

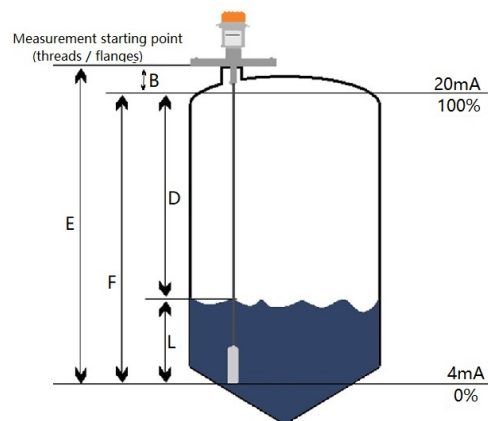
Guided Wave Radar JCGWR-301RD

1. Overview:

Guided wave radar is a measuring instrument that operates on the principle of time travel, and radar waves travel at the speed of light. The operating time can be converted into a level signal by electronic components. The working probe emits high-frequency pulses and propagates along the cable probe. When the pulses meet the surface of the material, they are reflected, which are processed by the electronic information processing unit of the instrument and converted into level signals.

Input: The reflected pulse signal is transmitted to the electronic information processing unit of the instrument through the cable, and the microprocessor processes the signal to identify the echo generated by the microwave pulse on the surface of the material; the correct echo signal identification is completed by the intelligent software, and the distance from the surface of the material is completed. The distance D is proportional to the time travel T of the pulse: $D=C \times T/2$, where C is the speed of light; the distance E of the empty tank is known, and the level L is:
 $L=W-D$.

Output: Set by inputting the empty pipe height E (= zero point), the full tank height F (= full tank volume) and some application parameters, the application parameters will make the instrument automatically adapt to the measurement environment; corresponding to 4 ~ 20mA output.



Datum plane for measurement: the bottom surface of the screw thread or the sealing surface of the flange.

Note: When using the radar level meter, make sure that the highest material level cannot enter

the measurement blind zone (the area shown in B in the figure).

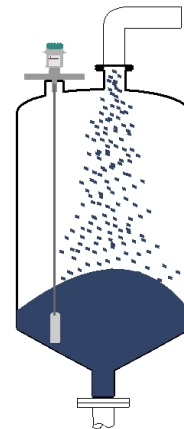
2. Installation

2.1 Installation guide

The following installation guidelines apply to the measurement of solid particles and liquid media with the cable probe and rod probe, while the coaxial tube probe is only suitable for the measurement of liquid objects.

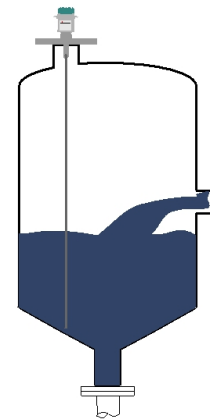
- The picture on the right is the installation diagram of the cable radar, which is mainly used for the measurement of liquid and solid particles.

- Keep as far away from the outlet and inlet as possible.
- For metal tanks and plastic tanks, it is not allowed to touch the tank wall during the entire measurement process and within the measurement range; if it is a metal tank, the level instrument cannot be installed in the center of the tank.
- The meter is suitable for installation at a quarter of the diameter of the silo
- The bottom of the probe is about 30mm from the bottom of the tank
- The minimum distance from the cable probe and rod probe to the tank wall is not less than 30mm



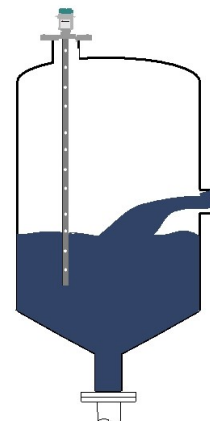
- The picture on the right is the installation diagram of the rod radar, which is mainly used for the measurement of liquid level.

- Can measure any medium with a dielectric constant greater than or equal to 1.6
- It is generally used to measure the medium with viscosity less than or equal to 500cst and is not easy to produce adhesion.
- The radar has a strong suppression capability for steam and foam, and the measurement is not affected by them.



- The picture on the right is the installation diagram of the coaxial rod radar, which is mainly used for the measurement of low DK liquid.

- Can measure any medium with a dielectric constant greater than or equal to 1.6

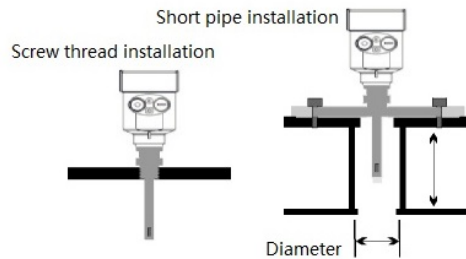


- It is generally used to measure the medium with viscosity less than or equal to 500cst and is not easy to produce adhesion.
- The radar has a strong suppression capability for steam and foam, and the measurement is not affected by them.
- The maximum measuring distance of the coaxial radar is 6 meters

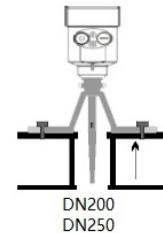
2.2 Installation Method

- Reasonable installation can ensure long-term effective measurement of the instrument.

