

Radar Level Transmitter with Lens Antenna

RLT6900L



Measuring Range of 30m, 70m, 120m



Air Purging



Process Pressure: (-)1bar ~ +3bar



IP67 Degree 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 and temperature transmitters with a prime focus to help our clients efficiently, safely and economically run complex industrial processes.

Rocksensor, headquartered in Switzerland, has its footprint in various geographical regions such as the US, Russia, South Korea, Italy, Germany, Singapore, Malaysia, Morocco, 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 the global market landscape and establish our footprints across the globe.



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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 RLT6900 with lens antenna is a sensor with swiveling holder for continuous measurement of bulk solids under difficult process conditions. The sensor is ideal for level measurement in large silos and piles. With air cleaning design it enables to acquire accurate measurement under extremely dusty conditions.

2. Typical Application

Continuous level measurement of bulk solid in high silos and piles. The swiveling holder antenna is adjustable which ensure accurate measurement for large silos. Air purge ensure reliable measurement under extremely dusty conditions.

3. Measuring Principle

The uses 80GHz Frequency Modulated Continuous Wave.

The FMCW 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 act receive frequency. The difference is directly proportional to the distance.

4. Advantages and Features

- Isolated emitting and receiving signal enable full range measurement without dead zone. Unaffected by buildup near sensor.
- Real time self-monitoring on voltage, current and chip. Output warning when abnormality present.
- Wave management concept. To help understand abnormal output, the RLT6900 storages echo automatically.
- Due to new MultiTrack wave tracking algorithm, RLT6900 get highest reliability.
- With swiveling holder the antenna is adjustable to ensure accurate measurement for large silo.

Air purge ensure reliable measurement under extremely dusty condition.

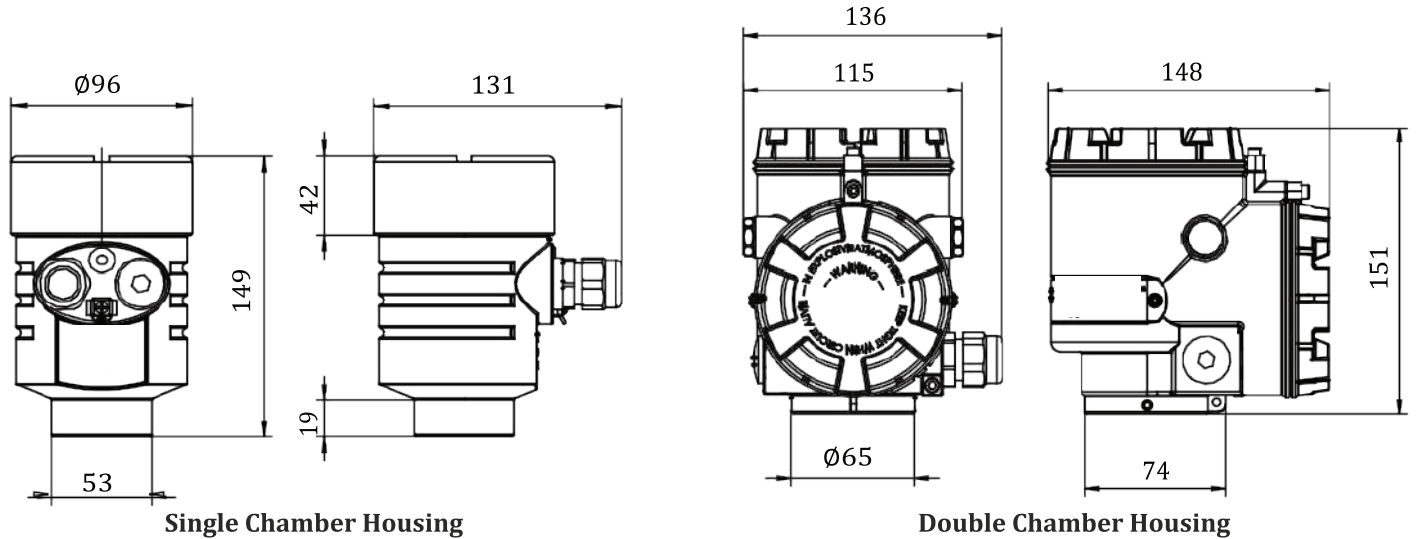
5. Technical Specifications

| | |
|------------------------------------|---|
| Measuring Range | 30m, 70m, 120m |
| Process Fitting/ Beam Angle | Min. Flange from DN80/ 3° |
| Power | <0.5 W |
| Response Time | <5s |
| Frequency | 76 ~ 81 Ghz |
| Media-Contacting Materials | Process fitting: SS304 (std.)/ SS316L (optional), PTFE Antenna, Seal: FKM, EPDM |
| Process Temperature | (-)40°C ~ 200°C (need air purging & heat sink for cooling) |
| Process Pressure | (-)1bar ~ +3bar |
| Resolution | 1mm |
| Accuracy | ±2mm |
| Repeatability | ±2mm |
| Signal Output | 4 ~ 20 mA/ HART, Bluetooth (optional) |

| | |
|-------------------------------|--|
| Display and Adjustment | LCD display, tank side display and tank side hub |
| Protect Level | IP67 |
| Electrical Connection | 2*M20*1.5 (cable diameter 9 ~13 mm), 1/2"NPT |
| Ex Information | Ex ia IIC T6 Ga/ 2G Ex db IIC T6 Gb |

6. Housing Version

The housings are available as single chamber version and double chamber version in stainless steel or aluminum. They are available with protection rating up to IP67(1bar)



7. Sensor Material

The Wetted part of sensor is made of SS316L and PTFE. The process sealing is made of FKM or EPDM.

