

BT7301/7302

26GHz Radar Level Meter



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I. General Introduction

BT7301/2 radar level transmitters emit narrow microwave pulses from their antennas. These pulses propagate at the speed of light in space and when they encounter the surface of the measured medium, a portion of their energy is reflected back and received by the same antenna. The time interval between the transmitted and received pulses is directly proportional to the distance between the antenna and the surface of the measured medium.

Due to the extremely high speed of electromagnetic wave propagation, it is challenging to accurately determine the time interval between the transmitted and received pulses, which is on the order of nanoseconds. The BT7301/2 radar level transmitters employ a special demodulation technique that allows for precise identification of the time interval between the transmitted and received pulses, enabling accurate calculation of the distance from the antenna to the surface of the measured medium.

II. Product Features

- ☑The narrow beam angle of the radar level transmitter allows for concentrated energy, providing strong resistance to interference and greatly improving measurement accuracy and reliability.
- ☑The small antenna size facilitates installation and the addition of

protective devices such as dust covers.

☑ With a lightweight design of approximately 1kg, it is easy to install.

☑ The measurement range can reach up to 70 meters, making it suitable for large-scale water level measurements in reservoirs and other applications.

☑ It offers multiple output circuit interfaces that can be integrated with data acquisition systems.

☑ Using a pulse operating mode, the radar level transmitter emits extremely low power, posing no harm to humans or the environment.

III. Technical parameters

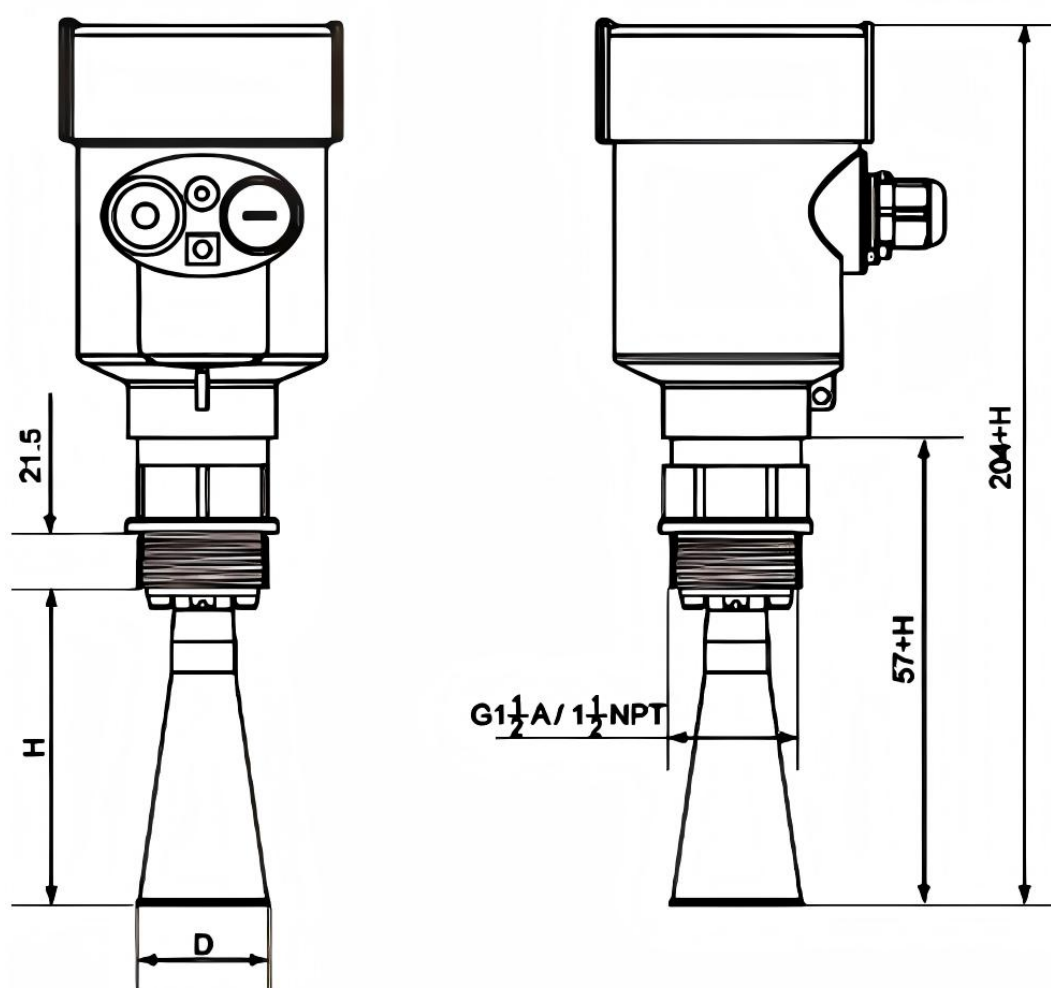
Main Specif ications	Blind Area	End of the Antenna	
	Max. Measuring Distance	BT7301	30m
		BT7302	70m
	Microwave Frequency	26 GHz	
	Communication Interface	Mod-bus	
	Measuring interval	≈ 1s	
	Adjusting Time	≈ 1s	
	Display Resolution	1 mm	
	Working/Storage/Transportation Temp.	(-40~100)°C	
	Process Temp.(Antenna)	(-40~250)°C	
	Pressure	Max. 4MPa	



