

## KING KB2407-1-ECO2S-PLUS

# KING KB2407-1-ECO2S-PLUS 7.5KW 240V 2-Stage Electronic Garage Heater User Manual

Model: KB2407-1-ECO2S-PLUS | Brand: KING

## 1. INTRODUCTION

The KING KB ECO2S+ series unit heater provides efficient heating, energy savings, and user-friendly control. This model features an integrated ECO2S+ electronic thermostat with remote control and a remote temperature sensor. It offers 2-stage heating, an Eco mode for optimized wattage use, fan-only operation, and timer functions. Designed for primary or supplemental heating in spaces like garages, warehouses, and stores, it ensures even air distribution and prolonged heater life through spiral steel elements and a dynamically balanced fan blade. A universal wall/ceiling bracket is included for flexible installation.

## 2. SAFETY INFORMATION

- **Professional Installation:** All electrical wiring and installation should be performed by a qualified, licensed electrician in accordance with local and national electrical codes.
- **Electrical Requirements:** This heater operates on 240V and requires a dedicated 40-amp circuit. Use only copper wire with a minimum gauge of 8 AWG.
- **Clearances:** Maintain adequate clearance from combustible materials. Refer to the installation instructions for specific distances.
- **Grounding:** Ensure the unit is properly grounded to prevent electrical shock.
- **Overheat Protection:** The heater is equipped with an automatic overheat protection system that will shut off the unit if it reaches an unsafe temperature.
- **Ventilation:** Do not block the air intake or exhaust vents of the heater.

## 3. PACKAGE CONTENTS

Verify that all components are present before beginning installation:

- KING KB2407-1-ECO2S-PLUS Heater Unit
- Remote Control
- Remote Temperature Sensor
- Universal Wall/Ceiling Mounting Bracket
- Installation Hardware (lag bolts, nuts, screws)
- Heavy-Duty Pigtail Power Cord (for electrical connection)
- Strain Relief Grommet



Image 1: KING KB2407-1-ECO2S-PLUS heater unit, remote control, remote temperature sensor, and mounting bracket.

## 4. INSTALLATION

### 4.1 Electrical Connection

**WARNING:** Ensure power is disconnected at the circuit breaker before performing any electrical work.

1. Remove the single Phillips screw securing the access panel on the side of the heater. Carefully lower the access panel.
2. Remove the protective film from the control panel.
3. Identify the appropriate knockout on the side of the heater for your wiring. Use pliers to remove the knockout.
4. Install the provided strain relief grommet into the knockout hole.

5. Loosen the L1 and L2 terminal screws on the internal wiring block.
6. Loosen and remove the grounding screw.
7. Feed the pigtail power cord through the strain relief grommet.
8. Connect the black wire from the pigtail to the L1 terminal and the red wire to the L2 terminal. Ensure no insulation is under the terminal for a secure connection. Tighten the screws firmly.
9. Connect the green (ground) wire from the pigtail to the grounding screw. Tighten securely.
10. Tighten the strain relief nut to secure the power cord and prevent damage to the wiring.
11. Close the access panel and secure it with the Phillips screw.

Video 1: Demonstrates the electrical wiring process for the KING KB ECO2S+ heater, including opening the access panel, removing knockouts, installing the strain relief, and connecting the L1, L2, and ground wires.

## 4.2 Mounting the Heater

The universal mounting bracket allows for ceiling or wall installation. Use the provided lag bolts to secure the bracket to a sturdy structural element.

1. Attach the mounting bracket to the heater unit using the two large knobs on the sides.
2. Securely fasten the mounting bracket to your desired ceiling or wall location using the provided lag bolts.
3. Adjust the angle of the heater by loosening the smaller knobs on the side of the bracket. The bracket offers four different angle positions. Tighten the knobs once the desired angle is achieved.



Image 2: Back view of the KING KB2407-1-ECO2S-PLUS heater, showing the fan and internal components, including the toggle switch for thermostat selection.

## 4.3 Thermostat Selection

On the back of the heater unit, there is a toggle switch to select between the built-in thermostat and an external thermostat.

- **Setting I (Built-in Thermostat):** For most users, flip the switch to position 'I' to utilize the heater's integrated thermostat and remote control.
- **Setting II (External Thermostat):** If you are using an optional 24V remote thermostat (e.g., Nest or other Wi-Fi thermostats) wired by a licensed electrician, flip the switch to position 'II'.

