

DATASHEET

Level

Ultrasonic Distance/Level Sensor Model PWL-U500



Features

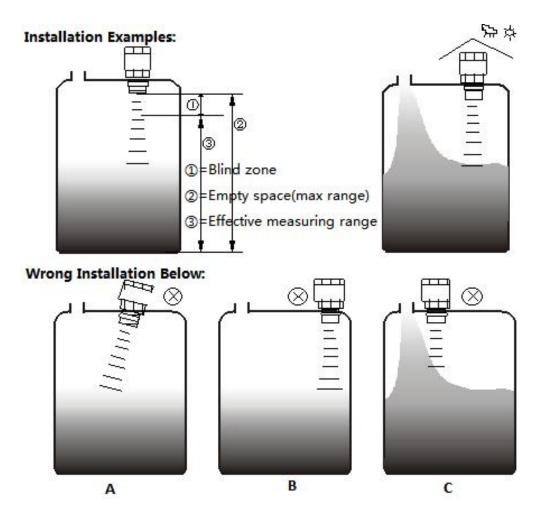
- Ultrasonic working principle, non-contact measurement method
- 0-50°C temperature compensation
- With anti-interference intelligent identification and error correction function
- 5m, 7m, 10m, 15m measuring ranges.
- Applicable to liquid level and distance measurement mode
- 0.5%F.S. accuracy, can customize 0.25%F.S.
- IP66 water-proof, IP68 optional
- Optional Intrinsically safe explosion-proof

Description

PWL-U500 Ultrasonic Level Transmitter is an integration of ultrasonic sensor, temperature sensor, ultrasonic servo circuit and transmitter circuit. All these features realize a concise and smart level transmitter. The circuit board is all gold-plated, and the internal electromagnetic shielding signal software digital filter (industrial grade) are tested under 48 hours high and low temperature aging. It promises higher and long term reliability. The housing is made of NLEPF synthetic material with strong texture and good acoustic properties. Its appearance is exquisite, waterproof and dustproof, and can adapt to most working conditions. Fixing the PWL-U500 ultrasonic transmitter on the liquid wall, moving arm or instrument shell does not require tools such as screws and screwdrivers. As long as there is a 68mm round hole, it can be installed very quickly and safely, and it is very convenient for maintenance and disassembly.



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.



Specifications

| Model | PWL-U500 | | | | |
|---------------------------|--|------------|------------|--|--|
| Measuring Range | 5m, 7m, 10m, 15m | | | | |
| | Measuring Rang | Blind Area | Beam Angle | | |
| Blind Area | ≤5m | ≤300mm | 15° | | |
| & | ≤7m | ≤500mm | 12° | | |
| Beam Angle | ≤10m | ≤500mm | 12° | | |
| | ≤15m | ≤800mm | 9° | | |
| Accuracy | ±0.5%FS; ±0.25%FS by customized | | | | |
| Signal Output | 4-20mA 3 wire with RS485 PC (Typical) | | | | |
| | 4-20mA(2-wire, 4-wire), 0-5V, 1-5V | | | | |
| | RS485 Modbus RTU | | | | |
| Power Supply | DC24V/300mA (typical); DC12V/300mA optional | | | | |
| Consumption | <1.5W | | | | |
| Resolution | 1mm | | | | |
| Working Temperature Range | -10~50℃ (Can customize for -10~60℃, -20~70℃) | | | | |
| Working Humility | ≤80%RH, no condensation | | | | |
| Protection Level | IP66; IP68 by customization | | | | |
| Electrical Connection | Water-proof connector, cable 1m | | | | |
| Housing Material | NLEPF synthetic material | | | | |
| Installation Method | Screw-in type: thread dimension M68x2.0mm | | | | |
| | Roller clamp type: hole opening size Φ70mm | | | | |
| Working Condition | Atmospheric pressure, non-explosion, non-corrosive environment | | | | |
| | (Can customize intrinsically safe explosion-proof) | | | | |
| Measurement Mode | Distance mode/measuring air distance (Default) | | | | |
| | Liquid level mode/measuring height of level | | | | |
| | (Default: Installation height=maximum range) | | | | |

Electrical Connection

Below is 3 wires 4-20mA signal +RS485 PC communication port wiring definition:

| Operation Voltage | RedV+ |
|-------------------|-------------------|
| Signal Output | Yellow4-20mA+ |
| Signal Output | WhiteRS485 A |
| Signal Output | GreenRS485 B |
| Operation Voltage | BlackGND |



How to Order

Example Part Number: U500R5A1T1S1T2P3003

| Model No. | PWL-U500 | U500 |
|---------------------|-----------------------------|------------|
| Measuring Range | R5=5m | |
| | R7=7m | R5 |
| | R10=10m | G |
| | R15=15m | |
| Accuracy | A1=0.5%FS (typical) | A1 |
| | A2=0.25%FS | AI |
| Signal Output | T1=4-20mA(3wires) (typical) | |
| | T2=4-20mA(2wires) | |
| | T3=0-5V | T 4 |
| | T4=1-5V | T1 |
| | T5=RS485 Modbus RTU | |
| | T0= Others by customization | |
| Power Supply | S1=24VDC | S1 |
| | S2=12VDC | 51 |
| Working Temperature | T1=-10~50℃ | |
| | T2=-10~60℃ | T2 |
| | T3=-20~70 ℃ | |
| Water Proof | P1=IP66 | |
| | P2=IP67 | P3 |
| | P3=IP68 | |
| Cable Length | 001= 1m cable 002= 2m cable | 003 |