

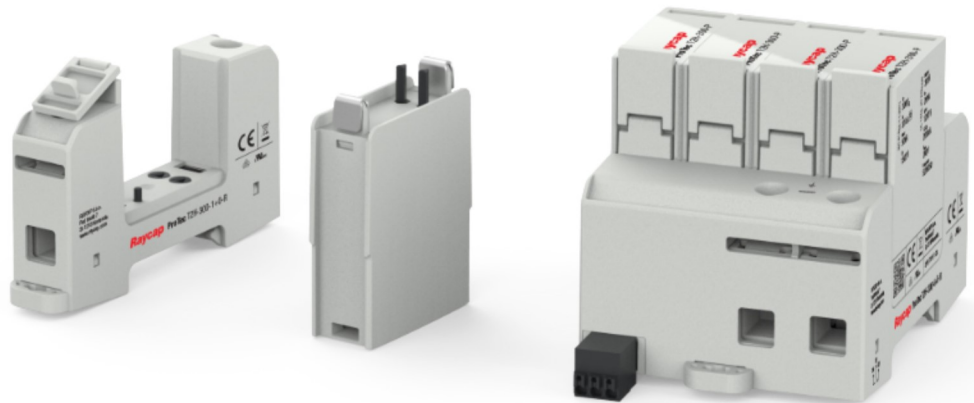
## Pluggable Single Pole & Multi-pole Surge Protective Devices (SPDs)

### Overvoltage Protection ProTec T2H



#### Special features:

- High maximum discharge current capacity ( $I_{max}$ ) of 50kA
- State-of-the-art thermal disconnecter
- Leakage current-free technology
- Backup fuse up to 315AgG
- Short-circuit current rating up to 50kA
- Vibration and shock withstand capability
- VDE-IEC Class II / EN Type 2 certified and Open Type 1 SPD Listed
- All modules including N-PE, with operating state green-red
- Optional remote contact signaling (RC)



Compliance	IEC 61643-11:2011	EN 61643-11:2012	UL 1449 4th Edition
ProTec T2H Series	✓	✓	✓

The ProTec T2H surge protection device provides high durability due to its leakage-free performance ensured by a special series connection of varistor and gas discharge tube. The ProTec T2H product family is an ideal supplement to the basic ProTec T2 product family, available for single or three-phase TN-S, TT and TN-C systems with a maximum continuous voltage of 300VAC. The perfect solution for applications such as railway safety control systems where complete absence of leakage current, is required. With its Type 2 classification, the unit can be installed between boundaries 1 – 2 and higher. The varistor based protection module features outstanding short-circuit currents up to 50kA<sub>RMS</sub> without using a back-up to a main fuse and a nominal current of 315A. All modules are equipped with a state-of-the-art thermal disconnecter and life-status green-red monitoring indicator. A unique vibration-proof locking mechanism enables secure use in high vibration environments. An optional remote contact (RC) features a three-pole remote signaling terminal, which enables remote monitoring of the operating state of the device.

# Overvoltage Protection

## ProTec T2H 1+0

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



Location of Use: Sub-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 II / Type 2 / Type 1CA  
 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 T2H-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)	$I_n$	20 kA
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$	50 kA
Voltage Protection Level	$U_p$	1500 V
Response Time	$t_A$	< 25 ns
Overcurrent Protection (max)		315 A / 250 A gG
Short-Circuit Current Rating (AC)	$I_{SCCR}$	25 kA / 50 kA
TOV Withstand 120min	$U_T$	442 V
Number of Ports		1

#### UL Electrical

Maximum Continuous Operating Voltage (AC)	MCOV	300 V
Voltage Protection Rating	VPR	1200 V
Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	20 kA
Short-Circuit Current Rating (AC)	SCCR	200 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 [4000 m]
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: 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)

