



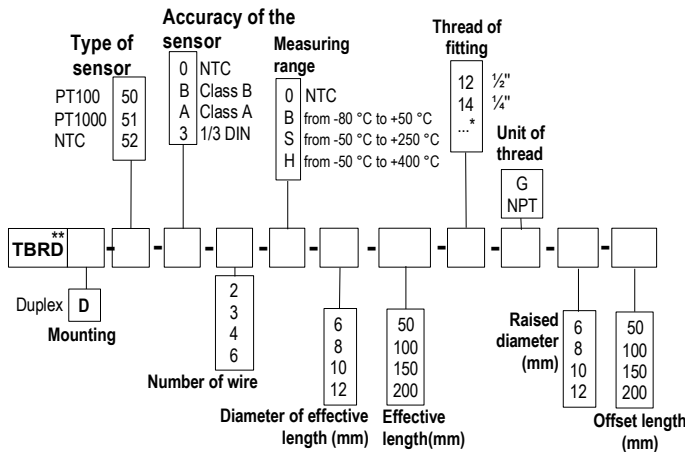
RTD sensor with standard head, resistive element and offset fitting

TBRD 50 / TBRDD 50

- Temperature sensor with stainless steel contact tip and offset compression fitting.
- Measuring range (According to reference) **from -80 °C to +400 °C** (PT100 and PT1000).
from -20 °C to +120 °C (NTC).
- Mounting of wire: **single pair** (2,3 or 4 wires).
multipair (4 or 6 wires).
- For other resistor type PT25, PT50, PT500, PT200 or NI, please contact us.

PART NUMBERS

To order, just add the codes to complete the part number.



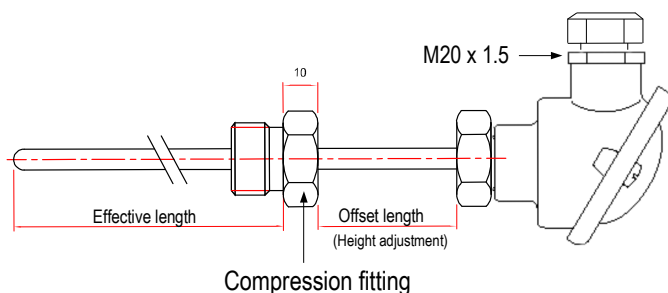
* Other dimension on request

** Other head on request

Example: TBRD-50-B-3-S-6-100-12-G-6-50.

Model: PT 100 temperature sensor, class B, 3 wires mounted on contact tip an effective length of 100 mm and 6 mm Ø and with a raised length of 50 mm and 6 mm Ø. Contact tip with 1/2" gas fitting.
Standard measuring range from -50 °C to 250 °C.

DIMENSIONS



TECHNICAL FEATURES

Working temperature (According to reference)	From -80 °C to +400 °C (PT100 and PT1000) From -20 °C and +120 °C (NTC)
Accuracy	PT100 or PT1000: see "Tolerances" table NTC: see "Tolerances" table
Type of sensor	PT100 or PT1000: Class B, Class A, 1/3 DIN as per DIN IEC751 NTC: resistance at 25 °C, $R_{25} = 10 \text{ K}\Omega$ Nominal Beta B25/85 value = 3.695 K $\pm 1\%$
Storage temperature	From -20 °C to +80 °C
Contact tip	316 L stainless steel, no welding, 3/4 to 4/4 hard
Compression fitting	Stainless steel 316 L
Thread	1/4, 1/2, male Gas or NPT plug (other tread on request)
Electrical connection	With or without terminal block Transmitter 4/20 mA 0/10 V as option
Connection head	Aluminium alloy Cable gland: M20 x 1.5 IP65 protection
Adjustable mountings	Interchangeable element



Mounting of wire

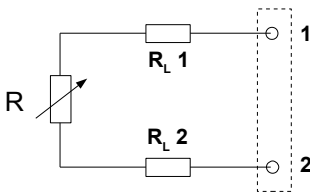
Single pair 2, 3 or 4 wires

For $T > 250 \text{ }^\circ\text{C}$ do not use 4 wires in a sheath of 6 mm Ø.

Multipair 4 or 6 wires

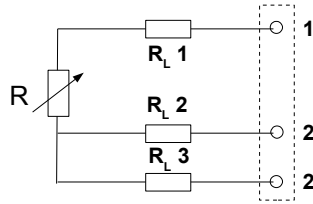
For $T > 250 \text{ }^\circ\text{C}$ use sheath from 8 mm Ø.

• 2-wire connection



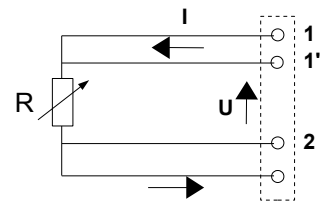
This is the simplest way, but line resistors (RL1 and RL2) are connected to the sensor in a series circuit. The addition of RL1 + RL2, leads to an off-set between measured temperature and real temperature. This connection must be avoided.

• 3-wire connection



This connection involves identical line resistors (RL1-RL2-RL3), RL2 + RL3 allow you to measure the line resistance that will be subtracted from the measured resistance between 1 and 2' terminals. This is the most common connection.

• 4-wire connection



Regulated current is going through 11' and 22' terminals and the measurement is made at the sensor terminals, so none of the line resistors are taken into account. This is the most accurate connection.

TOLERANCES* OF PT100 AND PT1000 PROBES

Norm as per IEC 751 (1993).

Temp °C	Tolerances					
	Class B		Class A		1/3 DIN	
	± °C	± Ohms	± °C	± Ohms	± °C	± Ohms
-100	0.8	0.32	0.35	0.14	0.27	0.11
-50	0.55	0.22	0.25	0.1	0.19	0.08
0	0.3	0.12	0.15	0.06	0.1	0.04
100	0.8	0.3	0.35	0.13	0.27	0.1
200	1.3	0.48	0.55	0.2	0.44	0.16
300	1.8	0.64	0.75	0.27	0.6	0.21
400	2.3	0.79	0.95	0.33	0.77	0.26

*Resistance values for PT1000 (Ω) must be multiplied by 10 for the same corresponding temperature value (°C). I.e: at 0 °C for Class B PT1000 ± 0.3 °C → ± 1.2 Ω

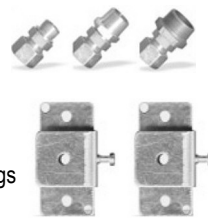
TOLERANCES* OF NTC PROBES

Measuring range °C	Tolerances °C
From -20 °C to 0 °C	± 0.5 °C
From 0 °C to +70 °C	± 0.2 °C
From +70 °C to +100 °C	± 0.5 °C

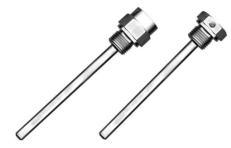
*all accuracies indicated in this technical data sheet were stated in laboratory conditions, and can be guaranteed for measurements carried out in the same conditions, or carried out with calibration compensation.

ACCESSORIES (SEE DATASHEET)

- Transmitter output 4/20 mA or 0/10 V
- Wall fixing support
- Stainless steel mounting bracket
- ¼" or ½" Gas screw nut
- Stainless steel compression fitting
- PTFE or stainless steel ferrule for compression fittings



- Sleeve to weld for food industry
- Stainless steel union fitting
- ½" Gas or NPT thread cuff
- Thermo-conducting silicone grease
- Calibration certificate
- Thermowell



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