

Lightning Surge Protectors for Electronics Equipment M-RESTER

LIGHTNING SURGE PROTECTOR FOR TWO-WIRE SIGNAL LOOP

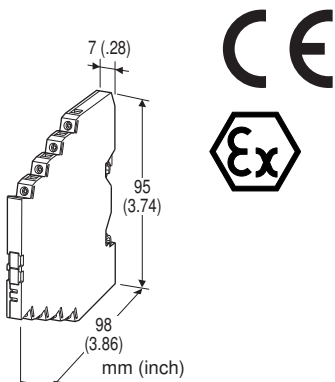
(ultra-slim)

Functions & Features

- High discharge current capacity 20 kA (8 / 20 μ s), 1 kA (10 / 350 μ s)
- Ultra-thin 7-mm-wide module can be mounted in high density
- Excellent protection employing multi-stage SPD circuits
- DIN rail mounting and grounding
- Loop disconnect fuse

Typical Applications

- Protecting a 2-wire transmitter loop
- Protecting an electronic device I/O



MODEL: MD72W-[1][2][3][4]

ORDERING INFORMATION

- Code number: MD72W-[1][2][3][4]
- Specify a code from below for each [1] through [4].
(e.g. MD72W-5500/Q)
- For the safety approval code 2, specify the product's destination country using Ordering Information Sheet (No. ESU-8057).
- Specify the specification for option code /Q
(e.g. /C01)

[1] NOMINAL VOLTAGE

- 07: 7 V DC
- 16: 16 V DC
- 32: 32 V DC
- 55: 55 V DC

[2] LOOP DISCONNECT FUSE

- 0: Without
- 1: With (CENELEC intrinsic safety (ATEX) not available)

[3] SAFETY APPROVAL

- 0: None
- 2: CENELEC intrinsic safety (ATEX)

[4] OPTIONS

- blank: none
- /Q: With options (specify the specification)
(CENELEC intrinsic safety (ATEX) not available)

SPECIFICATIONS OF OPTION: Q

COATING (For the detail, refer to M-System's web site.)

- /C01: Silicone coating
- /C02: Polyurethane coating

RELATED PRODUCTS

- Loop disconnect fuse (model: MD7F)

GENERAL SPECIFICATIONS

- Construction:** Slim-sized front terminal structure
- Degree of protection:** IP20
- Connection:** Euro terminal block (torque 0.3 N·m)
- Applicable wire size:** 0.2 - 2.5 mm², stripped length 8 mm
- Grounding:** DIN Rail
- Housing material:** Flame-resistant resin (black)
- Loop disconnect fuse:** Current rating 250 mA

INSTALLATION

- Operating temperature:** -25 to +85°C (-13 to +185°F)
(See Safety Parameters for use in a hazardous location.)
 - Operating humidity:** 30 to 90 %RH (non-condensing)
 - Mounting:** DIN Rail (TH35-7.5, 1-mm-thick)
- Oxide film on the surface of an aluminium DIN rail may lower the electric conductivity between this module and the ground. Use a steel or copper rail.
- Weight:** 70 g (2.5 oz)

PERFORMANCE

MODEL NO.		MD72W-07	MD72W-16	MD72W-32	MD72W-55
Max. continuous operating voltage (Uc)	Line to Line	±7V	±16V	±32V	±55V
	Line to Earth	±7V	±16V	±32V	±55V
Voltage protection level (Up) @6kV (1.2 / 50 μs)	Line to Line	20V	30V	50V	80V
	Line to Earth	30V	40V	60V	90V
Leakage current @Uc	Line to Line	≤ 10μA	≤ 5μA		
	Other sections	≤ 10μA	≤ 5μA		
Response time	Line to Line	≤ 4 nsec.			
	Other sections	≤ 4 nsec.			
Max. discharge current (Imax)		20kA (8 / 20 μs), 1.0kA (10 / 350 μs)			
Nominal current (In)	Without fuse	400mA			
	With fuse	250mA			
Internal series resistance	Without fuse	2.2Ω ±20% per line			
	With fuse	4Ω ±20% per line			
Surge protection		IEC 61643-21 Categories C1, C2, D1			

STANDARDS & APPROVALS

EU conformity:

ATEX Directive

Ex ia EN 60079-11

EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

RoHS Directive

EN 50581

Safety approval:

CENELEC: Intrinsic safety (ATEX)