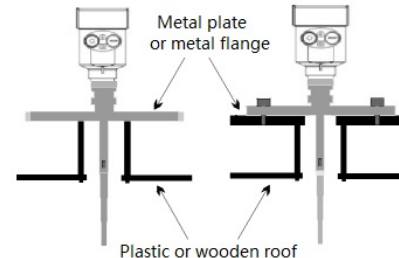
- The instrument can be connected by thread, and the length of the thread should not exceed 150mm. It can also be installed on a short pipe; the diameter of the short pipe to be installed From 2" to 6", a short tube with a height of $\leq 150\text{mm}$ should be used. If it is installed on a longer short tube, the cable probe should be fixed at the bottom or a centering bracket should be used to avoid contact between the cable probe and the end of the short tube.



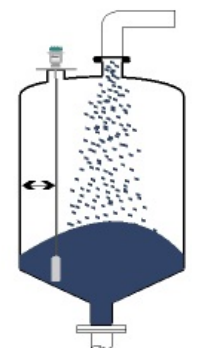
- Installation of DN200 or DN250 in short pipe
- When the instrument needs to be installed in a short tube with a diameter greater than 200mm, the inner wall of the short tube will generate echoes, which will cause measurement errors when the dielectric constant of the medium is low. Therefore, for a short tube with a diameter of 200mm or 250mm, you need to choose a Special flange with horn connection.



- Installation on plastic pipes
- Whether it is a cable or rod type, the process connection surface should be metal if the meter is to work properly. When the instrument is installed on a plastic tank, and the top is also made of plastic or other non-conductive materials, the instrument must be equipped with a metal flange, and when it is installed with a thread, a metal plate must be used.



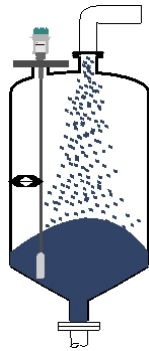
- The distance between the meter probe and the tank wall.
- The distance between the instrument probe and the tank wall is



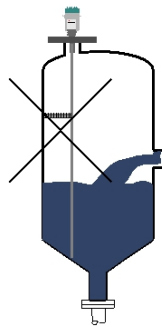
recommended to be between one sixth and one quarter of the diameter of the tank (at least greater than 300mm, and at least 400mm for concrete tanks). When selecting the probe length, pay attention to the distance between the bottom of the probe and the bottom of the tank About more than 30mm.

Precautions:

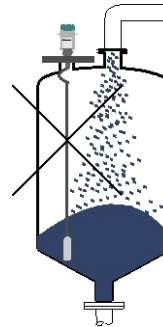
- The radar level meter cannot be installed at the discharge port (Figure 1)
- Other devices in the tank should be prevented from contacting the microwave conducting parts (Figure 2)
- It should be avoided that the guide wave cable comes into contact with the installation stub (Figure 3)



(Figure 1)



(Figure 2)



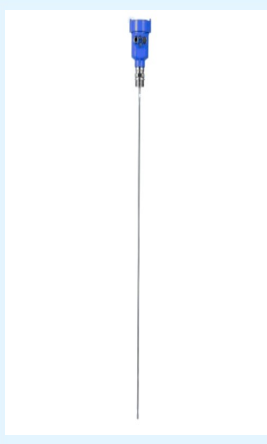
(Figure 3)

Model Selection: TECHNICAL SPECIFICATIONS


Item No.: RS-RD301

	Application	Liquid,solid,Solid particles
	Measuring Range	20 meters
	Process Connection	Screw thread or Flange
	Medium Temp.	-40°C~ 250°C
	Process Pressure	-0.1 ~ 2.0MPa
	Accuracy	±1mm
	Anti-explosion/Safety grade	Ex d ia II CT6 Gb/IP67
	Signal output	4~20mA two wire/RS485modbus/433M wireless transmission


Item No.: RS-RD302

	Application	Liquid,solid,Solid particles
	Measuring Range	6 meters
	Process Connection	Screw thread or Flange
	Medium Temp.	-40°C~ 250°C
	Process Pressure	-0.1 ~ 2.5MPa
	Accuracy	±1mm
	Anti-explosion/Safety grade	Ex d ia II CT6 Gb/IP67
	Signal output	4~20mA two wire/RS485modbus/433M wireless transmission

Item No.: RS-RD303

	Application	Solid particles or powders with low dielectric constant
	Measuring Range	6 meters
	Process Connection	Flange
	Medium Temp.	-40°C~ 250°C
	Process Pressure	-0.1 ~ 2.5MPa
	Accuracy	±3mm
	Anti-explosion/Safety grade	Ex d ia II CT6 Gb/IP67
	Signal output	4~20mA two wire/RS485modbus/433M wireless transmission

Item No.: RS-RD304

	Application	liquid with low dielectric constant
	Measuring Range	0.08~30 meters
	Process Connection	Flange
	Medium Temp.	-40°C~ 250°C
	Process Pressure	-0.1 ~ 2.5MPa
	Accuracy	±3mm
	Anti-explosion/Safety grade	Ex d ia II CT6 Gb/IP67
	Signal output	4~20mA two wire/RS485modbus/433M wireless transmission

Outer Dimension:

