

## Lightning Surge Protectors for Electronics Equipment M-RESTER

### LIGHTNING SURGE PROTECTOR FOR POWER SUPPLY USE

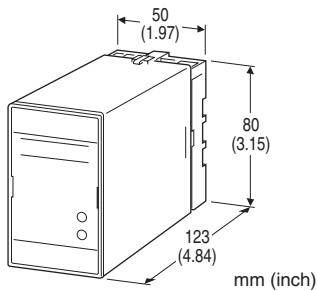
(DC power use)

#### Functions & Features

- Designed specifically for DC power supplies up to 5 amps
- Absorbing surges only without affecting instrumentation signal
- Indicator LED for surge absorber failure
- Fuse provided for detaching the discharge elements

#### Typical Applications

- Power supplies for control equipment
- Relays, level switches, proximity switches
- Protecting the output side of a switching regulator type power supply



### MODEL: MDH-[1]

#### ORDERING INFORMATION

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

#### [1] OPERATIONAL VOLTAGE

- 12: 12 V DC
- 24: 24 V DC
- 48: 48 V DC

#### GENERAL SPECIFICATIONS

- Construction:** Plug-in
- Connection:** M3.5 screw terminals (torque 0.8 N·m)
- Screw terminal:** Chromated steel
- Housing material:** Flame-resistant resin (black)
- Alarm indicator:** Red LEDs turn off with error

#### 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:** 250 g (0.55 lbs)

#### PERFORMANCE

##### Max. continuous operating voltage:

- 15 V DC (MDH-12)
- 30 V DC (MDH-24)
- 70 V DC (MDH-48)

##### Discharge voltage (peak voltage)

- Line to line:** 24 V min. (MDH-12)  
50 V min. (MDH-24)  
88 V min. (MDH-48)
- Line to ground:** ±380 V min.

##### Maximum surge voltage

- Line to line:**  
70 V max. (MDH-12)  
140 V max. (MDH-24)  
210 V max. (MDH-48)
- Line to ground:** ±700 V max.

(The maximum voltage that could pass through M-RESTER. Protected equipment must be able to withstand this voltage for very short time period.)

**Response time:** ≤ 0.1 μsec.

##### Leakage current

- Line to line (including the current consumed by LEDs)**  
≤ 15 mA at 15 V DC (MDH-12)  
≤ 15 mA at 30 V DC (MDH-24)  
≤ 20 mA at 70 V DC (MDH-48)
- Line to ground:** ≤ 1 mA at ±380 V DC

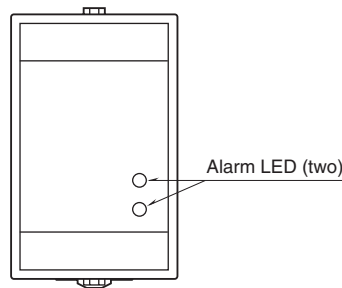
**Discharge current capacity:** 2000 A (8 / 20 μsec.)

**Maximum load current:** 5 A

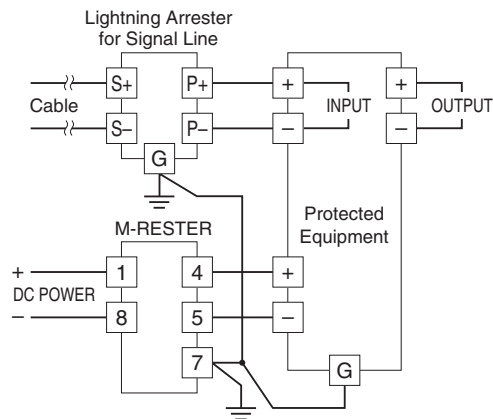
**Voltage drop:** ≤ 1 V



## EXTERNAL VIEW

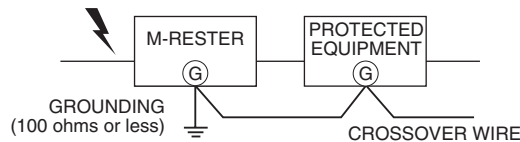


## CONNECTION EXAMPLES



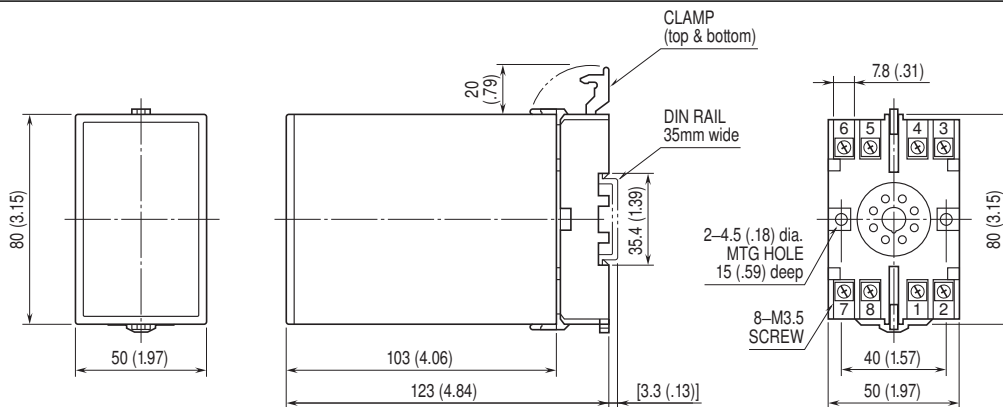
Ground one of the terminals 2, 3, 6 and 7.

## GROUNDING



A crossover wire between M-RESTER ground and ground or metallic housing of equipment is required for protection.  
If the protected equipment has no ground terminal, ground the M-RESTER only.

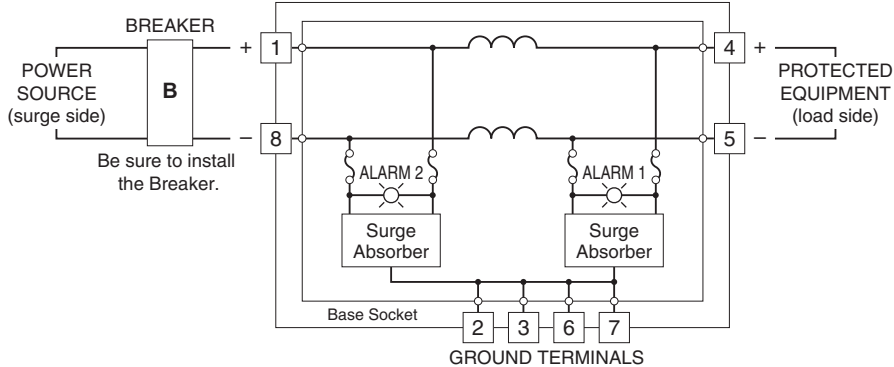
## EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



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



**SCHEMATIC CIRCUITRY**



Specifications are subject to change without notice.