#### Order Information

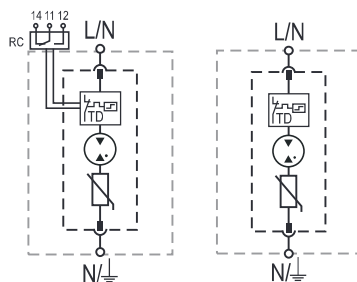
Order Code	300
ProTec T2H-xxx-1+0	59.0324
ProTec T2H-xxx-1+0-R (with remote contacts)	59.0325
ProTec T2H-xxx-P (plug)	59.0322

## ProTec T2H 1+0

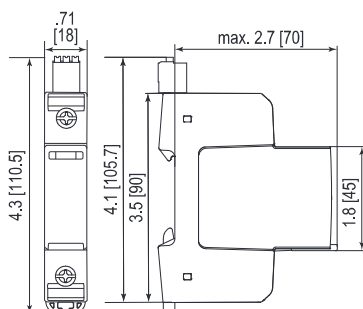
### Internal Configuration

#### 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

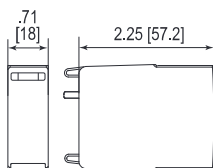
Complete Unit Dimensions & Packaging		
<b>ProTec T2H-xxx-1+0</b>		<b>300</b>
Weight	pounds [grams]	.264 [120]
<b>ProTec T2H-xxx-1+0-R</b>		
Weight	pounds [grams]	.279 [127]
DIN 43880 Dimension		1 TE / .71" [18]
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity		12 Units

### Plug Internal Configuration

#### ProTec T2H-xxx-P



### Spare Plug



#### Single Unit Dimensions & Packaging

Single Unit Dimensions & Packaging		
<b>ProTec T2H-xxx-P</b>		<b>300</b>
Weight	pounds [grams]	.112 [51]
DIN 43880 Dimension		1 TE / .71" [18]
Packaging Dimensions (HxWxL)		3.2 x 4.5 x 12" [83 x 115 x 305 mm]
Standard Order Quantity		24 Units

inches  
[mm]

# Overvoltage Protection

## ProTec T2H 2+0

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



Location of Use: Sub-Distribution Boards  
 Network Systems: TN-S  
 Mode of Protection: L-PE, N-PE  
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA  
 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 T2H-xxx-2+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)	$I_n$	20 kA
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$	50 kA
Voltage Protection Level	$U_p$	1500 V
Response Time	$t_A$	< 25 ns
Overcurrent Protection (max)		315 A / 250 A gG
Short-Circuit Current Rating (AC)	$I_{SCCR}$	25 kA / 50 kA
TOV Withstand 120min	$U_T$	442 V
Number of Ports		1

#### UL Electrical

Maximum Continuous Operating Voltage (AC)	MCOV	300 V
Voltage Protection Rating	VPR	1200 V
Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	20 kA
Short-Circuit Current Rating (AC)	SCCR	200 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 [4000 m]
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: 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)

#### Order Information

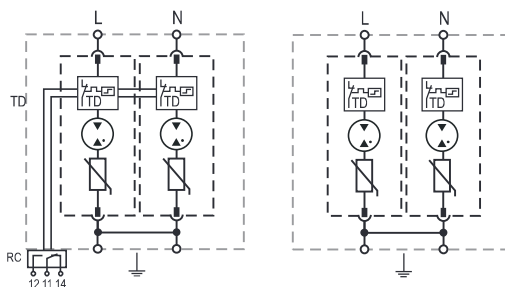
Order Code	300
ProTec T2H-xxx-2+0	59.0326
ProTec T2H-xxx-2+0-R (with remote contacts)	59.0327
ProTec T2H-xxx-P (plug)	59.0322

