

# Digital display TS-MR 50

Standard signals 0 / 4 ... 20 mA, 0 / 2 ... 10 V DC



## Features

- Input standard signals 0 / 4 ... 20 mA, 0 / 2 ... 10 V DC
- Measuring range programmable
- Basic accuracy 0,1 % ± 1 Digit
- Installed units:  
mV, V, mA, A, Ω, kΩ, μS / cm, mS / cm, °C, °F, min<sup>-1</sup>,  
U / min, bar, mbar, hPa, mm, cm, m, %, °, Ltr.,  
Ltr. / min, m<sup>3</sup>, m<sup>3</sup> / h, ppm  
custom units programmable
- Simulator function
- Fault monitoring for break of wire  
in the measuring circuit
- Programmable fault function  
Analog output min. or max. overflow  
Alarm outputs min. or max. function
- Integrated transmitter supply 24 V DC max. 30 mA
- 4 alarm outputs (relay SPDT)
- Isolated analog output 0 / 4 ... 20 mA; 0 / 2 ... 10 V DC
- Full 3-port isolation

The digital display TS-MR 50 has inputs for industry standard signals 0 / 4 ... 20 mA and 0 / 2 ... 10 V DC. Measuring value and programmed unit are shown in the display. The integrated transmitter supply offers direct connection of loop powered sensors. Simple programming, up to 4 alarm outputs (SPDT) and optional available fully isolated free programmable analog output 0 / 4 ... 20 mA; 0 / 2 ... 10 V DC meets the demand for different applications. Peak value indication for minimum and maximum measured values are stored in the background and can be read out from the display at any time.

## Type designation codes

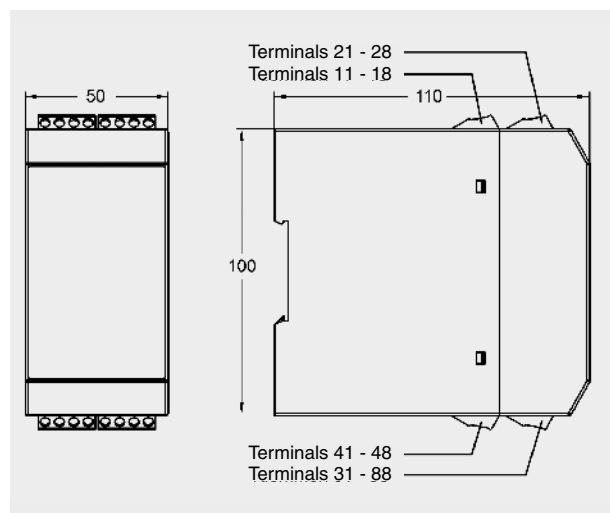
### Type TS-MR 50

- 1 Input
  - **1** = Standard signals 0 / 4 ... 20 mA; 0 / 2 ... 10 V DC  
Transmitter supply 24 V DC max. 30 mA
- 2 Alarm outputs
  - **2R** = 2 relay outputs A1, A2 SPDT
- 3 Alarm outputs
  - **00** = not installed
  - **2R** = 2 relay outputs A3, A4 SPDT
- 4 Analog output
  - **00** = not installed
  - **AO** = Analog output 0 / 4 ... 20 mA; 0 / 2 ... 10 V DC
- 5 Supply voltage
  - **0** = 230 V AC ± 10 % 50 ... 60 Hz
  - **1** = 115 V AC ± 10 % 50 ... 60 Hz
  - **5** = 24 V DC ± 15 %

