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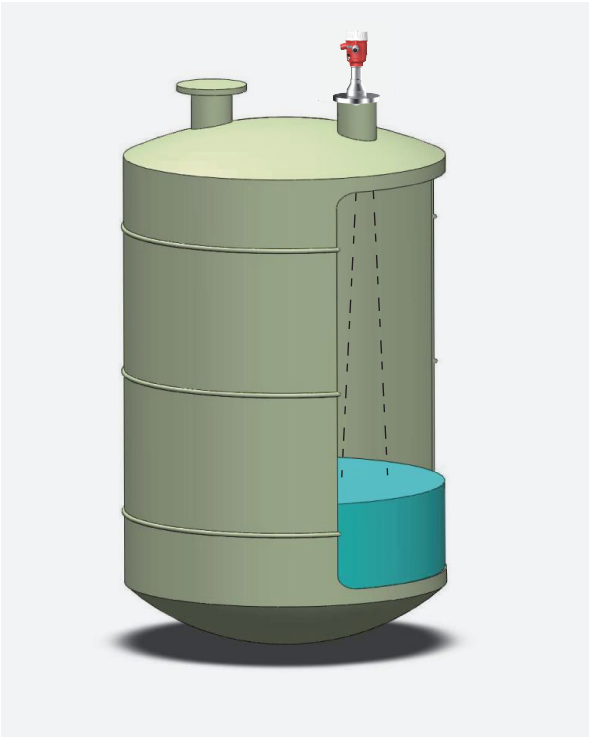
Measuring Principle



Radar level meter is a wireless wave ranging system based on the principle of time travel. By transmitting a low-power microwave (radio wave with a frequency of 26GHz) pulse of less than 1mW through an antenna, this pulse propagates in space at the speed of light. The microwave pulse signal encounters the surface of the tested medium, and some of its energy is reflected back by the surface of the medium and received by the antenna. The time interval between the transmission and reception of microwave pulse signals is directly proportional to the distance from the antenna to the surface of the tested medium, and thus the distance from the antenna to the surface of the tested medium can be calculated.

Product Advantages

- The dual CPU system radar level meter adopts a design system consistent with international first tier brands, greatly improving the hardware processing ability of the product, thereby improving the measurement performance, intelligence level, and product reliability of the instrument.
- The instrument adopts patented equivalent sampling pulse ranging technology, which not only improves the resolution and sensitivity of the signal, but also reduces the beam emission energy, and is harmless to humans.It can be installed in various metal and non-metallic containers or pipelines, with sensitive measurement and fast refresh speed.
- The instrument LCD display debugging unit is a 128 * 64 graphics dot matrix LCD, which supports complex operations such as full Chinese menu, waveform display, and modification of false echoes. Reduce the difficulty of on-site instrument operation and maintenance workload.
- Not affected by pressure changes, vacuum, temperature changes, inert gases, smoke, steam, and other environmental factors, the measurement results are stable and reliable. Customization of instrument functions and sensors can be carried out based on the operational characteristics of domestic customer industries and on-site conditions.
- The LCD display unit can be connected to the outside for 25 meters, forming a display operation unit next to the tank. Reduce the risk and labor intensity of daily inspection work for instruments in high-risk areas such as large tanks, high temperature, high pressure, and toxicity.
- The waveform display function is a radar specific Hart communicator. By using the radar specific Hart communicator, it is possible to directly observe the radar waveform in the central control room and perform debugging, greatly reducing the danger and labor intensity of on-site debugging.

LLMW1152 Radar Solid Level Meter With Parabolic Antenna

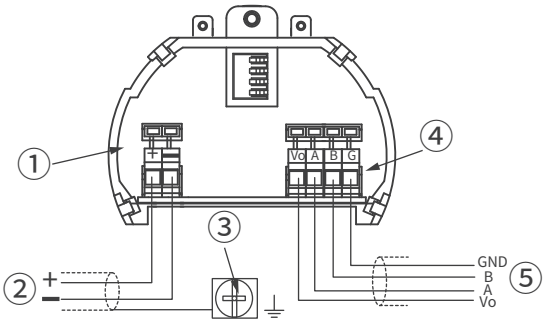
Application	Measurement of block, powder and particle solids
Measuring Range	70m
Antenna Form/material	Horn/Parabolic antenna/Stainless steel 316L
Contact Medium Material	Stainless steel 316L
Process Connection	Flange connection
Process Temperature	-60°C…+1000°C
Process Pressure	-1…3bar
Accuracy	±3mm
Resolution Ratio	1mm
Response Time	＜2s
Frequency Range	26GHz
Signal Output	4…20mA/HART/RS485
Display Debugging	LCD、Tank side monitor
Electrical Connection	M20*1.5、1/2 NPT (cable diameter 6~12mm)
Ingress Protection	IP67
ATEX	Ex ia IIC T2/T6 Ga Ex db ia [ia Ga] IIC T6/T2 Gb

