DATASHEET

Level

Ultrasonic Level Sensor

PWL-U700 (Integrative Type)

PWL-U707 (Segregated Type)

PWL-U709 (Explosion proof)

Features

- Ultrasonic working principle, non-contact measurement method
- Less than 9°beam angle design, less than 200ms responding time
- NLEPF engineering composite materials, durable and corrosion-resistant
- Sun protection cover design, IP65/IP66 waterproof
- Intelligent filtering algorithm design, more accurate
- Simple installation with no calibration necessary
- Over voltage and over current protection
- Optional explosion-proof

Description

PWL-U700 series ultrasonic level sensor is a non-contact, highly reliable, cost-effective, easy-to-install and maintain liquid measuring instrument. It can meet most liquid level measurement requirements without contacting the medium.

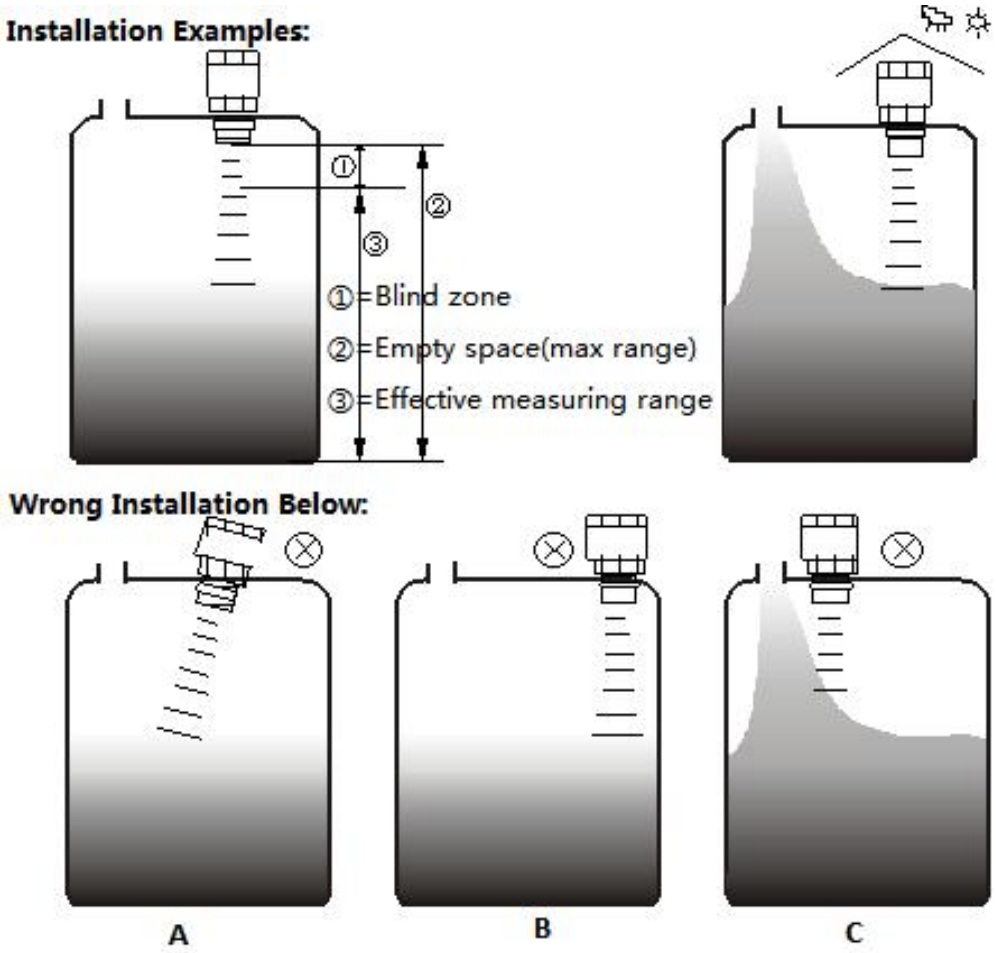
The housing is made of NLEPF engineering composite materials, which is durable, corrosion-resistant, acid-resistant and alkali-resistant, good aging performance. The intelligent filtering algorithm design is adopted to effectively eliminate false echoes in actual measurements, improve the signal-to-noise ratio, and make the measurement more accurate.

It is widely used in tap water, heating, water conservancy, metallurgy, chemical industry, machinery, energy and other industries. It can be used for production detection, flow calibration, temporary detection, flow inspection, water meter horizontal debugging and energy-saving monitoring. It is an essential tool for timely detection of water level.

