KIMO INSTRUMENTS

Technical Data Sheet

Pressure • Temperature • Humidity • Air Velocity • Airflow • Sound level

CE

Bent RTD sensor with
standard head and** at **resistive element
with or without fitting

Type TBC 50 et TBCR 50

TBC 50 – TBCD 50 - TBCR 50 – TBCRD 50

Probe features

- Temperature sensor with bent stainless steel contact tip with or without fitting.
- Measuring range (according to reference) **from -80°C to +400°C** (PT100 et PT1000).
  from -20°C to +120°C (NTC).
- Mounting of wires : **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.

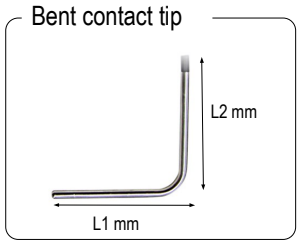
Transmitter features

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
CTN : resistance at 25°C, R_{25} = 10KΩ, Nominal Beta B25/85 value = 3,695K ±1%

Mounting of wires.....**single pair 2, 3 or 4 wires**
For T>250°C do not use 4 wires in a sheath of 6 mm Ø
multipair 4 or 6 wires
For T>250°C use sheath from 8mm.



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

Contact tip.....316 L stainless steel, no welding, 3/4 to 4/4 hard. 90°bent.

Compression fitting.....316 L stainless steel
Smooth mounting without fitting : do anything
Mounting with fitting on L2 (See schema) : 12 or 14 corresponding to ½'G et ¼'G fittings.
Mounting with fitting on L1 (See schema) : 12L1 or 14L1 corresponding to ½'G et ¼'G fittings.

No 4 wires mounting for contact tip 4mm ø.

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

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

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

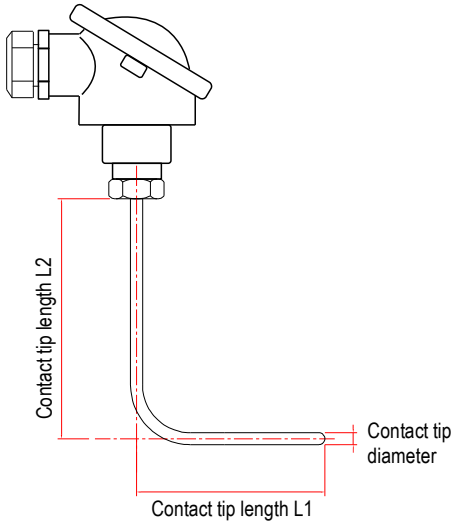
Adjustable mounting.....See catalogue or data sheet of related mountings.

TBC 50

Stainless steel bent sensor
with or without multipair mounting

Dimensions probe

L1 mini : to determine according to Ø
L2 mini : to determine according to Ø
Bending radius : 15 mm Ø 6 mm
24 mm Ø 8 and 10 mm



Part numbers

	Multipair	Sensor type		Accuracy		Number of wires (output)		Measuring range		Contact tip diameter (mm)	L1 length (mm)	L2 length (mm)	Angle
TBC –	D ...	50 51 52	PT100 PT1000 NTC	0 B A 3	NTC Class B Class A 1/3 DIN	2 3 4 6	NTC or PT1000 PT100 PT100	O S H	NTC from -50°C to +250°C from -50°C to +400°C	6 8 10 12	50 100 150 200 ...*	50 100 150 200 ...*	90 ...

* Other dimension on request

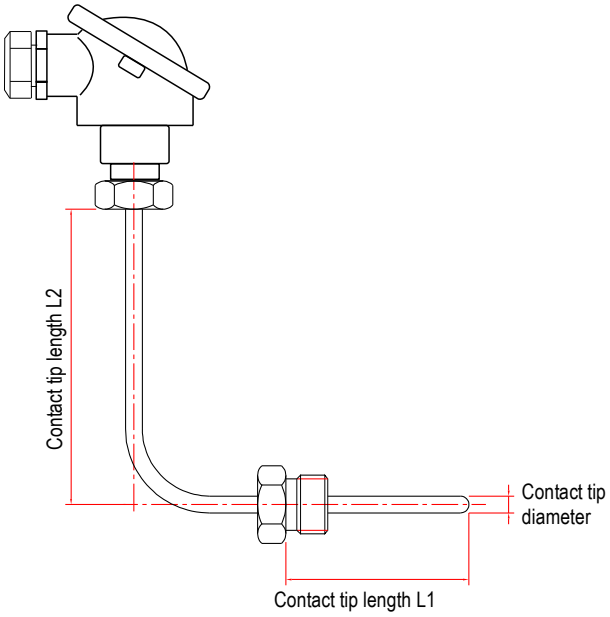
Example : TBC-51-B-2-S-8-100-100-90
Model : PT1000 temperature sensor Class B, 2 wires, stainless steel contact tip 8 mm Ø bent at 90° and lengths L1 and L2 of 100 mm.
Measuring range from -50 to +250°C.

