

Combined Lightning Current & Surge Arrester



ProTec ZPS T1H



Special features:

- Universal use in all main distribution cabinets due to the 47 mm compact design
- Designed for 40mm busbar system cabinets
- Auxiliary power contact
- Remote contact (RC) for monitoring of SPD
- Leakage current-free technology
- Reliable mechanical end-of-life (EOL) indicator



Compliance	IEC 61643-11:2011	EN 61643-11:2012
ProTec ZPS T1H Series	✓	✓

The ProTec ZPS T1H product family is specially designed for installations in front of the power meter on 40mm busbar connection panels. The product's simple and time saving package eliminates most wire terminations and is easy to integrate into three-phase 40mm busbar systems. The device is equipped with a state-of-the-art thermal disconnecter and mechanically driven visual indicator system (green-red). In addition to the visual mechanical indicator, a remote contact (RC) features a three-pole remote signaling terminal to remotely monitor the operating state of the device. The surge arrester is designed to fully comply with the latest requirements of the German DIN VDE 0100-443 and 534 which regulate when and how low voltage systems need to be protected against overvoltages, and to DIN VDE AR-N 4100, the new technical connection rules for low voltage applications.

Combined Lightning Current and Surge Arrester

ProTec ZPS T1H 3+0(-R)

Class I • Class II • Type 1 • Type 2



Location of Use: Main Distribution Boards,
40mm Busbar Systems

Network Systems: TN-C
Mode of Protection: L-PEN
IEC/EN: Class I+II / Type 1+2
Technology: Hybrid
Leakage Current Free: Yes
Line Follow Current: No
Housing: Compact design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTec ZPS T1H-xxx-3+0(-R)

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 μ s)	I_n	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50 kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	12.5 kA
Specific Energy	W/R	39 kJ/ Ω
Charge	Q	6.25As
Voltage Protection Level	U_p	1500V
Response Time	t_A	< 100ns
Overcurrent Protection (max)		315 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA
TOV Withstand 120min	U_T	442 V
Number of Ports		1

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}	PZ2 / 39.9 lbf-in [4.5Nm]
Conductor Cross Section (max)		35 mm ² (Solid, Stranded) / 25 mm ² (Flexible) 2 AWG (Solid, Stranded) / 4 AWG (Flexible)
Mounting		40mm Busbar Systems
Degree Of Protection		IP 20*
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
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)		1.5mm ² (Solid) / 16 AWG (Solid)

Order Information

Order Code	
ProTec ZPS T1H-300-3+0	59.0900
ProTec ZPS T1H-300-3+0-R (with remote contacts)	59.0901

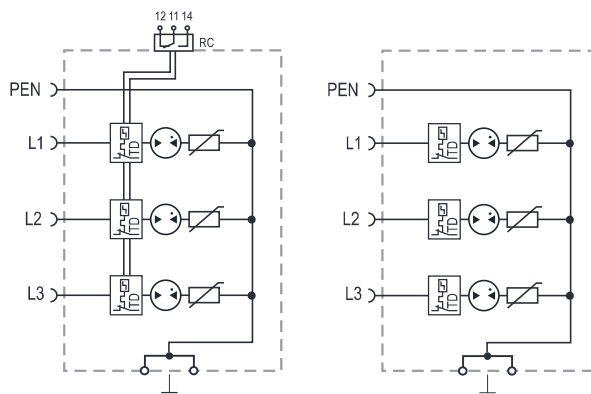
*IP 40 (in combination with cover)

ProTec ZPS T1H 3+0(-R)

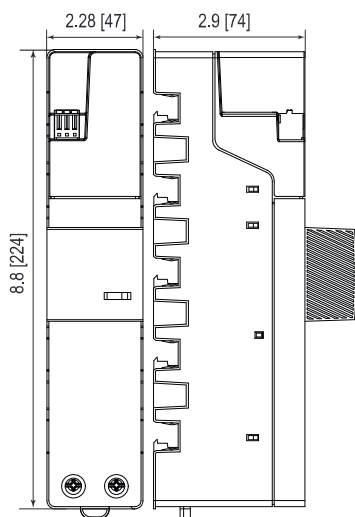
Internal Configuration

Legend

- L Line Busbar Terminal
- PEN PEN Busbar Terminal
- ⏚ Terminal for Main Earthing Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter



Complete Unit



Complete Unit Dimensions & Packaging

ProTec ZPS T1H-xxx-3+0	300
Weight	pounds [grams] 1.552 [704]
Packaging Dimensions (HxWxL)	12.5 × 13.4 × 9.5" [320 × 340 × 240 mm]
Standard Order Quantity	18 Units
ProTec ZPS T1H-xxx-3+0-R	300
Weight	pounds [grams] 1.570 [712]
Packaging Dimensions (HxWxL)	12.5 × 13.4 × 9.5" [320 × 340 × 240 mm]
Standard Order Quantity	18 Units

inches
[mm]



