

SPD for DC Power Systems  
**Protec DMDR 20 Series**  
 Class III



IEC/EN Category: Class III/Type 3  
 Mode of Protection: L-PE, N-PE, L-N  
 Location of Use: Sub-distribution Boards  
 Protection Element: High Energy MOV and GDT  
 Voltages: 24, 48, 60, 120V AC  
 Surge Discharge Ratings:  $U_{oc}/I_{cw}$  = up to 6kV/3kA  
 $I_{max}$  = up to 4kA (8/20 $\mu$ s)  
 Status Indication: Remote Contacts + LED  
 Enclosure: DIN 43880 1TE, DIN Rail Mount  
 Terminals: Stranded to 6 mm<sup>2</sup>  
 Housing: Modular Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

The Protec DMDR Series has been designed to meet the unique requirements of protection of DC power systems found in Telepower and railway applications.

Protec DMDR Series provides both common and differential mode protection using high nominal discharge rating for extended operating life under DC conditions.

**Technical Data**

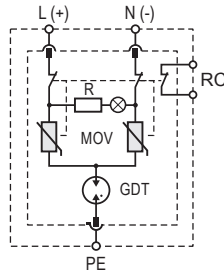
Protec DMDR 20 Series		24	48	60	120	
<b>Electrical</b>						
Nominal AC/DC Voltage	$U_o$	17V/24V	34V/48V	43V/60V	85V/120V	
Maximum Continuous Operating Voltage (AC/DC)	$U_c$	24V/34V	48V/60V	60V/75V	120V/150V	
Open Circuit Voltage of the Combination Wave Generator (1.2/50 $\mu$ s)	$U_{oc}$	2.4kV	2.4kV	6kV	6kV	
Short Circuit Current of the Combination Wave Generator (8/20 $\mu$ s)	$I_{cw}$	1.2kA	1.2kA	3kA	3kA	
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$	2kA	2kA	4kA	4kA	
Voltage Protection Level	(L - N)	$U_p$	< 250V	< 500V	< 600V	< 1100V
	(L - PE)/(N - PE)		< 700V	< 800V	< 850V	< 1200V
Response Time of Overvoltage Protection	(L - N)	$t_A$		< 25 ns		
	(L - PE)/(N - PE)			< 100 ns		
Back-Up Fuse (if mains > 32A)				32 A gG		
Short-Circuit Current Rating (AC)	$I_{SCCR}$			2 kA		
TOV Withstand 5s (AC)	$U_T$	115V	148V	163V	225V	
Number of Ports				1		
<b>Mechanical</b>						
Temperature Range	$T_a$	-40 °F to +158 °F [-40 °C to +70 °C]				
Permissible Humidity	RH	5%...95%				
Terminal Screw Torque	$M_{max}$	4.5 lbf-in [0.5Nm]				
Conductor Cross Section (max.)		10 AWG (Solid, Stranded) / 12 AWG (Flexible)				
		6 mm <sup>2</sup> (Solid, Stranded) / 4 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 Status Indication		Green LED				
<b>Order Information</b>						
Order Code		24	48	60	120	
Protec DMDR 20/xxx		510 783	510 833	510 834	510 835	
Protec DMDR 20/xxxM (module)		510 784	510 836	510 837	510 838	

# Protec DMDR 20 Series

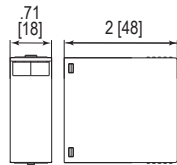
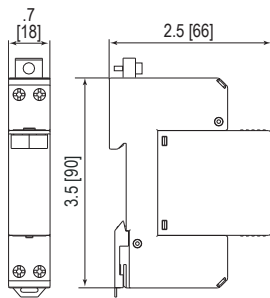
## Internal Configuration

### Legend

- GDT Gas Discharge Tube
- MOV Metal Oxide Varistor
- PE Ground
- R Resistor
- RC Remote Control (NC)



## Dimensions & Packaging



Protec DMDR 20 Series	24	48	60	120
<b>Dimensions</b>				
Weight per Unit	3.38 oz [96 g]			
Dimensions DIN 43880	1 TE			
Packaging Dimensions (Single Unit)	4.2 x 3 x .9" [109 x 77 x 24 mm]			
Minimum Package Quantity	12 pieces			

Protec DMDR 20/xxx M	24	48	60	120
<b>Dimensions</b>				
Weight per Unit	1.12 oz [32 g]			
Packaging Dimensions (Single Unit)	3.8 x 3 x 4.3" [98 x 77 x 110 mm]			
Minimum Package Quantity	12 pieces			

inches  
[mm]

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

