



Recorder



Flow



Pressure



Temp



Analyzer



Level

Datasheet

Radar level transmitter

SUP-WSR550

**Supmea**<sup>®</sup>

Committed to process automation solutions

Tel: 86-15158063876

E-mail: [info@supmea.com](mailto:info@supmea.com)

[www.supmea.com](http://www.supmea.com)

## Level radar transmitter SUP-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°C). 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

### 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

**SUP-WSR550**

## Principle

High-frequency microwave pulses issued by the guided wave radar propagate along detection components (steel cable or steel rod), meet 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.

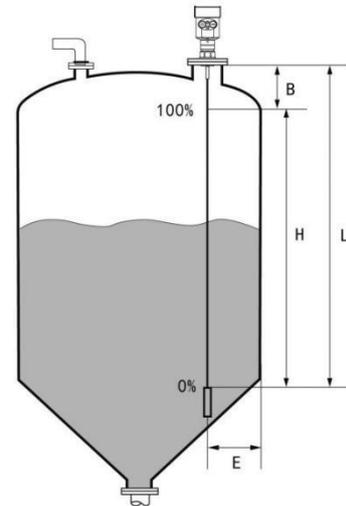
### Explanation:

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.

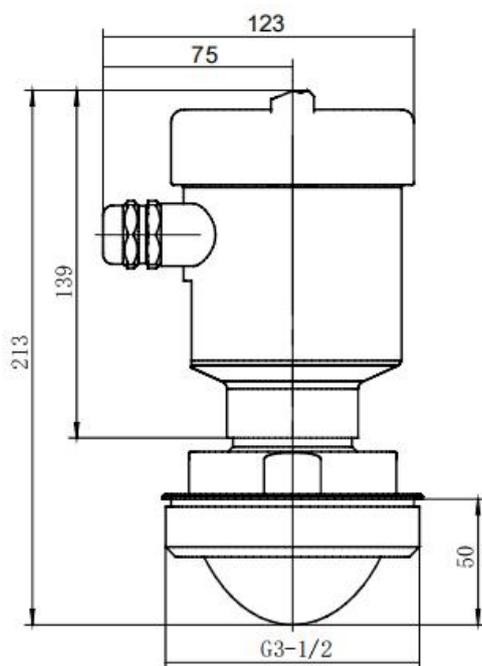
--Between the top and bottom of the blind is blind effective measure distances.

### Note:

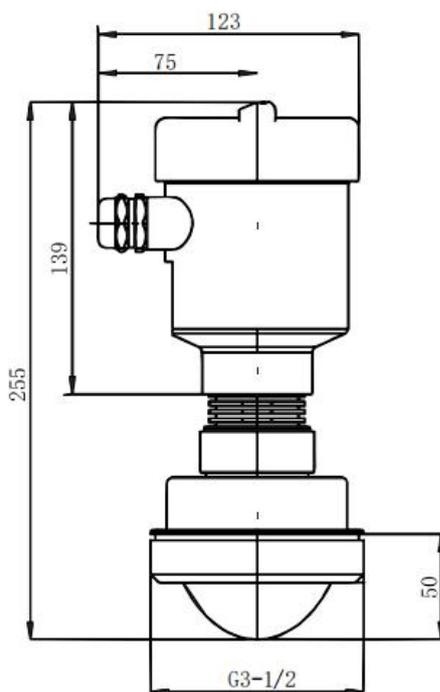
In order to ensure the accuracy of level measurement, the material should be located between the top and bottom of the blind the blind.

Parameters	
Transmit frequency	76GHz~81GHz
Range	0.08 m ~10m; 0.08~20m; 0.08 m ~30m; 0.3 m~60m
Accuracy	Liquid measurement: ±2mm Solid measurement: ±5mm
Measurement interval	1s
Beam angle	3°/8°
Dielectric constant range	≥2
Power supply	15~28VDC;220VAC
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°C/humidity≤95%RH; T1:-40~200°C; T2:-40~500°C; T3:-40~1000°C
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 0.75mm <sup>2</sup>
Ingress protection	IP67
Mounting method	Thread or flange

