

Thank You

Thanks for purchasing an LPU-2428 loop-powered ultrasonic sensor and RST-4101 programming module from us! We appreciate your business and your trust. Please take a moment to familiarize yourself with the products and this manual before installation. If you have any questions, at any time, don't hesitate to call us at 888-525-7300.

NOTE: Scan the QR code to the right to see the full user manual on your tablet or smartphone. Or visit <https://www.apgsensors.com/support> to find it on our website.



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1 Description

The LPU-2428 loop-powered ultrasonic level sensor provides low-power, non-contact measurement you can count on. The LPU-2428 is certified for installation in hazardous areas in the US and Canada by CSA for Class I, Division 1, Groups C & D and Class I, Division 2, Group environments. The default Application setting for the LPU-2428 is Distance, which will work in a wide variety of settings. Please refer to the full user manual for further configuration settings.

2 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 LPU-2428 will look something like this:

SAMPLE: LPU-2428-C6

The model number tells you exactly what you have. 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.

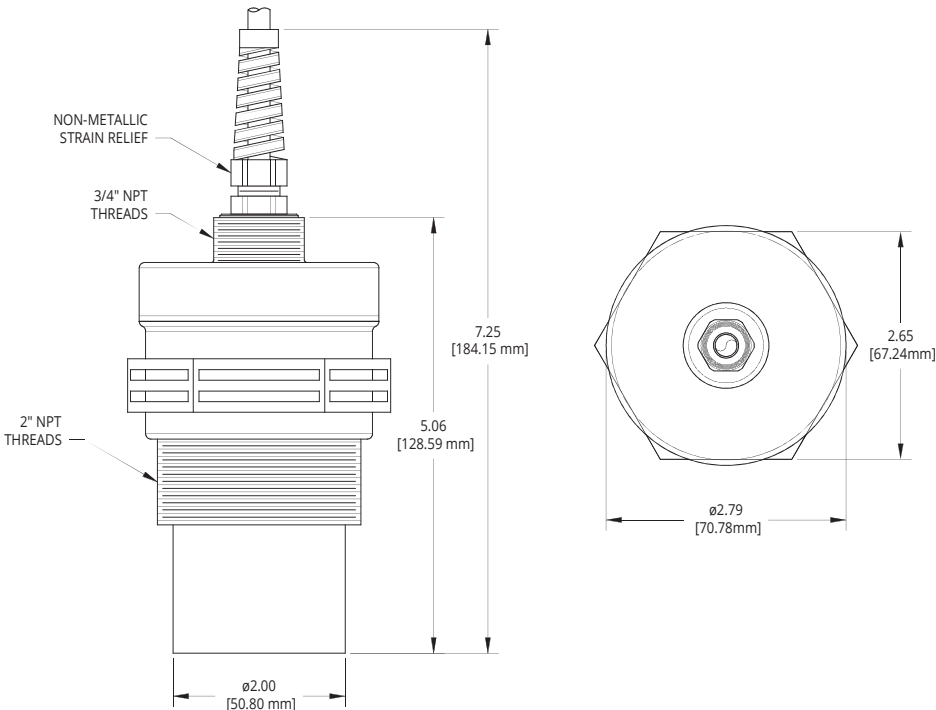
3 Warranty

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 <https://www.apgsensors.com/about-us/terms-conditions>. Contact Technical Support to receive a Return Material Authorization before shipping your product back.

Scan the QR code below to read the full explanation of our Warranty on your tablet or smartphone.



4 Dimensions



LPU-2428 Loop-Powered Ultrasonic Sensor Installation Guide

For LPU-2428 & RST-4101



Automation Products Group, Inc.
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Part # 122950-0030
Doc #9004795 Rev A1

5 Installation Guidelines

The LPU-2428 should be installed in an area--indoors or outdoors--which meets the following conditions:

- Ambient temperature between -40°C and 60°C (-40°F to +140°F)
- Ample space for maintenance and inspection

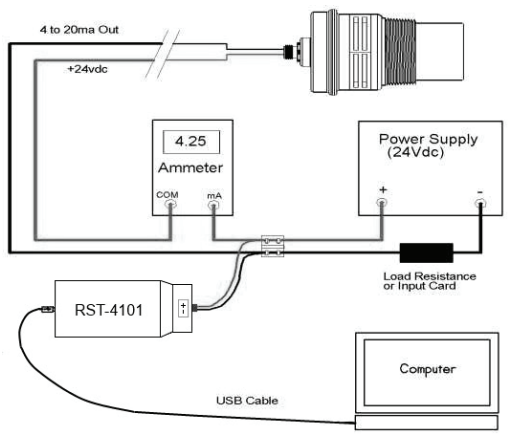
Additional care must be taken to ensure:

- The sensor has a clear, perpendicular sound path to the surface being monitored.
- The sensor is mounted away from tank or vessel walls and inlets.
- The sound path is free from obstructions and as open as possible for the 9° off axis beam pattern.
- The sensor is tightened by hand to avoid cross-threading.

