



- Accurate measurements
- Voltage linear or temperature linear
- Easy to connect and install
- Sensor failure monitoring
- High load capacitance



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Model:  
TUM-S

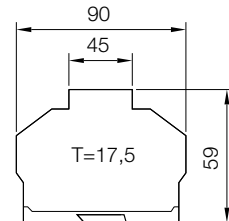
**Description**

Transmitters for rail and surface mounting convert the temperature-dependant change in voltage of thermocouples and the temperature-dependant change in resistance of resistance thermometers to a linear standard current signal.

The transmitter is a two-wire transmitter with 4 - 20 mA output. Transmission is absolutely noise-free even over long distances.

These transmitters are used where the use of transmitters for head mounting is not viable because of unsuitable field service conditions.

**Dimensions** in mm



**Standard version**

Settings are made with internal solder pads and potentiometers situated on the front panel.

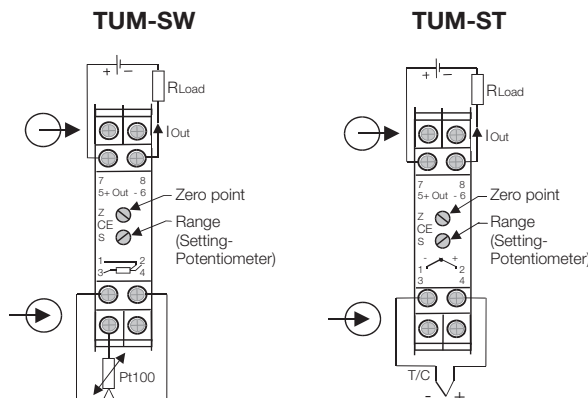
Model	Input	Output
TUM-SW	Pt 100	Temperature linear
TUM-ST	Thermocouples J, L, T, K or N	Voltage linear

Option: Factory setting. Please specify special data in writing.

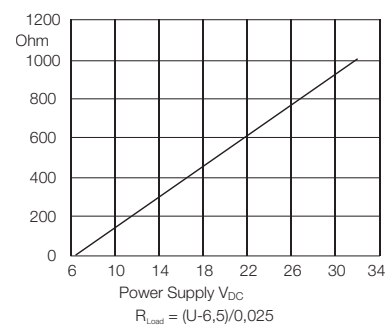
**Technical Details**

Model	TUM-SW	TUM-ST
Input	Pt 100 ( $\alpha = 0.00385$ ) 3-wire connection	Thermocouples J, L, T, K or N
Settings	-50 ... +550 °C	Measuring ranges: -5 ... +55 mV
Zero-point	-50 ... +50 °C	±10% of measuring span
Measuring span, selectable	50 ... 500 °C	10 ... 50 mV
Measuring span, fine adjustment	±10%	±10%
Supply, reverse polarity protected	6.5 ... 32 V <sub>DC</sub> (not electrically isolated)	6.5 ... 32 V <sub>DC</sub> (not electrically isolated)
Output	4 ... 20 mA	4 ... 20 mA
Linearity	Temperature linear	Voltage linear
Sensor failure monitoring, selectable	Max. approx. 25 mA, Min. approx. 3 mA	Max. approx. 25 mA, Min. approx. 3 mA
Current limiting	approx. 25 mA	approx. 25 mA
Maximum load	700 Ω at 24 V <sub>DC</sub> , 25 mA	700 Ω at 24 V <sub>DC</sub> , 25 mA
Long-term stability	±0.1% of measuring span/year	±0.1% of measuring span/year
Operating temperature	-20 ... +70 °C	-20 ... +70 °C
Storage temperature	-20 ... +70 °C	-20 ... +70 °C
Connection (wire or stranded cable)	≤ 2.5 mm <sup>2</sup>	≤ 2.5 mm <sup>2</sup>
Protection, housing/terminals	IP 20 / IP 20	IP 20 / IP 20

**Wiring diagrams**



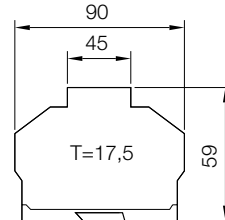
**Load diagram**



**Programmable version**

for industrial applications.  
 A device for resistance thermometers and thermocouples, thus reduced inventory costs.  
 Configuration in seconds with a Windows-based user-friendly software.

