

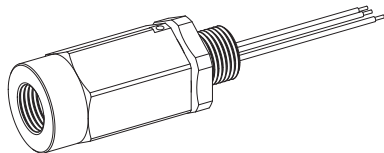
**Lightning Surge Protectors for
Electronics Equipment M-RESTER**

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

(conduit mount, weather-proof, 24 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
- Direct mount in a wiring conduit of outdoor enclosures
- Absorbs surges only without affecting instrumentation signal
- CE marking (conforms to ATEX and EMC)



MODEL: MD6T-24-[1][2][3]

ORDERING INFORMATION

- Code number: MD6T-24-[1][2][3]
- Specify a code from below for [1] through [3] (e.g. MD6T-24-00B)
- For the safety approval code 2 or 4, specify the product's destination country using Ordering Information Sheet (No. ESU-8284).

[1] SAFETY APPROVAL

- 0: None
- 1: FM intrinsically safe
- 2: CENELEC intrinsic safety (ATEX)
- 4: CENELEC flameproof (ATEX)
- 5: FM nonincendive

[2] WIRING CONDUIT

- 0: G 1/2 (Not selectable for CENELEC flameproof approval)
- 1: 1/2 NPT
- 2: M20 x 1.5

[3] BODY MATERIAL

- B: Brass
- S: Stainless steel

CAUTION

The packing of the cable gland must be separate from the body. Choose an appropriate one for the environment in which the surge protector is used.

GENERAL SPECIFICATIONS

- Degree of protection:** IP65
- Wiring conduit:** See 'Ordering information.'
- Connection**
 - Cable side:** Terminal block (leadwire diameter: 0.14 - 1.5 mm² for both stranded and solid wires; or AWG26 - 16)
 - Equipment side:** Leadwires (leadwire diameter AWG20 for grounding; AWG22 for the protected equipment)
 - Body material:** Nickel-plated brass or stainless steel 316

INSTALLATION

- Operating temperature:** -40 to +85°C (-40 to +185°F)
(See Safety Parameters for use in a hazardous location.)
- Mounting:** Screwed into an electrical conduit of outdoor enclosures
- Weight:** 500 g (1.1 lbs)

PERFORMANCE

- Discharge voltage (peak voltage)**
 - Line to line: 30 V min.
 - Line to ground: ±160 V min.
- Max. surge voltage**
 - Line to line: 40 V max.
 - Line to ground: ±650 V max.
- (The maximum voltage that could pass through the surge protector. Protected equipment must be able to withstand this voltage for a very short time period.)
- Response time:**
 - Line to line: ≤ 4 nsec.
 - Line to ground: ≤ 20 nsec.
- Leakage current:**
 - Line to line: ≤ 5 μA @ 30 V DC
 - Line to ground: ≤ 5 μA @ ±160 V DC
- Discharge current capacity:** 10000 A (8/ 20 μsec.)
- Max. load current:** 100 mA
- Internal series resistance:** Approx. 22 Ω including return
- Max. line voltage**
 - Without safety approval: 30 V DC
 - With safety approval: 28 V DC
- Capacitance @ 1 kHz:**



Line to line: ≤ 2500 pF
Line to ground: ≤ 100 pF

STANDARDS & APPROVALS

CE conformity:

ATEX Directive (94/9/EC)
EEx ia EN 50020: 2002
Category 1G EN 50284: 1999
Ex d EN 60079-1: 2004
EMC Directive (2004/108/EC)
EMI EN 61000-6-4: 2007
EMS EN 61000-6-2: 2005

Safety approval:

FM: Intrinsically safe
Class I, Div. 1, Groups A, B, C and D
Class II, Div. 1, Groups E, F and G
Class III, Div. 1
Class I, Zone 0, AEx ia IIC
T5 and T6
(Class 3610: 2010, ANSI/ISA 60079-11: 2009)
FM: Nonincendive
Class I, Div. 2, Groups A, B, C, and D
Class II, Div. 2, Groups E, F and G
Class III, Div. 1
T6
(Class 3611: 2004)
CENELEC: Intrinsic safety (ATEX)
⊗ II 1G, EEx ia IIC; T5 and T6
(EN 50020: 2002, EN 50284: 1999)
CENELEC: Flameproof (ATEX)
⊗ II 2G, Ex d IIC; T5 and T6
(EN 60079-1: 2004)

SAFETY PARAMETERS

Operating temperature:

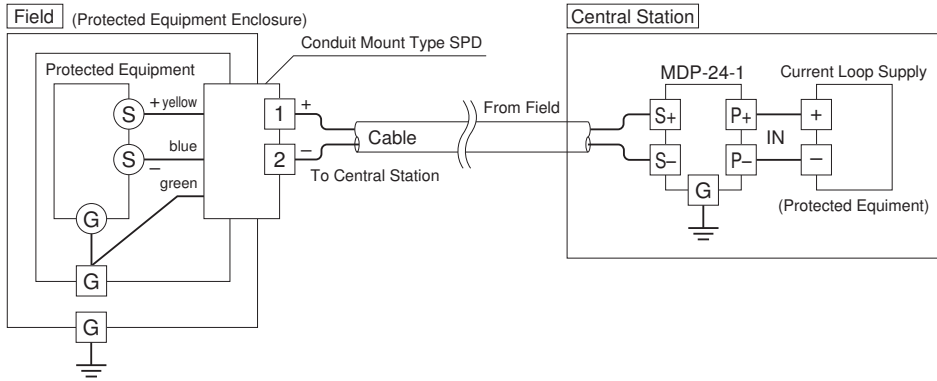
T5 -40 to +80°C
T6 -40 to +70°C
-40 to +75°C for CENELEC (ATEX) flameproof
-40 to +80°C for FM nonincendive

