

Уровномеры серии CX-RLM

Технические характеристики

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Radar Level Transmitter Radar Tank Gauging Level Sensor



CX-RLM-808



CX-RLM-809



CX-RLM-810

ISO/CE/SGS Certificates

Radar level meter level sensor measuring instrument, taking the advantages of various many level measuring instruments, is a universal one characterized by total digitalized and humanized design. It has perfect level monitoring, data transmission and man-machine communication.

It is featured by strong anti-interference performance; free setting of upper and lower limits and online output regulation, on-site indication, optional analog, switching value, and RS485 output and easy connection with main unit. The cover, made of waterproof engineering plastics, is small and firm with ABS probe. Therefore, it is applicable for various fields concerning level measuring and monitoring. According to the practical situation, it also can add other modules, such as RS 485, current output; it can be match with PLC better.

26GHz 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, 80X 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.

CX-RLM-808 26GHz Radar level meter

Application: Rivers, Lakes, Shoal

Measuring Range: 30 meters

Process Connection: Thread G1½ A" /Frame /Flange

Temperature: -40 °C~ 100 °C

Process Pressure: Normal pressure

Precision: ± 3mm

FrequencyRange: 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

CX-RLM-809 26GHZ Radar level meter

Application: Rivers, Lakes, Shoal
Measuring Range: 70 meters
Process Connection: Thread G1½ A" /Frame /Flange
Temperature: -40 °C~ 100 °C
Process Pressure: Normal pressure
Precision: ± 3mm
FrequencyRange: 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

CX-RLM-810 26GHZ Radar level meter

Application: solid, strong dust,crystal and moisture condensation condition
Measuring range:: 0-80m
Medium temperature: -40~250°C
Process pressure: -0.1~0.1MPa
Accuracy: ±15mm
Protection: IP67
Frequency: 26GHz
Protection: Exia II C T6 Ga/Exd ia IIC T6 Gb
Output:4...20mA/HART(2 wires/ 4 wires)

Characteristics of water conservancy industry application for radar level meter:

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

CX-RLM-080 intelligent radar level sensor level meter level transmitter



Products:

CX-RLM-080 series of intelligent radar substance position gauge



Types

CX-RLM-081

CX-RLM-082

CX-RLM-083

Application

Process condition is simple, corrosive liquids, slurries and solids
For example:
Water tank
Acid and alkali tanks
Slurry tanks
Solid granules
Small petrol tanks

Storing corrosive liquids, slurries and solids
For example:
Water tank
Acid and alkali tanks
Slurry tanks
Solid granules
Small petrol tanks

Suitable for all kinds of storing tanks or process measuring environment, liquids, slurries and solids.
For example:
Crude oil, light oil tank
Coal and powder coal bunkers
Volatile liquid tank
Charcoal level
Slurry tank
Solid granules

Measuring range 20 meters

Process connection Screw

Process temperature -40-130°C

Process pressure -1.0-3bar

Repeatability ± 3mm

Precision < 0.1%

Frequency range 6.8GHz

Anti-explosion/safety grade EXiaIICT6/IP68

Signal output 4...20mA/HART (two phases)

20 meters

Flange

-40-150°C

-1.0-20bar

± 3mm

< 0.1%

6.8GHz

EXiaIICT6/IP68

4...20mA/HART (two phases)

35 meters

Flange

-40-250°C

-1.0-40bar

± 3mm

< 0.1%

6.8GHz

EXiaIICT6/IP68

4...20mA/HART (two phases)

Technical data:

Basic parameters working frequency:

6.8GHz measuring range: 0...35m

repeatability: ± 3 mm

resolution: 1mm

response speed: >0.2 s(depends on concrete application status) electric current signal: 4...20mA

precision: $<0.1\%$

Antenna material 081、082 is PP/PTFE

083 is 316L stainless steel

Communication interface HART communication protocol

Process connection 081 (PP, PTFE antenna) : G1-1/2 316L stainless steel:

