Pluggable Multi-pole Surge Protective Devices (SPDs)

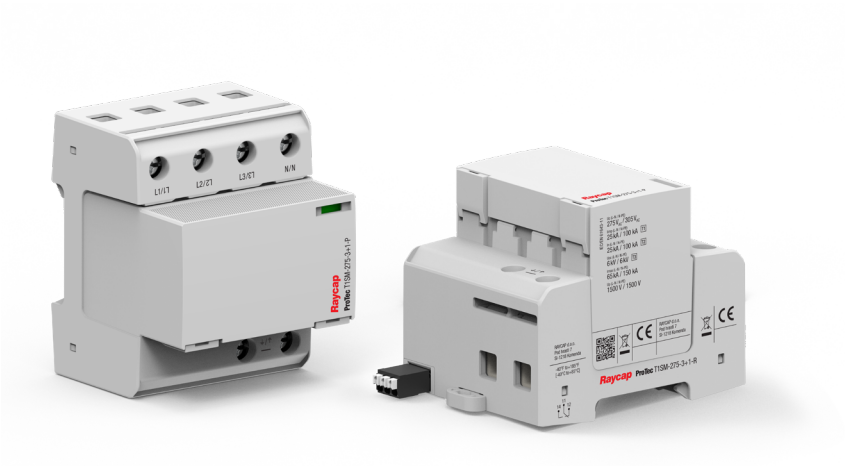
Overvoltage Protection (PGDT Technology)

ProTec T1SM 25 kA Series

LEAKAGE CURRENT FREE

Special features:

- High discharge capacity – I_{imp} 25kA – for LPL I applications
- Type 1 + 2 + 3 rated SPD for protecting sensitive loads
- Space optimized 4TE (72 mm) wide and 70 mm deep form factor, conforming to DIN 43880 size 2
- Single replaceable plug for easy maintenance
- Universal energy coordination



IEC 61643-11:2025	EN IEC 61643-11:2025
✓	✓

Raycap's ProTec T1SM product series is the next generation of the unique Phase-GDT (PGDT) technology, utilizing a breakthrough multi-cell, encapsulated gas discharge tube (GDT) technology. The ProTec T1SM delivers a high surge capacity of I_{imp} 25 kA, making it suitable for protection of the most critical applications and at the same time providing the best voltage protection levels at low level impulses. PGDT follow current limitation capabilities ensure the SPD can work in any network, without risk of nuissance tripping due to SPD operation. Surge performance of PGDT technology enables the SPD to be narrower (1TE per pole instead of 2TE per pole) and lower – only 70 mm from DIN rail, further reducing space requirements and allowing high-performance SPDs to be implemented in even the smallest applications.

More Product Information

RoHS COMPLIANT CE

DATASHEET

Lightning and Overvoltage Protection

ProTec T1SM 3+0

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

25 kA Series



Location of Use: Main Distribution Boards
Network Systems: TN-C
Mode of Protection: L-PEN
IEC/EN Category: Class I+II+III/Type 1+2+3
Housing: Pluggable Design
Compliance: IEC 61643-11:2025
EN IEC 61643-11:2025

CE RoHS COMPLIANT

Technical Data

ProTec T1SM-xxx-3+0(-R)		275
IEC Electrical		
Nominal AC Voltage (50/60 Hz)	U_o/U_n	240 V
Maximum Continuous Operating Voltage (AC)	U_c	275 V
Nominal Discharge Current (8/20 µs)	I_n	25 kA
Maximum Discharge Current (8/20 µs)	I_{max}	65 kA
Impulse Discharge Current (10/350 µs)	I_{imp}	25 kA
Specific Energy	W/R	156.2 kJ/Ω
Charge	Q	12.5 As
Open Circuit Voltage of Combination Wave Generator (1.2/50 µs)	U_{oc}	6 kV
Short Circuit Current of Combination Wave Generator (8/20µs)	I_{cw}	3 kA
Voltage Protection Level	U_p	1500 V
Response Time	t_A	< 100 ns
Overvoltage Category		III
Overcurrent Protection (max)		315 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	50 kA
Follow Current Interrupt Rating (AC)	I_{fi}	50 kA
TOV Withstand 120 min	U_T	442 V
Number of Ports		1
Additional Electrical Parameters *(Tests performed within Raycap testing laboratory only)*		
Residual Voltage at 5 kA (8/20 µs)	U_{res}	1200 V
Minimum Overcurrent Protection, if required		250 A gG
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}	40 lbf·in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded)/4 AWG (Flexible)
		35 mm² (Solid, Stranded)/25 mm² (Flexible)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20 (built-in)
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: 250 V/0.5 A, 125 V/0.1 A; DC: 48 V/0.5 A, 24 V/0.5 A, 12 V/0.5 A
RC Conductor Cross Section (max)		16 AWG (Solid)/1.5 mm² (Solid)
Overvoltage Category		III

