TJGOPKUJ KSD302/KSD301

TJGOPKUJ KSD302/KSD301 Bimetal Thermostat Instruction Manual

1. Introduction

This manual provides essential information for the safe and effective use of the TJGOPKUJ KSD302/KSD301 Bimetal Thermostat series. These thermostats are designed for temperature control in various electrical appliances and systems. Please read this manual thoroughly before installation and operation.

2. Safety Information

- **Electrical Hazard:** Always disconnect power before installing, servicing, or removing the thermostat to prevent electric shock.
- **Qualified Personnel:** Installation and wiring should only be performed by qualified electricians or technicians familiar with electrical systems and local codes.
- **Voltage and Current:** Ensure the thermostat's voltage (250V) and current (16A) ratings match your application's requirements. Exceeding these ratings can cause damage or fire.
- **Temperature Range:** Do not operate the thermostat outside its specified temperature range (40-300°C).
- **Proper Mounting:** Securely mount the thermostat to ensure accurate temperature sensing and prevent accidental dislodgement.

3. Product Overview

The KSD302/KSD301 series bimetal thermostats are compact, ceramic-bodied temperature switches. They utilize a bimetallic disc that deforms at a specific temperature, causing electrical contacts to open or close. These thermostats are available in two primary configurations:

- **Normally Closed (NC):** The contacts are closed (conducting electricity) at temperatures below the set point and open (breaking the circuit) when the temperature rises above the set point. This is common for heating applications.
- **Normally Open (NO):** The contacts are open (not conducting electricity) at temperatures below the set point and close (completing the circuit) when the temperature rises above the set point. This is common for cooling or alarm applications.



Figure 1: Front view of two KSD302/KSD301 Bimetal Thermostats. The image displays the ceramic body, metal cap, and terminal connectors, highlighting the compact design.



Figure 2: Top and bottom views of four KSD302/KSD301 Bimetal Thermostats. This image illustrates the overall form factor and the different perspectives of the terminals and mounting flanges.

4. Specifications

Feature	Specification
Model Number	KSD302/KSD301
Material	Ceramics
Temperature Range	40-300°C (Specific trip temperature varies by model, e.g., 230°C)
Current Rating	16A
Voltage Rating	250V
Contact Type	Normally Closed (NC) or Normally Open (NO)
Safety Standards	IEC
Breaking Capacity	High
Usage	Resettable (manual or auto-reset depending on specific variant)

Feature	Specification
Origin	Mainland China
Certification	RoHS
Package Dimensions	1.18 x 0.79 x 0.39 inches
Item Weight	3.49 ounces (approx. 99 grams)
Manufacturer	TJGOPKUJ

5. Setup and Installation

Follow these general steps for installing your bimetal thermostat. Always refer to the specific wiring diagram of your appliance or system.

1. **Power Disconnection:** Ensure all power to the circuit is turned off at the main breaker or fuse box before beginning installation. Verify with a voltage tester.
2. **Mounting:** Securely mount the thermostat using the provided mounting holes. The bimetal disc side should be in direct contact with or in close proximity to the surface or area where temperature sensing is required. Ensure good thermal contact.
3. **Wiring:** Connect the electrical wires to the thermostat terminals. For Normally Closed (NC) types, the thermostat is wired in series with the load (e.g., heating element). For Normally Open (NO) types, it may be wired in series with a cooling device or an alarm circuit. Ensure connections are tight and secure.
4. **Insulation:** Ensure all exposed wiring and terminals are properly insulated to prevent short circuits or accidental contact.
5. **Verification:** Double-check all connections and mounting before restoring power.
6. **Power Restoration:** Restore power to the circuit and test the thermostat's operation.

6. Operating Principles

The KSD302/KSD301 bimetal thermostat operates on the principle of thermal expansion. A bimetallic disc, made of two different metals bonded together, is calibrated to flex or snap at a specific temperature. This mechanical action directly controls the opening or closing of electrical contacts.

- **Normally Closed (NC) Operation:** At temperatures below its set point, the bimetallic disc maintains the contacts in a closed position, allowing current to flow. When the ambient temperature reaches or exceeds the set point (e.g., 230°C for the 230C variant), the disc snaps open, breaking the circuit and stopping current flow. As the temperature drops, the disc resets, closing the contacts again.
- **Normally Open (NO) Operation:** At temperatures below its set point, the bimetallic disc maintains the contacts in an open position, preventing current flow. When the ambient temperature reaches or exceeds the set point, the disc snaps closed, completing the circuit and allowing current to flow. As the temperature drops, the disc resets, opening the contacts again.

The specific trip temperature is factory-set and cannot be adjusted by the user.

7. Maintenance

Bimetal thermostats are generally low-maintenance devices. Regular inspection can help ensure reliable operation.

- **Visual Inspection:** Periodically check the thermostat for any signs of physical damage, corrosion, or loose connections.
- **Cleanliness:** Ensure the bimetal disc and surrounding area are free from dust, debris, or foreign materials that could impede proper temperature sensing or mechanical action. Use a soft, dry cloth for cleaning.
- **Thermal Contact:** Verify that the thermostat maintains good thermal contact with the surface it is monitoring. Poor contact can lead to inaccurate temperature readings and improper switching.
- **Replacement:** If the thermostat shows signs of damage, erratic operation, or fails to switch at the correct temperature, it should be replaced immediately by a qualified professional.

8. Troubleshooting

If you encounter issues with your bimetal thermostat, consider the following troubleshooting steps:

- **Thermostat Not Switching:**
  - **No Power:** Check if the circuit has power.
  - **Incorrect Wiring:** Verify that the thermostat is wired correctly for its type (NC or NO) and application.
  - **Temperature Not Reached:** Ensure the ambient temperature has reached the thermostat's set point. Use an external thermometer to confirm.
  - **Poor Thermal Contact:** Check if the thermostat is properly mounted and has good thermal contact with the heat source/area.
  - **Damaged Unit:** The thermostat itself may be faulty. Replace if necessary.
- **Incorrect Switching Temperature:**
  - **External Factors:** Air currents, nearby heat sources, or insulation issues can affect local temperature readings.
  - **Unit Faulty:** The thermostat may be defective or damaged. Replace if necessary.
- **Intermittent Operation:**
  - **Loose Connections:** Check all electrical connections for tightness.
  - **Vibration:** Excessive vibration can affect the bimetal disc. Ensure stable mounting.

If problems persist after troubleshooting, consult a qualified technician.

9. Warranty and Support

For warranty information or technical support regarding your TJGOPKUJ KSD302/KSD301 Bimetal Thermostat, please refer to the product packaging or contact the manufacturer directly. Keep your purchase receipt as proof of purchase.

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question