

TECHNOLOGY

HOLYKELL®

HR80G

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**

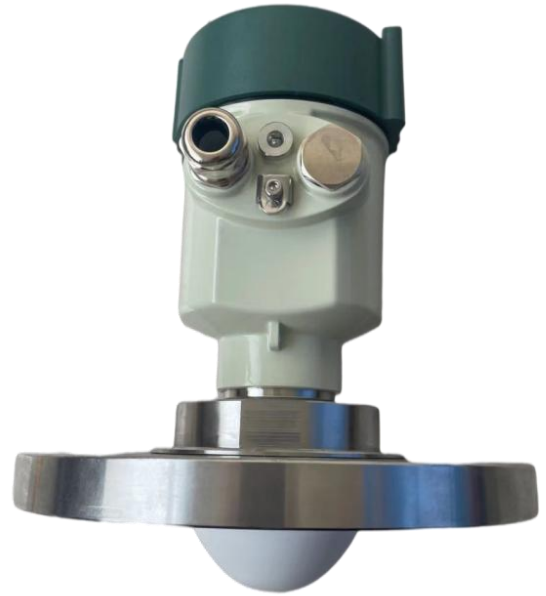
HR80G series

76-81GHz FMCW Radar Level Meters

Profiles

HR80G 76-81 FMCW radar (also called millimeter wave radar) level meters, as it uses a millimeter wave band with a higher frequency than Ku band radar, long-distance imaging and multi-spectral imaging in remote target detection and strong smoke and dust environments, it can detect smaller targets than microwave radar and achieve more precise positioning, it has higher resolution and stronger confidentiality.

It has a maximum measuring range of 120m and measuring accuracy of $\pm 2\text{mm}/\pm 1\text{mm}$ are optional, supporting 4-wire and 2-wire.



Features

- 76GHz-81GHz FM wave radar
- 5GHz ultra-large FM scanning frequency width, wide application
- Support standard HART, RS485/MODBUS bus protocol
- Support host computer setting software, tank side meter, etc. operation modes
- 24 V DC power supply
- Simple installation structure
- Bluetooth function optional

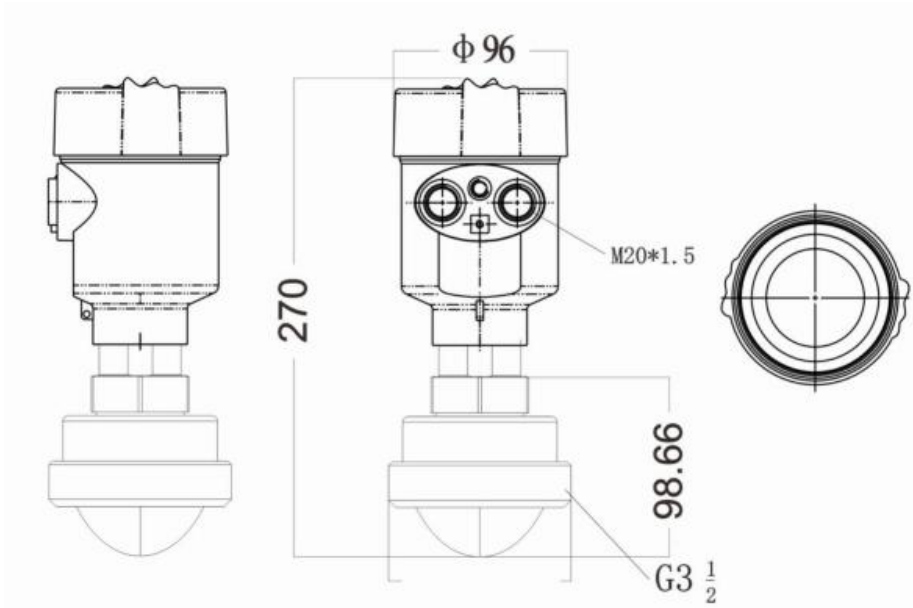
Applications

- The electromagnetic wave emission angle of the product is less than 3° , which is suitable for narrow space or guided wave pipeline measurement;
- It can reach a measurement range of 120m, suitable for the measurement of large storage tanks;
- The measurement blind area is in the range of 7-8CM, suitable for small storage tanks;
- The measurement accuracy is suitable for high-precision measurement;
- It has a wealth of echo processing algorithms and data of various working conditions; it has unique advantages in storage tank applications that challenge other similar products in extremely harsh working conditions such as strong dust, steam, or special process storage tanks with stirring and heating rods.

