



■ Operational Description

Only one moving part, a float, travels up and down a vertical stem. A permanent magnet inside the float acts on a series of closely set reed switches and resistors inside the stem. The total resistance value is converted into voltage and current signals proportional to the level of the liquid.

■ Applications

The RP liquid level sensors have numerous applications in the chemical, oil, shipping, food processing, waste treatment and other industries. Because they are manufactured to user specifications the RP units fit and work precisely to application requirements.

■ Accessories and Options

The RPR series is physically larger and available in longer lengths than the RPE series. For hazardous locations, the RPX is available as CSA Class I, Div. 2, Groups C & D.

RP series continuous level sensors are manufactured to customer specifications and assigned individual model numbers at the time of manufacture. Control convertor units are stock products.

RP Series

Custom Resistive Chain Level Measurement

- Continuous level indication
- 4-20 mA output or ohms
- Available with four adjustable alarm points and 4-20 mA output
- Very reliable
- Wide choice of materials
- Durable float matched to liquid specific gravity
- Shock resistive and antistick float design
- CSA approved Class I, Div. 2, Group C & D.

The RP series custom continuous level sensors are designed to meet demanding customer requirements for reliable operation. Models are available in lengths up to 20 ft. (6 m) with a variety of American and international mounting configurations. The wide selection of materials includes 304SS, 316SS, PVC, CPVC, polypropylene and PTFE. Output convertor units include a choice of 4-20 mA only or 4-20 mA with four adjustable alarm points.

To Assist Your Selection Process

See the level and flow control engineering form located at www.automationproducts.com/6259 (or fax back #6259).

RP Series – Custom Resistive Chain Level Measurement

■ RPR Specifications

Supply Voltage: 10 or 15 VDC
Cable Entry: 3/4 in. NPT
Rating: IP65/NEMA 4, 7
Materials Available: 304SS, 316SS, PVC, CPVC, PP, PTFE
Maximum Length: 154 in. (3900 mm)
Resolution: 0.39 in. (10 mm)
Accuracy: ±0.59 in. (15 mm)
Hysteresis: ±0.39 in. (10 mm)
Operating Temperature
304SS, 316SS, PTFE: 14 to 212°F (-10 to 100°C)
PVC: 32 to 140°F (0 to 50°C)
PP: 32 to 176°F (0 to 80°C)
RP-S: 14 to 248°F (-10 to 120°C)
Maximum Pressure
304SS, 316SS, PTFE: 72.5 psi (5 bar)
PVC: 29 psi (2 bar)
Minimum S₁ & S₂ (at SG=1.0)
304SS, 316SS: S ₁ = 80 mm; S ₂ = 80 mm
PVC: S ₁ = 90 mm; S ₂ = 135 mm
Converter Unit Required: RPR2000 or CTR2000

■ Interface Monitor

Model RP series float transmitters can monitor the interface between two immiscible liquids. A minimum specific gravity difference of 0.1 can be accommodated. The weight and buoyancy of the magnetic float will be adjusted so that the float sinks through the lighter liquid and rides on the heavier liquid. This option can be provided if the following criteria are met:

1. Float material is 316 stainless steel
2. Minimum specific gravity difference is 0.1
3. Liquids have a specific gravity of 0.6 or greater

Contact STI for details.

■ RPE Specifications

Supply Voltage: 8 VDC
Cable Entry: 3/4 in. NPT
Rating: IP65/NEMA 4
Materials Available: 304SS, 316SS, PVC, CPVC
Maximum Length: 78 in. (2000 mm)
Resolution: 0.39 in. (10 mm)
Accuracy: ±0.59 in. (15 mm)
Hysteresis: (6 ±3 mm)
Operating Temperature
304SS, 316SS, PTFE: 14 to 212°F (-10 to 100°C)
PVC: 32 to 140°F (0 to 50°C)
Maximum Pressure
304SS, 316SS, PTFE: 72.5 psi (5 bar)
PVC: 29 psi (2 bar)
Minimum S₁ & S₂ (at SG=1.0)
304SS, 316SS: S ₁ = 50 mm; S ₂ = 60 mm
PVC: S ₁ = 55 mm; S ₂ = 90 mm
Converter Unit Required: RPR2000 or CTR1000



