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> ICM Controls ICM2807 Carrier Replacement Furnace Control Board User Manual

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Model: ICM2807 | Brand: ICM Controls

INTRODUCTION

The ICM Controls ICM2807 is a direct replacement furnace control board designed for Carrier HK42FZ017 models. This manual provides essential information for the safe installation, operation, and maintenance of the control board, ensuring proper functionality of your furnace system.

SAFETY INFORMATION

WARNING: Installation and servicing of heating and air conditioning equipment can be hazardous due to electrical components and gas. Only qualified service personnel should install, repair, or service this equipment. Failure to follow these instructions could result in property damage, personal injury, or death.

- Disconnect all power to the furnace at the main service panel before installing or servicing the control board.
- Ensure the gas supply is turned off before working on gas components.
- Verify all wiring connections are secure and correct according to the furnace wiring diagram.
- Always wear appropriate personal protective equipment (PPE).

PRODUCT OVERVIEW

The ICM2807 is a microprocessor-based control designed to manage the operation of a furnace, including the gas valve, ignitor, blower motor, inducer, humidifier, and air cleaner. It features 100% gas shutoff in case of ignition failure and reverse polarity protection.

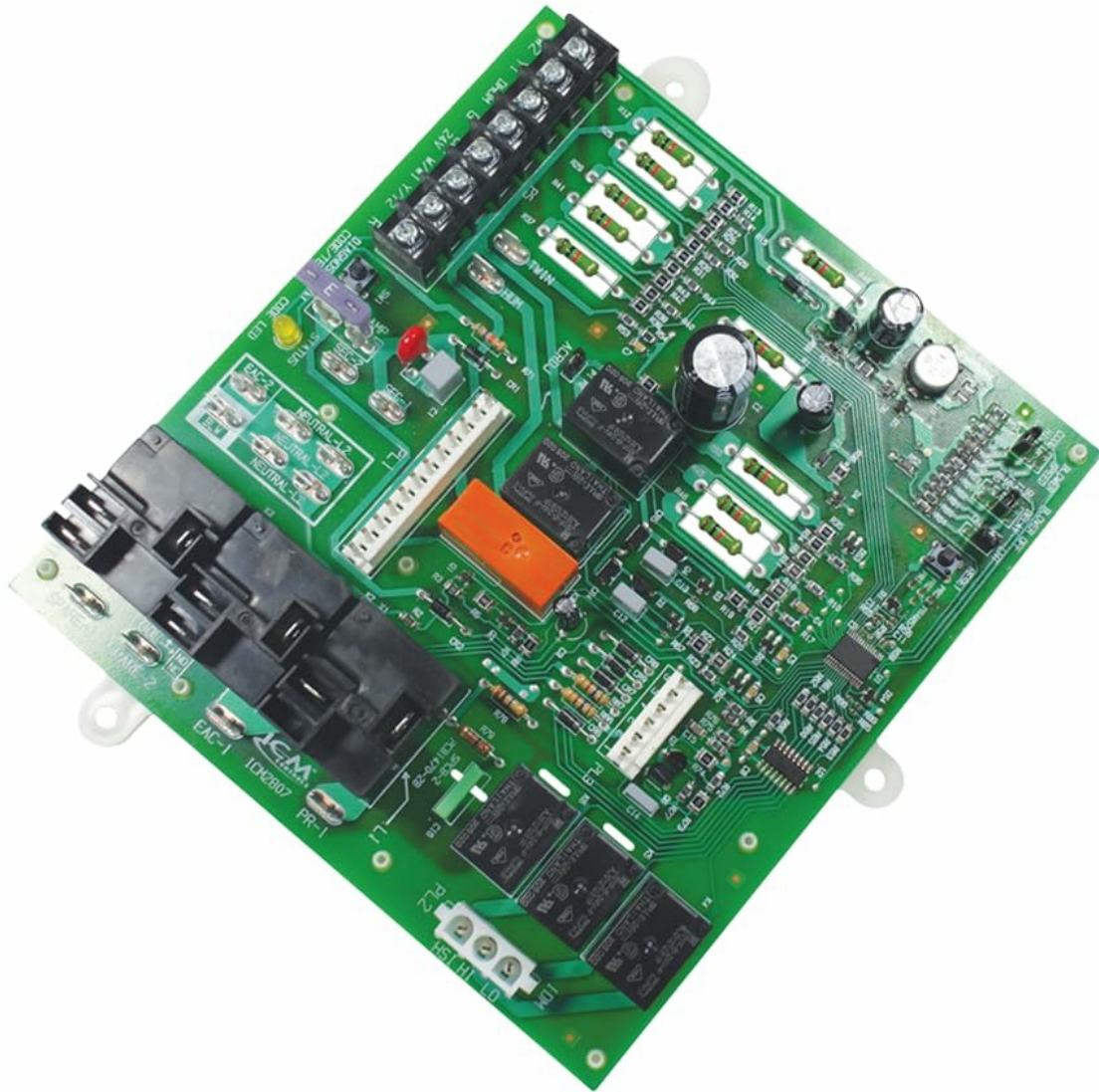


Figure 1: ICM Controls ICM2807 Furnace Control Board. This image displays the green circuit board with various components including relays, capacitors, terminal blocks for wiring (24V, W/Y/R, TWIN, EAC), and a status code LED. Key labels visible include "ICM2807 PR-1", "DIAGNOS CODE/TE", "STATUS CODE LED", "NEUTRAL-L2", "NEUTRAL-L1", "EAC-1", "EAC-2", "IDM", and "HSI HI LO".

Key Features

- Controls gas valve, ignitor, blower motor, inducer, humidifier, and air cleaner.
- Microprocessor-based precision.
- Designed for 100% gas shutoff in case of ignition failure.
- Twinning compatible with another ICM2807 control.
- Reverse polarity protection.
- Compatible with 24 VAC standard thermostat.

SETUP AND INSTALLATION

Follow these steps carefully to ensure proper and safe installation of the ICM2807 control board:

1. **Power Disconnection:** Turn off all electrical power to the furnace at the main service panel. Turn off the gas supply to the furnace.
2. **Access Old Board:** Open the furnace access panel to locate the existing control board.
3. **Document Wiring:** Before disconnecting any wires, take clear photographs of the existing wiring connections. Label each wire as it is removed from the old board. This step is crucial for correct reinstallation.
4. **Remove Old Board:** Carefully disconnect all wires and mounting screws holding the old control board in place. Remove the old board.
5. **Install New Board:** Position the ICM2807 replacement board in the same location as the old board. Secure it with the appropriate mounting screws.