***Important:** For user interface guide and sensor configuration see the full user manual.

6 Sensor and System Wiring Diagram

LPU-2428 & RST-4101 Wiring



For normal operation, connect the provided cable to your control system:

- Connect the red wire to +24 VDC.
- Connect the black wire to 4-20 mA input. Circuit load resistance + input resistance must be greater than 150Ω. **249Ω is recommended for optimal signal transmission.**
- Refer to drawing 9002747 (section 10) for Intrinsically Safe installation.
- Refer to drawing 9002745 (section 10) for Hazardous Location installation.

For programming:

- Connect (+) terminal of RST-4101 to +24 VDC supply of sensor (red wire).
- Connect (-) terminal of RST-4101 to 4-20 mA signal from sensor (black wire).
- Ensure that load resistor is between RST-4101 and control network or PLC, rather than between sensor and RST-4101.

IMPORTANT: Refer to section 10 for Hazardous Location Wiring.

The default Application setting for the LPU-2428 is Distance, which will work in a wide variety of settings. The LPU-2428 has several additional Application settings that can be configured to meet your needs.

Your level sensor is very low maintenance and will need little care as long as it was installed correctly. However, in general, you should periodically inspect your LPU-2428 sensor to ensure the sensor face is free of any buildup that might impede the function of the sensor. If sediment or other foreign matter becomes trapped on the sensor face, detection errors can occur.

9 Repair Information

- Phone: 888-525-7300
- Email: sales@apgsensors.com
- Online chat at www.apgsensors.com

Installation in Class I Division 2 Groups C and D Class I Zone 2 A EXnA IIB

NON-HAZARDOUS AREA

LPU-2127 / LPU-4127 Ultrasonic Sensor (4-20ma Loop Powered)

HAZARDOUS AREA

NON-HAZARDOUS AREA

LPU-2428 / LPU-4428 Ultrasonic Sensor (4-20ma Loop Powered)

Non-Incendive Wiring for Installation in Class I Division 2 Groups C and D, Max. Temp. 60°C

NON-HAZARDOUS AREA

Certified Associated
Non-Incendive
Field wiring Apparatus

- $V_{max} \geq V_{oc}$,
 $C_a \geq C_{cable} + C_i$
 $L_a \geq L_{cable} + L_i$

HAZARDOUS AREA

- $V_{max} = 28VDC$,
 $I_{max} = 200ma$,
 $C_i = 0nF$, $L_i = 0$

- Install in accordance with Section 18 of the CEC or Article 500 of the NEC.
- CSA listed or NRTL/UL listed conduit seal at location A & B as required by Local Authority.
- The cable is terminated in the sensor and runs continuously from the sensor through the Hazardous area and into the Non-Hazardous area.
- Electrical equipment connected to associated apparatus should not generate more than 250 V rms.
- Tampering or replacement with non-factory components may adversely affect the safe use of the system.

- WARNING - POTENTIAL ELECTROSTATIC CHARGING HAZARD - Clean with only with a damp cloth.
AVERTISSEMENT - surface non conductrice du boîtier peuvent être facturés par MEDIA non conductrice , CLEAN avec un chiffon humide
- DO NOT DISCONNECT WHILE CIRCUIT IS ALIVE
UNLESS AREA IS KNOWN TO BE NON-HAZARDOUS
AVERTISSEMENT-NE PAS DEBRANCHER TANT QUE LE CIRCUIT EST SOUS TENSION, A MOINS QU'IL NE S'AGISSE D'UN EMPLACEMENT NON DANGEREUX

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		DRAWN INNR 12-8-03 CHKD Travis B 12-10-03 APVD K. REID 12-10-03					
THIRD ANGLE PROJECTION 		CONTRACT MATL N/A FINISH II/A	SCALE NONE	CASE CODE 52797	PART NO 125xxx-xxxx	DOCUMENT NO 9002745	REV 1 OF 2

