

SRL630 SERIES 76-81GHz FMCW Radar Level Meter

OVERVIEW

SRL630 frequency modulated continuous wave (FMCW) radar level meter antenna emits a frequency modulated continuous wave signal (76~81GHz), which propagates in space at the speed of light, and encounters the measured medium. Part of the energy of the surface is reflected back and received by the same antenna. The echo signal received by the antenna is mixed with the transmitted signal, and the output is output after mixing. The frequency of the frequency signal is proportional to the distance, so as to calculate the distance from the antenna to the surface of the measured medium.



76-81GHz FM
continuous wave



Maximum detection
distance 120m



The narrowest beam
angle 3



Accuracy $\pm 1\text{mm}$



G7/2 thread type



G3/2 thread type



Universal type



Universal flange type



Anticorrosive

FEATURES

- Based on self-developed millimeter-wave radio frequency chip to achieve a more compact radio frequency architecture;
- Higher signal-to-noise ratio, almost unaffected by level fluctuations;
- The measurement accuracy is millimeter-level accuracy (1mm), which can be used for metrology-level measurement;
- The measurement blind area is small (3cm), and the effect of measuring the liquid level of small storage tanks is better;
- The beam angle can reach 3°, and the energy is more focused, effectively avoiding false echo interference;
- High frequency signal, can effectively measure the level of medium with low dielectric constant ($\epsilon \geq 1.5$);
- Strong anti-interference, almost unaffected by dust, steam, temperature and pressure changes;
- The antenna adopts PTFE lens, which is effective anti-corrosion and anti-hanging material;
- Support remote debugging and remote upgrade, reduce waiting time and improve work efficiency;
- It supports mobile phone Bluetooth debugging, which is convenient for maintenance work of on-site personnel

APPLICATION

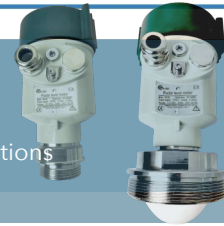
SRL630 Millimeter-wave radar measurements can effectively penetrate high-dust environments and are not affected by temperature. They are widely used in industrial fields. The company uses self-developed 76GHz-81GHz millimeter-wave chips to develop high-frequency millimeter-wave radars, which have high detection accuracy, small blind spots, and can be applied to extreme environments in various industrial production sites. Currently widely used in chemical, energy, steel, cement, food, pharmaceutical production and other industries





Application - Multilayer Mixed Tank Measurement

-The best choice for stirring, multi-layer stirring and condensation applications



FEATURES

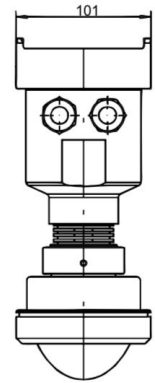
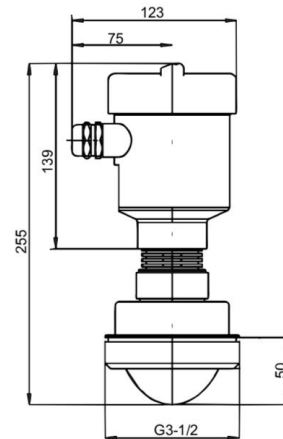
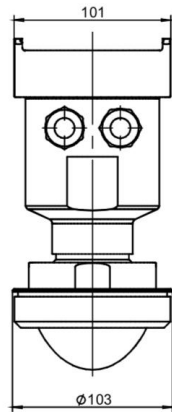
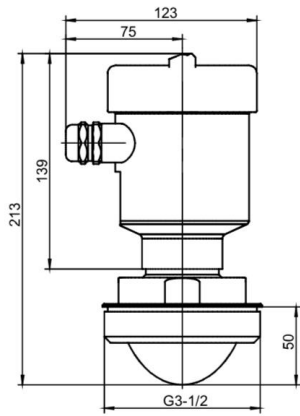
- 80GHz continuous frequency modulation wave radar has a narrower beam angle, which can better penetrate the space between the stirring blade and the tank wall and reduce the interference caused by the stirring blade;
- The radar adopts spherical lens, which is not easy to hang condensation on a large area. Combined with the proprietary algorithm, it has obvious advantages in measuring condensation environmental conditions;
- The radar has a highly stable algorithm, which can stably track liquid level measurements such as splashing, splashing, and eddy currents caused by stirring and spoilers.

