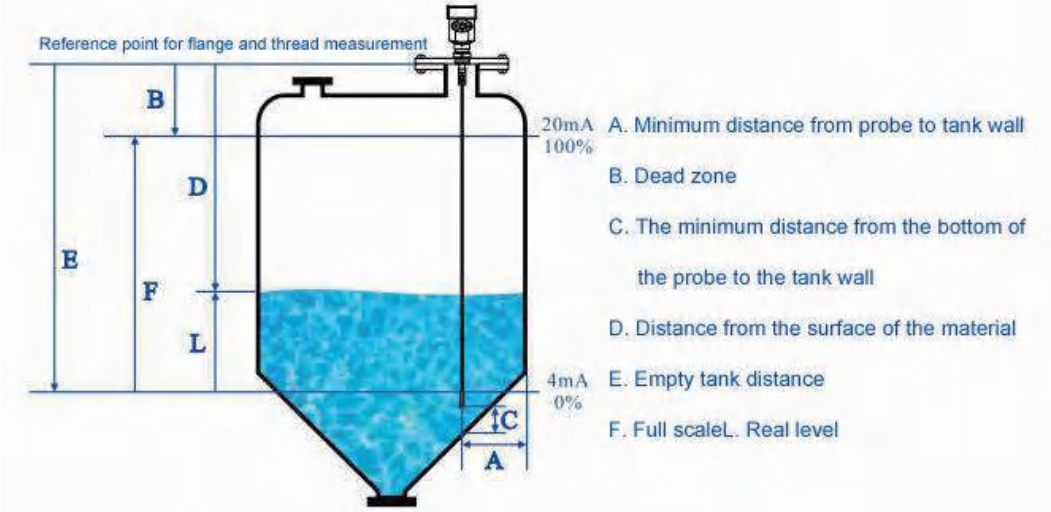
SRL610 SERIES GUIDE WAVE RADAR LEVEL METER

WORKING PRINCIPLE

The high-frequency microwave pulses emitted by the guided wave radar propagate along the detection component (steel cable or steel rod) and encounter the measured medium. Due to the sudden change of the dielectric constant, which causes reflection, part of the pulse energy is reflected back. The time interval between the transmitted pulse and the reflected pulse is proportional to the distance of the measured medium.



◎Input

Guided wave radar is a measuring instrument based on the principle of time travel, the radar wave runs at the speed of light, and the running time can be converted into level signal. The probe emits high-frequency pulses and propagates along the cable or rod probes. When the pulses meet the surface of the material, they are reflected back by the receiver in the instrument. Receive and convert distance signals into level signals.

The reflected pulse signal is transmitted to the electronic circuit part of the instrument along the cable or rod probe.

The microprocessor processes this signal and recognizes the micro. The echo generated by the wave pulse on the surface of the material. The correct echo signal identification is completed by the pulse software, the distance D from the surface of the material and the time of the pulse.

The interval T is proportional to: D= CxT/2, where C is the speed of light

Since the distance E of the empty tank is known, the level L is: L=E-D

◎Output

Set by inputting empty tank height E (=zero point), full tank height F (=full scale) and some application parameters, the application parameters will automatically make the instrument

Adapt to the measurement environment, corresponding to 4-20mA output.

DESIGN FEATURES

◎Guide wave radar level meter adopts advanced microwave processing technology and unique Echo Discovery echo processing technology, contact measurement, high measurement accuracy and more accurate measurement. At the same time, guided wave radar is anti-adhesion and is not affected by the external environment such as medium temperature and adhesion.

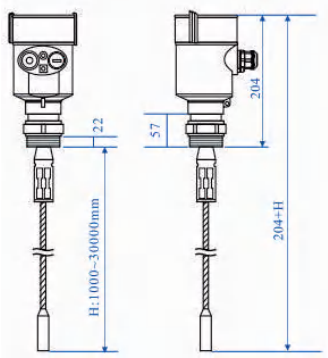
◎A variety of process connection methods and types of detection components make the 70X series guided wave radar level gauge suitable for various complex working conditions and applications. Such as: high temperature, high pressure and small dielectric constant medium.

