

TOV Immunity*
5 Year Warranty
Improved Up Level

Increased Discharge Current due to customized High Energy MOV
Discharge Current Capacity (8/20µs) 1 shot 60kA
Discharge Current Capacity (8/20µs) 15 shots 25kA

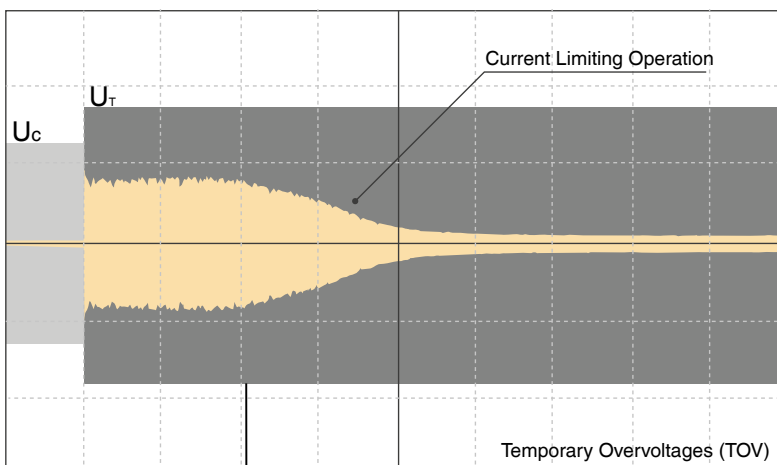
I_{SCCR} up to 100 kA*
Short-Circuit Current Rating (AC)
at 160 A gG Back-up Fuse

**IEC: If Main Fuse ≤ 315 A gG
no Back-up Fuse needed**
UL: No Back-up Fuse needed

Immune to Vibration & Schock
Module Locking Mechanism

** Tests performed within Raycap testing laboratory only.*

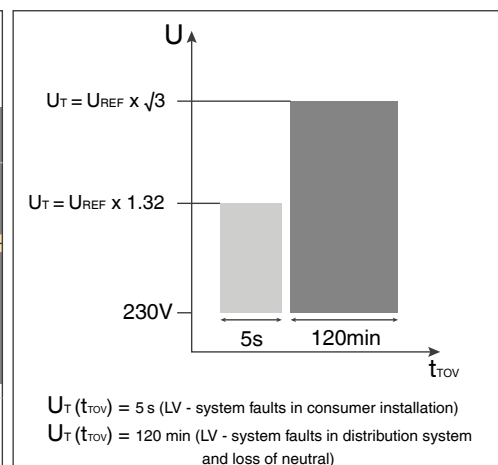
Principle of SafeTec's current limiting function



$U_T = U_{REF} \times \sqrt{3}$ ($U_{REF} = U_N + 10\%$)
An example case: At $U_N = 230V_{AC}$ $U_T = 440V_{AC}$

- U_c - Maximum Continuous Operating Voltage
- U_T - Temporary Overvoltage (TOV)
- IPE - Current Through SPD

TOV Withstand Performance



- SafeTec TC Technology
- Conventional Technology

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



Advanced Pluggable Multi-Pole SPD

SafeTec T2 4+0

Class II • Type 2 • Type 1CA



Location of Use: Sub-distribution Boards
 Network Systems: TN-S
 Mode of Protection: L-PE, N-PE
 Surge Ratings: $I_n = 20 \text{ kA}$ (8/20 μs)
 $I_{max} = \text{up to } 50 \text{ kA}$ (8/20 μs)
 IEC/EN/UL Category: Class II / Type 2 / Type 1CA
 Protective Elements: High Energy MOV in series with GDT and PTC
Safety: Patented Current Limiting Technology (Long Lifetime)
 Housing: Pluggable Design
 Humidity Range: Extended
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012
 UL 1449 4th Edition
 Recognized: UL 1449 4th Edition
 Back-up Fuse: Not needed (acc. to UL 1449 4th Edition)