Specification

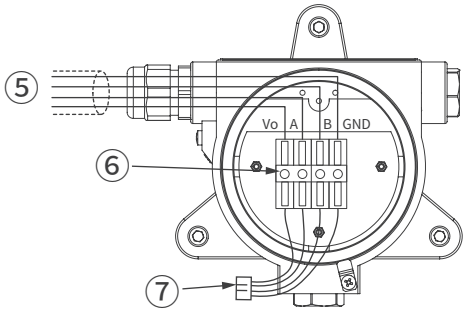
The actual measurement distance is affected by on-site measurement and working conditions. The actual measurement range of the instrument depends on antenna size, medium reflectivity, instrument installation location, and possible interference reflections. ± 2mm is the instrument laboratory accuracy under standard

(4) Remote display unit

24V Single compartment two-wire passive tank side wiring diagram



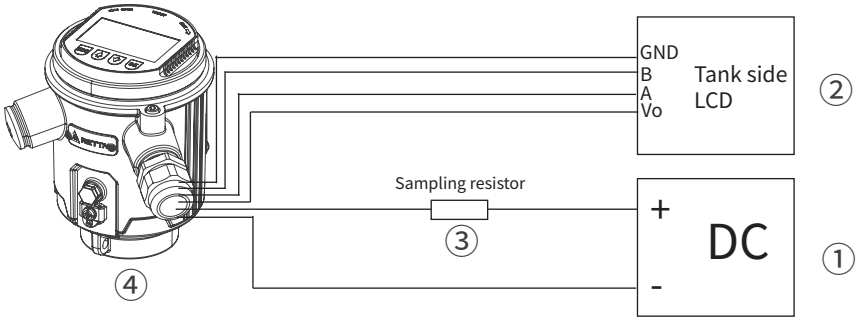
Host



Tank Side

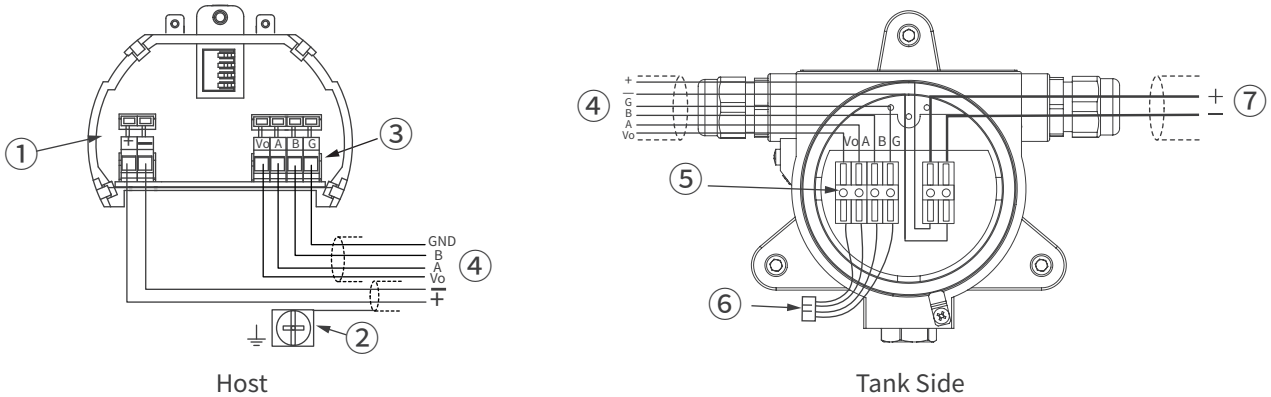
① Radar electronic unit
② 24V Power supply line
③ Grounding screw inside the case
④ 485 Signal wiring terminal
⑤ Tank side signal line (4 core)
⑥ Tank side wiring terminal
⑦ LCD line (Connect to LCD)

