

# Multi-range temperature transmitter MU 500

**Switch selectable temperature ranges RTD; Pt100 or Pt1000**

## Features

- Pt100: 13 temperature-ranges  
Pt1000: 16 temperature-ranges
- Accuracy 0.2 %,  
0.1 % factory calibration for one range available
- 2- or 3-wire connection
- Linearized outputs for  
0/4 ... 20 mA and 0/2 ... 10 V
- Offset and end value adjustable
- Full 3-port isolation
- Supply voltage 10 ... 30 V AC/10 ... 42 V DC or  
85 ... 265 V AC/110 ... 125V DC
- Power-on LED
- 22.5 mm DIN rail mounting



## General information

Temperature transmitter MU500 accept field signals of Pt100 or Pt1000 RTD sensors to the input which is filtered, isolated and converted into industry standard signals for process control systems. The multi-purpose design of inputs and outputs, also the wide range of supply voltage reduces the number of types. The small case allows space-saving mounting.

## Short information

Current output                   burden max. 1 kΩ

Multi-range                    temperature range and output configuration can be selected with the DIP- and rotary switch at the front panel

## Technical data

### Power supply

Supply voltage	: 85 ... 265 V AC/110 ... 125 V DC or 10 ... 30 V AC/10 ... 42 V DC
Frequency AC	: 40 ... 400 Hz
Power consumption	: max. 2.2 W, max. 3.3 VA
Working temperature	: -10 ... +60 °C (14 ... 140 °F)
Isolation voltage	: 500 V AC according to EN 60664-1 Gr. 2 between input/output/supply voltage
Test voltage	: 4 kV DC between input/output/supply voltage
CE-conformity	: EN 61326-1:2013                      EN 60664-1:2007

### Input

Sensor current	: Pt100 approx. 1 mA, Pt1000 approx. 0.25 mA (no self-heating)
Cable resistance	: max. 100 Ω (operation with safety barriers possible) automatic compensation of cable resistance at 3-wire configuration
Offset adjust	: Pt100 approx. +/-8 Ω, ( $\pm$ 20°C), Pt1000 approx. +/-8 Ω ( $\pm$ 2°C) (to compensate cable resistance at 2-wire configuration)
Span	: adjustable ca. +/-5 %
Broken or shorted line	: output rises to max. value

### Output

Current output	: 0 ... 20 mA, 4 ... 20 mA switch selectable, max. 1 kΩ burden
Voltage output	: 0 ... 10 V, 2 ... 10 V switch selectable, max. 15 mA load, short circuit proof (simultaneous to current output max. 5 mA)
Accuracy	: $\leq$ 0.2 % ( $\leq$ 0.1 % factory calibration for one range available)
Temperature coefficient	: $\leq$ 0.01 %/K
Current and voltage output	: $\leq$ 0.1 %

<b>Case</b>	: standard case of polycarbonate 8020 UL94V-1
Weight	: ca. 200 g
Connection	: screw-terminals with pressure plates, max. 2.5 mm <sup>2</sup>
Protection	: case IP40, terminals IP20, finger safe acc. German BGV A3

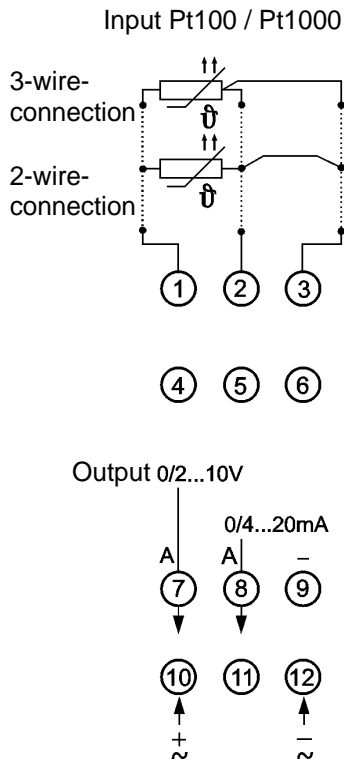
### Measuring range Pt100

Temperature range [°C]	Rotrary switch Range	DIP-witch Input
-50 ... 0	6	ON
-50 ... 50	7	ON
-30 ... 20	4	ON
-30 ... 70	5	ON
-20 ... 30	2	ON
-20 ... 80	3	ON
0 ... 50	0	ON
0 ... 100	1	ON
0 ... 150	8	ON
0 ... 200	9	ON
0 ... 300	1	OFF
0 ... 450	8	OFF
0 ... 600	9	OFF

