ZNC-W102 Integrated Temperature Transmitter

Areas of application: Widely used in various fields where temperature measurement is required.

I. Principle of operation

ZNC-W102 integrated temperature transmitter is the field installation of temperature instrumentation in the temperature transmission unit. ZNC-W102 integrated temperature transmitter set of sensors and transmitters as a whole, direct measurement of a variety of industrial processes, -200 ~ 1600 ℃ range of the temperature of liquid, steam and gas media, the temperature will be converted into a thermocouple, RTD signal is proportional to the 4 ~ 20mA uniform output signal, send the Display, record and adjust the instrument or computer. As a new generation of temperature transmitter, ZNC-W102 integrated thermocouple (resistance) temperature transmitter can be widely used in metallurgy, petroleum, chemical, electric power, light industry, textile, food, national defense and scientific research and other departments. The transmitter components are miniaturized and can be installed in the thermocouple RTD wiring to become an integrated temperature transmitter. As an integrated temperature transmitter in the industrial field directly output 4 ~ 20mA signal, which not only eliminates the expensive compensation wire, but also improves the signal long-distance transmission process of anti-interference ability. Transmitter components with high precision, low power consumption, wide range of ambient temperature, stable and reliable operation. And because of the silicone rubber sealing structure, the transmitter is shock-resistant, moisture-resistant, suitable for use in harsh field environments.

II. Product characteristics

With linearization correction function, thermocouple temperature transmitter has cold end temperature automatic compensation function. Pressure reed type temperature sensing element, good shock resistance Large measuring range (thermocouple can reach more than 1000℃), high measuring accuracy High mechanical strength, good pressure resistance Short response time

III. Technical parameters

Type	Parameters
Supply Voltage	24VDC
output signal	4-20ma output, 485 protocol
process connection	M27×2 or customer's size
Instrument Material	Head in cast aluminum, stainless steel
Catch material	304 material, 316 material
Display Type	4-digit LED display without display
environmental temperature	-20-60℃
Medium temperature	8 thermocouples, 2 RTDs
par length	50mm or customer requested size

IV. Instrument Selection

Instrument Type											clarification
ZNC-W102	-□	/□	/□	/□	/□	/□	/□	/□	/□	/□	
Temperature Sensing Element Type	B										standard type
	X										compact
Material of temperature sensing element		P1									Pt100
		P2									Pt1000
		K									Thermocouple Type K (Nichrome-NiSi)
		E									Thermocouple type E (Nichrome-Constantan)
		S									Thermocouple Type S (Platinum Rhodium 10-Platinum)
		B									Thermocouple type B (Platinum Rhodium 30 - Platinum Rhodium 6)
		R									Thermocouple type R (Platinum Rhodium 13-Platinum)
		N									Thermocouples Type N (NiCrSi - NiSiMg)
		J									Thermocouples Type J (Fe-Constantan)
		T									Thermocouple Type T (Copper-Constantan)
Instrument Type			O								Arrangement type
			K								Armor type
			M								Wear-resistant
			D								Face Type
			L								Right angle elbow type
			W								microminiature
			H								hygienic
structural form				S							Single Element
				T							Dual Element
Accuracy Class					1						0.1%FS
					2						0.2%FS
					5						0.5%FS

output form	1				4~20mA
	2				0~10mA
	3				0~5V
	4				0~10V
	5				on-site display
	6				4~20mA + field display
	7				RS485
connection method		01			fixtureless
		02			Fixed Threaded
		03			Movable Ferrule Threaded
		04			Fixed flange type
		05			movable ferrule flange type
		06			Tapered protection tube fixed threaded
		07			Right angle movable flange type
Cold End Form			1		Simple type (wire type)
			2		Anti-spray junction box type
			3		Waterproof junction box type
			4		Explosion-proof junction box type
			5		plug-and-play
Protection tube diameter	Metal protection tube			M0	φ16
				M1	φ20
				M2	φ10
				M3	φ8
				M4	φ12
	Non-metallic protection tube			N0	φ16
				N1	φ25 (double decker)
				N2	φ20
				N3	φ33 (double or triple)
	else			O5	Other diameters (user specified)
Insertion depth				-XX	Customer-specified length

Selection example: ZNC-W102-BP10S-51023M0-150

ZNC-W102 integrated temperature transmitter, temperature sensing element for RTD Pt100, 0.5 grade accuracy, 4~20mA output, fixed threaded connection, waterproof junction box, diameter 16 metal protection tube, insertion depth 150mm.

