

26G Radar level meter

product manual

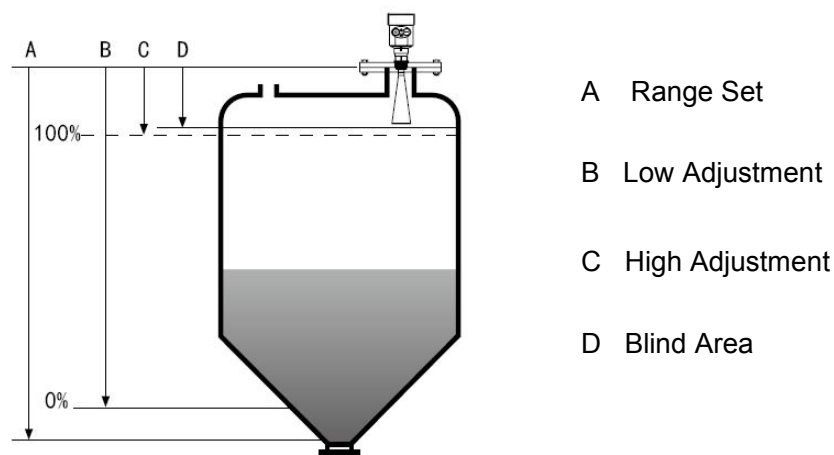
Model: 908/909



METERY TECH INC

Product Overview

Radar level meter antenna by narrow microwave pulse, the pulse propagation in space at the speed of light, meet the measured medium surface, the part of the energy to be reflected back, by the same antenna. Emission pulses and the time interval of the received pulse and the antenna to the measured medium surface is proportional to the distance. Due to the electromagnetic wave propagation and very high speed, pulse and receiving pulse time interval is very small (nanosecond) it is difficult to confirm, 90X series of 26G radar level meter adopts a special demodulation technology, can accurately identify the transmitted pulse and pulse interval, thus further calculate the antenna to the measured medium surface distance.



Datum measurement: Screw thread bottom or the sealing surface of the flange

Note: Make sure the radar level meter the highest level cannot enter the measuring blind area (Figure D shown below).

Characteristics of water conservancy industry application:

- Radar level meter adopts a recommended industry emission frequency of 26GHz, so it has beam angle is small, concentrated energy, has stronger anti-interference ability and greatly improves the precision and reliability of measurement.
- Small antenna size, easy to install and dustproof cover antenna protection device.
- Light weight about 1KG, easy to install.
- The measurement range of up to 70 meters, covering a large reservoir water level measurement.
- With a variety of output circuit interface and data acquisition system.
- The pulse working mode, radar level meter transmit power is very low, no harm to human body and environment.

1. Product Introduction

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Application: Rivers, Lakes, Shoal
Measuring Range: 30 meters
Process Connection: Thread G1½ A" /Frame /Flange
Temperature: -40℃ ~ 100℃
Process Pressure: Normal pressure
Precision: ± 3mm
Frequency Range: 26GHz
Protection Grade: IP67 / IP65
Power Supply: DC (6 - 24V) / Four-wire
The Signal output: RS485 / Modbus Protocol
The Scene Display: Optional
Shell: Aluminum / Plastic

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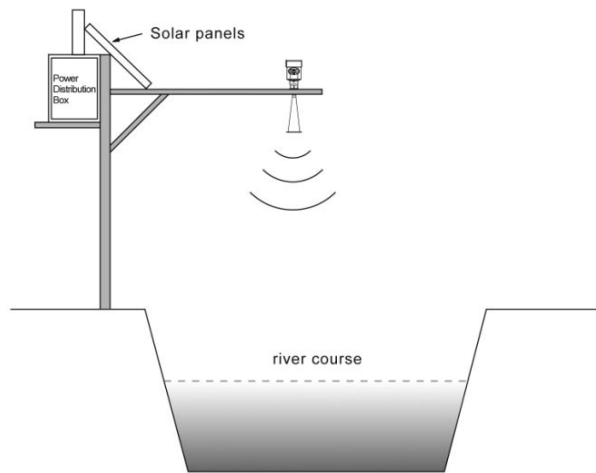
Application: Rivers, Lakes, Shoal
Measuring Range: 70 meters
Process Connection: Thread G1½ A" /Frame /Flange
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2. Installation