■ Converter Specifications

Model	RPR2000	CTR2000	CTR1000
Input	2 wire for RPR	2 wire for RPR	3 wire for RPE
Supply Voltage	90 to 132/180 to 264 VAC	90 to 132/180 to 264 VAC	90 to 132/180 to 264 VAC
Power Consumption	7 VA	2 VA	2 VA
Housing	Plastic, panel mount type	Plastic, 8 pin plug in type	Plastic, 11 pin plug in type
Output Signal	4-20 mA DC (750 max for AC voltage, 250 max for DC voltage)		
Accuracy	±0.5% F.S.		
Alarm Output	4x SPDT 3 A, 240 VAC	n/a	n/a
Integral Meter	0-100%	n/a	n/a
Operating Temperature Range	-4 to 122°F (-20 to 50°C)	32 to 122°F (0 to 50°C)	32 to 122°F (0 to 50°C)
Maximum Separation Distance	975 ft. (300 m)	975 ft. (300 m)	975 ft. (300 m)
Weight	6.2 lbs.	1 lb.	1 lb.



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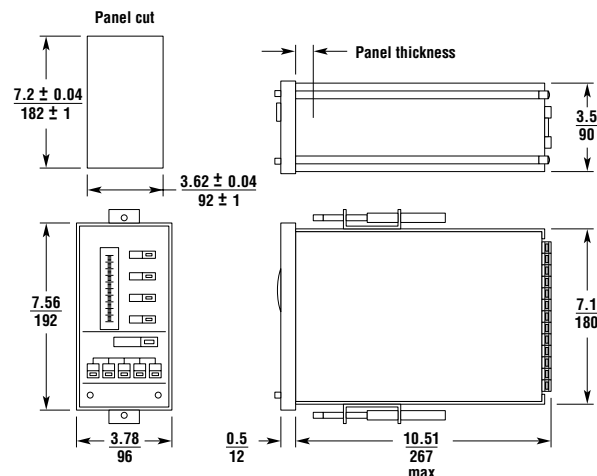
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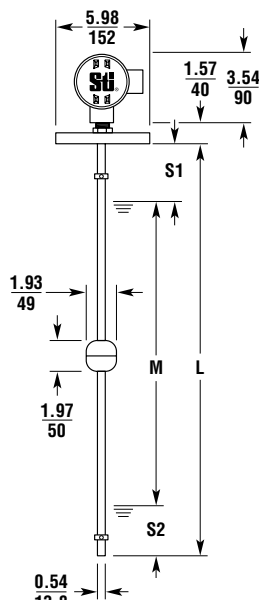
RP Series – Custom Resistive Chain Level Measurement

in.
mm

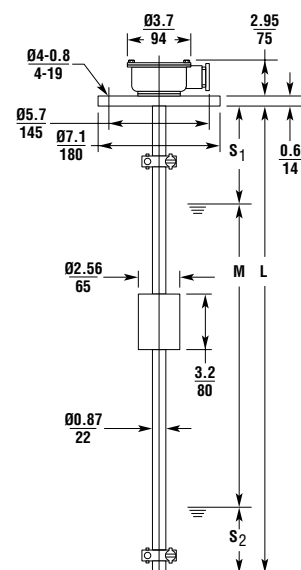
RPR2000



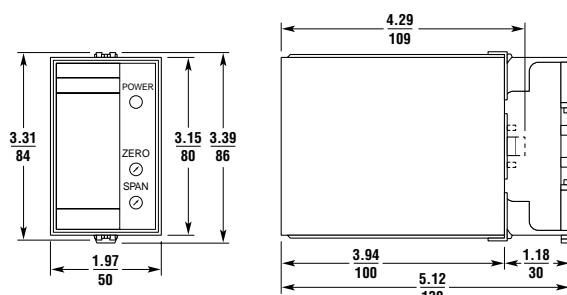
RPE-1A-S



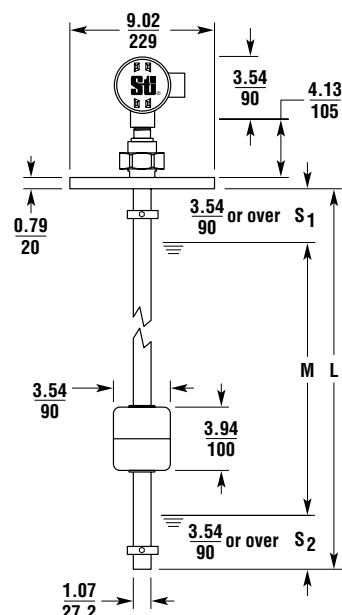
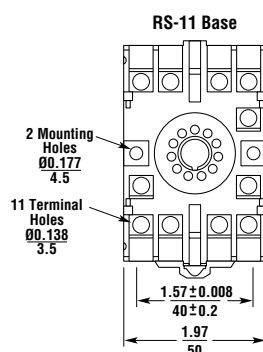
RPE-0J-PV