	Shock-proof	Mechanical vibration of 10m/s»	
Power Supply 4-Wire	Standard	(6~26)VDC	
	Consumption	max 12mA	
	Allowed Wave	-<100Hz	Uss<1V
		-(100-100k)Hz	Uss<10mV
Output Paramete rs	Output Signal	RS485	
	Communication Protocol	Mod-bus	
	Resolution	1.6 u AC	
	Breakdown Signal	Current output remain unchanged	
		20.5 mA	
		22 mA	
		3.9 mA	
	Integral time	(0-50)s, adjustable	
Housing	Sealing between outer cover and shell	Silicon rubber	
	Shell Window	Polycarbonate	
	Ground Terminal	Stainless Steel	
Cable Paramete rs	Cable entry/plug	M20*1.5 Cable entry	
	Connecting Terminal	Wire Cross-section 1.0 mm ²	

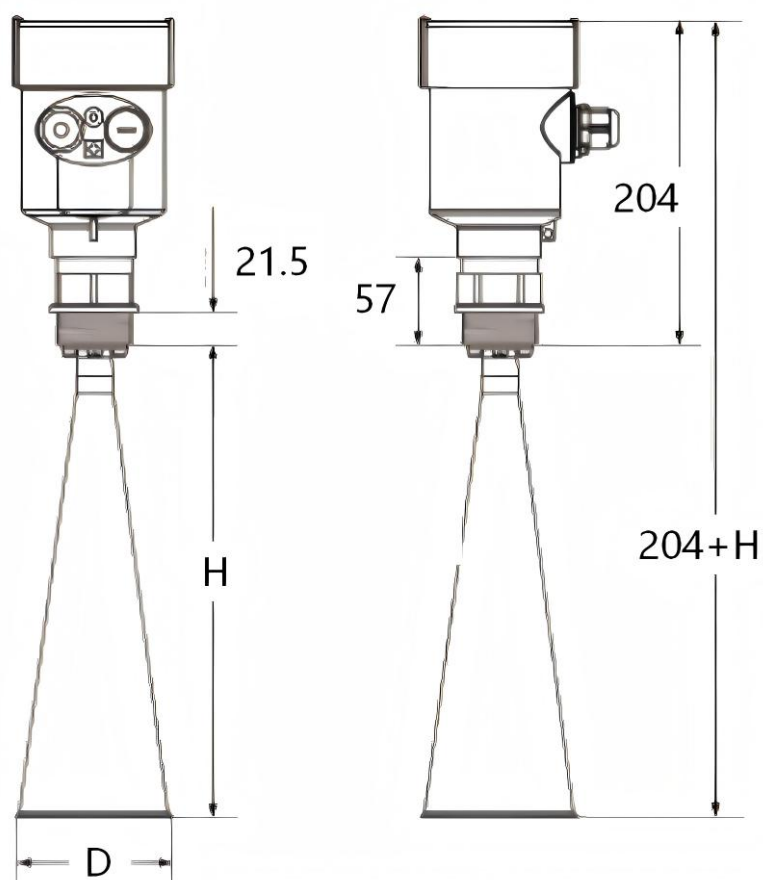
IV. Dimensional structure(Unit:mm)

BT7301



Flange	Bell Mouth Diameter	Bell Mouth Height
DN50	φ46	140
DN80	φ76	227
DN100	φ96	288

BT7302



Flange	Bell Mouth Diameter	Bell Mouth Height
DN80	φ76	227
DN100	φ96	288
DN125	φ121	620

Options for Flange

Size	Diameter-D	Center hole spacing-K	Number of holes-N	Aperture
DN50	φ165	φ125	4	18
DN80	φ200	φ160	8	18
DN100	φ220	φ180	8	18



DN125	φ250	φ210	8	18
DN150	φ285	φ240	8	22
DN200	φ340	φ295	12	22
DN250	φ405	φ355	12	26

V. Typical Industry Applications

Hydrological & Surface Water Monitoring:

Long-distance, non-contact level measurement for rivers, lakes, reservoirs, tidal channels, and flood warning systems.

Water Conservancy & Dams:

Precise water head monitoring at spillways, dam crests, and intake gates.

Industrial Liquid & Wastewater Tanks:

Level sensing in chemical storage vessels, water treatment sedimentation basins, and industrial sumps.

Severe Weather & Environmental Monitoring:

Rugged IP67 protection ensures continuous operational reliability under heavy rain, dust, and outdoor vibration.

vi. Option Guide



C o d e	Process Connection	Material					
G	Thread G1 1/2"	Stainless Steel 304					
N	Vertical bracket	Stainless Steel 304					
M	Gantry bracket	Stainless Steel 304					
Y	Special customizati on	Stainless Steel 304					
	Code	Antenna Types	Materi al				
		A	φ96 mm	Stainles s Steel 304			
		B	φ121 mm	Stainles s Steel 304			
	Y	Special customizati on	Stainles s Steel 304				
		Code	Sealing	Process Temperatur e			
		V	Stand ard Sealin g	-40~150 °C			
			Code	Electronic unit			
			V	RS485/Mod -bus/4-Wire			
				Code	Housing	Protection Level	
		L		Aluminiu m	IP67		
		G		Plastic	IP65		



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					Code	Cable Entry	
					N	1/2" NPT	
					M	M20*1.5	
						Code	On-site display/programming
						A	With
						X	Without
G	A	V	V	G	N	A	Example of Model