**IMPORTANT:** Incorrect thermostat switch setting will prevent normal operation of the heater.

## 5. OPERATING INSTRUCTIONS

### 5.1 Powering On

When the heater is first powered on, it will emit a beep sound, indicating correct voltage and power supply. The control panel will illuminate.

### 5.2 Control Panel and Remote

The heater can be operated using the touch controls on the unit's front panel or the included remote control.

- **Power Button:** Press to turn the unit on/off.
- **Mode Button:** Cycle through heating modes: Low, Eco, Fan Only, and High.
- **Eco Mode:** Automatically uses the lowest wattage necessary to maintain the set temperature, optimizing energy efficiency.
- **Temperature Adjustment:** Use the Up/Down arrow buttons on the control panel or remote to set your desired temperature.
- **Timer Mode:** Activate the timer function to set the heater to run for a predetermined length of time, after which it will automatically shut off.

Video 2: Overview of the KING KB ECO2S+ heater's features, including the remote temperature sensing, 2-stage heating, and various operating modes accessible via the control panel and remote.

## 6. MAINTENANCE

Regular maintenance ensures optimal performance and longevity of your heater.

- **Cleaning:** Periodically clean the exterior of the heater with a soft, damp cloth. Do not use abrasive cleaners or solvents.
- **Filter:** Check and clean the air filter regularly to maintain efficient airflow. Refer to the full manual for specific filter cleaning instructions.
- **Inspection:** Inspect the power cord and plug for any signs of damage. If damaged, contact a qualified technician for repair.

## 7. TROUBLESHOOTING





If your heater is not operating as expected, consider the following:

- **No Power/No Beep on Startup:** Check the circuit breaker to ensure power is supplied to the unit. Verify the electrical connections are secure and correct.
- **Heater Not Heating/Operating Normally:** Ensure the thermostat selection switch on the back of the unit is set correctly (Position 'I' for built-in thermostat, Position 'II' for external thermostat).
- **Insufficient Heat:** Verify the set temperature is higher than the ambient temperature. Check if the unit is in Eco mode and adjust to High mode if more rapid heating is desired. Ensure no obstructions are blocking the air intake or exhaust.

## 8. SPECIFICATIONS

Brand	KING
Model Number	KB2407-1-ECO2S-PLUS
Power Source	Electric
Voltage	240V

<b>Wattage</b>	7.5KW (7500W)
<b>Amperage</b>	32 Amps (at 240V)
<b>BTU Output</b>	25,600 BTU
<b>CFM</b>	600 CFM
<b>Heating Area</b>	Heats up to 700 Sq. Ft. (based on insulated walls and 8ft insulated ceiling)
<b>Dimensions (D x W x H)</b>	13.5"D x 15"W x 16.5"H
<b>Item Weight</b>	36 pounds
<b>Mounting Type</b>	Ceiling Mount
<b>Special Features</b>	Energy Efficient, Remote Control, Remote Temperature Sensor, 2-Stage Heating, Eco Mode, Timer Mode, Compatible with 24V Wi-Fi Thermostats

5,000 Watts 208/240 Volts Model # KB2405-1-B2-ECO	7,500 Watts 208/240 Volts Model # KB2407-1-B2-ECO	10,000 Watts 208/240 Volts Model # KB2410-1-B2-ECO	12,500 Watts 208/240 Volts Model # KB2412-1-B2-ECO	15,000 Watts 208/240 Volts Model # KB2415-1-B2-ECO
 <b>1 Car Garage</b> Heats Up to 450 *Sq. Ft. 17,000 BTU 400 CFM 21 Amps	 <b>2 Car Garage</b> Heats Up to 700 *Sq. Ft. 25,600 BTU 600 CFM 32 Amps	 <b>3 Car Garage</b> Heats Up to 900 *Sq. Ft. 34,100 BTU 725 CFM 42 Amps	 <b>4 Car Garage</b> Heats Up to 1,200 *Sq. Ft. 42,650 BTU 825 CFM 53 Amps	Heats Up to 1,500 *Sq. Ft. 51,200 BTU 925 CFM 63 Amps

\*Square footage is calculated at 10 watts per square foot, based on insulated walls (4" R-11 or R-13) and 8 foot insulated ceiling (4" R-11 or R-13).

Image 3: Chart illustrating the recommended heating area in square feet for various wattage garage heaters, including the 7.5KW model.

## 9. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please refer to the documentation included with your product or contact KING customer service directly. Keep your purchase receipt for warranty claims.