Red Lion PXU10020

Red Lion PXU10020 PID Controller

USER MANUAL

1. Introduction

This manual provides essential information for the proper installation, operation, and maintenance of the Red Lion PXU10020 PID Controller. The PXU10020 is a 1/16 DIN universal input controller with relay output, designed for precise temperature and process control applications. Please read this manual thoroughly before attempting to install or operate the device to ensure safe and efficient performance.

2. Safety Information

WARNING: Risk of electric shock. Disconnect power before installation or servicing.

- Ensure all wiring is performed by qualified personnel and complies with local electrical codes.
- Verify the power supply voltage matches the controller's specifications (100 to 240 Vac).
- Do not operate the controller in environments exceeding its specified temperature and humidity ratings.
- Avoid exposing the device to corrosive gases, liquids, or excessive vibration.
- Always use appropriate personal protective equipment (PPE) when working with electrical equipment.

3. Setup

3.1. Mounting

The PXU10020 is a 1/16 DIN panel mount controller. Cut a panel opening of 45 mm x 45 mm (1.77 in x 1.77 in). Insert the controller into the opening and secure it using the provided mounting brackets. Ensure a snug fit to prevent dust and moisture ingress.

3.2. Wiring

Connect the power supply, universal input sensor, and relay output according to the wiring diagram provided with the product. The universal input supports various sensor types (thermocouple, RTD, voltage,

current). The relay output provides switching capabilities for control elements. Ensure all connections are secure and correctly polarized.

Figure 1: Front view of the Red Lion PXU10020 PID Controller. This image displays the compact 1/16 DIN form factor, typical display, and control buttons for parameter adjustment and monitoring.

3.3. Initial Power-Up

After all wiring is complete and verified, apply power to the controller. The display will illuminate, and the controller will perform a self-test. Refer to the display for any initial error messages.

4. Operating

4.1. Basic Control Modes

The PXU10020 supports various control modes, including PID (Proportional-Integral-Derivative) and On/Off control. The appropriate mode should be selected based on the application requirements for stability and precision.

4.2. Parameter Setting

Use the front panel buttons to navigate through the menu structure and set parameters such as the desired setpoint, alarm limits, and PID tuning constants (P, I, D values). Consult the detailed programming guide for specific menu navigation and parameter definitions.

4.3. Display Interpretation

The controller's display typically shows the current process value (PV) and the setpoint (SP). Status indicators may include output status, alarm status, and auto/manual mode. Refer to the controller's display legend for detailed icon meanings.

5. Maintenance

5.1. Cleaning

Periodically clean the front panel with a soft, damp cloth. Do not use abrasive cleaners or solvents, as these can damage the display and housing. Ensure no liquid enters the controller.

5.2. Calibration

For critical applications, periodic calibration of the input sensor and controller may be required. Refer to the manufacturer's recommendations or consult a qualified service technician for calibration procedures.

6. Troubleshooting

Problem	Possible Cause	Solution

Problem	Possible Cause	Solution
Controller does not power on	No power supply; incorrect wiring; blown fuse	Check power connections; verify wiring; replace fuse if necessary (by qualified personnel)
Incorrect temperature reading	Sensor fault; incorrect input type setting; wiring error	Check sensor and wiring; verify input type configuration in settings
Output not switching	Output wiring error; control mode issue; relay failure	Verify output wiring; check control mode and setpoint; test relay (by qualified personnel)
Unstable control	Incorrect PID tuning parameters; sensor noise	Retune PID parameters; check sensor for noise or interference

7. Specifications

- **Model Number:** PXU10020
- **Manufacturer:** Red Lion Controls
- **Product Dimensions:** 3.9 x 2.5 x 2.4 inches (99 x 63.5 x 61 mm)
- **Item Weight:** 1 pound (0.45 kg)
- **Input Type:** Universal (Thermocouple, RTD, Voltage, Current)
- **Output Type:** Relay
- **Power Supply:** 100 to 240 Vac
- **DIN Size:** 1/16 DIN

8. Warranty and Support

Red Lion Controls products are warranted against defects in material and workmanship for a specified period from the date of purchase. For detailed warranty terms and conditions, please refer to the official Red Lion Controls website or contact their customer support.

For technical assistance, troubleshooting, or service inquiries, please visit the Red Lion Controls official website or contact their authorized distributors. Provide your product model number (PXU10020) and serial number when seeking support.