

Lightning Surge Protectors for Electronics Equipment *M-RESTER*

LIGHTNING SURGE PROTECTOR FOR STANDARD SIGNAL LINE & PULSE USE

MODEL **MDP-24-1**
MDP-65-1

MODEL & SUFFIX CODE SELECTION

MDP-24-1
MDP-65-1

MODEL _____

ORDERING INFORMATION

Specify code number. (e.g. MDP-24-1)

GENERAL SPECIFICATIONS

Construction: plug-in

Connection: M4 screw terminals (nickel-plated steel; torque ≤ 0.8 N·m)

Housing material: flame-resistant resin (black)

INSTALLATION

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

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

Mounting: surface or DIN rail (DIN rail adaptor model A-33 is required.)

Dimensions: W23.5×H100×D80 mm (0.93"×3.94"×3.15")

Weight: 120 g (0.26 lbs)

STANDARDS & APPROVALS

CE conformity: EMC Directive (89/336/EEC)

EMI EN61000-6-4

EMS EN61000-6-2

Approval: Protectors for data communications and fire alarm circuits (UL 497B)

PERFORMANCE

Discharge voltage

Between lines: 30V min. (MDP-24-1)
70V min. (MDP-65-1)

Line to ground: ± 300 V min.

Maximum surge voltage*

Between lines: 40V max. (MDP-24-1)
80V max. (MDP-65-1)

Line to ground: ± 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

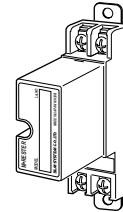
Between lines: ≤ 4 nanoseconds

Line to ground: ≤ 20 nanoseconds

Discharge current capacity: 5000A (8 / 20 μ sec.)

Maximum load current: 100mA

Internal series resistance: approx. 20 Ω including return



Functions & Features

- Designed specifically for 4 – 20mA DC and pulse signal line including both 4-wire and 2-wire transmitters
- Absorbs surges only without affecting instrumentation signal
- No interruption of signal by unplugging arrester element
- CE marking
- UL approval

Application Examples

- Protects two-wire transmission lines
- Protects electronic instruments' I/O

Leakage current

Between lines: $\leq 5\mu$ A at 30V DC (MDP-24-1)
 $\leq 5\mu$ A at 70V DC (MDP-65-1)

Line to ground: $\leq 5\mu$ A at ± 140 V DC

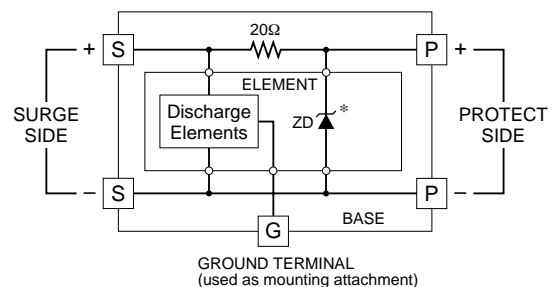
Maximum line voltage: 30V (MDP-24-1)
70V (MDP-65-1)

Capacitance

Between lines: ≤ 1000 pF at 1 kHz

Line to ground: ≤ 100 pF at 1 kHz

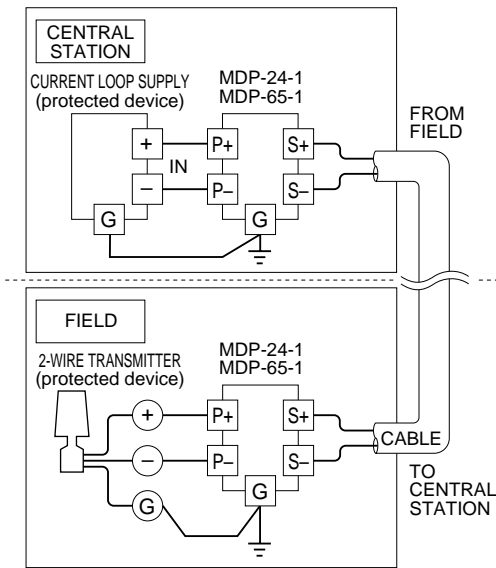
SCHEMATIC CIRCUITRY



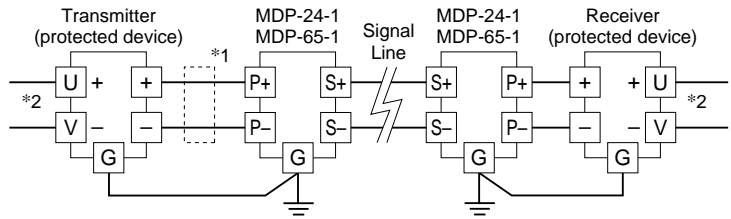
*The zener diode has polarity.
Zero-cross signal cannot be connected.

CONNECTION DIAGRAM

■ **PROTECTING TWO-WIRE SIGNAL LINES**

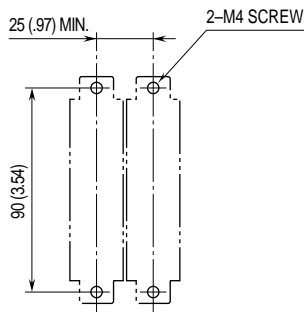


■ **PROTECTING ELECTRONIC INSTRUMENTS' I/O**

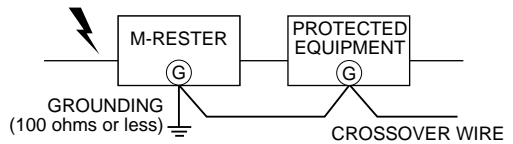


- *1. Install a circuit protector when the transmitter output current exceeds 100mA.
- *2. The MDP-24-1 is designed in particular to protect signal lines. To protect power supply lines, install other types of surge protectors.

MOUNTING REQUIREMENTS mm (inch)



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 ASSIGNMENT mm (inch)

