

RESISTANCE THERMOMETER

Measuring insert: Interchangeable

Type: RT-A

Sheet No.
1-4 V2.1

5450-E010321V3.1

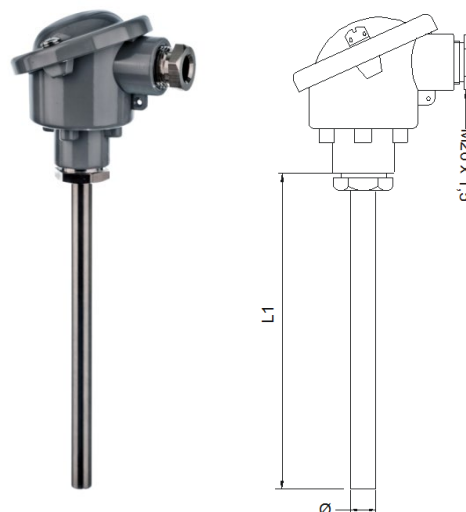


Application:

- For measuring temperatures in closed pipelines and containers with gaseous or liquid media, e.g. air, steam, gas, water, or oil.
- Field of application: up to 600°C, max 50bar and media velocities of up to 25m/sec
- Usually applied in:
 - processing plants
 - power plants
 - district heating, energy distribution

Properties:

- Pt100 resistance thermometer in accordance with IEC 60751
- Mechanical and thermal stress in accordance with DIN 43772
- Process attachment: adjustable coupling, thermowell or flange
- The measuring insert can be replaced or calibrated without shutting down the system
- Outer protective sheath: stainless acid-proof steel
- Modular construction and standard length minimizes the number of spare parts
- Can be delivered with head mounted transmitter



MECHANICAL SPECIFICATIONS

Protective sheath: -----
EN 1.4571 (AISI 316Ti) max. 850°C
Other on request

Sensor diameter Ø [mm]: -----
Ø8 / Ø9 / Ø11 / Ø12 / Ø15
Other on request

Immersion length L1 [mm]: -----
50 / 100 / 150 / 200 / 250 / 300
Other on request

Process attachment: -----
1/2" BSP adjustable nipple
1/4" BSP adjustable nipple
None
Other on request

Protection head: -----
B (aluminium (Al), enamelled, low cap, IP62)
BH (aluminium, enamelled, high cap, IP62)
BSB (aluminium, tilting lid w. screw, low cap, IP65)
BSBH (aluminium, tilting lid w. screw, high cap, IP65)
BRF-M20 (stainless, screw cap, M20x1.5, IP67)
CE (aluminium, enamelled, screw cap, IP68)
Other on request

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

Please specify cable diameter: -----

ELECTRICAL SPECIFICATIONS

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

---Cable (pre-mounted):
SS (Silicone-Silicone) max. 180°C
SBS (Silicone-Inner Braided-Silicone) max. 180°C
TBT (Teflon-Inner Braided-Teflon) max. 250°C
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
+400°C
+600°C (only cl. B 1/1 Pt100 and Pt1000)

---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.

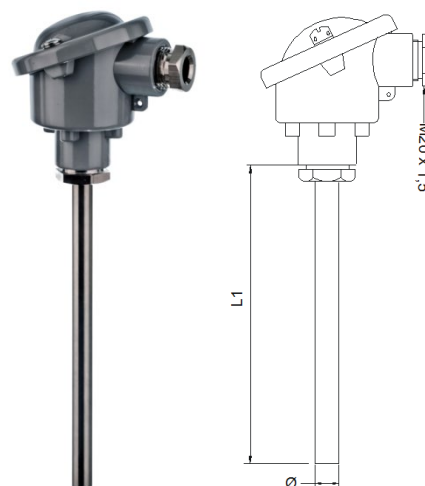
CRYO treatment is needed to ensure a correct and working sensor down to -196°C.

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

Head mounted transmitter

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](#)

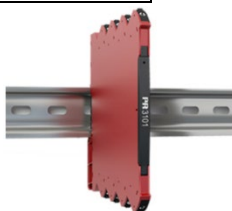


Transmitter Type:			
4 mA =	C°	20 mA =	C°

Link to further information:

[Transmitter Overview](#)

[Programmable rail mounted transmitter](#)



CALIBRATION

---Calibration:

In house (Span)

Accredited – in laboratory

1.	Point	°C
2.	Point	°C
3.	Point	°C

Enhanced performance services

-----Cryo treatment.