## ProTec T2H 2+0

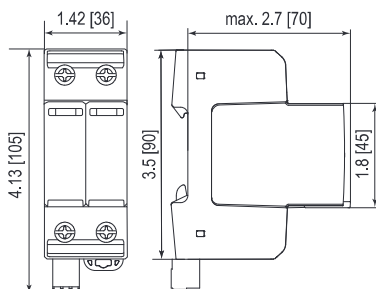
### Internal Configuration

#### 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

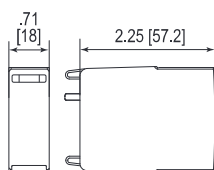
Complete Unit Dimensions & Packaging		
<b>ProTec T2H-xxx-2+0</b>		<b>300</b>
Weight	pounds [grams]	.514 [233]
<b>ProTec T2H-xxx-2+0-R</b>		
Weight	pounds [grams]	.534 [242]
DIN 43880 Dimension		2 TE / 1.42" [36]
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity		7 Units

### Plug Internal Configuration

#### ProTec T2H-xxx-P



### Spare Plug



#### Single Unit Dimensions & Packaging

Single Unit Dimensions & Packaging		
<b>ProTec T2H-xxx-P</b>		<b>300</b>
Weight	pounds [grams]	.112 [51]
DIN 43880 Dimension		1 TE / .71" [18]
Packaging Dimensions (HxWxL)		3.2 x 4.5 x 12" [83 x 115 x 305 mm]
Standard Order Quantity		24 Units

inches  
[mm]

# Overvoltage Protection

## ProTec T2H 3+0

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



Location of Use: Sub-Distribution Boards  
 Network Systems: TN-C  
 Mode of Protection: L-PEN  
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA  
 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 T2H-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)	$I_n$	20 kA
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$	50 kA
Voltage Protection Level	$U_p$	1500 V
Response Time	$t_A$	< 25 ns
Overcurrent Protection (max)		315 A / 250 A gG
Short-Circuit Current Rating (AC)	$I_{SCCR}$	25 kA / 50 kA
TOV Withstand 120min	$U_T$	442 V
Number of Ports		1

#### UL Electrical

Maximum Continuous Operating Voltage (AC)	MCOV	300 V
Voltage Protection Rating	VPR	1200 V
Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	20 kA
Short-Circuit Current Rating (AC)	SCCR	200 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 [4000 m]
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: 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)

#### Order Information

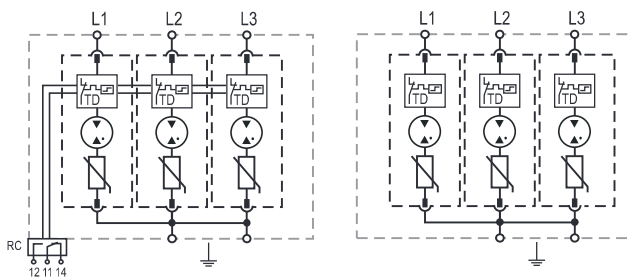
Order Code	300
ProTec T2H-xxx-3+0	59.0328
ProTec T2H-xxx-3+0-R (with remote contacts)	59.0329
ProTec T2H-xxx-P (plug)	59.0322

## ProTec T2H 3+0

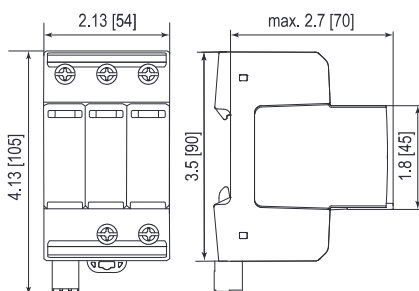
### Internal Configuration

#### Legend

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



### Complete Unit



#### Complete Unit Dimensions & Packaging

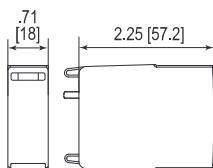
<b>ProTec T2H-xxx-3+0</b>	<b>300</b>
Weight	pounds [grams] .747 [339]
<b>ProTec T2H-xxx-3+0-R</b>	
Weight	pounds [grams] .767 [348]
DIN 43880 Dimension	3 TE / 2.13" [54]
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity	5 Units

