ROCKHILL

Quick Setup Instruction

ROHEVEL-PRT Series

Pulse radar for liquid and solid level measurement
4~20mA/HART-Two wire

0802-0005-01MIN17040610

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1.Warning

1.1 Electrostatic protection methods

The instrument contains component that is easily to be damaged by static.Hence, the suitable electrostatic protection is required when you disassemble or operate the inside circuit board or components. Please operate in following way:
(1) Cut off the power.
(2) Wear the antistatic ring or take other reliable way to make the part grounded when operate the circuit and component.
(3) The printed circuit board must be put in the conductive bag during deliver or store.You can take it out from the conductive bag when it's to be installed. The dismantling PCB should be put in electrostatic protection container immediately.

1.2 Transport

The instrument should be protected by cartoon or wooden package during transport. The handling must be carried out carefully. The instrument must be stored under standard environment where is dry, no machinery vibration, no dust and no corrosive media.

1.3 Check completeness

When receiving the package you must check the completeness or damage. Please contact our company or local agent once there is mistake or damage.

1.4 Instrument configuration

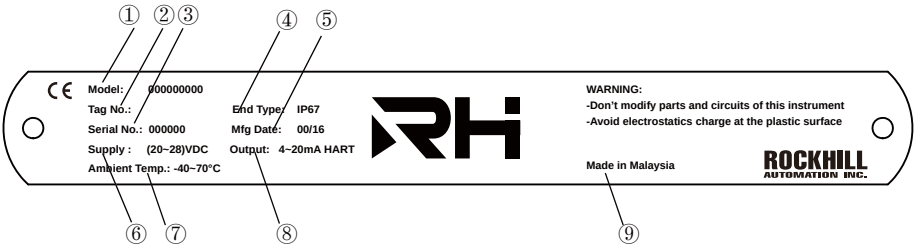
(1) Follow the instruction of the manual
(2) Have the instrument grounded
(3) Make sure no water in the conduit after cable connection.
(4) Tighten the instrument cover after configuration

1.5 Package

The package is recyclable. Please dispose the package through the specialized recycling company and deliver the electronic unit to related specialized company when it's scraped.

0802-0005-01MIN17040610

2.Product description



Nameplate description

① Instrument model
② Instrument tag number
③ Serial number
④ Housing protect level
⑤ Date of manufacturer
⑥ Voltage supply
⑦ Ambient temperature
⑧ Output signal
⑨ Country of origin

0802-0005-01MIN17040610

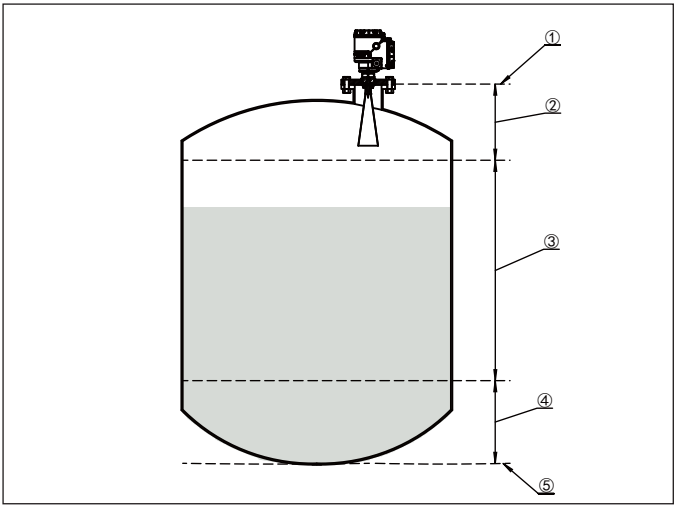
3. Mounting instruction

3.1 General mounting rules

•Keep the antenna away from the inner vessel wall 200mm at least. The ideal mounting position is at halg vessel radius.
•The antenna shoule protude the mounting nozzle 10mm into the vessel.
•Max. level doesn't enter the measuring dead zone.
•Keep the antenna away from the liquid or solid entrance.
•Keep the antenna vertical to liquid surface.
•For hazardous environment installation keep in mind that the instrument must be grounded.

In vessel with conical bottom it can be advantageous to mount the transmitter in the center of the vessel because the transmitter can measure down to the lowest point of the bottom. But it may not be possible to measure down to the lower dead zone.

