DATASHEET

Level

76-81GHz FMCW Radar Level Sensor For Rivers, Dams, Lakes Water Application

PWL-R807P

PWL-R807S

PWL-R808P

PWL-R808S

Description

PWL-R807/R808 is radar water level meter referring to Frequency Modulated Continuous Wave (FMCW) radar products that works at 76-81GHz. The maximum measuring range of the product can be 65m, and the blind area is 10cm. It's higher working frequency and a larger bandwidth, makes the measurement accuracy higher.

The product provides a bracket fixing method, and no on-site wiring is required, making installation convenient and easy.

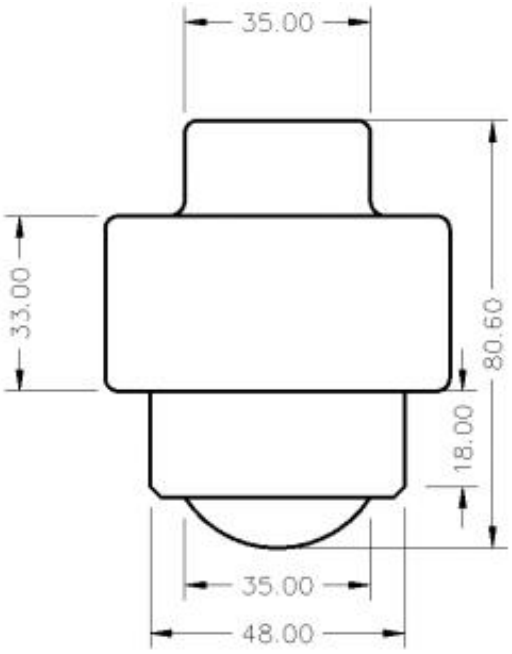
Features

- 76-81GHz FMCW radar
- Millimeter wave RF chip, higher signal-to-noise ratio, smaller blind area
- 5GHz working frequency bandwidth, higher resolution and precision
- Narrowest 6°antenna beam angle, less impact from interference in the installation environment
- IP67 protection level
- Integrated lens design, compact size.
- Support bluetooth debugging to facilitate the maintenance work

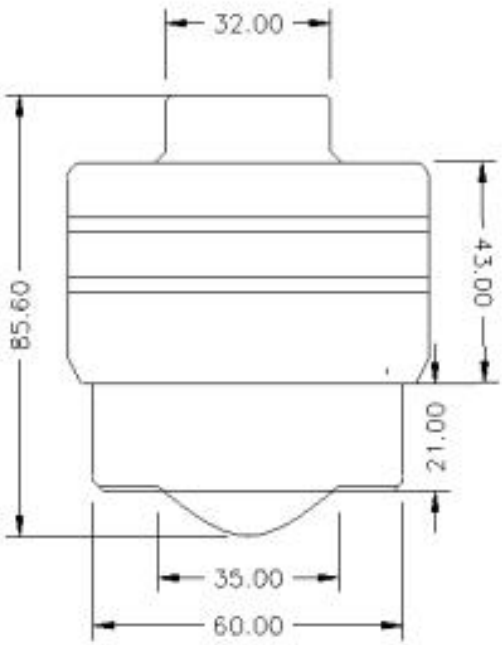
Specifications

Model	PWL-R807, PWL-R808
Frequency	76GHz ~ 81GHz, 5GHz FMCW bandwidth
Measuring Range	0.1 m ~65m
Accuracy	±1mm
Beam Angle	6°
Blind Zone	10cm
Application	Water level at rivers, dams, lakes, underground pipe network
Signal Output &Power Supply	PWL-R807: RS485 Modbus RTU 9~28 VDC PWL-R808: 4-20mA/HART 14 ~28 VDC PWL-R808: SDI-12 12 VDC
Bluetooth	Only available for PWL-R808 4-20mA Max range is 35m for with Bluetooth function, and available in 12m away from sensor
Enclosure	PP / Stainless steel
Antenna Type	Lens antenna
Electrical Connection	Directly cable outlet
Cable Length	10 meters (can be longer as requested)
Recommend Cable	0.5mm^2
Process Temperature	-30 ~ 75℃
Process Pressure	Atmospheric
Protection Level	IP68
Long-term Stability	≤±2mm/year
Installation Method	Threaded or by bracket (Bracket is along with shipment)