Combined Lightning Current and Surge Arrester

ProTec ZPS T1H 3+0(-R)-L

Class I • Class II • Type 1 • Type 2



Location of Use: Main Distribution Boards,
40mm Busbar Systems

Network Systems: TN-C
Mode of Protection: L-PEN
IEC/EN: Class I+II / Type 1+2
Technology: Hybrid
Leakage Current Free: Yes
Line Follow Current: No
Housing: Compact design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTec ZPS T1H-xxx-3+0(-R)-L

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 μ s)	I_n	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50 kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	12.5 kA
Specific Energy	W/R	39 kJ/ Ω
Charge	Q	6.25As
Voltage Protection Level	U_p	1500V
Response Time	t_A	< 100ns
Overcurrent Protection (max)		315 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA
TOV Withstand 120min	U_T	442 V
Number of Ports		1

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}	PZ2 / 39.9 lbf-in [4.5Nm]
Conductor Cross Section (max)		35 mm ² (Solid, Stranded) / 25 mm ² (Flexible) 2 AWG (Solid, Stranded) / 4 AWG (Flexible)
Mounting		40mm Busbar Systems
Degree Of Protection		IP 20*
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
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)		1.5mm ² (Solid) / 16 AWG (Solid)

Load Terminal (L1')

Rated Current	I_L	20 A
Load Side Overcurrent Protective Device		20 A gG
Wire Connection Method		Push In
Conductor Cross Section		10 AWG / 4 mm ² (Solid, Stranded, Flexible)
Stripping Length		16 mm

Order Information

Order Code		
ProTec ZPS T1H-300-3+0-L (with load terminal)		59.0902
ProTec ZPS T1H-300-3+0-R-L (with remote contacts and load terminal)		59.0903

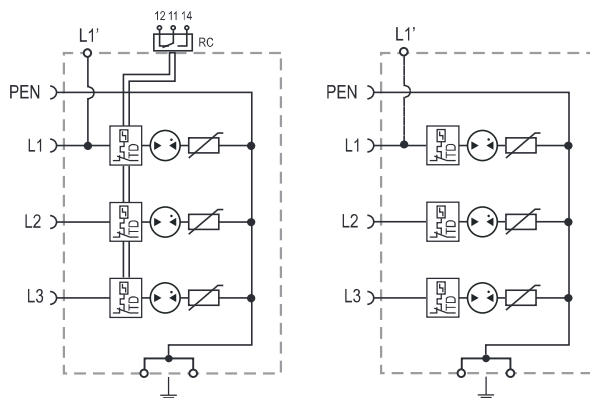
*IP 40 (in combination with cover)

ProTec ZPS T1H 3+0(-R)-L

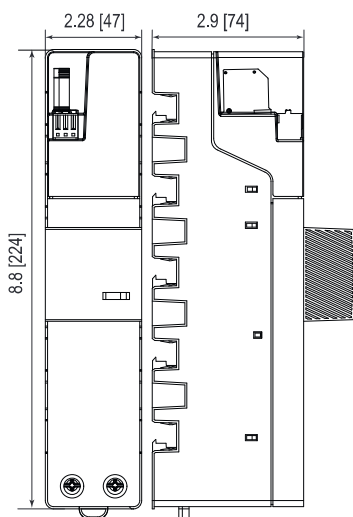
Internal Configuration

Legend

- L Line Busbar Terminal
- L1' Load Terminal
- PEN PEN Busbar Terminal
- ⏚ Terminal for Main Earthing Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter



Complete Unit



Complete Unit Dimensions & Packaging

ProTec ZPS T1H-xxx-3+0-L	300
Weight	pounds [grams] 1.570 [712]
Packaging Dimensions (HxWxL)	12.5 × 13.4 × 9.5" [320 × 340 × 240 mm]
Standard Order Quantity	18 Units
ProTec ZPS T1H-xxx-3+0-R-L	300
Weight	pounds [grams] 1.587 [720]
Packaging Dimensions (HxWxL)	12.5 × 13.4 × 9.5" [320 × 340 × 240 mm]
Standard Order Quantity	18 Units

inches
[mm]



Combined Lightning Current and Surge Arrester

ProTec ZPS T1H 3+1(-R)

Class I • Class II • Type 1 • Type 2



Location of Use: Main Distribution Boards,
40mm Busbar Systems

Network Systems: TN-S, TT

Mode of Protection: L-N, N-PE

IEC/EN: Class I+II / Type 1+2

Technology: Hybrid

Leakage Current Free: Yes

Line Follow Current: No

Housing: Compact design

Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTec ZPS T1H-xxx-3+1(-R)

