

# Lightning and Overvoltage Protection with Integrated Fuse

## ProTec T1SF 3+0

Class I • Class II • Class III • Type 1 • Type 2 • Type 3



Location of Use: Main Distribution Boards  
 Network Systems: TN-C  
 Mode of Protection: L-PEN  
 IEC/EN Category: Class I+II+III, Type 1+2+3  
 Housing: Pluggable Design  
 Compliance: IEC 61643-11: 2011  
 EN 61643-11: 2012+A11:2018



### Technical Data

ProTec T1SF-xxx-3+0(-R)

275

#### IEC Electrical

|                                                                     |             |                    |
|---------------------------------------------------------------------|-------------|--------------------|
| Nominal AC Voltage (50/60Hz)                                        | $U_o / U_n$ | 240 V              |
| Maximum Continuous Operating Voltage (AC)                           | $U_c$       | 275 V              |
| Nominal Discharge Current (8/20 $\mu$ s)                            | $I_n$       | 25 kA              |
| Maximum Discharge Current (8/20 $\mu$ s)                            | $I_{max}$   | 65 kA              |
| Impulse Discharge Current (10/350 $\mu$ s)                          | $I_{imp}$   | 25 kA              |
| Specific Energy                                                     | W/R         | 156.2 kJ/ $\Omega$ |
| Charge                                                              | Q           | 12.5 As            |
| Open Circuit Voltage of Combination Wave Generator (1.2/50 $\mu$ s) | $U_{oc}$    | 6 kV               |
| Short Circuit Current of Combination Wave Generator (8/20 $\mu$ s)  | $I_{cw}$    | 3 kA               |
| Voltage Protection Level                                            | $U_p$       | 1900 V             |
| Response Time                                                       | $t_A$       | < 100 ns           |
| Overvoltage Category                                                |             | III                |
| Maximum Backup fuse, if required                                    |             | Not Required       |
| Short-Circuit Current Rating (AC)                                   | $I_{SCCR}$  | 100 kA             |
| Follow Current Interrupt Rating (AC)                                | $I_{fi}$    | 100 kA             |
| TOV Withstand 120min                                                | $U_T$       | 442 V              |
| Number of Ports                                                     |             | 1                  |

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

|                                         |           |              |
|-----------------------------------------|-----------|--------------|
| Residual Voltage at 5 kA (8/20 $\mu$ s) | $U_{res}$ | 1200 V       |
| Minimum Backup fuse, if required        |           | Not required |

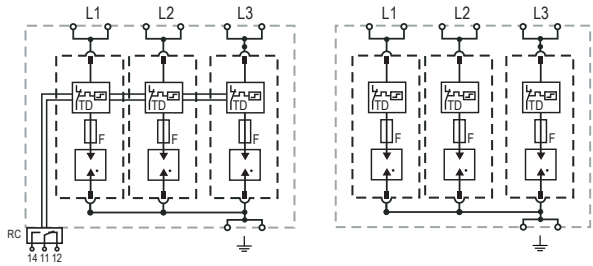
#### Mechanical & Environmental

|                                    |           |                                                                                                                    |
|------------------------------------|-----------|--------------------------------------------------------------------------------------------------------------------|
| 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)<br>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: 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 <sup>2</sup> (Solid)                                                                       |
| Overvoltage Category               |           | III                                                                                                                |

Internal Configuration

Legend

- L Line Conductor Terminal
- ⏏ PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter
- F Integrated Surge Adapted Backup Fuse



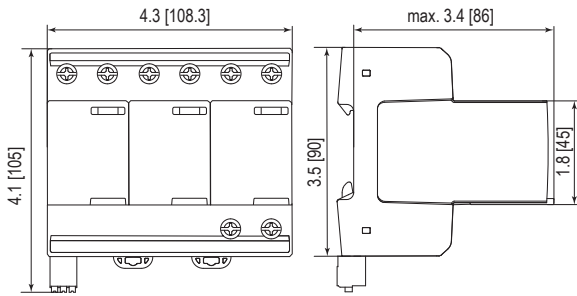
ProTec T1SF-xxx-3+0(-R)

Order Information

|                                              |         |
|----------------------------------------------|---------|
| Order Code                                   | 275     |
| ProTec T1SF-xxx-3+0                          | 59.C170 |
| ProTec T1SF-xxx-3+0-R (with remote contacts) | 59.C171 |
| ProTec T1SF-xxx-P (plug)                     | 59.A502 |

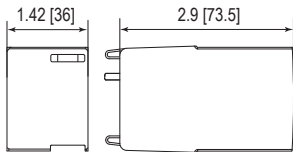
Dimensions & Packaging

inches [mm]



| Complete Unit                |                                        |             |
|------------------------------|----------------------------------------|-------------|
| ProTec T1SF-xxx-3+0          |                                        | 275         |
| Weight                       | pounds [grams]                         | 1.892 [858] |
| ProTec T1SF-xxx-3+0-R        |                                        |             |
| Weight                       | pounds [grams]                         | 1.914 [868] |
| DIN 43880 Dimension          | 6 TE / 4.3" [108.3mm]                  |             |
| Packaging Dimensions (HxWxL) | 4.3 x 4.5 x 13.8" [109 x 115 x 352 mm] |             |
| Standard Order Quantity      | 3 Units                                |             |

Spare Plug



| Single Unit                  |                                        |            |
|------------------------------|----------------------------------------|------------|
| ProTec T1SF-xxx-P            |                                        | 275        |
| Weight                       | pounds [grams]                         | .427 [194] |
| DIN 43880 Dimension          | 2 TE / 1.42" [36mm]                    |            |
| Packaging Dimensions (HxWxL) | 4.3 x 4.5 x 13.8" [109 x 115 x 352 mm] |            |
| Standard Order Quantity      | 14 Units                               |            |