

Combined lightning Current & Surge Arrester



ProTec ZPN T1H Series



Special features:

- Thin design – fits in all cabinets between 2xSH and SPD on the busbar 5x12mm
- Fast assembly - pluggable connection to the busbar
- Large load capacity in a small installation space – high continuous current of 101A
- High safety – locking system on all busbars
- User friendly – product is easily marked for identification on the top of the product
- Finger safe and isolated – live parts are never touched
- Long lasting connection – proven tension clamp enables secure connection to busbar
- Test and measure points available on all connection points



IEC 61643-11:2011

EN 61643-11:2012+A11:2018



The newest product in Raycap's ZP Series, the ProTec ZPN T1H, is specifically designed for installations in buildings according to VDE 0100-443/-534 and VDE-AR-N 4100:2019-04. As with the other products in the series, the ZPN has been developed for installation onto a 40 mm busbar system. Its special features include an integrated protected output for the smart meter and the gateway and modem, and a remote monitoring contact that can be easily integrated into a smart home system. With its space saving design and innovative phase tap the ZPN can supply power for a gateway without having to expand the busbar system and add a separate auxiliary terminal with a backup fuse. The versatile ProTec ZPN fits into all types of meter cabinets, without the need for tools or screws during installation.



Combined Lightning Current and Surge Arrester

ProTec ZPN T1H 3+0(-R)

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

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

Network Systems: TN-C

Mode of Protection: L-PEN

IEC/EN: Class I+II+III / Type 1+2+3

Technology: Hybrid

Leakage Current Free: Yes

Line Follow Current: No

Housing: Compact design

Compliance: IEC 61643-11:2011

EN 61643-11:2012 + A11:2018

Technical Data

ProTec ZPN T1H-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 μ s)	I_n	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	40 kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	12.5 kA
Specific Energy	W/R	39 kJ/ Ω
Charge	Q	6.25As
Open Circuit Voltage of Combination Wave Generator	U_{oc}	6 kV
Voltage Protection Level	U_p	1500V
Response Time	t_A	< 100ns
Overcurrent Protection (max)		160 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}	PH2 / 40 lbf-in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (Solid, Stranded) / 25mm ² (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)		16 AWG (Solid) / 1.5mm ² (Solid)

Order Information

Order Code	300
ProTec ZPN T1H-xxx-3+0	59.A600
ProTec ZPN T1H-xxx-3+0-R (with remote contacts)	59.A601

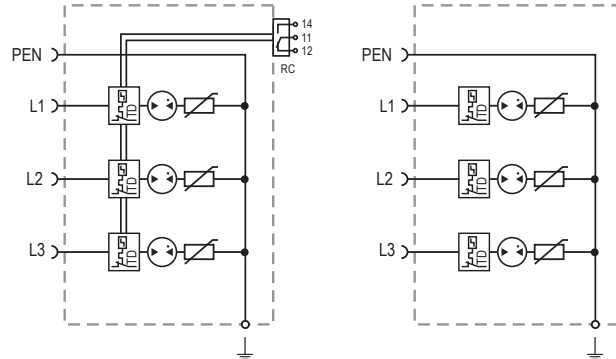
*IP 40 (in combination with cover)

ProTec ZPN T1H 3+0(-R)

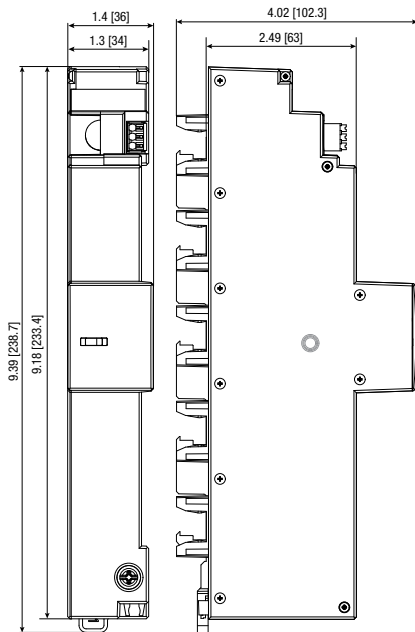
Internal Configuration

Legend

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



Complete Unit



Complete Unit Dimensions & Packaging

ProTec ZPN T1H-xxx-3+0		300
Weight	pounds [grams]	1.351 [613]
Packaging Dimensions (HxWxL)		270x375x395 [10.6x14.8x15.5]
Standard Order Quantity		24 Units
ProTec ZPN T1H-xxx-3+0-R		300
Weight	pounds [grams]	1.362 [618]
Packaging Dimensions (HxWxL)		270x375x395 [10.6x14.8x15.5]
Standard Order Quantity		24 Units

inches
[mm]

Information contained in this document is subject to change at any time without notice.



