



Product Overview

VSAN- Radar Level Transmitter



VSAN- RLT-8X FMCW Rdar Level Transmitter

Overview

The VSAN- 8X series radar level sensor is a kind of level measuring instrument that uses FMCW (Frequency Modulated Continuous Wave) special millimeter wave technology, the working frequency is 76-81Ghz. The signal output has options: 2 wires 4-20mA, 4 wires 4-20mA or RS485. The max range can reach 120m, and the blind zone of 8cm. The antenna beam angle is about 3°, the outstanding performance makes it is workable for the accurate measurement of liquids, solids, and powder materials.

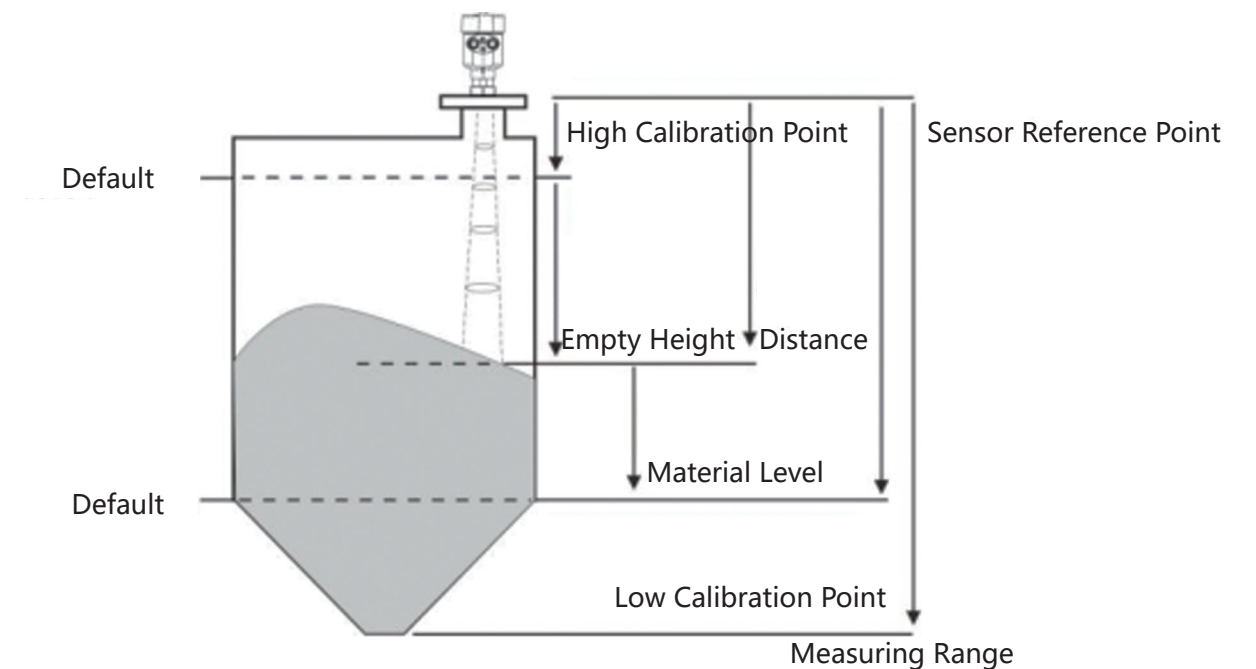
Principle

The radar level sensor emits linear frequency modulated pulse signal, and captures the echo wave reflected by the barriers on the path of wave spreading. It combines this two signals by “mixer” , and get an intermediate frequency signal (IF), we will get the distance what we want by process this signal and calculation.

Advantages

1. Based on the complementary metal-oxide-semiconductor transistor (CMOS) components with high compact architecture,
gives higher signal to noise ratio and smaller blind zone.
2. 5GHz working bandwidth means higher measurement resolution and accuracy.
3. 3° antenna beam angle, so the interference in the environment has less impact on the instrument and the installation is
more convenient.
4. Shorter wavelength offers better reflection performance on solid surface, so the universal flange is not necessary.
5. Supporting remote debugging and upgrading, reduce waiting time and improve the working efficiency.

