

Radar Level Transmitter with Lens Antenna

RLT6900L



Measuring Range of 30m, 70m, 120m



Single/ Double Chamber Housing



Process Pressure: (-)1 ~ 20 bar



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 radar 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 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 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. Uneffected 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 stores 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.

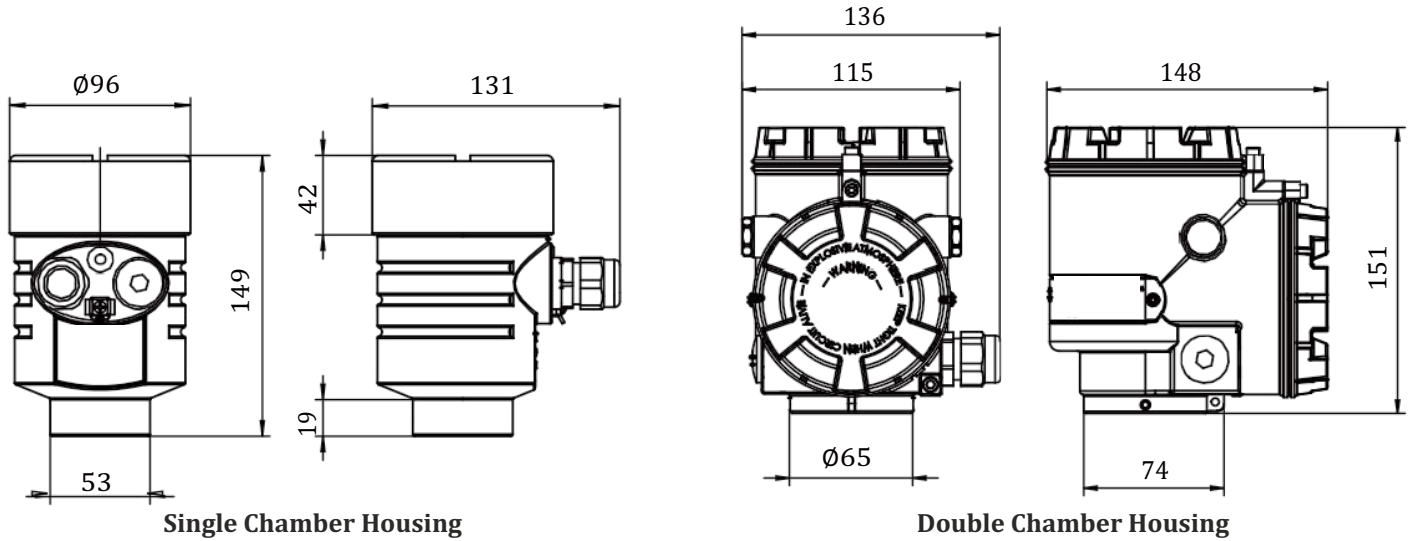
5. Technical Specifications

Measuring Range	30m, 70m, 120m
Process Fitting/ Beam Angle	Flange from DN80/ 3°
Power	<0.5 W
Response Time	<2s
Frequency	76 ~ 81 Ghz
Media-Contracting Materials	Process fittings: 316L,PP, PEEK; Seal: FKM, EPDM
Process Temperature	(-)40°C ~ 200°C
Process Pressure	(-)1bar ~ 20bar
Resolution	1mm
Accuracy	±5mm
Repeatability	±2mm
Signal Output	4 ~ 20 mA/ HART

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), ½NPT
Ex Information	EX ia IIC T6 Ga; Ex d ia [iaGa]IIC T6/ T2 Gb; Ex iaD tD A21 IP67T80°C/ T290°C

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 316L and PEEK. The process sealing is made of FKM or EPDM or KALREZ.

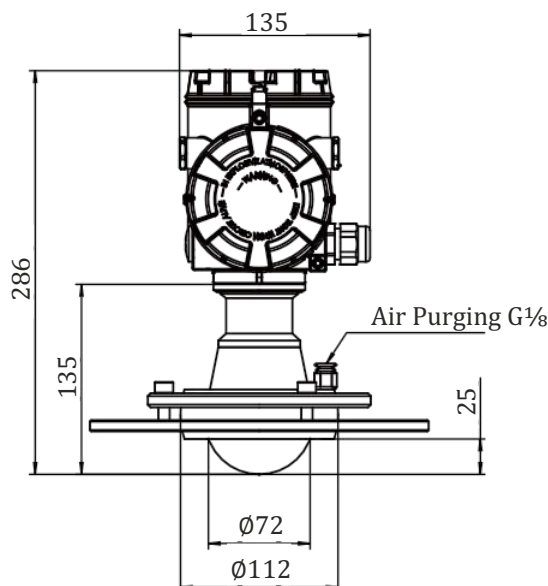
8. Electric Connection

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



11. Technical Data

RLT6900L		Radar Level Transmitter									
Code		1	2	3	4	5	6	7	8	9	10
Language											
English	A										
Spanish	S										
Customized	T										
Approval											
Standard	XX										
Ex ia IIC T6 Ga	CX										
Ex dia [iaGa]IIC T6/ T2 Gb	DX										
Ex iaD tD A21 IP67T80°C/ T290°C	EX										
Customized	TT										
Antenna Version/ Material											
Lens antenna/ 316L+PTFE	I										
Lens antenna/316L+PEEK	C										
Process Fitting											
Swivelling holder w/h flange DN80	SD										
Swivelling hold. w/h flange DN100	SE										
Swiveling hold. w/h flange DN150	SK										
Swiveling hold. w/h flange DN200	SL										
Swiveling hold. w/h flange DN250	SO										
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/(-)1~20bar	A										
FKM/(-)40~200°C/(-)1~20bar	B										
EPDM/(-)40~130°C/(-)1~20bar	F										
KALREZ 6230/(-)15~130°C/(-)1~20bar	R										
Accessories											
X	Without										
K	Air purge/quick connector Ø8mm										
U	Air purge/SS connector thread G¼										
V	Air purge/SS connector thread G¼ with check valve										
LCD Display											
X	Without display										
A	With display										
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/316L SS/IP67										
W	Double chamber/316L SS/IP6										
Electronics											
H	Two-wire 4~20mA/HART; 24VDC										
B	Four wire 4~20mA/HART; 220VAC										
I	Four wire 4~20mA/HART; 24VDC										
W	Wireless; GPRS; Wireless C Mesh										
T	Customized										
Sealing Material/ Temp./ Pressure											
S	KALREZ 6230/(-)15~200°C/(-)1~20bar										
G	KALREZ 6375/(-)15~130°C/(-)1~20bar										
H	KALREZ 6375/(-)15~200°C /(-)1~20bar										
T	Customized										

Example: RLT6900L-AXXITTAWAMXX

A - Language: English

XX - Approval: Standard

I - Antenna Version/ Material: Lens antenna/ 316L+PTFE

TT - Process Fitting: Customized

A - Sealing Material/ Temp./ Pressure: FKM/ (-)40~130°C/ (-)1~20bar

W - Electronics: Wireless; GPRS; Wireless C Mesh

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

M - Cable Entry/ Gland/ Connecting: M20x1.5/ with/ without

X - LCD Display: Without display

X - Accessories: Without

*For any customisation, contact our sales team