Product features

- All-metal casing design
- Color LCD display
- The button design and user-friendly menu make the product usage more convenient.
- Multiple connection methods can fully meet various specific installation requirements.
- The 330° rotatable display head can ensure the best performance under different installation methods.
- High viscosity medium, strong anti-fouling ability

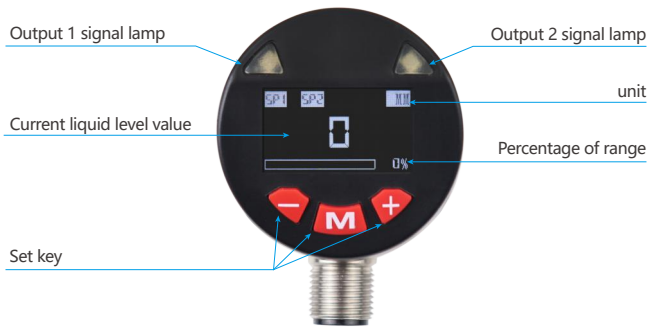
Product Application

- Can be applied to various liquid level measurements of solids

Product principle

The LM210 series uses radar-type principle sensors for liquid level measurement. The signals are processed by the rear processing circuit and then converted into standard industrial electrical signals for output and display.
The radar-type sensor is equipped with internal electrodes that interact with the metal tank or container to generate capacitance values. These capacitance values change as the medium volume in the cavity increases or decreases, thereby determining the liquid level value of the medium.