◎Using pulse working mode, the product's emission power is extremely low, and can be installed in various metal and non-metal containers without harming the human body and the environment.

TYPES & SPECIFICATION

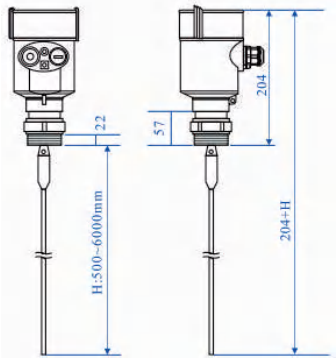
SRL611

Applicable medium: liquid, solid powder
Application: Liquid and solid powder measurement, complex process conditions
Explosion-proof: Exia I IC T6 Ga/ Exd ia I IC T6 Gb
Measuring range: 30m
Frequency: 500MHz-1.8GHz
Antenna: single or single pole antenna
Measurement accuracy: ± 2mm
Process temperature: (-40~250) °C
Process pressure: (-0.1~4) MPa
Signal output: (4~20) mA/HART
Live display: four-digit LCD programmable
Power supply: two-wire system (DC24V) / four wire system (DC24V/AC220V)
Shell: Aluminum / Plastic Process connection: thread / flange (optional)



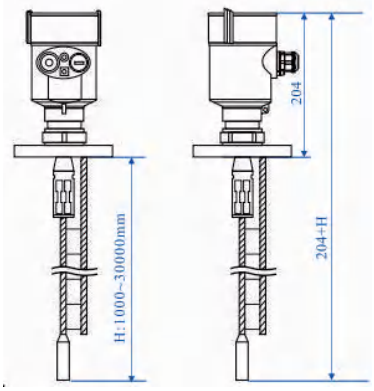
SRL612

Applicable medium: liquid, solid powder
Application: Liquid and solid powder measurement, complex process conditions
Explosion-proof: Exia I IC T6 Ga/ Exd ia I IC T6 Gb •Measuring range: 5m
Frequency: 500MHz-1.8GHz
Antenna: rod antenna
Measurement accuracy: ±10mm
Process temperature: (-40~250) °C
Process pressure: (-0.1~4) MPa
Signal output: (4~20) mA/HART
Live display: four-digit LCD programmable
Power supply:2-wire (DC24V) / 4-wire (DC24V/ AC220V)
Shell: Aluminum / Plastic
Process connection: thread / flange (optional)



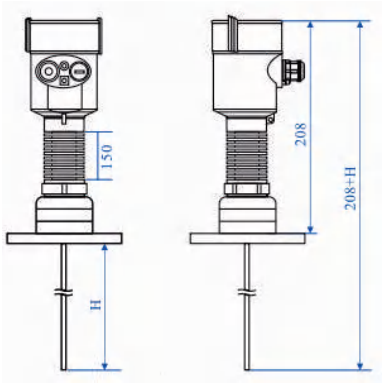
SRL613

Applicable medium: liquid, solid powder
Application: Liquid and solid powder measurement, complex process conditions
Explosion-proof certification: Exia I IC T6 Ga/ Exd ia I IC T6 Gb
Measuring range: 5m
Frequency: 500MHz-1.8GHz
Antenna: Rod antenna
Measurement accuracy: ±10mm
Process temperature: (-40~250) °C
Process pressure: (-0.1~4) MPa
Signal output: (4~20) mA/HART
Live display: four-digit LCD programmable
Power supply: two-wire system (DC24V) / four wire system (DC24V/AC220V)
Shell: Aluminum / Plastic
Process connection: thread / flange (optional)



