Datasheet

Integrated temperature transmitter

SUP-P202

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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

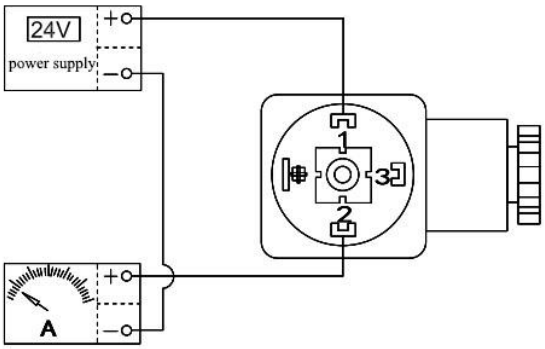
The Integrated temperature transmitter uses the characteristic that the resistance of a platinum resistor changes with temperature which exhibits a certain functional relationship to measure the temperature of the medium being measured. When the temperature changes, the resistance value of the resistive 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)℃
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 ≤0.7W RS485 output, power consumption ≤0.2W
Electrical interface	M20*1.5 cable plug
Accuracy	0.5%
Response time	T90≤60s
Insulation resistance	20MΩ，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℃
Process pressure	4MPa
Operating temperature	-20~70℃
Storage temperature	-20~70℃

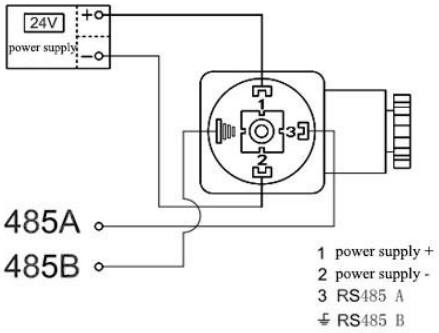
Wiring

Electrical connection diagram

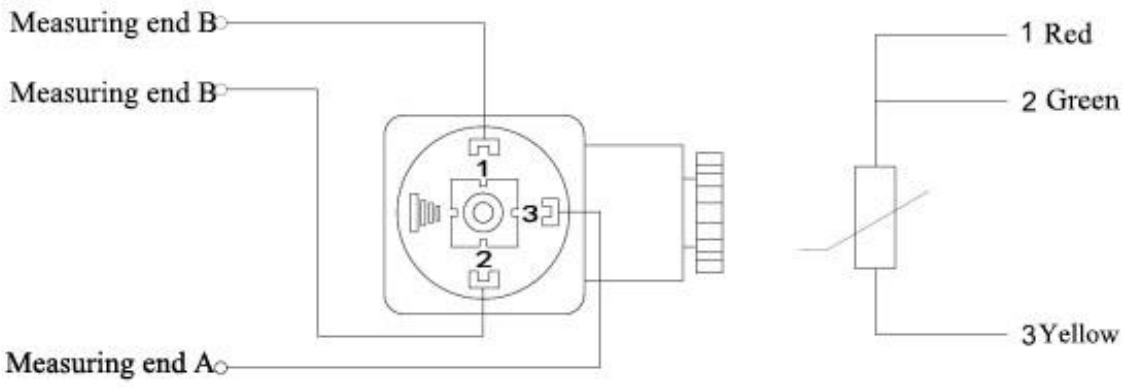
2-wire current



RS485 output

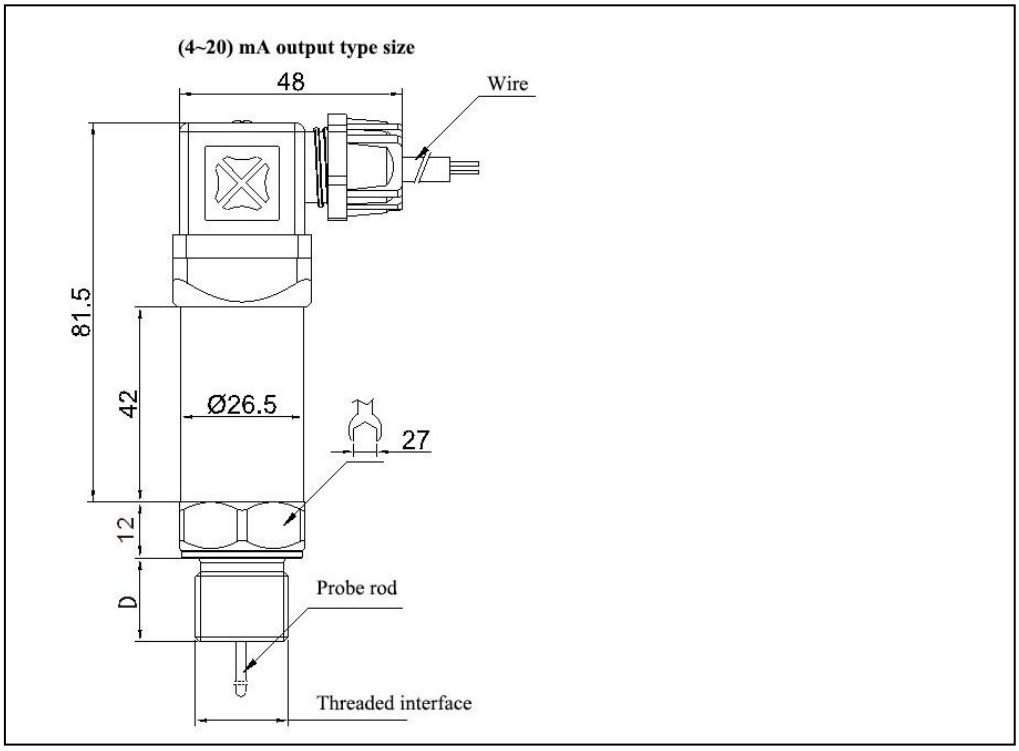


Pt100 output



1 Measuring end B red
2 Measuring end B green
3 Measuring end A yellow

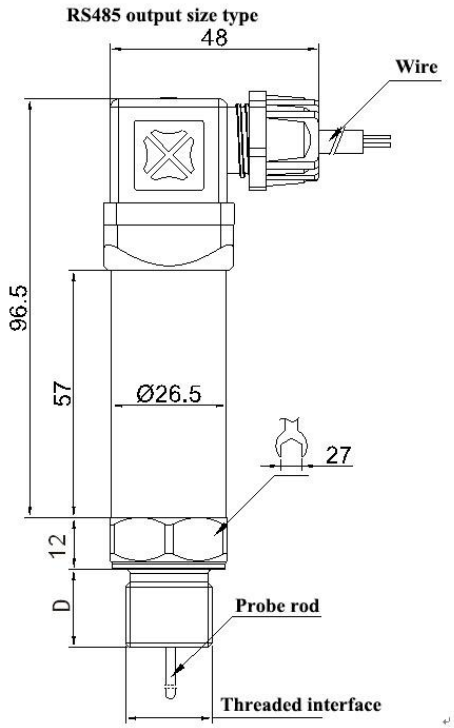
Dimension



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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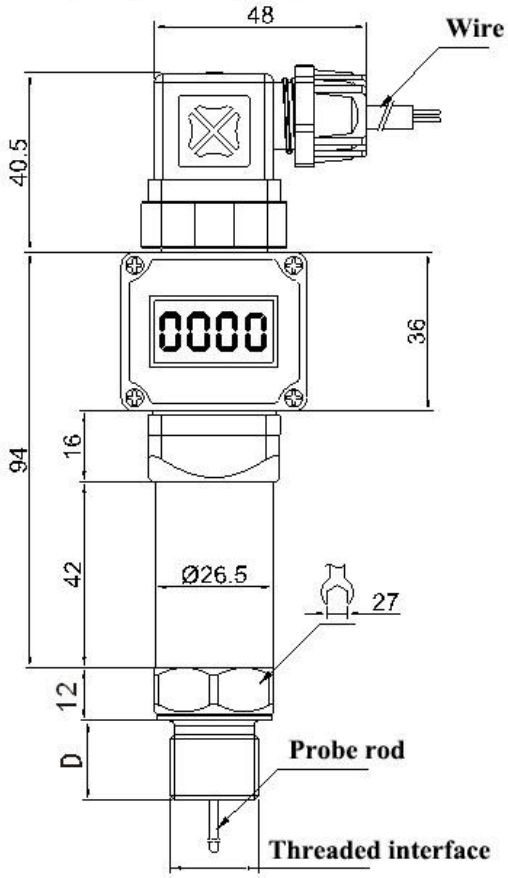
(4~20) mA output type size



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Ordering code

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

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 ≤1.8m