

YL6300

High-precision Smart-transmitter



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1. Product Introduction

YL6300 series monocrystalline silicon pressure transmitter a high-performance, high-precision pressure transmitter. This product adopts the domestic advanced monocrystal silicon production process, embedded intelligent signal processing module, to achieve the perfect combination of static pressure and temperature compensation. The product has high measurement accuracy, good long-term stability, fast response rate, lightning protection and anti-interference protection, data backup and recovery functions. It can be applied to high stability and high accuracy of pressure and liquid level measurement in petrochemical, power transmission and other fields. The product supports LCD display, 4-20mA standard industrial analog signal output and HART communication protocol, which is convenient to use, safe and reliable, and supports PC terminal for configuration.

2. Product Features

- 5-digit LCD digital display with backlight for real-time pressure indication
- key operation of the display block for data fine-tuning, range migration, data recovery, etc.
- standard HART communication, configurable via PC
- product with data backup and recovery function
- multiple display functions (Pa, kPa, MPa, bar, mbar, %, psi, mmH₂O)
- monocrystalline silicon sensors away from the media contact surface for mechanical and thermal isolation
- built-in temperature-sensitive compensation elements increasing product accuracy and stability
- dual overload diaphragm protection design, bilateral static pressure up to 40 MPa

3. Application

This product is mainly used for high stable and high precision pressure, differential pressure, liquid level and density measurement, etc. It can be configured on PC through HART protocol for real-time monitoring, and can be mainly applied in the following industries

- Pulp and Paper
- Machinery and Equipment / Shipbuilding
- Petroleum / Petrochemical / Chemical
- Steel / Nonferrous metals / Ceramics
- Electricity / City gas

4. Performance parameters

● Electrical parameters

Power supply	General purpose: 24VDC (10.5~45) VDC		
	Intrinsic safety explosion protection: 24VDC (10.5~26) VDC		
Output signal	4~20mA, 4~20mA+HART (Mode can be set)		
	Saturation current	Upper limit: 20.8mA	Lower limit: 3.8mA
	Alarm current	Upper limit: 22.8mA	Lower limit: 3.6mA
Response time	10ms		
Load resistance	0~2119Ω working condition		
	250~600Ω HART communication		
Power consumption	≤500mW@24VDC, 20.8mA		
Bridge resistance	6k ±0.5kΩ		
Power line spacing	15cm or more (Please avoid parallel wiring)		

● Technical parameters

Measurement medium	Liquid or gas
Accuracy	±0.1%(≥250KPa)
	±0.2%
Long-term stability	< 0.1%FS/year
Calibration temperature	20℃±5℃
Zero-point temperature drift	≤±0.01%FS/℃
Sensitivity temperature drift	≤±0.01%FS/℃
Compensation temperature	-30℃~70℃
Transmission distance	< 1000 m
Power supply impact	< 0.005%FS/V
Static pressure effect	< 0.2% FS/ Upper limit 10MPa
Overpressure effects	< 0.05% FS/10MPa
Vibration effects	On arbitrary axes, 200HZ/g is 0.1%FS
Location impact	Between the horizontal and vertical positions approximately 400Pa

Zero migration	Migration within -20% to +20% of maximum range
Protection grade	IP66
Temperature range of measuring medium	Silicon oil filled sensors: -40~120℃
	Fluorine oil filled sensor: -45~160℃
Operating ambient temperature	-40~85℃, Integrated LCD display: -30~70℃
Operating ambient humidity	5~100%RH@40℃
Storage ambient temperature	-40~110℃, Integrated LCD display: -30~70℃

● Electromagnetic compatibility performance

No.	Test Items	Basic Standards	Test conditions	Performance Grade
1	Radiation interference (enclosure)	GB/T 9254/CISPR22	30~1000MHZ	Qualified
2	Conducted interference (DC power port)	GB/T 9254/CISPR22	0.15~30MHZ	Qualified
3	Electrostatic discharge (ESD) immunity	GB/T 17626.2/IEC61000-4-2	4kV (Contacts) 8KV (Air)	B
4	RF EMF immunity	GB/T 17626.3/IEC61000-4-3	10V/m (80MHz~1GHz)	A
5	Industrial frequency magnetic field immunity	GB/T 17626.8/IEC61000-4-8	30A/m	A
6	Electrical fast covariance pulse group immunity	GB/T 17626.4/IEC61000-4-4	2kV (5/50ns,5kHz)	B
7	Surge immunity	GB/T 17626.5/IEC61000-4-5	2kV (Ground Line)	B
8	Conducted interference immunity for RF field induction	GB/T 17626.6/IEC61000-4-6	3V(150KHz~80MHz)	A

Note: 1) A performance level: Performance is normal within the technical specification limits when tested.

