

## Submersible Level Transmitter RP202L



Range upto 200 meters (H<sub>2</sub>O)



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 & 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. Product ..... 4

3. Specification ..... 4

4. Size (mm) ..... 5

5. Diagram ..... 6

6. Model Selection Table ..... 7

7. Pressure Conversion Table ..... 8

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.

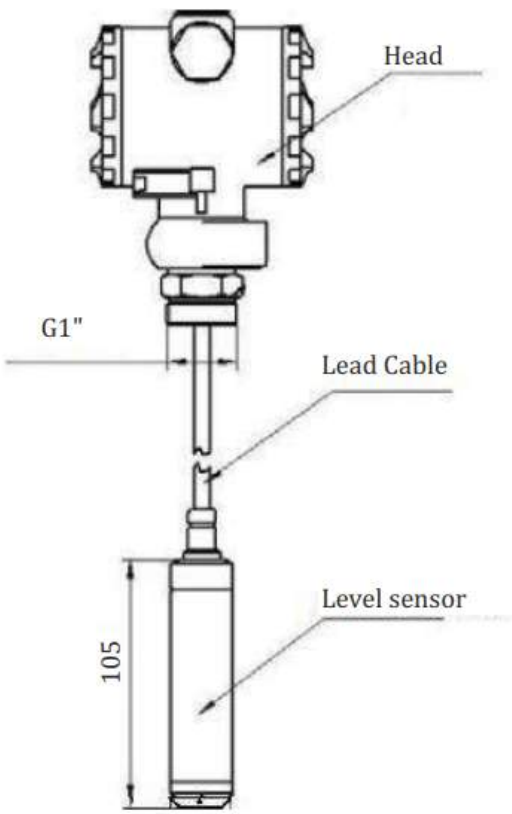
## 2. Product

- 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<sub>2</sub>O)

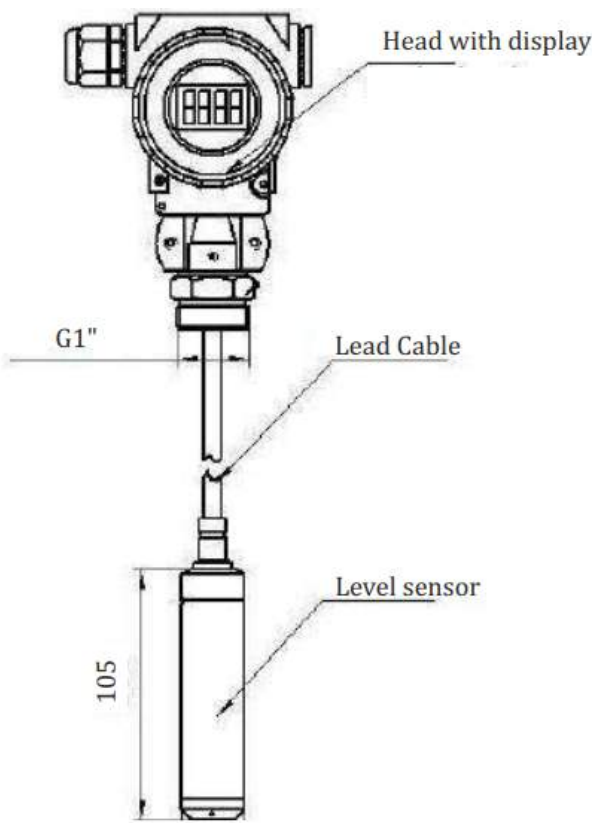
## 3. Specification

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

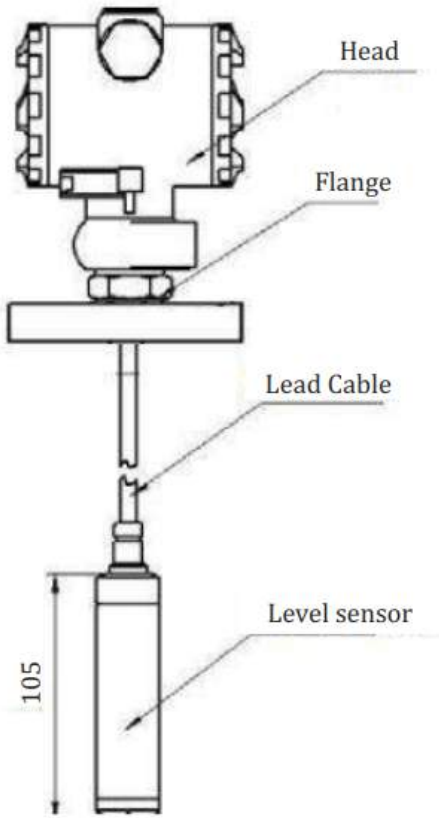
4. Size (mm)