### Example:

TS-MR 50 - **1** - **2R** - **00** - **AO** - **0**  
 TS-MR 50-1-2R-00-AO-0

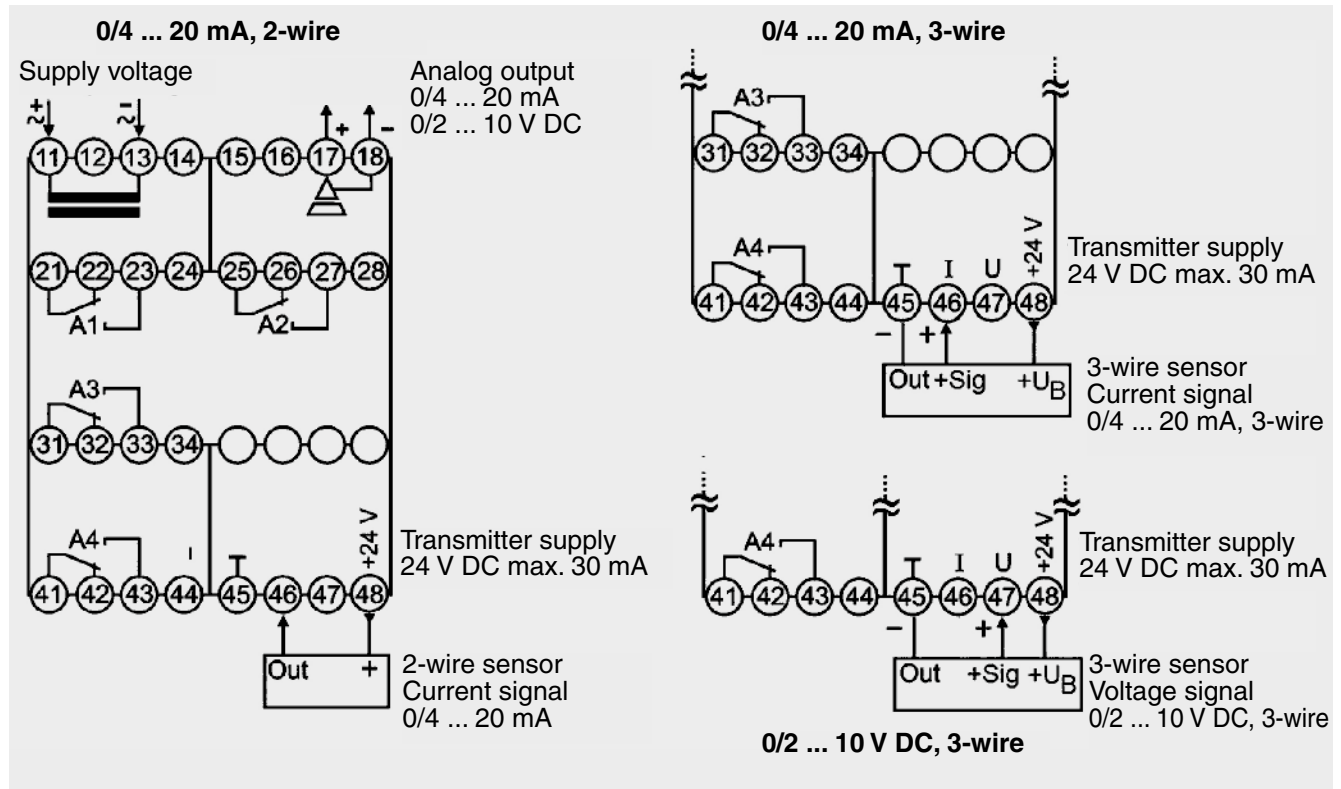
## Dimensional drawing



# Digital display TS-MR 50

Standard signals 0 / 4 ... 20 mA, 0 / 2 ... 10 V DC

## Connection diagram



Technical data	Type: TS-MR 50
Supply voltage U <sub>B</sub>	230 V AC ± 10 %, 115 V AC ± 10 %, or 24 V DC ± 15 %
Power consumption	Max. 5 VA
Operating temperature	-10 ... +55° C
<b>Input</b>	0 / 4 ... 20 mA; 0 / 2 ... 10 V DC
Fault detection	Break of wire in the measuring circuit
Input resistance	Current input 10 Ω, voltage input 10 kΩ
Basic accuracy	< 0,1 % ± 1 Digit
Temperature coefficient	0,01 % / K
Transmitter supply	24 V DC max. 30 mA
<b>Output</b>	
Alarm outputs A1-A4	Relay SPDT < 250 V AC < 250 VA < 2 A cosφ ≥ 0,3, < 300 V DC < 40 W < 2 A
Analog output	0/4 ... 20 mA burden ≥ 500 Ω; 0/2 ... 10 V burden > 500 Ω, galv. isolated, output changes automatically (burden impedance dependent).
Measurement error	0,2 %; TK 0,01 % / K
Fault function	For break of wire detection → Analog output 0 mA, < 3,6 mA or > 21,5 mA programmable → Alarm output(s) min. or max. function programmable
<b>Display</b>	Graphic LCD-Display 128x64 pixels, white background illuminated
<b>Case</b>	Polyamide (PA) 6.6, UL94V-0, DIN rail mounting TS 35
Weight	~ 450 g
Connection	Screw terminals 0.14 ... 2.5 mm <sup>2</sup> (AWG 26 ... 14)
Protection	Housing IP30, terminals IP20, German BGV A3