

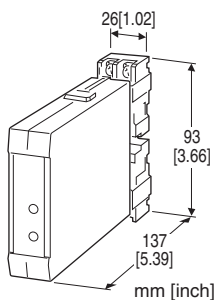
## Lightning Surge Protectors for Electronics Equipment M-RESTER

### LIGHTNING SURGE PROTECTOR FOR STANDARD SIGNAL LINE

(fast response: 3 nsec.)

#### Functions & Features

- Designed specifically for 4 - 20 mA DC and pulse signal line
- Battery-powered status indicator
- High discharge current capacity 20 kA (8/20  $\mu$ s)
- Shield terminal provided
- Compatible with IEC 61643-21 categories C1, C2, D1.



ON in normal operating

OFF in degradation of the voltage limiter or battery discharged

**Degradation judged:** When the leakage current at the voltage limiter exceeds approx. 50  $\mu$ A. 1 V or more is necessary for the signal (line to line) voltage.

**Check button:** Push button; momentary

**Alarm output:** Open collector

28 V DC @ 100 mA (resistive load)

OFF in normal conditions

ON in degradation of the voltage limiter or battery discharged

Saturation voltage 3.5 V DC

**Battery:** Lithium-metal battery (model: ER3N4); Non-rechargeable and non-replaceable

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

#### INSTALLATION

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

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

**Mounting:** Surface or DIN rail; Standard Rack Mounting  
Frame BX-16H available

**Weight:** 230 g (0.51 lb)

## MODEL: MDJST-[1][2]

#### ORDERING INFORMATION

- Code number: MDJST-[1][2]

Specify a code from below for each of [1] and [2].

(e.g. MDJST-24Y)

#### [1] NOMINAL VOLTAGE

12: 12 V DC

24: 24 V DC

48: 48 V DC

#### [2] STATUS INDICATOR

A1: Monitor LED

A2: Monitor LED and alarm output

Y: None

#### GENERAL SPECIFICATIONS

**Construction:** Plug-in

**Surge protection type:** Surge energy limiting type

**Connection:** M3.5 screw terminals (torque 0.8 N·m)

**Screw terminal:** Nickel-plated steel

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

**Status indicator**

**Monitor LED:** Green, activated by Check button

## PERFORMANCE

**Insulation resistance:**  $\geq 100 \text{ M}\Omega$  with 250 V DC (Line to alarm output)

(The voltage more than 250 V DC turns the discharge element on; then the insulation between lines and alarm output will be lost)

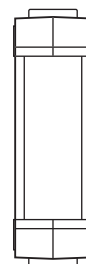
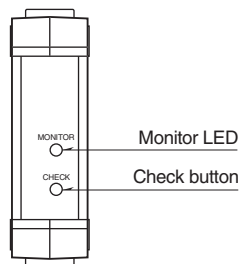
**Surge protection:** IEC 61643-21 Categories C1, C2, D1

	NOMINAL VOLTAGE	MDJST-12x	MDJST-24x	MDJST-48x
Max. Continuous operating voltage (Uc)	Line to Line	$\pm 18\text{V}$	$\pm 36\text{V}$	$\pm 60\text{V}$
	Line to Earth		$\pm 160\text{V}$	
	SHLD to Earth		$\pm 160\text{V}$	
Leakage current (initial value) @Uc	Line to Line		5 $\mu\text{A}$ max.	
	Line to Earth		5 $\mu\text{A}$ max.	
	SHLD to Earth		5 $\mu\text{A}$ max.	
Voltage protection level (Up) @4kV(1.2/50 $\mu\text{s}$ )	Line to Line	$\pm 30\text{V}$	$\pm 50\text{V}$	$\pm 90\text{V}$
	Line to Earth		$\pm 500\text{V}$	
	SHLD to Earth		$\pm 600\text{V}$	
Surge energy attenuation ratio	Line to Line		74 dB min.	
	Line to Earth		74 dB min.	
	SHLD to Earth		-	
Response Time (line to line)			3 nsec. max.	
Max. discharge current (Imax)			20kA (8/20 $\mu\text{s}$ )	
Nominal current (I <sub>N</sub> )			1A	
Internal series resistance			3 $\Omega$ max.	
AC durability			1 Arms (60 Hz 1s) 5 times	
Operational attenuation			3 dB max. @DC to 4 kHz, Z <sub>o</sub> = 600 $\Omega$ (8 dB max. @100 kHz)	