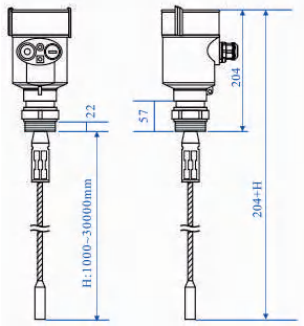
SRL614

Applicable medium: liquid, especially liquid in high temperature and high pressure environment
Application: Sealed tank, high pressure liquid measurement
Explosion-proof certification: Exia I IC T6 Ga/ Exd ia I IC T6 Gb
Measuring range: 15m
Frequency: 500MHz-1.8GHz
Antenna: single pole or single cable
Measurement accuracy: ±10mm
Process temperature: (-200~400) °C
Process pressure: (-0.1~4) MPa
Signal output: (4~20) mA/HART
Live display: four-digit LCD programmable
Power supply: two-wire system (DC24V) / four wire system (DC24V/AC220V)



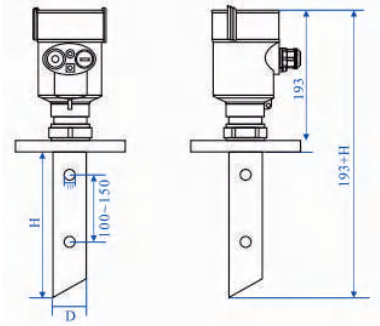
SRL615

Applicable medium: liquid,
Application: measurement of acids, bases or other corrosive media
Explosion-proof certification: Exia I IC T6 Ga/ Exd i a I I C T6 Gb
Measuring range: 30m
Frequency: 500MHz-1.8GHz
Antenna: cable antenna or rod antenna
Measurement accuracy: ± 2mm
Process temperature: (-40~200) ℃
Process pressure: (-0. 1~4) MPa •Signal output: (4~20) mA/HART
Live display: four-digit LCD programmable
Power supply: two-wire system (DC24V) / four wire system (DC24V/AC220V)
Shell: Aluminum / Plastic
Process connection: thread / flange (optional)



SRL616

Applicable medium: liquid, special low dielectric constant liquid
Application: Measurement of liquids such as ion-free water and deoxidized water
Explosion-proof certification: Exia I IC T6 Ga/ Exd i a I I C T6 Gb
Measuring range: 6m
Frequency: 500MHz-1.8GHz
Antenna: coaxial tube antenna
Measurement accuracy: ± 5mm
Process temperature: (-40~250) ℃
Process pressure: (-0. 1~4) MPa
Signal output: (4~20) mA/HART
Live display: four-digit LCD programmable
Power supply: two-wire system (DC24V) / four wire system (DC24V/AC220V)
Shell: Aluminum / Plastic



INSTALLATION REQUIREMENTS

Standard installation method

◎It is recommended to install at 1/4 or 1/6 of the diameter of the container.

Note: The minimum distance from the tank wall Lo≥300mm, Ho≥50mm.

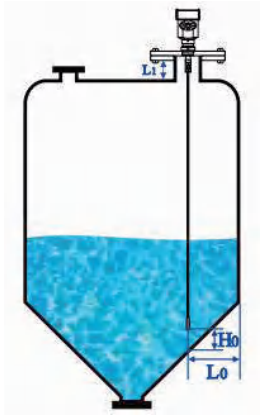
◎ Keep away from the inlet and outlet.

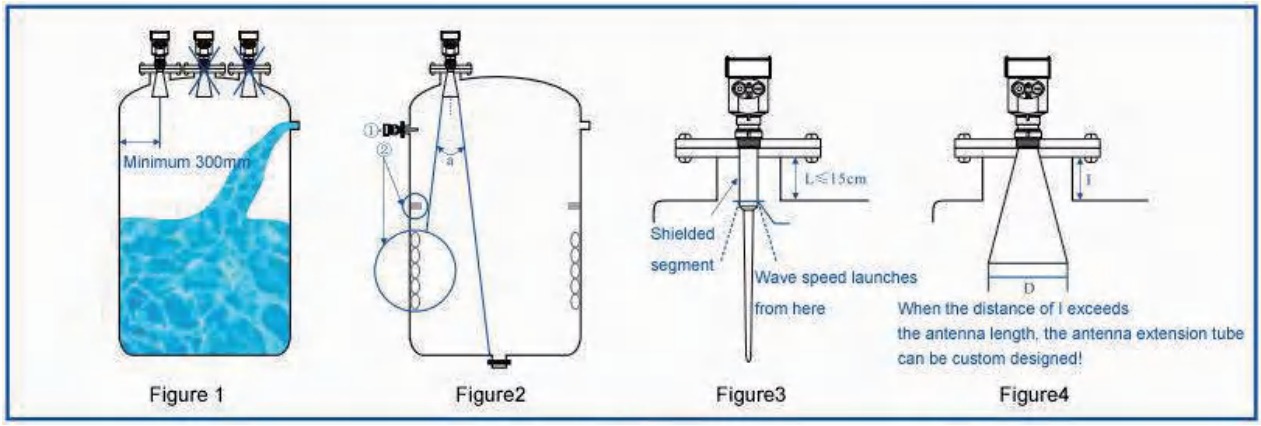
◎ Keep away from obstacles such as limit switches, heating coils, agitators, etc. Note: The distance between the probe and the obstacle is ≥200mm.

