

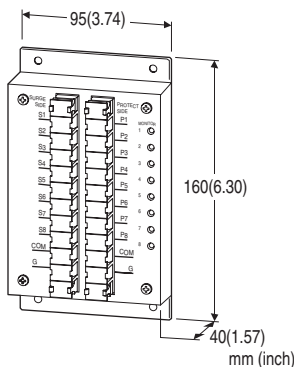
Lightning Surge Protectors for Electronics Equipment M-RESTER

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
- CE marking



MODEL: MDR2-8[1][2]

ORDERING INFORMATION

- Code number: MDR2-8[1][2]
- Specify a code from below for each [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 lbs)

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 %
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

CE conformity:

EMC Directive (2004/108/EC)

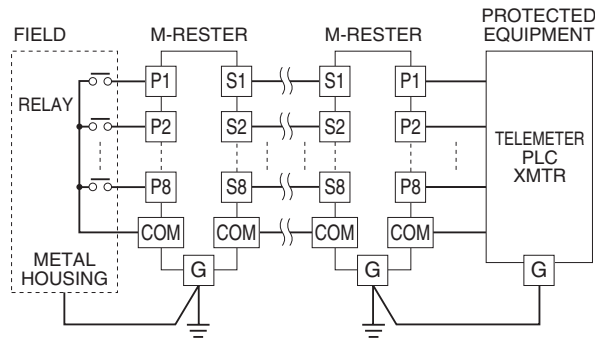
EMI EN 61000-6-4: 2007

EMS EN 61000-6-2: 2005

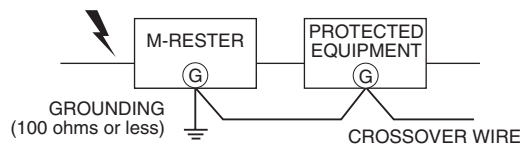
Surge protection: IEC 61643-21: 2000

(Categories C1, C2)

CONNECTION EXAMPLES

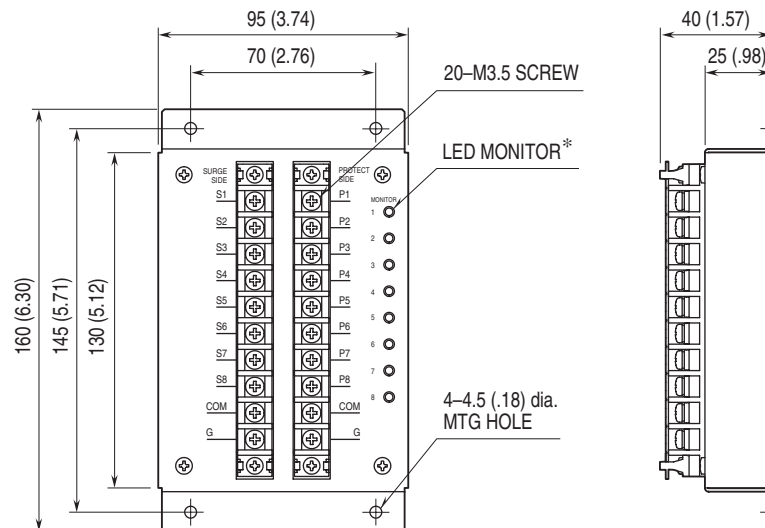


GROUNDING



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)

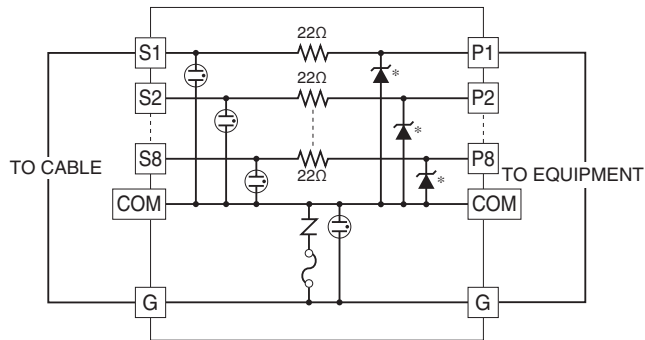


*Only available with MDR2-8xA

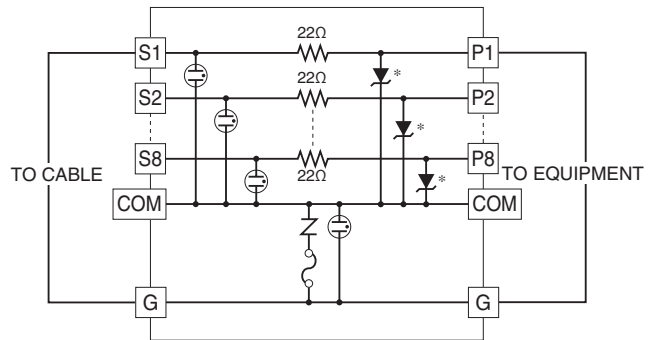


SCHEMATIC CIRCUITRY

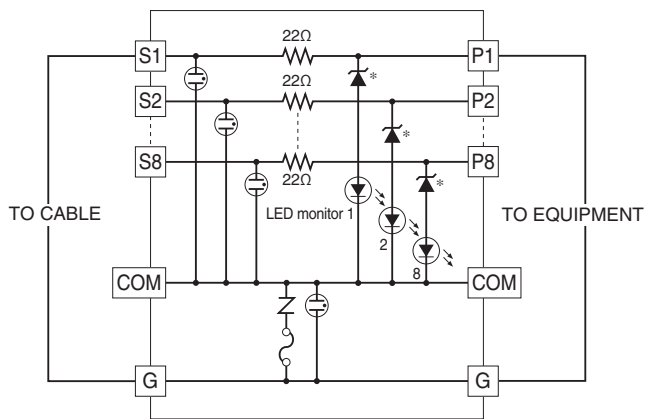
■ NPN, WITHOUT MONITOR LED



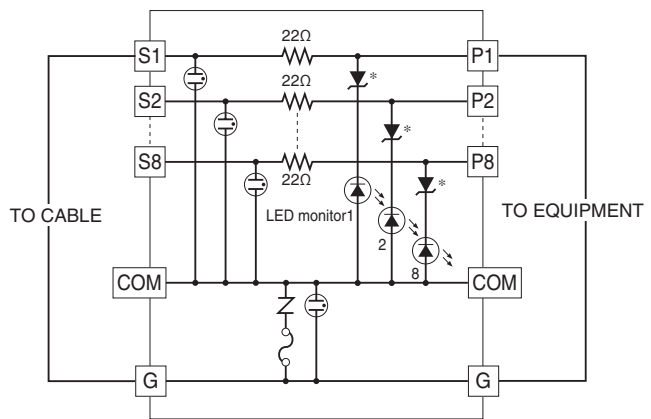
■ PNP, WITHOUT MONITOR LED



■ 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.