

**APG** 

**RPX Series  
Resistive  
Chain  
Continuous  
Level Probe**



## APG RPX Series Resistive Chain Continuous Level Probe Installation Guide

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**APG** 

**APG RPX Series Resistive Chain Continuous Level Probe**



## Thank You

Thanks for purchasing an RPX resistive chain continuous level probe from us! We appreciate your business and your trust. Please take a moment to familiarize yourself with the product and this manual before installation. If you have any questions, at any time, don't hesitate to call us at 888- 525-7300. You can also find a full list of our product manuals at:

[www.apgsensors.com/resources/product-resources/user-manuals](http://www.apgsensors.com/resources/product-resources/user-manuals)

## Description

The RPX resistive probes contain reed switches in a 1/2" Ø stainless steel stem and a permanent magnet in a float. As the float rises or falls with the level of the liquid, the magnet inside the float acts on the corresponding reed switches inside the stem, changing the output of the probe. The RPX carries explosion proof, intrinsically safe, and non-incendive hazardous location approvals.

## How To Read Your Label

Each label comes with a full model number, a part number, and a serial number. The model number for the RPX will look something like this:

SAMPLE: RPX-A-P2W-S6-E-48.00

The model number correlates with all the configurable options and tells you exactly what you have. Compare the model number to the options on the datasheet to identify your exact configuration. You can also call us with the model, part, or the serial number, and we can help you. You'll also find all hazardous certification information on the label.

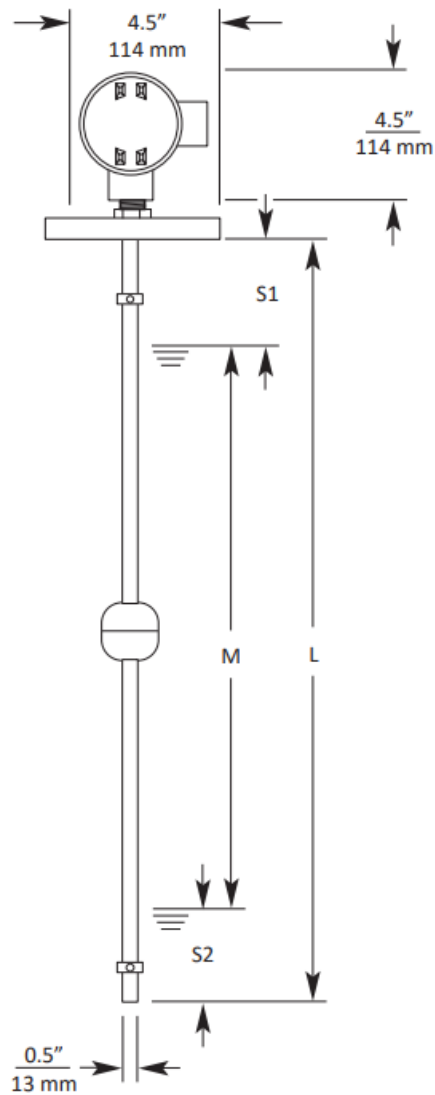
## Warranty

This product is covered by APG's warranty to be free from defects in material and workmanship under normal use and service of the product for 24 months. For a full explanation of our Warranty, please visit [www.apgsensors.com/resources/warranty-certifications/warranty-returns/](http://www.apgsensors.com/resources/warranty-certifications/warranty-returns/). Contact Technical Support to receive a Return Material Authorization before shipping your product back.

## Dimensions

## RPX Dimensions

### RPX Dimensions



## Mounting and Installation Instructions

### Mounting Instructions:

- Flange Mounting: Provide the compatible mating flange on the tank and install using a suitable gasket.
- Plug Mounting: Provide the compatible female boss on the tank and install the probe with thread tape.

### Additional care must be taken to ensure:

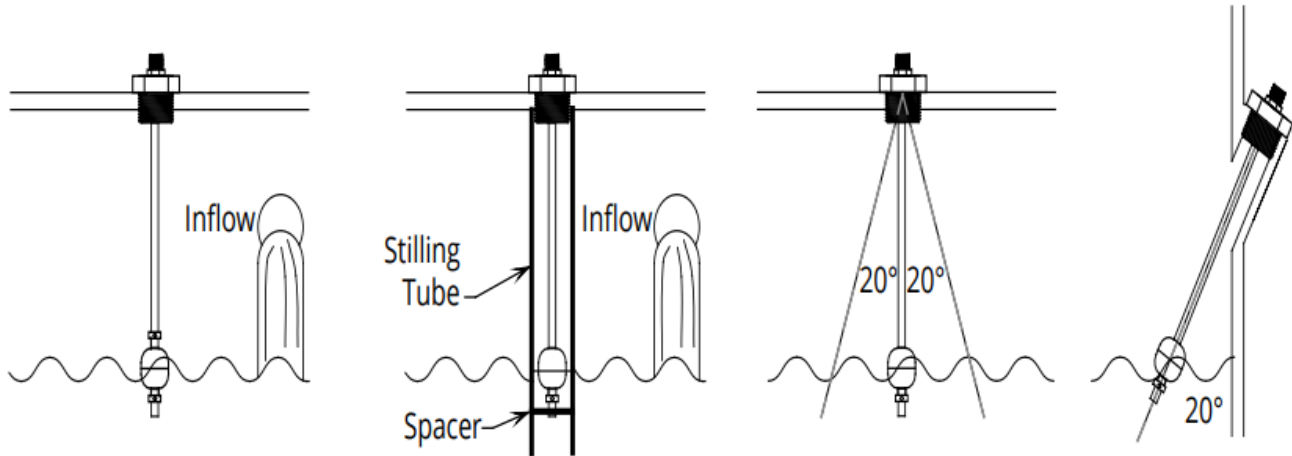
- The sensor is located away from strong magnetic fields, such as those produced by motors, transformers, solenoid valves, etc.
- The medium is free from metallic substances and other foreign matter.
- The sensor is not exposed to excessive vibration.

### Installation Notes:

- Do not locate your RPX series level sensor near inlets/outlets.

- If there is surface wave action, then use a time-delay relay or stilling tube. If a stilling tube is used, drill vent holes in the tube and use a spacer to assure the float has free travel inside the tube (See Figure 5.1).
- The RPX can be mounted up to 20° from vertical.

**IMPORTANT:** Your RPX MUST be installed according to drawing 9001930 (IS Hazardous Installation Drawing For RPX) or 9001932 (Hazardous Mounting Drawing RPX) to meet listed approvals. Faulty installation will invalidate all safety approvals and ratings.



**Figure 5.1**

**DANGER:** Do not remove the housing cover until the atmosphere is determined safe, and the power supply is turned off.

#### **Electrical Installation Instructions:**

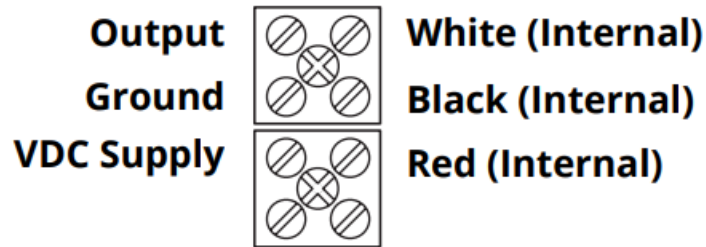
- Install conduit and/or cable with necessary seal(s) per Drawing 9001930 or 9001932 for hazardous locations.
- Remove the housing cover.
- Check the Terminal Tables in section 6 before making any connections.
- Connect the wire for your system to the appropriate terminal.
- Replace the housing cover.

