/xxx	255
Weight	pounds .396
	grams 180
DIN 43880 Dimension	2 TE / 1.42" [36]
Packaging Dimensions (H x W x L)	3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]
Standard Order Quantity	7 Units



inches
[mm]

Lightning and Overvoltage Protection

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
 IEC/EN Category: Class I+II / Type 1+2
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

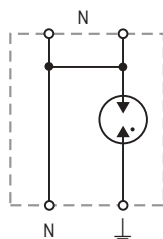
ProTube B 100/xxx		255
IEC Electrical		
Maximum Continuous Operating Voltage (AC)	U_c	255V
Nominal Discharge Current (8/20 μ s)	I_n	100 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	100 kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	100 kA
Specific Energy	W/R	2.5 MJ/ Ω
Charge	Q	50 As
Voltage Protection 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	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 [3.0 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (Solid, Stranded) / 25mm ² (Flexible)
Mounting		35mm 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

ProTube B 100

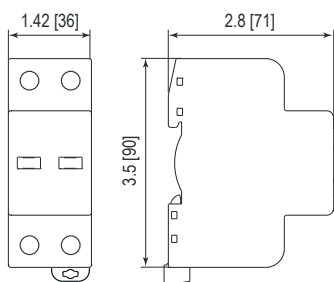
Internal Configuration

Legend

N Neutral Conductor Terminal
 ↓ PE/G Conductor Terminal



Complete Unit



Single Unit Dimensions & Packaging

ProTube B 100/xxx		255
Weight	pounds	.529
	grams	240
DIN 43880 Dimension		2 TE / 1.42" [36]
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]
Standard Order Quantity		7 Units



inches
[mm]

Lightning and Overvoltage Protection
ProBloc B(R) 12.5 (1+0)
 Class I • Class II • Type 1 • Type 2

12.5 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-S, TN-C
 Mode of Protection: L-PE, N-PE, L-PEN, L-N
 IEC/EN Category: Class I+II / Type 1+2
 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*
IEC Electrical				
Nominal AC Voltage (50/60 Hz)	U_o	120V	230V	230V
Maximum Continuous Operating Voltage (AC)	U_c	150V	275V	320V
Nominal Discharge Current (8/20 μ s)	I_n		20 kA	
Maximum Discharge Current (8/20 μ s)	I_{max}		50 kA	
Impulse Discharge Current (10/350 μ s)	I_{imp}		12.5 kA	
Specific Energy	W/R		39 kJ/ Ω	
Charge	Q		6.25 As	
Voltage Protection Level	U_p	< 1.0 kV	< 1.5 kV	< 1.5 kV
Response Time	t_A		< 25 ns	
Overcurrent Protection (max)			250 A gG	
Short-Circuit Current Rating (AC)	I_{SCCR}		50 kA	
TOV Withstand 5s	U_T	174V	334V	334V
TOV Safe Fail 120min	U_T	229V	438V	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 [3.0 Nm]		
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (Solid, Stranded) / 25mm 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		
Fault Indication		Red Flag		
Remote Contacts (RC)		Optional		
RC Switching Capacity		AC: 250V/0.5A; 125V/3A		
RC Terminal Cross Section (max)		1.5mm ² (Solid) / 16 AWG (Solid)		
RC Terminal Screw Torque	M_{max}	2.2 lbf-in [0.25 Nm]		

Order Information

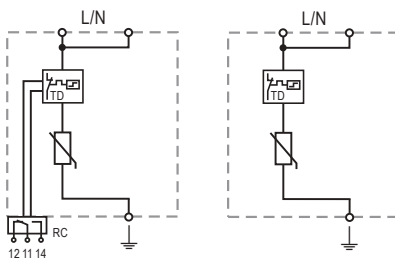
Order Code	150	275*	320*
ProBloc B 12.5/xxx (1+0)	56.0500	56.0502	56.0504
ProBloc BR 12.5/xxx (1+0) (with remote contacts)	56.0501	56.0503	56.0505

*OVE Certified

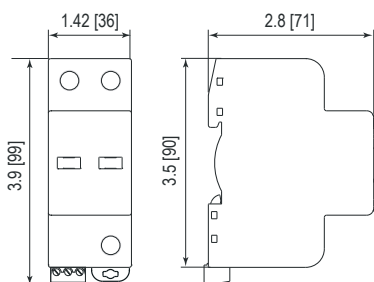
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏚ PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



Single Unit Dimensions & Packaging

		150	275*	320*
ProBloc B 12.5/xxx (1+0)				
Weight	pounds	.330	.440	.440
	grams	150	200	200
DIN 43880 Dimension		2 TE / 1.42" [36]		
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]		
Standard Order Quantity		7 Units		
ProBloc BR 12.5/xxx (1+0)				
Weight	pounds	.341	.451	.451
	grams	155	205	205
DIN 43880 Dimension		2 TE / 1.42" [36]		
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]		
Standard Order Quantity		7 Units		



inches
[mm]



Applicable connection configurations can be found beginning on page 98.

Lightning and Overvoltage Protection
ProBloc B(R) 25 (2+0)
 Class I • Class II • Type 1 • Type 2

12.5 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-S
 Mode of Protection: L-PE, N-PE
 IEC/EN Category: Class I+II / Type 1+2
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

ProBloc B(R) 25/xxx (2+0)		150	275*	320*
IEC Electrical				
Nominal AC Voltage (50/60 Hz)	U_o	120V	230V	230V
Maximum Continuous Operating Voltage (AC)	U_c	150V	275V	320V
Nominal Discharge Current (8/20 μ s)	I_n		20kA	
Maximum Discharge Current (8/20 μ s)	I_{max}		50kA	
Impulse Discharge Current (10/350 μ s)	I_{imp}		12.5kA	
Total Discharge Current (10/350 μ s)	I_{total}		25kA	
Specific Energy	W/R		39kJ/ Ω	
Charge	Q		6.25As	
Voltage Protection Level	U_p	< 1.0kV	< 1.5kV	< 1.5kV
Response Time	t_A		< 25ns	
Overcurrent Protection (max)			250A gG	
Short-Circuit Current Rating (AC)	I_{SCCR}		50kA	
TOV Withstand 5s	U_T	174V	334V	334V
TOV Safe Fail 120min	U_T	229V	438V	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) 35mm ² (Solid, Stranded) / 25mm ² (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)		1.5mm ² (Solid) / 16 AWG (Solid)		
RC Terminal Screw Torque	M_{max}	2.2 lbf-in [0.25Nm]		

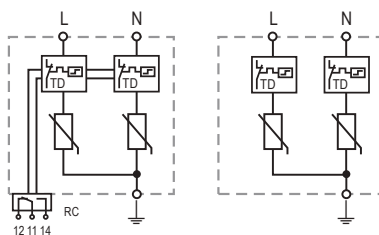
Order Information				
Order Code		150	275*	320*
ProBloc B 25/xxx (2+0)		56.0512	56.0514	56.0516
ProBloc BR 25/xxx (2+0) (with remote contacts)		56.0513	56.0515	56.0517

*OVE Certified

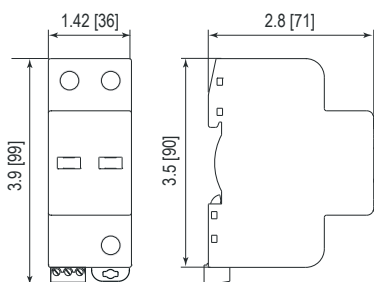
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏚ PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



Single Unit Dimensions & Packaging

		150	275*	320*
ProBloc B 25/xxx (2+0)				
Weight	pounds	.407	.496	.496
	grams	185	225	225
DIN 43880 Dimension		2 TE / 1.42" [36]		
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]		
Standard Order Quantity		7 Units		
ProBloc BR 25/xxx (2+0)				
Weight	pounds	.418	.507	.507
	grams	190	230	230
Packaging Dimensions (H x W x L)		2 TE / 1.42" [36]		
DIN 43880 Dimension		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]		
Standard Order Quantity		7 Units		



ProBloc B

inches
[mm]

Lightning and Overvoltage Protection
ProBloc B(R) 37.5 (3+0)
 Class I • Class II • Type 1 • Type 2

12.5 kA Series



Location of Use Main Distribution Boards
 Network Systems TN-C
 Mode of Protection: L - PEN
 IEC/EN Category: Class I+II / Type 1+2
 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*
IEC Electrical				
Nominal AC Voltage (50/60 Hz)	U_o	120V	230V	230V
Maximum Continuous Operating Voltage (AC)	U_c	150V	275V	320V
Nominal Discharge Current (8/20 μ s)	I_n		20 kA	
Maximum Discharge Current (8/20 μ s)	I_{max}		50 kA	
Impulse Discharge Current (10/350 μ s)	I_{imp}		12.5 kA	
Total Discharge Current (10/350 μ s)	I_{total}		37.5 kA	
Specific Energy	W/R		39 kJ/ Ω	
Charge	Q		6.25 As	
Voltage Protection Level	U_p	< 1.0 kV	< 1.5 kV	< 1.5 kV
Response Time	t_A		< 25 ns	
Overcurrent Protection (max)			250 A gG	
Short-Circuit Current Rating (AC)	I_{SCCR}		50 kA	
TOV Withstand 5s	U_T	174V	334V	334V
TOV Safe Fail 120min	U_T	229V	438V	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 [3.0 Nm]		
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (Solid, Stranded) / 25mm 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		
Fault Indication		Red Flag		
Remote Contacts (RC)		Optional		
RC Switching Capacity		AC: 250V/0.5A; 125V/3A		
RC Terminal Cross Section (max)		1.5mm ² (Solid) / 16 AWG (Solid)		
RC Terminal Screw Torque	M_{max}	2.2 lbf-in [0.25 Nm]		

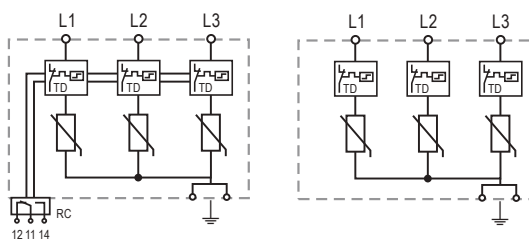
Order Information				
Order Code		150	275*	320*
ProBloc B 37.5/xxx (3+0)		56.0522	56.0524	56.0526
ProBloc BR 37.5/xxx (3+0) (with remote contacts)		56.0523	56.0525	56.0527

*OVE Certified

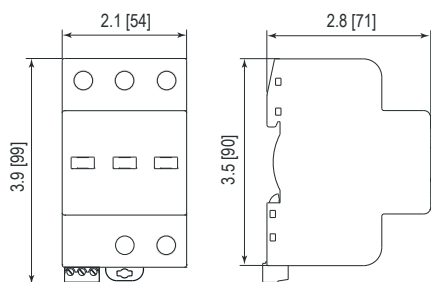
Internal Configuration

Legend

- L Line Conductor Terminal
- ⏏ PEN Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



Dimensions & Packaging

		150	275*	320*
ProBloc B 37.5/xxx (3+0)				
Weight	pounds	.639	.727	.727
	grams	290	330	330
DIN 43880 Dimension		3 TE / 2.13" [54]		
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]		
Standard Order Quantity		5 Units		
ProBloc BR 37.5/xxx (3+0)				
Weight	pounds	.661	.727	.727
	grams	300	330	330
DIN 43880 Dimension		3 TE / 2.13" [54]		
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]		
Standard Order Quantity		5 Units		



ProBloc B

inches
[mm]



Applicable connection configurations can be found beginning on page 98.

Lightning and Overvoltage Protection
ProBloc B(R) 50 (4+0)
 Class I • Class II • Type 1 • Type 2

12.5 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-S
 Mode of Protection: L-PE, N-PE
 IEC/EN Category: Class I+II / Type 1+2
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

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

		150	275*	320*
IEC Electrical				
Nominal AC Voltage (50/60 Hz)	U_o	120V	230V	230V
Maximum Continuous Operating Voltage (AC)	U_c	150V	275V	320V
Nominal Discharge Current (8/20 μ s)	I_n		20 kA	
Maximum Discharge Current (8/20 μ s)	I_{max}		50 kA	
Impulse Discharge Current (10/350 μ s)	I_{imp}		12.5 kA	
Total Discharge Current (10/350 μ s)	I_{total}		50 kA	
Specific Energy	W/R		39 kJ/ Ω	
Charge	Q		6.25 As	
Voltage Protection Level	U_p	< 1.0 kV	< 1.5 kV	< 1.5 kV
Response Time	t_A		< 25 ns	
Overcurrent Protection (max)			250 A gG	
Short-Circuit Current Rating (AC)	I_{SCCR}		50 kA	
TOV Withstand 5s	U_T	174V	334V	334V
TOV Safe Fail 120min	U_T	229V	438V	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 [3.0 Nm]		
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (Solid, Stranded) / 25mm 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		
Fault Indication		Red Flag		
Remote Contacts (RC)		Optional		
RC Switching Capacity		AC: 250V/0.5A; 125V/3A		
RC Terminal Cross Section (max)		1.5mm ² (Solid) / 16 AWG (Solid)		
RC Terminal Screw Torque	M_{max}	2.2 lbf-in [0.25 Nm]		

Order Information

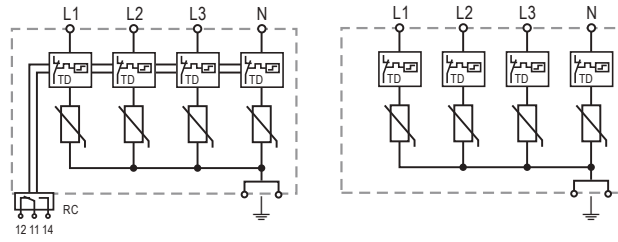
Order Code	150	275*	320*
ProBloc B 50/xxx (4+0)	56.0532	56.0534	56.0536
ProBloc BR 50/xxx (4+0) (with remote contacts)	56.0533	56.0535	56.0537

*OVE Certified

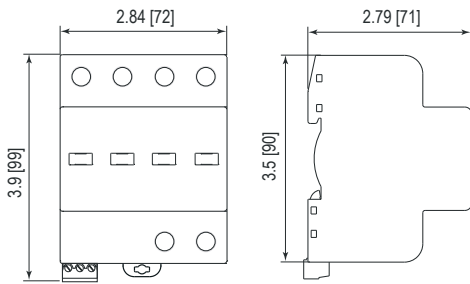
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏏ PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



Dimensions & Packaging				
ProBloc B 50/xxx (4+0)		150	275*	320*
Weight	pounds	1.212	1.521	1.521
	grams	550	590	590
DIN 43880 Dimension		4 TE / 2.84" [72]		
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]		
Standard Order Quantity		3 Units		
ProBloc BR 50/xxx (4+0)		150	275*	320*
Weight	pounds	1.234	1.234	1.322
	grams	560	560	600
DIN 43880 Dimension		4 TE / 2.84" [72]		
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]		
Standard Order Quantity		2 Units		

ProBloc B

inches
[mm]



Applicable connection configurations can be found beginning on page 98.

Lightning and Overvoltage Protection
ProBloc B(R) 25 (1+1)
 Class I • Class II • Type 1 • Type 2

12.5 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-S, TT
 Mode of Protection: L-N, N-PE
 IEC/EN Category: Class I+II / Type 1+2
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

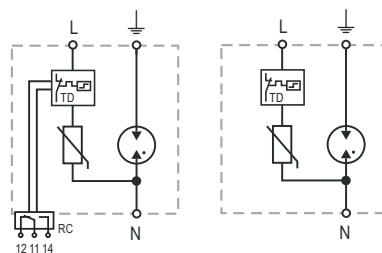
ProBloc B(R) 25/xxx (1+1)		150	275*	320*
IEC Electrical				
Nominal AC Voltage (50/60Hz)	U_o	120V	230V	230V
Maximum Continuous Operating Voltage (AC)	(L-N) U_c	150V	275V	320V
	(N-PE) U_c		255V	
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_n		20 kA / 50 kA	
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}		50 kA / 100 kA	
Impulse Discharge Current (10/350 μ s)	(L-N)/(N-PE) I_{imp}		12.5 kA / 50 kA	
Total Discharge Current (10/350 μ s)	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	< 1.0 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	
Overcurrent Protection (max)	(L-N)		250 A gG	
Short-Circuit Current Rating (AC)	I_{SCCR}		50 kA	
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 [3.0 Nm]		
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)		
		35mm ² (Solid, Stranded) / 25mm 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	(L-N)/(N-PE)	Yes/No		
Fault Indication	(L-N)/(N-PE)	Red Flag/No		
Remote Contacts (RC)		Optional		
RC Switching Capacity		AC: 250V/0.5A; 125V/3A		
RC Terminal Cross Section (max)		1.5mm ² (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 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

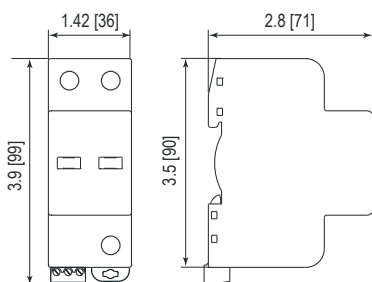
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



Single Unit Dimensions & Packaging			
ProBloc B 25/xxx (1+1)			
		150	275*
Weight	pounds	.242	.330
	grams	110	150
DIN 43880 Dimension		2 TE / 1.42" [36]	
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]	
Standard Order Quantity		7 Units	
ProBloc BR 25/xxx (1+1)			
		150	275*
Weight	pounds	.253	.341
	grams	115	155
DIN 43880 Dimension		2 TE / 1.42" [36]	
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]	
Standard Order Quantity		7 Units	



ProBloc B

inches
[mm]



Applicable connection configurations can be found beginning on page 98.

Lightning and Overvoltage Protection
ProBloc B(R) 50 (3+1)
 Class I • Class II • Type 1 • Type 2

12.5 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-S, TT
 Mode of Protection: L-N, N-PE
 IEC/EN Category: Class I+II / Type 1+2
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

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

275*

320*

IEC Electrical

			275*	320*
Nominal AC Voltage (50/60 Hz)	U_o		230V	230V
Maximum Continuous Operating Voltage (AC)	(L-N) U_c		275V	320V
	(N-PE) U_c			255V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_n		20 kA / 50 kA	
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}		50 kA / 100 kA	
Impulse Discharge Current (10/350 μ s)	(L-N)/(N-PE) I_{imp}		12.5 kA / 50 kA	
Total Discharge Current (10/350 μ s)	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		< 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	
Overcurrent Protection (max)	(L-N)		250 A gG	
Short-Circuit Current Rating (AC)	I_{SCCR}		50 kA	
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 [3.0 Nm]	
Conductor Cross Section (max)			2 AWG (Solid, Stranded) / 4 AWG (Flexible)	
			35mm ² (Solid, Stranded) / 25mm 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	(L-N)/(N-PE)		Yes/No	
Fault Indication	(L-N)/(N-PE)		Red Flag/No	
Remote Contacts (RC)			Optional	
RC Switching Capacity			AC: 250V/0.5A; 125V/3A	
RC Terminal Cross Section (max)			1.5mm ² (Solid) / 16 AWG (Solid)	
RC Terminal Screw Torque	M_{max}		2.2 lbf-in [0.25 Nm]	

Order Information

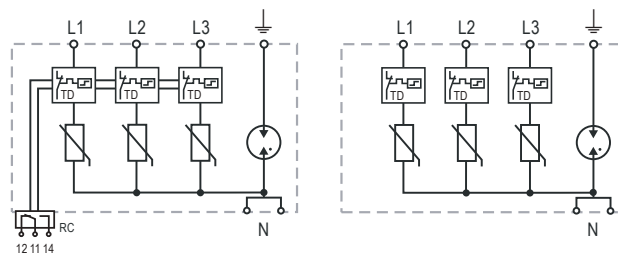
		275*	320*
Order Code			
ProBloc B 50/xxx (3+1)		56.0554	56.0556
ProBloc BR 50/xxx (3+1) (with remote contacts)		56.0555	56.0557

*OVE Certified

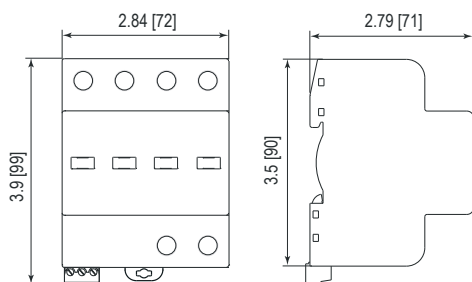
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏏ PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter



Complete Unit



Single Unit Dimensions & Packaging

ProBloc B 50/xxx (3+1)		275*	320*
Weight	pounds	1.311	1.311
	grams	595	595
DIN 43880 Dimension		4 TE / 2.84" [72]	
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]	
Standard Order Quantity		3 Units	
ProBloc BR 50/xxx (3+1)		275*	320*
Weight	pounds	1.322	1.322
	grams	600	600
DIN 43880 Dimension		4 TE / 2.84" [72]	
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]	
Standard Order Quantity		3 Units	



ProBloc B

inches
[mm]

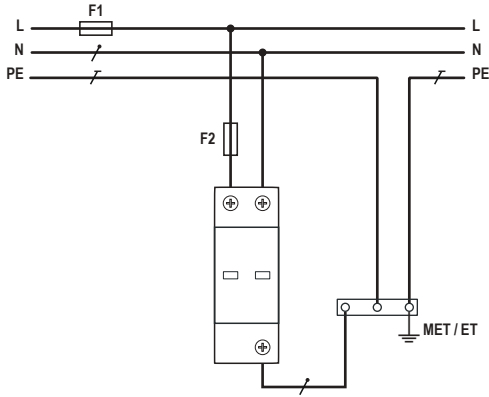


Applicable connection configurations can be found beginning on page 98.

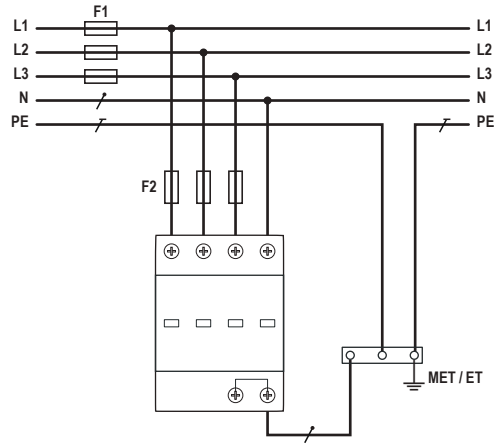
Compact Multi-pole SPD Connection Configurations

ProBloc B(R) 12.5kA Series & ProTube B

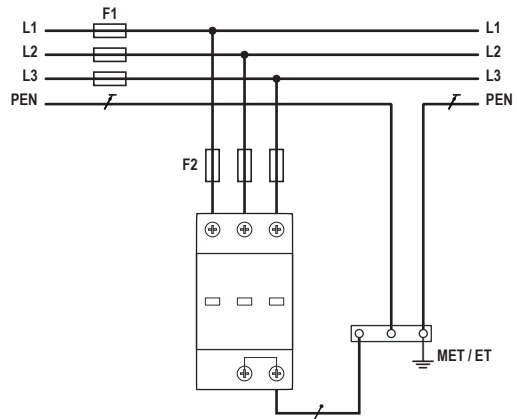
TN-S (Single-phase, 2+0, 1+1)



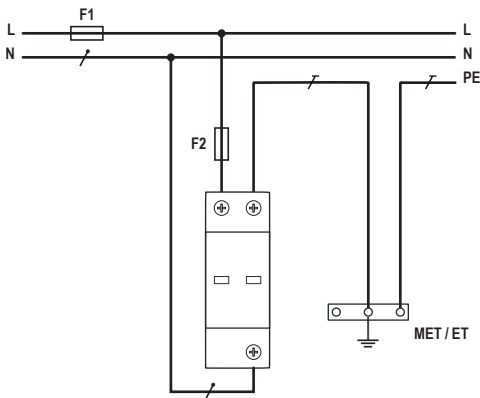
TN-S (Three-phase, 4+0, 3+1)



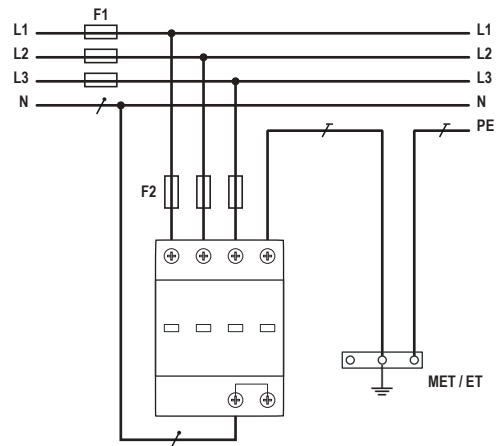
TN-C (Three-phase, 3+0)



TT (Single-phase, 1+1)








TT (Three-phase, 3+1)



Overcurrent Protection Rating for I_{SCCR}

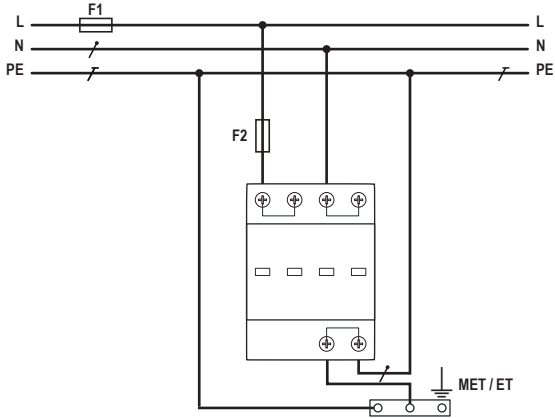
/ N Neutral
/ PE Protective Earth
/ PEN Protective Earth & Neutral

 $F1 > 250 \text{ A gG}$ →  $F2 = 250 \text{ A gG}$
 $F1 \leq 250 \text{ A gG}$ →  $F2$
 $F \leq 100 \text{ A gG}$

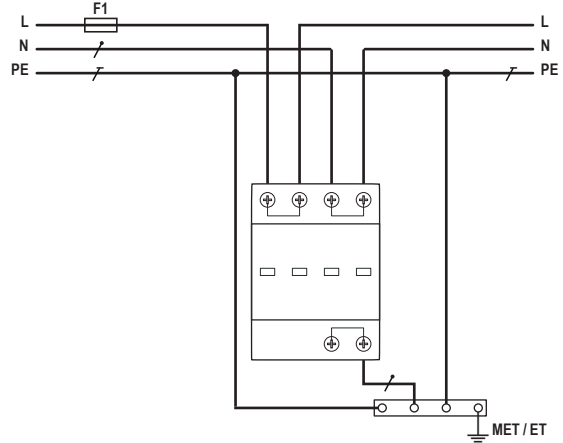
Compact Multi-pole SPD Connection Configurations

ProBloc B(R) 25kA Series

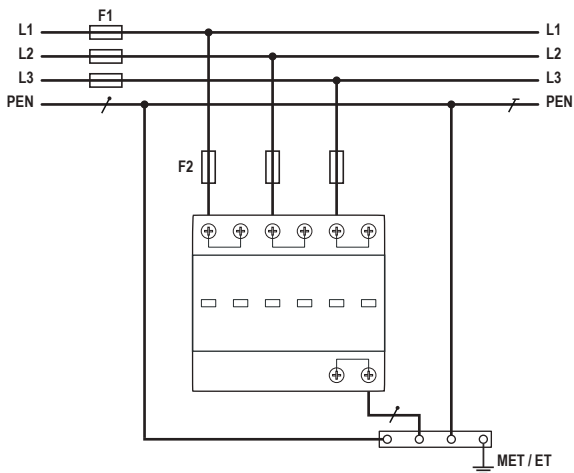
TN-S (Single-phase, 2+0, 1+1)
T Connection



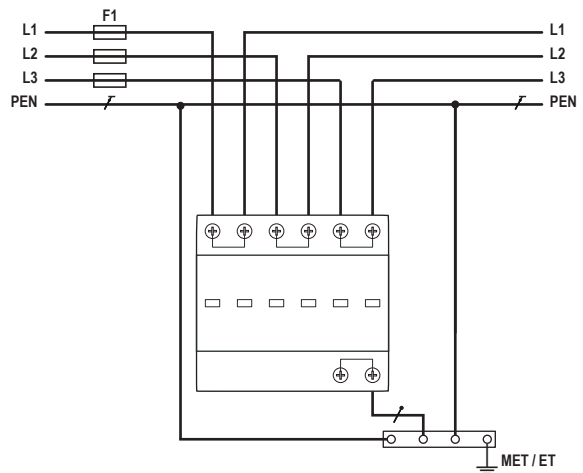
TN-S (Single-phase, 2+0, 1+1)
V Connection



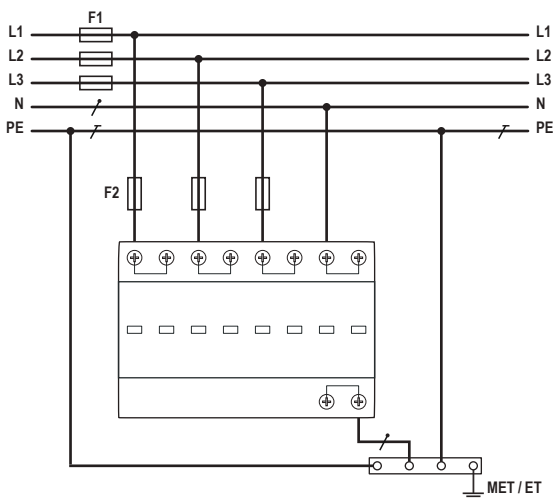
TN-C (Three-phase, 3+0)
T Connection



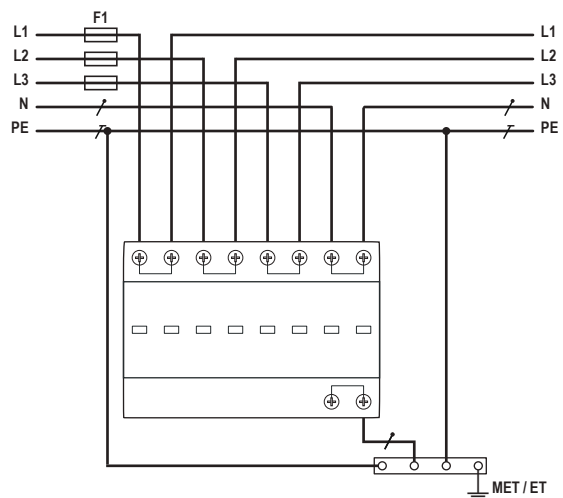
TN-C (Three-phase, 3+0)
V Connection



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



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



Overcurrent Protection Rating for I_{SCCR}

∕ N Neutral
 ∕ PE Protective Earth
 ∕ PEN Protective Earth & Neutral

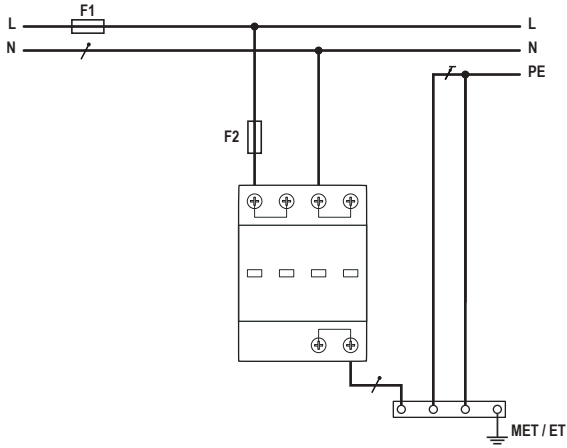
— F1 > 250 A gG → — F2 = 250 A gG
 — F1 ≤ 250 A gG → ~~— F2~~
 — F ≤ 100 A gG

ProBloc B

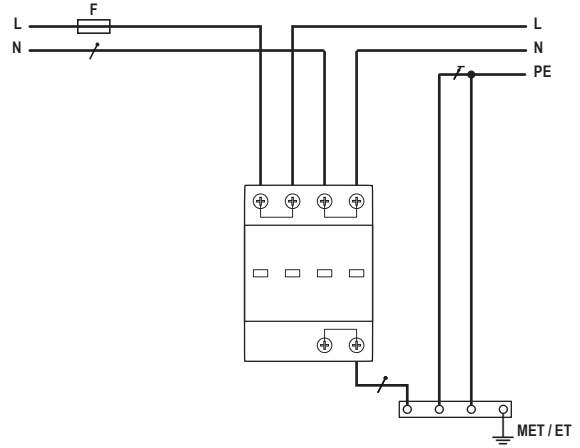
Compact Multi-pole SPD Connection Configurations

ProBloc B(R) 25kA Series

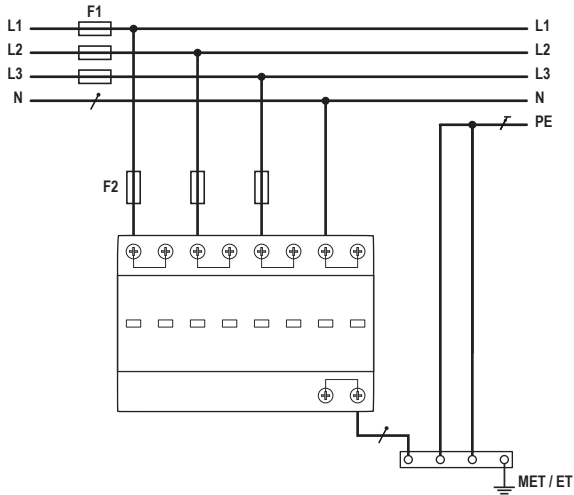
TT (Single-phase, 1+1)
T Connection



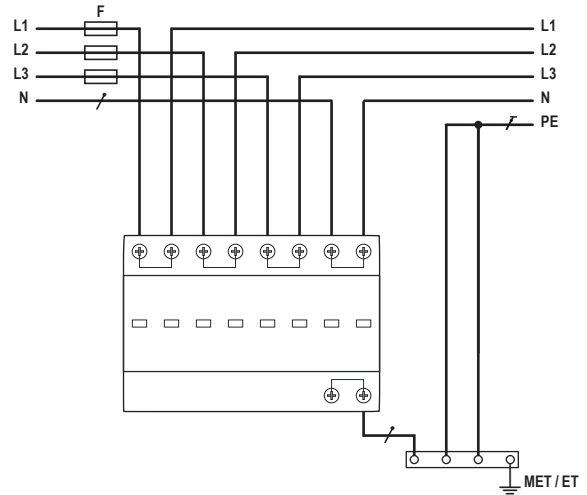
TT (Single-phase, 1+1)
V Connection



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



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



Overcurrent Protection Rating for I_{SCCR}

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

- $F1 > 250 \text{ A gG}$ → $F2 = 250 \text{ A gG}$
- $F1 \leq 250 \text{ A gG}$ → ~~$F2$~~
- $F \leq 100 \text{ A gG}$

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



Lightning and Overvoltage Protection

SafeBloc B(R) TCG



Special features:

- Leakage current free design
- High Energy MOV and GDT
- Compact design
- ÖVE-IEC Class I & II / EN Type 1+2 certified
- All modules including N-PE, with operating state fault indication green-red
- Optional remote contact signaling



Compliance	IEC 61643-11:2011	EN 61643-11:2012
SafeBloc B(R) Series	✓	✓

SafeBloc B offers basic protection as a Type 1 surge protective device that comes with a Maximum Continuous Operating Voltage (U_c) range from 150V to 275V. Due to its Type 1 classification SafeBloc can be installed between boundaries OA – 1 and higher. The high energy MOV and GDT protection modules feature outstanding short-circuit currents up to $50kA_{RMS}$ without using a back up to a main fuse nominal current of 315A. All modules are equipped with state of the art thermal disconnecter and life status monitoring (green-red). An optional remote contact (RC) features a three-pole remote signaling terminal to enable remote device monitoring.

Lightning and Overvoltage Protection

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

Class I • Class II • Type 1 • Type 2

25 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-S, TN-C
 Mode of Protection: L-PE, N-PE, L-PEN, L-N
 IEC/EN Category: Class I+II / Type 1+2
 Safety: High TOV Immunity
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

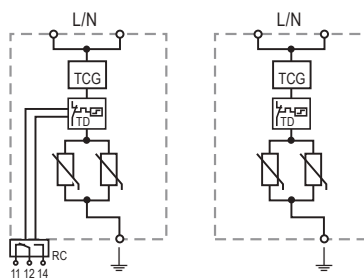
SafeBloc B(R) 25/xxx (1+0) TCG	150	275*
IEC Electrical		
Nominal AC Voltage (50/60 Hz)	U_o	120V / 230V
Maximum Continuous Operating Voltage (AC)	U_c	150V / 275V
Nominal Discharge Current (8/20 μ s)	I_n	25 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	100 kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	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
Overcurrent Protection (max)		250 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	50 kA
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 [3.0 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (Solid, Stranded) / 25mm 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
Fault Indication		Red Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/0.5A; 125V/3A
RC Terminal Cross Section (max)		1.5mm ² (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

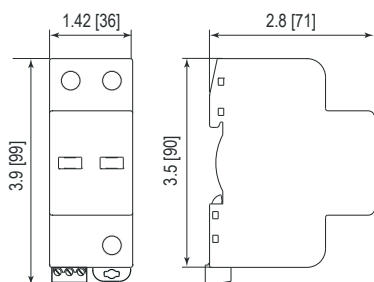
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏏ PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TCG Thermal Control Function with No Leakage
- TD Thermal Disconnect



Complete Unit



Single Unit Dimensions & Packaging

		150	275*
SafeBloc B 25/xxx (1+0) TCG			
Weight	pounds [grams]	.606 [275]	.716 [325]
DIN 43880 Dimension		2 TE / 1.42" [36]	
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]	
Standard Order Quantity		7 Units	
SafeBloc BR 25/xxx (1+0) TCG			
Weight	pounds [grams]	.617 [280]	.727 [330]
DIN 43880 Dimension		2 TE / 1.42" [36]	
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]	
Standard Order Quantity		7 Units	

inches
[mm]



Applicable connection configurations can be found beginning on page 134.



Lightning and Overvoltage Protection

SafeBloc B(R) 75 (3+0) TCG

Class I • Class II • Type 1 • Type 2

25 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-C
 Mode of Protection: L - PEN
 IEC/EN Category: Class I+II / Type 1+2
 Safety: High TOV Immunity
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

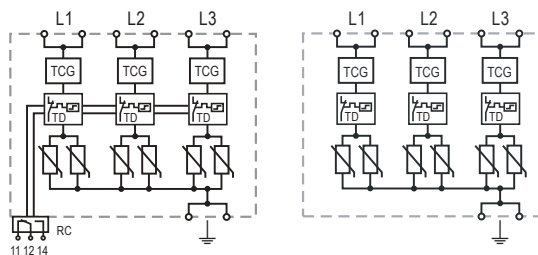
SafeBloc B(R) 75/xxx (3+0) TCG	150	275*
IEC Electrical		
Nominal AC Voltage (50/60 Hz)	U_o	120V / 230V
Maximum Continuous Operating Voltage (AC)	U_c	150V / 275V
Nominal Discharge Current (8/20 μ s)	I_n	25 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	100 kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	25 kA
Total Discharge Current (10/350 μ s)	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
Overcurrent Protection (max)		250 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	50 kA
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 [3.0 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (Solid, Stranded) / 25mm 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
Fault Indication		Red Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/0.5 A; 125V/3 A
RC Terminal Cross Section (max)		1.5mm ² (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

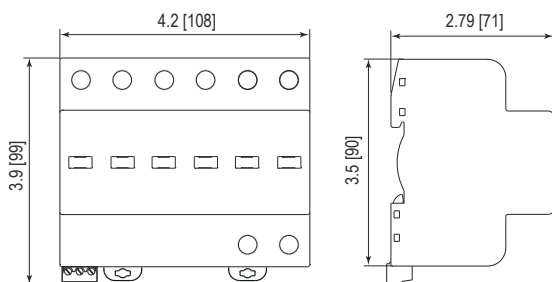
Internal Configuration

Legend

- L Line Conductor Terminal
- ⏏ PEN/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TCG Thermal Control Function with No Leakage
- TD Thermal Disconnect



Complete Unit



Single Unit Dimensions & Packaging

	150	275*
SafeBloc B 75/xxx (3+0) TCG		
Weight	pounds [grams] 1.719 [780]	2.050 [930]
DIN 43880 Dimension	6 TE / 4.25" [108]	
Packaging Dimensions (H×W×L)	3.1 × 4.4 × 11.7" [79 × 112 × 298 mm]	
Standard Order Quantity	2 Units	
SafeBloc BR 75/xxx (3+0) TCG		
Weight	pounds [grams] 1.741 [790]	2.072 [940]
DIN 43880 Dimension	6 TE / 4.25" [108]	
Packaging Dimensions (H×W×L)	3.1 × 4.4 × 11.7" [79 × 112 × 298 mm]	
Standard Order Quantity	2 Units	

inches
[mm]



Applicable connection configurations can be found beginning on page 134.



Lightning and Overvoltage Protection

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

Class I • Class II • Type 1 • Type 2

25 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-S
 Mode of Protection: L-PE, N-PE
 IEC/EN Category: Class I+II / Type 1+2
 Safety: High TOV Immunity
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

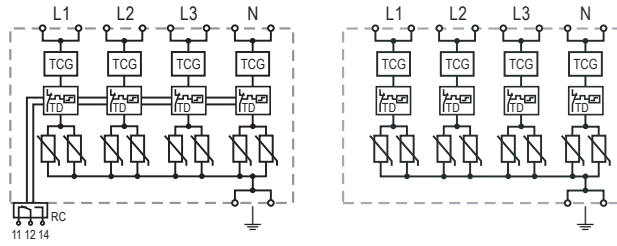
SafeBloc B(R) 100/xxx (4+0) TCG	150	275*	
IEC Electrical			
Nominal AC Voltage (50/60 Hz)	U_o	120V	230V
Maximum Continuous Operating Voltage (AC)	U_c	150V	275V
Nominal Discharge Current (8/20 μ s)	I_n		25 kA
Maximum Discharge Current (8/20 μ s)	I_{max}		100 kA
Impulse Discharge Current (10/350 μ s)	I_{imp}		25 kA
Total Discharge Current (10/350 μ s)	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
Overcurrent Protection (max)			250 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}		50 kA
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 [3.0 Nm]	
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (Solid, Stranded) / 25mm 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	
Fault Indication		Red Flag	
Remote Contacts (RC)		Optional	
RC Switching Capacity		AC: 250V/0.5 A; 125V/3 A	
RC Terminal Cross Section (max)		1.5mm ² (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

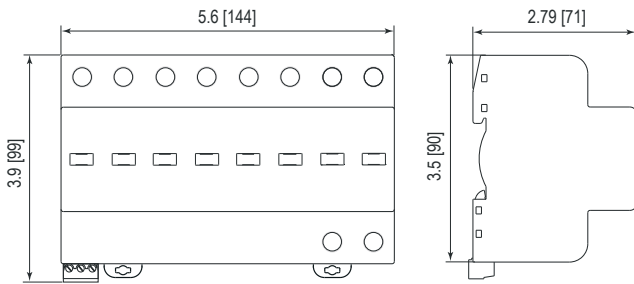
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TCG Thermal Control Function with No Leakage
- TD Thermal Disconnect



Complete Unit



Single Unit Dimensions & Packaging

	150	275*
SafeBloc B 100/xxx (4+0) TCG		
Weight	pounds [grams] 2.292 [1040]	2.733 [1240]
DIN 43880 Dimension	8 TE / 5.66" [144]	
Packaging Dimensions (H×W×L)	3.1 × 4.4 × 11.7" [79 × 112 × 298 mm]	
Standard Order Quantity	2 Units	
SafeBloc BR 100/xxx (4+0) TCG		
Weight	pounds [grams] 2.325 [1055]	2.766 [1255]
DIN 43880 Dimension	8 TE / 5.66" [144]	
Packaging Dimensions (H×W×L)	3.1 × 4.4 × 11.7" [79 × 112 × 298 mm]	
Standard Order Quantity	2 Units	

inches
[mm]



Applicable connection configurations can be found beginning on page 134.

Lightning and Overvoltage Protection
SafeBloc B(R) 100 (3+1) TCG
 Class I • Class II • Type 1 • Type 2

25kA Series



Location of Use: Main Distribution Boards
 Network Systems: TT
 Mode of Protection: L-N, N-PE
 IEC/EN Category: Class I+II / Type 1+2
 Safety: High TOV Immunity
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

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

275

IEC Electrical

Nominal AC Voltage (50/60 Hz)	U_o	230V
Maximum Continuous Operating Voltage (AC)	(L-N) U_c	275V
	(N-PE) U_c	255V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_n	25 kA / 100 kA
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}	100 kA / 100 kA
Impulse Discharge Current (10/350 μ s)	(L-N)/(N-PE) I_{imp}	25 kA / 100 kA
Total Discharge Current (10/350 μ s)	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
Follow Current Interrupt Rating	(N-PE) I_{fi}	100 A _{RMS}
Response Time	(L-N)/(N-PE) t_A	< 25 ns / < 100 ns
Overcurrent Protection (max)		250 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	50 kA
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 [3.0 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
		35mm ² (Solid, Stranded) / 25mm 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	(L-N)/(N-PE)	Yes/No
Fault Indication	(L-N)/(N-PE)	Red Flag/No
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/0.5A; 125V/3A
RC Terminal Cross Section (max)		1.5mm ² (Solid) / 16 AWG (Solid)
RC Terminal Screw Torque	M_{max}	2.2 lbf-in [0.25 Nm]

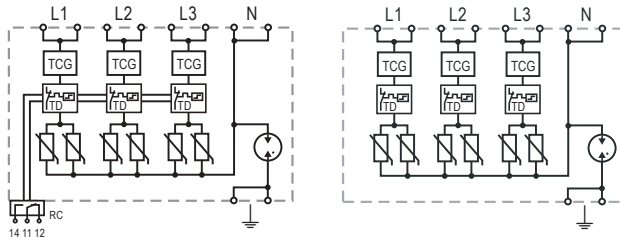
Order Information

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

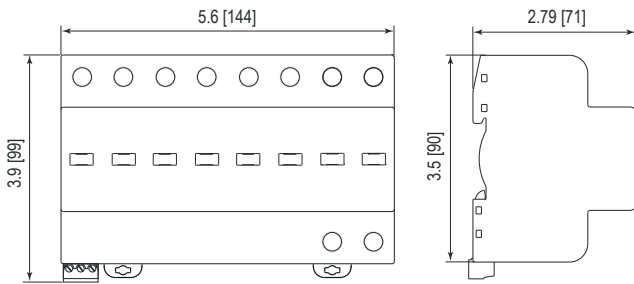
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TCG Thermal Control Function with No Leakage
- TD Thermal Disconnect



Complete Unit



Single Unit Dimensions & Packaging

SafeBloc B 100/xxx (3+1) TCG		275
Weight	pounds [grams]	2.502 [1135]
DIN 43880 Dimension		8 TE / 5.66" [144]
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]
Standard Order Quantity		2 Units
SafeBloc B(R) 100/xxx (3+1) TCG		275
Weight	pounds [grams]	2.535 [1150]
DIN 43880 Dimension		8 TE / 5.66" [144]
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]
Standard Order Quantity		2 Units

inches
[mm]



Applicable connection configurations can be found beginning on page 134.



