

RADAR LEVEL METER SERIE RL 1080



ATENÇÃO !

LEIA TODAS AS RECOMENDAÇÕES PRESENTES NESTE MANUAL ANTES DE INICIAR A INSTALAÇÃO, EVITANDO ASSIM, O MANUSEIO INCORRETO, FALHA DO EQUIPAMENTO E ATÉ MESMO LESÕES PESSOAIS.

1. Introduction

76-81GHz frequency modulation wave FMCW radar product (also called millimeter wave radar), it uses a millimeter wave band with a higher frequency than Ku band radar, it can detect smaller targets and achieve more precise positioning than microwave radar with higher resolution and stronger confidentiality. Therefore, it has important applications in long-distance target detection, strong smoke and dust environment, long-distance imaging, multi-spectral imaging, etc.

What is millimeter wave electromagnetic wave: Usually the electromagnetic wave in the frequency domain of 30-300GHz (wavelength is 1-10 mm) is called millimeter wave. It is located in the overlapping wavelength range of microwave and far-infrared wave, so it has the characteristics of two kinds of wave spectrum.



2. 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 ($\epsilon \geq 1.5$);

It supports mobile phone Bluetooth debugging, which is convenient for maintenance work of on-site personnel.

Support remote debugging and remote upgrade, reduce waiting time and improve work efficiency;

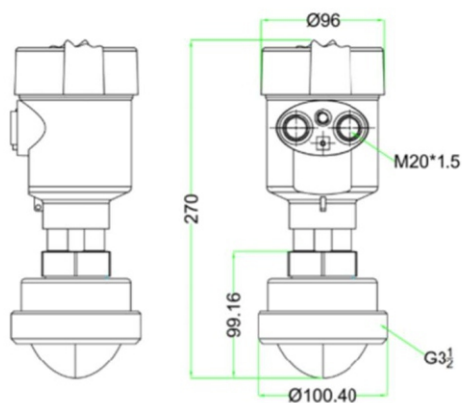
3. Parameters

- Product: 80GHZ Radar Level Transmitter
- Measuring range: 0m~120m
- Accuracy: $\pm 1\text{mm}$
- Antenna: Lens antenna/anti-corrosive antenna / flange isolated by quartz
- Enclosure: Aluminum alloy, stainless steel
- Beam angle: $3^{\circ}/8^{\circ}$
- Measuring frequency: 76~81GHz
- Power supply: 15~28 VDC
- Output signal: 4-20mA / Rs485 / 4-20mA + Hart
- Humidity: $\leq 95\%RH$
- Process pressure: -0.1~2MPa
- Ambient temperature: T0: -40~85°C; T1: -40~200°C; T2: -40~500°C; T3: -40~1000°C
- Protection grade: Ip67
- Installation method: Thread or Flange
- Cable Entry: M20*1.5