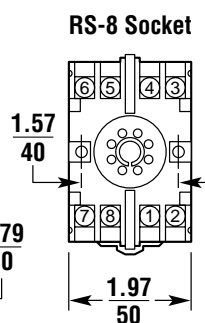
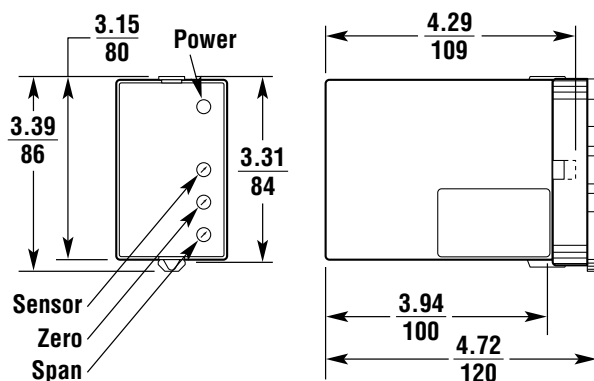
CTR1000



RPR-1A-S



CTR2000



E To Assist Your Selection Process

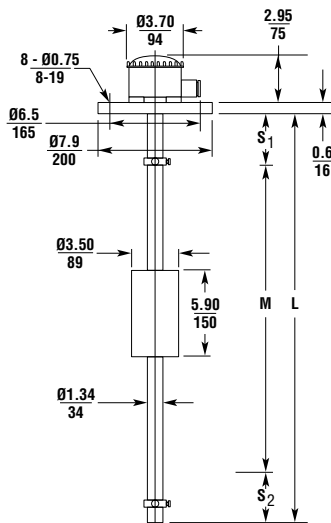
See the level and flow control engineering form located at www.automationsensors.com/6259 (or fax back #6259).

RP Series – Custom Resistive Chain Level Measurement

■ Dimensions (cont.)

in.
mm

RPR-0J-PV



■ RPR2000 Tank Volume Conversion Options

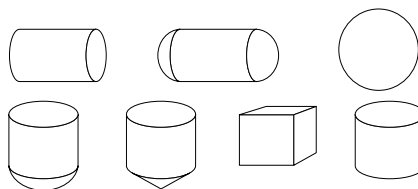
The standard graduation for the RPR2000 is 0-100%. However, for the tank shapes listed below, volume conversion is available. It is necessary to supply the volume and a dimensional sketch of the tank with your order.

- Horizontal cylinder with flat ends
- Horizontal cylinder with parabolic ends
- Spherical tank
- Cylindrical tank with parabolic bottom
- Cylindrical tank with cone bottom
- Vertical square tank with flat bottom
- Vertical round tank with flat bottom

■ Ordering Information

Model									
RPR	Rugged model								
RPE	Economy model								
RPS	Sanitary model								
RPX	Hazardous area (Class I, Div. 2, Groups C & D)								
Mounting Type									
0	Flat face flange								
1	Raised face flange								
3	Sanitary ferrule								
4	Plug mounted from outside of tank								
5	Plug mounted from inside of tank								
Material									
S	304SS								
S6	316SS								
PV	PVC								
CP	CPVC								
P	PP (available with RPR only)								
F4T	PTFE (available with 0 or 1 flange mounting styles only)								
Mounting Details (see technical reference section for dimensions and ordering codes)									
A	ANSI flange	T	NPT plug						
J	JIS flange	SL	Slide flange						
D	DIN flange	SF	3A sanitary ferrule						
G	PF plug	X	Other						
R	PT plug								
Signal Output									
R1	Resistance (customer specified)								
A1	4-20 mA signal integral to sense zero and span adjustable								
Stem Length (specify length in mm)									
L									
Converter (order separately, see Controllers section for details)									
RPR2000	4-20 mA output, 4 x SPDT alarms								
CTR2000	4-20 mA output for RPR								
CTR1000	4-20 mA output for RPE								
Socket (order separately)									
PN22607	RS8 Socket								
PN22608	RS11 Socket								

Note: RPX for hazardous locations requires 304SS or 316SS.



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147

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continuous level measurement – solids/liquids