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
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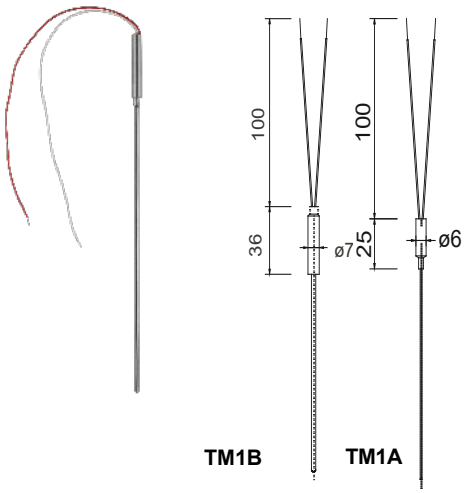

MECHANICAL SPECIFICATIONS:

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

Type:----------
TM1A (with free Leads)
TM1B (with free Leads)

ELECTRICAL SPECIFICATIONS

---Wire type (leads)
None (TC wires)
Plast (P)
Silicone (S)
Teflon (T)
Special

--Wire length
0,1 m,
Special

---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. ±1,5°C or ±(0,0040xT)
Class 2 for K,J,N,E (i.e. ±2,5°C or ±(0,0075xT)
Class 1 for T (i.e. ±0,5°C or ±(0,0040xT)
Class 2 for T (i.e. ±1,5°C or ±(0,0075xT

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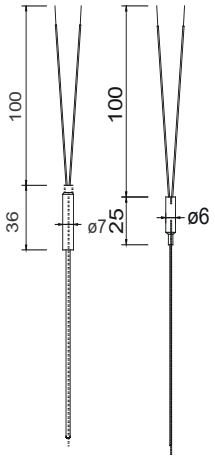
Calibration:
Temperature calibration are used to verify and certify the sensor to have the correct accuracy. We can do either: “In house” or “Accredited” calibration. Accredited is certified by 3.e part. Normally we do a calibration in 3 points.

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

None ----**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

Other on request

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