PR-R200080GHz High Accuracy Millimeter Wave Radar Level Sensor

DATASHEET

PR-R2000

80GHz High Accuracy Millimeter Wave Radar Level Sensor

Applications

- Water treatment
- Oil & gas industry
- Hydrological monitoring
- Rivers and channels
- Water/fuel tanks
- Chemical industry
- Petrochemical process storage tanks
- Pharmaceutical industry
- Food and beverage manufacturing
- Refining process vessels
- Sewage treatment
- Power generation
- Process control

Features

- High precision ±10mm,wide detection range
- Unique exterior design and compact size
- No-contact measurement adopted, without cleaning difficulty and maintenance
- Receiving little impact by condensation, rain, vapor, corrosion...
- Connection of host computer setting software, tank side meters...
- Wide power supply range with minimized power consumption
- Visualized PC interface
- High sensitivity, lightweight, easy integration
- Superior PC interaction performance
- Not affected by changes in dielectric constant & specific gravity of medium
- Easy to install with a bubble level design on the top
- No on-site calibration required

Profile

PR-R2000is a high-precision ultra-low-power millimeter-wave radar level sensor developed and designed by Holykell. Its proprietary radar ranging algorithm and visualized PC interface enable high measurement accuracy, high sensitivity, easy integration, and superior PC interaction performance.
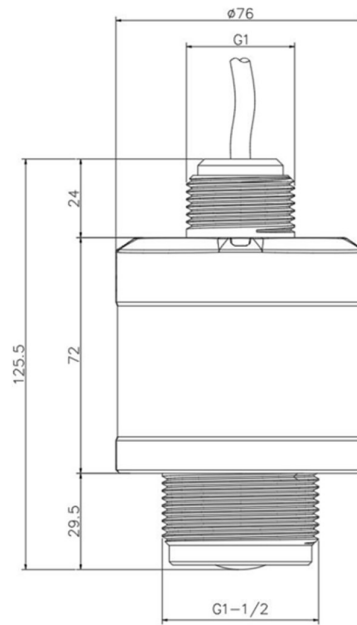
It uses non-contact technology, eliminating the need for physical contact with the measured substance, preventing contamination and minimizing maintenance requirements.

HR2000 can be used in various industries and applications, including liquids, distance, and even harsh environments such as chemicals, oil and gas, wastewater treatment, and food processing. Additionally, it can easily integrate with control and automation systems, allowing for seamless integration into industrial processes and enabling remote monitoring and control capabilities.

Specifications

Parameter	PR-R2000			
Working pressure	-1~3bar			
Measuring range	0.2-10m			
Measurement accuracy	Distance measuring accuracy: ±10mm(typical), ±2mm/±5mm(customized)			
Analog 0-5V/0-10V/4-20mA accuracy	0.5%F.S(typical),0.25%F.S/0.1%F.S(customized)			
FOV angle	Horizontal 15°			
Center frequency	80GHz			
Communication rate	Default 9600bit/s			
Scanning frequency	76-81GHz			
Signal output	0-5V+RS485 MODBUS RTU; 0-10V+RS485 MODBUS RTU; 4-20mA+RS485 MODBUS RTU optional			
Power Supply	12-30Vdc(Typical type) 3.3-4.2Vdc(Low voltage & low power consumption type)			
Working temperature	-40~85℃			
Power consumption	Regular power supply		Low voltage &low power consumption	
	Min.	Max.	Min.	Max.
	0.36W (12V*0.03A)	0.9W (30V*0.03A)	0.09W (3.3V*0.03A)	0.12W (4.2V*0.03A)
Product Size	Ø125.5×76mm			
Protection class	IP67/IP68(3 bar) optional			
Material of wet parts	PVDF(Anti-corrosion type)			
Material of housing	PA6 nylon + Fiberglass			
Antenna size	13×11mm			

Dimensions and Drawing

Unit: mm

Wiring

Pin No.	Definition	Wire Color
1	VCC	Red
2	GND	Black
3	RS-A	Green
4	RS-B	Blue
5	0-10V/0-5V/4-20mA	Yellow

Pro Range

How to Order

1. Range Selection Table:

01	0.2~1	02	0.2~2	03	0.2~3	04	0.2~4	05	0.2~6	06	0.2~8	07	0.2~10
X	By customized												

Kindly according to your application select suitable range code , Example: code 03 =3 .
Unit of measure select on the Part Number Selection Table . Example: Code H=m H_2O, that's 3m H_2O

2. Part Number Selection Table:

2000 Selection Type		W	07	H	1	S10	2	001	1

Type	W=Water(Typical) F=Fuel(Intrinsically safe explosion-proof type)
Range	Range reference to range selection table code
Level Units	H=m H_2O (Min: 0.2 m H_2O; Max:10 m H_2O) M=m Fuel (Min: 0.2 m fuel; Max:10 m fuel)
Signal Output	1=RS485+4~20mA 2=RS485+0~5V 3=RS485+0~10V
Power Supply	S10=12-30Vdc S54=3.3-4.2Vdc
Accuracy	2=±2mm 3=±5mm 4=±10mm
Cable length	001= Cable 1m 002= Cable 2m X= By Customized
IP rating	1=IP67(Typical) 2=IP68(By customized)

Pro Range