

RADAR Level Transmitter Rod Antenna

RLT6400R



Measuring range upto 30m



ATEX Certified



Process Pressure: upto 3bar



Sensor Housing (IP67 Protection)

**Product
Datasheet**

ROCKSENSOR AT A GLANCE (ABOUT US)

Rocksensor is one of the global leaders specializing in process Instrumentation, Research and Development and Designing of Industrial Automation Equipment. We provide highly precise pressure sensors and transmitters, flow metres, level transmitters & temperature transmitters with a prime focus to help our clients efficiently, safely and economically run complex industrial processes.

Rocksensor headquartered in Germany (originated in Switzerland), has its footprint in various geographical regions such as the US, Russia, South Korea, Italy, Germany, Singapore, Malaysia, China, Taiwan, Australia, UAE, Brazil, and India. Our clients come from some of the major industries such as Oil and Gas, Petrochemicals, Pharmaceuticals, FMCG, Automobiles, Water, Cement, Metal & Mining and mainly from the Power Industry like Nuclear, Thermal, Hydro and Solar.

Rocksensor deals in a wide range of highly accurate industrial automation instruments ensuring that even the complex industrial processes happen efficiently.

To fulfill the needs of our clients we make sure that our instruments work in even the harsh environmental conditions offering accurate recordings and communication.

We, at Rocksensor, believe in creating bonds that last a lifetime and create a success story for each and every client. Rocksensor aims to achieve a perfect fit in global market landscape and establish our footprints across the globe.



CONTENTS

1. Introduction 4

2. Typical Application 4

3. Measuring Principle 4

4. Advantages and Features 4

5. Technical Data..... 5

6. Housing Version 6

7. Electrical Connections 7

8. Operation 7

9. Dimension 7

10. Ordering Code 9

KEY APPLICATION INDUSTRIES

- Oil and Gas sector

Cement

Metal

Pulp and Paper

Agriculture

Textiles
- Chemicals

Power

Water

Pharmaceutical

Fertilizer

Plastics and HVAC

1. Introduction

The RLT6400 series is based on frequency Modulated Continuous Wave (FMCW) technology, which transmits a continuous radar signal with the frequency increasing over time to create a signal sweep. The signal is then reflected back to the antenna, to calculate the level.



RLT6400R with
Rod Antenna

2. Typical Application

The RLT6400R can measure all kinds of liquids, in simple as well as difficult processing conditions.

The Model comes with Intrinsic & Flameproof options to meet safety standards.

With compact antenna design it's particularly suitable for applications with tight space.

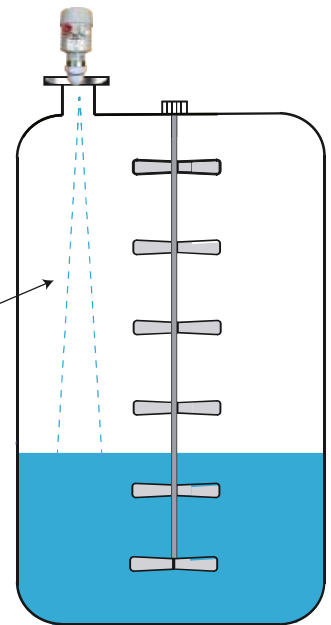
High focus make it possible for measurement for silos with high mounting nozzle or obstacle inside.

3. Measuring Principle

The radar uses 80GHz Frequency Modulated Continuous Wave.

The FMCW radar emits a high frequency signal whose frequency increases linearly during the measurement phase (called the frequency sweep). The signal is emitted, reflected from the measuring surface and received with a time delay, t . Delay time, $t=2d/c$, where d is the distance to the product surface and c is the speed of light in the gas above the product. For further signal processing the difference Δf is calculated from the actual transmit frequency and the receive frequency. The difference is directly proportional to the distance.

