

WZ industrial thermal resistance



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Overview

As a sensor for measuring temperature, thermal resistances are usually used in conjunction with display instruments, recording instruments and electronic regulators. It can directly measure the surface temperature of liquid, steam and gas media as well as solids in various production processes ranging from -200°C to 500°C .

Features

- ◆ High quality temperature sensing elements, stable and reliable performance.
- ◆ High mechanical strength and good pressure resistance
- ◆ High measurement accuracy
- ◆ No need for compensation wires, convenient and economical

Technical Parameters

Temperature measurement range and accuracy

Thermal resistance category	Measuring Range $^{\circ}\text{C}$	Grading	deviation Δt $^{\circ}\text{C}$
WZP type platinum resistor	$-200 \sim 500$	Pt100	B class deviation $\pm (0.3 + 0.005 t)$
			A class deviation $\pm (0.15 + 0.002 t)$
WZC type copper resistor	$-150 \sim 100$	Cu50	$-50 \sim 100^{\circ}\text{C}$ deviation $\pm (0.30 + 6.0 \times 10^{-3} t)$

Note: “t” in the formula is the absolute value of the actual measured temperature of the temperature sensing element.

Thermal response time

When there is a step change in temperature, the time required for the output of the thermal resistor to change to 50% of the step change is called the thermal response time and is represented by $T_{0.5}$.

	Protection tube diameter (Unit: mm)	Protective tube material	Thermal response time $T_{0.5}$ (Unit: s)
Platinum thermal resistance	$\Phi 12$	1Cr18Ni9Ti	30 ~ 90
	$\Phi 16$		30 ~ 90
	Tapered protective tube		90 ~ 180
Copper thermal resistance	$\Phi 12$		<180

Minimum insertion depth of thermal resistor

$$l_{\min} = l_s + 15D$$

$l_{\min}$: Minimum available insertion depth

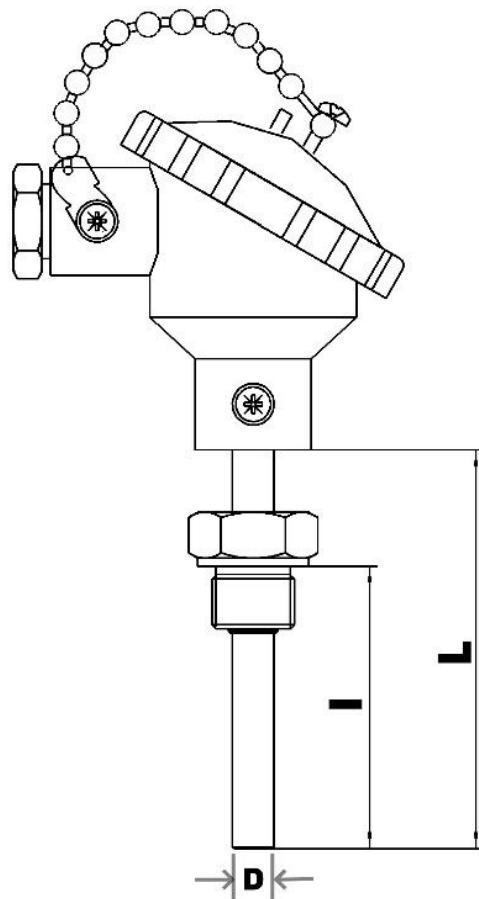
l_s : length of temperature sensing element

