

Lightning Surge Protectors for Electronics Equipment M-RESTER

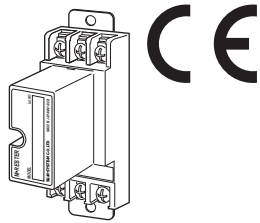
LIGHTNING SURGE PROTECTOR FOR DC POWER SUPPLY USE

Functions & Features

- Designed specifically for 12 V/24 V DC power supplies of small capacity
- Absorbs surges only without affecting instrumentation signal
- Monitor LED

Typical Applications

- DC power sources, switching regulators
- Power source for electronic devices



MODEL: MDP-D[1][2]

ORDERING INFORMATION

- Code number: MDP-D[1][2]
Specify a code from below for each [1] and [2].
(e.g. MDP-D24/A33/Q)
- Specify the specification for option code /Q
(e.g. /C01)

[1] OPERATIONAL VOLTAGE

12: 12 V DC
24: 24 V DC

[2] OPTIONS (multiple selections)

DIN Rail Mounting Adapter

blank: Without

/A33: With adapter (model A-33)

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

GENERAL SPECIFICATIONS

Construction: Plug-in

Surge protection type: Voltage limiting type two-port SPD

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

Screw terminal: Nickel-plated steel

Housing material: Flame-resistant resin (black)

Monitor LED: Green light turns ON during the power is supplied; OFF when the voltage limiter is failed.

INSTALLATION

Power input: Max. output current 1 A

Use a DC power source with the overload current protection.

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

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

Mounting: Surface or DIN rail

Weight: 140 g (0.31 lb), standard

165 g (0.36 lb), with DIN rail mounting adapter

PERFORMANCE

Max. continuous operating voltage (Uc):

MDP-D12 Line to line: 14 V

MDP-D24 Line to Line: 27 V

Line to earth: ± 160 V

Voltage protection level (Up):

MDP-D12 Line to line: 20 V

MDP-D24 Line to Line: 40 V

Line to earth: ± 650 V

Response time:

Line to line: ≤ 4 nsec.

Line to earth: ≤ 20 nsec.

Leakage current:

MDP-D12 Line to line: ≤ 3 mA @ 14 V DC

MDP-D24 Line to line: ≤ 6 mA @ 27 V DC

Line to earth: ≤ 0.1 mA @ ± 160 V DC

Max. discharge current (Imax): 5000 A (8 / 20 μ s)

Nominal current (In): 1.0 A

Internal series resistance: ≤ 0.6 Ω (including return)

Surge protection: IEC 61643-1 Class III

STANDARDS & APPROVALS

EU conformity:

EMC Directive

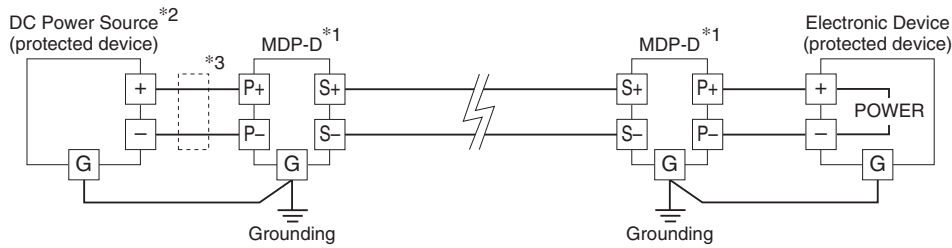
EMI EN 61000-6-4

EMS EN 61000-6-2

RoHS Directive

EN 50581

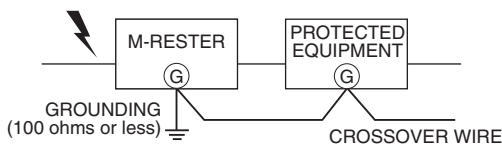
CONNECTION EXAMPLES



The MDP-D is not applicable to protect two-wire transmitters. To protect two-wire transmitters, model MDP-24-1 designed to yield only small leakage current is suitable.

- *1. Confirm the polarity of the terminals when connecting this module to a protected device.
- *2. Use a DC power source with the overload current protection function. (maximum output current 1A)
- *3. Install a current limiting element (capacity 1A) when the output current exceeds 1A.