### Plug Internal Configuration

#### ProTec T2H-xxx-P



### Spare Plug



#### Single Unit Dimensions & Packaging

<b>ProTec T2H-xxx-P</b>	<b>300</b>
Weight	pounds [grams] .112 [51]
DIN 43880 Dimension	1 TE / .71" [18]
Packaging Dimensions (HxWxL)	3.2 x 4.5 x 12" [83 x 115 x 305 mm]
Standard Order Quantity	24 Units

inches  
[mm]

# Overvoltage Protection

## ProTec T2H 4+0

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



Location of Use: Sub-Distribution Boards  
 Network Systems: TN-S  
 Mode of Protection: L-PE, N-PE  
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA  
 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 T2H-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)	$I_n$	20 kA
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$	50 kA
Voltage Protection Level	$U_p$	1500 V
Response Time	$t_A$	< 25 ns
Overcurrent Protection (max)		315 A / 250 A gG
Short-Circuit Current Rating (AC)	$I_{SCCR}$	25 kA / 50 kA
TOV Withstand 120min	$U_T$	442 V
Number of Ports		1

#### UL Electrical

Maximum Continuous Operating Voltage (AC)	MCOV	300 V
Voltage Protection Rating	VPR	1200 V
Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	20 kA
Short-Circuit Current Rating (AC)	SCCR	200 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 [4000 m]
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: 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)

#### Order Information

Order Code	300
ProTec T2H-xxx-4+0	59.0330
ProTec T2H-xxx-4+0-R (with remote contacts)	59.0331
ProTec T2H-xxx-P (plug)	59.0322

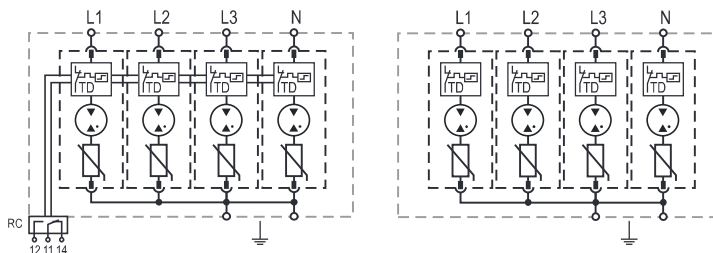


## ProTec T2H 4+0

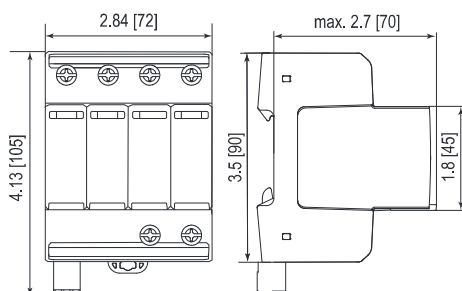
### Internal Configuration

#### 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

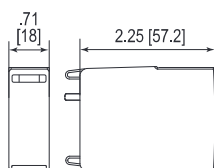
Complete Unit Dimensions & Packaging	
<b>ProTec T2H-xxx-4+0</b>	<b>300</b>
Weight	pounds [grams] .944 [428]
<b>ProTec T2H-xxx-4+0-R</b>	
Weight	pounds [grams] .964 [437]
DIN 43880 Dimension	4 TE / 2.84" [72]
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity	4 Units

### Plug Internal Configuration

#### ProTec T2H-xxx-P



### Spare Plug



#### Single Unit Dimensions & Packaging

Single Unit Dimensions & Packaging	
<b>ProTec T2H-xxx-P</b>	<b>300</b>
Weight	pounds [grams] .112 [51]
DIN 43880 Dimension	1 TE / .71" [18]
Packaging Dimensions (HxWxL)	3.2 x 4.5 x 12" [83 x 115 x 305 mm]
Standard Order Quantity	24 Units

inches  
[mm]

