DATASHEET

Lightning and Overvoltage Protection
ProTec T1S 3+1

Class I • Class II • Type 1 • Type 2

25 kA Series



Location of Use: Main Distribution Boards
Network Systems: TT, TN-S
Mode of Protection: L-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

RoHS COMPLIANT

Technical Data

ProTec T1S-xxx-3+1(-R)			275	440*
IEC Electrical				
Nominal AC Voltage (50/60Hz)		U_o/U_n	240 V	400 V
Maximum Continuous Operating Voltage (AC)	(L-N)/(N-PE)	U_c	275 V/305 V	440 V/440V
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n	25 kA/100 kA	25 kA/100 kA
Maximum Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_{max}	65 kA/150 kA	50 kA/100 kA
Impulse Discharge Current (10/350 µs)	(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	1500 V/1500 V	2500 V/2500 V
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	442 V/Withstand	762 V/Safe Fail
TOV Withstand 200ms	(N-PE)	U_T	1200 V	1200 V
Number of Ports			1	
Additional Electrical Parameters - Standard *(Tests performed within Raycap testing laboratory only)*				
Residual Voltage at 5 kA (8/20 µs)	(L-N)/(N-PE)	U_{res}	1400 V/305 V	1500 V/305 V
Minimum Backup fuse, 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	
Minimum Backup fuse, if required			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 mm² (Solid, Stranded)/25 mm² (Flexible)	
Mounting			35 mm DIN Rail, EN 60715	
Degree of Protection			IP 20 (built-in)	
Housing Material			Thermoplastic: Extinguishing Degree UL 94 V-0	
Operating State/Fault Indication			Green Flag/Not Green Flag	
Remote Contacts (RC)			Optional	
RC Switching Capacity			AC: 250 V/1A, 125 V/1 A; DC: 48 V/0.5 A, 24 V/0.5 A, 12 V/0.5 A	
RC Conductor Cross Section (max)			16 AWG (Solid) /1.5 mm² (Solid)	
Overvoltage Category			III	

**No VDE Certification.*

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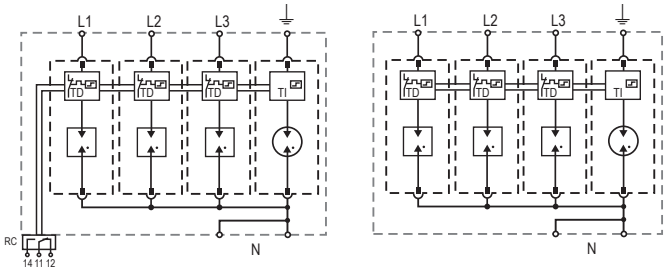
Internal Configuration

Legend

L	*Line Conductor Terminal*
N	*Neutral Conductor Terminal*
⏚	*PE Conductor Terminal*
RC	*Remote Contacts Terminal (Optional)*
TD	*Thermal Disconnector*
TI	*Thermal Indication*

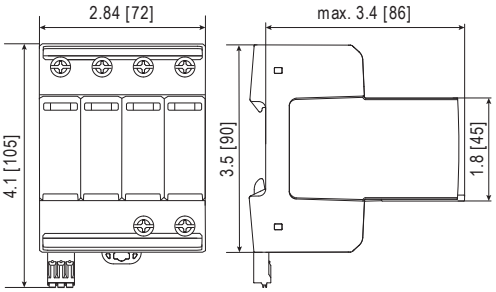


Order Information		
Order Code	**275**	**440***
ProTec T1S-xxx-3+1	59.0748	59.A527
ProTec T1S-xxx-3+1-R (with remote contacts)	59.0749	59.A528
ProTec T1S-xxx-P (plug L-N)	59.0384	59.A515
ProTube T1S-100-P (plug N-PE)	59.0386	-
ProTube T1S-440-100-P (plug N-PE)	-	59.A516

**No VDE Certification.*

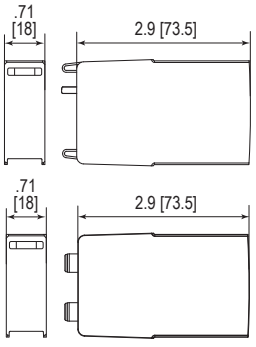
Dimensions & Packaging

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			
Weight	pounds [grams]	1.523 [691]	1.556 [706]
DIN 43880 Dimension		4 TE / 2.84" [72 mm]	
Packaging Dimensions (H x W x L)		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 (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]	
Standard Order Quantity		28 Units	

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