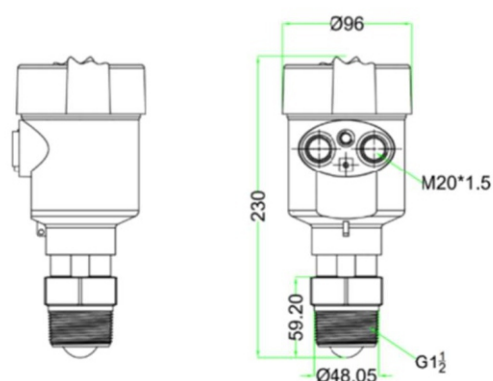
3. Product Drawing

DIMENSIONS

Unit: mm

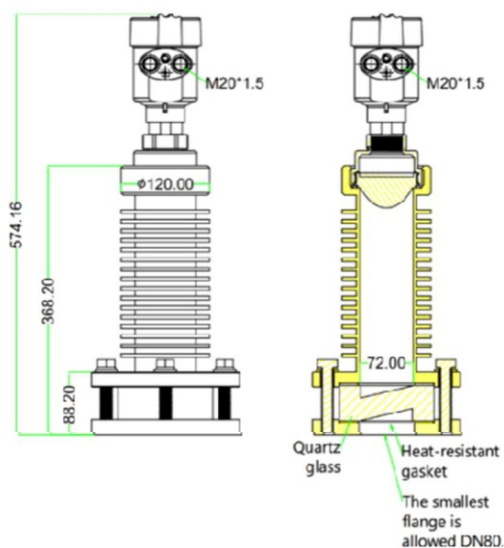


3° antenna beam width

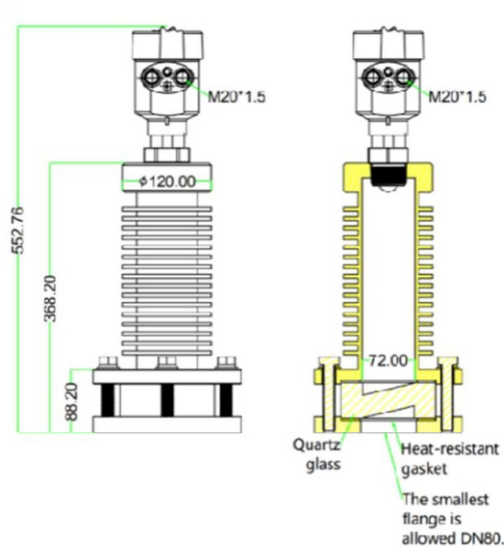


8° antenna beam width

high temperature resistant structure (for T2 and T3)



3° antenna beam width



8° antenna beam width

Picture							
Model	RL1081	RL1082	RL1083	RL1084	RL1085	RL1086	RL1087
Application	Slightly corrosive liquid, stirring, condensation	Slightly corrosive liquid, stirring, condensation	Strong dust, Solid, Block, Powder	Strong corrosive liquid, stirring, condensation	High temperature, strong corrosive liquid, stirring, condensation	Strong corrosive liquid, stirring, condensation	High temperature and high pressure liquid and solid
Process Connection	1.5" Thread, Flange	3.5" Thread, Flange	Flange with purging	Flange	Flange	Flange	Flange
Standard Process Temperature	-30~+100℃	-30~+80℃	-30~+100℃	-30~+75℃	-40~+200℃	-30~100℃	-40~+1000℃
Process Pressure	-0.1~0.3 MPA	-0.1~0.3 MPA	-0.1~0.3 MPA	-0.1~0.1 MPA	-0.3~2 MPA	-0.1~2 MPA	-0.5~3 MPA
Beam Angle	8°	3°	3°	5°	5°	8°	3°
Measuring Range	10m, 20m, 30m	10m, 20m, 30m, 80m, 120m	10m, 20m, 30m, 80m, 120m	10m, 20m, 30m, 80m, 120m	10m, 20m, 30m, 80m, 120m	10m, 20m, 30m	10m, 20m, 30m, 80m, 120m
Accuracy	±1 mm(≤30mm) ±3 mm(≥30mm)		±5 mm	±1 mm(≤30mm), ±3 mm(≥30mm)			
Wetted Parts	PTFE						Carbon steel, SS304, SS316
Blind zone	0.15m for 35m, 0.4m for 85m, 0.6m for 120m						
Frequency	76~81GHz, FM scanning frequency width 5GHz						
Ambient Temperature	-30~+70℃						
Shell Material	Cast Aluminium, SS304, SS316						
Power Supply	18~28 VDC, 85~865 VAC						
Signal Output	Two-wire / four-wire 4~20mA, HART / RS485 Modbus / Bluetooth						
Structurer	Compact, remote						
Ex-proof	Ex d IIC T6 Gb optional						
Protect Grade	IP67						
Language	English, Spanish, Russian, Portuguese, Korean						

