

YL4500 / YLW5100 Series

Wireless Integrated Temperature and Pressure Transmitter



Product introduction

YL4500/YLW5100 Series series of products is a kind of wireless transmitter that can work in the field without single-point wiring. This product adopts micro-power consumption wireless communication mode, installation is faster, safer and more convenient, and there is another supporting wireless adapter device, which can convert the wireless signal into MODBUS standard signal through Ethernet or serial port transmission, and can be easily accessed to the measurement and control system.

This series of wireless transmitter each type of product has been carefully designed, component selection, process verification curing, cyclic loading de-stressing, old refining, environmental simulation testing and other processes, to ensure that each product is stable and reliable.

Basic features

- Pressure form: Gauge, absolute, sealed gauge, differential pressure
- Reporting cycle: 1 minute ~ 1 hour can be set
- Measuring media: fluids compatible with 304, 316L or ceramics
- Range: -0.1MPa ... 0kPa ~ 10kPa ... 100MPa / -60°C ~ 450°C(optional)
- Accuracy: $\pm 0.1\%$ FS (Customized), $\pm 0.25\%$ FS, $\pm 0.5\%$ FS
- Overload capacity: ≤ 2 times (< 10MPa) , ≤ 1.5 times (≥ 10 MPa)
- Display mode: 4-digit LCD/4-digit LED
- Output signal: LoRa, NB-IoT, 4G
- Working voltage: 3.6V DC lithium-ion battery
- Battery life: ZigBee, Lora ≤ 3 years (related to data upload interval)
NB-IoT, 4G ≤ 1 year (related to data upload interval)
- Transmission distance: ≤ 1000 m (under open environment conditions)

Applications

Coal mines Environment protection Oil field Medicine
Chemical industry Water affairs Civil explosion Shipping

Product accuracy and performance index

Pressure performance indicators

Items	Parameters		
Accuracy	0.1	0.25	0.5
Non-linearity (%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

Temperature performance indicators

Items	Parameters	
Accuracy	0.5	1.0
Long-term stability (%FS/year)	≤0.5	≤1.0

Reference conditions

Temperature: 20°C ~ 25°C

Relative humidity: 45%RH ~ 75%RH

Supply voltage: 3.6V DC lithium-ion battery

Installation direction: pressure port vertical down

Environmental conditions

Item	Parameter range
Compensation temperature	0°C ~ +50°C (≤200kPa), -10°C ~ 60°C (> 200kPa)
Medium temperature	-30°C ~ +60°C
Ambient temperature	-40°C ~ +60°C
Environmental humidity	≤95% RH
Storage temperature	-40°C ~ +60°C

Note: Icing of the measured medium can cause irreversible damage to the product.

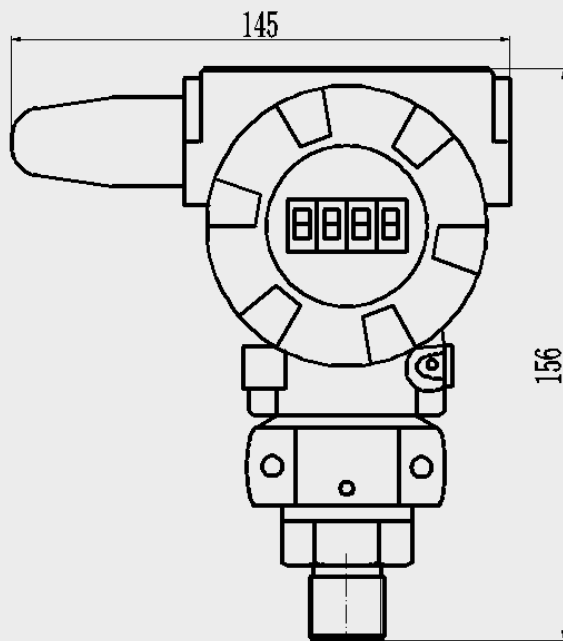
- When the pressure transmitter is working normally, it is required that the measured medium cannot solidify.