Lightning and Overvoltage Protection

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
 IEC/EN Category: Class I+II / Type 1+2
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

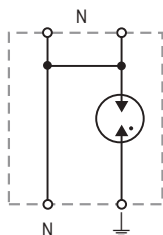
SafeTube B 100/xxx		255
IEC Electrical		
Maximum Continuous Operating Voltage (AC)	U_c	255V
Nominal Discharge Current (8/20 μ s)	I_n	100 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	100 kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	100 kA
Specific Energy	W/R	2.5 MJ/ Ω
Charge	Q	50 As
Voltage Protection 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	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 [3.0 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (Solid, Stranded) / 25mm 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
Order Information		
Order Code		255
SafeTube B 100/xxx		54.0543

SafeTube B 100

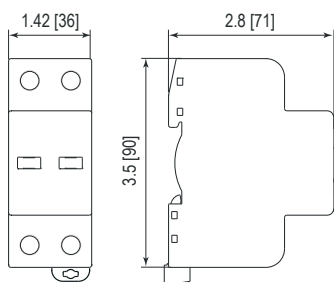
Internal Configuration

Legend

- N Neutral Conductor Terminal
- ⏚ PE/G Conductor Terminal



Complete Unit



Single Unit Dimensions & Packaging

SafeTube B 100/xxx	255
Weight	pounds [grams]
	.529 [240]
DIN 43880 Dimension	2 TE / 1.42" [36]
Packaging Dimensions (H x W x L)	3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]
Standard Order Quantity	7 Units

inches
[mm]

Lightning and Overvoltage Protection
SafeBloc B(R) 25/440 (1+0)
 Class I • Class II • Type 1 • Type 2

25 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-S, TN-C, TT (only L-N)
 Mode of Protection: L-PE, N-PE, L-PEN, L-N
 IEC/EN Category: Class I+II / Type 1+2
 Safety: High TOV Immunity
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

SafeBloc B(R) 25/xxx (1+0)

440

IEC Electrical

Nominal AC Voltage (50/60 Hz)	U_o / U_n	400V
Maximum Continuous Operating Voltage (AC)	U_c	440V
Nominal Discharge Current (8/20 μ s)	I_n	25 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	100 kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	25 kA
Specific Energy	W/R	156 kJ/ Ω
Charge	Q	12.5 As
Voltage Protection Level	U_p	< 2.5 kV
Response Time	t_A	< 100 ns
Overcurrent Protection (max)		250 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	50 kA
TOV Withstand 120min	U_T	762V
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) 35mm ² (Solid, Stranded) / 25mm 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
Fault Indication		Red Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/0.5A; 125V/3A
RC Terminal Cross Section (max)		1.5mm ² (Solid) / 16 AWG (Solid)
RC Terminal Screw Torque	M_{max}	2.2 lbf-in [0.25 Nm]

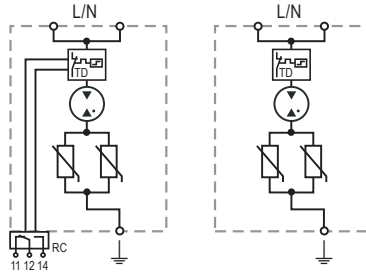
Order Information

Order Code	440
SafeBloc B 25/xxx (1+0)	54.0541
SafeBloc BR 25/xxx (1+0) (with remote contacts)	54.0542

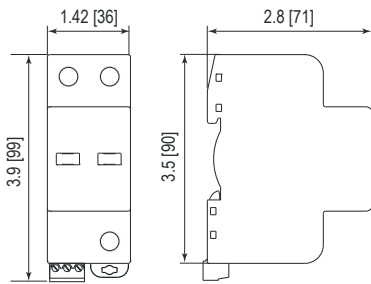
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏏ PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)



Complete Unit



Single Unit Dimensions & Packaging

SafeBloc B 25/xxx (1+0)		440
Weight	pounds [grams]	.734 [333]
DIN 43880 Dimension		2 TE / 1.42" [36]
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]
Standard Order Quantity		7 Units
SafeBloc BR 25/xxx (1+0)		440
Weight	pounds [grams]	.778 [353]
DIN 43880 Dimension		2 TE / 1.42" [36]
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]
Standard Order Quantity		7 Units

inches
[mm]

Lightning and Overvoltage Protection
SafeBloc B(R) 50/440 (2+0)
 Class I • Class II • Type 1 • Type 2

25 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-S
 Mode of Protection: L-PE, N-PE
 IEC/EN Category: Class I+II / Type 1+2
 Safety: High TOV Immunity
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

SafeBloc B(R) 50/xxx (2+0) 440

IEC Electrical		
Nominal AC Voltage (50/60 Hz)	U_o / U_n	400V
Maximum Continuous Operating Voltage (AC)	U_c	440V
Nominal Discharge Current (8/20 μ s)	I_n	25 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	100 kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	25 kA
Specific Energy	W/R	156 kJ/ Ω
Charge	Q	12.5 As
Voltage Protection Level	U_p	< 2.5 kV
Response Time	t_A	< 100 ns
Overcurrent Protection (max)		250 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	50 kA
TOV Withstand 120min	U_T	762V
Number of Ports		1

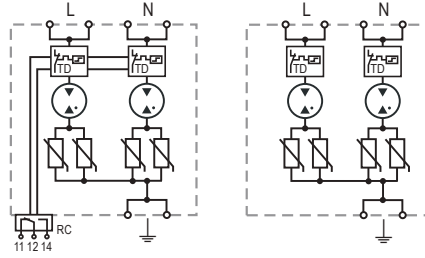
Mechanical & Environmental		
Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Humidity	RH	5%...95%
Terminal Screw Torque	M_{max}	26.5 lbf-in [3.0 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (Solid, Stranded) / 25mm ² (Flexible)
Mounting		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
Fault Indication		Red Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/0.5A; 125V/3A
RC Terminal Cross Section (max)		1.5mm ² (Solid) / 16 AWG (Solid)
RC Terminal Screw Torque	M_{max}	2.2 lbf-in [0.25 Nm]

Order Information		
Order Code		440
SafeBloc B 50/xxx (2+0)		54.0548
SafeBloc BR 50/xxx (2+0) (with remote contacts)		54.0549

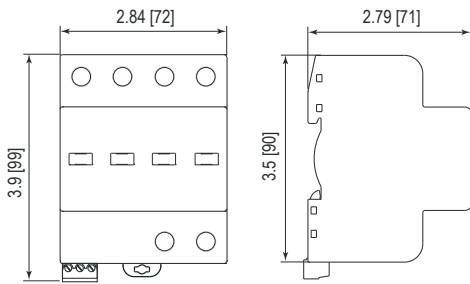
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter



Complete Unit



Single Unit Dimensions & Packaging

SafeBloc B 50/xxx (2+0)		440
Weight	pounds [grams]	1.398 [634]
DIN 43880 Dimension		4 TE / 2.84" [72]
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]
Standard Order Quantity		3 Units
SafeBloc BR 50/xxx (2+0)		440
Weight	pounds [grams]	1.415 [642]
DIN 43880 Dimension		4 TE / 2.84" [72]
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]
Standard Order Quantity		3 Units

inches
[mm]

Lightning and Overvoltage Protection
SafeBloc B(R) 75/440 (3+0)
 Class I • Class II • Type 1 • Type 2

25 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-C
 Mode of Protection: L - PEN
 IEC/EN Category: Class I+II / Type 1+2
 Safety: High TOV Immunity
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

SafeBloc B(R) 75/xxx (3+0) 440

IEC Electrical

Nominal AC Voltage (50/60 Hz)	U_o / U_n	400V
Maximum Continuous Operating Voltage (AC)	U_c	440V
Nominal Discharge Current (8/20 μ s)	I_n	25 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	100 kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	25 kA
Specific Energy	W/R	156 kJ/ Ω
Charge	Q	12.5 As
Voltage Protection Level	U_p	< 2.5 kV
Response Time	t_A	< 100 ns
Overcurrent Protection (max)		250 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	50 kA
TOV Withstand 120min	U_T	762V
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) 35mm ² (Solid, Stranded) / 25mm 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
Fault Indication		Red Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/0.5A; 125V/3A
RC Terminal Cross Section (max)		1.5mm ² (Solid) / 16 AWG (Solid)
RC Terminal Screw Torque	M_{max}	2.2 lbf-in [0.25 Nm]

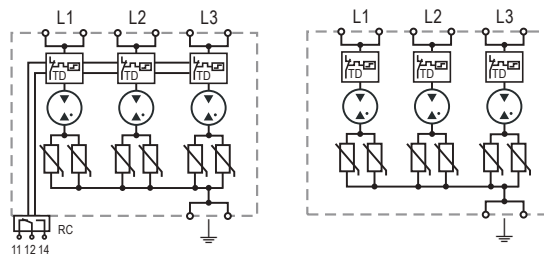
Order Information

Order Code	440
SafeBloc B 75/xxx (3+0)	54.0554
SafeBloc BR 75/xxx (3+0) (with remote contacts)	54.0555

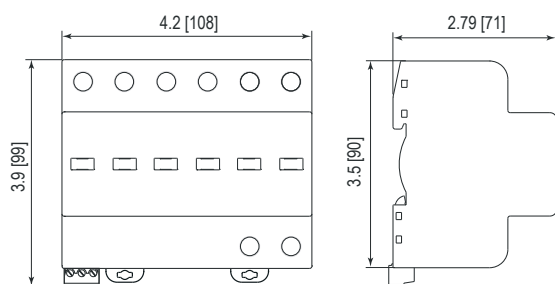
Internal Configuration

Legend

- L Line Conductor Terminal
- ⏏ PEN Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



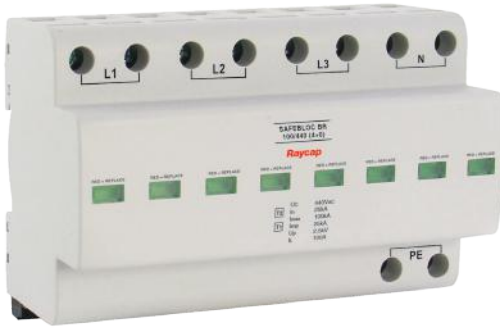
Single Unit Dimensions & Packaging

SafeBloc B 75/xxx (3+0)		440
Weight	pounds [grams]	2.247 [1019]
DIN 43880 Dimension		6 TE / 4.25" [108]
Packaging Dimensions (H×W×L)		3.1 × 4.4 × 11.7" [79 × 112 × 298 mm]
Standard Order Quantity		2 Units
SafeBloc BR 75/xxx (3+0)		440
Weight	pounds [grams]	2.250 [1021]
DIN 43880 Dimension		6 TE / 4.25" [108]
Packaging Dimensions (H×W×L)		3.1 × 4.4 × 11.7" [79 × 112 × 298 mm]
Standard Order Quantity		2 Units

inches
[mm]

Lightning and Overvoltage Protection
SafeBloc B(R) 100/440 (4+0)
 Class I • Class II • Type 1 • Type 2

25 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-S
 Mode of Protection: L-PE, N-PE
 IEC/EN Category: Class I+II / Type 1+2
 Safety: High TOV Immunity
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

SafeBloc B(R) 100/xxx (4+0) 440

IEC Electrical		
Nominal AC Voltage (50/60 Hz)	U_o / U_n	400V
Maximum Continuous Operating Voltage (AC)	U_c	440V
Nominal Discharge Current (8/20 μ s)	I_n	25 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	100 kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	25 kA
Specific Energy	W/R	156 kJ/ Ω
Charge	Q	12.5 As
Voltage Protection Level	U_p	< 2.5 kV
Response Time	t_A	< 100 ns
Overcurrent Protection (max)		250 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	50 kA
TOV Withstand 120min	U_T	762V
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) 35mm ² (Solid, Stranded) / 25mm 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
Fault Indication		Red Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/0.5A; 125V/3A
RC Terminal Cross Section (max)		1.5mm ² (Solid) / 16 AWG (Solid)
RC Terminal Screw Torque	M_{max}	2.2 lbf-in [0.25 Nm]

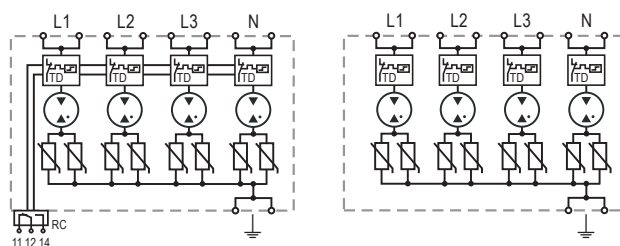
Order Information		
Order Code		440
SafeBloc B 100/xxx (4+0)		54.0560
SafeBloc BR 100/xxx (4+0) (with remote contacts)		54.0561



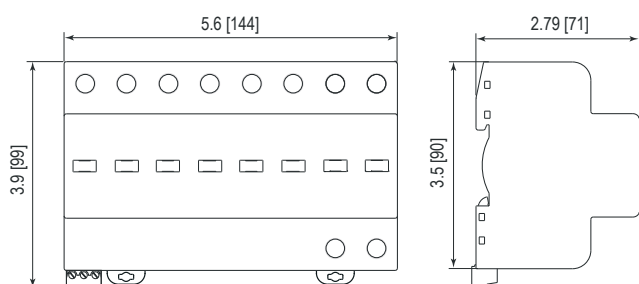
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏚ PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



Single Unit Dimensions & Packaging

SafeBloc B 100/xxx (4+0)		440
Weight	pounds [grams]	2.751 [1248]
DIN 43880 Dimension		8 TE / 5.66" [144]
Packaging Dimensions (H×W×L)		3.1 × 4.4 × 11.7" [79 × 112 × 298 mm]
Standard Order Quantity		2 Units
SafeBloc BR 100/xxx (4+0)		440
Weight	pounds [grams]	2.945 [1336]
DIN 43880 Dimension		8 TE / 5.66" [144]
Packaging Dimensions (H×W×L)		3.1 × 4.4 × 11.7" [79 × 112 × 298 mm]
Standard Order Quantity		2 Units

inches
[mm]

Lightning and Overvoltage Protection

SafeBloc B(R) 50/440 (1+1)

Class I • Class II • Type 1 • Type 2

25 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TT
 Mode of Protection: L - N, N - PE
 IEC/EN Category: Class I+II / Type 1+2
 Safety: High TOV Immunity
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

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

440

IEC Electrical

Nominal AC Voltage (50/60 Hz)	U_o / U_n	400V
Maximum Continuous Operating Voltage (AC)	(L-N) U_c	440V
	(N-PE) U_c	440V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_n	25 kA / 100 kA
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}	100 kA / 100 kA
Impulse Discharge Current (10/350 μ s)	(L-N)/(N-PE) I_{imp}	25 kA / 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	< 2.5 kV / < 2.5 kV
Follow Current Interrupt Rating	(N-PE) I_{fi}	100 A _{RMS}
Response Time	t_A	< 100 ns
Overcurrent Protection (max)		250 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	50 kA
TOV Withstand 120min	(L-N) U_T	762V
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 [3.0 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
		35mm ² (Solid, Stranded) / 25mm 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	(L-N)/(N-PE)	Yes/No
Fault Indication	(L-N)/(N-PE)	Red Flag/No
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/0.5A; 125V/3A
RC Terminal Cross Section (max)		1.5mm ² (Solid) / 16 AWG (Solid)
RC Terminal Screw Torque	M_{max}	2.2 lbf-in [0.25 Nm]

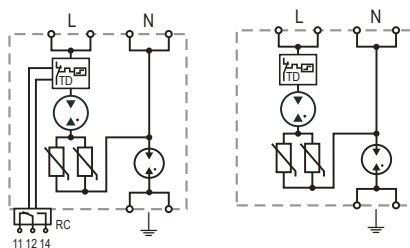
Order Information

Order Code	440
SafeBloc B 50/xxx (1+1)	54.0566
SafeBloc BR 50/xxx (1+1) (with remote contacts)	54.0567

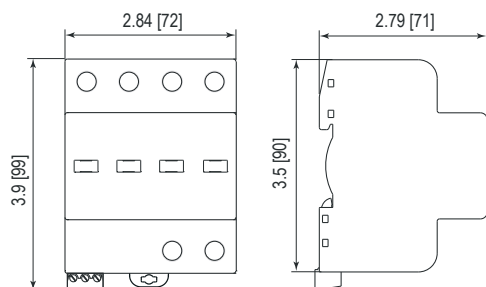
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏏ PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter



Complete Unit



Single Unit Dimensions & Packaging

SafeBloc B 50/xxx (1+1)		440
Weight	pounds [grams]	1.089 [494]
DIN 43880 Dimension		4 TE / 2.84" [72]
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]
Standard Order Quantity		3 Units
SafeBloc B(R) 50/xxx (1+1)		440
Weight	pounds [grams]	1.135 [515]
DIN 43880 Dimension		4 TE / 2.84" [72]
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]
Standard Order Quantity		3 Units

inches
[mm]



Lightning and Overvoltage Protection

SafeBloc B(R) 100/440 (3+1)

Class I • Class II • Type 1 • Type 2

25 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TT
 Mode of Protection: L - N, N - PE
 IEC/EN Category: Class I+II / Type 1+2
 Safety: High TOV Immunity
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

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

440

IEC Electrical

Nominal AC Voltage (50/60 Hz)	U_o / U_n	400V
Maximum Continuous Operating Voltage (AC)	(L - N) U_c	440V
	(N - PE) U_c	440V
Nominal Discharge Current (8/20 μ s)	(L - N)/(N - PE) I_n	25 kA/100 kA
Maximum Discharge Current (8/20 μ s)	(L - N)/(N - PE) I_{max}	100 kA/100 kA
Impulse Discharge Current (10/350 μ s)	(L - N)/(N - PE) I_{imp}	25 kA/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	< 2.5 kV / < 2.5 kV
Follow Current Interrupt Rating	(N - PE) I_{fi}	100 A _{RMS}
Response Time	t_A	< 100 ns
Overcurrent Protection (max)		250 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	50 kA
TOV Withstand 120min	(L - N) U_T	762V
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 [3.0 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
		35mm ² (Solid, Stranded) / 25mm 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	(L - N)/(N - PE)	Yes/No
Fault Indication	(L - N)/(N - PE)	Red Flag/No
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/0.5A; 125V/3A
RC Terminal Cross Section (max)		1.5mm ² (Solid) / 16 AWG (Solid)
RC Terminal Screw Torque	M_{max}	2.2 lbf-in [0.25 Nm]

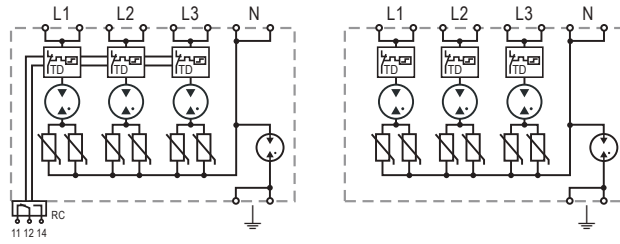
Order Information

Order Code	440
SafeBloc B 100/xxx (3+1)	54.0572
SafeBloc BR 100/xxx (3+1) (with remote contacts)	54.0573

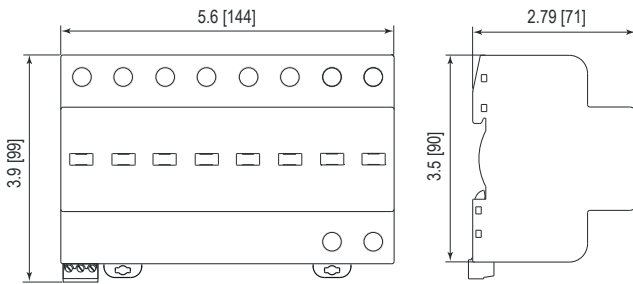
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏏ PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



Single Unit Dimensions & Packaging

SafeBloc B 100/xxx (3+1)		440
Weight	pounds [grams]	2.401[1089]
DIN 43880 Dimension		8 TE / 5.66" [144]
Packaging Dimensions (H×W×L)		3.1 × 4.4 × 11.7" [79 × 112 × 298 mm]
Standard Order Quantity		2 Units
SafeBloc B(R) 100/xxx (3+1)		440
Weight	pounds [grams]	2.566 [1164]
DIN 43880 Dimension		8 TE / 5.66" [144]
Packaging Dimensions (H×W×L)		3.1 × 4.4 × 11.7" [79 × 112 × 298 mm]
Standard Order Quantity		2 Units

inches
[mm]

Compact Single Pole SPD
SafeTube B 100/440
 Class I • Class II • Type 1 • Type 2



Location of Use: Main Distribution Boards
 Network Systems: TT
 Mode of Protection: N-PE
 IEC/EN Category: Class I+II / Type 1+2
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

SafeTube B 100/xxx	440	
IEC Electrical		
Nominal AC Voltage (50/60 Hz)	U_o	400V
Maximum Continuous Operating Voltage (AC)	U_c	440V
Nominal Discharge Current (8/20 μ s)	I_n	100 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	100 kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	100 kA
Specific Energy	W/R	2.5 MJ/ Ω
Charge	Q	50 As
Voltage Protection Level	U_p	< 2.5 kV
Follow Current Interrupt Rating	I_{fi}	100 A _{RMS}
Response Time	t_A	< 100 ns
TOV withstand 200ms	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 [3.0 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (Solid, Stranded) / 25mm 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
Order Information		
Order Code		440
SafeTube B 100/xxx		54.0624

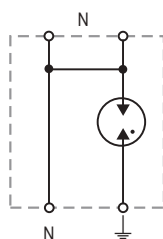
SafeTube B 100

Internal Configuration

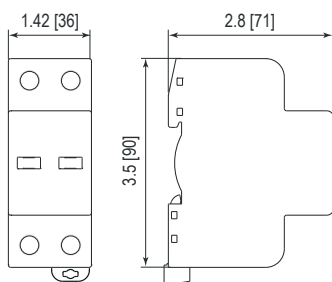
Legend

N Neutral Conductor Terminal

⏚ PE Conductor Terminal



Complete Unit



Single Unit Dimensions & Packaging

SafeTube B 100/xxx	440
Weight	pounds [grams]
DIN 43880 Dimension	2 TE / 1.42" [36]
Packaging Dimensions (H x W x L)	3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]
Standard Order Quantity	7 Units

inches
[mm]

Lightning and Overvoltage Protection

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

Class I • Class II • Type 1 • Type 2

12.5 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-S
 Mode of Protection: L-PE, N-PE
 IEC/EN Category: Class I+II / Type 1+2
 Safety: High TOV Immunity
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

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

150

275*

IEC Electrical

Parameter	Symbol	150	275*
Nominal AC Voltage (50/60 Hz)	U_o	120V	230V
Maximum Continuous Operating Voltage (AC)	U_c	150V	275V
Nominal Discharge Current (8/20 μ s)	I_n		20kA
Maximum Discharge Current (8/20 μ s)	I_{max}		50kA
Impulse Discharge Current (10/350 μ s)	I_{imp}		12.5kA
Total Discharge Current (10/350 μ s)	I_{total}		50kA
Specific Energy	W/R		39 kJ/ Ω
Charge	Q		6.25 As
Voltage Protection Level	U_p	< 1.2kV	< 1.5kV
Response Time	t_A		< 25 ns
Overcurrent Protection (max)			250 A 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 [3.0 Nm]	
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (Solid, Stranded) / 25mm 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	
Fault Indication		Red Flag	
Remote Contacts (RC)		Optional	
RC Switching Capacity		AC: 250V/0.5A; 125V/3A	
RC Terminal Cross Section (max)		1.5mm ² (Solid) / 16 AWG (Solid)	
RC Terminal Screw Torque	M_{max}	2.2 lbf-in [0.25 Nm]	

Order Information

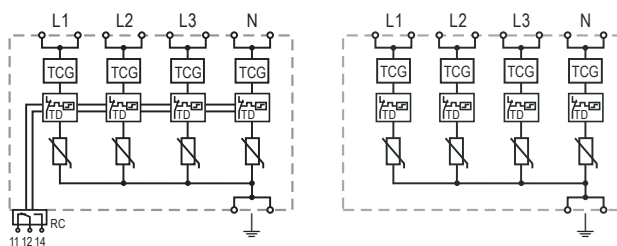
Order Code	150	275*
SafeBloc B 50/xxx (4+0) TCG	54.0519	54.0521
SafeBloc BR 50/xxx (4+0) TCG (with remote contacts)	54.0520	54.0522

*OVE Certified

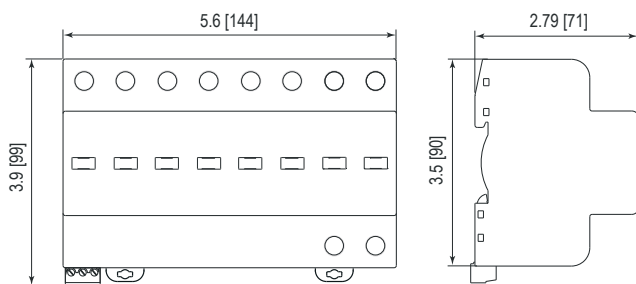
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TCG Thermal Control Function with No Leakage
- TD Thermal Disconnect



Complete Unit



Single Unit Dimensions & Packaging

		150	275*
SafeBloc B 50/xxx (4+0) TCG			
Weight	pounds [grams]	1.763 [800]	2.204 [1000]
DIN 43880 Dimension		8 TE / 5.66" [144]	
Packaging Dimensions (H×W×L)		3.1 × 4.4 × 11.7" [79 × 112 × 298 mm]	
Standard Order Quantity		2 Units	
SafeBloc BR 50/xxx (4+0) TCG			
Weight	pounds [grams]	1.796 [815]	2.237 [1015]
DIN 43880 Dimension		8 TE / 5.66" [144]	
Packaging Dimensions (H×W×L)		3.1 × 4.4 × 11.7" [79 × 112 × 298 mm]	
Standard Order Quantity		2 Units	

inches
[mm]



Applicable connection configurations can be found beginning on page 134.



Lightning and Overvoltage Protection

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

Class I • Class II • Type 1 • Type 2

12.5 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-S, TT
 Mode of Protection: L-N, N-PE
 IEC/EN Category: Class I+II / Type 1+2
 Safety: High TOV Immunity
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

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

150

275*

IEC Electrical

Parameter	Symbol	150	275*
Nominal AC Voltage (50/60 Hz)	U_o	120V	230V
Maximum Continuous Operating Voltage (AC)	(L-N) U_c	150V	275V
	(N-PE) U_c		255V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_n	20 kA / 50 kA	
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}	50 kA / 100 kA	
Impulse Discharge Current (10/350 μ s)	(L-N)/(N-PE) I_{imp}	12.5 kA / 50 kA	
Total Discharge Current (10/350 μ s)	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	
Overcurrent Protection (max)		250 A gG	
Short-Circuit Current Rating (AC)	I_{SCCR}	50 kA	
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 [3.0 Nm]	
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)	
		35mm ² (Solid, Stranded) / 25mm 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	
Fault Indication	(L-N)/(N-PE)	Red Flag/No	
Remote Contacts (RC)		Optional	
RC Switching Capacity		AC: 250V/0.5A; 125V/3A	
RC Terminal Cross Section (max)		1.5mm ² (Solid) / 16 AWG (Solid)	
RC Terminal Screw Torque	M_{max}	2.2 lbf-in [0.25 Nm]	

Order Information

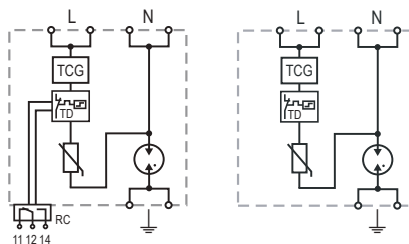
Order Code	150	275*
SafeBloc B 25/xxx (1+1) TCG	54.0525	54.0527
SafeBloc B(R) 25/xxx (1+1) TCG (with remote contacts)	54.0526	54.0528

*OVE Certified

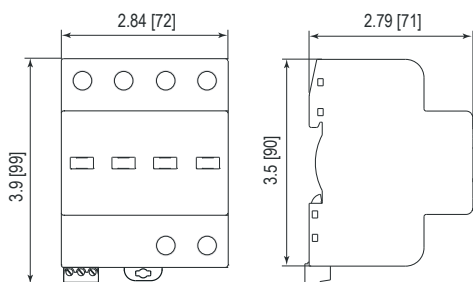
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏏ PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TCG Thermal Control Function with No Leakage
- TD Thermal Disconnect



Complete Unit



Single Unit Dimensions & Packaging

		150	275*
SafeBloc B 25/xxx (1+1) TCG			
Weight	pounds [grams]	.617 [280]	.694 [315]
DIN 43880 Dimension		4 TE / 2.84" [72]	
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]	
Standard Order Quantity		3 Units	
SafeBloc BR 25/xxx (1+1) TCG			
Weight	pounds [grams]	.628 [285]	.705 [320]
DIN 43880 Dimension		4 TE / 2.84" [72]	
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]	
Standard Order Quantity		3 Units	

inches
[mm]



Applicable connection configurations can be found beginning on page 134.

Lightning and Overvoltage Protection

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

Class I • Class II • Type 1 • Type 2

12.5 kA Series



Location of Use: Main Distribution Boards
 Network Systems: TN-S, TT
 Mode of Protection: L-N, N-PE
 IEC/EN Category: Class I+II / Type 1+2
 Safety: High TOV Immunity
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

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

275

IEC Electrical

Nominal AC Voltage (50/60 Hz)	U_o	230V
Maximum Continuous Operating Voltage (AC)	(L-N) U_c	275V
	(N-PE) U_c	255V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_n	20 kA/50 kA
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}	50 kA/100 kA
Impulse Discharge Current (10/350 μ s)	(L-N)/(N-PE) I_{imp}	12.5 kA/50 kA
Total Discharge Current (10/350 μ s)	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
Overcurrent Protection (max)		250 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	50 kA
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 [3.0 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
		35mm ² (Solid, Stranded) / 25mm 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	(L-N)/(N-PE)	Yes/No
Fault Indication	(L-N)/(N-PE)	Red Flag/NO
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/0.5A; 125V/3A
RC Terminal Cross Section (max)		1.5mm ² (Solid) / 16 AWG (Solid)
RC Terminal Screw Torque	M_{max}	2.2 lbf-in [0.25 Nm]

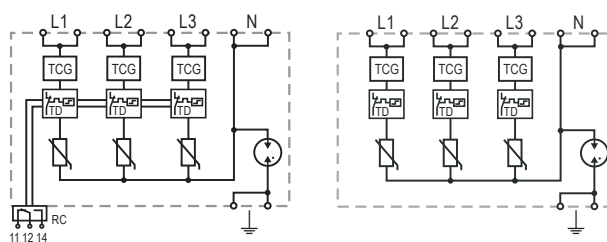
Order Information

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

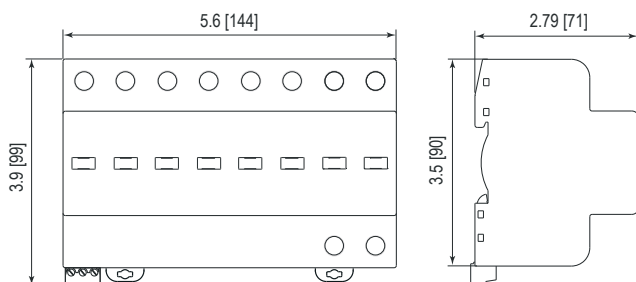
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TCG Thermal Control Function with No Leakage
- TD Thermal Disconnect



Complete Unit



Single Unit Dimensions & Packaging

SafeBloc B 50/xxx (3+1) TCG		275
Weight	pounds [grams]	1.984 [900]
DIN 43880 Dimension		8 TE / 5.66" [144]
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]
Standard Order Quantity		2 Units
SafeBloc BR 50/xxx (3+1) TCG		275
Weight	pounds [grams]	2.006 [910]
DIN 43880 Dimension		8 TE / 5.66" [144]
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]
Standard Order Quantity		2 Units

inches
[mm]



Lightning and Overvoltage Protection 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
Mode of Protection: L-PE, N-PE, L-PEN, L-N
IEC/EN Category: Class I+II / Type 1+2
Safety: High TOV Immunity
Technology: Hybrid
Leakage Current Free: Yes
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

IEC Electrical

Nominal AC Voltage (50/60 Hz)	U_o	600V
Maximum Continuous Operating Voltage (AC)	U_c	750V
Nominal Discharge Current (8/20 μ s)	I_n	12.5 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	40 kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	12.5 kA
Specific Energy	W/R	39 kJ/ Ω
Charge	Q	6.25 As
Voltage Protection Level	U_p	< 2.6 kV
Response Time	t_A	< 25 ns
Overcurrent Protection (max)		250 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	50 kA
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 [3.0 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (Solid, Stranded) / 25mm 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
Fault Indication		Red Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/0.5A; 125V/3A
RC Terminal Cross Section (max)		1.5mm ² (Solid) / 16 AWG (Solid)
RC Terminal Screw Torque	M_{max}	2.2 lbf-in [0.25 Nm]

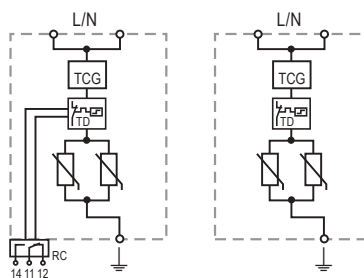
Order Information

Order Code	750
SAFELOC B 12.5/xxx (1+0) WT TCG	54.0590
SAFELOC BR 12.5/xxx (1+0) WT TCG (with remote contacts)	54.0591

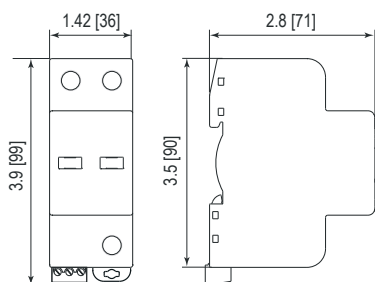
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏏ PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TCG Thermal Control Function with No Leakage
- TD Thermal Disconnect



Complete Unit



Single Unit Dimensions & Packaging

SafeBloc B 12.5/xxx (1+0) WT TCG		750
Weight	pounds [grams]	.959 [435]
DIN 43880 Dimension		2 TE / 1.42" [36]
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]
Standard Order Quantity		7 Units
SafeBloc BR 12.5/xxx (1+0) WT TCG		750
Weight	pounds [grams]	.970 [440]
DIN 43880 Dimension		2 TE / 1.42" [36]
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]
Standard Order Quantity		7 Units

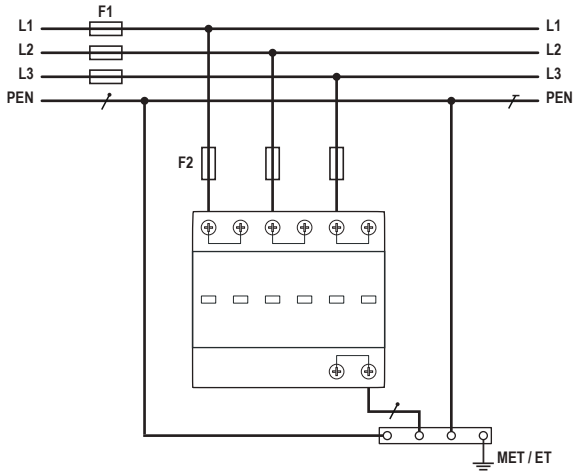
inches
[mm]

Compact Multi-pole SPD Connection Configurations

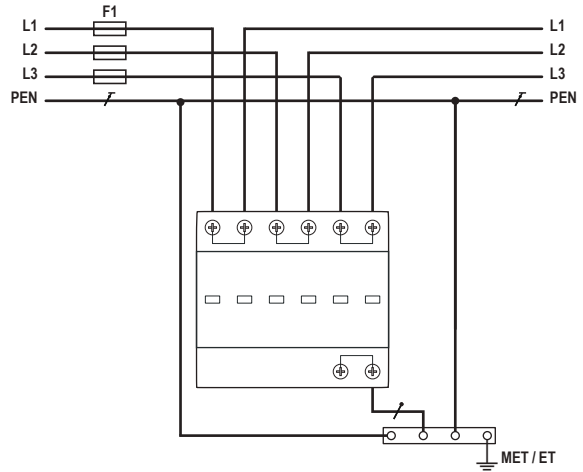
SafeBloc B(R) TCG 12.5kA & 25kA Series

SafeBloc B(R) 25kA Series

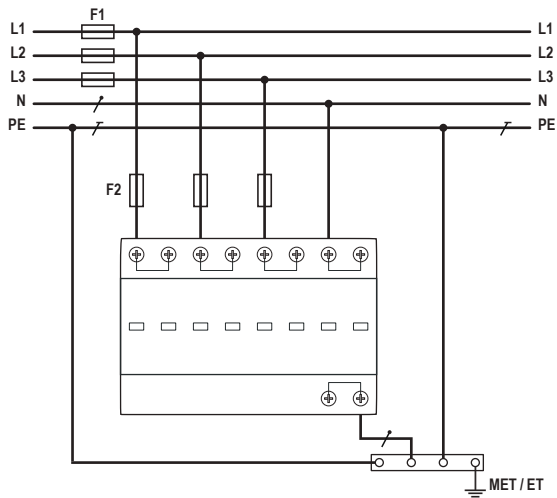
TN-C (Three-phase, 3+0)
T Connection



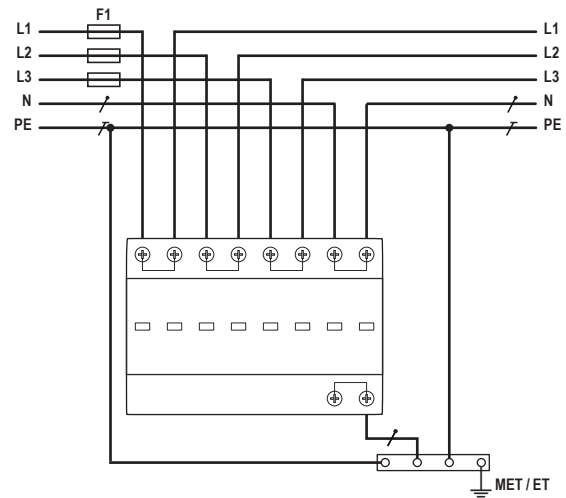
TN-C (Three-phase, 3+0)
V Connection



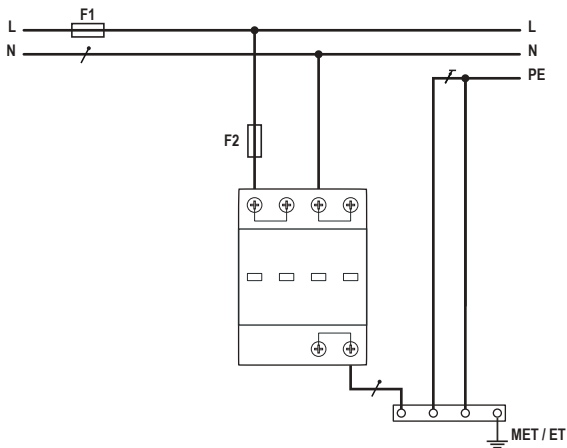
TN-S (Three-phase, 4+0, 3+1)
T Connection



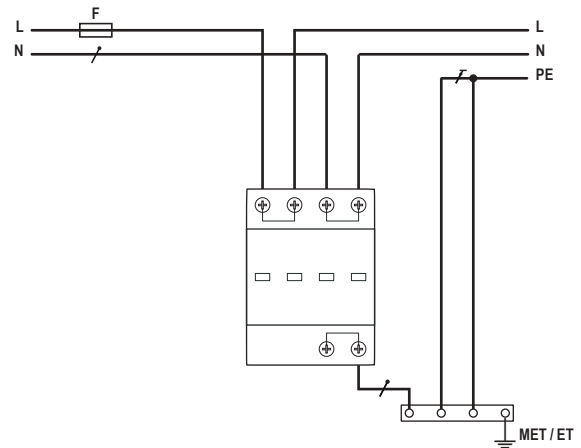
TN-S (Three-phase, 4+0, 3+1)
V Connection



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



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



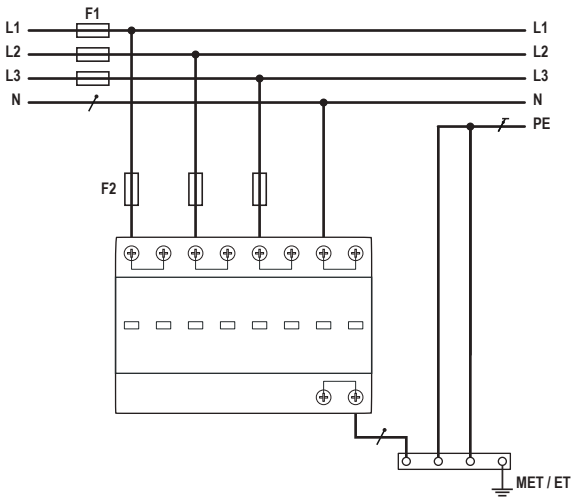
Overcurrent Protection Rating for I_{SCCR}

∩ N Neutral
 ∩ PE Protective Earth
 ∩ PEN Protective Earth & Neutral

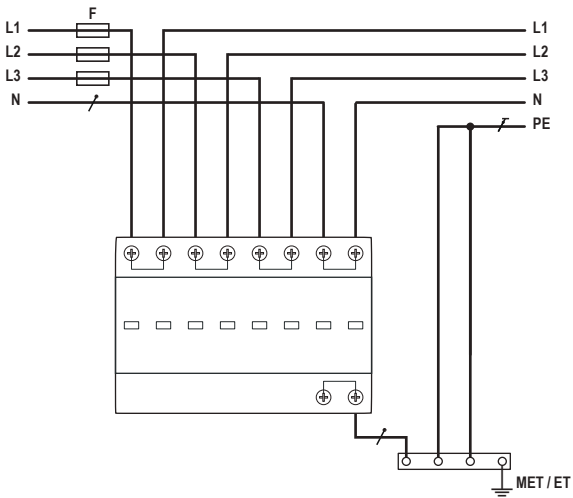
— F1 > 250 A gG → — F2 = 250 A gG
 — F1 ≤ 250 A gG → ~~— F2~~
 — F ≤ 100 A gG

Compact Multi-pole SPD Connection Configurations
SafeBloc B(R) TCG 12.5kA & 25kA Series
SafeBloc B(R) 25kA Series

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

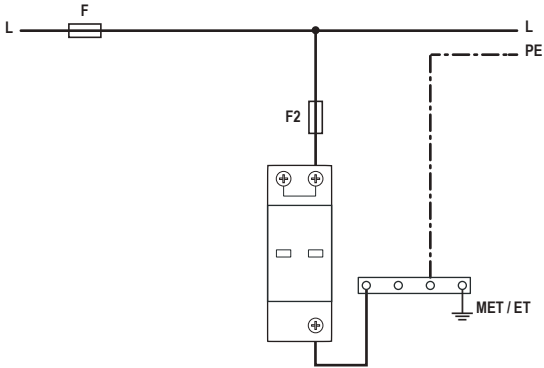


TT (Three-phase, 3+1)
 V Connection

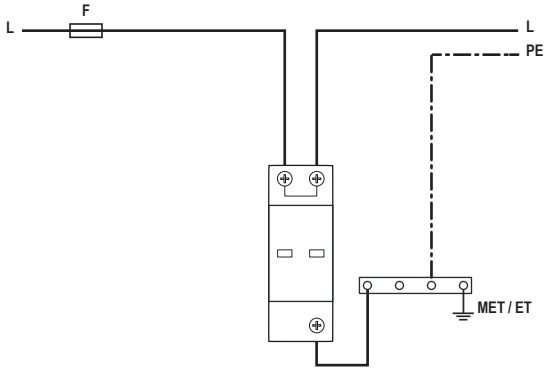


WT Compact Single Pole SPD Connection Configurations
SafeBloc B(R) WT TCG Series

SafeBloc B(R) 12.5 WT TCG
 T Connection



V Connection





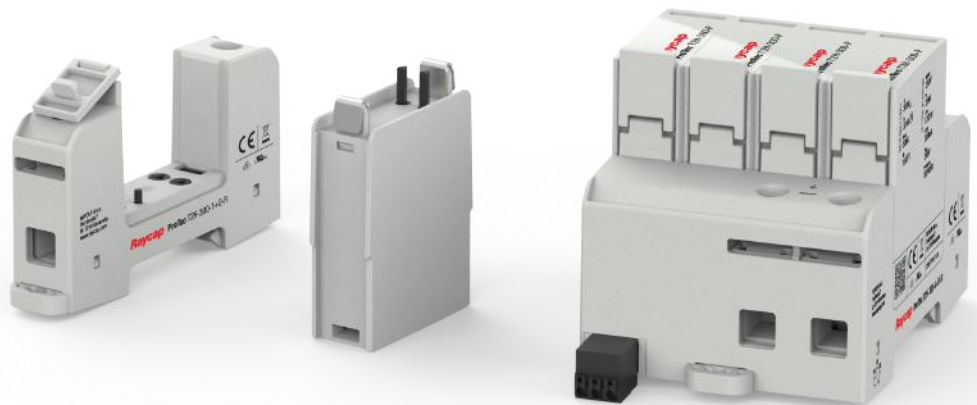
Pluggable Single Pole & Multi-pole Surge Protective Devices (SPDs)

Overvoltage Protection ProTec T2H



Special features:

- High maximum discharge current capacity (I_{max}) of 50 kA
- State-of-the-art thermal disconnecter
- Leakage current-free technology
- Backup fuse up to 315 AgG
- Short-circuit current rating up to 50 kA
- Vibration and shock withstand capability
- VDE-IEC Class II / EN Type 2 certified and Open Type 1 SPD Listed
- All modules including N-PE, with operating state green-red
- Optional remote contact signaling (RC)



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

The ProTec T2H surge protection device provides high durability due to its leakage-free performance ensured by a special series connection of varistor and gas discharge tube. The ProTec T2H product family is an ideal supplement to the basic ProTec T2 product family, available for single or three-phase TN-S, TT and TN-C systems with a maximum continuous voltage of 300VAC. The perfect solution for applications such as railway safety control systems where complete absence of leakage current, is required. With its Type 2 classification, the unit can be installed between boundaries 1 – 2 and higher. The varistor based protection module features outstanding short-circuit currents up to 50kA_{RMS} without using a back-up to a main fuse and a nominal current of 315A. All modules are equipped with a state-of-the-art thermal disconnecter and life-status green-red monitoring indicator. A unique vibration-proof locking mechanism enables secure use in high vibration environments. An optional remote contact (RC) features a three-pole remote signaling terminal, which enables remote monitoring of the operating state of the device.

Overvoltage Protection

ProTec T2H 1+0

Class II • Type 2 • Type 1 • 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
IEC/EN/UL Category: Class II / Type 2 / Type 1CA
Technology: Hybrid
Leakage Current Free: Yes
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
 EN 61643-11:2012
 UL 1449 4th Edition

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 μ s)	I_n	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50 kA
Voltage Protection Level	U_p	1500 V
Response Time	t_A	< 25 ns
Overcurrent Protection (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

UL Electrical

Maximum Continuous Operating Voltage (AC)	MCOV	300 V
Voltage Protection Rating	VPR	1200 V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA
Short-Circuit Current Rating (AC)	SCCR	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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (Solid)

Order Information

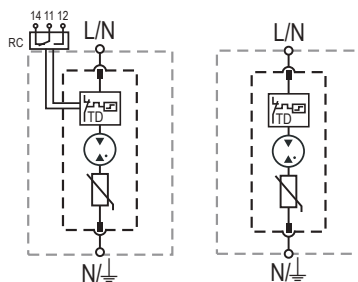
Order Code	300
ProTec T2H-xxx-1+0	59.0324
ProTec T2H-xxx-1+0-R (with remote contacts)	59.0325
ProTec T2H-xxx-P (plug)	59.0322

ProTec T2H 1+0

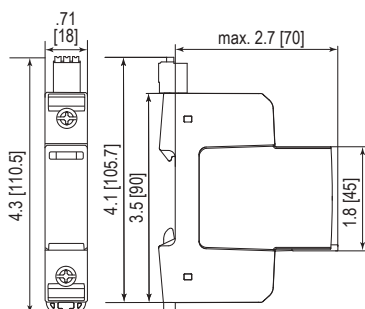
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏚ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



Complete Unit Dimensions & Packaging

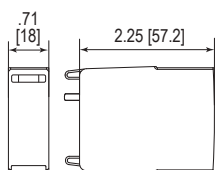
Complete Unit Dimensions & Packaging		
ProTec T2H-xxx-1+0		300
Weight	pounds [grams]	.264 [120]
ProTec T2H-xxx-1+0-R		
Weight	pounds [grams]	.279 [127]
DIN 43880 Dimension		1 TE / .71" [18]
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity		12 Units

Plug Internal Configuration

ProTec T2H-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

Single Unit Dimensions & Packaging		
ProTec T2H-xxx-P		300
Weight	pounds [grams]	.112 [51]
DIN 43880 Dimension		1 TE / .71" [18]
Packaging Dimensions (HxWxL)		3.2 x 4.5 x 12" [83 x 115 x 305 mm]
Standard Order Quantity		24 Units

inches
[mm]

Overvoltage Protection

ProTec T2H 2+0

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



Location of Use: Sub-Distribution Boards
 Network Systems: TN-S
 Mode of Protection: L-PE, N-PE
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Pluggable Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012
 UL 1449 4th Edition

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 μ s)	I_n	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50 kA
Voltage Protection Level	U_p	1500 V
Response Time	t_A	< 25 ns
Overcurrent Protection (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

UL Electrical

Maximum Continuous Operating Voltage (AC)	MCOV	300 V
Voltage Protection Rating	VPR	1200 V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA
Short-Circuit Current Rating (AC)	SCCR	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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (Solid)

Order Information

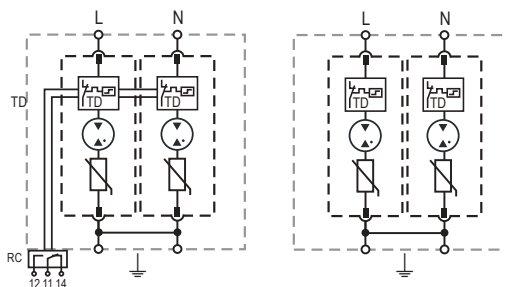
Order Code	300
ProTec T2H-xxx-2+0	59.0326
ProTec T2H-xxx-2+0-R (with remote contacts)	59.0327
ProTec T2H-xxx-P (plug)	59.0322

ProTec T2H 2+0

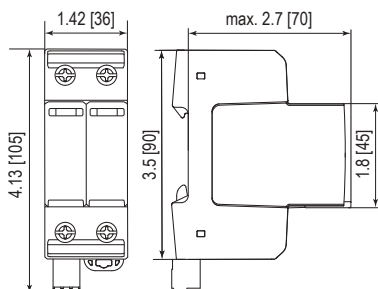
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏚ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



Complete Unit Dimensions & Packaging

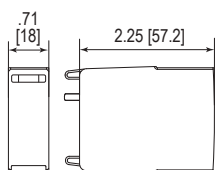
ProTec T2H-xxx-2+0	300
Weight	pounds [grams] .514 [233]
ProTec T2H-xxx-2+0-R	
Weight	pounds [grams] .534 [242]
DIN 43880 Dimension	2 TE / 1.42" [36]
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity	7 Units

Plug Internal Configuration

ProTec T2H-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

ProTec T2H-xxx-P	300
Weight	pounds [grams] .112 [51]
DIN 43880 Dimension	1 TE / .71" [18]
Packaging Dimensions (HxWxL)	3.2 x 4.5 x 12" [83 x 115 x 305 mm]
Standard Order Quantity	24 Units

inches
[mm]

Overvoltage Protection

ProTec T2H 3+0

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



Location of Use: Sub-Distribution Boards
 Network Systems: TN-C
 Mode of Protection: L-PEN
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Pluggable Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012
 UL 1449 4th Edition

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 μ s)	I_n	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50 kA
Voltage Protection Level	U_p	1500 V
Response Time	t_A	< 25 ns
Overcurrent Protection (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

UL Electrical

Maximum Continuous Operating Voltage (AC)	MCOV	300 V
Voltage Protection Rating	VPR	1200 V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA
Short-Circuit Current Rating (AC)	SCCR	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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (Solid)

Order Information

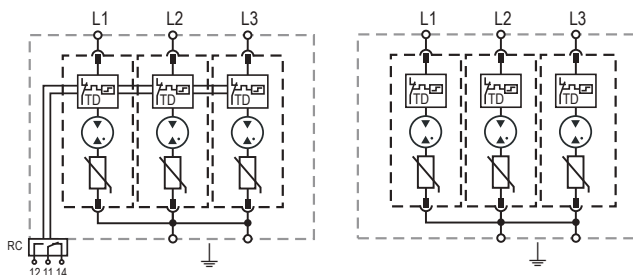
Order Code	300
ProTec T2H-xxx-3+0	59.0328
ProTec T2H-xxx-3+0-R (with remote contacts)	59.0329
ProTec T2H-xxx-P (plug)	59.0322

ProTec T2H 3+0

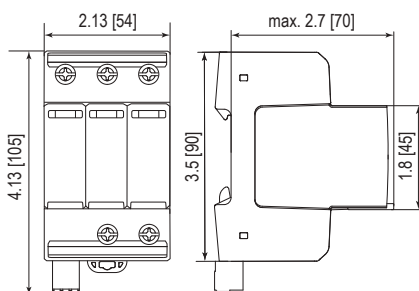
Internal Configuration

Legend

- L Line Conductor Terminal
- ⏚ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



Complete Unit Dimensions & Packaging

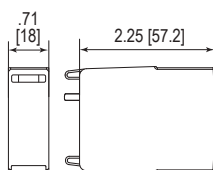
ProTec T2H-xxx-3+0		300
Weight	pounds [grams]	.747 [339]
ProTec T2H-xxx-3+0-R		300
Weight	pounds [grams]	.767 [348]
DIN 43880 Dimension		3 TE / 2.13" [54]
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity		5 Units

Plug Internal Configuration

ProTec T2H-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

ProTec T2H-xxx-P		300
Weight	pounds [grams]	.112 [51]
DIN 43880 Dimension		1 TE / .71" [18]
Packaging Dimensions (HxWxL)		3.2 x 4.5 x 12" [83 x 115 x 305 mm]
Standard Order Quantity		24 Units

inches
[mm]

Overvoltage Protection

ProTec T2H 4+0

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



Location of Use: Sub-Distribution Boards
 Network Systems: TN-S
 Mode of Protection: L-PE, N-PE
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Pluggable Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012
 UL 1449 4th Edition

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 μ s)	I_n	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50 kA
Voltage Protection Level	U_p	1500 V
Response Time	t_A	< 25 ns
Overcurrent Protection (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

UL Electrical

Maximum Continuous Operating Voltage (AC)	MCOV	300 V
Voltage Protection Rating	VPR	1200 V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA
Short-Circuit Current Rating (AC)	SCCR	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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (Solid)

Order Information

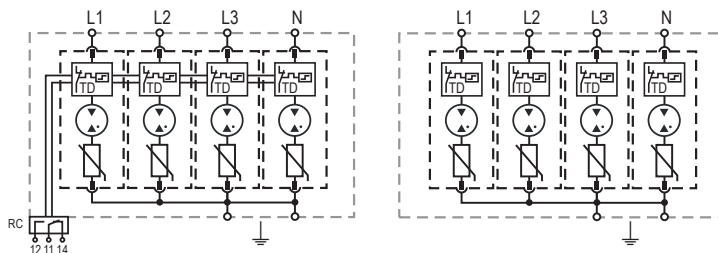
Order Code	300
ProTec T2H-xxx-4+0	59.0330
ProTec T2H-xxx-4+0-R (with remote contacts)	59.0331
ProTec T2H-xxx-P (plug)	59.0322

ProTec T2H 4+0

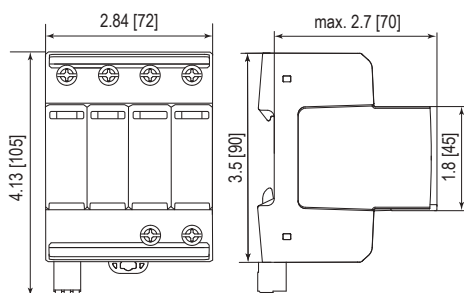
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



Complete Unit Dimensions & Packaging

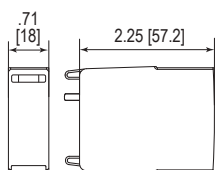
ProTec T2H-xxx-4+0	300
Weight	pounds [grams] .944 [428]
ProTec T2H-xxx-4+0-R	
Weight	pounds [grams] .964 [437]
DIN 43880 Dimension	4 TE / 2.84" [72]
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity	4 Units

Plug Internal Configuration

ProTec T2H-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

ProTec T2H-xxx-P	300
Weight	pounds [grams] .112 [51]
DIN 43880 Dimension	1 TE / .71" [18]
Packaging Dimensions (HxWxL)	3.2 x 4.5 x 12" [83 x 115 x 305 mm]
Standard Order Quantity	24 Units

inches
[mm]

Overvoltage Protection

ProTec T2H 1+1

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



Location of Use: Sub-Distribution Boards
 Network Systems: TT, TN-S
 Mode of Protection: L-N, N-PE
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Pluggable Design
 Compliance: IEC 61643-11: 2011
 EN 61643-11: 2012
 UL 1449 4th Edition

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 μ s)	(L-N) / (N-PE) I_n	20 kA / 40 kA
Maximum Discharge Current (8/20 μ s)	(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
Overcurrent Protection (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

UL Electrical

Maximum Continuous Operating Voltage (AC)	(L-N)/(N-G) MCOV	300 V / 305 V
Voltage Protection Rating	(L-N)/(N-G) VPR	1200 V / 1000 V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-G) I_n	20 kA / 20 kA
Short-Circuit Current Rating (AC)	(L-N) SCCR	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 [4000m]
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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (Solid)

Order Information

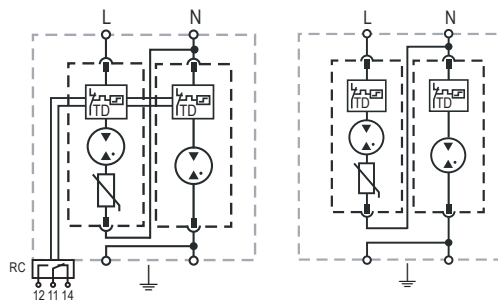
Order Code	300
ProTec T2H-xxx-1+1	59.0332
ProTec T2H-xxx-1+1-R (with remote contacts)	59.0333
ProTec T2H-xxx-P (plug L-N)	59.0322
ProTube T2H-40-P (plug N-PE)	59.0323

ProTec T2H 1+1

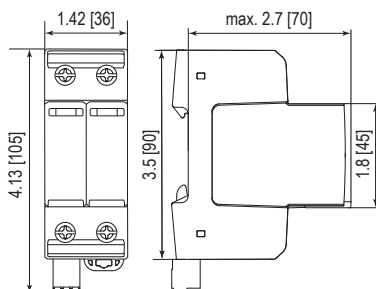
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏚ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



Complete Unit Dimensions & Packaging

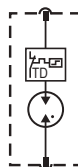
ProTec T2H-xxx-1+1	300
Weight	pounds [grams] .516 [234]
ProTec T2H-xxx-1+1-R	
Weight	pounds [grams] .525 [238]
DIN 43880 Dimension	2 TE / 1.42" [36]
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity	7 Units

Plug Internal Configuration

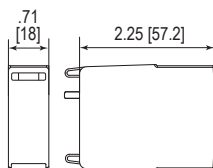
ProTec T2H-xxx-P



ProTube T2H-40-P



Spare Plug



Single Unit Dimensions & Packaging

ProTec T2H-xxx-P	300
Weight	pounds [grams] .112 [51]
ProTube T2H-40-P	40
Weight	pounds [grams] .093 [42]
DIN 43880 Dimension	1 TE / .71" [18]
Packaging Dimensions (HxWxL)	3.2 x 4.5 x 12" [83 x 115 x 305 mm]
Standard Order Quantity	24 Units

inches
[mm]

Overvoltage Protection

ProTec T2H 3+1

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



Location of Use: Sub-Distribution Boards
 Network Systems: TT, TN-S
 Mode of Protection: L-N, N-PE
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Pluggable Design
 Compliance: IEC 61643-11: 2011
 EN 61643-11: 2012
 UL 1449 4th Edition

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 μ s)	(L-N) / (N-PE) I_n	20 kA / 40kA
Maximum Discharge Current (8/20 μ s)	(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
Overcurrent Protection (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

UL Electrical

Maximum Continuous Operating Voltage (AC)	(L-N)/(N-G) MCOV	300 V / 305 V
Voltage Protection Rating	(L-N)/(N-G) VPR	1200 V / 1000 V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-G) I_n	20 kA / 20 kA
Short-Circuit Current Rating (AC)	(L-N) SCCR	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 [4000m]
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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A
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 (plug L-N)	59.0322
ProTube T2H-40-P (plug N-PE)	59.0323

Overvoltage Protection

ProTube T2H 40 0+1

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



Location of Use: Sub-Distribution Boards
 Network Systems: TT, TN-S
 Mode of Protection: N-PE
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Pluggable Design
 Compliance: IEC 61643-11: 2011
 EN 61643-11: 2012
 UL 1449 4th Edition

Technical Data

ProTube T2H-xxx-0+1(-R)

40

IEC Electrical

Maximum Continuous Operating Voltage (AC)	U_c	305 V
Nominal Discharge Current (8/20 μ s)	I_n	40kA
Maximum Discharge Current (8/20 μ s)	I_{max}	65 kA
Voltage Protection Level	U_p	1500V
Follow Current Interrupt Rating	I_{fi}	100 A _{RMS}
Response Time	t_A	< 100 ns
TOV Withstand 120min	U_T	1200V
Number of Ports		1

UL Electrical

Maximum Continuous Operating Voltage (AC)	MCOV	305V
Voltage Protection Rating	VPR	1000V
Nominal Discharge Current (8/20 μ s)	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 (max)		13123 ft [4000m]
Terminal Screw Torque	M_{max}	39.9 lbf-in [4.5Nm]
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: 250V / 1A, 125V / 1A; DC: 48V / 0.5A, 24V / 0.5A, 12V / 0.5A
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (Solid)

Order Information

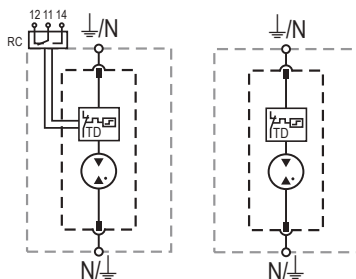
Order Code	40
ProTube T2H-xxx-0+1	59.0341
ProTube T2H-xxx-0+1-R (with remote contacts)	59.0342
ProTube T2H-40-P (plug)	59.0323

ProTube T2H 40 0+1

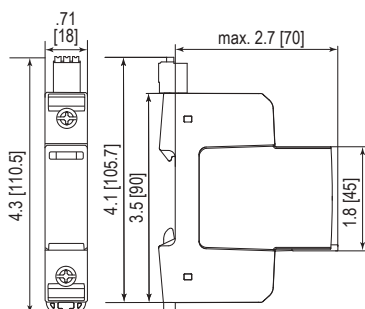
Internal Configuration

Legend

- N Neutral Conductor Terminal
- ⏏ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit

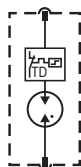


Complete Unit Dimensions & Packaging

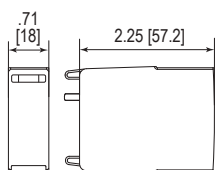
ProTube T2H-xxx-0+1	40
Weight	pounds [grams] .244 [111]
ProTube T2H-xxx-0+1-R	40
Weight	pounds [grams] .259 [118]
DIN 43880 Dimension	1 TE / .71" [18]
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity	12 Units

Plug Internal Configuration

ProTube T2H-40-P



Spare Plug



Single Unit Dimensions & Packaging

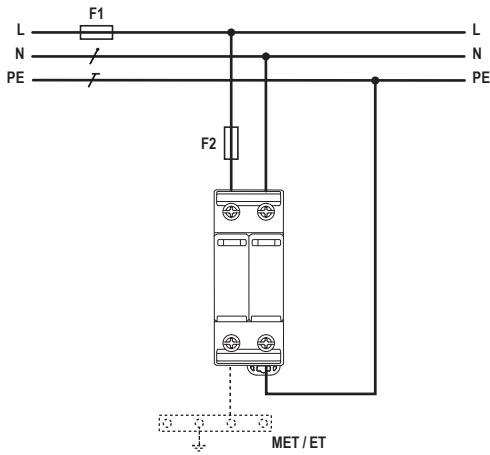
ProTube T2H-40-P	40
Weight	pounds [grams] .093 [42]
DIN 43880 Dimension	1 TE / .71" [18]
Packaging Dimensions (HxWxL)	3.2 x 4.5 x 12" [83 x 115 x 305 mm]
Standard Order Quantity	24 Units

inches
[mm]

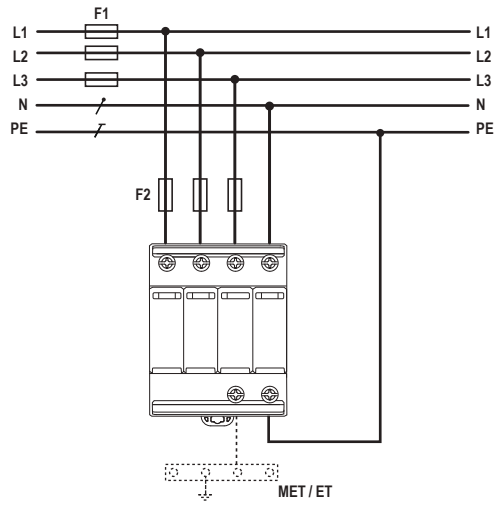
Pluggable Multi-pole SPD Connection Configurations

ProTec T2H & ProTube T2H

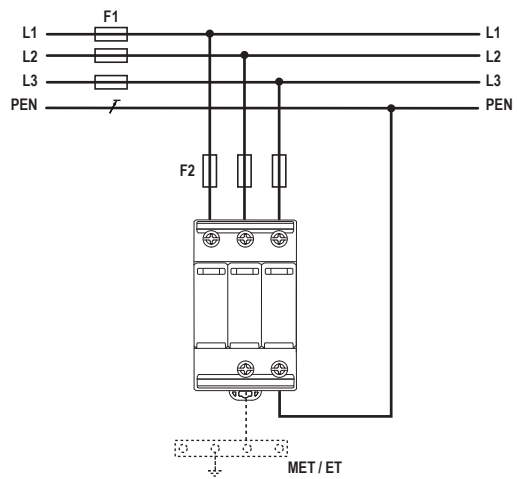
TN-S (Single-phase, 2+0, 1+1)



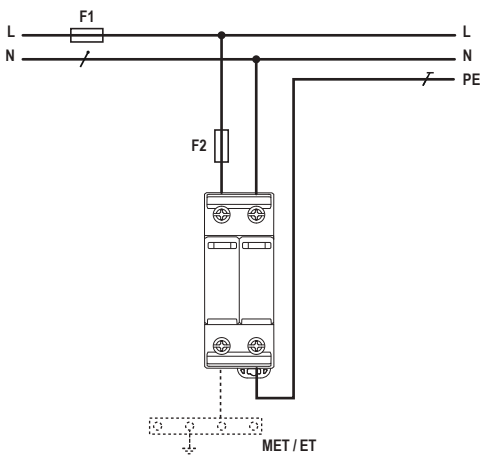
TN-S (Three-phase, 4+0, 3+1)



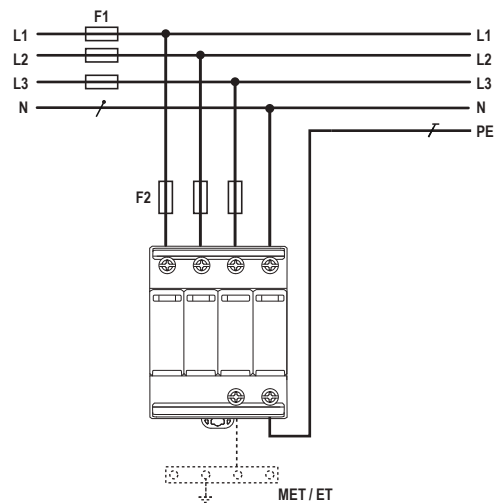
TN-C (Three-phase, 3+0)



TT (Single-phase, 1+1)



TT (Three-phase, 3+1)



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

Overcurrent Protection Rating for $I_{SCCR} = 50 \text{ kA}$

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

Overcurrent Protection Rating for $I_{SCCR} = 25 \text{ kA}$

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

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

Overvoltage Protection **ProTec T2**

Special features:

- Available in a wide variety of operating voltages 75V to 750V
- High Impulse Current capability using a single MOV
- Sensitive state-of-the-art thermal disconnecter
- Backup fuse up to 315AgG
- Short-circuit current rating up to 50kA
- Vibration and shock withstand capability
- VDE-IEC Class II / Type 2 certified and Open Type 1 SPD Listed
- All modules including N-PE with operating state green-red
- Optional remote contact (RC) signaling



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

ProTec T2 offers basic protection as a Type 2 surge protective device (SPD) that comes with an extended maximum continuous operating voltages (U_c) range that spans 75V up to 750V. With the Type 2 classification, ProTec T2 can be installed between boundaries Ob – 1 and higher. The varistor-based protection modules feature outstanding short-circuit currents up to $50kA_{RMS}$ without using a back-up to a main fuse nominal current of 315A. All modules are equipped with a state-of-the-art thermal disconnecter and life-status green-red monitoring indicators. A unique vibration-proof locking mechanism enables secure use in and high vibration environments. Besides the visual mechanical indicator, optional remote contacts (RC) feature a three-pole remote signaling terminal, which enables remote monitoring of the operating state of the device.

