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› Elitech EK-3010 Digital Temperature Controller User Manual

Elitech EK-3010

Elitech EK-3010 Digital Temperature Controller User Manual

Model: EK-3010

1. INTRODUCTION

The Elitech EK-3010 is a versatile digital temperature controller designed for precise temperature management in various applications, including cold rooms, greenhouses, and breweries. It features both cooling and heating control capabilities with a single probe, ensuring stable and reliable operation. This manual provides detailed instructions for installation, operation, maintenance, and troubleshooting to help you maximize the performance and lifespan of your device.

2. SAFETY INFORMATION

Please read all safety warnings and instructions carefully before installing or operating the EK-3010 controller. Failure to follow these instructions may result in electric shock, fire, or damage to the device.

- Ensure the power supply voltage matches the controller's requirements (220VAC $\pm$ 10%, 50/60Hz).
- All wiring should be performed by a qualified electrician in accordance with local electrical codes.
- Disconnect power before performing any wiring, maintenance, or inspection.
- Do not operate the controller in environments exceeding its specified temperature and humidity limits.
- The front panel has an IP65 protection level, making it resistant to dust and water splashes, but the rear terminals are not waterproof.

3. PRODUCT FEATURES

- **Unidirectional Control Output:** Supports both heating and cooling modes.
- **Capacitive Touch Keys:** High-precision touch keys for enhanced reliability and user experience.
- **Wide Control Range:** Temperature control range from -40 °C to 85 °C for diverse applications.
- **Audible Alarm Output:** Includes fault alarm and over-temperature alarm functions.
- **Stable and Reliable:** Passes EMC test and industrial level 4 test.
- **IP65 Front Panel Protection:** Dust and splash-water resistant front panel.

- **Real-time Monitor & Display:** Provides continuous temperature readings.
- **One-Click Restore:** Easy restoration to factory settings.
- **No Menu One-key Setup:** Simplified setup process.

EK-3010 Touch Key Temperature Controller

Cooling / Heating Control Output with Buzzer Alarm

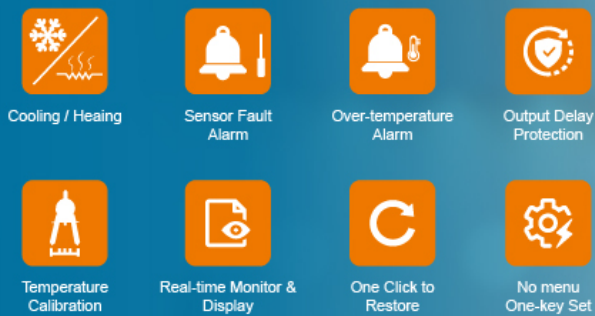


Image: Elitech EK-3010 Industrial Touch Temperature Controller showcasing its main features like cooling/heating dual mode, 3-level safety shield, military-grade sensor accuracy, no-menu one-key setup, IP65 rugged housing, multi-channel alarm system, 16A heavy-duty relay, and RS-485 Modbus protocol.

4. PACKAGE CONTENTS

- Elitech EK-3010 Digital Temperature Controller
- Temperature Probe Sensor (2m NTC)
- User Manual (this document)

5. PRODUCT OVERVIEW

The EK-3010 features a clear LCD display and intuitive touch keys for easy operation. The front panel includes indicators for key lock status, cooling operation, and compressor delay.

Model	EK-3010
Operating Voltage	220VAC+10%; 50/60Hz
Overall Power Consumption	<5W
Temperature Control Range	-40°C~85°C
Temperature Measurement Range	-40°C~99°C
Temperature Measurement Accuracy	1°C(-30°C~ 50°C), Others +2°C
Display Resolution	0.1°C
Product Size	85.0*35.0*63.8 (mm)
Mounting Dimension	71x29 (mm)
Rated Current of Output Relay	10A/220VAC
Refrigeration / Heating	
NTC Temperature Sensor (2m)	10KΩ/ 25°C, B value=3435K

Control Output



Cooling / Heating (10A)

Signal Input



Temperature Sensor

Others



Forced Shutdown
for Defrosting



Senser Fault
Alarm



Temperature
Calibration

Image: Close-up view of the Elitech EK-3010 controller, highlighting the capacitive touch keys for 'On Temp', 'Off Temp', 'Up', 'Down', and 'OK' functions, emphasizing its one-touch simplicity.