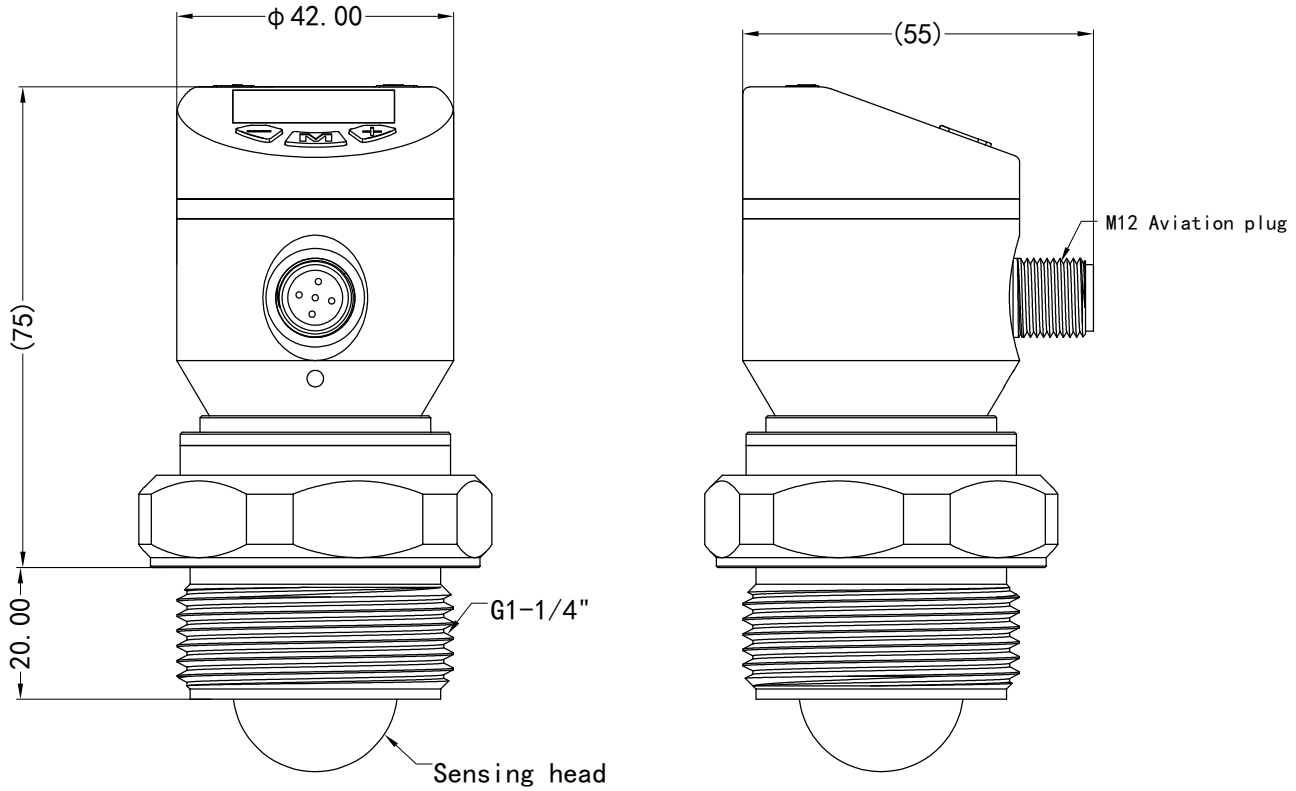
Panel diagram



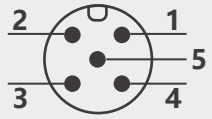
Technical Specifications

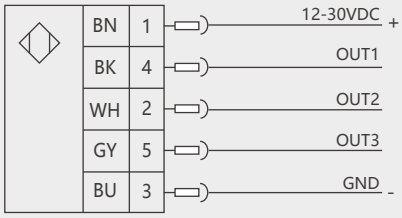
◇ **Measurement range:**	500... 30000mm (Top blind zone: 50mm)
◇ **Measured medium:**	Liquid/Solid
◇ **Voltage withstand:**	10bar
◇ **Accuracy:**	±2mm
◇ **Supply voltage:**	16... 28Vdc
◇ **No-load current consumption:**	≤30mA, when powered by 24Vdc
◇ **Switch output**	
◇ **Output type:**	PNP / NPN, configurable as normally open / normally closed
◇ **Output current:**	< 500mA
◇ **Current-mode analog output**	
◇ **Output type:**	Third line 0... 20mA/4... 20mA option available
◇ **Load RA:**	RA≤500ohm
◇ **Linearity:**	≤ ±1.5% range
◇ **Wiring method:**	M12×1 connector with direct wiring attached
◇ **Voltage mode analog output**	
◇ **Output type:**	Third line 0... 5V/1... 5V optional
◇ **Load RA:**	RA > 10Kohm
◇ **Linearity:**	≤ ±1.5% range
◇ **Wiring protection:**	Inverting, overload, short circuit protection
◇ **Display:**	Color LCD display
◇ **Temperature**	
◇ **Operating temperature:**	-20...80℃
◇ **Medium temperature:**	-20...80℃
◇ **Storage temperature:**	-30...80℃
◇ **Material**	
◇ **Housing:**	Stainless Steel 304
◇ **Probe rod:**	Stainless Steel 304 (with PTFE coating)
◇ **Protection level:**	IP67

Dimension drawing (mm)



Wiring diagram





A3: Two switches + one analog (4-20mA)

colour	stitch	instructions	Colour	stitch	instructions	Colour	stitch	instructions
BN	1	power supply (+)	BU	3	power supply (-)	GY	5 (OUT3)	Level: 4-20mA (factory default)
BK	4 (OUT1)	Level switch PNP (Factory default) Level switch NPN	WH	2 (OUT2)	Level switch PNP (Factory default) Level switch NPN			