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

Network Systems: TN-C

Mode of Protection: L-PEN

IEC/EN: Class I+II+III / Type 1+2+3

Technology: Hybrid

Leakage Current Free: Yes

Line Follow Current: No

Housing: Compact design

Compliance: IEC 61643-11:2011

EN 61643-11:2012 + A11:2018

Technical Data

ProTec ZPN T1H-xxx-3+0(-R)-F

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 μ s)	I_n	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	40 kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	12.5 kA
Specific Energy	W/R	39 kJ/ Ω
Charge	Q	6.25As
Open Circuit Voltage of Combination Wave Generator	U_{oc}	6 kV
Voltage Protection Level	U_p	1500V
Response Time	t_A	< 100ns
Overcurrent Protection (max)		160 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}	PH2 / 40 lbf-in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (Solid, Stranded) / 25mm ² (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)		16 AWG (Solid) / 1.5mm ² (Solid)

Auxiliary Terminal (LA)

Rated Current Integrated Fuse	I_n	6.3A
Fuse Link		FF, 5 x 20 mm, 6.3A
Short Circuit Interrupt Capability		25 kA
Wire Connection Method		Push In
Conductor Cross Section (max)		14 AWG / 2.5mm ² (Solid, Flexible)

Order Information

Order Code	300
ProTec ZPN T1H-xxx-3+0-F (with protected auxiliary terminal)	59.A602
ProTec ZPN T1H-xxx-3+0-R-F (with remote contacts and protected auxiliary terminal)	59.A603

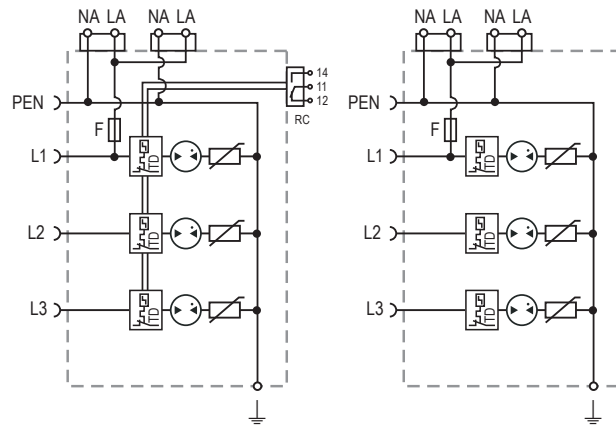
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ProTec ZPN T1H 3+0(-R)-F

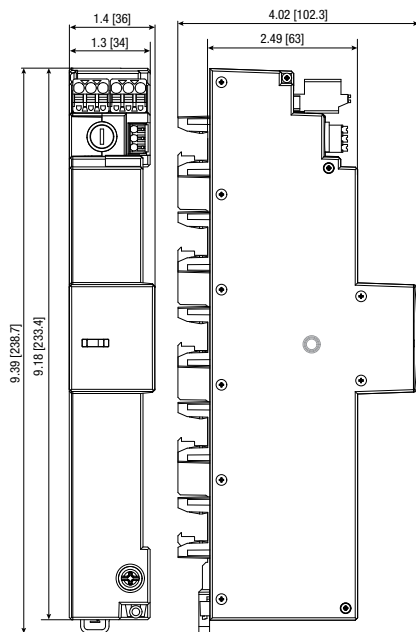
Internal Configuration

Legend

F	Integrated Fuse Link
NA	Neutral Auxiliary Terminal
LA	Line Auxiliary Terminal
L	Line Busbar Terminal
N	Neutral Busbar Terminal
PEN	PEN Busbar Terminal
$\perp$	Terminal for Main Earthing Terminal
RC	Remote Contacts Terminal (Optional)
TD	Thermal Disconnecter



