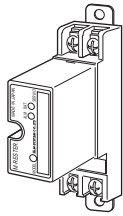


Lightning Surge Protectors for Electronics Equipment M-RESTER

## 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
- Life monitor function helps you to decide when you should replace the surge protector; reduces maintenance and prevents downtime
- Pressing CHK (Check) button confirms the degradation and life span of the surge protection circuits with LEDs
- Absorbs surges only without affecting instrumentation signal
- No interruption of signal by unplugging surge protector element



**MODEL: MDPA-24[1]**

### ORDERING INFORMATION

- Code number: MDPA-24[1]  
Specify a code from below for [1].  
(e.g. MDPA-24/BN)

### [1] OPTIONS

#### Configuration

**blank:** With Base (model: SK-2E) included

**/BN :** Element only for replacement

(Not selectable with DIN rail mounting adapter)

#### DIN rail mounting adapter

**blank:** Without

**/A33:** With adapter (model A-33)

### RELATED PRODUCTS

- Base (model: SK-2E)

### 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)

**Indicators:** Activated by CHK (Check) button, see the status table shown below.

**BAT:** Green LED

**ALM:** Red LED

**Degradation judged:** When the leakage current at the voltage limiter exceed approx. 7.5  $\mu$ A.

**Life time judged:** When the number of discharges of the discharge element reaches the expected life span.

**CHK button:** Push button; momentary

**Battery:** Lithium; No recharge or replacement available.

**Battery life:** 10 years (when used  $\leq$  2 minutes/month)

Discharge element status table

BAT	ALM	Battery	Discharge Element	Voltage Limiter	Replacement
☉	●		Normal		No Need
☉	☉	Normal	Near End	Normal	Near
●	☉	Normal	End of Life	Degraded*1	Immediately Required
●	●	Discharged	Unable to Judge		

☉ : ON    ● : OFF

\*1. With pulsating line signal or that containing ripples, the LED may flicker or blink when the voltage limiter is degraded.

### INSTALLATION

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

**Operating humidity:** 30 to 85 %RH (non-condensing)

**Mounting:** Surface or DIN rail

**Weight:** 150 g (0.33 lbs), standard

175 g (0.39 lbs), with DIN rail mounting adapter

### PERFORMANCE

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

Line to line: 30 V min

Line to earth:  $\pm$ 160 V min

**Voltage protection level (Up):**

- @ 1 kV (100 A)

Line to line: 45 V max.

Line to earth:  $\pm$ 650 V max.

- @ 2 kV (1 kA)

Line to line: 50 V max.

Line to earth:  $\pm$ 650 V max.

**Response time:**

Line to line:  $\leq$  4 nsec.

Line to earth:  $\leq$  20 nsec.

**Leakage current:**

Line to line:  $\leq$  5  $\mu$ A @ 30 V DC

Line to earth:  $\leq$  5  $\mu$ A @  $\pm$ 140 V DC

**Max. discharge current (Imax):** 5000 A (8 / 20  $\mu$ s)

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

**Internal series resistance:** 20  $\Omega$   $\pm$ 10 % (including return)

**Capacitance @ 1 MHz:**

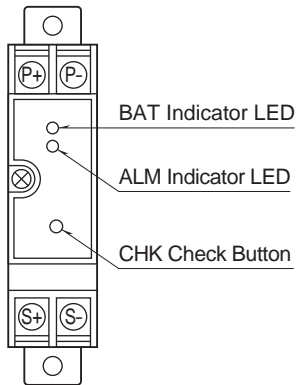
Line to line:  $\leq 1000$  pF

Line to earth:  $\leq 100$  pF

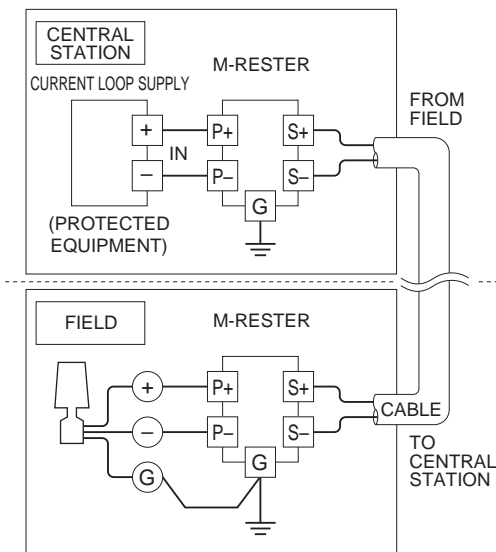
## STANDARDS & APPROVALS

Surge protection: IEC 61643-21 (Categories C1, C2)

