

Loop- Powered Isolator - M1 series

M1MTNI

- ▶ Loop- Powered Isolator
- ▶ Separation of 0(4)...20mA Standard Signals
- ▶ No power supply signal required
- ▶ 2-channels with safe galvanic separation; test voltage 4 kV ~
- ▶ Width 12,5mm
- ▶ Industrial design



Technische Daten

1. Technical data

Loop- Powered Isolator
2-channels
current signals: 0(4) to +20mA

2. Mechanical Design

Self-extinguishing plastic housing, IP rating IP40
Mounted on DIN-Rail TS 35 according to EN 60715
Mounting position: any
Shockproof terminal connection according to VBG 4 (PZ1 required),
IP rating IP20
Tightening torque: max. 1Nm
Terminal capacity:
1 x 0.5 to 2.5mm² with/without multicore cable end
1 x 4mm² without multicore cable end
2 x 0.5 to 1.5mm² with/without multicore cable end
2 x 2.5mm² flexible without multicore cable end

3. Input circuit:

Input signals: terminals 1-2, 3-4
Current inputs: 0 to 20mA, 4 to 20mA / max. 30V
Operating current: < 20 μ A
Overload: \leq 100 mA, \leq 30 V
Overvoltage category: II
Test voltage: 4kV AC(50Hz) between all circuits

4. Output circuit:

Output signals: terminals 5-6, 7-8
Current outputs: 4 to 20mA / max. 28V
Response time: approx. 5ms at 500 Ω load
Ripple: < 10 mVeff

5. Accuracy

Transmission error: $\pm 0,1\%$ of end value
Load error: $\pm 0,003\%$ of m.v. / 100 Ω load
Temperature coefficient: ± 15 ppm / of m.v. / 100 Ω load

6. Ambient temperature

Operating temperature: -20°C to +70°C (-4 to 158°F)
Storage temperature: -35°C to +85°C (-31 to 185°F)
Transport temperature: -35°C to +85°C
Relative Humidity: 15% to 85%
Pollution degree: 2

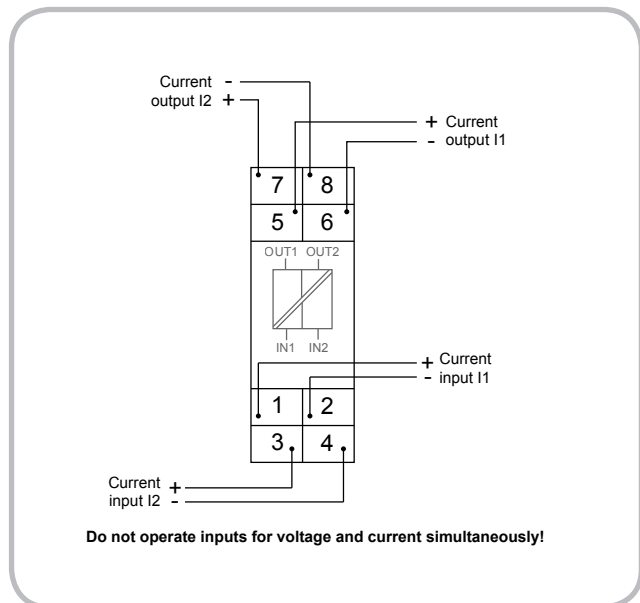
► Functions

The loop powered isolator is used for electrical isolation and processing of 0(4) ... 20 mA standard signals. The galvanic isolation guarantees reliable decoupling of the sensor circuit from the processing circuit and prevents linked measurement circuits from influencing each other. The Protective Separation of the isolator with high isolation level provides protection for personnel and downstream devices against impermissibly high voltage.

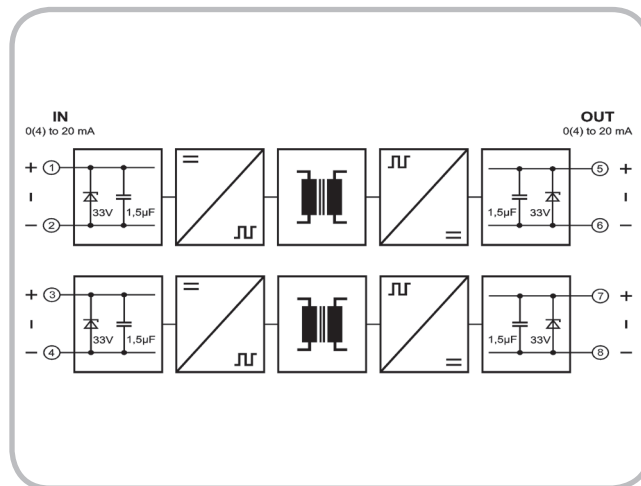
The input signal is modulated and then electrically decoupled using a transformer. The isolated signal is then made available at the output, demodulated and filtered.

When using loop-powered Isolators, ensure that the current-driving voltage of the power source U_S is sufficient for driving the maximum current of 20 mA over the isolator with voltage drop of $U_{drop} = 2\text{ V}$ and the load R_{load} .

► Connections



► Block diagramm



► Dimensions