Operating conditions

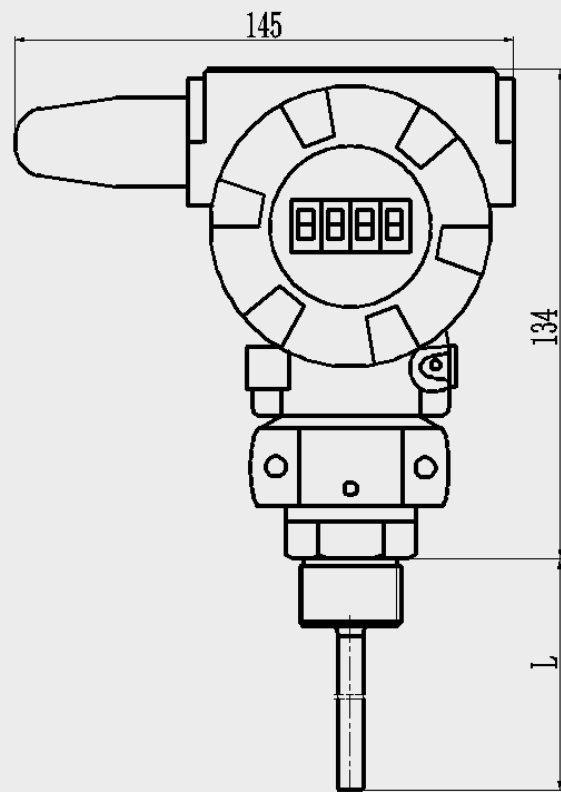
Item	Parameter range
Protection level	IP67
Explosion proof level	Exd II CT5 Gb
Atmospheric pressure	86kPa ~ 106kPa
Vibration environment	10g (@10Hz ~ 2000Hz)
Shock resistance	100g/11ms
Service life	> 10 million cycles of load capacity (within measurement range)

Typical appearance structure drawing (unit: mm)

The following picture shows the typical product shape structures, other shape structure please contact SIBO.X for customization.



YL4500 Series wireless pressure transmitter



YL5100 Series wireless temperature transmitter

Selection guide

YL4500		Series wireless pressure transmitter									
	Range		Measuring medium: -0.1MPa ... 0MPa ~ 0.01MPa ... 100MPa								
	xxn		Unit kPa, the first two digits of the xx value multiplied by the n-square of 10, n being the third value.								
			Code name	Pressure form							
			G	Gauge pressure							
			A	Absolute pressure							
			D	Differential pressure							
			S	Sealed gauge pressure							
			Code name	Power supply							
			U5	3.6VDC lithium battery							
			Code name	Output signal							
			V5	LoRa							
			V6	NB-IoT							
			V7	4G							
			Code name	Appearance interface							
				Mechanical interface							
				G $\frac{1}{4}$							
				G $\frac{1}{2}$							
				M20×1.5							
				Others (Directly labeled)							
			Code name	Additional function							
			M1	4-digit LCD digital display meter head							
			M2	4-digit LED digital display meter head							
			i	Intrinsic safety explosion-proof Exia II CT6							
			QT	Other functions							
YL4500	[102]	G	U ₅	V ₅	G $\frac{1}{2}$	Complete model specifications					

- ✧ The ordering model YL4500 [102] G U5 V5 G 189 represents the YL4500 series wireless pressure product, with a pressure range of 1MPa, gauge pressure, 3.6VDC lithium battery power supply, LoRa output, G1/2 threaded connector.

YL5100		Series wireless temperature transmitter						
	Range		60℃ ~ 450℃ (Range optional)					
				Code name	Power supply			
				U5	3.6VDC lithium battery			
				Code name	Output signal			
				V5	LoRa			
				V6	NB-IoT			
				V7	4G			
					Code name	Appearance interface		
						Mechanical interface		
					G¼			
					G½			
					Others (Directly labeled)			
	M1	4-digit LCD digital display meter head						
	M2	4-digit LED digital display meter head						
	i	Intrinsic safety explosion-proof Exia II CT6						
	QT	Other functions						
YLW5100	(-50 ~ 200)		U ₅	V ₅	G½	Complete model specifications		

- ✧ The ordering model YL5100 (-50~200) U5 V5 G $\frac{1}{2}$ represents the YL5100 series wireless temperature product, with a range of -50 ℃~200 ℃, powered by a 3.6VDC lithium battery, LoRa output, and G1/2 threaded connector.

Precautions

- During the battery powered operation of the product, it is strictly prohibited to use USB interface for debugging.
- Please contact us for information on the compatibility of the product seal material and the medium to be measured.
- To improve the reliability of data transmission, it is recommended that the antenna be placed in an open location when installed in the field.
- When the product is installed in the field, please do the secondary protection of the product, the front and rear covers and the sealing screws must be screwed tightly and sealed.
- When selecting the YLW5100 series high-temperature model, good ventilation must be maintained at the heat sink.
- YL4500 series gauge pressure products with a range of 3MPa or less are equipped with ventilation holes or ventilation cables, which need to be prevented from clogging the ventilation holes so as not to affect the accuracy of the product testing.