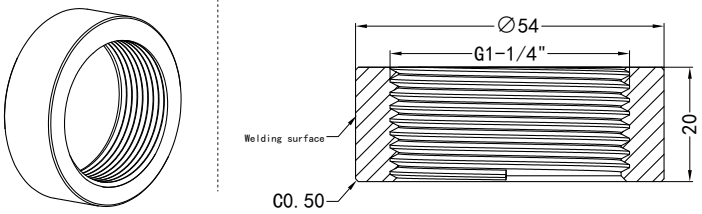
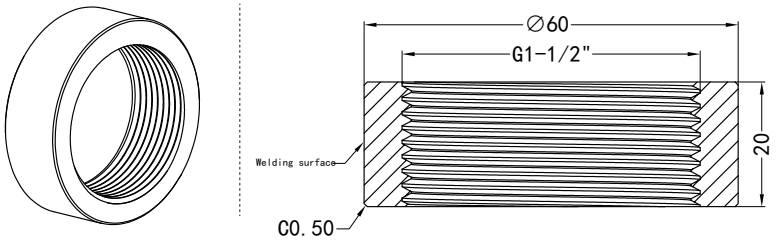
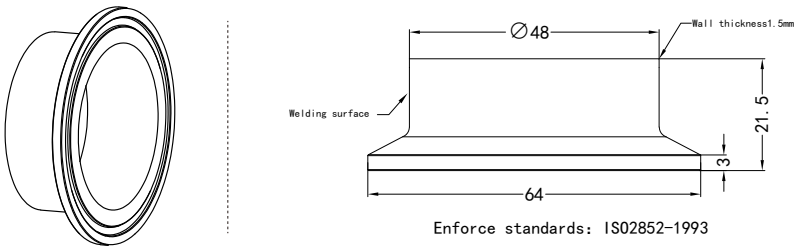
V5: Two switches + one analog (1-5V)

colour	stitch	instructions	Colour	stitch	instructions	Colour	stitch	instructions
BN	1	power supply (+)	BU	3	power supply (-)	GY	5 (OUT3)	Level: 1-5V
BK	4 (OUT1)	Level switch PNP (Factory default) Level switch NPN	WH	2 (OUT2)	Level switch PNP (Factory default) Level switch NPN			

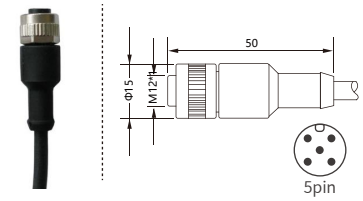
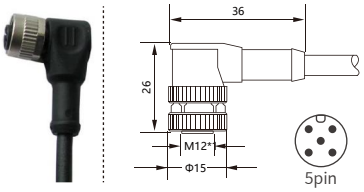
Selection Table

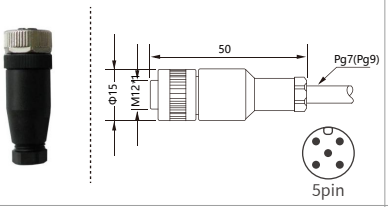
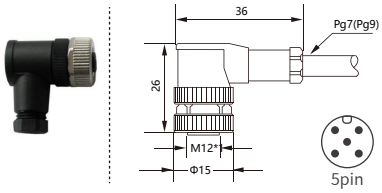
LM210-	A3	G112M	500	Detailed description
LM210-				Radar liquid level sensor
	A3			Output signal: Two switch outputs + analog output (4...) 20mA)
	V5			Output signal: Two switch outputs + analog output (1...) 5V)
		G112M		Process connection: G1-1/2 external thread
		G114M		Process connection: G1-1/4 external thread
		F25		Process connection: DN25 flange connection
		F50		Process connection: DN50 flange connection
			500	Measurement range: 500mm
			1000	Measurement range: 1000mm
			1500	Measurement range: 1500mm
			2000	Measurement range: 2000mm
			2500	Measurement range: 2500mm
			...	...
			30000	Measurement range: 30000mm
Special requirements can be customized.				

Optional accessory - Welding base

Name	Shape drawing / Dimension drawing (unit: mm)	Model	Order Number
LM210-G1-1/4 Welding base		LM210-G114K	KT44652
LM210-G1-1/2 Welding base		LM210-G112K	KT44654
LM210-H64 Welding base of chuck		LM210-H64	KT44655

Optional accessories - Electrical accessories (M12-5Pin: Factory default ZL05-PC02G)

name	Outline drawing/dimension drawing (unit :mm)	material	Model number	Shielded wire
M12*1-5Pin (2m cable)		PUR	ZL05-PU02G	-P
M12*1-5Pin (5m cable)			ZL05-PU05G	
M12*1-5Pin (10m cable)			ZL05-PU010G	
		PVC	ZL05-PC02G	
			ZL05-PC05G	
			ZL05-PC010G	
M12*1-5Pin (2m cable)		PUR	ZL05-PU02W	
M12*1-5Pin (5m cable)			ZL05-PU05W	
M12*1-5Pin (10m cable)			ZL05-PU010W	
		PVC	ZL05-PC02W	
			ZL05-PC05W	
			ZL05-PC010W	

