

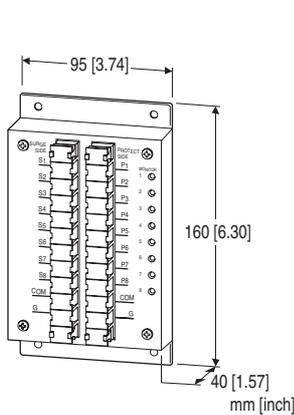
Lightning Surge Protectors for Electronics Equipment M-RESTER

LIGHTNING SURGE PROTECTOR FOR MULTI-CHANNEL USE

(high discharge current capacity)

Functions & Features

- Protection for semiconductor switches of discrete outputs against lightning surge damage
- Applicable to both negative and positive common signals
- Applicable to multi analog signals (non-isolation between channels)
- Space saving with multi-channel protectors
- LED monitor indicating degradation of voltage limiter
- LED monitor driven by discrete I/O signal without auxiliary power supply



MODEL: MDR2-8[1][2]

ORDERING INFORMATION

- Code number: MDR2-8[1][2]

Specify a code from below for each of [1] and [2].
(e.g. MDR2-8NA)

NUMBER OF PROTECTORS

8: 8 points

[1] COMMON

N: Negative common (NPN)

P: Positive common (PNP)

[2] LEAKAGE CURRENT INDICATOR

Y: None

A: With

GENERAL SPECIFICATIONS

Construction: terminal board; terminal cover provided

Connection: M3.5 screw terminals (torque 1.1 N·m)

Screw terminal: Nickel-plated steel

Housing material: Steel

LED monitor: Red

The leakage current from voltage limiter increases due to its degradation.

LED becomes brighter gradually in proportion to this leakage current.

INSTALLATION

Operating temperature: -5 to +55°C (23 to 131°F)

Operating humidity: 30 to 90 %RH (non-condensing)

Mounting: Surface

Weight: 520 g (1.15 lb)

PERFORMANCE

Response time: ≤ 4 nsec

Leakage current @ max. voltage

Line to COM: 5 μA

Line to line: 5 μA

COM to earth: 5 μA

Max. discharge current (Imax)

Line to COM: 10 kA

Line to line: 10 kA

COM to earth: 10 kA

Nominal current (In): 150 mA

Internal series resistance: 22 Ω ±20 %

Surge protection: IEC 61643-21 Categories C1, C2, D1

Max. Continuous operating voltage (Uc)

	MDR2			
	-8NY	-8NA	-8PY	-8PA
Between each of S1 to S8 lines	±30V			
Each line to COM*	+30V		-30V	
Each line or COM to Earth	±150V			

*MDR2 is operational as an SPD despite less than +2V (for MDR2-8PA) or more than -2V (for MDR2-8NA). However, the function of the monitor LED is not guaranteed.

Voltage protection level (Up)

- @1kV / 100A (1.2 / 50μs)

	MDR2			
	-8NY	-8NA	-8PY	-8PA
Between each of S1 to S8 lines	±40V	±50V	±40V	±50V
Each line to COM	+40V	+50V	-40V	-50V
Each line or COM to Earth	±500V			

- @4kV / 2kA (1.2 / 50μs)

	MDR2			
	-8NY	-8NA	-8PY	-8PA
Between each of S1 to S8 lines	±60V			
Each line to COM	+50V	+60V	-50V	-60V
Each line or COM to Earth	±600V			

STANDARDS & APPROVALS

EU conformity:

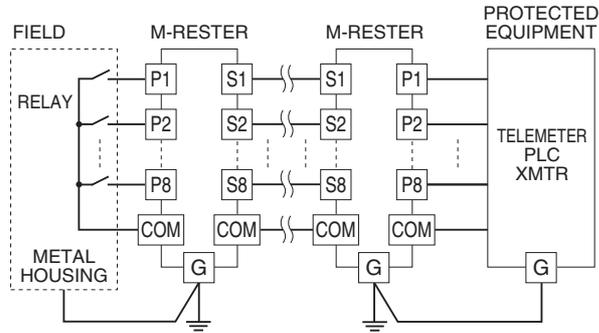
EMC Directive

EMI EN 61000-6-4

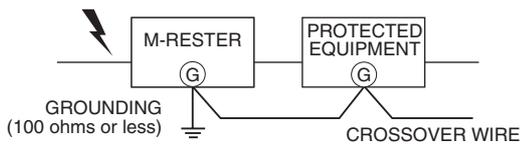
EMS EN 61000-6-2

RoHS Directive

CONNECTION EXAMPLES



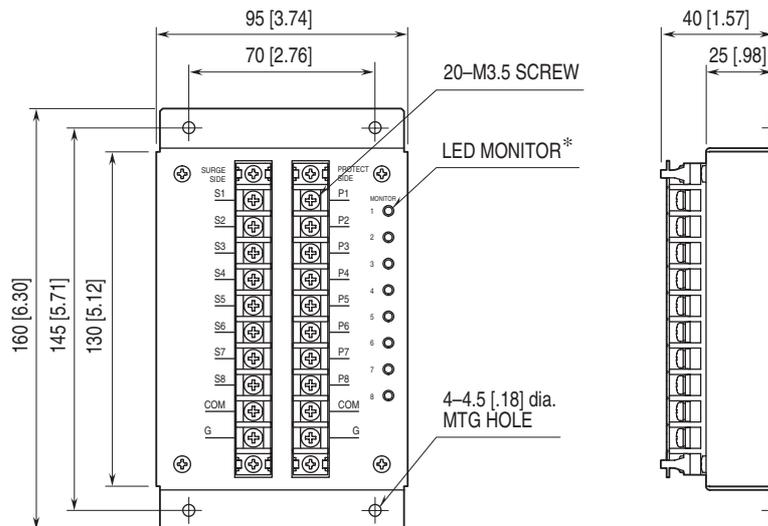
GROUNDING



A crossover wire between M-RESTER ground and ground or metallic housing of equipment is required for protection.

If the protected equipment has no ground terminal, ground the M-RESTER only.

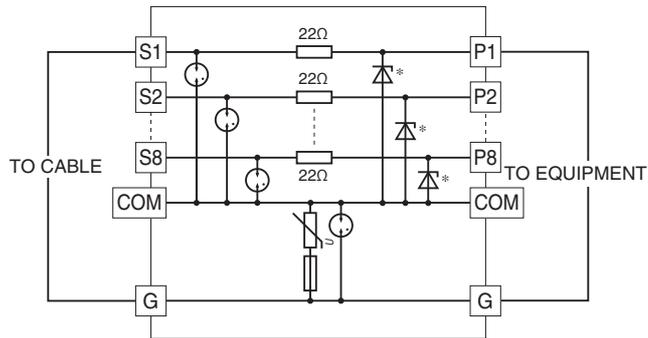
EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



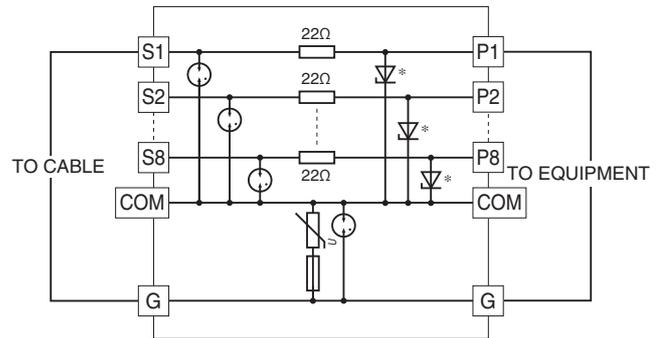
*Only available with MDR2-8xA

SCHEMATIC CIRCUITRY

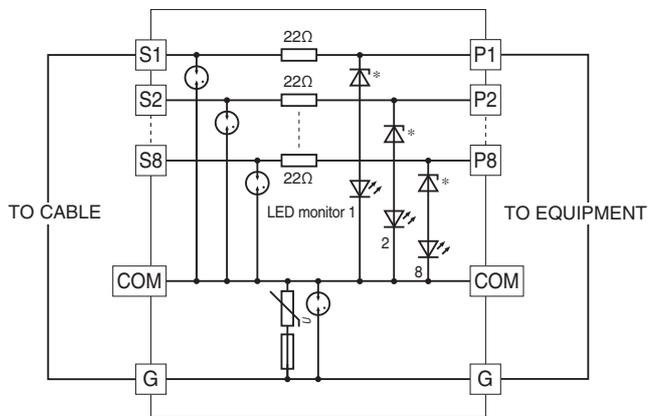
■ NPN, WITHOUT MONITOR LED



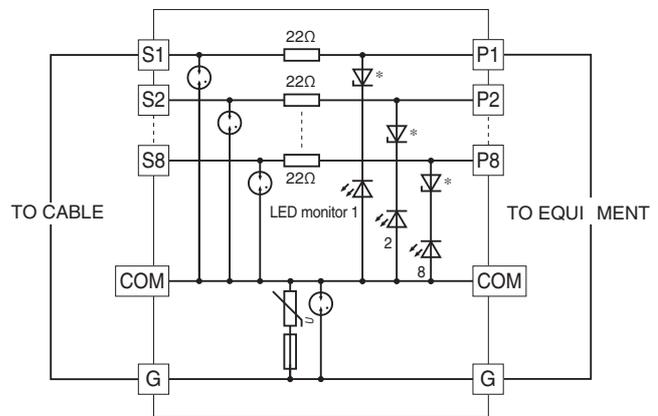
■ PNP, WITHOUT MONITOR LED



■ NPN, WITH MONITOR LED



■ PNP, WITH MONITOR LED



*Zenor diode has polarity.
Not applicable to zero-cross signals.



Specifications are subject to change without notice.