

## Pluggable Single Pole & Multi-pole Surge Protective Devices (SPDs)



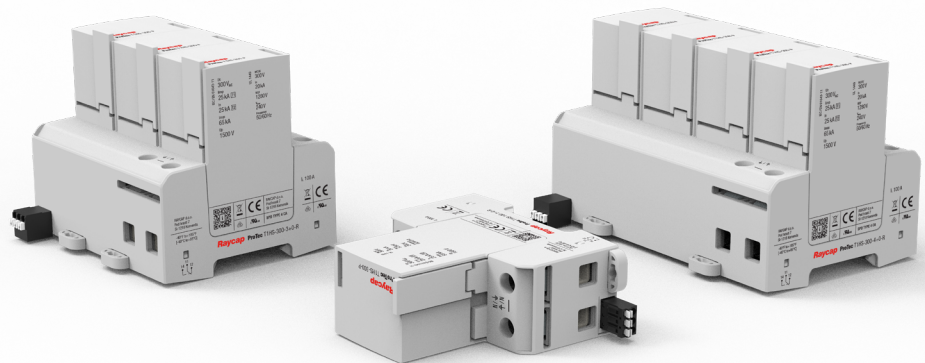
Lightning and Overvoltage Protection

### ProTec T1HS



#### Special features:

- Leakage current free hybrid topology
- High discharge capacity due to unique design impulse discharge current of 25 kA
- Energy coordinated with other ProTec families without additional cable length
- State-of-the-art thermal disconnector
- Backup fuse up to 315 A gG
- Short circuit current rating up to 100 kA\*
- Vibration and shock withstand capability
- All modules, also N-PE, with operating state green-red
- Optional remote contact (RC) signaling



IEC 61643-11:2011

EN 61643-11: 2012+A11:2018

UL 1449 5th Edition



The Type 1+2 modular surge protective device contains two high rated stand-alone varistors in series with a gas discharge tube that, in combination with a state-of-the-art space-saving thermal disconnection mechanism, ensure optimal system protection under all kinds of overloads. The series connection isolates the varistor from the grid, making it suitable for use upstream of meter panels in low-voltage consumer installations while making it immune to temporary overvoltage. The operating state requires no power to operate and instantly shows the health of the surge protective indicator. Besides a visual mechanical indicator, an optional remote contact (RC) device features a three-pole remote signaling terminal to monitor the operating state of the device.



More Product Information

\* VDE certified up to 50 kA, 100 kA additionally tested by VDE.



Lightning and Overvoltage Protection  
**ProTec T1HS 1+0**  
 Class I • Class II • Type 1 • Type 2 • Type 4CA



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 4CA  
 Housing: Pluggable Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11: 2012+A11:2018  
 UL 1449 5th Edition

**Technical Data**

**ProTec T1HS-xxx-1+0(-R)**

**300**

**IEC Electrical**

|  |             |                    |
|--|-------------|--------------------|
| Nominal AC Voltage (50/60Hz)               | $U_o / U_n$ | 240 V              |
| Maximum Continuous Operating Voltage (AC)  | $U_c$       | 300 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            |
| Voltage Protection Level                   | $U_p$       | 1500 V             |
| Rated Load Current                         | $I_L$       | 100 A              |
| Response Time                              | $t_A$       | < 100 ns           |
| Overcurrent Protection (max)               |             | 315 A gG           |
| Short-Circuit Current Rating (AC)          | $I_{scCR}$  | 100 kA             |
| TOV Withstand 120min                       | $U_T$       | 442 V              |
| Number of Ports                            |             | 1                  |

**UL Electrical**

|   |       |        |
|---|-------|--------|
| Maximum Continuous Operating Voltage (AC) | MCOV  | 300 V  |
| Measured Limiting Voltage                 | MLV   | 1280 V |
| Nominal Discharge Current (8/20 $\mu$ s)  | $I_n$ | 20 kA  |

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

|   |           |          |
|---|-----------|----------|
| Residual Voltage at 5 kA (8/20 $\mu$ s) | $U_{res}$ | 1100 V   |
| Overcurrent Protection (min)            |           | 250 A gG |

