



Recorder



Flow



Pressure



Temp



Analyzer



Level

Datasheet

Radar Level Transmitter

SUP-RD1000

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Datasheet**Radar Level transmitter
SUP-RD1000**

SUP-RD1000 uses the millimeter wave band with a higher frequency than the Ku-band radar. It has important applications in remote target detection, strong smoke and dust environments, long-distance imaging, multi-spectral imaging, etc., and can detect smaller than microwave radar. target and achieve more precise positioning with higher resolution and greater secrecy.

Applications

- Sewage treatment
- Mining industry
- Paper and Pulp Industry
- Boiler Engineering
- Liquid and solid powder measure
- Acids, bases or other corrosive media

Features

- Extremely narrow beam and penetration
- Adapt to ultra-complex working conditions
- Strong measurement performance
- Non-contact radar, no wear, no pollution.
- High frequency, measurement of solid and low dielectric constant of the best choice

**Radar level transmitter**

Principle

High-frequency microwave pulses issued by the guided wave radar propagate along detection components (steel cable or steel rod), meet the media to be measured, since the dielectric constant of the material, cause reflections, a portion of the pulse energy is reflected back. Transmit pulse and the reflected pulse is proportional to the distance and the time interval measured media.

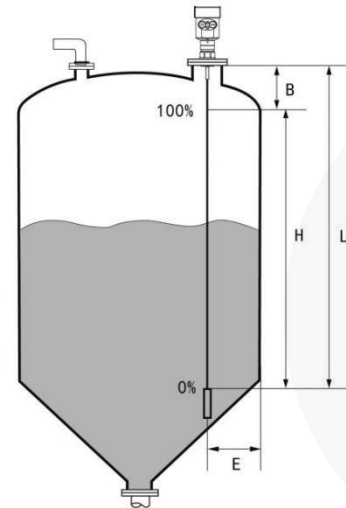
Explanation:

H--- Measuring range

L---Empty distance

B---The top of the blind

E---The minimum distance from the probe to the tank wall



--Blind spot is the minimum distance between the top of the highest material surface materials and measurement reference point.

--The bottom of the blind refers to a distance near the very bottom of the cable can not be accurately measured.

--Between the top and bottom of the blind is blind effective measure distances.

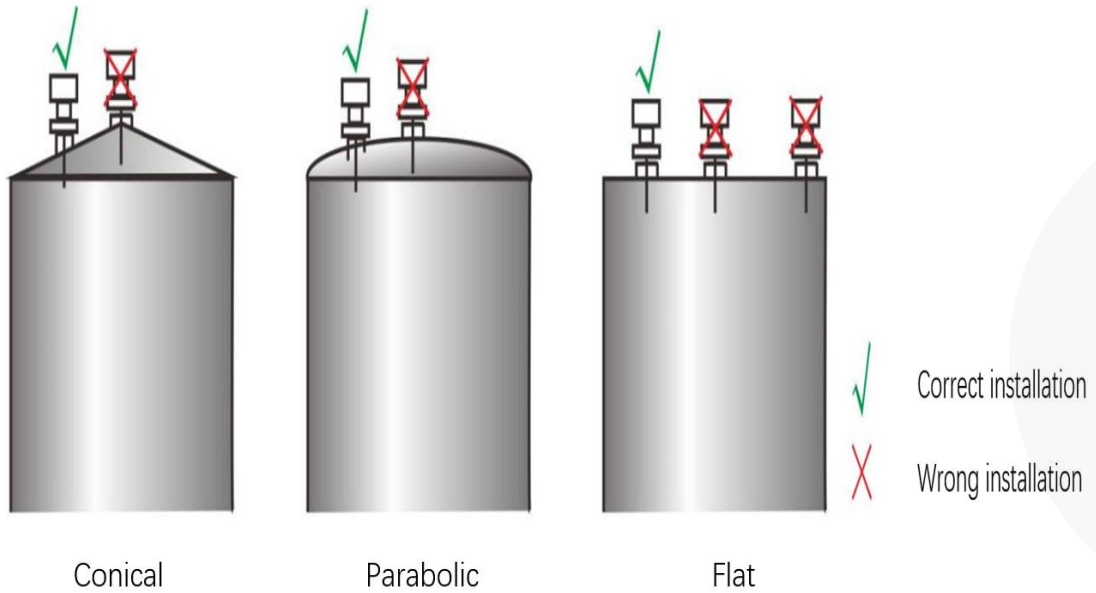
Note:

In order to ensure the accuracy of level measurement, the material should be located between the top and bottom of the blind the blind.

| Parameters | |
|----------------------|-------------------------------------|
| Measure range | 5m,10m,15m,20m,30m |
| Humidity | 0%-95%RH |
| Ambient temperature | -20-70°C |
| Storage temperature | -40-60°C |
| Accuracy | 0.1%FS |
| Ingress protection | IP66 |
| Display | 128*64 LCD |
| Signal Output | 4-20mA RS485/Modbus or HART |
| Power supply | DC 24V (22V-30V) |
| Electrical interface | M20*1.5(F) |
| Migration | ±9.9m |
| Weight | 1.2KG |
| Size | Diameter Φ 96mm× Height 221 mm |
| Mounting hole thread | G2 |

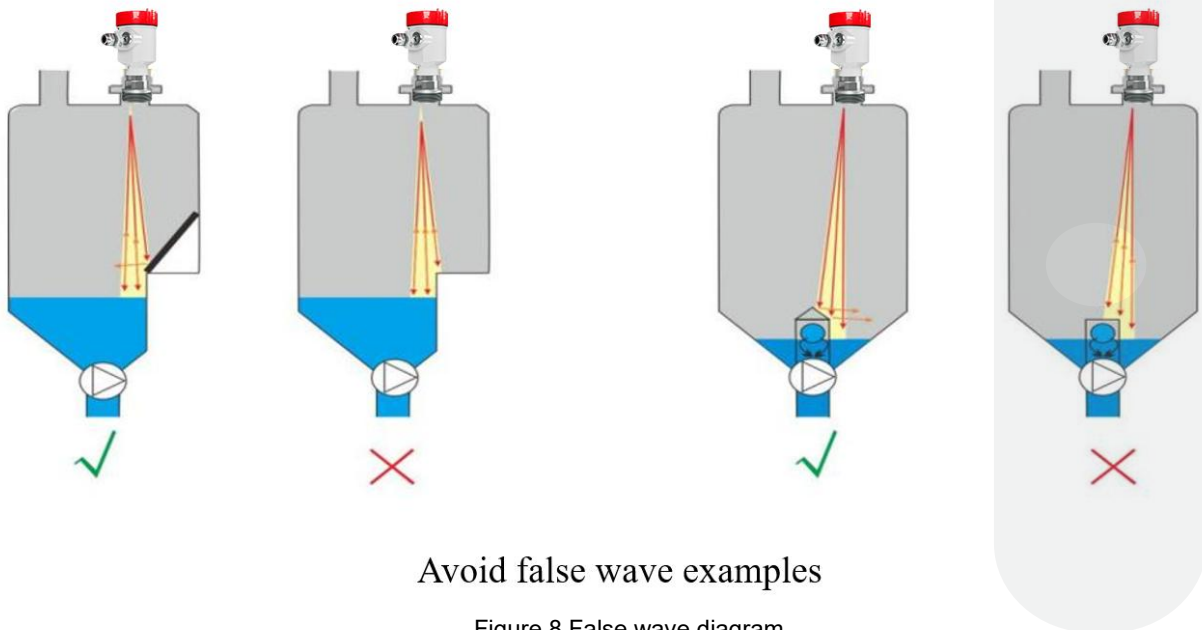
Installation

Avoid installing the radar in a central location or close to the edge of the container, otherwise it is likely to produce false readings.



