## 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 μs)
• Shield terminal provided
• Compatible with IEC 61643-21 categories C1, C2, D1.

26(1.02)
93 (3.66)
137 (5.39)
mm (inch)
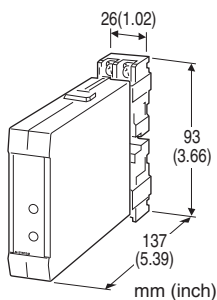
MODEL: MDJST–[1][2]

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
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 μA. 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 ≤ 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)

PERFORMANCE

Insulation resistance: ≥ 100 MΩ 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)
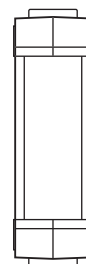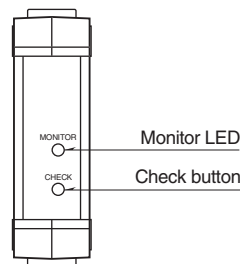Surge protection: IEC 61643-21 Categories C1, C2, D1

	NOMINAL VOLTAGE	MDJST-12x	MDJST-24x	MDJST-48x
Max. Continuous operating voltage (Uc)	Line to Line	±18V	±36V	±60V
	Line to Earth	±160V		
	SHLD to Earth	±160V		
Leakage current (initial value) @Uc	Line to Line	5μA max.		
	Line to Earth	5μA max.		
	SHLD to Earth	5μA max.		
Voltge protection level (Up) @4kV(1.2/50 μs)	Line to Line	±30V	±50V	±90V
	Line to Earth	±500V		
	SHLD to Earth	±600V		
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 μs)		
Nominal current (I_N)		1A		
Internal series resistance		3Ω max.		
AC durability		1 Arms (60 Hz 1s) 5 times		
Operational attenuation		3 dB max. @DC to 4 kHz, Zo = 600Ω (8 dB max. @100 kHz)		

EXTERNAL VIEW

■ For MDJST-xA1, MDJST-xA2

MONITOR ── Monitor LED
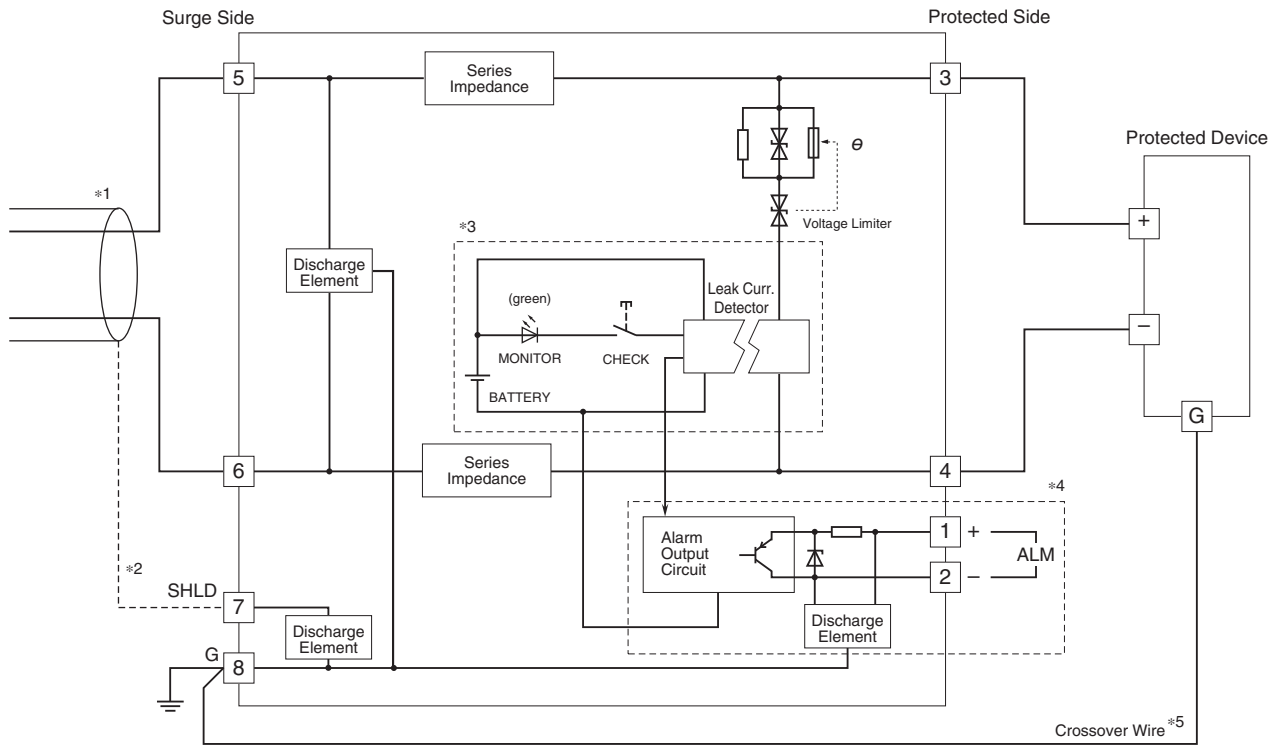CHECK ── Check button

■ For MDJST-xY

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS   unit: mm [inch]

CLAMP
(top & bottom)

DIN RAIL
35mm wide

7.8 [.31]

15 [.59]

2–4.5 [.18]
HOLE
15 [.59] deep

8–M3.5
SCREW

93 [3.66]
80 [3.15]
2 [.08] 3 [.12]
26 [1.02]

107 [4.21]
137 [5.39]
(3.3 [.13])

93 [3.66]
26 [1.02]
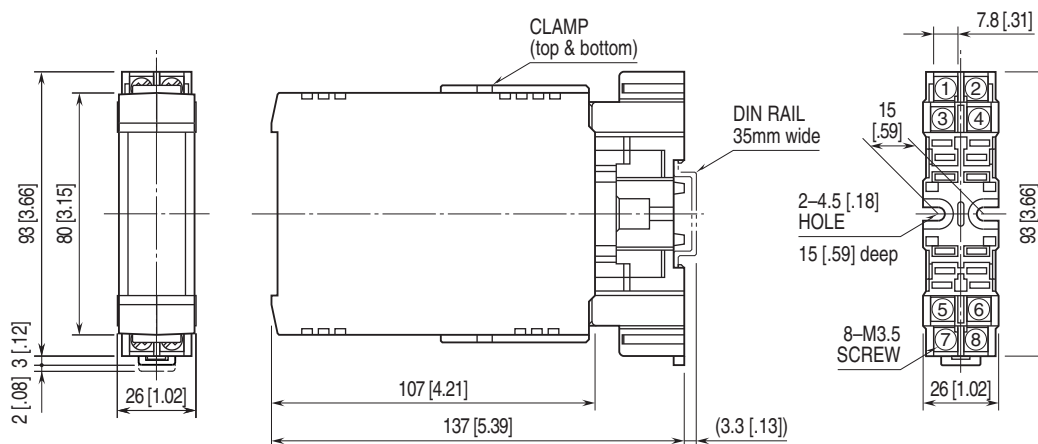
•When mounting, no extra space is needed between units.

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SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

θ: 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
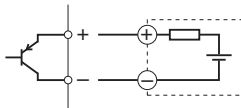
⚠
- Specifications are subject to change with or without notice.
- This product includes a lithium-metal battery.
  Consult your shipping agent such as a freight forwarder or an airline for the necessary procedures when transporting the battery.
  Observe your national and local regulations when disposing of the used battery.