



Recorder



Flow



Pressure



Temp



Analyzer



Level

Datasheet

Integrated temperature transmitter

SUP-P202-IS

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Instrumentación·y·control

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Datasheet**Integrated temperature transmitter
SUP-P202**

SUP-P202 integrated temperature transmitter uses Pt100 temperature sensor as the sensitive element, which is integrated with the signal conversion and amplification unit to measure the temperature of liquids in various processes. This product uses high-stability circuits for signal processing to achieve continuous temperature measurement and output. With a high-precision 24-bit ADC to convert into digital signals, functions such as display and remote transmission can be realized. It is widely used in temperature measurement of water or oil in petroleum, chemical industry, electric power, textile, environmental protection and other fields.

Applications

- Petroleum
- Chemical industry
- Electric power
- Textile
- Environmental protection

Features

- Compact structure and easy installation
- High stability and reliability
- Shockproof and resistant to radio frequency interference
- High-precision, all-stainless steel construction
- Strong anti-interference and excellent long-term stability
- Wide measuring range

**Integrated temperature transmitter****Principle**

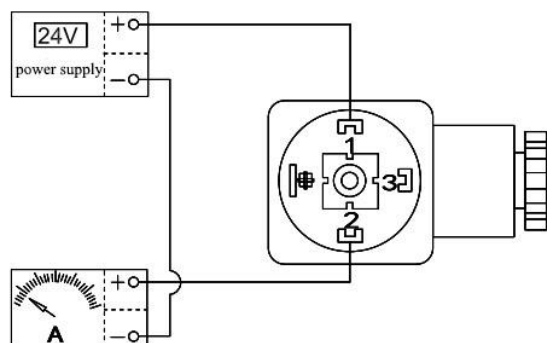
The Integrated temperature transmitter uses the characteristic that the resistance of a platinum resistor changes with temperature which exhibits a certain functional relationship to measure the temperature of the medium being measured. When the temperature changes, the resistance value of the resistive element will also change. This change will affect the current in the circuit, thus generating an electrical signal, which can be used to measure the temperature change. Temperature sensors can convert temperature changes into electrical signals that can be used to control or monitor temperature changes.

Parameters	
Measurement standard	Temperature
Temperature sensor	Pt100
Measuring range	(-50~200)°C
Transmission output	(4~20)mA
Load Resistance	$RL=(U-9V)/0.02A$ Note: U is the supply voltage, unit V
Communication output	RS485 interface, Modbus communication protocol
Temperature output	Pt100
Supply voltage	(4~20)mA output (9~30)V RS485 output (5~30)V
Power consumption	(4~20)mA output, power consumption $\leq 0.7W$ RS485 output, power consumption $\leq 0.2W$
Electrical interface	M20*1.5 cable plug
Accuracy	0.5%
Response time	T90 $\leq 60s$
Insulation resistance	20M Ω , 250VDC
Dielectric strength	500VAC
Protection grade	IP65(Digital display head IP50)
Medium type	Non-corrosive media to silicon and stainless steel (or aluminum alloy)
Medium temperature	-50~200°C
Process pressure	4MPa
Operating temperature	-20~70°C
Storage temperature	-20~70°C

