

- Electrical isolation and conversion of standard signals
- Multifunction
- Signal type and cut-off frequency
- selectable via internal DIP-switches
- Zero/Span adjustment via front potentiometers
- 3-way-isolation with secure isolation
- Zoomvoltage 24 to 240V AC/DC
- 1 output channel
- Width 12.5mm
- Industrial design



## Technical data

### 1. Functions

3-way-isolation amplifier for converting and galvanically deviding unipolar and bipolar signals with secure isolation. Signal selection by means of internal DIP-switches.

Current signals:	±20mA 0 to 20mA 4 to 20mA ±10mA 0 to 10mA 2 to 10mA
Voltage signals:	±10V 0 to 10V 2 to 10V ±5V 0 to 5V 1 to 5V

### 2. Mechanical design

Self-extinguishing plastic housing, IP rating IP40  
Mounted on DIN-Rail TS 35 according to EN 50022  
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 2.5mm<sup>2</sup> with/without multicore cable end  
1 x 4mm<sup>2</sup> without multicore cable end  
2 x 0.5 to 1.5mm<sup>2</sup> with/without multicore cable end  
2 x 1.5mm<sup>2</sup> flexible without multicore cable end

### 3. Supplying circuit

Supply voltage: 24 to 240V AC/DC terminals 7-8  
Tolerance: 24 to 240V AC/DC -15% to +5%  
Rated frequency: 48 to 62Hz  
Rated consumption: 3.0VA (1.5W)  
Duration of operation: 100%  
Secure isolation by reinforced insulation acc. to DIN EN 61010 for voltages up to 600VAC  
Overvoltage category: II  
Surge voltage: 4kV AC, 50Hz

### 4. Input circuit

Input signal (selectable via terminal connection and settings of internal DIP-switches)  
Current input: terminals 1-2  
Signal types: ±20mA  
0 to 20mA  
4 to 20mA  
±10mA  
0 to 10mA  
2 to 10mA  
Overload capacity: max.200mA  
Input resistance: approx. 25Ω  
Input capacity: approx. 1nF

Voltage input: terminals 3-4  
Signal types: ±10V  
0 to 10V  
2 to 10V  
±5V  
0 to 5V  
1 to 5V  
Overload capacity: 30V (voltage limitation via Z-diode)  
Overload capacity: max. 30mA  
Input resistance: approx. 1MΩ  
Input capacity: approx. 1nF  
Secure isolation by reinforced insulation acc. to DIN EN 61010 for voltages up to 600VAC  
Overvoltage category: II  
Surge voltage: 4kV AC, 50Hz

### 5. Output circuit

Output signal: terminals 5-6 (Selectable via internal DIP-switches)  
Current signals: ±20mA  
0 bis 20mA  
4 bis 20mA  
±10mA  
0 bis 10mA  
2 bis 10mA  
max. 12V (600Ω/20mA)  
Voltage signal: ±10V  
0 bis 10V  
2 bis 10V  
±5V  
0 bis 5V  
1 bis 5V  
max. 10mA (1kΩ/10V):  
<20mV<sub>eff</sub>  
Output current:  
Residual ripple:  
Linear transmission range  
unipolar signals: -2 to +110%  
bipolar signals: -110 to +110%  
Adjustment  
zero: ±10%  
span: ±10%  
Cut-off frequency (switchable): >10kHz or 30Hz  
Secure isolation by reinforced insulation acc. to DIN EN 61010 for voltages up to 600VAC  
Overvoltage category: II  
Surge voltage: 4kV AC, 50Hz

### 6. Accuracy

Base accuracy: 0.1% (of final value)  
Temperature influence: 0.01% / °C (of maximum value)

### 7. Ambient conditions

Ambient temperature: -20 to +70°C  
Storage temperature: -35 to +85°C  
Transport temperature: -35 to +85°C  
Relative humidity: 15% to 85%  
Pollution degree: 2

## Functions

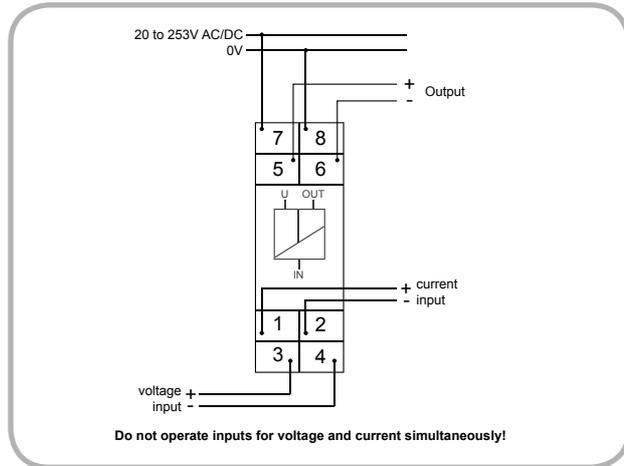
The 3-way isolation amplifier is used for electrical isolation and conversion of bipolar and unipolar process signals. Input and output range can be set by using DIP switch. The Zero/Span Adjustment on the front allows a fine-tuning of the measurement signal and the recalibration after a range selection.

The 3-way isolation guarantees reliable decoupling of the sensor circuit from the processing circuit and prevents linked measurement circuits from influencing each other. The Protective Separation with high isolation level provides protection for personnel and downstream devices against impermissibly high voltage.

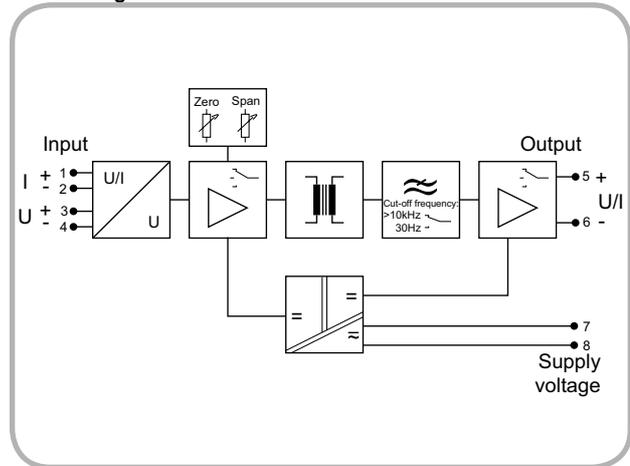
The input signal is modulated and then electrically decoupled using a transformer. The isolated signal is then made available at the output, demodulated, filtered and amplified.

## Connections

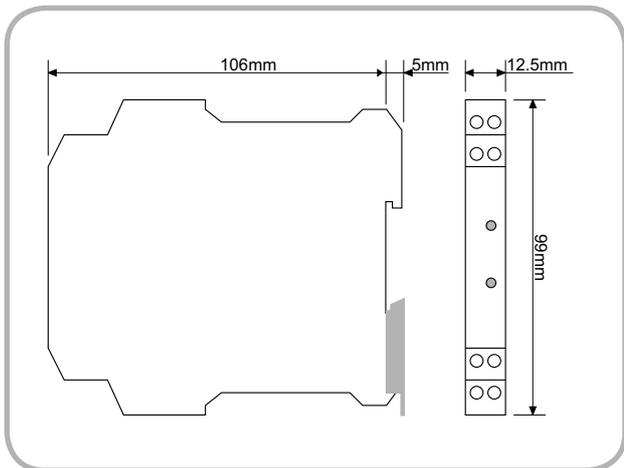
### M1MTB1 24-240V



### Block diagram



## Dimensions



Subject to alterations and errors