Radar installation location diagram

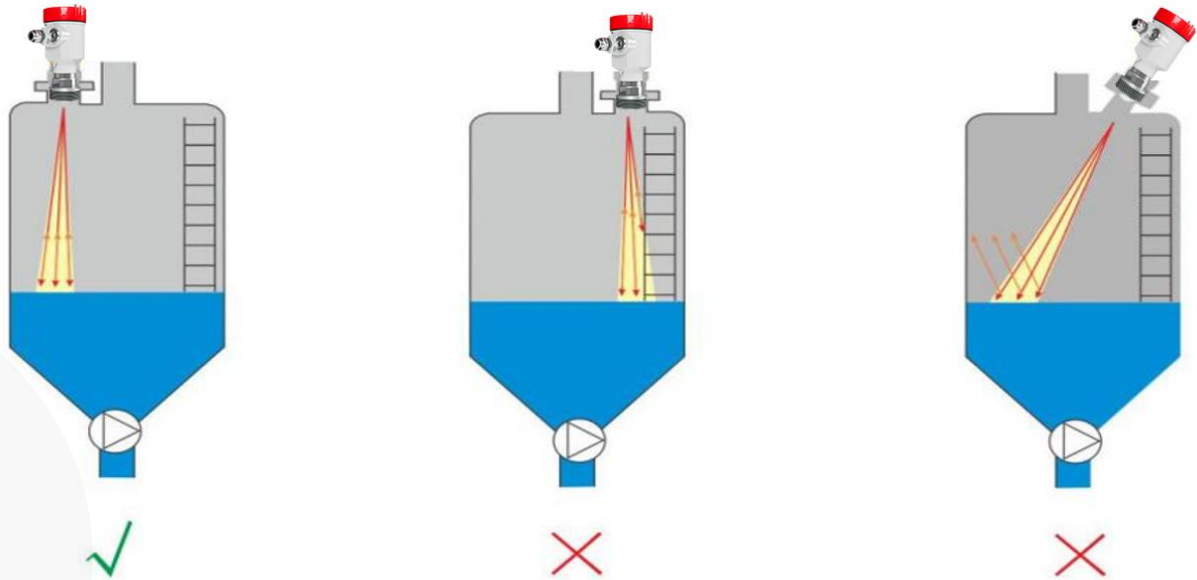
- Avoid false wave diagram



Avoid false wave examples

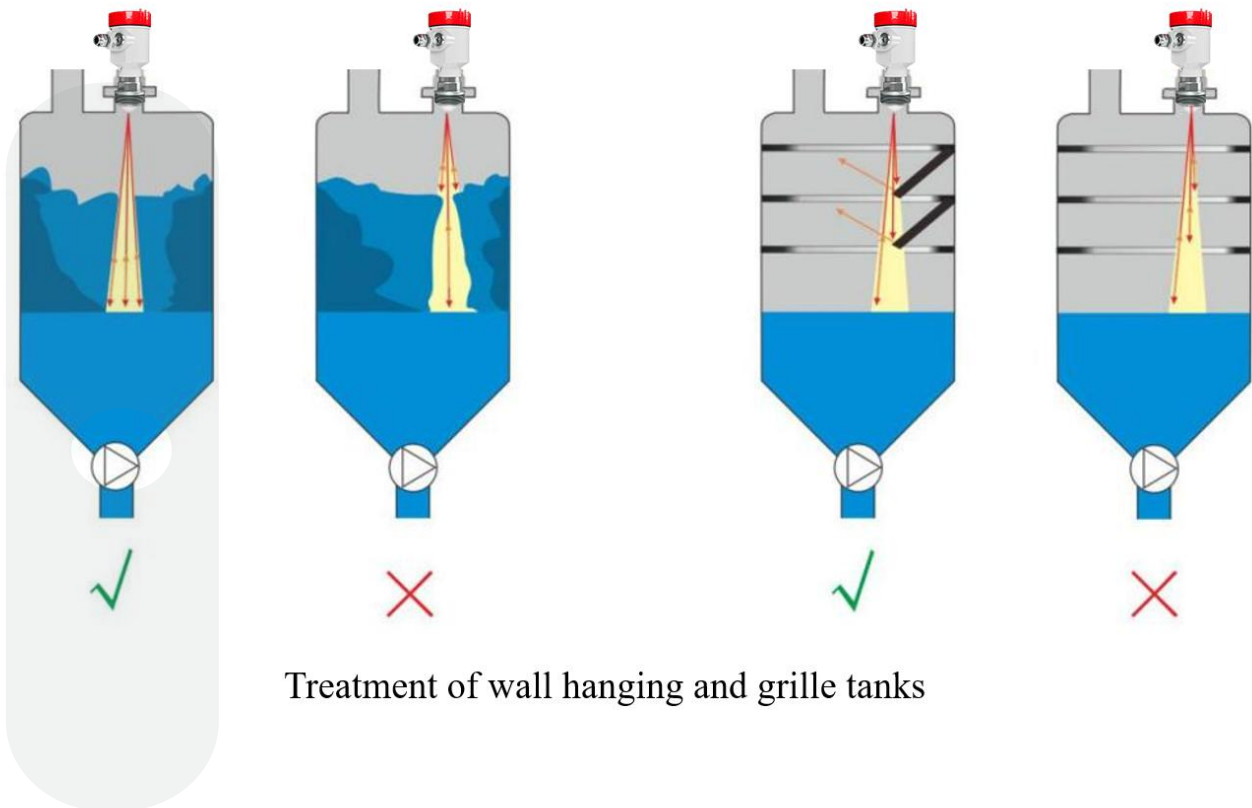
Figure 8 False wave diagram

