

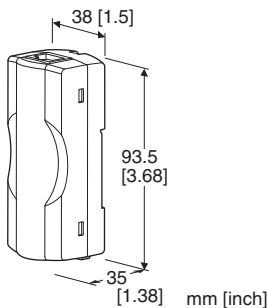
## Lightning Surge Protectors for Electronics Equipment M-RESTER

### LIGHTNING SURGE PROTECTOR FOR ETHERNET

(PoE / 10 BASE-T / 100 BASE-TX / 1000 BASE-T)

#### Functions & Features

- Designed specifically for Ethernet network
- Conforms with 1000 Base-T, PoE and PoE Plus
- LAN cable's shield wire can be floating or grounding by a shortcircuit bar
- DIN rail mounting



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

### ORDERING INFORMATION

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

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

(e.g. MDCAT-5E/DR/Q)

### [1] CABLE CATEGORY

5E: CAT5e

6: CAT6

### [2] OPTIONS (multiple selections)

#### Single mount DIN rail

blank: Without

/DR: With single mount DIN rail

#### 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

### CAUTION

- When this unit is earthed via a DIN rail, use a steel or copper rail. Oxide film on the surface of an aluminium rail may lower the electric conductivity between this module and the ground.
- Single mount DIN rail for option code '/DR' is made of aluminum. Connect to ground with ground terminal when this DIN rail is used.

### PACKAGE INCLUDES...

LAN cable connected to the protected device (STP, 1 meter)

### APPLICABLE NETWORK

10 BASE-T: IEEE 802.3i

100 BASE-TX: IEEE 802.3u

1000 BASE-T: IEEE 802.3ab

PoE: IEEE 802.3af

PoE Plus: IEEE802.3at

### GENERAL SPECIFICATIONS

#### Connection

**Network:** RJ-45 modular jack

**Grounding:** M3 screw terminal (torque 0.6 N·m)  
or via DIN rail

**Screw terminal:** Nickel-plated brass

**DIN rail material:** Aluminum

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

### INSTALLATION

**Operating temperature:** -25 to +85°C (-13 to +185°F)

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

**Mounting:** DIN Rail (TH35-7.5, 1-mm-thick)

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

## PERFORMANCE

### Transmission performance:

TIA/EIA-568-B.2 CAT5e (MDCAT-5E)

TIA/EIA-568-B.2 CAT6 (MDCAT-6)

### Surge protection: IEC 61643-21 Categories C1, C2

	LINE TO LINE (pair)		LINE TO LINE (PoE)	LINE TO EARTH
	MDCAT-5E	MDCAT-6		
Max. continuous operating voltage (Uc)	±6V	±3.3V	±58V	±150V
Voltage protection level (Up)	±15V @2kV	±10V @2kV	±100V @2kV	±600V @4kV
Leakage current @Uc	25μA	5μA	25μA	5μA
Response time	≤ 4 nsec.	≤ 4 nsec.	≤ 4 nsec.	≤ 20 nsec.
Max. discharge current (Imax)	100A	100A	100A	10kA
Nominal current (In)	1A			
Series resistance	Approx. 0Ω			