Overvoltage Protection

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
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA
 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	550*	750
IEC Electrical								
Nominal AC Voltage (50/60Hz)	U_o/U_n	60V	120V	240V	277V	400V	480V	600V
Maximum Continuous Operating Voltage (AC)	U_c	75V	150V	300V	350V	480V	550V	750V
Nominal Discharge Current (8/20 μ s)	I_n	20kA	20kA	20kA	20kA	20kA	20kA	20kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50kA	50kA	50kA	50kA	50kA	50kA	35kA
Voltage Protection Level	U_p	800V	1250V	1500V	1750V	2300V	2500V	3400V
Response Time	t_A	< 25ns						
Overcurrent Protection (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	697V	871V
TOV 120min	U_T	114V	229V	442V	529V	762V	915V	1143V
	mode	Withstand	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	550V	750V
Voltage Protection Rating	VPR	330V	600V	900V	1000V	1500V	2000V	2500V
Nominal Discharge Current (8/20 μ s)	I_n	20kA	20kA	20kA	20kA	20kA	20kA	20kA
Short-Circuit Current Rating (AC)	SCCR	100kA	200kA	150kA	200kA	200kA	200kA	200kA
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 [4000m]						
Terminal Screw Torque	M_{max}	39.9 lbf-in [4.5Nm]						
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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A						
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (Solid)						
Order Information								
Order Code		75	150	300	350	480	550*	750
ProTec T2-xxx-1+0		59.0069	59.0071	59.0073	59.0075	59.0077	59.0677	59.0079
ProTec T2-xxx-1+0-R (with remote contacts)		59.0070	59.0072	59.0074	59.0076	59.0078	59.0678	59.0080
ProTec T2-xxx-P (plug)		59.0063	59.0064	59.0065	59.0066	59.0067	59.0685	59.0068

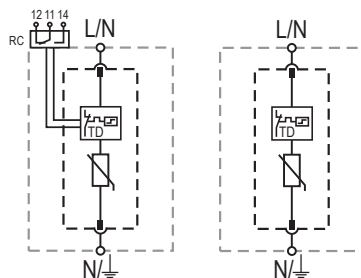
*UL listed, no IEC/EN certification.

ProTec T2 1+0

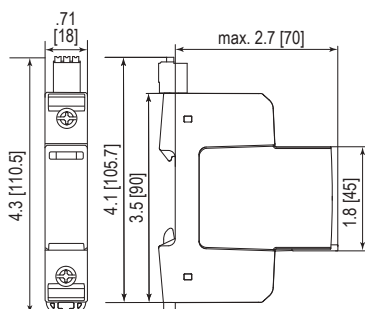
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏚ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit

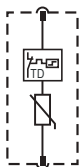


Complete Unit Dimensions & Packaging

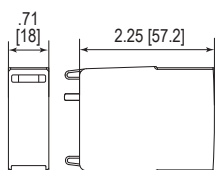
ProTec T2-xxx-1+0	75	150	300	350	480	550*	750
Weight	pounds	.259	.275	.281	.292	.306	.336
	grams	118	125	128	133	139	153
ProTec T2-xxx-1+0-R							
Weight	pounds	.275	.290	.297	.308	.321	.352
	grams	125	132	135	140	146	160
DIN 43880 Dimension	1 TE / .71" [18 mm]						
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]						
Standard Order Quantity	12 Units						

Plug Internal Configuration

ProTec T2-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

ProTec T2-xxx-P	75	150	300	350	480	550*	750
Weight	pounds	.108	.123	.130	.141	.154	.185
	grams	49	56	59	64	70	84
DIN 43880 Dimension	1 TE / .71" [18 mm]						
Packaging Dimensions (HxWxL)	3.2 x 4.5 x 12" [83 x 115 x 305 mm]						
Standard Order Quantity	24 Units						

inches
[mm]

Overvoltage Protection

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
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA
 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	550*	750
IEC Electrical								
Nominal AC Voltage (50/60Hz)	U_o/U_n	60V	120V	240V	277V	400V	480V	600V
Maximum Continuous Operating Voltage (AC)	U_c	75V	150V	300V	350V	480V	550V	750V
Nominal Discharge Current (8/20 μ s)	I_n	20kA	20kA	20kA	20kA	20kA	20kA	20kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50kA	50kA	50kA	50kA	50kA	50kA	35kA
Voltage Protection Level	U_p	800V	1250V	1500V	1750V	2300V	2500V	3400V
Response Time	t_A	< 25ns						
Overcurrent Protection (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	697V	871V
TOV 120min	U_T	114V	229V	442V	529V	762V	915V	1143V
	mode	Withstand	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	550V	750V
Voltage Protection Rating	VPR	330V	600V	900V	1000V	1500V	2000V	2500V
Nominal Discharge Current (8/20 μ s)	I_n	20kA	20kA	20kA	20kA	20kA	20kA	20kA
Short-Circuit Current Rating (AC)	SCCR	100kA	200kA	150kA	200kA	200kA	200kA	200kA
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 [4000m]						
Terminal Screw Torque	M_{max}	39.9 lbf-in [4.5Nm]						
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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A						
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (Solid)						
Order Information								
Order Code		75	150	300	350	480	550*	750
ProTec T2-xxx-2+0		59.0343	59.0081	59.0083	59.0085	59.0087	59.0679	59.0089
ProTec T2-xxx-2+0-R (with remote contacts)		59.0344	59.0082	59.0084	59.0086	59.0088	59.0680	59.0090
ProTec T2-xxx-P (plug)		59.0063	59.0064	59.0065	59.0066	59.0067	59.0685	59.0068

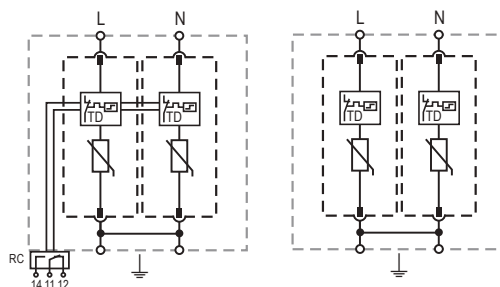
*UL listed, no IEC/EN certification.

ProTec T2 2+0

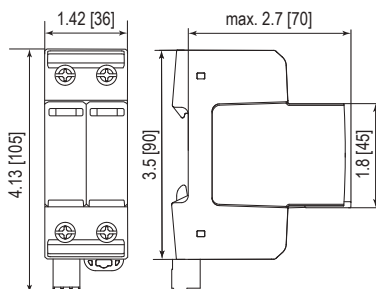
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏚ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter



Complete Unit

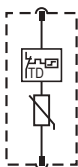


Complete Unit Dimensions & Packaging

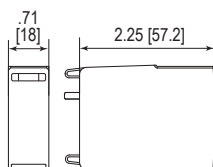
		75	150	300	350	480	550*	750
ProTec T2-xxx-2+0								
Weight	pounds	.505	.536	.549	.571	.598	.608	.660
	grams	229	243	249	259	271	276	299
ProTec T2-xxx-2+0-R								
Weight	pounds	.525	.556	.569	.591	.618	.639	.679
	grams	238	252	258	268	280	290	308
DIN 43880 Dimension		2 TE / 1.42" [36]						
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]						
Standard Order Quantity		7 Units						

Plug Internal Configuration

ProTec T2-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

		75	150	300	350	480	550*	750
ProTec T2-xxx-P								
Weight	pounds	.108	.123	.130	.141	.154	.163	.185
	grams	49	56	59	64	70	74	84
DIN 43880 Dimension		1 TE / .71" [18]						
Packaging Dimensions (HxWxL)		3.2 x 4.5 x 12" [83 x 115 x 305 mm]						
Standard Order Quantity		24 Units						

inches
[mm]

Overvoltage Protection

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
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA
 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	550*	750
IEC Electrical							
Nominal AC Voltage (50/60Hz)	U_o/U_n	120V	240V	277V	400V	480V	600V
Maximum Continuous Operating Voltage (AC)	U_c	150V	300V	350V	480V	550V	750V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50 kA	50 kA	50 kA	50 kA	50 kA	35 kA
Voltage Protection Level	U_p	1250V	1500V	1750V	2300V	2500V	3400V
Response Time	t_A	< 25 ns					
Overcurrent Protection (max)		315 A / 250 A gG					
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA / 50 kA					
TOV Withstand 5s	U_T	229V	337V	403V	581V	697V	871V
TOV 120min	U_T	229V	442V	529V	762V	915V	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	150V	300V	350V	480V	550V	750V
Voltage Protection Rating	VPR	600V	900V	1000V	1500V	2000V	2500V
Nominal Discharge Current (8/20 μ s)	I_n	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

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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A					
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (Solid)					

Order Information							
Order Code		150	300	350	480	550*	750
ProTec T2-xxx-3+0		59.0091	59.0093	59.0095	59.0097	59.0681	59.0099
ProTec T2-xxx-3+0-R (with remote contacts)		59.0092	59.0094	59.0096	59.0098	59.0682	59.0100
ProTec T2-xxx-P (plug)		59.0064	59.0065	59.0066	59.0067	59.0685	59.0068

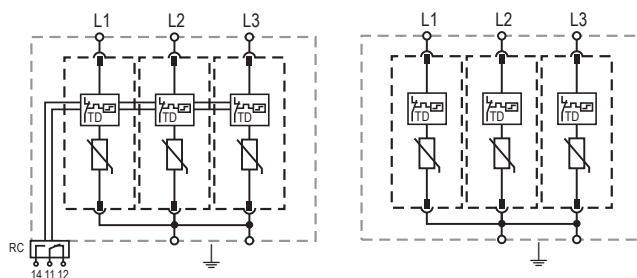
*UL listed, no IEC/EN certification.

ProTec T2 3+0

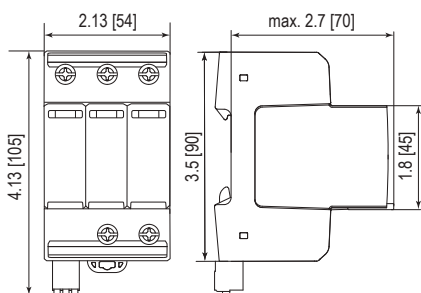
Internal Configuration

Legend

- L Line Conductor Terminal
- ⏏ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit

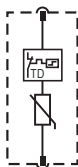


Complete Unit Dimensions & Packaging

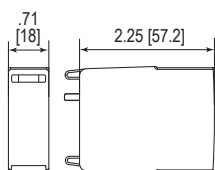
		150	300	350	480	550*	750
ProTec T2-xxx-3+0							
Weight	pounds	.780	.800	.833	.873	.890	.965
	grams	354	363	378	396	404	438
ProTec T2-xxx-3+0-R							
Weight	pounds	.800	.820	.853	.892	.913	.985
	grams	363	372	387	405	414	447
DIN 43880 Dimension		3 TE / 2.13" [54]					
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]					
Standard Order Quantity		5 Units					

Plug Internal Configuration

ProTec T2-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

		150	300	350	480	550*	750
ProTec T2-xxx-P							
Weight	pounds	.123	.130	.141	.154	.163	.185
	grams	56	59	64	70	74	84
DIN 43880 Dimension		1 TE / .71" [18]					
Packaging Dimensions (HxWxL)		3.2 x 4.5 x 12" [83 x 115 x 305 mm]					
Standard Order Quantity		24 Units					

inches
[mm]

Overvoltage Protection

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
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA
 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	550*
IEC Electrical						
Nominal AC Voltage (50/60Hz)	U_o/U_n	120V	240V	277V	400V	480V
Maximum Continuous Operating Voltage (AC)	U_c	150V	300V	350V	480V	550V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50 kA	50 kA	50 kA	50 kA	50 kA
Voltage Protection Level	U_p	1250V	1500V	1750V	2300V	2500V
Response Time	t_A	< 25 ns				
Overcurrent Protection (max)		315 A / 250 A gG				
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA / 50 kA				
TOV Withstand 5s	U_T	229V	337V	403V	581V	697V
TOV 120min	U_T	229V	442V	529V	762V	915V
	mode	Withstand	Safe Fail	Safe Fail	Safe Fail	Safe Fail
Number of Ports		1				
UL Electrical						
Maximum Continuous Operating Voltage (AC)	MCOV	150V	300V	350V	480V	550V
Voltage Protection Rating	VPR	600V	900V	1000V	1500V	2000V
Nominal Discharge Current (8/20 μ s)	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 [4000m]				
Terminal Screw Torque	M_{max}	39.9 lbf-in [4.5Nm]				
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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A				
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (Solid)				
Order Information						
Order Code		150	300	350	480	550*
ProTec T2-xxx-4+0		59.0101	59.0103	59.0300	59.0105	59.0683
ProTec T2-xxx-4+0-R (with remote contacts)		59.0102	59.0104	59.0301	59.0106	59.0684
ProTec T2-xxx-P (plug)		59.0064	59.0065	59.0066	59.0067	59.0685

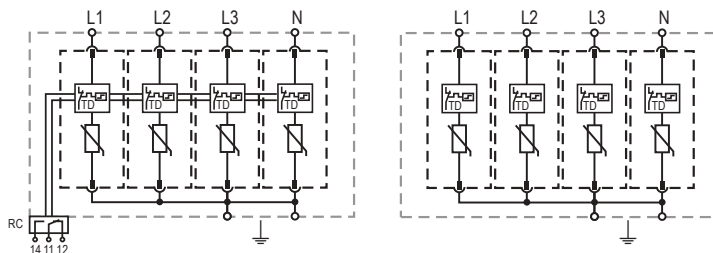
*UL listed, no IEC/EN certification.

ProTec T2 4+0

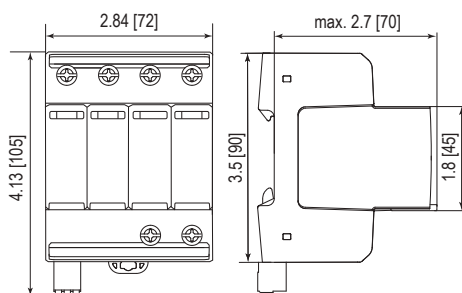
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit

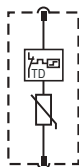


Complete Unit Dimensions & Packaging

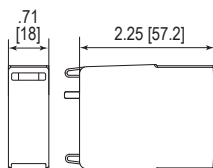
		150	300	350	480	550*
ProTec T2-xxx-4+0						
Weight	pounds	.989	1.015	1.059	1.112	1.208
	grams	448	460	480	504	548
ProTec T2-xxx-4+0-R						
Weight	pounds	1.008	1.035	1.079	1.132	1.228
	grams	457	469	489	513	557
DIN 43880 Dimension		4 TE / 2.84" [72]				
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]				
Standard Order Quantity		4 Units				

Plug Internal Configuration

ProTec T2-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

		150	300	350	480	550*
ProTec T2-xxx-P						
Weight	pounds	.123	.130	.141	.154	.163
	grams	56	59	64	70	74
DIN 43880 Dimension		1 TE / .71" [18]				
Packaging Dimensions (HxWxL)		3.2 x 4.5 x 12" [83 x 115 x 305 mm]				
Standard Order Quantity		24 Units				

inches
[mm]

Overvoltage Protection

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
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012
 UL 1449 4th Edition

Technical Data

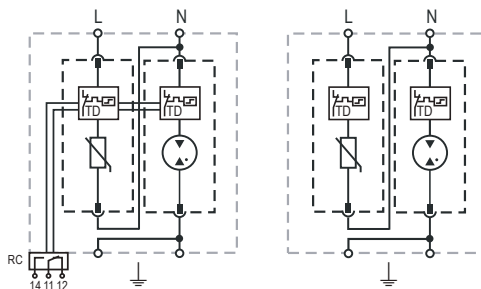
ProTec T2-xxx-1+1(-R)		75	150	300	350
IEC Electrical					
Nominal AC Voltage (50/60Hz)	U_o/U_n	60V	120V	240V	277V
Maximum Continuous Operating Voltage (AC)	(L-N) U_c	75V	150V	300V	350V
	(N-PE) U_c	305V	305V	305V	305V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_n	20kA / 40kA	20kA / 40kA	20kA / 40kA	20kA / 40kA
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}	50kA / 65kA	50kA / 65kA	50kA / 65kA	50kA / 65kA
Voltage Protection Level	(L-N)/(N-PE) U_p	800V / 1500V	1250V / 1500V	1500V / 1500V	1750V / 1500V
Follow Current Interrupt Rating	(N-PE) I_{fi}	100A _{RMS}			
Response Time	(L-N)/(N-PE) t_A	< 25 ns / < 100 ns			
Overcurrent Protection (max)		315 A / 250 A gG			
Short-Circuit Current Rating (AC)	(L-N) I_{SCCR}	25kA / 50kA			
TOV Withstand 5s	(L-N) U_T	114V	229V	337V	403V
	mode	Withstand	Withstand	Safe Fail	Safe Fail
TOV 120min	(L-N) U_T	114V	229V	442V	529V
	(N-PE) U_T	1200V			
Number of Ports		1			
UL Electrical					
Maximum Continuous Operating Voltage (AC)	(L-N)/(N-G) MCOV	75V / 305V	150V / 305V	300V / 305V	350V / 305V
Voltage Protection Rating	(L-N)/(N-G) VPR	330V / 1000V	600V / 1000V	900V / 1000V	1000V / 1000V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-G) I_n	20kA / 20kA			
Short-Circuit Current Rating (AC)	(L-N) SCCR	100kA	200kA	150kA	200kA
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 [4000m]			
Terminal Screw Torque	M_{max}	39.9 lbf-in [4.5Nm]			
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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A			
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 (plug L-N)		59.0063	59.0064	59.0065	59.0066
ProTube T2-40-P (plug N-PE)		59.0273	59.0273	59.0273	59.0273

ProTec T2 1+1

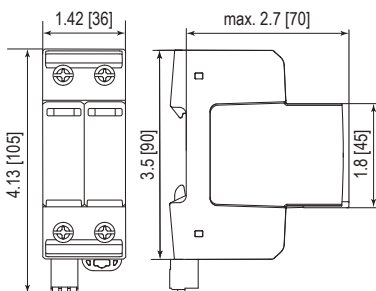
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏏ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter



Complete Unit

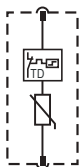


Complete Unit Dimensions & Packaging

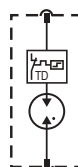
		75	150	300	350
ProTec T2-xxx-1+1					
Weight	pounds	.512	.527	.534	.545
	grams	232	239	242	247
ProTec T2-xxx-1+1-R					
Weight	pounds	.521	.536	.543	.554
	grams	236	243	246	251
DIN 43880 Dimension		2 TE / 1.42" [36]			
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]			
Standard Order Quantity		7 Units			

Plug Internal Configuration

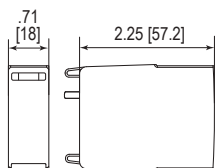
ProTec T2-xxx-P



ProTube T2-40-P



Spare Plug



Single Unit Dimensions & Packaging

		75	150	300	350
ProTec T2-xxx-P					
Weight	pounds	.108	.123	.130	.141
	grams	49	56	59	64
ProTube T2-40-P			40		
Weight	pounds		.093		
	grams		42		
DIN 43880 Dimension		1 TE / .71" [18]			
Packaging Dimensions (HxWxL)		3.2 x 4.5 x 12" [83 x 115 x 305 mm]			
Standard Order Quantity		24 Units			

inches
[mm]

Overvoltage Protection

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

Technical Data

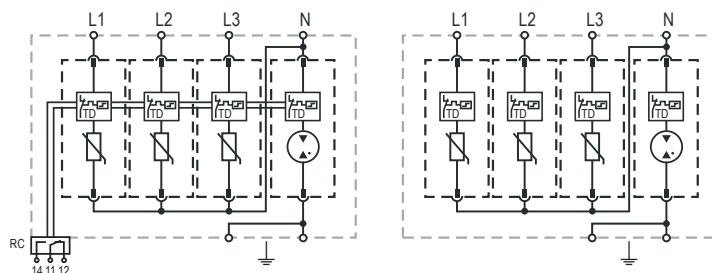
ProTec T2-xxx-3+1(-R)		300	350
IEC Electrical			
Nominal AC Voltage (50/60Hz)	U_o/U_n	240V	277V
Maximum Continuous Operating Voltage (AC)	(L-N) U_c	300V	350V
	(N-PE) U_c	305V	305V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_n	20kA / 40kA	20kA / 40kA
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}	50kA / 65kA	50kA / 65kA
Voltage Protection Level	(L-N)/(N-PE) U_p	1500V / 1500V	1750V / 1500V
Follow Current Interrupt Rating	(N-PE) I_{fi}	100A _{RMS}	
Response Time	(L-N)/(N-PE) t_A	< 25 ns / < 100 ns	
Overcurrent Protection (max)		315A / 250A gG	
Short-Circuit Current Rating (AC)	(L-N) I_{SCCR}	25kA / 50kA	
TOV Withstand 5s	(L-N) U_T	337V	403V
TOV 120min	(L-N) U_T mode	442V	529V
		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-G) MCOV	300V / 305V	350V / 305V
Voltage Protection Rating	(L-N)/(N-G) VPR	900V / 1000V	1000V / 1000V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-G) I_n	20kA / 20kA	
Short-Circuit Current Rating (AC)	(L-N) SCCR	150kA	200kA
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 [4000m]	
Terminal Screw Torque	M_{max}	39.9 lbf-in [4.5Nm]	
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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A	
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 (plug L-N)		59.0065	59.0066
ProTube T2-40-P (plug N-PE)		59.0273	59.0273

ProTec T2 3+1

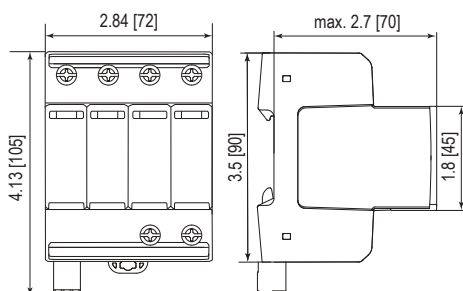
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit

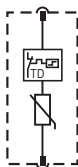


Complete Unit Dimensions & Packaging

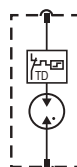
		300	350
ProTec T2-xxx-3+1			
Weight	pounds	1.000	1.033
	grams	453	468
ProTec T2-xxx-3+1-R			
Weight	pounds	1.011	1.044
	grams	458	473
DIN 43880 Dimension		4 TE / 2.84" [72]	
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]	
Standard Order Quantity		4 Units	

Plug Internal Configuration

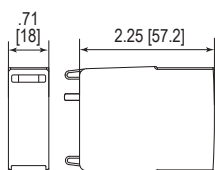
ProTec T2-xxx-P



ProTube T2-40-P



Spare Plug



Single Unit Dimensions & Packaging

		300	350
ProTec T2-xxx-P			
Weight	pounds	.130	.141
	grams	59	64
ProTube T2-40-P		40	
Weight	pounds	.093	
	grams	42	
DIN 43880 Dimension		1 TE / .71" [18]	
Packaging Dimensions (HxWxL)		3.2 x 4.5 x 12" [83 x 115 x 305 mm]	
Standard Order Quantity		24 Units	

inches
[mm]

Overvoltage Protection

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
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA
 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

Maximum Continuous Operating Voltage	U_c	305V
Nominal Discharge Current (8/20 μ s)	I_n	40kA
Maximum Discharge Current (8/20 μ s)	I_{max}	65kA
Voltage Protection Level	U_p	1500V
Follow Current Interrupt Rating	I_{fi}	100 A _{RMS}
Response Time	t_A	< 100 ns
TOV Withstand 200ms	U_T	1200V
Number of Ports		1

UL Electrical

Maximum Continuous Operating Voltage (AC)	MCOV	305V
Voltage Protection Rating	VPR	1000V
Nominal Discharge Current (8/20 μ s)	I_n	20kA

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 [4000m]
Terminal Screw Torque	M_{max}	39.9 lbf-in [4.5Nm]
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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (Solid)

Order Information

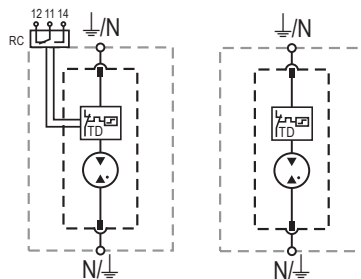
Order Code	40
ProTube T2-xxx-0+1	59.0280
ProTube T2-xxx-0+1-R (with remote contacts)	59.0336
ProTube T2-40-P (plug)	59.0273

ProTube T2 40 0+1

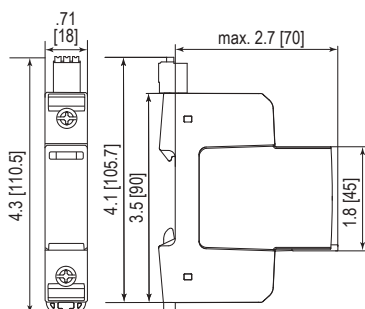
Internal Configuration

Legend

- N Neutral Conductor Terminal
- ⏏ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit

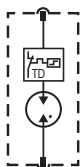


Complete Unit Dimensions & Packaging

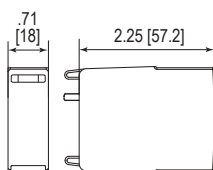
ProTube T2-xxx-0+1		40
Weight	pounds	.244
	grams	111
ProTube T2-xxx-0+1-R		
Weight	pounds	.259
	grams	118
DIN 43880 Dimension	1 TE / .71" [18]	
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]	
Standard Order Quantity	12 Units	

Plug Internal Configuration

ProTube T2-40-P



Spare Plug



Single Unit Dimensions & Packaging

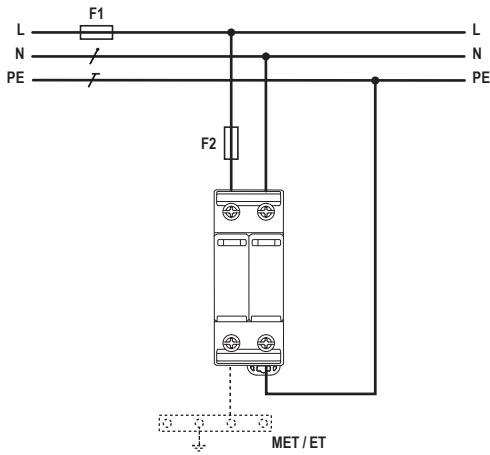
ProTube T2-40-P		40
Weight	pounds	.093
	grams	42
DIN 43880 Dimension	1 TE / .71" [18]	
Packaging Dimensions (HxWxL)	3.2 x 4.5 x 12" [83 x 115 x 305 mm]	
Standard Order Quantity	24 Units	

inches
[mm]

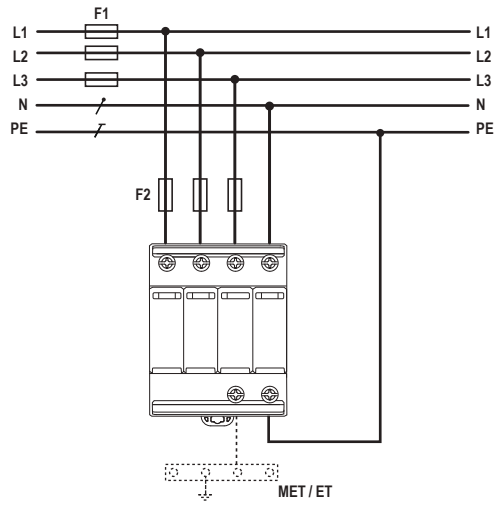
Pluggable Multi-pole SPD Connection Configurations

ProTec T2 Series

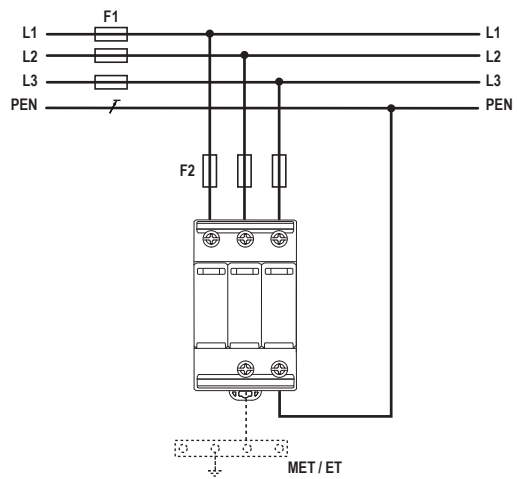
TN-S (Single-phase, 2+0, 1+1)



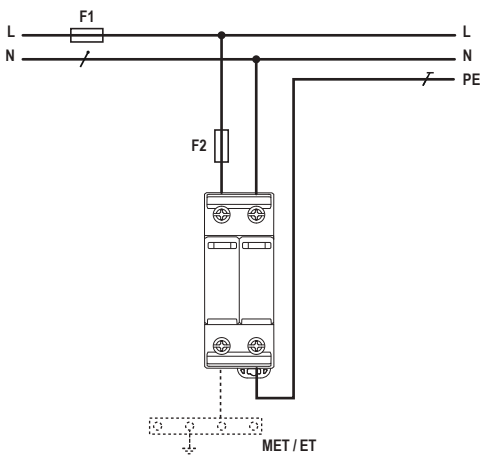
TN-S (Three-phase, 4+0, 3+1)



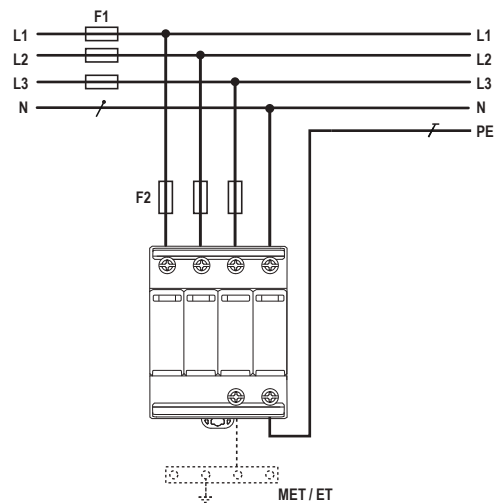
TN-C (Three-phase, 3+0)



TT (Single-phase, 1+1)



TT (Three-phase, 3+1)



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

Overcurrent Protection Rating for $I_{SCCR} = 50 \text{ kA}$

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

Overcurrent Protection Rating for $I_{SCCR} = 25 \text{ kA}$

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

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

Overvoltage Protection **ProTec T2-ADV**

Special features:

- Early warning system with clear green-yellow-red indicators
- Available in a wide variety of operating voltages from 75V to 480V
- High surge maximum discharge current capability of 50kA
- State-of-the-art thermal disconnecter
- Backup fuse up to 315 AgG
- Vibration and shock withstand capability
- Optional remote contact (RC) signaling
- VDE-IEC Class II / EN Type 2 certified and Open Type 1 SPD Listed



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

ProTec T2-ADV features an advanced three-stage life status indicator showing an intermediate degradation status before the arrester's end-of-life state, thus indicating possible problems or needed maintenance from overvoltage activity, before complete failure. During the SPDs end-of-life transition, green→yellow→red, the connected equipment is continually protected against fatal overvoltage effects. The specially treated autonomous varistors provide reliable determination of the first switching disconnecter, and the redundancy of two powerful separate varistors, both of which are functionally connected provide a unique safety advantage. These safety reserve systems are imperative for the growing need for notifications or alerts when changes in conditions occur, and are ideally suited in a variety of environments that protect critical infrastructure. In addition to the visual mechanical indicator, optional remote contacts (RC) feature a three-pole remote signaling terminal, enabling remote monitoring of the operating state of the device.

Overvoltage Protection

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
IEC/EN/UL Category: Class II / Type 2 / Type 1CA
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	60V	120V	240V	277V	400V
Maximum Continuous Operating Voltage (AC)	U_c	75V	150V	300V	350V	480V
Nominal Discharge Current (8/20 μ s)	I_n	20kA	20kA	20kA	20kA	20kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50kA	50kA	50kA	50kA	50kA
Voltage Protection Level	U_p	600V	1000V	1300V	1700V	2000V
Response Time	t_A			< 25ns		
Overcurrent Protection (max)				160A gG		
Short-Circuit Current Rating (AC)	I_{SCCR}			50kA		
TOV Withstand 5s	U_T	114V	229V	337V	403V	581V
TOV 120min	U_T	114V	229V	442V	528V	762V
	mode	Withstand	Withstand	Safe Fail	Safe Fail	Safe Fail
Number of Ports				1		

UL Electrical

Maximum Continuous Operating Voltage (AC)	MCOV	75V	150V	300V	350V	480V
Voltage Protection Rating	VPR	400V	600V	900V	1200V	1500V
Nominal Discharge Current (8/20 μ s)	I_n	20kA	20kA	20kA	20kA	20kA
Short-Circuit Current Rating (AC)	SCCR	100kA	200kA	150kA	200kA	200kA

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 [4000m]				
Terminal Screw Torque	M_{max}	39.9 lbf-in [4.5Nm]				
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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A				
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (Solid)				

Order Information

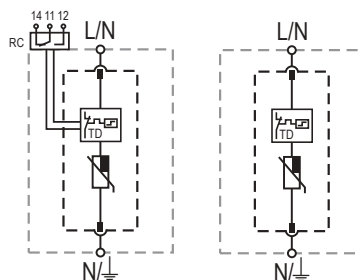
Order Code	75	150	300	350	480
ProTec T2-ADV-xxx-1+0	59.0208	59.0210	59.0212	59.0214	59.0216
ProTec T2-ADV-xxx-1+0-R (with remote contacts)	59.0209	59.0211	59.0213	59.0215	59.0217
ProTec T2-ADV-xxx-P (plug)	59.0202	59.0203	59.0204	59.0205	59.0206

ProTec T2-ADV 1+0

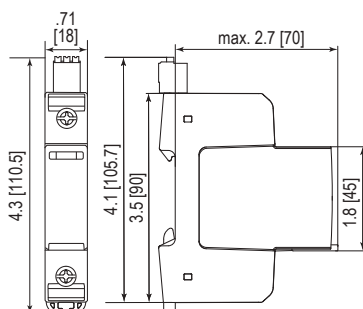
Internal Configuration

Legend

- L Line Conductor Terminal
- ⏚ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



Complete Unit Dimensions & Packaging

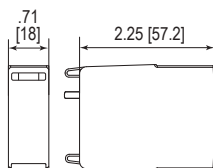
		75	150	300	350	480
Weight	pounds	.266	.275	.291	.302	.304
	grams	121	125	132	137	144
ProTec T2-ADV-xxx-1+0-R						
Weight	pounds	.283	.291	.306	.317	.328
	grams	128	132	139	144	149
DIN 43880 Dimension		1 TE / .71" [18]				
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]				
Standard Order Quantity		12 Units				

Plug Internal Configuration

ProTec T2-ADV-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

		75	150	300	350	480
Weight	pounds	.120	.127	.143	.154	.165
	grams	54	58	65	70	75
DIN 43880 Dimension		1 TE / .71" [18]				
Packaging Dimensions (HxWxL)		3.2 x 4.5 x 12" [83 x 115 x 305 mm]				
Standard Order Quantity		24 Units				

inches
[mm]

Overvoltage Protection

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

Technical Data

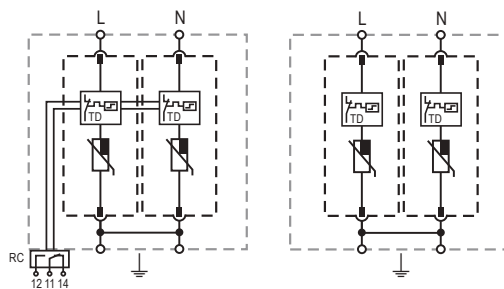
ProTec T2-ADV-xxx-2+0(-R)		75	150	300	350	480
IEC Electrical						
Nominal AC Voltage (50/60Hz)	U_o/U_n	60V	120V	240V	277V	400V
Maximum Continuous Operating Voltage (AC)	U_c	75V	150V	300V	350V	480V
Nominal Discharge Current (8/20 μ s)	I_n	20kA	20kA	20kA	20kA	20kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50kA	50kA	50kA	50kA	50kA
Voltage Protection Level	U_p	600V	1000V	1300V	1700V	2000V
Response Time	t_A	< 25ns				
Overcurrent Protection (max)		160A gG				
Short-Circuit Current Rating (AC)	I_{SCCR}	50kA				
TOV Withstand 5s	U_T	114V	229V	337V	403V	581V
TOV 120min	U_T	114V	229V	442V	528V	762V
	mode	Withstand	Withstand	Safe Fail	Safe Fail	Safe Fail
Number of Ports		1				
UL Electrical						
Maximum Continuous Operating Voltage (AC)	MCOV	75V	150V	300V	350V	480V
Voltage Protection Rating	VPR	400V	600V	900V	1200V	1500V
Nominal Discharge Current (8/20 μ s)	I_n	20kA	20kA	20kA	20kA	20kA
Short-Circuit Current Rating (AC)	SCCR	100kA	200kA	150kA	200kA	200kA
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 [4000m]				
Terminal Screw Torque	M_{max}	39.9 lbf-in [4.5Nm]				
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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A				
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (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 (plug)		59.0202	59.0203	59.0204	59.0205	59.0206

ProTec T2-ADV 2+0

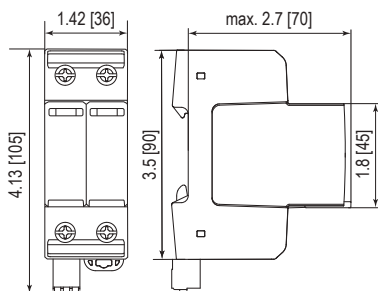
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏚ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit

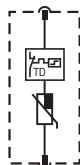


Complete Unit Dimensions & Packaging

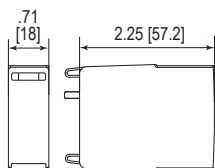
		75	150	300	350	480	
ProTec T2-ADV-xxx-2+0	Weight						
		pounds	.524	.542	.573	.595	.617
		grams	238	246	260	270	280
ProTec T2-ADV-xxx-2+0-R							
ProTec T2-ADV-xxx-2+0-R	Weight						
		pounds	.555	.573	.590	.626	.648
		grams	252	260	268	284	294
DIN 43880 Dimension		2 TE / 1.42" [36]					
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]					
Standard Order Quantity		7 Units					

Plug Internal Configuration

ProTec T2-ADV-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

		75	150	300	350	480	
ProTec T2-ADV-xxx-P	Weight						
		pounds	.120	.127	.143	.154	.165
		grams	54	58	65	70	75
DIN 43880 Dimension		1 TE / .71" [18]					
Packaging Dimensions (HxWxL)		3.2 x 4.5 x 12" [83 x 115 x 305 mm]					
Standard Order Quantity		24 Units					

inches
[mm]

Overvoltage Protection

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
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA
 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 μ s)	I_n	20 kA	20 kA	20 kA	20 kA
Maximum Discharge Current (8/20 μ s)	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			
Overcurrent Protection (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 μ s)	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 (max)		13123 ft [4000m]			
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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A			
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (Solid)			

Order Information

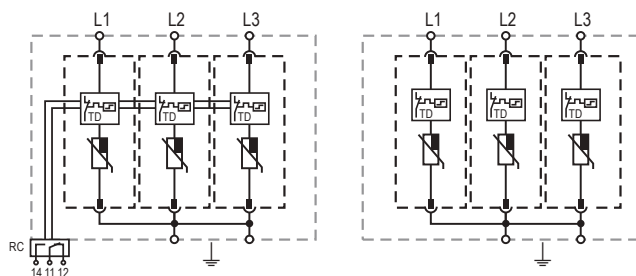
Order Code	150	300	350	480
ProTec T2-ADV-xxx-3+0	59.0228	59.0230	59.0232	59.0234
ProTec T2-ADV-xxx-3+0-R (with remote contacts)	59.0229	59.0231	59.0233	59.0235
ProTec T2-ADV-xxx-P (plug)	59.0203	59.0204	59.0205	59.0206

ProTec T2-ADV 3+0

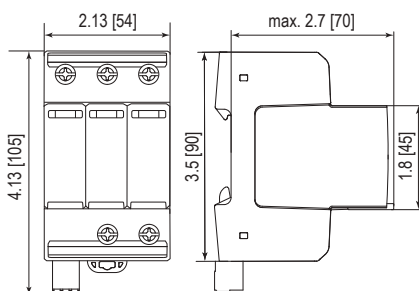
Internal Configuration

Legend

- L Line Conductor Terminal
- ⊥ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit

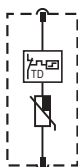


Complete Unit Dimensions & Packaging

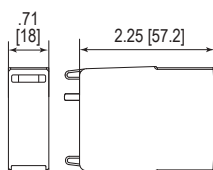
		150	300	350	480
Weight	pounds	.787	.833	.866	.899
	grams	357	378	393	408
		ProTec T2-ADV-xxx-3+0-R			
Weight	pounds	.809	.855	.888	.921
	grams	367	388	403	418
DIN 43880 Dimension		3 TE / 2.13" [54]			
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]			
Standard Order Quantity		5 Units			

Plug Internal Configuration

ProTec T2-ADV-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

		150	300	350	480
Weight	pounds	.127	.143	.154	.165
	grams	58	65	70	75
DIN 43880 Dimension		1 TE / .71" [18]			
Packaging Dimensions (HxWxL)		3.2 x 4.5 x 12" [83 x 115 x 305 mm]			
Standard Order Quantity		24 Units			

inches
[mm]

Overvoltage Protection

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
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA
 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 μ s)	I_n	20 kA	20 kA	20 kA	20 kA
Maximum Discharge Current (8/20 μ s)	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			
Overcurrent Protection (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 μ s)	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 (max)		13123 ft [4000m]			
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: 250V / 1A, 125V / 1A; DC: 48V / 0.5A, 24V / 0.5A, 12V / 0.5A			
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (Solid)			

Order Information

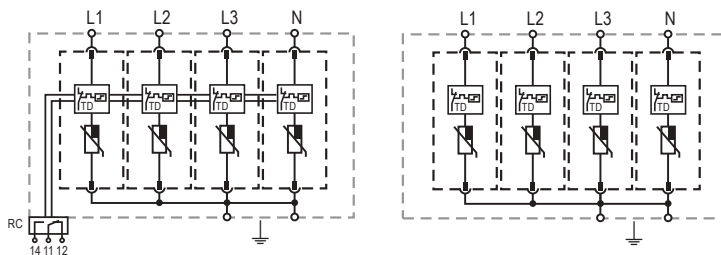
Order Code	150	300	350	480
ProTec T2-ADV-xxx-4+0	59.0236	59.0238	59.0240	59.0242
ProTec T2-ADV-xxx-4+0-R (with remote contacts)	59.0237	59.0239	59.0241	59.0243
ProTec T2-ADV-xxx-P (plug)	59.0203	59.0204	59.0205	59.0206

ProTec T2-ADV 4+0

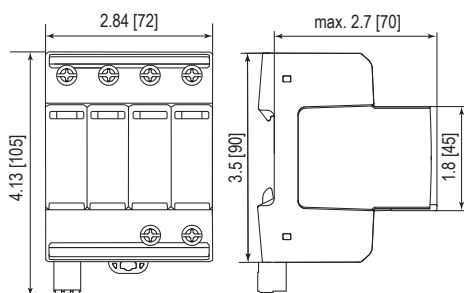
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit

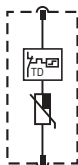


Complete Unit Dimensions & Packaging

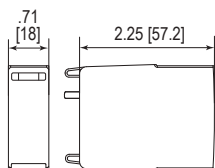
		150	300	350	480	
ProTec T2-ADV-xxx-4+0	Weight	pounds	1.067	1.128	1.172	1.216
		grams	484	512	532	552
ProTec T2-ADV-xxx-4+0-R						
Weight	pounds	1.086	1.148	1.192	1.236	
	grams	493	521	541	561	
DIN 43880 Dimension	4 TE / 2.84" [72]					
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]					
Standard Order Quantity	4 Units					

Plug Internal Configuration

ProTec T2-ADV-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

		150	300	350	480	
ProTec T2-ADV-xxx-P	Weight	pounds	.127	.143	.154	.165
		grams	58	65	70	75
DIN 43880 Dimension	1 TE / .71" [18]					
Packaging Dimensions (HxWxL)	3.2 x 4.5 x 12" [83 x 115 x 305 mm]					
Standard Order Quantity	24 Units					

inches
[mm]

Overvoltage Protection

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
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA
 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 μ s)	(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 μ s)	(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	600V / 1500V	1000V / 1500V	1300V / 1500V	1700V / 1500V
Follow Current Interrupt Rating	(N-PE) I_{fi}		100 A _{RMS}		
Response Time	(L-N)/(N-PE) t_A		< 25 ns / < 100 ns		
Overcurrent Protection (max)			160 A gG		
Short-Circuit Current Rating (AC)	I_{SCCR}		50 kA		
TOV Withstand 5s	(L-N) U_T	114V	229V	337V	403V
	mode	Withstand	Withstand	Safe Fail	Safe Fail
TOV 120min	(L-N) U_T	114V	229V	442V	528V
	(N-PE) U_T			1200V	
TOV Withstand 200ms	(N-PE) U_T			1200V	
Number of Ports			1		

UL Electrical

Maximum Continuous Operating Voltage (AC)	(L-N)/(N-G) MCOV	75V / 305V	150V / 305V	300V / 305V	350V / 305V
Voltage Protection Rating	(L-N)/(N-G) VPR	400V / 1000V	600V / 1000V	900V / 1000V	1200V / 1000V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-G) 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 (max)		13123 ft [4000m]			
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: 250V / 1A, 125V / 1A; DC: 48V / 0.5A, 24V / 0.5A, 12V / 0.5A			
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (Solid)			

Order Information

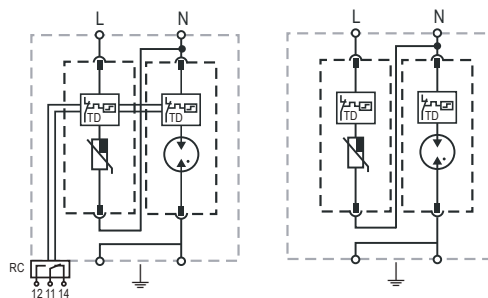
Order Code	75	150	300	350
ProTec T2-ADV-xxx-1+1	59.0244	59.0246	59.0248	59.0250
ProTec T2-ADV-xxx-1+1-R (with remote contacts)	59.0245	59.0247	59.0249	59.0251
ProTec T2-ADV-xxx-P (plug L-N)	59.0202	59.0203	59.0204	59.0205
ProTube T2-ADV-40-P (plug N-PE)	59.0275	59.0275	59.0275	59.0275

ProTec T2-ADV 1+1

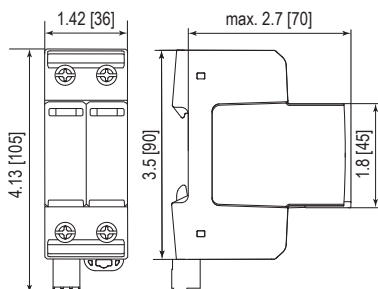
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏚ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit



Complete Unit Dimensions & Packaging

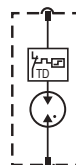
		75	150	300	350
ProTec T2-ADV-xxx-1+1	Weight				
	pounds	.500	.509	.524	.535
	grams	227	231	238	243
<hr/>					
ProTec T2-ADV-xxx-1+1-R					
Weight	pounds	.513	.522	.537	.548
	grams	233	237	244	249
<hr/>					
DIN 43880 Dimension		2 TE / 1.42" [36]			
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]			
Standard Order Quantity		7 Units			

Plug Internal Configuration

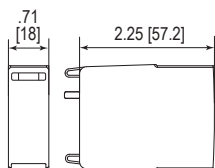
ProTec T2-ADV-xxx-P



ProTube T2-ADV-40-P



Spare Plug



Single Unit Dimensions & Packaging

		75	150	300	350
ProTec T2-ADV-xxx-P	Weight				
	pounds	.120	.127	.143	.154
	grams	54	58	65	70
<hr/>					
ProTube T2-ADV-40-P			40		
Weight	pounds		.093		
	grams		42		
<hr/>					
DIN 43880 Dimension		1 TE / .71" [18]			
Packaging Dimensions (HxWxL)		3.2 x 4.5 x 12" [83 x 115 x 305 mm]			
Standard Order Quantity		24 Units			

inches
[mm]

Overvoltage Protection

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
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA
 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

Parameter	Symbol	300	350
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 μ s)	(L-N)/(N-PE) I_n	20 kA / 40 kA	20 kA / 40 kA
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}	50 kA / 65 kA	50 kA / 65 kA
Voltage Protection Level	(L-N)/(N-PE) U_p	1300V / 1500V	1700V / 1500V
Follow Current Interrupt Rating	(N-PE) I_{fi}	100 A _{RMS}	
Response Time	(L-N)/(N-PE) t_A	< 25 ns / < 100 ns	
Overcurrent Protection (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	mode	Safe Fail
		mode	Safe Fail
TOV Withstand 200ms	(N-PE) U_T	1200V	
Number of Ports		1	

