

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.

DATA SHEET

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

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
Overvoltage Category		III
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

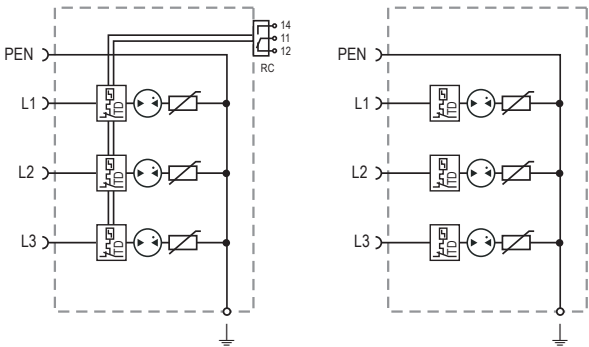
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity	RH	5%...95%
Pollution Degree		2
Altitude (max)		13123 ft [4000 m]
Terminal Screw Torque	M_{max}	PH2 / 40 lbf-in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (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)
Overvoltage Category		III

*IP 40 (in combination with cover)

Internal Configuration

Legend

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

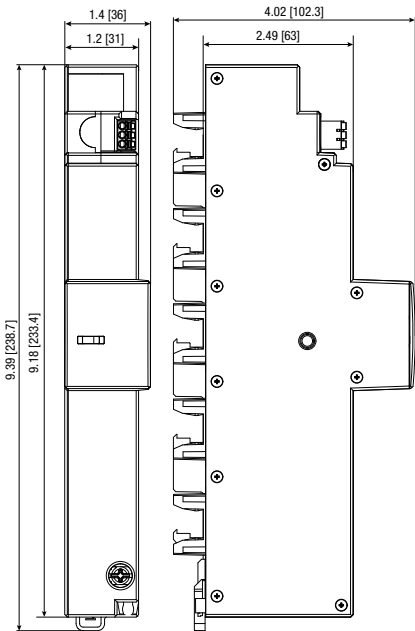


Order Information

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

Complete Unit

inches [mm]



Complete Unit Dimensions & Packaging

ProTec ZPN T1H-xxx-3+0	300
Weight pounds [grams]	1.358 [616]
ProTec ZPN T1H-xxx-3+0-R	
Weight pounds [grams]	1.369 [621]
Packaging Dimensions (HxWxL)	270x375x395 [10.6x14.8x15.5]
Standard Order Quantity	24 Units



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

Housing: Compact design

Compliance: IEC 61643-11:2011

EN 61643-11:2012 + A11:2018



RoHS
COMPLIANT

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
Overvoltage Category		III
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%
Pollution Degree		2
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)
Overvoltage Category		III

Auxiliary Terminal (LA)

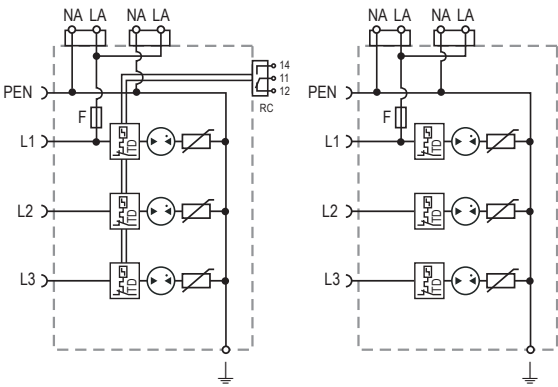
Rated Current Integrated Fuse	I_n	6.3A
Fuse Link		FF, 5 x 20 mm, 6.3A
Short Circuit Interrupt Capability		25kA
Wire Connection Method		Push In
Conductor Cross Section (max)		14 AWG / 2.5mm ² (Solid, Flexible)

*IP 40 (in combination with cover)

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
- Terminal for Main Earthing Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter

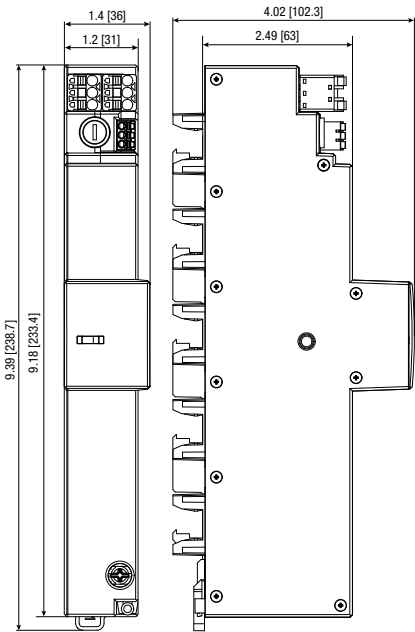


Order Information

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

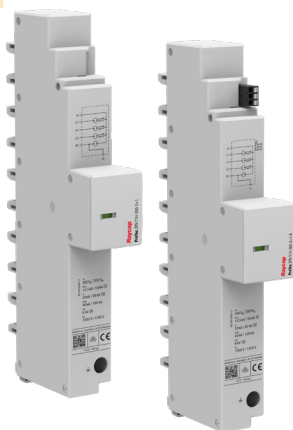
Complete Unit

inches [mm]



Complete Unit Dimensions & Packaging

ProTec ZPN T1H-xxx-3+0-F		300
Weight	pounds [grams]	1.409 [639]
ProTec ZPN T1H-xxx-3+0-R-F		
Weight	pounds [grams]	1.420 [644]
Packaging Dimensions (HxWxL)	270x375x395 [10.6x14.8x15.5]	
Standard Order Quantity	24 Units	



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

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	6.25As / 25As
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
Overvoltage Category		III
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

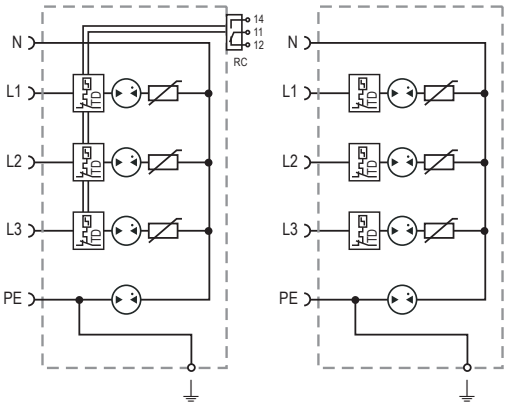
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity	RH	5%...95%
Pollution Degree		2
Altitude (max)		13123 ft [4000m]
Terminal Screw Torque	M_{max}	PH2 / 40 lbf-in [4.5Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (Solid, 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)
Overvoltage Category		III

*IP 40 (in combination with cover)

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

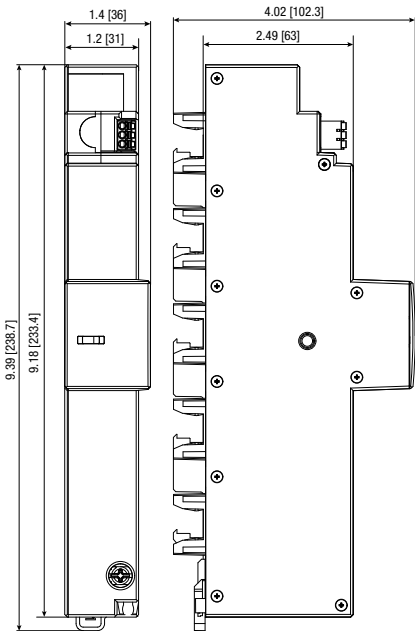


Order Information

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

Complete Unit

inches [mm]



Complete Unit Dimensions & Packaging

ProTec ZPN T1H-xxx-3+1	300
Weight pounds [grams]	1.411 [640]
ProTec ZPN T1H-xxx-3+1-R	
Weight pounds [grams]	1.422 [645]
Packaging Dimensions (HxWxL)	270x375x395 [10.6x14.8x15.5]
Standard Order Quantity	24 Units



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

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	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
Overvoltage Category		III
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%
Pollution Degree		2
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)
Overvoltage Category		III

Auxiliary Terminal (LA)