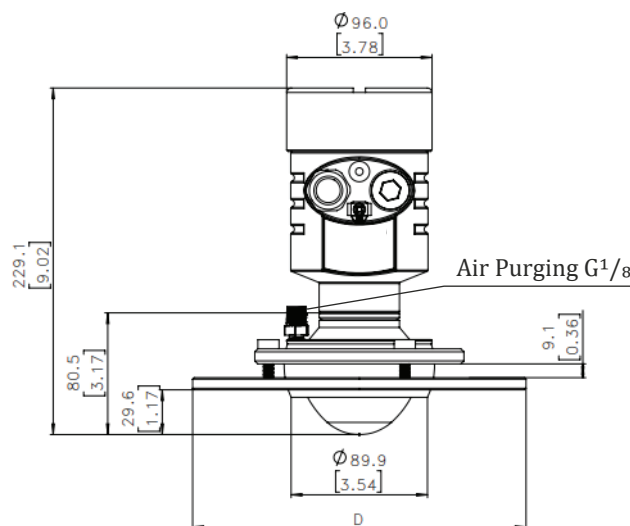
8. Electric Connection

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

9. Operations

The sensor can be adjusted vis LCD display, tank side display, tank side hub and HART communicator.

10. Dimensions



Lens Radar with (Single Chamber)

11. Technical Data

| RLT6900L | | Radar Level Transmitter with lens antenna | | | | | | | | | |
|--|---|--|---|---|---|---|---|---|---|---|----|
| Code | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Accuracy | | | | | | | | | | | |
| ±2mm | A | | | | | | | | | | |
| Approval | | | | | | | | | | | |
| Standard | XX | | | | | | | | | | |
| Ex ia IIC T6 Ga | CX | | | | | | | | | | |
| 2G Ex db IIC T6 Gb | DX | | | | | | | | | | |
| Customized | TT | | | | | | | | | | |
| Antenna material / Lens material | | | | | | | | | | | |
| Lens antenna/ SS304+PTFE | I | | | | | | | | | | |
| Lens antenna/SS316+PTFE | C | | | | | | | | | | |
| Customized | T | | | | | | | | | | |
| Process Fitting | | | | | | | | | | | |
| Without Swivelling hold. w/h flange DN80 | SD | | | | | | | | | | |
| Swivelling hold. w/h flange DN100 | SE | | | | | | | | | | |
| Swivelling hold. w/h flange DN150 | SK | | | | | | | | | | |
| Swivelling hold. w/h flange DN200 | SL | | | | | | | | | | |
| Swivelling hold. w/h flange DN250 | SO | | | | | | | | | | |
| Without Swivelling hold. w/h flange ASME3" | SN | | | | | | | | | | |
| Swivelling hold. w/h flange ASME4" | SP | | | | | | | | | | |
| Swivelling hold. w/h flange ASME6" | SR | | | | | | | | | | |
| Swivelling hold. w/h flange ASME8" | SU | | | | | | | | | | |
| Swivelling hold.w/h flange ASME10" | ST | | | | | | | | | | |
| Customized | TT | | | | | | | | | | |
| Sealing Material/ Temp./ Pressure | | | | | | | | | | | |
| FKM/(-)40~130°C/(-)1~3bar | A | | | | | | | | | | |
| FKM/(-)40~200°C/(-)1~3bar | B | | | | | | | | | | |
| EPDM/(-)40~130°C/(-)1~3bar | F | | | | | | | | | | |
| Customized | T | | | | | | | | | | |
| Accessories | | | | | | | | | | | |
| X | Without | | | | | | | | | | |
| U | Air purge/SS connector thread G ¹ / ₈ | | | | | | | | | | |
| LCD Display | | | | | | | | | | | |
| X | Without display | | | | | | | | | | |
| A | With display | | | | | | | | | | |
| B | With remote display (10 meter cable) | | | | | | | | | | |
| Cable Entry/ Gland/ Connecting | | | | | | | | | | | |
| M | M20x1.5/with/without | | | | | | | | | | |
| N | ½NPT/without/ without | | | | | | | | | | |
| Housing/Protection | | | | | | | | | | | |
| A | Single chamber/Aluminum/IP67 | | | | | | | | | | |
| B | Double chamber/Aluminum/IP67 | | | | | | | | | | |
| U | Single chamber/ SS316L / IP67 | | | | | | | | | | |
| Electronics | | | | | | | | | | | |
| H | Two-wire 4~20mA/HART; 24VDC | | | | | | | | | | |
| B | Four wire 4~20mA/HART; 220VAC | | | | | | | | | | |
| I | Four wire 4~20mA/HART; 24VDC | | | | | | | | | | |
| T | Customized | | | | | | | | | | |

Example: RLT6900-L-AXXISDAHAMXX

RLT6900-L - Radar Level Transmitter With Lens Antenna

A - Accuracy : ±2mm

XX - Approval : Standard

I - Antenna material/ Lens material : Lens antenna/ SS304+PTFE

SD - Process fitting : Without Swivelling hold. w/h flange DN80

A - Sealing material/ Temperature/Pressure : FKM/ (-)40~130°C/ (-)1~3bar

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

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

M - Cable Entry/ Gland/ Connecting : M20x1.5/ With/ Without

X - LCD Display : Without display

X - Accessories : Without

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

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

- 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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