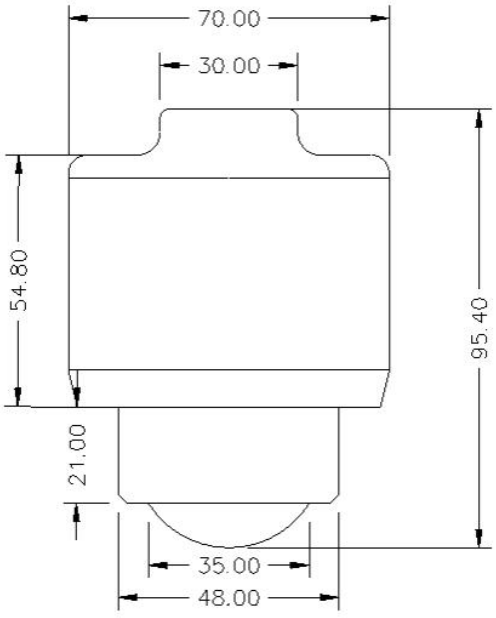
Dimensions



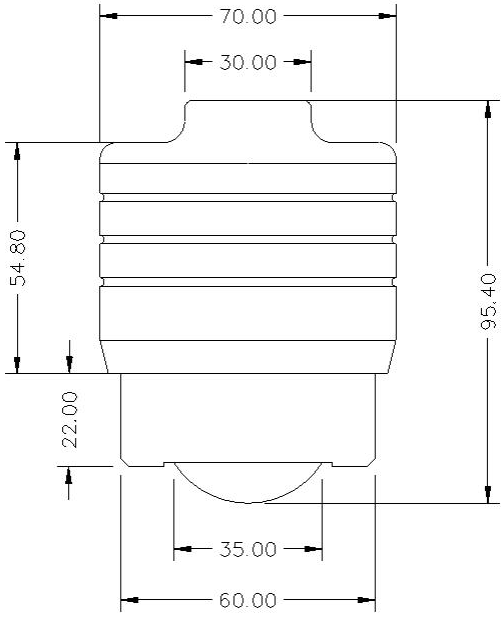
PWL-R807P (PP material)



PWL-R807S (Stainless steel material)

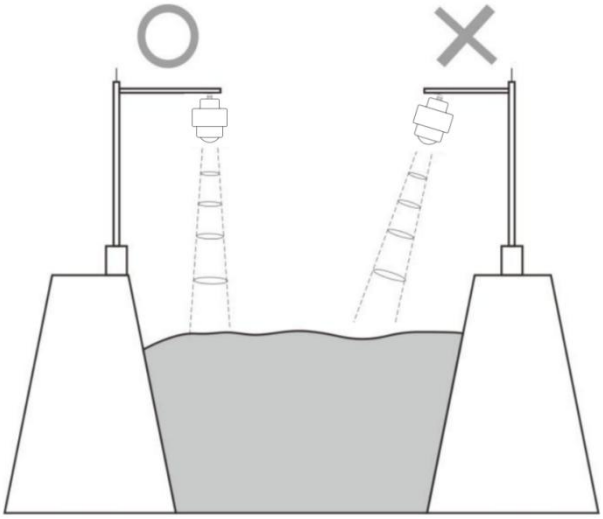


PWL-R808P (PP material)



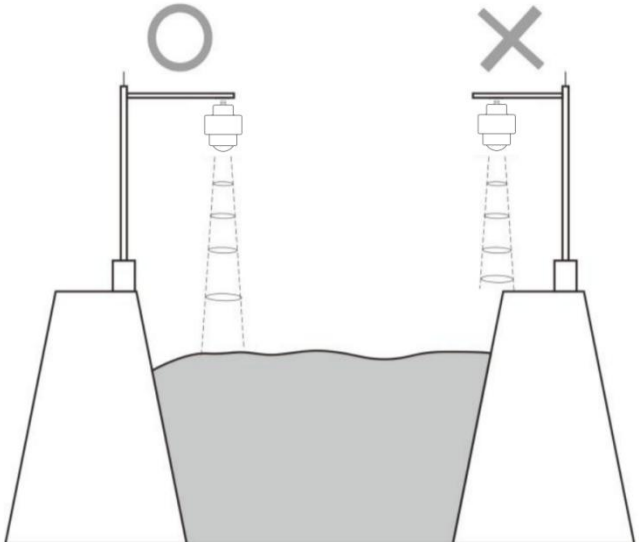
PWL-R808S (Stainless steel material)