Complete Unit



Complete Unit Dimensions & Packaging

ProTec ZPN T1H-xxx-3+0-F	300
Weight	pounds [grams] 1.402 [636]
Packaging Dimensions (HxWxL)	270 x 375 x 395 [10.6 x 14.8 x 15.5]
Standard Order Quantity	24 Units
ProTec ZPN T1H-xxx-3+0-R-F	300
Weight	pounds [grams] 1.413 [641]
Packaging Dimensions (HxWxL)	270 x 375 x 395 [10.6 x 14.8 x 15.5]
Standard Order Quantity	24 Units

inches
[mm]

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Combined Lightning Current and Surge Arrester

ProTec ZPN T1H 3+1(-R)

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



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+III / Type 1+2+3

Technology: Hybrid

Leakage Current Free: Yes

Line Follow Current: No

Housing: Compact design

Compliance: IEC 61643-11:2011

EN 61643-11:2012 + A11:2018

Technical Data

ProTec ZPN T1H-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) 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}	40 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	6.25 As / 25 As
Open Circuit Voltage of Combination Wave Generator	U_{oc}	6 kV
Voltage Protection Level	(L-N)/(N-PE) U_p	1500 V / 1500 V
Follow Current Interrupt Rating	(N-PE) I_{fi}	100 A
Response Time	(L-N)/(N-PE) t_A	< 100 ns / < 100 ns
Overcurrent Protection (max)		160 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}	PH2 / 40 lbf-in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (Solid, Stranded) / 25mm ² (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)		16 AWG (Solid) / 1.5mm ² (Solid)

Order Information

Order Code	300
ProTec ZPN T1H-xxx-3+1	59.A608
ProTec ZPN T1H-xxx-3+1-R (with remote contacts)	59.A609

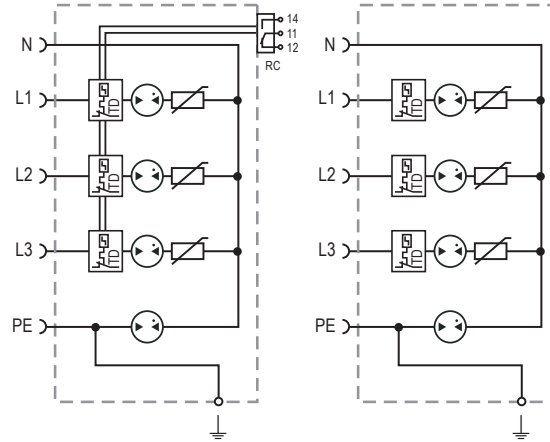
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ProTec ZPN T1H 3+1(-R)

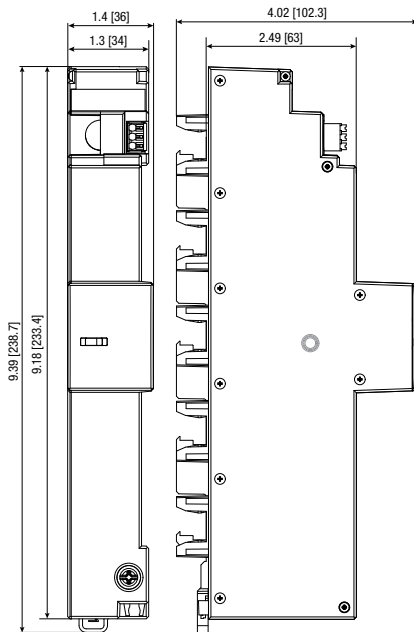
Internal Configuration

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 Disconnect



Complete Unit

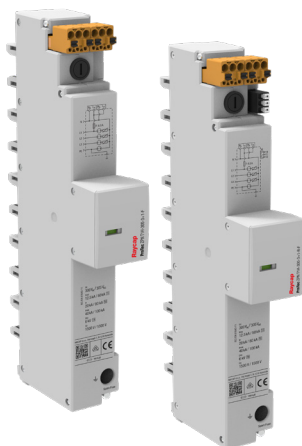


Complete Unit Dimensions & Packaging

ProTec ZPN T1H-xxx-3+1		300
Weight	pounds [grams]	1.395 [633]
Packaging Dimensions (HxWxL)		270x375x395 [10.6x14.8x15.5]
Standard Order Quantity		24 Units
ProTec ZPN T1H-xxx-3+1-R		300
Weight	pounds [grams]	1.406 [638]
Packaging Dimensions (HxWxL)		270x375x395 [10.6x14.8x15.5]
Standard Order Quantity		24 Units

inches
[mm]