082 (rod type antenna) : flanging flange 2", 3", 4", 6"

083 (horn type antenna): flange 2", 3", 4", 6", 8", 10"

Anti-explosion authentication ExiallC T6

Shell safety grade IP68

120G 80G Radar Level Transmitter Level Sensor Level Measurement



1. Millimeter-wave radar, with a measurement accuracy of up to ± 2 mm and a minimum blind area of 0.05m.
2. Smaller antenna size to meet the measurement of more working conditions.
3. A variety of lens antennas, smaller emission angles, more concentrated energy, and stronger echo signals, so it has higher reliability than other radar products under the same industrial and mining conditions.
4. It has stronger penetrability and can be used normally under the condition of adhesion and condensation.
5. CX-RLM-F series products have larger dynamic signal range and more stable measurement for low dielectric constant media.
6. Multiple measurement modes, the radar response time is less than 1S in the fast measurement mode.

CX-RLM-F Series Product Introduction:

● CX-RLM-F11



Measuring medium: Liquid
Measuring Range: 0.05m~30m
Process Connection: Thread G1½" A / 1½" NPT
Flange ≥ DN50
Process Temperature: -40~80℃
Process Pressure: -0.1~0.3MPa
Antenna Size: 32mm lens antenna
Antenna material: PTFE
Accuracy: ±2mm
Protection Level: IP67
Frequency: 123GHz
Launch angle: 7 °
Power Supply: Two-wire / DC 24V
Four-wire / DC 12~24V
Four-wire / AC 220V
Outer casing: Aluminum/ Plastic/ Stainless steel
Signal output: Two-wire / 4...20mA / Hart protocol
Four-wire / 4...20mA / Modbus-RS485

● CX-RLM-F12_{CX-RLM}



Measuring medium: Liquid
Measuring Range: 0.05m~35m
Process Connection: Thread G2" A / Flange ≥ DN65
Process Temperature: -40~110℃
Process Pressure: -0.1~1.6MPa
Antenna Size: 42mm lens antenna
Antenna material: PTFE
Accuracy: ±2mm
Protection Level: IP67
Frequency: 123GHz
Launch angle: 5 °
Power Supply: Two-wire / DC 24V
Four-wire / DC 12~24V
Four-wire / AC 220V
Outer casing: Aluminum/ Plastic/ Stainless steel
Signal output: Two-wire / 4...20mA / Hart protocol
Four-wire / 4...20mA / Modbus-RS485

● CX-RLM-F13



Measuring medium: Liquid
Measuring Range: 0.1m~100m
Process Connection: Flange \geq DN80
Process Temperature: -40~110 $^{\circ}$ C
Process Pressure: -0.1~0.3MPa
Antenna Size: 78mm lens antenna
Antenna material: PTFE
Accuracy: \pm 2mm (Range below 35m)
 \pm 5mm ((Range between 35m-100m))
Protection Level: IP67
Frequency: 123GHz
Launch angle: 3 $^{\circ}$
Power Supply: Two-wire / DC 24V
Four-wire / DC 12~24V
Four-wire / AC 220V
Outer casing: Aluminum/ Plastic/ Stainless steel
Signal output: Two-wire / 4...20mA / Hart protocol
Four-wire/ 4...20mA / Modbus-RS485

● CX-RLM-F14



Measuring medium: Liquid
Measuring Range: 0.1m~150m
Process Connection: Flange \geq DN125
Process Temperature: -40~110 $^{\circ}$ C
Process Pressure: -0.1~0.3MPa
Antenna Size: 110mm lens antenna
Antenna material: PTFE
Accuracy: \pm 2mm (Range below 35m)
 \pm 5mm ((Range between 35m-100m))
Protection Level: IP67
Frequency: 123GHz
Launch angle: 1.5 $^{\circ}$
Power Supply: Two-wire / DC 24V
Four-wire / DC 12~24V
Four-wire / AC 220V
Outer casing: Aluminum/ Plastic/ Stainless steel
Signal output: Two-wire / 4...20mA / Hart protocol
Four-wire/ 4...20mA / Modbus-RS485