SPECIFICATION

Frequency	76GHz ~ 81GHz
Measuring range	0~ 120m
Measurement accuracy	±1mm
Beam angle	3°/8°
Process temperature	85°C/200°C
Dimension	φ100*270mm
Cable entry	M20*1.5
Process pressure	-0.1~2MPa
Protection class	IP67
Explosion-proof grade	ExdiallCT6
Installation method	Thread
Recommended cables	AWG18 or 0.75mm ²
Shell material	Aluminum alloy, stainless steel
Fault output	3.8mA, 4mA, 20mA, 21mA, hold
Communication method	4~20mA/Hart/Modbus
Field operation/programming	128 × 64 dot matrix display / 4 buttons PC software Bluetooth
Antenna type	Lens antenna, can be equipped with lens antenna shield/anti-corrosion antenna/antenna thermal paste/quartz isolation flange
Weight	2.480Kg/2.995Kg
Packing box size	370*270*180mm

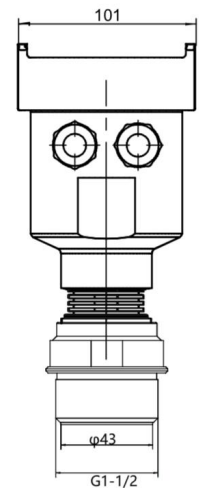
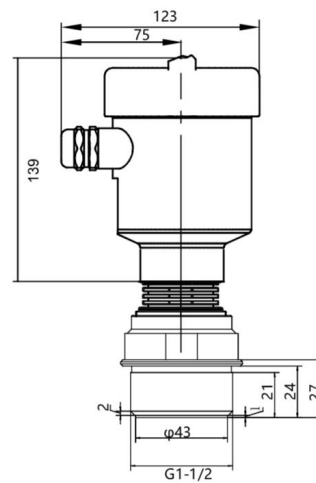
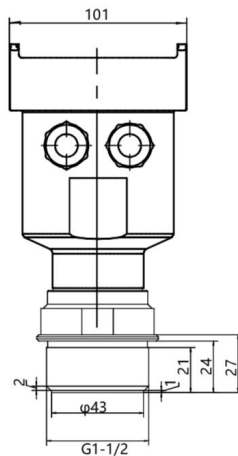
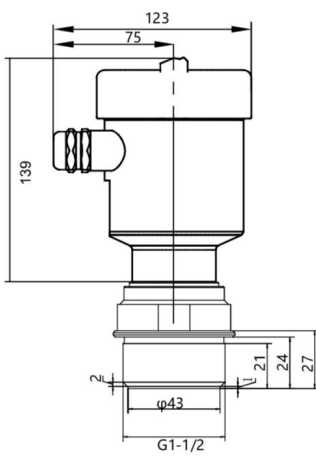
DIMENSION