Ex-data:

Ui (Vmax) 30 V ('Any' for CENELEC intrinsic safety approval (ATEX))
Ii (Imax) 100 mA ('Any' for CENELEC intrinsic safety approval (ATEX))
Pi 750 mW
Ci 2.5 nF
Li 0 mH



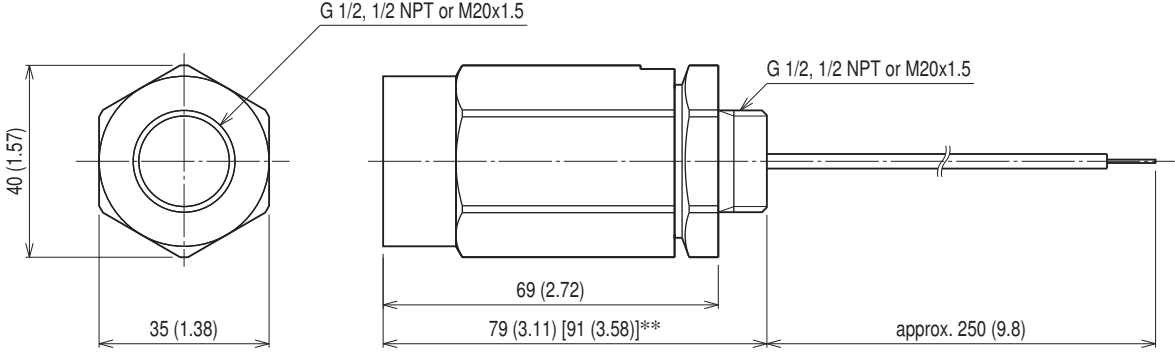
CONNECTION EXAMPLES



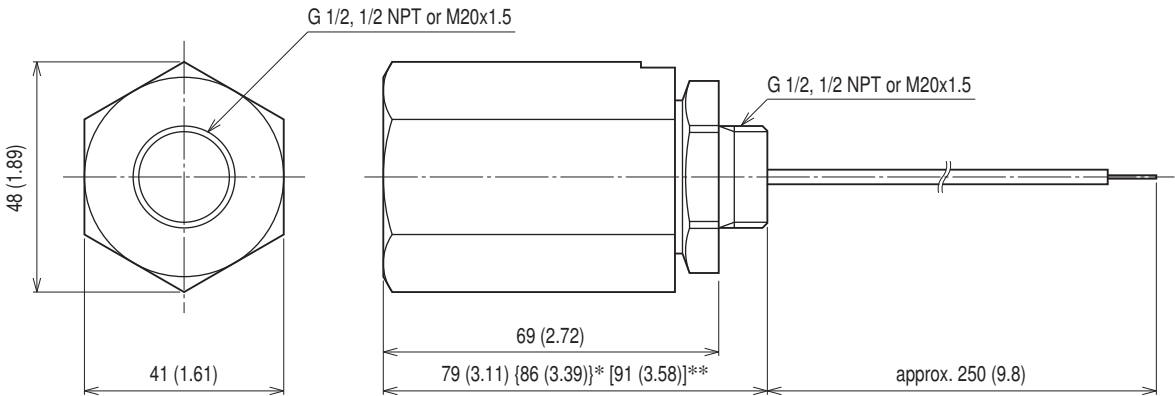
Connect the MD6T's green leadwire to the ground terminal inside the protected equipment enclosure to ground through the enclosure's outside ground terminal.
 If the enclosure does not have an inside ground terminal, connect the green leadwire directly to the outside ground wire pulled inside the enclosure. Keep the ground wire as short as possible.

DIMENSIONS unit: mm (inch)

WITHOUT SAFETY APPROVAL



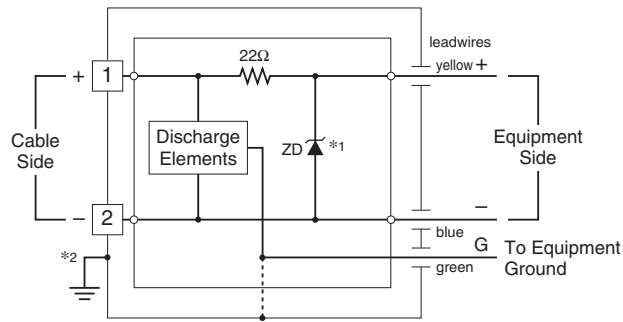
WITH SAFETY APPROVAL



* { } for M20x1.5 with CENELEC (ATEX) flameproof approval
 **[] for 1/2 NPT



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



- *1. The zener diode has polarity. Zero-cross signal cannot be connected.
- *2. Use only when the signal line require functional grounding.
This is NOT for surge protection.



Specifications are subject to change without notice.