UL Electrical

Parameter	Symbol	300	350
Maximum Continuous Operating Voltage (AC)	(L-N)/(N-G) MCOV	300V / 305V	350V / 305V
Voltage Protection Rating	(L-N)/(N-G) VPR	900V / 1000V	1200V / 1000V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-G) 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 (max)		13123 ft [4000m]	
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		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 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 mm ² (Solid)	

Order Information

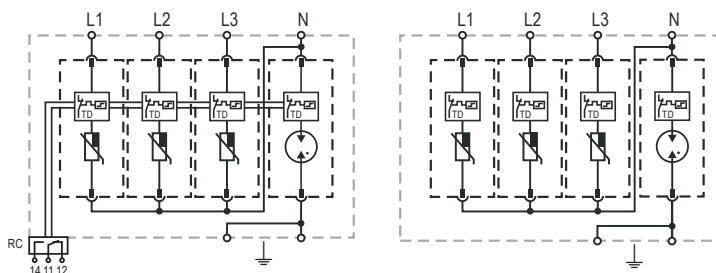
Order Code	300	350
ProTec T2-ADV-xxx-3+1	59.0256	59.0258
ProTec T2-ADV-xxx-3+1-R (with remote contacts)	59.0257	59.0259
ProTec T2-ADV-xxx-P (plug L-N)	59.0204	59.0205
ProTube T2-ADV-40-P (plug N-PE)	59.0275	59.0275

ProTec T2-ADV 3+1

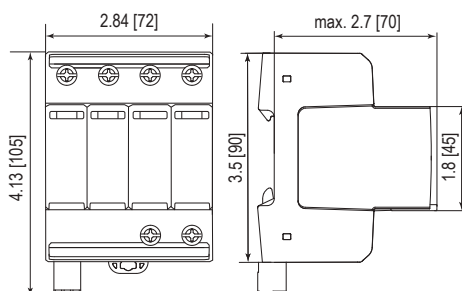
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit

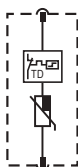


Complete Unit Dimensions & Packaging

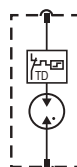
		300	350
ProTec T2-ADV-xxx-3+1	Weight	pounds 1.060	1.093]
		grams 481	496
<hr/>			
ProTec T2-ADV-xxx-3+1-R	Weight	pounds 1.080	1.113
		grams 490	505
DIN 43880 Dimension		4 TE / 2.84" [72]	
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]	
Standard Order Quantity		4 Units	

Plug Internal Configuration

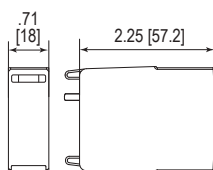
ProTec T2-ADV-xxx-P



ProTube T2-ADV-40-P



Spare Plug



Single Unit Dimensions & Packaging

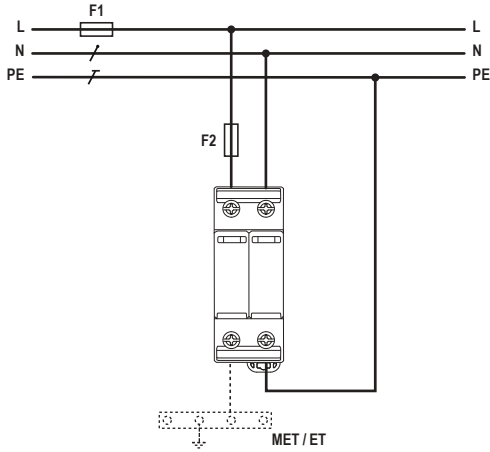
		300	350
ProTec T2-ADV-xxx-P	Weight	pounds .143	.154
		grams 65	70
<hr/>			
ProTube T2-ADV-40-P	Weight	pounds .093	40
		grams 42	
DIN 43880 Dimension		1 TE / .71" [18]	
Packaging Dimensions (HxWxL)		3.2 x 4.5 x 12" [83 x 115 x 305 mm]	
Standard Order Quantity		24 Units	

inches
[mm]

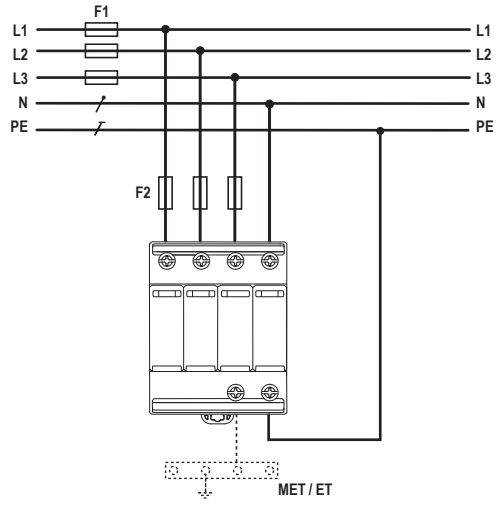
Pluggable Multi-pole SPD Connection Configurations

ProTec T2 ADV Series

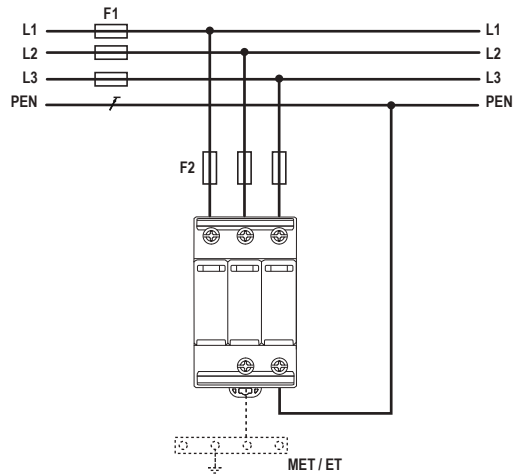
TN-S (Single-phase, 2+0, 1+1)



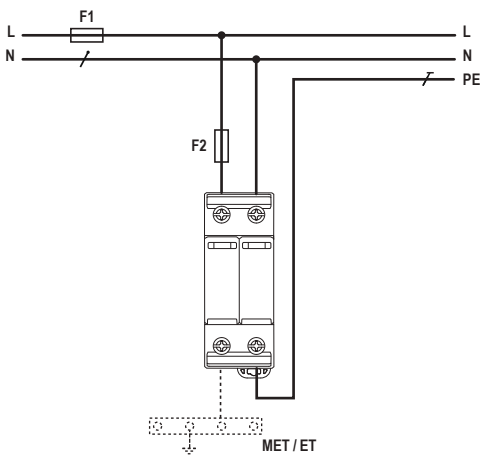
TN-S (Three-phase, 4+0, 3+1)



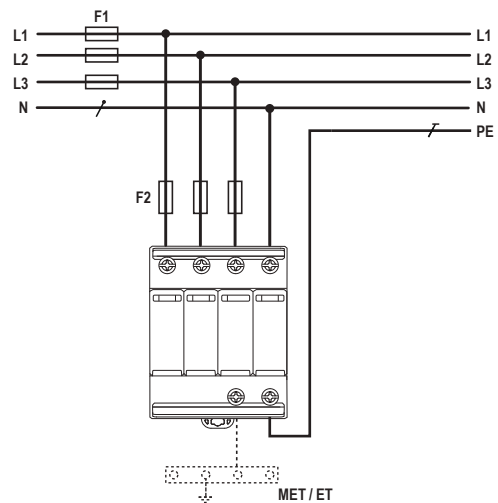
TN-C (Three-phase, 3+0)



TT (Single-phase, 1+1)



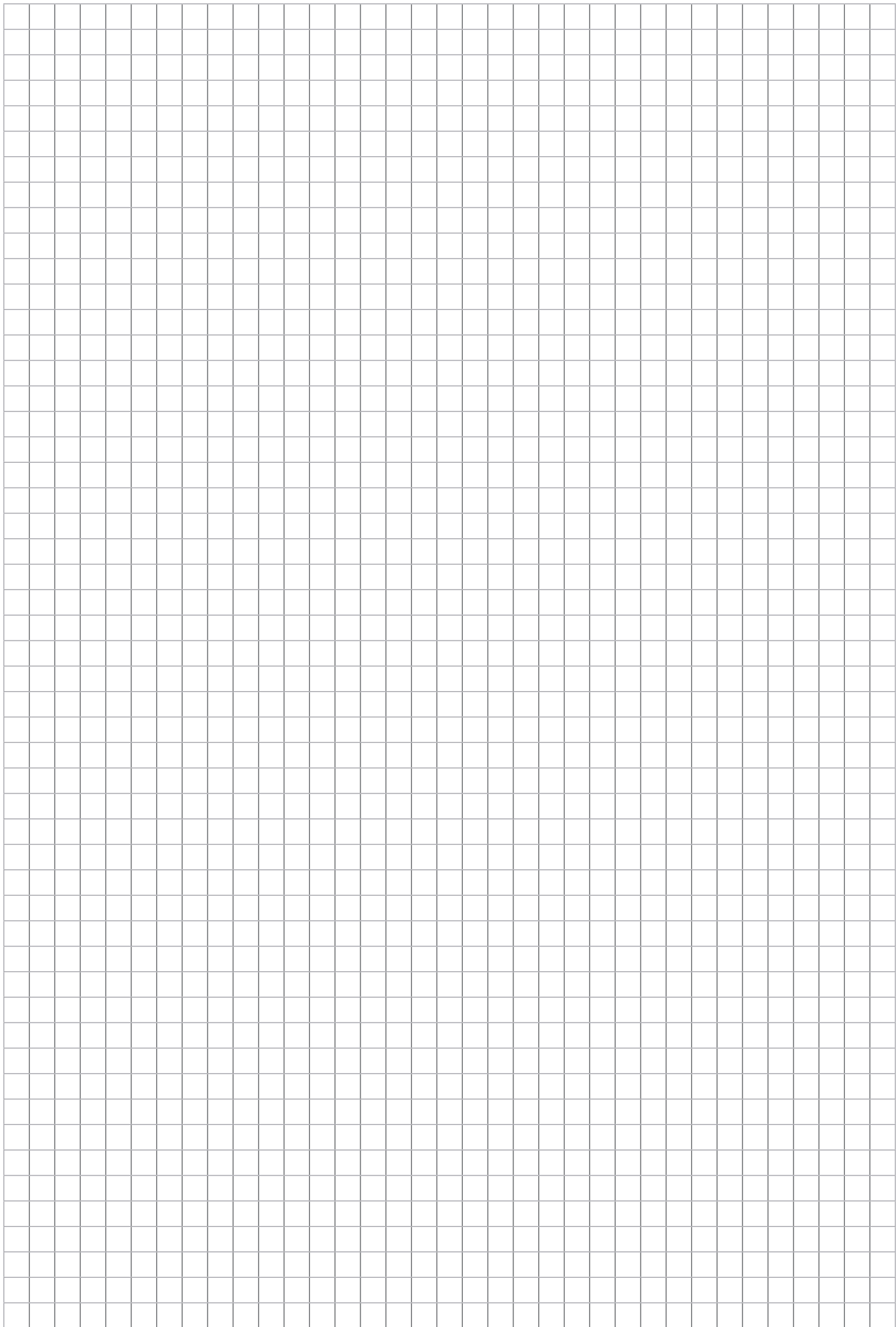
TT (Three-phase, 3+1)



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

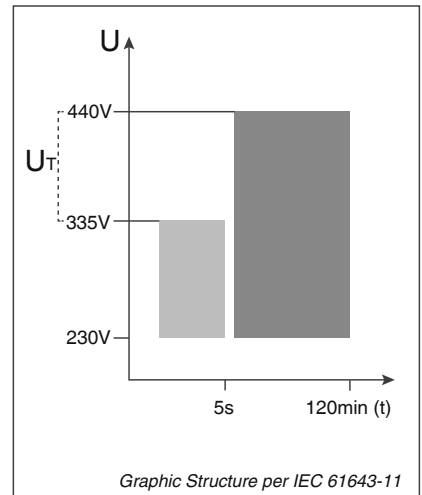
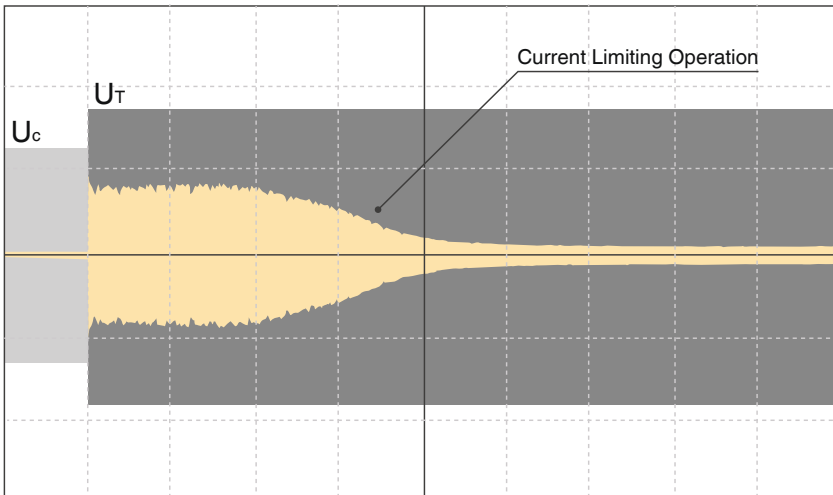
Overcurrent Protection Rating for $I_{SCCR} = 50 \text{ kA}$

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



SafeTec Technology

- Good protection level
- Industry standard DIN rail technology for situations where TOVs or switching transients are present on a distribution network
- Open circuit mode in combination with patented current limiting technology offers great immunity to TOVs
- 5-year warranty, 10-year life span
- Low-maintenance cost
- Pluggable installation
- Modular, pluggable, field replaceable modules



Temporary Overvoltages (TOV)

- Maximum Continuous Operating Voltage
- Temporary Overvoltage (TOV)
- Current Through SPD

- SafeTec TC Technology
- Conventional Technology

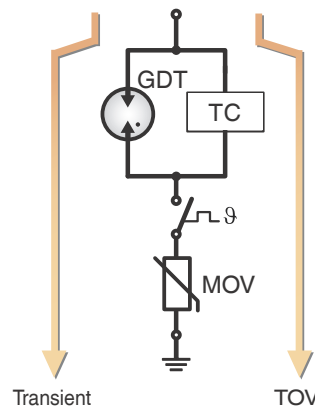
Two possible types of overvoltages may appear in the power supply network:

Transient overvoltages – switching operations, direct and indirect atmospheric discharges

Temporary overvoltages (TOVs) – last between 5 seconds and up to a few weeks, voltage amplitude can reach 173% U_{REF}

$$U_{REF} = U_0 \times 1,1$$

U_0 ... Nominal Line Voltage



Legend

- Transient Short duration
- TOV Long duration
- TC Thermal control function
- GDT Gas discharge tube
- MOV Metal-oxide varistor
- ⎓ Thermal disconnecter

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

Overvoltage Protection **SafeTec T2**

Special features:

- High temporary overvoltage (TOV) immunity
- High maximum discharge current capacity (I_{max}) of 50kA
- State-of-the-art thermal disconnecter
- Continuous power to the equipment at end-of-life (EOL)
- AC current up to 880V
- Back-up fuse up to 315A gG
- Short circuit current rating up to 50kA
- Vibration and shock withstand capability
- All modules, including N-PE with operating state green-red
- Optional remote contact (RC) signaling
- VDE-IEC Class II / EN Type 2 certified and Open Type 1 SPD Listed
- Worldwide patented thermal control (TC) technology
- Five year warranty



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

Temporary overvoltages (TOV) are by far the most frequent cause of arrester failure by abnormal overvoltages of the power network (50/60 Hz) with significant duration and amplitude. The SafeTec product family is a reliable solution for all transient overvoltages. This multi-purpose single pole arrester features the industry's widest range and an unprecedented level of integration, enabling power systems to have improved surge protection, simplified designs and lower overall costs. The patented thermal control (TC) technology function prolongs the lifespan of the SPDs, enables TOV immunity and provides low protection level, all at the same dimensions as conventional protective devices. The universal features of SafeTec make the technology suitable for protection of electrical devices not only against overvoltages caused by lightning strikes, but also by switching operations that originate from the internal power system. In addition to the visual mechanical indicator, the optional remote contact (RC) features a three-pole remote signaling terminal enabling remote monitoring of the operating state of the device.

Overvoltage Protection

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
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA
 Safety: Patented Current Limiting Technology
 Housing: Pluggable Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012
 UL 1449 4th Edition

Technical Data

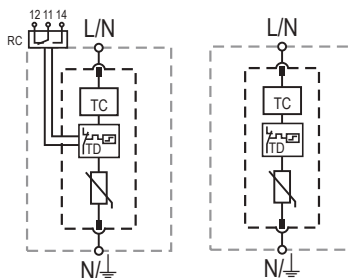
SafeTec T2-xxx-1+0(-R)		75	150	300	350	480	550	750	880
IEC Electrical									
Nominal AC Voltage (50/60Hz)	U_o/U_n	60V	120V	240V	277V	400V	400V	600V	600V
Maximum Continuous Operating Voltage (AC)	U_c	75V	150V	300V	350V	480V	550V	750V	880V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	35 kA	35 kA
Voltage Protection Level	U_p	800V	1250V	1650V	1750V	2300V	2500V	3500V	3600V
Response Time	t_A	< 25 ns							
Overcurrent Protection (max)		315 A/250 A gG							
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA/50 kA							
TOV Withstand 120min	U_T	150V	255V	442V	529V	762V	918V	1200V	1250V
Number of Ports		1							
UL Electrical									
Maximum Continuous Operating Voltage (AC)	MCOV	75V	150V	300V	350V	480V	550V	750V	880V
Voltage Protection Rating	VPR	600V	700V	1200V	1200V	1500V	1800V	2500V	2500V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
Short-Circuit Current Rating (AC)	SCCR	85 kA	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 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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A							
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (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 (plug)		59.0125	59.0126	59.0127	59.0128	59.0129	59.0299	59.0130	59.0131

SafeTec T2 1+0

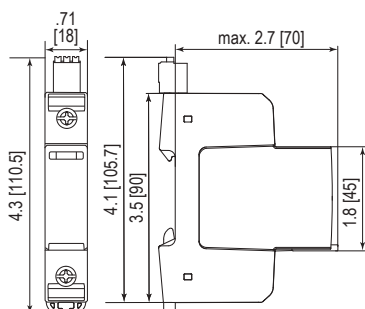
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TC Thermal Control Function
- TD Thermal Disconnect



Complete Unit

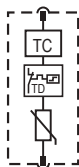


Complete Unit Dimensions & Packaging

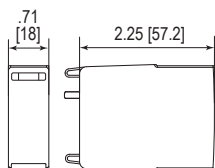
SafeTec T2-xxx-1+0	75	150	300	350	480	550	750	880	
Weight	pounds	.279	.290	.297	.314	.317	.328	.345	.350
	grams	127	132	135	143	144	149	157	159
SafeTec T2-xxx-1+0-R									
Weight	pounds	.295	.306	.312	.330	.332	.343	.361	.365
	grams	134	139	142	150	151	156	164	166
DIN 43880 Dimension	1 TE / .71" [18]								
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]								
Standard Order Quantity	12 Units								

Plug Internal Configuration

SafeTec T2-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

SafeTec T2-xxx-P	75	150	300	350	480	550	750	880	
Weight	pounds	.128	.139	.146	.163	.165	.176	.194	.198
	grams	58	63	66	74	75	80	88	90
DIN 43880 Dimension	1 TE / .71" [18]								
Packaging Dimensions (HxWxL)	3.2 x 4.5 x 12" [83 x 115 x 305 mm]								
Standard Order Quantity	24 Units								

inches
[mm]

Overvoltage Protection

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
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA
 Safety: Patented Current Limiting Technology
 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	60V	120V	240V	277V	400V	400V	600V	600V
Maximum Continuous Operating Voltage (AC)	U_c	75V	150V	300V	350V	480V	550V	750V	880V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	35 kA	35 kA
Voltage Protection Level	U_p	800V	1250V	1650V	1750V	2300V	2500V	3500V	3600V
Response Time	t_A	< 25 ns							
Overcurrent Protection (max)		315 A/250 A gG							
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA/50 kA							
TOV Withstand 120min	U_T	150V	255V	442V	529V	762V	918V	1200V	1250V
Number of Ports		1							

UL Electrical									
Maximum Continuous Operating Voltage (AC)	MCOV	75V	150V	300V	350V	480V	550V	750V	880V
Voltage Protection Rating	VPR	600V	700V	1200V	1200V	1500V	1800V	2500V	2500V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
Short-Circuit Current Rating (AC)	SCCR	85 kA	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 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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A							
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (Solid)							

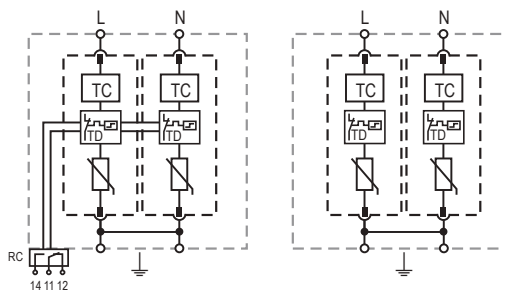
Order Information									
Order Code		75	150	300	350	480	550	750	880
SafeTec T2-xxx-2+0		59.0345	59.0148	59.0150	59.0152	59.0154	59.0156	59.0158	59.0160
SafeTec T2-xxx-2+0-R (with remote contacts)		59.0346	59.0149	59.0151	59.0153	59.0155	59.0157	59.0159	59.0161
SafeTec T2-xxx-P (plug)		59.0125	59.0126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

SafeTec T2 2+0

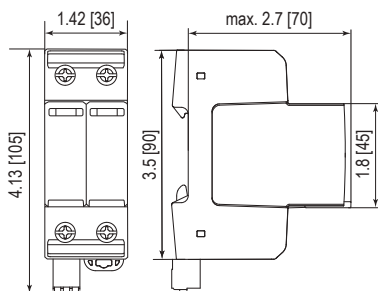
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏚ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TC Thermal Control Function
- TD Thermal Disconnect



Complete Unit

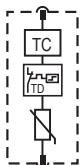


Complete Unit Dimensions & Packaging

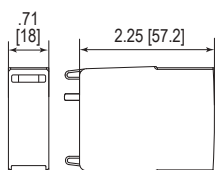
SafeTec T2-xxx-2+0	75	150	300	350	480	550	750	880	
Weight	pounds	.545	.567	.580	.616	.620	.642	.677	.686
	grams	247	257	263	279	281	291	307	311
SafeTecT2-xxx-2+0-R									
Weight	pounds	.565	.587	.600	.635	.640	.662	.697	.706
	grams	256	266	272	288	290	300	316	320
DIN 43880 Dimension	2 TE / 1.42" [36]								
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]								
Standard Order Quantity	7 Units								

Plug Internal Configuration

SafeTec T2-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

SafeTec T2-xxx-P	75	150	300	350	480	550	750	880	
Weight	pounds	.128	.139	.146	.163	.165	.176	.194	.198
	grams	58	63	66	74	75	80	88	90
DIN 43880 Dimension	1 TE / .71" [18]								
Packaging Dimensions (HxWxL)	3.2 x 4.5 x 12" [83 x 115 x 305 mm]								
Standard Order Quantity	24 Units								

inches
[mm]

Overvoltage Protection

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
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA
 Safety: Patented Current Limiting Technology
 Housing: Pluggable Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012
 UL 1449 4th Edition

Technical Data

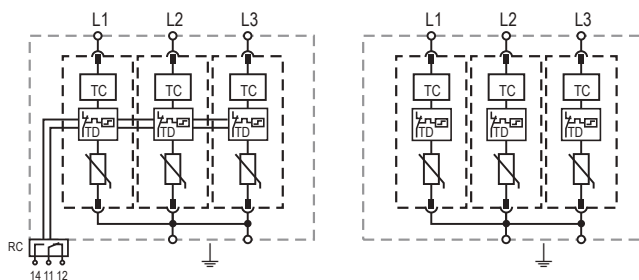
SafeTec T2-xxx-3+0(-R)		150	300	350	480	550	750	880
IEC Electrical								
Nominal AC Voltage (50/60Hz)	U_o/U_n	120 V	240 V	277 V	400 V	400 V	600 V	600 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	300 V	350 V	480 V	550 V	750 V	880 V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
Maximum Discharge Current (8/20 μ s)	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						
Overcurrent Protection (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 μ s)	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 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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A						
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (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 (plug)		59.0126	59.0127	59.0128	59.0129	59.0299	59.0130	59.0131

SafeTec T2 3+0

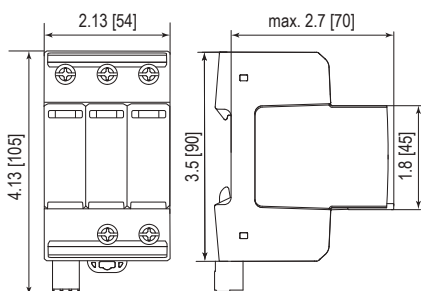
Internal Configuration

Legend

- L Line Conductor Terminal
- ⏏ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TC Thermal Control Function
- TD Thermal Disconnect



Complete Unit

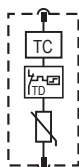


Complete Unit Dimensions & Packaging

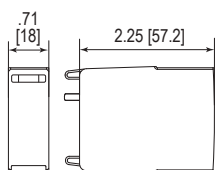
		150	300	350	480	550	750	880
Weight	pounds	.826	.846	.899	.906	.939	.992	1.005
	grams	375	384	408	411	426	450	456
SafeTecT2-xxx-3+0-R								
Weight	pounds	.846	.866	.919	.926	.959	1.011	1.025
	grams	384	393	417	420	435	459	465
DIN 43880 Dimension		3 TE / 2.13" [54]						
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]						
Standard Order Quantity		5 Units						

Plug Internal Configuration

SafeTec T2-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

		150	300	350	480	550	750	880
Weight	pounds	.139	.146	.163	.165	.176	.194	.198
	grams	63	66	74	75	80	88	90
DIN 43880 Dimension		1 TE / .71" [18]						
Packaging Dimensions (HxWxL)		3.2 x 4.5 x 12" [83 x 115 x 305 mm]						
Standard Order Quantity		24 Units						

SafeTec T2

Overvoltage Protection

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
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA
 Safety: Patented Current Limiting Technology
 Housing: Pluggable Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012
 UL 1449 4th Edition

Technical Data

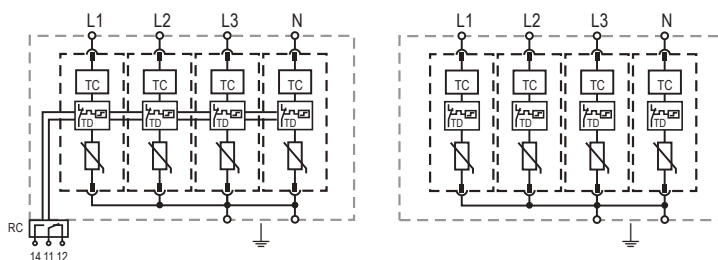
SafeTec T2-xxx-4+0(-R)		150	300	350	480	550
IEC Electrical						
Nominal AC Voltage (50/60Hz)	U_o/U_n	120V	240V	277V	400V	400V
Maximum Continuous Operating Voltage (AC)	U_c	150V	300V	350V	480V	550V
Nominal Discharge Current (8/20 μ s)	I_n	20kA	20kA	20kA	20kA	20kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50kA	50kA	50kA	50kA	50kA
Voltage Protection Level	U_p	1250V	1650V	1750V	2300V	2500V
Response Time	t_A	< 25 ns				
Overcurrent Protection (max)		315 A/250 A gG				
Short-Circuit Current Rating (AC)	I_{SCCR}	25kA/50kA				
TOV Withstand 120min	U_T	255V	442V	529V	762V	918V
Number of Ports		1				
UL Electrical						
Maximum Continuous Operating Voltage (AC)	MCOV	150V	300V	350V	480V	550V
Voltage Protection Rating	VPR	700V	1200V	1200V	1500V	1800V
Nominal Discharge Current (8/20 μ s)	I_n	20kA	20kA	20kA	20kA	20kA
Short-Circuit Current Rating (AC)	SCCR	200kA	150kA	200kA	200kA	200kA
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 [4000m]				
Terminal Screw Torque	M_{max}	39.9 lbf-in [4.5Nm]				
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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A				
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (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 (plug)		59.0126	59.0127	59.0128	59.0129	59.0299

SafeTec T2 4+0

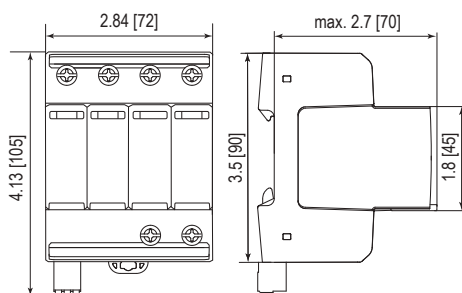
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TC Thermal Control Function
- TD Thermal Disconnect



Complete Unit

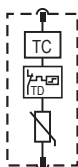


Complete Unit Dimensions & Packaging

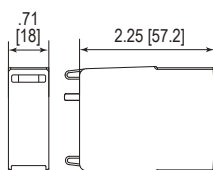
		150	300	350	480	550
Weight	pounds	1.050	1.077	1.147	1.156	1.200
	grams	476	488	520	524	544
SafeTec T2-xxx-4+0-R						
Weight	pounds	1.070	1.097	1.167	1.176	1.220
	grams	485	497	529	533	553
DIN 43880 Dimension		4 TE / 2.84" [72]				
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]				
Standard Order Quantity		4 Units				

Plug Internal Configuration

SafeTec T2-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

		150	300	350	480	550
Weight	pounds	.139	.146	.163	.165	.176
	grams	63	66	74	75	80
DIN 43880 Dimension		1 TE / .71" [18]				
Packaging Dimensions (HxWxL)		3.2 x 4.5 x 12" [83 x 115 x 305 mm]				
Standard Order Quantity		24 Units				

inches
[mm]

Overvoltage Protection
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
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA
 Safety: Patented Current Limiting Technology
 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	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 μ s)	(L-N)/(N-PE) I_n	20kA/40kA	20kA/40kA	20kA/40kA	20kA/40kA
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}	50kA/65kA	50kA/65kA	50kA/65kA	50kA/65kA
Voltage Protection Level	(L-N)/(N-PE) U_p	800V/1500V	1250V/1500V	1650V/1500V	1750V/1500V
Follow Current Interrupt Rating	(N-PE) I_{fi}			100 A _{RMS}	
Response Time	(L-N)/(N-PE) t_A		< 25 ns / < 100 ns		
Overcurrent Protection (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	150V	255V	442V	529V
TOV Withstand 200ms	(N-PE) U_T			1200V	
Number of Ports				1	

UL Electrical

Maximum Continuous Operating Voltage (AC)	(L-N)/(N-G) MCOV	75V/305V	150V/305V	300V/305V	350V/305V
Voltage Protection Rating	(L-N)/(N-G) VPR	600V/1000V	700V/1000V	1200V/1000V	1200V/1000V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-G) I_n			20kA/20kA	
Short-Circuit Current Rating (AC)	(L-N) SCCR	85kA	200kA	150kA	200kA

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 [4000m]			
Terminal Screw Torque	M_{max}	39.9 lbf-in [4.5Nm]			
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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A			
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (Solid)			

Order Information

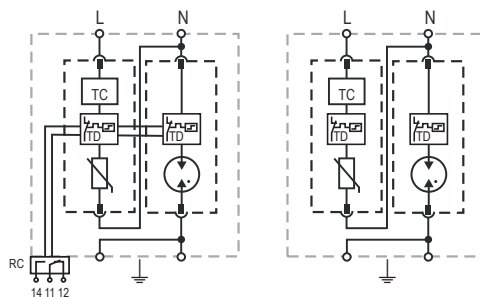
Order Code	75	150	300	350
SafeTec T2-xxx-1+1	59.0186	59.0188	59.0190	59.0192
SafeTec T2-xxx-1+1-R (with remote contacts)	59.0187	59.0189	59.0191	59.0193
SafeTec T2-xxx-P (plug L-N)	59.0125	59.0126	59.0127	59.0128
SafeTube T2-40-P (plug N-PE)	59.0274	59.0274	59.0274	59.0274

SafeTec T2 1+1

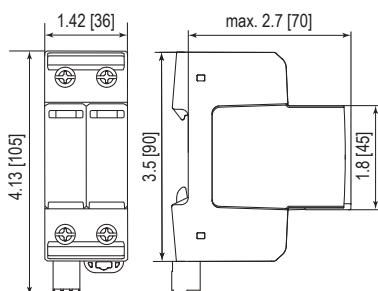
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TC Thermal Control Function
- TD Thermal Disconnect



Complete Unit

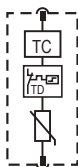


Complete Unit Dimensions & Packaging

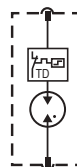
SafeTec T2-xxx-1+1	75	150	300	350	
Weight	pounds	.532	.543	.549	.567
	grams	241	246	249	257
SafeTec T2-xxx-1+1-R					
Weight	pounds	.541	.552	.558	.576
	grams	245	250	253	261
DIN 43880 Dimension	2 TE / 1.42" [36]				
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]				
Standard Order Quantity	7 Units				

Plug Internal Configuration

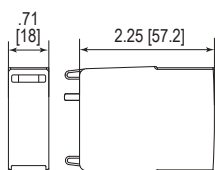
SafeTec T2-xxx-P



SafeTube T2-40-P



Spare Plug



Single Unit Dimensions & Packaging

SafeTec T2-xxx-P	75	150	300	350	
Weight	pounds	.128	.139	.146	.163
	grams	58	63	66	74
SafeTube T2-40-P					
Weight	pounds	.093			
	grams	42			
DIN 43880 Dimension	1 TE / .71" [18]				
Packaging Dimensions (HxWxL)	3.2 x 4.5 x 12" [83 x 115 x 305 mm]				
Standard Order Quantity	24 Units				

inches
[mm]

Overvoltage Protection

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
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA
 Safety: Patented Current Limiting Technology
 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	240V	277V
Maximum Continuous Operating Voltage (AC)	(L-N) U_c	300V	350V
	(N-PE) U_c	305V	305V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_n	20 kA/40 kA	20 kA/40 kA
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}	50 kA/65 kA	50 kA/65 kA
Voltage Protection Level	(L-N)/(N-PE) U_p	1650V/1500V	1750V/1500V
Follow Current Interrupt Rating	(N-PE) I_{fi}		100 A _{RMS}
Response Time	(L-N)/(N-PE) t_A		< 25 ns / < 100 ns
Overcurrent Protection (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	442V	529V
TOV Withstand 200ms	(N-PE) U_T		1200V
Number of Ports			1

UL Electrical

Maximum Continuous Operating Voltage (AC)	(L-N)/(N-PE) MCOV	300V/305V	350V/305V
Voltage Protection Rating	(L-N)/(N-PE) VPR	1200V/1000V	1200V/1000V
Nominal Discharge Current (8/20 μ s)	(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 (max)		13123 ft [4000m]	
Terminal Screw Torque	M_{max}	39.9 lbf-in [4.5Nm]	
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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A	
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (Solid)	

Order Information

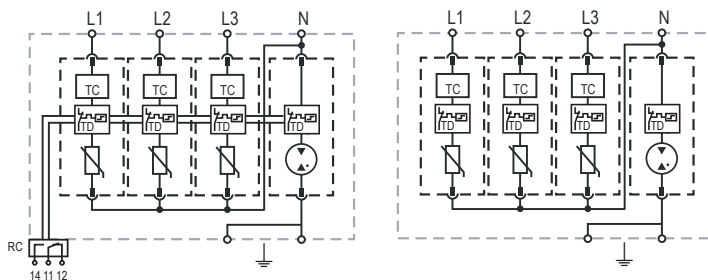
Order Code	300	350
SafeTec T2-xxx-3+1	59.0198	59.0200
SafeTec T2-xxx-3+1-R (with remote contacts)	59.0199	59.0201
SafeTec T2-xxx-P (plug L-N)	59.0127	59.0128
SafeTube T2-40-P (plug N-PE)	59.0274	59.0274

SafeTec T2 3+1

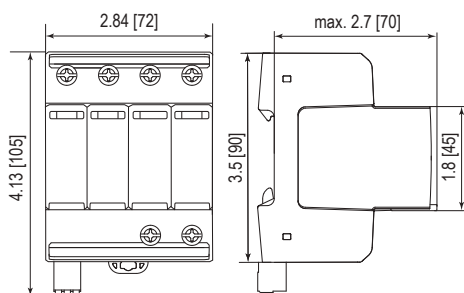
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TC Thermal Control Function
- TD Thermal Disconnect



Complete Unit

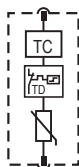


Complete Unit Dimensions & Packaging

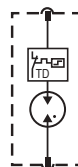
		300	350
SafeTec T2-xxx-3+1	Weight	pounds 1.046	1.099
		grams 474	498
SafeTec T2-xxx-3+1-R			
Weight	pounds	1.057	1.110
	grams	479	503
DIN 43880 Dimension	4 TE / 2.84" [72]		
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]		
Standard Order Quantity	4 Units		

Plug Internal Configuration

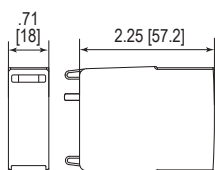
SafeTec T2-xxx-P



SafeTube T2-40-P



Spare Plug



Single Unit Dimensions & Packaging

		300	350
SafeTec T2-xxx-P	Weight	pounds .146	.163
		grams 66	74
SafeTube T2-40-P			40
Weight	pounds	.093	
	grams	42	
DIN 43880 Dimension	1 TE / .71" [18]		
Packaging Dimensions (HxWxL)	3.2 x 4.5 x 12" [83 x 115 x 305 mm]		
Standard Order Quantity	24 Units		

inches
[mm]



Overvoltage Protection

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
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA
 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

Maximum Continuous Operating Voltage	U_c	305V
Nominal Discharge Current (8/20 μ s)	I_n	40kA
Maximum Discharge Current (8/20 μ s)	I_{max}	65kA
Voltage Protection Level	U_p	1500V
Follow Current Interrupt Rating	I_{fi}	100 A _{RMS}
Response Time	t_A	< 100 ns
TOV Withstand 200ms	U_T	1200V
Number of Ports		1

UL Electrical

Maximum Continuous Operating Voltage (AC)	MCOV	305V
Voltage Protection Rating(N)	VPR	1000V
Nominal Discharge Current (8/20 μ s)	I_n	20kA

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 [4000m]
Terminal Screw Torque	M_{max}	39.9 lbf-in [4.5Nm]
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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5mm ² (Solid)

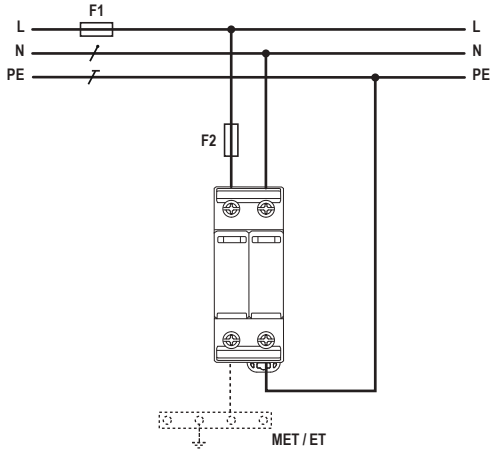
Order Information

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 (plug)		59.0274

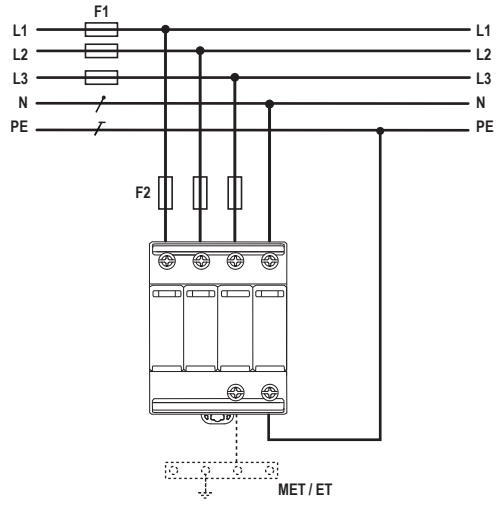
Pluggable Multi-pole SPD Connection Configurations

SafeTec T2

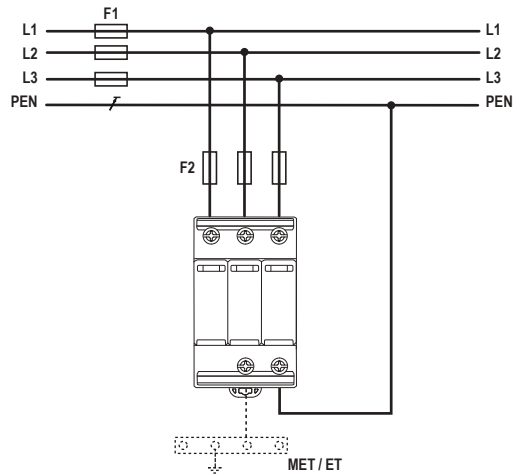
TN-S (Single-phase, 2+0, 1+1)



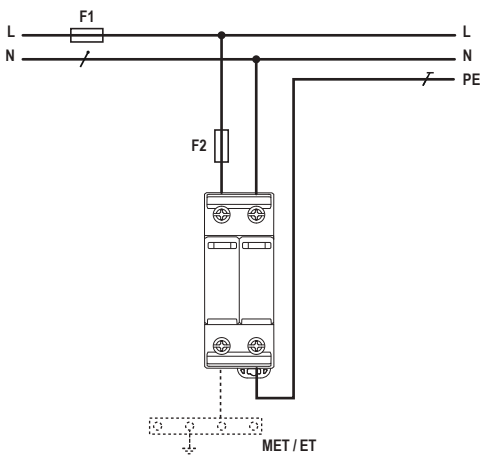
TN-S (Three-phase, 4+0, 3+1)



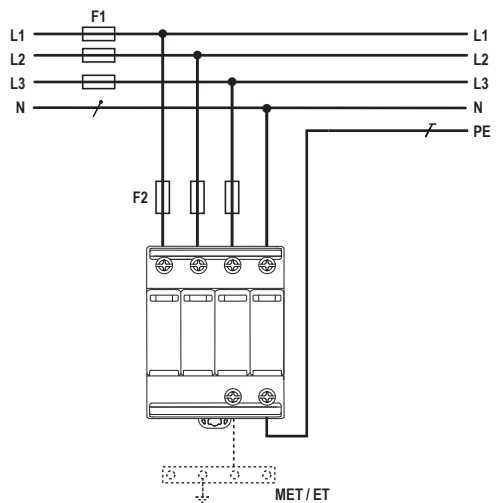
TN-C (Three-phase, 3+0)



TT (Single-phase, 1+1)



TT (Three-phase, 3+1)



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

Overcurrent Protection Rating for $I_{SCCR} = 50 \text{ kA}$

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

Overcurrent Protection Rating for $I_{SCCR} = 25 \text{ kA}$

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

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



ProTec CM(R)

Overvoltage waves are slowly increasing at greater frequency, reoccurring and threatening devices. Incidence of low value surges are still too high for electronic elements and are common in the object itself, often caused by activation switching of major appliances, inductive devices and motors, or industrial system operation failures. SPDs in this classification are intended to protect sensitive electronic installations in Zones 2-3 per IEC 62305.

The ProTec CM modular series consist of high performance varistors for each pole and an optional high energy encapsulated gas discharge tube (GDT), 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.

Pluggable Multi-pole SPD

ProTec CM(R) 80 (2+0)

Class II • Type 2



Location of Use: Sub-distribution Boards
 Network Systems: TN-S
 Mode of Protection: L-PE, N-PE
 IEC/EN Category: Class II / Type 2
 Housing: Modular Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

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

275

320

Electrical

		275	320
Nominal AC Voltage (50/60 Hz)	U_o	230V	230V
Maximum Continuous Operating Voltage (AC)	U_c	275V	320V
Nominal Discharge Current (8/20 μ s)	I_n	15 kA	15 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	40 kA	40 kA
Voltage Protection Level	U_p	< 1.5 kV	< 1.5 kV
Response Time	t_A	< 25 ns	
Overcurrent Protection (max)		63 A gG	
Short-Circuit Current Rating	I_{SCCR}	25 kA	
TOV Withstand 5s	U_T	335V	
Number of Ports		1	

Mechanical & Environmental

Temperature Range	T_a	-40 °C to +85 °C	
Permissible Humidity	RH	5%...95%	
Terminal Screw Torque	(L, N) M_{max}	0.5 Nm	
	(PE) M_{max}	3.0 Nm	
Conductor Cross Section	(L, N)	6 mm ² (solid) / 4 mm ² (stranded)	
	(PE)	35 mm ² (solid) / 25 mm ² (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	
Fault Indication		Red Flag	
Remote Contacts (RC)		Optional	
RC Switching Capacity		AC: 250V/0.5A; 125V/3A	
RC Terminal Cross Section (max)		1.5 mm ²	
RC Terminal Screw Torque		0.25 Nm	

Order Information

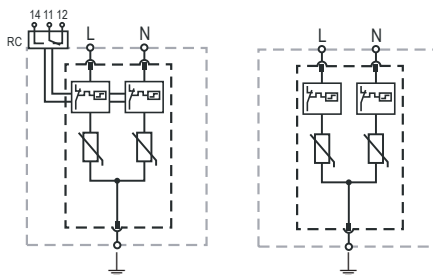
Order Code	275	320
ProTec CM 80/xxx (2+0)	508.315	508.316
ProTec CMR 80/xxx (2+0) (with remote contacts)	508.320	508.321
Plug ProTec CM(R) 80/xxx (2+0)	508.325	508.326

ProTec CM(R) 80 (2+0)

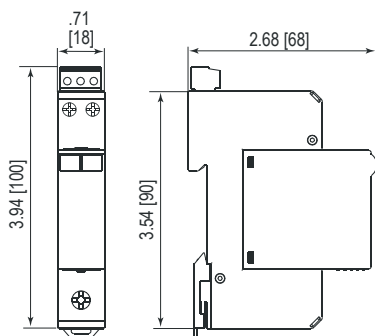
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏚ PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)



Complete Unit

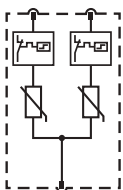


Complete Unit Dimensions & Packaging

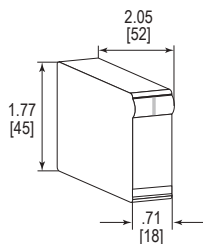
		275	320
ProTec CM 80/xxx (2+0)			
Weight	pounds (grams)	0.317 [144]	0.317 [144]
ProTec CMR 80/xxx (2+0)			
Weight	pounds (grams)	0.328 [149]	0.328 [149]
DIN 43880 Dimension		1 TE / .71" [18 mm]	
Packaging Dimensions (HxWxL)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]	
Standard Order Quantity		12 Units	

Plug Internal Configuration

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



Spare Plug



Single Unit Dimensions & Packaging

		275	320
Plug ProTec CM(R) 80/xxx (2+0)			
Weight	pounds (grams)	0.14 [63]	0.17 [79]
DIN 43880 Dimension		1 TE / .71" [18 mm]	
Packaging Dimensions (HxWxL)		3.86 x 3.03 x 4.33" [98 x 77 x 110 mm]	
Minimum Order Quantity		12 Units	

inches
[mm]

Pluggable Multi-pole SPD

ProTec CM(R) 80 (1+1)

Class II • Type 2



Location of Use: Sub-distribution Boards
 Network Systems: TT, TN-S
 Mode of Protection: L-N, N-PE
 IEC/EN Category: Class II / Type 2
 Housing: Modular Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

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

275

320

Electrical

Nominal AC Voltage (50/60 Hz)	U_o	230V	230V
Maximum Continuous Operating Voltage (AC)	(L-N) U_c	275V	320V
	(N-PE) U_c		255V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_n		15kA/20kA
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}		40kA/35kA
Voltage Protection Level	(L-N) U_p	1.5kV	1.5kV
	(N-PE) U_p	1.75kV	1.75kV
Follow Current Interrupt Rating	(N-PE) I_{fi}		100A _{RMS}
Response Time	(L-N)/(N-PE) t_A		< 25 ns / < 100 ns
Overcurrent Protection (max)			63A gG
Short-Circuit Current Rating	I_{SCCR}		25kA
TOV Withstand 5s	(L-N) U_T		335V
TOV Safe fail 200ms	(N-PE) U_T		1200V/300A
Number of Ports			1

Mechanical & Environmental

Temperature Range	T_a		-40 °C to +85 °C
Permissible Humidity	RH		5%...95%
Terminal Screw Torque	(L, N) M_{max}		0.5 Nm
	(PE) M_{max}		3.0 Nm
Conductor Cross Section	(L, N)		6 mm ² (solid) / 4 mm ² (stranded)
	(PE)		35 mm ² (solid) / 25 mm ² (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
Fault Indication			Red Flag
Remote Contacts (RC)			Optional
RC Switching Capacity			AC: 250V/0.5A; 125V/3A
RC Terminal Cross Section (max)			1.5 mm ²
RC Terminal Screw Torque			0.25 Nm

Order Information

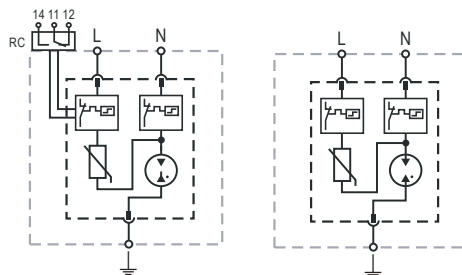
Order Code	275	320
ProTec CM 80/xxx (1+1)	508.330	508.331
ProTec CMR 80/xxx (1+1) (with remote contacts)	508.335	508.336
Plug ProTec CM(R) 80/xxx (1+1)	508.340	508.341

ProTec CM(R) 80 (1+1)

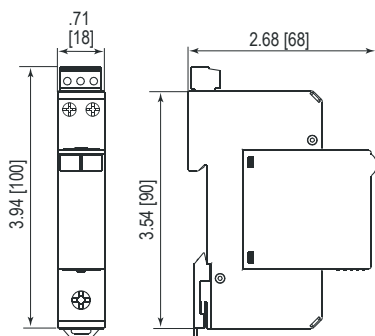
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏚ PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)



Complete Unit

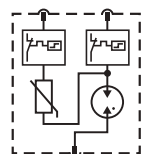


Complete Unit Dimensions & Packaging

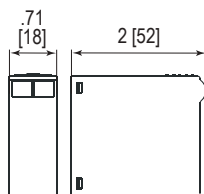
		275	320
ProTec CM 80/xxx (1+1)			
Weight	pounds (grams)	0.28 [126]	0.28 [126]
ProTec CMR 80/xxx (1+1)			
Weight	pounds (grams)	0.29 [131]	0.29 [131]
DIN 43880 Dimension		1 TE / .71" [18 mm]	
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]	
Standard Order Quantity		12 Units	

Plug Internal Configuration

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



Spare Plug



Single Unit Dimensions & Packaging

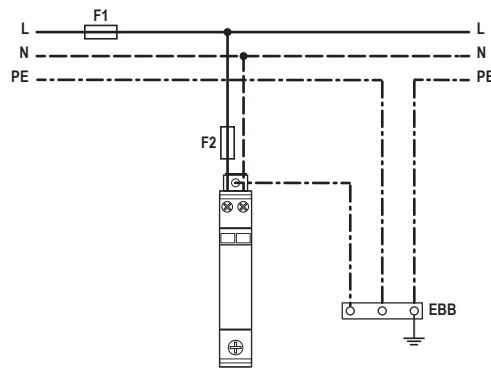
		275	320
Plug ProTec CM(R) 80/xxx (1+1)			
Weight	pounds (grams)	0.13 [59]	0.13 [59]
Single Unit DIN 43880 Dimension		1 TE / .71" [18 mm]	
Packaging Dimensions (H x W x L)		3.86 x 3.03 x 4.33" [98 x 77 x 110 mm]	
Standard Order Quantity		12 Units	

inches
[mm]





Pluggable Multi-pole SPD Connection Configurations

ProTec CM(R) Series

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



Overcurrent Protection Rating for I_{SCCR}

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

PCB Mount SPD Socket for AC Systems

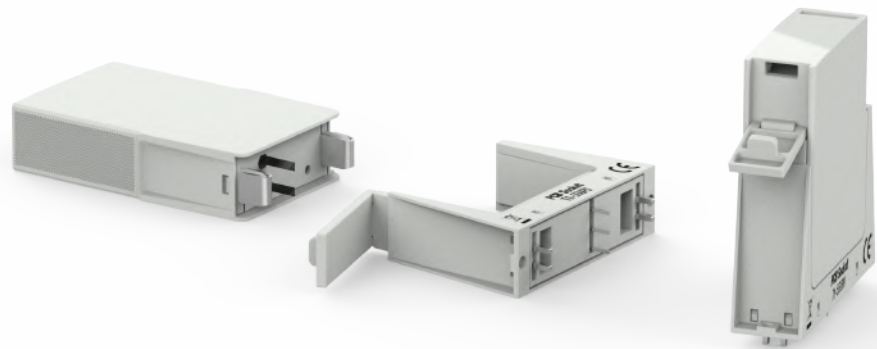


Lightning and Overvoltage Protection

PCB Socket T1 & PCB Socket T2

Special features:

- For use with maximum continuous operating voltage (U_c) up to 880V modules
- Dual sets of two soldering pads for mechanical soldering
- Two additional mechanical fixation holes
- Voltage indicator socket
- Module locking mechanism
- Vibration and shock withstand capability
- Sensitive and reliable remote signaling contacts
- Fault indicator, green-no green
- Compact profile for printed circuit board (PCB) mounting



Compliance	IEC 61643-11:2011	EN 61643-11:2012
PCB T1 & T2 Sockets	✓	✓

Raycap has developed the series of socket bases as an on-board printed circuit board (PCB) solution to optimally protect electronic equipment with efficient surge protection while keeping cost for installation down. With the constant demand for increased reliability of power systems, electronics manufacturers expect comprehensive turnkey solutions that are ready to be installed, but are effectively designed with optimum functionality. The key benefits of the PCB Socket Series are cost and space efficiency, elimination of manufacturing lead times, and maximum equipment protection ensured.



