**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

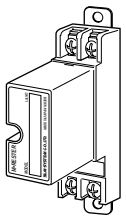
**Operating temperature**: -5 to +55°C (23 to 131°F)
**Operating humidity**: 30 to 90% RH (non-condensing)
**Mounting**: surface or DIN rail (DIN rail adaptor model A-33 is required.)
**Dimensions**: W23.5×H100×D80 mm (0.93"×3.94"×3.15")
**Weight**: 120 g (0.26 lbs)

## 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**: ±300V min.
**Maximum surge voltage***
**Between lines**: 40V max. (MDP-24-1)
80V max. (MDP-65-1)
**Line to ground**: ±650V 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 μsec.)
**Maximum load current**: 100mA
**Internal series resistance**: approx. 20Ω including return

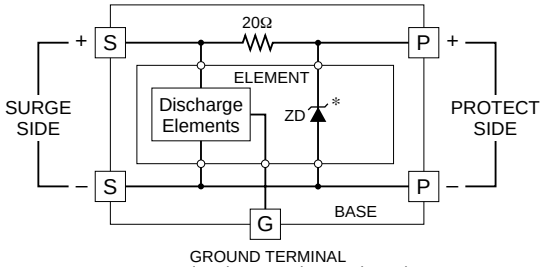


***Functions & Features***
• Designed specifically for 4 – 20mA DC and pulse signal line including both 4-wire and 2-wire transmitters • Absorbs surges only without affecting instrumentation signal • No interruption of signal by unplugging arrester element • CE marking • UL approval

***Application Examples***
• Protects two-wire transmission lines • Protects electronic instruments' I/O

**Leakage current**
**Between lines**: ≤5μA at 30V DC (MDP-24-1)
≤5μA at 70V DC (MDP-65-1)
**Line to ground**: ≤5μA at ±140V 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

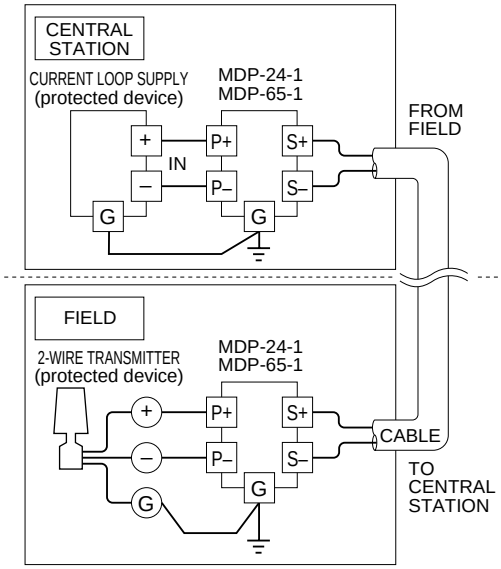
## SCHEMATIC CIRCUITRY



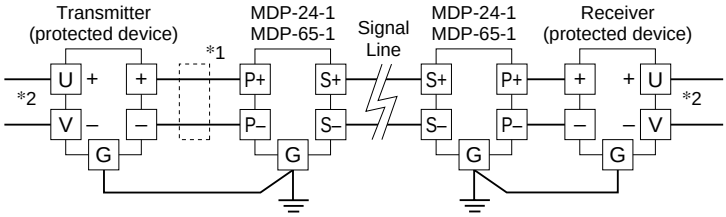

*The zenor diode has polarity.
Zero-cross signal cannot be connected.

## CONNECTION DIAGRAM

**■PROTECTING TWO-WIRE SIGNAL LINES**

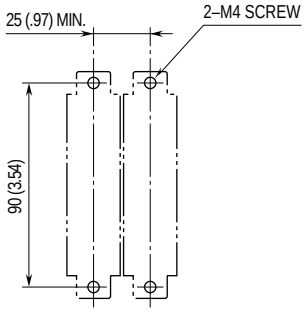



**■PROTECTING ELECTRONIC INSTRUMENTS' I/O**

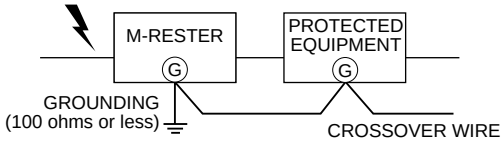



*1. Install a circuit protector when the transmitter output current exceeds 100mA.
*2. The MDP-24-1 is designed in particular to protect signal lines.
To protect power supply lines, install other types of surge protectors.

## MOUNTING REQUIREMENTS mm (inch)

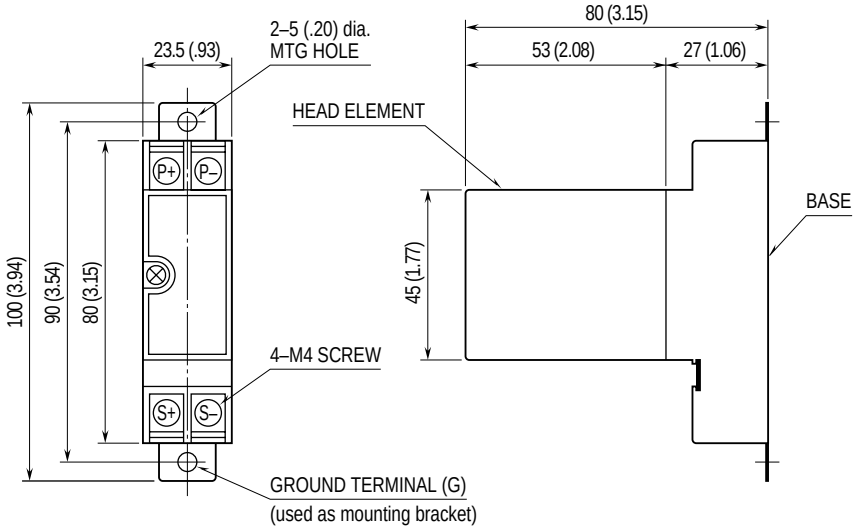



## GROUNDING




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)




Specifications subject to change without notice.