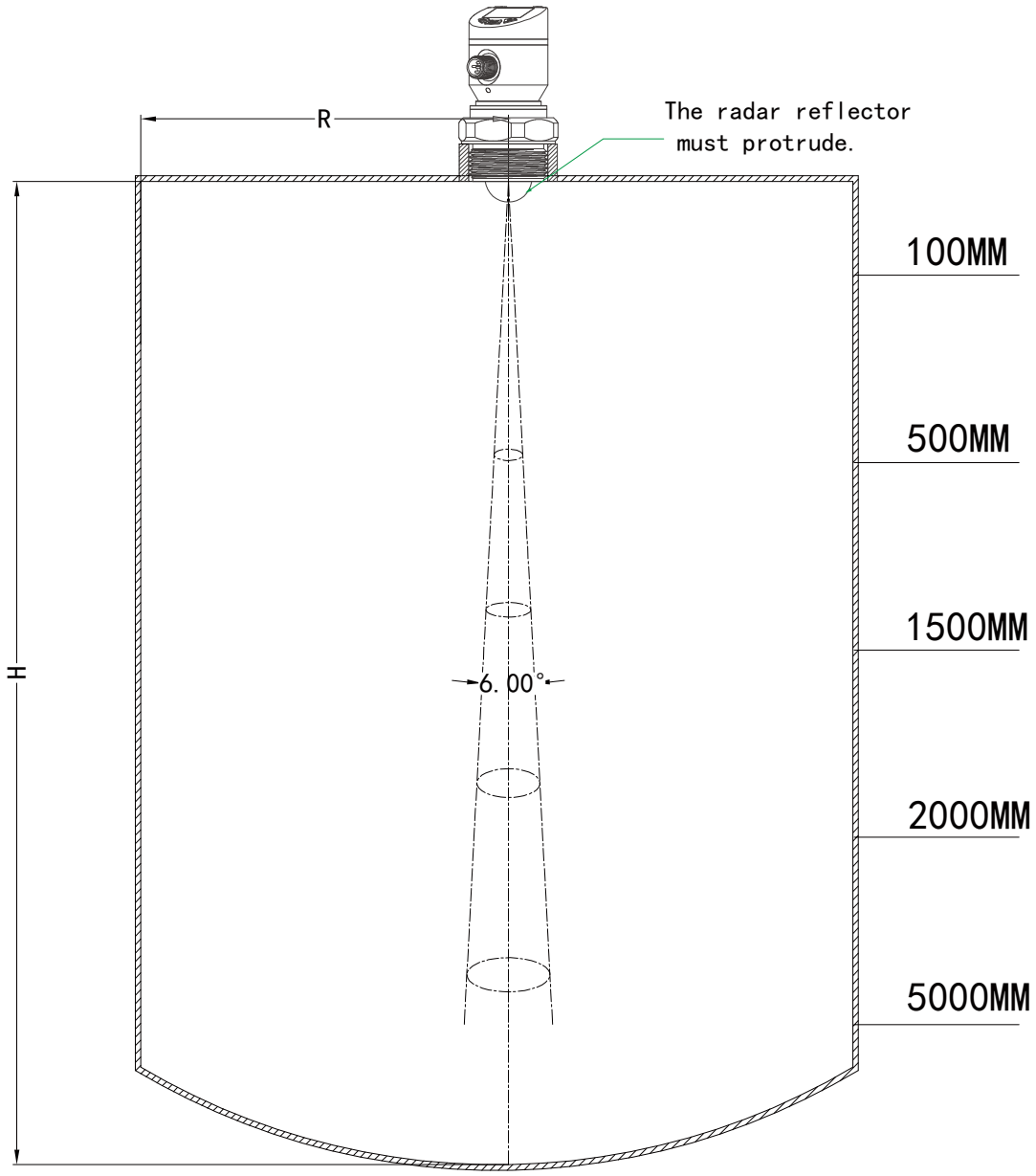
M12*1-5Pin self-connector/Dimensions (Unit :mm)	Model number
	GL05 (4 Pin connector)
	WL05 (5 Pin connector)