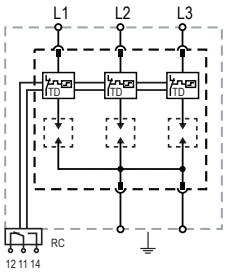
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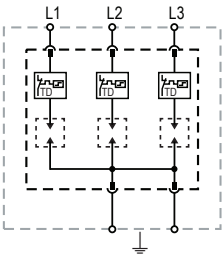
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Internal Configuration

Legend

L *Line Conductor Terminal*
⏚ *PEN Conductor Terminal*
RC *Remote Contacts Terminal (Optional)*
TD *Thermal Disconnector*

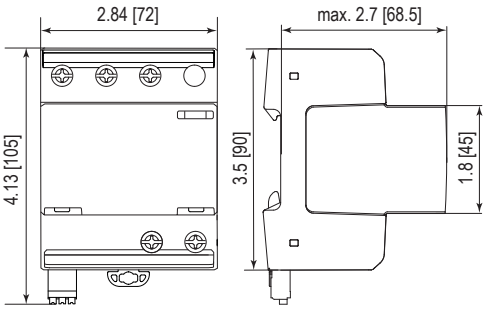




Order Information	
Order Code	**275**
ProTec T1SM-xxx-3+0	59.D133
ProTec T1SM-xxx-3+0-R (with remote contacts)	59.D134
ProTec T1SM-xxx-3+0-P (plug)	59.D139

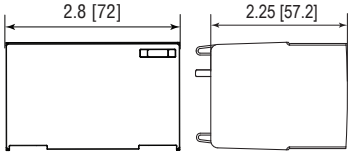
Dimensions & Packaging

inches [mm]



Complete Unit		
ProTec T1SM-xxx-3+0		**275**
Weight	pounds [grams]	.930 [422]
ProTec T1SM-xxx-3+0-R		
Weight	pounds [grams]	.942 [427]
DIN 43880 Dimension		4 TE/2.84 [72 mm]
Packaging Dimensions (H x W x L)		4.3 × 4.5 × 13.8" [109 × 115 × 352 mm]
Standard Order Quantity		4 Units

Spare Plug



Single Unit		
ProTec T1SM-xxx-3+0-P		**275**
Weight	pounds [grams]	.399 [180]
DIN 43880 Dimension		4 TE/2.84 [72 mm]
Packaging Dimensions (H x W x L)		3.1 × 4.5 × 12" [80 × 115 × 305 mm]
Standard Order Quantity		7 Units

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DATASHEET

Lightning and Overvoltage Protection

ProTec T1SM 4+0

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

25 kA Series



Location of Use: Main Distribution Boards
Network Systems: TN-S
Mode of Protection: L-PE, N-PE
IEC/EN Category: Class I+II+III/Type 1+2+3
Housing: Pluggable Design
Compliance: IEC 61643-11:2025
EN IEC 61643-11:2025

