

## Lightning Surge Protectors for Electronics Equipment M-RESTER

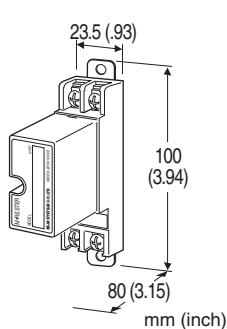
### LIGHTNING SURGE PROTECTOR FOR STANDARD SIGNAL LINE & PULSE USE

#### Functions & Features

- Designed specifically for 4 - 20mA DC and pulse signal line including both 4-wire and 2-wire transmitters
- Absorbs surges only without affecting instrumentation signal
- No interruption of signal by unplugging surge protector element

#### Application Examples

- Protects two-wire transmission lines
- Protects electronic instruments' I/O



### MODEL: MDP-24-1[1]

#### ORDERING INFORMATION

- Code number: MDP-24-1[1]  
Specify a code from below for [1].  
(e.g. MDP-24-1/A33/CE/Q)
- Specify the specification for option code /Q  
(e.g. /C01)

#### [1] OPTIONS (multiple selections)

##### DIN Rail Mounting Adapter

blank: Without

/A33: With adapter (model A-33)

##### Standards & Approvals (must be specified)

/N: Without CE or UL

/CE: CE marking

/UL: UL approval, CE marking

##### Other Options

blank: none

/Q: Option 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

/C03: Rubber coating (UL not available)

#### GENERAL SPECIFICATIONS

**Construction:** Plug-in

**Connection:** M4 screw terminals (torque 0.8 N·m)

**Screw terminal:** Nickel-plated steel

**Housing material:** Flame-resistant resin (black)

#### INSTALLATION

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

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

**Mounting:** Surface or DIN rail

**Weight:**

120 g (0.26 lb), standard

145 g (0.32 lb), with DIN rail mounting adapter

#### PERFORMANCE

**Max. continuous operating voltage (Uc):**

Line to line: 30 V

Line to earth: ±140 V

**Voltage protection level (Up):**

• @ 1 kV (100 A)

Line to line: 40 V

Line to earth: ±650 V

• @ 2 kV (1 kA)

Line to line: 45 V

Line to earth: ±800 V

**Response time:**

Line to line: ≤ 4 nsec.

Line to earth: ≤ 20 nsec.

**Leakage current:**

Line to line: ≤ 5 μA @ 30 V DC

Line to earth: ≤ 5 μA @ ±140 V DC

**Max. discharge current (Imax):** 5000 A (8 / 20 μs)

**Nominal current (In):** 100 mA

**Internal series resistance:** 20 Ω ±10 % (including return)

**Capacitance @ 1 MHz:**

Line to line: ≤ 1000 pF

Line to earth: ≤ 100 pF

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

## STANDARDS & APPROVALS

### EU conformity:

EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

RoHS Directive

EN 50581

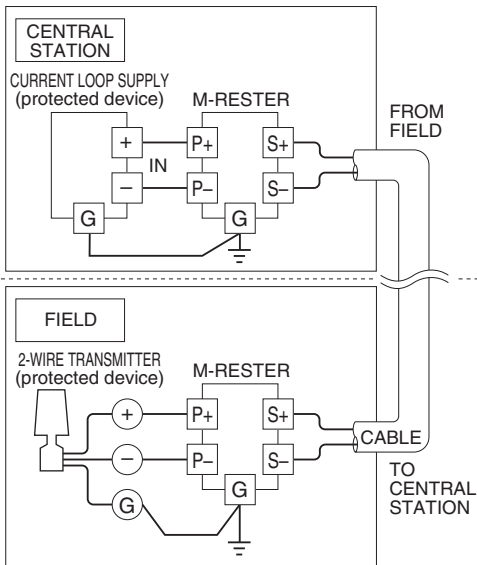
### Approval:

Protectors for Data Communications and Fire

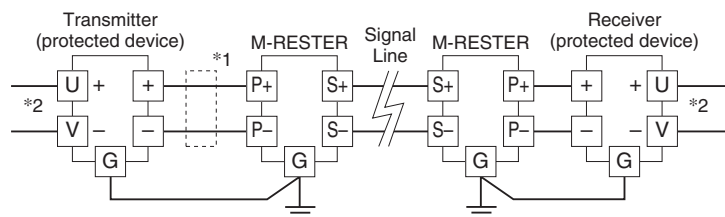
Alarm Circuits (UL 497B)

## CONNECTION EXAMPLES

### ■ PROTECTING TWO-WIRE SIGNAL LINES



### ■ PROTECTING ELECTRONIC INSTRUMENTS' I/O

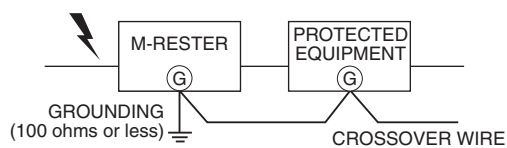


\*1. Install a circuit protector when the transmitter output current exceeds 100mA.

\*2. The M-RESTER is designed in particular to protect signal lines.

