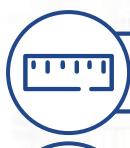


# Radar Level Transmitter Flange Version

## RLT6400F



ANSI-3"-Class150 RF 304



Measuring range upto 30m



ATEX Certified



Process Pressure: upto 25 bar



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	Chemicals
Cement	Power
Metal	Water
Pulp and Paper	Pharmaceutical
Agriculture	Fertilizer
Textiles	Plastics and HVAC

## 1. Introduction

It 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.



RLT6400F with Flange version

## 2. Typical Application

The RLT6400 series can measure all kinds of liquids, even under high pressure and extreme temperatures, in simple as well as difficult processing conditions.

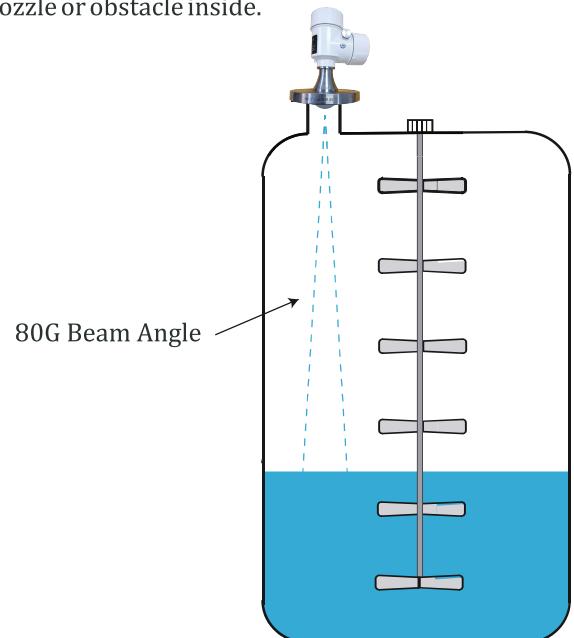
With compact antenna design it's particularly suitable for applications with tight space.

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  $\Delta f$  is calculated from the actual transmit frequency and the receive frequency. The difference is directly proportional to the distance.



## 4. Advantages and Features

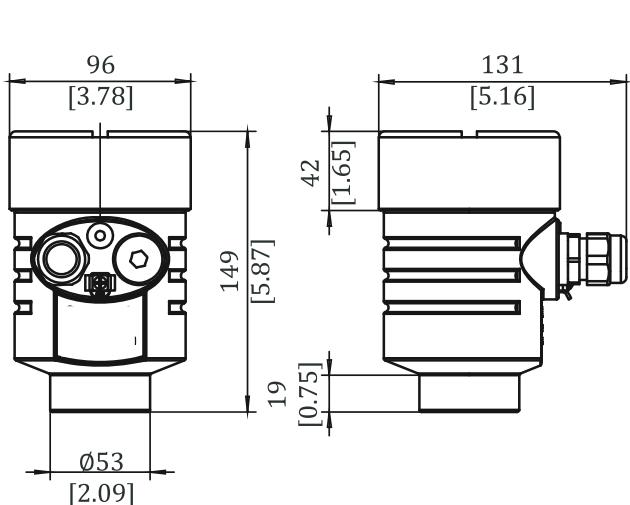
- Isolated emitting & receiving signal enable full range measurement with minimum dead zone. Uneffected by buildup or condensation sensor.
- Real time self-monitoring on voltage, current and chip. Output warning when abnormality present.
- High focus makes it possible for measurement for silos with high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