24V Single compartment two-wire system Modbus output



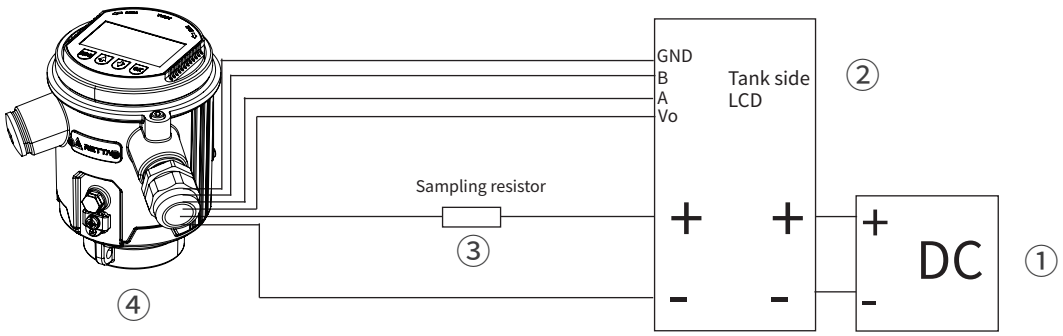
① 24V Power supply line
② Tank side LCD unit
③ HART Communication impedance (⩾250R), pay attention to the max load
④ Radar level meter

24V Single compartment two-wire positive tank side wiring diagram



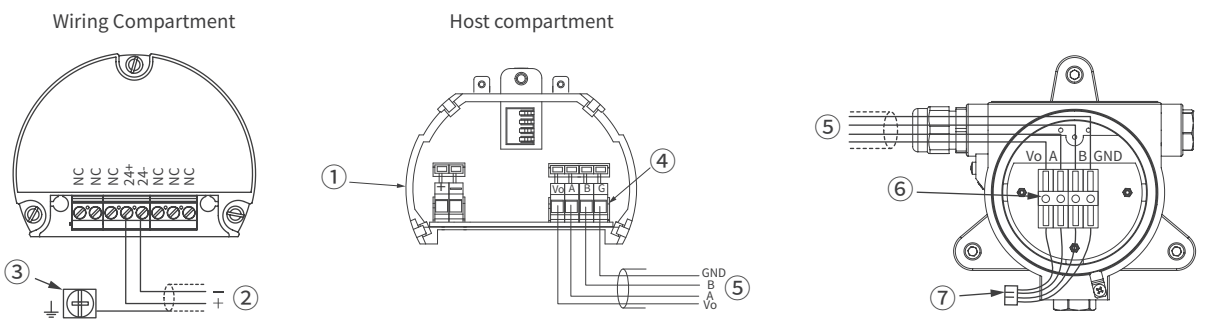
① Radar electronic unit
② Grounding screw inside the case
③ 485 Signal wiring terminal
④ Tank side power/signal connection line(6core)
⑤ Tank side wiring terminal
⑥ LCD line (Connect to LCD)
⑦ 24V Power supply line

24V Single compartment two-wire Modbus output



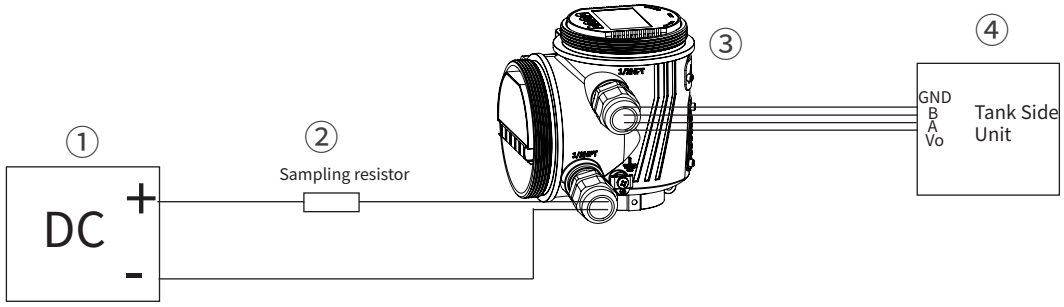
① 24V Power supply line
② Tank side unit
③ HART Communication impedance (⩾250R), pay attention to the max load
④ Radar level meter

