

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



Overvoltage Protection with Integrated Fuse

ProTec T2F



Special features:

- Integrated back-up fuse – no external fuse needed
- Reduces design complexity and optimizes installation
- Better overall voltage protection levels due to less wiring
- High discharge capacity - I_{max} up to 40 kA
- Short circuit current rating up to 100 kA
- Type 2 SPD, compliant to IEC 61643-11
- Shock and vibration tested



IEC 61643-11:2011

EN 61643-11:2012 +A11:2018



The pluggable ProTec T2F Type 2 arrester with integrated fuse saves space in the control cabinet and facilitates installation as well as maintenance. The Type 2 ProTec T2F has a protection level of 1,500V, a maximum discharge capacity of 40kA 8/20μs and a rated discharge current of 20kA 8/20μs. Thus, in addition to the proven Raycap ProTec T2 product technology, developed for use in systems with a rated current of up to 315A, without back-up fuse, this product can offer protection that is independent of the installed fuses in equipment in larger factories and industrial plants. By integrating the back-up fuse and eliminating the external fuse holder assembly, the ProTec T2F offers up to 50 percent less space requirement in the control cabinet compared to conventional Type 2 arresters with external back-up fuses. The combined device conforms to standard DIN Rail dimensions, making the overall installation faster and cost-effective.



More Product Information





Location of Use: Sub-Distribution Boards
 Network Systems: TN-S, TN-C, TT (only L-N), IT* (only 440 V)
 Mode of Protection: L-PE, N-PE (only TN-S), L-PEN, L-N
 IEC/EN Category: Class II+III / Type 2+3
 Housing: Pluggable Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012+A11:2018



Technical Data

ProTec T2F-xxx-1+0(-R)

		300	440
IEC Electrical			
Nominal AC Voltage (50/60Hz)	U_o/U_n	240V	240V
Maximum Continuous Operating Voltage (AC)	U_c	300V	440V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA	15 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	40 kA	30 kA
Open Circuit Voltage of Combination Wave Generator (1.2/50 μ s)	U_{oc}	6 kV	6 kV
Short Circuit Current of Combination Wave Generator (8/20 μ s)	I_{cw}	3 kA	3 kA
Voltage Protection Level	U_p	1500V	2000V
Response Time	t_A	< 25ns	< 25ns
Overvoltage Category		III	III
Overcurrent Protection		Not Required	Not Required
Short-Circuit Current Rating (AC)	I_{SCCR}	100 kA	100 kA
TOV Withstand 5s	U_T	337V	580V
TOV 120min	U_T	442V	630V
	mode	Safe Fail	Safe Fail
Number of Ports		1	

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

Residual Voltage at 5 kA (8/20 μ s)	U_{res}	1150V	1500V
Overcurrent Protection (min)		Not Required	Not Required

Additional Electrical Parameters - Extended (Additionally tested by VDE)

Short-Circuit Current Rating (AC)	I_{SCCR}	100 kA	100 kA
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Mechanical & Environmental

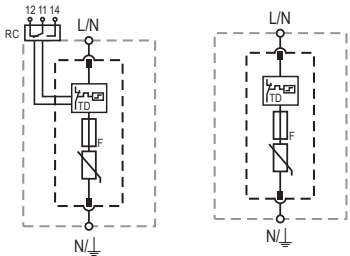
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]	
Permissible Operating Humidity	RH	5%...95%	
Pollution Degree		2	
Altitude (max)		13123 ft [4000m]	
Terminal Screw Torque	M_{max}	40 lbf-in [4.5 Nm]	
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)	
		35 mm ² (Solid, Stranded) / 25 mm ² (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 ² (Solid)	
Overvoltage Category		III	

*Only applicable to IT power systems where the earth on the distribution transformer is interconnected with the earth on the consumer side (RE=RA in Figure 44.A1 of IEC 60364-4-44:2018).

Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect
- F Integrated Surge Adapted Backup Fuse

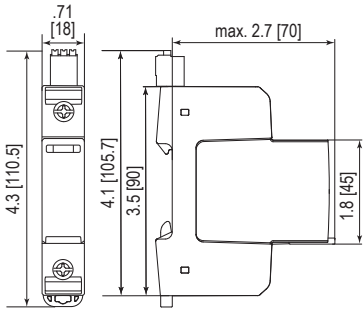


ProTec T2F-xxx-1+0(-R)

Order Information		
Order Code	300	440
ProTec T2F-xxx-1+0	59.A250	59.A942
ProTec T2F-xxx-1+0-R (with remote contacts)	59.A251	59.A943
ProTec T2F-xxx-P (plug)	59.A258	59.A950

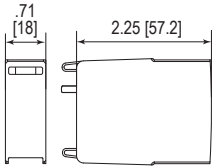
Dimensions & Packaging

inches [mm]



Complete Unit		
ProTec T2F-xxx-1+0	300	440
Weight	pounds	.320
	grams	145
ProTec T2F-xxx-1+0-R		
Weight	pounds	.342
	grams	155
DIN 43880 Dimension	1 TE / .71" [18mm]	
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352mm]	
Standard Order Quantity	12 Units	

Spare Plug



Single Unit		
ProTec T2F-xxx-P	300	440
Weight	pounds	.152
	grams	69
DIN 43880 Dimension	1 TE / .71" [18mm]	
Packaging Dimensions (HxWxL)	3.2 x 4.5 x 12" [83 x 116 x 305mm]	
Standard Order Quantity	24 Units	



Location of Use: Sub-Distribution Boards
 Network Systems: TN-S, IT*(only 440V)
 Mode of Protection: L-PE, N-PE
 IEC/EN Category: Class II+III / Type 2+3
 Housing: Pluggable Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012+A11:2018

**Technical Data****ProTec T2F-xxx-2+0(-R)**

		300	440
IEC Electrical			
Nominal AC Voltage (50/60Hz)	U_o/U_n	240V	240V
Maximum Continuous Operating Voltage (AC)	U_c	300V	440V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA	15 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	40 kA	30 kA
Open Circuit Voltage of Combination Wave Generator (1.2/50 μ s)	U_{oc}	6 kV	6 kV
Short Circuit Current of Combination Wave Generator (8/20 μ s)	I_{cw}	3 kA	3 kA
Voltage Protection Level	U_p	1500V	2000V
Response Time	t_A	< 25ns	< 25ns
Overvoltage Category		III	III
Overcurrent Protection		Not Required	Not Required
Short-Circuit Current Rating (AC)	I_{SCCR}	100 kA	100 kA
TOV Withstand 5s	U_T	337V	580V
TOV 120min	U_T	442V	630V
	mode	Safe Fail	Safe Fail
Number of Ports		1	

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

Residual Voltage at 5 kA (8/20 μ s)	U_{res}	1150V	1500V
Overcurrent Protection (min)		Not Required	Not Required

Additional Electrical Parameters - Extended (Additionally tested by VDE)

Short-Circuit Current Rating (AC)	I_{SCCR}	100 kA	100 kA
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Mechanical & Environmental

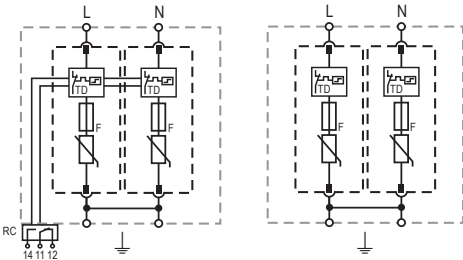
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]	
Permissible Operating Humidity	RH	5%...95%	
Pollution Degree		2	
Altitude (max)		13123 ft [4000m]	
Terminal Screw Torque	M_{max}	40 lbf-in [4.5 Nm]	
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)	
		35 mm ² (Solid, Stranded) / 25 mm ² (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 ² (Solid)	
Overvoltage Category		III	

*Only applicable to IT power systems where the earth on the distribution transformer is interconnected with the earth on the consumer side (RE=RA in Figure 44.A1 of IEC 60364-4-44:2018).

Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter
- F Integrated Surge Adapted Backup Fuse

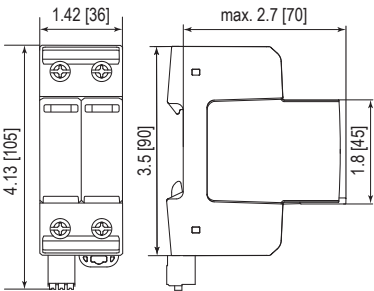


ProTec T2F-xxx-2+0(-R)

Order Information			
Order Code	300	440	
ProTec T2F-xxx-2+0	59.A252	59.A944	
ProTec T2F-xxx-2+0-R (with remote contacts)	59.A253	59.A945	
ProTec T2F-xxx-P (plug)	59.A258	59.A950	

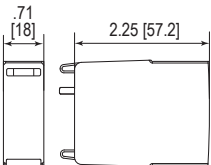
Dimensions & Packaging

inches [mm]