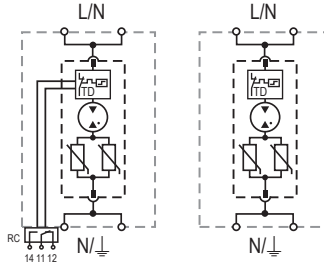
**Mechanical & Environmental**

|                                    |           |   |
|------------------------------------|-----------|---|
| Operating Temperature Range        | $T_a$     | -40 °F to +185 °F [-40 °C to +85 °C]  |
| Permissible Operating Humidity     | RH        | 5%...95%  |
| Altitude                           |           | 13123 ft [4000 m]   |
| Terminal Screw Torque              | $M_{max}$ | 40 lbf-in [4.5 Nm]  |
| Conductor Cross Section (max)      |           | 4 AWG (Solid, Stranded) per UL 1449<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)  |

## Internal Configuration

### Legend

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



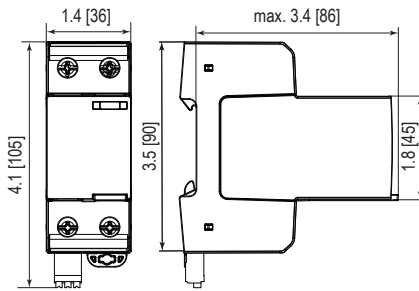
### ProTec T1HS-xxx-1+0(-R)

#### Order Information

| Order Code                                   | 300     |
|--|---------|
| ProTec T1HS-xxx-1+0                          | 59.A594 |
| ProTec T1HS-xxx-1+0-R (with remote contacts) | 59.A595 |
| ProTec T1HS-xxx-P (plug)                     | 59.0302 |

## Dimensions & Packaging

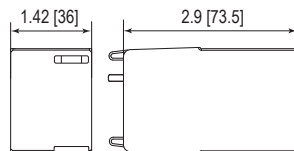
inches [mm]



#### Complete Unit

| ProTec T1HS-xxx-1+0          |                | 300                                    |
|------------------------------|----------------|--|
| Weight                       | pounds [grams] | .650 [295]                             |
| ProTec T1HS-xxx-1+0-R        |                |  |
| Weight                       | pounds [grams] | .670 [304]                             |
| DIN 43880 Dimension          |                | 2 TE / 1.42 [36]                       |
| Packaging Dimensions (HxWxL) |                | 4.3 x 4.5 x 13.8" [109 x 115 x 352 mm] |
| Standard Order Quantity      |                | 7 Units                                |

## Spare Plug



#### Single Unit

| ProTec T1HS-xxx-01-P         |                | 300                                    |
|------------------------------|----------------|--|
| Weight                       | pounds [grams] | .364 [165]                             |
| DIN 43880 Dimension          |                | 2 TE / 1.42" [36]                      |
| Packaging Dimensions (HxWxL) |                | 4.3 x 4.5 x 13.8" [109 x 115 x 352 mm] |
| Standard Order Quantity      |                | 16 Units                               |

Lightning and Overvoltage Protection  
**ProTec T1HS 3+0**  
 Class I • Class II • Type 1 • Type 2 • Type 4CA



Location of Use: Main Distribution Boards  
 Network Systems: TN-C  
 Mode of Protection: L-PEN  
 IEC/EN/UL Category: Class I+II, Type 1+2, Type 4CA  
 Housing: Pluggable Design  
 Compliance: IEC 61643-11: 2011  
 EN 61643-11: 2012+A11:2018  
 UL 1449 5th Edition

**Technical Data**

**ProTec T1HS-xxx-3+0(-R)**

**300**

**IEC Electrical**

|  |             |                    |
|--|-------------|--------------------|
| Nominal AC Voltage (50/60Hz)               | $U_o / U_n$ | 240 V              |
| Maximum Continuous Operating Voltage (AC)  | $U_c$       | 300 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            |
| Voltage Protection Level                   | $U_p$       | 1500 V             |
| Rated Load Current                         | $I_L$       | 100 A              |
| Response Time                              | $t_A$       | < 100 ns           |
| Overcurrent Protection (max)               |             | 315 A gG           |
| Short-Circuit Current Rating (AC)          | $I_{SCCR}$  | 50 kA              |
| TOV Withstand 120min                       | $U_T$       | 442 V              |
| Number of Ports                            |             | 1                  |