24V Dual compartment two-wire passive tank side wiring diagram



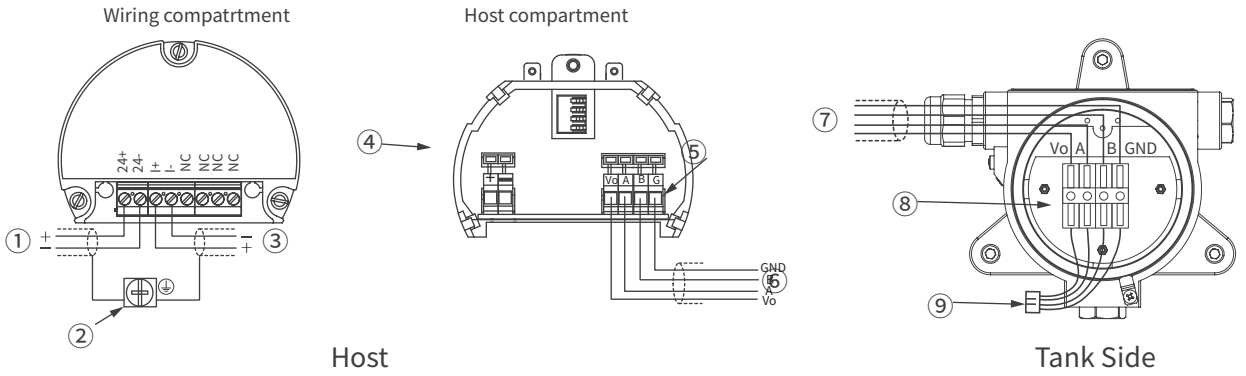
① Radar electronic unit
② 24V Power supply line
③ Grounding screw inside the case
④ 485 Signal wiring terminal
⑤ Tank side signal line (4core)
⑥ Tank side wiring terminal
⑦ LCD line(Connect to LCD)

24V Dual compartment two-wire passive tank side 4…20mA HART



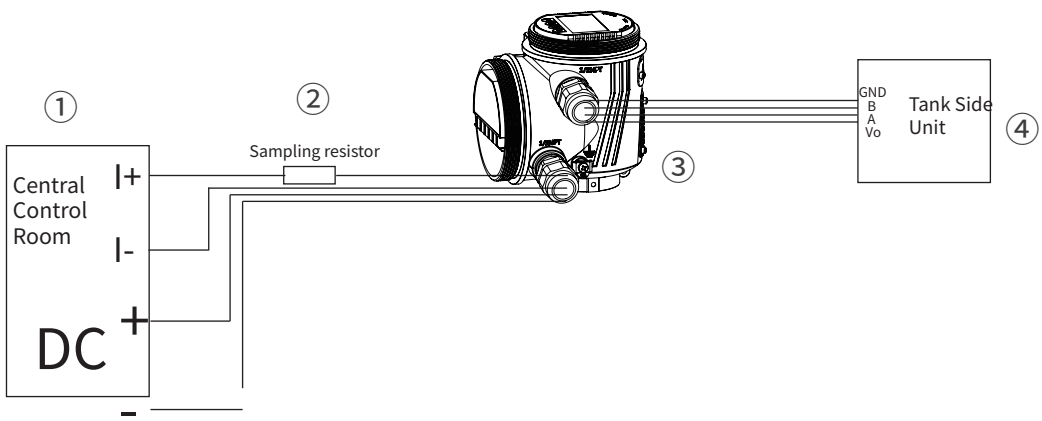
① 24V Power supply line ② HART Communication impedance (⩾250R), pay attention to the max load ③ Radar level meter ④ Tank side unit

24V Dual compartment four-wire passive tank side wiring diagram



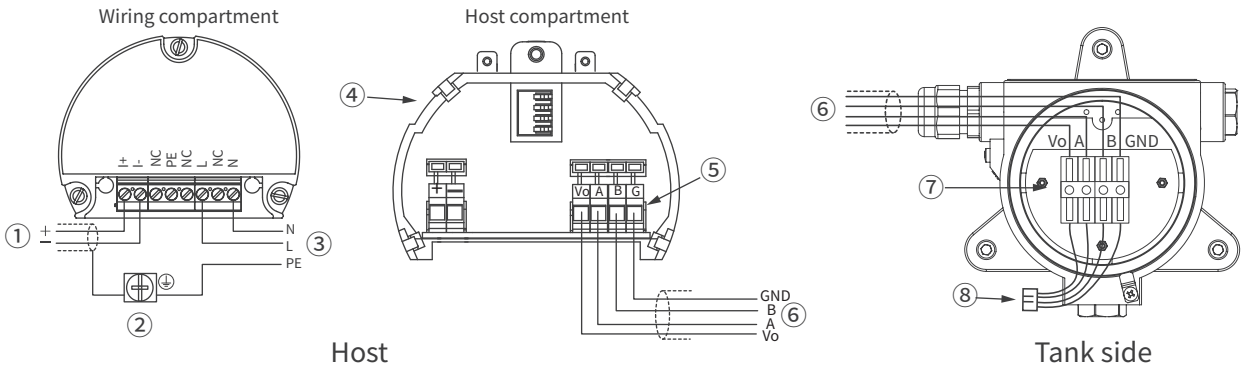
① 24V Power supply line ③ Current signal line ⑤ 485 Signal wiring terminal ⑦ Tank side signal line (4core) ⑨ LCD line(Connect to LCD)
② Grounding screw inside the case ④ Radar electronic unit ⑥ Tank side signal line (4core) ⑧ Tank side wiring terminal

