Datasheet

Radar Level Transmitter

SUP-RD1000

Supmea®

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Datasheet

Radar Level transmitter
SUP-RD1000

SUP-RD1000 uses the millimeter wave band with a higher frequency than the Ku-band radar. It has important applications in remote target detection, strong smoke and dust environments, long-distance imaging, multi-spectral imaging, etc., and can detect smaller than microwave radar. target and achieve more precise positioning with higher resolution and greater secrecy.

Applications

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

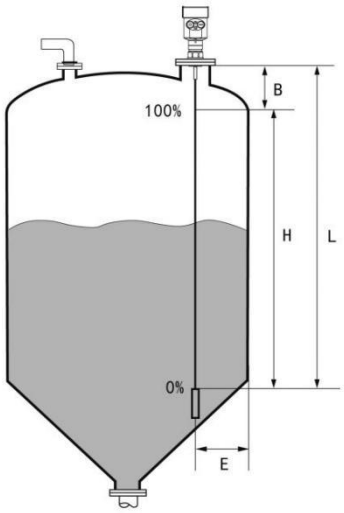
Radar level transmitter

Features

- Extremely narrow beam and penetration
- Adapt to ultra-complex working conditions
- Strong measurement performance
- Non-contact radar, no wear, no pollution.
- High frequency, measurement of solid and low dielectric constant of the best choice

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.

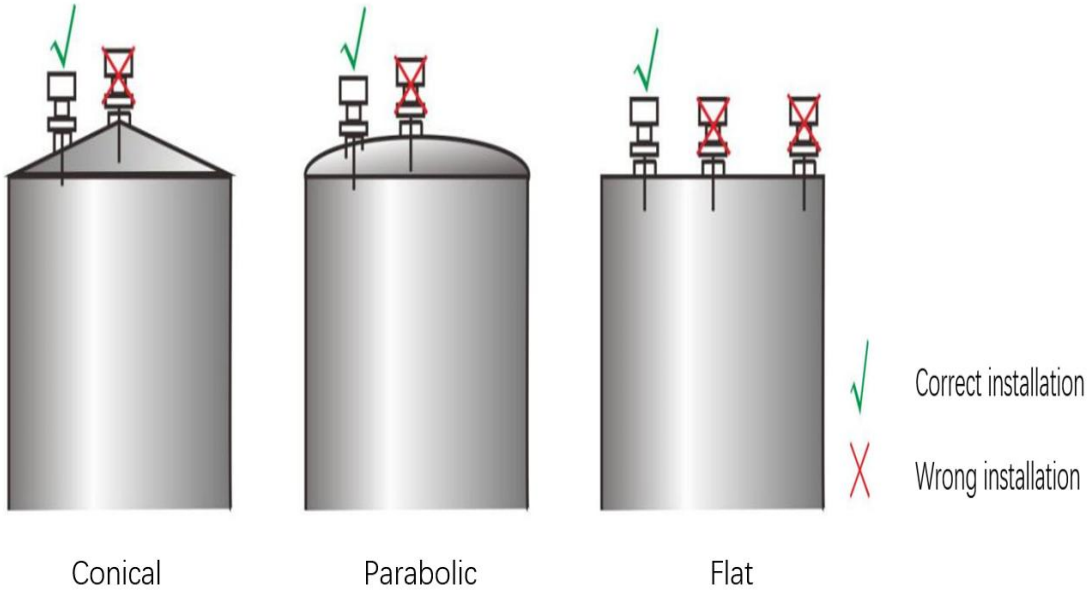
Note：

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	
Measure range	5m,10m,15m,20m
Humidity	0%-95%RH
Ambient temperature	-20-70℃
Storage temperature	-40-60℃
Accuracy	0.1%FS
Ingress protection	IP66
Display	128*64 LCD
Signal Output	4-20mA HART
Power supply	DC 24V (22V-30V)
Electrical interface	M20*1.5(F)
Migration	±9.9m
Weight	1.2KG
Size	Diameter Φ 96mm× Height 221 mm
Mounting hole thread	G2

