INSTRUCTION MANUAL

LIGHTNING SURGE PROTECTOR FOR STANDARD SIGNAL LINE & PULSE USE (life monitor)

MODEL **MDPA-24 MDPA-65**

BEFORE USE ....

Thank you for choosing us. Before use, please check contents of the package you received as outlined below.
If you have any problems or questions with the product, please contact our sales office or representatives.

■ PACKAGE INCLUDES:

Surge protector (Head element + Base) ..... (1)
DIN rail mounting adaptor*..... (1)
Screws for DIN rail mounting (M4 × 8)* ..... (2)
*Included with option code /A33
(Base section is optional.)

■ MODEL NO.

Confirm Model No. marking on the product to be exactly what you ordered.

■ INSTRUCTION MANUAL

This manual describes necessary points of caution when you use this product, including installation, connection and basic maintenance procedures.

LIMITATION APPLICABLE TO M-RESTER

The M-RESTER will protect electronics equipment from damage caused by lightning by absorbing most of the surge voltages.

However, M-RESTER may not be effective against certain extremely high voltages caused by a direct or almost direct hit by lightning.

M-RESTER must be installed according to this installation / instruction manual.

GENERAL

■ FUNCTION & FEATURES

- Designed specifically for 4 – 20mA DC and pulse signal line including both 4-wire and 2-wire transmitters
- Life monitor function helps you to decide when you should replace the surge protector; reduces maintenance and prevents downtime
- Pressing CHK (Check) button confirms the degradation and life span of the surge protection circuits with LEDs
- Absorbs surges only without affecting instrumentation signal
- No interruption of signal by unplugging surge protector element

■ SPECIFICATIONS

	LINE TO LINE		LINE TO EARTH
	MDPA-24	MDPA-65	
Max. continuous operating voltage (Uc)	30V	70V	±160V
Voltage protection level (Up) @2kV (1kA)	50V	100V	±650V
Leakage current (new device)	≤ 5μA @30V DC	≤ 5μA @70V DC	≤ 5μA @±140V DC
Capacitance (reference value) @1 MHz	≤ 2000pF	≤ 2000pF	≤ 100pF
Response time	≤ 4 nsec.	≤ 4 nsec.	≤ 20 nsec.
Max. line voltage	30V	70V	----
Max. discharge current (Imax)	5000A (8 / 20 μs)		
Nominal current (I_N)	100mA		
Internal series resistance	20Ω ±10% including return		

POINTS OF CAUTION

■ ENVIRONMENT

- Indoor use.
- When heavy dust or metal particles are present in the air, install the surge protector inside proper housing with sufficient ventilation.
- Do not install the surge protector where it is subjected to continuous vibration. Do not subject the unit to physical impact.
- Environmental temperature must be within -5 to +55°C (23 to 131°F) with relative humidity within 30 to 85% RH in order to ensure adequate life span and operation.

■ WIRING

- Do not install cables close to noise sources (relay drive cable, high frequency line, etc.).
- Do not bind the surge protector's cables together with those in which noises are present. Do not install them in the same duct.

■ DIELECTRIC STRENGTH TEST

- Loosen the screw located at the left-center of the element and remove the element module from the base before conducting a dielectric strength testing. Otherwise the element will start discharging at a voltage exceeding the max. continuous operating voltage (Uc), which can cause insulation failure of the module.
  Be sure to return the element and fasten securely after the test.

■ BATTERY LIFE

- The battery's life is assured for 10 years from the manufacturing date indicated at the right-top of the specification label (when used ≤ 2 minutes/month).
- The battery continues to discharge even while it is unused. We recommend not to store the Element module for a long period of time.

■ AND ....

- We recommend that you keep spare surge protectors so that you can replace them when necessary.
- Lightning surge can enter not only through signal lines but also through power supply lines. We recommend that you also use the surge protectors for power line for sufficient protection.