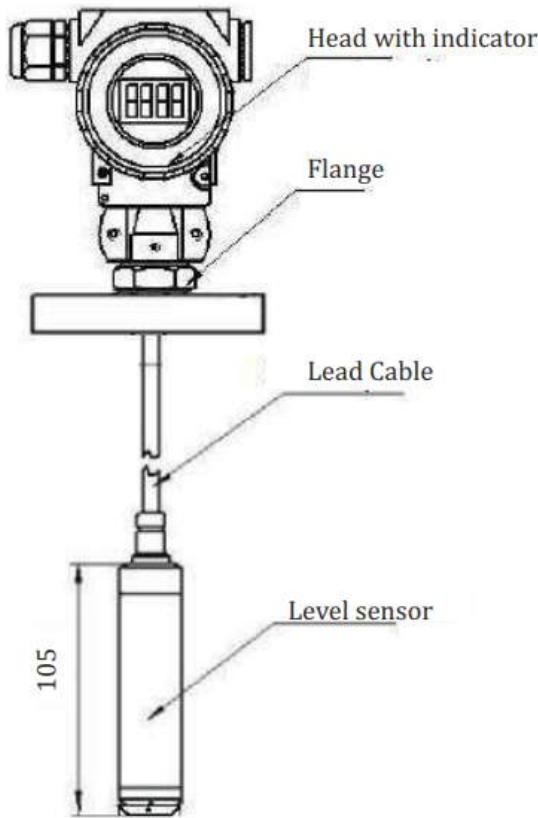
RP202L-AT, Thread Installation



RP202L-DT, Thread Installation

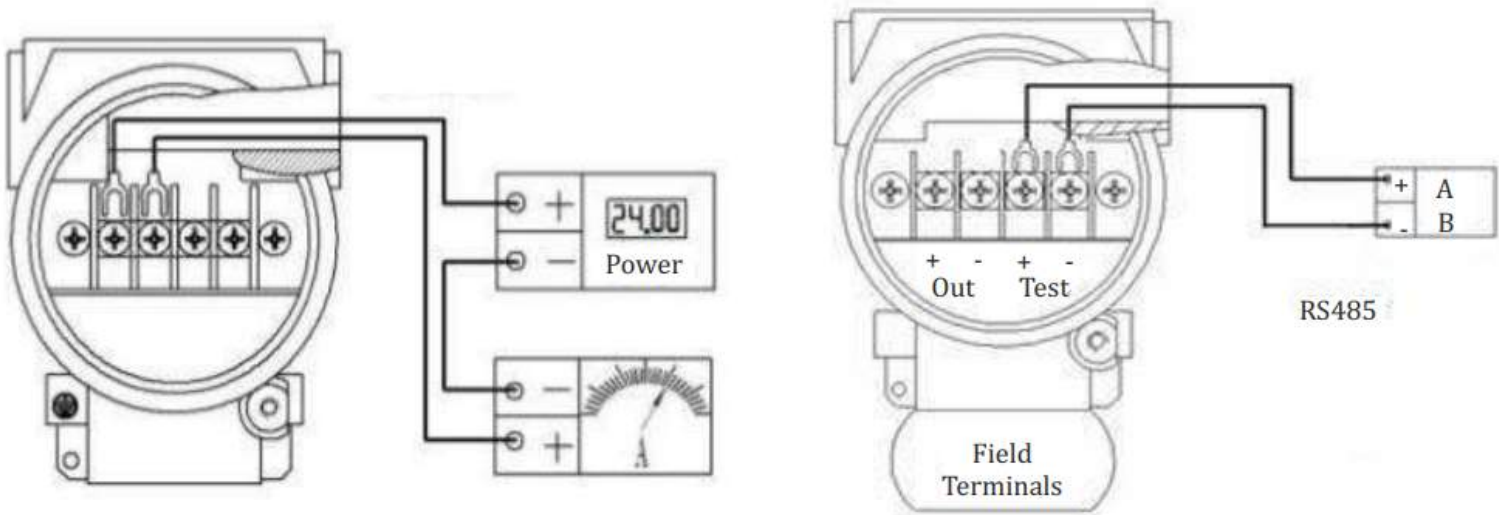


RP202L-AT, Flange Installation



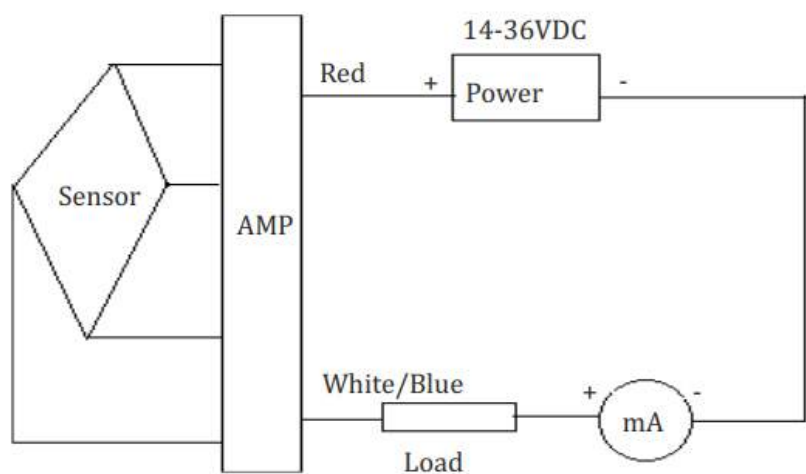
RP202L-DT, Flange Installation

5. Diagram

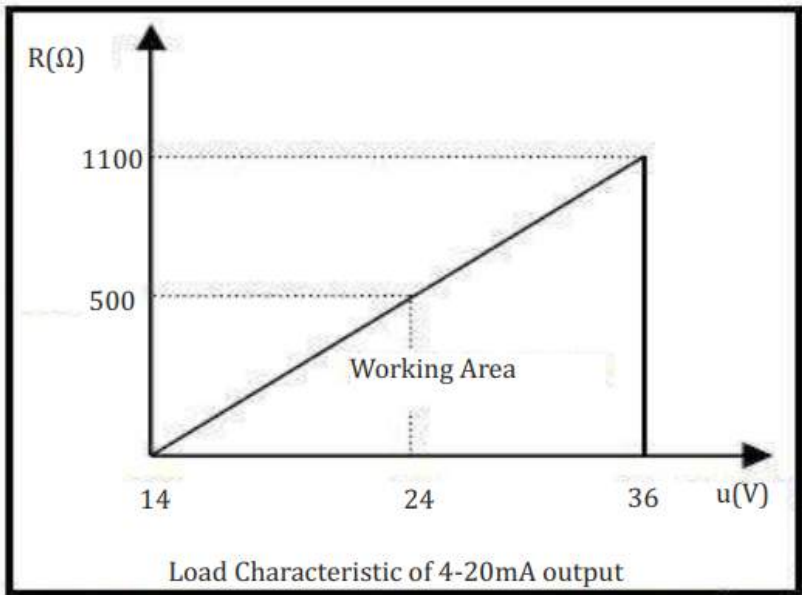


4-20mA Output Diagram (Loop powered 2- Wire)

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,  $g = 9.80665 \text{ m/s}^2$ )  $1 \text{ mH}_2\text{O} = 9.80665 \text{ kPa}$
5. For any special requirement, contact Rocksensor.

**7. Pressure Conversion Table**

	psi	atms	"H <sub>2</sub> O	mm H <sub>2</sub> O	cm H <sub>2</sub> O	oz/in <sup>2</sup>	Kg/cm <sup>2</sup>	"Hg	mmHg (Torr)	cmHg	mbar	bar	Pa (N/m <sup>2</sup> )	kPa	MPa
<b>psi</b>	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
<b>atms</b>	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
<b>"H<sub>2</sub>O</b>	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
<b>mm H<sub>2</sub>O</b>	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
<b>cm H<sub>2</sub>O</b>	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
<b>oz/in<sup>2</sup></b>	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
<b>Kg/cm<sup>2</sup></b>	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
<b>"Hg</b>	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
<b>mmHg</b>	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
<b>cmHg</b>	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
<b>mbar</b>	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
<b>bar</b>	14.504	0.987	401.9	10,210	1,021	232.1	1.02	29.53	750	75	1,000	1	100,000	100	0.1
<b>Pa</b>	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
<b>kPa</b>	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
<b>MPa</b>	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



## 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:**

**in:** Rocksensor India

**▶:** Rocksensor

**f:** Rocksensor

**@:** Rocksensor

**🐦:** Rocksensor India