For applications below -50°C

-----Ageing:

For long term stability.

-----Documentation

Certificate: 3.1 Material

Certificate of origin

Certificate of conformity

THERMOCOUPLE THERMOMETER
Measuring insert: Interchangeable

Type: TC-A

Sheet No.
3-1 V2.1

5350-E010321V3.1

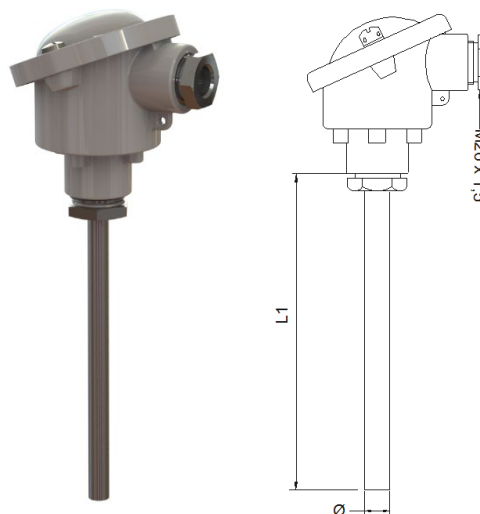


Application:

- For measuring temperatures in closed pipelines and containers with gaseous or liquid media, e.g. air, steam, gas, water or oil.
- Field of application: Up to 1250°C (depending on thermocouple)
- Usually applied in:
 - Tile works.
 - Refuse disposal plants.
 - Processing plants
 - Power plants
 - District heating
 - Energy distribution

Properties:

- Thermocouple thermometer: type K, J, N, T or E
- in acc. with DIN IEC 60584-1
- Constructed in accordance with DIN EN 50446
- Measuring insert: Interchangeable
- Process attachment: Adjustable coupling
- Outer protective sheath: Heat-proof steel or stainless acid-proof steel
- Modular construction and standard length minimize the number of spare parts.
- Can be delivered with head mounted transmitter.
- Approved by: GOST. TRCU on request



MECHANICAL SPECIFICATIONS

Protective sheath: -----

EN 1.4571 (AISI 316Ti) max. 850°C

Other on request

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Plastic

Nickle plated brass

Stainless acid-proof steel

Please specify cable diameter: -----

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---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 Type:

Type T (Cu-CuNi) max. +300°C

Type J (Fe-CuNi) max. +700°C

Type E (NiCr-CuNi) max. +800°C

Type K (NiCr-Ni) max. +1150°C

Type N (NiCrSi-Ni) max. +1250°C

Other on request

---Number of thermocouples:

1xTC

2xTC

Other on request

---Media temperature max:

+600°C

+800°C

+1250°C

---Tolerance in acc. with DIN EN 50446:

Class 1 for K,J,N,E (i.e. $\pm 1,5^\circ\text{C}$ or $\pm(0,0040 \times T)$)

Class 2 for K,J,N,E (i.e. $\pm 2,5^\circ\text{C}$ or $\pm(0,0075 \times T)$)

Class 1 for T (i.e. $\pm 0,5^\circ\text{C}$ or $\pm(0,0040 \times T)$)

Class 2 for T (i.e. $\pm 1,5^\circ\text{C}$ or $\pm(0,0075 \times T)$)

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

THERMOCOUPLE THERMOMETER
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Type: TC-A

Sheet No.
3-1 V2

5350-E010321V3.1



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Enhanced performance services:

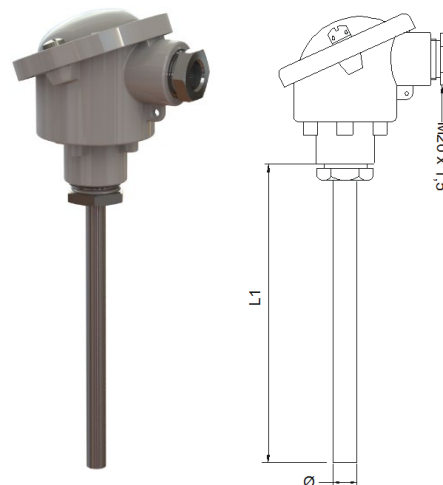
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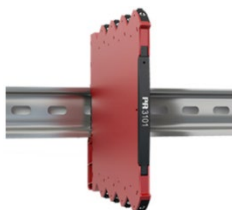


Transmitter Type:			
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Link to further information:

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[Programmable rail mounted transmitter](#)



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

Link for further information: