YL0500 Series

Industrial Pressure Transmitter



Product introduction

The YL0500 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: ≤2times(< 10MPa), ≤1.5times（≥10MPa）
- Electrical connection: Industrial terminal blocks
- Accuracy: ±0.1%FS (customized), ±0.25%FS, ±0.5%FS
- Output signal: 4mA ~ 20mA (HART protocol can be stacked), 0V ~ 10VDC、RS485 (can output 4mA to 20mA signals simultaneously), I^2C
- On-site display: 4-digit LED / 4-digit LCD
- Respond time: ≤3ms（10% ~ 90%）
- Measuring medium: fluid compatible with 304, 316L, or ceramic

Product certification

CE UKCA CNEX 国家防爆 Ex RoHS SIL

Applications

- Coal mine
- Oil field
- Chemical industry
- Civil explosion
- Environment protection
- Medicine
- Water services
- 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^2C (4 wire)	I^2C	3.3V ~ 5V DC
RS485 (4 wire)	RS485	5V ~ 30V DC

Load resistance (Ω)

Current (2 wire): R ≤ (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 <5μA)

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
Nonelinety (%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/°C)	≤0.01	≤0.03	≤0.05
Sensitivity temperature drift (%FS/°C)	≤0.01	≤0.03	≤0.05

Reference conditions

Temperature: 20℃ ~ 25℃

Relative humidity: 45%RH to 75%RH

Power supply voltage: 24V ± 0.24V; 5V ± 0.05V

Installation direction: Pressure interface vertical downward

Environmental conditions

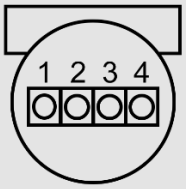
Item	Range
Compensation temperature	0℃~+50℃ (≤200kPa)，-10℃~70℃ (＞200kPa)
Medium temperature	-40℃~+85℃, -10℃~60℃ (Explosion-proof type, cable type)
Storage temperature	-40℃~+125℃/-20℃~+80℃ (Cable type)
Note: Icing of the measured medium can cause irreversible damage to the product.	

