ROCKSENSOR™

Submersible Level Transmitter

RP202L

- Range upto 200 meters (H_2O)
- Reference Accuracy upto 0.5%
- Sensor Housing (IP68 degree protection)
- RoHS Approved

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.

CE

International Organization for Standardization ISO 9001

Ex ATEX

Safety Integrity Level SIL

IECEx

HART COMMUNICATION PROTOCOL

FIELDCOMM GROUP MEMBER

RoHS

RKS ROCKSENSOR

CONTENTS

KEY APPLICATION INDUSTRIES

- Oil and Gas sector
- Cement
- Metal
- Pulp and Paper
- Agriculture
- Textiles
- Chemicals
- Power
- Water
- Pharmaceutical
- Fertilizer
- Plastics and HVAC

1. Introduction

Fully sealed Submersible (Hydrostatic) Level Transmitter suitable for variety of industrial applications in water & liquids medium.

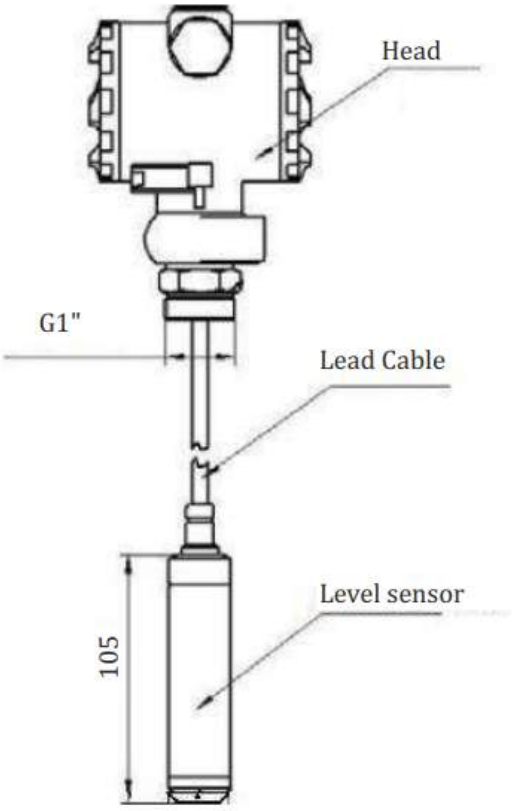
2. Product

- High Stability Silicon Piezoresistive Pressure Sensor
- Reference Accuracy up to 0.5% (standard), 0.2% & 0.1% (On customer demand)
- Integrated construction, No need for external adjustment
- Sensor Housing with IP68 degree protection
- 2-Wire/ 4-20 mADC Output
- Optional Display Unit for showing level value
- Stainless Steel Diaphragm & Housing
- RoHS Approved
- Range up to 200 meters (H_2O)

