

Lightning and Overvoltage Protection

12.5 kA Series

ProTec T1 1+0

Class I • Class II • Type 1 • Type 2 • Type 1CA



Location of Use: Main Distribution Boards
 Network Systems: TN-S, TN-C, TT (only L-N)
 Mode of Protection: L-PE, N-PE (only TN-S), L-PEN, L-N
 IEC/EN/UL Category: Class I+II / Type 1+2 / Type 1CA
 Housing: Pluggable Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012
 UL 1449 4th Edition

Technical Data

| ProTec T1-xxx-1+0(-R) | | 75 | 150 | 300 | 350 | 480 | 750 |
|--|------------|------------------|-----------------|-----------------|-----------------|-----------------|-------------------|
| IEC Electrical | | | | | | | |
| Nominal AC Voltage (50/60Hz) | U_o/U_n | 60V | 120V | 240V | 277V | 400V | 600V |
| Maximum Continuous Operating Voltage (AC) | U_c | 75V | 150V | 300V | 350V | 480V | 750V |
| Nominal Discharge Current (8/20 μ s) | I_n | 20 kA | 20 kA | 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 | 50 kA | 35 kA |
| Impulse Discharge Current (10/350 μ s) | I_{imp} | 12.5 kA | 12.5 kA | 12.5 kA | 12.5 kA | 10 kA | 5 kA |
| Specific Energy | W/R | 39 kJ/ Ω | 39 kJ/ Ω | 39 kJ/ Ω | 39 kJ/ Ω | 25 kJ/ Ω | 6.25 kJ/ Ω |
| Charge | Q | 6.25 As | 6.25 As | 6.25 As | 6.25 As | 5 As | 2.5 As |
| Voltage Protection Level | U_p | 700V | 1000V | 1500V | 1750V | 2100V | 3200V |
| Response Time | t_A | < 25 ns | | | | | |
| Overcurrent Protection (max) | | 315 A / 250 A gG | | | | | 250 A gG |
| Short-Circuit Current Rating (AC) | I_{SCCR} | 25 kA / 50 kA | | | | | 50 kA |
| TOV Withstand 5s | U_T | 114V | 175V | 337V | 403V | 581V | 871V |
| TOV 120min | U_T | 114V | 229V | 442V | 529V | 762V | 1143V |
| | mode | Withstand | Safe Fail | Safe Fail | Safe Fail | Safe Fail | Safe Fail |
| Number of Ports | | 1 | | | | | |

| | | | | | | | |
|---|-------|--------|--------|--------|--------|--------|--------|
| UL Electrical | | | | | | | |
| Maximum Continuous Operating Voltage (AC) | MCOV | 75V | 150V | 300V | 350V | 480V | 750V |
| Voltage Protection Rating | VPR | 330V | 600V | 900V | 1200V | 1500V | 2500V |
| Nominal Discharge Current (8/20 μ s) | I_n | 20 kA | 20 kA | 20 kA | 20 kA | 20 kA | 20 kA |
| Short-Circuit Current Rating (AC) | SCCR | 100 kA | 200 kA | 150 kA | 150 kA | 200 kA | 150 kA |

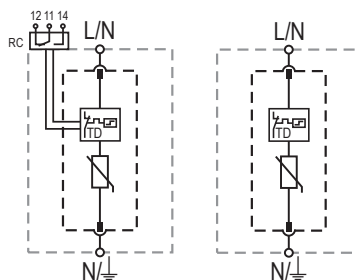
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|---------------------------------------|-----------|--|--|--|--|--|--|
| Mechanical & Environmental | | | | | | | |
| Operating Temperature Range | T_a | -40 °F to +185 °F [-40 °C to +85 °C] | | | | | |
| Permissible Operating Humidity | RH | 5%...95% | | | | | |
| 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 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) | | | | | |

| Order Information | | | | | | | |
|--|--|---------|---------|---------|---------|---------|---------|
| Order Code | | 75 | 150 | 300 | 350 | 480 | 750 |
| ProTec T1-xxx-1+0 | | 59.0007 | 59.0009 | 59.0011 | 59.0013 | 59.0015 | 59.0017 |
| ProTec T1-xxx-1+0-R (with remote contacts) | | 59.0008 | 59.0010 | 59.0012 | 59.0014 | 59.0016 | 59.0018 |
| ProTec T1-xxx-P (plug) | | 59.0001 | 59.0002 | 59.0003 | 59.0004 | 59.0005 | 59.0006 |

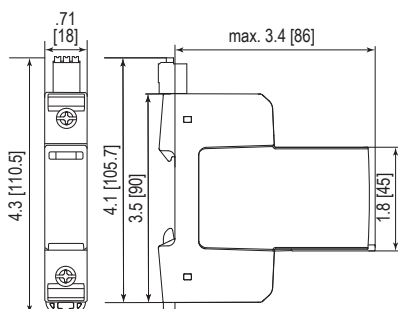
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⊥ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



Complete Unit

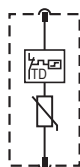


Complete Unit Dimensions & Packaging

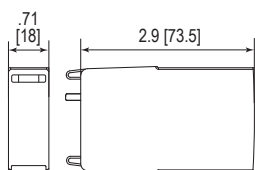
| | | 75 | 150 | 300 | 350 | 480 | 750 |
|------------------------------|--------|--|------|------|------|------|------|
| ProTec T1-xxx-1+0 | | | | | | | |
| Weight | pounds | .304 | .355 | .381 | .423 | .430 | .437 |
| | grams | 138 | 161 | 173 | 192 | 195 | 198 |
| ProTec T1-xxx-1+0-R | | | | | | | |
| Weight | pounds | .320 | .370 | .397 | .439 | .445 | .452 |
| | grams | 145 | 168 | 180 | 199 | 202 | 205 |
| 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 | | 12 Units | | | | | |

Plug Internal Configuration

ProTec T1-xxx-P



Spare Plug



Single Unit Dimensions & Packaging

| | | 75 | 150 | 300 | 350 | 480 | 750 |
|------------------------------|--------|--|------|------|------|------|------|
| ProTec T1-xxx-P | | | | | | | |
| Weight | pounds | .152 | .203 | .229 | .271 | .278 | .284 |
| | grams | 69 | 92 | 104 | 123 | 126 | 129 |
| 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 | | | | | |