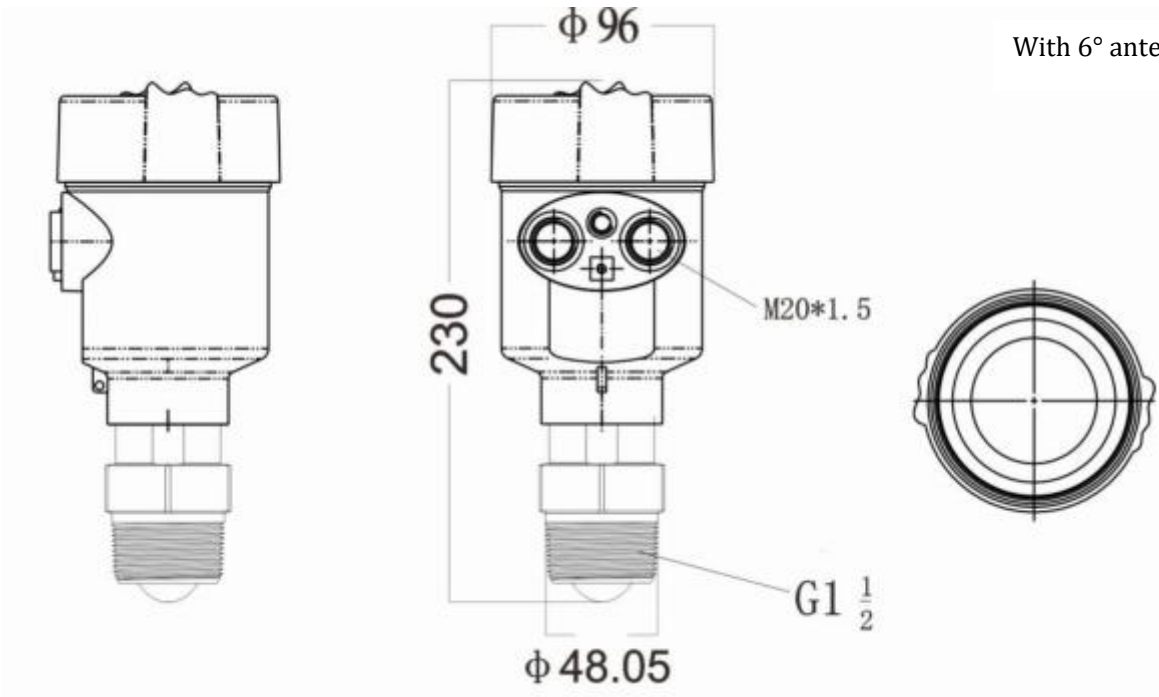
Specifications

| Parameter | HR80G |
|---------------------------------|--|
| Frequency | 76GHz-81GHz, 5GHz FMCW bandwidth |
| Measuring range | 0.3~60m(For solids) 0.08~30m(For liquids) 0.6m~120m (For solids and liquids) |
| Measurement accuracy | ±2mm / ±1mm |
| Beam angle | 3°;6° |
| Dielectric constant range | ≥2 |
| Power supply | 18-28 V DC;220VAC |
| Communication | MODBUS; HART optional |
| Signal output | 4-20mA or RS485 |
| Field operation/ programming | 128 × 64 dot matrix display / 4 buttons;PC software |
| Enclosure | Aluminum alloy, stainless steel |
| Antenna type | Lens antenna/anti-corrosive antenna / flange isolated by quartz |
| Process temperature/Humidity | -40~85°C/≤95%RH |
| Process pressure | -0.1~1.6MPa |
| Product Size | Ø100*270mm |
| Cable entry | M20*1.5 |
| Recommended cables | AWG18 or 0.75mm ² |
| Protection class | IP67 |
| Installation method | Thread or flange |
| Weight | Approx. 2.480Kg/2.995Kg(for reference only, the actual product shall prevail.) |