Measuring range

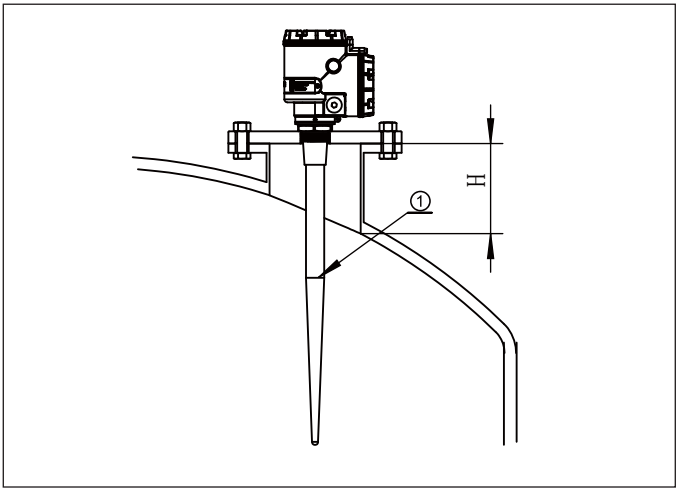


① Upper reference point
② Upper dead zone
③ Effective measuring range
④ Lower dead zone
⑤ Lower reference point
Note:
•The measuring base level is the thread sealing level or lower flange end surface.
•When the liquid(solid) level enter the dead zone the instrument can't measure level effectively.

0802-0005-01MIN17040610

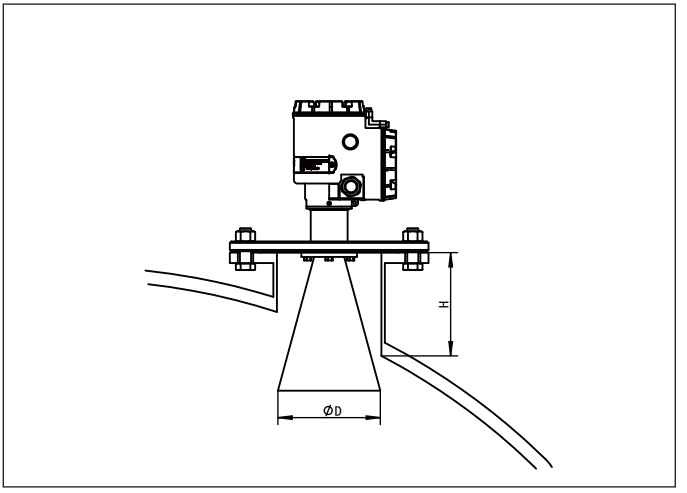
3.2 Mounting instruction

6G rod antenna mounting



① radar pulse source
The radar pulse source shoule protrude into the vessel.

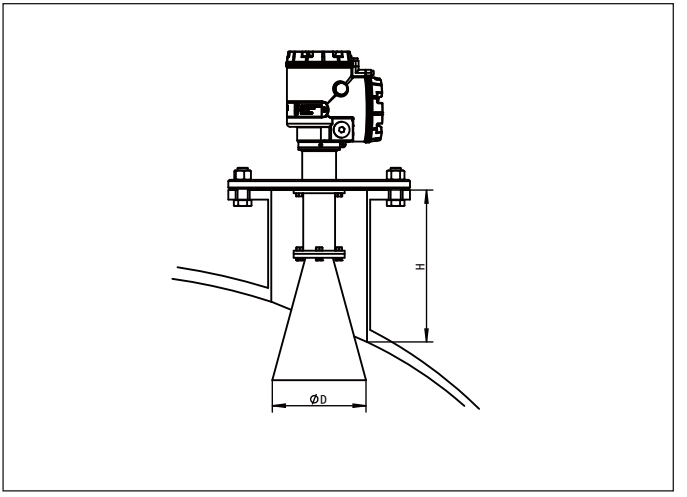
6G horn antenna mounting



You can chose suitable dimension for horn antenna corresponding to the inner diamater of mounting nozzle.