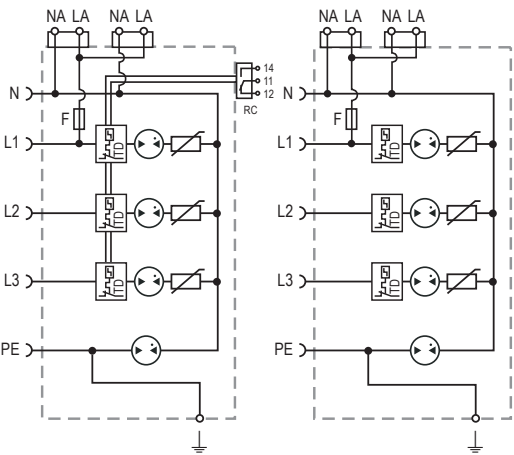
Rated Current Integrated Fuse	I_n	6.3 A
Fuse Link		FF, 5 x 20 mm, 6.3 A
Short Circuit Interrupt Capability		25 kA
Wire Connection Method		Push In
Conductor Cross Section (max)		14 AWG / 2.5mm ² (Solid, Flexible)

*IP 40 (in combination with cover)

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

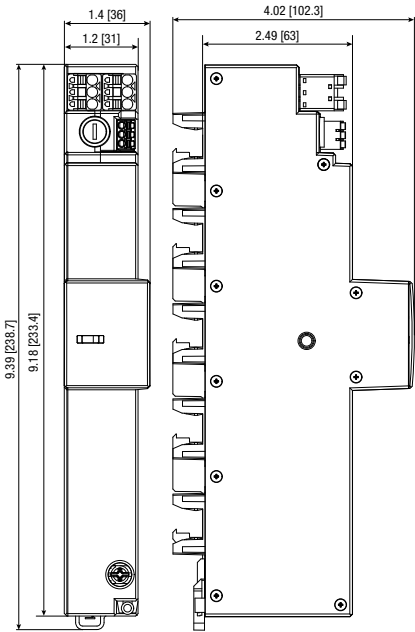


Order Information

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

Complete Unit

inches [mm]



Complete Unit Dimensions & Packaging

ProTec ZPN T1H-xxx-3+1-F		300
Weight	pounds [grams]	1.462 [663]
ProTec ZPN T1H-xxx-3+1-R-F		
Weight	pounds [grams]	1.473 [668]
Packaging Dimensions (HxWxL)	270x375x395 [10.6x14.8x15.5]	
Standard Order Quantity	24 Units	

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

Housing: Compact design

Compliance: IEC 61643-11:2011

EN 61643-11:2012 + A11:2018

RoHS
COMPLIANT**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
Overvoltage Category		III
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

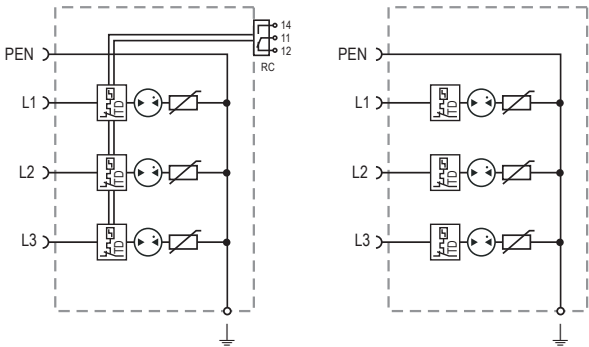
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity	RH	5%...95%
Pollution Degree		2
Altitude (max)		13123 ft [4000 m]
Terminal Screw Torque	M_{max}	PH2 / 40 lbf-in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35mm ² (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)
Overvoltage Category		III

*IP 40 (in combination with cover)

Internal Configuration

Legend

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

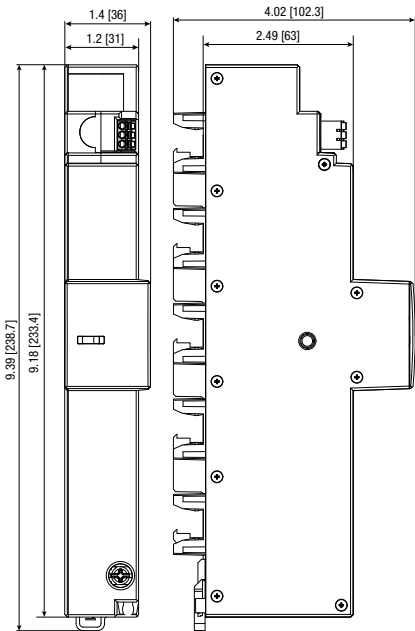


Order Information

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

Complete Unit

inches [mm]



Complete Unit Dimensions & Packaging

ProTec ZPN T1H-xxx-3+0-E	300
Weight pounds [grams]	1.109 [503]
ProTec ZPN T1H-xxx-3+0-E-R	
Weight pounds [grams]	1.120 [508]
Packaging Dimensions (HxWxL)	270x375x395 [10.6x14.8x15.5]
Standard Order Quantity	24 Units



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

Housing: Compact design

Compliance: IEC 61643-11:2011

EN 61643-11:2012 + A11:2018



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
Overvoltage Category		III
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%
Pollution Degree		2
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)
Overvoltage Category		III

Auxiliary Terminal (LA)

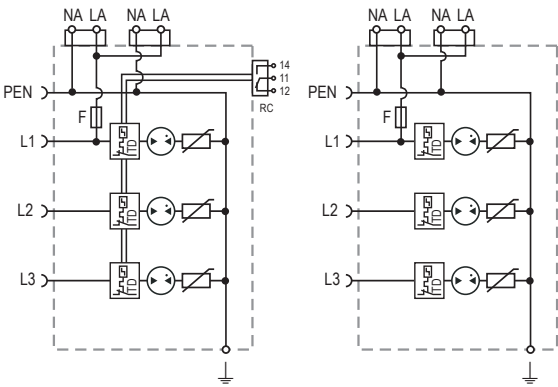
Rated Current Integrated Fuse	I_n	6.3A
Fuse Link		FF, 5 x 20 mm, 6.3A
Short Circuit Interrupt Capability		25 kA
Wire Connection Method		Push In
Conductor Cross Section (max)		14 AWG / 2.5mm ² (Solid, Flexible)

*IP 40 (in combination with cover)

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
- Terminal for Main Earthing Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter

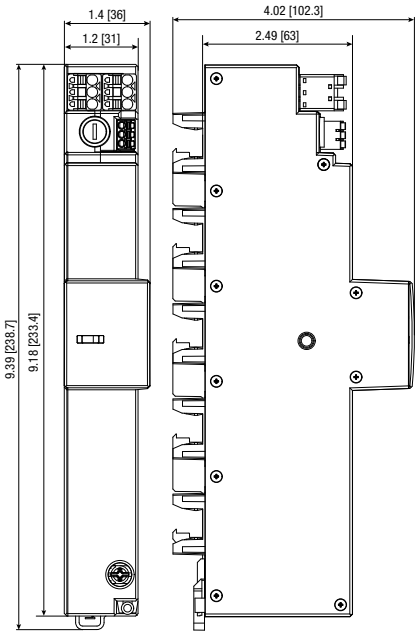


Order Information

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

Complete Unit

inches [mm]



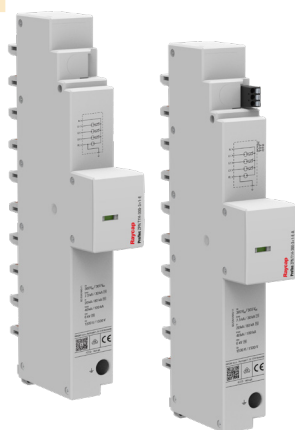
Complete Unit Dimensions & Packaging

ProTec ZPN T1H-xxx-3+0-E-F		300
Weight	pounds [grams]	1.160 [526]
ProTec ZPN T1H-xxx-3+0-E-R-F		
Weight	pounds [grams]	1.171 [531]
Packaging Dimensions (HxWxL)	270x375x395 [10.6x14.8x15.5]	
Standard Order Quantity	24 Units	