D: Outer diameter of protective tube

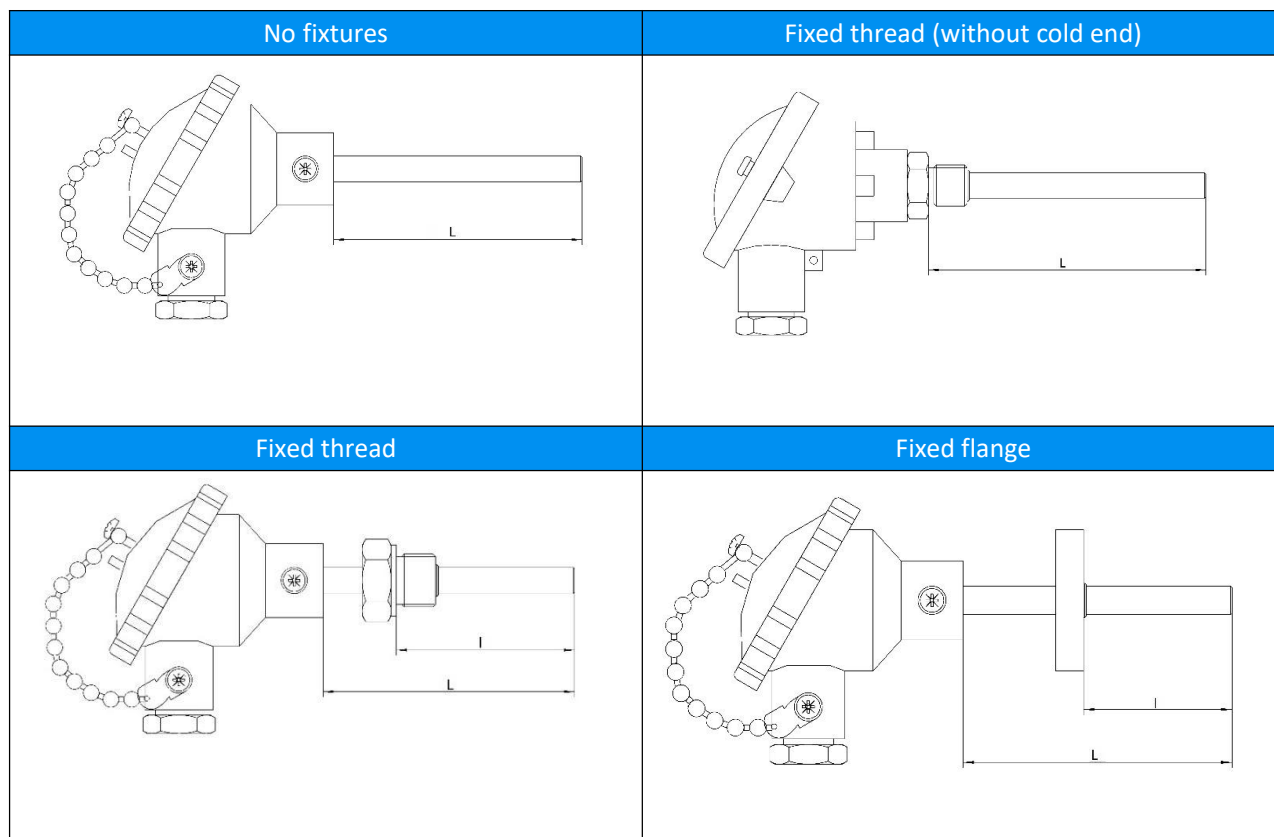
Insulation resistance

The insulation resistance value at room temperature is no less than $100M \Omega$ when DC 10~100V is any value, the ambient temperature is within the range of $15 \sim 35^{\circ}\text{C}$, and the relative humidity not be greater than 80%.

Structure Drawings (Unit: mm)



Installation



Ordering Guide

Item NO.	Type										
WZ	Thermal resistance										
		Code	Sensor								
		P	Pt100								
		Code	Number of Wires								
		1	Single 2 wires								
		2	Single 3 wires								
		3	Double 2 wires								
		4	Double 3 wires								
		Code	Junction box								
		3	Waterproof								
		4	Explosion-proof								
		Code	Probe diameter								
		0	16mm								
		1	12mm								
		X	Fill out x directly								
		Code	Installation Way								
		1	No fixing								
		2	Fixed thread								
		3	Movable flange								
		4	Fixed flange								
		6	Tri-clamp								
		Code	Process connection								
		N	No fixing								
		P1	M20×1.5								
		P4	G1/2								
		P17	M27×2								
		P22	M16×1.5								
		K1	1.5"(50.5mm) clamp								
K2	2" (64mm) clamp										
F20	DN20 Flange										
F50	DN50 Flange										
Code	Probe Material										
S4	SS304										
S6	SS316L										
Code	Others										
I	I=insertion depth(mm)										
φ	φ=Tube diameter(mm)										
L	L=Total length of protective tube(mm)										
T	temperature range T=(t1,t2)										