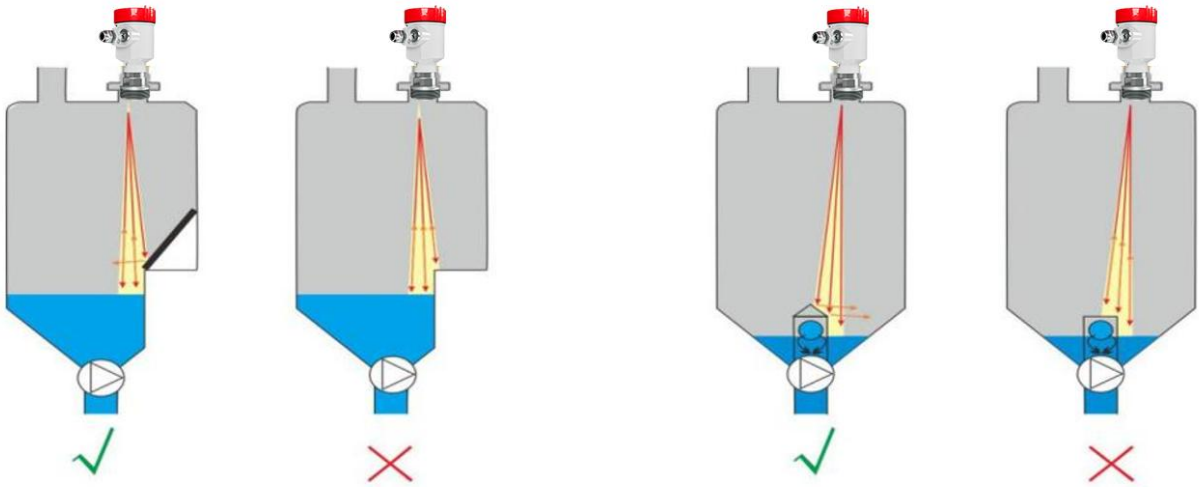
Installation

Avoid installing the radar in a central location or close to the edge of the container, otherwise it is likely to produce false readings.



Radar installation location diagram

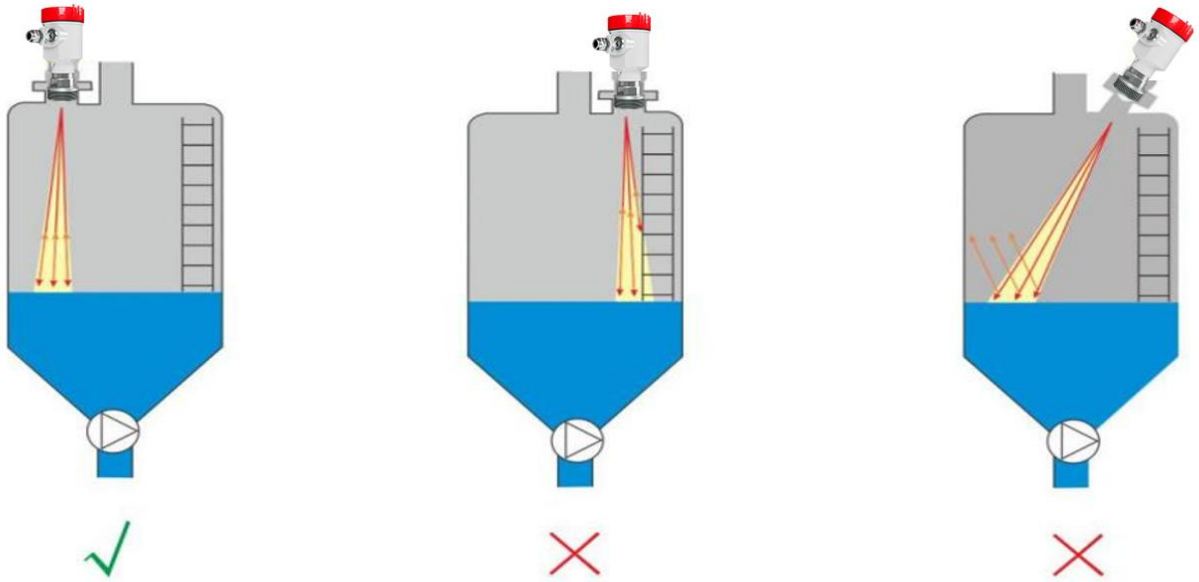
- Avoid false wave diagram



Avoid false wave examples

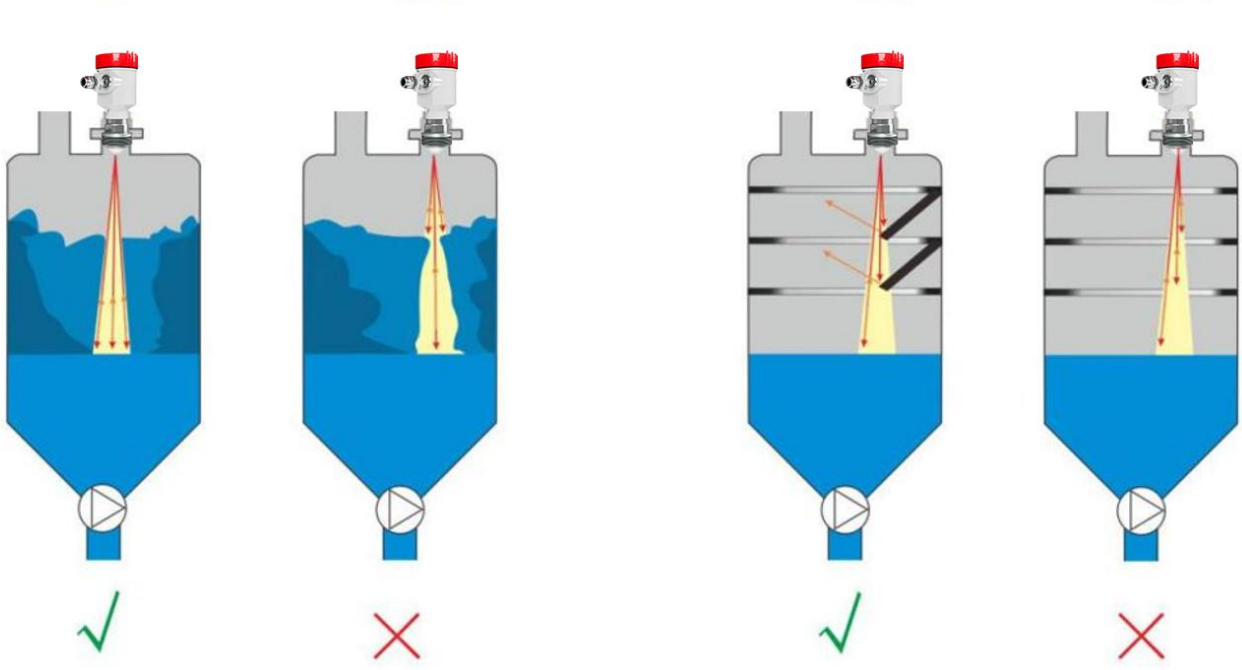
Figure 8 False wave diagram

- Treatment of stairs and grille tanks



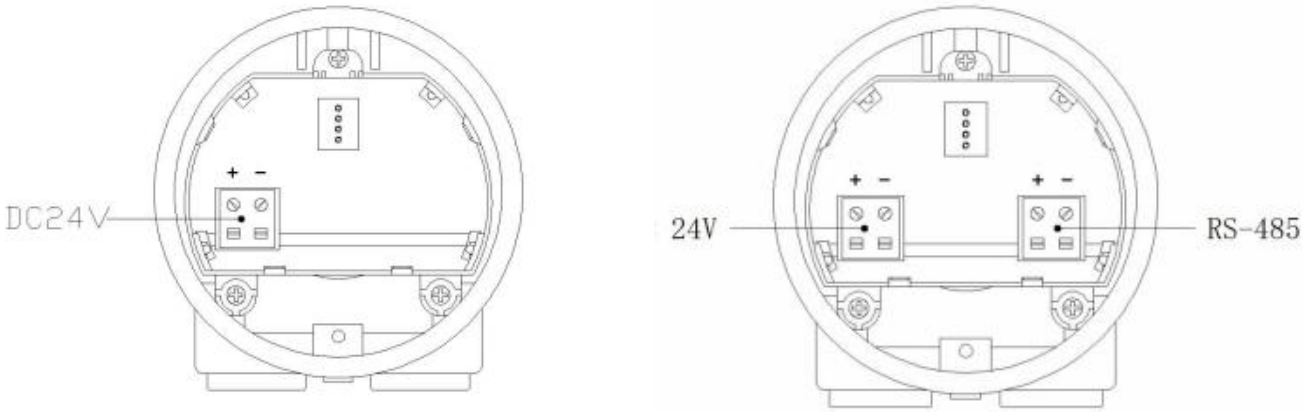
Treatment of stairs and grille tanks

- Treatment of wall hanging and grille tanks



Treatment of wall hanging and grille tanks

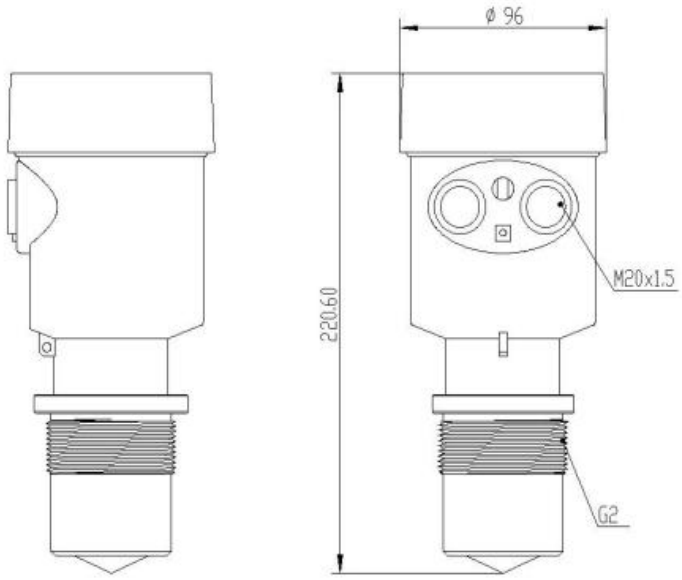
Wiring



Connect the power cord to the DC 24V terminal of the meter

Pay attention to the positive and negative poles, do not reverse

Dimension



Ordering code

SUP-RD1000-MM1-RT1-DT1-O0-D0-V1-I1-P1-T1										Description
SUP-RD1000	-	-	-	-	-	-	-	-	-	
Measuring medium	MM1									Water
	MM2									Liquid
	MM3									Solid
Measuring range		RT1								5m
		RT2								10m
		RT3								15m
		RT4								20m
		RT5								30m
Display type			DT1							With display
Output				O0						Non output
				O1						(4～20)mA/two-wire
Communication					D0					Non communication
					D2					RS485
					D3					HART
Power supply						V1				24VDC（22~30V）
Installation							I1			G3/4Thread
							I2			G2Thread
							I3			M68*2Thread
							I4			G3.5Thread
							I5			DN32 Flange
							I6			DN50 Flange
							I7			DN80 Flange
							I8			DN100 Flange
							I9			DN150 Flange
