Emerson XCM25D

Emerson XCM25D Condensing Unit Controller User Manual

Model: XCM25D | Part Number: 543-0220-00

1. Introduction

This manual provides essential information for the installation, operation, and maintenance of the Emerson XCM25D Condensing Unit Controller. The XCM25D is designed to manage and optimize the performance of condensing units in various refrigeration and air conditioning applications. Please read this manual thoroughly before installation and operation to ensure proper functioning and safety.



Figure 1: Front view of the Emerson XCM25D Condensing Unit Controller, showing the display and control buttons.

2. Safety Information

Always observe the following safety precautions:

- Installation and maintenance should only be performed by qualified personnel.
- Disconnect power before performing any wiring or maintenance.
- Ensure proper grounding to prevent electrical shock.
- Refer to local electrical codes and regulations.
- Do not operate the controller if it is damaged.

3. Specifications

Key technical specifications for the XCM25D controller:

Parameter	Value

Model	XCM25D
Part Number	543-0220-00
Manufacturer	Copeland (Emerson Climate Technologies)
Input Voltage	24 Volts AC
Display Type	LCD or LED
Item Weight	0.33 kg (11.6 ounces)



Figure 2: Rear label of the XCM25D controller, displaying model number, part number, voltage, and manufacturing details.

4. Installation and Setup

Follow these steps for proper installation of the XCM25D controller:

1. **Mounting:** Securely mount the controller in a suitable enclosure, away from direct moisture and excessive vibration. Ensure adequate ventilation.

2. **Wiring:**
    - Connect the 24V AC power supply to the designated terminals.
    - Connect temperature sensors to the appropriate sensor inputs.
    - Wire output relays to control components such as compressors, fans, and defrost heaters, following the system's wiring diagram.
    - Ensure all connections are tight and secure.
3. **Initial Power-Up:** After verifying all connections, apply power to the controller. The display should illuminate.
4. **Parameter Configuration:** Access the controller's menu to set up operational parameters such as setpoints, differentials, and alarm thresholds. Refer to the operating section for detailed parameter settings.



Figure 3: Side view of the XCM25D controller, illustrating the various terminal blocks for electrical connections.

5. Operating Instructions

The XCM25D controller features an intuitive display and button interface for easy operation.



Figure 4: Detailed view of the XCM25D display, showing temperature readings and various status icons, along with the 'SET', 'Start', and arrow buttons.

5.1. Display Overview

The digital display shows the current temperature, operational status, and alarm indicators. Icons on the display represent functions such as compressor status, fan operation, defrost cycle, and alarm conditions.

5.2. Button Functions

- **SET Button:** Used to enter parameter setting mode and confirm selections.
- **UP Arrow (▲) Button:** Navigates through menu options or increases parameter values.
- **DOWN Arrow (▼) Button:** Navigates through menu options or decreases parameter values.
- **Start Button:** Initiates or stops specific functions, such as manual defrost.
- **Information Button:** Provides access to system information or alarm history.

5.3. Parameter Setting

To adjust operational parameters:

1. Press and hold the **SET** button for a few seconds to enter the parameter menu.
2. Use the **UP** or **DOWN** arrow buttons to scroll through parameters.
3. Press **SET** to select a parameter.
4. Use the **UP** or **DOWN** arrow buttons to change the value.
5. Press **SET** again to confirm the new value.
6. Exit the menu by pressing and holding **SET** or waiting for a timeout.