**Dimensions** in mm



Model	Input	Output
TUM-SP	Pt 100 Thermocouples	Temperature linear

**Accessories**

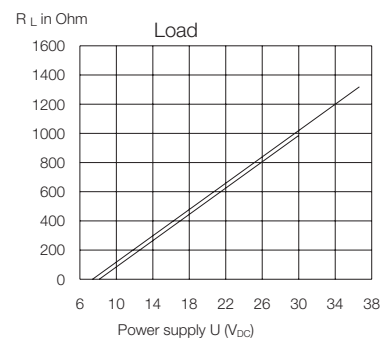
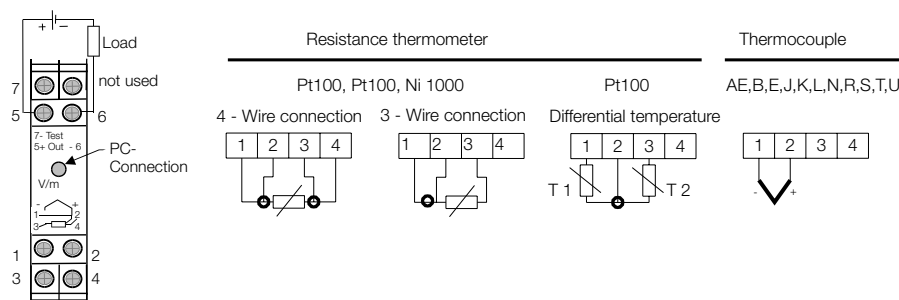
TUM-SP01	Software with cable
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Option: Factory setting. Please specify special data in writing.

**Technical Details**

Model	TUM-SP
Input	Pt 100, IEC751, $\alpha = 0.00385$ , 3+4-wire connection, -200...+1000 °C D100. (Pt 100 acc. to JIS1604, $\alpha = 0.003916$ ), 3+4-wire connect., -200...+1000 °C, Thermocouple Type AE W5%Rh-W26% -10...2300 °C Type N NiCrSi-NiSi -270...1300 °C Type B PtRh30%-PtRh6% 0...1800 °C Type R Pt13%Rh-Pt -50...1750 °C Type E NiCr-CuNi -200...1000 °C Type S Pt10Rh-Pt -50...1750 °C Type J Fe-CuNi -200...1000 °C Type T Cu-CuNi -200... 400 °C Type K NiCr-Ni -200...1350 °C Type U Cu-CuNi -200... 600 °C Type L Fe-CuNi -200... 900 °C
Adjustment	Minimum input range
Zero-point	any value within the range limits
Minimum input range	Thermocouples 2 mV; Pt 100 10 °C
Supply, reverse polarity protected	7.5...36 V <sub>DC</sub> (electrically isolated)
Output	4...20 mA
Linearity	Temperature linear
Sensor failure monitoring, selectable	Minimum/Maximum
Minimum output signal	(measurement/fault) 3.8 mA / 3.5 mA
Maximum output signal	(measurement/fault) 20.5 mA / 21.6 mA
Maximum load	750 Ω at 24 V <sub>DC</sub> , 22 mA
Long-term stability	±0.1 % of measuring span/ year
Operating temperature	-20...+70 °C
Storage temperature	-20...+70 °C
Connection (wire or stranded cable)	≤ 1.5 mm <sup>2</sup>
Protection, housing/terminals	IP 20 / IP 20

**Wiring diagrams**



# Resistance Temperature Sensor with Neck Well



Special temperature measurement for food applications



- Measuring range: -50 ... +250 °C
- optional with neck well for high temperatures
- Sensor Pt 100, accuracy class A
- p<sub>max</sub> 10 bar, t<sub>max</sub> 250 °C
- hygienic (acc. to EHEDG)
- variable mounting with different sleeves
- Sensor completely assembled from st. steel
- Optional with head mounted transmitter
- CIP/SIP-compliant

For more informations please refer  
to our brochure "Food L1"

**Model:**  
LTS