80G Beam Angle



4. Advantages and Features

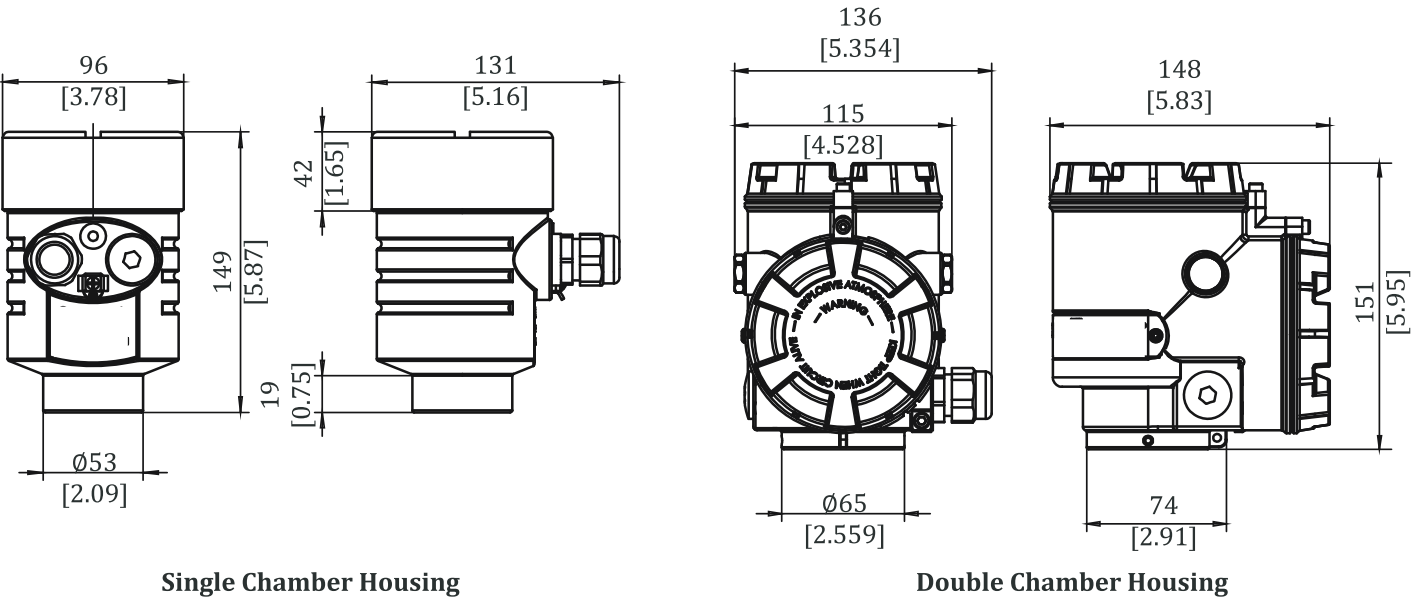
- Isolated emitting & receiving signal enable full range measurement with minimum dead zone. Unaffected by buildup or condensation sensor.
- Real time self-monitoring on voltage, current and chip. Output warning when abnormality present.
- High focus makes it possible for measurement for silos with high mounting nozzle or obstacle inside.
- Due to new Multi-Track wave tracking algorithm, get highest reliability.

5. Technical Specifications

Model	RLT6400R with Rod Antenna
Application	Applicable for continuous level measurement of aggressive liquids in storage containers, reactors or process vessels.
Measuring Range	0 ~ 30m
Process Fitting & Beam Angle	Thread G1½ (φ45 antenna) - Beam angle 7°; Thread G3 (φ75 antenna, min. D80 Flange) - Beam angle 3°
Power	<0.5W
Response Time	<2s
Frequency	76 ~ 81GHz
Media-contracting Materials	Process fittings: PP: Antenna PP: Seal: FKM, EPDM
Process Temperature	(-)40°C ~ 130°C
Process Pressure	-1 bar ~ 3 bar
Resolution	1mm
Accuracy	±2mm
Repeatability	±1mm
Signal Output	4 ~ 20mA/ HART
Display & Adjustment	LCD display, tank side display and tank side hub
Protect Level	IP67
Electrical Connection	2x M20*1.5(Cable diameter 9 - 13 mm)/ ½NPT
Explosion Proof Grade	Ex ia IIC T6 Ga Ex db IIC T6 Gb