Combined Lightning Current and Surge Arrester

ProTec ZPN T1H 3+1 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-S, TT

Mode of Protection: L-N, N-PE

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

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
Overvoltage Category		III
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

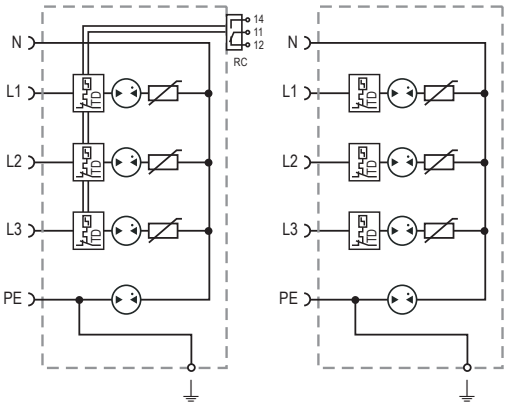
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity	RH	5%...95%
Pollution Degree		2
Altitude (max)		13123 ft [4000 m]
Terminal Screw Torque	M_{max}	PH2 / 40 lbf·in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
		35mm 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)
Overvoltage Category		III

*IP 40 (in combination with cover)

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

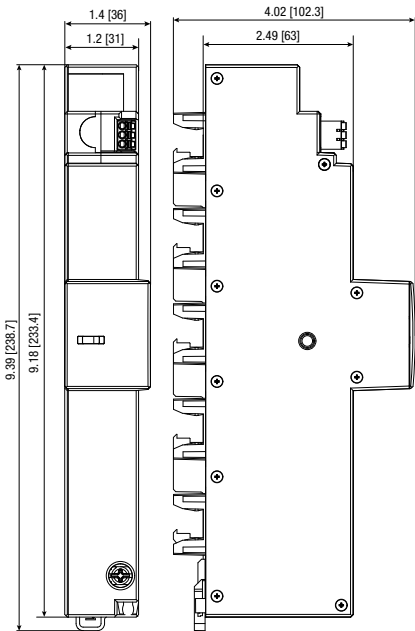


Order Information

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

Complete Unit

inches [mm]



Complete Unit Dimensions & Packaging

ProTec ZPN T1H-xxx-3+1-E		300
Weight	pounds [grams]	1.162 [527]
ProTec ZPN T1H-xxx-3+1-E-R		
Weight	pounds [grams]	1.173 [532]
Packaging Dimensions (HxWxL)	270x375x395 [10.6x14.8x15.5]	
Standard Order Quantity	24 Units	



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

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
Overvoltage Category		III
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%
Pollution Degree		2
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)
Overvoltage Category		III

Auxiliary Terminal (LA)

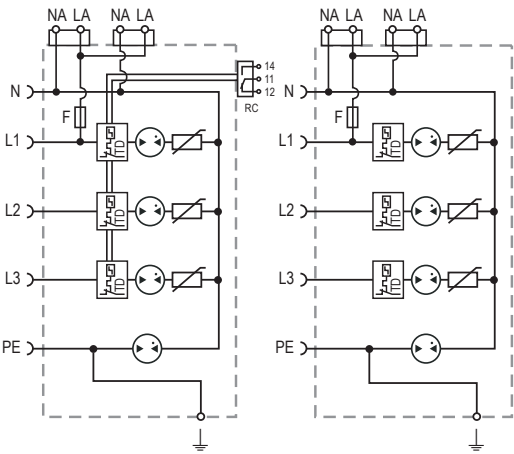
Rated Current Integrated Fuse	I_n	6.3 A
Fuse Link		FF, 5 x 20 mm, 6.3 A
Short Circuit Interrupt Capability		25 kA
Wire Connection Method		Push In
Conductor Cross Section (max)		14 AWG / 2.5 mm ² (Solid, Flexible)

*IP 40 (in combination with cover)

