Elitech ECS-06CX

Elitech ECS-06CX Temperature Controller User Manual

Model: ECS-06CX

1. INTRODUCTION

The Elitech ECS-06CX is a versatile temperature controller designed for refrigeration systems, offering precise control over cooling, defrosting, and fan operations. It features three output relays and includes both temperature and evaporator defrost sensors for comprehensive system management. This manual provides essential information for the safe installation, setup, operation, and maintenance of your ECS-06CX controller.

2. SAFETY INFORMATION

WARNING: ELECTRIC SHOCK RISK!

- Always disconnect power to the unit before performing any wiring, installation, or maintenance procedures. Failure to do so can result in serious injury or death.

- Installation and wiring should only be performed by qualified personnel in accordance with all local and national electrical codes.

- Ensure proper grounding of the unit.

- Do not operate the controller if it is damaged or has been exposed to moisture.

- Verify that the power supply voltage matches the controller's specifications (220VAC).

3. PRODUCT OVERVIEW

The Elitech ECS-06CX controller features a digital display and intuitive buttons for easy operation. It comes with necessary sensors for temperature and defrost control.

3.1. Front Panel and Buttons

Image 1: Elitech ECS-06CX front panel and sensor. The front panel features a digital display and four control buttons. A sensor cable is shown connected to the unit.

The front panel includes a digital display for temperature readings and status indicators. The four buttons provide control over various functions:

- **Cycle/Power Button:** Used to cycle through display modes or power the unit on/off (long press).
- **Defrost Button:** Initiates a manual defrost cycle.
- **Light/Fan Button:** Controls auxiliary functions, potentially light or fan operation depending on configuration.
- **Set Button:** Enters parameter setting mode or confirms selections.

3.2. Rear Panel and Connections

Image 2: Elitech ECS-06CX rear panel. The rear panel shows multiple terminal blocks for electrical connections and ventilation slots.

The rear panel houses the terminal blocks for power input, sensor connections, and output relays. Refer to the wiring diagram in the Installation section for detailed connection instructions.

4. INSTALLATION

Proper installation is critical for the safe and reliable operation of the ECS-06CX controller. Ensure all safety precautions are followed.

4.1. Mounting

The controller is designed for panel mounting. Cut an appropriate opening in the control panel and secure the unit using the provided clips or mounting hardware. Ensure adequate ventilation around the unit.
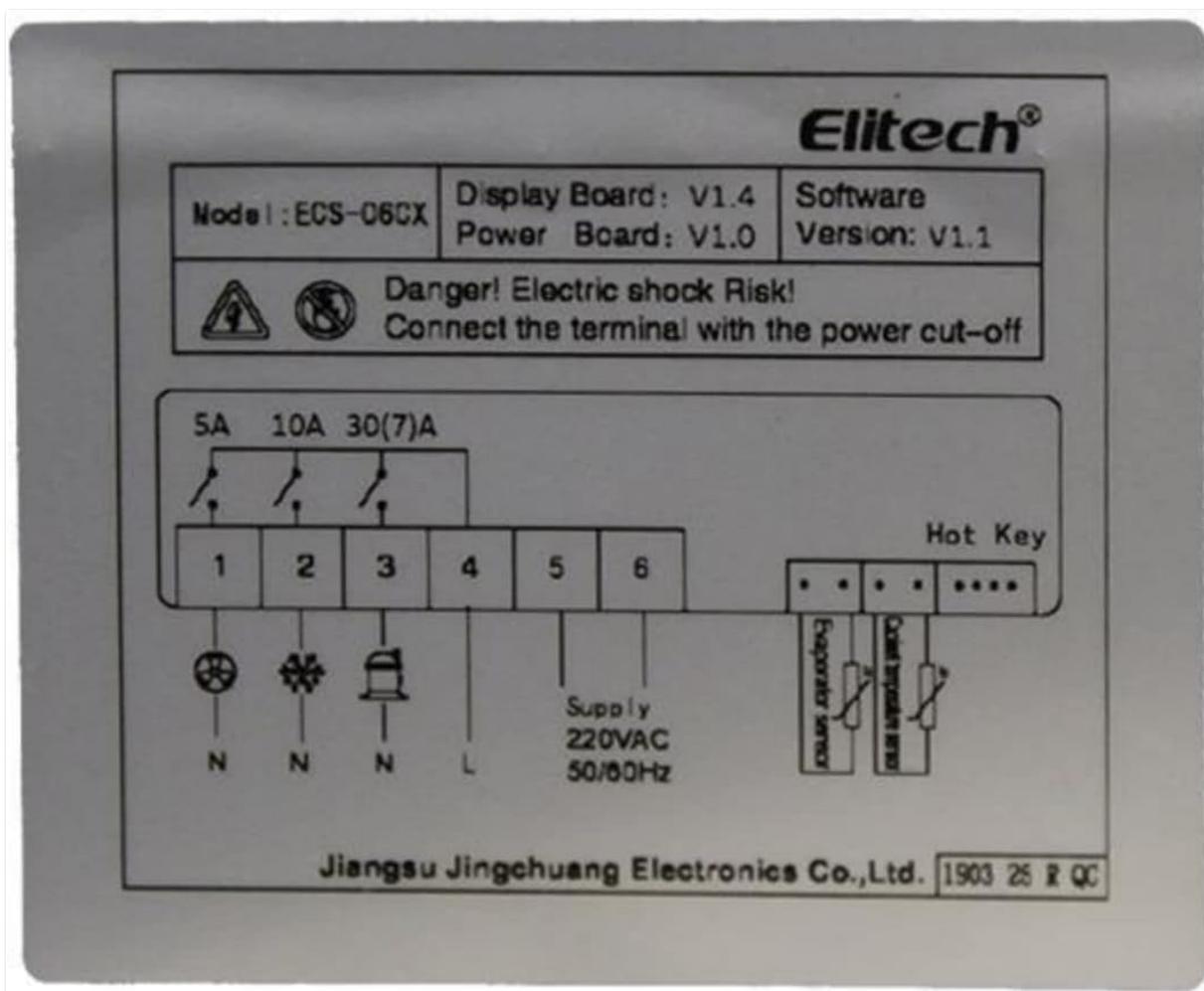
4.2. Wiring Diagram

Image 3: Elitech ECS-06CX wiring diagram. This diagram illustrates the connections for power supply (220VAC, 50/60Hz), three relay outputs (5A, 10A, 30(7)A), and sensor inputs (Evaporator sensor, Cold storage sensor).