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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+III / Type 1+2+3

Technology: Hybrid

Leakage Current Free: Yes

Line Follow Current: No

Housing: Compact design

Compliance: IEC 61643-11:2011

EN 61643-11:2012 + A11:2018

Technical Data

ProTec ZPN T1H-xxx-3+1(-R)-F

300

IEC Electrical

Nominal AC Voltage (50/60Hz)	U_o/U_n	240V
Maximum Continuous Operating Voltage (AC)	(L-N) U_c	300V
	(N-PE) U_c	305V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_n	20kA / 80kA
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}	40kA / 100kA
Impulse Discharge Current (10/350 μ s)	(L-N)/(N-PE) I_{imp}	12.5kA / 50kA
Specific Energy	(L-N)/(N-PE) W/R	39kJ/ Ω / 625kJ/ Ω
Charge	(L-N)/(N-PE) Q	6.25As / 25As
Open Circuit Voltage of Combination Wave Generator	U_{oc}	6kV
Voltage Protection Level	(L-N)/(N-PE) U_p	1500V / 1500V
Follow Current Interrupt Rating	(N-PE) I_{fi}	100A
Response Time	(L-N)/(N-PE) t_A	< 100ns / < 100ns
Overcurrent Protection (max)		160A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25kA
TOV Withstand 120min	(L-N) U_T	442V
TOV Withstand 200ms	(N-PE) U_T	1200V
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}	PH2 / 40 lbf.in [4.5Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (Solid, Stranded) / 25mm ² (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)		16 AWG (Solid) / 1.5mm ² (Solid)

Auxiliary Terminal (LA)

Rated Current Integrated Fuse	I_n	6.3A
Fuse Link		FF, 5 x 20 mm, 6.3A
Short Circuit Interrupt Capability		25kA
Wire Connection Method		Push In
Conductor Cross Section (max)		14 AWG / 2.5mm ² (Solid, Flexible)

Order Information

Order Code	300
ProTec ZPN T1H-xxx-3+1-F (with protected auxiliary terminal)	59.A610
ProTec ZPN T1H-xxx-3+1-R-F (with remote contacts and protected auxiliary terminal)	59.A611

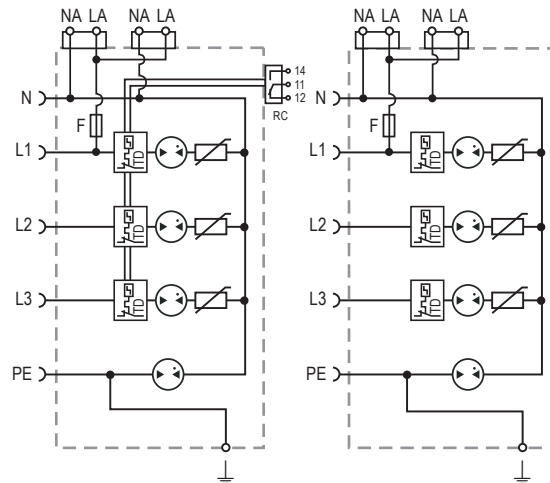
*IP 40 (in combination with cover)

