

# 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 $\mu$ s)	(L-N) / (N-PE) $I_n$	20 kA / 50 kA
Maximum Discharge Current (8/20 $\mu$ s)	(L-N) / (N-PE) $I_{max}$	65 kA / 100 kA
Impulse Discharge Current (10/350 $\mu$ s)	(L-N) / (N-PE) $I_{imp}$	12.5 kA / 50 kA
Specific Energy	(L-N) / (N-PE) W/R	39 kJ/ $\Omega$ / 625 kJ/ $\Omega$
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 <sub>RMS</sub>
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 $\mu$ 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 <sup>2</sup> (Solid, Stranded) / 25 mm <sup>2</sup> (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 <sup>2</sup> (Solid)

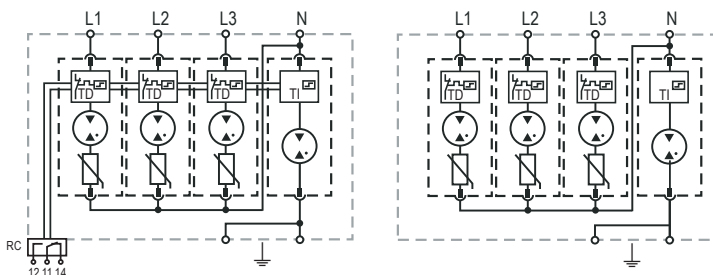
#### Order Information

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

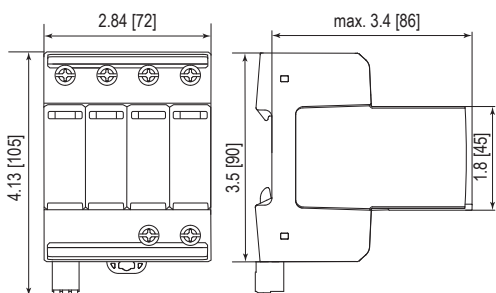
Internal Configuration

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

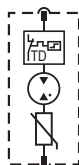


Complete Unit Dimensions & Packaging

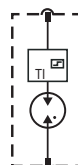
ProTec T1H-xxx-3+1		300
Weight	pounds [grams]	1.446 [656]
ProTec T1H-xxx-3+1-R		1.466 [665]
Weight	pounds [grams]	1.466 [665]
DIN 43880 Dimension		4 TE / 2.84 [72]
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity		4 Units

Plug Internal Configuration

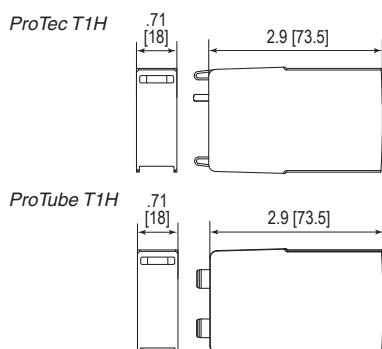
ProTec T1H-xxx-P



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]