5.1. Display and Key Functions

- **Key Lock Indicator:** On (Lock Status), Off (Unlock Status).
- **Cooling Indicator:** On (Cooling Working), Off (Cooling Finishing), Flashing (Compressor Delay).
- **Turn on Temperature Key:** Used to set the turn-on temperature.
- **Shutdown Temperature Key:** Used to set the shutdown temperature.
- **Up Key:** Navigates up or increases values.
- **Down Key:** Navigates down or decreases values.
- **OK Key:** Confirms selections.
- **Forced Defrost Key:** Initiates manual defrost (if applicable to model).
- **Unlock Key:** Unlocks the keypad.

EK-3010

Industrial Touch Temperature Controller



Dual Mode Cooling/Heating with Smart Alarm Protection



**Cooling & Heating
Dual Mode**



**3-Level
Safety Shield**



**Military-Grade
Sensor Accuracy**



**No-Menu
One-Key Setup**



**IP65 Rugged
Housing**



**Multi-Channel
Alarm System**



**16A Heavy-Duty
Relay**



**RS-485
Modbus Protocol**

Image: Diagram illustrating the Elitech EK-3010 front panel, labeling the Key Lock Indicator, Cooling Indicator, Turn on Temperature Key, Shutdown Temperature Key, Up Key, Down Key, Unlock Key, and Forced Defrost Key.

6. SPECIFICATIONS

Parameter	Value
Model	EK-3010
Operating Voltage	220VAC $\pm 10\%$, 50/60Hz
Overall Power Consumption	<5W
Temperature Control Range	-40 °C ~ 85 °C
Temperature Measurement Range	-40 °C ~ 99 °C
Temperature Measurement Accuracy	1 °C (-30°C ~ 50°C), Others $\pm 2^\circ\text{C}$

Parameter	Value
Display Resolution	0.1°C
Product Size	85.0*35.0*63.8 (mm)
Mounting Dimension	71x29 (mm)
Rated Current of Output Relay	10A/220VAC
Refrigeration / Heating	10A
NTC Temperature Sensor	10KΩ/ 25°C, B value=3435K
Material	Plastic or Rubber
Display Type	LCD
Color	Grey

Safe, Stable, Reliable

Elitech EK-3010 Temperature Controller

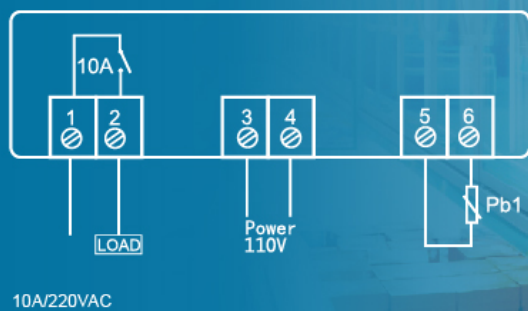


Image: Diagram showing the mounting dimensions of the Elitech EK-3010, with a front panel size of 71mm x 29mm and a total depth of 63.8mm.



Image: Additional view of the Elitech EK-3010 mounting dimensions, showing a width of 85mm and height of 35mm for the main body, and a depth of 63.8mm.

7. INSTALLATION AND SETUP

7.1. Mounting

The EK-3010 is designed for panel mounting. Ensure the mounting hole dimensions are 71mm x 29mm. Secure the controller firmly into the panel cutout.

7.2. Wiring Diagram

Follow the wiring diagram carefully to ensure correct and safe installation. Incorrect wiring can damage the device or pose electrical hazards. The controller supports a 10A load for both cooling and heating applications.