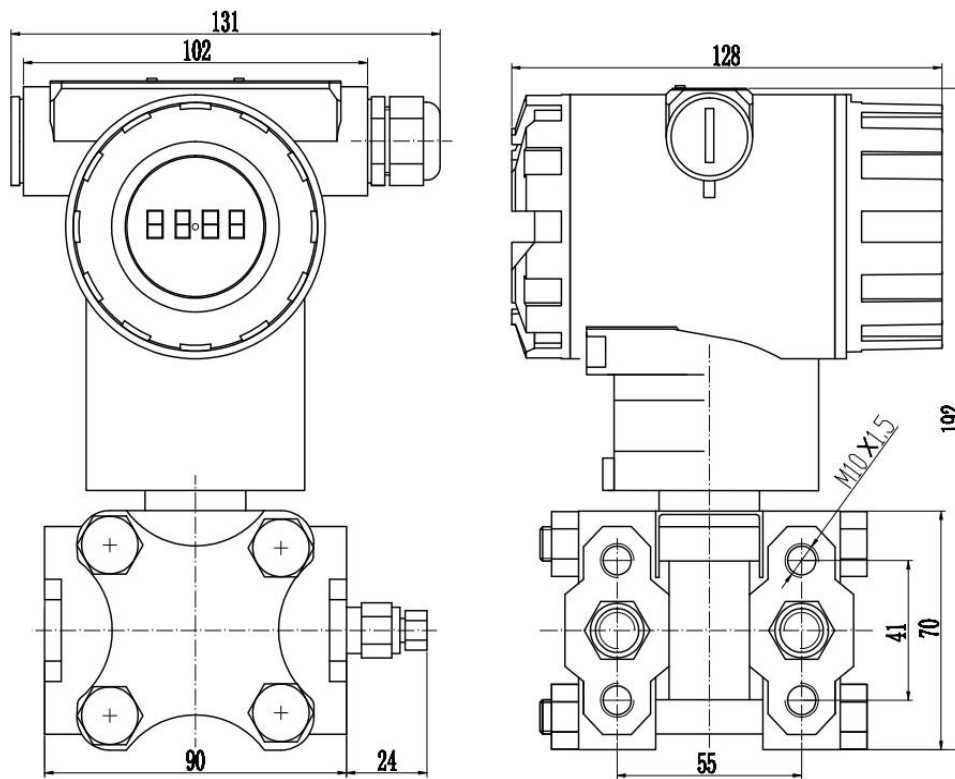
2) B performance level: Temporary reduction or loss of function or performance at the time of testing, but capable of self-recovery, with no change in actual operating conditions, storage and its data.

● Certification



5. Appearance

● Dimensions



P1 Product dimensions

6. Product Selection

Product Signal Output Selection		
No.	Output signal	Outlet method
1	LCD display	\
2	LCD display+4~20mA	two-wire
3	LCD display+4~20mA+HART	two-wire

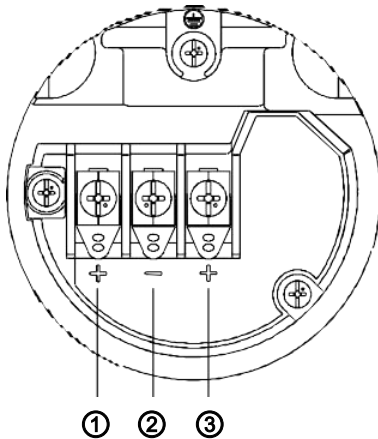
Product range selection reference						
Standard Range	Minimum range	Lower range limit	Upper range limit	Static pressure range	Overload high end	Overload low end
6kPa	200Pa	-6kPa	6kPa	25MPa	25MPa	16MPa
40kPa	400Pa	-40kPa	40kPa	40MPa	25MPa	16MPa

250kPa	2.5kPa	-100kPa	250kPa	40MPa	25MPa	500kPa
3MPa	30kPa	-500kPa	3MPa	40MPa	25MPa	500kPa

* Bilateral static pressure is only available for differential pressure series.

* The product should not exceed the maximum overload pressure under pressure, otherwise it may damage the sensor.

