WENGART WG02

Wengart WG02 Thermal Actuator AC 230V Instruction Manual

Model: WG02

1. Product Overview

The Wengart WG02 Thermal Actuator is designed for use with manifold bypass valves and small dynamic balancing valves in underfloor heating systems. It controls the electrical component of the valve, regulating temperature through the thermal expansion and contraction of a temperature-sensing element. This design ensures quiet operation, compact size, and low power consumption, contributing to energy efficiency.

Image 1: Wengart WG02 Thermal Actuator highlighting features such as thermostatic control, energy saving, stable operation, silent operation, flame retardant PC material, and easy installation.

Key Features:

- **Thermostatic Control:** Utilizes thermal expansion for precise temperature regulation.
- **Energy Saving:** Efficient design with low power consumption.
- **Stable Operation:** Reliable performance without mechanical wear.
- **Silent Operation:** Operates without noise.
- **Durable Material:** Constructed from flame-retardant PC material.
- **Easy Installation:** Features a nut connection for quick setup.
- **LED Indicator:** Small black dot indicates the actuator's on/off status.
- **Spring Return Function:** Valve closes automatically upon power failure.

Image 2: The Wengart WG02 Thermal Actuator shown in an application context, integrated into an underfloor heating manifold system.

2. Specifications

Specification	Value
Model Number	WG02
Voltage	AC 230 V
Stable Power	2 W
Ambient Temperature	-5 to 50 °C
Wire Type	2 x 0.5 mm² (Normally Closed)
Thread Connection	M30 x 1.5 mm

Specification	Value
Stroke Length	3 - 4 mm
Full Open/Close Time	180 - 300 seconds (approx. 3-5 minutes)
Cable Length	800 mm
Protection Class	IP54
Dimensions (L x W x H)	38 x 38 x 58 mm (1.5 x 1.5 x 2.3 inches)
Material	Plastic

Image 3: Detailed dimensions of the Wengart WG02 Thermal Actuator, including its length, width, height, and cable length, with the M30x1.5mm thread interface highlighted.

3. Setup and Installation

The Wengart WG02 Thermal Actuator is designed for straightforward installation using a nut connection method. Ensure the valve you are connecting to has an M30 x 1.5 mm thread for compatibility.

3.1 Wiring Instructions

Connect the actuator to your thermostat and power supply as per the diagram below. The actuator requires an AC 230V power source. For optimal control, integrate with a compatible thermostat (e.g., WG-806).