Key Lock Indicator

On: Lock Status

Off: Unlock Status

Cooling Indicator

On: Cooling Working

Off: Cooling Finishing

Flashing: Compressor Delay

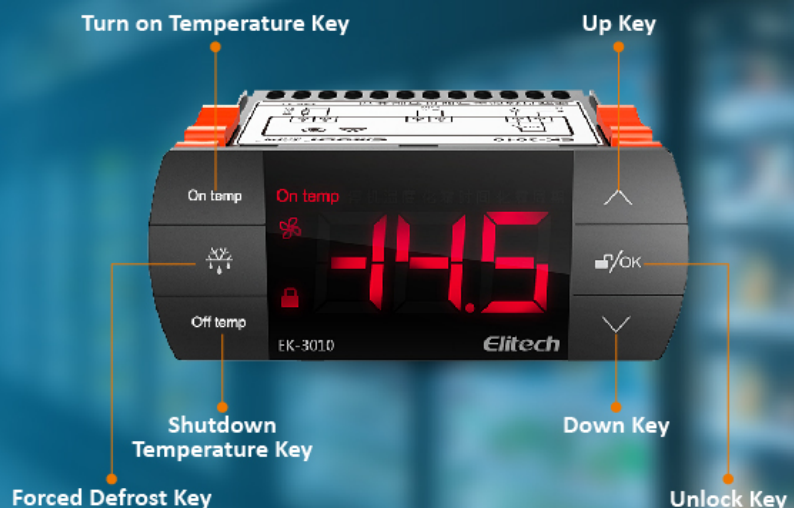


Image: Step-by-step wiring guide for the Elitech EK-3010, showing connections for Line (L), Neutral (N), Power Supply (PS), and the Cold Room Temperature Probe (Pb1) to terminals 1-2, 3-4, and 5-6 respectively. A 10A fuse is recommended for the load circuit.

- Connect the Line (L) and Neutral (N) wires to terminals 1 and 2 for the load.
- Connect the main power supply (PS) to terminals 3 and 4.
- Connect the temperature probe (Pb1) to terminals 5 and 6.
- Ensure all connections are secure and insulated.

8. OPERATION

The EK-3010 offers straightforward operation through its touch-sensitive keys.

8.1. Power On/Off

To power on the device, ensure it is correctly wired and connected to a power source. The display will illuminate. To power off, disconnect the main power supply.

8.2. Setting Temperature Parameters

1. **Unlock Keypad:** If the keypad is locked, press the Unlock Key (often combined with another key, refer to specific model instructions if not obvious) to unlock it. The key lock indicator will turn off.
2. **Set Turn-on Temperature:** Press the 'On Temp' key. The current turn-on temperature will flash. Use the Up/Down keys to adjust the value. Press 'OK' to confirm.
3. **Set Shutdown Temperature:** Press the 'Off Temp' key. The current shutdown temperature will flash. Use the Up/Down keys to adjust the value. Press 'OK' to confirm.
4. **Mode Selection (Cooling/Heating):** The controller automatically switches between cooling and heating based on the set temperatures and the current measured temperature. Ensure your set points are appropriate for the desired mode.

8.3. Calibration

If the displayed temperature deviates from a known accurate reference, temperature calibration may be required. Refer to the detailed parameter settings in the full manual for specific calibration procedures.

9. MAINTENANCE

Regular maintenance ensures optimal performance and longevity of your EK-3010 controller.

- **Cleaning:** Wipe the front panel with a soft, damp cloth. Do not use abrasive cleaners or solvents.
- **Probe Inspection:** Periodically check the temperature probe for any signs of damage or corrosion. Replace if necessary.
- **Connection Check:** Ensure all wiring connections remain tight and secure.
- **Environmental Conditions:** Maintain the operating environment within specified temperature and humidity ranges to prevent damage.

10. TROUBLESHOOTING

This section addresses common issues you might encounter with the EK-3010 controller.

Problem	Possible Cause	Solution
Display shows "EE" or "HH"	Sensor error or temperature out of range.	Check sensor connection. Replace sensor if damaged. Ensure temperature is within -40°C to 99°C.
Controller not responding to key presses	Keypad is locked.	Press the Unlock Key to unlock the keypad.
Output not switching (cooling/heating)	Incorrect temperature settings or wiring.	Verify 'On Temp' and 'Off Temp' settings. Check wiring according to the diagram.
Audible alarm sounds	Fault alarm or over-temperature alarm triggered.	Identify the specific alarm (refer to full manual for alarm codes). Address the underlying issue (e.g., temperature excursion, sensor fault).
Display is blank	No power or power supply issue.	Check power connections and ensure power supply is active. Verify voltage.

11. APPLICATIONS

The Elitech EK-3010 is suitable for a wide range of temperature control applications due to its robust design and versatile functionality.