ProTec ZPN T1H 3+1(-R)-F

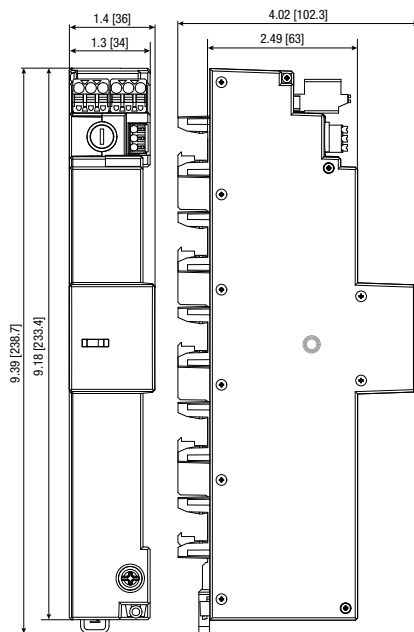
Internal Configuration

Legend

F	Integrated Fuse Link
NA	Neutral Auxiliary Terminal
LA	Line Auxiliary Terminal
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 ZPN T1H-xxx-3+1-F		300
Weight	pounds [grams]	1.446 [656]
Packaging Dimensions (HxWxL)		270x375x395 [10.6x14.8x15.5]
Standard Order Quantity		24 Units
ProTec ZPN T1H-xxx-3+1-R-F		300
Weight	pounds [grams]	1.457 [661]
Packaging Dimensions (HxWxL)		270x375x395 [10.6x14.8x15.5]
Standard Order Quantity		24 Units

inches
[mm]

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Combined Lightning Current and Surge Arrester

ProTec ZPN T1H 3+0 E(-R)

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

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

Network Systems: TN-C

Mode of Protection: L-PEN

IEC/EN: Class I+II+III / Type 1+2+3

Technology: Hybrid

Leakage Current Free: Yes

Line Follow Current: No

Housing: Compact design

Compliance: IEC 61643-11:2011

EN 61643-11:2012 + A11:2018

Technical Data

ProTec ZPN T1H-xxx-3+0-E(-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 μ s)	I_n	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	40 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
Open Circuit Voltage of Combination Wave Generator	U_{oc}	6 kV
Voltage Protection Level	U_p	1500V
Response Time	t_A	< 100ns
Overcurrent Protection (max)		160 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}	PH2 / 40 lbf-in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (Solid, Stranded) / 25mm ² (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)		16 AWG (Solid) / 1.5mm ² (Solid)

Order Information

Order Code	300
ProTec ZPN T1H-xxx-3+0-E	59.A604
ProTec ZPN T1H-xxx-3+0-E-R (with remote contacts)	59.0605

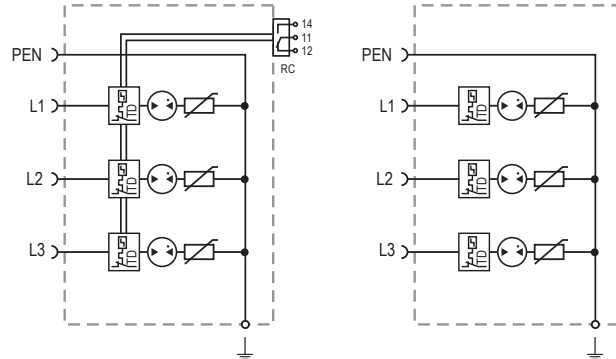
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ProTec ZPN T1H 3+0 E(-R)

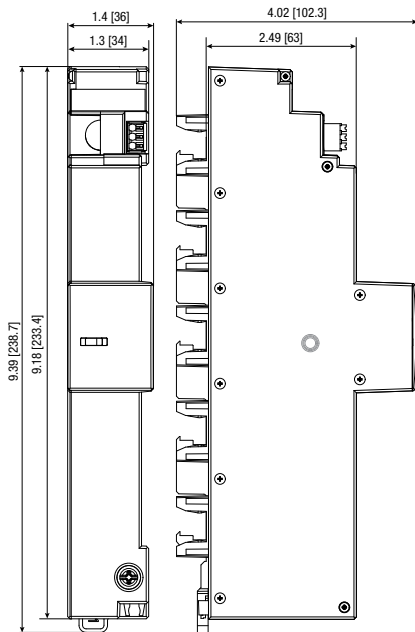
Internal Configuration

Legend

L	Line Busbar Terminal
PEN	PEN Busbar Terminal
⏏	Terminal for Main Earthing Terminal
RC	Remote Contacts Terminal (Optional)
TD	Thermal Disconnect



Complete Unit



Complete Unit Dimensions & Packaging

ProTec ZPN T1H-xxx-3+0-E		300
Weight	pounds [grams]	1.351 [613]
Packaging Dimensions (HxWxL)		270x375x395 [10.6x14.8x15.5]
Standard Order Quantity		24 Units
ProTec ZPN T1H-xxx-3+0-E-R		300
Weight	pounds [grams]	1.362 [618]
Packaging Dimensions (HxWxL)		270x375x395 [10.6x14.8x15.5]
Standard Order Quantity		24 Units

inches
[mm]

Information contained in this document is subject to change at any time without notice.