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

Operating conditions

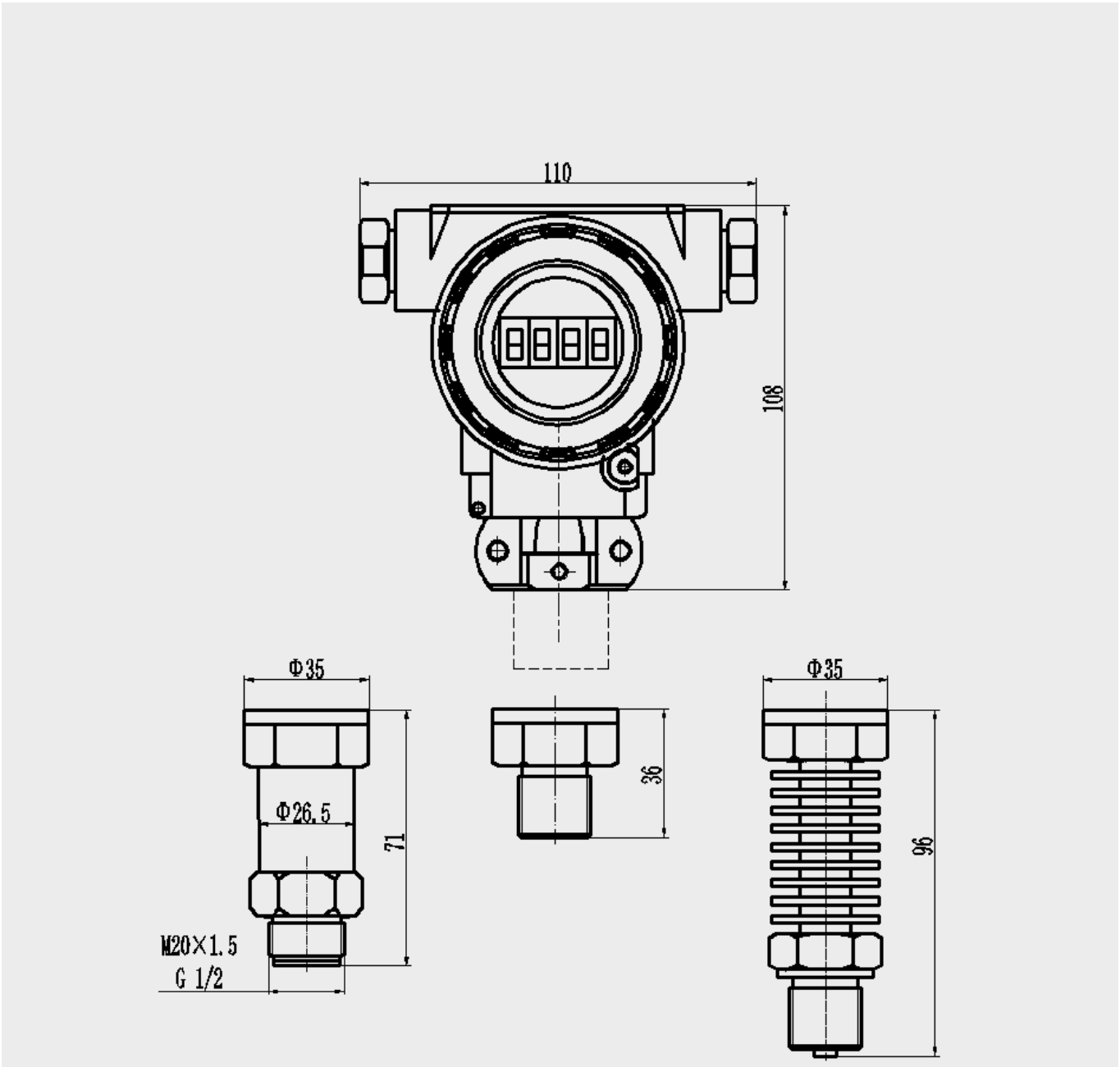
Item	Parameter range
Protection level	IP66
Explosion proof level	Explosion-proof type: Ex d IIC T5 Gb
Atmospheric pressure	86kPa ~ 106kPa
Vibration environment	10g（@10Hz ~ 2000Hz）
Shock resistance	100g/11ms
Service life	＞10 million cycles of load capacity (within measurement range)

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

YL0500	Series industrial pressure transmitters
Range	Measuring range: -0.1MPa … 0MPa~0.01MPa … 100MPa
xxn	Unit: kPa. The first two digits of the xx value are multiplied by 10 to the power of n, where n is the third digit value.

Code	Pressure form
G	Gauge pressure
A	Absolute pressure
D	Differential pressure
S	Seal gauge pressure

Code	Supply voltage
U_1	24VDC
U_2	12VDC
U_3	5VDC
U_4	3VDC（3.3VDC）
U_5	Others

Code	Output signal
E_1	4mA~20mADC
E_2	0mA~10mADC
E_3	0mA~20mADC
V_1	1VDC~5VDC
V_2	0VDC~5VDC
V_3	0VDC~10VDC
V_4	0.5VDC~4.5VDC
V_5	Other voltage outputs
R_4	RS485 communication interface
H	HART® protocol communication
II	I^2C protocol communication

Code	Appearance interface	
	Electrical connection	Mechanical interface
	Hirschmann socket (LJ_1)	G¼
	Aviation connector (LJ_2)	G½
	Waterproof connector (LJ_3)	G1
	Level outlet (LJ_4)	M20×1.5
	Others (LJ_5)	Others (Directly labeled)

Code	Additional function
M_1	4-digit LCD digital display (4mA ~20mADC output only)
M_2	4-digit LED digital display (4mA~20mADC output only)
d	Explosion-proof type: ExdIICT5
i	Intrinsically safe explosion-proof type: ExiaIICT6
QT	Other functions

YL0500	[102]	G	U_1	E_1	LJ_5G½	M_1	Complete model specifications

Ordering code YL0500 [102] G U1 E1 G½ M1 indicates a product in the CYB0500 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.