Unit: mm



Normal temperature G3-1/2 pipe thread connection drawing

High temperature G3-1/2 pipe thread connection drawing

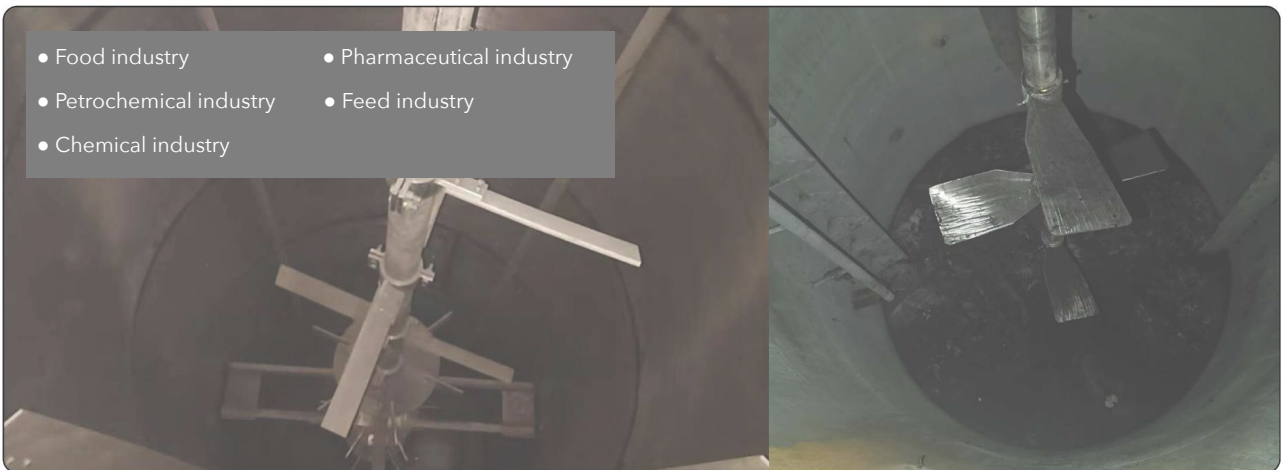


Normal temperature G1-1/2 pipe thread connection drawing

Normal temperature G1-1/2 pipe thread connection drawing

APPLICATION

- Food industry
- Petrochemical industry
- Chemical industry
- Pharmaceutical industry
- Feed industry





Application - High range level measurement

-The best choice for high range dust, strong dust and dust attachment applications



FEATURES

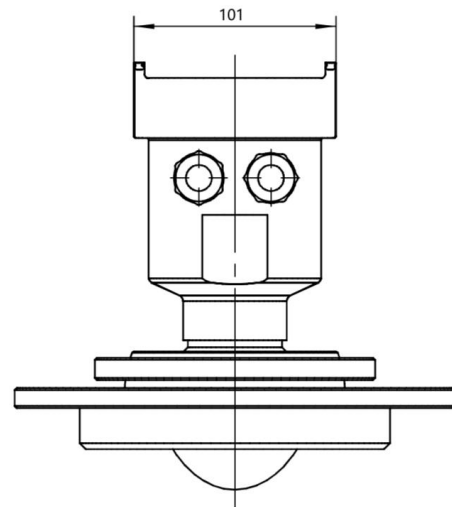
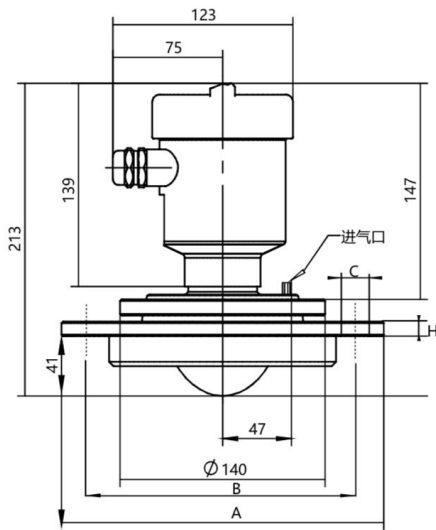
- 80G continuous frequency modulation wave measurement, with better penetration to high dust environment;
- Mature tracking algorithm, more stable for dust level tracking, easy to deal with high-range cement, toner and plant ash and other scenarios;
- The unique measurement algorithm can penetrate the powder dust attached to the surface of the antenna, and the signal is not easy to be blocked.

