

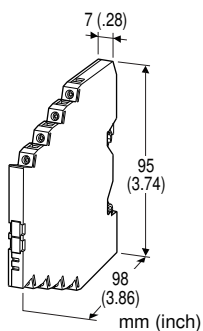
Lightning Surge Protectors for Electronics Equipment M-RESTER

LIGHTNING SURGE PROTECTOR FOR STRAIN GAUGE

(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
- Shield terminal provided
- Protects strain gauges and transmitters
- CE marking



MODEL: MD7LC-[1][2]

ORDERING INFORMATION

- Code number: MD7LC-[1][2]

Specify a code from below for each [1] and [2].
(e.g. MD7LC-10)

For the safety approval code 2, specify the product's destination country using Ordering Information Sheet (No. ESU-8057).

[1] SERIES RESISTANCE

0: Without (No CE marking; CENELEC/ATEX approval Not selectable)

1: With

[2] SAFETY APPROVAL

0: None

2: CENELEC intrinsic safety (ATEX)

RELATED PRODUCTS

- Terminal block for grounding (model: MD7G)

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

Grounding: DIN Rail

Housing material: Flame-resistant resin (black)

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 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.		MD7LC-0	MD7LC-1
Max. continuous operating voltage (Uc)	Output voltage	±0.2V	
	Excitation	15V	
	Line to Earth*1	±15V	
Voltage protection level (Up)	Output voltage	±15V @0.2kV(1.2 / 50 μs)	±40V @6kV (1.2 / 50 μs)
	Excitation	30V @0.2kV (1.2 / 50 μs)	50V @6kV (1.2 / 50 μs)
	Line to Earth*1	±30V @0.2kV (1.2 / 50 μs)	±50V @6kV (1.2 / 50 μs)
Leakage current @Uc	Output voltage	≤0.2μA	
	Excitation	≤2μA	
	Line to Earth*1	≤2μA	
Response time		≤4 nsec.	
Max. discharge current (Imax)		100A (8 / 20 μs)	20kA (8 / 20 μs), 1kA (10 / 350 μs)
Nominal current (IN)		----	250mA
Internal series resistance		----	1.5Ω ±10% per line

*1. Measured across the terminal 2 and DIN rail, the terminal 7 and DIN rail.

STANDARDS & APPROVALS

CE conformity:

ATEX Directive (94/9/EC)
 Ex ia EN 60079-11: 2007
 Category 1G EN 60079-26: 2007
 EMC Directive (2004/108/EC)
 EMI EN 61000-6-4: 2007
 EMS EN 61000-6-2: 2005

Safety approval:

CENELEC: Intrinsic safety (ATEX)
 Ⓢ II 1G, Ex ia IIC; T4 and T5
 EN 60079-0: 2006
 EN 60079-11: 2007
 EN 60079-26: 2007

Surge protection:

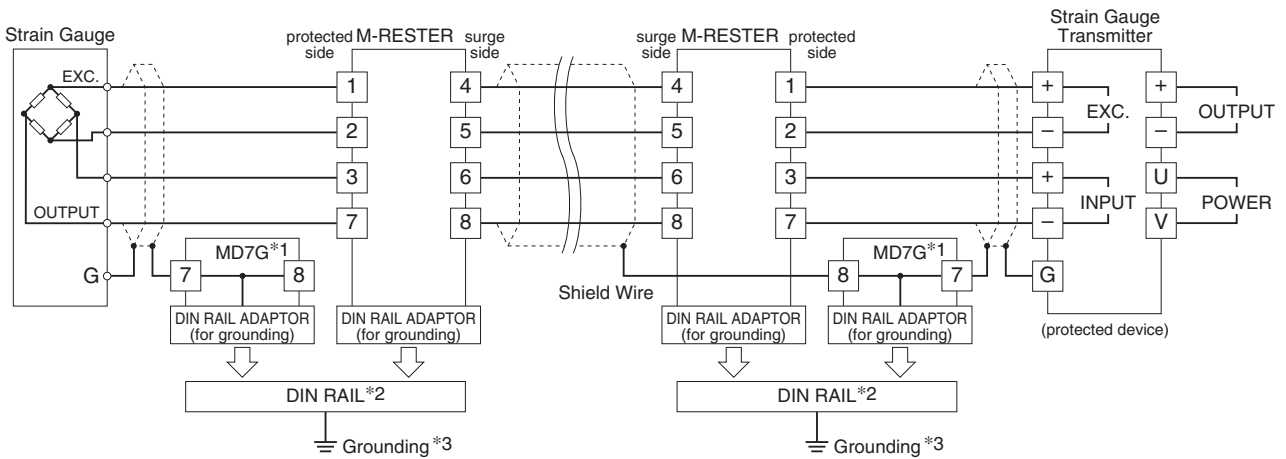
IEC 61643-21: 2000
 EN 61643-21: 2001
 (Categories C1, C2, D1;
 applicable with series resistance only)