Diameter pressure								P1		(-0.3～1)MPa
								P2		(1～4)MPa
Temperature resistance									T1	(-30～80)℃
									T2	(-100～-30)℃
									T3	(80～150)℃

Note：

Measuring pool/liquid medium, the range is 5m~30m, and the accuracy is 0.1%FS.

Measure solid medium, the range is 10m~20m, and the accuracy is 0.1%FS.

The range is 5m~30m, and the blind area is 200mm.

The 20-meter range is suitable for simple material levels, and the 10-meter range is suitable for complex material levels

Default 2-wire system (4～20) mA

Only one of transmission output and communication output can be selected

G3/4Thread	Measure water or liquid below 10 meters	
G2Thread	Measure water or liquid below 15 meters	
M68*2Thread	Measure water or liquid below 20 meters, material level below 10 meters	
G3.5Thread	Measure water or liquid below 45 meters, material level below 20 meters	
DN32 Flange	Measure water or liquid below 10 meters	The default selection is DN50, the default flange material is 304, and 316, PP and PTFE can be customized.
DN50 Flange	Measure water or liquid below 20 meters, material level below 10 meters	
DN80 Flange	Measure water or liquid below 30 meters, material level below 20 meters	
DN100 Flange	Measure water or liquid below 30 meters, material level below 20 meters	
DN150 Flange	Measure water or liquid below 30 meters, material level below 20 meters	