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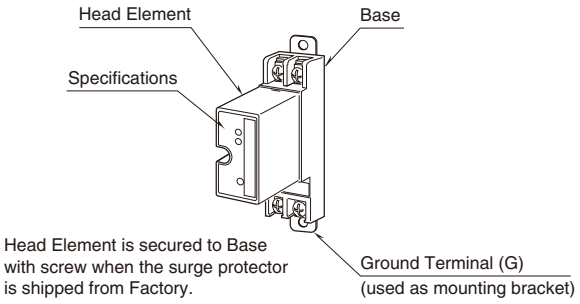
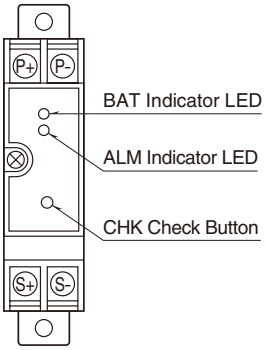
COMPONENT IDENTIFICATION



■ FRONT PANEL CONFIGURATION



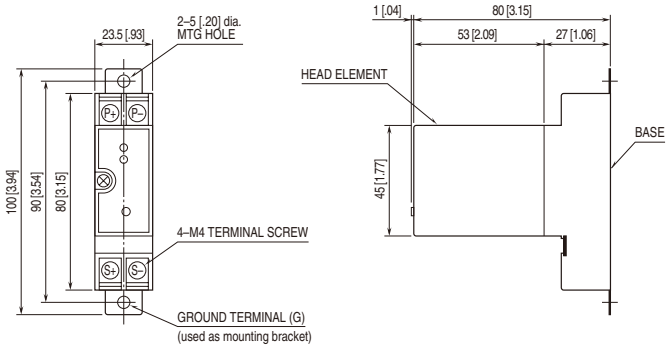
INSTALLATION

In order to separate the head element from the base, loosen the screw located at the left-center of the element.

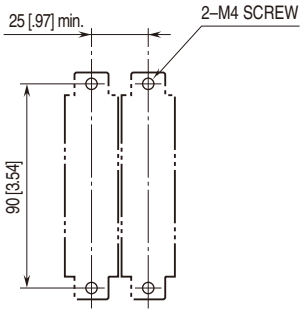
■ WALL MOUNTING

Refer to the drawings below.

• EXTERNAL DIMENSIONS unit: mm [inch]



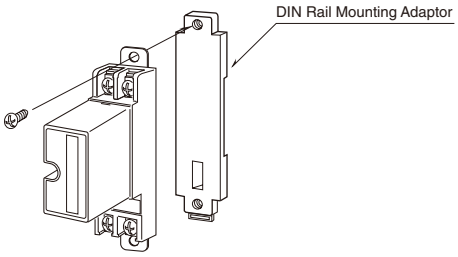
• MOUNTING REQUIREMENTS unit: mm [inch]



■ DIN RAIL MOUNTING (Only for /A33)

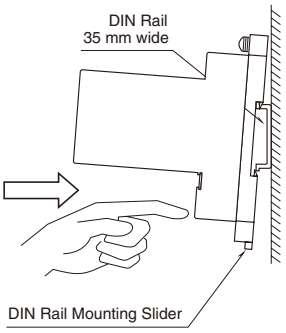
1. MOUNTING ONTO THE ADAPTOR

Before DIN rail mounting, secure the mounting bracket of MDP to the mounting adaptor with a screw provided with this product. In this step, secure at one point.



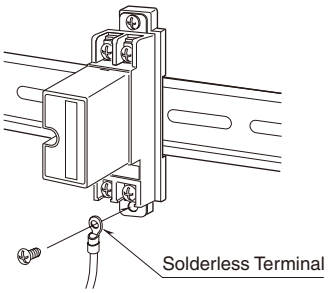
2. DIN RAIL MOUNTING

Set the base socket so that its mounting slider is at the bottom. Hang the upper hook at the rear side of base socket on the DIN rail and push in the lower. When removing the socket, push down the mounting slider utilizing a minus screwdriver and pull.