## STANDARDS & APPROVALS

### EU conformity:

EMC Directive

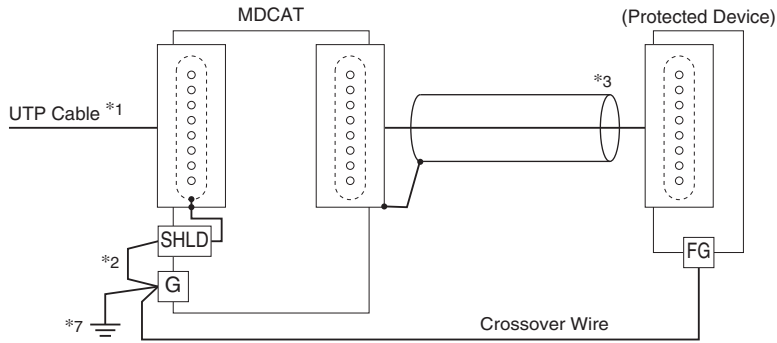
EMI EN 61000-6-4

EMS EN 61000-6-2

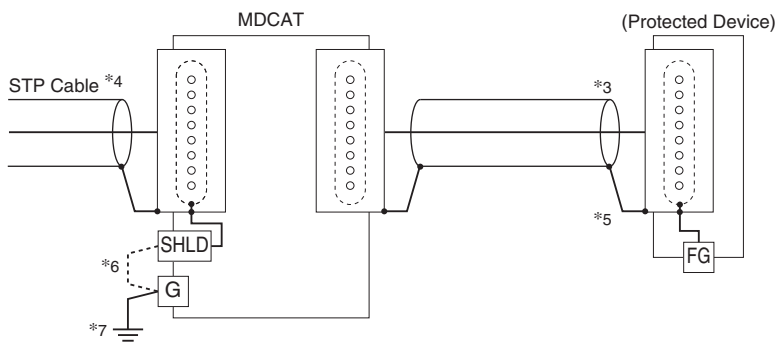
RoHS Directive

## CONNECTION EXAMPLES

### ■ PROTECTING NON-STP (UTP) DEVICE



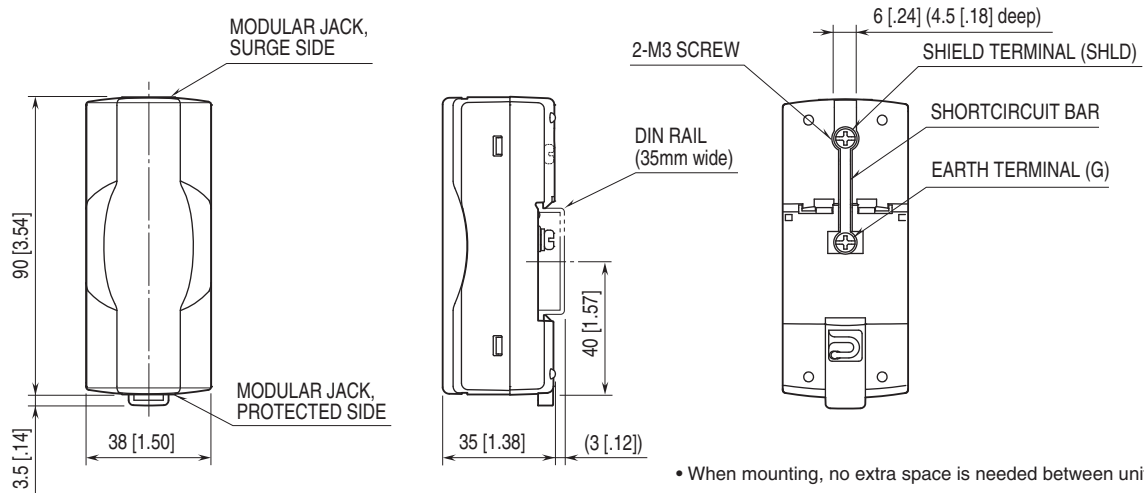
### ■ PROTECTING STP DEVICE



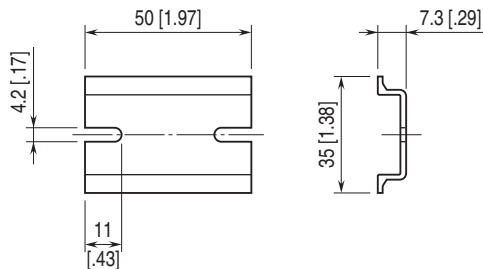
- \*1. Unshield twisted-pair cable
- \*2. Maintain the shortcircuit bar. The protected device is earthed.
- \*3. Cable included in the product package or provided by customer.
- \*4. Shield twisted-pair cable
- \*5. STP cable's shield wire serves as the crossover wiring.
- \*6. The protected device is 'earthed' when the shortcircuit bar is connected. Remove the bar in order to switch to 'floating' state.
- \*7. Use a DIN rail made of steel or copper when connecting to ground via the DIN rail.  
Single mount DIN rail for option code 'DR' is made of aluminum.  
Connect to ground with ground terminal when this DIN rail is used.