**UL Electrical**

|   |       |        |
|---|-------|--------|
| Maximum Continuous Operating Voltage (AC) | MCOV  | 300 V  |
| Measured Limiting Voltage                 | MLV   | 1280 V |
| Nominal Discharge Current (8/20 $\mu$ s)  | $I_n$ | 20 kA  |

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

|   |           |          |
|---|-----------|----------|
| Residual Voltage at 5 kA (8/20 $\mu$ s) | $U_{res}$ | 1100 V   |
| Overcurrent Protection (min)            |           | 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 |

**Mechanical & Environmental**

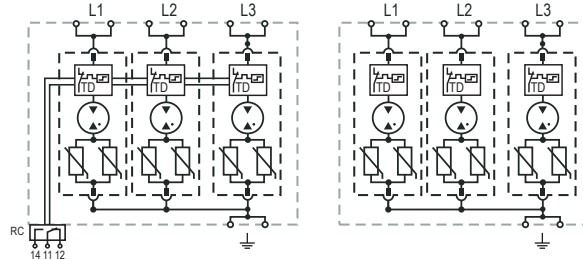
|                                    |           |   |
|------------------------------------|-----------|---|
| Operating Temperature Range        | $T_a$     | -40 °F to +185 °F [-40 °C to +85 °C]  |
| Permissible Operating Humidity     | RH        | 5%...95%  |
| Altitude                           |           | 13123 ft [4000 m]   |
| Terminal Screw Torque              | $M_{max}$ | 40 lbf-in [4.5 Nm]  |
| Conductor Cross Section (max)      |           | 4 AWG (Solid, Stranded) per UL 1449<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) / 1.5mm <sup>2</sup> (Solid)   |



## Internal Configuration

### Legend

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



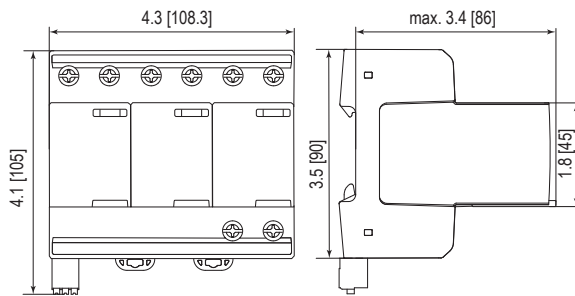
### ProTec T1HS-xxx-3+0(-R)

#### Order Information

| Order Code                                   | 300     |
|--|---------|
| ProTec T1HS-xxx-3+0                          | 59.0304 |
| ProTec T1HS-xxx-3+0-R (with remote contacts) | 59.0305 |
| ProTec T1HS-xxx-P (plug)                     | 59.0302 |

## Dimensions & Packaging

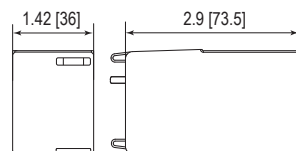
inches [mm]



#### Complete Unit

| ProTec T1HS-xxx-3+0          | 300                                    |
|------------------------------|--|
| Weight                       | pounds [grams] 1.892 [858]             |
| ProTec T1HS-xxx-3+0-R        |  |
| Weight                       | pounds [grams] 1.914 [868]             |
| DIN 43880 Dimension          | 6 TE / 4.3" [108.3]                    |
| 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 T1HS-xxx-P            | 300                                    |
|------------------------------|--|
| Weight                       | pounds [grams] .364 [165]              |
| DIN 43880 Dimension          | 2 TE / 1.42" [36]                      |
| Packaging Dimensions (HxWxL) | 4.3 x 4.5 x 13.8" [109 x 115 x 352 mm] |
| Standard Order Quantity      | 16 Units                               |

Lightning and Overvoltage Protection  
**ProTec T1HS 4+0**  
 Class I • Class II • Type 1 • Type 2 • Type 4CA