Dimensions and Drawing



With 3° antenna beamwidth

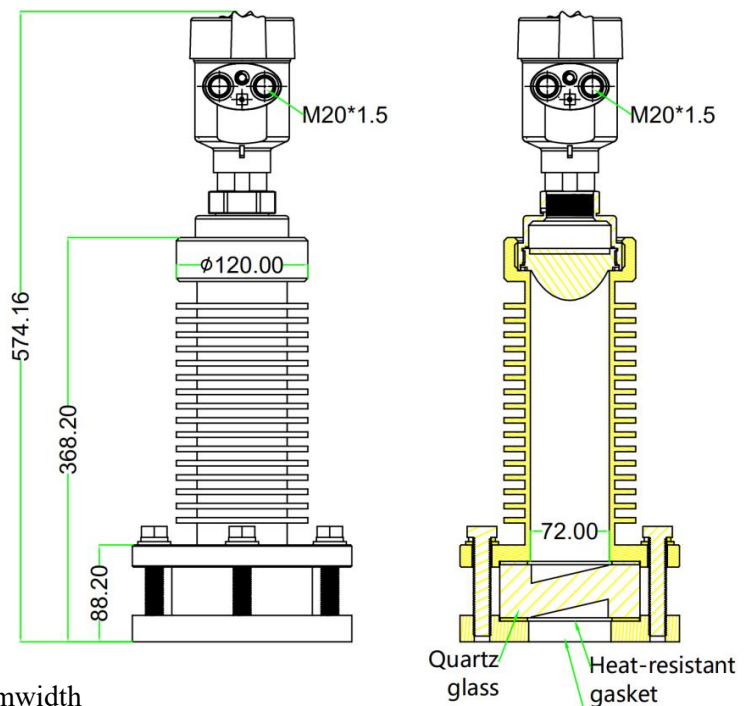


With 6° antenna beamwidth

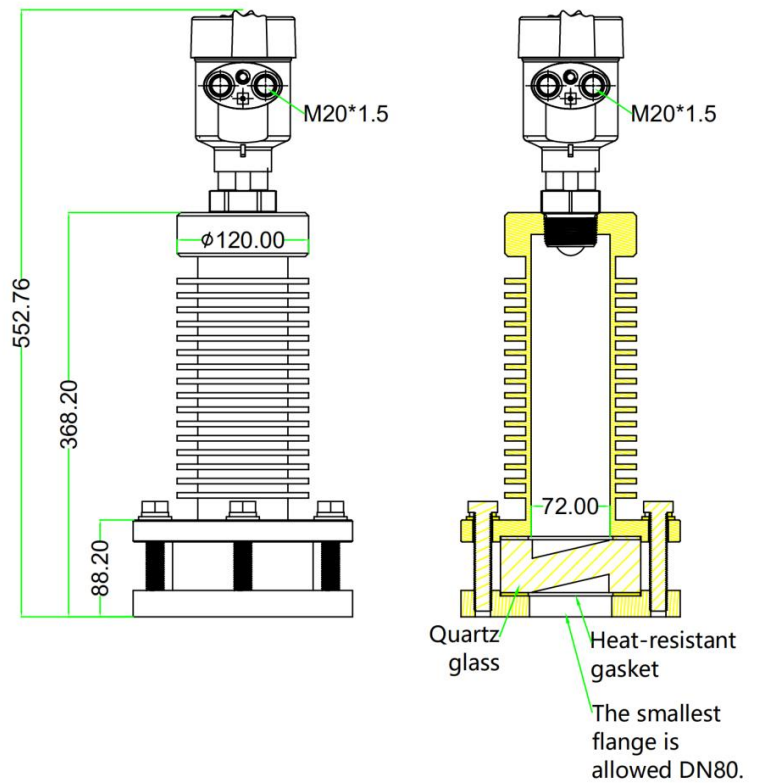
Unit: mm

Dimensions of version with a high temperature flange

With 3° antenna beamwidth



With 6° antenna beamwidth

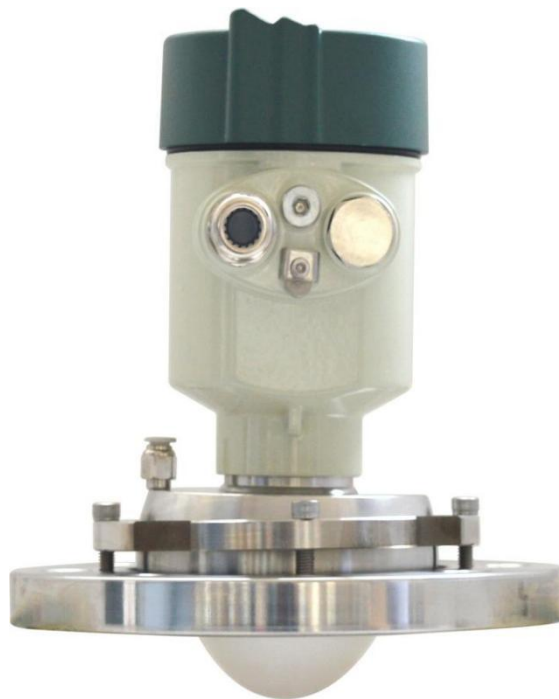


How to Order

| 80G conventional large lens | |
|-----------------------------|---|
| Model | HR80G-A |
| Frequency range | 76~81GHz |
| Application range | Slightly corrosive liquid, stirring, water vapor condensation |
| Measuring range | 120 m |
| Signal output | 4-20mA/HART (two-wire/four-wire) RS485/Modbus |
| Process connection | Flange, thread |
| Medium temperature | -30°C to +80 °C |
| Process pressure | -0.1 to 0.3Mpa |
| Measurement accuracy | ±2mm / ±1mm |
| IP rating | IP67 |
| Bluetooth | Optional function |
| Shell material | Aluminum casting/stainless steel |