IEC Electrical

Nominal AC Voltage (50/60Hz)	U_o/U_n	240 V
Maximum Continuous Operating Voltage (AC)	(L-N) U_c	300 V
	(N-PE) U_c	305 V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_n	20 kA / 80 kA
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}	50 kA / 100 kA
Impulse Discharge Current (10/350 μ s)	(L-N)/(N-PE) I_{imp}	12.5 kA / 50 kA
Specific Energy	(L-N)/(N-PE) W/R	39 kJ/ Ω / 625 kJ/ Ω
Charge	(L-N)/(N-PE) Q	6.25As / 25As
Voltage Protection Level	(L-N)/(N-PE) U_p	1500V / 1500V
Follow Current Interrupt Rating	(N-PE) I_{fi}	100A _{RMS}
Response Time	(L-N)/(N-PE) t_A	< 100ns / < 100ns
Overcurrent Protection (max)		315 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA
TOV Withstand 120min	(L-N) U_T	442 V
TOV Withstand 200ms	(N-PE) U_T	1200 V
Number of Ports		1

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}	PZ2 / 39.9 lbf-in [4.5 Nm]
Conductor Cross Section (max)		35mm ² (Solid, Stranded) / 25mm ² (Flexible)
		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
Mounting		40mm Busbar Systems
Degree Of Protection		IP 20*
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
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)		1.5mm ² (Solid) / 16 AWG (Solid)

Order Information

Order Code		
ProTec ZPS T1H-300-3+1		59.0908
ProTec ZPS T1H-300-3+1-R (with remote contacts)		59.0909

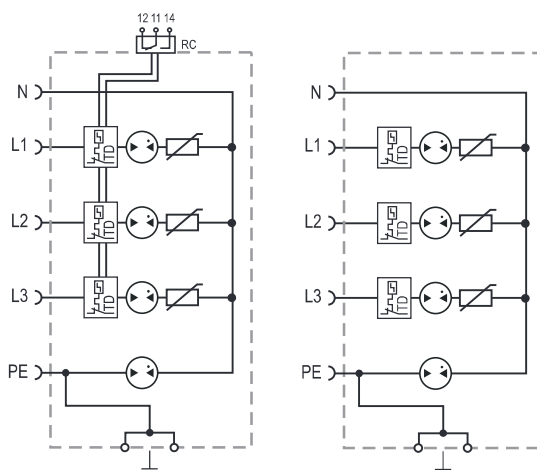
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ProTec ZPS T1H 3+1(-R)

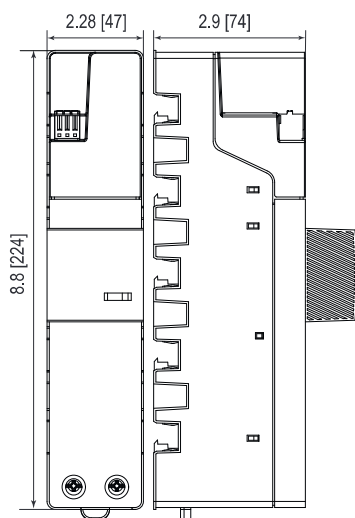
Internal Configuration

Legend

- L Line Busbar Terminal
- N Neutral Busbar Terminal
- PE PE Busbar Terminal
- ⏚ Terminal for Main Earthing Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter



Complete Unit



Complete Unit Dimensions & Packaging

ProTec ZPS T1H-xxx-3+1	300
Weight	pounds [grams] 1.640 [744]
Packaging Dimensions (HxWxL)	12.5 × 13.4 × 9.5" [320 × 340 × 240 mm]
Standard Order Quantity	18 Units
ProTec ZPS T1H-xxx-3+1-R	300
Weight	pounds [grams] 1.658 [752]
Packaging Dimensions (HxWxL)	12.5 × 13.4 × 9.5" [320 × 340 × 240 mm]
Standard Order Quantity	18 Units

inches
[mm]



Combined Lightning Current and Surge Arrester

ProTec ZPS T1H 3+1(-R)-L

Class I • Class II • Type 1 • Type 2



Location of Use: Main Distribution Boards,
40mm Busbar Systems

Network Systems: TN-S, TT

Mode of Protection: L-N, N-PE

IEC/EN: Class I+II / Type 1+2

Technology: Hybrid

Leakage Current Free: Yes

Line Follow Current: No

Housing: Compact design

Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTec ZPS T1H-xxx-3+1(-R)-L

IEC Electrical

Nominal AC Voltage (50/60Hz)	U_o/U_n	240 V
Maximum Continuous Operating Voltage (AC)	(L-N) U_c	300 V
	(N-PE) U_c	305 V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_n	20 kA / 80 kA
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}	50 kA / 100 kA
Impulse Discharge Current (10/350 μ s)	(L-N)/(N-PE) I_{imp}	12.5 kA / 50 kA
Specific Energy	(L-N)/(N-PE) W/R	39 kJ/ Ω / 625 kJ/ Ω
Charge	(L-N)/(N-PE) Q	6.25As / 25As
Voltage Protection Level	(L-N)/(N-PE) U_p	1500V / 1500V
Follow Current Interrupt Rating	(N-PE) I_{fi}	100A _{RMS}
Response Time	(L-N)/(N-PE) t_A	< 100ns / < 100ns
Overcurrent Protection (max)		315 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA
TOV Withstand 120min	(L-N) U_T	442 V
TOV Withstand 200ms	(N-PE) U_T	1200 V
Number of Ports		1

