

Compact & Pluggable Multi-pole Surge Protective Devices (SPDs) for DC Systems



Lightning and Overvoltage Protection for DC Systems

ProBloc B DC & SafeTec T2 DC



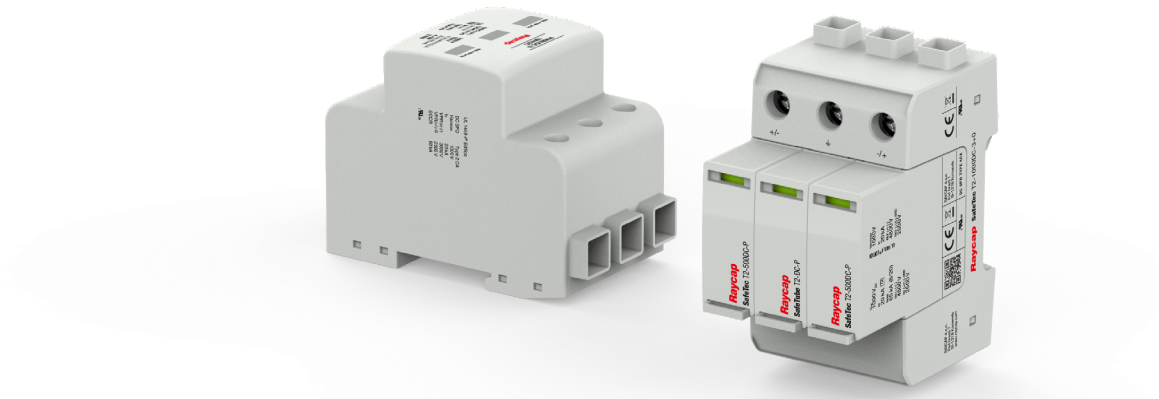
Special features:

ProBloc B DC

- Maximum Continuous Operating DC voltage 1000V
- High Surge Discharge Current (I_{Total}) 12.5kA (10/350)
- Short circuit current rating up to 50kA
- Leakage Free hybrid topology
- High Energy MOV and GDT technology
- Compact design
- Vibration and shock resistant
- UL Type 1CA certified
- Optional remote contact (RC) signaling

SafeTec T2 DC

- Maximum Continuous Operating DC voltage 1000V
- High Surge Discharge Current (I_{Total}) 65kA (8/20)
- High TOV immunity
- Vibration and shock resistant
- UL Type 4CA certified
- Optional remote contact (RC) signaling
- Five year warranty



Compliance

UL 1449 5th Edition

ProBloc B 1000 DC Series



SafeTec T2-1000DC Series



ProBloc B 1000 DC is a UL Type 1CA certified product designed for use to protect a large number of DC sources. Its main features include a compact design and an innovative disconnecting device with a rotating mechanism that can be used to safely extinguish a switching arc. Due to the high self-extinguishing capacity, a prospective short-circuit current of 50kA can be separated, for example as caused by battery storage in e-mobility applications. With this solution, numerous systems in the growing electro mobility market (e-mobility) can be protected.

The SafeTec T2 1000 DC is a UL Type 4CA device specially developed for protecting DC systems with SafeTec TC technology. The thermal control function prolongs lifespan of SPDs, enables TOV immunity and provides low protection level at the same dimensions as other conventional protective devices. The universal features make it suitable to protect electrical devices not only against overvoltages caused by lightning strikes but voltages that originate from the internal system as well. In addition to the mechanical indicator, an optional remote contact (RC) feature offers a three-pole remote signaling terminal to remotely monitor the operating state of the device.

