

THERMOCOUPLE THERMOMETER

Measuring insert: Fixed

Type:
TC-TM2

Sheet No.
3-25 V2.1

5851-E010818V2.1



Application:

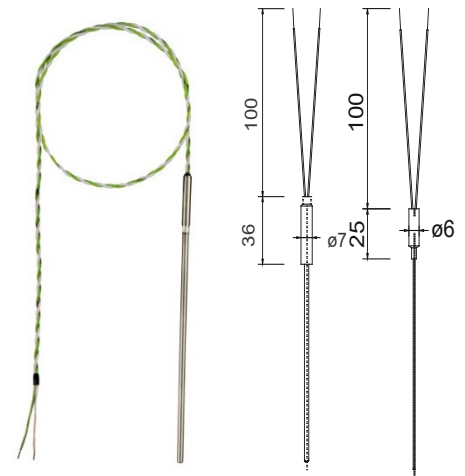
A mineral insulated thermocouple sensor for measuring temperatures in situations that require the sensor to be robust, flexible/ bendable and having a quick reaction time.

Usually applied in:

- Processing plants
- Engines
- Power plants

Properties:

- Thermocouple thermometer type K, J, E, N, T, R, S and B in acc. with IEC 60584-1
- Constructed in accordance with DIN 43733
- Measuring insert: Fixed
- Process attachment: Coupling, soldering or other mechanical means of attachment
- Outer protective sheath: Various materials depending on the task in question
- Ambient temperatures min/max: 25/+120°C (depending on cable insulation)
- Approved by: GOST, TCRU on request.



MECHANICAL SPECIFICATIONS:

Protective sheath: -----

EN 1.4571 (AISI 316Ti) max. 850°C

EN 1.4841 (AISI 314) max. 1100°C

EN 2.4816 (Inconel 600)

Special

Sensor diameter Ø [mm]: -----

Ø1 / Ø1.5 / Ø3 / Ø6

Special

Immersion length L1 [mm]: -----

150 / 300 / 500 / 1000 / 1500 / 2000

Special

Process attachment: -----

None

1/8" BSP adjustable coupling

1/4" BSP adjustable coupling

3/8" BSP adjustable coupling

1/2" BSP adjustable coupling

3/4" BSP adjustable coupling

Special

Olives (for adjustable coupling): -----

With Teflon olive

With Steel olive

ELECTRICAL SPECIFICATIONS

--Plug

Plug std.

Plug mini

Other on request

None

--Cable

PP (PVC-PVC)

SS (Silicone-Silicone)

TT (Teflon-Teflon)

SGSB (Silicone-Glass Fiber-Braided)

TGSB (Teflon-Glass Fiber-Braided)

Special

--Cable length [m]:

--Sensor element:

Type K (NiCr-Ni) max. +1150°C

Type J (Fe-CuNi) max. +700°C

Type E (NiCr-CuNi) max. +800°C

Type N (NiCrSi-Ni) max. +1200°C

Type T (Cu-CuNi) max. +300°C

Type R (Pt13%Rh-Pt) max. +1600°C

Type S (Pt10%Rh-Pt) max. +1600°C

Type B (Pt30%Rh-Pt6%Rh) max. +1800°C

--Number of thermocouples:

1xTC

2xTC

--Tolerance in acc. with DIN 43732:

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: [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:

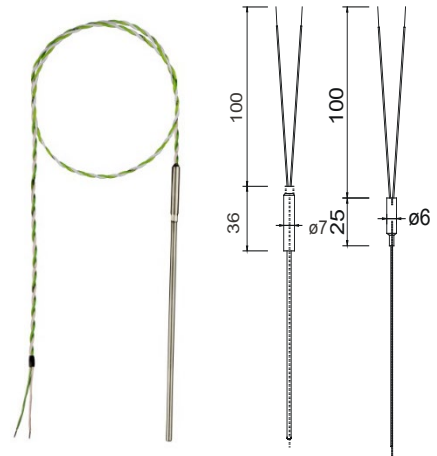
Cold applications (below -50°C) will influence the material and the measurement. CRYO treatment is needed to ensure a correct and working sensor down to -196°C.

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

Enclosure

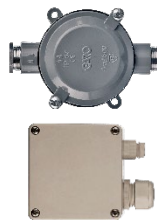
Marine Box (112x82x42mm) -----

ABS Box (82x80x56mm) -----

NONE -----

Programmable 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



- [5334A Uninsulated for RTD](#)
- [5334D 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°

- [5350A Profibus standard](#)
- [5350B Profibus ATEX, FM and CSA](#)

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

Other on request