

WR Temperature Thermocouples



Nanjing Hangjia Electronic Technology Co., Ltd.

Overview

As a sensor for measuring temperature, thermocouples are usually used in conjunction with display instruments, recording instruments and electronic regulators. It can directly measure the temperature of liquid, steam and gas media in various production processes ranging from 0°C to 1800°C.

Features

- ◆ High quality temperature sensing elements, stable and reliable performance
- ◆ High mechanical strength and good pressure resistance
- ◆ Large measuring range and high measuring accuracy

Technical Parameters

Temperature measurement range and accuracy

Thermocouple name	Model	Type	Tolerance level	Measuring range (°C)	Tolerance (reference end is 0°C)
70%Pt/30%Rh-94%Pt/6%Rh	WRB(WRR)	B	Class 2	600~1700	$\pm 0.0025 t $
			Class 3	600~800	$\pm 4^{\circ}\text{C}$
				800~1700	$\pm 0.005 t $
90%Pt/10%Rh-Pt	WRS(WRP)	S	Class 2	0~600	$\pm 1.5^{\circ}\text{C}$
				600~1600	$\pm 0.0025 t $
87%Pt/13%Rh-Pt	WRR(WRQ)	R	Class 2	0~600	$\pm 1.5^{\circ}\text{C}$
				600~1600	$\pm 0.0025 t $
Chromel-Alumel	WRK(WRN)	K	Class 2	-40~333	$\pm 2.5^{\circ}\text{C}$
				333~1200	$\pm 0.0075 t $
Chromel-Constantan	WRE	E	Class 2	-40~333	$\pm 2.5^{\circ}\text{C}$
				333~900	$\pm 0.0075 t $
Copper-Constantan	WRT(WRC)	T	Class 2	-40~133	$\pm 1^{\circ}\text{C}$
				133~350	$\pm 0.0075 t $
Iron-Constantan	WRJ(WRF)	J	Class 2	-40~+333	$\pm 2.5^{\circ}\text{C}$
				333~750	$\pm 0.0075 t $
Nicrosil-Nisil	WRN(WRM)	N	Class 2	-40~333	$\pm 2.5^{\circ}\text{C}$
				333~1200	$\pm 0.0075 t $

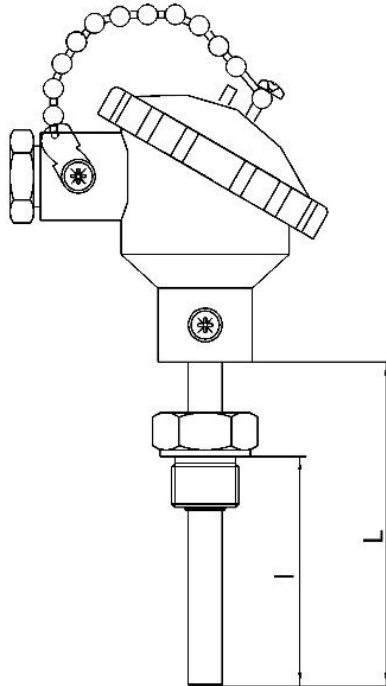
Note: “t” in the formula is the absolute value of the actual measured temperature of the temperature sensing element.

