

**INSULATED RESISTANCE CABLE THERMOMETER WITH SPRING**



PT31PRI has been designed to measure, e.g. the bearing temperature in large rotating machines, where its bearings can be damaged by stray current. It is also suitable for application, where it is necessary to provide the continual pressure top of stem to measured place, where there are some vibration mainly.

The nut is tight by O-rings in PTFE housing.

A Pt100 temperature sensing element according to DIN EN 60751, class A in 4-wire circuit is used as a measuring insert by default. Versions with Pt500 Pt1000 or Ni1000 are also possible. The connection is also available in 2-wire and 3-wire circuits as an option. Metal parts are made from stainless steel of 17248 grade. Mechanical dimensions as well as the cable length may be customized.

**PT31PRI** Cable design, diameter 6mm, suitable for bearing housing units, insulated.  
Fittings can be used: G1/2; M20x1,5 or others..

Immersion length „Y“ according to order

**Immersion length Y = depth of hole + 10mm! Spring compression is max. 20mm.**

<b>Technical data:</b>	Basic design:	6x100mm G1/2 Pt100/B with 4w cable 1m, max. +200°C
	Measuring range:	-30...+80°C with PVC cable (τ=cca 10sec)
		-60...+200°C with MCBE-AFEP cable (τ=cca 10sec)
		-40...+200°C with PTFE cable (τ=cca 10sec)
	Dielectric strength:	500V, dielectric resistance min. 20MΩ (circuit to metal case)

**Sensors used:**

Pt100/A,B	PT1000/A,B
Ni1000/5000	Ni1000/6180
NTC ....	KTY ...
PTC ....	SMT 160-30-92
DALLAS..	Others...

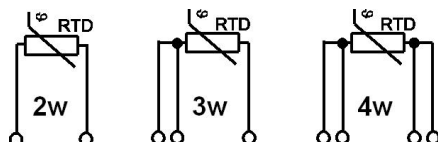
It is possible to use a pair of sensors in one stem.

**Type test:** Standart type test to ČSN EN 60770-1 ed.2

**The most widely used cables:**

- 2w cable 80°C has 2 PVC-insulated wires 0,34mm<sup>2</sup>, externally PVC, low oil resistance (ex. Ø 4,8 mm)
- 4w cable 80°C has 4 PVC-insulated wires 0,25mm<sup>2</sup>, externally PVC, low oil resistance (ex. Ø 4,8 mm)
- 4w cable 200°C has 4 teflon isolation wires 0,09mm<sup>2</sup>, without metal shielding, externally teflon (ex. Ø 2,5 mm)
- 2w cable 200°C has 2 teflon insulated wires 0,22mm<sup>2</sup>, metal shielding, externally teflon (ex. Ø 3,8 mm)
- 4w cable 200°C has 4 teflon insulated wires 0,22mm<sup>2</sup>, metal shielding, externally teflon (ex. Ø 3,5 mm)
- 2w cable 200°C has 2 teflon insulated wires 0,22mm<sup>2</sup>, without metal shielding, externally silicone (ex. Ø 3,6 mm))
- 2w cable 200°C has 2 teflon insulated wires 0,15mm<sup>2</sup>, metal shielding, externally silicone (ex. Ø 3,0 mm)
- 3w cable 200°C has 3 teflon insulated wires 0,15mm<sup>2</sup>, metal shielding, externally silicone (ex. Ø 3,1 mm)
- 3w cable 200°C has 3 teflon insulated wires 0,22mm<sup>2</sup>, metal shielding, externally silicone (ex. Ø 4,5 mm)
- 4w cable 200°C has 4 teflon insulated wires 0,22mm<sup>2</sup>, metal shielding, externally silicone (ex. Ø 4,5 mm)
- 6w cable 200°C has 6 teflon insulated wires 0,22mm<sup>2</sup>, metal shielding, externally silicone (ex. Ø 5,2 mm))

**Basic electric connection :**



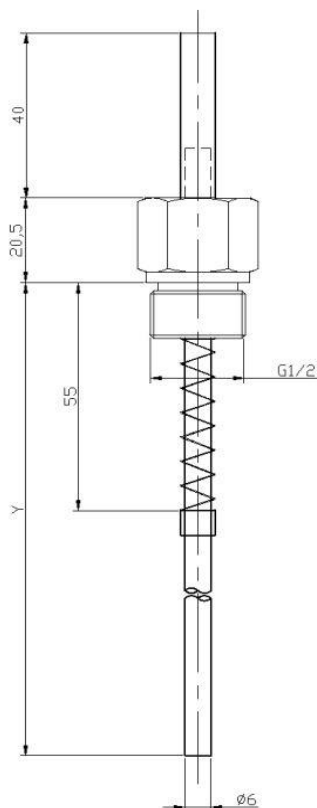
**Wire connection:**

Design with one sensor, four-wire 80°C:  
 Design with one sensor, four-wire 200°C:  
 Design with one sensor, three-wire 200°C:  
 Design with two sensors 80°C:  
 Design with two sensors 200°C:

white + yellow, brown + green  
 black + white, red + blue (or red + red, white + white)  
 white, red + blue  
 white + yellow - sensor "A", brown + green - sensor "B"  
 black, white - sensor "A", red, blue - sensor "B"  
 (or 2 x red - sensor "A", 2 x white - sensor "B")  
 red + blue, white - sensor "A", black + brown, yellow - sensor "B"  
 two wires of different colours

Design with two sensors three-wire 200°C  
 Design with one sensor, two-wire:

The ends of the conductors are stripped and tinned. For temperature above 200°C is used crimp barrels.

**Dimension drawing:**

**Immersion length Y = depth of hole + 10mm! Spring compression is max. 20mm.**

**The order must include:**

- type of thermometer PT31PRI
- accuracy of sensors Pt100 A, B or other specifications  
 (double sensor, other type of sensor - e.g. Pt1000, Ni1000, KTY, PTC, thermocouple...)  
 If not specified, PT100/B will be used.
- length of stem
- length of cable
- screw fitting
- expected maximum temperature (it depends on cable type)
- quantity

**Examples of orders:**

Most frequently ordered designs	PT31PRI 6x180 G1/2 Pt100/A 4w Tf. 5m 200°C	3 pcs
	PT31PRI 6x100 M20x1,5 Pt100/B 4w 3m 80°C	1 pc
	PT31PRI 6x200 G1/2 Pt100/B 2w 4m 200°C	2 pcs

A calibration protocol can be ordered.