Technical Data

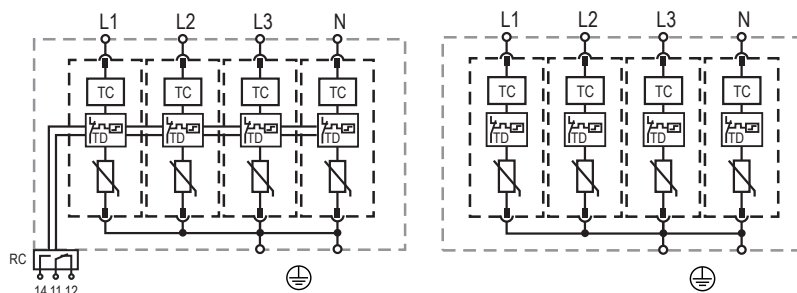
SafeTec T2-xxx-4+0(-R)	150	300	350	480	550	
IEC Electrical						
Nominal AC Voltage (50/60Hz)	U_o/U_n	120 V	240 V	277 V	400 V	400 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	300 V	350 V	480 V	550 V
Nominal Discharge Current (8/20 μs)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA
Maximum Discharge Current (8/20 μs)	I_{max}	50 kA	50 kA	50 kA	50 kA	50 kA
Voltage Protection Level ($I_n = 20 \text{ kA}$)	U_p	1250 V	1650 V	1750 V	2300 V	2500 V
Response Time	t_A	< 25 ns				
Back-Up Fuse (max)/Short-Circuit Current Rating (AC)	I_{SCCR}	315 A gG/25 kA				
Back-Up Fuse (max)/Short-Circuit Current Rating (AC)	I_{SCCR}	250 A gG/50 kA				
TOV Withstand (120min)	U_T	255 V	442 V	529 V	762 V	918 V
Number of Ports		1				
UL Electrical						
Maximum Continuous Operating Voltage (AC)	MCOV	150 V	300 V	350 V	480 V	550 V
Voltage Protection Rating	VPR	700 V	1200 V	1200 V	1500 V	1800 V
Nominal Discharge Current (8/20 μs)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA
Short-Circuit Current Rating (AC)	SCCR	200 kA	150 kA	200 kA	200 kA	200 kA
Additional Electrical Parameters (Tests performed within Raycap testing laboratory only)						
Residual Voltage at 5 kA (8/20 μs)	U_{RES}	750 V	1000 V	1300 V	1600 V	1900 V
Discharge Current Capacity (15 shots; 8/20 μs)		25 kA	25 kA	25 kA	25 kA	25 kA
Discharge Current Capacity (1 shot; 8/20 μs)		60 kA	60 kA	60 kA	60 kA	60 kA
TOV Withstand (300min)	U_T	255 V	442 V	529 V	762 V	918 V
Back-Up Fuse (max)/Short-Circuit Current Rating (AC)	I_{SCCR}	160 A gG/100 kA				
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}	39.9 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/1 A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5 A				
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (Solid)				
Order Information						
Order Code		150	300	350	480	550
SafeTec T2-xxx-4+0		59.0176	59.0178	59.0180	59.0182	59.0184
SafeTec T2-xxx-4+0-R (with remote contacts)		59.0177	59.0179	59.0181	59.0183	59.0185
SafeTec T2-xxx-P		59.0126	59.0127	59.0128	59.0129	59.0299

SafeTec T2 4+0

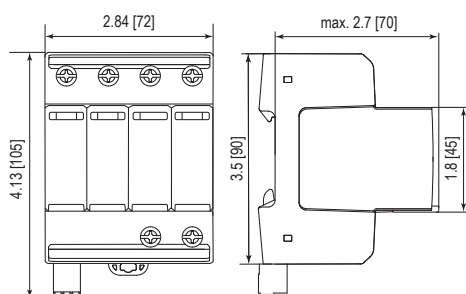
Internal Configuration

Legend

- L Terminal for Line Conductor
- N Terminal for Neutral Conductor
- ⊕ Terminal for PE/G Conductor
- RC Terminal for Remote Contacts (Optional)
- TC Thermal Control (TC) Function
- TD Thermal Disconnecter



Dimensions & Packaging



Dimensions & Packaging

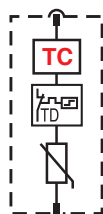
		150	300	350	480	550
Single Unit Weight	pounds	1.085	1.129	1.200	1.226	1.270
	grams	492	512	544	556	576
		150	300	350	480	550
Single Unit Weight	pounds	1.105	1.149	1.220	1.246	1.290
	grams	501	521	553	565	585
Single Unit DIN 43880 Dimension		4 TE				
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]				
Minimum Order Quantity		4 Units				

Plug Internal Configuration

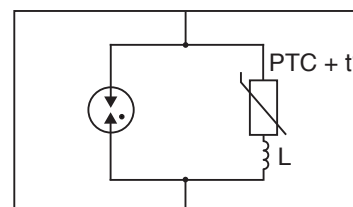
Legend

- TC Thermal Control (TC) Function
- TD Thermal Disconnecter
- PTC + t° Positive Thermal Coefficient Resistor
- L Coil

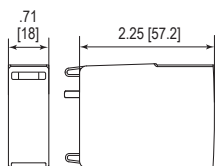
SafeTec T2-xxx-P



Thermal control (TC) schematics



Dimensions & Packaging



Dimensions & Packaging

		150	300	350	480	550
Single Unit Weight	pounds	.133	.144	.161	.168	.179
	grams	60	65	73	76	81
Single Unit DIN 43880 Dimension		1 TE				
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]				
Minimum Order Quantity		28 Units				

inches
[mm]

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