• CX-RLM-F15



Measuring medium: Liquid
 Measuring Range: 0.1m~35m
 Process Connection: Flange \geq DN80
 Process Temperature: -40~200 $^{\circ}$ C
 Process Pressure: -0.1~2.5MPa
 Antenna Size: 78mm lens antenna
 Antenna material: PTFE / integral filling
 Accuracy: \pm 2mm
 Protection Level: IP67
 Frequency: 123GHz
 Launch angle: 3 $^{\circ}$
 Power Supply: Two-wire / DC 24V
 Four-wire / DC 12~24V
 Four-wire / AC 220V
 Outer casing: Aluminum/ Plastic/ Stainless steel
 Signal output: Two-wire / 4...20mA / Hart protocol
 Four-wire/ 4...20mA / Modbus-RS485

• CX-RLM-F21

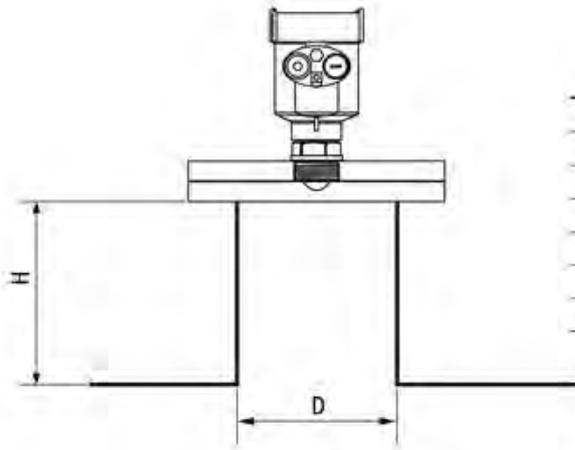


Measuring medium: Solid
 Measuring Range: 0.3m~150m
 Process Connection: Flange \geq DN80
 Process Temperature: -40~110 $^{\circ}$ C
 Process Pressure: -0.1~0.3MPa
 Antenna Size: 78mm lens antenna
 78mm lens antenna + purge
 Antenna material: PTFE
 Accuracy: \pm 5mm
 Protection Level: IP67
 Frequency: 123GHz
 Launch angle: 3 $^{\circ}$
 Power Supply: Two-wire / DC 24V
 Four-wire / DC 12~24V
 Four-wire / AC 220V
 Outer Covering: Aluminum/ Plastic/ Stainless steel
 Signal output: Two-wire / 4...20mA / Hart protocol
 Four-wire/ 4...20mA / Modbus-RS485

- **Installation takeover diagram:**

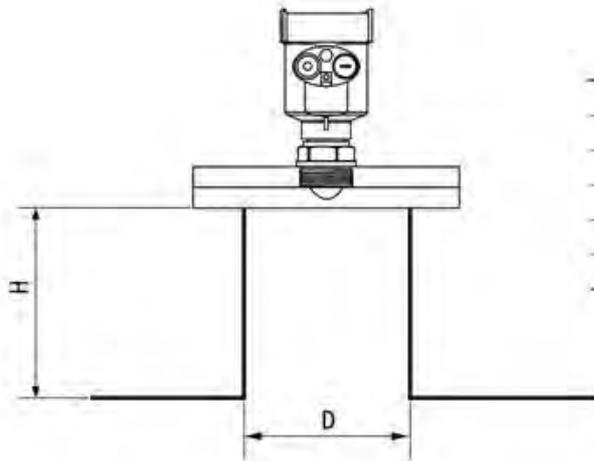
The maximum installed short tube height depends on the diameter D of the installed short tube and the size of the product launch angle. Overly long installation and takeover will affect radar performance.