TBCR

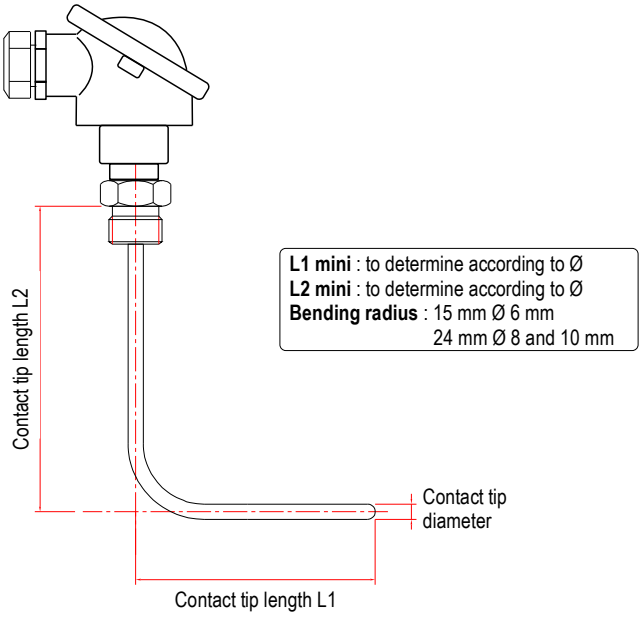
Bent sensor with fitting
and with or without multipair mounting

Dimensions probe

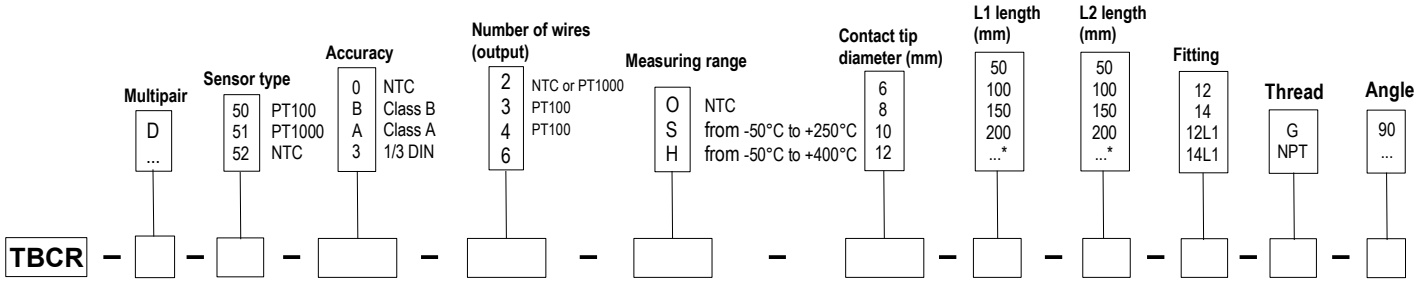
- With fitting on L1



- With fitting on L2



Part numbers



* Other dimension on request

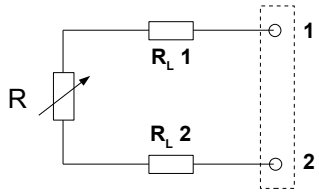
Example : TBCR-51-B-2-S-8-100-100-12-G-90

Model : PT1000 temperature sensor Class B, 2 wires, stainless steel contact tip 8 mm Ø bent at 90° and lengths L1 and L2 of 100 mm.
With ½' G fitting on L2.

Measuring range from -50 to +250°C.

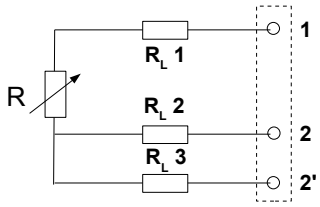
Useful information on thermometry with platinum resistor PT100, PT1000 or NTC .

• 2-wire connection



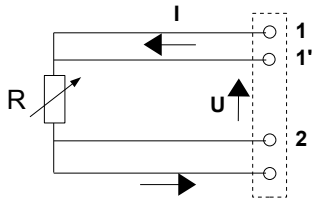
This is the simplest way, but line resistors (RL1 and RL2) are connected to the sensor in a series circuit. The addition of RL1 + RL2, leads to an off-set between measured temperature and real temperature. This connection must be avoided.

• 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) and 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 brackets
- 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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