Location of Use: Main Distribution Boards  
 Network Systems: TN-S  
 Mode of Protection: L-PE, N-PE  
 IEC/EN/UL Category: Class I+II, Type 1+2, Type 4CA  
 Housing: Pluggable Design  
 Compliance: IEC 61643-11: 2011  
 EN 61643-11: 2012+A11:2018  
 UL 1449 5th Edition

**Technical Data**

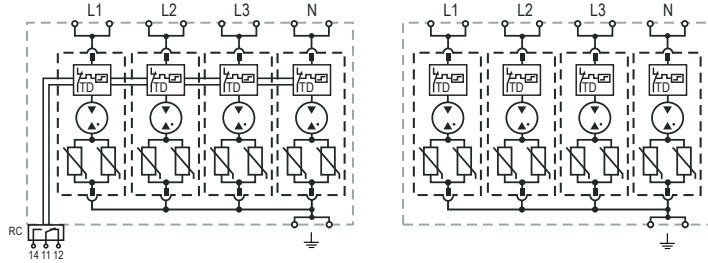
**ProTec T1HS-xxx-4+0(-R) 300**

| IEC Electrical  |             |   |
|---|-------------|---|
| Nominal AC Voltage (50/60Hz)  | $U_o / U_n$ | 240 V   |
| Maximum Continuous Operating Voltage (AC)   | $U_c$       | 300 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   |
| Voltage Protection Level  | $U_p$       | 1500 V  |
| Rated Load Current  | $I_L$       | 100 A   |
| Response Time   | $t_A$       | < 100 ns  |
| Overcurrent Protection (max)  |             | 315 A gG  |
| Short-Circuit Current Rating (AC)   | $I_{SCCR}$  | 50 kA   |
| TOV Withstand 120min  | $U_T$       | 442 V   |
| Number of Ports   |             | 1   |
| UL Electrical   |             |   |
| Maximum Continuous Operating Voltage (AC)   | MCOV        | 300 V   |
| Measured Limiting Voltage   | MLV         | 1280 V  |
| Nominal Discharge Current (8/20 $\mu$ s)  | $I_n$       | 20 kA   |
| Additional Electrical Parameters - Standard (Tests performed within Raycap testing laboratory only) |             |   |
| Residual Voltage at 5 kA (8/20 $\mu$ s)   | $U_{res}$   | 1100 V  |
| Overcurrent Protection (min)  |             | 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  |
| Mechanical & Environmental  |             |   |
| Operating Temperature Range   | $T_a$       | -40 °F to +185 °F [-40 °C to +85 °C]  |
| Permissible Operating Humidity  | RH          | 5%...95%  |
| Altitude  |             | 13123 ft [4000 m]   |
| Terminal Screw Torque   | $M_{max}$   | 40 lbf-in [4.5 Nm]  |
| Conductor Cross Section (max)   |             | 4 AWG (Solid, Stranded) per UL 1449<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) / 1.5mm <sup>2</sup> (Solid)   |

## Internal Configuration

### Legend

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



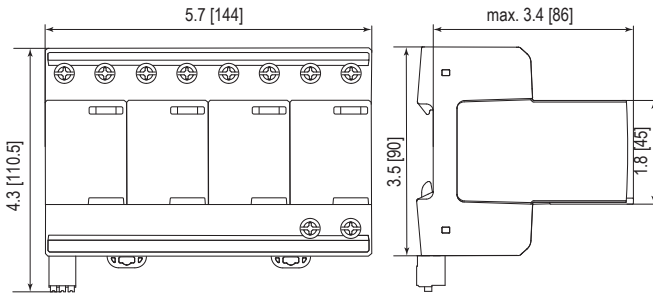
### ProTec T1HS-xxx-4+0(-R)

#### Order Information

| Order Code                                   | 300     |
|--|---------|
| ProTec T1HS-xxx-4+0                          | 59.0260 |
| ProTec T1HS-xxx-4+0-R (with remote contacts) | 59.0261 |
| ProTec T1HS-xxx-P (plug)                     | 59.0302 |

## Dimensions & Packaging

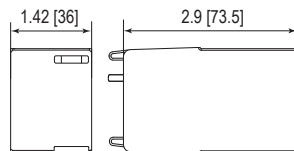
inches [mm]



