

Telecom and Data Surge Protector

FRD4-xxx

D1 • C1 • C2 • C3



IEC/EN Category: D1/C1/C2/C3

Mode of Protection: Longitudinal, Transverse

Coarse Protection: 3 Terminal GDT

Voltages: 5, 12, 15, 24, 30, 48, 60, 110 Vdc

Frequency Range: 30 MHz

Surge Discharge Ratings: I_n : 10 kA, I_{max} : 20 kA, I_{imp} : 5 kA

Series Load Current: 1 A

Enclosure: DIN 43880 2/3 TE, DIN Rail Mount

Terminals: Stranded to 4 mm²

Housing: Modular Design

Compliance: IEC/EN 61643-21

FRD4 provides the level of protection to two independent circuit pairs. A number of protection voltages are available to ensure the user is able to select the closest clamping voltage to the normal signal operation of the equipment being protected.

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

If the module is unplugged from the base, the connection Lines will be disconnected.

Technical Data

FRD4-xxx		5	12	15	24	30	48	60	110
IEC Electrical									
Line Conductor Terminals Protected		2 (4 Conductors)							
Nominal Operating Voltage (DC)	U_n	5 V	12 V	15 V	24 V	30 V	48 V	60 V	110 V
Maximum Continuous Operating Voltage (DC)	U_C	6 V	15 V	18 V	28 V	33 V	52 V	64 V	170 V
Rated Load Current at 25 °C	I_L	1 A							
C2 Nominal Discharge Current (8/20 μ s)	I_n	10 kA							
Maximum Discharge Current (8/20 μ s)	I_{max}	20 kA							
D1 Impulse Current (10/350 μ s)	I_{imp}	5 kA							
Residual Voltage at 5 kA (8/20 μ s)	U_{res}	< 22 V	< 42 V	< 48 V	< 70 V	< 80 V	< 140 V	< 160 V	< 450 V
Rated Spark Overvoltage	(Line - Ground)	7-10 V	17-21 V	21-25 V	31-37 V	36-44 V	57-69 V	68-84 V	184-264 V
	(Line - Line)	7-10 V	17-21 V	21-25 V	31-37 V	36-44 V	57-69 V	68-84 V	184-264 V
Response Time Overvoltage Protection	t_A	< 1 ns							
Thermal Protection		Yes							
Insulation Resistance of the Protection	R_{iso}	≥ 6 k Ω	≥ 15 k Ω	≥ 18 k Ω	≥ 28 k Ω	≥ 33 k Ω	≥ 52 k Ω	≥ 64 k Ω	≥ 170 k Ω
Serial Resistance per Path	R	1.6-2.0 Ω							
Transverse Capacitance	C	50 pF							
Cut-off Frequency	f_G	30 MHz							
Mechanical									
Temperature Range		-40 °F to +158 °F [-40 °C to +70 °C]							
Terminal Cross Section Multi-Strand (max.)		12 AWG [4 mm ²]							
Terminal Screw Torque		4.5 lbf-in [0.5 Nm]							
Degree of Protection IEC/EN 60529		IP20 (built-in)							
Housing Material		Thermoplastic: Extinguishing Degree V-0							
Mounting IEC/EN 60715		35 mm DIN Rail							
Order Information									
Ordering Code		5	12	15	24	30	48	60	110
FRD4-xxx		0500051	0500121	0500151	0500241	0500301	0500481	0500601	0501101

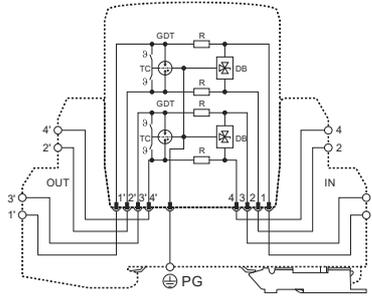


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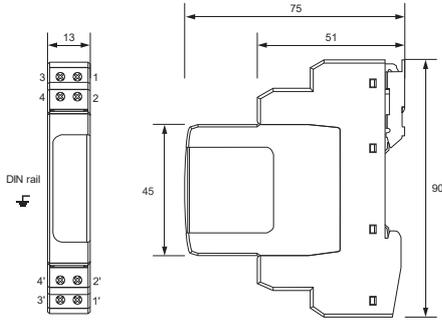
Internal Configuration

Legend

- DB Diode Block
- GDT Gas Discharge Tube
- PG Protective Grounding
- R Resistor
- TC Thermo-clip



Dimensions & Packaging



[mm]

Complete Unit							
FRD4-xxx	5	12	15	24	30	48	60 110
DIN 43880 Dimension	1 CTN						
Packaging Dimensions (H x W x L)	[260 x 220 x 330 mm]						
Standards Order Quantity	78 Units						