# Overvoltage Protection

## ProTec T2H 1+1

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



Location of Use: Sub-Distribution Boards  
 Network Systems: TT, TN-S  
 Mode of Protection: L-N, N-PE  
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA  
 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 T2H-xxx-1+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 / 40 kA
Maximum Discharge Current (8/20 $\mu$ s)	(L-N) / (N-PE) $I_{max}$	50 kA / 65 kA
Voltage Protection Level	(L-N) / (N-PE) $U_p$	1500 V / 1500 V
Response Time	(L-N) / (N-PE) $t_A$	<25 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
Voltage Protection Rating	(L-N)/(N-G) VPR	1200 V / 1000 V
Nominal Discharge Current (8/20 $\mu$ s)	(L-N)/(N-G) $I_n$	20 kA / 20 kA
Short-Circuit Current Rating (AC)	(L-N) SCCR	200 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 [4000 m]
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: 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)

#### Order Information

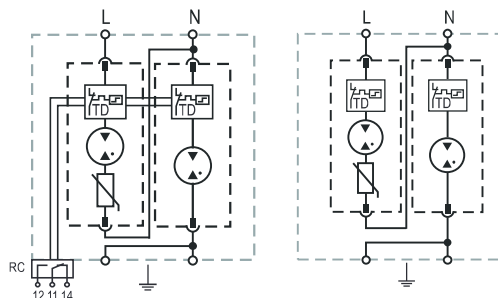
Order Code	300
ProTec T2H-xxx-1+1	59.0332
ProTec T2H-xxx-1+1-R (with remote contacts)	59.0333
ProTec T2H-xxx-P (plug L-N)	59.0322
ProTube T2H-40-P (plug N-PE)	59.0323

## ProTec T2H 1+1

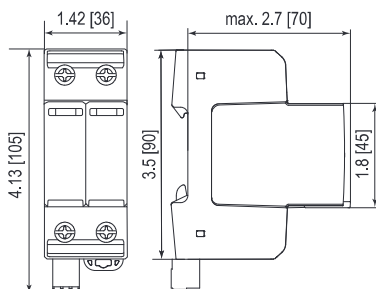
### Internal Configuration

#### 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

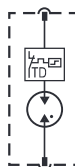
Complete Unit Dimensions & Packaging		
<b>ProTec T2H-xxx-1+1</b>		<b>300</b>
Weight	pounds [grams]	.516 [234]
<b>ProTec T2H-xxx-1+1-R</b>		
Weight	pounds [grams]	.525 [238]
DIN 43880 Dimension		2 TE / 1.42" [36]
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity		7 Units

### Plug Internal Configuration

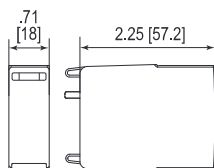
#### ProTec T2H-xxx-P



#### ProTube T2H-40-P



### Spare Plug



#### Single Unit Dimensions & Packaging

Single Unit Dimensions & Packaging		
<b>ProTec T2H-xxx-P</b>		<b>300</b>
Weight	pounds [grams]	.112 [51]
<b>ProTube T2H-40-P</b>		<b>40</b>
Weight	pounds [grams]	.093 [42]
DIN 43880 Dimension		1 TE / .71" [18]
Packaging Dimensions (HxWxL)		3.2 x 4.5 x 12" [83 x 115 x 305 mm]
Standard Order Quantity		24 Units

inches  
[mm]

# Overvoltage Protection

## ProTec T2H 3+1

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



Location of Use: Sub-Distribution Boards  
 Network Systems: TT, TN-S  
 Mode of Protection: L-N, N-PE  
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA  
 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 T2H-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 / 40 kA
Maximum Discharge Current (8/20 $\mu$ s)	(L-N) / (N-PE) $I_{max}$	50 kA / 65 kA
Voltage Protection Level	(L-N) / (N-PE) $U_p$	1500 V / 1500 V
Response Time	(L-N) / (N-PE) $t_A$	< 25 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
Voltage Protection Rating	(L-N)/(N-G) VPR	1200 V / 1000 V
Nominal Discharge Current (8/20 $\mu$ s)	(L-N)/(N-G) $I_n$	20 kA / 20 kA
Short-Circuit Current Rating (AC)	(L-N) SCCR	200 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 [4000 m]
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: 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)