- **Preparation before installation:**

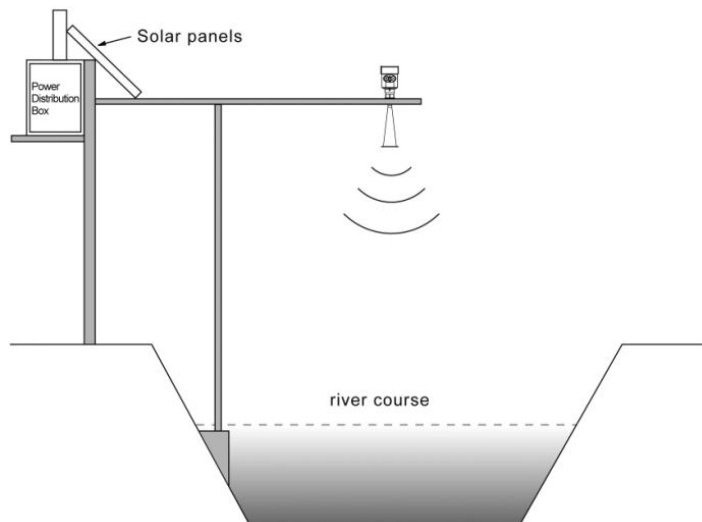
- Please pay attention to the following matters, to ensure that the instrument can be installed correctly:
- Please reserve enough space for installation.
- Please avoid installing occasions strong vibration.

- **Illustration and installation position**



Schematic diagram of radar and stent

Note: The radar antenna microwave pulse, have certain emission angle. From the lower edge of the measured medium antenna to the surface, there are obstacles not and emission microwave beam radiation region.



Schematic diagram of radar and stent

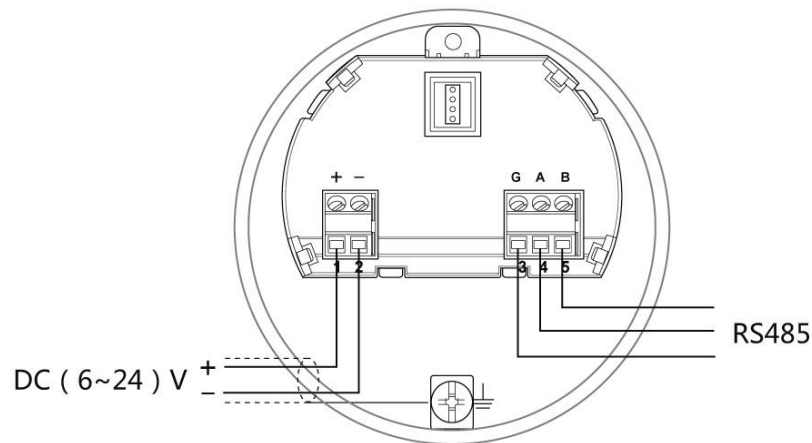
3. Electrical Connection

Power Supply voltage

RS485/Modbus	power supply and Modbus signal lines separate drespectively using a shielded cable, the power supply voltage range of see technical data.
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Connection mode

The RS485/Modbus wiring diagram as follows:



Safety instructions

Please make sure that the sealing head is not damaged.

Please make sure that the cable is not damaged.

Please make sure that the cable for use with electrical connection specification.