| 80G conventional large lens with universal blowing | |
|--|---|
| Model | HR80G-B |
| Frequency range | 76~81GHz |
| Application range | Strong dust, solid, block, powder |
| Measuring range | 120 m |
| Signal output | 4-20mA/HART (two-wire/four-wire) RS485/Modbus |
| Process connection | Universal flange |
| Medium temperature | -40°C to +120 °C |
| Process pressure | -0.1 to 0.6Mpa |
| Measurement accuracy | ±2mm / ±1mm |
| IP rating | IP67 |
| Bluetooth | Optional function |
| Shell material | Aluminum casting/stainless steel |



| 80G conventional small lens | |
|-----------------------------|---|
| Model | HR80G-C |
| Frequency range | 76~81GHz |
| Application range | Slightly corrosive liquid, stirring, condensation |
| Measuring range | 120 m |
| Signal output | 4-20mA/HART (two-wire/four-wire) RS485/Modbus |
| Process connection | Flange, thread |
| Medium temperature | -40°C to +120 °C |
| Process pressure | -0.1 to 0.3Mpa |
| Measurement accuracy | ±2mm / ±1mm |
| IP rating | IP67 |
| Bluetooth | Optional function |
| Shell material | Aluminum casting/stainless steel |



| 80G anti-corrosive large flat lens | |
|------------------------------------|--|
| Model | HR80G-D |
| Frequency range | 76~81GHz |
| Application range | Strong corrosive liquid, stirring, water vapor, condensation |
| Measuring range | 120 m |
| Signal output | 4-20mA/HART (two-wire/four-wire) RS485/Modbus |
| Process connection | Flange, thread |
| Medium temperature | -40°C to +120 °C |
| Process pressure | -0.1 to 0.5Mpa |
| Measurement accuracy | ±2mm / ±1mm |
| IP rating | IP67 |
| Bluetooth | Optional function |
| Shell material | Aluminum casting/stainless steel |



| 80G anti-corrosive large flat lens | |
|------------------------------------|--|
| Model | HR80G-E |
| Frequency range | 76~81GHz |
| Application range | High temperature environment, strong corrosive liquid, stirring, water vapor, condensation |
| Measuring range | 120 m |
| Signal output | 4-20mA/HART (two-wire/four-wire) RS485/Modbus |
| Process connection | Flange, thread |
| Medium temperature | -40°C to +200°C |
| Process pressure | -0.3 to 1.6Mpa |
| Measurement accuracy | ±2mm / ±1mm |
| IP rating | IP67 |
| Bluetooth | Optional function |
| Shell material | Aluminum casting/stainless steel |



| 80G anti-corrosive small flat lens | |
|------------------------------------|--|
| Model | HR80G-F |
| Frequency range | 76~81GHz |
| Application range | strong corrosive liquid, stirring, water vapor, condensation |
| Measuring range | 120 m |
| Signal output | 4-20mA/HART (two-wire/four-wire) RS485/Modbus |
| Process connection | Flange, thread |
| Medium temperature | -40°C to +120 °C |
| Process pressure | -0.1 to 1.6Mpa |
| Measurement accuracy | ±2mm / ±1mm |
| IP rating | IP67 |
| Bluetooth | Optional function |
| Shell material | Aluminum casting/stainless steel |



| 80G anti-corrosive flat lens | |
|------------------------------|--|
| Model | HR80G-G |
| Frequency range | 76~81GHz |
| Application range | Strong corrosive liquid, stirring, water vapor, condensation |
| Measuring range | 120 m |
| Signal output | 4-20mA/HART (two-wire/four-wire) RS485/Modbus |
| Process connection | Flange |
| Medium temperature | -30°C to +80 °C |
| Process pressure | -0.1 to 0.3 Mpa |
| Measurement accuracy | ±1mm |
| IP rating | IP67 |
| Bluetooth | Optional function |
| Shell material | Aluminum casting/stainless steel |



Product Selection Table

Note: Pls advise the following info.: Model No./Measuring range/ Signal output/
Process connection/Housing material/Flange material(if applicable)/Display.

| | Example |
|--|----------------|
| Model No. | |
| 1. HR80G-A 2. HR80G-B 3. HR80G-C 4. HR80G-D 5. HR80G-E 6. HR80G-F 7. HR80G-G | 1 |
| Measuring Range | |
| *** m(max 120m) | 12 |
| Signal Output | |
| 3 4-20 mA+HART 5. RS485 Modbus | 3 |
| Process connection | |
| T. Thread F. Flange Y . Customized | F |
| Housing Material | |
| L. Cast Aluminum (typical) G. 304 Stainless steel S. 316L stainless steel | L |
| Flange Material | |
| G. 304 Stainless steel(typical) S. 316L stainless steel X. Not applicable | G |
| Display | |
| D. Double displays X. Standard display(typical) | X |
| Temperature | |
| A. Normal temperature B. By customized | A |