Single-pole PCB Mount SPD Socket for AC System

PCB Socket T1(-R)

Class I • Class II • Type 1 • Type 2



Location of Use: Indoor - to be firmly fixed to PCB
 Network Systems: TN, TT (only L-N)
 Mode of Protection: L-PE, N-PE (only TN-S), L-PEN
 IEC/EN Category: Class I+II, Type 1+2
 Housing: PCB Mount
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

PCB Socket T1(-R)

IEC Electrical

Nominal AC Voltage (50/60 Hz)	U_o / U_n	up to 600V
Maximum Continuous Operating Voltage (AC)	U_c	up to 750V
Nominal Discharge Current (8/20 μ s)	I_n	up to 25 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	up to 65 kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	up to 25 kA
Specific Energy	W/R	up to 156.25 kJ/ Ω
Charge	Q	up to 12.5 As
Short-Circuit Current Rating	I_{SCCR}	up to 25 kA
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 (max)		13123 ft [4000 m]
Mounting		Printed Circuit Board (PCB)
Degree Of Protection		IP 20 (built-in PCB, with protection module plugged in)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A

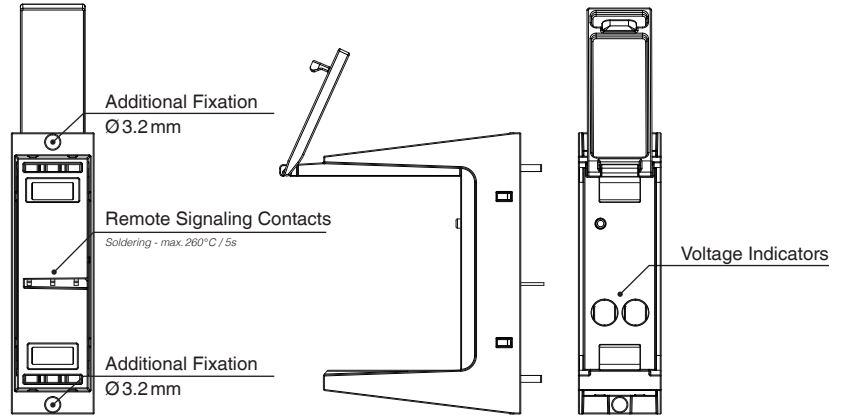
Order Information

Without Remote Contact		With Remote Contact	
PCB Socket T1-75	515 167	PCB Socket T1-75-R	515 175
PCB Socket T1-150	515 168	PCB Socket T1-150-R	515 176
PCB Socket T1-300	515 169	PCB Socket T1-300-R	515 177
PCB Socket T1-350	515 170	PCB Socket T1-350-R	515 178
PCB Socket T1-480	515 171	PCB Socket T1-480-R	515 179
PCB Socket T1-750	515 173	PCB Socket T1-750-R	515 181

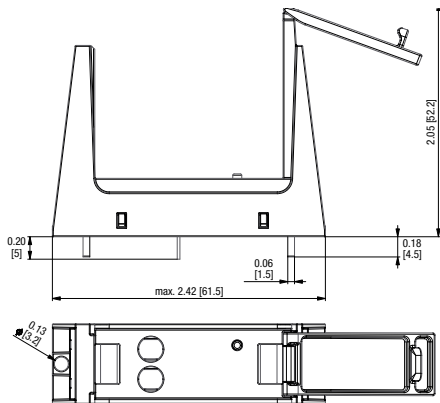
Product combinations with associated plugs can be found in the PCB Socket AC Products Combination Index on page 294.

Installation Configuration

PCB Socket T1(-R)



Complete Unit



Single Unit Dimensions & Packaging

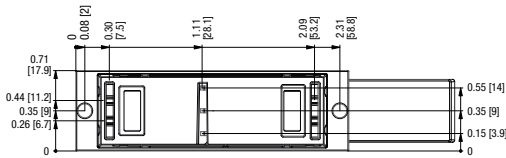
PCB Socket T1

Weight	pounds	.046
	grams	21 g

PCB Socket T1-R

Weight	pounds	.048
	grams	22 g

DIN 43880 Dimension	1 TE / .71" [18]
Packaging Dimensions (H x W x L)	14.8 x 2.8 x 2.6" [37.5 x 7 x 6.5mm]
Standard Order Quantity	1 Unit



inches
[mm]

Single-pole PCB Mount SPD Socket for AC System

PCB Socket T2(-R)

Class II • Type 2



Location of Use: Indoor - to be firmly fixed to PCB
 Network Systems: TN, TT
 Mode of Protection: L-PE, N-PE, L-PEN
 IEC/EN Category: Class II, Type 2
 Housing: PCB Mount
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

PCB Socket T2(-R)

IEC Electrical

Nominal AC Voltage (50/60 Hz)	U_o / U_n	up to 600V
Maximum Continuous Operating Voltage (AC)	U_c	up to 880V
Nominal Discharge Current (8/20 μ s)	I_n	up to 25 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	up to 65 kA
Short-Circuit Current Rating	I_{SCCR}	up to 25 kA
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 (max)		13123 ft [4000m]
Mounting		Printed Circuit Board (PCB)
Degree Of Protection		IP 20 (built-in PCB, with protection module plugged in)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A

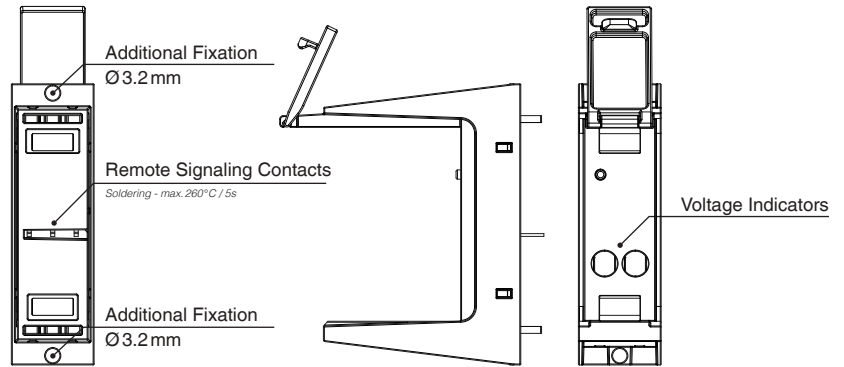
Order Information

Without Remote Contact		With Remote Contact	
PCB Socket T2-75	515 183	PCB Socket T2-75-R	515 192
PCB Socket T2-150	515 184	PCB Socket T2-150-R	515 193
PCB Socket T2-300	515 185	PCB Socket T2-300-R	515 194
PCB Socket T2-350	515 186	PCB Socket T2-350-R	515 195
PCB Socket T2-480	515 187	PCB Socket T2-480-R	515 196
PCB Socket T2-550	515 188	PCB Socket T2-550-R	515 197
PCB Socket T2-750	515 189	PCB Socket T2-750-R	515 198
PCB Socket T2-880	515 190	PCB Socket T2-880-R	515 199
PCB Socket T2-NPE-305	515 191	PCB Socket T2-NPE-305-R	515 200

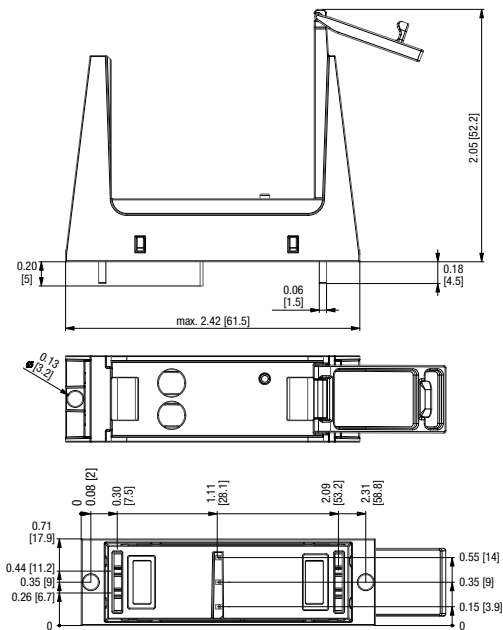
Product combinations with associated plugs can be found in the PCB Socket AC Products Combination Index on page 294.

PCB Socket T2(-R)

Installation Configuration



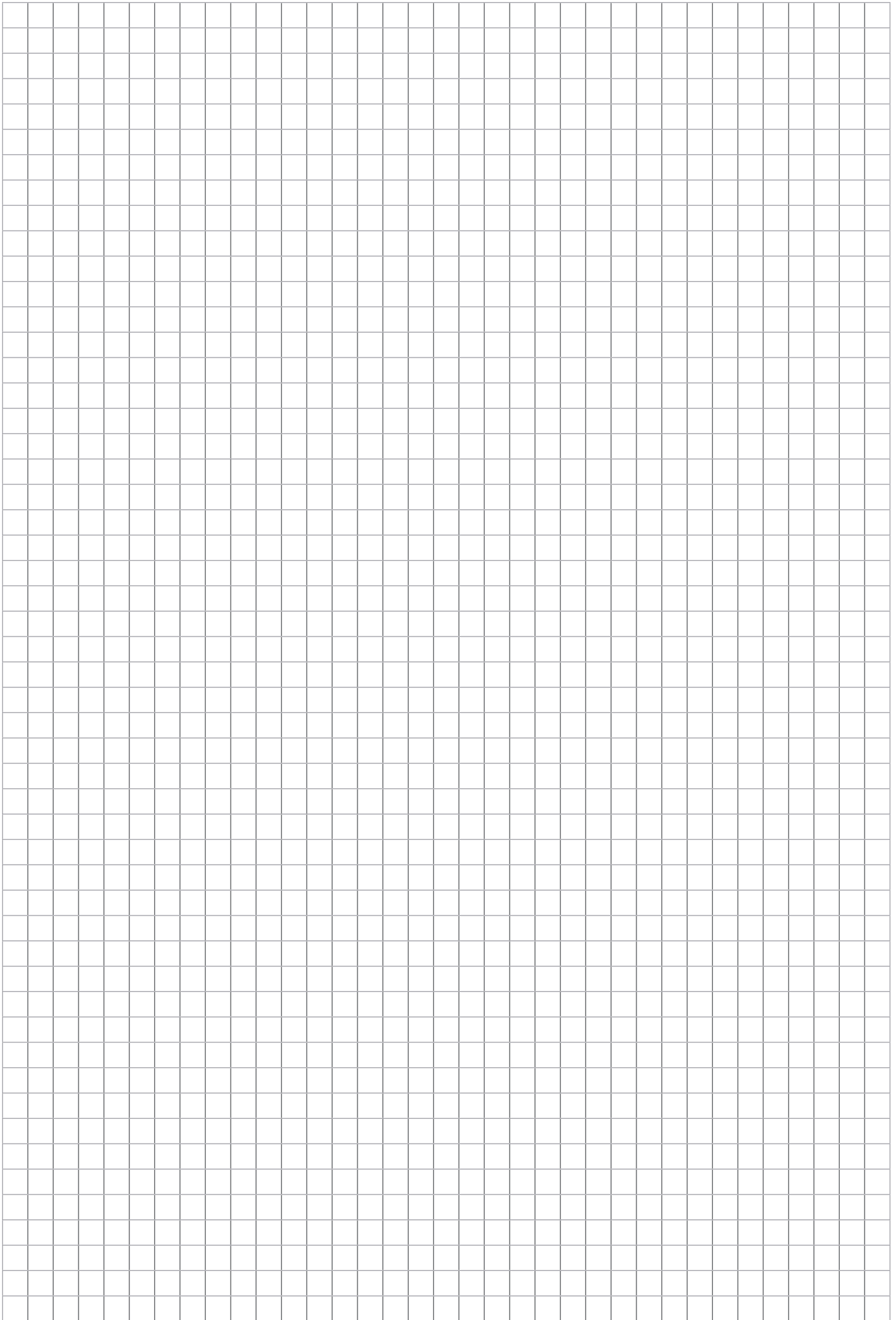
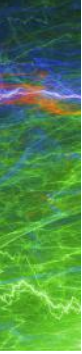
Complete Unit



Single Unit Dimensions & Packaging

PCB Socket T2	
Weight	pounds .044
	grams 20g
PCB Socket T2-R	
Weight	pounds .046
	grams 21g
DIN 43880 Dimension	1 TE / .71" [18]
Packaging Dimensions (H x W x L)	14.8 x 2.8 x 2.6" [37.5 x 7 x 6.5mm]
Standard Order Quantity	1 Unit

inches
[mm]



PCB Mount SPD Socket for Photovoltaic Systems (DC)

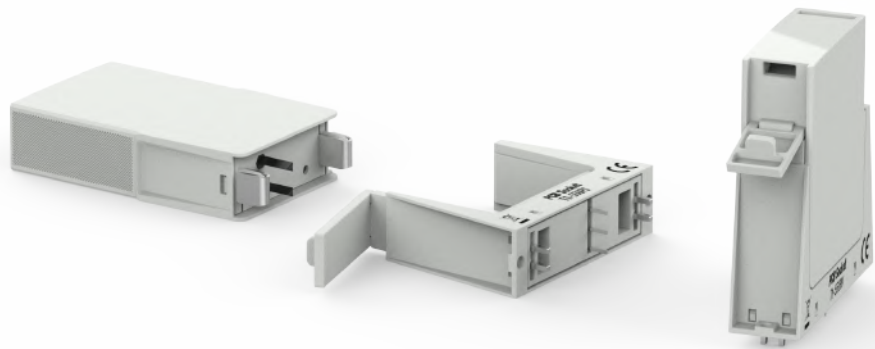


Lightning and Overvoltage Protection

PCB Socket T1 PV & PCB Socket T2 PV

Special features:

- For use with maximum continuous operating voltage (U_{CPV}) up to 750V modules
- Dual sets of two soldering pads for mechanical soldering
- Two additional mechanical fixation holes
- Voltage indicator socket
- Module locking mechanism
- Vibration and shock withstand capability
- Sensitive and reliable remote signaling contacts
- Fault indicator, green-no green
- Compact profile for printed circuit board (PCB) mounting



Compliance	IEC 61643-31:2018	EN 50539-11:2013+A1:2014	UL 1449 4th Edition
PCB T1 & T2 PV Sockets	✓	✓	✓

Raycap has developed the series of socket bases as an on-board printed circuit board (PCB) solution to optimally protect electronic equipment with efficient surge protection while keeping cost for installation down. With the constant demand for increased reliability of power systems, electronics manufacturers expect comprehensive turnkey solutions that are ready to be installed, but are effectively designed with optimum functionality. The key benefits of the PCB Socket Series are cost and space efficiency, elimination of manufacturing lead times, and maximum equipment protection ensured.



Single-pole PCB Mount SPD Socket for PV System

PCB Socket T1 PV(-R)

Type 1 • Type 2 • Type 1CA



Location of Use: String box, Inverter
 Mode of Protection: (+)-PE, (-)-PE, (+)-(-)
 EN/UL Category: Type 1, Type 2 / Type 1CA
 Housing: PCB Mount
 Compliance: EN 50539-11:2013+A1:2014
 IEC 61643-31:2018
 UL 1449 4th Edition

Technical Data

PCB Socket T1 PV(-R)

EN Electrical

Maximum Continuous Operating Voltage (PV)	U_{CPV}	up to 750V
Nominal Discharge Current (8/20 μ s)	I_n	up to 20kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	up to 6.25kA
Specific Energy	W/R	up to 9.77 kJ/ Ω
Charge	Q	up to 3.125As
Maximum Discharge Current (8/20 μ s)	I_{max}	up to 40kA
Number of Ports		1

UL Electrical

Maximum Permitted DC Voltage	V_{pVdc}	Up to 750V
Nominal Discharge Current (8/20 μ s)	I_n	Up to 20kA

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 [4000m]
Mounting		Printed Circuit Board (PCB)
Degree Of Protection		IP 20 (built-in PCB, with protection module plugged in)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A

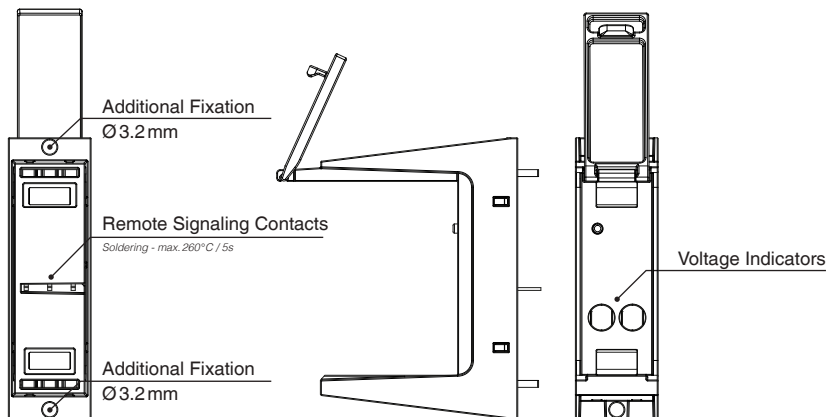
Order Information

Order Code	
PCB Socket T1-550PV	515 155
PCB Socket T1-550PV-M	515 156
PCB Socket T1-750PV	515 157
PCB Socket T1-750PV-M	515 158
PCB Socket T1-550PV-R	515 159
PCB Socket T1-550PV-M-R	515 160
PCB Socket T1-750PV-R	515 161
PCB Socket T1-750PV-M-R	515 162

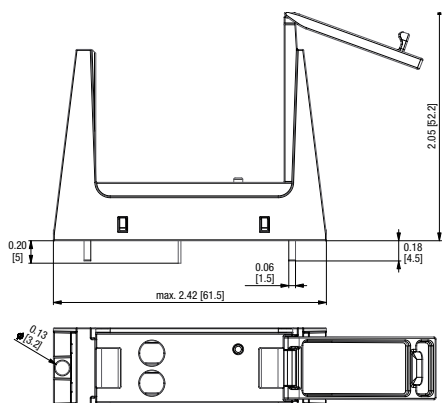
Product combinations with associated plugs can be found in the PCB Socket PV Products Combination Index on page 295.

PCB Socket T1 PV(-R)

Installation Configuration



Complete Unit



Single Unit Dimensions & Packaging

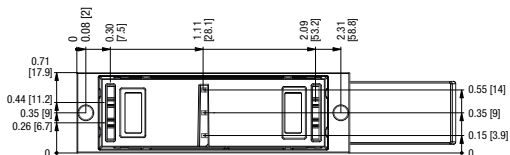
PCB Socket T1 PV

Weight	pounds	.046
	grams	21 g

PCB Socket T1 PV-R

Weight	pounds	.048
	grams	22 g

DIN 43880 Dimension	1 TE / .71" [18]
Packaging Dimensions (H x W x L)	14.8 x 2.5 x 2.6" [377 x 64 x 67 mm]
Standard Order Quantity	20 Units



inches
[mm]

Single-pole PCB Mount SPD Socket for PV System
PCB Socket T2 PV(-R)
 Type 2 • Type 1CA



Location of Use: String box, Inverter
 Mode of Protection: (+)-PE, (-)-PE, (+)-(-)
 EN/UL Category: Type 2 / Type 1CA
 Housing: PCB Mount
 Compliance: EN 50539-11:2013+A1:2014
 IEC 61643-31:2018
 UL 1449 4th Edition

Technical Data

PCB Socket T2 PV(-R)

EN Electrical

Maximum Continuous Operating Voltage (PV)	U_{OPV}	up to 750V
Nominal Discharge Current (8/20 μ s)	I_n	up to 20kA
Maximum Discharge Current (8/20 μ s)	I_{max}	up to 40kA
Number of Ports		1

UL Electrical

Maximum Permitted DC Voltage	V_{pVdc}	up to 750V
Nominal Discharge Current (8/20 μ s)	I_n	up to 20kA

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 [4000m]
Mounting		Printed Circuit Board (PCB)
Degree Of Protection		IP 20 (built-in PCB, with protection module plugged in)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A

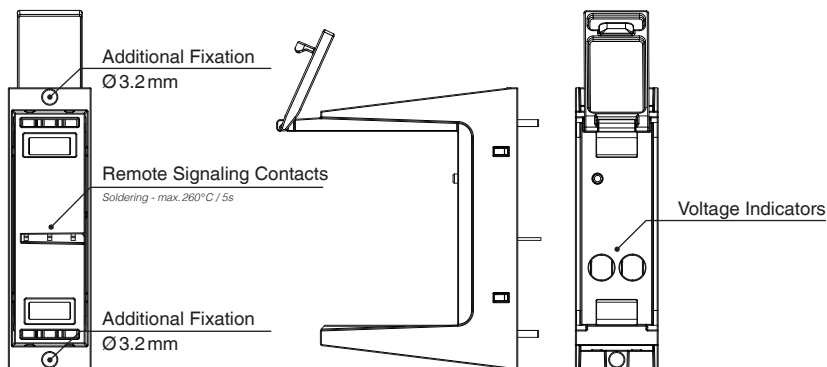
Order Information

Order Code	
PCB Socket T2-550PV	515 163
PCB Socket T2-750PV	515 164
PCB Socket T2-550PV-R	515 165
PCB Socket T2-750PV-R	515 166

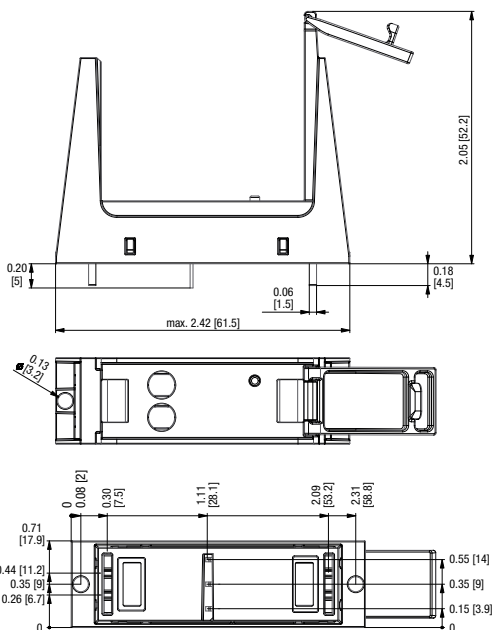
Product combinations with associated plugs can be found in the PCB Socket PV Products Combination Index on page 295.

PCB Socket T2 PV(-R)

Installation Configuration



Complete Unit



Single Unit Dimensions & Packaging

PCB Socket T2 PV

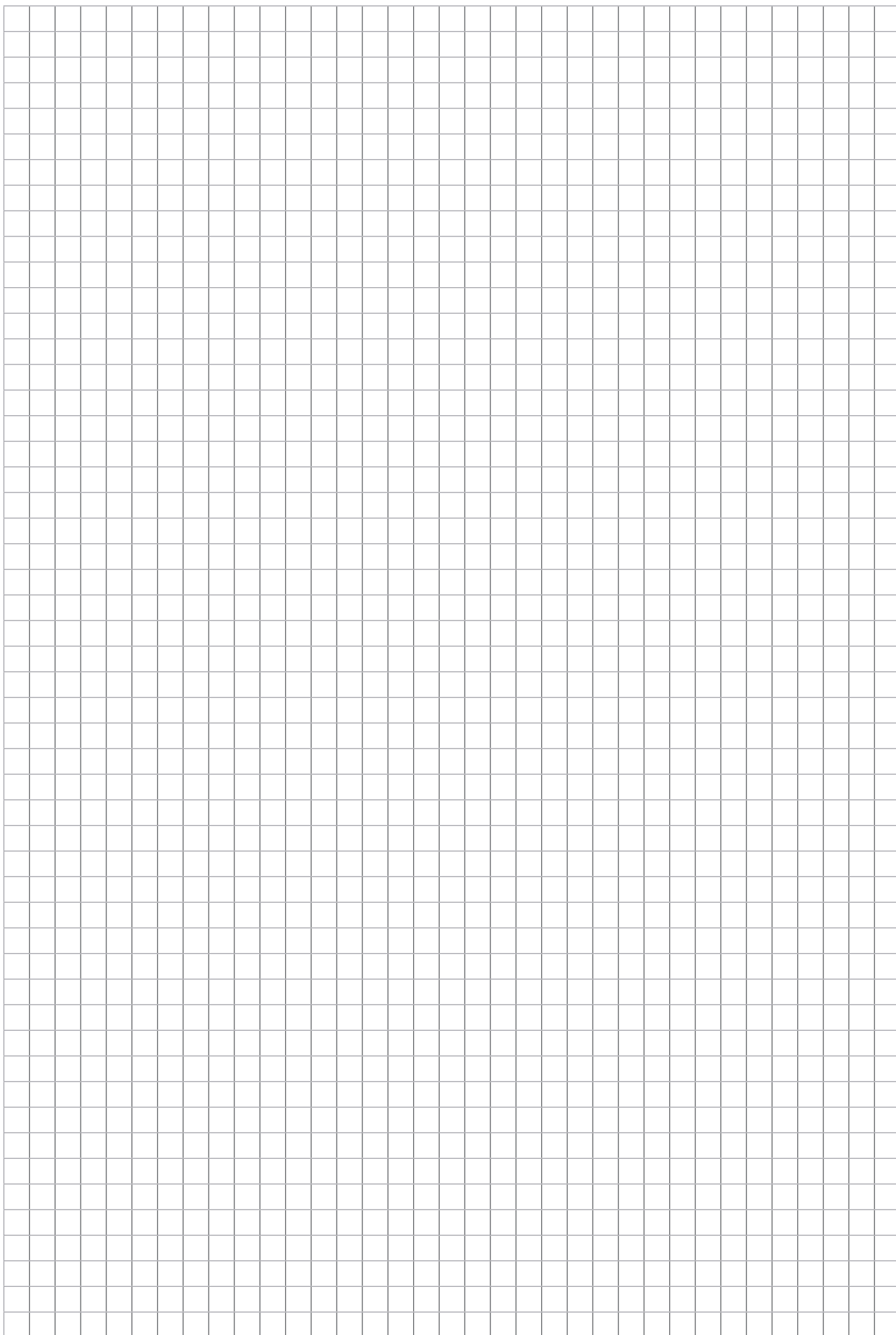
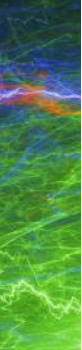
Weight	pounds	.044
	grams	20g

PCB Socket T2 PV-R

Weight	pounds	.046
	grams	21g

DIN 43880 Dimension	1 TE / .71" [18]
Packaging Dimensions (H x W x L)	14.8 x 2.5 x 2.6" [377 x 64 x 67 mm]
Standard Order Quantity	20 Units

inches
[mm]



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

Lightning and Overvoltage Protection **ProTec T1-PV & ProTec T2-PV**

Special features:

- Vibration and shock withstand capability
- Sensitive and reliable state-of-the-art disconnecter
- Short circuit current rating of 11kA



Compliance	EN 50539-11:2013+A1:2014	UL 1449 4th Edition
ProTec T1 PV Series	✓	✓
ProTec T2 PV Series	✓	✓

The ProTec PV product range provides powerful and pluggable protective devices for photovoltaic systems up to 1500 VDC either as Type 1 or Type 2. All devices have a short circuit current rating of 11kA, the highest available on the market.

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, (+)-(-)
 EN/UL Category: Type 1, Type 2 / Type 1CA
 Housing: Pluggable Design
 Compliance: EN 50539-11:2013+A1:2014
 UL 1449 4th Edition

ProTec T1-xxxxPV-3+0(-R)

1100

1500

EN Electrical

Parameter	Symbol	1100	1500
Maximum Continuous Operating Voltage (PV)	U_{OPV}	1100 V	1500 V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA	20 kA
Impulse Discharge Current (10/350 μ s)	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 μ s)	I_{Total}	12.5 kA	10 kA
Total Discharge Current (8/20 μ s)	I_{Total}	50 kA	40 kA
Maximum Discharge Current (8/20 μ s)	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

Parameter	Symbol	1100	1500
Maximum Permitted DC Voltage	V_{pVdc}	1100 V	1500 V
Voltage Protection Rating	(+)-G, (-)-G VPR	2500 V	4000 V
	(+)-(-) VPR	2500 V	4000 V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA	65 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 [4000m]	
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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A	
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (Solid)	

Order Information

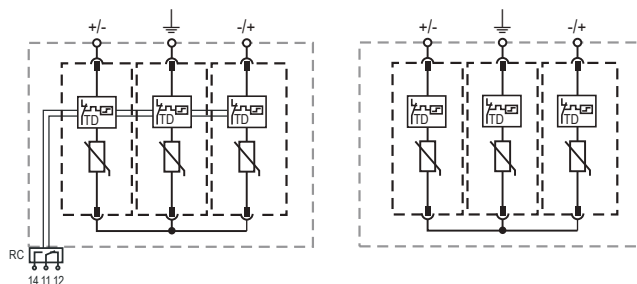
Order Code	1100	1500
ProTec T1-xxxxPV-3+0	59.0285	59.0289
ProTec T1-xxxxPV-3+0-R (with remote contacts)	59.0286	59.0290
ProTec T1-550PV-P (middle plug)	59.0283	-
ProTec T1-550PV-M-P (side plug)	59.0284	-
ProTec T1-750PV-P (middle plug)	-	59.0287
ProTec T1-750PV-M-P (side plug)	-	59.0288

ProTec T1-PV 3+0

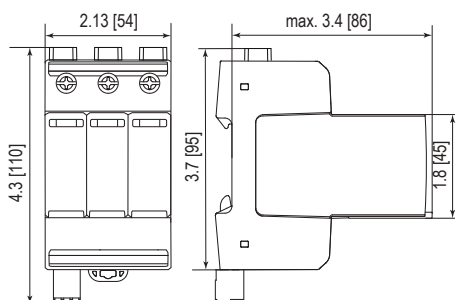
Internal Configuration

Legend

- +/-, -/+ + or - Conductor Terminal
- ⏏ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit

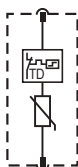


Complete Unit Dimensions & Packaging

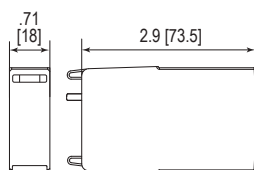
		1100	1500
ProTec T1-xxxxPV-3+0	Weight	pounds .968	1.034
		grams 439	469
ProTec T1-xxxxPV-3+0-R	Weight	pounds .979	1.045
		grams 444	474
DIN 43880 Dimension	3 TE / 2.13" [54]		
Packaging Dimensions (H x W x L)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]		
Standard Order Quantity	5 Units		

Plug Internal Configuration

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



Spare Plug



Single Unit Dimensions & Packaging

		550	750
ProTec T1-xxxPV-P	Weight	pounds .220	.282
		grams 100	128
ProTec T1-xxxPV-M-P	Weight	pounds .194	.196
		grams 88	89
DIN 43880 Dimension	1 TE / .71" [18]		
Packaging Dimensions (H x W x L)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]		
Standard Order Quantity	28 Units		

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, (+)-(-)
 EN/UL Category: Type 2 / Type 1CA
 Housing: Pluggable Design
 Compliance: EN 50539-11:2013+A1:2014
 UL 1449 4th Edition

Technical Data

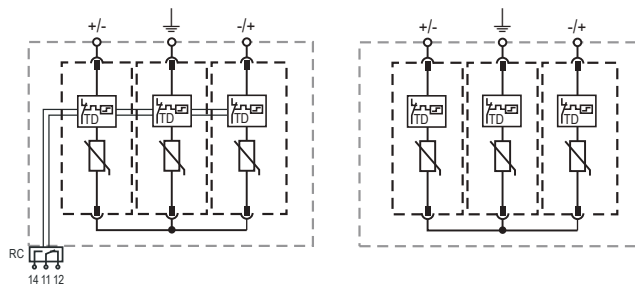
ProTec T2-xxxxPV-3+0(-R)		1100	1500
EN Electrical			
Maximum Continuous Operating Voltage (PV)	U_{OPV}	1100 V	1500 V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA	
Maximum Discharge Current (8/20 μ s)	I_{max}	40 kA	30 kA
Total Discharge Current	I_{Total}	50 kA	40 kA
Voltage Protection Level	U_p	3800 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 μ s)	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 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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A	
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (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 (plug)		59.0291	-
ProTec T2-750PV-P (plug)		-	59.0294

ProTec T2-PV 3+0

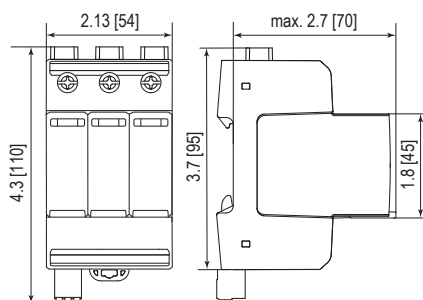
Internal Configuration

Legend

- +/-, -/+ + or - Conductor Terminal
- ⊥ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit

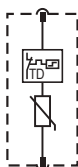


Complete Unit Dimensions & Packaging

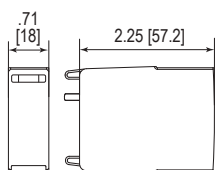
		1100	1500
ProTec T2-xxxxPV-3+0	Weight	pounds .806	.879
		grams 366	399
<hr/>			
ProTec T2-xxxxPV-3+0-R	Weight	pounds .817	.890
		grams 371	404
DIN 43880 Dimension		3 TE / 2.13" [54]	
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]	
Standard Order Quantity		5 Units	

Plug Internal Configuration

ProTec T2-XXXPV-P



Spare Plug



Single Unit Dimensions & Packaging

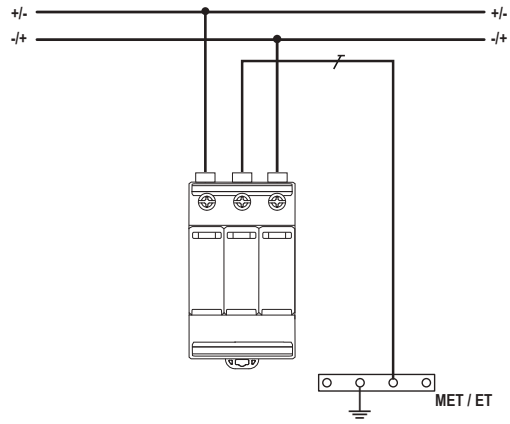
		550	750
ProTec T2-xxxPV-P	Weight	pounds .150	.174
		grams 68	79
DIN 43880 Dimension		1 TE / .71" [18]	
Packaging Dimensions (HxWxL)		3.2 x 4.5 x 12" [83 x 115 x 305 mm]	
Standard Order Quantity		24 Units	

inches
[mm]



Pluggable Multi-pole SPD Connection Configurations
ProTec T1 PV & ProTecT2 PV

ProTec T1-PV-3+0, ProTec T2-PV-3+0



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

Lightning and Overvoltage Protection for DC Systems **ProBloc B DC & SafeTec T2 DC**



Special features:

ProBloc B DC

- Maximum Continuous Operating DC voltage 1000V
- High Surge Discharge Current (I_{Total}) 12.5kA (10/350)
- Short circuit current rating up to 50kA
- Leakage Free hybrid topology
- High Energy MOV and GDT technology
- Compact design
- Vibration and shock resistant
- UL Type 1CA certified
- Optional remote contact (RC) signaling

SafeTec T2 DC

- Maximum Continuous Operating DC voltage 1000V
- High Surge Discharge Current (I_{Total}) 65kA (8/20)
- High TOV immunity
- Vibration and shock resistant
- UL Type 4CA certified
- Optional remote contact (RC) signaling
- Five year warranty



Compliance	UL 1449 4th Edition
ProBloc B 1000 DC Series	✓
SafeTec T2-1000DC Series	✓

ProBloc B 1000 DC is a UL Type 1CA certified product designed for use to protect a large number of DC sources. Its main features include a compact design and an innovative patented disconnecting device with a rotating mechanism that can be used to safely extinguish a switching arc. Due to the high self-extinguishing capacity, a prospective short-circuit current of 50kA can be separated, for example as caused by battery storage in e-mobility applications. With this solution, numerous systems in the growing electro mobility market (e-mobility) can be protected.

The SafeTec T2 1000 DC is a UL Type 4CA device specially developed for protecting DC systems with the worldwide patented SafeTec TC technology. The thermal control function prolongs lifespan of SPDs, enables TOV immunity and provides low protection level at the same dimensions as other conventional protective devices. The universal features make it suitable to protect electrical devices not only against overvoltages caused by lightning strikes but voltages that originate from the internal system as well. In addition to the mechanical indicator, an optional remote contact (RC) feature offers a three-pole remote signaling terminal to remotely monitor the operating state of the device.

Compact Multi-Pole SPD for DC Systems

ProBloc B 1000 DC

Type 1 • Type 2 • Type 1CA



Location of Use: DC Systems, EV Chargers
 Mode of Protection: (+)-G, (-)-G, (+)-(-)
 UL Category: Type 1+2 / Type 1CA
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Compact Design
 Safety: Patented Rotary Disconnecter
 Compliance: UL 1449 4th Edition

ProBloc B 1000 DC

1000

EN Electrical

Nominal DC Voltage	U_n	900 V
Maximum Continuous Operating Voltage (DC)	(+)-(-) U_{CDC}	1000 V
	(+/-)-G U_{CDC}	750 V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	6.25 kA
Specific Energy	W/R	9.77 kJ/ Ω
Charge	Q	3.125 As
Total Discharge Current (10/350 μ s)	I_{Total}	12.5 kA
Total Discharge Current (8/20 μ s)	I_{Total}	65 kA
Voltage Protection Level	(+)-(-) U_p	4400 V
	(+/-)-G U_p	2300 V
Response Time	(+)-(-) t_A	< 25 ns
	(+/-)-G t_A	< 100 ns
Number of Ports		1

UL Electrical

Maximum Permitted DC Voltage	V_{dcmcov}	1000 V
Voltage Protection Rating	(+)-(-) VPR	3000 V
	(+/-)-G VPR	1800 V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA
Short-Circuit Current Rating	SCCR	50 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}	26.5 lbf-in [3.0 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

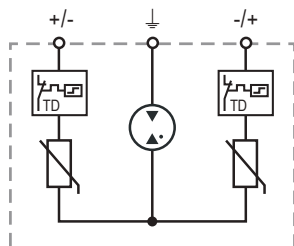
Order Code		1000
ProBloc B 1000 DC		56.0670

ProBloc B 1000 DC

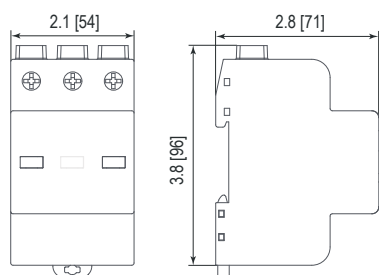
Internal Configuration

Legend

-  PE/G Conductor Terminal
-  Thermal Disconnect



Complete Unit



Single Unit Dimensions & Packaging

ProBloc B 1000 DC		1000
Weight	pounds [grams]	.934 [424]
DIN 43880 Dimension		3 TE / 2.13" [54]
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]
Standard Order Quantity		5 Units



inches
[mm]

Pluggable Multi-Pole SPD for DC Systems

SafeTec T2-1000DC-3+0(-R)

Type 2 • Type 4CA



Location of Use: DC Systems, EV Chargers
 Mode of Protection: (+) - GND, (-) - GND, (+) - (-)
 EN/UL Category: Type 2 / Type 4CA
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Pluggable Design
 Safety: Patented Current Limiting
 Compliance: UL 1449 4th Edition

Technical Data

SafeTec T2-1000DC-3+0(-R)

1000

EN Electrical

Nominal DC Voltage	U_n	900 V
Maximum Continuous Operating Voltage (DC)	(+) - (-) U_{CDC}	1000 V
	(+/-) - G U_{CDC}	500 V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA
Total Discharge Current	I_{Total}	65 kA
Voltage Protection Level	(+/-) - G U_p	2500 V
	(+) - (-) U_p	4800 V
Response Time	(+/-) - G t_A	< 100 ns
	(+) - (-) t_A	< 25 ns
Number of Ports		1

UL Electrical

Maximum Permitted DC Voltage	V_{dcmcov}	1000 V
Measured Limiting Voltage	(+/-) - G MLV	2470 V
	(+) - (-) MLV	4590 V
Nominal Discharge Current (8/20 μ s)	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 (max)		13123 ft [4000m]
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: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (Solid)





Order Information

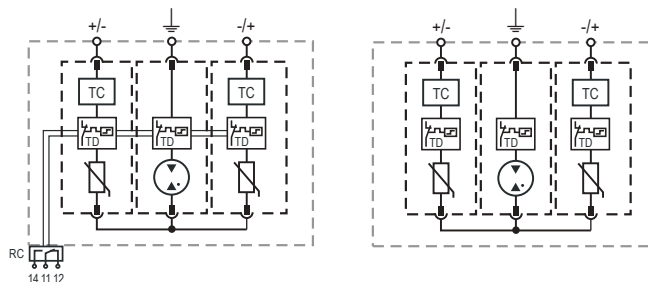
Order Code	1000
SafeTec T2-1000DC-3+0	59.0373
SafeTec T2-1000DC-3+0-R (with remote contacts)	59.0374

SafeTec T2-1000DC-3+0(-R)

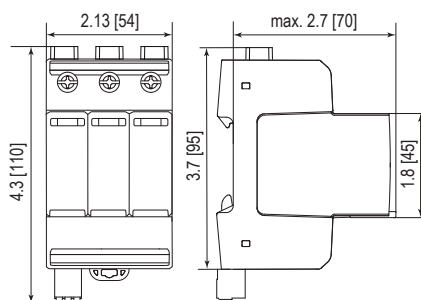
Internal Configuration

Legend

-  PE/G Conductor Terminal
-  RC Remote Contacts Terminal (Optional)
-  TC Thermal Control Function
-  TD Thermal Disconnecter



Complete Unit

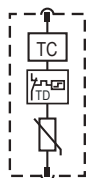


Complete Unit Dimensions & Packaging

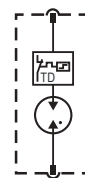
SafeTec T2-1000DC-3+0		1000
Weight	pounds	.853
	grams	387
SafeTec T2-1000DC-3+0-R		
Weight	pounds	.870
	grams	395
DIN 43880 Dimension		3 TE / 2.13" [54]
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity		5 Units

Plug Internal Configuration

SafeTec T2-xxxxDC-P



SafeTube T2-DC-P

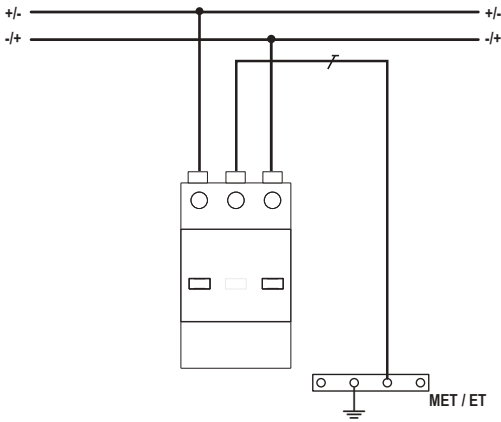


inches
[mm]

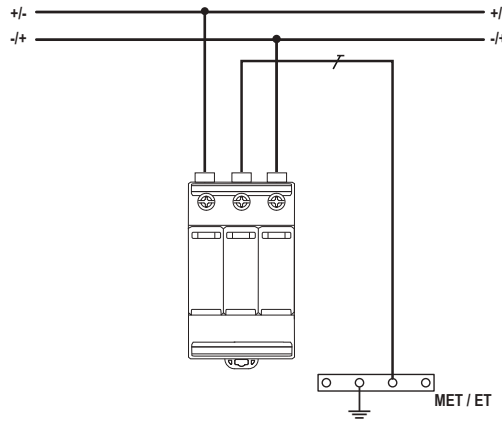
Pluggable Multi-pole SPD Connection Configurations

ProBloc B DC & SafeTec T2 DC

ProBloc B 1000 DC



SafeTec T2-1000DC-3+0(-R)



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

 ProTec DMDR,
ProTec DMG & DMGR
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, reoccurring and threatening devices. Incidence of low value surges are still too high for electronic elements and are common in the object itself, often caused by activation switching of major appliances, inductive devices and motors, or industrial system operation failures. SPDs in this classification are intended to protect sensitive electronic installations in Zones 2-3 per IEC 62305.

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

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

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

Pluggable 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
 IEC/EN Category: Class III / Type 3
 Housing: Modular Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

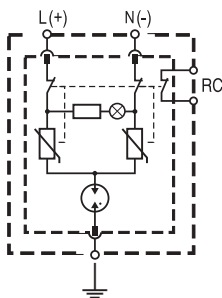
Technical Data

ProTec DMDR 20/xxx

		24	48	60	120
IEC Electrical					
Nominal AC Voltage	U_o	17V	34V	43V	85V
Maximum Continuous Operating Voltage (AC)	U_c	24V	48V	60V	120V
Open Circuit Voltage of the Combination Wave Generator (1.2/50 μ s)	U_{oc}	2.4 kV	2.4 kV	6 kV	6 kV
Short Circuit Current of the Combination Wave Generator (8/20 μ s)	I_{cw}	1.2 kA	1.2 kA	3 kA	3 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	2 kA	2 kA	4 kA	4 kA
Voltage Protection Level	(L-N) U_p	< 250V	< 500V	< 600V	< 1100V
	(L-PE)/(N-PE)	< 700V	< 800V	< 850V	< 1200V
Response Time of Overvoltage Protection	(L-N) t_A		< 25 ns		
	(L-PE)/(N-PE)		< 100 ns		
Overcurrent Protection (max)			32 A gG		
Short-Circuit Current Rating (AC)	I_{SCCR}		2 kA		
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)			
		6 mm ² (Solid, Stranded) / 4 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 Status Indication		Green LED			
Order Information					
Order Code		24	48	60	120
ProTec DMDR 20/xxx		510 783	510 833	510 834	510 835
Plug ProTec DMDR 20/xxx		510 784	510 836	510 837	510 838

ProTec DMDR 20 Series

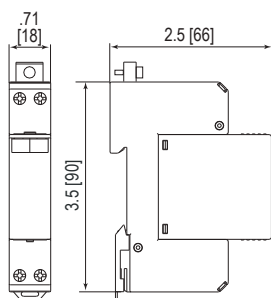
Internal Configuration



Legend

- L Line Conductor Terminal
- ⏏ PE/G Conductor Terminal
- RC Remote Contacts Terminal

Complete Unit

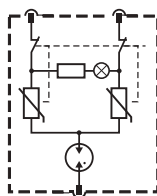


Complete Unit Dimensions & Packaging

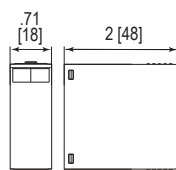
ProTec DMDR 20/xxx	24	48	60	120
Weight	pounds [grams]		.211 [96]	
DIN 43880 Dimension			1 TE / .71" [18]	
Packaging Dimensions (H x W x L)			3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]	
Standard Order Quantity			12 Units	

Plug Internal Configuration

Plug ProTec DMDR 20/xxx



Spare Plug



Single Unit Dimensions & Packaging

Plug ProTec DMDR 20/xxx	24	48	60	120
Weight	pounds [grams]		.070 [32]	
DIN 43880 Dimension			1 TE / .71" [18]	
Packaging Dimensions (H x W x L)			3.8 x 3 x 4.3" [98 x 77 x 110 mm]	
Standard Order Quantity			12 Units	

inches
[mm]

Pluggable 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
 IEC/EN Category: Class III/Type 3
 Housing: Modular Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

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

320

IEC Electrical

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

Mechanical & Environmental

Temperature Range	T_a	-40 °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) 6 mm ² (Solid, Stranded) / 4 mm ² (Flexible)
Conductor Cross Section	(PE)	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
Fault Indication		Red Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/0.5A; 125V/3A
RC Terminal Cross Section (max)		1.5mm ² (Solid) / 16 AWG (Solid)
RC Terminal Screw Torque		2.2 lbf-in [0.25 Nm]

Order Information

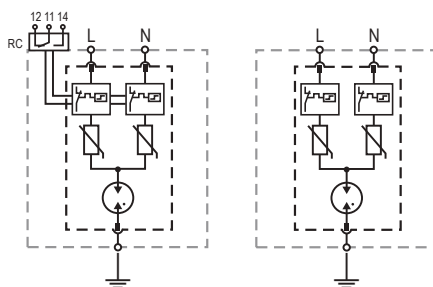
Order Code	320
ProTec DMG 20/xxx (2+0)	508.369
ProTec DMGR 20/xxx (2+0) (with remote contacts)	508.370
Plug ProTec DMG(R) 20/xxx	508.371

ProTec DMG(R) 20 (2+0)

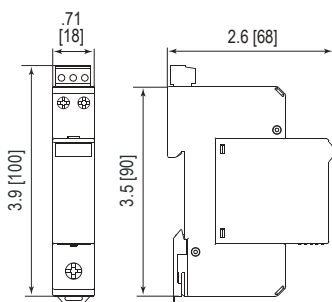
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏚ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)



Complete Unit

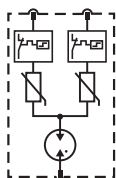


Complete Unit Dimensions & Packaging

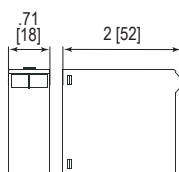
ProTec DMG 20/xxx (2+0)		320
Weight	pounds [grams]	0.260 [118]
ProTec DMGR 20/xxx (2+0)		
Weight	pounds [grams]	0.271 [123]
Single Unit DIN 43880 Dimension		1 TE / .71" [18]
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]
Standard Order Quantity		12 Units

Plug Internal Configuration

Plug ProTec DMG(R) 20/xxx



Spare Plug



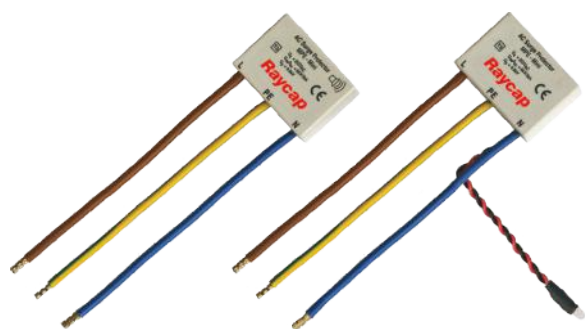
Single Unit Dimensions & Packaging

Plug ProTec DMG(R) 20/xxx		320
Weight	pounds [grams]	0.112 [51]
DIN 43880 Dimension		1 TE / .71" [18]
Packaging Dimensions (H x W x L)		3.8 x 3 x 4.3" [98 x 77 x 110 mm]
Standard Order Quantity		12 Units

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
 IEC/EN Category: Class III / Type 3
 Safety: Buzzer, LED
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

		MPE-Mini	MPE-Mini LED
IEC Electrical			
Nominal AC Voltage (50/60 Hz)	U_o		230V
Maximum Continuous Operating Voltage (AC)	U_c		275V
Open Circuit Voltage of the Combination Wave Generator (1.2/50 μ s)	U_{oc}		6kV
	(L+N-PE) $U_{oc\ total}$		10kV
Short-Circuit Current of the Combination Wave Generator (8/20 μ s)	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
Overcurrent Protection (max)			MCB/B 16A
Short-Circuit Current Rating	I_{SCCR}		1 kA
TOV Withstand 5s	U_T		337 V
Number of Ports			1
Mechanical & Environmental			
Temperature Range	T_a		-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Humidity	RH		5%...95%
Conductor Cross Section			17 AWG (Stranded) / 1.0mm ² (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

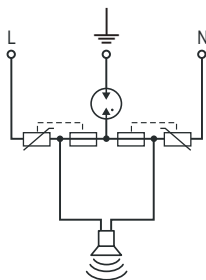
MPE Mini

Internal Configuration

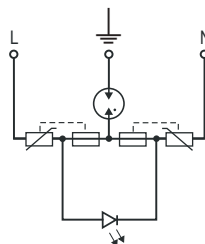
Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏏ PE/G Conductor Terminal

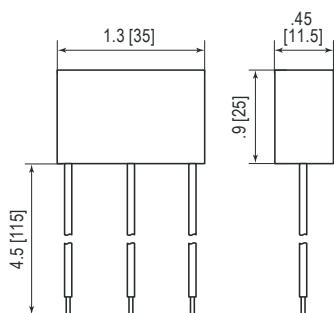
MPE-Mini



MPE-Mini LED



Complete Unit



Complete Unit Dimensions & Packaging

MPE-Mini & MPE-Mini LED

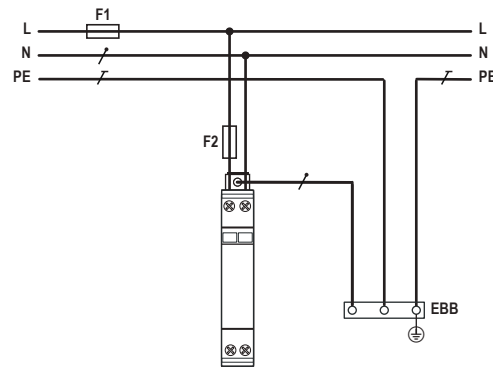
Weight	pounds [grams]	0.114 [52]
Packaging Dimensions (H x W x L)		12 x 4.5 x 3.2" [305 x 116 x 83 mm]
Standard Order Quantity		30 Units

inches
[mm]



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

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

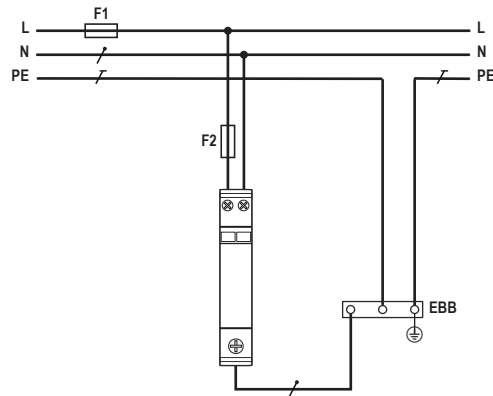


Overcurrent Protection Rating for I_{SCCR}

- F1 > 32A gG → — F2 = 32A gG
- F1 ≤ 32A gG → ~~— F2~~

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

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



Overcurrent Protection Rating for I_{SCCR}

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

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.

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



Location of Use: Overhead Power Lines
 Network Systems: TN
 Mode of Protection: L - PEN
 IEC/EN Category: Class II / Type 2
 Housing: Compact Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

ProTec AQS 40/xxx		150	275	320	440
IEC Electrical					
Nominal AC Voltage (50/60 Hz)	U_o	120V	230V	230V	440V
Maximum Continuous Operating Voltage (AC)	U_c	150V	275V	320V	440V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA			
Maximum Discharge Current (8/20 μ s)	I_{max}	40 kA			
Voltage Protection Level	U_p	< 0.9kV	< 1.3kV	< 1.4kV	< 2.0kV
Response Time	t_A	< 25ns			
TOV Withstand 5s	U_T	216V	393V	393V	682V
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 [3.5Nm]			
Connection Thread	(L/N)	M8			
Conductor Cross Section (max)	(PE)	6 mm ² (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			

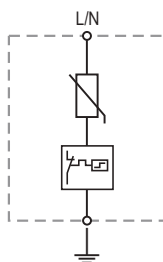
Order Information					
Order Code		150	275	320	440
PROTEC AQS 40/xxx		509.210	509.211	509.212	509.213

ProTec AQS 40 Series

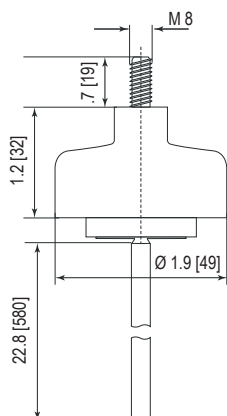
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏚ PE/G Conductor Terminal



Complete Unit

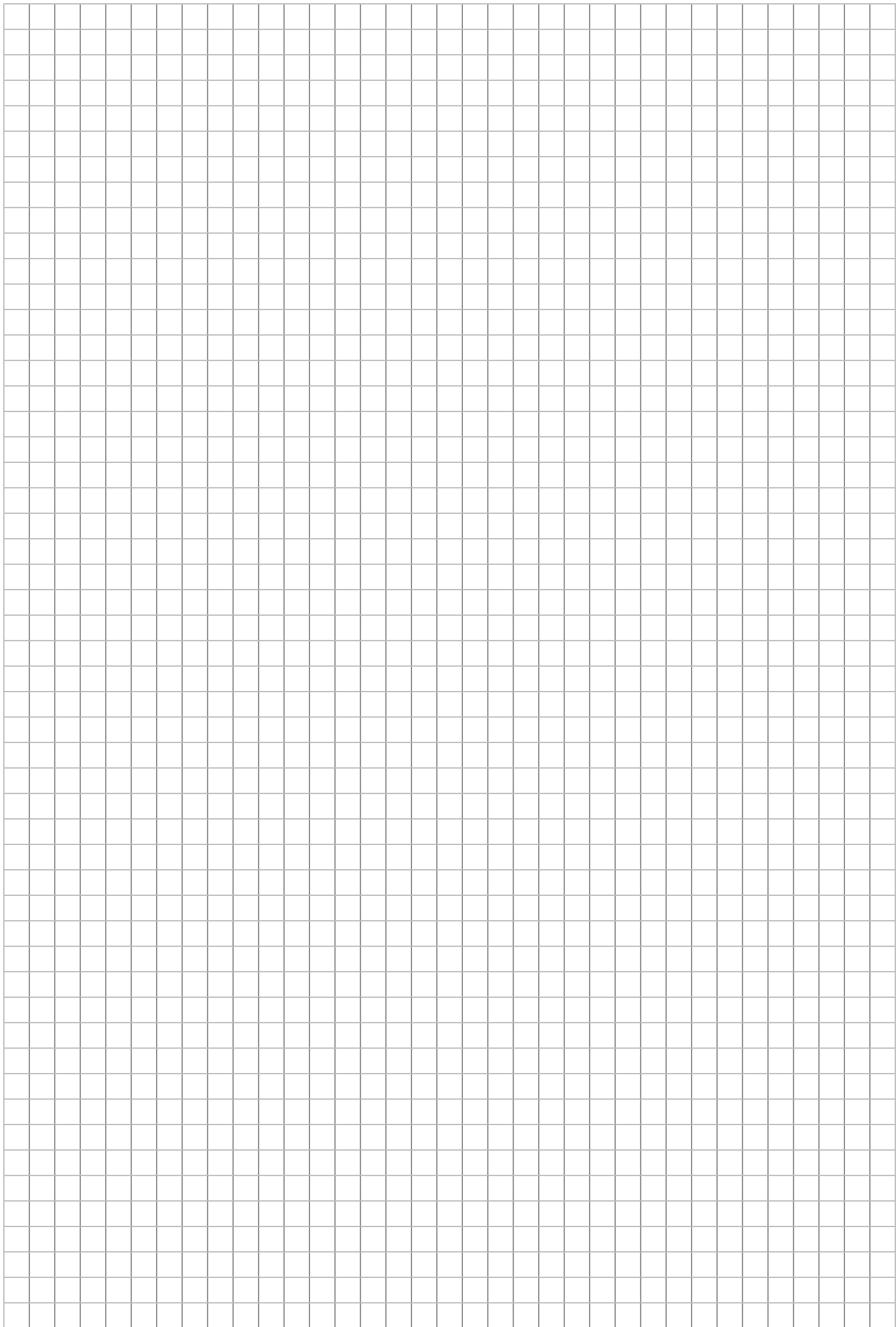


Complete Unit Dimensions & Packaging

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



inches
[mm]



Isolating Spark Gap (ISG)



EPZ 100/350 Ex

The EPZ 100/350 Ex 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 100/350 Ex 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 100/350 Ex is available in a hermetically sealed enclosure for direct burial applications.

The EPZ 100/350 Ex has been developed to comply with the EN 62561-3:2017, Edition 2.0 – Lightning Protection System Components (LPSC) – Part 3: Requirement for Isolating Spark Gaps (ISG), and to comply with the EN 60079-0:2012+A11:2013, EN 60079-15:2010, both standards for explosive atmospheres.

Isolating Spark Gaps (ISG) EPZ 100/350 Ex Class 1L for Light Duty



Corrosion resistant enclosure with hermetic environmental seal and flying leads for ease of connection. Use in places in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of gas or vapour is not likely to occur in normal operation, but if it does occur, will persist for short period only (usually no longer than two hours).

Location of Use: Explosive atmosphere, Zone 2, Group II, Category 3

Type of Protection: Equipment Producing Operational Sparks
IEC/EN Category: Class 1L

Housing: Corrosion resistant enclosure

Compliance: IEC 60079-0:2011
IEC 60079-15:2010
EN 60079-0:2012+A11:2013
EN 60079-15:2010
EN 62561-3:2017



Technical Data

EPZ 100/350 Ex

350

Intrinsic Safety Parameters

IECEX BAS 15.0069X	Ex nC IIC T5 Gc (-30°C ≤ 70°C)
Basefa15ATEX0102X	II 3G Ex nC IIC T5 Gc (-30°C ≤ 70°C)

Electrical

Rated Power Frequency Withstand Voltage	$U_{W AC}$	240V
Rated DC Withstand Voltage	$U_{W DC}$	350V
Rated Impulse Sparkover Voltage	$U_{r imp}$	1000V
Maximum Discharge Current (8/20µs)	I_{max}	100kA
Impulse Discharge Current (10/350µs)	I_{imp}	25kA
Specific Energy	W/R	156kJ/Ω
Charge	Q	12.5As
Residual Voltage at 5kA (8/20µs)	U_{res}	1.6kV
ISG Classification		1L
Capacitance at 1MHz	C	< 10pF

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)		37.402" [950 mm]
Cross Sectional Area		6 AWG [16 mm ²]
Number of Conductors		≥ 465/0.21
Insulation		Double Insulated
Environmental Protection		UV Stabilized, Flame Retardant
Resistant		Acids, Solvents and Oils
Connection		Suitable for Screw or Lug Termination
Degree of Protection		IP 67
Housing Material		Metal Tube
Location		Indoor/Outdoor

Specifications for Use

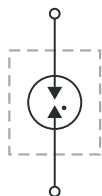
Environmental	Local heating by pipelines and other hot surfaces in vicinity of the installation of the product must be considered by the installer to ensure that specified maximum ambient temperature is not exceeded.
Wiring	Connection of the internal cables must be in accordance with the applicable requirement of IEC 60079-0 and IEC 60079-15 for field wiring connections.
Safety	EPZ has an external non-metallic heat shrink sleeve which may provide a potential electrostatic charging hazard. See installation instructions for further information.

Order Information

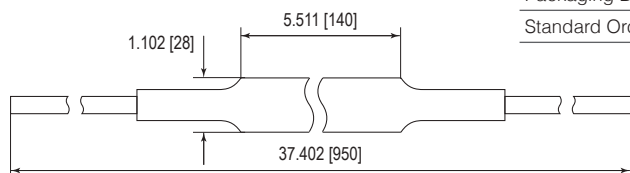
Order Code	350
EPZ 100/350 Ex	509 521

EPZ 100/350 Ex

Internal Configuration



Complete Unit



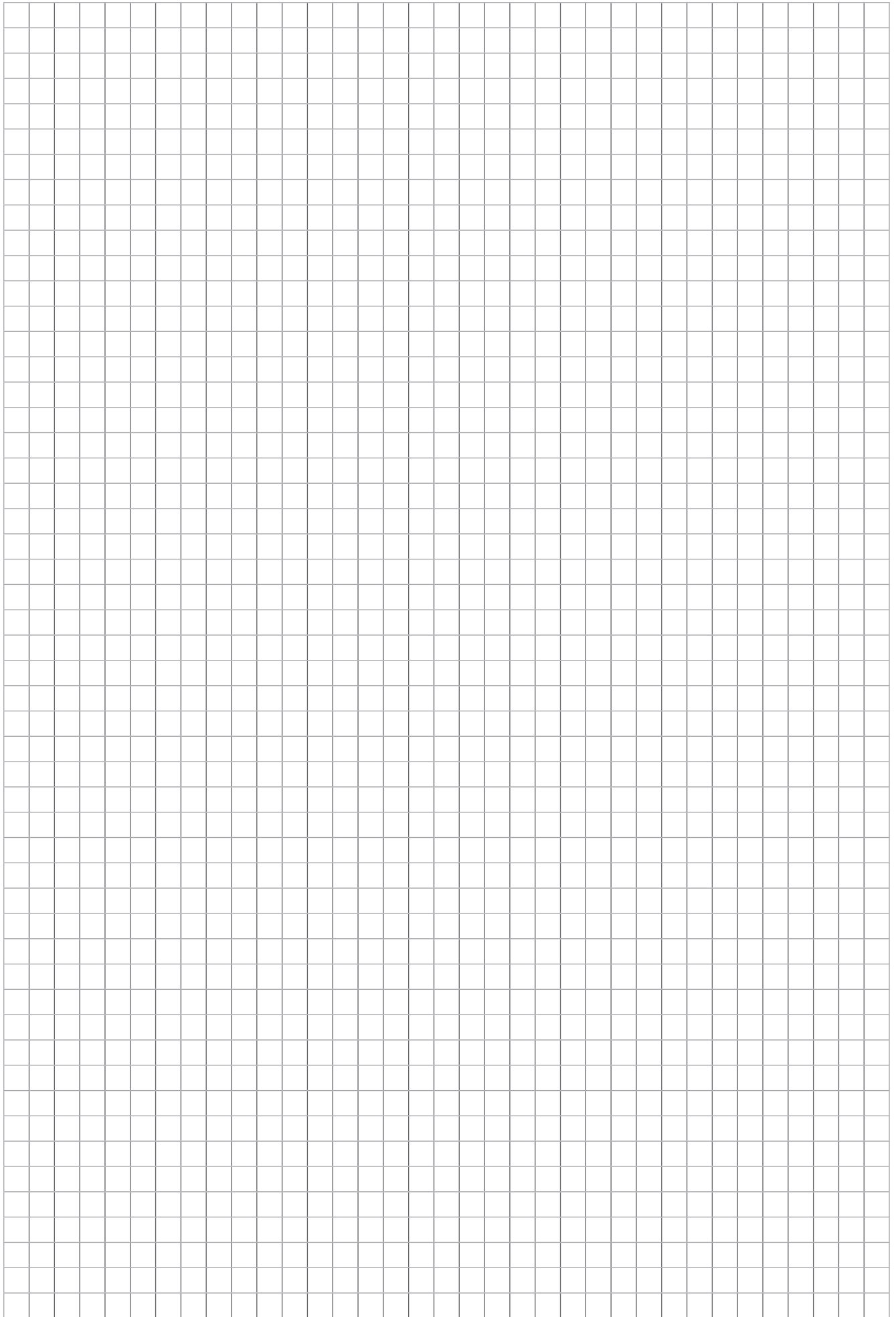
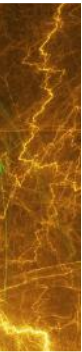
Complete Unit Dimensions & Packaging

EPZ 100/350 Ex		350
Weight	pounds [grams]	1.103 [500]
Packaging Dimensions (H×W×L)		13.7 × 4.9 × 2.1" [350 × 125 × 55mm]
Standard Order Quantity		27 Units



inches
[mm]





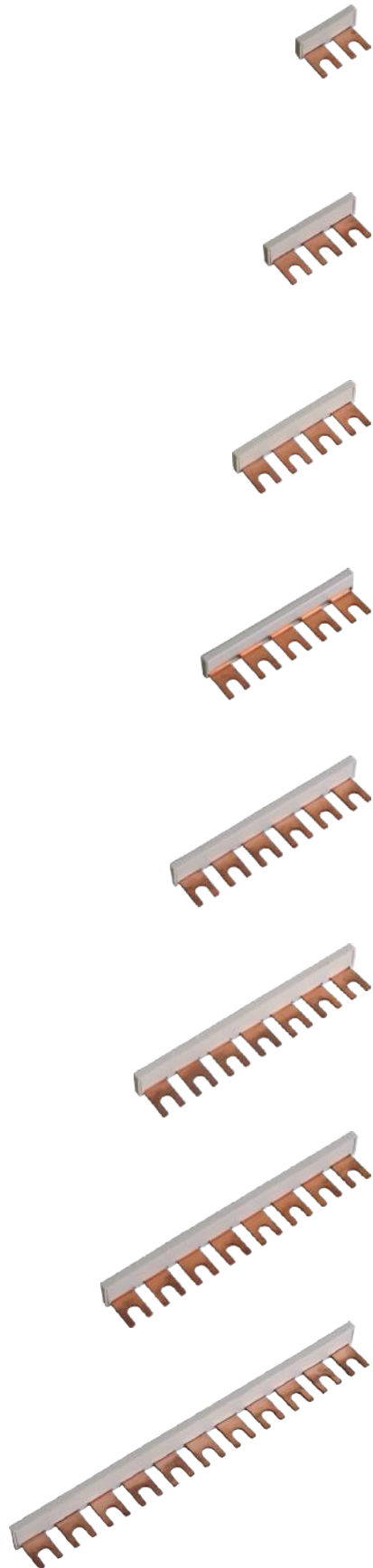
Surge Protective Devices Connection Accessories



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.



ProBar	1-2
Mechanical	
Number of Poles	2
Busbar Cross Section	6 AWG / 16 mm ²
Order Information	
Ordering Code	501 338
ProBar	1-3
Mechanical	
Number of Poles	3
Busbar Cross Section	6 AWG / 16 mm ²
Order Information	
Ordering Code	501 339
ProBar	1-4
Mechanical	
Number of Poles	4
Busbar Cross Section	6 AWG / 16 mm ²
Order Information	
Ordering Code	501 340
ProBar	1-5
Mechanical	
Number of Poles	5
Busbar Cross Section	6 AWG / 16 mm ²
Order Information	
Ordering Code	501 341
ProBar	1-6
Mechanical	
Number of Poles	6
Busbar Cross Section	6 AWG / 16 mm ²
Order Information	
Ordering Code	501 342
ProBar	1-7
Mechanical	
Number of Poles	7
Busbar Cross Section	6 AWG / 16 mm ²
Order Information	
Ordering Code	501 343
ProBar	1-8
Mechanical	
Number of Poles	8
Busbar Cross Section	6 AWG / 16 mm ²
Order Information	
Ordering Code	501 344
ProBar	1-11
Mechanical	
Number of Poles	11
Busbar Cross Section	6 AWG / 16 mm ²
Order Information	
Ordering Code	501 345

Modular Wiring Systems ProBar Busbar

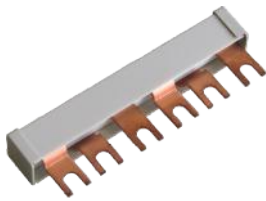
Two Phase Series



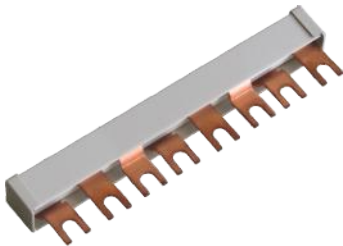
ProBar	2-8
Mechanical	
Number of Poles	8
Busbar Cross Section	6 AWG / 16 mm ²
Order Information	
Ordering Code	501 346

Modular Wiring Systems ProBar Busbars

Three Phase Series



ProBar	3-6
Mechanical	
Number of Poles	6
Busbar Cross Section	6 AWG / 16 mm ²
Order Information	
Ordering Code	501 347



ProBar	3-8
Mechanical	
Number of Poles	8
Busbar Cross Section	6 AWG / 16 mm ²
Order Information	
Ordering Code	501 348

SPD Accessories

inches
[mm]

PB 1 Busbars

ProTec B(R) 2 TE • SafeTec B(R) 2 TE



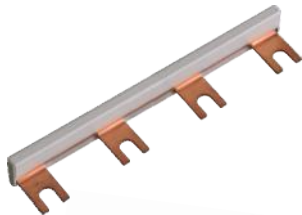
PB 1 (2+0)	1 (2+0)
Mechanical	
Number of Poles	2
Busbar Cross Section	6 AWG / 16 mm ²
Order Information	
Ordering Code	501 349



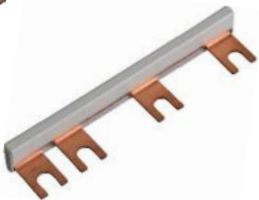
PB 1 (3+0)	1 (3+0)
Mechanical	
Number of Poles	3
Busbar Cross Section	6 AWG / 16 mm ²
Order Information	
Ordering Code	501 350



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



PB 1 (4+0)	1 (4+0)
Mechanical	
Number of Poles	4
Busbar Cross Section	6 AWG / 16 mm ²
Order Information	
Ordering Code	501 352



PB 1 (3+1)	1 (3+1)
Mechanical	
Number of Poles	4
Busbar Cross Section	6 AWG / 16 mm ²
Order Information	
Ordering Code	501 353

Compact Single Pole Overhead Power Lines
Connection Accessories
ProTec AQS Series



Fixing Cable

Order Information

Ordering Code 509 522



Fixing Hook

Order Information

Ordering Code 509 523



PSN

Connection clamp for the non-insulated conductor.

Order Information

Ordering Code 509 524

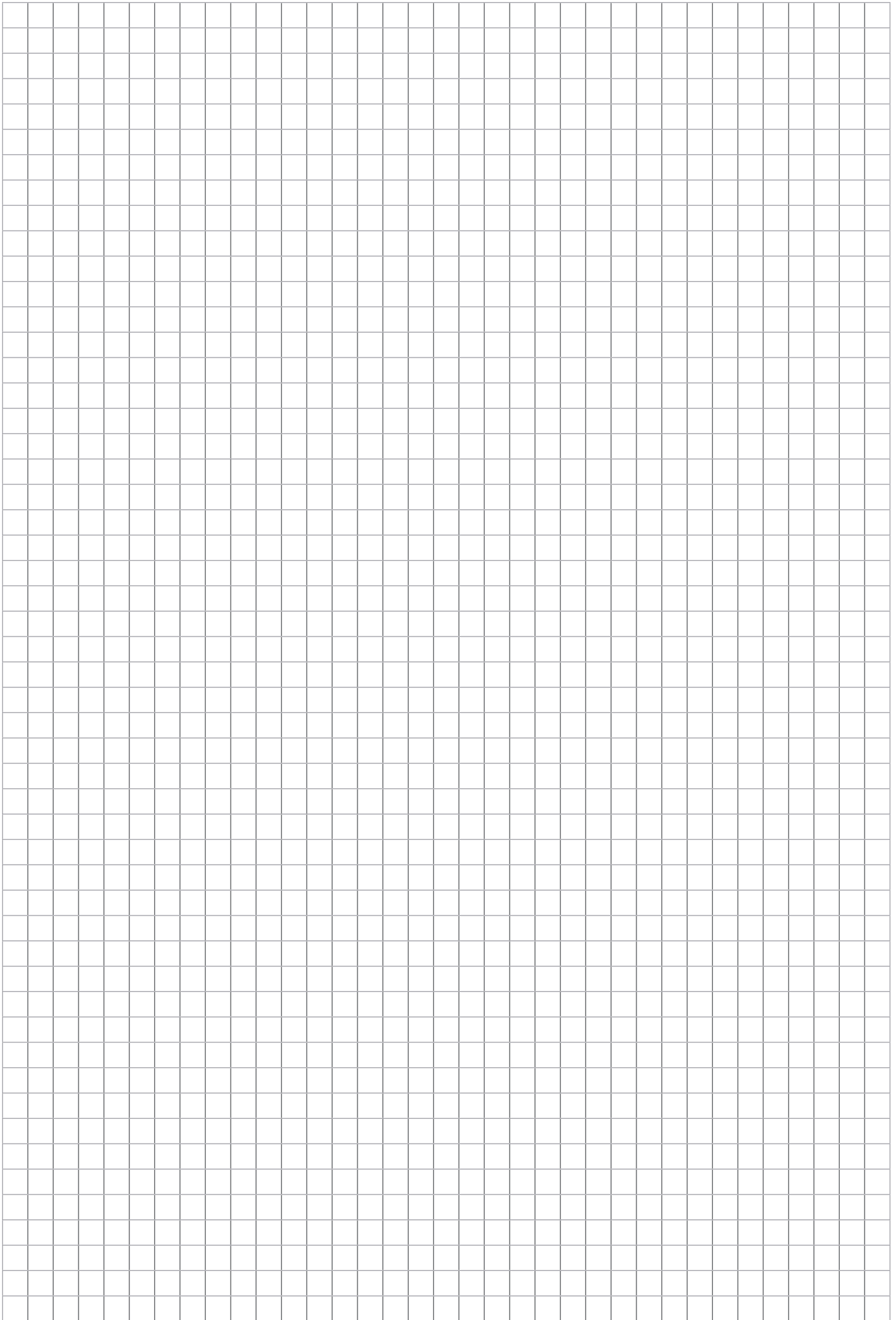


PSI

Connection clamp for the insulated conductor.

Order Information

Ordering Code 509 525



Surge & Lightning Counters Surge Protection Device Monitoring



ProGRID Series

Electrical surges are high frequency current events that present potential danger to sophisticated electronic devices. Electrical surges can occur at almost any time, and the most common causes are lightning strikes, the switching of inductive loads, power grid disturbances, general fault or arcing conditions. In the case of a direct lightning strike the damage caused by surge current is clearly felt and often visible, however many other electrical surge events can go unnoticed. The consequences of such 'quiet' disturbances can be just as detrimental to the operation.



Raycap's ProGRID surge and lightning counter solutions have different capabilities that can sense, record and transmit the occurrence of otherwise undetectable surge currents, enabling users to take preventative measures and plan appropriate maintenance.

Counting & Monitoring Solutions

ProSEC II+



Location of Use: Main & Sub-Distribution Boards
 Threshold Current: $I_{tc} = 50\text{A}$
 Surge Ratings: $I_{mcw} = 50\text{kA}$ (8/20 μs)
 Housing: Compact Design
 Compliance: EN 61326-1:2013

Technical Data

ProSEC II+

IEC Electrical

Threshold Current (8/20 μs)	I_{tc}	50A
Maximum Counting Discharge Current (8/20 μs)	I_{mcw}	50kA
Power Supply		Replaceable: CR17335 lithium battery Lifetime: up to two years
Maximum Events Logged		999
Number of Ports		1

Mechanical & Environmental

Operating Temperature Range	T_a	-4 °F to +158 °F [-20 °C to +70 °C]
Wired Diameter through Current Sensor (max)		0.55" [14 mm]
Sensor Cable		19.7" [0.5 m]
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20 (built-in)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Operating State/Display		LCD Screen Number of Surges, Hour, Minute, Date of Event
Surge Sensor		Snap-on

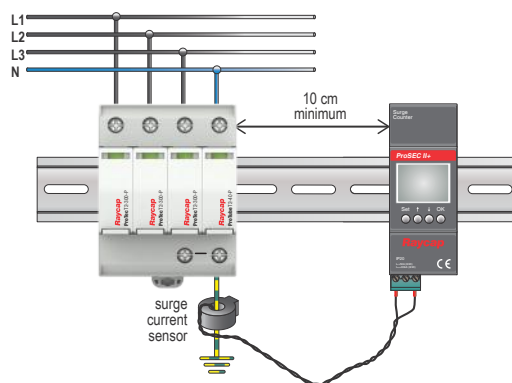
Order Information

Order Code		
ProSEC II+		130 100

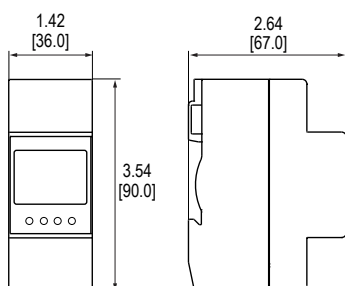
ProSEC II+

Typical Installation

The ProSEC II+ is a surge counter with additional functionality. Besides counting the number of surges, it also logs the hour and date of each surge counted. This additional time and date logging function makes it possible to pinpoint the exact time of every surge and correlate it with equipment and power supply problems inside of a facility or structure.



Complete Unit



Complete Unit Dimensions & Packaging

ProSEC II+

Weight	pounds [grams]	.33 [150]
DIN 43880 Dimension		2 TE / 1.42" [36]
Packaging Dimensions (H x W x L)		3.3 x 1.7 x 4.3" [83 x 42 x 110 mm]
Standard Order Quantity		1 Unit

inches
[mm]

Counting & Monitoring Solutions

ProSLS



Location of Use: Main & Sub-Distribution Boards
 Housing: Compact Design
 Compliance: EN 61326-1:2013

Technical Data

ProSLS

IEC Electrical

Minimum Measurable Leakage Current	100 μ A
Power Supply	Replaceable: 3.6V(ER AA) battery Lifetime: up to two years
Remote Contacts	AC: 45V/1A DC: 30V/1A
Number of Ports	1

Mechanical & Environmental

Operating Temperature Range	T _a	-22 °F to +158 °F [-30 °C to +70 °C]
Wired Diameter through Current Sensor (max)		0.47" [12mm]
Sensor Cable		39.4" [1 m]
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20 (built-in)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Operating State/Display		LCD Screen
Surge Sensor		Number of Surges, Hour, Minute, Date of Event Snap-on

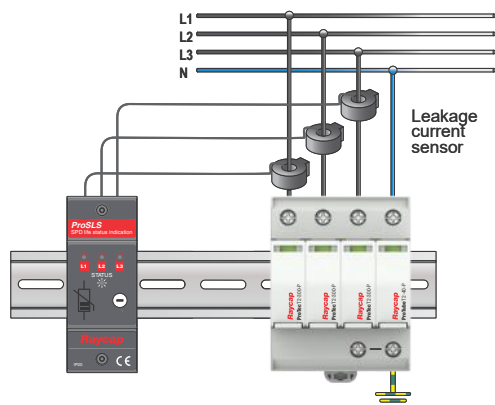
Order Information

Order Code	
ProSLS	130 551
ProSLS (Shielded)	133 005

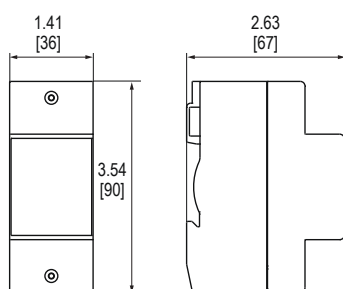
ProSLS

Typical Installation

ProSLS is a device that continuously monitors the leakage current of an SPD, which is the most accurate predictor of a SPD's life status. Using measured current, ProSLS is able to predict the advanced degradation of a SPD and convey this information to the user.



Complete Unit



Complete Unit Dimensions & Packaging

ProSLS

Weight	pounds [grams]	.88 [440]
DIN 43880 Dimension		2 TE / 1.42" [36]
Packaging Dimensions (H x W x L)		2.9 x 2.3 x 4.2" [73.5 x 58 x 106 mm]
Standard Order Quantity		1 Unit



inches
[mm]

SPD Component Tester ProSCT



Location of Use: Portable SPD Component Tester

Test Current

(MOV & ABD): 0.1 mA; 0.5mA; 1 mA

Test Voltage: up to 1500VDC

Housing: Portable Design with or without case

Compliance: EN 61326-1:2013

IEC 61010-1:2010

Technical Data

ProSCT

IEC Electrical

Test Current (MOV & ABD)	I_{tc}	0.1 mA; 0.5mA; 1 mA
Test Voltage DC (max)		1500V
Voltage Ramp (GDT)	t_A	100V/s; 1000V/s
Power Supply		Integrated rechargeable battery
		Lifetime: up to two years
MOV Measurement Error		1.5% +/- 2 digit counts
GDT Measurement Error		3.5% +/- 2 digit counts (1 kV/s)
		1.6% +/- 2 digit counts (100V/s)
Component Connection		Auto-detect
Number of Ports		1

Mechanical & Environmental

Operating Temperature Range	T_a	+14 °F to +122 °F [-10 °C to +50 °C]
Degree of Protection		IP 20 (built-in)
Housing Material		Thermoplastic: Extinguishing Degree UL-94-HB ABS
Operating State/Display		320 x 240 pixel TFT Color with Touch Screen Interface
		MOV, GDT, TVS Measurement, LOG Mode, Auto Detect, Date of Event

Order Information

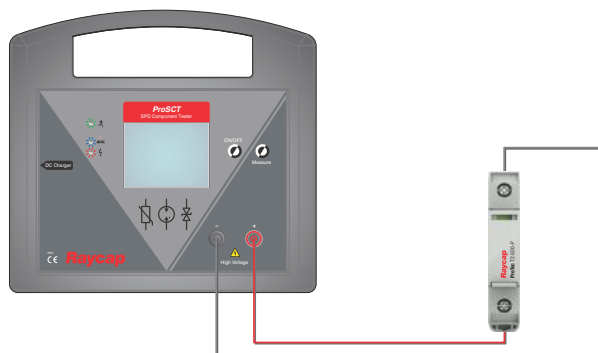
Order Code		
ProSCT		130 571
ProSCT (with Suitcase)		130 572

ProSCT

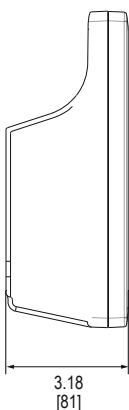
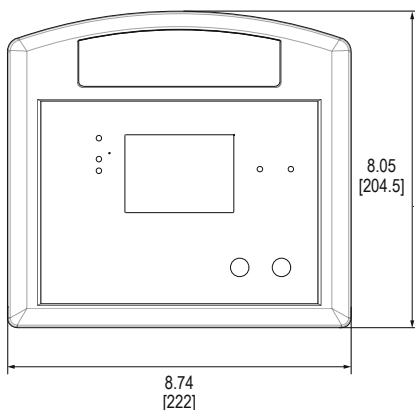
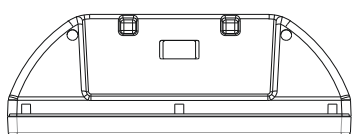
Typical Installation

The ProSCT SPD Component Tester tests the components commonly used in surge protective devices, such as Gas Discharge Tubes (GDT), Metal Oxide Varistors (MOV), and Transient Voltage Suppressors (TVS).

It is a portable, battery operated instrument with an integrated battery charger housed in a robust enclosure. The instrument features a 320 × 240 pixel TFT color display with touch screen interface.



Complete Unit



Complete Unit Dimensions & Packaging

ProSCT

Weight	pounds [grams]	2.43 [1100]
Packaging Dimensions (H×W×L)	Suitcase: 4.5 × 10.1 × 14.3" [115 × 256 × 363 mm]	
Standard Order Quantity	1 Unit	

Accessories

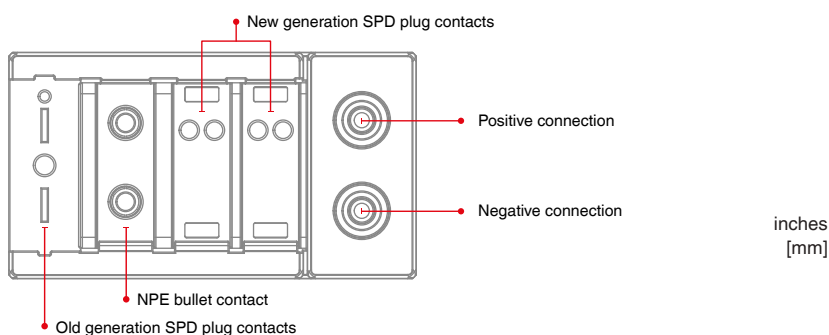


SPD Adapter

Connections towards SPD tester	Banana Jack
Connections towards SPD modules	Old SPD flat contacts, NPE bullet contact, 2 New SPD spring contacts (for 1TE and 2TE modules)
Operating temperatures	-10 °C to +50 °C
Enclosure Dimension (L × W × D)	2.3 × 4.3 × 2" [60 × 108 × 52 mm]
Weight	pounds [grams] .38 [175]

Order Information

Order Code	
SPD adapter	130 573



SPD Monitoring Solutions ProALARM



Location of Use: Main & Sub-Distribution Boards
 Power Supply: 110V to 230V (AC/DC)
 Housing: Compact Design
 Compliance: IEC 61010-1:2010

Technical Data

ProALARM

IEC Electrical

Power Supply (AC/DC)	110V – 230V
Number of Ports	1

Mechanical & Environmental

Operating Temperature Range	T_a	-20 °C to +70 °C (-4 °F to + 158 °F)
Mounting		35mm DIN Rail, EN 60715
Degree of Protection		IP 20 (built-in)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Operating State/Display		LED Red / Audible Alarm

Order Information

Order Code	
ProALARM	130 511

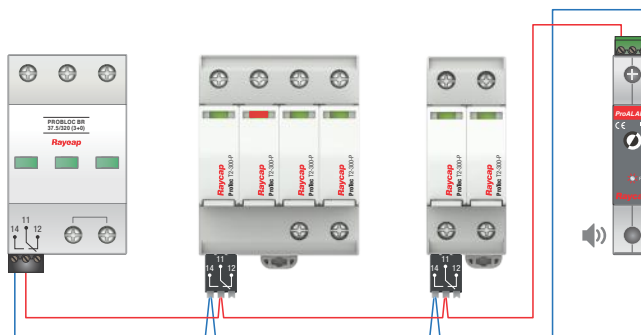
ProALARM

Typical Installation

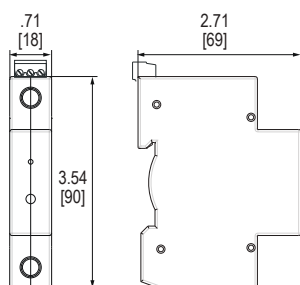
ProALARM is a failure indication device that indicates the need to replace a failed SPD. It can be easily installed next to the SPD on the same rail by making connection between the RC contacts of the SPD and the unit.

If the SPD fails, a loud audible beeping sound and the red LED illuminates.

Pressing the button will silence the audible sound, but leave the LED illuminated until the SPD has been replaced.



Complete Unit



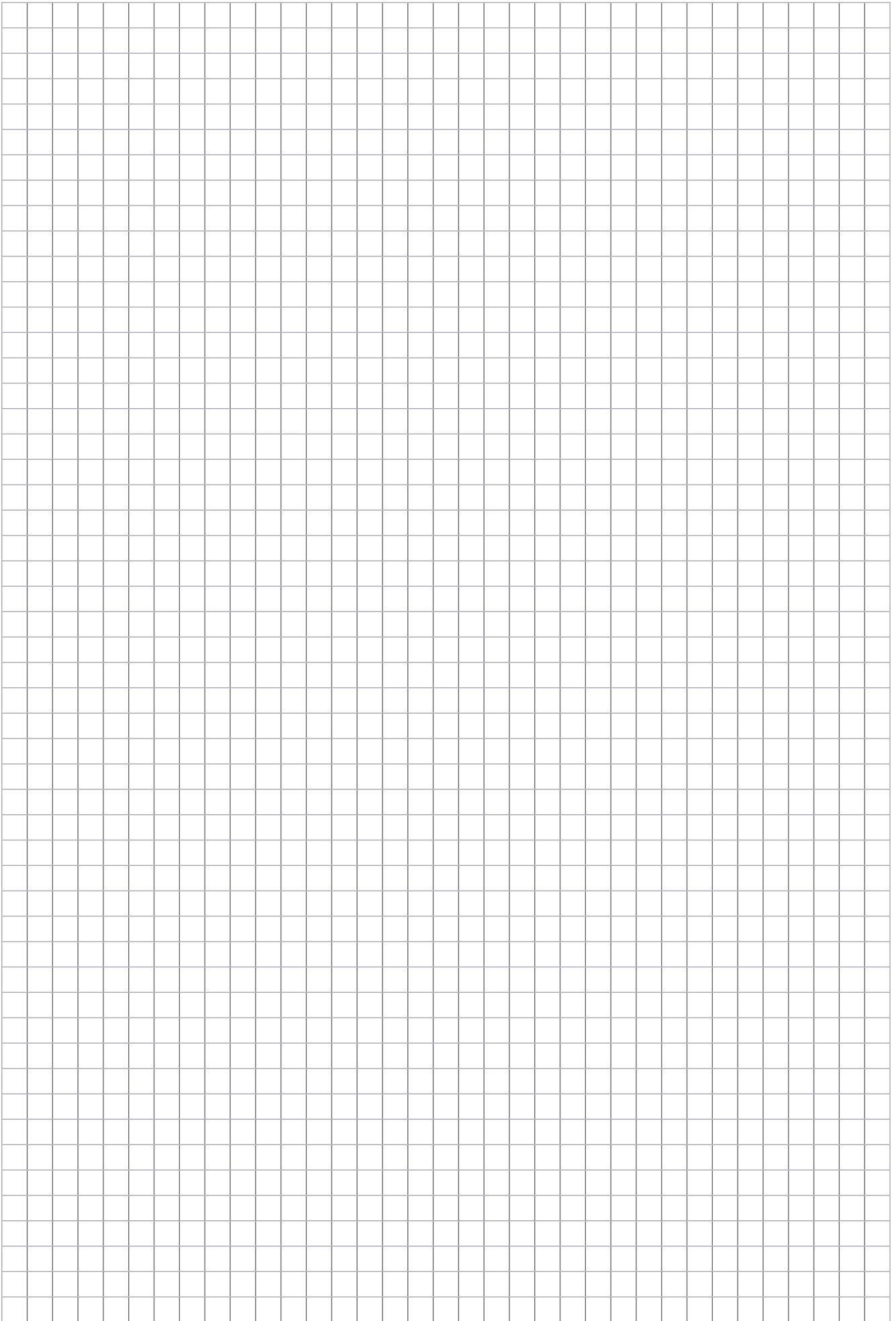
Complete Unit Dimensions & Packaging

ProALARM

Weight	pounds [grams]	.19 [87]
DIN 43880 Dimension		1 TE / .71" [18]
Packaging Dimensions (H×W×L)		2.9 × 0.9 × 4.3" [74 × 24 × 108 mm]
Standard Order Quantity		1 Unit



inches
[mm]



References Product Indexes



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.

The following pages highlight current Regulatory Standards, SPD Technologies in use today, Industry Terminology and the basic types of Low Voltage Distribution Systems Raycap products protect.

Product Indexes are arranged alphabetically either by Class/Type or Product Name. Also included is a listing by Order Code for convenient reordering and the new PCB Socket Product Combination Index to quickly identify which plugs fit which PCB Socket Configuration.

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: 2013+ A1: 2014	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	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 61643-11: 2012	Surge protective devices connected to low-voltage power distribution systems – requirements and test methods.
8 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)
9 EN 62561-3: 2012	Lightning protection system components (LPSC) – Part 3: Requirements for isolating spark gaps (ISG)
European Commission on European Standards (EC/EN)	
10 IEC/EN 61326-1: 2012 2LV	Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements
International Electrotechnical Commission (IEC)	
11 IEC 60038: 2009	IEC standard voltages
12 IEC 60099-4: 2014	Surge arresters – Part 4: Metal-oxide surge arresters without gaps for AC systems
13 IEC 60099-5: 2013	Surge arresters – Part 5: Selection and application recommendations
14 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
15 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
16 IEC 60364-7-712: 2017	Electrical installations of buildings – Part 7-712: Requirements for special installations or locations – Solar photovoltaic (PV) power supply systems
17 IEC 61000-4-5: 2014	Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test
18 IEC 61400-24: 2010	Wind turbine generator systems – Part 24: Lightning protection

Regulations	Description
19 IEC 61643-11: 2011	Surge protective devices connected to low voltage power distribution systems – Requirements and test methods
20 IEC 61643-12: 2008	Surge protective devices connected to low voltage power distribution systems – Selection and application principles
21 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
22 IEC 61643-22: 2015	Low voltage surge protective devices – Part 22: Surge protection devices connected to telecommunications and signaling networks – Selection and application principles
23 IEC 61643-31: 2018	Low voltage surge protective devices – Part 31: Requirements and test methods of SPDs for photovoltaic installations
24 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
25 IEC 62305-1: 2010	Protection against lightning – Part 1: General principles
26 IEC 62305-2: 2010	Protection against lightning – Part 2: Risk management
27 IEC 62305-3: 2010	Protection against lightning – Part 3: Physical damage to structures and life hazard
28 IEC 62305-4: 2010	Protection against lightning – Part 4: Electrical and electronic systems within structures
29 IEC 62497-2: 2010	Railway applications – Insulation coordination – Part 2: Overvoltages and related protection
29 IEC 62561-6: 2011	Lightning protection system components (LPSC) – Part 6: Requirements for lightning strike counters (LSC)
International Telecommunication Union Standards (ITU-T)	
31 ITU-T K.20: 2011	Protection against interferences: Resistibility of telecommunication equipment installed in a telecommunications center to overvoltages and overcurrents
32 ITU-T K.21: 2016	Protection against interferences: Resistibility of telecommunication equipment installed in customer premises to overvoltages and overcurrents
33 ITU-T K.44: 2016	Protection against interferences: Resistibility test for telecommunication equipment exposed to overvoltages and overcurrents – Basic Recommendation
Harmonization Document (HD)	
34 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.
35 HD 60364-7-712: 2016	Low voltage electrical installations – Part 7-712: Requirements for special installations or locations – Photovoltaic (PV) systems
Underwriters Laboratory (UL)	
36 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



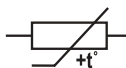
Gas Discharge Tube (GDT)

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 μ s



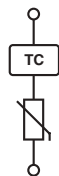
SPD Based on GDT Technology

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



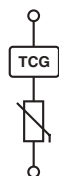
Combination (Hybrid) Type SPD Based on Combined GDT and MOV Technology

- 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 μ s
- 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 μ s
- Thermal Control Function (TC)



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

- No follow current I_{fi}
- Quick response time t_A at ≤ 25 ns results in low residual voltage
- Responds well to low overvoltages
- High surge capacity up to 25 kA 10/350 μ s
- 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 50 kA (25 kA + 25 kA) 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 μ s Voltage Impulse

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

8/20 μ s Current Impulse

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

American Wire Gauge (AWG)

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

Combination Wave

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

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

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

Follow Current Interrupt Rating I_{fi}

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

Impulse Discharge Current I_{imp} (10/350 μ s Current Impulse)

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

Maximum Continuous Operating Voltages (U_c or MCOV)

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

Maximum Discharge Current I_{max}

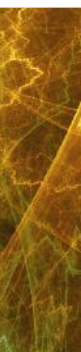
Crest value of a current through the SPD having an 8/20 μ s waveshape and magnitude according to the manufacturers specifications: I_{max} is greater than I_n .

Metal Oxide Varistor (MOV)

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

Multi-pole Surge Protective Device (SPD)

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



Nominal AC Voltage U_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 μ s.

Overcurrent Protection

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

Residual Voltage U_{res}

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

SPD Disconnecter

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

SPD Mode of Protection

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

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

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

Short Circuit Current Rating (SCCR) per UL 1449

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

Surge Protective Device (SPD)

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

Temporary Overvoltage Characteristics TOV

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

Total Discharge Current I_{Total}

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

Voltage Protection Level U_p

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

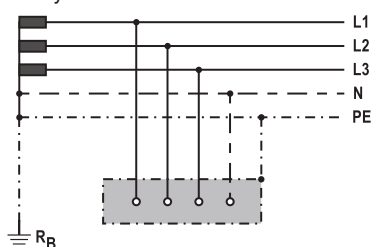
Low Voltage Power Distribution System Types



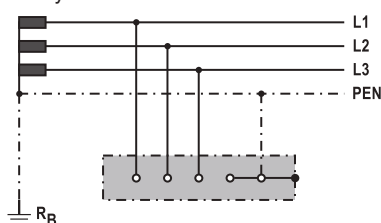
Earthing Systems

System Configuration

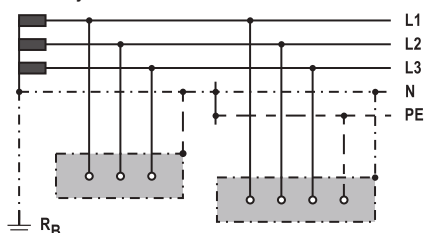
TN-S System



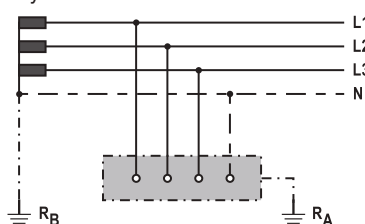
TN-C System



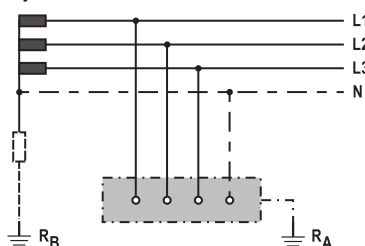
TN-C-S System



TT System



IT System



Low voltage distribution network systems are designated using two letters according to IEC 60364-4-41: 2015. The first letter describes the grounding method used at the source, the secondary side of the power distribution transformer. The second letter describes the grounding method used at the consumer's electrical installation for any conductive metal parts.

The method is used to define three basic systems:

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

The abbreviations have the following meaning:

First Letter—relationship of power system to earth

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

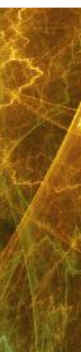
Second Letter—grounding method used at exposed conductive parts in the electrical installation:

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

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

- S** Neutral and protective conductor are separated
- C** Neutral and protective conductor are combined in a single conductor (PEN conductor)

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





Live Conductor Systems










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












Product Indexes









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				
	ProBloc B 12.5/150 (1+0)	56.0500	2 TE	86
	ProBloc BR 12.5/150 (1+0)	56.0501	2 TE	86
	ProBloc B 12.5/275 (1+0)	56.0502	2 TE	86
	ProBloc BR 12.5/275 (1+0)	56.0503	2 TE	86
	ProBloc B 12.5/320 (1+0)	56.0504	2 TE	86
	ProBloc BR 12.5/320 (1+0)	56.0505	2 TE	86
	ProBloc B 25/150 (1+0)	56.0562	2 TE	70
	ProBloc BR 25/150 (1+0)	56.0563	2 TE	70
	ProBloc B 25/275 (1+0)	56.0564	2 TE	70
	ProBloc BR 25/275 (1+0)	56.0565	2 TE	70
	ProBloc B 25/320 (1+0)	56.0566	2 TE	70
	ProBloc BR 25/320 (1+0)	56.0567	2 TE	70
	ProBloc B 25/150 (1+1)	56.0542	2 TE	94
	ProBloc BR 25/150 (1+1)	56.0543	2 TE	94
	ProBloc B 25/275 (1+1)	56.0544	2 TE	94
	ProBloc BR 25/275 (1+1)	56.0545	2 TE	94
	ProBloc B 25/320 (1+1)	56.0546	2 TE	94
	ProBloc BR 25/320 (1+1)	56.0547	2 TE	94
	ProBloc B 25/150 (2+0)	56.0512	2 TE	88
	ProBloc BR 25/150 (2+0)	56.0513	2 TE	88
	ProBloc B 25/275 (2+0)	56.0514	2 TE	88
	ProBloc BR 25/275 (2+0)	56.0515	2 TE	88
	ProBloc B 25/320 (2+0)	56.0516	2 TE	88
	ProBloc BR 25/320 (2+0)	56.0517	2 TE	88
	ProBloc B 37.5/150 (3+0)	56.0522	3 TE	90
	ProBloc BR 37.5/150 (3+0)	56.0523	3 TE	90
	ProBloc B 37.5/275 (3+0)	56.0524	3 TE	90
	ProBloc BR 37.5/275 (3+0)	56.0525	3 TE	90
	ProBloc B 37.5/320 (3+0)	56.0526	3 TE	90
	ProBloc BR 37.5/320 (3+0)	56.0527	3 TE	90
	ProBloc B 50/150 (1+1)	56.0602	4 TE	78
	ProBloc BR 50/150 (1+1)	56.0603	4 TE	78
	ProBloc B 50/275 (1+1)	56.0604	4 TE	78
	ProBloc BR 50/275 (1+1)	56.0605	4 TE	78
	ProBloc B 50/320 (1+1)	56.0606	4 TE	78
	ProBloc BR 50/320 (1+1)	56.0607	4 TE	78
	ProBloc B 50/150 (2+0)	56.0572	4 TE	72
	ProBloc BR 50/150 (2+0)	56.0573	4 TE	72
	ProBloc B 50/275 (2+0)	56.0574	4 TE	72
	ProBloc BR 50/275 (2+0)	56.0575	4 TE	72
	ProBloc B 50/320 (2+0)	56.0576	4 TE	72
	ProBloc BR 50/320 (2+0)	56.0577	4 TE	72
	ProBloc B 50/275 (3+1)	56.0554	4 TE	96
	ProBloc BR 50/275 (3+1)	56.0555	4 TE	96
	ProBloc B 50/320 (3+1)	56.0556	4 TE	96
	ProBloc BR 50/320 (3+1)	56.0557	4 TE	96
	ProBloc B 50/150 (4+0)	56.0532	4 TE	92
	ProBloc BR 50/150 (4+0)	56.0533	4 TE	92
	ProBloc B 50/275 (4+0)	56.0534	4 TE	92
	ProBloc BR 50/275 (4+0)	56.0535	4 TE	92
	ProBloc B 50/320 (4+0)	56.0536	4 TE	92
	ProBloc BR 50/320 (4+0)	56.0537	4 TE	92

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				
<i>(continued)</i>				
	ProBloc B 75/150 (3+0)	56.0582	6 TE	74
	ProBloc BR 75/150 (3+0)	56.0583	6 TE	74
	ProBloc B 75/275 (3+0)	56.0584	6 TE	74
	ProBloc BR 75/275 (3+0)	56.0585	6 TE	74
	ProBloc B 75/320 (3+0)	56.0586	6 TE	74
	ProBloc BR 75/320 (3+0)	56.0587	6 TE	74
		ProBloc B 100/275 (3+1)	56.0614	8 TE
ProBloc BR 100/275 (3+1)		56.0615	8 TE	80
ProBloc B 100/320 (3+1)		56.0616	8 TE	80
ProBloc BR 100/320 (3+1)		56.0617	8 TE	80
	ProBloc B 100/150 (4+0)	56.0592	8 TE	76
	ProBloc BR 100/150 (4+0)	56.0593	8 TE	76
	ProBloc B 100/275 (4+0)	56.0594	8 TE	76
	ProBloc BR 100/275 (4+0)	56.0595	8 TE	76
	ProBloc B 100/320 (4+0)	56.0596	8 TE	76
	ProBloc BR 100/320 (4+0)	56.0597	8 TE	76
	ProTec ZPS T1H-300-3+0	59.0900		20
	ProTec ZPS T1H-300-3+0-R	59.0901		20
	ProTec ZPS T1H-300-3+0-L	59.0902		22
	ProTec ZPS T1H-300-3+0-R-L	59.0903		22
	ProTec ZPS T1H-300-3+0-E	59.0904		28
	ProTec ZPS T1H-300-3+0-E-R	59.0905		28
	ProTec ZPS T1H-300-3+0-E-L	59.0906		30
	ProTec ZPS T1H-300-3+0-E-R-L	59.0907		30




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				
				<i>(continued)</i>
	ProTec ZPS T1H-300-3+1	59.0908		24
	ProTec ZPS T1H-300-3+1-R	59.0909		24
	ProTec ZPS T1H-300-3+1-L	59.0910		26
	ProTec ZPS T1H-300-3+1-R-L	59.0911		26
	ProTec ZPS T1H-300-3+1-E	59.0912		32
	ProTec ZPS T1H-300-3+1-E-R	59.0913		32
	ProTec ZPS T1H-300-3+1-E-L	59.0914		34
	ProTec ZPS T1H-300-3+1-E-R-L	59.0915		34
	ProTube B 50/255	56.0510	2 TE	82
	ProTube B 100/255	56.0511	2 TE	84
	SafeBloc B 25/150 (1+0) TCG	54.0537	2 TE	102
	SafeBloc BR 25/150 (1+0) TCG	54.0538	2 TE	102
	SafeBloc B 25/275 (1+0) TCG	54.0539	2 TE	102
	SafeBloc BR 25/275 (1+0) TCG	54.0540	2 TE	102
	SafeBloc B 25/150 (1+1) TCG	54.0525	4 TE	128
	SafeBloc BR 25/150 (1+1) TCG	54.0526	4 TE	128
	SafeBloc B 25/275 (1+1) TCG	54.0527	4 TE	128
	SafeBloc BR 25/275 (1+1) TCG	54.0528	4 TE	128



	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
Compact Single Pole & Multi-pole Surge Protective Devices				
				<i>(continued)</i>
	SafeBloc B 25/440 (1+0)	54.0541	2 TE	112
	SafeBloc BR 25/440 (1+0)	54.0542	2 TE	112
	SafeBloc B 50/275 (3+1) TCG	54.0533	8 TE	130
	SafeBloc BR 50/275 (3+1) TCG	54.0534	8 TE	130
	SafeBloc B 50/150 (4+0) TCG	54.0519	8 TE	126
	SafeBloc BR 50/150 (4+0) TCG	54.0520	8 TE	126
	SafeBloc B 50/275 (4+0) TCG	54.0521	8 TE	126
	SafeBloc BR 50/275 (4+0) TCG	54.0522	8 TE	126
	SafeBloc B 50/440 (1+1)	54.0566	4 TE	120
	SafeBloc BR 50/440 (1+1)	54.0567	4 TE	120
	SafeBloc B 50/440 (2+0)	54.0548	4 TE	114
	SafeBloc BR 50/440 (2+0)	54.0549	4 TE	114
	SafeBloc B 75/150 (3+0) TCG	54.0550	6 TE	104
	SafeBloc BR 75/150 (3+0) TCG	54.0551	6 TE	104
	SafeBloc B 75/275 (3+0) TCG	54.0552	6 TE	104
	SafeBloc BR 75/275 (3+0) TCG	54.0553	6 TE	104
	SafeBloc B 75/440 (3+0)	54.0554	6 TE	116
	SafeBloc BR 75/440 (3+0)	54.0555	6 TE	116
	SafeBloc B 100/275 (3+1) TCG	54.0570	8 TE	108
	SafeBloc BR 100/275 (3+1) TCG	54.0571	8 TE	108
	SafeBloc B 100/440 (3+1)	54.0572	8 TE	122
	SafeBloc BR 100/440 (3+1)	54.0573	8 TE	122
	SafeBloc B 100/150 (4+0) TCG	54.0556	8 TE	106
	SafeBloc BR 100/150 (4+0) TCG	54.0557	8 TE	106
	SafeBloc B 100/275 (4+0) TCG	54.0558	8 TE	106
	SafeBloc BR 100/275 (4+0) TCG	54.0559	8 TE	106






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				
				<i>(continued)</i>
	SafeBloc B 100/440 (4+0)	54.0560	8 TE	118
	SafeBloc BR 100/440 (4+0)	54.0561	8 TE	118
	SafeBloc B 12.5/750 (1+0) WT TCG	54.0590	2 TE	132
	SafeBloc BR 12.5/750 (1+0) WT TCG	54.0591	2 TE	132
	SafeTube B 100/255	54.0543	2 TE	110
	SafeTube B 100/440	54.0624	2 TE	124

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 T1-75-1+0	59.0007	1 TE	54
	ProTec T1-75-1+0-R	59.0008	1 TE	54
	ProTec T1-150-1+0	59.0009	1 TE	54
	ProTec T1-150-1+0-R	59.0010	1 TE	54
	ProTec T1-300-1+0	59.0011	1 TE	54
	ProTec T1-300-1+0-R	59.0012	1 TE	54
	ProTec T1-350-1+0	59.0013	1 TE	54
	ProTec T1-350-1+0-R	59.0014	1 TE	54
	ProTec T1-480-1+0	59.0015	1 TE	54
	ProTec T1-480-1+0-R	59.0016	1 TE	54
	ProTec T1-750-1+0	59.0017	1 TE	54
	ProTec T1-750-1+0-R	59.0018	1 TE	54
		ProTec T1-75-2+0	59.0349	2 TE
ProTec T1-75-2+0-R		59.0350	2 TE	56
ProTec T1-150-2+0		59.0019	2 TE	56
ProTec T1-150-2+0-R		59.0020	2 TE	56
ProTec T1-300-2+0		59.0021	2 TE	56
ProTec T1-300-2+0-R		59.0022	2 TE	56
ProTec T1-350-2+0		59.0023	2 TE	56
ProTec T1-350-2+0-R		59.0024	2 TE	56
ProTec T1-480-2+0		59.0025	2 TE	56
ProTec T1-480-2+0-R		59.0026	2 TE	56
ProTec T1-750-2+0		59.0027	2 TE	56
ProTec T1-750-2 +0-R		59.0028	2 TE	56