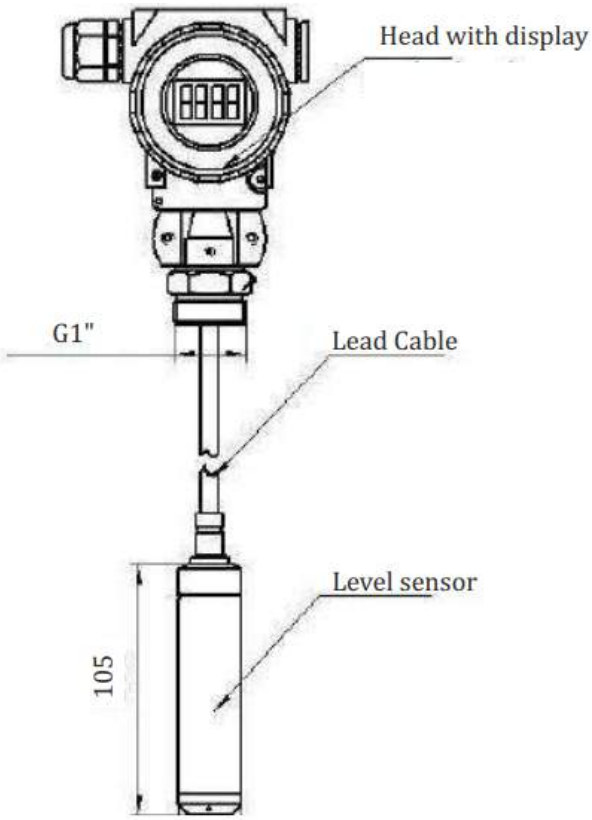
3. Specification

Process fluid	Pure water, sea water, chemical liquids compatible with SS316L
Range	0 ~ 0.5m - 200m
Accuracy	±0.5%/ ±0.2%/ ±0.1% (Rage 30~120m)
Stability	0.25% (%F.S. per year)
Fluid/ Compensation Temp.	0 to 70℃
Over Pressure	2x Max. Range
Temperature Effect	±1.5% FS(accuracy: ±0.2%)/ ±3.0% FS(accuracy:±0.5%)/ ±5.0% FS(accuracy:±1.0%)
Power Supply	14-36VDC (4-20Ma output)/ 12-36VDC (RS485 output)
Zero Offset	<0.5% of output range
Zero & Range Adjust	+20% (only indicator type)
Range Adjustable	between Min. & Max. Range
Load effect	Negative
Load resistance	4-20mA, R≤1KΩ
Baud rate	9600/ 4800/ 19200
Diaphragm Material	SS316L, Tantalum
Sensor (Probe) Material	Stainless Steel
Lead Cable Material	Wear-proof & water-proof cable
Housing Material	Aluminum alloy with spraying painted
Indicator	4½ Digit LCD
Output	4-20mA/ RS485/ 4-20ma+RS485
Installation	Thread: G1'' or Flange: DN25, DN32
Thread, Flange Material	Stainless steel
Electrical Connector	M20X1.5
Standard Power Supply	24VDC±5%, ripple less than 1%
Power effect	Less than 0.01%/V of output range
IP protection	IP68 (Transmitter)/ Indicator(IP65)
Storage temperature	(-)40 ~ 125℃
Size	105mm x 28mm (Lx D)
Weight	2.0kg /3m

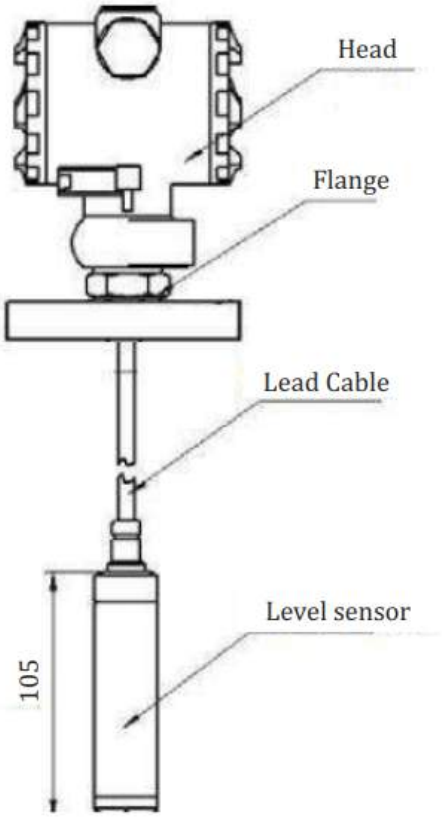
4. Size (mm)