To protect power supply lines, install other types of surge protectors.

## GROUNDING



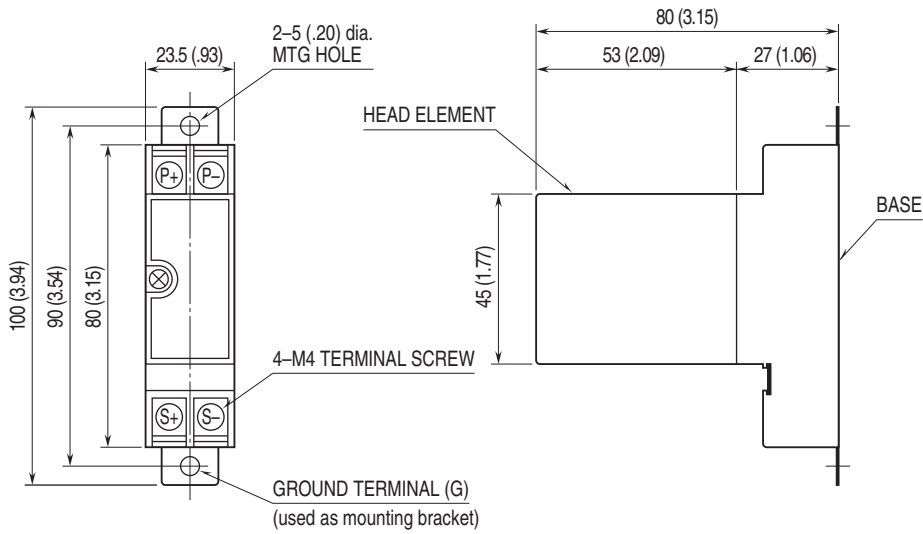
A crossover wire between M-RESTER ground and the ground or metallic housing of the equipment is required for protection.

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

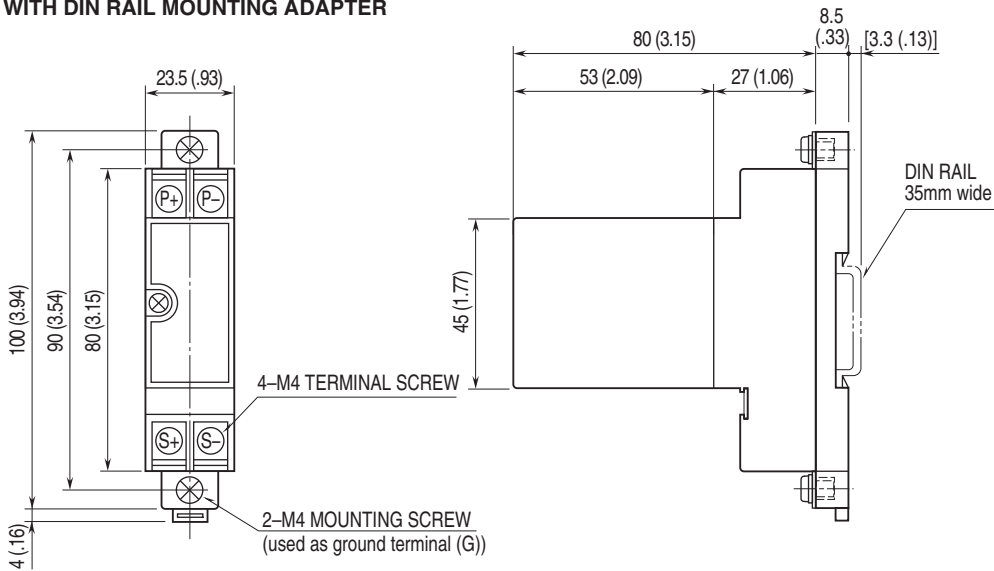
When the M-RESTER is mounted with DIN Rail Mounting Adapter, connect the grounding wire to the mounting screw of the M-RESTER.

## EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)

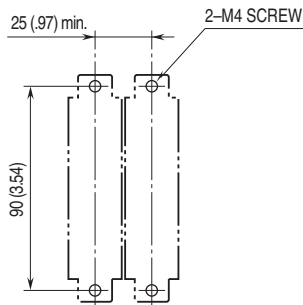
### ■ STANDARD



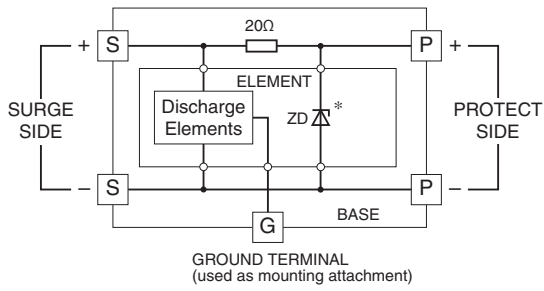
### ■ WITH DIN RAIL MOUNTING ADAPTER



## MOUNTING REQUIREMENTS unit: mm (inch)



**SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM**



\*The zenor diode has polarity.  
Zero-cross signal cannot be connected.



Specifications are subject to change without notice.