#### Order Information

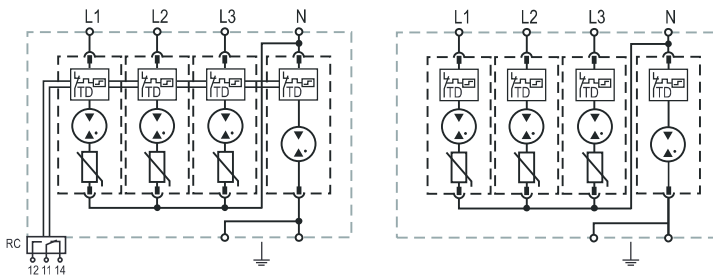
Order Code	300
ProTec T2H-xxx-3+1	59.0334
ProTec T2H-xxx-3+1-R (with remote contacts)	59.0335
ProTec T2H-xxx-P (plug L-N)	59.0322
ProTube T2H-40-P (plug N-PE)	59.0323

## ProTec T2H 3+1

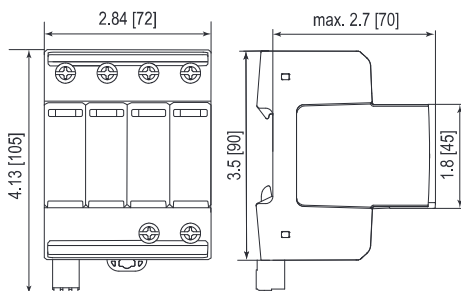
### Internal Configuration

#### Legend

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



### Complete Unit



#### Complete Unit Dimensions & Packaging

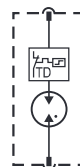
Complete Unit Dimensions & Packaging		
<b>ProTec T2H-xxx-3+1</b>		<b>300</b>
Weight	pounds [grams]	.947 [429]
<b>ProTec T2H-xxx-3+1-R</b>		
Weight	pounds [grams]	.958 [434]
DIN 43880 Dimension		4 TE / 2.84" [72]
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity		4 Units

### Plug Internal Configuration

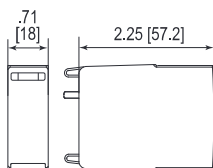
#### ProTec T2H-xxx-P



#### ProTube T2H-40-P



### Spare Plug



#### Single Unit Dimensions & Packaging

Single Unit Dimensions & Packaging		
<b>ProTec T2H-xxx-P</b>		<b>300</b>
Weight	pounds [grams]	.112 [51]
<b>ProTube T2H-40-P</b>		<b>40</b>
Weight	pounds [grams]	.093 [42]
DIN 43880 Dimension		1 TE / .71" [18]
Packaging Dimensions (HxWxL)		3.2 x 4.5 x 12" [83 x 115 x 305 mm]
Standard Order Quantity		24 Units

inches  
[mm]

# Overvoltage Protection

## ProTube T2H 40 0+1

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



Location of Use: Sub-Distribution Boards  
 Network Systems: TT, TN-S  
 Mode of Protection: N-PE  
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA  
 Technology: Hybrid  
 Leakage Current Free: Yes  
 Housing: Pluggable Design  
 Compliance: IEC 61643-11: 2011  
 EN 61643-11: 2012  
 UL 1449 4th Edition

### Technical Data

ProTube T2H-xxx-0+1(-R)

