UOFKIPBA AK6-BKL310

UOFKIPBA WINPARK AK6 PID Temperature Controller AK6-BKL310 User Manual

Model: AK6-BKL310 | Brand: UOFKIPBA

1. Introduction

This manual provides essential instructions for the installation, operation, and maintenance of the UOFKIPBA WINPARK AK6 PID Temperature Controller, model AK6-BKL310. This device is designed for precise temperature regulation in various industrial and scientific applications. Please read this manual thoroughly before using the controller to ensure safe and efficient operation.

2. Safety Information

Always observe the following safety precautions to prevent personal injury or damage to the device:

- Ensure the power supply voltage matches the controller's specifications.
- Disconnect power before performing any wiring or maintenance.
- Installation and wiring should be performed by qualified personnel.
- Do not operate the controller in environments with excessive moisture, dust, corrosive gases, or high temperatures.
- Avoid strong vibrations or impacts to the device.
- Do not disassemble or modify the controller.

3. Product Overview

The WINPARK AK6 PID Temperature Controller features a compact design with a clear digital display and intuitive controls for setting and monitoring temperature parameters.

Front Panel

Figure 1: Front view of the WINPARK AK6 PID Temperature Controller. This image displays the controller's front panel, featuring the PV (Process Value) and SV (Set Value) digital displays, along with control buttons such as SET, AT, MAN, and INFO. The WINPARK AK6 branding is visible.

The front panel includes two digital displays: PV (Process Value) for current temperature and SV (Set Value) for the target temperature. Control buttons allow for parameter adjustment and mode selection.

Rear Panel and Wiring Terminals

Figure 2: Rear view of the WINPARK AK6 PID Temperature Controller. This image shows the back of the controller with clearly labeled wiring terminals (1-14) for power input, sensor connection, and output relays. The WINPARK logo is also visible at the bottom.

The rear panel provides access to the wiring terminals for power input, sensor connections, and control outputs. Refer to the wiring diagram for correct connections.

4. Specifications

Feature	Specification
Model	AK6-BKL310
Dimensions (Package)	11.81 x 7.87 x 3.94 inches
Item Weight	1.76 ounces
Manufacturer	UOFKIPBA
Assembly Required	No
Number of Pieces	1

5. Setup and Installation

Proper installation is crucial for the controller's performance and safety.

Mounting

- The controller is designed for panel mounting. Ensure the panel cutout dimensions match the controller's specifications (48x96mm).
- Secure the controller firmly using the provided mounting brackets.

Wiring

Refer to the wiring diagram printed on the side of the controller (as shown in Figure 1) and the terminal labels on the rear panel (Figure 2) for correct connections.

1. **Power Supply:** Connect the appropriate AC power supply to the designated terminals. Verify voltage compatibility.
2. **Sensor Input:** Connect your temperature sensor (e.g., thermocouple, RTD) to the sensor input terminals. Ensure correct polarity for thermocouples.
3. **Control Output:** Connect your heating or cooling element (e.g., SSR, relay) to the control output terminals. Observe maximum current ratings.
4. **Alarm Outputs (if applicable):** Connect any external alarm devices to the alarm output terminals.

Important: *Double-check all wiring connections before applying power to prevent damage to the controller or connected equipment.*

6. Operating Instructions

This section outlines the basic operation and parameter settings for the AK6 PID Temperature Controller.

Power On

Once wired correctly, apply power. The controller will perform a self-test, and the PV display will show the current temperature, while the SV display will show the last set temperature.

Setting the Target Temperature (SV)

1. Press the **SET** button once. The SV display will begin to flash.
2. Use the **Up (▲)** and **Down (▼)** arrow buttons to adjust the target temperature.
3. Press **SET** again to confirm the new value and exit the setting mode.

PID Auto-Tuning (AT)

The auto-tuning function helps the controller optimize its PID parameters for stable and accurate temperature control.

- Ensure the system is at a stable temperature, preferably near the desired setpoint.
- Press and hold the **AT** button for a few seconds until the AT indicator lights up or flashes.
- The controller will cycle the output to determine optimal PID values. This process may take some time.
- Once auto-tuning is complete, the AT indicator will turn off, and the new PID parameters will be saved automatically.

Manual Control (MAN)

In manual mode, you can directly control the output power percentage.

- Press the **MAN** button to enter manual control mode. The MAN indicator will light up.
- Use the **Up (▲)** and **Down (▼)** arrow buttons to adjust the output power percentage.
- Press **MAN** again to exit manual mode and return to automatic PID control.

7. Maintenance

The WINPARK AK6 PID Temperature Controller requires minimal maintenance.

- **Cleaning:** Wipe the front panel with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Inspection:** Periodically check wiring connections for looseness or signs of damage.
- **Environment:** Ensure the operating environment remains within specified conditions (temperature, humidity, absence of corrosive substances).

8. Troubleshooting

This section addresses common issues you might encounter.

Problem	Possible Cause	Solution
No display/Power off	No power supply; Incorrect wiring; Blown fuse	Check power connections; Verify wiring; Replace fuse if necessary.
PV display shows 'HHHH' or 'LLLL'	Sensor open circuit; Sensor short circuit; Sensor out of range; Incorrect sensor type setting	Check sensor wiring; Replace faulty sensor; Verify sensor type setting in parameters.
Temperature unstable/Overshoot	Incorrect PID parameters; Load mismatch	Perform PID auto-tuning; Adjust PID parameters manually if auto-tuning is insufficient.
Output not switching	Output wiring error; Faulty output relay/SSR; Setpoint not reached	Check output wiring; Test output component; Verify SV and PV values.

If the problem persists after attempting these solutions, please contact customer support.

9. Warranty and Support

The UOFKIPBA WINPARK AK6 PID Temperature Controller is covered by a standard manufacturer's warranty against defects in materials and workmanship. Please refer to your purchase documentation for specific warranty

terms and duration.
For technical support, troubleshooting assistance, or warranty claims, please contact your retailer or the manufacturer directly. Have your model number (AK6-BKL310) and purchase date available when contacting support.