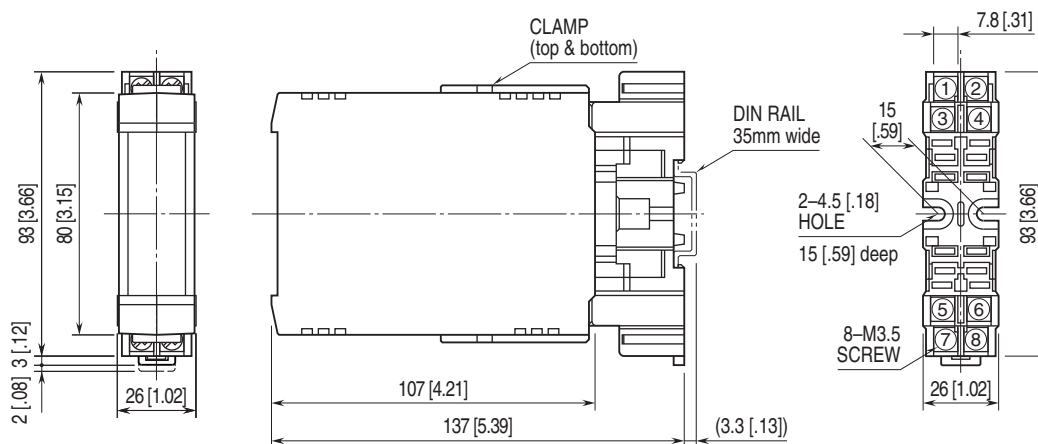
## EXTERNAL VIEW

■ For MDJST-xA1, MDJST-xA2

■ For MDJST-xY

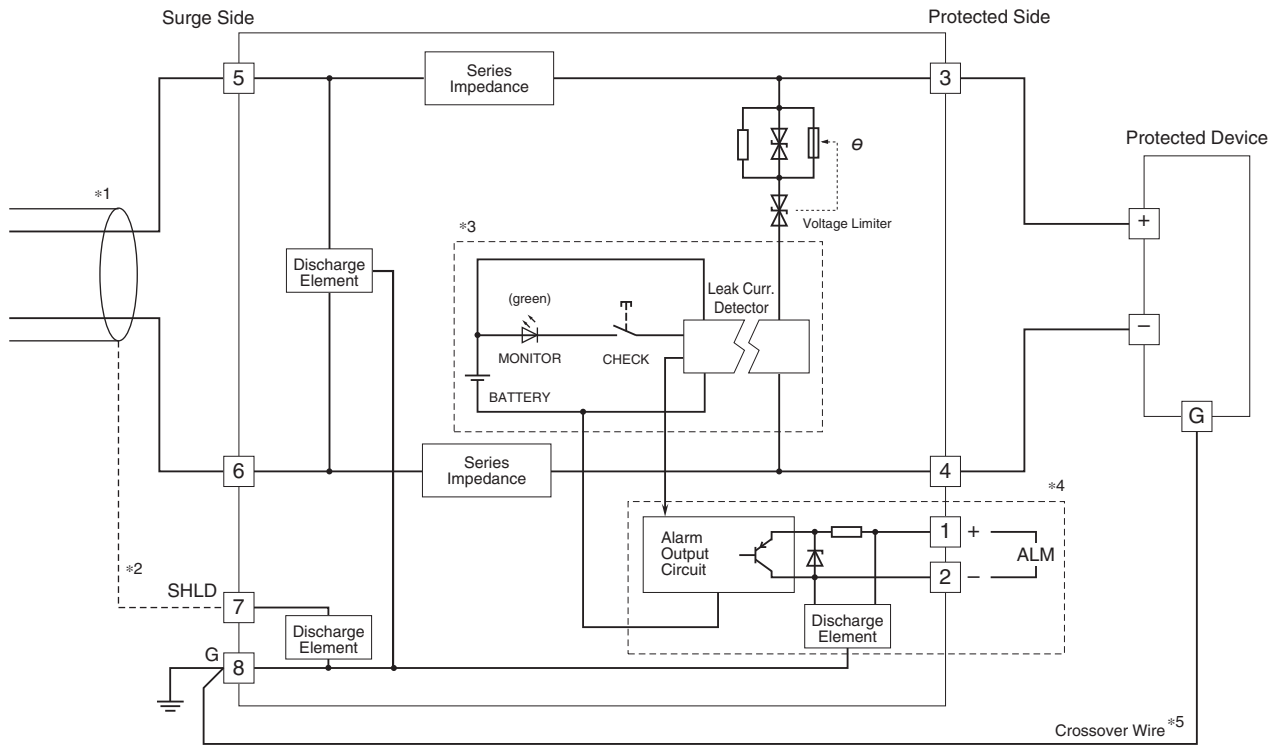


## EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



•When mounting, no extra space is needed between units.

## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



$\theta$ : Thermal breaker

\*1. Do not connect a high capacity current source such as power supply. (The current source must be equipped with current limiter of 1A or less.)

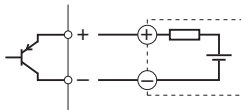
\*2. For floating SHLD line, connect to the terminal (7).

\*3. Sections enclosed in broken line are only applicable for "Status indicator" code "A1" or "A2."

\*4. Sections enclosed in broken line are only applicable for "Status indicator" code "A2."

\*5. The protected device's metal enclosure must be cross-wired to the earth terminal of the MDJST.  
If the protected device has no earth terminal, earth only the MDJST.

### ■ Alarm output connection example



- Specifications are subject to change with or without notice.

- This product includes a lithium-metal battery.



Consult your shipping agent such as a freight forwarder or an airline for the necessary procedures when transporting the battery.

Observe your national and local regulations when disposing of the used battery.