

YW0500 Series

Industrial Pressure Transmitter



Product introduction

The YW0500 series industrial pressure transmitter carefully selects high reliability silicon pressure resistors, ceramic capacitors, sapphire, sputtering thin film pressure sensors, etc. as sensitive cores according to the application characteristics of different industries. After temperature compensation, digital circuit correction, and signal conditioning, it outputs standard industrial application and networking signals.

Each product in this series of industrial pressure transmitters has undergone careful design, component screening, process validation curing, cyclic loading stress relief, aging, environmental simulation testing, and other processes to ensure the stability and reliability of each product.

Basic features

- Pressure form: Gauge pressure, absolute pressure, sealed gauge pressure
- Range: -0.1MPa ... 0kPa ~ 10kPa ... 100MPa
- Overload capacity: $\leq 2\text{times}$ ($< 10\text{MPa}$), $\leq 1.5\text{times}$ ($\geq 10\text{MPa}$)
- Electrical connection: Industrial terminal blocks
- Accuracy: $\pm 0.1\%FS$ (customized), $\pm 0.25\%FS$, $\pm 0.5\%FS$
- Output signal: 4mA ~ 20mA (HART protocol can be stacked), 0V ~ 10VDC、RS485 (can output 4mA to 20mA signals simultaneously), I²C
- On-site display: 4-digit LED / 4-digit LCD
- Respond time: $\leq 3\text{ms}$ (10% ~ 90%)
- Measuring medium: fluid compatible with 304, 316L, or ceramic

Product certification



Applications

- Coal mine
- Environment protection
- Oil field
- Medicine
- Chemical industry
- Water services
- Civil explosion
- Shipping

Output signal and supply voltage

Type	Output signal	Supply voltage
Current (2 wire)	4mA ~ 20mA	12V ~ 30V DC
Voltage (3 wire)	0V ~ 10V DC	12V ~ 30V DC
I ² C (4 wire)	I ² C	3.3V ~ 5V DC
RS485 (4 wire)	RS485	5V ~ 30V DC

Load resistance (Ω)

Current (2 wire): $R \leq (U-10)/0.02-RD$ (U: power supply voltage, RD: cable resistance)

Total current consumption

Current (2-wire): Signal current, maximum approx. 23 mA

Voltage (3-wire): <5mA

I²C (4 wires): <1.3mA (customizable low power consumption <5 μ A)

RS485 (4-wire): <5mA (low power consumption <1.1mA)

Product accuracy and performance indicators

Item	Parameters		
Accuracy level	0.1 (customized)	0.25	0.5
Nonlinearity (%FS)	≤ 0.1	≤ 0.2	≤ 0.4
Hysteresis (%FS)	≤ 0.05	≤ 0.05	≤ 0.1
Repeatability (%FS)	≤ 0.05	≤ 0.05	≤ 0.1
Long-term stability (%FS/year)	≤ 0.1	≤ 0.2	≤ 0.5
Zero-point temperature drift (%FS/ $^{\circ}$ C)	≤ 0.01	≤ 0.03	≤ 0.05
Sensitivity temperature drift (%FS/ $^{\circ}$ C)	≤ 0.01	≤ 0.03	≤ 0.05

Reference conditions

Temperature: 20 $^{\circ}$ C ~ 25 $^{\circ}$ C

Relative humidity: 45%RH to 75%RH

Power supply voltage: 24V $\pm$ 0.24V; 5V $\pm$ 0.05V

Installation direction: Pressure interface vertical downward

Environmental conditions

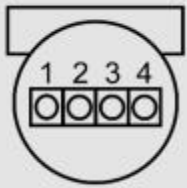
Item	Range
Compensation temperature	0°C~+50°C ($\leq 200\text{kPa}$), -10°C~70°C ($> 200\text{kPa}$)
Medium temperature	-40°C~+85°C, -10°C~60°C (Explosion-proof type, cable type)
Storage temperature	-40°C~+125°C/-20°C~+80°C (Cable type)
Note: Icing of the measured medium can cause irreversible damage to the product.	

When the pressure transmitter is working normally, it is required that the measured medium cannot solidify.

