

THERMOCOUPLE THERMOMETER

Measuring insert: Fixed

Type:
TC-AC/ACC

Sheet No.
3-6 V3

5151-E090221V3.1



Application:

- Measurement of high temperatures in large ovens and channels for flue gases and air
- Field of application: Up to 1700°C (depending on thermocouple)
- Usually applied in: Tile works, refuse disposal plants and processing plants

Properties:

- Thermocouple thermometer type T, J, E, K, N, S, R or B in accordance with IEC 60584-1
- Constructed in accordance with DIN EN 50446
- Measuring insert: Fixed
- Process attachment: Adjustable flange or coupling.
- Gas-proof ceramic internal tube protects thermocouple against pollution.
- 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 and TRCU (on request)



MECHANICAL SPECIFICATIONS

Protective tube O: -----

Ceramics KER610 according to DIN EN 50446
Ceramics KER799 according to DIN EN 50446

Internal tube I: -----

Ceramics KER610 according to DIN EN 50446
Ceramics KER799 according to DIN EN 50446
None

Sensor diameter Ø [mm]: -----

Ø15
Ø24

Nominal length L [mm]: -----

500
710
1000
1400
Others on request

Retained tube length H [mm]: -----

EN 1.4845 Ø21.3x2.65x150
EN 1.0305 Ø32x2x200
Others on request

Process attachment: -----

1" BSP
1 1/4" BSP
Ø22 flange acc. to DIN EN 50446
Ø32 flange acc. to DIN EN 50446

Protection head: -----

A (aluminium, enamelled, low cap, IP62)
A special (aluminium, enamelled, low cap, IP65)
AHSB (aluminium, enamelled, high cap, IP54)
Others on request

Cable gland (pre-mounted in head): -----

None (standard – cable entry M20x1.5)
Plastic
Nickel plated brass
Stainless acid-proof steel

Please specify cable diameter: -----

ELECTRICAL SPECIFICATIONS

-----Plug (pre-mounted in head):

M12 (for M20)
Harting (specify type)
Others on request
None

-----Cable (pre-mounted in head):

PP (Plastic-Plastic)
SBS (Silicone-Inner Braided-Silicone)
TBT (Teflon-Inner Braided-Teflon)
Others on request
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
Type S (Pt10Rh-Pt) max +1600°C
Type R (Pt13Rh-Pt) max +1600°C
Type B (Pt30Rh-Pt6Rh) max +1700°C
Others on request

-----Number of thermocouples:

1xTC
2xTC
Others on request

-----Tolerance in acc. with IEC 60584-1:

Class 1 for T (i.e. $\pm 0,5^{\circ}\text{C}$ or $\pm(0,0040 \times T)$)
Class 1 for J, E, K, N (i.e. $\pm 1,5^{\circ}\text{C}$ or $\pm(0,0040 \times T)$)
Class 1 for S, R ($\pm 1,0^{\circ}\text{C}$ [$\pm 1,0^{\circ}\text{C} + (T \text{ (actual)} - 1100^{\circ}\text{C})$])
Class 2 for T (i.e. $\pm 1,5^{\circ}\text{C}$ or $\pm(0,0075 \times T)$)
Class 2 for J, E, K, N (i.e. $\pm 2,5^{\circ}\text{C}$ or $\pm(0,0075 \times T)$)
Class 2 for S (i.e. $\pm 1,25^{\circ}\text{C}$ or $\pm(0,0025 \times T)$)
Class 2 for R, B (i.e. $\pm 1,5^{\circ}\text{C}$ or $\pm(0,0025 \times T)$)

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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 3rd part. Normally, we do a calibration in 3 points.

Enhanced performance services:

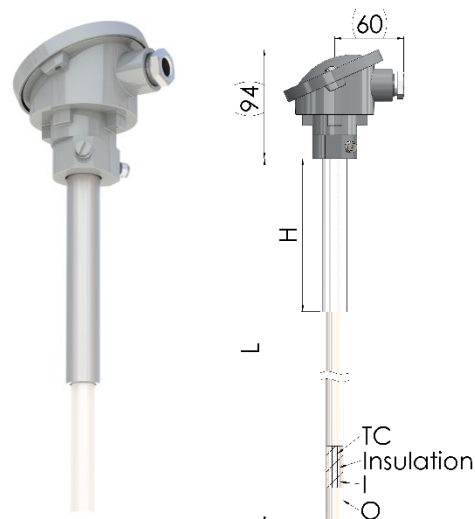
Cold applications (below -50°C) will influence the material and the measurement. CRYO treatment is needed to ensure a correct and working sensor down to -196°C.

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:

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

[5334A Uninsulated for TC](#)

[5334D EEX Uninsulated for TC](#)

[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](#)

[TC Tolerance](#)

CALIBRATION

----Calibration:

In house (Span)

Accredited – in laboratory

1.	Point	°C
2.	Point	°C
3.	Point	°C

Enhanced performance services

-----Cryo treatment:

Recommended for temperature applications below -50°C

-----Ageing:

For long term stability

-----Documentation

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