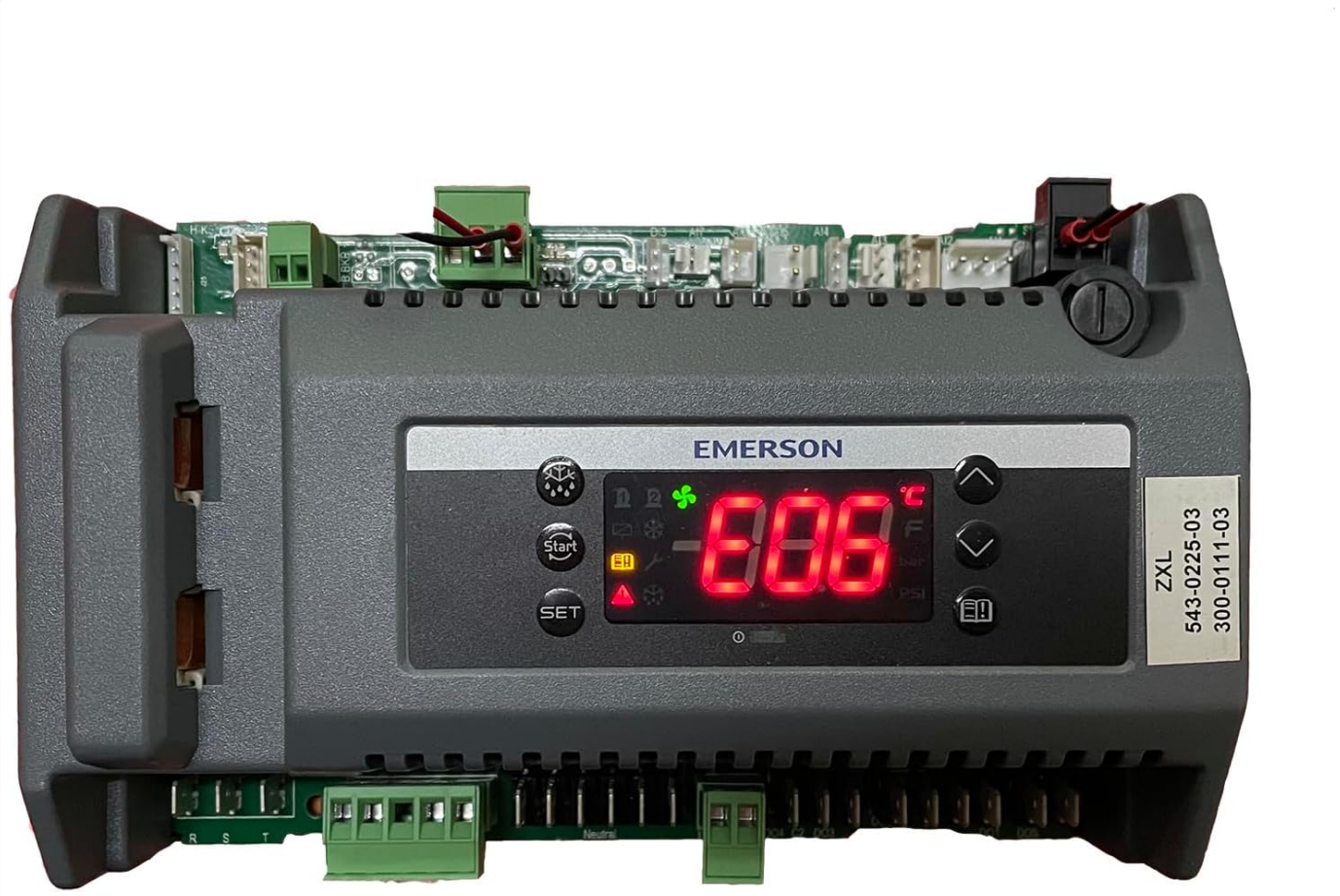


Figure 5: The XCM25D controller displaying a temperature reading in red, indicating active operation or a specific status.

6. Maintenance

Regular maintenance ensures the longevity and optimal performance of your XCM25D controller.

- **Cleaning:** Periodically clean the controller's exterior with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Connections:** Annually check all electrical connections for tightness and signs of corrosion. Re-tighten if necessary.
- **Sensor Verification:** Verify sensor readings periodically against a calibrated thermometer to ensure accuracy.
- **Firmware Updates:** Consult Emerson's official documentation or technical support for information on potential firmware updates.

Always disconnect power to the unit before performing any maintenance.

7. Troubleshooting

This section provides solutions to common issues you might encounter with the XCM25D controller.

Problem	Possible Cause	Solution

Display is blank	No power supply; Faulty wiring; Controller failure.	Check power connections and circuit breaker. Verify wiring. If problem persists, contact technical support.
Incorrect temperature reading	Faulty sensor; Sensor not properly connected; Sensor placed incorrectly.	Check sensor wiring. Verify sensor resistance/output. Relocate sensor if necessary. Replace sensor if faulty.
Controller not responding to button presses	Keypad malfunction; Controller frozen.	Try power cycling the unit. If unresponsive, contact technical support.
Alarms constantly active	System operating outside set parameters; Sensor issue; Alarm thresholds set too tight.	Check system operation (e.g., refrigerant levels, fan operation). Verify sensor readings. Adjust alarm parameters if appropriate.

For issues not listed here, or if troubleshooting steps do not resolve the problem, please contact Emerson technical support.

8. Technical Support

For further assistance, technical inquiries, or to report issues, please contact Emerson Climate Technologies support channels. Refer to the official Emerson website for the most up-to-date contact information.
Website: www.emerson.com

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