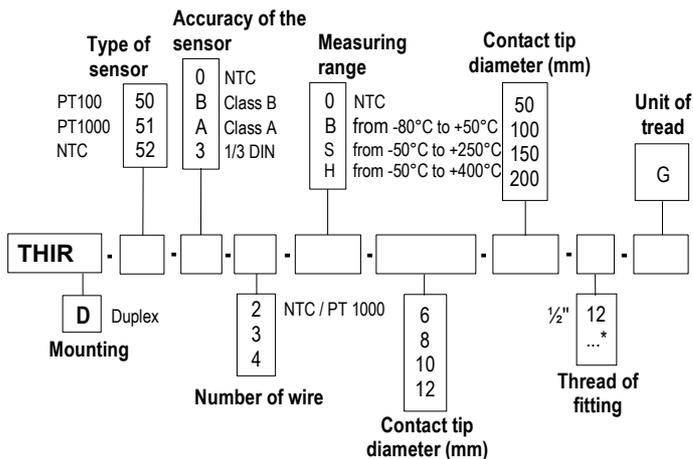*RTD sensor
with **DIN 43650** head and
resistive element*

THIR 50 / THIRD 50

CE

• Temperature sensor with or without compression fitting and stainless steel contact tip.
• Measuring range (According to references) **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 (2x2 wires only).
• For other type of resistance PT25, PT50, PT500, PT200 or NI, please contact us.

◼ *Part numbers*

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

Type of sensor	Accuracy of the sensor	Measuring range	Contact tip diameter (mm)		Unit of tread
PT100 **50**	**0** NTC	**0** NTC	**50**		**G**
PT1000 **51**	**B** Class B	**B** from -80°C to +50°C	**100**		
NTC **52**	**A** Class A	**S** from -50°C to +250°C	**150**		
	3 1/3 DIN	**H** from -50°C to +400°C	**200**		

THIR - ▢ - ▢ - ▢ - ▢ - ▢ - ▢ - ▢

D Duplex		**2**	NTC / PT 1000	**6**		**½"**	**12**
Mounting		**3**		**8**			...*
		4		**10**			
				12			

Number of wire   **Contact tip diameter (mm)**   **Thread of fitting**

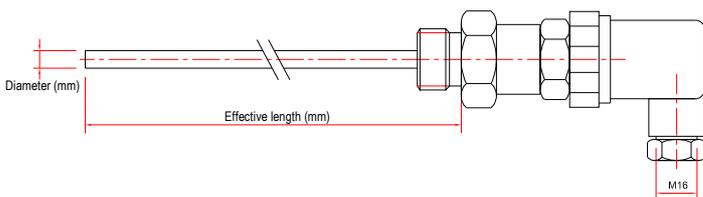* Other dimensions on request

Example : THIR-50-B-3-S-6-100-12G.
Model : PT 100 temperature sensor, class B, 3 wires with 6 mm diameter and length including thread of 100 mm.
With ½' G compression fitting.
Standard measuring range from -50°C to 250°C.

◼ *Dimensions*

Diameter (mm)

Effective length (mm)

M16

◼ *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 à 25°C, R_{25} = 10KΩ
                                             Nominal Beta B25/85 value = 3,695K ±1%

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

Compression fitting....................stainless steel 316 L

Thread...with or without, ½' G in standard
                                             other on request

Electrical connection..................Attached tinned brass eyelet on flange
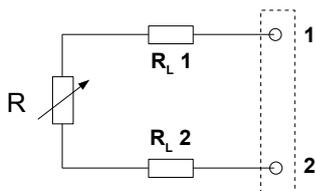
Connection head........................rectangular in glass fibre reinforced plastic
                                             cable gland : P G11 or M16
                                             IP65 protection (with seal)
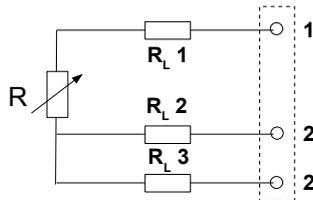   working temperature : from -40°C to +125°C

Adjustable mountings..................on request

◼ *Useful information on thermometry with platinum resistor PT100, PT1000 or NTC .*
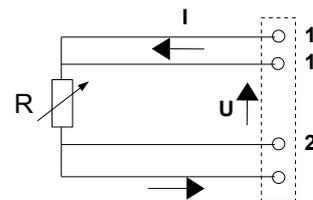
• 2-wire connection

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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