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
Pluggable Single Pole & Multi-pole Surge Protective Devices (continued)				
ProTec T1 3+0 (R) 	ProTec T1-150-3+0	59.0029	3 TE	58
	ProTec T1-150-3+0-R	59.0030	3 TE	58
	ProTec T1-300-3+0	59.0031	3 TE	58
	ProTec T1-300-3+0-R	59.0032	3 TE	58
	ProTec T1-350-3+0	59.0033	3 TE	58
	ProTec T1-350-3+0-R	59.0034	3 TE	58
	ProTec T1-480-3+0	59.0035	3 TE	58
	ProTec T1-480-3+0-R	59.0036	3 TE	58
	ProTec T1-750-3+0	59.0037	3 TE	58
	ProTec T1-750-3 +0-R	59.0038	3 TE	58
ProTec T1 4+0 (R) 	ProTec T1-150-4+0	59.0039	4 TE	60
	ProTec T1-150-4+0-R	59.0040	4 TE	60
	ProTec T1-300-4+0	59.0041	4 TE	60
	ProTec T1-300-4+0-R	59.0042	4 TE	60
	ProTec T1-350-4+0	59.0351	4 TE	60
	ProTec T1-350-4+0-R	59.0352	4 TE	60
	ProTec T1-480-4+0	59.0043	4 TE	60
	ProTec T1-480-4+0-R	59.0044	4 TE	60
ProTec T1 1+1 (R) 	ProTec T1-75-1+1	59.0047	2 TE	62
	ProTec T1-75-1+1-R	59.0048	2 TE	62
	ProTec T1-150-1+1	59.0049	2 TE	62
	ProTec T1-150-1+1-R	59.0050	2 TE	62
	ProTec T1-300-1+1	59.0051	2 TE	62
	ProTec T1-300-1+1-R	59.0052	2 TE	62
	ProTec T1-350-1+1	59.0053	2 TE	62
	ProTec T1-350-1+1-R	59.0054	2 TE	62
ProTec T1 3+1 (R) 	ProTec T1-300-3+1	59.0059	4 TE	64
	ProTec T1-300-3+1-R	59.0060	4 TE	64
	ProTec T1-350-3+1	59.0061	4 TE	64
	ProTec T1-350-3+1-R	59.0062	4 TE	64
ProTec T1-xxx-P	ProTec T1-75-P	59.0001	1 TE plug	54-56, 62
	ProTec T1-150-P	59.0002	1 TE plug	54-62
	ProTec T1-300-P	59.0003	1 TE plug	54-64
	ProTec T1-350-P	59.0004	1 TE plug	54-64
	ProTec T1-480-P	59.0005	1 TE plug	54-60
	ProTec T1-750-P	59.0006	1 TE plug	54-58
ProTec T1H 1+0 (R) 	ProTec T1H-300-1+0	59.0310	1 TE	38
	ProTec T1H-300-1+0-R	59.0311	1 TE	38
ProTec T1H 2+0 (R) 	ProTec T1H-300-2+0	59.0312	2 TE	40
	ProTec T1H-300-2+0-R	59.0313	2 TE	40
ProTec T1H 3+0 (R) 	ProTec T1H-300-3+0	59.0314	3 TE	42
	ProTec T1H-300-3+0-R	59.0315	3 TE	42
ProTec T1H 4+0 (R) 	ProTec T1H-300-4+0	59.0316	4 TE	44
	ProTec T1H-300-4+0-R	59.0317	4 TE	44

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 <i>(continued)</i>				
ProTec T1H 1+1 (R)	ProTec T1H-300-1+1	59.0318	2 TE	46
	ProTec T1H-300-1+1-R	59.0319	2 TE	46
ProTec T1H 3+1 (R)	ProTec T1H-300-3+1	59.0320	4 TE	48
	ProTec T1H-300-3+1-R	59.0321	4 TE	48
ProTec T1H-300-P	ProTec T1H-300-P	59.0308	1 TE plug	38-48
ProTec T1HS 3+0 (R)	ProTec T1HS-300-3+0	59.0304	6 TE	10
	ProTec T1HS-300-3+0-R	59.0305	6 TE	10
ProTec T1HS 3+1 (R)	ProTec T1HS-300-3+1	59.0306	8 TE	14
	ProTec T1HS-300-3+1-R	59.0307	8 TE	14
ProTec T1HS 4+0 (R)	ProTec T1HS-300-4+0	59.0260	8 TE	12
	ProTec T1HS-300-4+0-R	59.0261	8 TE	12
ProTec T1HS-300-P	ProTec T1HS-300-P	59.0302	1 TE plug	10-14
ProTube T1 0+1	ProTube T1-50-0+1	59.0276	1 TE	66
	ProTube T1-100-0+1	59.0278	1TE	66
ProTube T1-50-P	ProTube T1-50-P	59.0269	1 TE plug	62-66
ProTube T1-100-P	ProTube T1-100-P	59.0271	1 TE plug	66
ProTube T1H 50 0+1	ProTube T1H-50-0+1	59.0340	1 TE	50
ProTube T1H-50-P	ProTube T1H-50-P	59.0309	1 TE plug	46-50
ProTube T1HS-100-P	ProTube T1HS-100-P	59.0303	1 TE plug	14

Class II • Type 2 • Type 1 CA

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
Pluggable Single Pole & Multi-pole Surge Protective Devices				
ProTec T2 1+0 (R) 	ProTec T2-75-1+0	59.0069	1 TE	154
	ProTec T2-75-1+0-R	59.0070	1 TE	154
	ProTec T2-150-1+0	59.0071	1 TE	154
	ProTec T2-150-1+0-R	59.0072	1 TE	154
	ProTec T2-300-1+0	59.0073	1 TE	154
	ProTec T2-300-1+0-R	59.0074	1 TE	154
	ProTec T2-350-1+0	59.0075	1 TE	154
	ProTec T2-350-1+0-R	59.0076	1 TE	154
	ProTec T2-480-1+0	59.0077	1 TE	154
	ProTec T2-480-1+0-R	59.0078	1 TE	154
	ProTec T2-550-1+0	59.0677	1 TE	154
	ProTec T2-550-1+0-R	59.0678	1 TE	154
	ProTec T2-750-1+0	59.0079	1 TE	154
ProTec T2-750-1+0-R	59.0080	1 TE	154	
ProTec T2 2+0 (R) 	ProTec T2-75-2+0	59.0343	2 TE	156
	ProTec T2-75-2+0-R	59.0344	2 TE	156
	ProTec T2-150-2+0	59.0081	2 TE	156
	ProTec T2-150-2+0-R	59.0082	2 TE	156
	ProTec T2-300-2+0	59.0083	2 TE	156
	ProTec T2-300-2+0-R	59.0084	2 TE	156
	ProTec T2-350-2+0	59.0085	2 TE	156
	ProTec T2-350-2+0-R	59.0086	2 TE	156
	ProTec T2-480-2+0	59.0087	2 TE	156
	ProTec T2-480-2+0-R	59.0088	2 TE	156
	ProTec T2-550-2+0	59.0679	2 TE	156
	ProTec T2-550-2+0-R	59.0680	2 TE	156
	ProTec T2-750-2+0	59.0089	2 TE	156
ProTec T2-750-2+0-R	59.0090	2 TE	156	
ProTec T2 3+0 (R) 	ProTec T2-150-3+0	59.0091	3 TE	158
	ProTec T2-150-3+0-R	59.0092	3 TE	158
	ProTec T2-300-3+0	59.0093	3 TE	158
	ProTec T2-300-3+0-R	59.0094	3 TE	158
	ProTec T2-350-3+0	59.0095	3 TE	158
	ProTec T2-350-3+0-R	59.0096	3 TE	158
	ProTec T2-480-3+0	59.0097	3 TE	158
	ProTec T2-480-3+0-R	59.0098	3 TE	158
	ProTec T2-550-3+0	59.0681	3 TE	158
	ProTec T2-550-3+0-R	59.0682	3 TE	158
	ProTec T2-750-3+0	59.0099	3 TE	158
	ProTec T2-750-3+0-R	59.0100	3 TE	158
	ProTec T2 4+0 (R) 	ProTec T2-150-4+0	59.0101	4 TE
ProTec T2-150-4+0-R		59.0102	4 TE	160
ProTec T2-300-4+0		59.0103	4 TE	160
ProTec T2-300-4+0-R		59.0104	4 TE	160
ProTec T2-350-4+0		59.0300	4 TE	160
ProTec T2-350-4+0-R		59.0301	4 TE	160
ProTec T2-480-4+0		59.0105	4 TE	160
ProTec T2-480-4+0-R		59.0106	4 TE	160
ProTec T2-550-4+0		59.0683	4 TE	160
ProTec T2-550-4+0-R		59.0684	4 TE	160
ProTec T2 1+1 (R) 	ProTec T2-75-1+1	59.0109	2 TE	162
	ProTec T2-75-1+1-R	59.0110	2 TE	162
	ProTec T2-150-1+1	59.0111	2 TE	162
	ProTec T2-150-1+1-R	59.0112	2 TE	162
	ProTec T2-300-1+1	59.0113	2 TE	162
	ProTec T2-300-1+1-R	59.0114	2 TE	162
	ProTec T2-350-1+1	59.0115	2 TE	162
	ProTec T2-350-1+1-R	59.0116	2 TE	162



Class II • Type 2 • Type 1 CA

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
Pluggable Single Pole & Multi-pole Surge Protective Devices <i>(continued)</i>				
	ProTec T2-300-3+1	59.0121	4 TE	164
	ProTec T2-300-3+1-R	59.0122	4 TE	164
	ProTec T2-350-3+1	59.0123	4 TE	164
	ProTec T2-350-3+1-R	59.0124	4 TE	164
ProTec T2-xxx-P	ProTec T2-75-P	59.0063	1 TE plug	154-156, 162
	ProTec T2-150-P	59.0064	1 TE plug	154-162
	ProTec T2-300-P	59.0065	1 TE plug	154-164
	ProTec T2-350-P	59.0066	1 TE plug	154-164
	ProTec T2-480-P	59.0067	1 TE plug	154-160
	ProTec T2-550-P	59.0685	1 TE plug	154-160
ProTec T2-750-P	ProTec T2-750-P	59.0068	1 TE plug	154-158
	ProTec T2-ADV-75-1+0	59.0208	1 TE	170
	ProTec T2-ADV-75-1+0-R	59.0209	1 TE	170
	ProTec T2-ADV-150-1+0	59.0210	1 TE	170
	ProTec T2-ADV-150-1+0-R	59.0211	1 TE	170
	ProTec T2-ADV-300-1+0	59.0212	1 TE	170
	ProTec T2-ADV-300-1+0-R	59.0213	1 TE	170
	ProTec T2-ADV-350-1+0	59.0214	1 TE	170
	ProTec T2-ADV-350-1+0-R	59.0215	1 TE	170
	ProTec T2-ADV-480-1+0	59.0216	1 TE	170
ProTec T2-ADV-480-1+0-R	59.0217	1 TE	170	
	ProTec T2-ADV-75-2+0	59.0347	2 TE	172
	ProTec T2-ADV-75-2+0-R	59.0348	2 TE	172
	ProTec T2-ADV-150-2+0	59.0220	2 TE	172
	ProTec T2-ADV-150-2+0-R	59.0221	2 TE	172
	ProTec T2-ADV-300-2+0	59.0222	2 TE	172
	ProTec T2-ADV-300-2+0-R	59.0223	2 TE	172
	ProTec T2-ADV-350-2+0	59.0224	2 TE	172
	ProTec T2-ADV-350-2+0-R	59.0225	2 TE	172
	ProTec T2-ADV-480-2+0	59.0226	2 TE	172
ProTec T2-ADV-480-2+0-R	59.0227	2 TE	172	
	ProTec T2-ADV-150-3+0	59.0228	3 TE	174
	ProTec T2-ADV-150-3+0-R	59.0229	3 TE	174
	ProTec T2-ADV-300-3+0	59.0230	3 TE	174
	ProTec T2-ADV-300-3+0-R	59.0231	3 TE	174
	ProTec T2-ADV-350-3+0	59.0232	3 TE	174
	ProTec T2-ADV-350-3+0-R	59.0233	3 TE	174
	ProTec T2-ADV-480-3+0	59.0234	3 TE	174
ProTec T2-ADV-480-3+0-R	59.0235	3 TE	174	
	ProTec T2-ADV-150-4+0	59.0236	4 TE	176
	ProTec T2-ADV-150-4+0-R	59.0237	4 TE	176
	ProTec T2-ADV-300-4+0	59.0238	4 TE	176
	ProTec T2-ADV-300-4+0-R	59.0239	4 TE	176
	ProTec T2-ADV-350-4+0	59.0240	4 TE	176
	ProTec T2-ADV-350-4+0-R	59.0241	4 TE	176
	ProTec T2-ADV-480-4+0	59.0242	4 TE	176
ProTec T2-ADV-480-4+0-R	59.0243	4 TE	176	
	ProTec T2-ADV-75-1+1	59.0244	2 TE	178
	ProTec T2-ADV-75-1+1-R	59.0245	2 TE	178
	ProTec T2-ADV-150-1+1	59.0246	2 TE	178
	ProTec T2-ADV-150-1+1-R	59.0247	2 TE	178
	ProTec T2-ADV-300-1+1	59.0248	2 TE	178
	ProTec T2-ADV-300-1+1-R	59.0249	2 TE	178
	ProTec T2-ADV-480-1+1	59.0250	2 TE	178
ProTec T2-ADV-480-1+1-R	59.0251	2 TE	178	







	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
Pluggable Single Pole & Multi-pole Surge Protective Devices <i>(continued)</i>				
	ProTec T2-ADV-300-3+1	59.0256	4 TE	180
	ProTec T2-ADV-300-3+1-R	59.0257	4 TE	180
	ProTec T2-ADV-350-3+1	59.0258	4 TE	180
	ProTec T2-ADV-350-3+1-R	59.0259	4 TE	180
	ProTec T2-ADV-75-P	59.0202	1 TE plug	170-172, 178
	ProTec T2-ADV-150-P	59.0203	1 TE plug	170-178
	ProTec T2-ADV-300-P	59.0204	1 TE plug	170-180
	ProTec T2-ADV-350-P	59.0205	1 TE plug	170-180
	ProTec T2-ADV-480-P	59.0206	1 TE plug	170-176
	ProTec T2H-300-1+0	59.0324	1 TE	138
	ProTec T2H-300-1+0-R	59.0325	1 TE	138
	ProTec T2H-300-2+0	59.0326	2 TE	140
	ProTec T2H-300-2+0-R	59.0327	2 TE	140
	ProTec T2H-300-3+0	59.0328	3 TE	142
	ProTec T2H-300-3+0-R	59.0329	3 TE	142
	ProTec T2H-300-4+0	59.0330	4 TE	144
	ProTec T2H-300-4+0-R	59.0331	4 E	144
	ProTec T2H-300-1+1	59.0332	2 TE	146
	ProTec T2H-300-1+1-R	59.0333	2 TE	146
	ProTec T2H-300-3+1	59.0334	4 TE	148
	ProTec T2H-300-3+1-R	59.0335	4 TE	148
	ProTec T2H-300-P	59.0322	1 TE plug	138-148
	ProTube T2-40-0+1	59.0280	1 TE	166
	ProTube T2-40-0+1-R	59.0336		166
	ProTube T2-40-P	59.0273	1 TE plug	162-166
	ProTube T2-ADV-40-P	59.0275	1 TE plug	178-180




Class II • Type 2 • Type 1 CA

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
Pluggable Single Pole & Multi-pole Surge Protective Devices <i>(continued)</i>				
	ProTube T2H-40-0+1	59.0341	1 TE	150
	ProTube T2H-40-0+1-R	59.0342	1 TE	150
ProTube T2H-40-P	ProTube T2H-40-P	59.0323	1 TE plug	146-150
	SafeTec T2-75-1+0	59.0132	1 TE	186
	SafeTec T2-75-1+0-R	59.0133	1 TE	186
	SafeTec T2-150-1+0	59.0134	1 TE	186
	SafeTec T2-150-1+0-R	59.0135	1 TE	186
	SafeTec T2-300-1+0	59.0136	1 TE	186
	SafeTec T2-300-1+0-R	59.0137	1 TE	186
	SafeTec T2-350-1+0	59.0138	1 TE	186
	SafeTec T2-350-1+0-R	59.0139	1 TE	186
	SafeTec T2-480-1+0	59.0140	1 TE	186
	SafeTec T2-480-1+0-R	59.0141	1 TE	186
	SafeTec T2-550-1+0	59.0142	1 TE	186
	SafeTec T2-550-1+0-R	59.0143	1 TE	186
	SafeTec T2-750-1+0	59.0144	1 TE	186
	SafeTec T2-750-1+0-R	59.0145	1 TE	186
	SafeTec T2-880-1+0	59.0146	1 TE	186
SafeTec T2-880-1+0-R	59.0147	1 TE	186	
	SafeTec T2-75-2+0	59.0345	2 TE	188
	SafeTec T2-75-2+0-R	59.0346	2 TE	188
	SafeTec T2-150-2+0	59.0148	2 TE	188
	SafeTec T2-150-2+0-R	59.0149	2 TE	188
	SafeTec T2-300-2+0	59.0150	2 TE	188
	SafeTec T2-300-2+0-R	59.0151	2 TE	188
	SafeTec T2-350-2+0	59.0152	2 TE	188
	SafeTec T2-350-2+0-R	59.0153	2 TE	188
	SafeTec T2-480-2+0	59.0154	2 TE	188
	SafeTec T2-480-2+0-R	59.0155	2 TE	188
	SafeTec T2-550-2+0	59.0156	2 TE	188
	SafeTec T2-550-2+0-R	59.0157	2 TE	188
	SafeTec T2-750-2+0	59.0158	2 TE	188
	SafeTec T2-750-2+0-R	59.0159	2 TE	188
	SafeTec T2-880-2+0	59.0160	2 TE	188
SafeTec T2-880-2+0-R	59.0161	2 TE	188	
	SafeTec T2-150-3+0	59.0162	3 TE	190
	SafeTec T2-150-3+0-R	59.0163	3 TE	190
	SafeTec T2-300-3+0	59.0164	3 TE	190
	SafeTec T2-300-3+0-R	59.0165	3 TE	190
	SafeTec T2-350-3+0	59.0166	3 TE	190
	SafeTec T2-350-3+0-R	59.0167	3 TE	190
	SafeTec T2-480-3+0	59.0168	3 TE	190
	SafeTec T2-480-3+0-R	59.0169	3 TE	190
	SafeTec T2-550-3+0	59.0170	3 TE	190
	SafeTec T2-550-3+0-R	59.0171	3 TE	190
	SafeTec T2-750-3+0	59.0172	3 TE	190
	SafeTec T2-750-3+0-R	59.0173	3 TE	190
	SafeTec T2-880-3+0	59.0174	3 TE	190
	SafeTec T2-880-3+0-R	59.0175	3 TE	190


Class II • Type 2 • Type 1 CA

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
Pluggable Single Pole & Multi-pole Surge Protective Devices (continued)				
	SafeTec T2-150-4+0	59.0176	4 TE	192
	SafeTec T2-150-4+0-R	59.0177	4 TE	192
	SafeTec T2-300-4+0	59.0178	4 TE	192
	SafeTec T2-300-4+0-R	59.0179	4 TE	192
	SafeTec T2-350-4+0	59.0180	4 TE	192
	SafeTec T2-350-4+0-R	59.0181	4 TE	192
	SafeTec T2-480-4+0	59.0182	4 TE	192
	SafeTec T2-480-4+0-R	59.0183	4 TE	192
	SafeTec T2-550-4+0	59.0184	4 TE	192
	SafeTec T2-550-4+0-R	59.0185	4 TE	192
	SafeTec T2-75-1+1	59.0186	2 TE	194
	SafeTec T2-75-1+1-R	59.0187	2 TE	194
	SafeTec T2-150-1+1	59.0188	2 TE	194
	SafeTec T2-150-1+1-R	59.0189	2 TE	194
	SafeTec T2-300-1+1	59.0190	2 TE	194
	SafeTec T2-300-1+1-R	59.0191	2 TE	194
	SafeTec T2-350-1+1	59.0192	2 TE	194
	SafeTec T2-350-1+1-R	59.0193	2 TE	194
	SafeTec T2-300-3+1	59.0198	4 TE	196
	SafeTec T2-300-3+1-R	59.0199	4 TE	196
	SafeTec T2-350-3+1	59.0200	4 TE	196
	SafeTec T2-350-3+1-R	59.0201	4 TE	196
	SafeTec T2-75-P	59.0125	1 TE plug	186-188, 194
	SafeTec T2-150-P	59.0126	1 TE plug	186-194
	SafeTec T2-300-P	59.0127	1 TE plug	186-196
	SafeTec T2-350-P	59.0128	1 TE plug	186-196
	SafeTec T2-480-P	59.0129	1 TE plug	186-192
	SafeTec T2-550-P	59.0299	1 TE plug	186-192
	SafeTec T2-750-P	59.0130	1 TE plug	186-190
	SafeTec T2-880-P	59.0131	1 TE plug	186-190
	SafeTube T2-40-0+1	59.0281	1 TE	198
	SafeTube T2-40-0+1-R	59.0337	1 TE	198
	SafeTube T2-40-P	59.0274	1 TE plug	194-198



Class I • Class II • Type 1 • Type 2

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
Pluggable Single-pole PCB Mount SPD Socket for AC System				
	PCB Socket T1-75	515 167	1 TE	208
	PCB Socket T1-75-R	515 175	1 TE	208
	PCB Socket T1-150	515 168	1 TE	208
	PCB Socket T1-150-R	515 176	1 TE	208
	PCB Socket T1-300	515 169	1 TE	208
	PCB Socket T1-300-R	515 177	1 TE	208
	PCB Socket T1-350	515 170	1 TE	208
	PCB Socket T1-350-R	515 178	1 TE	208
	PCB Socket T1-480	515 171	1 TE	208
	PCB Socket T1-480-R	515 179	1 TE	208
	PCB Socket T1-750	515 173	1 TE	208
	PCB Socket T1-750-R	515 181	1 TE	208



Class I • Class II • Type 1 • Type 2

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
Pluggable Single-pole PCB Mount SPD Socket for AC System (continued)				
	PCB Socket T2-75	515 183	1 TE	210
	PCB Socket T2-75-R	515 192	1 TE	210
	PCB Socket T2-150	515 184	1 TE	210
	PCB Socket T2-150-R	515 193	1 TE	210
	PCB Socket T2-300	515 185	1 TE	210
	PCB Socket T2-300-R	515 194	1 TE	210
	PCB Socket T2-350	515 186	1 TE	210
	PCB Socket T2-350-R	515 195	1 TE	210
	PCB Socket T2-480	515 187	1 TE	210
	PCB Socket T2-480-R	515 196	1 TE	210
	PCB Socket T2-550	515 188	1 TE	210
	PCB Socket T2-550-R	515 197	1 TE	210
	PCB Socket T2-750	515 189	1 TE	210
	PCB Socket T2-750-R	515 198	1 TE	210
	PCB Socket T2-880	515 190	1 TE	210
	PCB Socket T2-880-R	515 199	1 TE	210
	PCB Socket T2-NPE-305	515 191	1 TE	210
PCB Socket T2-NPE-305-R	515 200	1 TE	210	


Type 1 • Type 2 • Type 1 CA

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
Pluggable Single-pole PCB Mount SPD Socket for Photovoltaic System				
	PCB Socket T1-550PV	515 155	1 TE	214
	PCB Socket T1-550PV-M	515 156	1 TE	214
	PCB Socket T1-550PV-M-R	515 160	1 TE	214
	PCB Socket T1-550PV-R	515 159	1 TE	214
	PCB Socket T1-750PV	515 157	1 TE	214
	PCB Socket T1-750PV-M	515 158	1 TE	214
	PCB Socket T1-750PV-M-R	515 162	1 TE	214
	PCB Socket T1-750PV-R	515 161	1 TE	214
	PCB Socket T2-550PV	515 163	1 TE	216
	PCB Socket T2-550PV-R	515 165	1 TE	216
	PCB Socket T2-750PV	515 164	1 TE	216
	PCB Socket T2-750PV-R	515 166	1 TE	216
Pluggable Multi-Pole SPD for Photovoltaic Systems				
	ProTec T1-1100PV-3+0	59.0285	3 TE	220
	ProTec T1-1100PV-3+0-R	59.0286	3 TE	220
	ProTec T1-1500PV-3+0	59.0289	3 TE	220
	ProTec T1-1500PV-3+0-R	59.0290	3 TE	220
	ProTec T1-550PV-P	59.0283	1 TE plug	220
	ProTec T1-550PV-M-P	59.0284	1 TE plug	220
	ProTec T1-750PV-P	59.0287	1 TE plug	220
	ProTec T1-750PV-M-P	59.0288	1 TE plug	220
	ProTec T2-1100PV-3+0	59.0292	3 TE	222
	ProTec T2-1100PV-3+0-R	59.0293	3 TE	222
	ProTec T2-1500PV-3+0	59.0295	3 TE	222
	ProTec T2-1500PV-3+0-R	59.0296	3 TE	222
	ProTec T2-550PV-P	59.0291	1 TE plug	222
	ProTec T2-750PV-P	59.0294	1 TE plug	222




Type 1 • Type 2 • Type 1 CA • Type 4 CA

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
DC Compact Multi-pole Surge Protective Device				
ProBloc B 1000 DC	ProBloc B 1000DC	56.0670	3 TE	226
				
DC Pluggable Multi-pole Surge Protective Device				
SafeTec T2-1000DC-3+0(-R)	SafeTec T2-1000DC-3+0	59.0373	3 TE	228
	SafeTec T2-1000DC-3+0-R	59.0374	3 TE	228
				



Class 1L

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
Isolating Spark Gap				
EPZ 100/350 Ex	EPZ 100/350	509 521		244
				


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		240
	ProTec AQS 40/275	509.211		240
	ProTec AQS 40/320	509.212		240
	ProTec AQS 40/440	509.213		240
				
Pluggable Multi-pole Surge Protective Devices				
ProTec CM(R) 80 (1+1)	ProTec CM 80/275 (1+1)	508.330	1 TE	204
	ProTec CM 80/320 (1+1)	508.331	1 TE	204
	ProTec CMR 80/275 (1+1)	508.335	1 TE	204
	ProTec CMR 80/320 (1+1)	508.336	1 TE	204
				
Plug ProTec CM(R) 80/xxx (1+1)	Plug ProTec CM(R) 80/275 (1+1)	508.340	1 TE plug	204
	Plug ProTec CM(R) 80/320 (1+1)	508.341	1 TE plug	204
ProTec CM(R) 80 (2+0)	ProTec CM 80/275 (2+0)	508.315	1 TE	202
	ProTec CM 80/320 (2+0)	508.316	1 TE	202
	ProTec CMR 80/275 (2+0)	508.320	1 TE	202
	ProTec CMR 80/320 (2+0)	508.321	1 TE	202
				
Plug ProTec CM(R) 80/xxx (2+0)	Plug ProTec CM(R) 80/275 (2+0)	508.325	1 TE plug	202
	Plug ProTec CM(R) 80/320 (2+0)	508.326	1 TE plug	202


Class III • Type 3

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
Pluggable Multi-pole Surge Protective Devices				
	ProTec DMDR 20/24	510 783	1 TE	232
	ProTec DMDR 20/48	510 833	1 TE	232
	ProTec DMDR 20/60	510 834	1 TE	232
	ProTec DMDR 20/120	510 835	1 TE	232
Plug ProTec DMDR 20	Plug ProTec DMDR 20/24	510 784	1 TE plug	232
	Plug ProTec DMDR 20/48	510 836	1 TE plug	232
	Plug ProTec DMDR 20/60	510 837	1 TE plug	232
	Plug ProTec DMDR 20/120	510 838	1 TE plug	232
	ProTec DMG 20/320 (2+0)	508.369	1 TE	234
	ProTec DMGR 20/320 (2+0)	508.370	1 TE	234
Plug ProTec DMG(R) 20	Plug ProTec DMG(R) 20/320	508.371	1 TE plug	234

Compact Multi-pole Surge Protective Devices

	MPE-Mini	121 280		236
	MPE-Mini LED	121 282		236





Surge Protection Connection Accessories

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
Modular Wiring Systems				
	ProBar 1-2	501 338		248
	ProBar 1-3	501 339		248
	ProBar 1-4	501 340		248
	ProBar 1-5	501 341		248
	ProBar 1-6	501 342		248






Surge Protection Connection Accessories

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
Modular Wiring Systems				<i>(continued)</i>
ProBar Single Phase Busbars (continued)	ProBar 1-7	501 343		248
	ProBar 1-8	501 344		248
	ProBar 1-11	501 345		248
	ProBar 2-8	501 346		249
ProBar Two Phase Busbars	ProBar 2-8	501 346		249
	ProBar 3-6	501 347		249
ProBar Three Phase Busbars	ProBar 3-6	501 347		249
	ProBar 3-8	501 348		249
	PB 1-(2+0)	501 349		250
PB Single Phase Busbars	PB 1-(2+0)	501 349		250
	PB 1-(3+0)	501 350		250
	PB 1-(2+1)	501 351		250
	PB 1-(4+0)	501 352		250
	PB 1-(3+1)	501 353		250
				

Surge Protection Connection Accessories

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
Compact Overhead Line Accessories				
ProTec AQS Accessories	Fixing cable	509 522		251
				
	Fixing hook	509 523		251
				
	PSN	509 524		251
				
	PSI	509 525		251
				

Surge & Lightning Counters, Monitoring & Component Tester

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
Counting & Monitoring Solutions				
ProSEC II+	ProSEC II+	130 100	2 TE	254
				
ProSLS (Shielded)	ProSLS ProSLS Shielded	130 551 133 005	2 TE 2 TE	256 256
				
Surge Protection Device Component Tester				
ProSCT(Case)	ProSCT ProSCT with Case	130 571 130 572		258 258
				
ProSCT SPD Adapter	SPD Adapter	130 573		259
				
Surge Protection Device Monitoring Solution				
ProALARM	ProALARM	130 511	1 TE	260
				

Product Name Index

Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
EPZ 100/350 EX	509 521		244	ProBar 1-6	501 342		248
Fixing Cable	509 522		251	ProBar 1-7	501 343		248
Fixing Hook	509 523		251	ProBar 1-8	501 344		248
MPE-Mini	121 280		236	ProBar 1-11	501 345		248
MPE-Mini LED	121 282		236	ProBar 2-8	501 346		249
PB 1-(2+0)	501 349		250	ProBar 3-6	501 347		249
PB 1-(2+1)	501 351		250	ProBar 3-8	501 348		249
PB 1-(3+0)	501 350		250	ProBloc B 12.5/150 (1+0)	56.0500	2 TE	86
PB 1-(3+1)	501 353		250	ProBloc B 12.5/275 (1+0)	56.0502	2 TE	86
PB 1-(4+0)	501 352		250	ProBloc B 12.5/320 (1+0)	56.0504	2 TE	86
PCB Socket T1-75	515 167	1 TE	208	ProBloc B 25/150 (1+0)	56.0562	2 TE	70
PCB Socket T1-75-R	515 175	1 TE	208	ProBloc B 25/150 (1+1)	56.0542	2 TE	94
PCB Socket T1-150	515 168	1 TE	208	ProBloc B 25/150 (2+0)	56.0512	2 TE	88
PCB Socket T1-150-R	515 176	1 TE	208	ProBloc B 25/275 (1+0)	56.0564	2 TE	70
PCB Socket T1-300	515 169	1 TE	208	ProBloc B 25/275 (1+1)	56.0544	2 TE	94
PCB Socket T1-300-R	515 177	1 TE	208	ProBloc B 25/275 (2+0)	56.0514	2 TE	88
PCB Socket T1-350	515 170	1 TE	208	ProBloc B 25/320 (1+0)	56.0566	2 TE	70
PCB Socket T1-350-R	515 178	1 TE	208	ProBloc B 25/320 (1+1)	56.0546	2 TE	94
PCB Socket T1-480	515 171	1 TE	208	ProBloc B 25/320 (2+0)	56.0516	2 TE	88
PCB Socket T1-480-R	515 179	1 TE	208	ProBloc B 37.5/150 (3+0)	56.0522	3 TE	90
PCB Socket T1-550PV	515 155	1 TE	214	ProBloc B 37.5/275 (3+0)	56.0524	3 TE	90
PCB Socket T1-550PV-M	515 156	1 TE	214	ProBloc B 37.5/320 (3+0)	56.0526	3 TE	90
PCB Socket T1-550PV-M-R	515 160	1 TE	214	ProBloc B 50/150 (1+1)	56.0602	4 TE	78
PCB Socket T1-550PV-R	515 159	1 TE	214	ProBloc B 50/150 (2+0)	56.0572	4 TE	72
PCB Socket T1-750	515 173	1TE	208	ProBloc B 50/150 (4+0)	56.0532	4 TE	92
PCB Socket T1-750-R	515 181	1TE	208	ProBloc B 50/275 (1+1)	56.0604	4 TE	78
PCB Socket T1-750PV	515 157	1 TE	214	ProBloc B 50/275 (2+0)	56.0574	4 TE	72
PCB Socket T1-750PV-M	515 158	1 TE	214	ProBloc B 50/275 (3+1)	56.0554	4 TE	96
PCB Socket T1-750PV-M-R	515 162	1 TE	214	ProBloc B 50/275 (4+0)	56.0534	4 TE	92
PCB Socket T1-750PV-R	515 161	1 TE	214	ProBloc B 50/320 (1+1)	56.0606	4 TE	78
PCB Socket T2-75	515 183	1 TE	210	ProBloc B 50/320 (2+0)	56.0576	4 TE	72
PCB Socket T2-75-R	515 192	1 TE	210	ProBloc B 50/320 (3+1)	56.0556	4 TE	96
PCB Socket T2-150	515 184	1 TE	210	ProBloc B 50/320 (4+0)	56.0536	4 TE	92
PCB Socket T2-150-R	515 193	1 TE	210	ProBloc B 75/150 (3+0)	56.0582	6 TE	74
PCB Socket T2-300	515 185	1 TE	210	ProBloc B 75/275 (3+0)	56.0584	6 TE	74
PCB Socket T2-300-R	515 194	1 TE	210	ProBloc B 75/320 (3+0)	56.0586	6 TE	74
PCB Socket T2-350	515 186	1 TE	210	ProBloc B 100/150 (4+0)	56.0592	8 TE	76
PCB Socket T2-350-R	515 195	1 TE	210	ProBloc B 100/275 (3+1)	56.0614	8 TE	80
PCB Socket T2-480	515 187	1 TE	210	ProBloc B 100/275 (4+0)	56.0594	8 TE	76
PCB Socket T2-480-R	515 196	1 TE	210	ProBloc B 100/320 (3+1)	56.0616	8 TE	80
PCB Socket T2-550	515 188	1 TE	210	ProBloc B 100/320 (4+0)	56.0596	8 TE	76
PCB Socket T2-550-R	515 197	1 TE	210	ProBloc B 1000DC	56.0670	3 TE	226
PCB Socket T2-550PV	515 163	1 TE	216	ProBloc BR 12.5/150 (1+0)	56.0501	2 TE	86
PCB Socket T2-550PV-R	515 165	1 TE	216	ProBloc BR 12.5/275 (1+0)	56.0503	2 TE	86
PCB Socket T2-750	515 189	1 TE	210	ProBloc BR 12.5/320 (1+0)	56.0505	2 TE	86
PCB Socket T2-750-R	515 198	1 TE	210	ProBloc BR 25/150 (1+0)	56.0563	2 TE	70
PCB Socket T2-750PV	515 164	1 TE	216	ProBloc BR 25/150 (1+1)	56.0543	2 TE	94
PCB Socket T2-750PV-R	515 166	1 TE	216	ProBloc BR 25/150 (2+0)	56.0513	2 TE	88
PCB Socket T2-880	515 190	1 TE	210	ProBloc BR 25/275 (1+0)	56.0565	2 TE	70
PCB Socket T2-880-R	515 199	1 TE	210	ProBloc BR 25/275 (1+1)	56.0545	2 TE	94
PCB Socket T2-NPE-305	515 191	1 TE	210	ProBloc BR 25/275 (2+0)	56.0515	2 TE	88
PCB Socket T2-NPE-305-R	515 200	1 TE	210	ProBloc BR 25/320 (1+0)	56.0567	2 TE	70
Plug ProTec CM(R) 80/275 (1+1)	508.340	1 TE plug	204	ProBloc BR 25/320 (1+1)	56.0547	2 TE	94
Plug ProTec CM(R) 80/275 (2+0)	508.325	1 TE plug	202	ProBloc BR 25/320 (2+0)	56.0517	2 TE	88
Plug ProTec CM(R) 80/320 (1+1)	508.341	1 TE plug	204	ProBloc BR 37.5/150 (3+0)	56.0523	3 TE	90
Plug ProTec CM(R) 80/320 (2+0)	508.326	1 TE plug	202	ProBloc BR 37.5/275 (3+0)	56.0525	3 TE	90
Plug ProTec DMDR 20/24	510 784	1 TE Plug	232	ProBloc BR 37.5/320 (3+0)	56.0527	3 TE	90
Plug ProTec DMDR 20/48	510 836	1 TE Plug	232	ProBloc BR 50/150 (1+1)	56.0603	4 TE	78
Plug ProTec DMDR 20/60	510 837	1 TE Plug	232	ProBloc BR 50/150 (2+0)	56.0573	4 TE	72
Plug ProTec DMDR 20/120	510 838	1 TE Plug	232	ProBloc BR 50/150 (4+0)	56.0533	4 TE	92
Plug ProTec DMGR) 20/320	508.371	1 TE Plug	234	ProBloc BR 50/275 (1+1)	56.0605	4 TE	78
ProALARM	130 511	1 TE	260	ProBloc BR 50/275 (2+0)	56.0575	4 TE	72
ProBar 1-2	501 338		248	ProBloc BR 50/275 (3+1)	56.0555	4 TE	96
ProBar 1-3	501 339		248	ProBloc BR 50/275 (4+0)	56.0535	4 TE	92
ProBar 1-4	501 340		248	ProBloc BR 50/320 (1+1)	56.0607	4 TE	78
ProBar 1-5	501 341		248	ProBloc BR 50/320 (2+0)	56.0577	4 TE	72

Product Name Index

(continued)

Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
ProBloc BR 50/320 (3+1)	56.0557	4 TE	96	ProTec T1-350-1+0-R	59.0014	1 TE	54
ProBloc BR 50/320 (4+0)	56.0537	4 TE	92	ProTec T1-350-1+1	59.0053	2 TE	62
ProBloc BR 75/150 (3+0)	56.0583	6 TE	74	ProTec T1-350-1+1-R	59.0054	2 TE	62
ProBloc BR 75/275 (3+0)	56.0585	6 TE	74	ProTec T1-350-2+0	59.0023	2 TE	56
ProBloc BR 75/320 (3+0)	56.0587	6 TE	74	ProTec T1-350-2+0-R	59.0024	2 TE	56
ProBloc BR 100/150 (4+0)	56.0593	8 TE	76	ProTec T1-350-3+0	59.0033	3 TE	58
ProBloc BR 100/275 (3+1)	56.0615	8 TE	80	ProTec T1-350-3+0-R	59.0034	3 TE	58
ProBloc BR 100/275 (4+0)	56.0595	8 TE	76	ProTec T1-350-3+1	59.0061	4 TE	64
ProBloc BR 100/320 (3+1)	56.0617	8 TE	80	ProTec T1-350-3+1-R	59.0062	4 TE	64
ProBloc BR 100/320 (4+0)	56.0597	8 TE	76	ProTec T1-350-4+0	59.0351	4 TE	60
ProSCT	130 571		258	ProTec T1-350-4+0-R	59.0352	4 TE	60
ProSCT SPD Adapter	130 573		259	ProTec T1-350-P	59.0004	1 TE plug	54-64
ProSCT with Case	130 572		258	ProTec T1-480-1+0	59.0015	1 TE	54
ProSEC II+	130 100	2 TE	254	ProTec T1-480-1+0-R	59.0016	1 TE	54
ProSLS	130 551	2 TE	256	ProTec T1-480-2+0	59.0025	2 TE	56
ProSLS Shielded	133 005	2 TE	256	ProTec T1-480-2+0-R	59.0026	2 TE	56
ProTec AQS 40/150	509.210		240	ProTec T1-480-3+0	59.0035	3 TE	58
ProTec AQS 40/275	509.211		240	ProTec T1-480-3+0-R	59.0036	3 TE	58
ProTec AQS 40/320	509.212		240	ProTec T1-480-4+0	59.0043	4 TE	60
ProTec AQS 40/440	509.213		240	ProTec T1-480-4+0-R	59.0044	4 TE	60
ProTec CM 80/275 (1+1)	508.330	1 TE	204	ProTec T1-480-P	59.0005	1 TE plug	54-60
ProTec CM 80/275 (2+0)	508.315	1 TE	202	ProTec T1-550PV-M-P	59.0284	1 TE plug	220
ProTec CM 80/320 (1+1)	508.331	1 TE	204	ProTec T1-550PV-P	59.0283	1 TE plug	220
ProTec CM 80/320 (2+0)	508.316	1 TE	202	ProTec T1-750-1+0	59.0017	1 TE	54
ProTec CMR 80/275 (1+1)	508.335	1 TE	204	ProTec T1-750-1+0-R	59.0018	1 TE	54
ProTec CMR 80/275 (2+0)	508.320	1 TE	202	ProTec T1-750-2+0	59.0027	2 TE	56
ProTec CMR 80/320 (1+1)	508.336	1 TE	204	ProTec T1-750-2+0-R	59.0028	2 TE	56
ProTec CMR 80/320 (2+0)	508.321	1 TE	202	ProTec T1-750-3+0	59.0037	3 TE	58
ProTec DMDR 20/24	510 783	1 TE	232	ProTec T1-750-3+0-R	59.0038	3 TE	58
ProTec DMDR 20/48	510 833	1 TE	232	ProTec T1-750-P	59.0006	1 TE plug	54-58
ProTec DMDR 20/60	510 834	1 TE	232	ProTec T1-750PV-M-P	59.0288	1 TE plug	220
ProTec DMDR 20/120	510 835	1 TE	232	ProTec T1-750PV-P	59.0287	1 TE plug	220
ProTec DMG 20/320 (2+0)	508.369	1 TE	234	ProTec T1-1100PV-3+0	59.0285	3 TE	220
ProTec DMGR 20/320 (2+0)	508.370	1 TE	234	ProTec T1-1100PV-3+0-R	59.0286	3 TE	220
ProTec T1-75-1+0	59.0007	1 TE	54	ProTec T1-1500PV-3+0	59.0289	3 TE	220
ProTec T1-75-1+0-R	59.0008	1 TE	54	ProTec T1-1500PV-3+0-R	59.0290	3 TE	220
ProTec T1-75-1+1	59.0047	2 TE	62	ProTec T1H-300-1+0	59.0310	1 TE	38
ProTec T1-75-1+1-R	59.0048	2 TE	62	ProTec T1H-300-1+0-R	59.0311	1 TE	38
ProTec T1-75-2+0	59.0349	2 TE	56	ProTec T1H-300-1+1	59.0318	2 TE	46
ProTec T1-75-2+0-R	59.0350	2 TE	56	ProTec T1H-300-1+1-R	59.0319	2 TE	46
ProTec T1-75-P	59.0001	1 TE plug	54-56, 62	ProTec T1H-300-2+0	59.0312	2 TE	40
ProTec T1-150-1+0	59.0009	1 TE	54	ProTec T1H-300-2+0-R	59.0313	2 TE	40
ProTec T1-150-1+0-R	59.0010	1 TE	54	ProTec T1H-300-3+0	59.0314	3 TE	42
ProTec T1-150-1+1	59.0049	2 TE	62	ProTec T1H-300-3+0-R	59.0315	3 TE	42
ProTec T1-150-1+1-R	59.0050	2 TE	62	ProTec T1H-300-3+1	59.0320	4 TE	48
ProTec T1-150-2+0	59.0019	2 TE	56	ProTec T1H-300-3+1-R	59.0321	4 TE	48
ProTec T1-150-2+0-R	59.0020	2 TE	56	ProTec T1H-300-4+0	59.0316	4 TE	44
ProTec T1-150-3+0	59.0029	3 TE	58	ProTec T1H-300-4+0-R	59.0317	4 TE	44
ProTec T1-150-3+0-R	59.0030	3 TE	58	ProTec T1H-300-P	59.0308	1 TE plug	38-48
ProTec T1-150-4+0	59.0039	4 TE	60	ProTec T1HS-300-3+0	59.0304	6 TE	10
ProTec T1-150-4+0-R	59.0040	4 TE	60	ProTec T1HS-300-3+0-R	59.0305	6 TE	10
ProTec T1-150-P	59.0002	1 TE plug	54-62	ProTec T1HS-300-3+1	59.0306	8 TE	14
ProTec T1-300-1+0	59.0011	1 TE	54	ProTec T1HS-300-3+1-R	59.0307	8 TE	14
ProTec T1-300-1+0-R	59.0012	1 TE	54	ProTec T1HS-300-4+0	59.0260	8 TE	12
ProTec T1-300-1+1	59.0051	2 TE	62	ProTec T1HS-300-4+0-R	59.0261	8 TE	12
ProTec T1-300-1+1-R	59.0052	2 TE	62	ProTec T1HS-300-P	59.0302	1 TE plug	10-14
ProTec T1-300-2+0	59.0021	2 TE	56	ProTec T2-75-1+0	59.0069	1 TE	154
ProTec T1-300-2+0-R	59.0022	2 TE	56	ProTec T2-75-1+0-R	59.0070	1 TE	154
ProTec T1-300-3+0	59.0031	3 TE	58	ProTec T2-75-1+1	59.0109	2 TE	162
ProTec T1-300-3+0-R	59.0032	3 TE	58	ProTec T2-75-1+1-R	59.0110	2 TE	162
ProTec T1-300-3+1	59.0059	4 TE	64	ProTec T2-75-2+0	59.0343	2 TE	156
ProTec T1-300-3+1-R	59.0060	4 TE	64	ProTec T2-75-2+0-R	59.0344	2 TE	156
ProTec T1-300-4+0	59.0041	4 TE	60	ProTec T2-75-P	59.0063	1 TE plug	154-156, 162
ProTec T1-300-4+0-R	59.0042	4 TE	60	ProTec T2-150-1+0	59.0071	1 TE	154
ProTec T1-300-P	59.0003	1 TE plug	54-64	ProTec T2-150-1+0-R	59.0072	1 TE	154
ProTec T1-350-1+0	59.0013	1 TE	54	ProTec T2-150-1+1	59.0111	2 TE	162

Product Name Index

(continued)

Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
ProTec T2-150-1+1-R	59.0112	2 TE	162	ProTec T2-ADV-75-1+0-R	59.0209	1 TE	170
ProTec T2-150-2+0	59.0081	2 TE	156	ProTec T2-ADV-75-1+1	59.0244	2 TE	178
ProTec T2-150-2+0-R	59.0082	2 TE	156	ProTec T2-ADV-75-1+1-R	59.0245	2 TE	178
ProTec T2-150-3+0	59.0091	3 TE	158	ProTec T2-ADV-75-2+0	59.0347	2 TE	172
ProTec T2-150-3+0-R	59.0092	3 TE	158	ProTec T2-ADV-75-2+0-R	59.0348	2 TE	172
ProTec T2-150-4+0	59.0101	4 TE	160	ProTec T2-ADV-75-P	59.0202	1 TE plug	170-172, 178
ProTec T2-150-4+0-R	59.0102	4 TE	160	ProTec T2-ADV-150-1+0	59.0210	1 TE	170
ProTec T2-150-P	59.0064	1 TE plug	154-162	ProTec T2-ADV-150-1+0-R	59.0211	1 TE	170
ProTec T2-300-1+0	59.0073	1 TE	154	ProTec T2-ADV-150-1+1	59.0246	2 TE	178
ProTec T2-300-1+0-R	59.0074	1 TE	154	ProTec T2-ADV-150-1+1-R	59.0247	2 TE	178
ProTec T2-300-1+1	59.0113	2 TE	162	ProTec T2-ADV-150-2+0	59.0220	2 TE	172
ProTec T2-300-1+1-R	59.0114	2 TE	162	ProTec T2-ADV-150-2+0-R	59.0221	2 TE	172
ProTec T2-300-2+0	59.0083	2 TE	156	ProTec T2-ADV-150-3+0	59.0228	3 TE	174
ProTec T2-300-2+0-R	59.0084	2 TE	156	ProTec T2-ADV-150-3+0-R	59.0229	3 TE	174
ProTec T2-300-3+0	59.0093	3 TE	158	ProTec T2-ADV-150-4+0	59.0236	4 TE	176
ProTec T2-300-3+0-R	59.0094	3 TE	158	ProTec T2-ADV-150-4+0-R	59.0237	4 TE	176
ProTec T2-300-3+1	59.0121	4 TE	164	ProTec T2-ADV-150-P	59.0203	1 TE plug	170-178
ProTec T2-300-3+1-R	59.0122	4 TE	164	ProTec T2-ADV-300-1+0	59.0212	1 TE	170
ProTec T2-300-4+0	59.0103	4 TE	160	ProTec T2-ADV-300-1+0-R	59.0213	1 TE	170
ProTec T2-300-4+0-R	59.0104	4 TE	160	ProTec T2-ADV-300-1+1	59.0248	2 TE	178
ProTec T2-300-P	59.0065	1 TE plug	154-164	ProTec T2-ADV-300-1+1-R	59.0249	2 TE	178
ProTec T2-350-1+0	59.0075	1 TE	154	ProTec T2-ADV-300-2+0	59.0222	2 TE	172
ProTec T2-350-1+0-R	59.0076	1 TE	154	ProTec T2-ADV-300-2+0-R	59.0223	2 TE	172
ProTec T2-350-1+1	59.0115	2 TE	162	ProTec T2-ADV-300-3+0	59.0230	3 TE	174
ProTec T2-350-1+1-R	59.0116	2 TE	162	ProTec T2-ADV-300-3+0-R	59.0231	3 TE	174
ProTec T2-350-2+0	59.0085	2 TE	156	ProTec T2-ADV-300-3+1	59.0256	4 TE	180
ProTec T2-350-2+0-R	59.0086	2 TE	156	ProTec T2-ADV-300-3+1-R	59.0257	4 TE	180
ProTec T2-350-3+0	59.0095	3 TE	158	ProTec T2-ADV-300-4+0	59.0238	4 TE	176
ProTec T2-350-3+0-R	59.0096	3 TE	158	ProTec T2-ADV-300-4+0-R	59.0239	4 TE	176
ProTec T2-350-3+1	59.0123	4 TE	164	ProTec T2-ADV-300-P	59.0204	1 TE plug	170-180
ProTec T2-350-3+1-R	59.0124	4 TE	164	ProTec T2-ADV-350-1+0	59.0214	1 TE	170
ProTec T2-350-4+0	59.0300	4 TE	160	ProTec T2-ADV-350-1+0-R	59.0215	1 TE	170
ProTec T2-350-4+0-R	59.0301	4 TE	160	ProTec T2-ADV-350-2+0	59.0224	2 TE	172
ProTec T2-350-P	59.0066	1 TE plug	154-164	ProTec T2-ADV-350-2+0-R	59.0225	2 TE	172
ProTec T2-480-1+0	59.0077	1 TE	154	ProTec T2-ADV-350-3+0	59.0232	3 TE	174
ProTec T2-480-1+0-R	59.0078	1 TE	154	ProTec T2-ADV-350-3+0-R	59.0233	3 TE	174
ProTec T2-480-2+0	59.0087	2 TE	156	ProTec T2-ADV-350-3+1	59.0258	4 TE	180
ProTec T2-480-2+0-R	59.0088	2 TE	156	ProTec T2-ADV-350-3+1-R	59.0259	4 TE	180
ProTec T2-480-3+0	59.0097	3 TE	158	ProTec T2-ADV-350-4+0	59.0240	4 TE	176
ProTec T2-480-3+0-R	59.0098	3 TE	158	ProTec T2-ADV-350-4+0-R	59.0241	4 TE	176
ProTec T2-480-4+0	59.0105	4 TE	160	ProTec T2-ADV-350-P	59.0205	1 TE plug	170-180
ProTec T2-480-4+0-R	59.0106	4 TE	160	ProTec T2-ADV-480-1+0	59.0216	1 TE	170
ProTec T2-480-P	59.0067	1 TE plug	154-160	ProTec T2-ADV-480-1+0-R	59.0217	1 TE	170
ProTec T2-550-1+0	59.0677	1 TE	154	ProTec T2-ADV-480-1+1	59.0250	2 TE	178
ProTec T2-550-1+0-R	59.0678	1 TE	154	ProTec T2-ADV-480-1+1-R	59.0251	2 TE	178
ProTec T2-550-2+0	59.0679	2 TE	156	ProTec T2-ADV-480-2+0	59.0226	2 TE	172
ProTec T2-550-2+0-R	59.0680	2 TE	156	ProTec T2-ADV-480-2+0-R	59.0227	2 TE	172
ProTec T2-550-3+0	59.0681	3 TE	158	ProTec T2-ADV-480-3+0	59.0234	3 TE	174
ProTec T2-550-3+0-R	59.0682	3 TE	158	ProTec T2-ADV-480-3+0-R	59.0235	3 TE	174
ProTec T2-550-4+0	59.0683	4 TE	160	ProTec T2-ADV-480-4+0	59.0242	4 TE	176
ProTec T2-550-4+0-R	59.0684	4 TE	160	ProTec T2-ADV-480-4+0-R	59.0243	4 TE	176
ProTec T2-550-P	59.0685	1 TE plug	154-160	ProTec T2-ADV-480-P	59.0206	1 TE plug	170-176
ProTec T2-550PV-P	59.0291	1 TE plug	222	ProTec T2H-300-1+0	59.0324	1 TE	138
ProTec T2-750-1+0	59.0079	1 TE	154	ProTec T2H-300-1+0-R	59.0325	1 TE	138
ProTec T2-750-1+0-R	59.0080	1 TE	154	ProTec T2H-300-1+1	59.0332	2 TE	146
ProTec T2-750-2+0	59.0089	2 TE	156	ProTec T2H-300-1+1-R	59.0333	2 TE	146
ProTec T2-750-2+0-R	59.0090	2 TE	156	ProTec T2H-300-2+0	59.0326	2 TE	140
ProTec T2-750-3+0	59.0099	3 TE	158	ProTec T2H-300-2+0-R	59.0327	2 TE	140
ProTec T2-750-3+0-R	59.0100	3 TE	158	ProTec T2H-300-3+0	59.0328	3 TE	142
ProTec T2-750-P	59.0068	1 TE plug	154-158	ProTec T2H-300-3+0-R	59.0329	3 TE	142
ProTec T2-750PV-P	59.0294	1 TE plug	222	ProTec T2H-300-3+1	59.0334	4 TE	148
ProTec T2-1100PV-3+0	59.0292	3 TE	222	ProTec T2H-300-3+1-R	59.0335	4 TE	148
ProTec T2-1100PV-3+0-R	59.0293	3 TE	222	ProTec T2H-300-4+0	59.0330	4 TE	144
ProTec T2-1500PV-3+0	59.0295	3 TE	222	ProTec T2H-300-4+0-R	59.0331	4 TE	144
ProTec T2-1500PV-3+0-R	59.0296	3 TE	222	ProTec T2H-300-P	59.0322	1 TE plug	138-148
ProTec T2-ADV-75-1+0	59.0208	1 TE	170	ProTec ZPS T1H-300-3+0	59.0900		20