DATA SHEET

Compact Multi-Pole SPD for DC Systems

ProBloc B(R) 1000 DC

Type 1 • Type 2 • Type 1CA



Location of Use: DC Systems, EV Chargers
 Mode of Protection: (+) - PE, (-) - PE, (+) - (-)
 UL Category: Type 1+2 / Type 1CA
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Compact Design
 Safety: Rotary Disconnecter
 Compliance: UL 1449 5th Edition
 EN 50539-11:2013+A1:2014

ProBloc B(R) 1000 DC

1000

EN Electrical

Nominal DC Voltage	U_n	900 V
Maximum Continuous Operating Voltage (DC)	(+) - (-) U_{CD0}/U_{CPV}	1000 V
	(+/-) - PE U_{CD0}/U_{CPV}	750 V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	6.25kA
Specific Energy	W/R	9.77kJ/ Ω
Charge	Q	3.125As
Total Discharge Current (10/350 μ s)	I_{Total}	12.5kA
Total Discharge Current (8/20 μ s)	I_{Total}	65kA
Voltage Protection Level	(+) - (-) U_p	4400 V
	(+/-) - PE U_p	2300 V
Response Time	(+) - (-) t_A	< 25 ns
	(+/-) - PE t_A	< 100 ns
Number of Ports		1

UL Electrical

Maximum Permitted DC Voltage	V_{dcmcov}	1000V
Voltage Protection Rating	(+) - (-) VPR	3000 V
	(+/-) - PE VPR	1800 V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA
Short-Circuit Current Rating	SCCR	50 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 [4000m]
Terminal Screw Torque	M_{max}	26.5 lbf-in [3.0Nm]
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/0.5A; 125V/3A
RC Terminal Cross Section (max)		1.5mm ² (Solid) / 16 AWG (Solid)
RC Terminal Screw Torque	M_{max}	2.2 lbf-in [0.25Nm]

Order Information

Order Code	1000
ProBloc B 1000 DC	56.0670
ProBloc BR 1000 DC*	56.0671

*No UL certification






www.raycap.com

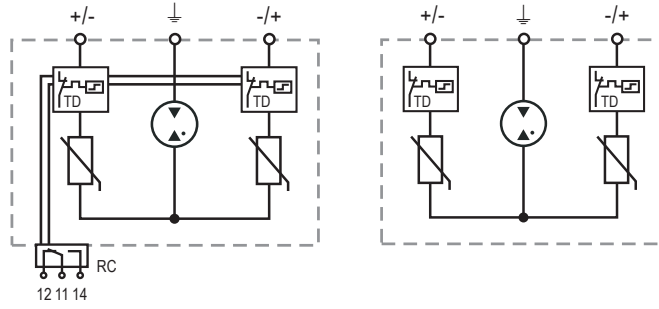
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ProBloc B(R) 1000 DC

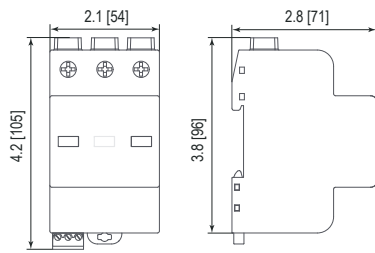
Internal Configuration

Legend

-  PE/G Conductor Terminal
-  TD Thermal Disconnect
-  RC Remote Contacts Terminal (Optional)



Complete Unit



Single Unit Dimensions & Packaging

ProBloc B(R) 1000 DC		1000
Weight	pounds [grams]	.934 [424]
DIN 43880 Dimension		3 TE / 2.13" [54]
Packaging Dimensions (H x W x L)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]
Standard Order Quantity		5 Units

inches
[mm]

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Pluggable Multi-Pole SPD for DC Systems
SafeTec T2-1000DC-3+0(-R)
 Type 2 • Type 4CA



Location of Use: DC Systems, EV Chargers
 Mode of Protection: (+) - GND, (-) - GND, (+) - (-)
 EN/UL Category: Type 2 / Type 4CA
 Technology: Hybrid
 Leakage Current Free: Yes
 Housing: Pluggable Design
 Safety: Current Limiting
 Compliance: UL 1449 5th Edition

Technical Data

SafeTec T2-1000DC-3+0(-R)

1000

EN Electrical

Nominal DC Voltage	U_n	900 V
Maximum Continuous Operating Voltage (DC)	(+) - (-) U_{CDC}	1000 V
	(+/-) - G U_{CDC}	500 V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA
Total Discharge Current	I_{Total}	65 kA
Voltage Protection Level	(+/-) - G U_p	2500 V
	(+) - (-) U_p	4800 V
Response Time	(+/-) - G t_A	< 100 ns
	(+) - (-) t_A	< 25 ns
Number of Ports		1

