

# RESISTANCE THERMOMETER

Measuring insert: Fixed

Type: **BP1-T-C**

Sheet No.  
1-20 V2

5459-E011021V3.1

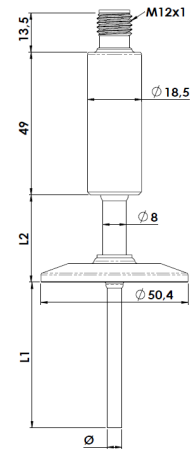
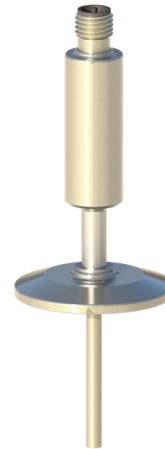


## Application:

- For measuring temperatures of liquid and gaseous media
- Integrated programmable transmitter with output signal: 4-20 mA
- For operations that require the sensor to couple quickly and uncouple electrically, and where a secure fixing of the cable is needed
- Usually applied in: Hygienic industry, Food and Beverage, Pharma

## Properties:

- Integrated programmable transmitter with output signal 4/20mA
- Pt100 and Pt1000 in acc. with IEC 60751, 3-wire
- Mechanical and thermal stress in accordance with DIN 43772
- Measuring insert: Fixed
- Electrical connection: M12 (degree of protection IP65)
- Process attachment: Tri-Clamp
- Outer protective sheath and nipple: Stainless acid-proof steel
- Stands media temperatures of up to max. 250°C
- Ambient temperature min./max.: -40/+85°C
- Withstands vibrations
- Quick reaction time
- Approved by: GOST/TRCU



## MECHANICAL SPECIFICATIONS:

**Protective sheath:** -----  
EN 1.4571 (AISI 316Ti)  
Special

**Sensor diameter [mm]** -----  
Ø5  
Special

**Immersion length L1 [mm]:** -----  
50 / 80 / 100 / 150 / 200 / 250  
Special

**Extension length L2 [mm]:** -----  
None  
50mm  
Special

**Process attachment:** -----  
Clamp 3/4" APC  
Clamp 1 1/2" DN38, ISO2852  
Clamp 2" DN51, ISO2852  
Special

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

## ELECTRICAL SPECIFICATIONS

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

**----Temperature range min/max:**  
-50/+180°C  
-50/+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.±(0,06+0,00083xTactual)°C)  
Type B 1/10 DIN (i.e.±(0,03+0,0005xTactual)°C)  
Special

**----M12 connector:**  
Angled 90°  
Straight  
None

**----Cable:**  
**(pre-mounted in M12 connector)**  
Cable type SS (Silicone-Silicone)  
Cable type SBS (Silicone-Braided-Silicone)  
Cable type TBT (Teflon-Braided-Teflon)  
Special

**----Cable length L2 [m]:**  
2 / 4 / 6 / 10  
Special

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:**

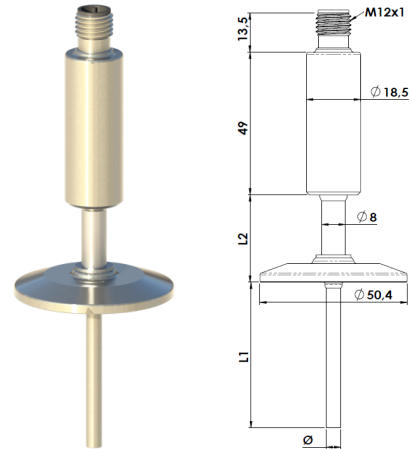
Cold applications (below -50°C) will influence the material and the measurement. CRYO treatment is needed to ensure a correct and working sensor down to -196°C.

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**

Common specifications

**Supply**

Supply voltage: 8.0 ... 35 VDC  
Internal power dissipation: 25 mW ... 0.8 W

**Response time**

Response time (Programmable): 0.33 ... 60 s

Voltage drop: 8.0 VDC

Warm-up time: 5 min

Programming: Loop Link

Singal / Noise ratio:Min. 60 dB

Signal dynamics, input: 19 bit

Signal dynamics, output: 16 bit

Effect of supply voltage change: < 0.005% of span /VDC

Accuracy: Better than 0.1% of sel. Range

EMC immunity influence: <+/-0.5% of span

**Range:**

4mA: °C

20mA: °C

**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

Other on request