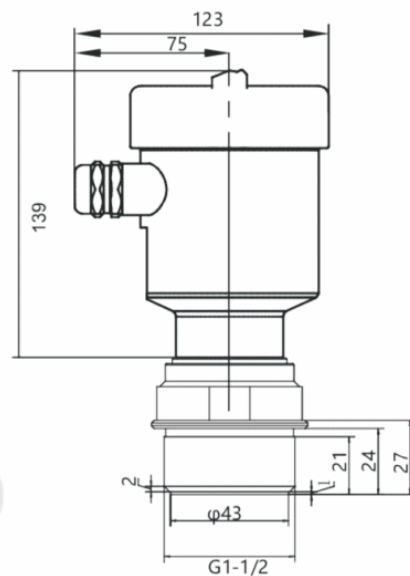
RL1081



Thread Connection



Flange connection



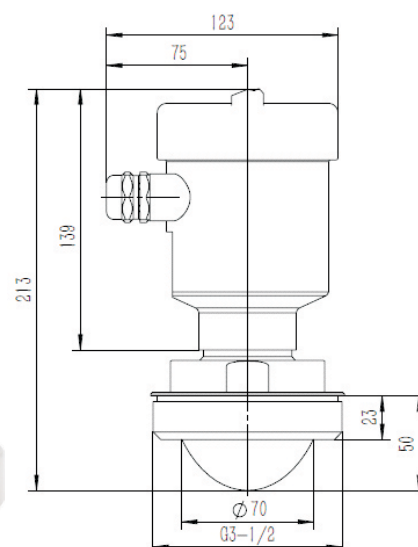
RL1082



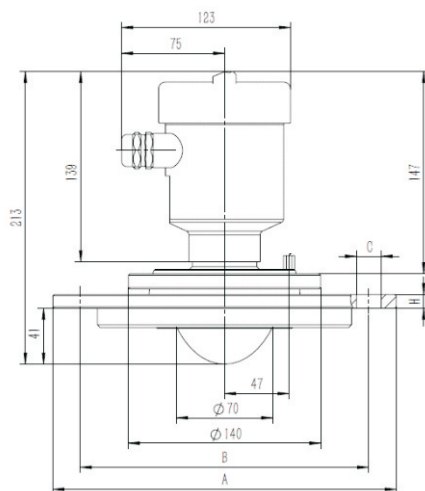
Thread Connection



Flange connection

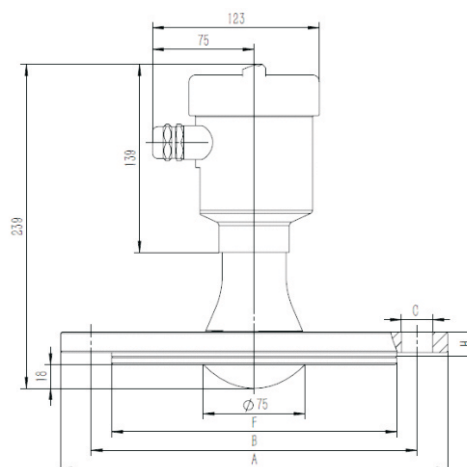


RL1083



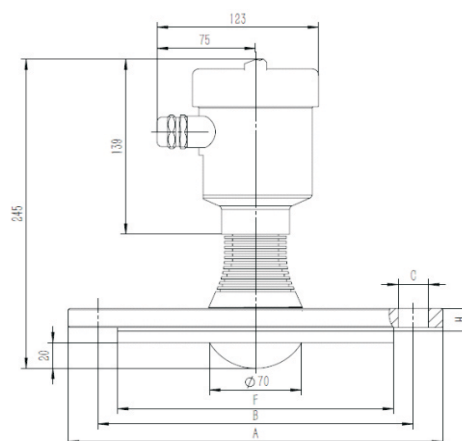
	A	B	C	H
DN80	190	150	4-φ18	15
DN100	210	170	4-φ18	15
DN125	240	200	8-φ18	17
DN150	265	225	8-φ18	17
DN200	320	280	8-φ18	19

RL1084



	A	B	C	F	H
DN80	φ190	φ150	4-φ18	φ128	18
DN100	φ210	φ170	4-φ18	φ148	18
DN125	φ240	φ200	8-φ18	φ178	20
DN150	φ265	φ225	8-φ18	φ202	20
DN200	φ320	φ280	8-φ18	φ258	20

RL1085



	A	B	C	F	H
DN80	φ200	φ160	8-φ18	φ138	20
DN100	φ220	φ180	8-φ18	φ158	22
DN125	φ250	φ210	8-φ18	φ188	22
DN150	φ285	φ240	8-φ22	φ212	24
DN200	φ340	φ295	12-φ22	φ268	26



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