

Lightning and Overvoltage Protection

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 + A11:2018
 UL 1449 5th 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}	12.5 kA	12.5 kA	12.5 kA	10kA	5kA
Specific Energy	W/R	39kJ/ Ω	39kJ/ Ω	39kJ/ Ω	25kJ/ Ω	6.25kJ/ Ω
Charge	Q	6.25 As	6.25 As	6.25 As	5 As	2.5 As
Voltage Protection Level	U_p	1000V	1500V	1750V	2100V	3200V
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	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

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	2500V
Minimum Backup fuse, if required		160 A gG				80 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				

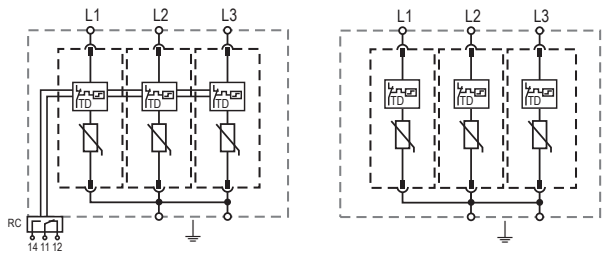
Mechanical & Environmental

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 [4000m]				
Terminal Screw Torque	M_{max}	40 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)				
Overvoltage Category		III				

Internal Configuration

Legend

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

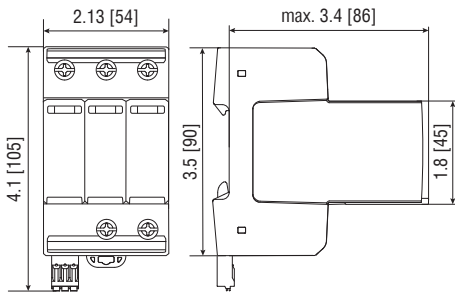


Order Information

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

Dimensions & Packaging

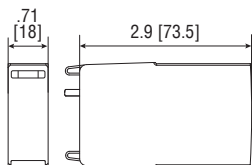
inches [mm]



Complete Unit

ProTec T1-xxx-3+0		150	300	350	480	750
Weigh	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 mm]			
Packaging Dimensions (HxWxL)			4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]			
Standard Order Quantity			5 Unit			

Spare Plug



Single Unit

ProTec T1-xxx-P		150	300	350	480	750
Weight	pounds	.203	.229	.271	.278	.284
	grams	92	104	123	126	129
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			