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

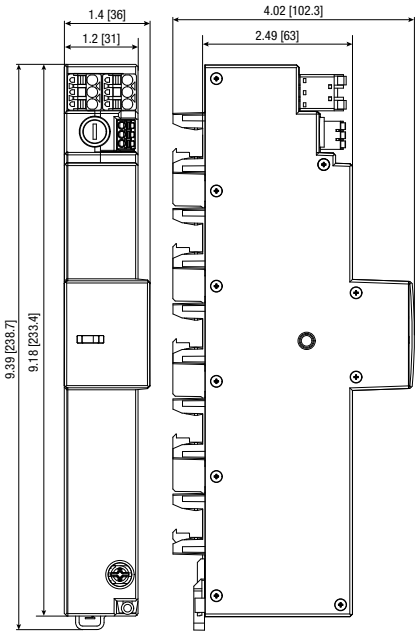


Order Information

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

Complete Unit

inches [mm]



Complete Unit Dimensions & Packaging

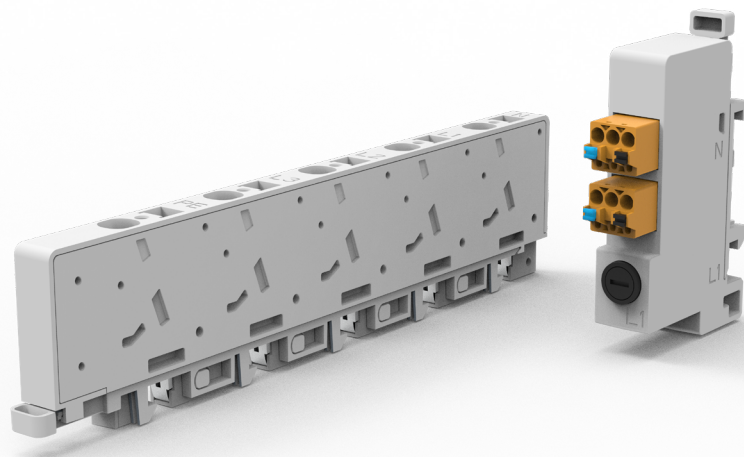
ProTec ZPN T1H-xxx-3+1-E-F		300
Weight	pounds [grams]	1.213 [550]
ProTec ZPN T1H-xxx-3+1-E-R-F		
Weight	pounds [grams]	1.224 [555]
Packaging Dimensions (HxWxL)	270x375x395 [10.6x14.8x15.5]	
Standard Order Quantity	24 Units	

Accessories for Combined lightning Current & Surge Arrester

ProAcc ZP-TB & ProAcc ZP-FH

Special features:

- Small design – fits in all cabinets on the busbars 5x12mm
- Fast assembly – pluggable connection to the busbar
- High safety – locking system on all busbars
- User friendly – standardized plugs on power cables enable quick and easy connections
- Finger safe – live parts are never touched
- Dedicated fuse – pre-assembled with 6.3A fuse with short circuit current rating of 25kA, compatible for almost all regions in Germany



The space saving design of the ProTec ZPN Series has added room for Raycap to provide the ProAcc ZP-TB and a new fuse holder ProAcc ZP-FH for additional cabinet. Additions that enhance the ZPN product versatility. ProAcc ZP-TB is a functional terminal bar for incoming power connection and supply to the 40mm busbar system. The combination of the two devices results in an overall width that was previously occupied only by the SPD itself, making the new combination solution highly space efficient. The quick assembly of these products onto the busbar eliminates the complex and time-consuming process of applying a single clamping yoke to each busbar. For cabinet expansion, for example to add another meter, an additional RfZ field is required. In this additional RfZ field, an additional power supply cable must be mounted from in-front of the meter to the smart meter and the gateway. In this case the new ProAcc ZP-FH, can provide the power to the Gateway and the modem in its standalone as an auxiliary power supply adapter with integrated overcurrent protection. ProAcc ZP-FH comes with a prewired cable set for fast installation. For both products, mounting clips ensure secure product position on the busbar.