Dimension

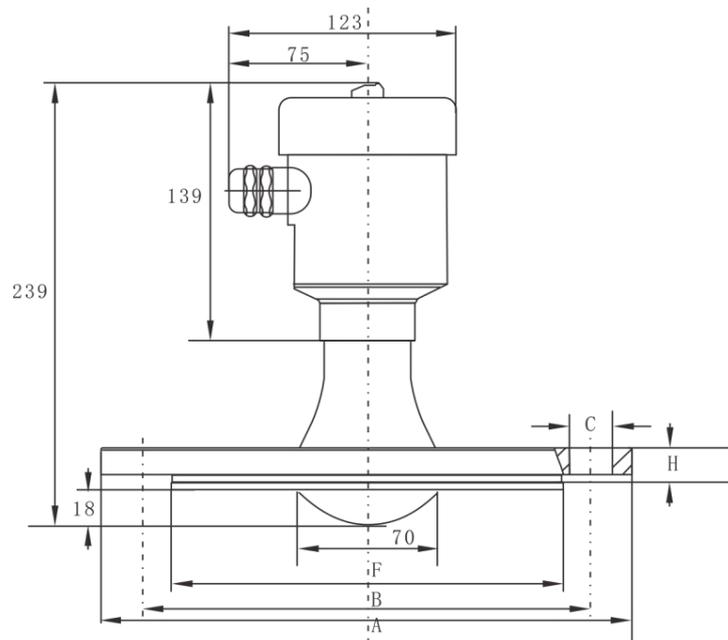


Normal temperature pipe threaded connection

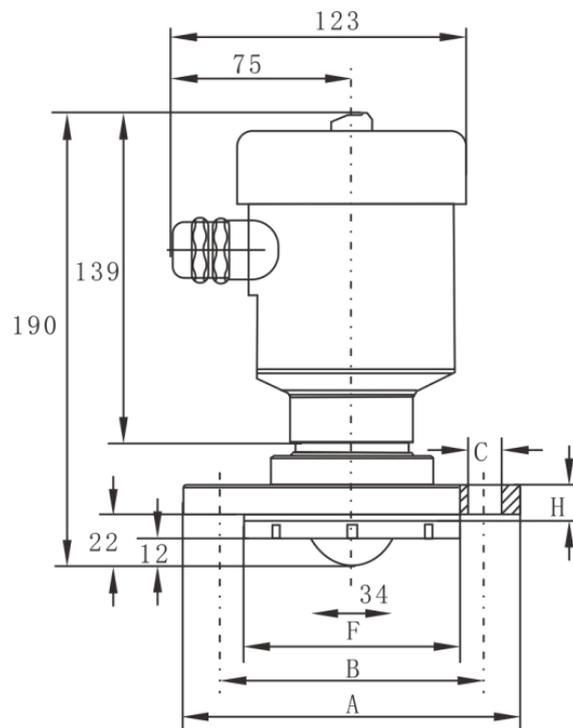


Note: This model needs to be equipped with a high temperature version of the electronic module  
High temperature (-40...200°C) pipe thread connection





	A	B	C	F	H
DN80	φ 190	φ 150	4- φ 18	φ 128	18
DN100	φ 210	φ 170	4- φ 18	φ 148	18
DN125	φ 240	φ 200	8- φ 18	φ 178	20
DN150	φ 265	φ 225	8- φ 18	φ 202	20
DN200	φ 320	φ 280	8- φ 18	φ 258	22



	A	B	C	F	H
DN50	φ 140	φ 110	4- φ 14	φ 90	16
DN100	φ 160	φ 130	4- φ 14	φ 110	16

Normal temperature anti-corrosion flange structure

Ordering code

SUP-WSR550-B-10-A-G1-A-1-A														Description	
SUP-WSR550	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Liquid
Medium	A														Solid Powder
	B														10m
		10													20m
Range		20													30m
		30													60m
		60													Other
		XX													Two-wire 4-20mA+HART
			A2												4-20mA+RS485, 24VDC
			SE												Two-wire 4-20mA+HART+Bluet ooth
Output and power supply			B3												4-20mA+RS485+Bluet ooth, 24VDC
			B5												Two-wire 4-20mA+HART+Bluet ooth, 220VAC
			B4												4-20mA+RS485+Bluet ooth, 220VAC
			B6												G1 1/2
			LB												HG/T20592 PN10 DN50
			LE												HG/T20592 PN10 DN80
			FP												HG/T20592 PN10 DN100
			FQ												HG/T20592 PN10 DN125
Thread Type			FR												HG/T20592 PN10 DN150
			FS												HG/T20592 PN10 DN80 Swivel
			FT												HG/T20592 PN10 DN100 Swivel
			FU												HG/T20592 PN10 DN150 Swivel
			FV												HG/T20592 PN10
			FW												HG/T20592 PN10

	XX								DN150 Swivel
									Other
	1								Polytetrafluoroethylene (PTFE), 304SS
Antenna and Thread Type	2								Polytetrafluoroethylene (PTFE), SS316L
Material	3								Polytetrafluoroethylene (PTFE)
	9								Other
		TC							'-40-80°C
High Temperature Resistance		TF							'-40-150°C
		XX							Other
			EJ						Plastic ABS Air Duster
Accessories			EM						Installation bracket 304SS