24V Dual compartment four-wire passive tank side 4…20mA HART



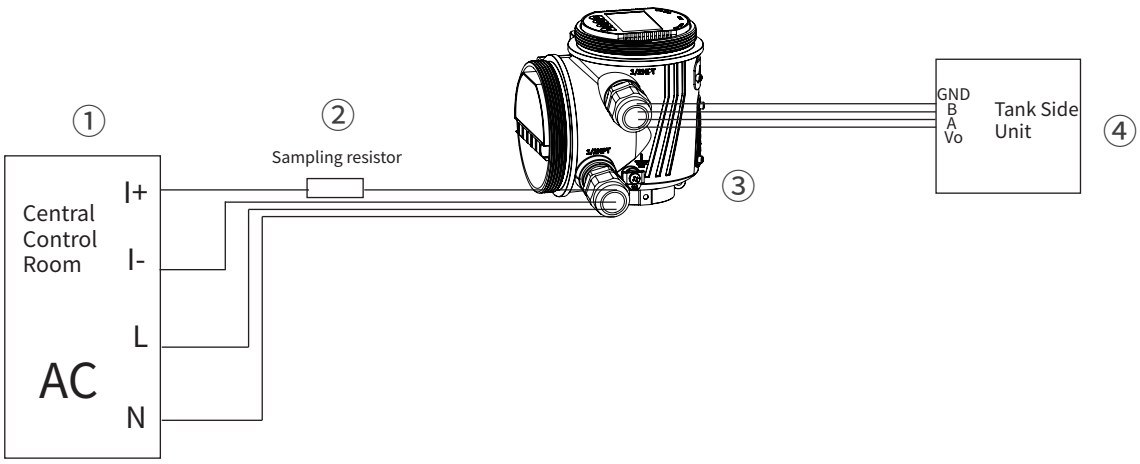
① 224V Power supply and signal collection module ② HART Communication impedance (⩾250R), pay attention to the max load
③ Radar level meter ④ Tank side unit

220V Dual compartment four-wire passive tank side wiring diagram



① Current signal line
② Grounding screw inside the case
③ 220V Power supply line
④ Radar electronic unit
⑤ 485 Signal wiring terminal
⑥ Tank side signal line (4core)
⑦ Tank side wiring terminal
⑧ LCD line (Connect to LCD)

220 Dual compartment four-wire passive tank side 4…20mA HART



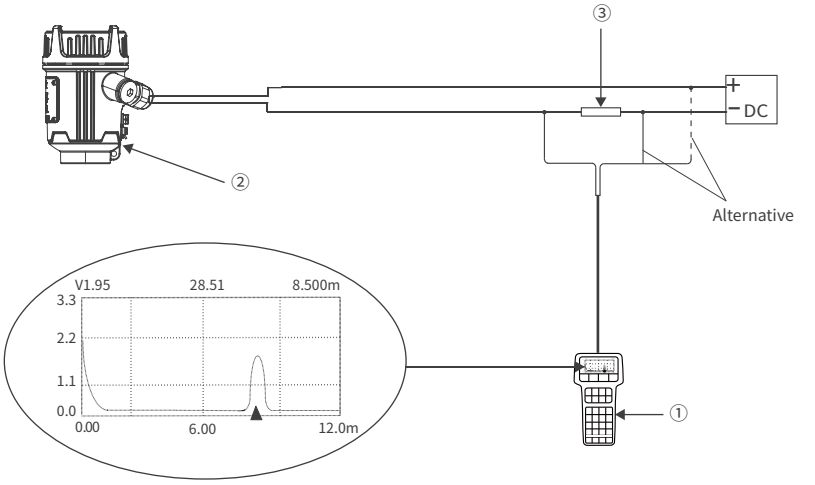
① 220V Power supply and signal collection module
② HART Communication impedance (⩾250R), pay attention to the max load
③ Radar level meter
④ Tank side unit

