

THERMOCOUPLE THERMOMETER
Measuring insert: Fixed

Type:
TC-TM3

Sheet No.
3-27 V2.1
5552-E010818V2.1



Application:

- For measuring temperatures in situations that require the sensor:
 - to be robust
 - to be flexible/bendable
 - to have a quick reaction time
- Usually applied in:
 - Processing plants
 - Engines
 - Power plants

Properties:

- Thermocouple thermometer type K, J, E, N, T, S and R in acc. with DIN IEC 584-1
- 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
- Can be delivered with head mounted transmitter



MECHANICAL SPECIFICATIONS:

Protective tube: -----
EN1.4571 (AISI 316Ti)
EN 1.4841
EN 2.4816 (Inconel 600)
Special

Sensor diameter Ø [mm]: -----
Ø1 / Ø1,5, Ø3 / Ø6
Special

Immersion length L1 [mm]: -----
150 / 300 / 500 / 1000
Special

Process attachment: -----
¼" BSP adjustable nipple
½" BSP adjustable nipple
Special

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 w/screw, high cap, digital display (excl. tr.), IP65)
BM (Mini - aluminum, enameled, IP65)
CE (Al, enamelled, screw cap, IP68)
BSP (plastic, black, screw cap, IP54)
BRF (stainless steel, screw cap, M20x1,5, IP67)
B-SRF (sanitary, stainless steel, screw cap, M20x1,5, IP67)
Special

Cable gland (pre-mounted): -----
Plastic
Nickel plated brass
Stainless acid-proof steel
None

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)**
TGSB (Teflon-glass Fibre-braided)
SGSB (Silicone-Glass Fibre-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. +1250°C
Type T (Cu-CuNi) max. +300°C
Type R (Pt13%Rh-Pt) max. +1600°C
Type S (Pt10%Rh-Pt) max. +1600°C
Special

-----**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)

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/+1800°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

Other on request

Save

Print

Submit