#### **Terminal Tables**

Terminals for RPX-A and RPX-I

	<b>Black (Internal)</b>
	<b>White (Internal)</b>
	<b>Red (Internal)</b>
	<b>Output</b>
	<b>+24 VDC</b>

**Terminals for RPX-R (Resistive Output)**



## Removal Instructions

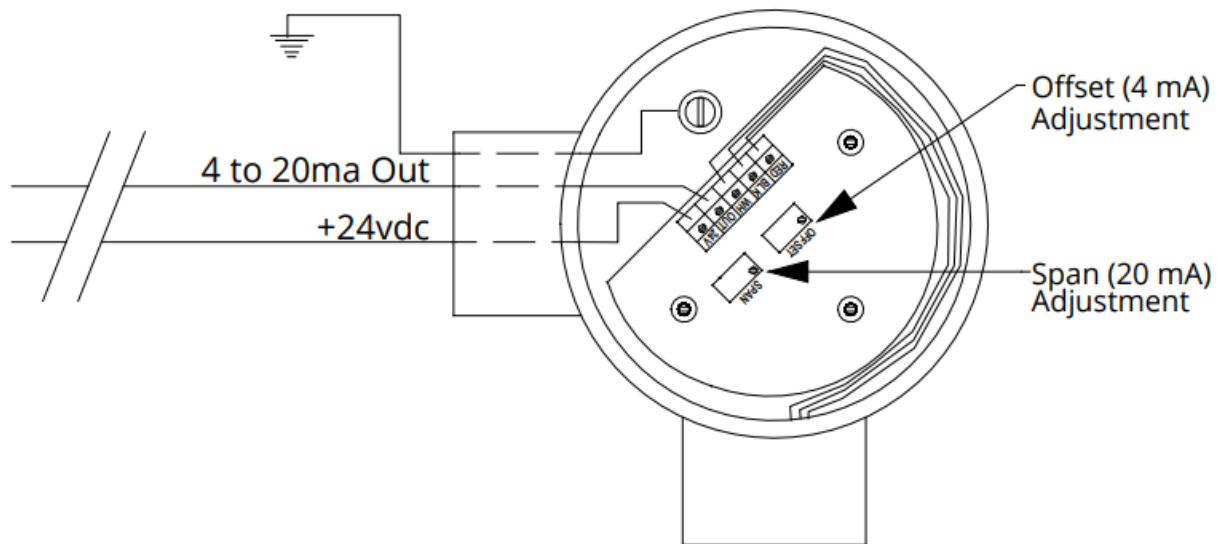
Removing your RPX from service must be done with care. It's easy to create an unsafe situation, or damage your sensor, if you are not careful to follow these guidelines:

- Ensure all circuits are de-energized, and any hazardous atmosphere has dispersed.
- Disconnect wires, either at terminals in the RPX head or at your system.
- Remove the RPX with an appropriately sized wrench (per your mounting type).
- Clean the RPX's stem and float of any debris (see General Care) and inspect for damage.
- Store your RPX in a dry place, at a temperature between -40° and 85°C (-40° and 185°F).

## Offset and Span Calibration (4-20 mA output probes only)

This procedure can be performed in a non-hazardous area, either prior to installation, or by temporarily uninstalling your 4-20 mA RPX probe:

- Set DC power supply to 24 VDC, and connect to the RPX probe, with ammeter in loop.
- Move float to the desired position for 4 mA output.
- Using a jeweler's screwdriver or a suitable instrument, adjust the "Offset" potentiometer until you have a 4 mA output.
- Move float to the desired position for 20 mA output.
- Using a jeweler's screwdriver or a suitable instrument, adjust the "Span" potentiometer until you have a 20 mA output.
- Repeat as necessary to fine tune calibration. (See Figure 8.1)
- Replace the housing cover when finished.



**Figure 8.1**

NOTE: This procedure can be performed in a non-hazardous area, either prior to installation, or by temporarily uninstalling your 4-20 mA RPX probe.

NOTE: You may also return the RPX probe to the factory for repair and/or adjustment

## General Care

Your RPX resistive chain continuous level probe is very low maintenance and will need little care as long as it is installed correctly. However, in general, you should:

- Periodically inspect the stem and floats for any trapped debris, sediment, or other foreign material.
- Avoid applications for which the RPX was not designed, such as extreme temperatures, contact with incompatible corrosive chemicals, or other damaging environments.
- If your RPX has an NPT mount, inspect the threads whenever you remove it from duty or change its location.
- Never leave the housing cover off. If the cover is damaged or lost, order a replacement immediately.