40

#### IEC Electrical

Maximum Continuous Operating Voltage (AC)	$U_c$	305 V
Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	40kA
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$	65 kA
Voltage Protection Level	$U_p$	1500V
Follow Current Interrupt Rating	$I_{fi}$	100 A <sub>RMS</sub>
Response Time	$t_A$	< 100 ns
TOV Withstand 120min	$U_T$	1200 V
Number of Ports		1

#### UL Electrical

Maximum Continuous Operating Voltage (AC)	MCOV	305V
Voltage Protection Rating	VPR	1000V
Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	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 [4.5Nm]
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: 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)

#### Order Information

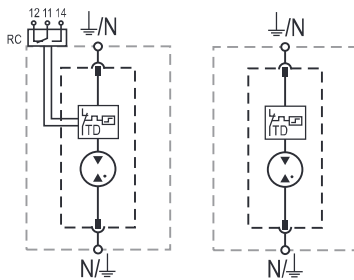
Order Code	40
ProTube T2H-xxx-0+1	59.0341
ProTube T2H-xxx-0+1-R (with remote contacts)	59.0342
ProTube T2H-40-P (plug)	59.0323

## ProTube T2H 40 0+1

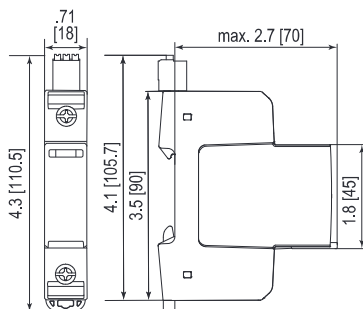
### Internal Configuration

#### Legend

- N* Neutral Conductor Terminal
- $\perp$  PE/G Conductor Terminal
- RC* Remote Contacts Terminal (Optional)
- TD* Thermal Disconnect



### Complete Unit

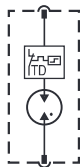


#### Complete Unit Dimensions & Packaging

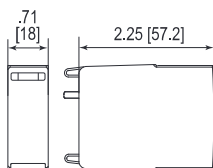
<b>ProTube T2H-xxx-0+1</b>	<b>40</b>
Weight	pounds [grams] .244 [111]
<b>ProTube T2H-xxx-0+1-R</b>	<b>40</b>
Weight	pounds [grams] .259 [118]
DIN 43880 Dimension	1 TE / .71" [18]
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity	12 Units

### Plug Internal Configuration

#### ProTube T2H-40-P



### Spare Plug



#### Single Unit Dimensions & Packaging

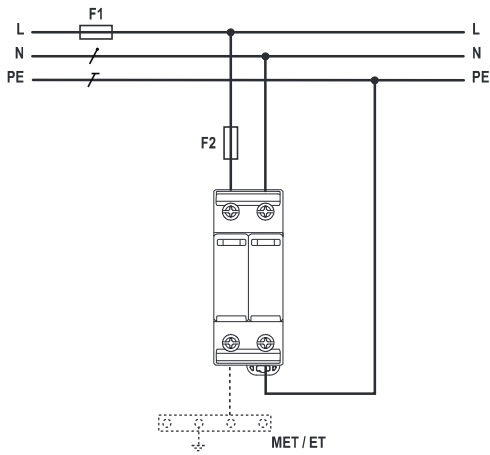
<b>ProTube T2H-40-P</b>	<b>40</b>
Weight	pounds [grams] .093 [42]
DIN 43880 Dimension	1 TE / .71" [18]
Packaging Dimensions (HxWxL)	3.2 x 4.5 x 12" [83 x 115 x 305 mm]
Standard Order Quantity	24 Units

inches  
[mm]