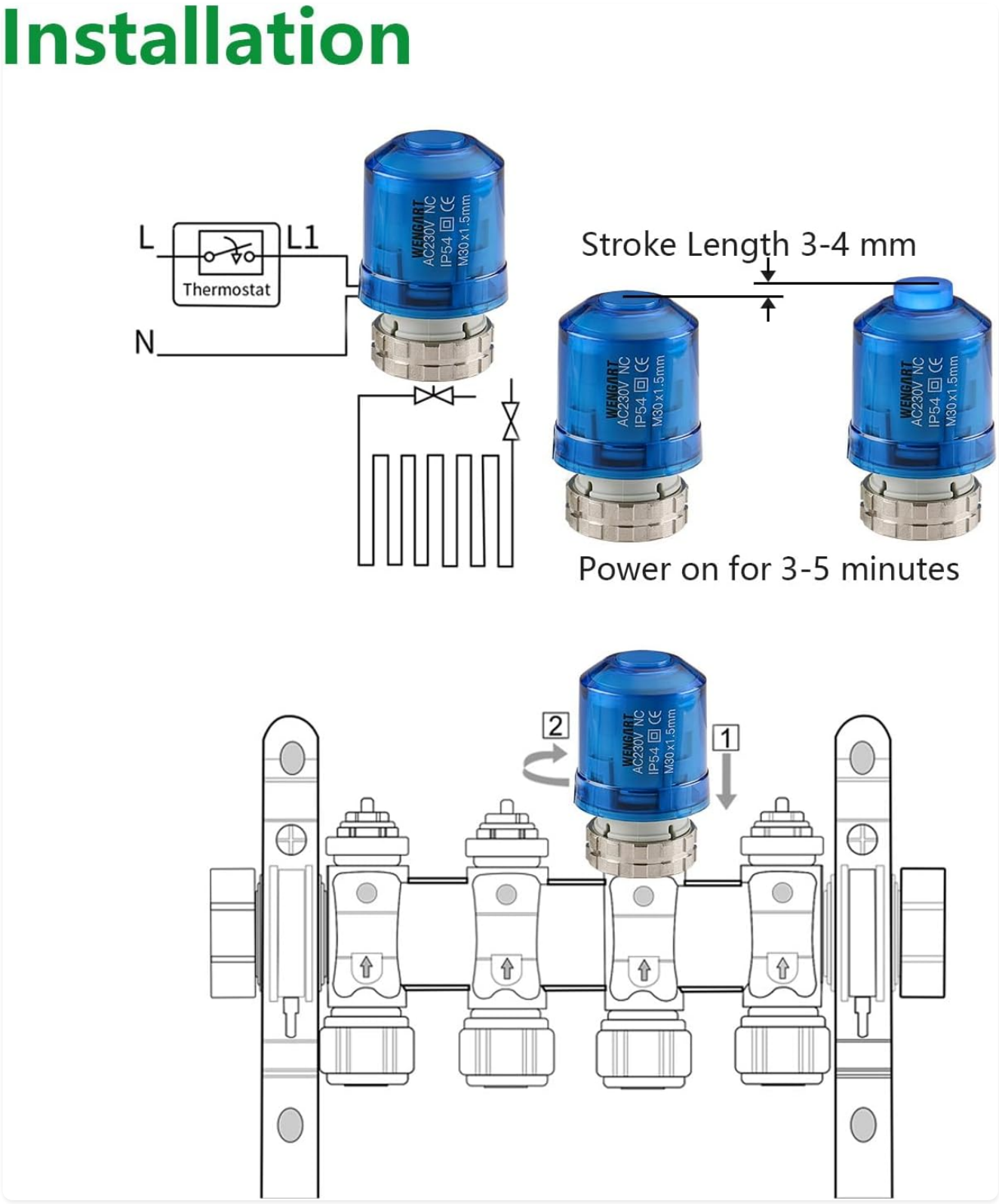

Image 4: Wiring diagram illustrating the connection of the Wengart WG02 Thermal Actuator to an AC 230V power supply and a WG-806 thermostat, including an optional external sensor.

Wiring Connections:

- Connect the L (Live) and N (Neutral) wires from your AC 230V supply to the corresponding terminals on the thermostat.
- Connect the L1 and N1 terminals from the thermostat to the actuator's power input.
- If using an external sensor, connect it to the designated terminals on the thermostat.

3.2 Mounting the Actuator

The actuator connects directly to the valve body using its M30 x 1.5 mm nut connection. Ensure a secure fit to prevent leaks and ensure proper operation.

Image 5: Step-by-step installation guide for the Wengart WG02 Thermal Actuator, showing connection to a thermostat and mounting onto a heating manifold. Note the stroke length of 3-4 mm and the 3-5 minute activation time.

1. Ensure the heating system is depressurized and cooled before installation.
2. Thread the actuator onto the M30 x 1.5 mm valve connection. Hand-tighten first, then use a wrench if necessary to ensure a snug fit without overtightening.
3. Connect the electrical wires as shown in the wiring diagram (Image 4).
4. Once powered on, the actuator will take approximately 3-5 minutes to fully open or close, achieving a stroke

length of 3-4 mm.

Image 6: Detailed breakdown of the Wengart WG02 Thermal Actuator, illustrating its excellent paraffin-driven element, simple nut connection for easy disassembly, and the LED indicator light.

4. Operating Instructions

The Wengart WG02 Thermal Actuator operates in conjunction with a thermostat to regulate the flow of heating fluid. It functions based on the thermal expansion and contraction of a paraffin element, driven by PTC heating.

4.1 Actuator Status Indication

The actuator features a 360-degree LED indicator (a small black dot) that illuminates when the actuator is powered and actively opening the valve. When the LED is off, the actuator is not powered, and the valve is closed (normally closed operation).