V. Structural forms

1. Sensing element and diameter

(1). Thermal resistance

Filament Resistance Forms	Casing Diameter	Casing material
		Pt100
Single Element 	Φ3	1Cr18Ni9TI
	Φ4	
	Φ5	
	Φ6	
	Φ8	
Dual Element 	Φ4	
	Φ5	
	Φ6	
	Φ8	

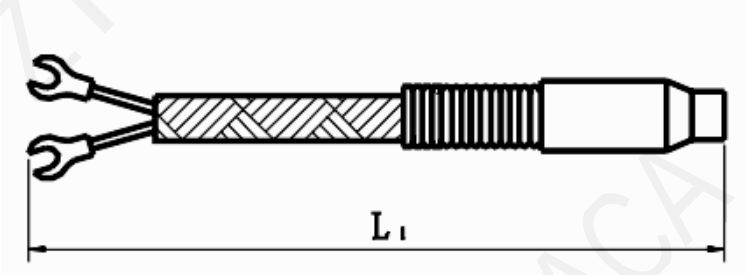
(2). Thermocouple

Type	Casing Diameter	Casing material		
		E、J、T	K、N	S、B
Single Element 	Φ2	1Cr18Ni9TI	GH3030 1Cr18Ni9Ti	corundum (mineral) GH3039 Cr25Ni20
	Φ3			
	Φ4			
	Φ5			
	Φ6			
	Φ8			
Dual Element 	Φ3			
	Φ4			
	Φ5			
	Φ6			
	Φ8			