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

Network Systems: TN-C

Mode of Protection: L-PEN

IEC/EN: Class I+II+III / Type 1+2+3

Technology: Hybrid

Leakage Current Free: Yes

Line Follow Current: No

Housing: Compact design

Compliance: IEC 61643-11:2011

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Technical Data

ProTec ZPN T1H-xxx-3+0-E(-R)-F

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 μ s)	I_n	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	40 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
Open Circuit Voltage of Combination Wave Generator	U_{oc}	6 kV
Voltage Protection Level	U_p	1500V
Response Time	t_A	< 100ns
Overcurrent Protection (max)		160 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}	PH2 / 40 lbf-in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (Solid, Stranded) / 25mm ² (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)		16 AWG (Solid) / 1.5mm ² (Solid)

Auxiliary Terminal (LA)

Rated Current Integrated Fuse	I_n	6.3A
Fuse Link		FF, 5 x 20 mm, 6.3A
Short Circuit Interrupt Capability		25 kA
Wire Connection Method		Push In
Conductor Cross Section (max)		14 AWG / 2.5 mm ² (Solid, Flexible)

Order Information

Order Code	300
ProTec ZPN T1H-xxx-3+0-E-F (with protected auxiliary terminal)	59.A606
ProTec ZPN T1H-xxx-3+0-E-R-F (with remote contacts and protected auxiliary terminal)	59.0607

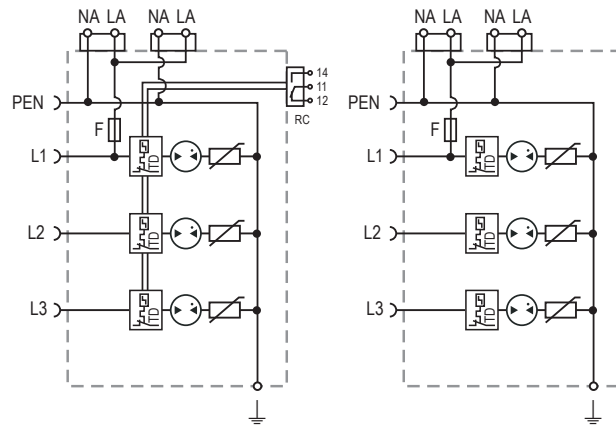
*IP 40 (in combination with cover)

ProTec ZPN T1H 3+0 E(-R)-F

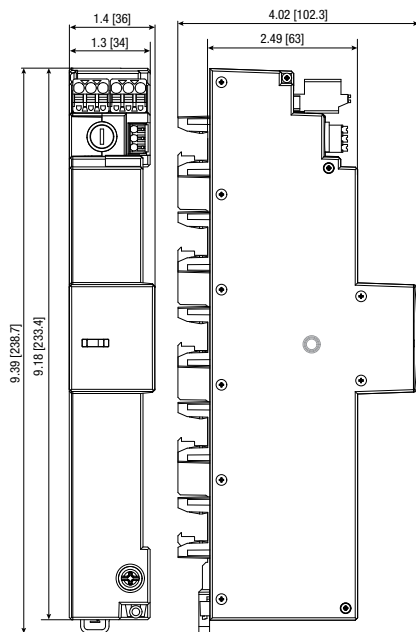
Internal Configuration

Legend

F	Integrated Fuse Link
NA	Neutral Auxiliary Terminal
LA	Line Auxiliary Terminal
L	Line Busbar Terminal
N	Neutral Busbar Terminal
PEN	PEN Busbar Terminal
$\perp$	Terminal for Main Earthing Terminal
RC	Remote Contacts Terminal (Optional)
TD	Thermal Disconnecter



Complete Unit



Complete Unit Dimensions & Packaging

ProTec ZPN T1H-xxx-3+0-E-F	300
Weight	pounds [grams] 1.402 [636]
Packaging Dimensions (HxWxL)	270x375x395 [10.6x14.8x15.5]
Standard Order Quantity	24 Units
ProTec ZPN T1H-xxx-3+0-E-R-F	300
Weight	pounds [grams] 1.413 [641]
Packaging Dimensions (HxWxL)	270x375x395 [10.6x14.8x15.5]
Standard Order Quantity	24 Units

inches
[mm]

Information contained in this document is subject to change at any time without notice.