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}	PZ2 / 39.9 lbf-in [4.5 Nm]
Conductor Cross Section (max)		35mm ² (Solid, Stranded) / 25mm ² (Flexible)
		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
Mounting		40mm Busbar Systems
Degree Of Protection		IP 20*
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
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)		1.5mm ² (Solid) / 16 AWG (Solid)

Load Terminal (L1')

Rated Current	I_L	20 A
Load Side Overcurrent Protective Device		20 A gG
Wire Connection Method		Push In
Conductor Cross Section		10 AWG / 4 mm ² (Solid, Stranded, Flexible)
Stripping Length		16 mm

Order Information

Order Code		
ProTec ZPS T1H-300-3+1-L (with load terminal)		59.0910
ProTec ZPS T1H-300-3+1-R-L (with remote contacts and load terminal)		59.0911

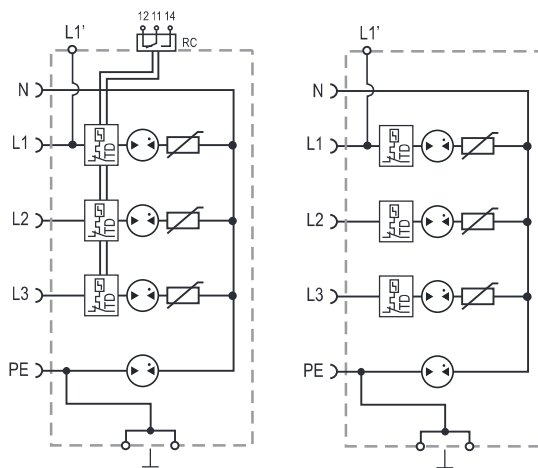
*IP 40 (in combination with cover)

ProTec ZPS T1H 3+1(-R)-L

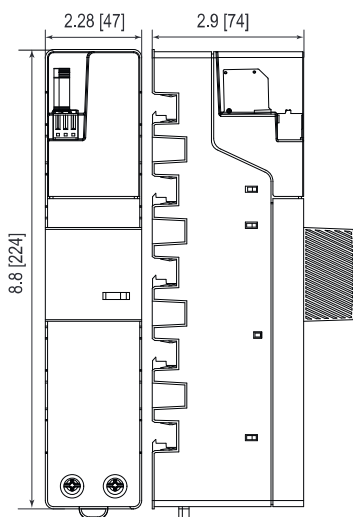
Internal Configuration

Legend

- L Line Busbar Terminal
- L1' Load Terminal
- N Neutral Busbar Terminal
- PE PE Busbar Terminal
- ⏚ Terminal for Main Earthing Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter



Complete Unit



Complete Unit Dimensions & Packaging

ProTec ZPS T1H-xxx-3+1-L	300
Weight	pounds [grams] 1.658 [752]
Packaging Dimensions (HxWxL)	12.5 x 13.4 x 9.5" [320 x 340 x 240 mm]
Standard Order Quantity	18 Units
ProTec ZPS T1H-xxx-3+1-R-L	300
Weight	pounds [grams] 1.676 [760]
Packaging Dimensions (HxWxL)	12.5 x 13.4 x 9.5" [320 x 340 x 240 mm]
Standard Order Quantity	18 Units

inches
[mm]



Combined Lightning Current and Surge Arrester

ProTec ZPS T1H 3+0 E(-R)

Class I • Class II • Type 1 • Type 2



Location of Use: Main Distribution Boards,
40mm Busbar Systems

Network Systems: TN-C
Mode of Protection: L-PEN
IEC/EN: Class I+II / Type 1+2
Technology: Hybrid
Leakage Current Free: Yes
Line Follow Current: No
Housing: Compact design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTec ZPS T1H-xxx-3+0-E(-R)

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 μ s)	I_n	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50 kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	7.5 kA
Specific Energy	W/R	14 kJ/ Ω
Charge	Q	3.75 As
Voltage Protection Level	U_p	1500V
Response Time	t_A	< 100ns
Overcurrent Protection (max)		315 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA
TOV Withstand 120min	U_T	442 V
Number of Ports		1

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}	PZ2 / 39.9 lbf-in [4.5Nm]
Conductor Cross Section (max)		35 mm ² (Solid, Stranded) / 25 mm ² (Flexible) 2 AWG (Solid, Stranded) / 4 AWG (Flexible)
Mounting		40mm Busbar Systems
Degree Of Protection		IP 20*
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
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)		1.5mm ² (Solid) / 16 AWG (Solid)

Order Information

Order Code	
ProTec ZPS T1H-300-3+0-E	59.0904
ProTec ZPS T1H-300-3+0-E-R (with remote contacts)	59.0905