UL Electrical

Maximum Permitted DC Voltage	V_{dcmcov}	1000 V
Measured Limiting Voltage	(+/-) - G MLV	2470 V
	(+) - (-) MLV	4590 V
Nominal Discharge Current (8/20 μ s)	I_n	20 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 [4000m]
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/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm ² (Solid)





Order Information

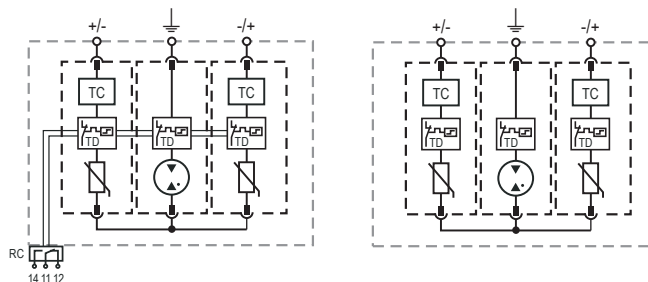
Order Code	1000
SafeTec T2-1000DC-3+0	59.0373
SafeTec T2-1000DC-3+0-R (with remote contacts)	59.0374
SafeTec T2-500DC-P (side plug)	59.0387
SafeTube T2-DC-P (middle plug)	59.0388

SafeTec T2-1000DC-3+0(-R)

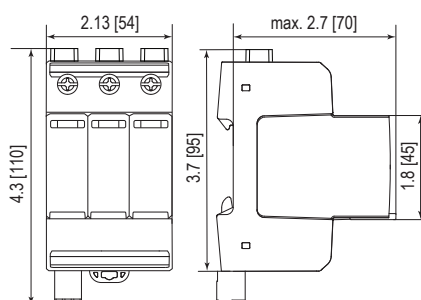
Internal Configuration

Legend

-  PE/G Conductor Terminal
-  Remote Contacts Terminal (Optional)
-  Thermal Control Function
-  Thermal Disconnecter



Complete Unit

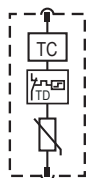


Complete Unit Dimensions & Packaging

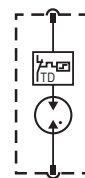
SafeTec T2-1000DC-3+0		1000
Weight	pounds	.853
	grams	387
SafeTec T2-1000DC-3+0-R		
Weight	pounds	.870
	grams	395
DIN 43880 Dimension		3 TE / 2.13" [54]
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Standard Order Quantity		5 Units

Plug Internal Configuration

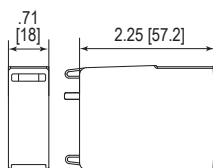
SafeTec T2-xxxDC-P



SafeTube T2-DC-P



Spare Plug



Single Unit Dimensions & Packaging

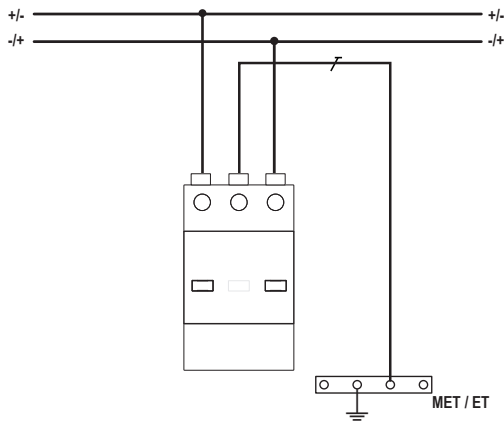
SafeTec T2-xxxDC-P		500
Weight	pounds	.176
	grams	80
SafeTube T2-DC-P		40
Weight	pounds	.093
	grams	42
DIN 43880 Dimension		1 TE / .71" [18]
Packaging Dimensions (HxWxL)		3.2 x 4.5 x 12" [83 x 115 x 305 mm]
Standard Order Quantity		24 Units

inches
[mm]

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ProBloc B(R) 1000 DC



SafeTec T2-1000DC-3+0(-R)

