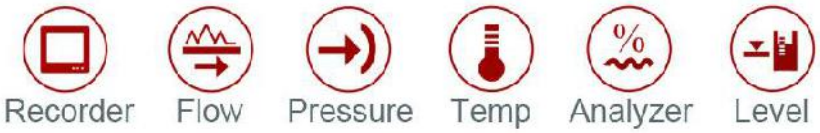


Datasheet

Radar level transmitter

BSD-WSR550

BSD
INSTRUMENTATION
& SYSTEMS LTD.

Datasheet

Level radar transmitter
BSD-WSR550

The 76-81GHz series products refer to frequency modulated continuous wave (FMCW) radar products operating at 76-81GHz, supporting four-wire and two-wire applications. The product has multiple models, the range can reach 120m, and the blind zone can reach 8 cm. Because of its higher operating frequency and shorter wavelength, it is especially suitable for solid applications. The working method of transmitting and receiving electromagnetic waves through the lens has unique advantages in high dust and harsh temperature environments (+200℃). The instrument provides flange or thread connection, which makes installation convenient and easy.

Applications

- Chemical industry
- Solids level measurement
- Sewage treatment
- Mining industry
- Paper and Pulp Industry
- Boiler Engineering
- Liquid and solid powder measure
- Acids, bases or other corrosive media

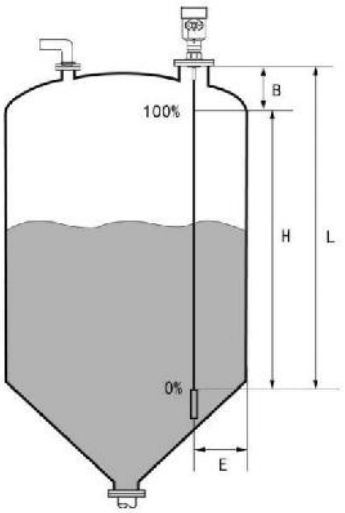
BSD-WSR550

Features

- Range: M1-10m, M2-20m, M3-30M, M6-60m, MB-120m
- Can be used in stirring, steam, dust, crystallization occasions
- Abundant physical interfaces: 4~20mA (2 channels optional), HART,AUTBUS
- Fieldbus Foundation, ProfibusPA, NB-IoT, etc.
- Support Bluetooth debugging function
- Support low dielectric constant (less than 1.5) medium TBF tank bottom reflection measurement
- Support backlight display

Principle

High-frequency microwave pulses issued by the guided wave radar propagate along detection components (steel cable or steel rod), met the media to be measured, since the dielectric constant of the mutation, cause reflections, a portion of the pulse energy is reflected back. Transmit pulse and the reflected pulse is proportional to the distance and the time interval measured media.



Explanation：

H--- Measuring range

L---Empty distance

B---The top of the blind

E---The minimum distance from the probe to the tank wall

--Blind spot is the minimum distance between the top of the highest material surface materials and measurement reference point.

--The bottom of the blind refers to a distance near the very bottom of the cable can not be accurately measured.

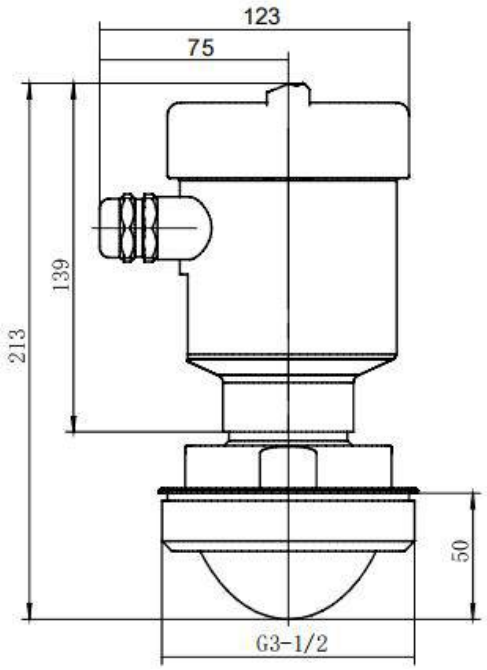
--Between the top and bottom of the blind is blind effective measure distances.

Note：

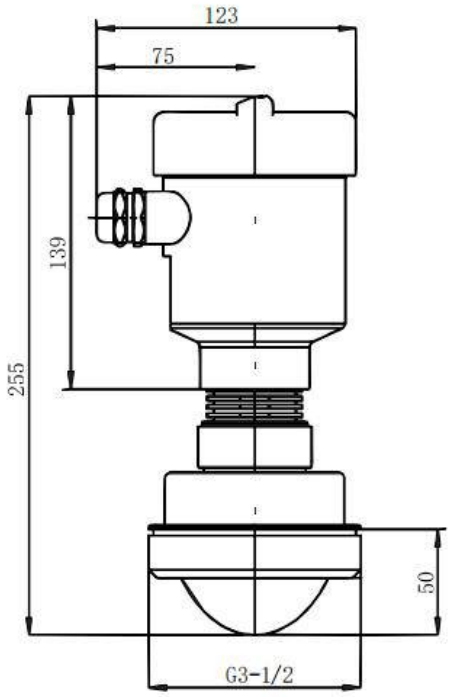
In order to ensure the accuracy of level measurement, the material should be located between the top and bottom of the blind the blind.