Complete Unit			
ProTec T2F-xxx-2+0	300	440	
Weight	pounds	.591	.606
	grams	268	275
ProTec T2F-xxx-2+0-R			
Weight	pounds	.613	.628
	grams	278	285
DIN 43880 Dimension	2 TE / 1.42" [36mm]		
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352mm]		
Standard Order Quantity	7 Units		

Spare Plug



Single Unit			
ProTec T2F-xxx-P	300	440	
Weight	pounds	.152	.167
	grams	69	76
DIN 43880 Dimension	1 TE / .71" [18mm]		
Packaging Dimensions (HxWxL)	3.2 x 4.5 x 12" [83 x 116 x 305mm]		
Standard Order Quantity	24 Units		



Location of Use: Sub-Distribution Boards
 Network Systems: TN-C, IT* (only 440 V)
 Mode of Protection: L-PEN
 IEC/EN Category: Class II+III / Type 2+3
 Housing: Pluggable Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012+A11:2018

**Technical Data****ProTec T2F-xxx-3+0(-R)**

		300	440
IEC Electrical			
Nominal AC Voltage (50/60Hz)	U_o/U_n	240V	240V
Maximum Continuous Operating Voltage (AC)	U_c	300V	440V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA	15 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	40 kA	30 kA
Open Circuit Voltage of Combination Wave Generator (1.2/50 μ s)	U_{oc}	6 kV	6 kV
Short Circuit Current of Combination Wave Generator (8/20 μ s)	I_{cw}	3 kA	3 kA
Voltage Protection Level	U_p	1500V	2000V
Response Time	t_A	< 25ns	< 25ns
Overvoltage Category		III	III
Overcurrent Protection		Not Required	Not Required
Short-Circuit Current Rating (AC)	I_{SCCR}	100 kA	100 kA
TOV Withstand 5s	U_T	337V	580V
TOV 120min	U_T	442V	630V
	mode	Safe Fail	Safe Fail
Number of Ports		1	

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

Residual Voltage at 5 kA (8/20 μ s)	U_{res}	1150V	1500V
Overcurrent Protection (min)		Not Required	Not Required

Additional Electrical Parameters - Extended (Additionally tested by VDE)

Short-Circuit Current Rating (AC)	I_{SCCR}	100 kA	100 kA
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Mechanical & Environmental

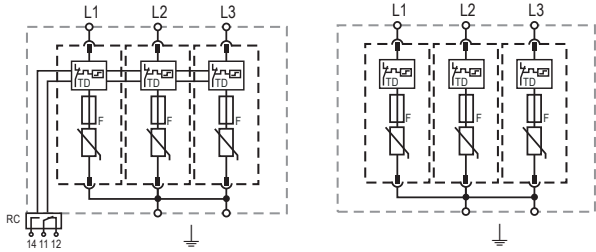
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]	
Permissible Operating Humidity	RH	5%...95%	
Pollution Degree		2	
Altitude (max)		13123 ft [4000m]	
Terminal Screw Torque	M_{max}	40 lbf-in [4.5 Nm]	
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)	
		35 mm ² (Solid, Stranded) / 25 mm ² (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 ² (Solid)	
Overvoltage Category		III	

*Only applicable to IT power systems where the earth on the distribution transformer is interconnected with the earth on the consumer side (RE=RA in Figure 44.A1 of IEC 60364-4-44:2018).

Internal Configuration

Legend

- L Line Conductor Terminal
- PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter
- F Integrated Surge Adapted Backup Fuse



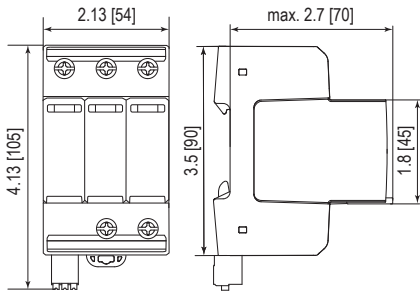
ProTec T2F-xxx-3+0(-R)

Order Information

Order Code	300	440
ProTec T2F-xxx-3+0	59.A254	59.A946
ProTec T2F-xxx-3+0-R (with remote contacts)	59.A255	59.A947
ProTec T2F-xxx-P (plug)	59.A258	59.A950

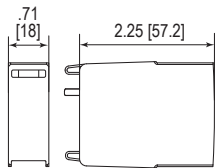
Dimensions & Packaging

inches [mm]



