

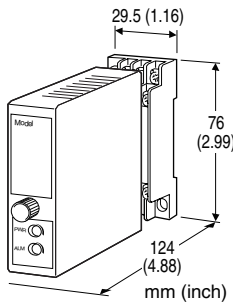
## Lightning Surge Protectors for Electronics Equipment M-RESTER

### LIGHTNING SURGE PROTECTOR FOR STANDARD SIGNAL LINE & PULSE USE

(life monitor, 48 V or 65 V DC line voltage)

#### Functions & Features

- Designed specifically for 4 - 20 mA DC and pulse signal line including both 4-wire and 2-wire transmitters
- Absorbs surges only without affecting instrumentation signal
- Life monitor function helps you to decide when you should replace the surge protector; reduces maintenance and prevents downtime
- LED display and alarm contact output indicate the degradation and life span of the surge protection circuits



## MODEL: MDM2A-65-[1]

### ORDERING INFORMATION

- Code number: MDM2A-65-[1]
- Specify a code from below for [1].  
(e.g. MDM2A-65-M2)

### [1] POWER INPUT

#### AC Power

M2: 100 - 240 V AC (Operational voltage range 85 - 264 V, 47 - 66 Hz)

#### DC Power

R: 24 V DC

(Operational voltage range 24 V  $\pm$ 10 %, ripple 10 %p-p max.)

P: 110 V DC

(Operational voltage range 85 - 150 V, ripple 10 %p-p max.)

### GENERAL SPECIFICATIONS

**Construction:** Plug-in

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

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

#### Alarm indicators

**PWR:** The green LED turns on while the power is supplied.

**ALM:** Tricolor LED (green/amber/red)

• Remains off when the power supply is first turned on.

• **Green:** The unit has received one or more surges.

• **Amber:** Replacement is recommended.

• **Red:** The life span has ended.

**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.

**Alarm contact:** The N.C. contact is on when the life span of the discharge elements has ended, when the voltage limiter has degraded, and/or when the power supply is removed.

**Rating:** 125 V AC @ 0.5 A ( $\cos \theta = 1$ )

30 V DC @ 1 A (resistive load)

**Maximum switching voltage:** 125 V AC or 110 V DC

**Maximum switching power:** 62.5 VA or 30 W

**Minimum load:** 5 V DC @ 1 mA

### INSTALLATION

#### Power consumption

• **AC:** Approx. 2 VA at 100 V

Approx. 3 VA at 200 V

Approx. 4 VA at 240 V

• **DC:** Approx. 1.5 W

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

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

**Mounting:** Surface or DIN rail

**Weight:** 150 g (0.33 lb)

### PERFORMANCE

#### Discharge voltage (peak voltage)

Line to line: 70 V min.

Line to ground:  $\pm$ 300 V min.

#### Maximum surge voltage

Line to line: 85 V max.

Line to ground:  $\pm$ 650 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:**  $\leq$  0.1  $\mu$ sec.

#### Leakage current:

Line to line:  $\leq$  5  $\mu$ A @ 70 V DC

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

**Discharge current capacity:** 5000 A (8 / 20  $\mu$ sec.)

**Max. load current:** 100 mA

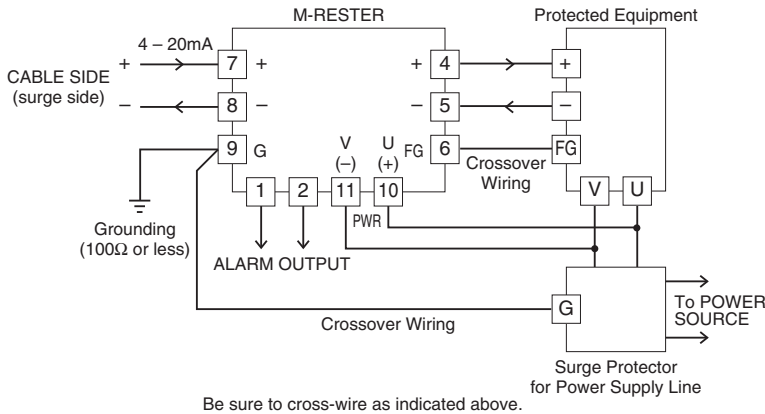
**Insulation resistance:**  $\geq$  100 M $\Omega$  with 500 V DC