SPECIFICATION

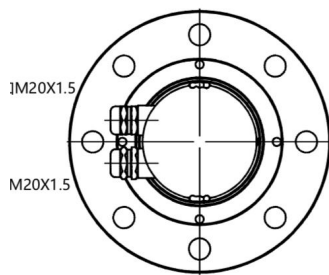
Frequency	76GHz ~ 81GHz
Measuring range	30m/60m/120m
Measurement accuracy	±1mm
Beam angle	3°
Process temperature	85°C/200°C
Dimension	φ100*270mm
Cable entry	M20*1.5
Process pressure	-0.1~2MPa
Protection class	IP67
Explosion-proof grade	ExdialICT6
Installation method	Flange
Recommended cables	AWG18 or 0.75mm ²
Shell material	Aluminum alloy, stainless steel
Fault output	3.8mA, 4mA, 20mA, 21mA, hold
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Packing box size	370*270*180mm

DIMENSION

Unit: mm



Schematic diagram of universal structure dimensions



	A	B	C	H
DN80	φ190	φ150	4-φ18	φ15
DN100	φ210	φ170	4-φ18	φ15
DN125	φ240	φ200	8-φ18	φ17
DN150	φ265	φ225	8-φ18	φ17
DN200	φ320	φ280	8-φ18	φ19

Flange specification sheet

APPLICATION



- Cement industry
- Petrochemical industry
- Chemical industry
- Coal industry
- Feed industry



Applications - Antiseptic level measurement
 - Best choice for corrosive vapor-liquid, high temperature and high pressure environment measurement



FEATURES

- Adopt integral lens with teflon sealing surface to ensure corrosive gas and liquid will not enter inside the equipment;
- The lens structure for high pressure scenarios can withstand 3MPa pressure in scenarios up to 150°C;
- The specially designed antenna lens structure can realize small blind area measurement within 8cm;

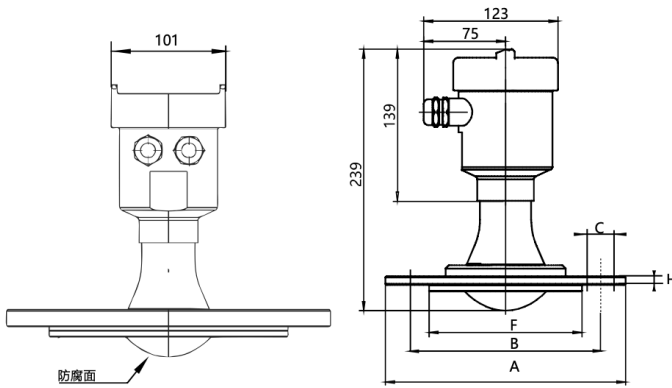
SPECIFICATION

Frequency	76GHz ~ 81GHz
Measuring range	30m/60m/120m
Measurement accuracy	±1mm
Beam angle	3°/8°
Process temperature	85°C/150°C/200°C
Dimension	φ100*270mm
Cable entry	M20*1.5
Process pressure	-0.1~2MPa
Protection class	IP67
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DIMENSION

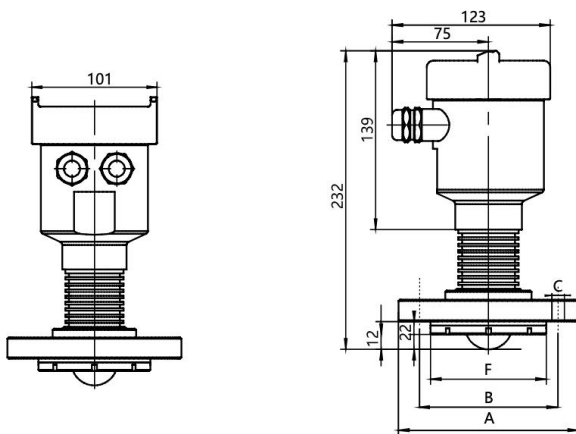
Unit: mm

- Antenna 3° structure diagram



	A	B	C	H	H
DN80	φ190	φ150	4-φ18	φ128	φ18
DN100	φ210	φ170	4-φ18	φ148	φ18
DN125	φ240	φ200	8-φ18	φ178	φ20
DN150	φ265	φ225	8-φ18	φ202	φ20
DN200	φ320	φ280	8-φ18	φ258	φ22