Product Name Index

(continued)

Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
ProTec ZPS T1H-300-3+0-E	59.0904		28	SafeBloc BR 100/150 (4+0) TCG	54.0557	8 TE	106
ProTec ZPS T1H-300-3+0-E-L	59.0906		30	SafeBloc BR 100/275 (3+1) TCG	54.0571	8 TE	108
ProTec ZPS T1H-300-3+0-E-R	59.0905		28	SafeBloc BR 100/275 (4+0) TCG	54.0559	8 TE	106
ProTec ZPS T1H-300-3+0-E-R-L	59.0907		30	SafeBloc BR 100/440 (3+1)	54.0573	8 TE	122
ProTec ZPS T1H-300-3+0-L	59.0902		22	SafeBloc BR 100/440 (4+0)	54.0561	8 TE	118
ProTec ZPS T1H-300-3+0-R	59.0901		20	SafeTec T2-75-1+0	59.0132	1 TE	186
ProTec ZPS T1H-300-3+0-R-L	59.0903		22	SafeTec T2-75-1+0-R	59.0133	1 TE	186
ProTec ZPS T1H-300-3+1	59.0908		24	SafeTec T2-75-1+1	59.0186	2 TE	194
ProTec ZPS T1H-300-3+1-E	59.0912		32	SafeTec T2-75-1+1-R	59.0187	2 TE	194
ProTec ZPS T1H-300-3+1-E-L	59.0914		34	SafeTec T2-75-2+0	59.0345	2 TE	188
ProTec ZPS T1H-300-3+1-E-R	59.0913		32	SafeTec T2-75-2+0-R	59.0346	2 TE	188
ProTec ZPS T1H-300-3+1-E-R-L	59.0915		34	SafeTec T2-75-P	59.0125	1 TE plug	186-188, 194
ProTec ZPS T1H-300-3+1-L	59.0910		26	SafeTec T2-150-1+0	59.0134	1 TE	186
ProTec ZPS T1H-300-3+1-R	59.0909		24	SafeTec T2-150-1+0-R	59.0135	1 TE	186
ProTec ZPS T1H-300-3+1-R-L	59.0911		26	SafeTec T2-150-1+1	59.0188	2 TE	194
ProTube B 50/255	56.0510	2 TE	82	SafeTec T2-150-1+1-R	59.0189	2 TE	194
ProTube B 100/255	56.0511	2 TE	84	SafeTec T2-150-2+0	59.0148	2 TE	188
ProTube T1-50-0+1	59.0276	1 TE	66	SafeTec T2-150-2+0-R	59.0149	2 TE	188
ProTube T1-50-P	59.0269	1 TE plug	62-66	SafeTec T2-150-3+0	59.0162	3 TE	190
ProTube T1-100-0+1	59.0278	1 TE	66	SafeTec T2-150-3+0-R	59.0163	3 TE	190
ProTube T1-100-P	59.0271	1 TE plug	66	SafeTec T2-150-4+0	59.0176	4 TE	192
ProTube T1H-50-0+1	59.0340	1 TE	50	SafeTec T2-150-4+0-R	59.0177	4 TE	192
ProTube T1H-50-P	59.0309	1 TE plug	46-50	SafeTec T2-150-P	59.0126	1 TE plug	186-194
ProTube T1HS-100-P	59.0303	1 TE plug	14	SafeTec T2-300-1+0	59.0136	1 TE	186
ProTube T2-40-0+1	59.0280	1 TE	166	SafeTec T2-300-1+0-R	59.0137	1 TE	186
ProTube T2-40-0+1-R	59.0336	1 TE	166	SafeTec T2-300-1+1	59.0190	2 TE	194
ProTube T2-40-P	59.0273	1 TE plug	162-166	SafeTec T2-300-1+1-R	59.0191	2 TE	194
ProTube T2-ADV-40-P	59.0275	1 TE plug	178-180	SafeTec T2-300-2+0	59.0150	2 TE	188
ProTube T2H-40-0+1	59.0341	1 TE	150	SafeTec T2-300-2+0-R	59.0151	2 TE	188
ProTube T2H-40-0+1-R	59.0342	1 TE	150	SafeTec T2-300-3+0	59.0164	3 TE	190
ProTube T2H-40-P	59.0323	1 TE plug	146-150	SafeTec T2-300-3+0-R	59.0165	3 TE	190
PSI	509 525		251	SafeTec T2-300-3+1	59.0198	4 TE	196
PSN	509 524		251	SafeTec T2-300-3+1-R	59.0199	4 TE	196
SafeBloc B 12.5/750 (1+0) WT TCG	54.0590	2 TE	132	SafeTec T2-300-4+0	59.0178	4 TE	192
SafeBloc B 25/150 (1+0) TCG	54.0537	2 TE	102	SafeTec T2-300-4+0-R	59.0179	4 TE	192
SafeBloc B 25/150 (1+1) TCG	54.0525	4 TE	128	SafeTec T2-300-P	59.0127	1 TE plug	186-196
SafeBloc B 25/275 (1+0) TCG	54.0539	2 TE	102	SafeTec T2-350-1+0	59.0138	1 TE	186
SafeBloc B 25/275 (1+1) TCG	54.0527	4 TE	128	SafeTec T2-350-1+0-R	59.0139	1 TE	186
SafeBloc B 25/440 (1+0)	54.0541	2 TE	112	SafeTec T2-350-1+1	59.0192	2 TE	194
SafeBloc B 50/150 (4+0) TCG	54.0519	8 TE	126	SafeTec T2-350-1+1-R	59.0193	2 TE	194
SafeBloc B 50/275 (3+1) TCG	54.0533	8 TE	130	SafeTec T2-350-2+0	59.0152	2 TE	188
SafeBloc B 50/275 (4+0) TCG	54.0521	8 TE	126	SafeTec T2-350-2+0-R	59.0153	2 TE	188
SafeBloc B 50/440 (1+1)	54.0566	4 TE	120	SafeTec T2-350-3+0	59.0166	3 TE	190
SafeBloc B 50/440 (2+0)	54.0548	4 TE	114	SafeTec T2-350-3+0-R	59.0167	3 TE	190
SafeBloc B 75/150 (3+0) TCG	54.0550	6 TE	104	SafeTec T2-350-3+1	59.0200	4 TE	196
SafeBloc B 75/275 (3+0) TCG	54.0552	6 TE	104	SafeTec T2-350-3+1-R	59.0201	4 TE	196
SafeBloc B 75/440 (3+0)	54.0554	6 TE	116	SafeTec T2-350-4+0	59.0180	4 TE	192
SafeBloc B 100/150 (4+0) TCG	54.0556	8 TE	106	SafeTec T2-350-4+0-R	59.0181	4 TE	192
SafeBloc B 100/275 (3+1) TCG	54.0570	8 TE	108	SafeTec T2-350-P	59.0128	1 TE plug	186-196
SafeBloc B 100/275 (4+0) TCG	54.0558	8 TE	106	SafeTec T2-480-1+0	59.0140	1 TE	186
SafeBloc B 100/440 (3+1)	54.0572	8 TE	122	SafeTec T2-480-1+0-R	59.0141	1 TE	186
SafeBloc B 100/440 (4+0)	54.0560	8 TE	118	SafeTec T2-480-2+0	59.0154	2 TE	188
SafeBloc BR 12.5/750 (1+0) WT TCG	54.0591	2 TE	132	SafeTec T2-480-2+0-R	59.0155	2 TE	188
SafeBloc BR 25/150 (1+0) TCG	54.0538	2 TE	102	SafeTec T2-480-3+0	59.0168	3 TE	190
SafeBloc BR 25/150 (1+1) TCG	54.0526	4 TE	128	SafeTec T2-480-3+0-R	59.0169	3 TE	190
SafeBloc BR 25/275 (1+0) TCG	54.0540	2 TE	102	SafeTec T2-480-4+0	59.0182	4 TE	192
SafeBloc BR 25/275 (1+1) TCG	54.0528	4 TE	128	SafeTec T2-480-4+0-R	59.0183	4 TE	192
SafeBloc BR 25/440 (1+0)	54.0542	2 TE	112	SafeTec T2-480-P	59.0129	1 TE plug	186-192
SafeBloc BR 50/150 (4+0) TCG	54.0520	8 TE	126	SafeTec T2-550-1+0	59.0142	1 TE	186
SafeBloc BR 50/275 (3+1) TCG	54.0534	8 TE	130	SafeTec T2-550-1+0-R	59.0143	1 TE	186
SafeBloc BR 50/275 (4+0) TCG	54.0522	8 TE	126	SafeTec T2-550-2+0	59.0156	2 TE	188
SafeBloc BR 50/440 (1+1)	54.0567	4 TE	120	SafeTec T2-550-2+0-R	59.0157	2 TE	188
SafeBloc BR 50/440 (2+0)	54.0549	4 TE	114	SafeTec T2-550-3+0	59.0170	3 TE	190
SafeBloc BR 75/150 (3+0) TCG	54.0551	6 TE	104	SafeTec T2-550-3+0-R	59.0171	3 TE	190
SafeBloc BR 75/275 (3+0) TCG	54.0553	6 TE	104	SafeTec T2-550-4+0	59.0184	4 TE	192
SafeBloc BR 75/440 (3+0)	54.0555	6 TE	116	SafeTec T2-550-4+0-R	59.0185	4 TE	192

Product Name Index

(continued)

Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
SafeTec T2-550-P	59.0299	1 TE plug	186-192
SafeTec T2-750-1+0	59.0144	1 TE	186
SafeTec T2-750-1+0-R	59.0145	1 TE	186
SafeTec T2-750-2+0	59.0158	2 TE	188
SafeTec T2-750-2+0-R	59.0159	2 TE	188
SafeTec T2-750-3+0	59.0172	3 TE	190
SafeTec T2-750-3+0-R	59.0173	3 TE	190
SafeTec T2-750-P	59.0130	1 TE plug	186-190
SafeTec T2-880-1+0	59.0146	1 TE	186
SafeTec T2-880-1+0-R	59.0147	1 TE	186
SafeTec T2-880-2+0	59.0160	2 TE	188

Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
SafeTec T2-880-2+0-R	59.0161	2 TE	188
SafeTec T2-880-3+0	59.0174	3 TE	190
SafeTec T2-880-3+0-R	59.0175	3 TE	190
SafeTec T2-880-P	59.0131	1 TE plug	186-190
SafeTec T2-1000DC-3+0	59.0373	3 TE	228
SafeTec T2-1000DC-3+0-R	59.0374	3 TE	228
SafeTube B 100/255	54.0543	2 TE	110
SafeTube B 100/440	54.0624	2 TE	124
SafeTube T2-40-0+1	59.0281	1 TE	198
SafeTube T2-40-0+1-R	59.0337	1 TE	198
SafeTube T2-40-P	59.0274	1 TE plug	194-198

PCB Socket Products for AC Systems T1 Combinations Index

PCB Socket Product Name	Order Code	Catalog Page(s)	Compatible Plug Product	Order Code	Dimensions DIN 43880	Catalog Page(s)
PCB Socket T1-75	515 167	208	ProTec T1-75-P	59.0001	1 TE plug	54-56, 62
PCB Socket T1-75-R	515 175	208				
PCB Socket T1-150	515 168	208	ProTec T1-150-P	59.0002	1 TE plug	54-62
PCB Socket T1-150-R	515 176	208				
PCB Socket T1-300	515 169	208	ProTec T1-300-P	59.0003	1 TE plug	54-64
PCB Socket T1-300-R	515 177	208	ProTec T1H-300-P	59.0308	1 TE plug	38-48
PCB Socket T1-350	515 170	208	ProTec T1-350-P	59.0004	1 TE plug	54-64
PCB Socket T1-350-R	515 178	208				
PCB Socket T1-480	515 171	208	ProTec T1-480-P	59.0005	1 TE plug	54-60
PCB Socket T1-480-R	515 179	208				
PCB Socket T1-750	515 173	208	ProTec T1-750-P	59.0006	1 TE plug	54-58
PCB Socket T1-750-R	515 181	208				

PCB Socket Products for AC Systems T2 Combinations Index

PCB Socket Product Name	Order Code	Catalog Page(s)	Compatible Plug Product	Order Code	Dimensions DIN 43880	Catalog Page(s)
PCB Socket T2-75	515 183	210	ProTec T2-75-P	59.0063	1 TE plug	154-156, 162
PCB Socket T2-75-R	515 192	210	ProTec T2-ADV-75-P	59.0202	1 TE plug	170-172, 178
			SafeTec T2-75-P	59.0125	1 TE plug	186-188, 194
PCB Socket T2-150	515 184	210	ProTec T2-150-P	59.0064	1 TE plug	154-162
PCB Socket T2-150-R	515 193	210	ProTec T2-ADV-150-P	59.0203	1 TE plug	170-178
			SafeTec T2-150-P	59.0126	1 TE plug	186-194
PCB Socket T2-300	515 185	210	ProTec T2-300-P	59.0065	1 TE plug	154-164
PCB Socket T2-300-R	515 194	210	ProTec T2-ADV-300-P	59.0204	1 TE plug	170-180
			ProTec T2H-300-P	59.0322	1 TE plug	138-148
			SafeTec T2-300-P	59.0127	1 TE plug	186-196
PCB Socket T2-350	515 186	210	ProTec T2-350-P	59.0066	1 TE plug	154-164
PCB Socket T2-350-R	515 195	210	ProTec T2-ADV-350-P	59.0205	1 TE plug	170-180
			SafeTec T2-350-P	59.0128	1 TE plug	186-196
PCB Socket T2-480	515 187	210	ProTec T2-480-P	59.0067	1 TE plug	154-160
PCB Socket T2-480-R	515 196	210	ProTec T2-ADV-480-P	59.0206	1 TE plug	170-176
			SafeTec T2-480-P	59.0129	1 TE plug	186-192
PCB Socket T2-550	515 188	210	ProTec T2-550-P	59.0685	1 TE plug	154-160
PCB Socket T2-550-R	515 197	210	SafeTec T2-550-P	59.0299	1 TE plug	186-192
PCB Socket T2-750	515 189	210	ProTec T2-750-P	59.0068	1 TE plug	154-158
PCB Socket T2-750-R	515 198	210	SafeTec T2-750-P	59.0130	1 TE plug	186-190
PCB Socket T2-880	515 190	210	SafeTec T2-880-P	59.0131	1 TE plug	186-190
PCB Socket T2-880-R	515 199	210				
PCB Socket T2-NPE-305	515 191	210	ProTube T2-40-P	59.0273	1 TE plug	162-166
PCB Socket T2-NPE-305-R	515 200	210	ProTube T2-ADV-40-P	59.0275	1 TE plug	178-180
			ProTube T2H-40-P	59.0323	1 TE plug	146-150
			SafeTube T2-40-P	59.0274	1 TE plug	194-198

PCB Socket Products for Photovoltaic Systems Combination Index

PCB Socket Product Name	Order Code	Catalog Page(s)	Compatible Plug Product	Order Code	Dimensions DIN 43880	Catalog Page(s)
PCB Socket T1-550PV	515 155	214	ProTec T1-550PV-P	59.0283	1 TE plug	220
PCB Socket T1-550PV-M	515 156	214	ProTec T1-550PV-M-P	59.0284	1 TE plug	220
PCB Socket T1-550PV-M-R	515 160	214	ProTec T1-550PV-M-P	59.0284	1 TE plug	220
PCB Socket T1-550PV-R	515 159	214	ProTec T1-550PV-P	59.0283	1 TE plug	220
PCB Socket T1-750PV	515 157	214	ProTec T1-750PV-P	59.0287	1 TE plug	220
PCB Socket T1-750PV-M	515 158	214	ProTec T1-750PV-M-P	59.0288	1 TE plug	220
PCB Socket T1-750PV-M-R	515 162	214	ProTec T1-750PV-M-P	59.0288	1 TE plug	220
PCB Socket T1-750PV-R	515 161	214	ProTec T1-750PV-P	59.0287	1 TE plug	220
PCB Socket T2-550PV	515 163	216	ProTec T2-550PV-P	59.0291	1 TE plug	222
PCB Socket T2-550PV-R	515 165	216	ProTec T2-550PV-P	59.0291	1 TE plug	222
PCB Socket T2-750PV	515 164	216	ProTec T2-750PV-P	59.0294	1 TE plug	222
PCB Socket T2-750PV-R	515 166	216	ProTec T2-750PV-P	59.0294	1 TE plug	222

Order Code Index

(continued)

Order Code	Product Name	Dimensions DIN 43880	Catalog Page(s)	Order Code	Product Name	Dimensions DIN 43880	Catalog Page(s)
54.0519	SafeBloc B 50/150 (4+0) TCG	8 TE	126	56.0542	ProBloc B 25/150 (1+1)	2 TE	94
54.0520	SafeBloc BR 50/150 (4+0) TCG	8 TE	126	56.0543	ProBloc BR 25/150 (1+1)	2 TE	94
54.0521	SafeBloc B 50/275 (4+0) TCG	8 TE	126	56.0544	ProBloc B 25/275 (1+1)	2 TE	94
54.0522	SafeBloc BR 50/275 (4+0) TCG	8 TE	126	56.0545	ProBloc BR 25/275 (1+1)	2 TE	94
54.0525	SafeBloc B 25/150 (1+1) TCG	4 TE	128	56.0546	ProBloc B 25/320 (1+1)	2 TE	94
54.0526	SafeBloc BR 25/150 (1+1) TCG	4 TE	128	56.0547	ProBloc BR 25/320 (1+1)	2 TE	94
54.0527	SafeBloc B 25/275 (1+1) TCG	4 TE	128	56.0554	ProBloc B 50/275 (3+1)	4 TE	96
54.0528	SafeBloc BR 25/275 (1+1) TCG	4 TE	128	56.0555	ProBloc BR 50/275 (3+1)	4 TE	96
54.0533	SafeBloc B 50/275 (3+1) TCG	8 TE	130	56.0556	ProBloc B 50/320 (3+1)	4 TE	96
54.0534	SafeBloc BR 50/275 (3+1) TCG	8 TE	130	56.0557	ProBloc BR 50/320 (3+1)	4 TE	96
54.0537	SafeBloc B 25/150 (1+0) TCG	2 TE	102	56.0562	ProBloc B 25/150 (1+0)	2 TE	70
54.0538	SafeBloc BR 25/150 (1+0) TCG	2 TE	102	56.0563	ProBloc BR 25/150 (1+0)	2 TE	70
54.0539	SafeBloc B 25/275 (1+0) TCG	2 TE	102	56.0564	ProBloc B 25/275 (1+0)	2 TE	70
54.0540	SafeBloc BR 25/275 (1+0) TCG	2 TE	102	56.0565	ProBloc BR 25/275 (1+0)	2 TE	70
54.0541	SafeBloc B 25/440 (1+0)	2 TE	112	56.0566	ProBloc B 25/320 (1+0)	2 TE	70
54.0542	SafeBloc BR 25/440 (1+0)	2 TE	112	56.0567	ProBloc BR 25/320 (1+0)	2 TE	70
54.0543	SafeTube B 100/255	2 TE	110	56.0572	ProBloc B 50/150 (2+0)	4 TE	72
54.0548	SafeBloc B 50/440 (2+0)	4 TE	114	56.0573	ProBloc BR 50/150 (2+0)	4 TE	72
54.0549	SafeBloc BR 50/440 (2+0)	4 TE	114	56.0574	ProBloc B 50/275 (2+0)	4 TE	72
54.0550	SafeBloc B 75/150 (3+0) TCG	6 TE	104	56.0575	ProBloc BR 50/275 (2+0)	4 TE	72
54.0551	SafeBloc BR 75/150 (3+0) TCG	6 TE	104	56.0576	ProBloc B 50/320 (2+0)	4 TE	72
54.0552	SafeBloc B 75/275 (3+0) TCG	6 TE	104	56.0577	ProBloc BR 50/320 (2+0)	4 TE	72
54.0553	SafeBloc BR 75/275 (3+0) TCG	6 TE	104	56.0582	ProBloc B 75/150 (3+0)	6 TE	74
54.0554	SafeBloc B 75/440 (3+0)	6 TE	116	56.0583	ProBloc BR 75/150 (3+0)	6 TE	74
54.0555	SafeBloc BR 75/440 (3+0)	6 TE	116	56.0584	ProBloc B 75/275 (3+0)	6 TE	74
54.0556	SafeBloc B 100/150 (4+0) TCG	8 TE	106	56.0585	ProBloc BR 75/275 (3+0)	6 TE	74
54.0557	SafeBloc BR 100/150 (4+0) TCG	8 TE	106	56.0586	ProBloc B 75/320 (3+0)	6 TE	74
54.0558	SafeBloc B 100/275 (4+0) TCG	8 TE	106	56.0587	ProBloc BR 75/320 (3+0)	6 TE	74
54.0559	SafeBloc BR 100/275 (4+0) TCG	8 TE	106	56.0592	ProBloc B 100/150 (4+0)	8 TE	76
54.0560	SafeBloc B 100/440 (4+0)	8 TE	118	56.0593	ProBloc BR 100/150 (4+0)	8 TE	76
54.0561	SafeBloc BR 100/440 (4+0)	8 TE	118	56.0594	ProBloc B 100/275 (4+0)	8 TE	76
54.0566	SafeBloc B 50/440 (1+1)	4 TE	120	56.0595	ProBloc BR 100/275 (4+0)	8 TE	76
54.0567	SafeBloc BR 50/440 (1+1)	4 TE	120	56.0596	ProBloc B 100/320 (4+0)	8 TE	76
54.0570	SafeBloc B 100/275 (3+1) TCG	8 TE	108	56.0597	ProBloc BR 100/320 (4+0)	8 TE	76
54.0571	SafeBloc BR 100/275 (3+1) TCG	8 TE	108	56.0602	ProBloc B 50/150 (1+1)	4 TE	78
54.0572	SafeBloc B 100/440 (3+1)	8 TE	122	56.0603	ProBloc BR 50/150 (1+1)	4 TE	78
54.0573	SafeBloc BR 100/440 (3+1)	8 TE	122	56.0604	ProBloc B 50/275 (1+1)	4 TE	78
54.0590	SafeBloc B 12.5/750 (1+0) WT TCG	2 TE	132	56.0605	ProBloc BR 50/275 (1+1)	4 TE	78
54.0591	SafeBloc BR 12.5/750 (1+0) WT TCG	2 TE	132	56.0606	ProBloc B 50/320 (1+1)	4 TE	78
54.0624	SafeTube B 100/440	2 TE	124	56.0607	ProBloc BR 50/320 (1+1)	4 TE	78
56.0500	ProBloc B 12.5/150 (1+0)	2 TE	86	56.0614	ProBloc B 100/275 (3+1)	8 TE	80
56.0501	ProBloc BR 12.5/150 (1+0)	2 TE	86	56.0615	ProBloc BR 100/275 (3+1)	8 TE	80
56.0502	ProBloc B 12.5/275 (1+0)	2 TE	86	56.0616	ProBloc B 100/320 (3+1)	8 TE	80
56.0503	ProBloc BR 12.5/275 (1+0)	2 TE	86	56.0617	ProBloc BR 100/320 (3+1)	8 TE	80
56.0504	ProBloc B 12.5/320 (1+0)	2 TE	86	56.0670	ProBloc B 1000DC	3 TE	226
56.0505	ProBloc BR 12.5/320 (1+0)	2 TE	56	59.0001	ProTec T1-75-P	1 TE plug	54-56, 62
56.0510	ProTube B 50/255	2 TE	82	59.0002	ProTec T1-150-P	1 TE plug	54-62
56.0511	ProTube B 100/255	2 TE	84	59.0003	ProTec T1-300-P	1 TE plug	54-64
56.0512	ProBloc B 25/150 (2+0)	2 TE	88	59.0004	ProTec T1-350-P	1 TE plug	54-64
56.0513	ProBloc BR 25/150 (2+0)	2 TE	88	59.0005	ProTec T1-480-P	1 TE plug	54-60
56.0514	ProBloc B 25/275 (2+0)	2 TE	88	59.0006	ProTec T1-750-P	1 TE plug	54-58
56.0515	ProBloc BR 25/275 (2+0)	2 TE	88	59.0007	ProTec T1-75-1+0	1 TE	54
56.0516	ProBloc B 25/320 (2+0)	2 TE	88	59.0008	ProTec T1-75-1+0-R	1 TE	54
56.0517	ProBloc BR 25/320 (2+0)	2 TE	88	59.0009	ProTec T1-150-1+0	1 TE	54
56.0522	ProBloc B 37.5/150 (3+0)	3 TE	90	59.0010	ProTec T1-150-1+0-R	1 TE	54
56.0523	ProBloc BR 37.5/150 (3+0)	3 TE	90	59.0011	ProTec T1-300-1+0	1 TE	54
56.0524	ProBloc B 37.5/275 (3+0)	3 TE	90	59.0012	ProTec T1-300-1+0-R	1 TE	54
56.0525	ProBloc BR 37.5/275 (3+0)	3 TE	90	59.0013	ProTec T1-350-1+0	1 TE	54
56.0526	ProBloc B 37.5/320 (3+0)	3 TE	90	59.0014	ProTec T1-350-1+0-R	1 TE	54
56.0527	ProBloc BR 37.5/320 (3+0)	3 TE	90	59.0015	ProTec T1-480-1+0	1 TE	54
56.0532	ProBloc B 50/150 (4+0)	4 TE	92	59.0016	ProTec T1-480-1+0-R	1 TE	54
56.0533	ProBloc BR 50/150 (4+0)	4 TE	92	59.0017	ProTec T1-750-1+0	1 TE	54
56.0534	ProBloc B 50/275 (4+0)	4 TE	92	59.0018	ProTec T1-750-1+0-R	1 TE	54
56.0535	ProBloc BR 50/275 (4+0)	4 TE	92	59.0019	ProTec T1-150-2+0	2 TE	56
56.0536	ProBloc B 50/320 (4+0)	4 TE	92	59.0020	ProTec T1-150-2+0-R	2 TE	56
56.0537	ProBloc BR 50/320 (4+0)	4 TE	92	59.0021	ProTec T1-300-2+0	2 TE	56

Order Code Index

(continued)

Order Code	Product Name	Dimensions DIN 43880	Catalog Page(s)	Order Code	Product Name	Dimensions DIN 43880	Catalog Page(s)
59.0022	ProTec T1-300-2+0-R	2 TE	56	59.0094	ProTec T2-300-3+0-R	3 TE	158
59.0023	ProTec T1-350-2+0	2 TE	56	59.0095	ProTec T2-350-3+0	3 TE	158
59.0024	ProTec T1-350-2+0-R	2 TE	56	59.0096	ProTec T2-350-3+0-R	3 TE	158
59.0025	ProTec T1-480-2+0	2 TE	56	59.0097	ProTec T2-480-3+0	3 TE	158
59.0026	ProTec T1-480-2+0-R	2 TE	56	59.0098	ProTec T2-480-3+0-R	3 TE	158
59.0027	ProTec T1-750-2+0	2 TE	56	59.0099	ProTec T2-750-3+0	3 TE	158
59.0028	ProTec T1-750-2+0-R	2 TE	56	59.0100	ProTec T2-750-3+0-R	3 TE	158
59.0029	ProTec T1-150-3+0	3 TE	58	59.0101	ProTec T2-150-4+0	4 TE	160
59.0030	ProTec T1-150-3+0-R	3 TE	58	59.0102	ProTec T2-150-4+0-R	4 TE	160
59.0031	ProTec T1-300-3+0	3 TE	58	59.0103	ProTec T2-300-4+0	4 TE	160
59.0032	ProTec T1-300-3+0-R	3 TE	58	59.0104	ProTec T2-300-4+0-R	4 TE	160
59.0033	ProTec T1-350-3+0	3 TE	58	59.0105	ProTec T2-480-4+0	4 TE	160
59.0034	ProTec T1-350-3+0-R	3 TE	58	59.0106	ProTec T2-480-4+0-R	4 TE	160
59.0035	ProTec T1-480-3+0	3 TE	58	59.0109	ProTec T2-75-1+1	2 TE	162
59.0036	ProTec T1-480-3+0-R	3 TE	58	59.0110	ProTec T2-75-1+1-R	2 TE	162
59.0037	ProTec T1-750-3+0	3 TE	58	59.0111	ProTec T2-150-1+1	2 TE	162
59.0038	ProTec T1-750-3+0-R	3 TE	58	59.0112	ProTec T2-150-1+1-R	2 TE	162
59.0039	ProTec T1-150-4+0	4 TE	60	59.0113	ProTec T2-300-1+1	2 TE	162
59.0040	ProTec T1-150-4+0-R	4 TE	60	59.0114	ProTec T2-300-1+1-R	2 TE	162
59.0041	ProTec T1-300-4+0	4 TE	60	59.0115	ProTec T2-350-1+1	2 TE	162
59.0042	ProTec T1-300-4+0-R	4 TE	60	59.0116	ProTec T2-350-1+1-R	2 TE	162
59.0043	ProTec T1-480-4+0	4 TE	60	59.0121	ProTec T2-300-3+1	4 TE	164
59.0044	ProTec T1-480-4+0-R	4 TE	60	59.0122	ProTec T2-300-3+1-R	4 TE	164
59.0047	ProTec T1-75-1+1	2 TE	62	59.0123	ProTec T2-350-3+1	4 TE	164
59.0048	ProTec T1-75-1+1-R	2 TE	62	59.0124	ProTec T2-350-3+1-R	4 TE	164
59.0049	ProTec T1-150-1+1	2 TE	62	59.0125	SafeTec T2-75-P	1 TE plug	186-188, 194
59.0050	ProTec T1-150-1+1-R	2 TE	62	59.0126	SafeTec T2-150-P	1 TE plug	186-194
59.0051	ProTec T1-300-1+1	2 TE	62	59.0127	SafeTec T2-300-P	1 TE plug	186-196
59.0052	ProTec T1-300-1+1-R	2 TE	62	59.0128	SafeTec T2-350-P	1 TE plug	186-196
59.0053	ProTec T1-350-1+1	2 TE	62	59.0129	SafeTec T2-480-P	1 TE plug	186-192
59.0054	ProTec T1-350-1+1-R	2 TE	62	59.0130	SafeTec T2-750-P	1 TE plug	186-190
59.0059	ProTec T1-300-3+1	4 TE	64	59.0131	SafeTec T2-880-P	1 TE plug	186-190
59.0060	ProTec T1-300-3+1-R	4 TE	64	59.0132	SafeTec T2-75-1+0	1 TE	186
59.0061	ProTec T1-350-3+1	4 TE	64	59.0133	SafeTec T2-75-1+0-R	1 TE	186
59.0062	ProTec T1-350-3+1-R	4 TE	64	59.0134	SafeTec T2-150-1+0	1 TE	186
59.0063	ProTec T2-75-P	1 TE plug	154-156, 162	59.0135	SafeTec T2-150-1+0-R	1 TE	186
59.0064	ProTec T2-150-P	1 TE plug	154-162	59.0136	SafeTec T2-300-1+0	1 TE	186
59.0065	ProTec T2-300-P	1 TE plug	154-164	59.0137	SafeTec T2-300-1+0-R	1 TE	186
59.0066	ProTec T2-350-P	1 TE plug	154-164	59.0138	SafeTec T2-350-1+0	1 TE	186
59.0067	ProTec T2-480-P	1 TE plug	154-160	59.0139	SafeTec T2-350-1+0-R	1 TE	186
59.0068	ProTec T2-750-P	1 TE plug	154-158	59.0140	SafeTec T2-480-1+0	1 TE	186
59.0069	ProTec T2-75-1+0	1 TE	154	59.0141	SafeTec T2-480-1+0-R	1 TE	186
59.0070	ProTec T2-75-1+0-R	1 TE	154	59.0142	SafeTec T2-550-1+0	1 TE	186
59.0071	ProTec T2-150-1+0	1 TE	154	59.0143	SafeTec T2-550-1+0-R	1 TE	186
59.0072	ProTec T2-150-1+0-R	1 TE	154	59.0144	SafeTec T2-750-1+0	1 TE	186
59.0073	ProTec T2-300-1+0	1 TE	154	59.0145	SafeTec T2-750-1+0-R	1 TE	186
59.0074	ProTec T2-300-1+0-R	1 TE	154	59.0146	SafeTec T2-880-1+0	1 TE	186
59.0075	ProTec T2-350-1+0	1 TE	154	59.0147	SafeTec T2-880-1+0-R	1 TE	186
59.0076	ProTec T2-350-1+0-R	1 TE	154	59.0148	SafeTec T2-150-2+0	2 TE	188
59.0077	ProTec T2-480-1+0	1 TE	154	59.0149	SafeTec T2-150-2+0-R	2 TE	188
59.0078	ProTec T2-480-1+0-R	1 TE	154	59.0150	SafeTec T2-300-2+0	2 TE	188
59.0079	ProTec T2-750-1+0	1 TE	154	59.0151	SafeTec T2-300-2+0-R	2 TE	188
59.0080	ProTec T2-750-1+0-R	1 TE	154	59.0152	SafeTec T2-350-2+0	2 TE	188
59.0081	ProTec T2-150-2+0	2 TE	156	59.0153	SafeTec T2-350-2+0-R	2 TE	188
59.0082	ProTec T2-150-2+0-R	2 TE	156	59.0154	SafeTec T2-480-2+0	2 TE	188
59.0083	ProTec T2-300-2+0	2 TE	156	59.0155	SafeTec T2-480-2+0-R	2 TE	188
59.0084	ProTec T2-300-2+0-R	2 TE	156	59.0156	SafeTec T2-550-2+0	2 TE	188
59.0085	ProTec T2-350-2+0	2 TE	156	59.0157	SafeTec T2-550-2+0-R	2 TE	188
59.0086	ProTec T2-350-2+0-R	2 TE	156	59.0158	SafeTec T2-750-2+0	2 TE	188
59.0087	ProTec T2-480-2+0	2 TE	156	59.0159	SafeTec T2-750-2+0-R	2 TE	188
59.0088	ProTec T2-480-2+0-R	2 TE	156	59.0160	SafeTec T2-880-2+0	2 TE	188
59.0089	ProTec T2-750-2+0	2 TE	156	59.0161	SafeTec T2-880-2+0-R	2 TE	188
59.0090	ProTec T2-750-2+0-R	2 TE	156	59.0162	SafeTec T2-150-3+0	3 TE	190
59.0091	ProTec T2-150-3+0	3 TE	158	59.0163	SafeTec T2-150-3+0-R	3 TE	190
59.0092	ProTec T2-150-3+0-R	3 TE	158	59.0164	SafeTec T2-300-3+0	3 TE	190
59.0093	ProTec T2-300-3+0	3 TE	158	59.0165	SafeTec T2-300-3+0-R	3 TE	190

Order Code Index

(continued)

Order Code	Product Name	Dimensions DIN 43880	Catalog Page(s)	Order Code	Product Name	Dimensions DIN 43880	Catalog Page(s)
59.0166	SafeTec T2-350-3+0	3 TE	190	59.0239	ProTec T2-ADV-300-4+0-R	4 TE	176
59.0167	SafeTec T2-350-3+0-R	3 TE	190	59.0240	ProTec T2-ADV-350-4+0	4 TE	176
59.0168	SafeTec T2-480-3+0	3 TE	190	59.0241	ProTec T2-ADV-350-4+0-R	4 TE	176
59.0169	SafeTec T2-480-3+0-R	3 TE	190	59.0242	ProTec T2-ADV-480-4+0	4 TE	176
59.0170	SafeTec T2-550-3+0	3 TE	190	59.0243	ProTec T2-ADV-480-4+0-R	4 TE	176
59.0171	SafeTec T2-550-3+0-R	3 TE	190	59.0244	ProTec T2-ADV-75-1+1	2 TE	178
59.0172	SafeTec T2-750-3+0	3 TE	190	59.0245	ProTec T2-ADV-75-1+1-R	2 TE	178
59.0173	SafeTec T2-750-3+0-R	3 TE	190	59.0246	ProTec T2-ADV-150-1+1	2 TE	178
59.0174	SafeTec T2-880-3+0	3 TE	190	59.0247	ProTec T2-ADV-150-1+1-R	2 TE	178
59.0175	SafeTec T2-880-3+0-R	3 TE	190	59.0248	ProTec T2-ADV-300-1+1	2 TE	178
59.0176	SafeTec T2-150-4+0	4 TE	192	59.0249	ProTec T2-ADV-300-1+1-R	2 TE	178
59.0177	SafeTec T2-150-4+0-R	4 TE	192	59.0250	ProTec T2-ADV-480-1+1	2 TE	178
59.0178	SafeTec T2-300-4+0	4 TE	192	59.0251	ProTec T2-ADV-480-1+1-R	2 TE	178
59.0179	SafeTec T2-300-4+0-R	4 TE	192	59.0256	ProTec T2-ADV-300-3+1	4 TE	180
59.0180	SafeTec T2-350-4+0	4 TE	192	59.0257	ProTec T2-ADV-300-3+1-R	4 TE	180
59.0181	SafeTec T2-350-4+0-R	4 TE	192	59.0258	ProTec T2-ADV-350-3+1	4 TE	180
59.0182	SafeTec T2-480-4+0	4 TE	192	59.0259	ProTec T2-ADV-350-3+1-R	4 TE	180
59.0183	SafeTec T2-480-4+0-R	4 TE	192	59.0260	ProTec T1HS-300-4+0	8 TE	12
59.0184	SafeTec T2-550-4+0	4 TE	192	59.0261	ProTec T1HS-300-4+0-R	8 TE	12
59.0185	SafeTec T2-550-4+0-R	4 TE	192	59.0269	ProTube T1-50-P	1 TE plug	62-66
59.0186	SafeTec T2-75-1+1	2 TE	194	59.0271	ProTube T1-100-P	1 TE plug	66
59.0187	SafeTec T2-75-1+1-R	2 TE	194	59.0273	ProTube T2-40-P	1 TE plug	162-166
59.0188	SafeTec T2-150-1+1	2 TE	194	59.0274	SafeTube T2-40-P	1 TE plug	194-198
59.0189	SafeTec T2-150-1+1-R	2 TE	194	59.0275	ProTube T2-ADV-40-P	1 TE plug	178-180
59.0190	SafeTec T2-300-1+1	2 TE	194	59.0276	ProTube T1-50-0+1	1 TE	66
59.0191	SafeTec T2-300-1+1-R	2 TE	194	59.0278	ProTube T1-100-0+1	1 TE	66
59.0192	SafeTec T2-350-1+1	2 TE	194	59.0280	ProTube T2-40-0+1	1 TE	166
59.0193	SafeTec T2-350-1+1-R	2 TE	194	59.0281	SafeTube T2-40-0+1	1 TE	198
59.0198	SafeTec T2-300-3+1	4 TE	196	59.0283	ProTec T1-550PV-P	1 TE plug	220
59.0199	SafeTec T2-300-3+1-R	4 TE	196	59.0284	ProTec T1-550PV-M-P	1 TE plug	220
59.0200	SafeTec T2-350-3+1	4 TE	196	59.0285	ProTec T1-1100PV-3+0	3 TE	220
59.0201	SafeTec T2-350-3+1-R	4 TE	196	59.0286	ProTec T1-1100PV-3+0-R	3 TE	220
59.0202	ProTec T2-ADV-75-P	1 TE plug	170-172, 178	59.0287	ProTec T1-750PV-P	1 TE plug	220
59.0203	ProTec T2-ADV-150-P	1 TE plug	170-178	59.0288	ProTec T1-750PV-M-P	1 TE plug	220
59.0204	ProTec T2-ADV-300-P	1 TE plug	170-180	59.0289	ProTec T1-1500PV-3+0	3 TE	220
59.0205	ProTec T2-ADV-350-P	1 TE plug	170-180	59.0290	ProTec T1-1500PV-3+0-R	3 TE	220
59.0206	ProTec T2-ADV-480-P	1 TE plug	170-176	59.0291	ProTec T2-550PV-P	1 TE plug	222
59.0208	ProTec T2-ADV-75-1+0	1 TE	170	59.0292	ProTec T2-1100PV-3+0	3 TE	222
59.0209	ProTec T2-ADV-75-1+0-R	1 TE	170	59.0293	ProTec T2-1100PV-3+0-R	3 TE	222
59.0210	ProTec T2-ADV-150-1+0	1 TE	170	59.0294	ProTec T2-750PV-P	1 TE plug	222
59.0211	ProTec T2-ADV-150-1+0-R	1 TE	170	59.0295	ProTec T2-1500PV-3+0	3 TE	222
59.0212	ProTec T2-ADV-300-1+0	1 TE	170	59.0296	ProTec T2-1500PV-3+0-R	3 TE	222
59.0213	ProTec T2-ADV-300-1+0-R	1 TE	170	59.0299	SafeTec T2-550-P	1 TE plug	186-192
59.0214	ProTec T2-ADV-350-1+0	1 TE	170	59.0300	ProTec T2-350-4+0	4 TE	160
59.0215	ProTec T2-ADV-350-1+0-R	1 TE	170	59.0301	ProTec T2-350-4+0-R	4 TE	160
59.0216	ProTec T2-ADV-480-1+0	1 TE	170	59.0302	ProTec T1HS-300-P	1 TE plug	14-Oct
59.0217	ProTec T2-ADV-480-1+0-R	1 TE	170	59.0303	ProTube T1HS-100-P	1 TE plug	14
59.0220	ProTec T2-ADV-150-2+0	2 TE	172	59.0304	ProTec T1HS-300-3+0	6 TE	10
59.0221	ProTec T2-ADV-150-2+0-R	2 TE	172	59.0305	ProTec T1HS-300-3+0-R	6 TE	10
59.0222	ProTec T2-ADV-300-2+0	2 TE	172	59.0306	ProTec T1HS-300-3+1	8 TE	14
59.0223	ProTec T2-ADV-300-2+0-R	2 TE	172	59.0307	ProTec T1HS-300-3+1-R	8 TE	14
59.0224	ProTec T2-ADV-350-2+0	2 TE	172	59.0308	ProTec T1H-300-P	1 TE plug	38-48
59.0225	ProTec T2-ADV-350-2+0-R	2 TE	172	59.0309	ProTube T1H-50-P	1 TE plug	46-50
59.0226	ProTec T2-ADV-480-2+0	2 TE	172	59.0310	ProTec T1H-300-1+0	1 TE	38
59.0227	ProTec T2-ADV-480-2+0-R	2 TE	172	59.0311	ProTec T1H-300-1+0-R	1 TE	38
59.0228	ProTec T2-ADV-150-3+0	3 TE	174	59.0312	ProTec T1H-300-2+0	2 TE	40
59.0229	ProTec T2-ADV-150-3+0-R	3 TE	174	59.0313	ProTec T1H-300-2+0-R	2 TE	40
59.0230	ProTec T2-ADV-300-3+0	3 TE	174	59.0314	ProTec T1H-300-3+0	3 TE	42
59.0231	ProTec T2-ADV-300-3+0-R	3 TE	174	59.0315	ProTec T1H-300-3+0-R	3 TE	42
59.0232	ProTec T2-ADV-350-3+0	3 TE	174	59.0316	ProTec T1H-300-4+0	4 TE	44
59.0233	ProTec T2-ADV-350-3+0-R	3 TE	174	59.0317	ProTec T1H-300-4+0-R	4 TE	44
59.0234	ProTec T2-ADV-480-3+0	3 TE	174	59.0318	ProTec T1H-300-1+1	2 TE	46
59.0235	ProTec T2-ADV-480-3+0-R	3 TE	174	59.0319	ProTec T1H-300-1+1-R	2 TE	46
59.0236	ProTec T2-ADV-150-4+0	4 TE	176	59.0320	ProTec T1H-300-3+1	4 TE	48
59.0237	ProTec T2-ADV-150-4+0-R	4 TE	176	59.0321	ProTec T1H-300-3+1-R	4 TE	48
59.0238	ProTec T2-ADV-300-4+0	4 TE	176	59.0322	ProTec T2H-300-P	1 TE plug	138-148

Order Code Index

(continued)

Order Code	Product Name	Dimensions DIN 43880	Catalog Page(s)	Order Code	Product Name	Dimensions DIN 43880	Catalog Page(s)
59.0323	ProTube T2H-40-P	1 TE plug	146-150	501 340	ProBar 1-4		248
59.0324	ProTec T2H-300-1+0	1 TE	138	501 341	ProBar 1-5		248
59.0325	ProTec T2H-300-1+0-R	1 TE	138	501 342	ProBar 1-6		248
59.0326	ProTec T2H-300-2+0	2 TE	140	501 343	ProBar 1-7		248
59.0327	ProTec T2H-300-2+0-R	2 TE	140	501 344	ProBar 1-8		248
59.0328	ProTec T2H-300-3+0	3 TE	142	501 345	ProBar 1-11		248
59.0329	ProTec T2H-300-3+0-R	3 TE	142	501 346	ProBar 2-8		249
59.0330	ProTec T2H-300-4+0	4 TE	144	501 347	ProBar 3-6		249
59.0331	ProTec T2H-300-4+0-R	4 TE	144	501 348	ProBar 3-8		249
59.0332	ProTec T2H-300-1+1	2 TE	146	501 349	PB 1-(2+0)		250
59.0333	ProTec T2H-300-1+1-R	2 TE	146	501 350	PB 1-(3+0)		250
59.0334	ProTec T2H-300-3+1	4 TE	148	501 351	PB 1-(2+1)		250
59.0335	ProTec T2H-300-3+1-R	4 TE	148	501 352	PB 1-(4+0)		250
59.0336	ProTube T2-40-0+1-R	1 TE	166	501 353	PB 1-(3+1)		250
59.0337	SafeTube T2-40-0+1-R	1 TE	198	508.315	ProTec CM 80/275 (2+0)	1 TE	202
59.0340	ProTube T1H-50-0+1	1 TE	50	508.316	ProTec CM 80/320 (2+0)	1 TE	202
59.0341	ProTube T2H-40-0+1	1 TE	150	508.320	ProTec CMR 80/275 (2+0)	1 TE	202
59.0342	ProTube T2H-40-0+1-R	1 TE	150	508.321	ProTec CMR 80/320 (2+0)	1 TE	202
59.0343	ProTec T2-75-2+0	2 TE	156	508.325	Plug ProTec CM(R) 80/275 (2+0)	1 TE plug	202
59.0344	ProTec T2-75-2+0-R	2 TE	156	508.326	Plug ProTec CM(R) 80/320 (2+0)	1 TE plug	202
59.0345	SafeTec T2-75-2+0	2 TE	188	508.330	ProTec CM 80/275 (1+1)	1 TE	204
59.0346	SafeTec T2-75-2+0-R	2 TE	188	508.331	ProTec CM 80/320 (1+1)	1 TE	204
59.0347	ProTec T2-ADV-75-2+0	2 TE	172	508.335	ProTec CMR 80/275 (1+1)	1 TE	204
59.0348	ProTec T2-ADV-75-2+0-R	2 TE	172	508.336	ProTec CMR 80/320 (1+1)	1 TE	204
59.0349	ProTec T1-75-2+0	2 TE	56	508.340	Plug ProTec CM(R) 80/275 (1+1)	1 TE plug	204
59.0350	ProTec T1-75-2+0-R	2 TE	56	508.341	Plug ProTec CM(R) 80/320 (1+1)	1 TE plug	204
59.0351	ProTec T1-350-4+0	4 TE	60	508.369	ProTec DMG 20/320 (2+0)	1 TE	234
59.0352	ProTec T1-350-4+0-R	4 TE	60	508.370	ProTec DMGR 20/320 (2+0)	1 TE	234
59.0373	SafeTec T2-1000DC-3+0	3 TE	228	508.371	Plug ProTec DMG(R) 20/320	1 TE Plug	234
59.0374	SafeTec T2-1000DC-3+0-R	3 TE	228	509.210	ProTec AQS 40/150		240
59.0677	ProTec T2-550-1+0	1 TE	154	509.211	ProTec AQS 40/275		240
59.0678	ProTec T2-550-1+0-R	1 TE	154	509.212	ProTec AQS 40/320		240
59.0679	ProTec T2-550-2+0	2 TE	156	509.213	ProTec AQS 40/440		240
59.0680	ProTec T2-550-2+0-R	2 TE	156	509.521	EPZ 100/350 EX		244
59.0681	ProTec T2-550-3+0	3 TE	158	509.522	Fixing Cable		251
59.0682	ProTec T2-550-3+0-R	3 TE	158	509.523	Fixing Hook		251
59.0683	ProTec T2-550-4+0	4 TE	160	509.524	PSN		251
59.0684	ProTec T2-550-4+0-R	4 TE	160	509.525	PSI		251
59.0685	ProTec T2-550-P	1 TE plug	154-160	510 783	ProTec DMDR 20/24	1 TE	232
59.0900	ProTec ZPS T1H-300-3+0		20	510 784	Plug ProTec DMDR 20/24	1 TE Plug	232
59.0901	ProTec ZPS T1H-300-3+0-R		20	510 833	ProTec DMDR 20/48	1 TE	232
59.0902	ProTec ZPS T1H-300-3+0-L		22	510 834	ProTec DMDR 20/60	1 TE	232
59.0903	ProTec ZPS T1H-300-3+0-R-L		22	510 835	ProTec DMDR 20/120	1 TE	232
59.0904	ProTec ZPS T1H-300-3+0-E		28	510 836	Plug ProTec DMDR 20/48	1 TE Plug	232
59.0905	ProTec ZPS T1H-300-3+0-E-R		28	510 837	Plug ProTec DMDR 20/60	1 TE Plug	232
59.0906	ProTec ZPS T1H-300-3+0-E-L		30	510 838	Plug ProTec DMDR 20/120	1 TE Plug	232
59.0907	ProTec ZPS T1H-300-3+0-E-R-L		30	515 155	PCB Socket T1-550PV	1 TE	214
59.0908	ProTec ZPS T1H-300-3+1		24	515 156	PCB Socket T1-550PV-M	1 TE	214
59.0909	ProTec ZPS T1H-300-3+1-R		24	515 157	PCB Socket T1-750PV	1 TE	214
59.0910	ProTec ZPS T1H-300-3+1-L		26	515 158	PCB Socket T1-750PV-M	1 TE	214
59.0911	ProTec ZPS T1H-300-3+1-R-L		26	515 159	PCB Socket T1-550PV-R	1 TE	214
59.0912	ProTec ZPS T1H-300-3+1-E		32	515 160	PCB Socket T1-550PV-M-R	1 TE	214
59.0913	ProTec ZPS T1H-300-3+1-E-R		32	515 161	PCB Socket T1-750PV-R	1 TE	214
59.0914	ProTec ZPS T1H-300-3+1-E-L		34	515 162	PCB Socket T1-750PV-M-R	1 TE	214
59.0915	ProTec ZPS T1H-300-3+1-E-R-L		34	515 163	PCB Socket T2-550PV	1 TE	216
121 280	MPE-Mini		236	515 164	PCB Socket T2-750PV	1 TE	216
121 282	MPE-Mini LED		236	515 165	PCB Socket T2-550PV-R	1 TE	216
130 100	ProSEC II+	2 TE	254	515 166	PCB Socket T2-750PV-R	1 TE	216
130 511	ProALARM	1 TE	260	515 167	PCB Socket T1-75	1 TE	208
130 551	ProSLS	2 TE	256	515 168	PCB Socket T1-150	1 TE	208
130 571	ProSCT		258	515 169	PCB Socket T1-300	1 TE	208
130 572	ProSCT with Case		258	515 170	PCB Socket T1-350	1 TE	208
130 573	ProSCT SPD Adapter		259	515 171	PCB Socket T1-480	1 TE	208
133 005	ProSLS Shielded	2 TE	256	515 173	PCB Socket T1-750	1 TE	208
501 338	ProBar 1-2		248	515 175	PCB Socket T1-75-R	1 TE	208
501 339	ProBar 1-3		248	515 176	PCB Socket T1-150-R	1 TE	208

Order Code Index

(continued)

Order Code	Product Name	Dimensions DIN 43880	Catalog Page(s)	Order Code	Product Name	Dimensions DIN 43880	Catalog Page(s)
515 177	PCB Socket T1-300-R	1 TE	208	515 190	PCB Socket T2-880	1 TE	210
515 178	PCB Socket T1-350-R	1 TE	208	515 191	PCB Socket T2-NPE-305	1 TE	210
515 179	PCB Socket T1-480-R	1 TE	208	515 192	PCB Socket T2-75-R	1 TE	210
515 181	PCB Socket T1-750-R	1TE	208	515 193	PCB Socket T2-150-R	1 TE	210
515 183	PCB Socket T2-75	1 TE	210	515 194	PCB Socket T2-300-R	1 TE	210
515 184	PCB Socket T2-150	1 TE	210	515 195	PCB Socket T2-350-R	1 TE	210
515 185	PCB Socket T2-300	1 TE	210	515 196	PCB Socket T2-480-R	1 TE	210
515 186	PCB Socket T2-350	1 TE	210	515 197	PCB Socket T2-550-R	1 TE	210
515 187	PCB Socket T2-480	1 TE	210	515 198	PCB Socket T2-750-R	1 TE	210
515 188	PCB Socket T2-550	1 TE	210	515 199	PCB Socket T2-880-R	1 TE	210
515 189	PCB Socket T2-750	1 TE	210	515 200	PCB Socket T2-NPE-305-R	1 TE	210

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Raycap Worldwide Locations



Raycap Inc.
806 South Clearwater Loop
Post Falls, ID 83854
United States of America

Raycap|STEALTH
7555-A Palmetto Commerce Pkwy
North Charleston, SC 29420
United States of America

Raycap GmbH
Parkring 11
85748 Garching Munich
Germany

Raycap S.A.
Telou & Petroussou 14
15124 Maroussi Athens
Greece

Raycap S.A. Manufacturing
Industrial Area of Drama
66100 Drama
Greece

Raycap d.o.o.
Poslovna cona Žeje pri Komendi
Pod hrasti 7
1218 Komenda
Slovenia

Raycap Cyprus Ltd.
46 Lefkosias Street
Industrial Area of Dali
2540 Nicosia
Cyprus

Raycap SAS
84 rue Charles Michels
Building B
93200 Saint-Denis
France

Raycap Corporation SRL
4A, Johann Strauss, 4 Floor,
Sector 2, 020312 Bucharest
Romania

Raycap (Suzhou) Co. Ltd.
Block B, Phase II
of New Sea Union
No. 58 Heshun Road
SIP, Suzhou 215122
Jiangsu Province
China



Raycap

raycap.com • info@raycap.com

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