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℃ to 500℃.

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℃	Grading	deviation△t ℃
WZP type platinum resistor	-200～500	Pt100	B class deviation±（0.3+0.005｜t｜）
			A class deviation±（0.15+0.002｜t｜）
WZC type copper resistor	-150～100	Cu50	-50～100℃ deviation±（$0.30+6.0\times10^{-3}t$）

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	Φ12	1Cr18Ni9Ti	30～90
	Φ16		30～90
	Tapered protective tube		90～180
Copper thermal resistance	Φ12		<180

Minimum insertion depth of thermal resistor

$l_{min} = l_S + 15D$

l_{min}: Minimum available insertion depth

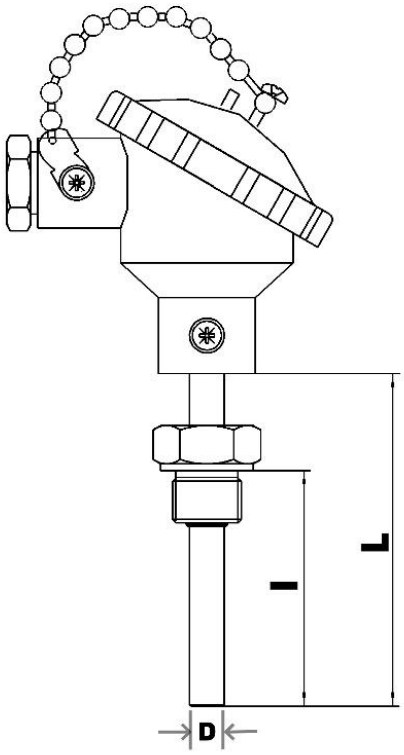
l_s: length of temperature sensing element

D: Outer diameter of protective tube

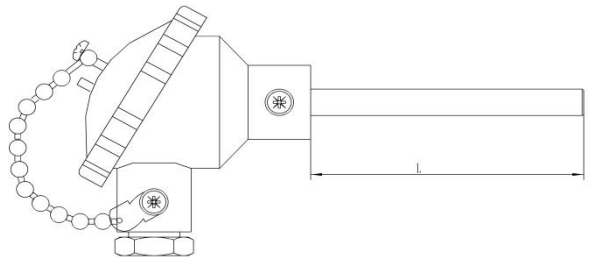
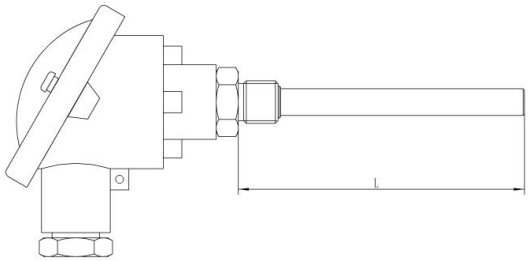
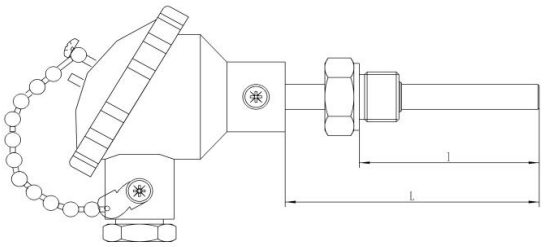
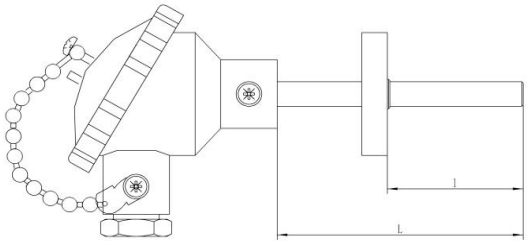
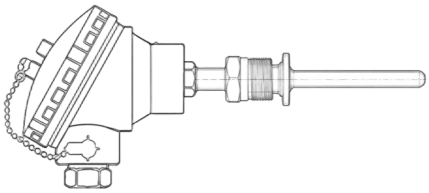
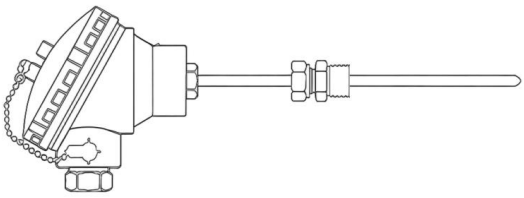
Insulation resistance

The insulation resistance value at room temperature is no less than 100MΩ when DC 10~100V is any value, the ambient temperature is within the range of 15~35℃, and the relative humidity not be greater than 80%.

Structure Drawings (Unit: mm)



Installation

No fixing	Fixed thread (without cold end)
	
Fixed thread (with cold end)	**Fixed flange**
	
Movable Thread Type 1	**Movable Thread Type 2(Adjustable)**
	

Ordering Guide

Item NO.	Type									
WZ	Thermal resistance									
	Code	Sensor								
	P	Pt100								
		Code	Number of Wires							
		N/A	Single							
		2	Duplex							
			Code	Installation Way						
			1	No fixing						
			2	Fixed thread						
			3	Movable flange						
			4	Fixed flange						
			5	Movable Thread						
			6	Tri-clamp						
				Code	Junction box					
				3	Waterproof					
				4	Explosion-proof					
					Code	Probe diameter				
					0	16mm				
					1	12mm				
					X	Fill out x directly				
						Code	Probe Material			
						S4	SS304			
						S6	SS316L			
							Code	Number of wires		
							2	2-wire		
							3	3-wire		
							4	4-wire		
							Code	Process connection		
							N	No fixing		
							P1	M20×1.5		
							P4	G1/2		
							P17	M27×2		
							P22	M16×1.5		
							K505	1.5"(50.5mm) clamp		
							K640	2" (64mm) clamp		
							KF20	DN20 Flange		
							KF50	DN50 Flange		
								Code	Others	
								l	l=insertion depth(mm)	
								ϕ	ϕ=Tube diameter(mm)	
								L	L=Total length of protective tube(mm)	
								T	temperature range T=(t1,t2)	
e.g.: WZP231-S4-3-P1-I100φ6L150 (-20~400℃)										