

Lightning and Overvoltage Protection

ProTec T1S 3+1

Class I • Class II • Type 1 • Type 2



Location of Use: Main Distribution Boards
 Network Systems: TT, TN-S
 Mode of Protection: L-N, N-PE
 IEC/EN Category: Class I+II / Type 1+2
 Housing: Pluggable Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012+A11:2018



Technical Data

ProTec T1S-xxx-3+1(-R)

275

440*

IEC Electrical

		240V	400V
Nominal AC Voltage (50/60Hz)	U_o / U_n	240V	400V
Maximum Continuous Operating Voltage (AC)	(L-N) / (N-PE) U_c	275V / 305V	440V / 440V
Nominal Discharge Current (8/20 μ s)	(L-N) / (N-PE) I_n	25 kA / 100 kA	25 kA / 100 kA
Maximum Discharge Current (8/20 μ s)	(L-N) / (N-PE) I_{max}	65 kA / 150 kA	50 kA / 100 kA
Impulse Discharge Current (10/350 μ s)	(L-N) / (N-PE) I_{imp}	25 kA / 100 kA	25 kA / 100 kA
Specific Energy	(L-N) / (N-PE) W/R	156.2 kJ/ Ω / 2500 kJ/ Ω	156.2 kJ/ Ω / 2500 kJ/ Ω
Charge	(L-N) / (N-PE) Q	12.5 As / 50 As	12.5 As / 50 As
Voltage Protection Level	(L-N) / (N-PE) U_p	1500V / 1500V	2500V / 2500V
Response Time	(L-N) / (N-PE) t_A	< 100 ns / < 100 ns	< 100 ns / < 100 ns
Overvoltage Category		III	III
Overcurrent Protection (max)		315 A gG	315 A gG / 250 A gG
Short-Circuit Current Rating (AC)	(L-N) I_{SCCR}	50 kA	50 kA / 100 kA
Follow Current Interrupt Rating (AC)	(L-N) I_{fi}	50 kA	50 kA / 100 A
	(N-PE)	100 A	100 A
TOV 120 min	(L-N) U_T / mode	442V / Withstand	762V / Safe Fail
TOV Withstand 200ms	(N-PE) U_T	1200V	1200V
Number of Ports		1	

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

Residual Voltage at 5 kA (8/20 μ s)	(L-N) / (N-PE) U_{res}	1400V / 305V	1500V / 305V
Minimum Overcurrent Protection, if required		250 A gG	250 A gG

Additional Electrical Parameters - Extended (Additionally tested by VDE)

Short-Circuit Current Rating (AC)	I_{SCCR}	100 kA
Overcurrent Protection (max)		315 A gG / 250 A gG

Mechanical & Environmental

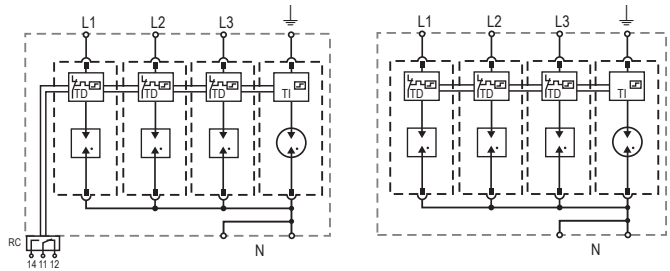
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity	RH	5%...95%
Pollution Degree		2
Altitude		6562 ft [2000 m]
Terminal Screw Torque	M_{max}	40 lbf-in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35 mm ² (Solid, Stranded) / 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/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

*No VDE Certification.

Internal Configuration

Legend

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



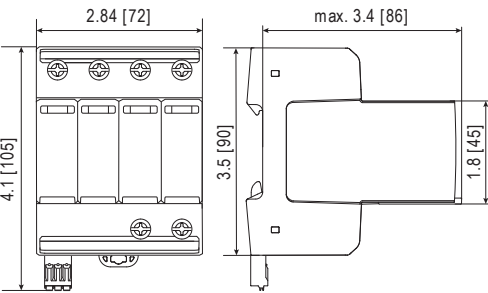
ProTec T1S-xxx-3+1(-R)

Order Information

Order Code	275	440*
ProTec T1S-xxx-3+1	59.0748	59.A527
ProTec T1S-xxx-3+1-R (with remote contacts)	59.0749	59.A528
ProTec T1S-xxx-P (plug L-N)	59.0384	59.A515
ProTube T1S-100-P (plug N-PE)	59.0386	-
ProTube T1S-440-100-P (plug N-PE)	-	59.A516

*No VDE Certification.

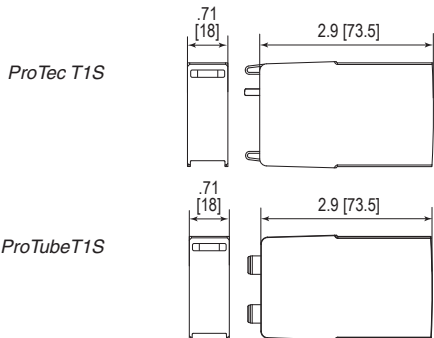
Dimensions & Packaging



inches [mm]

Complete Unit			
ProTec T1S-xxx-3+1		275	440*
Weight	pounds [grams]	1.503 [682]	1.537 [697]
ProTec T1S-xxx-3+1-R		275	440*
Weight	pounds [grams]	1.523 [691]	1.556 [706]
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 T1S-xxx-P		275	440*
Weight	pounds [grams]	.231 [105]	.242 [110]
ProTube T1S-100-P		100	
Weight	pounds [grams]	.253 [115]	
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	