Parameters	
Transmit frequency	76GHz~81GHz
Range	0.08 m ~10m；0.08~20m；0.08 m ~30m；0.3 m~60m；0.6 m~120m
Accuracy	±1mm
Measurement interval	Fastest 100ms
Beam angle	3°/8°/20°
Dielectric constant range	≥2
Power supply	12~28VDC
Communication	MODBUS, HART
Signal output	4~20mA or RS-485
Fault output	3.8mA, 4mA, 20mA, 21mA, hold
On-site operation/programming	128×64 dot matrix display/4 buttons; configurable host computer setting software
Industrial temperature/humidity	T0:-40~85℃/humidity≤95%RH; T1:-40~200℃; T2:-40~500℃; T3:-40~1000℃
Shell material	Aluminum alloy, stainless steel
Process connection	Pipe thread/universal flange/anti-corrosion flange/sanitary chuck/quartz isolation flange
Process pressure	-0.1~2MPa
Dimension	φ 100*270mm
Connection	M20*1.5
Recommended wire	AWG18 or 0.75mm²
Ingress protection	IP67
Mounting method	Thread or flange

Dimension

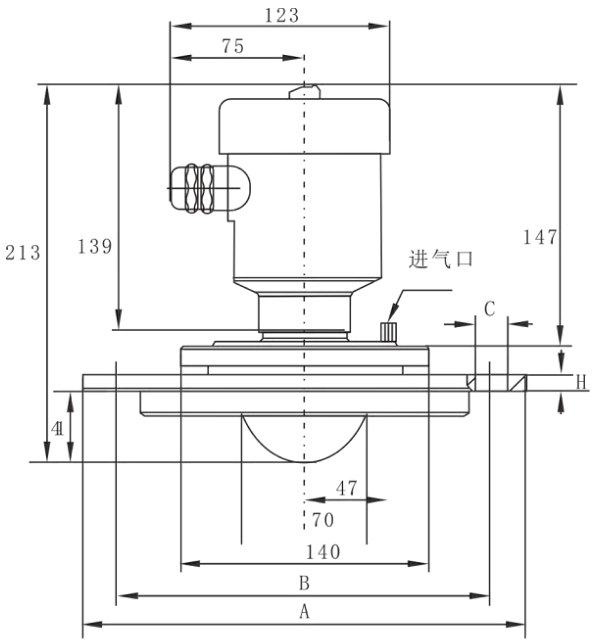


Normal temperature pipe threaded connection



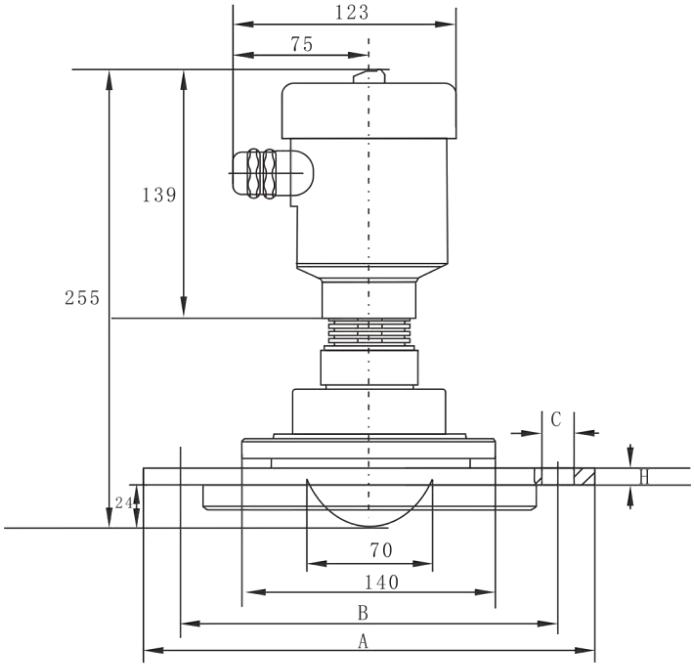
Note: This model needs to be equipped with a high temperature version of the electronic module