- Antenna 8° structure diagram



	A	B	C	H	H
DN50	φ140	φ110	4-φ14	φ90	φ16
DN65	φ160	φ130	4-φ14	φ110	φ16

APPLICATION





Applications - High temperature and high pressure measurement
 - The best choice for material measurement in high temperature and high pressure working environment



FEATURES

- 80G continuous frequency modulation wave with 3° beam Angle, to achieve high penetration, can penetrate thick quartz glass, to achieve high temperature insulation;
- Specially designed shaped glass can withstand up to 10MPa process pressure at 200°C process temperature;

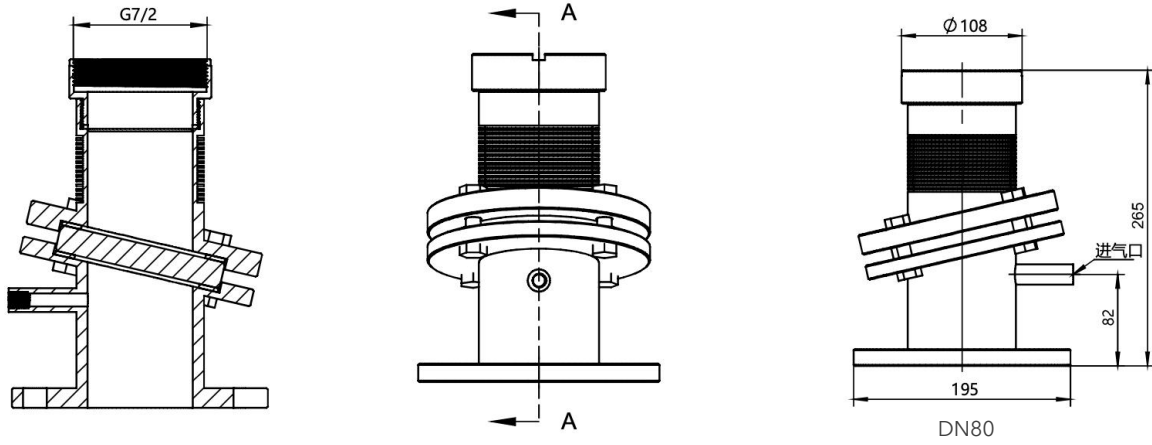
SPECIFICATION

Frequency	76GHz ~ 81GHz
Measuring range	30m/60m/120m
Measurement accuracy	±1mm
Beam angle	3°/8°
Process temperature	1200°C
Dimension	φ100*270mm
Cable entry	M20*1.5
Process pressure	10MPa
Protection class	IP67
Explosion-proof grade	ExdialICT6
Installation method	Flange
Recommended cables	AWG18 or 0.75mm ²
Shell material	Aluminum alloy, stainless steel
Fault output	3.8mA, 4mA, 20mA, 21mA, hold
Communication method	4~20mA/Hart/Modbus
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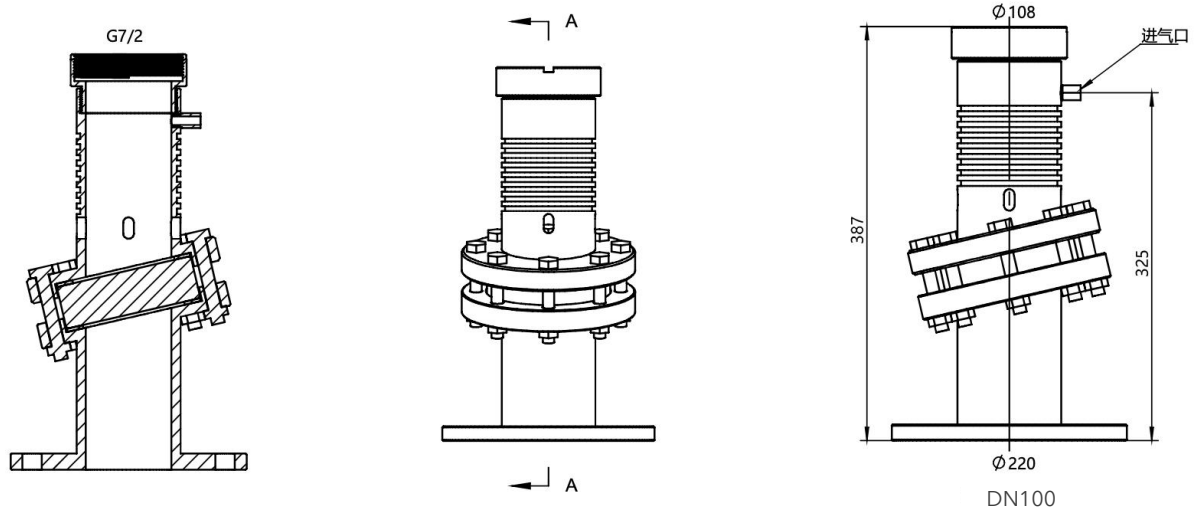
DIMENSION

