

# RESISTANCE THERMOMETER

Measuring insert: Interchangeable

Type: RT-AW

Sheet No.  
2-30 V2.1

5450-E010321V3.1

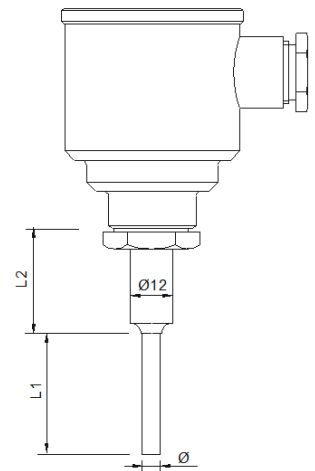


## Application:

- For measuring temperatures in the food, pharmaceutical, cosmetic and chemical/ technical industries

## Properties:

- Sensor: Pt100, 2xPt100, Pt1000 in acc. with IEC 60751
- Mechanical and thermal stress in acc. with DIN 43772
- Measuring insert: Interchangeable
- Process attachment: Weld-in thermowell
- Outer protective sheath: Stainless acid-proof steel
- Withstands media temperatures of up to max. 250°C
- Withstands ambient temperatures of up to max. 120°C
- Withstands vibrations
- Quick reaction time
- Degree of protection is determined by the electrical connection; in this case protection head
- Following attachment of the sensor, the protection head can be turned to point in the desired direction
- Can be delivered with head mounted transmitter
- Approved by: GOST, TRCU on request.



## MECHANICAL SPECIFICATIONS

**Protective sheath:** -----  
EN 1.4404 (AISI 316L) max. 850°C

**Sensor diameter Ø [mm]:** -----  
Ø5 / Ø6 / Ø8  
Other on request

**Extension length L2 [mm]:** -----  
30 / 50  
Other on request

**Immersion length L1 [mm]:** -----  
20 / 35 / 50  
Other on request

**Surface area of parts with media contact:** -----  
Mechanically polished <0,8 µm  
Electro-polished <0,5 µm

**Protection head:** -----  
**B (aluminium (Al), enamelled, low cap, IP62)**  
BH (Al, enamelled, high cap, IP62)  
BSB (Al, tilting lid w/screw, low cap, IP65)  
BSBH (Al, tilting lid w/screw, high cap, IP65)  
BSBH-W (Al, tilting lid, high cap, digital display (excl. tr.), IP65)  
CE (Al, enamelled, screw cap, IP68)  
BRF (stainless steel, screw cap, M20x1,5, IP67)  
BRF-EEX (stainless steel, screw cap, M20x1,5, IP67)  
B-SRF (sanitary, stainless steel, screw cap, M20x1,5, IP67)  
Other on request

**Cable gland (pre-mounted):** -----  
None (standard – cable entry M20x1.5)  
Plastic  
Nickle plated brass  
Stainless acid-proof steel

**Please specify cable diameter:** -----

## ELECTRICAL SPECIFICATIONS

**---Plug (pre-mounted In Head):**  
M12 (for M20)  
Harting (specify type)  
Other on request  
None

**---Cable (pre-mounted in Head):**  
SS (Silicone-Silicone) max. 180°C  
SBS (Silicone-Inner Braided-Silicone)  
TBT (Teflon-Inner Braided-Teflon)  
None

**---Cable length [m]:**

**---Sensor element:**  
1xPt100  
2xPt100  
1xPt1000 (only cl. B 1/1 and cl. A)  
2xPt1000 (only cl. B 1/1 and cl. A)

**---Number of conductors:**  
2-wire (recommended only for Pt1000)  
3-wire  
4-wire

**---Media temperature max:**  
+180°C  
+250°C

**---Tolerance in acc. with IEC 60751:**  
Type A DIN (i.e.±(0,15+0,002xTactual) °C)  
Type B 1/1 DIN (i.e.±(0,3+0,005xTactual) °C)  
Type B 1/3 DIN (i.e.±(0,1+0,0017xTactual) °C)  
Type B 1/6 DIN (i.e.±(0,05+0,00083xTactual) °C)  
Type B 1/10 DIN (i.e.±(0,03+0,0005xTactual) °C)

Link for further information: [Pt100 Tolerance](#)

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**Calibration:**

Temperature calibration are used to verify and certify the sensor to have the correct accuracy. We can do either: "In house" or "Accredited" calibration. Accredited is certified by 3.e part. Normally we do a calibration in 3 points.

**Enhanced performance services:**

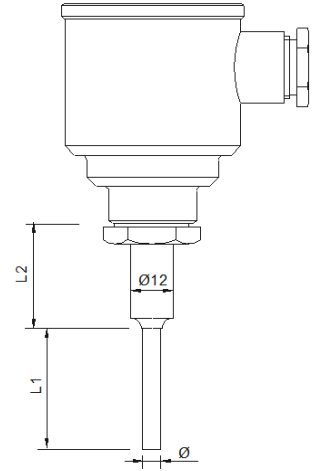
Cold applications (below -50°C) will influence the material and the measurement. CRYO treatment is needed to ensure a correct and working sensor down to -196°C.

A sensor will always drift over time, especially when there are high temperature fluctuations.

With "Ageing treatment" we stabilize the sensor to ensure a minimum drift over time. The benefits are long term stability, more correct measurement and easier planning of calibration periods.

**Documentation:**

Please order the correct documentation when ordering the sensor.



**SIGNAL PROCESSING**

Ceramic socket mounted in terminal head. -----

Prepared for transmitter w/o ceramic socket. -----  
w/long leads

Programmable head mounted transmitter-----

Measuring range min/max: -200/+850°C  
Output: 2-wire, 4-20 mA  
Min. span: 25°C  
Ambient temperature min/max: -40/+85°C

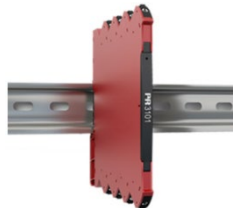
- [5333A Uninsulated for RTD](#)
- [5333D EEX Uninsulated for RTD](#)
- [5332A Uninsulated for RTD](#)
- [5332D EEX Uninsulated for RTD](#)
- [5331A Galvanic Isolated RTD / TC](#)
- [5331D EEX Galvanic Isolated RTD / TC](#)
- [5335A Hart 5 Protocol Standard](#)
- [5335D Hart 5 Protocol CSA, FM, ATEX, IECEx](#)
- [5337A Hart 5 & 7 Protocol](#)
- [5337D Hart 5 & 7 Protocol CSA, FM, ATEX, IECEx](#)



Transmitter Type:			
4 mA =	C°	20 mA =	C°

Link to further information:

- [Transmitter Overview](#)
- [Programmable rail mounted transmitter](#)



**CALIBRATION**

**---Calibration:**

In house (Span -33°C - +700°C)

Accredited – in laboratory (-196°C - +1200°C)

1.	Point	°C
2.	Point	°C
3.	Point	°C

**More point on request**

**Enhanced performance services**

**-----Cryo treatment.**

For temperature sensor under -50°C

**-----Ageing:**

For long term stability.  
Secure minimum drift of sensor accuracy

**-----Documentation**

Certificate: 3.1 Material  
Certificate of origin  
Certificate of conformity  
Certificate of GOST