## Repair Information

Should your RPX require service, please contact us via email, phone, or online chat on our website. We will issue you an RMA number with instructions.

- Phone: [888-525-7300](tel:888-525-7300)
- Email: [sales@apgsensors.com](mailto:sales@apgsensors.com)
- Online chat at [www.apgsensors.com](http://www.apgsensors.com)

WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY;

DANGER: OPEN CIRCUIT BEFORE REMOVING COVER or KEEP COVER TIGHT WHILE CIRCUITS ARE ALIVE

DANGER: EXPLOSION HAZARD-DO NOT DISCONNECT WHILE CIRCUIT IS LIVE UNLESS AREA IS KNOWN TO BE NON-HAZARDOUS;

IMPORTANT: SEAL SHALL BE INSTALLED WITHIN 50 mm OF THE ENCLOSURE;

## Hazardous Location Wiring

### IS Hazardous Installation Drawing

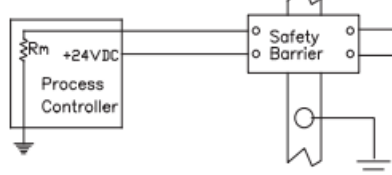
REVISIONS					
ZONE	REV	DESCRIPTION	CHANGE ORDER	DATE	APPROVED
–	C1	Change to APG Title Block	CO– 1471	7/20/09	K. Reid

## Installation in Class I Division 1 Groups C and D

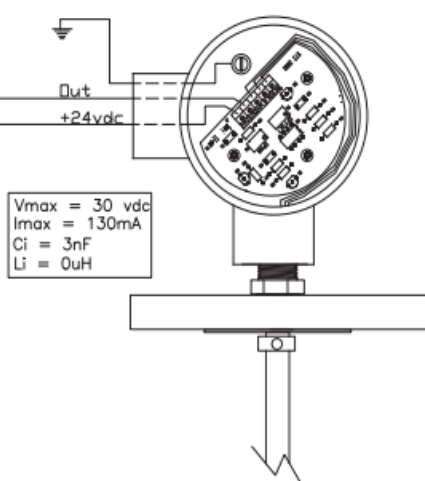
### RPX Resistive Probe (4–20ma Loop Powered)

#### NON-HAZARDOUS AREA

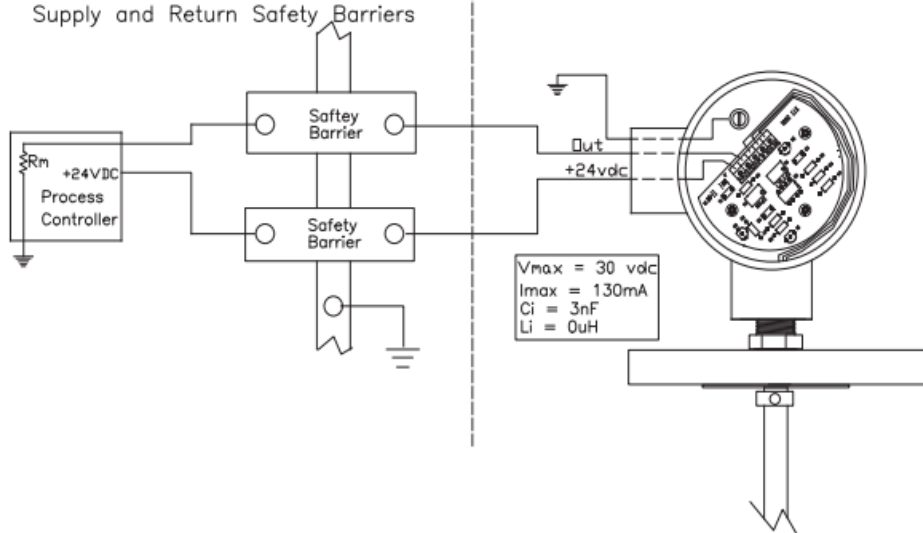
Circuit Diagram 1  
Dual Channel Safety Barrier



