

TECHNOLOGY

HOLYKELL®

HR2000
LEVEL
• DATASHEET •

- 1. Pressure Measurement 2. Level Measurement 3. Temperature Measurement**
4. Flow Measurement 5. Display & Control Instruments
6. Wireless Monitoring System 7. Velocity Measurement

HR2000

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 $\pm 10\text{mm}$, 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

HR2000 is 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.

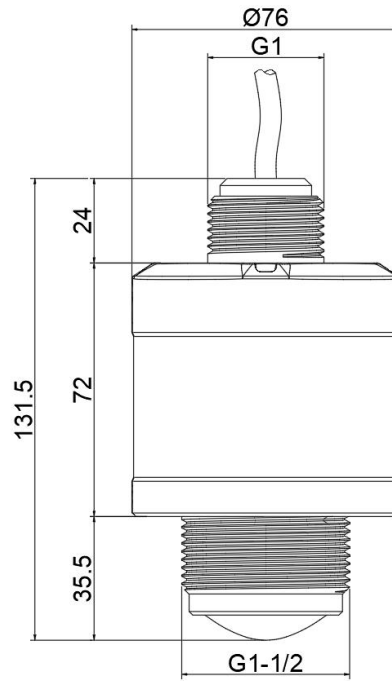
It uses non-contact technology, eliminating the need for physical contact with the measured substance, preventing contamination and minimizing maintenance requirements.

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 | HR2000 | | | | | |
|---|--|---------------------|-------------------------------------|--------|-------------|-------|
| Working pressure | -1~3bar | | | | | |
| Measuring range | 0.2-10m; 0.2-20m For measuring range >10m, it supports 4-20mA+RS485 and regular power supply only | | | | | |
| Measurement accuracy | Distance measuring accuracy: $\pm 10\text{mm}$ (typical), $\pm 2\text{mm}/\pm 5\text{mm}$ (customized) | | | | | |
| Analog 0-5V/0-10V/4-20mA accuracy | 0.25%F.S(typical), 0.1%F.S(customized) | | | | | |
| FOV angle | 8° | | | | | |
| Center frequency | 80GHz | | | | | |
| Communication rate | Default 9600bit/s | | | | | |
| Scanning frequency | 76-81GHz | | | | | |
| Power Supply | 12-30Vdc(Regular type) 3.3-5.5Vdc(Low voltage & low power consumption type) | | | | | |
| Signal output | 12-30Vdc: 0-5V/0-10V/4-20mA+RS485 Modbus RTU 3.3-5.5Vdc: RS485 Modbus RTU only | | | | | |
| Working temperature | -40~85°C | | | | | |
| Power consumption | Regular power supply | | Low voltage & low power consumption | | Low voltage | |
| | Min. | Max. | Min. | Max. | Min. | Max. |
| | 0.72W (12V×0.06A) | 1.2W (30V×0.04A) | 0.067W | 0.065W | 0.5W | 0.65W |
| Product Size | Ø125.5×76mm(for measuring water), Ø131.5×76mm(for measuring oils) | | | | | |
| Protection class | IP67/IP68(3 bar) optional | | | | | |
| Material of wet parts | PVDF(Anti-corrosion type) | | | | | |
| Material of housing | PA6 nylon + Fiberglass | | | | | |

■ Dimensions and Drawing



Unit: mm

■ Wiring

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

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 | |
| 08 | 0.2~20m | 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 H₂O, that's 3m H₂O

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 ₂ O (Min: 0.2 m H ₂ O; Max:10 m H ₂ O) M=m Fuel (Min: 0.2 m fuel; Max:10 m fuel) | | | | | | | | |
| Signal Output | 1=RS485 Modbus RTU+4~20mA 2=RS485 Modbus RTU +0~5V 3=RS485 Modbus RTU+0~10V 4=RS485 Modbus RTU | | | | | | | | |
| Power Supply | S10=12-30Vdc | S56=3.3-5.5Vdc | | | | | | | |
| Accuracy | 4=±10mm(Typical) | 3=±5mm(By customized) | 2=±2mm(By customized) | | | | | | |
| Cable length | 001= Cable 1m | 002= Cable 2m | X= By Customized | | | | | | |
| IP rating | 1=IP67(Typical) | 2=IP68(By customized) | | | | | | | |