7. Electrical wiring



P2 Monocrystalline silicon block

Output	Block terminal		
	①	②	③
LCD display	Vcc	GND	\
LCD display+4~20mA	Vcc	Iout	\
LCD display+4~20mA+HART	Vcc	Iout	\

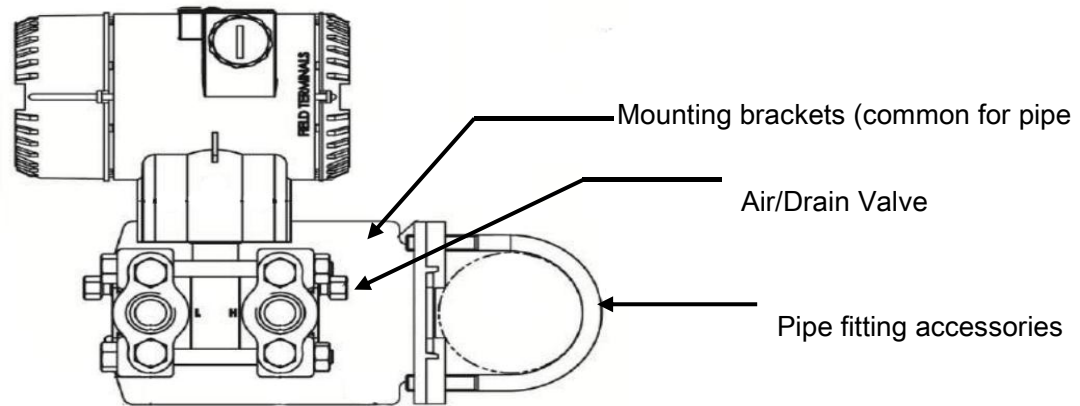
8. Product usage

- 1) Check carefully to make sure the wiring is correct, then turn on the DC 24V power supply and the product will work normally.
- 2) If you want to disassemble the transmitter, you must first disconnect the power and then disassemble it.
- 3) Use the display block button to clear the zero-point, zero point and full range fine adjustment, range migration, etc. For details, see Appendix 1.

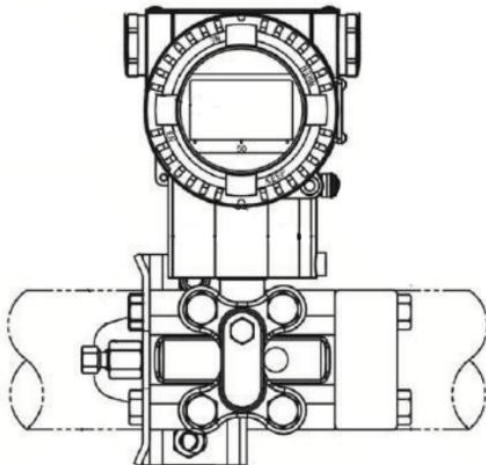
Function	Description
PV clearing	Make the current analog output correspond to zero pressure value (gauge pressure, differential pressure)
Zero adjustment	Actual output 4mA calibrated using reference pressure
Full adjustment	Actual output 20mA calibrated using reference pressure
Restore factory settings	Restore factory backup data in case of adjustment errors

4) The installation details of the product in actual use are as follow:

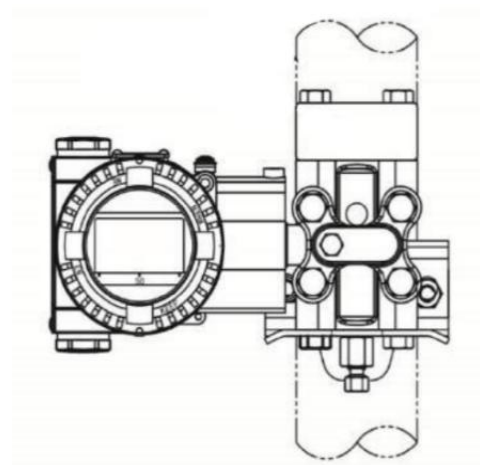
a) Connection of pipes



P3 Product piping connections

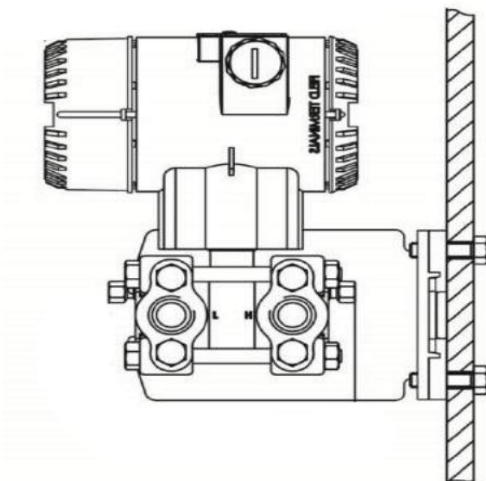


P4 Horizontal piping connection method



P5 Vertical piping connection

b) Connection to the wall



P6 Vertical piping connection method

9. Abnormal situation handling

- 1) The measurement signal appears abnormal, should determine whether the process pressure is abnormal, whether the measurement system is wrong, whether the environment of the installation has any influence or the pressure transmitter is abnormal, and then analyze the cause to take appropriate measures.
- 2) No signal output, process pressure changes without corresponding changes in the output signal or changes do not correspond to the abnormalities, may be caused by abnormal pressure transmitter. Should check the power supply polarity or disconnection, voltage, power consumption and load resistance to meet normal operating requirements; also check whether there is pressure leakage and lead pipe blockage, shut-off valve is not open, etc..
- 3) Output signal error is large or beyond the normal range, should check the power supply voltage, power consumption and load resistance to meet the normal working requirements of the pressure transmitter, the measurement range settings, adjustment, and calibration is correct; also check whether there is a leak and the lead pipe is blocked, the shut-off valve is not open and the pressure transmitter installation site is not affected by rapid temperature fluctuations.

10. Notes

- 1) Please read this manual carefully before use to ensure the correct use of the product to avoid irreversible damage to the transmitter.
- 2) Changes in mounting position parallel to the diaphragm surface will not cause zero drift effects. If the mounting position changes more than 90° from the diaphragm surface, zero effects in the range of <0.4kPa will occur, which can be corrected by adjusting the zero, with no range effects.
- 3) When cleaning the instrument, use a cleaning agent that will not damage the instrument surface and seals. When using the pressure washer, do not aim the nozzle directly at the electrical connection or the vent hole (atmospheric connection position).
- 4) The measuring medium must be a gas or liquid that will not corrode the stainless steel, otherwise it should be specially customized.
- 5) Do not use your hand or other hard and sharp objects to press or clean the inlet hole, so as not to damage the chip.
- 6) This product is a measurement product, strict touch fall; do not allow their own disassembly, this kind of damage does not belong to the warranty.
- 7) The entry of viscous liquid will affect the measurement accuracy and should be avoided as much as possible.

11. Transportation and storage

- 1) Do not store outdoors.
- 2) Do not expose to corrosive media.

- 3) Avoid mechanical shock and vibration.
- 4) Storage environment requirements: -40~110°C, integrated LCD display: -30~70°C.

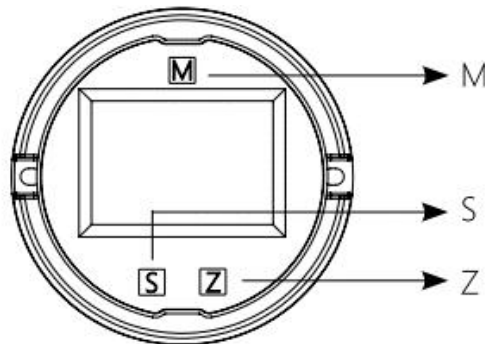
12.Product List

NO.	Product list	Quantity	Notes
1	High precision monocrystalline silicon pressure transmitter	One	
2	Product instruction manual	One	
3	Product conformity certificate	One	
4	Factory test data	One	

Appendix 1

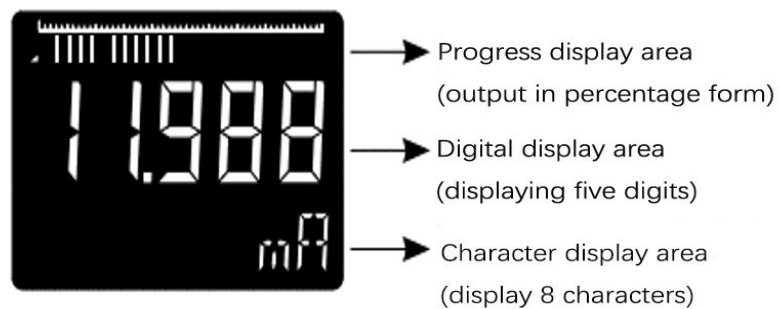
Display block button operation instructions

1) Three button position diagrams



P1 Three button position diagram

2) Display diagram



P2 Diagram of product display

3) Three-button commissioning flow chart