Operating conditions

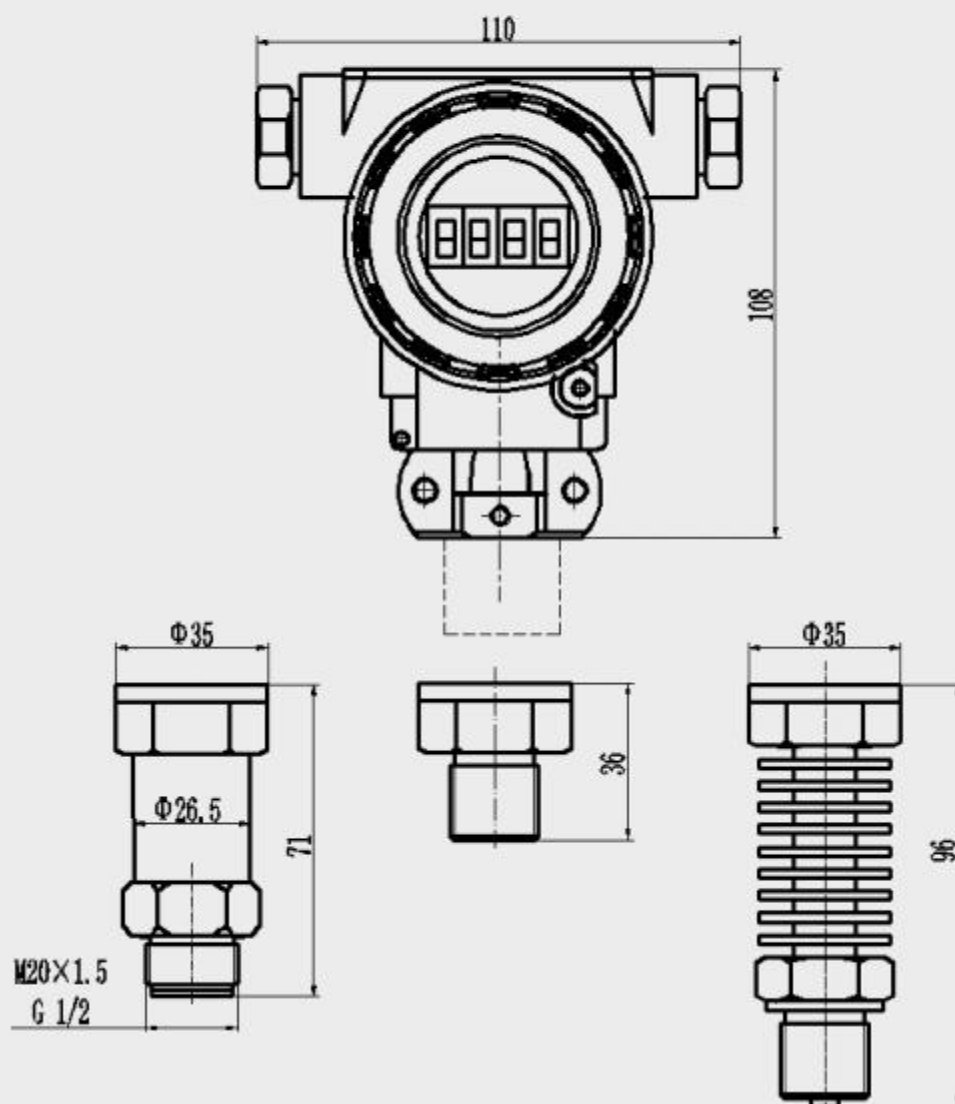
Item	Parameter range
Protection level	IP66
Explosion proof level	Explosion-proof type: Ex d IIC T5 Gb
Atmospheric pressure	86kPa ~ 106kPa
Vibration environment	10g (@10Hz ~ 2000Hz)
Shock resistance	100g/11ms
Service life	> 10 million cycles of load capacity (within measurement range)

Electrical connection wiring diagram

Industrial terminal blocks					
structure diagram	Wiring post	Current (2 wire)	Voltage (3 wire)	IIC (4 wire)	RS485 (4 wire)
	1	PE	PE	SDA	RS485B
	2	/	Vout	SCL	RS485A
	3	Iout	GND	GND	GND
	4	Vcc	Vcc	Vcc	Vcc

Typical appearance structure drawing (unit: mm)

The figure below shows the typical product structure. For other structures, please contact us for customization.



Selection guide

YW0500				Series industrial pressure transmitters																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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YW0500 [102] G U₁ E₁ G₁/₂ M₁ Complete model specifications

Ordering code YW0500 [102] G U₁ E₁ G₁/₂ M₁ indicates a product in the YW0500 series with a range of 1 MPa, gauge pressure, 24 V power supply, 4 mA to 20 mA output, G1/2 threaded connector, and 4-digit LCD display.

Precautions

- When the product range is within -5 kPa to 5 kPa, only non-corrosive dry gases can be measured.
- Some products have pressure connection threads limited to M20× 1.5 or G1/2. Please consult us for special thread requirements.
- For information on the compatibility of product seal materials and test media, please contact us.
- When there is a risk of the product being immersed or submerged, please be sure to specify this when placing your order.
- When selecting high-temperature products, ensure that the heat sink is well ventilated.
- When selecting products that are resistant to strong corrosion, it is essential to protect the product casing and dial.