## 5. Technical Specifications

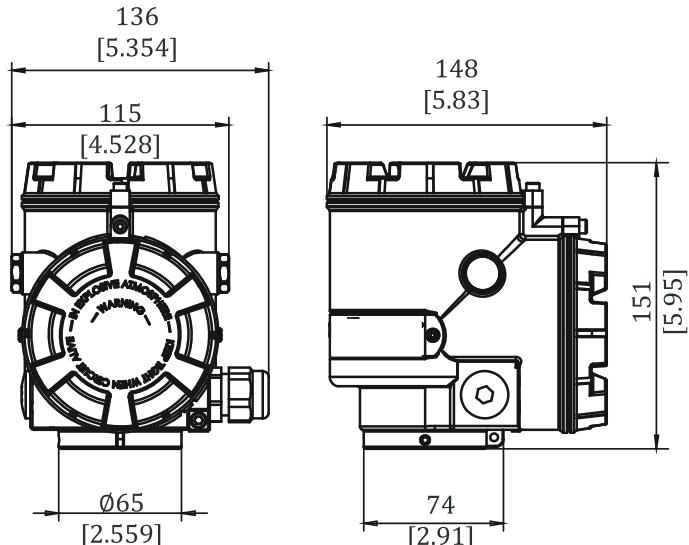
Model	RLT6400F with Flange Version
<b>Application</b>	Applicable for continuous level measurement for extremely aggressive liquid in storage containers, reactors or process vessels.
<b>Measuring Range</b>	0 ~ 30m
<b>Process Fitting &amp; Beam Angle</b>	Flange from DN50, 2"; Beam angle 7° Flange from DN80, 3"; Beam angle 3°
<b>Power</b>	<0.5W
<b>Response Time</b>	<2s
<b>Frequency</b>	76 ~ 81GHz
<b>Media-contacting Materials</b>	Process fittings : SS304 (std.)/ SS316L (optional) ; Antenna : PTFE
<b>Process Temperature</b>	(-)40°C ~ 200°C
<b>Process Pressure</b>	(-)1bar ~ 25bar
<b>Resolution</b>	1mm
<b>Accuracy</b>	±2mm
<b>Repeatability</b>	±1mm
<b>Signal Output</b>	4 ~ 20mA/ HART/RS-485/ Bluetooth
<b>Display &amp; Adjustment</b>	LCD display
<b>Protect Level</b>	IP67
<b>Electrical Connection</b>	2 X M20*1.5(Cable diameter 9 - 13 mm); 1/2NPT
<b>Explosion Proof Grade</b>	<b>Intrinsic Safe:</b> Ex ia IIC T6 Ga <b>Flame proof:</b> Ex db IIC T6 Gb (ATEX)

## 6. Housing Version

The housing are available as double chamber version in stainless steel or alminium. They are available with protection ratings up to IP67.