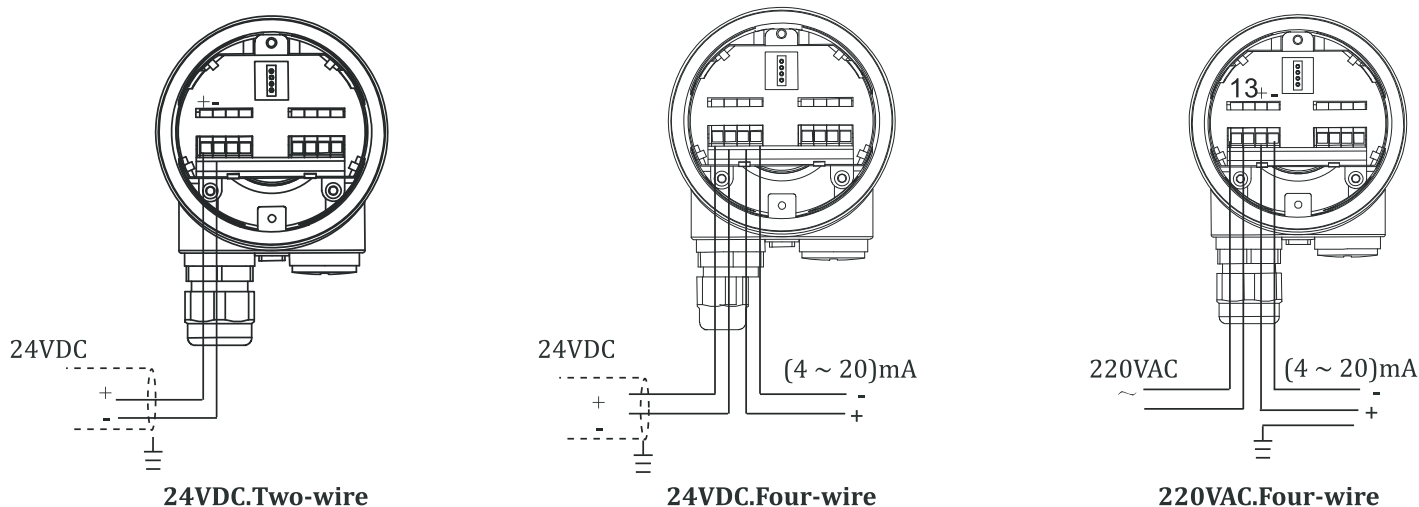
6. Housing Version

The housings are available as double chamber version in plastic, stainless steel or aluminium. They are available with protection ratings up to IP67.



7. Electric Connection

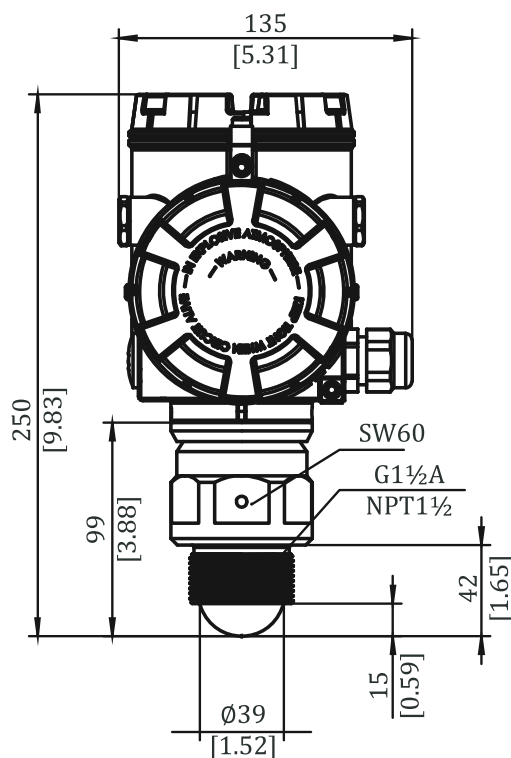
The instruments are available in different electronics versions. 4 ~ 20 mA/ HART in two and four-wire version with 24VDC and four-wire with 220VAC.



8. Operation

The adjustment of the instrument is carried out via the LCD display, tank side display, tank side hub and HART communicator.

9. Dimensions



RLT6400R with Rod Antenna

Note: The dimensions shown are general dimensions. In actual the dimensions may slightly differ.