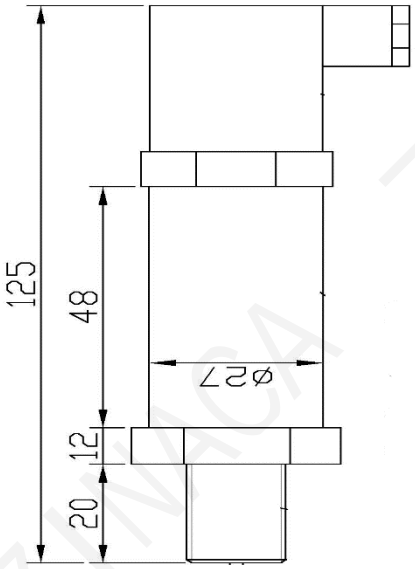
2.Junction box

(1). Protection grade: IP65

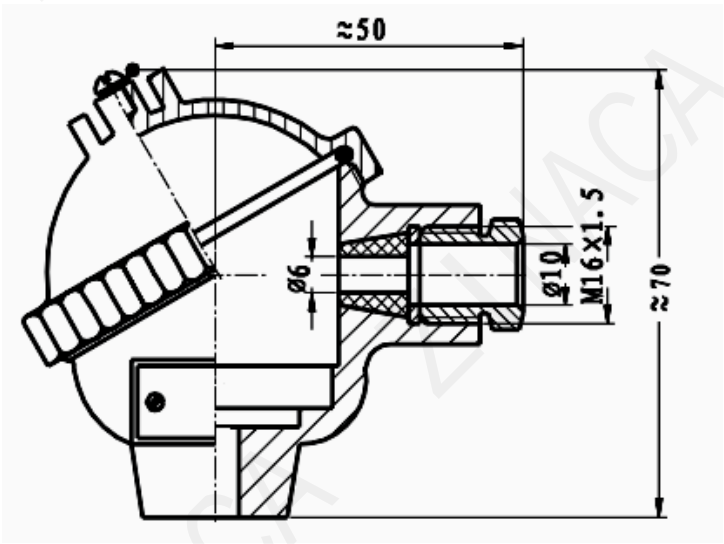
(2). Junction box structure diagram



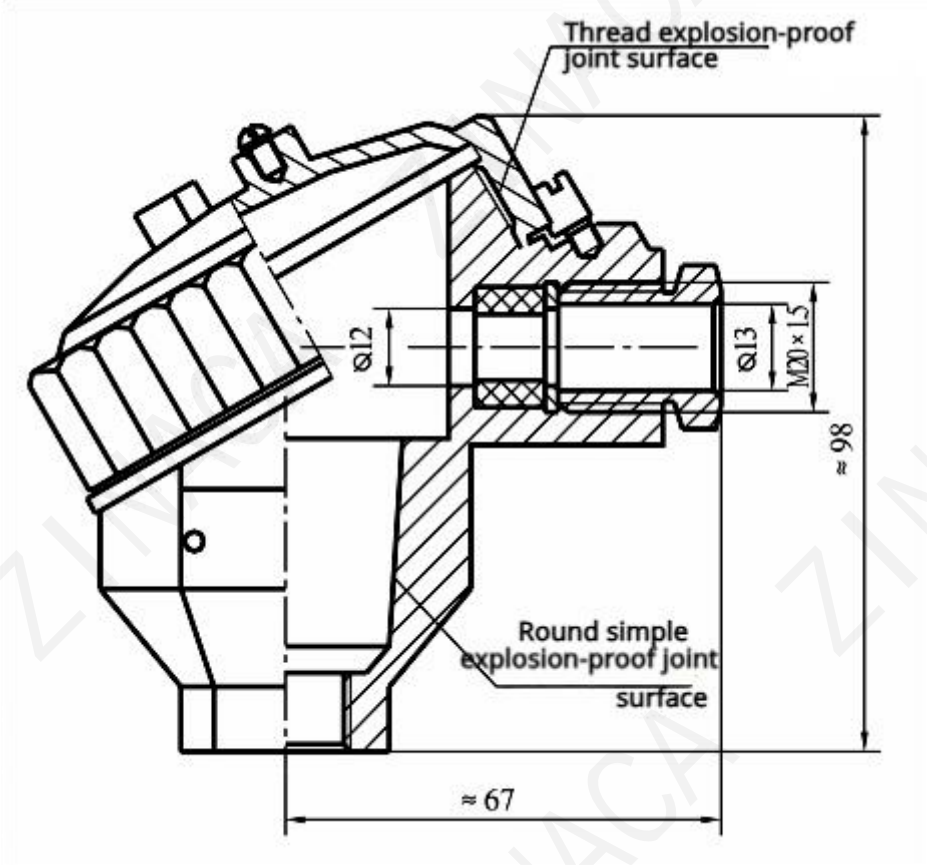
Simple Type (Compensating Lead Type)



