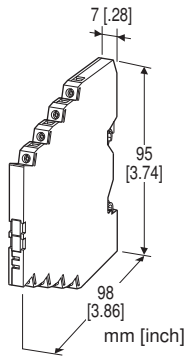
Lightning Surge Protectors for Electronics Equipment M-RESTER

LIGHTNING SURGE PROTECTOR FOR FOUNDATION Fieldbus

(ultra-slim)

Functions & Features

- High discharge current capacity 20 kA (8 / 20 µs), 1 kA (10 / 350 µs)
- Ultra-thin 7-mm-wide module can be mounted in high density
- Excellent protection employing multi-stage SPD circuits
- DIN rail mounting and grounding
- Shield terminal provided



MODEL: MD7FB-[1]0[2]

ORDERING INFORMATION

- Code number: MD7FB-[1]0[2]

Specify a code from below for each of [1] and [2].
(e.g. MD7FB-FF0/Q)

- Specify the specification for option code /Q
(e.g. /C01)

[1] SHIELD TERMINAL (to earth)

FF: Floating
FG: Grounding

SAFETY APPROVAL

0: None

[2] OPTIONS

blank: none
/Q: Options other than the above (specify the specification)

SPECIFICATIONS OF OPTION: Q

COATING (For the detail, refer to M-System's web site.)
/C01: Silicone coating
/C02: Polyurethane coating

APPLICABLE NETWORK

FOUNDATION Fieldbus and other networks complied with IEC 61158-2
Caution: Power supply to the bus must be limited to 400 mA or less.

GENERAL SPECIFICATIONS

Construction: Slim-sized front terminal structure
Degree of protection: IP20
Connection: Euro terminal block (torque 0.3 N·m)
Applicable wire size: 0.2 – 2.5 mm^2, stripped length 8 mm
Grounding: DIN Rail
Housing material: Flame-resistant resin (black)

INSTALLATION

Operating temperature: -25 to +85°C (-13 to +185°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Mounting: DIN Rail (TH35-7.5, 1-mm-thick)
Oxide film on the surface of an aluminium DIN rail may lower the electric conductivity between this module and the ground. Use a steel or copper rail.
Weight: 70 g (2.5 oz)

PERFORMANCE

	LINE TO LINE	LINE TO EARTH	SHLD TO EARTH
Max. continuous operating voltage (Uc)	±32V	±160V	±160V*1
Voltage protection level (Up) @4kV (1.2 / 50 µs)	±60V	±800V	±800V*1
Leakage current @Uc	≤ 5µA	≤ 5µA	≤ 5µA*1
Response time	≤ 4 nsec.	≤ 20 nsec.	≤ 20 nsec.*1
Approx. capacitance @10 kHz	1500 pF	100 pF	100 pF*1
Max. discharge current (Imax)	20kA (8 / 20 µs) 1.0kA (10 / 350 µs)		
Nominal current (I_N)	400mA		
Internal series resistance	1.5Ω ±10% per line		
Surge protection	IEC 61643-21 Categories C1, C2, D1		

*1. Values for the floating type (FF). Shortcircuited for the grounding type (FG).

STANDARDS & APPROVALS

EU conformity:

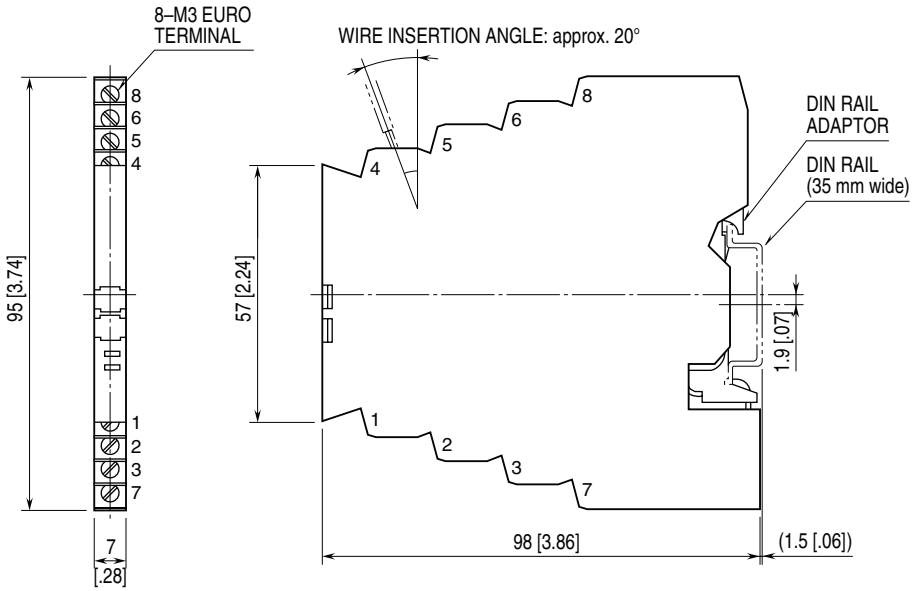
EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