(surge protector circuit to alarm output to power)  
**Dielectric strength:** 2000 V AC @ 1 minute  
 (surge protector circuit to power to ground)  
**Internal series resistance:** 20 Ω ±10 % (including return)  
**Maximum line voltage:** 70 V

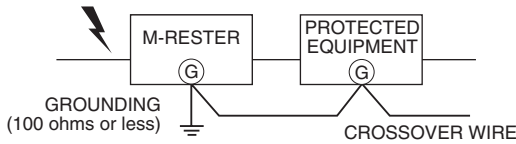
## STANDARDS & APPROVALS

**EU conformity:**  
 EMC Directive  
 EMI EN 61000-6-4  
 EMS EN 61000-6-2  
 Low Voltage Directive  
 EN 61010-1  
 Installation Category II  
 Pollution Degree 2  
 Surge suppression circuit to power:  
 Reinforced insulation (300 V)  
 RoHS Directive  
 EN 50581

## CONNECTION EXAMPLES

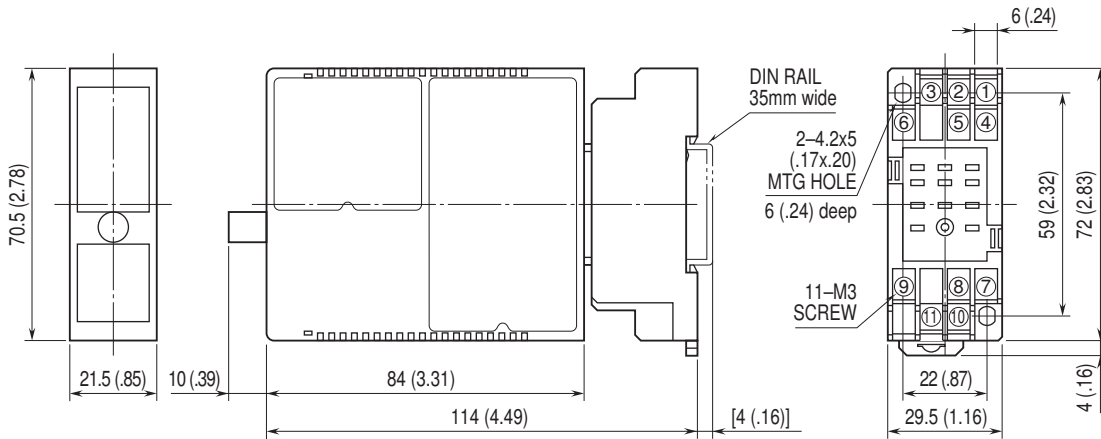


## GROUNDING



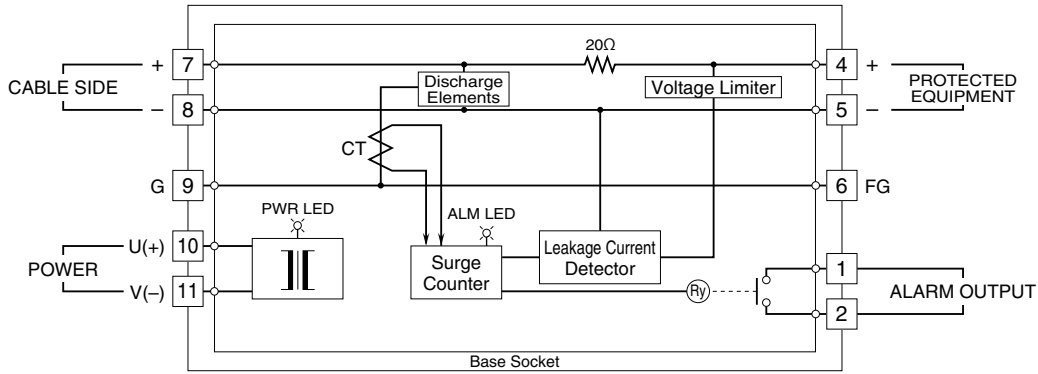
A crossover wire between M-RESTER ground and ground or metallic housing of equipment is required for protection.  
 If the protected equipment has no ground terminal, ground the M-RESTER only.

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



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

## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.