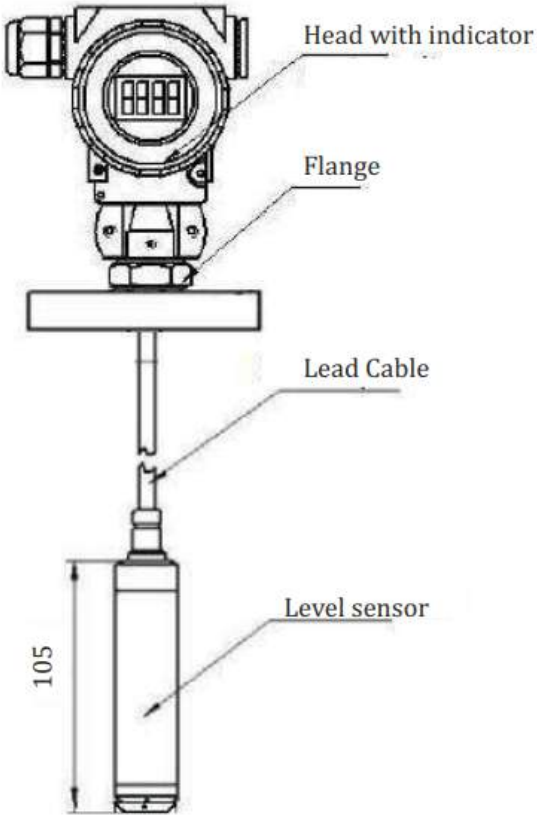
RP202L-AT, Thread Installation



RP202L-DT, Thread Installation

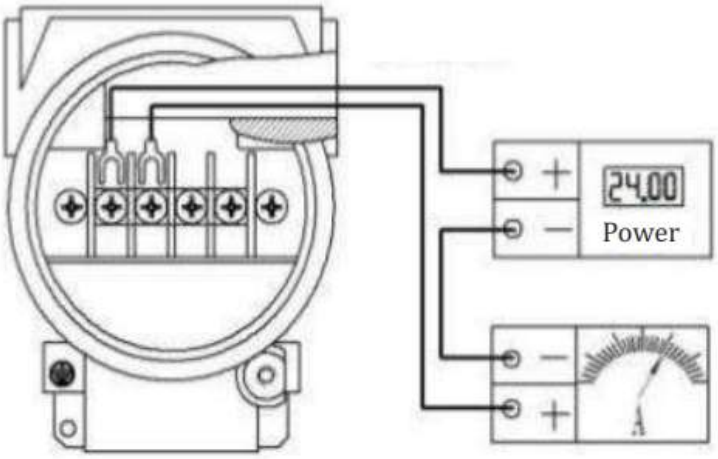


RP202L-AT, Thread Installation

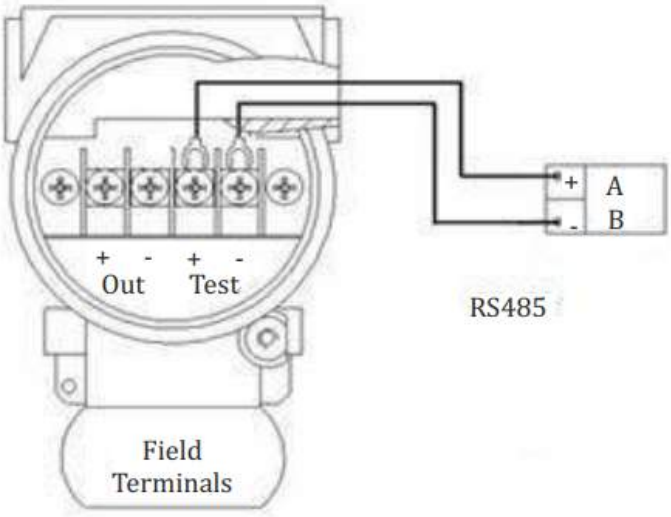


RP202L-DT, Thread Installation

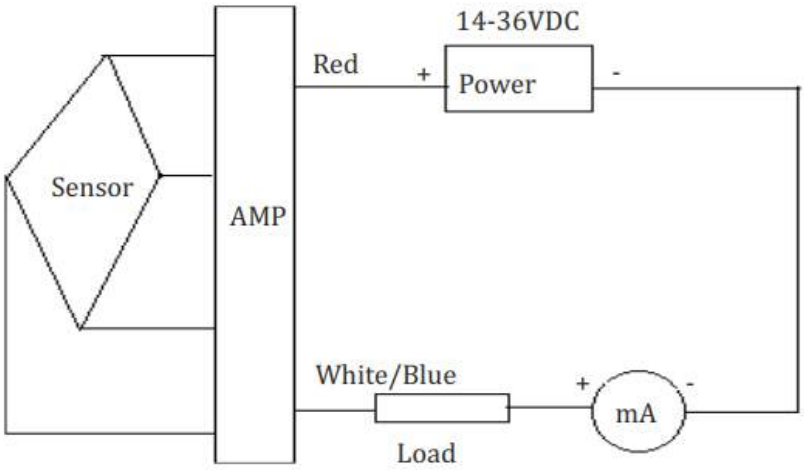
5. Diagram



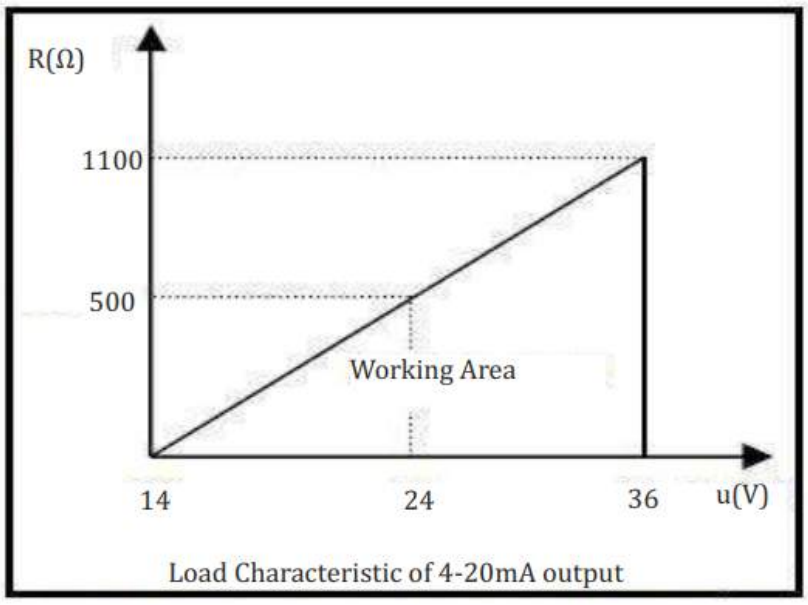
4-20mA Output Diagram (Loop powered 2- Wire)



RS485 Output, Standard Modbus-RTU protocol



E.g.: 4-20mA Output diagram



E.g. Load Resistor for 4-20mA Output

6. Model Selection Table

RP202L	Submersible Level Tx.							
Code	1	2	3	4	5	6	7	8

Accuracy	
0.1% (Range 30~120m)	A
0.2%	B
0.5%	C

Diaphragm Material	
SS316L	A
Tantalum	B

Local Display	
None, without local indicator	N
Yes, with local LCD indicator	D

Installation	
None	N
Thread installation, G1'' default, if other size, please advise thread size	T
Flange installation, please advise flange size, such as DN25, DN32...	F

Range			
Min.	Max.	Avg.	
0-0.5m	0-1.0m	±0.5%	01
0-1.0m	0-3.5m	±0.5%	02
0-3.5m	0-10m	±0.5%	03
0-10m	0-20m	±0.2%	04
0-20m	0-70m	±0.2%	05
0-70m	0-170m	±0.2%	06
0-100m	0-200m	±0.2%	07

Lead Cable Length	
NX	Cable total length, same as ex-work range, please advise the range e.g. ex-calibration range :3m, so NX=N3
LX	Sensor range + external cable length, please advise the exact sensor range & total lead cable length (such as L6: 6m cable, sensor range + external cable: 6m)

Special Requirement	
N	None
S	Lighting surge protection
A1	Accuracy: 0.1% (only for range: >30m)

Output	
A	4-20ma, 2 wire, default
R	RS485 output, standard MODBUS-RTU protocol
AR	4-20ma +RS485 output

Example: RP202L-CADTN01ASN9

RP202L - Submersible Level Transmitter

C - Accuracy : 0.5%FS

A - Diaphragm Material: SS316L

D - Local Display: Yes, with local LCD indicator

T - Installation: Thread installation, G1'' default

N - Sensor (Probe) Material : ICr18Ni9Ti stainless steel

01 - Range (Min.: 0-0.5m, Max.: 0-1.0m, Avg.: ±0.5%)

A - Output: 4-20ma, 2 wire

S - Special Requirement: Lighting surge protection

N9 - Lead Cable Length: 9m

*For any customisation, contact our sales team

Note:

1. Please make sure that the media is compatible with the wetted parts. Before placing order, kindly confirm the density of the media (except water).