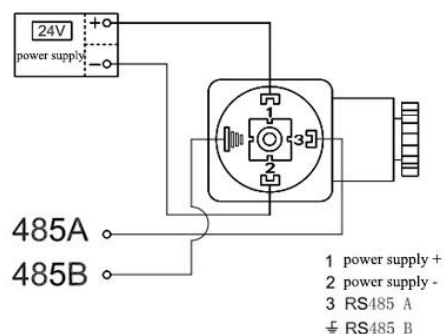
Wiring

Electrical connection diagram

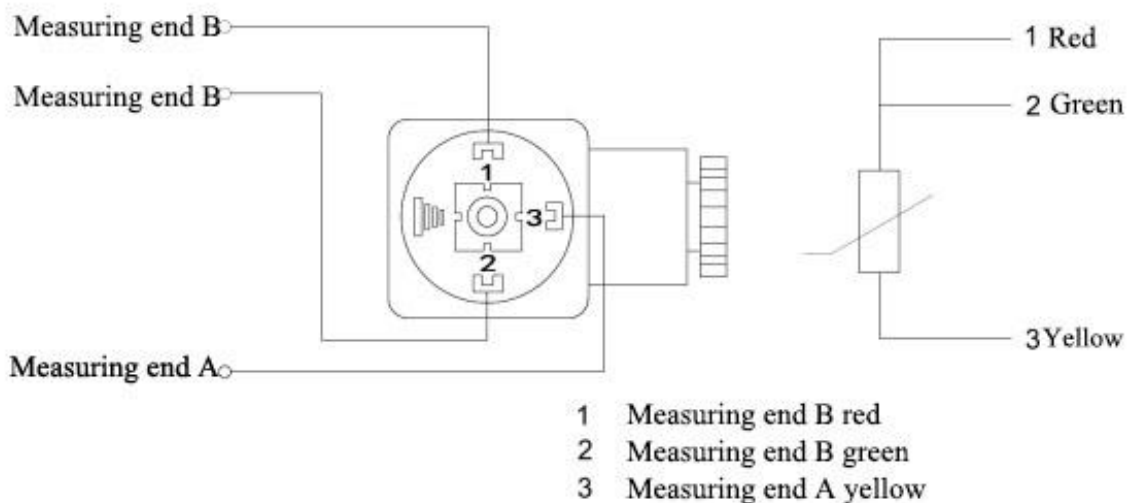
2-wire current



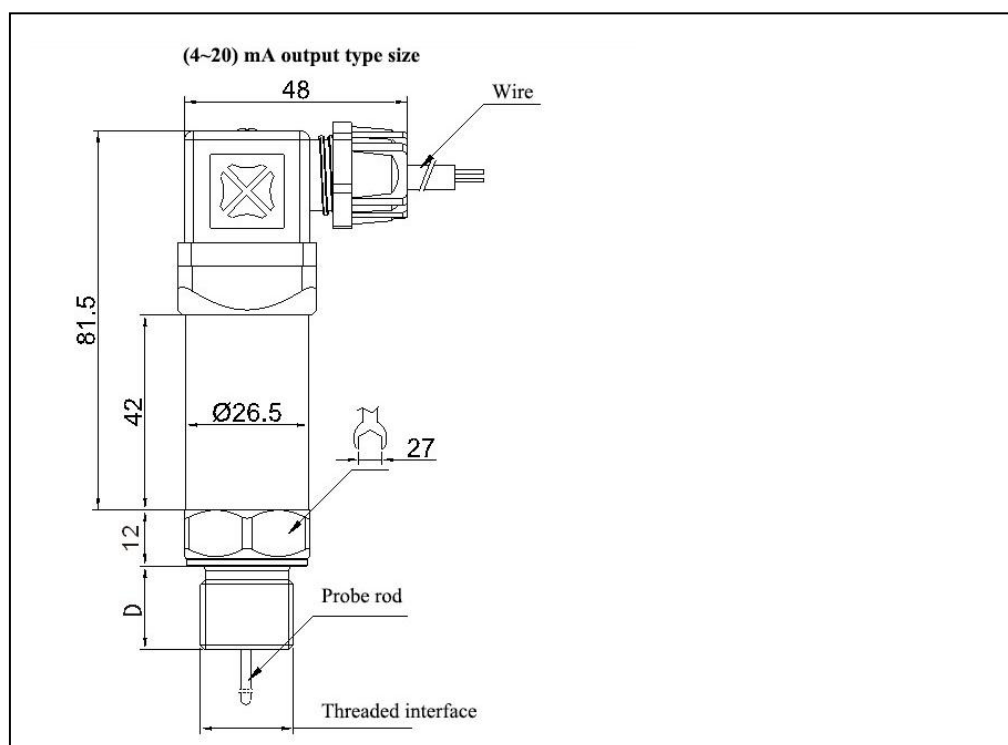
RS485 output



Pt100 output



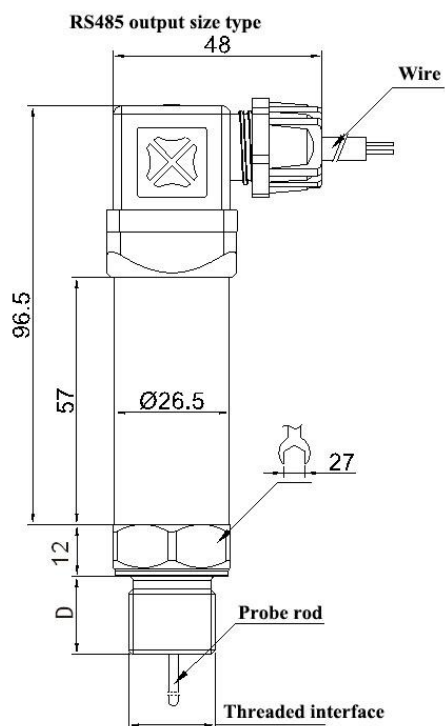
Dimension



Conventional thread interface dimensions

Threaded interface	M20×1.5	M27×2	M14×1.5
D	16.5mm	18.5mm	13.5mm
Threaded interface	G 1/2	G 1/4	NPT 1/2
D	16.5mm	13.5mm	16.5mm

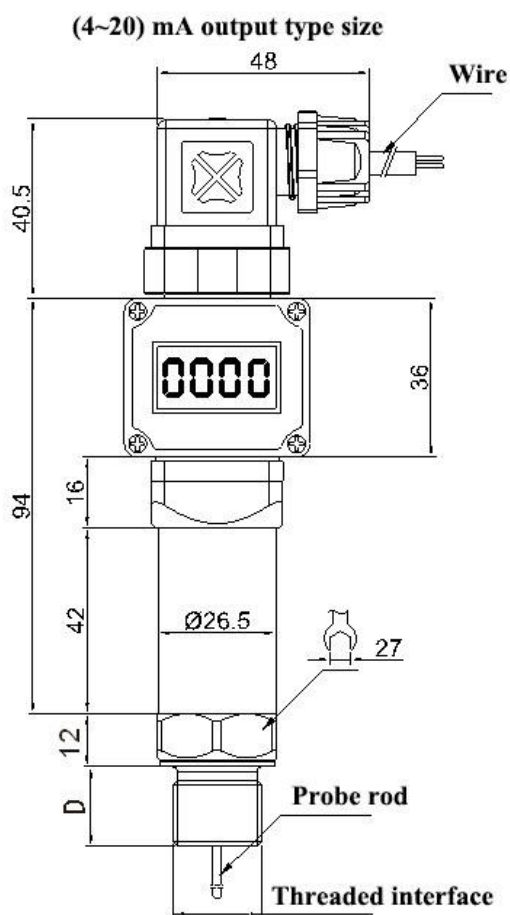
Note: The length and diameter of the probe rod are customized according to the order.



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Ordering code

SUP-P202-PA-1-K-A1-L2-3F-30-M1-WA-02											Description
SUP-P202	-	-	-	-	-	-	-	-	-	-	Pt100, class A
Type	PA										0-100°C
Measuring range	1										-50-200°C
	3										-50-100°C
	2										Other
	X										0.5 Class
Accuracy		K									Two-Wire 4-20mA
Output and Power Supply			A1								RS485, 24VDC
			R2								PT100
			PH								0-10V, 24VDC
			V2								M20×1.5 thread
Process connection				L2							M27×2 thread
				L3							G1/2 thread
				G1							G1/4 thread
				G2							NPT1/2 thread
				NC							M14×1.5 thread
				L1							Other
				XX							Φ8mm assembled type
Probe rod (sheath) diameter					3F						Φ10mm assembled type
					4F						Φ12mm assembled type
					5F						Φ16mm assembled type
					6F						Φ8mm removable sheath
					5E						Φ12mm removable sheath
					6E						Φ16mm removable sheath
					7E						Φ6mm assembled type
					2F						Φ4mm assembled type
					1F						Other
					XX						30mm
					30						50mm
					50						100mm
Probe rod (sheath) length					1H						200mm
					2H						300mm
					3H						500mm
					5H						Other
					XX						304SS
											Other
Process connection and probe material								M1			Hirschmann connector, IP65
								XX			
Electrical interface and protection level									WA		

Cable length	02	2m
	05	5m
	10	10m
	XX	Other

Note: The length of the probe rod (sheath) does not include the thread length, the length is $\leq 1.8\text{m}$