Specifications

Model	PWL-U700/PWL-U707/PWL-U709	
Measuring Range	5m, 10m, 15m, 20m, 30m, 40m, 50m, 60m	
Accuracy	±0.5%FS; ±0.25%FS by customized	
Blind Zone	0.25-1.2m (According to the range)	
Resolution	3mm or 0.1% (Which one is max)	
Working Pressure	2 Bar (Explosion proof type is 5 Bar)	
Display (English language)	Display: Level measurement, distance measurement, transmission value, ambient temperature, echo state, alarm display, algorithm selection	
Signal Output	Integrative Type	Segregated Type
	4-20mA/510Ω load resistance (4 wires) 4-20mA/250Ω load resistance (2 wires) 0~5V, 1~5V, 0~10V (3 wires) Hart protocol	4-20mA/510Ω load resistance (4 wires) 0~5V, 1~5V, 0~10V (3 wires)
Relay/Alarm output	2 ways of AC250V/5A or DC30V/5A Programmable status	2 or 4 ways of AC250V/(NO:10A, NC: 6A) or DC24V/10A Programmable status
Power Supply	24VDC 120mA (typical) 12VDC Optional (for power by battery, solar panel...) 220V AC±15% 50Hz Optional	
Communication	RS485 Modbus RTU or RS232(optional)	
Environmental Temp.	Indicator: -20~+60℃ Sensor: -20~+80℃	
Protection Level	Indicator of integrated type: IP66 Indicator of segregated type: IP65 Sensor: IP68	
Cable Length	None cable for integrative type; 10 meter cable for segregated type, max 100m	
Sensor Installation	Range ≤10m: G2A thread(similar with M60) Range 11-20m: M78*2 thread Range 21-30m: G3 thread Range >31m: M108*2 thread	
Explosion Proof	Ex(ia) II CT6 for integrative type only	
Store Condition	Temperature: -20~+80℃; Humidity: ≤90%RH Pressure: Atmospheric pressure Non-corrosive gases or steam, no vibration	
Corrosive Application	Available to customize PVFD or PTFE sensor probe	

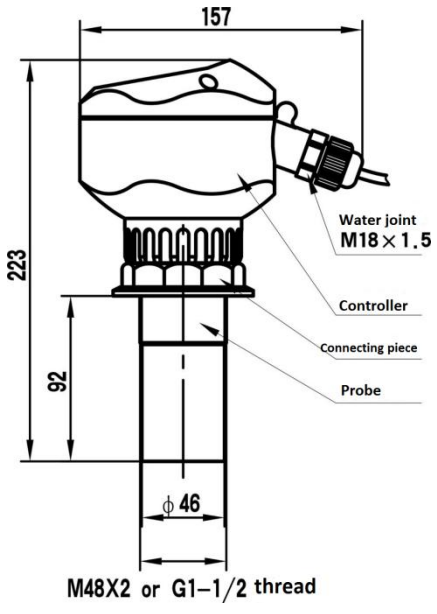
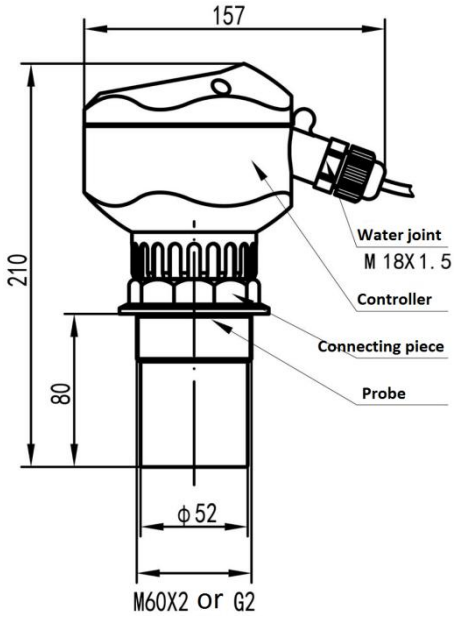
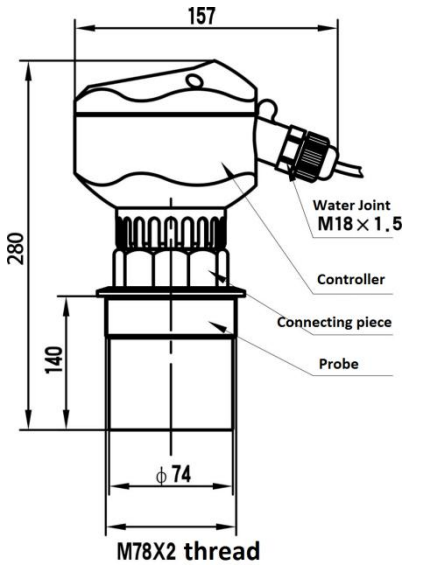
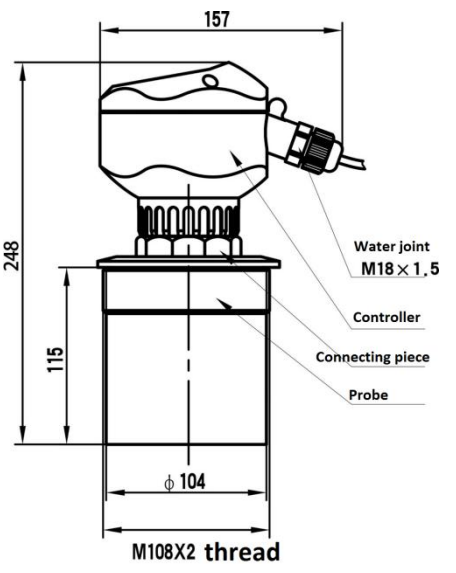
Installation

