

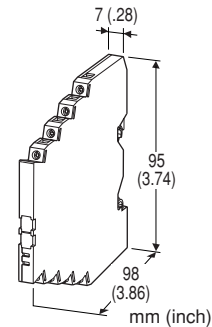
**Lightning Surge Protectors for Electronics Equipment *M-RESTER***

**LIGHTNING SURGE PROTECTOR FOR PROFIBUS-PA (ultra-slim)**

MODEL **MD7PA**

**MODEL & SUFFIX CODE SELECTION**

MODEL \_\_\_\_\_ MD7PA-□□  
 SHIELD TERMINAL (to earth) \_\_\_\_\_  
 FF : Floating  
 FG : Grounding  
 SAFETY APPROVAL \_\_\_\_\_  
 0 : None  
 1 : FM intrinsically safe (future plan)  
 2 : CENELEC intrinsically safe (ATEX) (future plan)



**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

**ORDERING INFORMATION**

Specify code number. (e.g. MD7PA-FF0)

**APPLICABLE NETWORK**

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

**GENERAL SPECIFICATIONS**

**Ingress protection:** IP 20  
**Connection:** Euro terminal block (torque 0.3 N·m)  
**Applicable wire size:** 0.2 – 2.5 mm<sup>2</sup>  
**Housing material:** Flame-resistant resin (black)  
**Grounding:** DIN Rail

**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 coating of an aluminum rail may lower the electric conductivity between this module and the ground. Use a steel or copper rail.  
**Dimensions:** W7×H98×D95 mm (0.28"×3.86"×3.74")  
**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 max.	±800V max.	±800V max.*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 (In)	400mA		
Internal series resistance	1.5Ω ±10% per line		

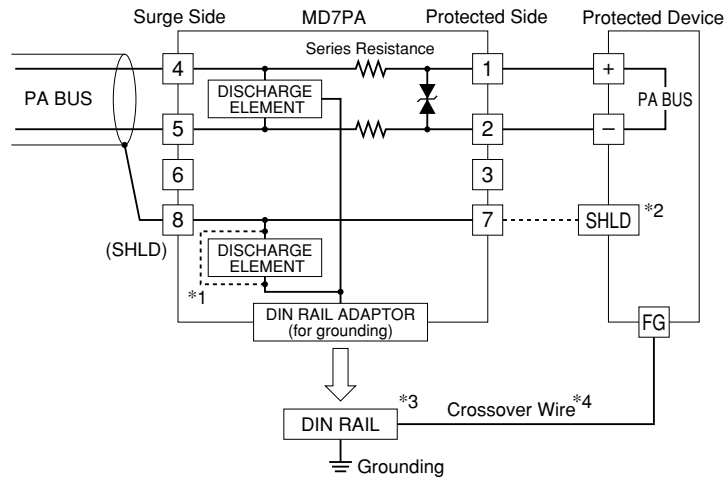
\*1. Values for the MD7PA-FF. Shortcircuited for the MD7PA-FG.

**STANDARDS & APPROVALS**

**CE conformity:** EMC Directive (89/336/EEC)  
 EMI EN61000-6-4  
 EMS EN61000-6-2  
**Surge protection:** IEC 61643-21  
 (Categories C1, C2, D1)

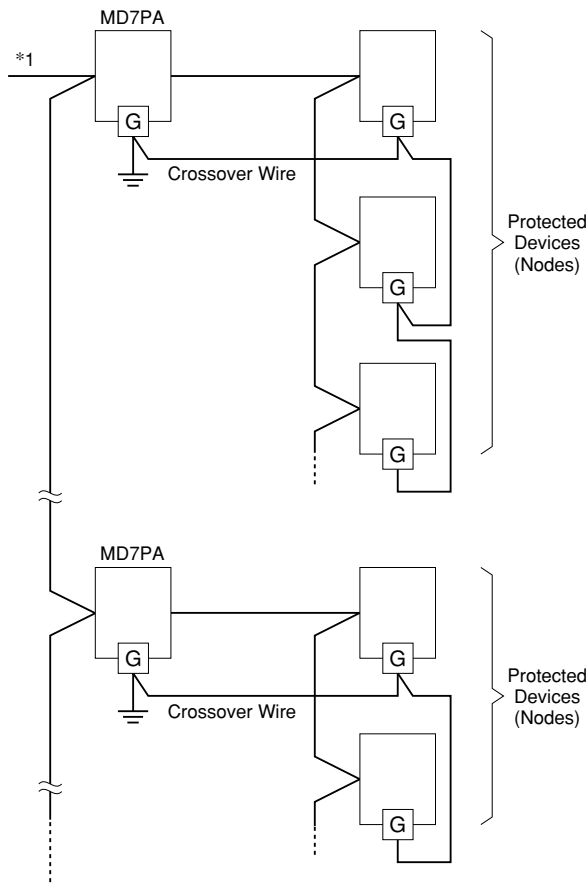
**SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM**

**CONNECTION DIAGRAM**



- \*1. Choose the MD7PA-FG when the shield wire is to be grounded.
- \*2. When SHLD is not isolated from PA BUS, DO NOT connect the surge protector's terminal 7 to SHLD.
- \*3. Be sure to ground the DIN rail. Recommended grounding resistance max. 100 ohms.
- \*4. 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 MD7PA'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 MD7PA by each group of devices. Insert the MD7PA at the surge side of the network. For detailed information on the network, refer to that provided by PROFIBUS International.

Specifications subject to change without notice.

**EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENT (unit: mm)**

