

# Pluggable Multi-Pole SPD for Photovoltaic Systems

## ProTec T1-PV 3+0

Type 1 • Type 2 • Type 1CA



Location of Use: String box, Inverter  
 Mode of Protection: (+)-PE, (-)-PE, (+)-(-)  
 EN/UL Category: Type 1, Type 2 / Type 1CA  
 Housing: Pluggable Design  
 Compliance: EN 50539-11:2013+A1:2014  
 UL 1449 4<sup>th</sup> Edition

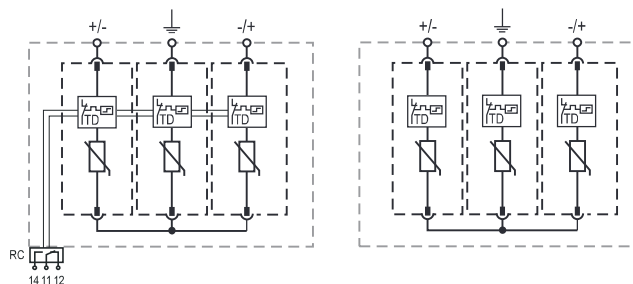
ProTec T1-xxxxPV-3+0(-R)		1100	1500
<b>EN Electrical</b>			
Maximum Continuous Operating Voltage (PV)	$U_{CPV}$	1100 V	1500 V
Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	20 kA	20 kA
Impulse Discharge Current (10/350 $\mu$ s)	$I_{imp}$	6.25 kA	5 kA
Specific Energy	W/R	9.77 kJ/ $\Omega$	6.25 kJ/ $\Omega$
Charge	Q	3.125 As	2.5 As
Total Discharge Current (10/350 $\mu$ s)	$I_{Total}$	12.5 kA	10 kA
Total Discharge Current (8/20 $\mu$ s)	$I_{Total}$	50 kA	40 kA
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$	40 kA	30 kA
Voltage Protection Level	(+)-PE, (-)-PE $U_p$	3800 V	5000 V
	(+)-(-) $U_p$	3800 V	5000 V
Response Time	$t_A$	< 25 ns	
Short-Circuit Current Rating	$I_{SCPV}$	11 kA	
Number of Ports		1	
<b>UL Electrical</b>			
Maximum Permitted DC Voltage	$V_{pVdc}$	1100 V	1500 V
Voltage Protection Rating	(+)-G, (-)-G $V_{PR}$	2500 V	4000 V
	(+)-(-) $V_{PR}$	2500 V	4000 V
Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	20 kA	65 kA
Short-Circuit Current Rating	SCCR	50 kA	65 kA
<b>Mechanical &amp; Environmental</b>			
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 <sup>2</sup> (Solid, Stranded) / 25 mm <sup>2</sup> (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 <sup>2</sup> (Solid)	
<b>Order Information</b>			
Order Code		1100	1500
ProTec T1-xxxxPV-3+0		59.0285	59.0289
ProTec T1-xxxxPV-3+0-R (with remote contacts)		59.0286	59.0290
ProTec T1-550PV-P (middle plug)		59.0283	-
ProTec T1-550PV-M-P (side plug)		59.0284	-
ProTec T1-750PV-P (middle plug)		-	59.0287
ProTec T1-750PV-M-P (side plug)		-	59.0288

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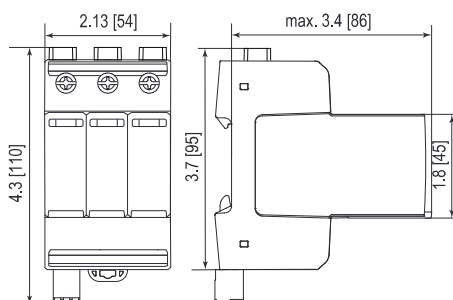
### Internal Configuration

#### Legend

- +/-, -/+ + or - Conductor Terminal
- ⏏ PE/G Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect



### Complete Unit

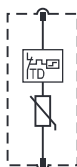


#### Complete Unit Dimensions & Packaging

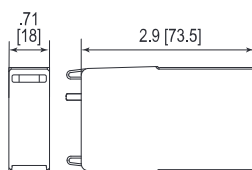
		1100	1500
<b>ProTec T1-xxxxPV-3+0</b>			
Weight	pounds	.968	1.034
	grams	439	469
<b>ProTec T1-xxxxPV-3+0-R</b>			
Weight	pounds	.979	1.045
	grams	444	474
DIN 43880 Dimension		3 TE / 2.13" [54]	
Packaging Dimensions (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]	
Standard Order Quantity		5 Units	

### Plug Internal Configuration

ProTec T1-xxxPV-P  
ProTec T1-xxxPV-M-P



### Spare Plug



#### Single Unit Dimensions & Packaging

		550	750
<b>ProTec T1-xxxPV-P</b>			
Weight	pounds	.220	.282
	grams	100	128
<b>ProTec T1-xxxPV-M-P</b>			
Weight	pounds	.194	.196
	grams	88	89
DIN 43880 Dimension		1 TE / .71" [18]	
Packaging Dimensions (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]	
Standard Order Quantity		28 Units	

inches  
[mm]