Complete Unit			
ProTec T2F-xxx-3+0		300	440
Weight	pounds	.875	.890
	grams	397	404
ProTec T2F-xxx-3+0-R			
Weight	pounds	.897	.912
	grams	407	414
DIN 43880 Dimension	3 TE / 2.13" [54mm]		
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352mm]		
Standard Order Quantity	5 Units		

Spare Plug



Single Unit Dimensions & Packaging			
ProTec T2F-xxx-P		300	440
Weight	pounds	.152	.167
	grams	69	76
DIN 43880 Dimension	1 TE / .71" [18mm]		
Packaging Dimensions (HxWxL)	3.2 x 4.5 x 12" [83 x 116 x 305mm]		
Standard Order Quantity	24 Units		



Location of Use: Sub-Distribution Boards
 Network Systems: TN-S, IT*(only 440V)
 Mode of Protection: L-PE, N-PE
 IEC/EN Category: Class II+III / Type 2+3
 Housing: Pluggable Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012+A11:2018

**Technical Data****ProTec T2F-xxx-4+0(-R)**

		300	440
IEC Electrical			
Nominal AC Voltage (50/60Hz)	U_o/U_n	240V	240V
Maximum Continuous Operating Voltage (AC)	U_c	300V	440V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA	15 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	40 kA	30 kA
Open Circuit Voltage of Combination Wave Generator (1.2/50 μ s)	U_{oc}	6 kV	6 kV
Short Circuit Current of Combination Wave Generator (8/20 μ s)	I_{cw}	3 kA	3 kA
Voltage Protection Level	U_p	1500V	2000V
Response Time	t_A	< 25ns	< 25ns
Overvoltage Category		III	III
Overcurrent Protection		Not Required	Not Required
Short-Circuit Current Rating (AC)	I_{SCCR}	100 kA	100 kA
TOV Withstand 5s	U_T	337V	580V
TOV 120min	U_T	442V	630V
	mode	Safe Fail	Safe Fail
Number of Ports		1	

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

Residual Voltage at 5 kA (8/20 μ s)	U_{res}	1150V	1500V
Overcurrent Protection (min)		Not Required	Not Required

Additional Electrical Parameters - Extended (Additionally tested by VDE)

Short-Circuit Current Rating (AC)	I_{SCCR}	100 kA	100 kA
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Mechanical & Environmental

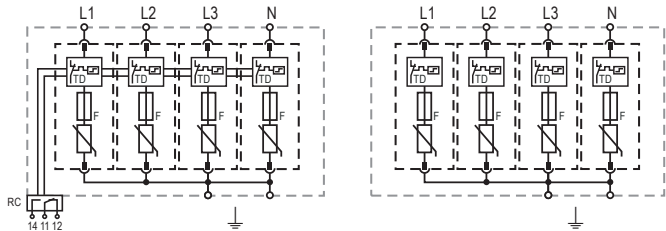
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]	
Permissible Operating Humidity	RH	5%...95%	
Pollution Degree		2	
Altitude (max)		13123 ft [4000m]	
Terminal Screw Torque	M_{max}	40 lbf-in [4.5 Nm]	
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35 mm ² (Solid, Stranded) / 25 mm ² (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 ² (Solid)	
Overvoltage Category		III	

*Only applicable to IT power systems where the earth on the distribution transformer is interconnected with the earth on the consumer side
 (RE=RA in Figure 44.A1 of IEC 60364-4-44:2018).

Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter
- F Integrated Surge Adapted Backup Fuse

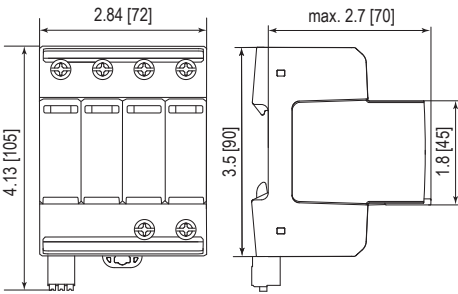


ProTec T2F-xxx-4+0(-R)

Order Information

Order Code	300	440
ProTec T2F-xxx-4+0	59.A256	59.A948
ProTec T2F-xxx-4+0-R (with remote contacts)	59.A257	59.A949
ProTec T2F-xxx-P (plug)	59.A258	59.A950

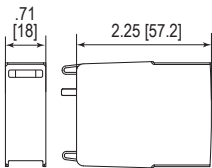
Dimensions & Packaging



inches [mm]