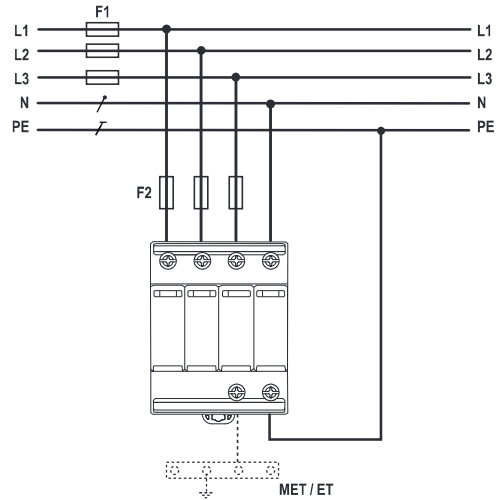
# Pluggable Multi-pole SPD Connection Configurations

## ProTec T2H & ProTube T2H

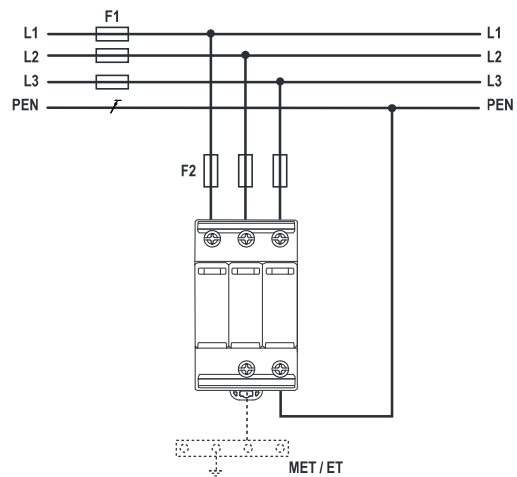
TN-S (Single-phase, 2+0, 1+1)



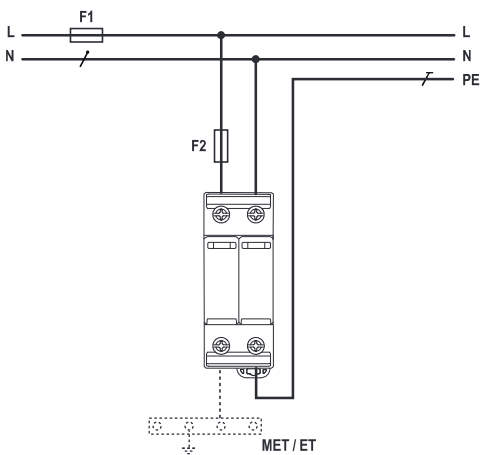
TN-S (Three-phase, 4+0, 3+1)



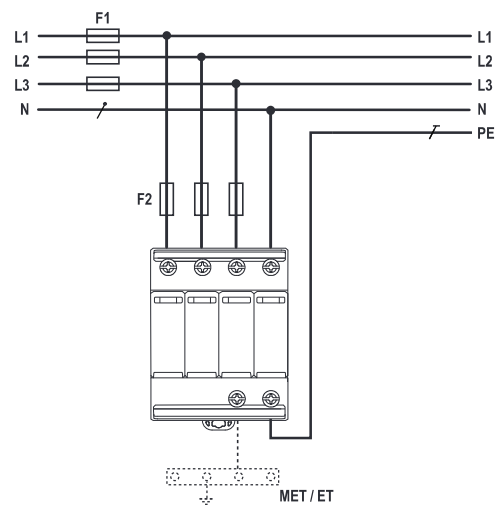
TN-C (Three-phase, 3+0)



TT (Single-phase, 1+1)



TT (Three-phase, 3+1)



/ N Neutral  
 / PE Protective Earth  
 / PEN Protective Earth & Neutral

Overcurrent Protection Rating for  $I_{SCCR} = 50 \text{ kA}$

$F1 > 250 \text{ A gG} \rightarrow F2 = 250 \text{ A gG}$   
 $F1 \leq 250 \text{ A gG} \rightarrow \text{---} F2$

Overcurrent Protection Rating for  $I_{SCCR} = 25 \text{ kA}$

$F1 > 315 \text{ A gG} \rightarrow F2 = 315 \text{ A gG}$   
 $F1 \leq 315 \text{ A gG} \rightarrow \text{---} F2$