Thermal response time

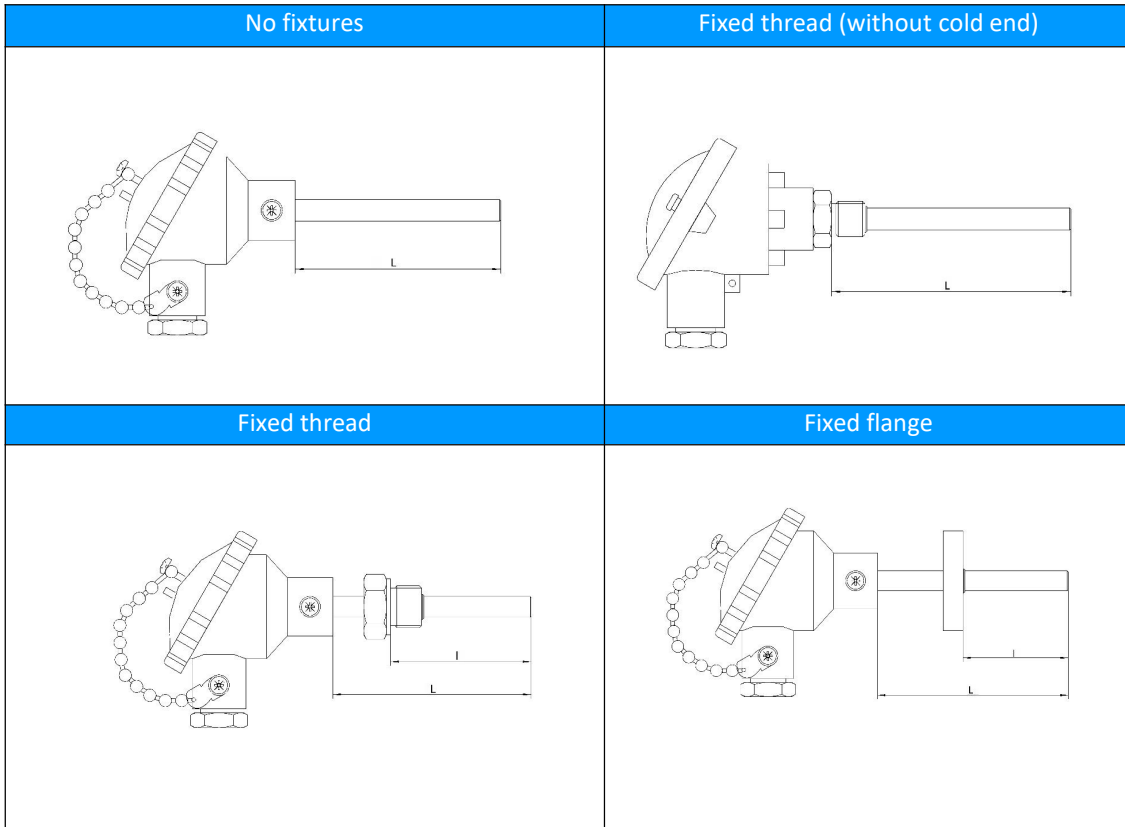
When there is a step change in temperature, the time required for the output of the thermal resistor to change to 50% of the step change is called the thermal response time and is represented by $T_{0.5}$.

Protection tube diameter(mm)	Protective tube material	Thermal response time(s)
Φ16	High aluminum tube/corundum tube	≤150
	Metal tube	≤90
Φ20	High aluminum tube/corundum tube	≤240
	Metal tube	≤90
Φ25	High aluminum tube/corundum tube	≤360
Tapered protective tube	Metal tube	≤150

Structure Drawings (Unit: mm)



Installation



Ordering Guide

Item NO.	Type		
WR	Temperature Thermocouples		
	Code	Type	Thermocouple name
	R	B	70%Pt/30%Rh-94%Pt/6%Rh
	P	S	90%Pt/10%Rh-Pt
	Q	R	87%Pt/13%Rh-Pt
	N	K	Chromel-Alumel
	E	E	Chromel-Constantan
	F	J	Iron-Constantan
	C	T	Copper-Constantan
	M	N	Nicrosil-Nisil
		Code	Measuring Insert
		NA	single
		2	double
		Code	Installation form
		1	No fixtures
		2	Fixed thread
		3	Movable flange
		4	Fixed flange
		Code	Junction Box
		1	Simple
		2	Splash proof
		3	Waterproof
		4	Explosion-proof
		Code	Protection tube diameter
		0	16mm
		1	12mm
		2	16mm High aluminum tube
		3	20mm High aluminum tube
		4	25mm Double layer protection tube
		Code	Protective tube material
		S4	SUS304 (Applicable to KNEJT types)
		S6	SUS316L (Applicable to KNEJT types)
		CT1	corundum (Applicable to SRB types)
		CT2	High aluminum (Applicable to KNSRB types)
		Code	Others
		N	Integrated CNC, no welding
		I	I=insertion depth(mm)
		L	L=Total length of protective tube(mm)
		T	temperature range T=(t1,t2)
eg: WRN-230-S4 I=350 L=500 T=(0-800)°C			
Indicates a single K-type thermocouple, fixed thread installation M27x2, waterproof junction box, protective tube made of 304, diameter 16, total length 500mm, insertion depth 350mm, measuring temperature range 0-800°C			