⊕ II 1G, Ex ia IIC; T4 and T5

EN 60079-0

EN 60079-11

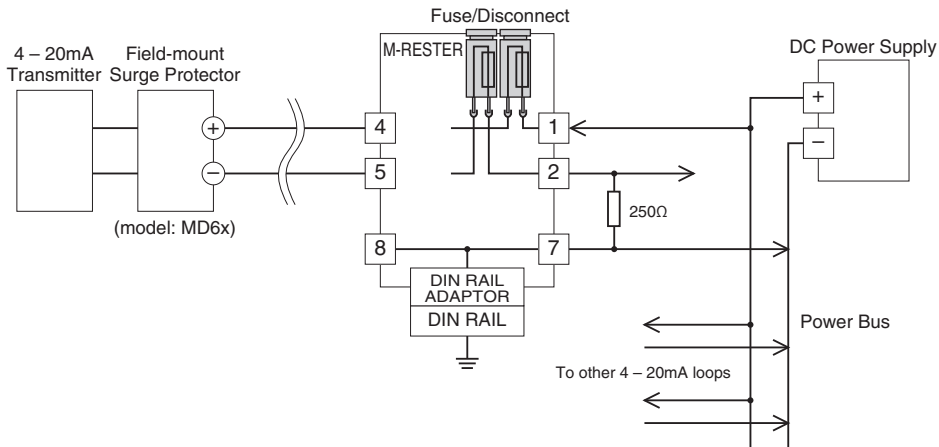
SAFETY PARAMETERS

■ CENELEC / ATEX IS DATA

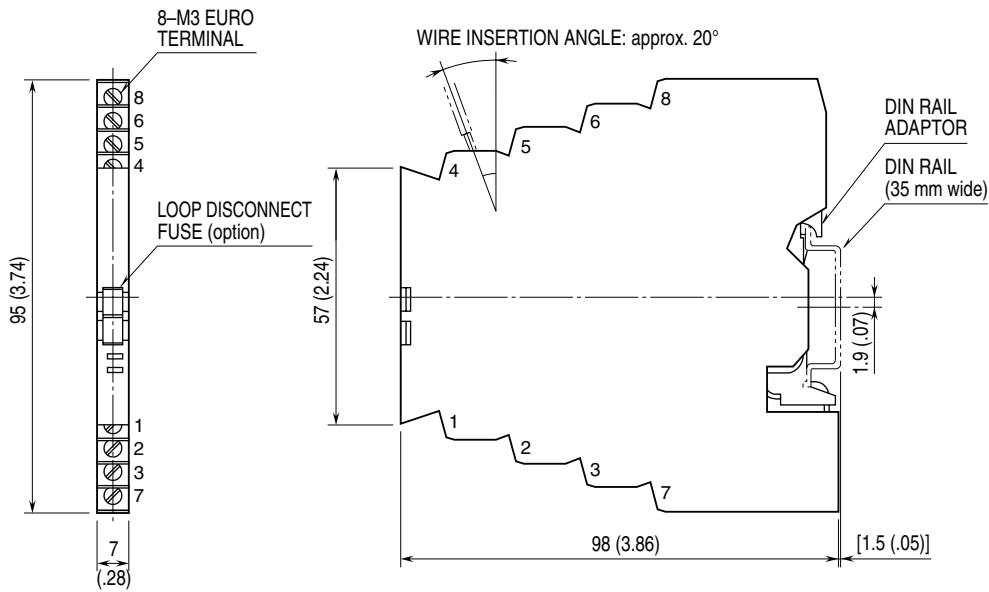
	MD72W-07	MD72W-16	MD72W-32	MD72W-55
Ui (Vmax)	7V	16V	32V	60V
Ii (Imax)	150mA	150mA	150mA	150mA
Ci	50 nF	35 nF	10 nF	5 nF
Li	150 μH	150 μH	150 μH	150 μH
Pi	Temp. Class	Range		Parameter
	T4	-25 to +40°C		1.3W
		-25 to +60°C		1.2W
		-25 to +80°C		1.0W
T5	-25 to +40°C		1.0W	

DESCRIPTIONS

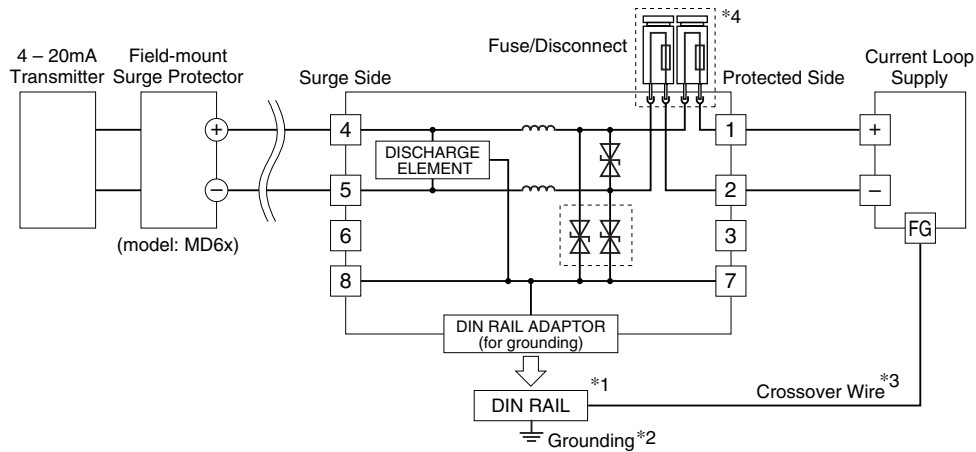
- Specify 'Loop disconnect fuse' type when multiple transmitters are connected to a single power bus.
- Loop disconnect fuse is used to separate a transmitter loop from the power bus when it fails in shortcircuit mode.



EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



- *1. Oxide film on the surface of an aluminium rail may lower the electric conductivity between this module and the ground. Use a steel or copper rail.
- *2. Be sure to ground the DIN rail. Recommended grounding resistance $\leq 100\Omega$
- *3. Cross-wire between the DIN rail or the terminal 7 and the metal housing of the protected device to equalize the earth potential. Ground only the surge protector when the protected device has no ground terminal.
- *4. Without Fuse/Disconnect option, fuse circuit is shorted.



Specifications are subject to change without notice.