

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



ProTec CM(R)

Overvoltage waves are slowly increasing at greater frequency, reoccurring and threatening devices. Incidence of low value surges are still too high for electronic elements and are common in the object itself, often caused by activation switching of major appliances, inductive devices and motors, or industrial system operation failures. SPDs in this classification are intended to protect sensitive electronic installations in Zones 2-3 per IEC 62305.

The ProTec CM modular series consist of high performance varistors for each pole and an optional high energy encapsulated gas discharge tube (GDT), separate thermal disconnect mechanisms.

The plug-in module and base design facilitates replacement of a failed module *in situ* without the need to remove system wiring.

Pluggable Multi-pole SPD

ProTec CM(R) 80 (2+0)

Class II • Type 2



Location of Use: Sub-distribution Boards
 Network Systems: TN-S
 Mode of Protection: L-PE, N-PE
 IEC/EN Category: Class II / Type 2
 Housing: Modular Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

ProTec CM(R) 80/xxx (2+0)

275

320

Electrical

		275	320
Nominal AC Voltage (50/60 Hz)	U_o	230V	230V
Maximum Continuous Operating Voltage (AC)	U_c	275V	320V
Nominal Discharge Current (8/20 μ s)	I_n	15 kA	15 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	40 kA	40 kA
Voltage Protection Level	U_p	< 1.5kV	< 1.5kV
Response Time	t_A	< 25 ns	
Overcurrent Protection (max)		63A gG	
Short-Circuit Current Rating	I_{SCCR}	25 kA	
TOV Withstand 5s	U_T	335V	
Number of Ports		1	

Mechanical & Environmental

Temperature Range	T_a	-40 °C to +85 °C	
Permissible Humidity	RH	5%...95%	
Terminal Screw Torque	(L, N) M_{max}	0.5 Nm	
	(PE) M_{max}	3.0 Nm	
Conductor Cross Section	(L, N)	6 mm ² (solid) / 4 mm ² (stranded)	
	(PE)	35 mm ² (solid) / 25 mm ² (stranded)	
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	
Fault Indication		Red Flag	
Remote Contacts (RC)		Optional	
RC Switching Capacity		AC: 250V/0.5A; 125V/3A	
RC Terminal Cross Section (max)		1.5 mm ²	
RC Terminal Screw Torque		0.25 Nm	

Order Information

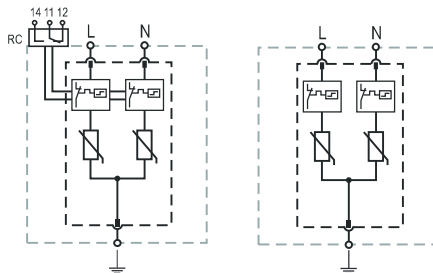
Order Code	275	320
ProTec CM 80/xxx (2+0)	508.315	508.316
ProTec CMR 80/xxx (2+0) (with remote contacts)	508.320	508.321
Plug ProTec CM(R) 80/xxx (2+0)	508.325	508.326

ProTec CM(R) 80 (2+0)

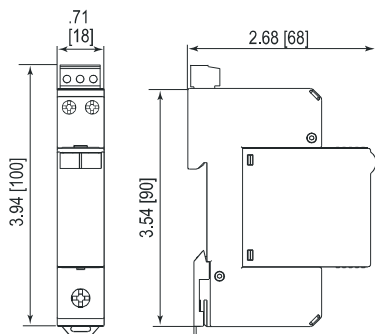
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏚ PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)



Complete Unit

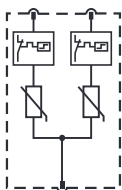


Complete Unit Dimensions & Packaging

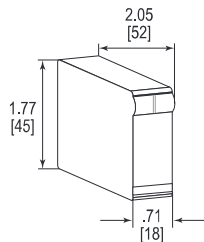
		275	320
ProTec CM 80/xxx (2+0)			
Weight	pounds (grams)	0.317 [144]	0.317 [144]
ProTec CMR 80/xxx (2+0)			
Weight	pounds (grams)	0.328 [149]	0.328 [149]
DIN 43880 Dimension		1 TE / .71" [18 mm]	
Packaging Dimensions (HxWxL)		3.1 x 4.4 x 11.7" [79 x 112 x 298 mm]	
Standard Order Quantity		12 Units	

Plug Internal Configuration

Module ProTec CM(R) 80/xxx (2+0)



Spare Plug



Single Unit Dimensions & Packaging

		275	320
Plug ProTec CM(R) 80/xxx (2+0)			
Weight	pounds (grams)	0.14 [63]	0.17 [79]
DIN 43880 Dimension		1 TE / .71" [18 mm]	
Packaging Dimensions (H x W x L)		3.86 x 3.03 x 4.33" [98 x 77 x 110 mm]	
Minimum Order Quantity		12 Units	

ProTec CM



Applicable connection configurations can be found on page 206.

inches
[mm]

Pluggable Multi-pole SPD ProTec CM(R) 80 (1+1) Class II • Type 2



Location of Use: Sub-distribution Boards
 Network Systems: TT, TN-S
 Mode of Protection: L-N, N-PE
 IEC/EN Category: Class II / Type 2
 Housing: Modular Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012

Technical Data

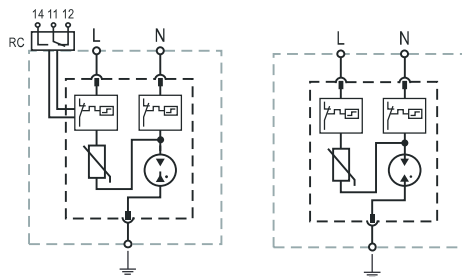
ProTec CM(R) 80/xxx (1+1)		275	320
Electrical			
Nominal AC Voltage (50/60 Hz)	U_o	230V	230V
Maximum Continuous Operating Voltage (AC)	(L-N) U_c	275V	320V
	(N-PE) U_c		255V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_n		15kA/20kA
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE) I_{max}		40kA/35kA
Voltage Protection Level	(L-N) U_p	1.5kV	1.5kV
	(N-PE) U_p	1.75kV	1.75kV
Follow Current Interrupt Rating	(N-PE) I_{fi}		100 A _{RMS}
Response Time	(L-N)/(N-PE) t_A		< 25 ns / < 100 ns
Overcurrent Protection (max)			63A gG
Short-Circuit Current Rating	I_{SCCR}		25kA
TOV Withstand 5s	(L-N) U_T		335V
TOV Safe fail 200ms	(N-PE) U_T		1200V/300A
Number of Ports			1
Mechanical & Environmental			
Temperature Range	T_a		-40 °C to +85 °C
Permissible Humidity	RH		5%...95%
Terminal Screw Torque	(L, N) M_{max}		0.5 Nm
	(PE) M_{max}		3.0 Nm
Conductor Cross Section	(L, N)		6 mm ² (solid) / 4 mm ² (stranded)
	(PE)		35 mm ² (solid) / 25 mm ² (stranded)
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
Fault Indication			Red Flag
Remote Contacts (RC)			Optional
RC Switching Capacity			AC: 250V/0.5A; 125V/3A
RC Terminal Cross Section (max)			1.5 mm ²
RC Terminal Screw Torque			0.25 Nm
Order Information			
Order Code		275	320
ProTec CM 80/xxx (1+1)		508.330	508.331
ProTec CMR 80/xxx (1+1) (with remote contacts)		508.335	508.336
Plug ProTec CM(R) 80/xxx (1+1)		508.340	508.341

ProTec CM(R) 80 (1+1)

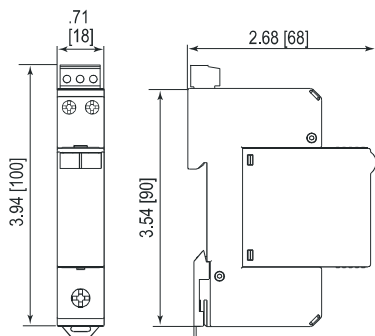
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏚ PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)



Complete Unit

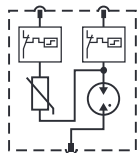


Complete Unit Dimensions & Packaging

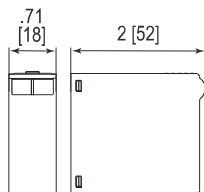
		275	320
ProTec CM 80/xxx (1+1)			
Weight	pounds (grams)	0.28 [126]	0.28 [126]
ProTec CMR 80/xxx (1+1)			
Weight	pounds (grams)	0.29 [131]	0.29 [131]
DIN 43880 Dimension		1 TE / .71" [18 mm]	
Packaging Dimensions (H×W×L)		3.1 × 4.4 × 11.7" [79 × 112 × 298 mm]	
Standard Order Quantity		12 Units	

Plug Internal Configuration

Module ProTec CM(R) 80/xxx (1+1)



Spare Plug



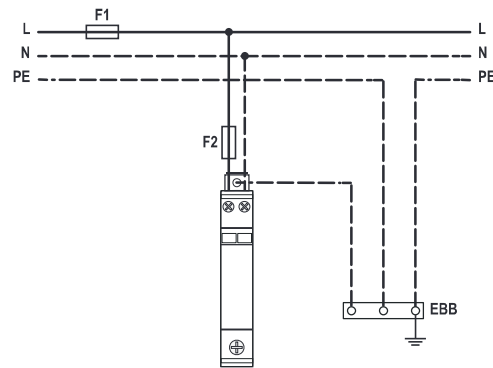
Single Unit Dimensions & Packaging

		275	320
Plug ProTec CM(R) 80/xxx (1+1)			
Weight	pounds (grams)	0.13 [59]	0.13 [59]
Single Unit DIN 43880 Dimension		1 TE / .71" [18 mm]	
Packaging Dimensions (H×W×L)		3.86 × 3.03 × 4.33" [98 × 77 × 110 mm]	
Standard Order Quantity		12 Units	





Pluggable Multi-pole SPD Connection Configurations

ProTec CM(R) Series

TN-S (Single-phase, 2+0)



Overcurrent Protection Rating for I_{SCCR}

-  F1 > 63A gG →  F2 = 63A gG
-  F1 ≤ 63A gG → ~~ F2~~