#### Complete Unit

| ProTec T1HS-xxx-4+0          |                | 300                                    |
|------------------------------|----------------|--|
| Weight                       | pounds [grams] | 2.502 [1135]                           |
| ProTec T1HS-xxx-4+0-R        |                |  |
| Weight                       | pounds [grams] | 2.522 [1144]                           |
| DIN 43880 Dimension          |                | 8 TE / 5.7" [144]                      |
| Packaging Dimensions (HxWxL) |                | 4.3 x 4.5 x 13.8" [109 x 115 x 352 mm] |
| Standard Order Quantity      |                | 2 Units                                |

## Spare Plug



#### Single Unit

| ProTec T1HS-xxx-P            |                | 300                                    |
|------------------------------|----------------|--|
| Weight                       | pounds [grams] | .364 [165]                             |
| DIN 43880 Dimension          |                | 2 TE / 1.42" [36]                      |
| Packaging Dimensions (HxWxL) |                | 4.3 x 4.5 x 13.8" [109 x 115 x 352 mm] |
| Standard Order Quantity      |                | 16 Units                               |

Lightning and Overvoltage Protection  
**ProTec T1HS 3+1**  
 Class I • Class II • Type 1 • Type 2 • Type 4CA



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  
 Housing: Pluggable Design  
 Compliance: IEC 61643-11: 2011  
 EN 61643-11: 2012+A11:2018  
 UL 1449 5th Edition

**Technical Data**

**ProTec T1HS-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) $I_n$     | 25 kA / 100 kA                         |
| Maximum Discharge Current (8/20 $\mu$ s)   | (L-N) / (N-PE) $I_{max}$ | 65 kA / 130 kA                         |
| Impulse Discharge Current (10/350 $\mu$ s) | (L-N) / (N-PE) $I_{imp}$ | 25 kA / 100 kA                         |
| Specific Energy                            | (L-N) / (N-PE) W/R       | 156.2 kJ/ $\Omega$ / 2500 kJ/ $\Omega$ |
| Charge                                     | (L-N) / (N-PE) Q         | 12.5 As / 50 As                        |
| Voltage Protection Level                   | (L-N) / (N-PE) $U_p$     | 1500 V / 1500 V                        |
| Rated Load Current                         | $I_L$                    | 100 A                                  |
| Response Time                              | (L-N) / (N-PE) $t_A$     | < 100 ns / < 100 ns                    |
| Overcurrent Protection (max)               |                          | 315 A gG                               |
| Short-Circuit Current Rating (AC)          | $I_{scCR}$               | 50 kA                                  |
| Follow Current Interrupt Rating            | (N-PE) $I_{fi}$          | 100 A                                  |
| 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   | 1280 V / 1000 V |
| Nominal Discharge Current (8/20 $\mu$ s)  | (L-N)/(N-G) $I_n$ | 20 kA           |

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

|   |                          |                |
|---|--------------------------|----------------|
| Residual Voltage at 5 kA (8/20 $\mu$ s) | (L-N) / (N-PE) $U_{res}$ | 1100 V / 305 V |
| Overcurrent Protection (min)            |                          | 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 |

**Mechanical & Environmental**

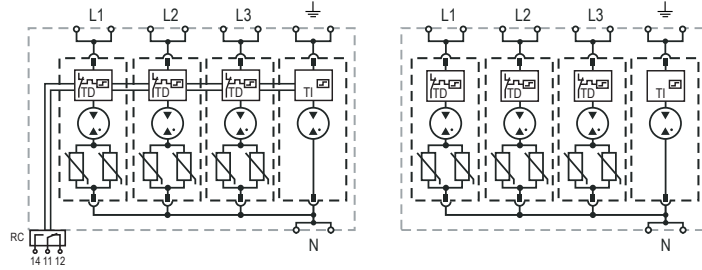
|                                    |           |   |
|------------------------------------|-----------|---|
| Operating Temperature Range        | $T_a$     | -40 °F to +185 °F [-40 °C to +85 °C]  |
| Permissible Operating Humidity     | RH        | 5%...95%  |
| Altitude                           |           | 13123 ft [4000 m]   |
| Terminal Screw Torque              | $M_{max}$ | 40 lbf-in [4.5 Nm]  |
| Conductor Cross Section (max)      |           | 4 AWG (Solid, Stranded) per UL 1449<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) / 1.5mm <sup>2</sup> (Solid)   |



## 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                  |



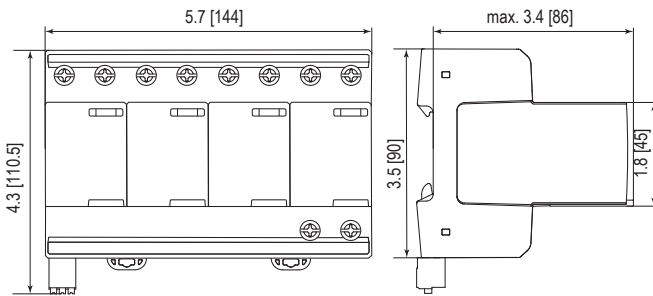
### ProTec T1HS-xxx-3+1(-R)

#### Order Information

|  |            |
|--|------------|
| Order Code                                   | <b>300</b> |
| ProTec T1HS-xxx-3+1                          | 59.0306    |
| ProTec T1HS-xxx-3+1-R (with remote contacts) | 59.0307    |
| ProTec T1HS-xxx-P (plug L-N)                 | 59.0302    |
| ProTube T1HS-100-P (plug N-PE)               | 59.0303    |

## Dimensions & Packaging

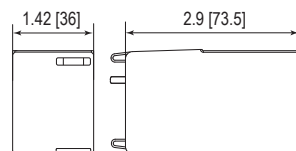
inches [mm]



#### Complete Unit

|                              |  |
|------------------------------|--|
| <b>ProTec T1HS-xxx-3+1</b>   | <b>300</b>                             |
| Weight                       | pounds [grams] 2.348 [1065]            |
| <b>ProTec T1HS-xxx-3+1-R</b> |  |
| Weight                       | pounds [grams] 2.368 [1074]            |
| DIN 43880 Dimension          | 8 TE / 5.7 [144]                       |
| Packaging Dimensions (HxWxL) | 4.3 x 4.5 x 13.8" [109 x 115 x 352 mm] |
| Standard Order Quantity      | 2 Units                                |

## Spare Plug



#### Single Unit

|                              |  |
|------------------------------|--|
| <b>ProTec T1HS-xxx-P</b>     | <b>300</b>                             |
| Weight                       | pounds [grams] .364 [165]              |
| <b>ProTube T1HS-100-P</b>    | <b>100</b>                             |
| Weight                       | pounds [grams] 0.209 [95]              |
| DIN 43880 Dimension          | 2 TE / 1.42 [36]                       |
| Packaging Dimensions (HxWxL) | 4.3 x 4.5 x 13.8" [109 x 115 x 352 mm] |
| Standard Order Quantity      | 16 Units                               |

Lightning and Overvoltage Protection  
**ProTube T1HS 0+1**  
 Class I • Class II • Type 1 • Type 2 • Type 4CA



Location of Use: Main Distribution Boards  
 Network Systems: TT, TN-S  
 Mode of Protection: N-PE  
 IEC/EN/UL Category: Class I+II, Type 1+2, Type 4CA  
 Housing: Pluggable Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11: 2012+A11:2018  
 UL 1449 5th Edition

**Technical Data**

**ProTube T1HS-xxx-0+1(-R)**

**100**

**IEC Electrical**

|  |             |                   |
|--|-------------|-------------------|
| Nominal AC Voltage (50/60Hz)               | $U_o / U_n$ | 240 V             |
| Maximum Continuous Operating Voltage (AC)  | $U_c$       | 305 V             |
| Nominal Discharge Current (8/20 $\mu$ s)   | $I_n$       | 100 kA            |
| Maximum Discharge Current (8/20 $\mu$ s)   | $I_{max}$   | 130 kA            |
| Impulse Discharge Current (10/350 $\mu$ s) | $I_{imp}$   | 100 kA            |
| Specific Energy                            | W/R         | 2500 kJ/ $\Omega$ |
| Charge                                     | Q           | 50 As             |
| Voltage Protection Level                   | $U_p$       | 1500 V            |
| Rated Load Current                         | $I_L$       | 100 A             |
| Response Time                              | $t_A$       | < 100 ns          |
| Follow Current Interrupt Rating            | $I_{fi}$    | 100 A             |
| TOV Withstand 200ms                        | $U_T$       | 1200 V            |
| Number of Ports                            |             | 1                 |