Optional accessories - Protective cover

Color crystal screen series (switch) sensor protection cover

Order number: KTCS33661

Installation

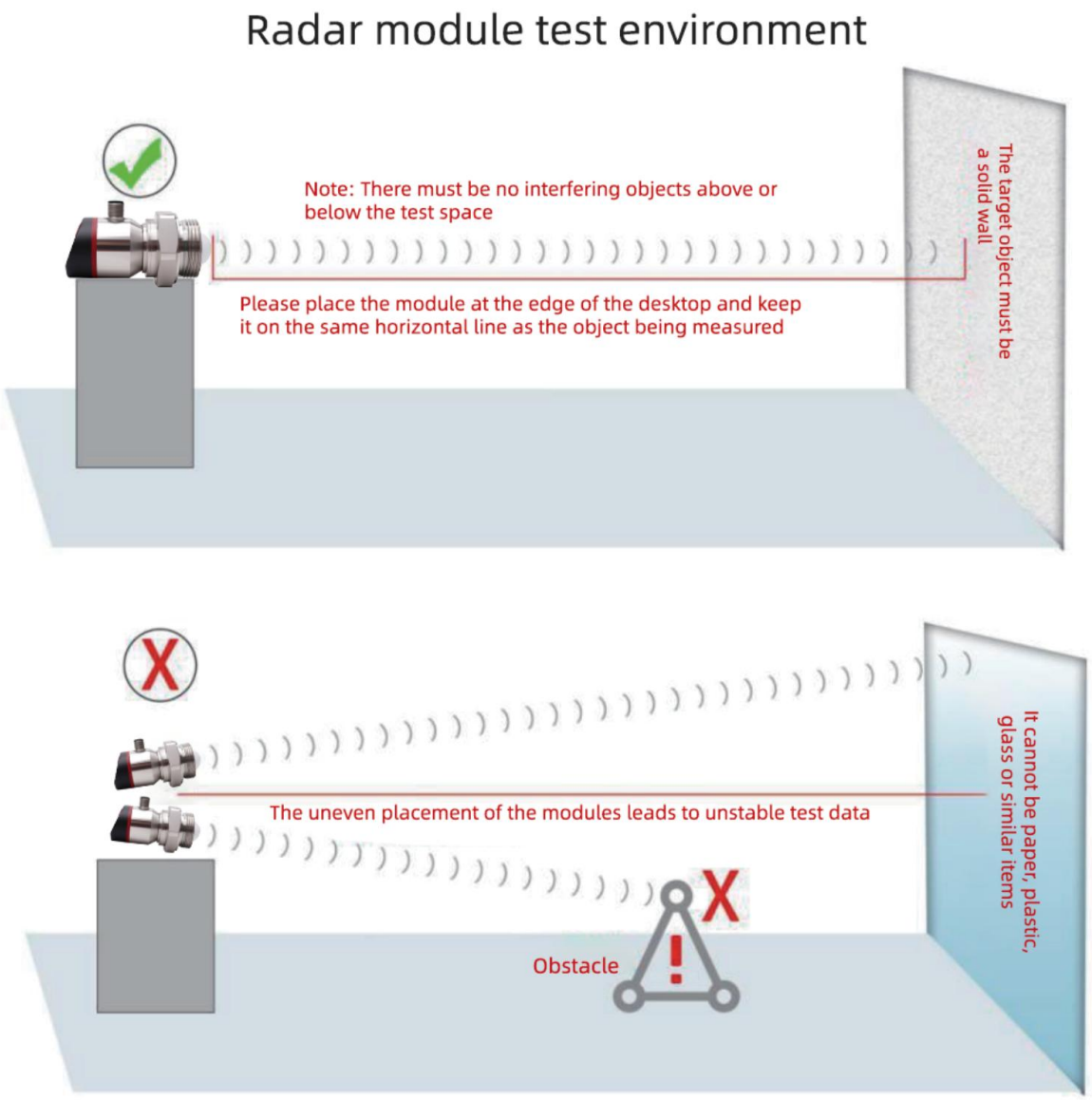


Height measurement calculation formula: H = R (radius) / tan (wave velocity angle)

