



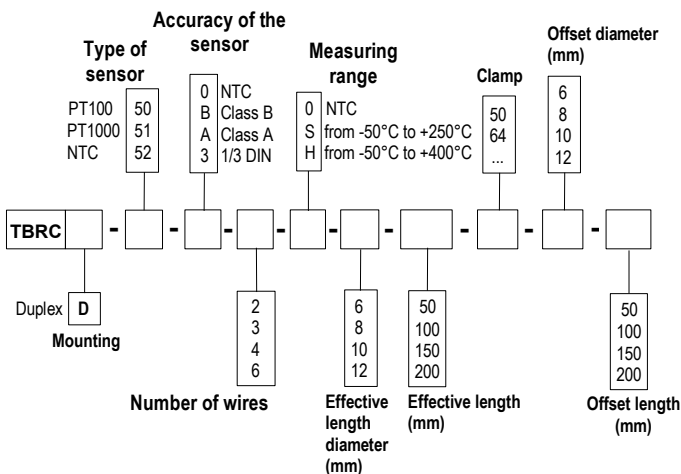
## RTD sensor with standard head, resistive element and clamp fitting

### TBRC 50 / TBRC D 50

- Temperature sensor with stainless steel contact tip and clamp 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.



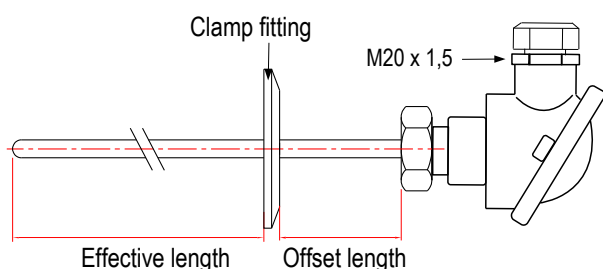
\* Other dimensions on request

**Example : TBRC-50-B-3-S-6-100-50-6-50.**

**Model :** PT 100 temperature sensor, class B, 3 wires mounted on contact tip with an effective length of 100 mm and 6 mm Ø and with an offset length of 50 mm and 6 mm Ø. Contact tip with clamp fitting of 50,5 mm Ø for a ferrule DN from 25 to 42,4 mm.

**Standard measuring range from -50°C to 250°C.**

#### Dimensions



#### Technical features

**Working temperature**.....from -80°C to +400°C (PT100 and PT1000)  
(According to reference) from -20°C to +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,  $R_{25} = 10K\Omega$   
Nominal Beta B25/85 value = 3,695K ±1%

**Mounting of wire**.....single pair 2, 3 or 4 wires

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

**multipair 4 or 6 wires**

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



**Storage temperature**.....from -20°C to +80°C

**Contact tip**.....316 L stainless steel, no welding, 3/4 to 4/4 hard

**Clamp fitting**.....stainless steel 316 L

- **Standard**

**50** : Solid end caps 50,5 mm Ø for ferrules DN 25 at 42,4mm

**64** : Solid end caps 64 mm Ø for ferrule DN 48,3 at 51mm  
(other clamp solid end caps on request)

- **Accessories**

Ferrule and clamp on request

**Thread**.....1/4, 1/2, male Gas or NPT plug  
(other tread on request)

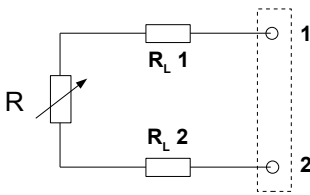
**Electrical connection**.....with or without terminal block  
Transmitter 4/20mA 0/10V as option

**Connection head**.....aluminium alloy  
cable gland : M20 x 1,5  
IP65 protection

**Adjustable mountings**.....See catalogue or data sheet  
of specific mountings.

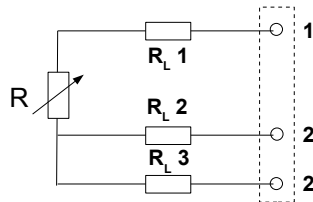
## Useful information on thermometry with platinum resistor PT100, PT1000 or NTC .

### • 2-wire connection



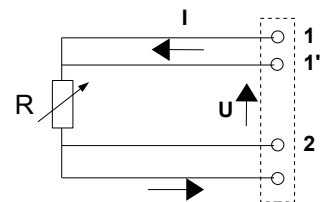
This is the simplest way, but line resistors (RL1 and RL2) are connected to the sensor in a series circuit. The addition of RL1 + RL2, leads to an off-set between measured temperature and real temperature. This connection must be avoided.

### • 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 22' 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.

## Tolerance\* of PT100 and PT1000 probes.

Norms as per IEC 751 (1993), BS 1904 (1984) et DIN 43760 (1980).

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 data sheet)

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