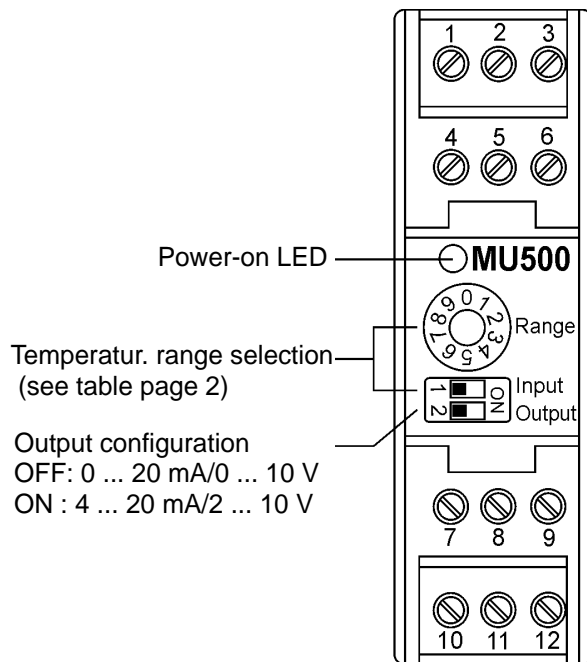
### Measuring range Pt1000

Temperature range [°C]	Rotary switch Range	DIP-switch Input
-50 ... 0	2	OFF
-50 ... 50	3	OFF
-30 ... -20	6	ON
-30 ... -10	7	ON
-20 ... -10	4	ON
-20 ... 0	5	ON
-10 ... 0	2	ON
-10 ... 10	3	ON
0 ... 10	0	ON
0 ... 20	1	ON
0 ... 20	8	ON
0 ... 40	9	ON
0 ... 50	0	OFF
0 ... 100	1	OFF
0 ... 150	8	OFF
0 ... 200	9	OFF

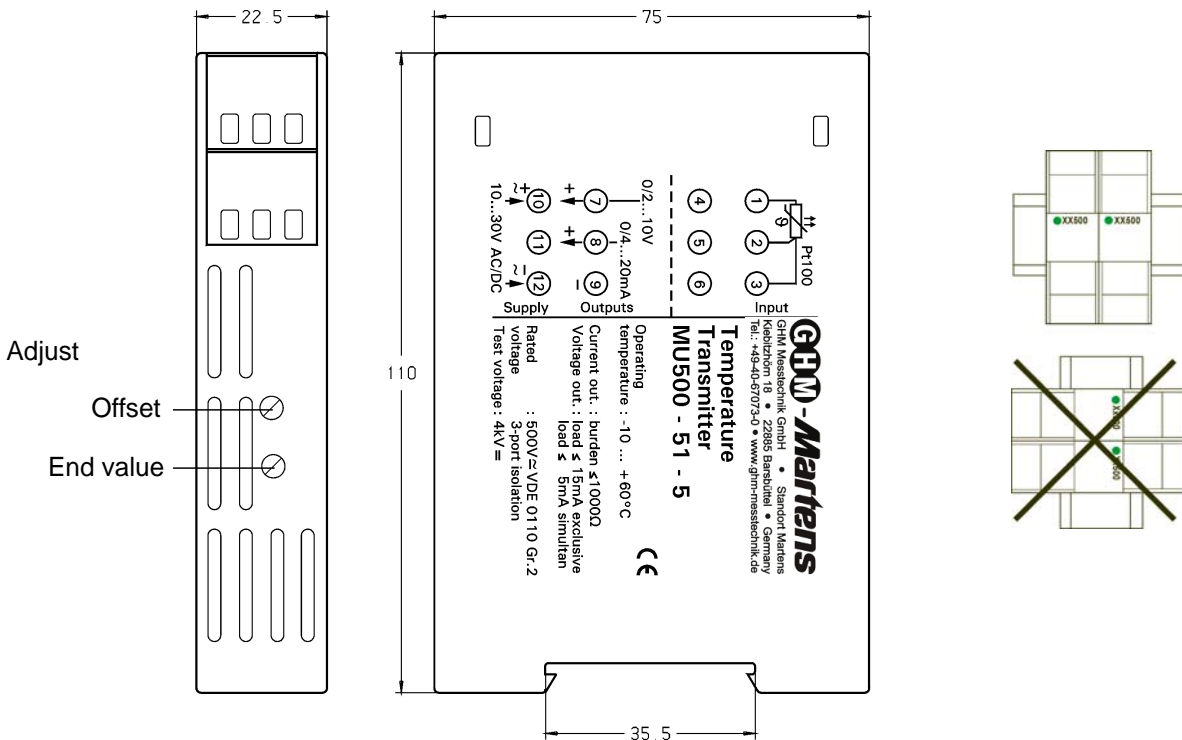
## Connection diagram



## Front panel controls



## Dimension



TS35 DIN rail mounting  
acc. to DIN 46277 and DIN EN 50022

## Ordering code

MU500 -  <sup>1.</sup> -  <sup>2.</sup>

### 1. Device type

51	Pt100	13 measuring ranges switch selectable
53	Pt1000	16 measuring ranges switch selectable

### 2. Supply voltage

0	85 ... 265 V AC
5	10 ... 30 V AC/DC



The transmitter MU500 is also as Ex-i type available.  
Please don't hesitate to contact us.