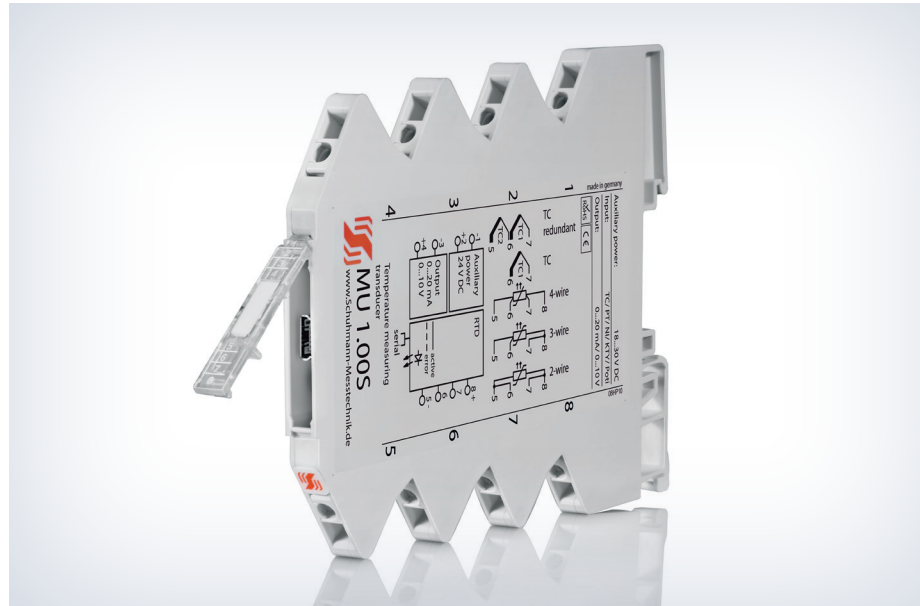




FEATURES

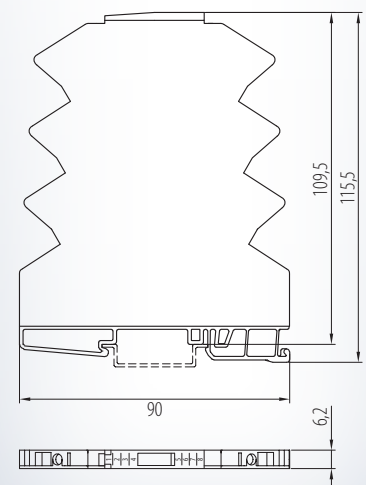
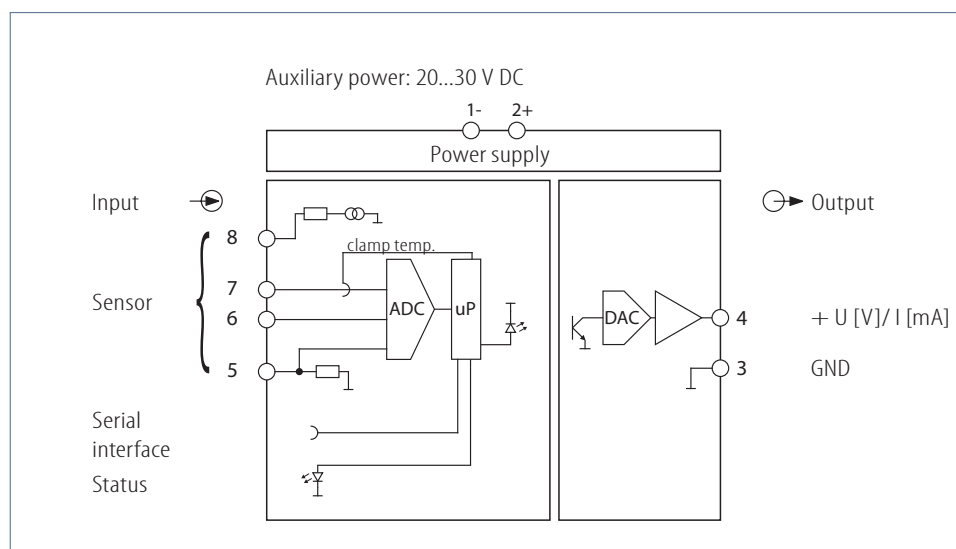
- **Input:**
PT 100, PT 500, PT 1000, NI 500,
NI 1000, PTC, KTY, thermocouples
e.g. type J, K, L, N, S, Poti 0...5 k Ω ,
other Sensors via Software
- **Output: 0(4)...20 mA/ 0(2)...10 V**
- **Detection of sensor break
and short-circuit**
- **Redundant measurement at
thermocouples possible**
- **Int./ext. cold-junction compensation**
- **Parameterization without
auxiliary power via PC-interface**
- **Galvanic 3-way isolation of 2,5 kV**