Distance : Real Time Value = Distance
Material Level: Real Time Value = Low Calibration Point – Distance (Min Is 0)
Empty Height: Real Time Value = Distance – High Calibration Point (Min Is 0)



VSAN- RLT-80 Radar Level Transmitter



Application	Measurement Of Liquid
Measuring Range	0~120m
Antenna Type	Lens
Installation method	Thread/Flange
Beam angle	8°
Response Time	< 0.6s (Due To Parameter Setting)
Medium Temperature	(-40~200) °C
DK Value of Medium	> 1.5
Process Pressure	(-0.1~2) MPa
Accuracy	< 2mm
Signal Output	(4~20) mA HART, RS485 MODBUS-RTU
Working Frequency	(76~81) GHz
Protection Grade	IP68
Explosion-Proof Grade	Ex db ia IIC T6 Gb;Ex tb IIIC T80°C Db



Unit	Code	Parameters		
Instrument Type	P	Standard		
	I	Intrinsically Safe		
	D	Flameproof		
	F	Dust Ignition-proof		
Housing/Protection Grade	L	Aluminum Alloy/IP68		
	G	Aluminum Alloy Dual Chamber/IP67		
	D	316L Stainless Steel/IP68		
	Y	Special Custom		
Material	4	304		
	6	316		
	7	PTFE		
Antenna Type	2	Lens Type		
	3	Anti Corrosion Type/PTFE		
	4	High Temperature (0-200°C)		
Process Connection	Q	Thread G1	E	Thread NPT1½
	W	Thread NPT1	R	Thread G2
	G	Thread G1½	/	/
	T	Thread NPT2	A	Flange DN50
	J	Flange DN65	B	Flange DN80
	C	Flange DN100	F	Flange DN125
	D	Flange DN150	Y	Special Custom
Electronic Unit	2	2 Wires (4 ~ 20) mA 24V DC/HART		
	3	4 Wires (4 ~ 20) mA 220V AC (Dual Chamber Housing)		
	4	4 Wires RS485 MODBUS-RTU+(4 ~ 20)mA		
	5	4 Wires RS485 MODBUS-RTU		
	6	4 Wires (4 ~ 20)mA 24V DC		
	Y	Special Custom		
Cable Inlet	M	M20*1.5		
	N	NPT1/2		
Medium Type	L	Liquid		
Measuring Range	1	(0~30) m		
	2	(0~60) m		
	3	(0~120) m		
Special Custom	Y	Special Custom		

VSAN- RLT-80S Radar Level Transmitter



Application	Measurement Of Liquid
Measuring Range	0~20m
Antenna Type	Lens
Installation method	Thread/Flange
Beam angle	8°
Response Time	< 0.6s (Due To Parameter Setting)
Medium Temperature	(-40~120) °C
DK Value of Medium	> 1.5
Process Pressure	(-0.1~2) MPa
Accuracy	< 2mm
Signal Output	(4~20) mA HART
Working Frequency	(76~81) GHz
Explosion-Proof Grade	Ex db ia IIC T6 Gb;Ex tb IIIC T80°C Db



Unit	Code	Parameters		
Instrument Type	P	Standard		
	I	Intrinsically Safe		
	D	Flameproof		
	F	Dust Ignition-proof		
Housing/Protection Grade	L	Aluminum Alloy/IP68		
	G	Aluminum Alloy Dual Chamber/IP67		
	D	316L Stainless Steel/IP68		
	Y	Special Custom		
Material	4	304		
	6	316		
	7	PTFE		
Antenna Type	2	Lens Type		
	3	Anti Corrosion Type/PTFE		
Process Connection	Q	Thread G1	E	Thread NPT1½
	W	Thread NPT1	R	Thread G2
	G	Thread G1½	/	/
	T	Thread NPT2	A	Flange DN50
	J	Flange DN65	B	Flange DN80
	C	Flange DN100	F	Flange DN125
	D	Flange DN150	Y	Special Custom
Electronic Unit	2	2 Wires (4~20) mA 24V DC/HART		
	3	4 Wires (4~20) mA 220V AC (Dual Chamber Housing)		
	Y	Special Custom		
Cable Inlet	M	M20*1.5		
	N	NPT1/2		
Medium Type	L	Liquid		
Measuring Range	1	(0~10) m		
	2	(0~20) m		
Special Custom	Y	Special Custom		

VSAN-RLT-81 Radar Level Transmitter



Application	Measurement Of Liquid, Solid
Measuring Range	0~120m
Antenna Type	Lens
Installation method	Thread/Flange
Beam angle	3°
Response Time	< 0.6s (Due To Parameter Setting)
Medium Temperature	(-40~200) °C
DK Value of Medium	> 1.5
Process Pressure	(-0.1~2) MPa
Accuracy	< 2mm
Signal Output	(4~20) mA HART, RS485 MODBUS-RTU
Working Frequency	(76~81) GHz
Protection Grade	IP68
Explosion-Proof Grade	Ex db ia IIC T6 Gb;Ex tb IIIC T80°C Db



Unit	Code	Parameters				
Instrument Type	P	Standard		I	Intrinsically Safe	
	D	Flameproof		F	Dust Ignition-proof	
Housing/Protection Grade	L	Aluminum Alloy/IP68				
	G	Aluminum Alloy Dual Chamber/IP67				
	D	316L Stainless Steel/IP68				
	Y	Special Custom				
Material	4	304		6	316	
Antenna Type	1	Lens Type		3	Anti Corrosion Type/PTFE	
	4	High Temperature (0-200℃)				
Process Connection	G	Thread G3½				
	P	Thread NPT 3½				
	A	Flange DN50 (Optional for anti-corrosion type only)				
	J	Flange DN65 (Optional for anti-corrosion type only)				
	B	Flange DN80 PN10				
	C	Flange DN100 PN10				
	F	Flange DN125 PN10				
	D	Flange DN150 PN10				
	L	Flange DN80 PN10 Universal flange				
	K	Flange DN100 PN10 Universal flange				
	E	Flange DN125 PN10 Universal flange				
	N	Flange DN150 PN10 Universal flange				
	R	Flange DN80 PN10 Universal flange with air purge				
	S	Flange DN100 PN10 Universal flange with air purge				
	H	Flange DN125 PN10 Universal flange with air purge				
	M	Flange DN150 PN10 Universal flange with air purge				
	Y	Special Custom				
Electronic Unit	2	2 Wires (4~20) mA 24V DC/HART				
	3	4 Wires (4~20) mA 220V AC (Dual Chamber Housing)				
	4	4 Wires RS485 MODBUS-RTU+(4~20)mA				
	5	4 Wires RS485 MODBUS-RTU				
	6	4 Wires (4~20) mA 24V DC				
	Y	Special Custom				
Cable Inlet	M	M20*1.5		N	NPT1/2	
Medium Type	L	Liquid	S	Soild		D Powder
Measuring Range	1	(0~30) m	2	(0~60) m		3 (0~120) m
Special Custom	Y	Special Custom				

VSAN-RLT-81S Radar Level Transmitter



Application	Measurement Of Solid
Measuring Range	0~20m
Antenna Type	Lens
Installation method	Thread/Flange
Beam angle	3°
Response Time	< 0.6s (Due To Parameter Setting)
Medium Temperature	(-40~120) °C
DK Value of Medium	> 1.5
Process Pressure	(-0.1~2) MPa
Accuracy	< 2mm
Signal Output	(4~20) mA HART
Working Frequency	(76~81) GHz
Explosion-Proof Grade	Ex db ia IIC T6 Gb;Ex tb IIIC T80°C Db



Unit	Code	Parameters		
Instrument Type	P	Standard	I	Intrinsically Safe
	D	Flameproof	F	Dust Ignition-proof
Housing/Protection Grade	L	Aluminum Alloy/IP68		
	G	Aluminum Alloy Dual Chamber/IP67		
	D	316L Stainless Steel/IP68		
	Y	Special Custom		
Material	4	304		
	6	316		
Antenna Type	1	Lens Type	3	Anti Corrosion Type/PTFE
Process Connection	G	Thread G3½		
	P	Thread NPT 3½		
	A	Flange DN50		
	J	Flange DN65		
	B	Flange DN80 PN10		
	C	Flange DN100 PN10		
	F	Flange DN125 PN10		
	D	Flange DN150 PN10		
	L	Flange DN80 PN10 Universal flange		
	K	Flange DN100 PN10 Universal flange		
	E	Flange DN125 PN10 Universal flange		
	N	Flange DN150 PN10 Universal flange		
	R	Flange DN80 PN10 Universal flange with air purge		
	S	Flange DN100 PN10 Universal flange with air purge		
	H	Flange DN125 PN10 Universal flange with air purge		
	M	Flange DN150 PN10 Universal flange with air purge		
	Y	Special Custom		
Electronic Unit	2	2 Wires (4 ~ 20) mA 24V DC/HART		
	3	4 Wires (4 ~ 20) mA 220V AC (Dual Chamber Housing)		
	Y	Special Custom		
Cable Inlet	M	M20*1.5		
	N	NPT1/2		
Medium Type	L	Liquid	S	Soild
Measuring Range	1	(0~10) m	2	(0~20) m
Special Custom	Y	Special Custom		

VSAN-RLT-82 High Temperature And Pressure Resistant Type



Application	Measurement Of Liquid, Solid
Measuring Range	0~60m
Antenna Type	Lens
Installation method	Thread/Flange
Beam angle	3°
Response Time	< 0.6s (Due To Parameter Setting)
Medium Temperature	(-40~1200) °C
DK Value of Medium	> 1.5
Process Pressure	(With Quartz Isolation Flange)
Accuracy	< 2mm
Signal Output	(4~20) mA HART RS485 MODBUS-RTU
Working Frequency	(76~81) GHz
Protection Grade	IP68

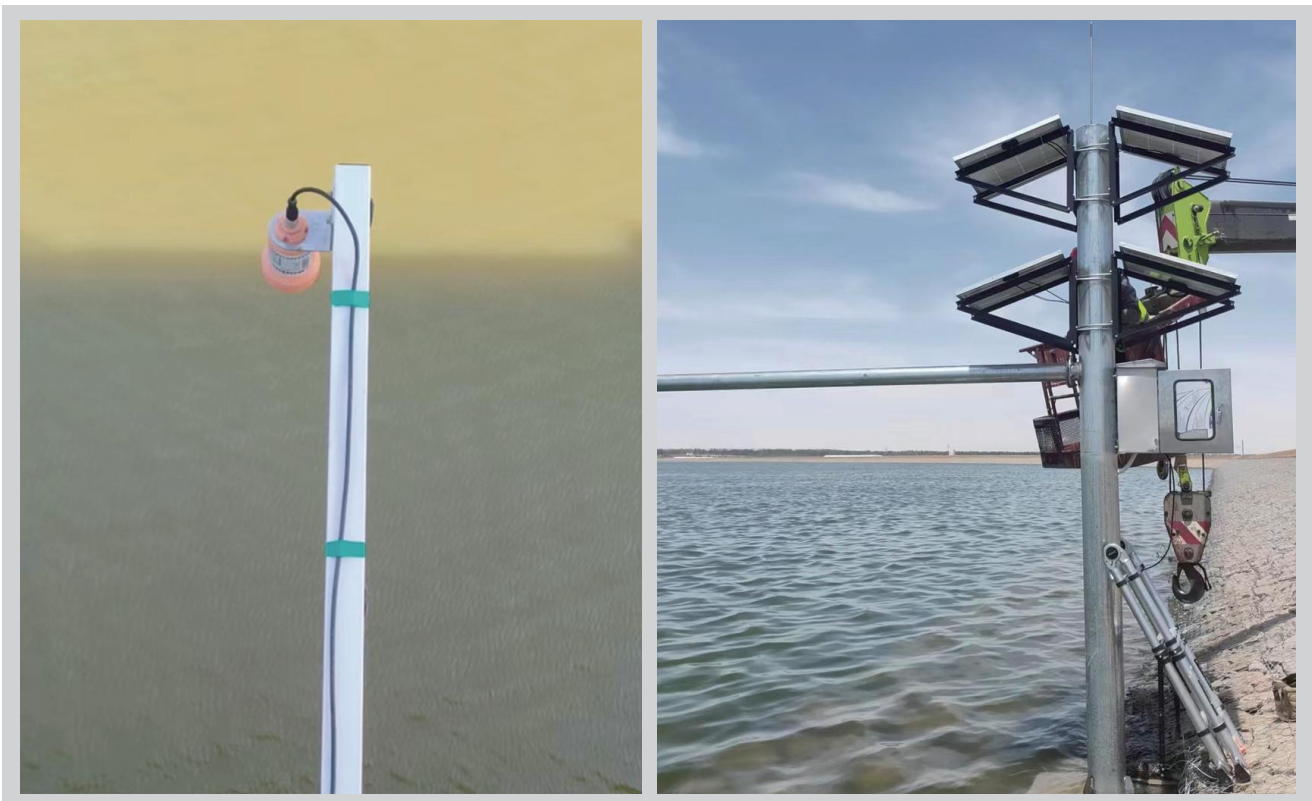


Unit	Code	Parameters		
Instrument Type	P	Standard	Y	Special Custom
Housing/Protection Grade	L	Aluminum Alloy/IP68		
	G	Aluminum Alloy Dual Chamber/IP67		
	D	316L Stainless Steel/IP68		
	Y	Special Custom		
Medium temperature	T0	-40~120°C	T2	0~600°C
	T3	0~1200°C	Y	Special Custom
Process pressure	P0	-0.1~2MPa	P1	-0.1~20MPa (Normal Temperature)
	Y	Special Custom		
Electronic Unit	2	2 Wires (4~20) mA 24V DC/HART		
	3	4 Wires (4~20) mA 220V AC (Dual Chamber Housing)		
	4	4 Wires RS485 MODBUS-RTU+(4~20)mA		
	5	4 Wires RS485 MODBUS-RTU		
	6	4 Wires (4~20) mA 24V DC		
	Y	Special Custom		
Cable Inlet	M	M20*1.5		
	N	NPT1/2		
	Y	Special Custom		
Medium Type	L	Liquid	S	Soild
	D	Powder		
Measuring Range	1	(0~30) m	2	(0~60) m
	3	(0~120) m		
Process Connection	B	Flange DN80		
	C	Flange DN100		
	F	Flange DN125		
	D	Flange DN150		
	E	Flange DN200		
	Y	Special Custom		
Special Custom	Y	Special Custom		

VSAN- RLT-8H Radar Water Level Sensor



Application	Water Level Masurement
Measuring Range	0~30m
Antenna Type	Integrated lens antenna design
Installation method	Thread/Bracket
Beam angle	6°/8°
Ambient temperature	(-40~85) °C
Accuracy	±3mm
Signal Output	(4~20mA HART) /RS485 MODBUS/4G
Working Frequency	(76~81) GHz
Protection Grade	IP67



Unit	Code	Parameters
Lens	B	With lens , beam angle 6°
	A	Integrated lens 8° (Thread G1.5)-Bluetooth
Housing/Material	4	304
	3	Engineering plastics
Communication	R	RS485 Communication
	G	4G All networks
	L	LoRa Communication
	A	Two-Wire(4~20)mA
	H	Two-Wire(4~20)mA、 HART
	Y	Special Custom
	E	Top thread NPT3/4 / Bottom thread NPT1½ (option for 8°)
Connection mode	G	thread G1½ (option for 8°)
	R	Top thread NPT3/4/ Bottom thread NPT2 (option for 8°)
	T	thread G2 (option for 8°)
	U	M24*1.5 (option for 6° only)
	Y	Special Custom
Installation bracket	W	With installing bracket
	N	Without installing bracket
Battery	B0	With lithium battery (2800mAh sleep function only 4G version is applicable)
	N	Without battery
	Y	Special Custom
Measuring Range	1	15m
	2	30m
	Y	Special Custom
Cable length	1	5m
	2	10m
	Y	Special Custom
Special Custom	Y	Special Custom

VSAN- RLT-8S Radar Level Sensor



Application	Liquid level measurement
Measuring Range	0~15m
Installation method	Thread G1 1/2/ flange
Ambient temperature	(-40 ~ 85) °C
Process pressure	2MPa
Signal Output	(4 ~ 20)mA HART RS485MODBUS-RTU Wireless transmission Bluetooth
Accuracy	±3mm
Explosion-proof class	/
Protection Grade	IP67
Frequency range	(76 ~ 81)GHz



Unit	Code	Parameters
Beam Angle	1	6° (G11/2 PTFE)
	2	8° (G1 PTFE)
	3	10°(G3/4 PTFE)
Material of flange	N	Without
	P	PP
	T	PTFE
Installation Specification	N	Without
	K	DN40
	A	DN50
	J	DN65
	B	DN80
	C	DN100
	Z	Bracket, four-way adjustable, material: iron
Electronic unit	2	Two-wire system (4~20)mA 24VDC HART
	5	RS485 MODBUS-RTU 24VDC
Bluetooth configuration	BT	BlueTooth 5.2
Measure range	0	0.1~15m