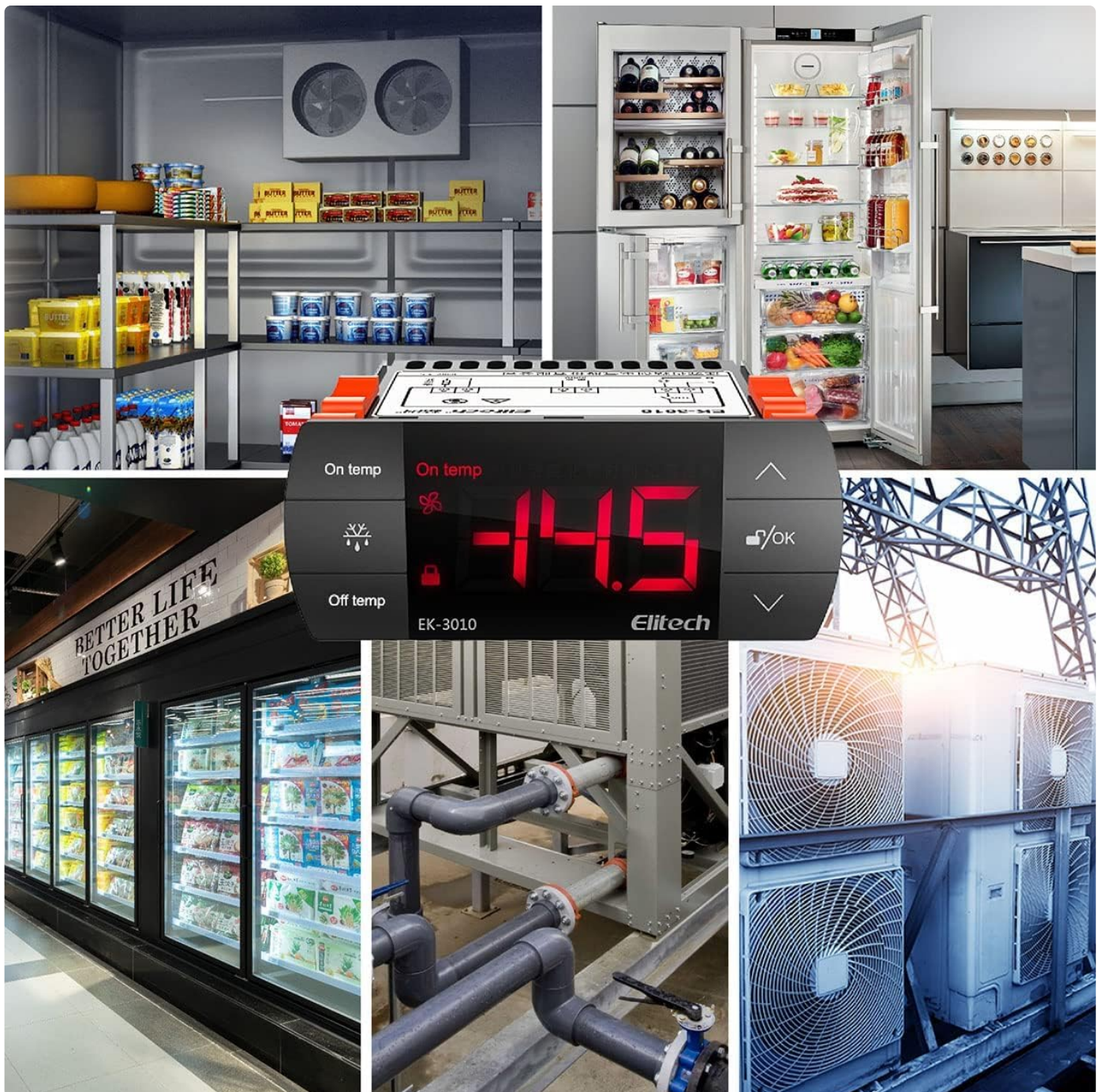


Image: Collage showing typical applications for the Elitech EK-3010, including cold storage, freezers, refrigerators, chillers, and heating equipment.

12. WARRANTY AND SUPPORT

Elitech provides a standard warranty for the EK-3010 Digital Temperature Controller against defects in materials and workmanship under normal use. The specific warranty period may vary by region and retailer. Please retain your proof of purchase for warranty claims.

For technical support, troubleshooting assistance beyond this manual, or warranty inquiries, please contact Elitech customer service through their official website or the retailer where the product was purchased. Provide your model number (EK-3010) and a detailed description of the issue for faster service.

Elitech Official Website: www.elitech.com

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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.

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