#### HAZARDOUS AREA



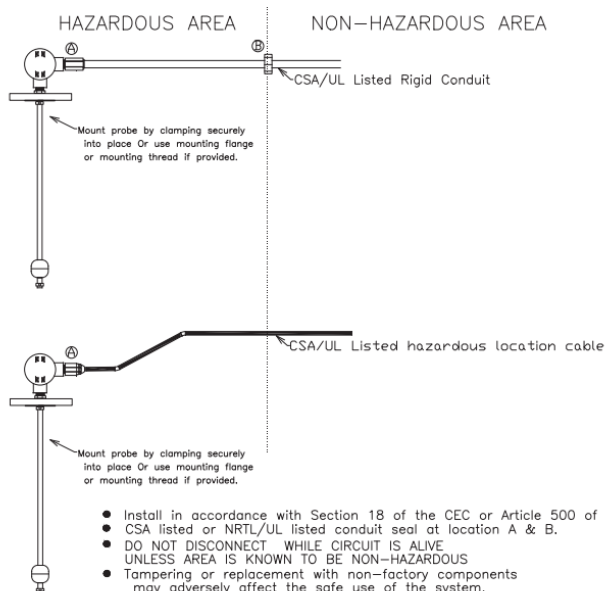
Circuit Diagram for  
Supply and Return Safety Barriers



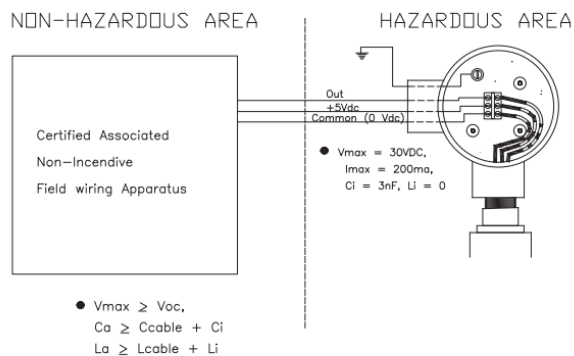
Install in accordance with CEC, NEC articles 504, 505 and ISA RP12.6 Recommended Practice for the Installation of Intrinsically Safe Circuits.

- WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY (AVERTISSEMENT: LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SECURITE INTRINSEQUE).
- WARNING: EXPLOSION HAZARD – DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR AREA IS KNOWN TO BE NONHAZARDOUS (AVERTISSEMENT – DE DECONNECTER L'EQUIPMENT; COUPER LE COURANT DU S' ASSURER QUE L'EMPLACEMENT EST DESIGNÉ NON DANGEREUX).

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		DRWN	K. Reid		10/10/02			
		CHKD	D. Hutchins		10/10/02			
		APVD	K. REID		10/10/2002			
THIRD ANGLE PROJECTION		CONTRACT		IS Hazardous Installation Drawing for RPX Resistive Chain Probe (RPX_IS_HM)				
		MATL	N/A	SIZE	CAGE CODE	PART NO	DOCUMENT NO	REV
		FINISH	N/A	C	0Z430	RPX_IS_HM	9001930	C1
				SCALE	NONE	DO NOT SCALE DRAWING	SHEET	1 OF 1



Non-Incendive Wiring for Installation in  
Class I Division 2 Groups C and D, Max. Temp. 85°C



## FAQ

- **Q: What should I do if my RPX probe malfunctions?**
  - A: If you experience issues with your RPX probe, contact Technical Support for troubleshooting and potential repair options.
- **Q: Can I install the RPX probe in hazardous locations?**
  - A: Yes, but ensure to follow the Hazardous Installation Drawing provided to maintain safety approvals.

## Documents / Resources

	<p><b><a href="#">APG RPX Series Resistive Chain Continuous Level Probe</a> [pdf] Installation Guide</b></p> <p>RPX-A-P2W-S6-E-48.00, RPX Series Resistive Chain Continuous Level Probe, RPX Series, Resistive Chain Continuous Level Probe, Chain Continuous Level Probe, Continuous Level Probe, Level Probe, Probe</p>
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## References

- [User Manual](#)