

## VM-DC Series



- **Category IEC/EN:** D1/C1/C2/C3
- **Coarse Protection:** 3 terminal GDT
- **Location of use:** DC power systems
- **Nominal operating voltage:**  $U_n$ : 12 and 24V<sub>DC</sub>
- **Max. operating voltage:**  $U_c$ : 15 and 28V<sub>DC</sub>
- **Surge Discharge Ratings:**  $I_n$ : 10kA,  $I_{max}$ : 20kA,  $I_{imp}$ : 2.5kA
- **Serial resistance:** 0.1Ω
- **Enclosure:** DIN 43880 1TE, DIN rail mount
- **Terminals:** Stranded to 6 mm<sup>2</sup>
- **Housing:** Modular design
- **Complies with:** IEC/EN 61643-21



The VM-DC series has been developed to protect DC power supplies. Coarse protection is provided by a three terminal gas discharge tube while fine protection is provided using a high speed silicon stage.

### Technical data

Type		12V	VM-DC xx	24V
<b>Electrical characteristics</b>				
Number of protected pairs			1 (2 conductors)	
Nominal operating voltage (DC)	$U_n$	12V <sub>DC</sub>		24V <sub>DC</sub>
Max. continuous operating voltage (DC)	$U_c$	15V <sub>DC</sub>		28V <sub>DC</sub>
Rated operating current at 25°C	$I_L$		10A	
Nominal discharge current (8/20μs)	$I_n$		10kA	
Max. discharge current (8/20μs)	$I_{max}$		20kA	
Impulse current (10/350μs)	$I_{imp}$		2.5kA	
Residual voltage at 5 kA (8/20μs)	$U_{res}$	184V - 276V		184V - 276V
Rated spark overvoltage	(0,12/24V - PG)	16V - 20V		30V - 36V
	(0 - 12/24V)	< 32V (0.12V)		< 60V (0.24V)
Response time of overvoltage protection	$t_A$		< 1ns	
Thermal protection			YES	
Insulation resistance of the protection	$R_{iso}$	≥ 15MΩ		≥ 28MΩ
Serial resistance	$R$		< 0.1Ω	
Transverse capacitance	$C$	< 1nF		< 3nF
<b>Mechanical characteristics</b>				
Temperature range			-40°C ... +80°C	
Terminal cross section			Stranded to 6 mm <sup>2</sup>	
Terminal screw torque			max. 2Nm	
Degree of protection IEC/EN 60529			IP 20	
Housing material			Thermoplastic; yellow, extinguishing degree V-O	
Mounting IEC/EN 60715			35mm DIN rail	

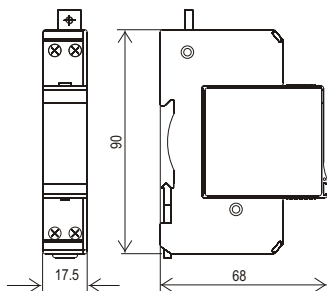
### Ordering information

$U_n$	12V	24V
Ordering code VM-DC xx	7035.02	7035.04
Ordering code Module VM-DC xx	7035.01	7035.03

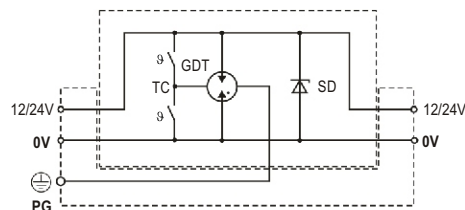
Dimensions, Internal configuration, Weight and Packaging

VM-DC Series

Dimensions



Internal configuration



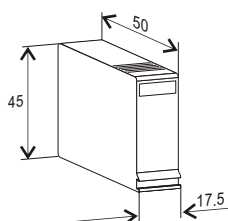
Legend:

- TC *thermo-clip*
- GDT *gas discharge tube*
- SD *signal-direction TVS diode*
- PG *protective grounding*

VM-DC xx	12V	24V
Dimensions DIN 43880	1TE	
Weight per unit	90g	90g
Packaging dimensions (single unit)	78 x 23 x 108mm	
Min. packaging quantity	12 pcs.	

Module VM-DC Series

Dimensions



Module VM-DC xx	12V	24V
Weight per unit	24g	24g
Packaging dimensions (single unit)	61 x 49 x 21mm	
Min. packaging quantity	24 pcs.	