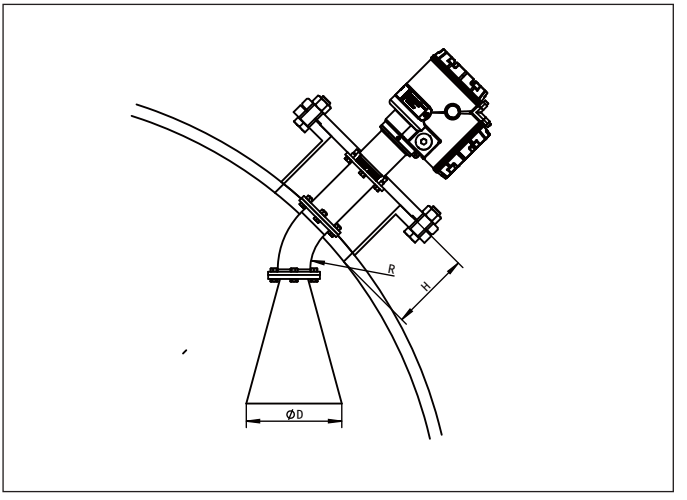
0802-0005-01MIN17040610

6G extended horn antenna mounting



If the moungint nozzle is long and sensor antenna can't extrude the nozzle you can extend the antenna to make it protude the nozzle about 1cm into the vessel.

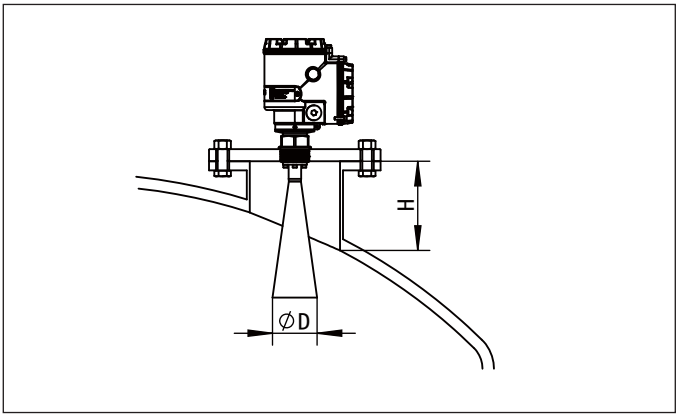
6G extended bending horn antenna mounting



For the mounting nozzle which is not vertical to medium surface you can extend and bend the antenna to make it vertical to medium surface.

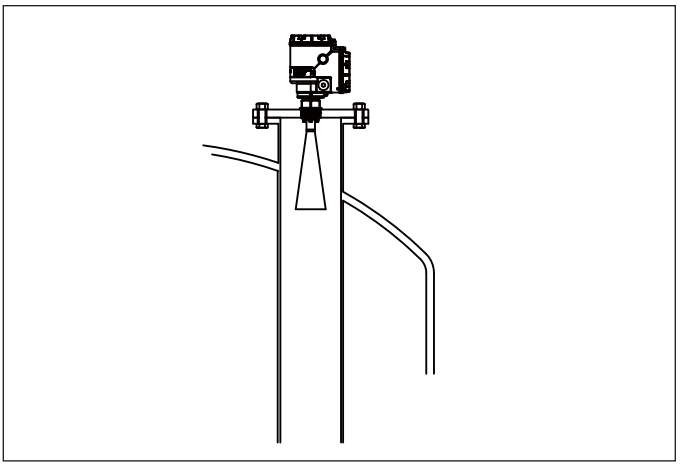
0802-0005-01MIN17040610

26G horn antenna mounting



You can chose suitable dimension for horn antenna corresponding to the inner diameter of mounting nozzle.

26G guided wave tube mounting



For the conditions with influence of vessel installation and turbulence you can mount the sensor by guided wave tube. You should choose suitable dimension for horn antenna corresponding to inner diameter of guided wave tube.