## EXTERNAL DIMENSIONS unit: mm [inch]

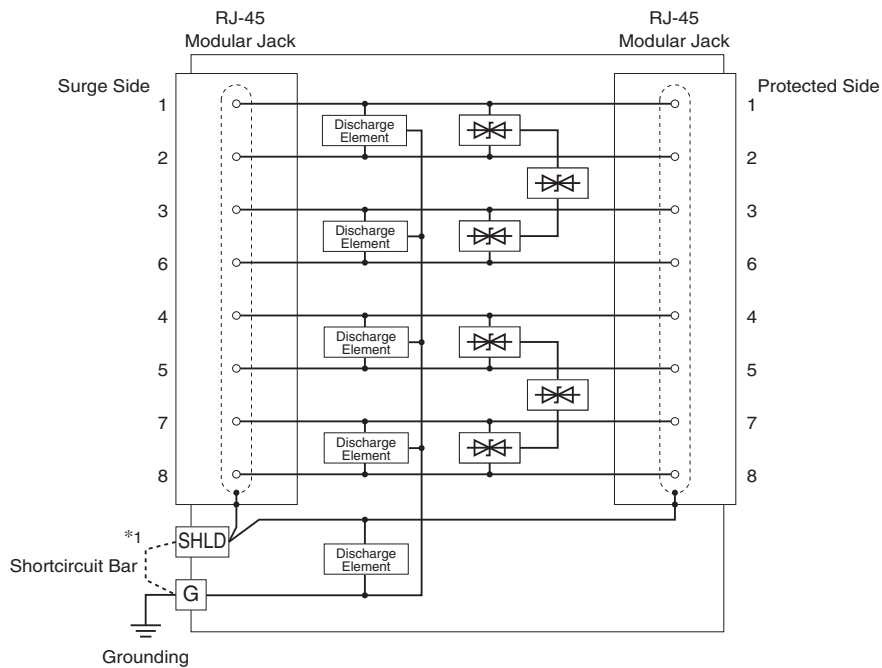
### UNIT



### DIN RAIL

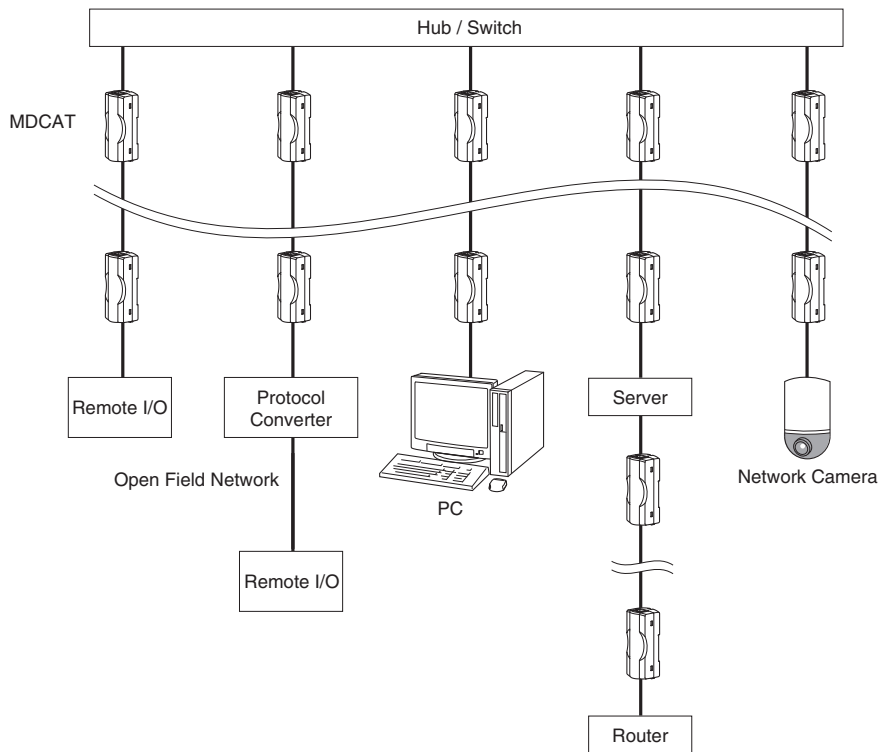


## SCHEMATIC CIRCUITRY



\*1. Remove the shortcircuit bar when the LAN cable's shield wire is floating.  
 Note: Line to line (PoE): Terminal 1 & 2 to 3 & 6, 4 & 5 to 7 & 8  
 Line to line (pair): Terminal 1 to 2, 3 to 6, 4 to 5 and 7 to 8

**SYSTEM CONFIGURATION EXAMPLES**



Specifications are subject to change without notice.