◎When the container is a metal can, the radar should not touch the wall and bottom of the tank in the whole range.

◎If the bottom of the container is tapered, the radar can be installed in the center of the tank top.

◎The height of the installed short tube should be L≤10cm.





ELECTRONIC CONNECTION

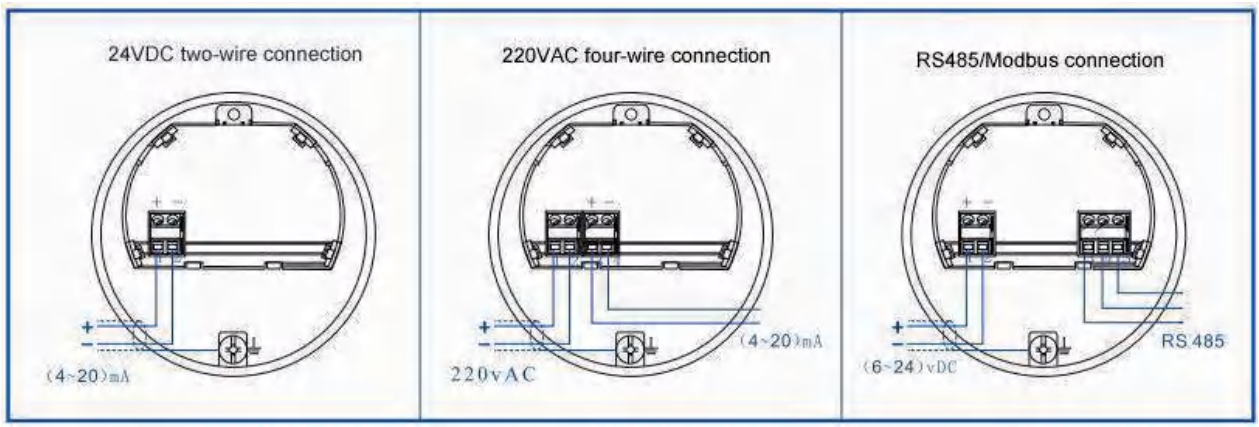
◎ Supply voltage

(4~20)mA/HART (two-wire system) - The power supply and output current signal share a two-core shielded cable. Refer to the technical data for the specific supply voltage range. For intrinsically safe models, a safety barrier must be added between the power supply and the instrument.

(4~20)mA/HART (four-wire system) - The power supply and the current signal are separated, and each uses a two-core shielded wire. Refer to the technical data for the specific supply voltage range.

RS485/Modbus - The power supply and Modbus signals are separated, and each uses a two-core shielded wire. Refer to the technical data for the specific supply voltage range.