Complete Unit			
ProTec T2F-xxx-4+0		300	440
Weight	pounds	1.056	1.071
	grams	479	486
ProTec T2F-xxx-4+0-R			
Weight	pounds	1.078	1.093
	grams	489	496
DIN 43880 Dimension		4 TE / 2.84" [72 mm]	
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]	
Standard Order Quantity		4 Units	

Spare Plug



Single Unit Dimensions & Packaging			
ProTec T2F-xxx-P		300	440
Weight	pounds	.152	.167
	grams	69	76
DIN 43880 Dimension		1 TE / .71" [18 mm]	
Packaging Dimensions (HxWxL)		3.2 x 4.5 x 12" [83 x 116 x 305 mm]	
Standard Order Quantity		24 Units	



Location of Use: Sub-Distribution Boards
 Network Systems: TT, TN-S
 Mode of Protection: L-N, N-PE
 IEC/EN Category: Class II+III / Type 2+3
 Housing: Pluggable Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012+A11:2018

**Technical Data****ProTec T2F-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) 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 / 40 kA
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}	40 kA / 65 kA
Voltage Protection Level	(L-N)/(N-PE) U_p	1500 V / 1500 V
Open Circuit Voltage of Combination Wave Generator (1.2/50 μ s)	(L-N)/(N-PE) U_{oc}	6 kV / 6 kV
Short Circuit Current of Combination Wave Generator (8/20 μ s)	(L-N)/(N-PE) I_{cw}	3 kA / 3 kA
Follow Current Interrupt Rating	(N-PE) I_{fi}	100 A
Response Time	(L-N)/(N-PE) t_A	< 25 ns / < 100 ns
Overvoltage Category		III
Overcurrent Protection		Not Required
Short-Circuit Current Rating (AC)	(L-N) I_{SCCR}	100 kA
TOV Withstand 5s	(L-N) U_T	337 V
TOV 120min	(L-N) U_T	442 V
	mode	Safe Fail
TOV Withstand 200ms	(N-PE) U_T	1200 V
Number of Ports		1

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

Residual Voltage at 5 kA (8/20 μ s)	U_{res}	1150 V
Overcurrent Protection (min)		Not Required

Additional Electrical Parameters - Extended (Additionally tested by VDE)

Short-Circuit Current Rating (AC)	I_{SCCR}	100 kA
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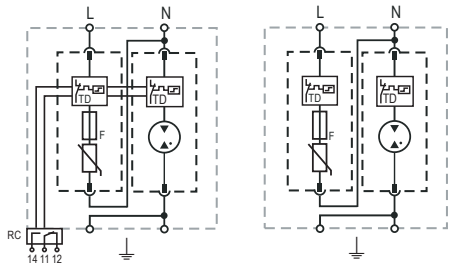
Mechanical & Environmental

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}	40 lbf-in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible) 35 mm ² (Solid, Stranded) / 25 mm ² (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 ² (Solid)
Overvoltage Category		III

Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect
- F Integrated Surge Adapted Backup Fuse

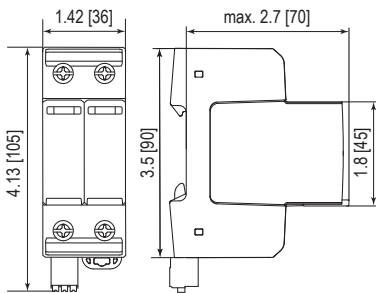


ProTec T2F-xxx-1+1(-R)

Order Information	
Order Code	300
ProTec T2F-xxx-1+1	59.A259
ProTec T2F-xxx-1+1-R (with remote contacts)	59.A260
ProTec T2F-xxx-P (plug L-N)	59.A258
ProTube T2F-40-P (plug N-PE)	59.A271

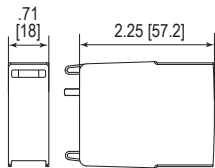
Dimensions & Packaging

inches [mm]



Complete Unit	
ProTec T2F-xxx-1+1	300
Weight	pounds .565
	grams 256
ProTec T2F-xxx-1+1-R	
Weight	pounds .586
	grams 266
DIN 43880 Dimension	2 TE / 1.42" [36mm]
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352mm]
Standard Order Quantity	7 Units