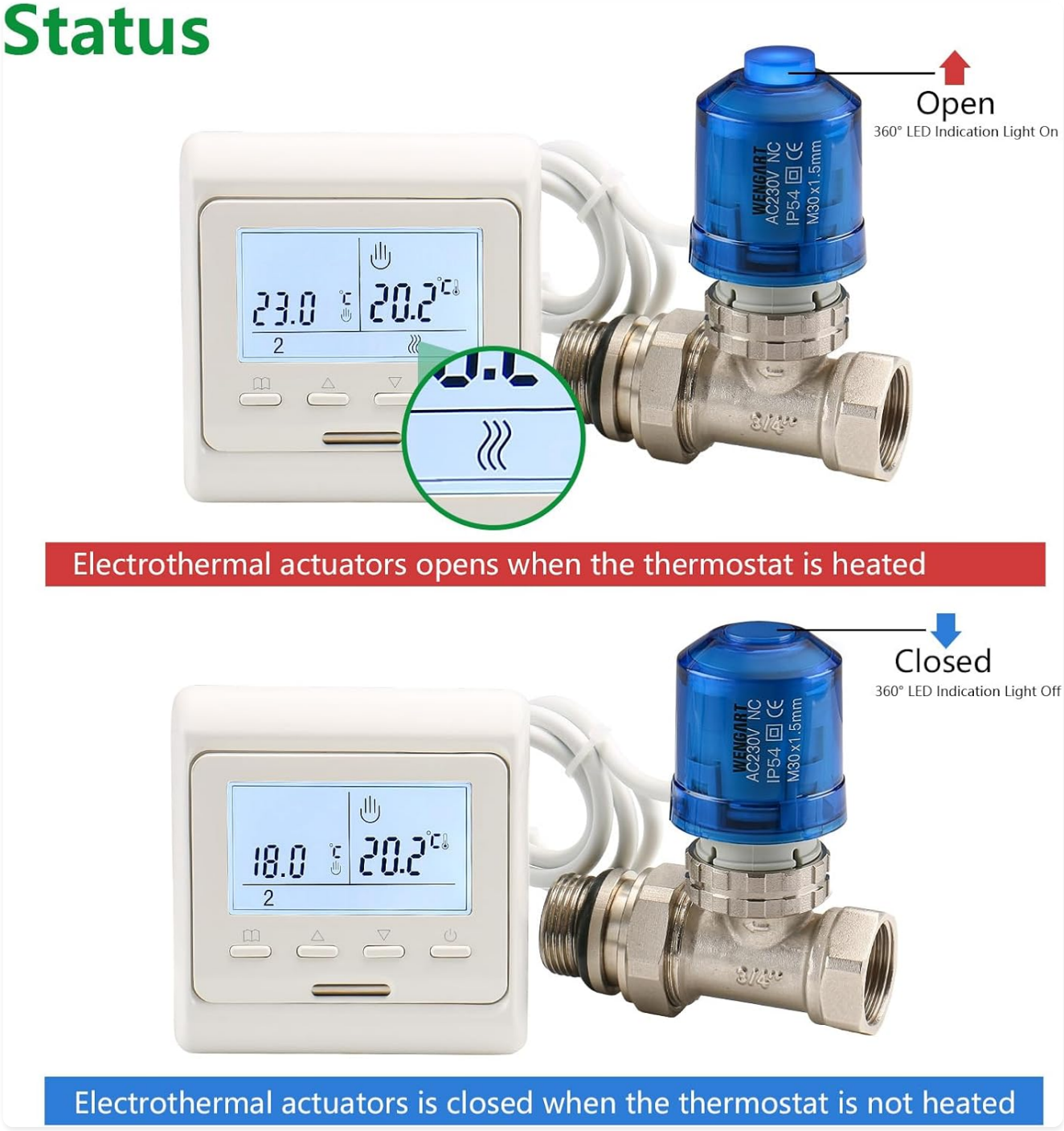

Image 7: Illustration of the actuator's operational status. When the thermostat is heating, the electrothermal actuator opens, and the 360° LED indicator is on. When the thermostat is not heating, the actuator closes, and the LED indicator is off.

4.2 Thermostat Integration

When used with a compatible thermostat, the actuator enables separate room control, reducing energy consumption. The valve will close when the room temperature reaches the set temperature on the thermostat, and open when heating is required.

4.3 Power Failure Safety

The actuator is designed with a spring return function, meaning the valve will automatically close in the event of a power failure. This ensures a failsafe operation, preventing uncontrolled heating.

5. Maintenance

The Wengart WG02 Thermal Actuator is designed for long-term, maintenance-free operation due to its non-

mechanical transmission and durable components. No regular lubrication or component replacement is typically required.

Recommended Checks:

- Periodically inspect the actuator and wiring for any visible damage or loose connections.
- Ensure the LED indicator functions correctly when the thermostat calls for heat.
- Keep the actuator free from dust and debris to maintain optimal performance.

6. Troubleshooting

If you encounter issues with your Wengart WG02 Thermal Actuator, refer to the following troubleshooting steps:

- **Actuator not opening/closing:**
  - Check if the thermostat is calling for heat (for opening) or not (for closing).
  - Verify that the actuator is receiving AC 230V power.
  - Inspect all wiring connections for looseness or damage.
  - Ensure the actuator is securely threaded onto the valve.
- **LED indicator not lighting up:**
  - Confirm the actuator is powered and the thermostat is actively calling for heat.
  - Check the power supply to the actuator.
- **Valve not fully opening or closing:**
  - Allow the full 3-5 minutes for the actuator to complete its stroke.
  - Ensure there are no obstructions preventing the valve from moving freely.

If problems persist after performing these checks, consult a qualified technician.

7. Warranty and Support

Specific warranty details for the Wengart WG02 Thermal Actuator are not provided in this manual. Please refer to your purchase documentation or contact the retailer/manufacturer directly for warranty information and technical support.