- Treatment of stairs and grille tanks

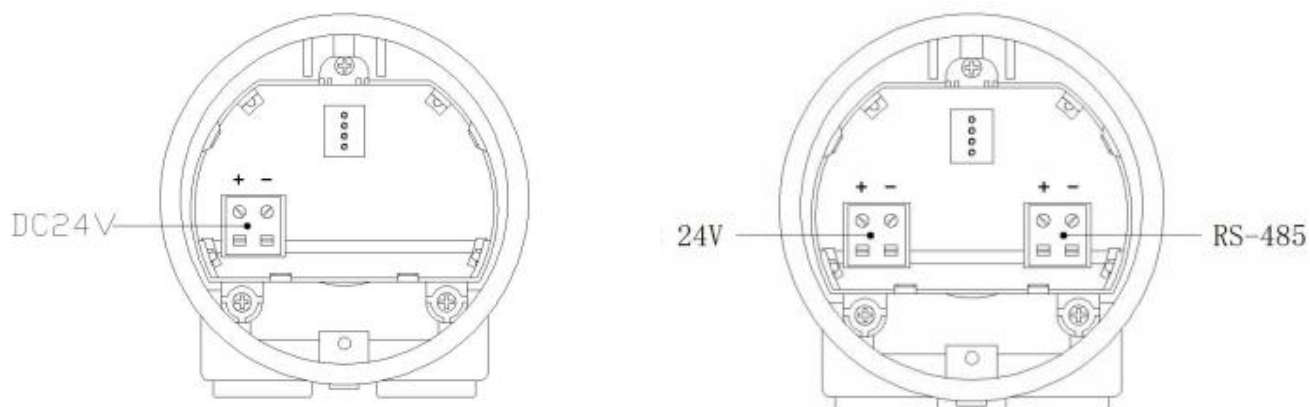


Treatment of stairs and grille tanks

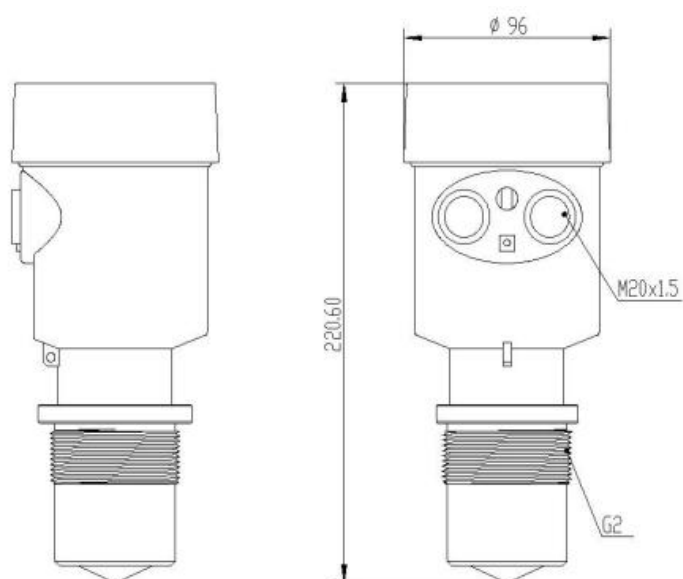
- Treatment of wall hanging and grille tanks