SAFETY PARAMETERS

■ CENELEC / ATEX IS DATA

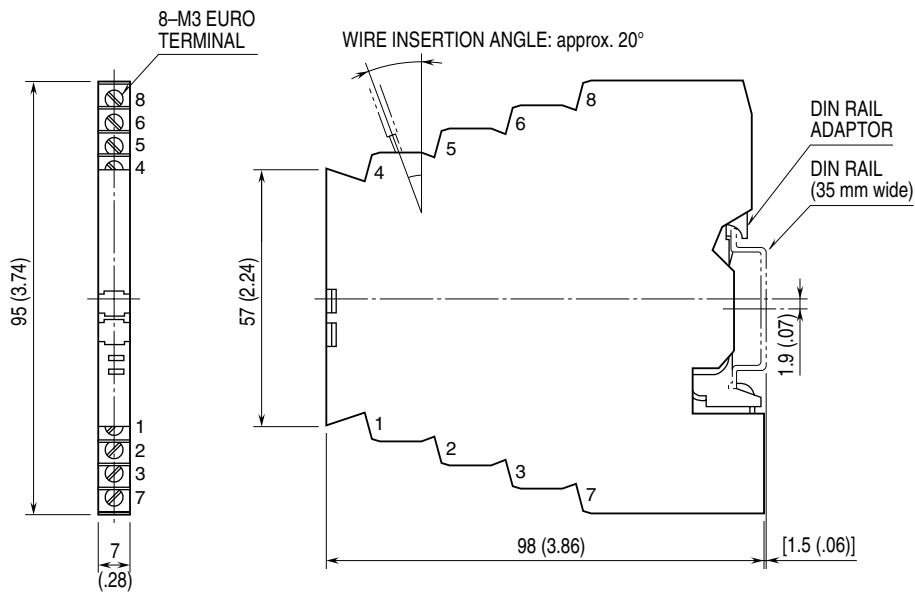
Ui (Vmax)	16V		
Ii (Imax)	any		
Ci	35 nF		
Li	0 μH		
Pi	Temp. Class	Range	Parameter
	T4	-25 to +40°C	1.3W
		-25 to +60°C	1.2W
		-25 to +80°C	1.0W
T5	-25 to +40°C	1.0W	

CONNECTION EXAMPLES



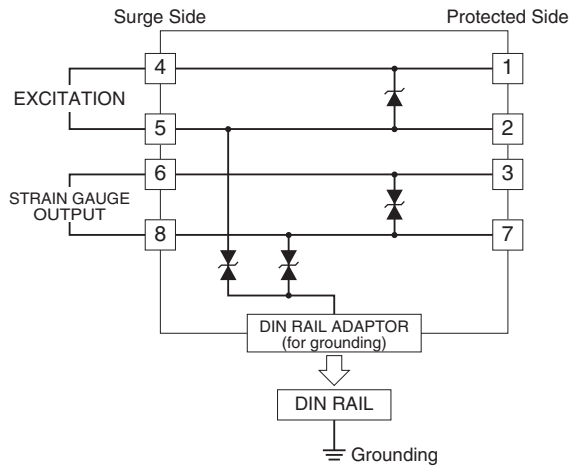
- *1. Without the MD7G, cross-wire between the DIN rail and the metal housing of the protected device to equalize the earth potential.
- *2. Oxide film on the surface of an aluminium rail may lower the electric conductivity between this module and the ground. Use a steel or copper rail.
- *3. Be sure to ground the DIN rail. Recommended grounding resistance $\leq 100\Omega$.

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)

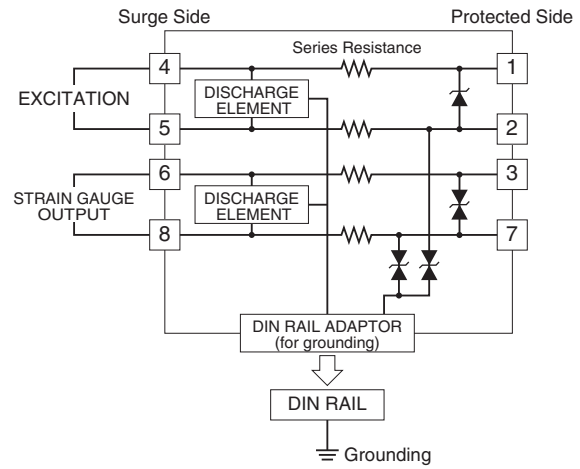


SCHEMATIC CIRCUITRY

■ MD7LC-0



■ MD7LC-1



Specifications are subject to change without notice.