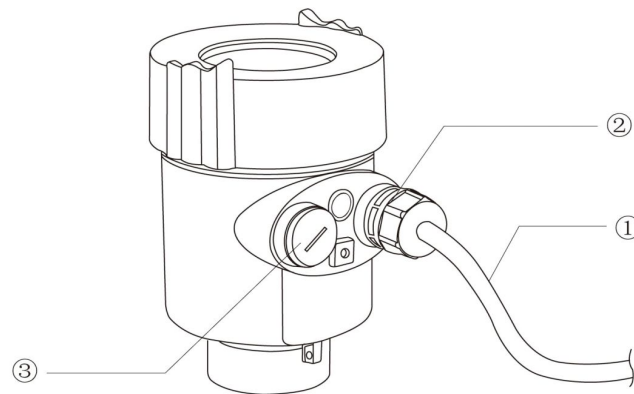
Cable into the electrical interface before its curved downward, ensure that the water will not flow into the shell, see the①

Tighten the cable seal head, see the②

Please electrical interface will not use blind plug tight, see the③

Protection grade

This instrument meets the protection grade IP66/67 requirements, please ensure the waterproof cable sealing head.



How to install to meet the requirements of IP67:

Please make sure that the sealing head is not damaged.

Please make sure that the cable is not damaged.

Please make sure that the cable for use with electrical connection specification.

Cable into the electrical interface before its curved downward, ensure that the water will not flow into the shell, see the ①

Tighten the cable seal head, see the ②

Please electrical interface will not use blind plug tight, see the ③

4. Instrument Commissioning

- **There are three kinds of debugging method:**

- 1) Display / Keyboard
- 2) Host debugging
- 3) HART handheld programmer

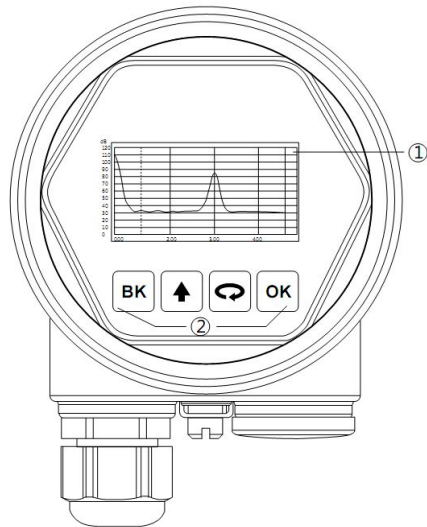
- **Display / Keyboard:**

Please debug the instrumentation by four buttons on the display screen. There are three debug menu languages optional. After debugging is generally used only for display, through the glass window can read measured value very clearly.

Display / Keyboard

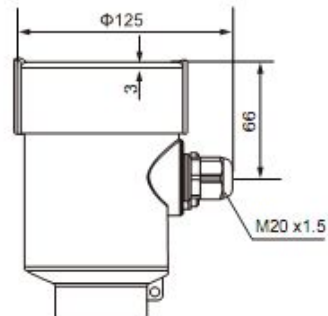
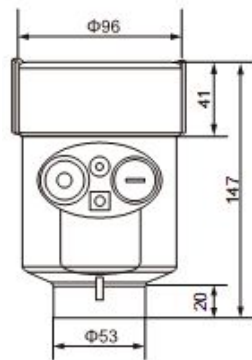
① Liquid crystal display(LCD)

② The key



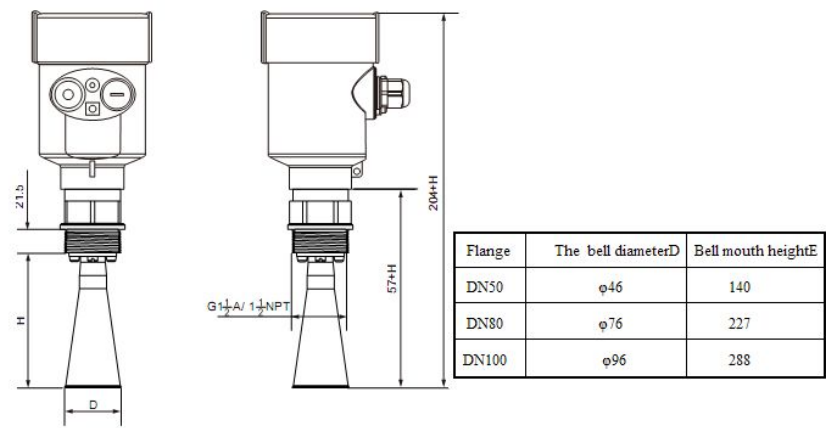
5. Structure Size (Unit: mm)