**UL Electrical**

|   |       |        |
|---|-------|--------|
| Maximum Continuous Operating Voltage (AC) | MCOV  | 305 V  |
| Measured Limiting Voltage                 | MLV   | 1000 V |
| Nominal Discharge Current (8/20 $\mu$ s)  | $I_n$ | 20 kA  |

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

|   |           |       |
|---|-----------|-------|
| Residual Voltage at 5 kA (8/20 $\mu$ s) | $U_{res}$ | 305 V |
|---|-----------|-------|

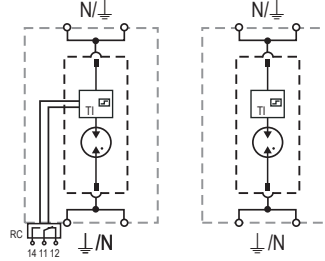
**Mechanical & Environmental**

|                                    |           |   |
|------------------------------------|-----------|---|
| Operating Temperature Range        | $T_a$     | -40 °F to +185 °F [-40 °C to +85 °C]  |
| Permissible Operating Humidity     | RH        | 5%...95%  |
| Altitude                           |           | 13123 ft [4000 m]   |
| Terminal Screw Torque              | $M_{max}$ | 40 lbf-in [4.5 Nm]  |
| Conductor Cross Section (max)      |           | 4 AWG (Solid, Stranded) per UL 1449<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) / 1.5mm <sup>2</sup> (Solid)   |

## Internal Configuration

### Legend

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



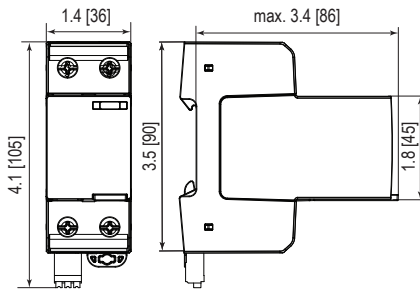
### ProTube T1HS-xxx-0+1(-R)

#### Order Information

| Order Code                                    | 100     |
|---|---------|
| ProTube T1HS-xxx-0+1                          | 59.A596 |
| ProTube T1HS-xxx-0+1-R (with remote contacts) | 59.A597 |
| ProTube T1HS-100-01-P (plug)                  | 59.0720 |

## Dimensions & Packaging

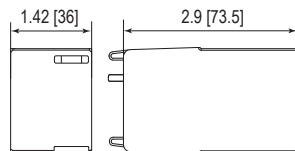
inches [mm]



#### Complete Unit

| ProTube T1HS-xxx-0+1         |                | 300                                    |
|------------------------------|----------------|--|
| Weight                       | pounds [grams] | .496 [225]                             |
| ProTube T1HS-xxx-0+1-R       |                |  |
| Weight                       | pounds [grams] | .515 [234]                             |
| DIN 43880 Dimension          |                | 2 TE / 1.42 [36]                       |
| Packaging Dimensions (HxWxL) |                | 4.3 x 4.5 x 13.8" [109 x 115 x 352 mm] |
| Standard Order Quantity      |                | 7 Units                                |

## Spare Plug



#### Single Unit

| ProTube T1HS-100-01-P        |                | 100                                    |
|------------------------------|----------------|--|
| Weight                       | pounds [grams] | 0.209 [95]                             |
| DIN 43880 Dimension          |                | 2 TE / 1.42 [36]                       |
| Packaging Dimensions (HxWxL) |                | 4.3 x 4.5 x 13.8" [109 x 115 x 352 mm] |
| Standard Order Quantity      |                | 16 Units                               |