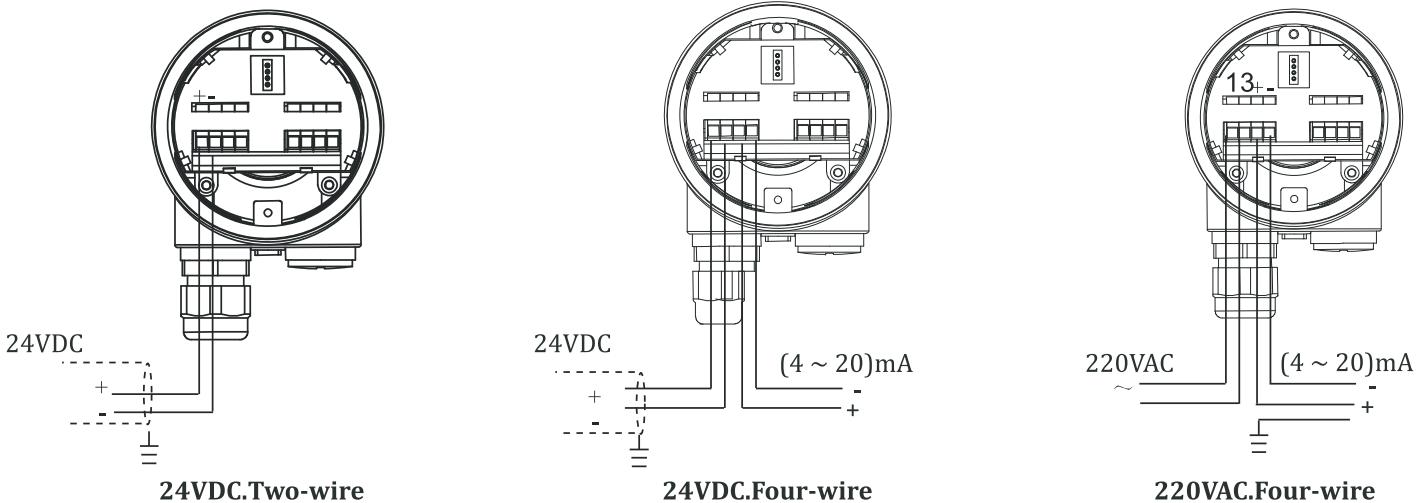
Single Chamber Housing



Double Chamber Housing

## 7. Electric Connection

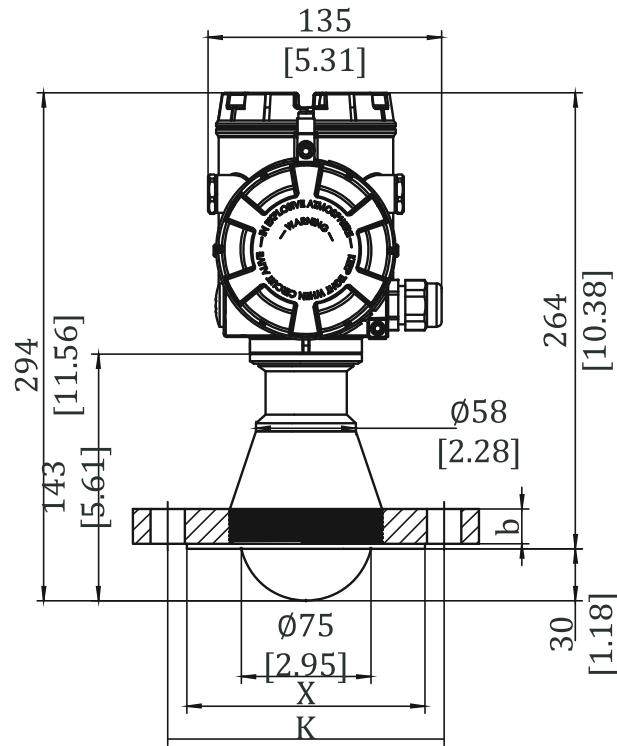
The instruments are available in different electronics versions. 4 ~ 20 mA/ HART in two and four-wire version with 24VDC and four-wire with 220VAC.



## 8. Operation

The adjustment of the instrument is carried out via the LCD display and HART communicator.