- The outer shell:

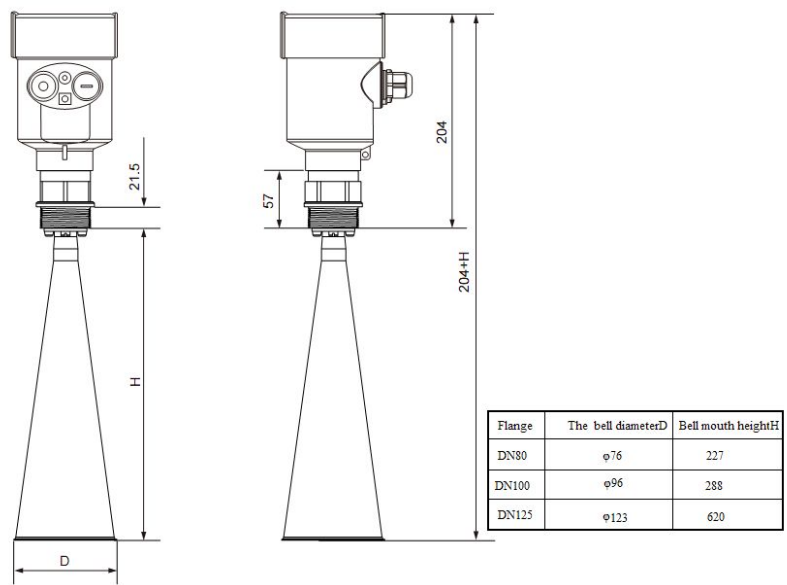


● Appearance size:

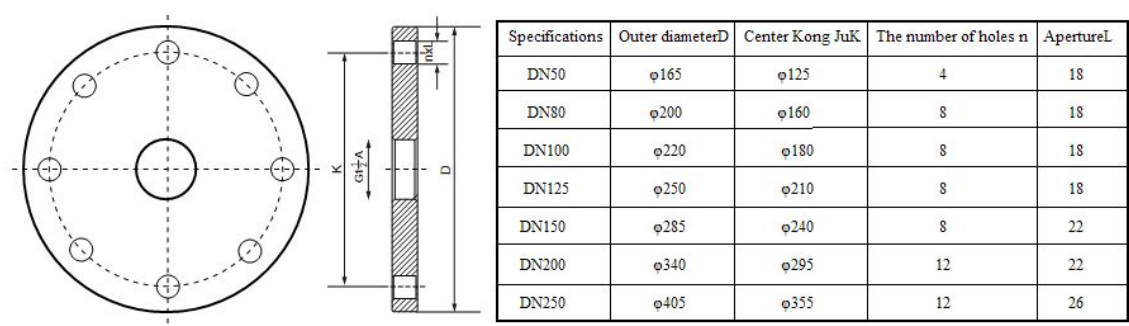
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● Flange type



6. Technical Parameters

The outer shell

The seal between the shell and the shell cover	Silicone rubber
Casing window	Polycarbonate
The ground terminal	Stainless steel

The power supply voltage

Two wire system		
	The standard type	(16 ~ 26) V DC
	Intrinsically safe	(21.6 ~ 26.4) V DC
	Power dissipation	max 22.5mA / 1W
	Allowable ripple	
	- <100Hz	Uss<IV
	- (100~100K) Hz	Uss<I0mV

The cable parameters

Cable entrance / plug	1 M20x1.5 cable entrance 1 blind plug
Terminal	Conductor cross section 1.0mm ²