Instrument Debugging

Debugging on-site

(1) Display through the LCD display module

(2) HART Communicator (LCD display unit in central control room)



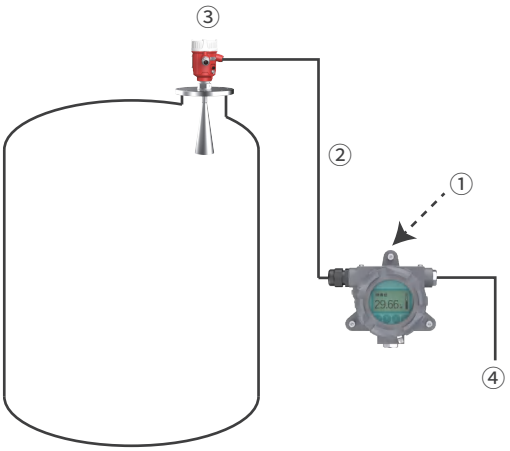
① HART Communicator (LCD display unit in central control room) ;

② Radar level meter

③ HART resistance 250 ohms (If the DCS in the central control room already has an internal resistance of 250 ohms, this resistance can be omitted, and the Hart handheld communicator can be directly connected to both ends of the control cabinet wiring terminals) By using an external power source or battery power supply, the Hart handheld communicator can form a LCD display unit in the central control room for long-term observation of instrument operation status.

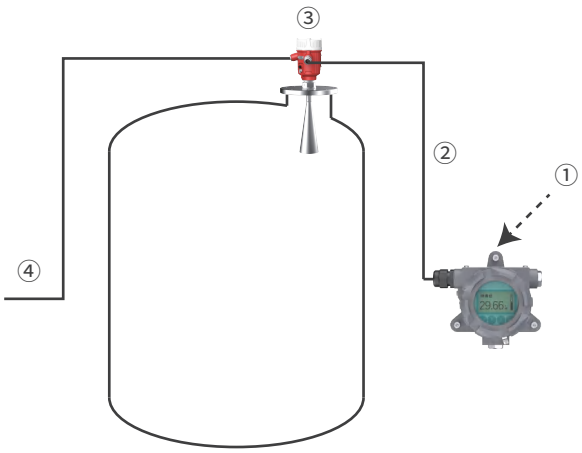
Remote debugging

Remote display unit——positive tank side



① Tank side display and debugging unit
② Instrument sensor and tank side connection wire
③ Instrument sonsor
④ Power supply/sensor output signal

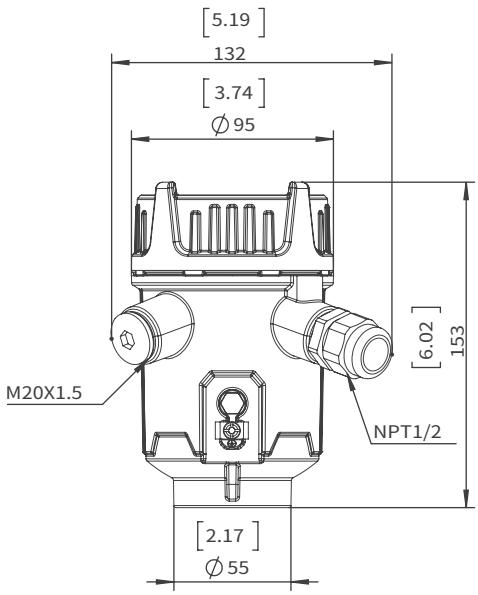
Remote display unit——passive tank side

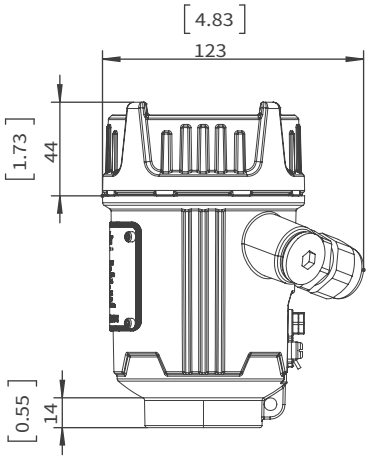


① Tank side display and debugging unit
② Instrument sensor and tank side connection wire
③ Instrument sonsor
④ Power supply/sensor output signal