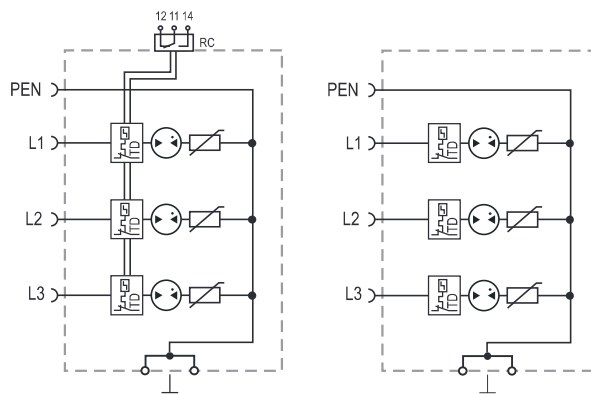
*IP 40 (in combination with cover)

ProTec ZPS T1H 3+0 E(-R)

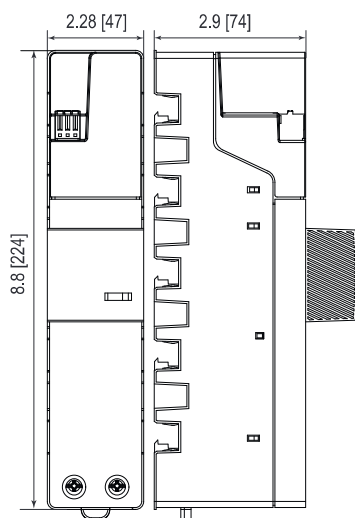
Internal Configuration

Legend

- L Line Busbar Terminal
- PEN PEN Busbar Terminal
- ⏚ Terminal for Main Earthing Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter



Complete Unit



Complete Unit Dimensions & Packaging

ProTec ZPS T1H-xxx-3+0-E	300
Weight	pounds [grams] 1.548 [702]
Packaging Dimensions (HxWxL)	12.5 × 13.4 × 9.5" [320 × 340 × 240 mm]
Standard Order Quantity	18 Units
ProTec ZPS T1H-xxx-3+0-E-R	300
Weight	pounds [grams] 1.565 [710]
Packaging Dimensions (HxWxL)	12.5 × 13.4 × 9.5" [320 × 340 × 240 mm]
Standard Order Quantity	18 Units

inches
[mm]



Combined Lightning Current and Surge Arrester

ProTec ZPS T1H 3+0 E(-R)-L

Class I • Class II • Type 1 • Type 2



Location of Use: Main Distribution Boards,
40mm Busbar Systems

Network Systems: TN-C
Mode of Protection: L-PEN
IEC/EN: Class I+II / Type 1+2
Technology: Hybrid
Leakage Current Free: Yes
Line Follow Current: No
Housing: Compact design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTec ZPS T1H-xxx-3+0-E(-R)-L

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 μ s)	I_n	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50 kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	7.5 kA
Specific Energy	W/R	14 kJ/ Ω
Charge	Q	3.75 As
Voltage Protection Level	U_p	1500V
Response Time	t_A	< 100ns
Overcurrent Protection (max)		315 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA
TOV Withstand 120min	U_T	442 V
Number of Ports		1

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}	PZ2 / 39.9 lbf-in [4.5 Nm]
Conductor Cross Section (max)		35 mm ² (Solid, Stranded) / 25 mm ² (Flexible) 2 AWG (Solid, Stranded) / 4 AWG (Flexible)
Mounting		40mm Busbar Systems
Degree Of Protection		IP 20*
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
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)		1.5mm ² (Solid) / 16 AWG (Solid)

Load Terminal (L1')

Rated Current	I_L	20 A
Load Side Overcurrent Protective Device		20 A gG
Wire Connection Method		Push In
Conductor Cross Section		10 AWG / 4 mm ² (Solid, Stranded, Flexible)
Stripping Length		16 mm

Order Information

Order Code		
ProTec ZPS T1H-300-3+0-E-L (with load terminal)		59.0906
ProTec ZPS T1H-300-3+0-E-R-L (with remote contacts and load terminal)		59.0907

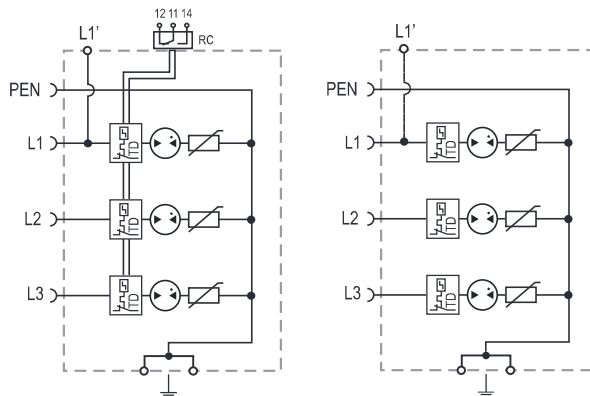
*IP 40 (in combination with cover)