Spare Plug



Single Unit Dimensions & Packaging	
ProTec T2F-xxx-P	300
Weight	pounds .152
	grams 69
ProTube T2F-40-P	40
Weight	pounds .093
	grams 42
DIN 43880 Dimension	1 TE / .71" [18mm]
Packaging Dimensions (HxWxL)	3.2 x 4.5 x 12" [83 x 116 x 305mm]
Standard Order Quantity	24 Units



Location of Use: Sub-Distribution Boards
 Network Systems: TT, TN-S
 Mode of Protection: L-N, N-PE
 IEC/EN Category: Class II+III / Type 2+3
 Housing: Pluggable Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012+A11:2018

**Technical Data****ProTec T2F-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 / 40 kA
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}	40 kA / 65 kA
Voltage Protection Level	(L-N)/(N-PE) U_p	1500 V / 1500 V
Open Circuit Voltage of Combination Wave Generator (1.2/50 μ s)	(L-N)/(N-PE) U_{oc}	6 kV / 6 kV
Short Circuit Current of Combination Wave Generator (8/20 μ s)	(L-N)/(N-PE) I_{cw}	3 kA / 3 kA
Follow Current Interrupt Rating	(N-PE) I_{fi}	100 A
Response Time	(L-N)/(N-PE) t_A	< 25 ns / < 100 ns
Overvoltage Category		III
Overcurrent Protection		Not Required
Short-Circuit Current Rating (AC)	(L-N) I_{SCCR}	100 kA
TOV Withstand 5s	(L-N) U_T	337 V
TOV 120min	(L-N) U_T	442 V
	mode	Safe Fail
TOV Withstand 200ms	(N-PE) U_T	1200 V
Number of Ports		1

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

Residual Voltage at 5 kA (8/20 μ s)	U_{res}	1150 V
Overcurrent Protection (min)		Not Required

Additional Electrical Parameters - Extended (Additionally tested by VDE)

Short-Circuit Current Rating (AC)	I_{SCCR}	100 kA
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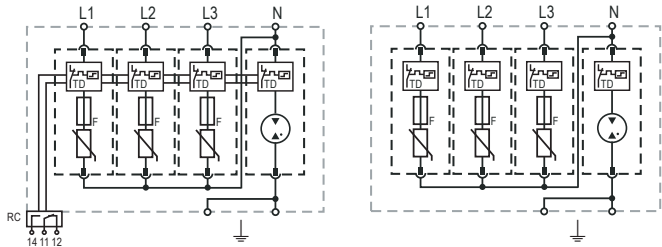
Mechanical & Environmental

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}	40 lbf-in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
		35 mm ² (Solid, Stranded) / 25 mm ² (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 ² (Solid)
Overvoltage Category		III

Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter
- F Integrated Surge Adapted Backup Fuse

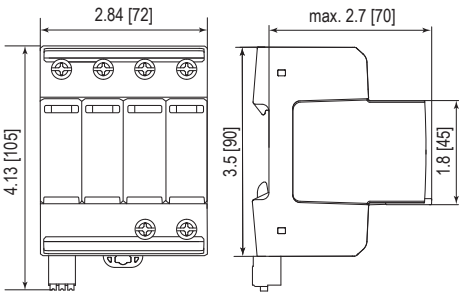


ProTec T2F-xxx-3+1(-R)

Order Information

Order Code	300
ProTec T2F-xxx-3+1	59.A261
ProTec T2F-xxx-3+1-R (with remote contacts)	59.A262
ProTec T2F-xxx-P (plug L-N)	59.A258
ProTube T2F-40-P (plug N-PE)	59.A271

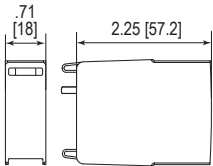
Dimensions & Packaging



inches [mm]

Complete Unit	
ProTec T2F-xxx-3+1	300
Weight	pounds 1.032
	grams 468
ProTec T2F-xxx-3+1-R	
Weight	pounds 1.054
	grams 478
DIN 43880 Dimension	4 TE / 2.84" [72mm]
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352mm]
Standard Order Quantity	4 Units

Spare Plug



Single Unit Dimensions & Packaging	
ProTec T2F-xxx-P	300
Weight	pounds .152
	grams 69
ProTube T2F-40-P	40
Weight	pounds .093
	grams 42
DIN 43880 Dimension	1 TE / .71" [18mm]
Packaging Dimensions (HxWxL)	3.2 x 4.5 x 12" [83 x 116 x 305mm]
Standard Order Quantity	24 Units

Notes

A large grid of graph paper for taking notes. The grid consists of 20 columns and 30 rows of small squares, providing a structured area for writing or drawing.