For example: H=R/tan3°

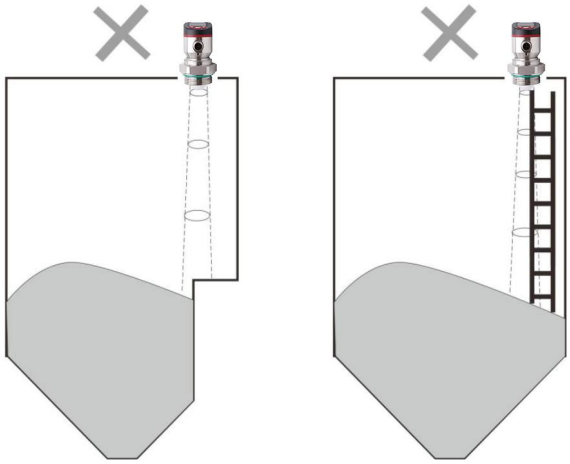
Measurement distance (H)	1000mm	2000mm	3000mm	4000mm	5000mm	10000mm
Distance from the wall (R)	60mm	110mm	160mm	210mm	270mm	530mm
For mirror-like smooth inner walls made of metal (such as stainless steel 304, etc.), the distance from the wall can be reduced by 50%.	30mm	60mm	80mm	110mm	140mm	240mm

■ *Installation Instructions*

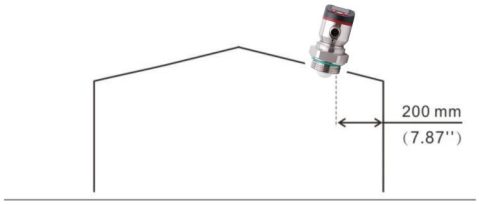


Two points to note during installation:
(1) Align with the target material level and try to ensure a vertical entry to the material level;
(2) Avoid false echoes.
For typical working conditions, refer to the following points.
Ensure there are no interfering objects within the wave beam range, such as people, ladders, and steps.
The instrument installation should ensure that the antenna wave beam avoids the feed inlet.
The instrument installation should be at least 6cm away from the container wall; otherwise, it is likely to result in incorrect readings.
For conical containers, try to ensure that the wave beam directly hits the tank; otherwise, the measurement results at the bottom of the tank may be inaccurate.

Instrument Installation Location Diagram

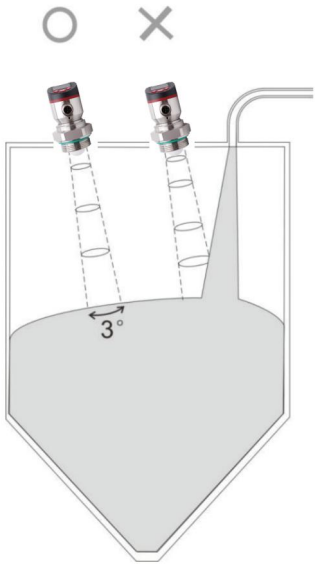


The instrument should be installed at least 20 cm away from the container wall; otherwise, there is a high possibility of incorrect readings.



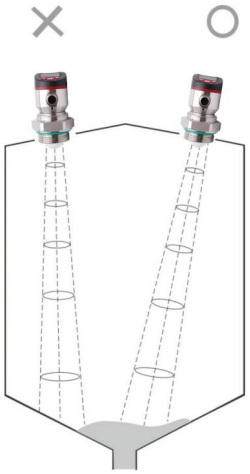
Install at least 20 cm away from the container wall.

- **The installation of the instrument should ensure that the antenna beam avoids the feed inlet, as shown in the figure.**



The antenna beam avoids the feed inlet.

The conical container should be designed to ensure that the beam is directly directed at the bottom of the tank.
Otherwise, the measurement results at the bottom of the tank may be inaccurate.



The conical tank is designed to ensure that the beam is directly directed at the bottom of the tank.