Output parameters

The output signal	(4 ~ 20) mA/RS485
Communication protocol	HART
Resolution	1.6μA
Fault signal	Constant current output; 20. 5mA 22mA 3.9mA
The integral time	(0 ~ 50) s, adjustable

Blind area	the ends of the antenna
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The maximum distance measurement	70 meters
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Microwave frequency	26GHz
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Communication interface	HART communication protocol
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The measurement interval	about 1 second (depending on the parameter settings)
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Adjust the time	about 1 second (depending on the parameter settings)
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Display resolution	1 mm
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Working storage and transportation temperature	(-40~100) °C
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Process temperature (the temperature of the antenna part)	(-40~250)°C
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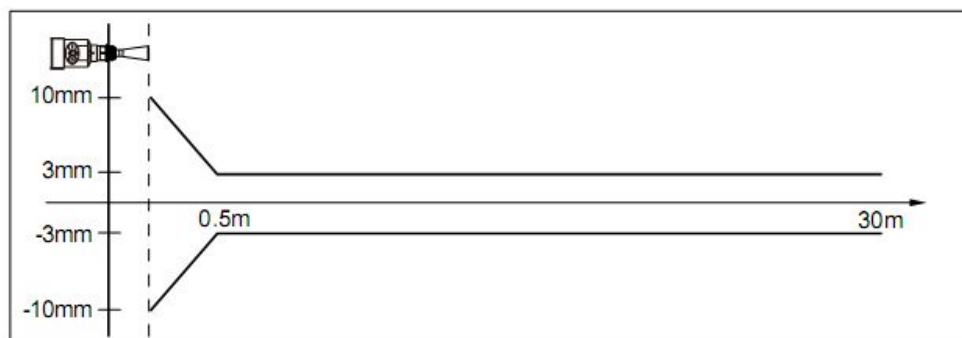
Pressure	Max.4MPa
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Seismic	Mechanical vibration I0m/s ² , (10 ~ 150) Hz
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7. Meter Linearity

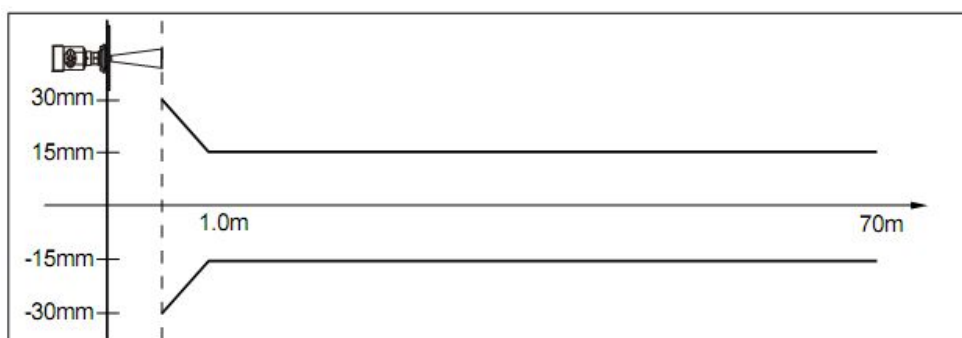
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Emission angle	Depending on the size of the antenna
- \varnothing 76mm	12°
- \varnothing 96mm	18°
- \varnothing 121mm	6°
Precision	See chart



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8. Product Model Selection

● 908

License

P standard (non-explosion-proof)

Process connection / materials

G thread G1 ½" A/ 304 stainless steel

N The vertical bracket

M Square bracket

Y special custom

Antenna type / materials

A horn antenna with 76mm/ 304 stainless steel

B horn antenna with 96mm/ 304 stainless steel

Y special custom

Seal / process temperature

V common seal / (-40~150) °C

The electronic unit

V RS485/Modbus/ four wire system

Shell / protection class

L aluminum /IP67

G Plastic /IP65

Cable line

M M20 x l. 5

N ½ " NPT

The scene shows / programming

A belt

X Without

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