FUNCTION

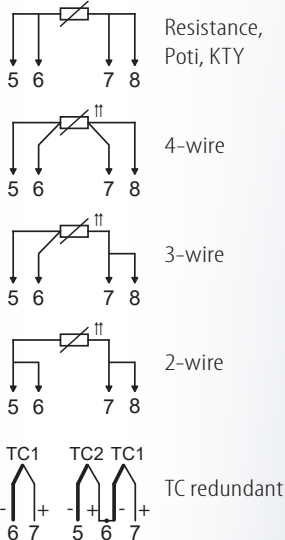
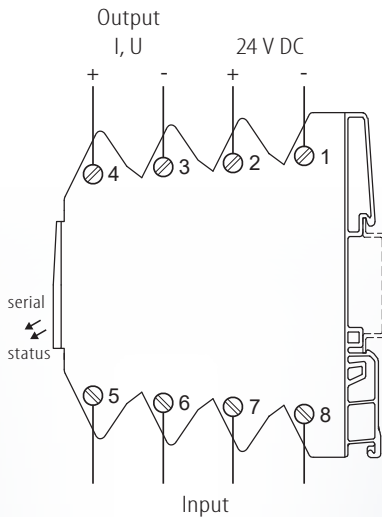
The MU 1.00 S is processing sensor signals and is used for the precise measurement of virtually all temperature sensors. Measurements of temperatures within a range of -200 and +2400 °C can be made, for example in air-conditioning and process engineering. Sensor break and sensor short-circuit are signaled and can be used as safety functions. By PT-sensors different connections can be selected: 2-, 3-, 4-wire system. The measuring line of the 3- or 4-wire connection is detected on wire break or short-circuits.

Further temperature sensor cams can be produced by a table of value and assigned to the transducer by the USB2 Interface in connection with KALIB-Software. Higher functional safety offers the redundant connection of thermocouples to the transducer. Indication of status is signaled by front sided LED. The integrated protective switching with suppressor diode protects the secondary circuit from voltage peaks and transient excess voltage.



MU 1.00 S

Connection diagram:



Input:

Sensor	Measurement range
Type B	400...1820 °C
Type C	400...2300 °C
Type D	400...2400 °C
Type E	-200...1000 °C
Type J	-200...1200 °C
Type K	-200...1372 °C
Type L	-200...900 °C
Type N	-200...1300 °C
Type R	-50...1760 °C
Type S	-50...1760 °C
Type T	-200...400 °C
Type U	-200...400 °C
KTY 81-110..	-58...150 °C
KTY 82-122..	-58...150 °C
KTY 83-110..	-58...150 °C
KT 100/110/130	-58...150 °C
KT 210/230	-58...150 °C
KTY 10/11/13-5..	-58...150 °C
KTY 21/23-5..	-58...150 °C
PTC	
PT100, PT500, PT1000	-200...850 °C
NI100, NI500, NI1000	-58...208 °C
Poti (2-wire) User	0...500 Ω / 5 kΩ

Additional temperature sensor cams can be created by using KALIB-Software.

Temperature compensation:
 - internal: ± 1 K typ., max $\pm 1,2$ K
 - external: to be recommended at high temperature thermocouples

Redundancy at thermocouples:
 - thermocouple TC1 has priority over TC2
 - at deviation TC1 to TC2 > 30 °C warning via LED

Input resistance: approx. 1 MΩ at thermocouples

Sampling cycle: approx. 100 ms int.
 limiting frequency: approx. 0,5 Hz

connection: terminal 5, 6, 7, 8
 PT- 2/3/4 wire, at 2-wire measurement with offset correction

Output:

I: load-independent DC current: 0(4)...20 mA
 connection: terminal 3 -, 4 +
 permissible load max. 400 Ω

U: load-independent DC voltage: 0(2)...10 V
 connection: terminal 3 -, 4 +
 permissible load ≥ 2 kΩ

Adjustment:

Measuring ranges and parameterization are adjustable by KALIB-Software. For this you need a PC as well as the interface adapter **USB2/ USB-Simulator** with **KALIB-Software**.

Display:

LED status: green, active
 green, flashing
 input signals are in standard range, device ready for use
 input out of predetermined limits
 or exceeding of measuring range or sensor error

Environmental conditions:

Storage temperature: -40...+70 °C
 Operating temperature: 0...55 °C
 Isolation voltage:
 2,5 kV eff. 1 sec. input-output
 2,5 kV eff. 1 sec. auxiliary voltage

Directive:

EMC Directive: 2014/30/EU*
 Low Voltage Directive: 2014/35/EU
 *minimum deviations possible during HF-radiation influence

Auxiliary power:

24 V DC: 20...30 V DC
 < 1,5 W

Influence of auxiliary power: < 0,1 %

Mounting details:

Housing for top hat rail
 Type of protection: IP 20
 Mounting rail fixed according to EN 50022-35 x 6,2 mm
 Width: 6,2 mm
 Weight: 55 g
 Material: Polyamide PA
 Flammability class: V0 (UL 94)
 Approval: CE
 Connection: screw clamps
 0,14...2,5 mm²

Characteristics of transmission:

Transmission error: < 0,12 %
 Resolution: 0,1 °C, 16 bit
 Linearity error: < 0,03 %
 Temperature error: < 30 ppm/ K
 Load influence I: < 0,07 %
 of final value
 Load influence U: < 0,15 % at 2 kΩ load

Please check parameterization before initial operation!

Ordering information:

Type: MU 1.00 S 24 V DC Universal
MU 1.01 S 24 V DC only PT100, NI, KTY, Poti
MU 1.08 S 24 V DC only thermocouples

Accessories: USB2/ USB-Simulator with KALIB-Software, manual

Schuhmann GmbH & Co. KG
 Römerstraße 2
 D-74363 Güglingen
 Tel. + 49 71 35 50 56
 Fax + 49 71 35 53 55
 www.schuhmann-messtechnik.de