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+III / Type 1+2+3

Technology: Hybrid

Leakage Current Free: Yes

Line Follow Current: No

Housing: Compact design

Compliance: IEC 61643-11:2011

EN 61643-11:2012 + A11:2018

Technical Data

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

300

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}	40 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
Open Circuit Voltage of Combination Wave Generator	U_{oc}	6 kV
Voltage Protection Level	(L-N)/(N-PE) U_p	1500V / 1500V
Follow Current Interrupt Rating	(N-PE) I_{fi}	100A
Response Time	(L-N)/(N-PE) t_A	< 100ns / < 100ns
Overcurrent Protection (max)		160 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}	PH2 / 40 lbf·in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (Solid, Stranded) / 25mm ² (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)		16 AWG (Solid) / 1.5mm ² (Solid)

Order Information

Order Code	300
ProTec ZPN T1H-xxx-3+1-E	59.A612
ProTec ZPN T1H-xxx-3+1-E-R (with remote contacts)	59.A613

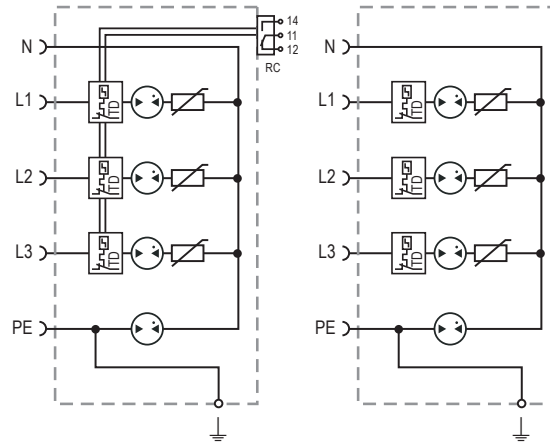
*IP 40 (in combination with cover)

ProTec ZPN T1H 3+1 E(-R)

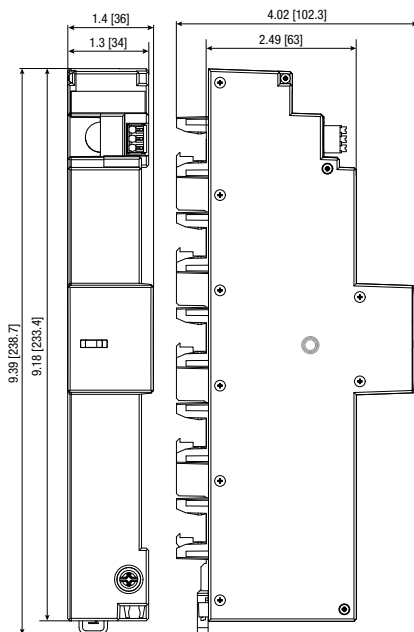
Internal Configuration

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 Disconnect



Complete Unit

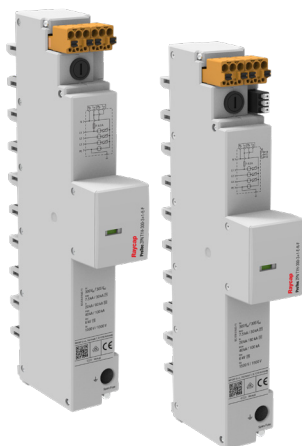


Complete Unit Dimensions & Packaging

ProTec ZPN T1H-xxx-3+1-E	300
Weight	pounds [grams] 1.395 [633]
Packaging Dimensions (HxWxL)	270x375x395 [10.6x14.8x15.5]
Standard Order Quantity	24 Units
ProTec ZPN T1H-xxx-3+1-E-R	300
Weight	pounds [grams] 1.406 [638]
Packaging Dimensions (HxWxL)	270x375x395 [10.6x14.8x15.5]
Standard Order Quantity	24 Units

inches
[mm]

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change at any time without notice.