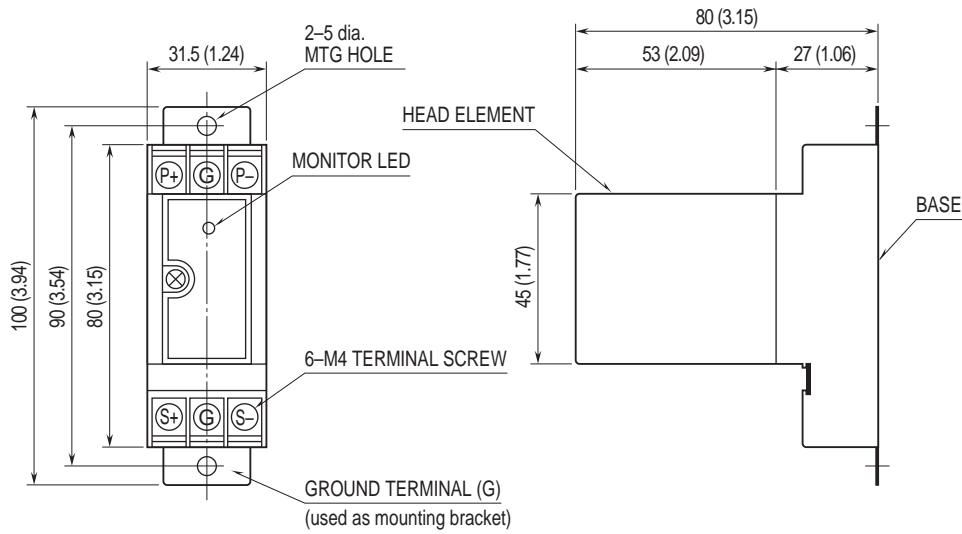
GROUNDING



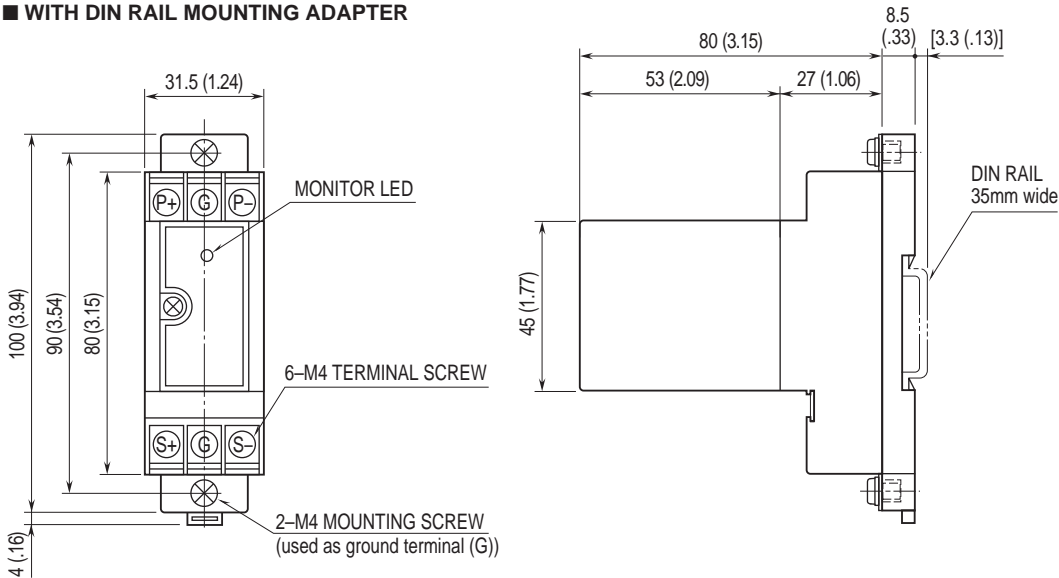
A crossover wire between M-RESTER ground and the ground or metallic housing of the equipment is required for protection.
 If the protected equipment has no ground terminal, ground the M-RESTER only.
 When the M-RESTER is mounted with DIN Rail Mounting Adapter, connect the grounding wire to the mounting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

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)

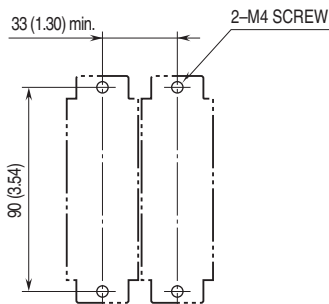
■ STANDARD



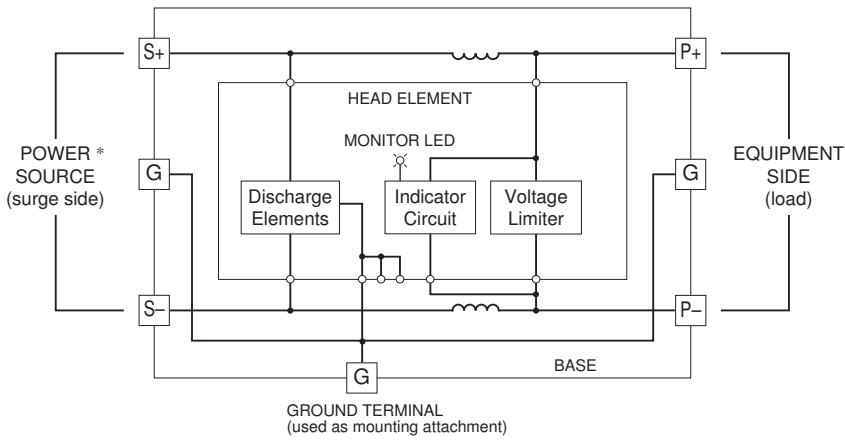
■ WITH DIN RAIL MOUNTING ADAPTER



MOUNTING REQUIREMENTS unit: mm (inch)



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



* Use a DC power source with the overload current protection function. (maximum output current 1A)



Specifications are subject to change without notice.