

Lightning and Overvoltage Protection

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 +A11:2018
 UL 1449 5th 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			
Overvoltage Category		III			
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

Additional Electrical Parameters - Standard (Tests performed within Raycap testing laboratory only)

Residual Voltage at 5 kA (8/20 μ s)	U_{res}	800V	1100V	1300V	1500V
Minimum Backup fuse, if required		160 A gG			

Additional Electrical Parameters - Extended (Additionally tested by VDE)

Short-Circuit Current Rating (AC)	I_{SCCR}	100 kA			
Overcurrent Protection (max)		250 A gG			

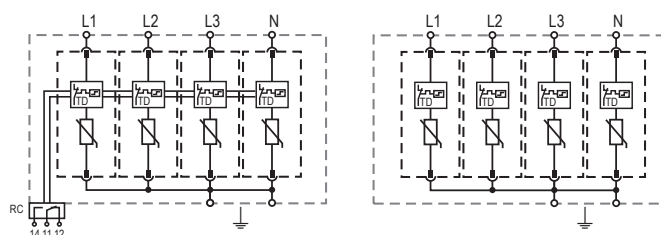
Mechanical & Environmental

Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]			
Permissible Operating Humidity	RH	5%...95%			
Pollution Degree		2			
Altitude (max)		13123 ft [4000 m]			
Terminal Screw Torque	M_{max}	40 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/1 A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A			
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (Solid)			
Overvoltage Category		III			

Internal Configuration

Legend

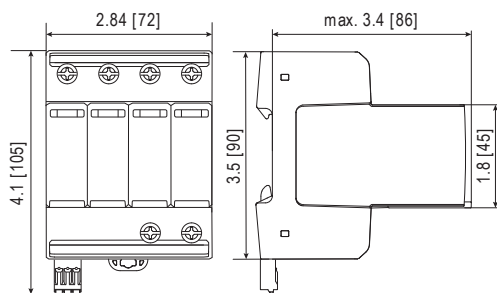
<i>L</i>	Line Conductor Terminal
<i>N</i>	Neutral Conductor Terminal
$\downarrow$	PE/G Conductor Terminal
<i>RC</i>	Remote Contacts Terminal (Optional)
<i>TD</i>	Thermal Disconnecter



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

Dimensions & Packaging

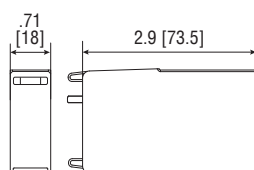


inches [mm]

Complete Unit

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

Spare Plug



Single Unit

ProTec T1-xxx-P	150	300	350	480
Weight	pounds	.203	.229	.271
	grams	92	104	123
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	28 Units			