CE RoHS COMPLIANT

Technical Data

ProTec T1SM-xxx-4+0(-R)			275
IEC Electrical			
Nominal AC Voltage (50/60 Hz)		U_o/U_n	240 V
Maximum Continuous Operating Voltage (AC)		U_c	275 V
Nominal Discharge Current (8/20 µs)		I_n	25 kA
Maximum Discharge Current (8/20 µs)		I_{max}	65 kA
Impulse Discharge Current (10/350 µs)		I_{imp}	25 kA
Specific Energy		W/R	156.2 kJ/Ω
Charge		Q	12.5 As
Open Circuit Voltage of Combination Wave Generator (1.2/50 µs)		U_{oc}	6 kV
Short Circuit Current of Combination Wave Generator (8/20µs)		I_{cw}	3 kA
Voltage Protection Level		U_p	1500 V
Response Time		t_A	< 100 ns
Overvoltage Category			III
Overcurrent Protection (max)			315 A gG
Short-Circuit Current Rating (AC)		I_{SCCR}	50 kA
Follow Current Interrupt Rating (AC)	(L-PE)/(N-PE)	I_{fi}	50 kA/100 A
TOV Withstand 120 min	(L-PE)	U_T	442 V
Number of Ports			1
Additional Electrical Parameters *(Tests performed within Raycap testing laboratory only)*			
Residual Voltage at 5 kA (8/20 µs)	(L-PE)/(N-PE)	U_{res}	1200 V/275 V
Minimum Overcurrent Protection, if required			250 A gG
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}	40 lbf·in [4.5 Nm]
Conductor Cross Section (max)			2 AWG (Solid, Stranded)/4 AWG (Flexible)
			35 mm² (Solid, Stranded)/25 mm² (Flexible)
Mounting			35 mm DIN Rail, EN 60715
Degree of Protection			IP 20 (built-in)
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: 250 V/0.5 A, 125 V/0.1 A; DC: 48 V/0.5 A, 24 V/0.5 A, 12 V/0.5 A
RC Conductor Cross Section (max)			16 AWG (Solid)/1.5 mm² (Solid)
Overvoltage Category			III

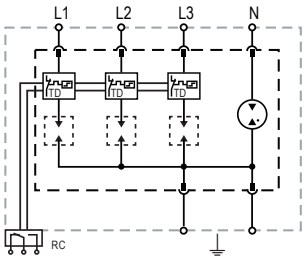
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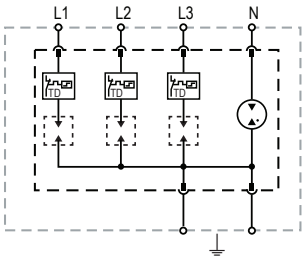
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Internal Configuration

Legend

L	*Line Conductor Terminal*
N	*Neutral Conductor Terminal*
⏚	*PE Conductor Terminal*
RC	*Remote Contacts Terminal (Optional)*
TD	*Thermal Disconnector*

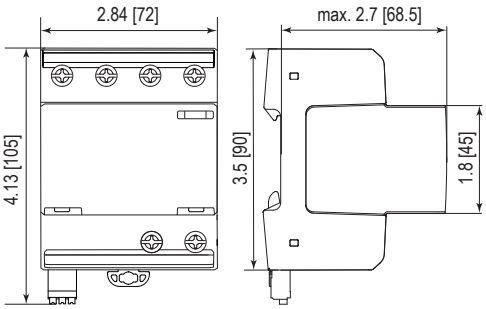




Order Information	
Order Code	**275**
ProTec T1SM-xxx-4+0	59.D135
ProTec T1SM-xxx-4+0-R (with remote contacts)	59.D136
ProTec T1SM-xxx-4+0-P (plug)	59.D140

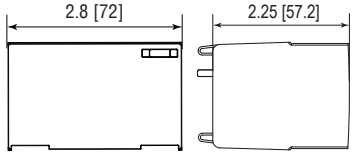
Dimensions & Packaging

inches [mm]



Complete Unit		
ProTec T1SM-xxx-4+0		**275**
Weight	pounds [grams]	.950 [431]
ProTec T1SM-xxx-4+0-R		
Weight	pounds [grams]	.962 [436]
DIN 43880 Dimension		4 TE/2.84 [72 mm]
Packaging Dimensions (H x W x L)		4.3 × 4.5 × 13.8" [109 × 115 × 352 mm]
Standard Order Quantity		4 Units

Spare Plug



Single Unit		
ProTec T1SM-xxx-4+0-P		**275**
Weight	pounds [grams]	.419 [190]
DIN 43880 Dimension		4 TE/2.84 [72 mm]
Packaging Dimensions (H x W x L)		3.1 × 4.5 × 12" [80 × 115 × 305 mm]
Standard Order Quantity		7 Units

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