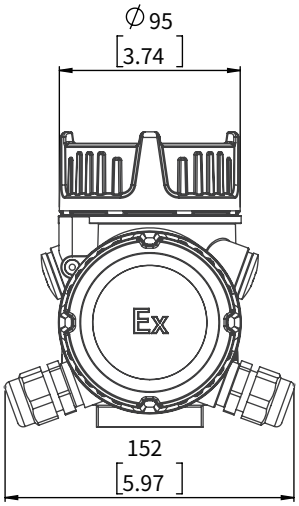
Structure Size

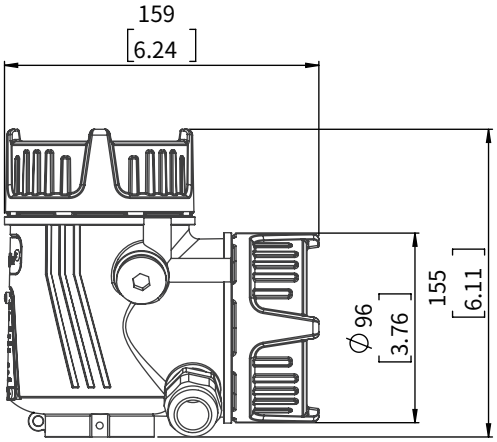
Single compartment housing size (Note:The values marked in [] are in inches, and the rest are in millimeters)





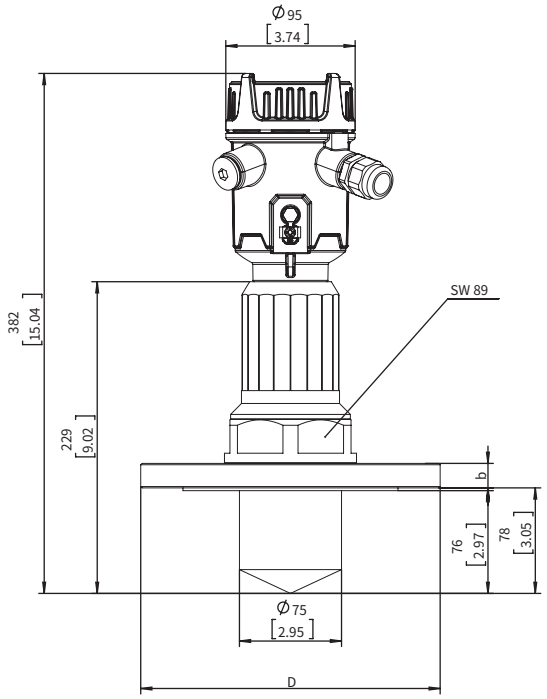
Dual compartment housing size (Note:The values marked in [] are in inches, and the rest are in millimeters)





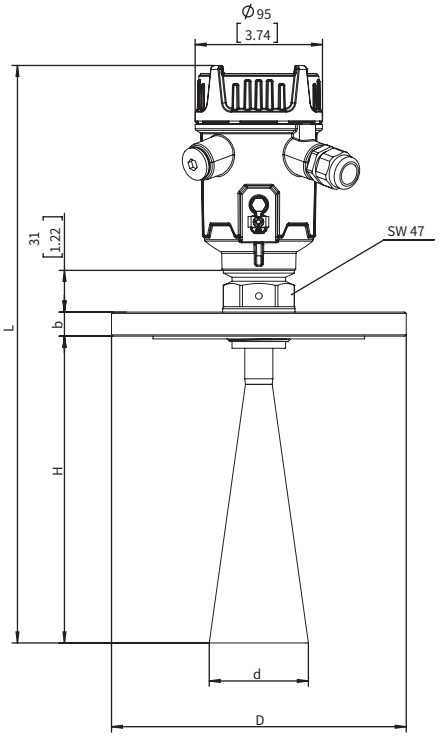
Instrument Size (Note:The values marked in [ ] are in inches, and the rest are in millimeters)