2. Two kinds of cables are available – Polyurethane and Polyethylene. Default selection is Polyethylene. More durable and flexible polyurethane cable can be selected based upon the requirement.

3. Use suitable measures to protect the Device and Power grounding reliably in case of installation in Thunder Storm Area.

4. At standard conditions (@4°C, g = 9.80665 m/s^2) 1 mH_2O = 9.80665 kPa

5. For any special requirement, contact Rocksensor.

7. Pressure Conversion Table

	psi	atms	"H_2O	mm H_2O	cm H_2O	oz/in^2	Kg/cm^2	"Hg	mmHg (Torr)	cmHg	mbar	bar	Pa (N/m^2)	kPa	MPa
psi	1	0.0681	27.71	703.8	70.38	16	0.0704	2.036	51.715	5.17	68.95	0.0689	6,895	6.895	0.0069
atms	14.7	1	407.2	10,343	1,034.3	235.1	1.033	29.92	760	76	1013	1.013	101,325	101.3	0.1013
"H_2O	0.0361	0.00246	1	25.4	2.54	0.5775	0.00254	0.0735	1.866	0.187	2.488	0.00249	248.8	0.249	0.00025
mm H_2O	0.001421	0.000097	0.0394	1	0.1	0.0227	0.0001	0.00289	0.0735	0.00735	0.098	0.000098	9.8	0.0098	0.00001
cm H_2O	0.01421	0.000967	0.3937	10	1	0.227	0.001	0.0289	0.735	0.0735	0.98	0.00098	98	0.098	0.0001
oz/in^2	0.0625	0.00425	1.732	43.986	4.40	1	0.0044	0.1273	3.232	0.3232	4.31	0.00431	431	0.431	0.00043
Kg/cm^2	14.22	0.968	394.1	100,010	1,001	227.6	1	28.96	735.6	73.56	980.7	0.981	98,067	98.07	0.0981
"Hg	0.4912	0.03342	13.61	345.7	34.57	7.858	0.0345	1	25.4	2.54	33.86	0.0339	3,386	3.386	0.00339
mmHg	0.01934	0.001316	0.536	13.61	1.361	0.310	0.00136	0.0394	1	0.1	1.333	0.001333	133.3	0.1333	0.000133
cmHg	0.1934	0.01316	5.358	136.1	13.61	3.10	0.0136	0.394	10	1	13.33	0.01333	1,333	1.333	0.00133
mbar	0.0145	0.000987	0.4012	10.21	1.021	0.2321	0.00102	0.0295	0.75	0.075	1	0.001	100	0.1	0.0001
bar	14.504	0.987	401.9	10,210	1021	232.1	1.02	29.53	750	75	1,000	1	100,000	100	0.1
Pa	0.000145	0.00001	0.00402	0.102	0.0102	0.00232	0.00001	0.000295	0.0075	0.00075	0.01	0.00001	1	0.001	0.000001
kPa	0.14504	0.00987	4.019	102.07	10.207	2.321	0.0102	0.295	7.5	0.75	10	0.01	1,000	1	0.001
MPa	145.04	9.869	4019	102,074	10,207	2321	10.2	295.3	7500	750	10,000	10	1,000,000	1,000	1

NOTES

ROCKSENSOR™

Sensing Beyond the Vision

Field Instrumentation Range

Pressure Measurement

- Smart Differential Pressure Transmitter
- Smart Gauge Pressure Transmitter
- Smart Absolute PressureTransmitter
- 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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