Treatment of wall hanging and grille tanks

Wiring

Connect the power cord to the DC 24V terminal of the meter
Pay attention to the positive and negative poles, do not reverse

Dimension

Ordering code

| SUP-RD1000-MM1-RT1-DT1-O0-D0-V1-I1-P1-T1 | | | | | | | | | | Description | |
|--|-----|-----|-----|----|----|----|---|----|----|-------------|-------------------|
| SUP-RD1000 | - | - | - | - | - | - | - | - | - | - | |
| Measuring medium | MM1 | | | | | | | | | | Water |
| | MM2 | | | | | | | | | | Liquid |
| | MM3 | | | | | | | | | | Solid |
| Measuring range | | RT1 | | | | | | | | | 5m |
| | | RT2 | | | | | | | | | 10m |
| | | RT3 | | | | | | | | | 15m |
| | | RT4 | | | | | | | | | 20m |
| | | RT5 | | | | | | | | | 30m |
| Display type | | | DT1 | | | | | | | | With display |
| Output | | | | O0 | | | | | | | Non output |
| | | | | O1 | | | | | | | (4~20)mA/two-wire |
| Communication | | | | | D0 | | | | | | Non communication |
| | | | | | D2 | | | | | | RS485 |
| | | | | | D3 | | | | | | HART |
| Power supply | | | | | | V1 | | | | | 24VDC (22~30V) |
| Installation | | | | | | | | I1 | | | G3/4Thread |
| | | | | | | | | I2 | | | G2Thread |
| | | | | | | | | I3 | | | M68*2Thread |
| | | | | | | | | I4 | | | G3.5Thread |
| | | | | | | | | I5 | | | DN32 Flange |
| | | | | | | | | I6 | | | DN50 Flange |
| | | | | | | | | I7 | | | DN80 Flange |
| | | | | | | | | I8 | | | DN100 Flange |
| | | | | | | | | I9 | | | DN150 Flange |
| Diameter pressure | | | | | | | | | P1 | | (-0.3~1)MPa |
| | | | | | | | | | P2 | | (1~4)MPa |
| Temperature resistance | | | | | | | | | | T1 | (-30~80)°C |
| | | | | | | | | | | T2 | (-100~-30)°C |
| | | | | | | | | | | T3 | (80~150)°C |

Note:

Measuring pool/liquid medium, the range is 5m~30m, and the accuracy is 0.1%FS.

Measure solid medium, the range is 10m~20m, and the accuracy is 0.1%FS.

The range is 5m~30m, and the blind area is 200mm.

The 20-meter range is suitable for simple material levels, and the 10-meter range is suitable for complex material levels

Default 2-wire system (4~20) mA

Only one of transmission output and communication output can be selected

| | | |
|--------------|---|--|
| G3/4Thread | Measure water or liquid below 10 meters | |
| G2Thread | Measure water or liquid below 15 meters | |
| M68*2Thread | Measure water or liquid below 20 meters, material level below 10 meters | |
| G3.5Thread | Measure water or liquid below 45 meters, material level below 20 meters | |
| DN32 Flange | Measure water or liquid below 10 meters | The default selection is DN50, the default flange material is 304, and 316, PP and PTFE can be customized. |
| DN50 Flange | Measure water or liquid below 20 meters, material level below 10 meters | |
| DN80 Flange | Measure water or liquid below 30 meters, material level below 20 meters | |
| DN100 Flange | Measure water or liquid below 30 meters, material level below 20 meters | |
| DN150 Flange | Measure water or liquid below 30 meters, material level below 20 meters | |