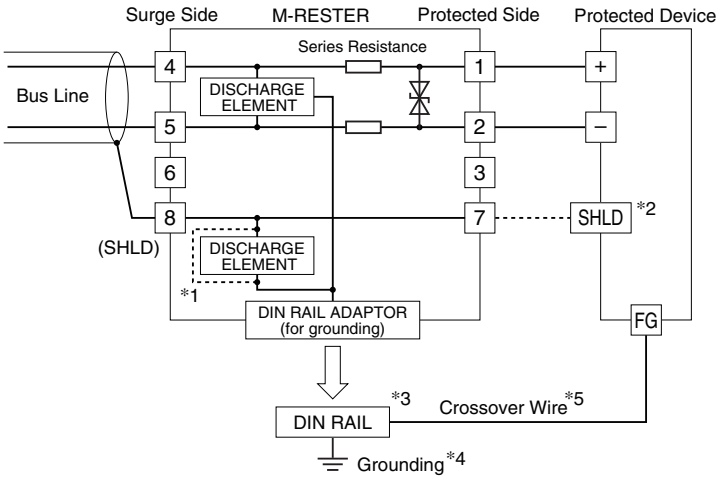
RoHS Directive

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



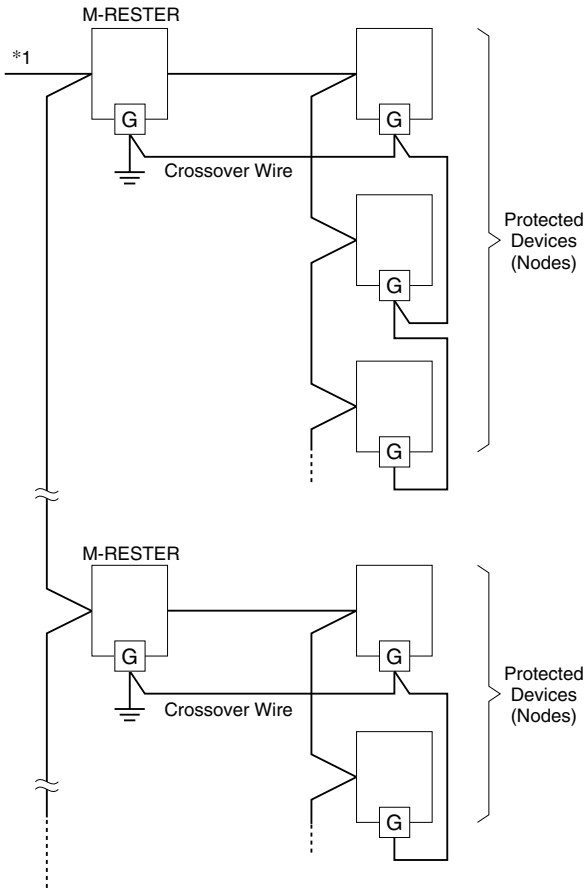
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

■ **CONNECTION DIAGRAM**



*1. Choose the grounding (FG) when the shield wire is to be grounded.
*2. When SHLD is not isolated from the bus line, DO NOT connect the surge protector's terminal 7 to SHLD.
*3. Oxide film on the surface of an aluminium rail may lower the electric conductivity between this module and the ground. Use a steel or copper rail.
*4. Be sure to ground the DIN rail. Recommended grounding resistance max. 100 ohms.
*5. Cross-wire from the DIN rail to the metal housing of the protected device to equalize the ground potential. Ground only the surge protector when the protected device has no grounding terminal.

■ NETWORK CONFIGURATION



*1. Fieldbus devices complying with IEC 61158-2 operate by a supply voltage between 9V and 32V DC.
Take the M-RESTER's internal series resistance into consideration when determining the cable distance if there is a large current flow on the bus line.

When the distance between nodes are relatively long (e.g. grouped and separated by cabinets), install the M-RESTER by each group of devices. Insert the M-RESTER at the surge side of the network. For detailed information on the network, refer to that provided by Fieldbus Foundation.

⚠ Specifications are subject to change without notice.