Srliya BEM-TC7A-14RV

Srliya BEM-TC7A-14RV Digital PID Temperature Controller User Manual

Model: BEM-TC7A-14RV

1. Introduction

The Srliya BEM-TC7A-14RV is a digital PID temperature controller designed for precise temperature regulation in various applications. It features a 7-segment LED display for clear indication of process value (PV) and set value (SV), and offers multiple control methods including ON/OFF, P, PI, PD, and full PID control. This manual provides essential information for the safe and effective operation of your device.

Image 1.1: Front view of the BEM-TC7A-14RV Digital PID Temperature Controller, showing the dual LED display and control buttons.

2. Package Contents

Please verify that all items listed below are present in your package:

- 1 x Srliya BEM-TC7A-14RV Digital PID Temperature Controller
- 2 x Mounting Brackets
- 1 x User Manual (this document)

Image 2.1: The temperature controller shown with its included mounting brackets.

3. Specifications

Feature	Specification
Item Type	Thermostat
Material	ABS
Rated Voltage	100-240VAC
Display Mode	7 segment LED (PV: red, SV: green)
Control Output	Relay 250VAC 3A 1a, Solid State 12VDC±2V 20mA or less

Feature	Specification
Alarm Output	AL1, AL2 Relay: 1A.1a
Control Method	ON/OFF, P, PI, PD, PID control
Input Type	Factory default K (CA) type, adjustable J (IC), L (IC), T (CC), R (PR), S (PR)
Control Accuracy	1~100℃ / 0.1~50.0℃
Package Dimensions	4.33 x 3.15 x 3.15 inches
Item Weight	6.4 ounces

4. Setup and Installation

The BEM-TC7A-14RV temperature controller is designed for panel mounting. Ensure the installation location is free from excessive humidity, vibrations, and direct heat sources. Refer to the wiring diagram on the side of the unit for correct electrical connections.

4.1 Wiring Connections

Connect the power supply, sensor input, and control outputs (relay or solid state) according to the labels on the terminal block. Always ensure power is disconnected before making any wiring changes.

Image 4.1: Side view of the controller, detailing the terminal block for power, sensor, and output connections.

4.2 Mounting

Insert the controller into the panel cutout. Secure it in place using the provided mounting brackets. Ensure a snug fit to prevent movement during operation.

5. Operating Instructions

The controller features a user-friendly interface with a MODE key, direction keys, and indicator lights.

Image 5.1: The controller's front panel, showing the display and control buttons for operation.

5.1 Key Functions

- **MODE Key:** Used to enter parameter group settings, return to operating mode, switch between parameter groups, and save set values.
- **Direction Keys (↑ / ↓):** Used to enter the setting value change mode or move the digit position to adjust values up and down.
- **Function Keys (↑ + ↓ simultaneously):** Pressing these keys together for 3 seconds activates the [D1-K] digital input key function, which can include run/stop, alarm clear, or auto-tuning settings.
- **Temperature Unit Indicator Light (°C / °F):** Displays the currently selected temperature unit.

5.2 Basic Operation

1. **Power On:** After proper wiring, apply power to the unit. The display will illuminate, showing the current process value (PV) and set value (SV).
2. **Setting the Temperature:** Use the MODE key to navigate to the set value (SV) adjustment. Use the direction keys (↑ / ↓) to change the desired temperature. Press MODE again to confirm and save the setting.
3. **Parameter Settings:** For advanced settings such as control method (PID, ON/OFF), input type, or alarm

configurations, refer to the detailed parameter menu accessible via the MODE key. Consult the full technical manual for specific parameter codes and their functions.

6. Maintenance

To ensure optimal performance and longevity of your Srliya BEM-TC7A-14RV temperature controller, follow these general maintenance guidelines:

- **Cleaning:** Regularly clean the display and housing with a soft, dry cloth. Avoid using abrasive cleaners or solvents.
- **Inspection:** Periodically check all wiring connections for tightness and signs of wear or corrosion.
- **Environment:** Ensure the operating environment remains within the specified temperature and humidity ranges to prevent damage.

7. Troubleshooting

If you encounter issues with your temperature controller, consider the following common troubleshooting steps:

- **No Display:** Check the power supply connections and ensure the rated voltage (100-240VAC) is applied correctly.
- **Incorrect Temperature Reading:** Verify that the sensor is correctly connected and that the input type setting in the controller matches your sensor type (e.g., K-type, J-type).
- **Output Not Activating:** Check the set temperature (SV) against the process value (PV) and ensure the control mode (e.g., heating/cooling) is correctly configured. Inspect output wiring.
- **Unstable Control:** If the temperature fluctuates excessively, consider performing an auto-tuning function or manually adjusting PID parameters.

For persistent issues, contact customer support for further assistance.

8. Important Notices

This device is intended for use in environments with controlled relative humidity. Avoid installation in excessively humid conditions to prevent damage and ensure safe operation.

9. Warranty and Support

This product comes with a standard manufacturer's warranty. For warranty claims, technical support, or service inquiries, please refer to the contact information provided with your purchase documentation or visit the official Srliya website.