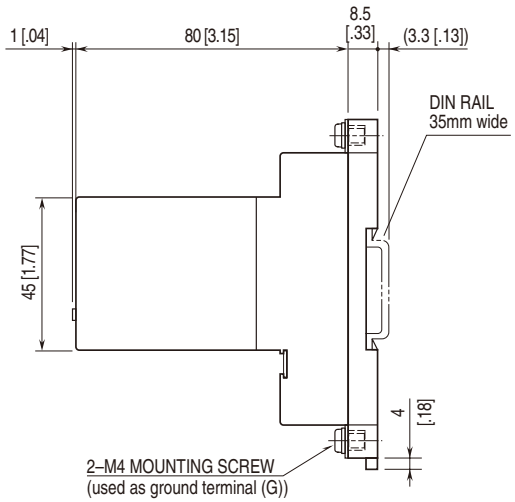


3. GROUNDING

Secure the mounting bracket at the other point with the other screw. In this step, secure the grounding wire together with the screw.

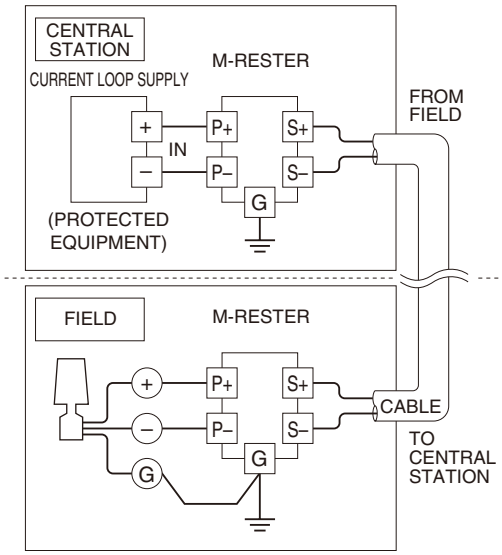


• MOUNTING REQUIREMENTS unit: mm [inch]

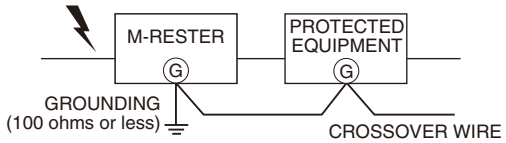


TERMINAL CONNECTION

Connect the unit as in the diagram below.
Be sure to cross-wire between the Ground terminal (G) and that of the protected equipment. When the surge protector is connected with a device which has no ground terminal (See figure below), ground the M-RESTER Ground terminal (G) only.



■ GROUNDING



A crossover wire between M-RESTER ground and the ground or metallic housing of the equipment is required for protection.
If the protected equipment has no ground terminal, ground the M-RESTER only.
When the M-RESTER is mounted with DIN Rail Mounting Adapter, connect the grounding wire to the mounting screw of the M-RESTER.

WIRING INSTRUCTIONS

■ SCREW TERMINAL

Torque: 0.8 N·m

MAINTENANCE

■ WIRING

1) Make sure that wiring is done as instructed in the connection diagram.
2) Make sure that the Ground terminal (G) is connected to the metallic housing of protected equipment.
3) Make sure that the Ground terminal (G) is grounded to earth.

■ HEAD ELEMENT MODULE

Check surge protectors periodically. Many cases of lightning are ignored, and even lightning at a far distance often causes inductive surges.
We recommend that you check your surge protector about twice a year, before and after the rainy season. Check whenever you experience a strong lightning occurrence.
DO NOT test it during a thunder storm.

For testing, press CHK (Check) button on the front and LED tuns on or off according to the surge protector's condition as shown in the table below.

• Discharge Element Status Table

BAT	ALM	Battery	Discharge Element	Voltage Limiter	Replacement
☼	●	Normal			No Need
☼	☼	Normal	Near End	Normal	Near
●	☼	Normal	End of Life	Degraded*1	Immediately Required
●	●	Discharged	Unable to Judge		

☼ : ON ● : OFF

*1 : With pulsating line signal or that containing ripples, the LED may flicker or blink when the voltage limiter is degraded.

Replace the had element module to a new one immediately when the LEDs indicate so.

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