Accessories
ProAcc ZP-TB
40mm Busbar Power Feed Input Terminal Block



Location of Use: Meter panels per DIN VDE 0603-1 and DIN VDE 0603-2-1 with 40mm Busbar System 12x5mm

Compliance: IEC 61984
EN 61984
DIN EN 61984
VDE-AR-N 4100
DIN VDE 0603-1
DIN VDE 0603-2-1
DIN VDE 18015-1



Technical Data

ProAcc ZP-TB

IEC Electrical

Rated Voltage (AC) per IEC 61984	U_N	240/400V
Rated Current per IEC 61984	I_N	101 A
Nominal Current		125 A
Rated Isolation Voltage per IEC 61984	U_i	400V
Rated Impulse Voltage per IEC 61984	U_{imp}	6kV
Rated Short Circuit Current per VDE-AR-N 4100		25kA
Number of poles		5

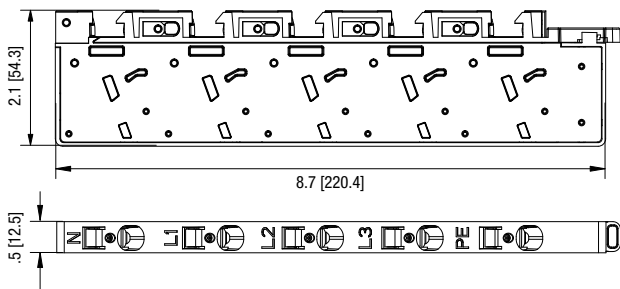
Mechanical & Environmental

Pollution degree		3
Operating Temperature Range	T_a	-13 °F to +131 °F [-25 °C to +55 °C]
Permissible Operating Humidity	RH	5%...95%
Pollution Degree		2
Altitude (max)		6561 ft [2000 m]
Wire Connection Method		Tension clamp
Connectivity		One conductor per clamping unit
Conductor Cross Section (max)		1.5 - 25 mm ² (Solid, Stranded) / 1.5 - 16 mm ² (Flexible) 15 - 4 AWG (Solid, Stranded) / 15 - 5 AWG (Flexible)
Mounting		40mm Busbar System 12x5mm
Degree Of Protection		IP 00 IP20 when installed behind the protective cover
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0

Order Information

Order Code	
ProAcc ZP-TB	515 669

Dimensions & Packaging inches [mm]



inches [mm]

Complete Unit Dimensions & Packaging

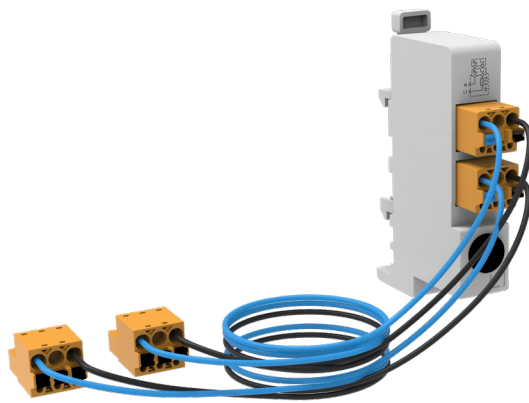
ProAcc ZP-TB

Weight	pounds [grams]	.33 [150]
Packaging Dimensions (HxWxL)		.78 x 2.3 x 9.5" [20 x 60 x 242 mm]
Standard Order Quantity		1 Unit

Accessories

ProAcc ZP-FH

40mm Busbar Fuse Holder



Location of Use: Main Distribution Boards,
N and L1 Busbars of 40mm Busbar
System 12x5mm

Load terminals: L1 protected by fuse link

Compliance: IEC 61984
EN 61984
DIN VDE 0603-1
VDE-AR-N 4100



Technical Data

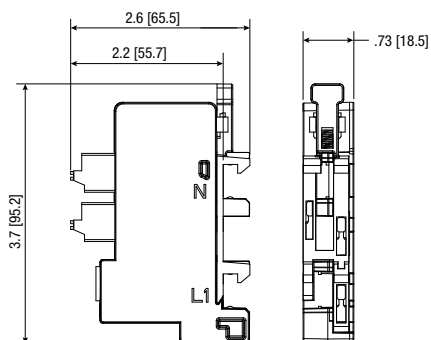
ProAcc ZP-FH (xxx)		1.6 A	6.3 A
IEC Electrical			
Rated Voltage (AC)	U_N	240V	240V
Rated Current	I_N	1.6 A	6.3 A
Rated Impulse Voltage	U_{imp}	4kV	4kV
Short Circuit Interrupt Capability		25kA	25kA
Fuse Link		5 x 20 mm, 1.6 A	5 x 20 mm, 6.3 A