◎ Wring Connection

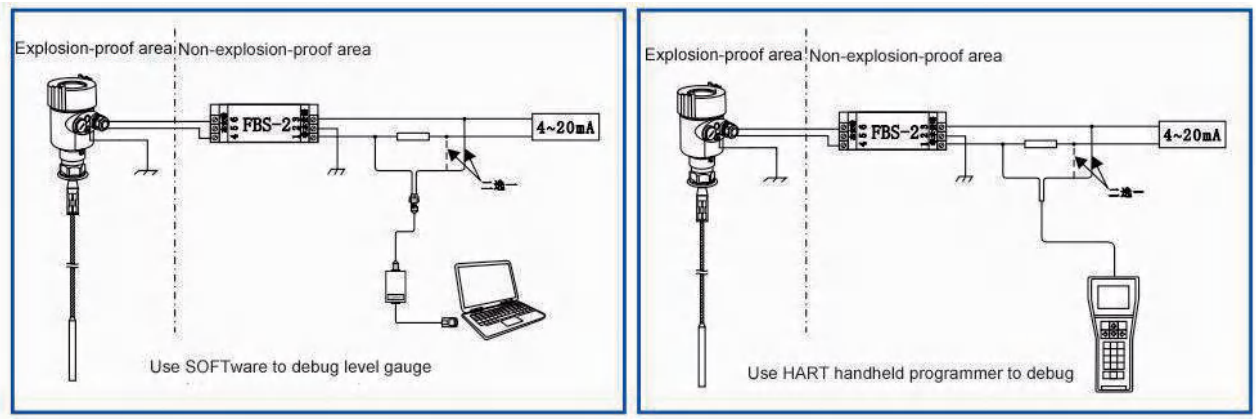


◎Explosion-proof connection

The explosion-proof form of this product is intrinsically safe. Explosion-proof mark: Exia IIC T6. The intrinsically safe guided wave radar level gauge uses a die-cast aluminum housing material, and the electronic components adopt a rubber seal structure to ensure that the sparks generated when the circuit part fails will not be discharged. This product is suitable for continuous level measurement of flammable media below ExiaIICT6 explosion-proof level.

This product must be powered by a safety barrier. FBS-2 safety barrier is the related equipment of this product, and the explosion-proof form is intrinsically safe. Explosion-proof mark: [Exia] IIC, power supply voltage (21.6~26.4) V DC, short circuit current is 135mA, working current (4~20) mA.

All cables should be shielded cables with a maximum length of 500m from the instrument to the safety barrier. Distributed capacitance≤0.1μF/km, distributed inductance≤1mH/km. The instrument must be connected to the ground when it is installed. Do not use other related equipment that has not been tested for explosion protection.



APPLICATION

◎Power plant: coal pile, raw coal bunker, fuel bunker, storage tank, exhaust gas purification tank, bunker pump, steam drum, ash storage, oil tank, etc.;

◎Oilfield: crude oil storage tank, product oil storage tank, three-phase separator, settling tank, sewage tank, oil-water interface, drilling mud tank, etc.;

◎Chemical: crude oil distillation tower, raw material silo, intermediate silo, reaction tank, ammonia water tank, solid silo, separator, asphalt storage tank, etc.;

◎Metallurgy: blast furnace, ore silo, ore crusher, raw material silo, auxiliary silo, alumina powder silo, electrolytic cell buffer tank, etc.;

◎Water conservancy: water channels, reservoirs, farmland irrigation, river water level monitoring, mountain flood warning, urban waterlogging, etc.;

◎Cement: stone silo, raw silo, cement silo, pulverized coal silo, slag storage silo, commercial concrete, etc.;

◎Food: Juice factory, milk factory, raw sugar storage tank, tomato sauce storage tank, beer factory storage tank, etc.;

◎Pharmaceutical: Chinese medicine storage tank, separator, fermentation tank, etc.;

◎Water treatment: storage tank, sewage tank, water treatment tank, sedimentation tank, deep well, drinking water network, etc.;

◎Papermaking: raw material warehouse, storage tower, drying drum, chemical material storage warehouse, etc.;

◎Other: quarry, coal mine, environmental protection, shipbuilding and other industries.

CHENGDU SENTEC TECHNOLOGY CO., LTD
Email: info@cdsentec.com www.cdsentec.com.
Unit 1, Bldg. 2, Shangding int'l, No.27, section 4,
Renmin South Road, Wuhou Dist., Chengdu, 610042, China.