LLMW1112 Radar Liquid Level Meter With Anti-corrosion Rod Antenna



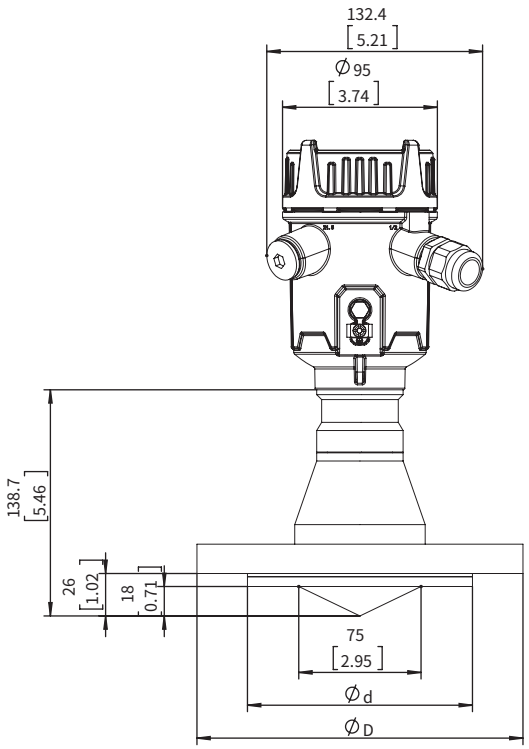
Weight:about 3.9kg

LLMW1122 Radar Liquid Level Meter With Horn Antenna



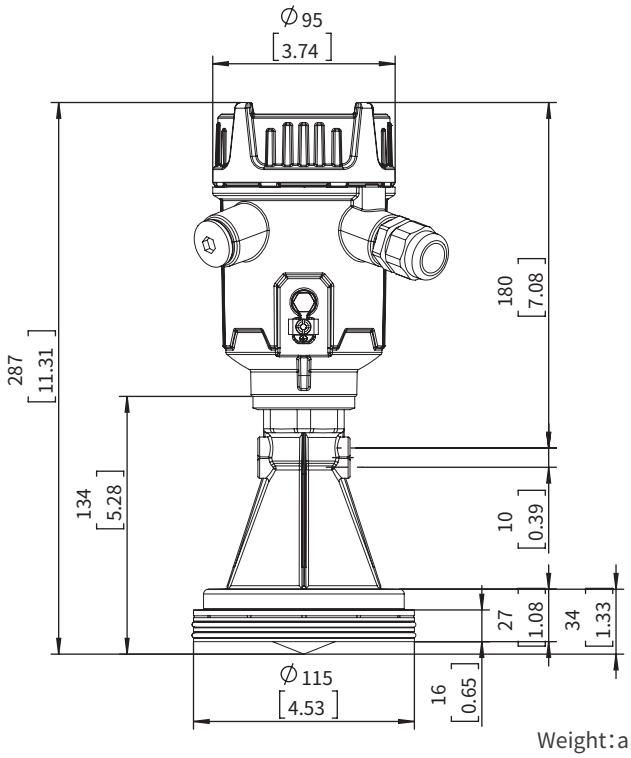
Weight:about 2.1kg

LLMW1132 Radar Liquid Level Meter With Anti-corrosion Conical Antenna



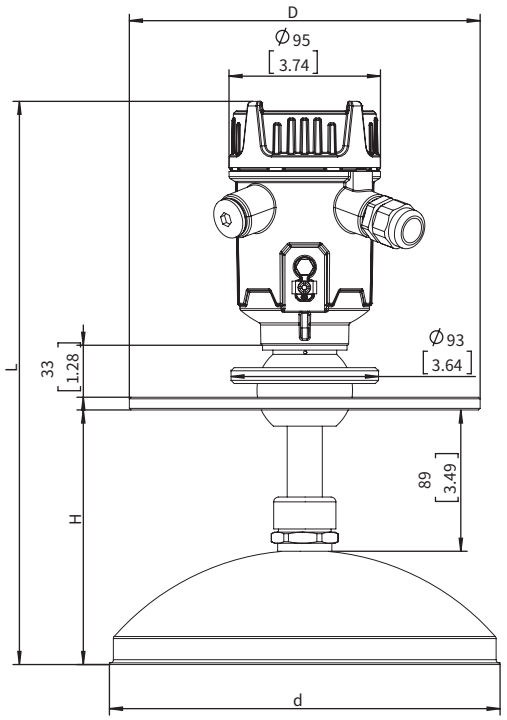
Weight：about 3.2kg

LLMW1142 Radar Solid Level Meter With Conical Antenna



Weight：about 1.2kg（including DN100 flange）

LLMW1152 Radar Solid Level Meter With Parabolic Antenna



Weight：about 4.3kg

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