Unit: mm

- Schematic diagram of 350°C high temperature flange insulation device



- Schematic diagram of 1200°C high temperature flange insulation device



APPLICATION

- Petrochemical industry
- Iron and steel industry
- Chemical industry
- Energy industry



ORDER GUIDE

SRL630	76-81GHz FM Radar Level Meter						
	CODE	Range					
	1	0.08~10meter					
	2	0.08~20meter					
	3	0.08~30meter					
	6	0.3~60meter					
	12	0.8~120meter					
	CODE	wire					
	2	2-wire					
	4	4-wire					
	CODE	Antenna beam Angle					
	3	3°					
	8	8°					
	CODE	process temperature					
	T0	-40~85 °C					
	T1	-40~200 °C					
	T2	-40~350 °C(With temperature isolation device)					
	T3	-40~1000 °C(With temperature isolation device)					
	CODE	process pressure					
	P1	-0.1~0.6Mpa					
	P2	-0.1~1.0Mpa					
	P3	-0.1~1.6Mpa					
	P4	-0.1~2.0Mpa					
	P5	-0.1~2.5Mpa					
	P6	-0.1~10Mpa					
	CODE	process connection					
	S	Sanitary chuck (Size customized)					
	T	Thread (Size customized)					
	F	Flange (Size customized)					
	CODE	Bluetooth					
	Y	With					
	N	Without					
	CODE	Shell material					
	A	Aluminum shell					
	S	Stainless steel case					
SRL630	A	2	0	T0	P	P0	Order example

ANTENNA TYPES

ANTENNA TYPE							
Drawing							
Material	PTFE	PTFE	316L+PTFE	316L+PTFE	316L+PTFE	316L+PTFE	PTFE
Connection size	Thread G3/2A	Thread G3/2A	Flange DN80 DN100 DN150	Flange DN80 DN100 DN150	Flange DN50 DN65	Flange DN50 DN65	Flange DN50 DN80 DN100 DN125
Features	Liquid/solid	Liquid/solid	Antiseptic	Antiseptic/ high temperature	Antiseptic	Antiseptic/ high temperature	Anticorrosive full PTFE
Drawing							
Material	PTFE	PTFE	316L+PTFE	316L+PTFE	316L+PTFE	316L+PTFE	PTFE
Connection size	Flange DN80 DN100 DN125 DN200	Flange DN80 DN100 DN125 DN200	Hygienic chuck	Thread G1/2A	Thread G1/2A	DN80	DN100
Features	universal	universal/ high temperature	High temperature	Liquid	High temperature	High temperature 350°C	High temperature 1000°C

INFORMATION

You can find further information about the SENTEC product line on www.cdsentec.com
 You can write to us @ info@cdsentec.com or call us @ 0086 28 60253688