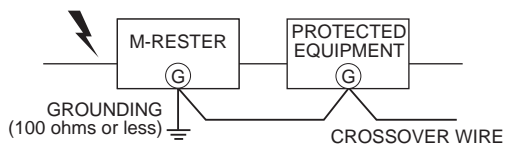
## EXTERNAL VIEW



## CONNECTION EXAMPLES



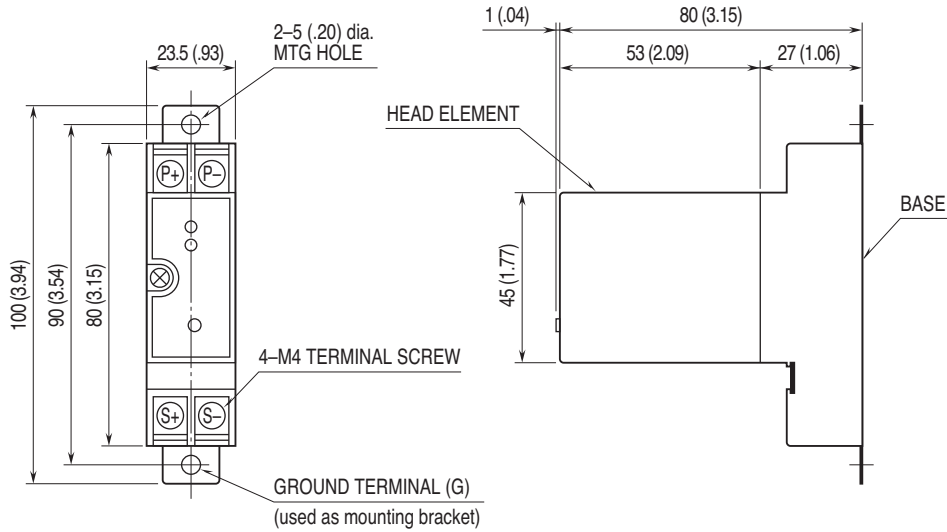
## GROUNDING



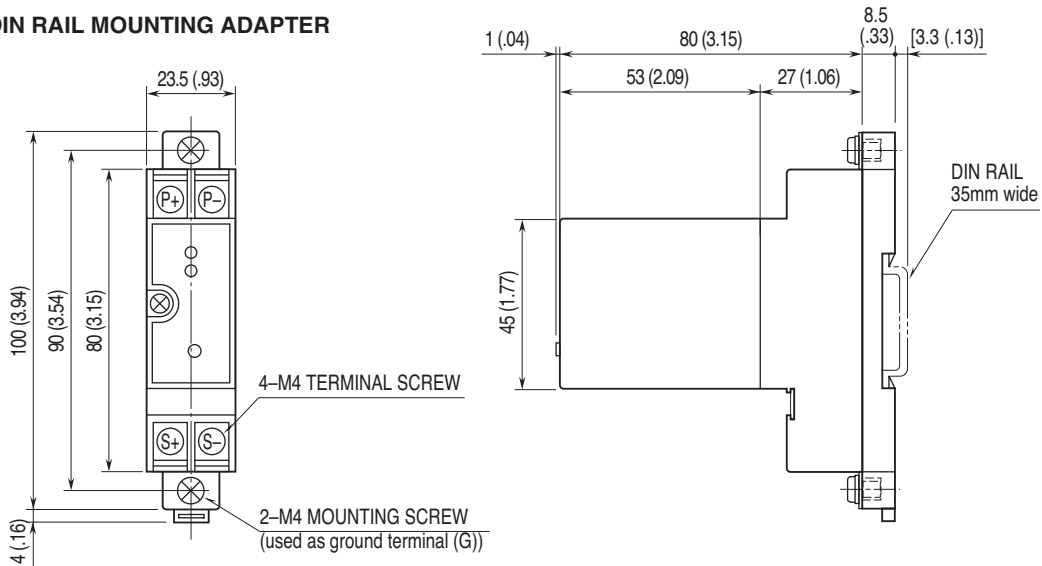
A crossover wire between M-RESTER ground and the ground or metallic housing of the equipment is required for protection.  
 If the protected equipment has no ground terminal, ground the M-RESTER only.  
 When the M-RESTER is mounted with DIN Rail Mounting Adapter, connect the grounding wire to the mounting screw of the M-RESTER.

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

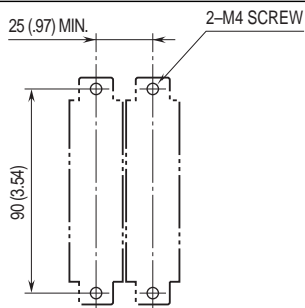
### ■ STADARD



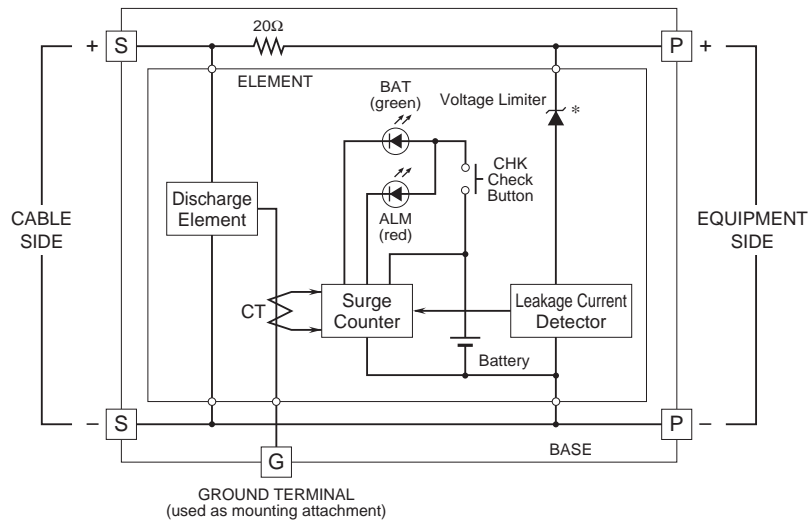
### ■ WITH DIN RAIL MOUNTING ADAPTER



## 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.