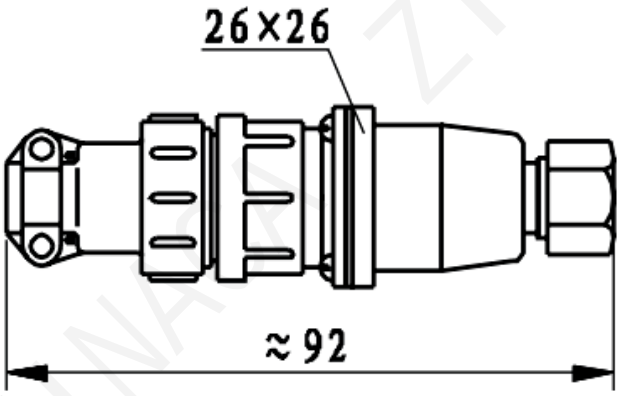
Compact type junction box



Waterproof junction box type

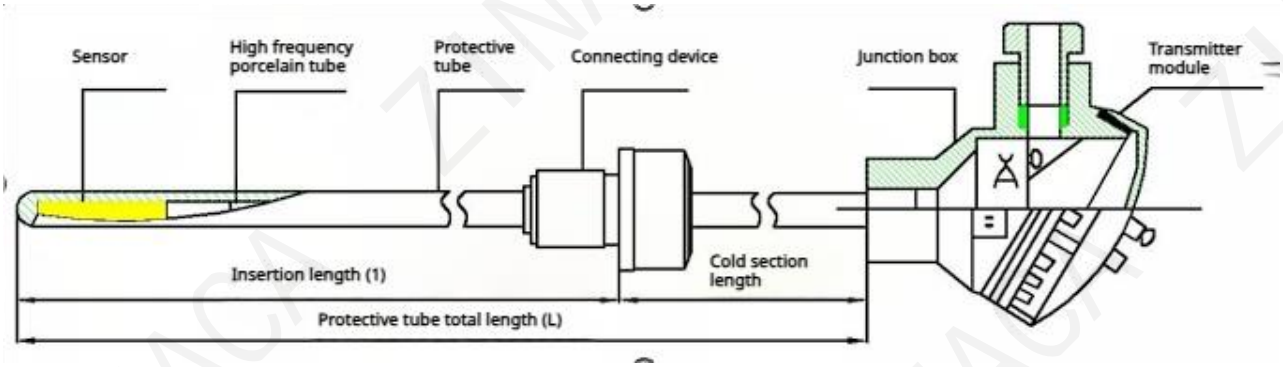


Explosion-proof junction box type



plug-and-play

3. Internal structure of integrated temperature transmitter



VI. Installation and use

+	—		
A	B	A	B

1. Environmental conditions

(1). Ambient temperature:-25～80℃.

(2). Relative humidity:5％～95%.

(3). Mechanical vibration: f≤55Hz, amplitude<0.15mm

(4). The surrounding air does not contain the medium that causes corrosion of thermocouples and RTDs

2 . Installation Precautions

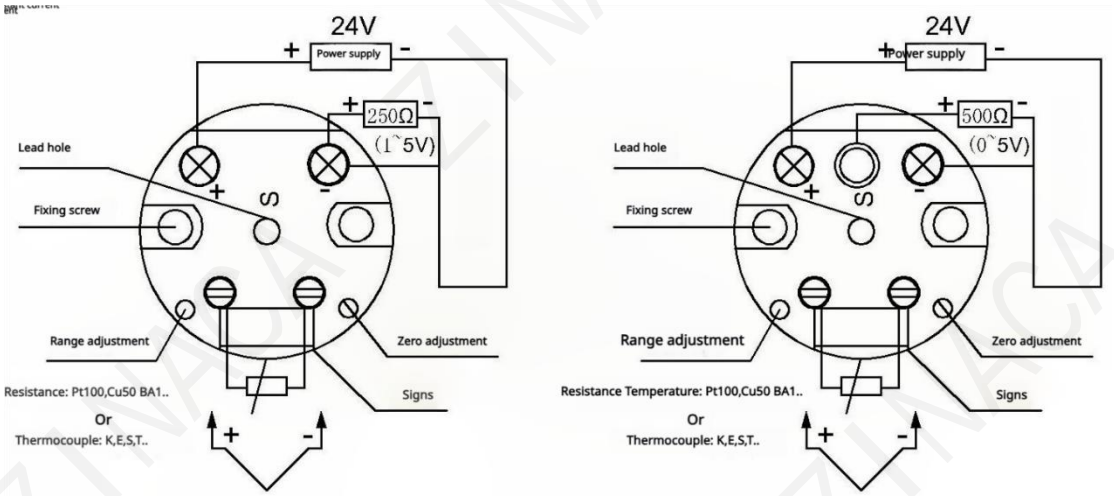
Avoid installing the device in the place where the door of the furnace or the heated object is too tight, and the junction box should not touch the wall of the vessel of the measured medium. Avoid strong vibration at the installation place.

3 . Installation of mounting sleeves

Installation casing is pre-installed in the manufacture of equipment, so in the design of equipment should be based on the equipment to be measured within the medium temperature, pressure, flow rate and other factors to choose the form of casing and material, the main point of choice is the casing of the structure of the strength of the equipment itself is not lower, or even should be higher than the equipment.

4 . Instrument wiring

A、Integrated temperature transmitter wiring



B. Integrated temperature transmitter with display wiring

1. Open the screws on both sides of the wiring on the display side of the transmitter.

2, wiring method :

4～20mA Analogue signal output 2 wires

4～20mA

4-20Ma to A (+) B(-) Local display to A B

3, after the power cord is connected, tighten the display meter head screws and tighten the junction box cover.