Cable Set Information			
Rated Current	I_N		9.5 A
Rated Isolation Voltage			6kV
Rated Short Circuit Current			25kA
Type of Connection		Load side: Plug BLF 5.08 / Fuse holder side: Plug SLF 5.08	
Connection Cable Length		Modem: 80cm / Gateway: 115cm	
Cable Cross Section		0.82 mm ² (Stranded)	

Mechanical & Environmental			
Operating Temperature Range	T_a	-13 °F to +131 °F [-25 °C to +55 °C]	
Permissible Operating Humidity	RH	5%...95%	
Pollution degree		2	
Altitude (max)		13123 ft [4000m]	
Mounting		N and L1 Busbars	
		40mm Busbar System 12x5mm	
Wire Connection Method		2x Push In Plugs	
Conductor Cross Section (max)		2.5mm ² [12 AWG] (Solid, Flexible)	
Degree Of Protection		IP 00	
		IP20 when installed behind the protective cover	
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0	

Order Information			
Order Code		1.6 A	6.3 A
ProAcc ZP-FH (xxx) (with cable set)		515 A07	515 751

Dimensions & Packaging



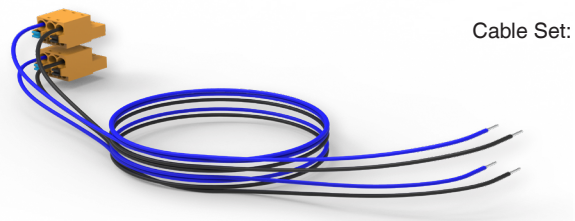
Complete Unit Dimensions & Packaging

ProAcc ZP-FH (xxx)		1.6 A	6.3 A
Weight	pounds [grams]	.30 [136]	.30 [136]
Packaging Dimensions (HxWxL)		3.6 x 1.4 x 4.7" [93 x 38 x 120 mm]	
Standard Order Quantity		1 Unit	

Accessories
ProTec ZPN Cable Set
Product Variants with Integrated Fuse

Location of Use: Power supply for application space (RfZ) - gateway and the termination point for meter space (APZ) - modem

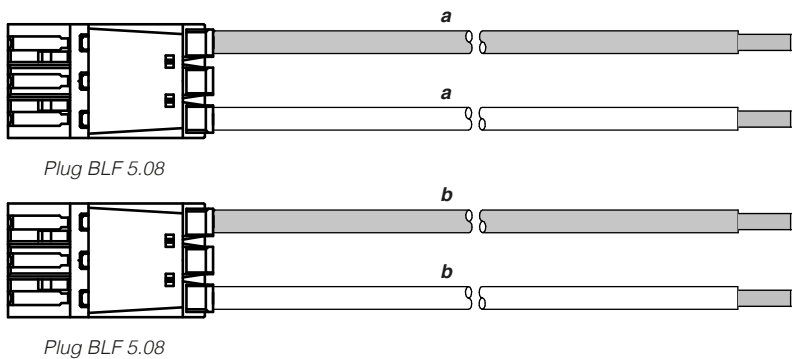
Cable Set: Two BLF 5.08 Plugs
Two pairs of Connection Cables



Technical Data
ProTec ZPN Cable Set

IEC Electrical			
Rated Current			9.5 A
Isolation Voltage			6 kV
Short Circuit Current			25 kA
Mechanical & Environmental			
Operating Temperature Range	T _a		-40 °F to +185 °F [-40 °C to +85 °C]
Type of Connection			Plug BLF 5.08
Cable Length	a - Modem Connection Cable		80 cm
	b - Gateway Connection Cable		115 cm
Cable Cross Section			0.82 mm ² (Stranded)
Order Information			
Order Code			
ProTec ZPN Cable Set			515 793

Product Diagram



- a** Modem Connection, 80 cm
- b** Gateway Connection, 115 cm