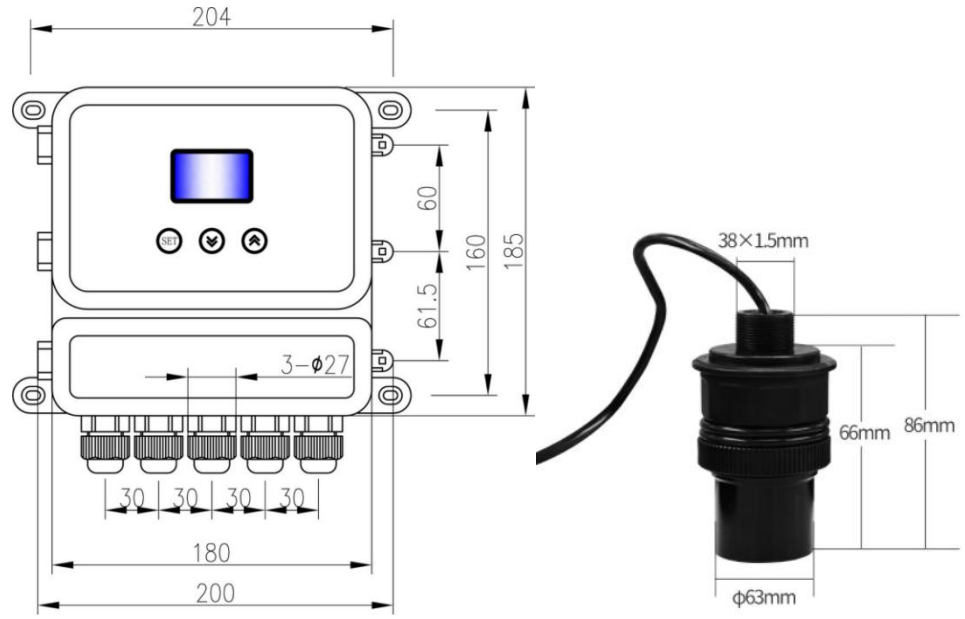
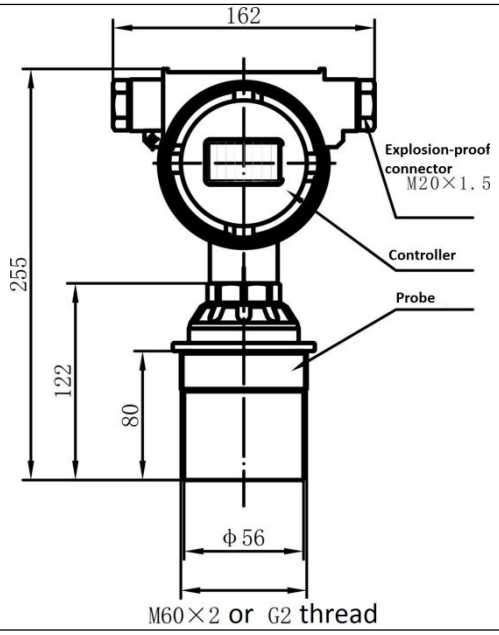


Notes:

1. Measurement starts from the bottom line of the sensor.
2. The highest level of media cannot enter into blind area.
3. Level measurement should avoid the feeding port/inlet.
4. Better use sun/rain shade when installing outdoors.
5. Sensor's bottom should be horizontal with surface of medias, keep the sensor to be vertical with medias.
6. Sensor should be kept some distance to the wall because of beam angle of ultrasonic wave.
7. When measuring the object level, should avoid the feeding port to prevent the ultrasound echo being interfered.

Dimensions

PWL-U700		
		

PWL-U707	
PWL-U709	

Electrical Connection

Electronic Wiring Definition		
Current	Red	Vcc+
	Yellow	Signal+
Voltage	Red	Vcc+
	Yellow	Signal+
	Black	GND
RS485	Red	Vcc+
	Yellow	RS485A
	White	RS485B
	Black	GND

How to Order

Example Part Number: **PWL-U700R20A1T1S1T2000**

Model No.	PWL-U700 (Integrative Type) PWL-U707 (Segregated Type) PWL-U709 (Explosion proof type)	PWL-U700
Measuring Range	R5=5m R10=10m R15=15m ... R60=60m	R20
Accuracy	A1=0.5%FS (typical) A2=0.25%FS	A1
Signal Output	T1=4-20mA(2wires) T2=4-20mA(3wires) A3=4-20mA(4wires) T4=0-5V T5=1-5V T6=RS485 Modbus RTU T7=HART S1=Relay (Upper & Lower alarm) T0= Others by customization	T1
Power Supply	S1=24VDC S2=12VDC S3=220VAC	S1
Working Temperature	T1=0~50℃ T2=-10~60℃ T3=-20~70℃	T2
Cable Length	000=None cable 001= 1m cable 002= 2m cable ...	000