## 9. Dimensions

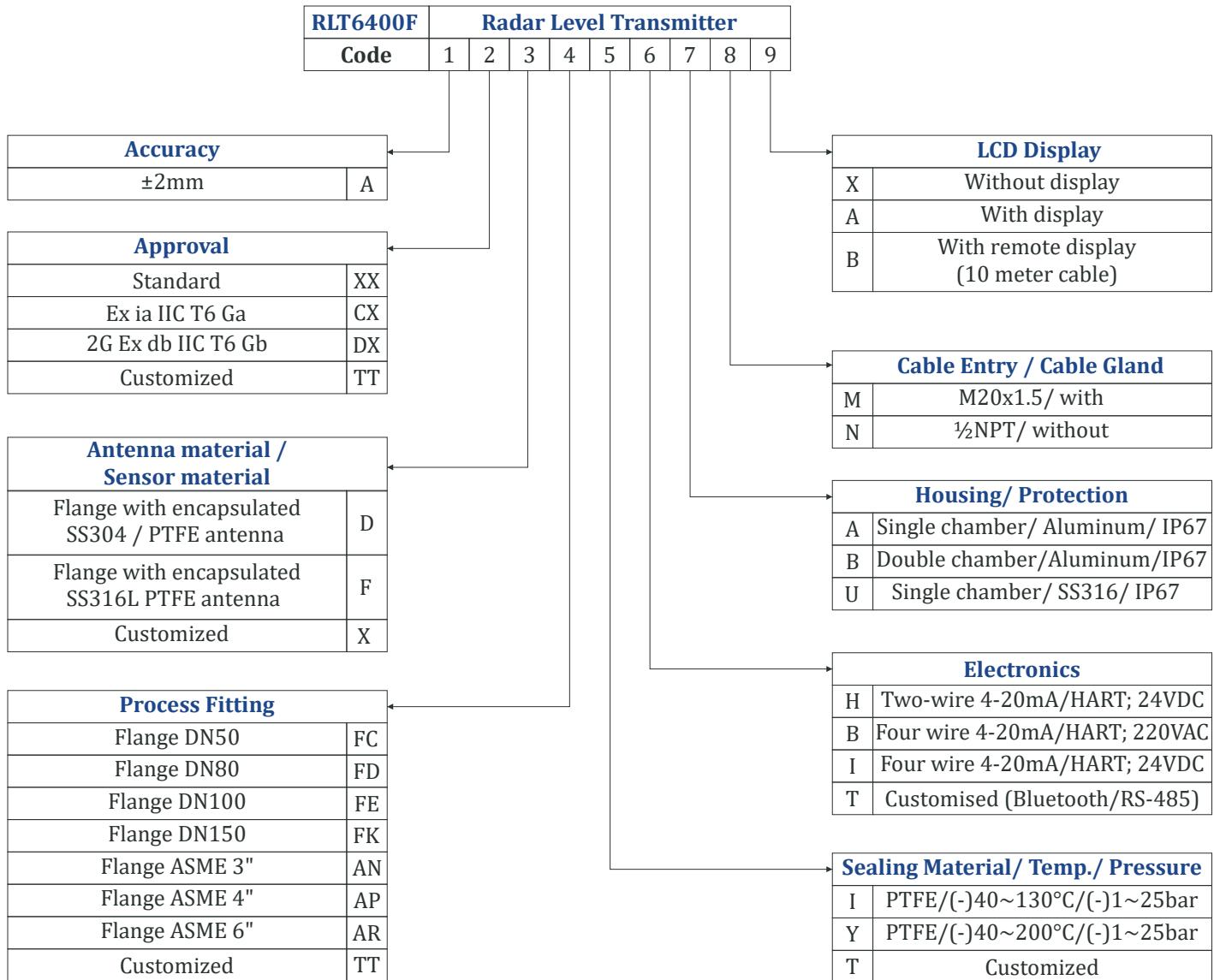


RLT6400F

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

## 10. Ordering Code

### RLT6400F RADAR Level Transmitter with Flange Version Antenna



**Example:** RLT6400F-AXXFTTIHANA

A - Accuracy: ±2mm

XX - Approval: Standard

F - Thread Antenna Material/ Sensor Material: Flange with encapsulated SS316/ PTFE antenna

TT - Process Fitting: Customized

I - Sealing Material/ Temp./ Pressure: PTFE/ (-)40~130°C/ (-)1~25bar

H - Electronics: Two-wire 4-20mA/ HART; 24VDC

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

N - Cable Entry / Cable Gland: ½NPT/ With

A - LCD Display: With 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

## Rocksensor India Pvt. Ltd.

B -36, Sector 67, Noida, Uttar Pradesh - 201301

For more details, contact us on:

+91 928 948 8117 | +91 1204121469

: [info@rocksensor.in](mailto:info@rocksensor.in)

: [www.rocksensor.in](http://www.rocksensor.in)

## Global Offices

**Head Office**  
Rocksensor GmbH, Germany

**North America:**  
Rocksensor Automation LLC, USA

**APAC:**  
Rocksensor Automation Co.Ltd., Shanghai

For more updates, follow us on:

: Rocksensor India

: Rocksensor

: Rocksensor

: Rocksensor

: Rocksensor India