- **CX-RLM-F11**



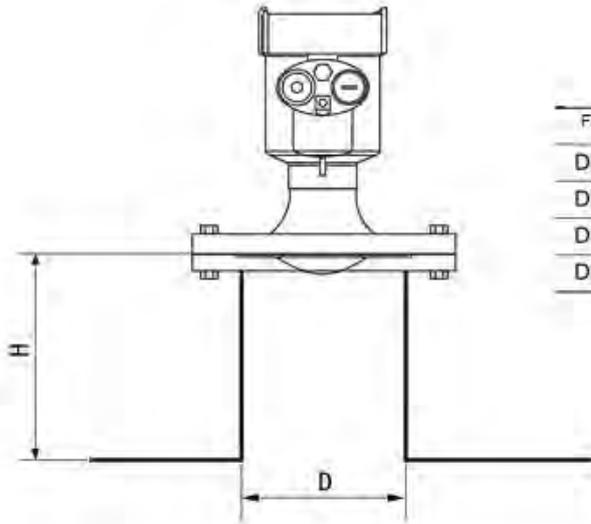
Flange	D	H max
DN50	50mm (2")	300mm
DN65	65mm (2.5")	450mm
DN80	80mm (3")	550mm
DN100	100mm (4")	700mm
DN125	125mm (5")	900mm
DN150	150mm (6")	1100mm

- **CX-RLM-F12**



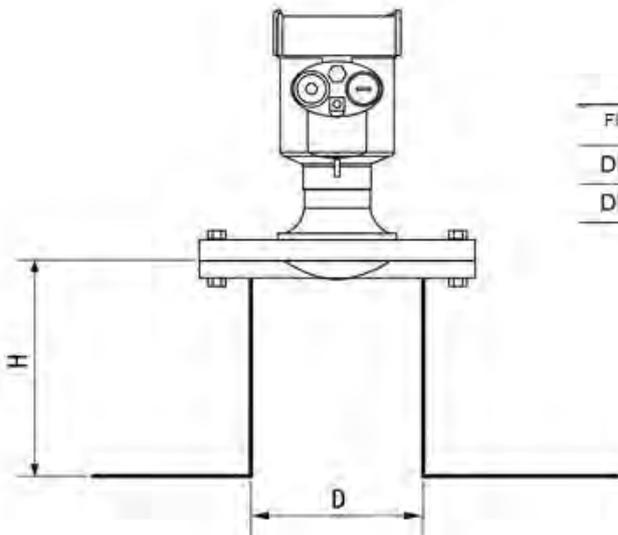
Flange	D	H max
DN65	65mm (2.5")	600mm
DN80	80mm (3")	800mm
DN100	100mm (4")	1000mm
DN125	125mm (5")	1200mm
DN150	150mm (6")	1400mm

➤ CX-RLM-F13/CX-RLM-F15



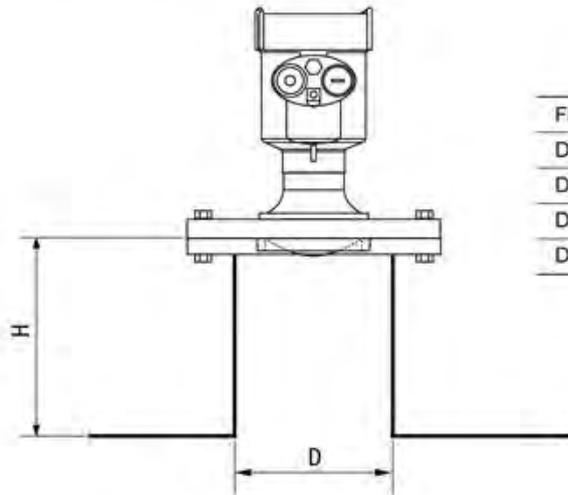
Flange	D	H max
DN80	80mm (3")	1200mm
DN100	100mm (4")	1500mm
DN125	125mm (5")	2000mm
DN150	150mm (6")	2500mm

➤ CX-RLM-F14



Flange	D	H max
DN125	125mm (5")	4000mm
DN150	150mm (6")	5000mm

➤ CX-RLM-F21



Flange	D	H max
DN80	80mm (3")	1200mm
DN100	100mm (4")	1500mm
DN125	125mm (5")	2000mm
DN150	150mm (6")	2500mm

CX-RLM-F Electrical connections:

● supply voltage

(4~20) mA (2-wire)

The power supply and the output current signal share a two-core shielded cable. See the technical data for the specific supply voltage range.