Connect the wires according to the diagram above. Pay close attention to the terminal labels:

- **Supply (220VAC, 50/60Hz):** Connect the main power supply to the designated terminals (L and N).
- **Output Relays:**
  - Terminal 1 (N): Neutral for outputs.
  - Terminal 2 (5A): Output for Fan.
  - Terminal 3 (10A): Output for Defrost.
  - Terminal 4 (30(7)A): Output for Cooling.
- **Sensors:** Connect the evaporator sensor and cold storage (temperature) sensor to their respective terminals.
- **Hot Key:** Dedicated terminals for connecting a hot key for quick parameter copying (if applicable).

Ensure all connections are secure and insulated to prevent short circuits.

5. SETUP AND INITIAL CONFIGURATION

After installation and power-up, the controller may require initial parameter settings to match your specific application.

1. **Power On:** Apply power to the unit. The display should illuminate.
2. **Access Parameter Settings:** Press and hold the **Set** button for several seconds to enter the parameter setting menu.

3. **Navigate and Adjust:** Use the arrow buttons (Cycle/Power and Defrost buttons may function as up/down arrows in setting mode) to navigate through parameters. Press **Set** to select a parameter, adjust its value, and press **Set** again to confirm.

4. **Key Parameters (Examples):**

   - **Temperature Setpoint:** The desired temperature for your application.
   - **Differential/Hysteresis:** The temperature range around the setpoint before the cooling output activates/deactivates.
   - **Defrost Cycle Parameters:** Frequency, duration, and termination temperature of defrost cycles.
   - **Fan Control Parameters:** Settings for fan operation relative to cooling and defrost cycles.
   - **Sensor Calibration:** If necessary, adjust sensor readings for accuracy.

5. **Exit Settings:** After configuring all necessary parameters, exit the setting menu (often by pressing the Cycle/Power button or waiting for a timeout).

Refer to the full Elitech ECS-06CX programming manual (not provided here) for a complete list and detailed explanation of all parameters.

6. OPERATING INSTRUCTIONS

Once configured, the ECS-06CX operates automatically based on the set parameters. Manual operations are also available.

- **Viewing Temperature:** The display typically shows the current temperature measured by the cold storage sensor.

- **Manual Defrost:** Press the **Defrost** button to initiate a manual defrost cycle. The defrost indicator will illuminate.

- **Auxiliary Control (Light/Fan):** Press the **Light/Fan** button to toggle the auxiliary output (e.g., cabinet light or manual fan override).

- **Power On/Off:** Press and hold the **Cycle/Power** button for several seconds to turn the unit on or off.

7. MAINTENANCE

Regular maintenance ensures the longevity and accurate operation of your temperature controller.

- **Cleaning:** Periodically clean the controller's front panel with a soft, damp cloth. Do not use abrasive cleaners or solvents. Ensure no liquid enters the unit.

- **Sensor Inspection:** Regularly check the temperature and defrost sensors for physical damage or corrosion. Ensure they are securely mounted and positioned correctly for accurate readings.

- **Wiring Check:** Annually, or as needed, inspect all wiring connections for tightness and signs of wear or damage. Ensure power is disconnected before inspection.

- **Ventilation:** Ensure that the ventilation slots on the controller are not obstructed to prevent overheating.

8. TROUBLESHOOTING

If you encounter issues with your ECS-06CX controller, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Controller does not power on.	No power supply; incorrect wiring; blown fuse.	Check power connections and voltage. Verify wiring according to diagram. Check for internal fuse (if accessible and replaceable by qualified personnel).
Incorrect temperature reading.	Faulty sensor; sensor incorrectly placed; sensor wiring issue; calibration error.	Check sensor connections. Ensure sensor is in the correct location. Replace sensor if damaged. Check sensor calibration in settings.
Cooling/Defrost/Fan output not activating.	Incorrect setpoint/parameters; faulty relay; wiring issue; compressor/fan/heater fault.	Verify setpoint and differential settings. Check wiring to the load. Test the load directly if possible. Consult a qualified technician for relay issues.
Display shows error code.	Sensor fault; internal error.	Refer to the full Elitech programming manual for specific error code meanings. Typically, sensor errors (e.g., E1, E2) indicate a disconnected or faulty sensor.

For issues not listed here or if solutions do not resolve the problem, contact Elitech customer support or a qualified technician.

9. SPECIFICATIONS

- **Model:** ECS-06CX
- **Brand:** Elitech
- **Power Supply:** 220 VAC, 50/60 Hz
- **Output Relays:**

  - Cooling: 30(7)A
  - Defrost: 10A
  - Fan: 5A

- **Product Dimensions (L x W x H):** 7.8 x 3.4 x 8.2 cm
- **Weight:** 252 grams
- **Sensors:** Temperature sensor, Evaporator defrost sensor
- **Display:** Digital LED

10. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please contact Elitech customer service or visit the official Elitech website. Keep your purchase receipt as proof of purchase.
Elitech Website: www.elitech.com