ProTec ZPS T1H 3+0 E(-R)-L

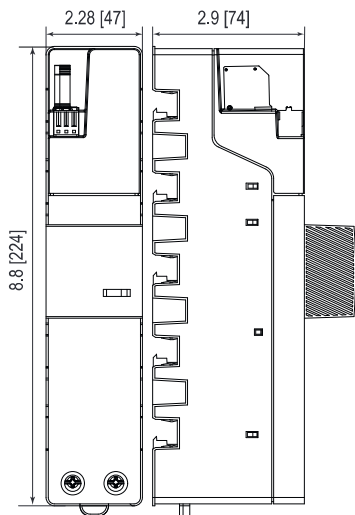
Internal Configuration

Legend

- L Line Busbar Terminal
- L1' Load Terminal
- PEN PEN Busbar Terminal
- ⏚ Terminal for Main Earthing Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter



Complete Unit



Complete Unit Dimensions & Packaging

ProTec ZPS T1H-xxx-3+0-E-L	300
Weight	pounds [grams] 1.565 [710]
Packaging Dimensions (HxWxL)	12.5 × 13.4 × 9.5" [320 × 340 × 240 mm]
Standard Order Quantity	18 Units
ProTec ZPS T1H-xxx-3+0-E-R-L	300
Weight	pounds [grams] 1.583 [718]
Packaging Dimensions (HxWxL)	12.5 × 13.4 × 9.5" [320 × 340 × 240 mm]
Standard Order Quantity	18 Units

inches
[mm]

Combined Lightning Current and Surge Arrester

ProTec ZPS T1H 3+1 E(-R)

Class I • Class II • Type 1 • Type 2



Location of Use: Main Distribution Boards,
40mm Busbar Systems

Network Systems: TN-S, TT

Mode of Protection: L-N, N-PE

IEC/EN: Class I+II / Type 1+2

Technology: Hybrid

Leakage Current Free: Yes

Line Follow Current: No

Housing: Compact design

Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTec ZPS T1H-xxx-3+1-E(-R)

IEC Electrical

Nominal AC Voltage (50/60Hz)	U_o/U_n	240 V
Maximum Continuous Operating Voltage (AC)	(L-N) U_c	300 V
	(N-PE) U_c	305 V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_n	20 kA / 80 kA
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}	50 kA / 100 kA
Impulse Discharge Current (10/350 μ s)	(L-N)/(N-PE) I_{imp}	7.5 kA / 30 kA
Specific Energy	(L-N)/(N-PE) W/R	14 kJ/ Ω / 225 kJ/ Ω
Charge	(L-N)/(N-PE) Q	3.75 As / 15As
Voltage Protection Level	(L-N)/(N-PE) U_p	1500V / 1500V
Follow Current Interrupt Rating	(N-PE) I_{fi}	100A _{RMS}
Response Time	(L-N)/(N-PE) t_A	< 100ns / < 100ns
Overcurrent Protection (max)		315 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA
TOV Withstand 120min	(L-N) U_T	442 V
TOV Withstand 200ms	(N-PE) U_T	1200 V
Number of Ports		1

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}	PZ2 / 39.9 lbf-in [4.5Nm]
Conductor Cross Section (max)		35mm ² (Solid, Stranded) / 25mm ² (Flexible)
		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
Mounting		40mm Busbar Systems
Degree Of Protection		IP 20*
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
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)		1.5mm ² (Solid) / 16 AWG (Solid)

Order Information

Order Code		
ProTec ZPS T1H-300-3+1-E		59.0912
ProTec ZPS T1H-300-3+1-E-R (with remote contacts)		59.0913

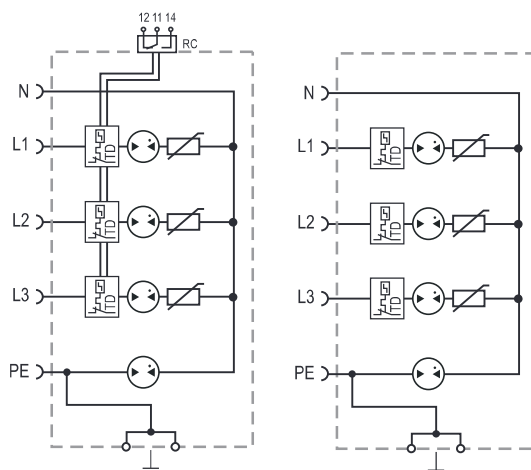
*IP 40 (in combination with cover)

ProTec ZPS T1H 3+1 E(-R)

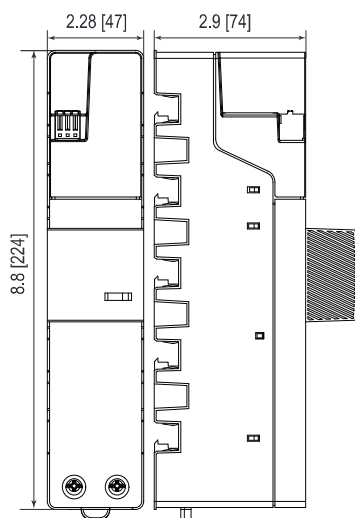
Internal Configuration

Legend

- L Line Busbar Terminal
- N Neutral Busbar Terminal
- PE PE Busbar Terminal
- ⏚ Terminal for Main Earthing Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter



Complete Unit



Complete Unit Dimensions & Packaging

ProTec ZPS T1H-xxx-3+1-E	300
Weight	pounds [grams] 1.636 [742]
Packaging Dimensions (HxWxL)	12.5 × 13.4 × 9.5" [320 × 340 × 240 mm]
Standard Order Quantity	18 Units
ProTec ZPS T1H-xxx-3+1-E-R	300
Weight	pounds [grams] 1.653 [750]
Packaging Dimensions (HxWxL)	12.5 × 13.4 × 9.5" [320 × 340 × 240 mm]
Standard Order Quantity	18 Units

inches
[mm]

Combined Lightning Current and Surge Arrester

ProTec ZPS T1H 3+1 E(-R)-L

Class I • Class II • Type 1 • Type 2



Location of Use: Main Distribution Boards,
40mm Busbar Systems

Network Systems: TN-S, TT
Mode of Protection: L-N,N-PE
IEC/EN: Class I-II / Type 1+2
Technology: Hybrid
Leakage Current Free: Yes
Line Follow Current: No
Housing: Compact design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTec ZPS T1H-xxx-3+1-E(-R)-L

IEC Electrical

Nominal AC Voltage (50/60Hz)	U_o/U_n	240 V
Maximum Continuous Operating Voltage (AC)	(L-N) U_c	300 V
	(N-PE) U_c	305 V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_n	20 kA / 80 kA
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}	50 kA / 100 kA
Impulse Discharge Current (10/350 μ s)	(L-N)/(N-PE) I_{imp}	7.5 kA / 30 kA
Specific Energy	(L-N)/(N-PE) W/R	14 kJ/ Ω / 225 kJ/ Ω
Charge	(L-N)/(N-PE) Q	3.75 As / 15As
Voltage Protection Level	(L-N)/(N-PE) U_p	1500V / 1500V
Follow Current Interrupt Rating	(N-PE) I_{fi}	100A _{RMS}
Response Time	(L-N)/(N-PE) t_A	< 100ns / < 100ns
Overcurrent Protection (max)		315 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA
TOV Withstand 120min	(L-N) U_T	442 V
TOV Withstand 200ms	(N-PE) U_T	1200 V
Number of Ports		1

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}	PZ2 / 39.9 lbf-in [4.5 Nm]
Conductor Cross Section (max)		35mm ² (Solid, Stranded) / 25mm ² (Flexible)
		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
Mounting		40mm Busbar Systems
Degree Of Protection		IP 20*
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
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)		1.5mm ² (Solid) / 16 AWG (Solid)

Load Terminal (L1')

Rated Current	I_L	20 A
Load Side Overcurrent Protective Device		20 A gG
Wire Connection Method		Push In
Conductor Cross Section		10 AWG / 4 mm ² (Solid, Stranded, Flexible)
Stripping Length		16 mm

Order Information

Order Code		
ProTec ZPS T1H-300-3+1-E-L (with load terminal)		59.0914
ProTec ZPS T1H-300-3+1-E-R-L (with remote contacts and load terminal)		59.0915

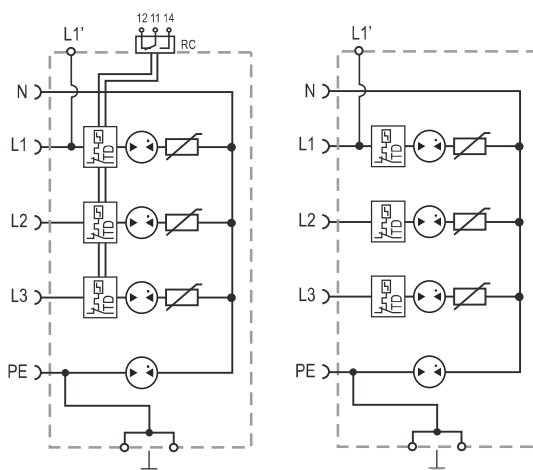
*IP 40 (in combination with cover)

ProTec ZPS T1H 3+1 E(-R)-L

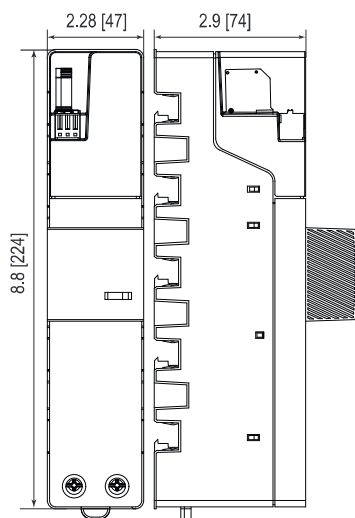
Internal Configuration

Legend

- L Line Busbar Terminal
- L1' Load Terminal
- N Neutral Busbar Terminal
- PE PE Busbar Terminal
- ⏚ Terminal for Main Earthing Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter



Complete Unit



Complete Unit Dimensions & Packaging

ProTec ZPS T1H-xxx-3+1-E-L	300
Weight	pounds [grams] 1.653 [750]
Packaging Dimensions (HxWxL)	12.5 x 13.4 x 9.5" [320 x 340 x 240 mm]
Standard Order Quantity	18 Units
ProTec ZPS T1H-xxx-3+1-E-R-L	300
Weight	pounds [grams] 1.671 [758]
Packaging Dimensions (HxWxL)	12.5 x 13.4 x 9.5" [320 x 340 x 240 mm]
Standard Order Quantity	18 Units



inches
[mm]

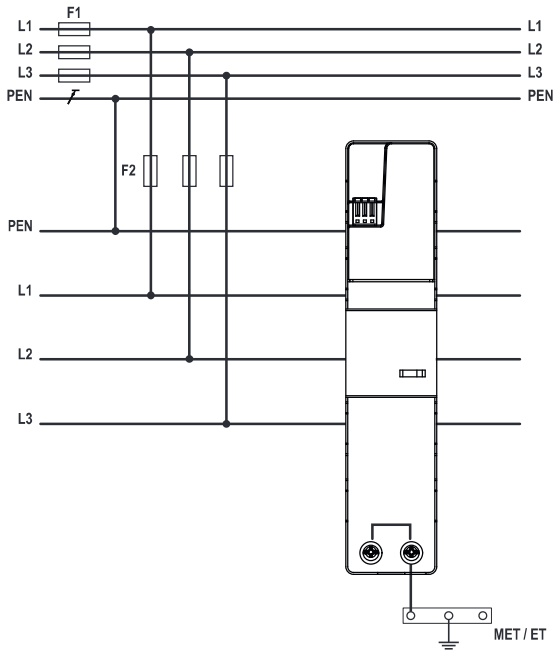


Applicable connection configurations can be found on page 36.

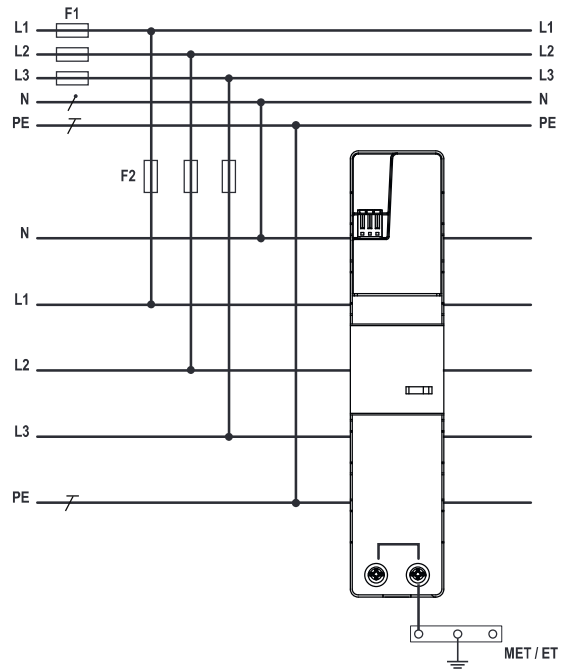
Combined Lightning Current and Surge Arrester

ProTec ZPS T1H

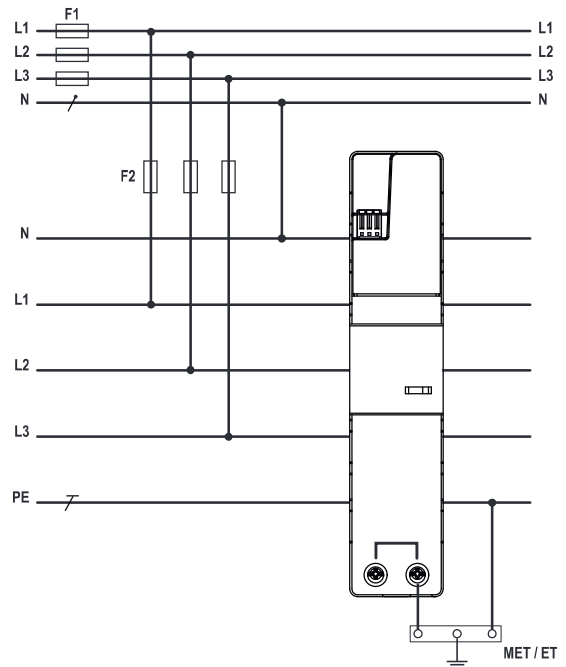
TN-C Connection



TN-S Connection



TT Connection



N Neutral
PE Protective Earth
PEN Protective Earth & Neutral

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

$F1 > 315 \text{ A gG} \rightarrow F2 = 315 \text{ A gG}$
 $F1 \leq 315 \text{ A gG} \rightarrow \text{no } F2$