10. Ordering Code

RLT6400R RADAR Level Transmitter with Rod Antenna



RLT6400R	Radar Level Transmitter								
Code	1	2	3	4	5	6	7	8	9

Accuracy	10
±2mm	A

Approval	20
Standard	XX
Ex ia IIC T6 Ga	CX
Ex db IIC T6 Gb	DX

Antenna version material	30
Rod Antenna/ PTFE	A
Rod antenna/ PFA	J
Rod Antenna φ45 / PTFE	A
Rod Antenna φ75 / PTFE	B
Rod Antenna φ45 / PFA	C
Rod Antenna φ75 / PFA	D

Process Fitting	40
Thread G1½	TG
Thread G3	TH
Flange DN50	FC
Flange DN80	FD
Flange DN100	FE
Flange DN150	FK
Flange ASME 2"	AM
Flange ASME 3"	AN
Flange ASME 4"	AP
Flange ASME 6"	AR
Customized	TT

90	LCD Display
X	Without display
A	With display
B	With remote display (10 meter cable)

80	Cable Entry/ Cable Gland
M	M20x1.5/ with
N	½NPT/ without

70	Housing Protection
A	Single chamber/ Aluminum/ IP67
B	Double chamber/Aluminum/IP67
U	Double chamber/ SS316 / IP67

60	Electronics
H	Two-wire 4~20mA/ HART; 24VDC
B	Four wire 4-20mA/HART; 220VAC
I	Four wire 4-20mA/HART; 24VDC
T	Customised (Bluetooth/RS-485)

50	Sealing Material /Temp./ Pressure
M	FKM/ (-)40 ~ 130°C/ (-)1 ~ 3bar
O	EPDM/ (-)40 ~ 130°C/ (-)1 ~ 3bar
T	Customised

Example: RLT6400R-AXXJTGMTANX

A - Accuracy: ±2mm

XX - Approval: Standard

A - Antenna Version Material: Rod Antenna/ PTFE

TG - Process Fitting: Thread G1½

M - Sealing Material/ Temp./ Pressure: FKM/ (-)40~130°C/ (-)1~3bar

T - Electronics: Customised (Bluetooth/RS-485)

A - Housing/ Protection: Single Chamber/ Aluminum / IP67

N - Cable Entry / Cable Gland: ½NPT/ Without

X - LCD Display: Without Display

*For any customisation, contact our sales team

Field Instrumentation Range



Pressure Measurement

- Smart Differential Pressure Transmitter
- Smart Gauge Pressure Transmitter
- Smart Absolute Pressure Transmitter
- Miniature Pressure Transducer without display
- Sanitary Gauge/ Absolute Pressure Transmitter

- Submersible Pressure Transmitter
- Remote Seal Differential P.T. with capillary
- Remote Seal Differential P.T. Direct Mount
- Remote Seal Gauge/Absolute P.T. with capillary
- Remote Seal Gauge/Absolute P.T. Direct Mount



Flow Measurement

- Coriolis Mass Flowmeter
- Thermal Gas Mass Flowmeter
- Positive Displacement Flowmeter
- Electromagnetic Flowmeter
- Vortex Flowmeter

- Turbine Flowmeter
- Variable Area Flowmeter
- Clamp On Ultrasonic Flowmeter
- Inline Ultrasonic Flowmeter
- Portable Ultrasonic Flowmeter



Level Measurement

- RADAR Level Transmitter Horn Antenna
- Compact RADAR Level Transmitter
- RADAR Level Transmitter Sanitary
- RADAR Level Transmitter
- Guided Wave RADAR Level Transmitter
- Guided Wave RADAR Level Transmitter
- RADAR Level Transmitter Lens Antenna

- RADAR Level Transmitter Rod Antenna
- Ultrasonic Level Transmitter
- Microwave Barrier Level Switch
- Admittance Level Switch Series
- Vibrating Rod Level Switch Series
- Tuning Fork Level Switch Series



Temperature Measurement

- Head Mount Temperature Transmitter
- Temperature Transmitter for Sanitary Applications

- DIN Rail Temperature Transmitter
- Field Mount Temperature Transmitter

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