0802-0005-01MIN17040610

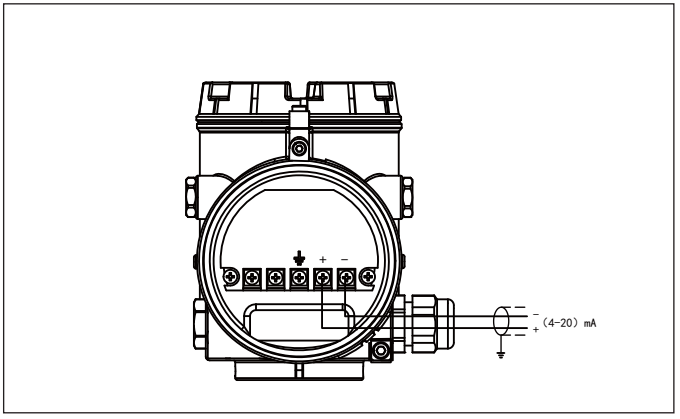
4. Connecting to power supply

4.1 Power supply connection

(1) Unscrew the housing cover
(2) Loosen compression nut of the cable entry gland
(3) Remove approximate 15 cm of the cable mantle, strip approximate 1.5 cmcm of insulation from the ends of the individual wires
(4) Insert the cable into the transmitter through the cable entry
(5) Insert the wire ends into the terminals according to the wiring plan

4.2 Wiring plan

4~20mA , two wires



0802-0005-01MIN17040610

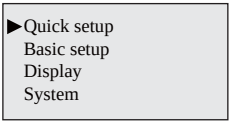
5.Display and adjustment module setup

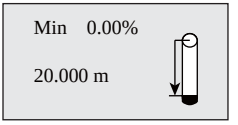
Install display and adjustment module as following instruction

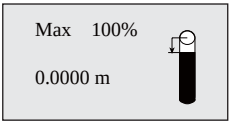
(1) Unscrew the housing cover
(2) Place the display and adjustment module in the target position
(3) Screw housing cover

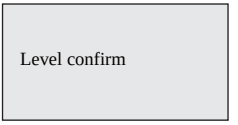
6.Parameter adjustment-quick setup

The instrument can work probably after finishing “Quick setup” for most of the field conditions.
The quick setup contains min. adjustment, max. adjustment and current level adjustment. You can press “OK”on the main menu then the display shows as follow.
Select “Quick setup” and enter the next menu.







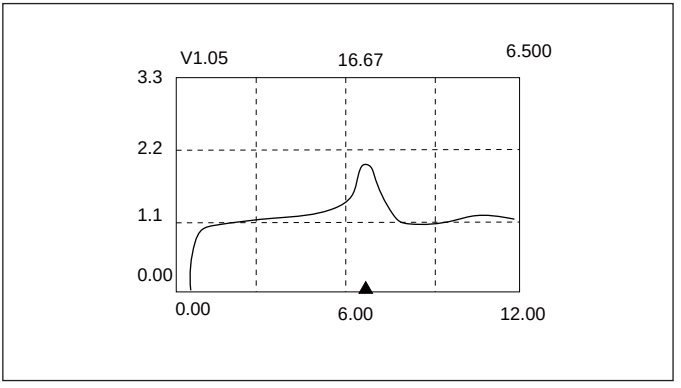


0802-0005-01MIN17040610

(1) Min. level
Distance from the surface of instrument flange (or end face of thread) to the surface of material for the empty vessel.

(2) Max. level
Distance from the surface of instrument flange (or end face of thread) to the surface of material for the full vessel.

(3) Level confirm （Echo curve）
Select “echo curve” and press “OK”. You can observe echo curve.
Press “OK” on current menu to enter next sub menu.
Echo curve is displayed as follows.



Select the targeting function and push【OK】to enter the selected function.
- X Zoom in
- Y Zoom in
- No Zoom in
- Set display range
- Modify fake wave
- Min. Dead zone
- Max. Dead zone
- Threshold value

All the first four functions do not influence the measured distance value. With them you can observe the echo wave more easily. The last four functions have effect on distinguishing of echo.

Modify false echo: this function will create the false echo storage, so the transmitter will not count the echo covered by false echo storage.

Min Dead zone: the transmitter will not count the echo above the max dead zone.

0802-0005-01MIN17040610

Max Dead zone: the transmitter will not count the echo bellow the max dead zone.

Threshold value: the transmitter will not count the echo of the signal intensity that below the threshold value.

(4) Set up false echo
The internal vessel wall and high socket may cause interfering reflections and can influence the measurement. If the measured distance is far from actual distance between the transmitter and material level the probable reason is that the transmitter detects the interfering reflections. You need do some more adjustment to ensure the interfering reflections are no longer taken in to account for the level measurement.

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