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+III / Type 1+2+3

Technology: Hybrid

Leakage Current Free: Yes

Line Follow Current: No

Housing: Compact design

Compliance: IEC 61643-11:2011

EN 61643-11:2012 + A11:2018

Technical Data

ProTec ZPN T1H-xxx-3+1-E(-R)-F

300

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}	40 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
Open Circuit Voltage of Combination Wave Generator	U_{oc}	6 kV
Voltage Protection Level	(L-N)/(N-PE) U_p	1500V / 1500V
Follow Current Interrupt Rating	(N-PE) I_{fi}	100A
Response Time	(L-N)/(N-PE) t_A	< 100ns / < 100ns
Overcurrent Protection (max)		160 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}	PH2 / 40 lbf.in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (Solid, Stranded) / 25mm ² (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)		16 AWG (Solid) / 1.5mm ² (Solid)

Auxiliary Terminal (LA)

Rated Current Integrated Fuse	I_n	6.3A
Fuse Link		FF, 5 x 20 mm, 6.3A
Short Circuit Interrupt Capability		25 kA
Wire Connection Method		Push In
Conductor Cross Section (max)		14 AWG / 2.5 mm ² (Solid, Flexible)

Order Information

Order Code	300
ProTec ZPN T1H-xxx-3+1-E-F (with protected auxiliary terminal)	59.A614
ProTec ZPN T1H-xxx-3+1-E-R-F (with remote contacts and protected auxiliary terminal)	59.A615

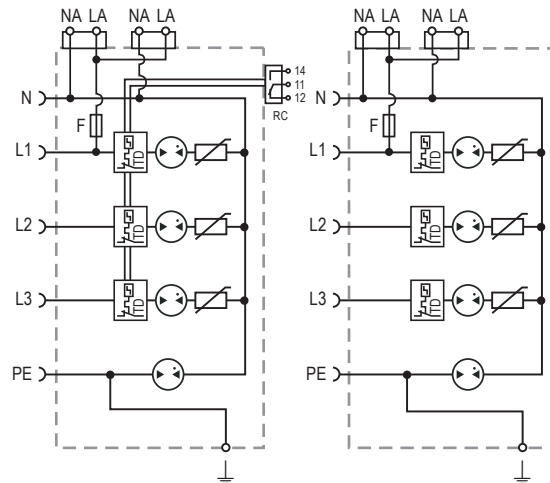
*IP 40 (in combination with cover)

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

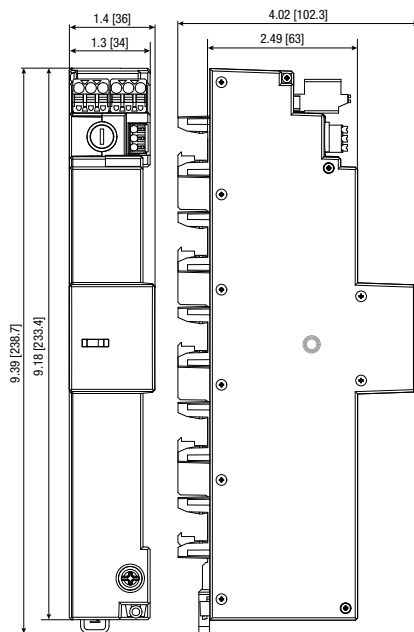
Internal Configuration

Legend

F	Integrated Fuse Link
NA	Neutral Auxiliary Terminal
LA	Line Auxiliary Terminal
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 ZPN T1H-xxx-3+1-E-F	300
Weight	pounds [grams] 1.446 [656]
Packaging Dimensions (HxWxL)	270x375x395 [10.6x14.8x15.5]
Standard Order Quantity	24 Units
ProTec ZPN T1H-xxx-3+1-E-R-F	300
Weight	pounds [grams] 1.457 [661]
Packaging Dimensions (HxWxL)	270x375x395 [10.6x14.8x15.5]
Standard Order Quantity	24 Units

inches
[mm]

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