Installation

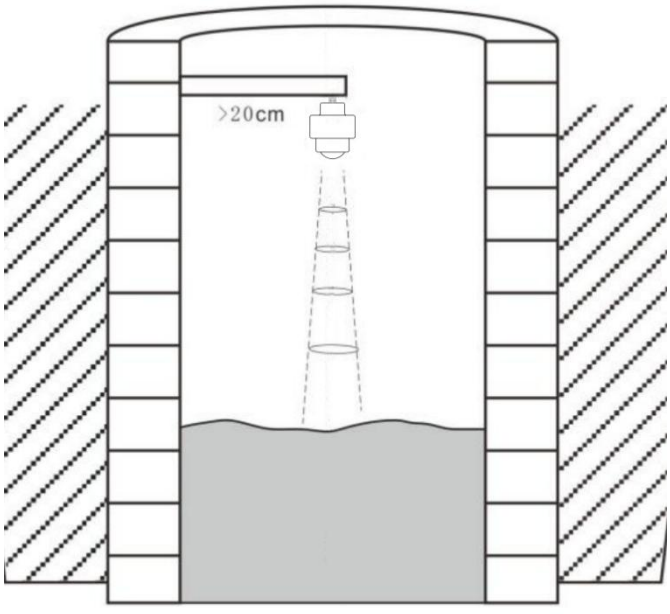


Make sure the instrument and beam vertically target the water level;

Tilt installation will weaken the received signal amplitude and affect measurement.



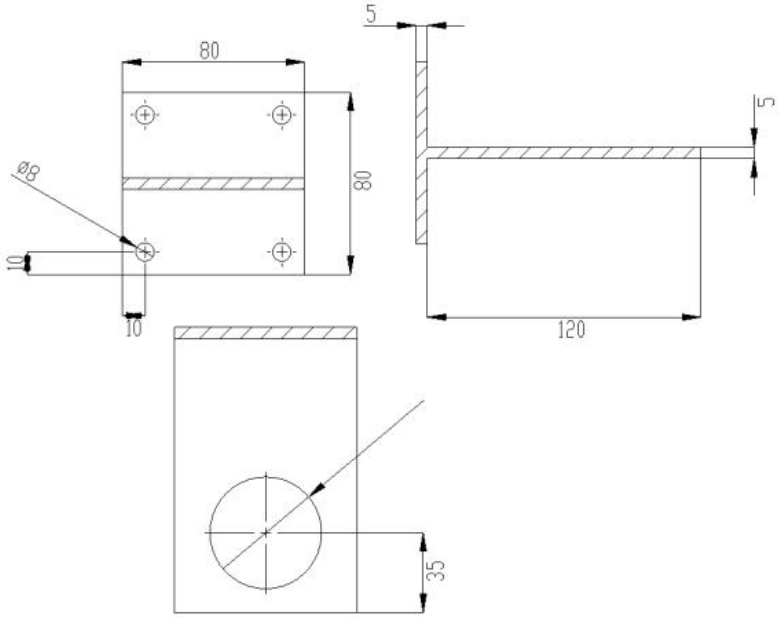
Ensure there are no interference objects within the beam range, such as riverbank, ladders or steps.



Meter should be at least 20cm distance away from the wall;

When underground pipe network, meter should be installed as close to the center of the sewer as possible, otherwise the well wall will easily generate interference signals, affecting the measurement.

T-bracket Schematic Diagram



Wiring Definition

PWL-R807 RS485 Modbus RTU		
	Green	RS485A
	Yellow	RS485B
	Red	Vcc+
	Blue	Vcc-

PWL-R808 4-20mA/HART		
	Yellow	GND
	Red	Vcc+
	Blue	Vcc-

PWL-R808 SDI-12		
	Yellow	GND
	Red	Vcc+
	Blue	Serial Data

***Tell us which application / measuring range / signal output / working Temp. and pressure / what you wanna to realize, our sales engineer will recommend suitable model for you.*