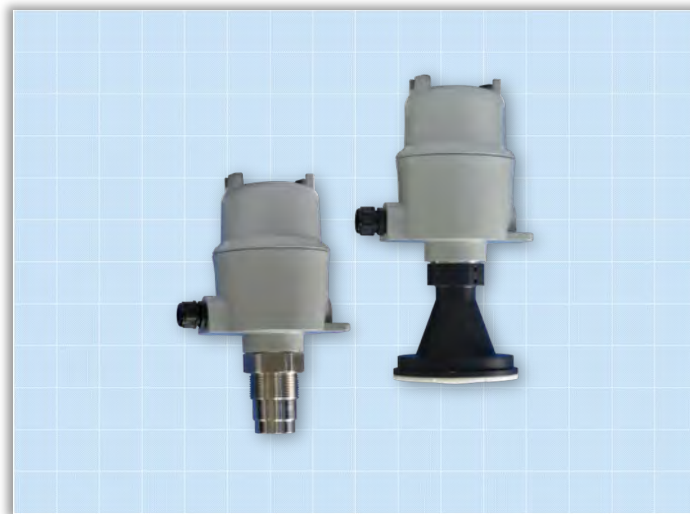


## CROSS SMART SENSOR

# RG7-I Integrated Radar Level Meter

DIGITAL TECHNOLOGY FOR OPTIMIZED MEASURES



### FEATURES & BENEFITS

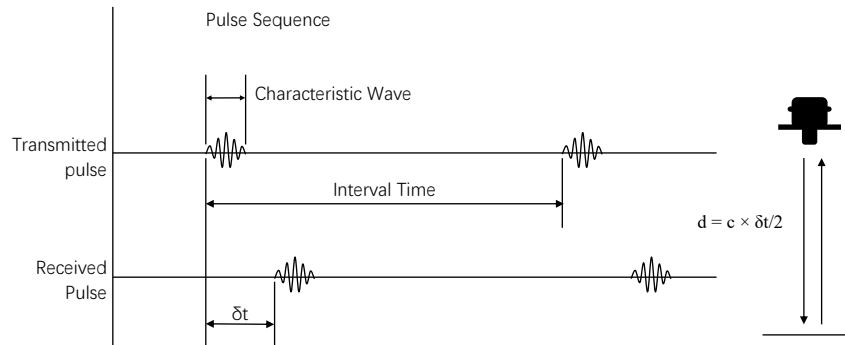
- 80GHz high frequency radar, can be measured even in low permittivity medium
- The antenna is small and easy to install
- Non-contact measuring
- No moving parts
- High accuracy:  $\pm 1\text{mm}$
- Small beam cone angle, only  $4^\circ$  for improved energy concentration. Well-suited for narrow spaces with minimal interferences
- Very small "dead" zone, accurate measurement of low tank levels
- Less affected from foam, steam, dust and other potential interferences
- High reliability, Simple maintenance
- High signal-to-noise ratio, excellent performance even under extreme surface fluctuations
- Integral with display and keypad
- Two wire loop-powered, 4-20mA analogue output with Hart for standard model

## APPLICATIONS

RG7 is very capable of measuring both calm surface liquids such as storage and buffer tanks as well as very uneven, disturbed surface liquids such as reactor tanks. It is applicable over a wide range of industrial applications including:

- Chemical and petrochemical
- Refinery
- Pharmacy
- Food and beverage
- River intake gate
- Process in waterworks
- Water reservoir
- Waste water treatment plant
- Hydraulic power station
- River and dam
- Coolant pit in steel process

## MEASURING PRINCIPLE



## DESCRIPTION

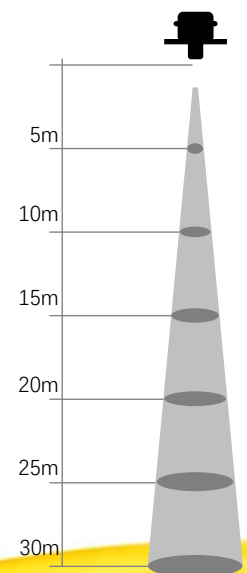
RG7 measures the level by transmitting radar pulses towards the object and receiving its echoes. The level is determined by the pulses travel time that is proportional to the distance between the sensor and the object surface.

Upon reception, the microprocessor that runs the intelligent software in the sensor head analyzes the echoes, transforms them into the surface level values, and outputs the data. Since the radar pulses are minimally affected by the tank content and its environment like temperature and pressure, radar measurement is proven to be the most reliable gauging method in most applications.

Additionally, because the radar sensor is not physically contacting with the measured object, maintenance of the sensor is extremely minimal.

## BEAM ANGLE

Antenna Type	80GHz
Beam Angle	4°
Distance	Mapping Diameter (m)
5	0.349
10	0.698
15	1.048
20	1.397
30	2.095
40	2.794
50	3.492
100	6.984



## SPECIFICATIONS

Principle	Transit-Time between transmitting and receiving radar pulses
Measurement Object	Liquid, Granular Solid & Powder
Max. Range	Teflon Lens Antenna: 30m Horn Lens Antenna: 100m
Accuracy	±1mm
Beam Angle	4°
Microwave	76 to 81 GHz
Power Consumption	<5μW
Respond Time	1s
Process Pressure	-1 to 20 bar
Storage Temperature	-40°C to 85°C
Process Temperature	-40°C to 130°C
Display (Optional)	Level, Distance, %, mA, Signal Strength, Temperature
Output	4 to 20 mA with HART; Optional 4-20 mA plus RS485/Modbus for line-powered model
Power	24VDC loop powered for standard model; 220VAC line powered for optional model
Power Sumption	3 w
Process Interface	1-1/2" NPT Thread or DN80 Flange
Material	Die-cast Aluminum housing for electronic unit; 316SS and TFE for sensor
Ex-proof (Optional)	Ex d IIC T6
Waterproof	NEMA4X, IP66
Electrical Interface	Two holes of 3/4" NPT thread with cable gland; Blind plug for Ex-proof

## ORDER CODE

RG7-I Integral Radar Level Gauge			
	-	Liquid	
	-S	Granular Solid or Powder	
	-	Teflon Lens Antenna	
	04H	Horn Lens Antenna	
	-	Loop Powered with 4-20 mA output and Hart.	
	R	Line Powered with 4-20 mA output and RS485/Modbus RTU communication	
RG7-I	-S	-	-



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