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.

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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.

4. Dimensions

Dimensions

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 1500Ω. 2490Ω 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.
**General Care**

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.

If you need to remove the sensor, be sure to store it in a dry place at a temperature between -40° and 180°F.

**Repair Information**

If your LPU-2428 ultrasonic sensor or RST-4101 programming module need repair, contact us via email, phone, or online chat on our website. We will issue you an RMA number with instructions.

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

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**LPU-2428 Default Application Setting**

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.

All of the LPU-2428’s adjustable settings are accessible through the LPU-2428A Software, which is available at [https://www.apgsensors.com/support](https://www.apgsensors.com/support).

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**Hazardous Location Wiring**

Installation in Class I, Division 2 Groups C and D

- **Class I, Zone 2 A**
  - **Hazardous Area:** LPU-2428 / LPU-4049 Ultrasonic Sensor & Control Loop Powered
  - **Non-Hazardous Area:** LPN-2428 / LPU-4049 Ultrasonic Sensor & Control Loop Powered

**Non-Incendive Wiring for Installation in Class I, Division 2 Groups C and D, Max Temp. 275°C**

- ** certified associated non-incendive field wiring apparatus**
  - **Certified associated non-incendive field wiring apparatus**
    - **Certified associated non-incendive field wiring apparatus**
      - **Certified associated non-incendive field wiring apparatus**

**Installation in Class I, Division 1 Groups C and D**

- **Class I, Zone 1 A**
  - **Hazardous Area:** LPU-2428 / LPU-4049 Ultrasonic Sensor & Control Loop Powered
  - **Non-Hazardous Area:** LPN-2428 / LPU-4049 Ultrasonic Sensor & Control Loop Powered

**Installation in Class I, Division 1 Groups C and D**

- **Class I, Zone 1 A**
  - **Hazardous Area:** LPU-2428 / LPU-4049 Ultrasonic Sensor & Control Loop Powered
  - **Non-Hazardous Area:** LPN-2428 / LPU-4049 Ultrasonic Sensor & Control Loop Powered

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