High temperature (-40...200°C) pipe thread connection



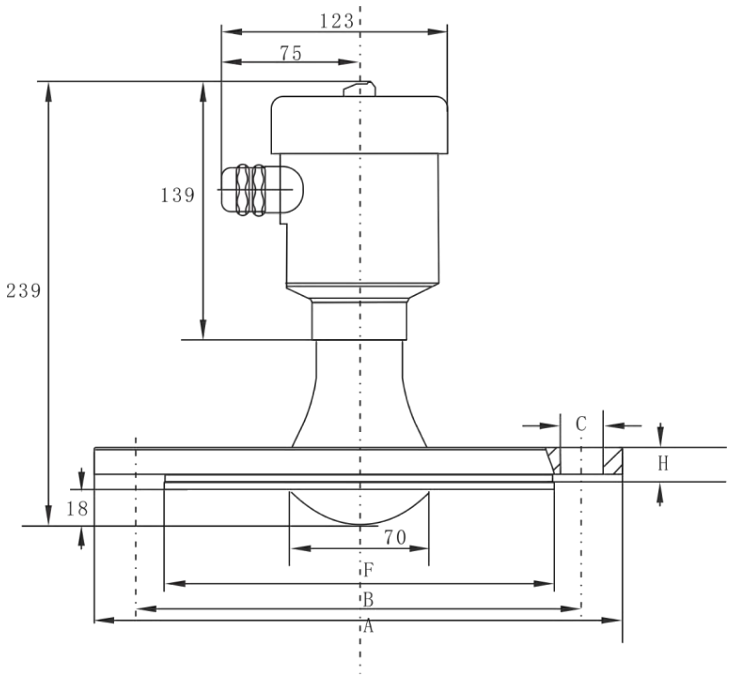
	A	B	C	H
DN80	Φ190	Φ150	4-Φ18	15
DN100	Φ210	Φ170	4-Φ18	15
DN125	Φ240	Φ200	8-Φ18	17
DN150	Φ265	Φ225	8-Φ18	17
DN200	Φ320	Φ280	8-Φ18	19

Normal temperature universal flange structure

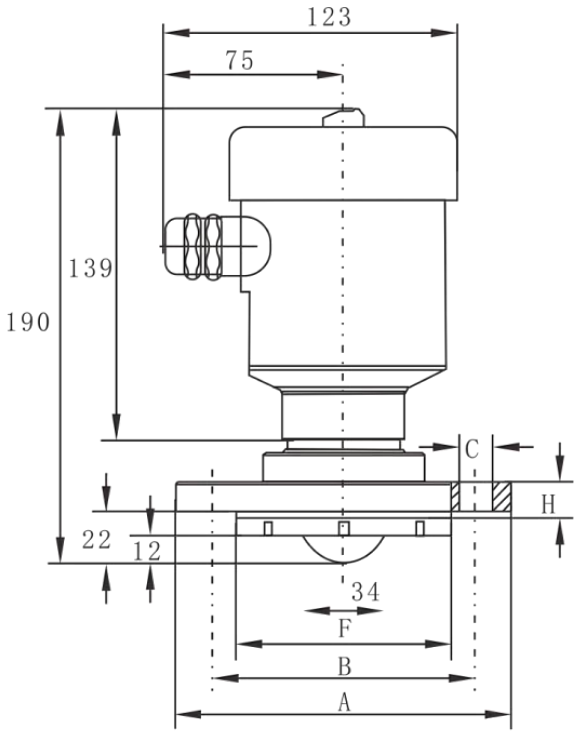


	A	B	C	H
DN80	Φ190	Φ150	4-Φ18	15
DN100	Φ210	Φ170	4-Φ18	15
DN125	Φ240	Φ200	8-Φ18	17
DN150	Φ265	Φ225	8-Φ18	17
DN200	Φ320	Φ280	8-Φ18	19

High temperature (-40...200℃) universal flange structure



	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	22



	A	B	C	F	H
DN50	Φ140	Φ110	4-Φ14	Φ90	16
DN100	Φ160	Φ130	4-Φ14	Φ110	16

Normal temperature anti-corrosion flange structure

Ordering code

BSD-WSR550 -F1-R1-C1-M1-S1-T1-P1-B1															Description
BSD-WSR550	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Frequency	F1														76~81GHz
	FZ														Customized
Range		R1													0-10m
		R2													0-20m
		R3													0-30m
		R4													0-60m
		R5													0-120m
		RZ													Customized
Connection			C1												G¾(DIN 3852-E)@14°
			C2												¾NPT(ASME B1.20.1)@14°
			C3												G1½(DIN 3852-A）@7°
			C4												1½NPT@7°
			C5												G2@5°
			C6												G3½@3°
			C7												DN50 PN16 @7°
			C8												DN65 PN16 @7°
			C9												DN80 PN16@5°
			C10												DN100 PN16@3°
			C11												DN150 PN16@1°
			CZ												Customized
Material				M1											Aluminum alloy
				M2											304
				M3											316
				M4											316L
				MZ											Customized
Seal material					S1										Fluororubber
					S2										EPDM
					S3										Kalrez 4079
					S4										Aegis Pf128
					S5										Borosilicate
					SZ										Customized
Temperature and pressure resistance						T1									80℃@2Bar
						T2									130℃@20Bar
						T3									230℃@20Bar
						TZ									Customized

Power supply and output	P1								2-wire, Hart
	P2								Four-wire system,RS485
	P3								Two-wire system,NB-iot
	P4								Fieldbus Foundation
	P5								Profibus PA
	PZ								Customized
Bluetooth output		B1							With
		B3							Without