(4~20) mA (4-wire / 6-wire)

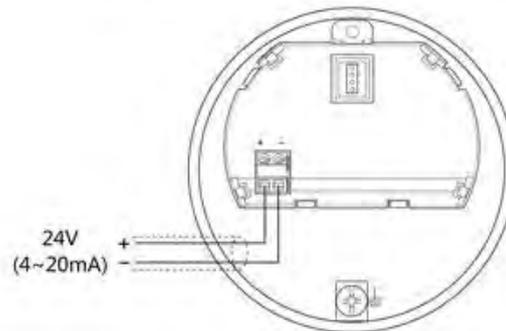
The power supply needs to be powered separately. The power supply and current signals use a four-core shielded cable (current signal and RS485 interface can be output simultaneously, and a six-core shielded cable is required for output).

Modbus-RS485

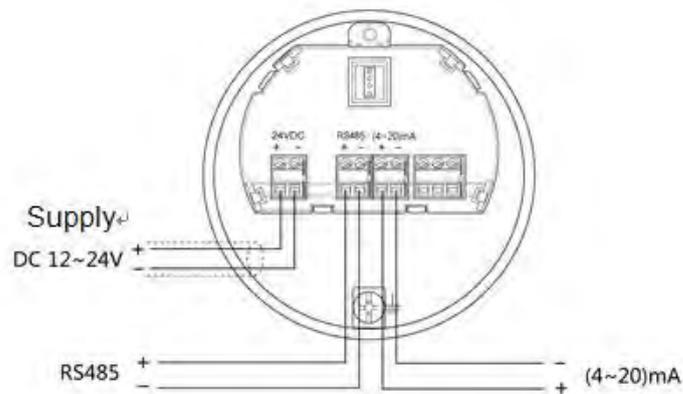
The power supply needs to be powered separately. The power supply and digital use a four-core shielded cable (current signal and RS485 interface can be output simultaneously, and a six-core shielded cable is required for output).

- **Connection method**

- 24V two-wire system wiring diagram is as follows:



- 12~24V four-wire system wiring diagram is as follows:



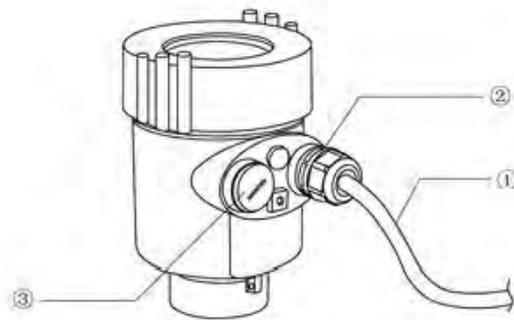
- **Safety guidance**

Please observe the requirements of the local electrical installation regulations!
Please observe local regulations regarding the health and safety of personnel. All operations on the electrical components of the instrument must be performed by trained professionals.

Please check the nameplate of the instrument to ensure that the product specifications meet your requirements. Make sure that the supply voltage is the same as that on the instrument nameplate.

- **Protection level**

This instrument fully meets the requirements of protection grade IP66/67. Please ensure the waterproof performance of the cable gland. As shown below:



How to ensure that the installation meets the requirements of IP67:

Make sure the seal head is not damaged.

Make sure the cable is not damaged.

Make sure that the cable you are using meets the electrical connection specifications.

Before entering the electrical interface, bend the cable down to ensure that water does not flow into the housing, see ①

Please tighten the cable gland, see ②

Please block the unused electrical interface with a blind plug, see ③

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