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> HANYOUNG AX4-3A Thermostat Instruction Manual

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Model: AX4-3A

1. INTRODUCTION

This instruction manual provides detailed information for the safe and efficient operation of your HANYOUNG AX4-3A Thermostat. Please read this manual thoroughly before installation and use, and keep it for future reference. This device is designed for precise temperature control in various industrial and commercial applications.

2. SAFETY INFORMATION

To ensure safe operation and prevent damage to the device or injury to personnel, observe the following safety precautions:

- **WARNING:** Always disconnect power before performing any installation, wiring, or maintenance.
- Ensure proper grounding to prevent electric shock.
- Do not operate the device in environments with excessive moisture, corrosive gases, or flammable substances.
- Only qualified and authorized personnel should perform installation and wiring.
- Verify all wiring connections are secure and correct before applying power.

3. PRODUCT OVERVIEW

The HANYOUNG AX4-3A is a high-precision digital thermostat featuring a clear dual-line digital display for process value (PV) and set value (SV), along with intuitive control buttons. It supports multiple input types and control methods, making it versatile for various temperature control needs.



Figure 1: Front view of the HANYOUNG AX4-3A Thermostat, showing the digital display and control buttons.



Figure 2: Internal view of the thermostat's terminal block, illustrating the wiring connections for power, sensor, and output.



Figure 3: The HANYOUNG AX4-3A Thermostat as packaged in its box, highlighting its compact design and protective packaging.



Figure 4: Product label on the packaging, indicating model AX4-1A, input/output types, and power requirements. Note: This label is for a similar model, AX4-1A, but illustrates typical HANYOUNG product labeling.

4. SETUP

4.1. Mounting

The AX4-3A thermostat is designed for panel mounting. Ensure adequate space for ventilation around the unit and sufficient clearance for wiring connections. Refer to the dimensions provided in the specifications section for precise panel cutout requirements.

4.2. Wiring

Connect the power supply, temperature sensor, and output devices to the appropriate terminals on the rear of the unit. Refer to Figure 2 for the terminal block layout. Ensure all connections are secure and correctly polarized according to the wiring diagram for your specific application.

- **Power Supply:** 100 - 240 V a.c., 50/60 Hz.
- **Sensor Input:** Multi-input support including various Thermocouple types (K, J, T, E, R, S, B, N, W5Re/W26Re, PLII), RTD types (Pt100, JPt100), and DC Voltage/Current signals (0-5V, 1-5V, 0-10V, 0-20mA, 4-20mA). Ensure the sensor type configured in the thermostat matches the connected sensor.
- **Output:** Multi-output support, typically including Relay, SSR (Solid State Relay) drive, Current, or Voltage outputs. The specific output type depends on the model variant.

5. OPERATING INSTRUCTIONS

5.1. Power On

Once all wiring is complete and verified, apply power to the thermostat. The display will illuminate, showing the current process value (PV) on the upper display (red) and the set value (SV) on the lower display (green).

5.2. Setting Temperature

To adjust the set value (SV):

1. Press the **MODE** button to enter the parameter setting mode.
2. Navigate to the SV parameter using the **MODE** button.
3. Use the **Up** (▲) and **Down** (▼) arrow buttons to adjust the desired temperature.
4. Press the **MODE** button again to confirm the setting and exit the parameter mode.

5.3. Control Modes

The AX4-3A supports various control methods, including PID control with auto-tuning functionality for optimal performance, and simple ON/OFF control. Advanced control parameters and functions can be accessed and configured through the parameter setting menu. Refer to the comprehensive technical manual for detailed instructions on advanced settings and calibration.

6. MAINTENANCE

Regular maintenance ensures the longevity and reliable operation of your thermostat.

6.1. Cleaning

Clean the front panel and display with a soft, dry cloth. Do not use abrasive cleaners, solvents, or chemical sprays, as these can damage the display or casing.

6.2. Inspection

Periodically inspect all wiring connections to ensure they remain tight and free from corrosion or damage. Check that the ventilation openings on the unit are clear of dust and debris to prevent overheating.

7. TROUBLESHOOTING

This section provides solutions to common issues you may encounter.

Problem	Possible Cause	Solution
No Display / Unit Not Powering On	No power supply; Incorrect wiring; Blown fuse (internal/external)	Check power connections and voltage. Verify wiring. Inspect fuses if applicable.
Incorrect Temperature Reading	Sensor type mismatch; Sensor wiring error; Damaged sensor; Sensor not properly installed	Verify the configured sensor type matches the connected sensor. Check sensor wiring for shorts or open circuits. Replace damaged sensor. Ensure sensor is correctly positioned.
Output Not Activating	SV not reached; Control mode incorrect; Output wiring error; Output device malfunction	Check if PV has reached SV. Verify control mode (e.g., heating/cooling). Inspect output wiring. Test the connected output device (e.g., heater, fan).
Unstable Control / Temperature Fluctuations	PID parameters not tuned; External disturbances	Perform auto-tuning for PID parameters. Minimize external temperature fluctuations or drafts near the sensor.

8. SPECIFICATIONS

Key technical specifications for the HANYOUNG AX4-3A Thermostat:

Feature	Description
Model	AX4-3A
Manufacturer	Vanky Industry (HANYOUNG NUX)
Input Type	Multi input (Thermocouple: K, J, T, E, R, S, B, N, W5Re/W26Re, PLII; RTD: Pt100, JPt100; DC Voltage: 0-5V, 1-5V, 0-10V; DC Current: 0-20mA, 4-20mA)
Sampling Cycle	100 ms

Feature	Description
Input Impedance	Max 1 MΩ
Allowable Input Wiring Resistance	10 V DC
Display Type	7 Segment LED (PV: red, SV: green)
Insulation Resistance	Min 20MΩ (500V DC) for 1 minute (Primary terminal - secondary terminal)
Dielectric Strength	2,300 V AC, 50/60 Hz, for 1min (Primary terminal - secondary terminal)
Control Method	PID control by Auto-tuning, ON/OFF control
Manual Reset	Users set with in the range 0.0% - 100.0%
Control Output Operation	Reverse operation / Direct operation selectable by the parameter setting
Power Supply Voltage	100-240 V AC 50/60 Hz
Voltage Fluctuation	±10 % of the power supply voltage
Power Consumption	5.5 VA max
Ambient Temperature	-5 ~ 50°C
Ambient Humidity	35 ~ 85% RH (without condensation)
Vibration Resistance	10-55 Hz, 0.75 mm, each to direction, X, Y and Z for 2 hours
Shock Resistance	300 m/s ² to direction 6 each 3 times
Weight	320 g (Approximate, specific to AX4-3A may vary slightly)
Country of Origin	China
ASIN	B0DNPDWQR
UPC	734150687056

9. WARRANTY

This HANYOUNG NUX product is covered by the manufacturer's standard warranty. Please refer to the warranty card included with your product for specific terms and conditions, or contact HANYOUNG NUX customer support for detailed warranty information and service procedures.

10. SUPPORT

For technical assistance, product inquiries, or service, please contact HANYOUNG NUX ELECTRONIC (SHANGHAI) CO.,LTD. using the contact information below:

Telephone: [021-59547598](tel:021-59547598)

Fax: 021-59547738

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