6. **Connect Wiring:** Refer to your photographs and labels to connect each wire to the corresponding terminal on the new ICM2807 board. Ensure all connections are tight and secure. Pay close attention to the 24V, W/Y/R, TWIN, EAC, NEUTRAL-L1, NEUTRAL-L2, IDM, and HSI HI LO terminals.
7. **Verify Connections:** Double-check all wiring against the furnace's wiring diagram and your documented photos.
8. **Restore Power:** Close the furnace access panel. Restore gas supply and electrical power to the furnace.
9. **Test Operation:** Initiate a call for heat from the thermostat to verify proper furnace operation. Observe the status code LED for any diagnostic indications.

OPERATING INSTRUCTIONS

The ICM2807 operates automatically in response to thermostat demands. Once installed and powered, it will manage the furnace's heating and cooling cycles based on the thermostat's input.

Status Code LED

The board includes a diagnostic LED (labeled "STATUS CODE LED" on the board) that flashes codes to indicate operational status or fault conditions. Refer to the furnace manufacturer's documentation or the sticker provided with the ICM2807 for a complete list of diagnostic codes and their meanings.

Common Status Indications:

- **Slow Flash:** Normal operation, no call for heat.
- **Rapid Flash:** Call for heat in progress.
- **Specific Flash Patterns:** Indicate fault conditions (e.g., ignition failure, pressure switch error). Consult the diagnostic code chart for interpretation.

MAINTENANCE

The ICM2807 control board itself requires no routine maintenance. However, regular maintenance of the overall furnace system is essential for optimal performance and longevity. Neglecting furnace maintenance can lead to system malfunctions and reduced efficiency.

- Ensure furnace filters are clean and replaced regularly according to manufacturer recommendations.
- Inspect and clean the flame sensor periodically (as per furnace manufacturer guidelines). A dirty flame sensor can cause ignition issues.
- Keep the area around the furnace clear of obstructions to ensure proper airflow.
- Schedule annual professional furnace inspections to identify and address potential issues early.

TROUBLESHOOTING

Before attempting any troubleshooting, ensure all power and gas supplies to the furnace are turned off for safety.

Common Issues and Solutions

1. Furnace Not Starting:

- Check thermostat settings to ensure it is calling for heat.
- Verify power supply to the furnace at the breaker panel.
- Check the diagnostic LED on the control board for fault codes.
- Ensure all wiring connections to the control board are secure.

2. Ignition Failure:

- Check the gas supply valve to ensure it is open.
- Inspect and clean the flame sensor.
- Verify ignitor operation (if applicable, consult furnace manual).
- Consult diagnostic codes for specific ignition-related faults.

3. Blower Motor Not Running:

- Check thermostat fan settings (e.g., set to "ON" instead of "AUTO" for continuous operation).
- Verify wiring to the blower motor from the control board.
- Check diagnostic codes for blower motor faults.

4. Intermittent Operation:

- Inspect for loose wiring connections on the control board and throughout the furnace.
- Check for proper grounding of the furnace system.
- Monitor diagnostic codes for recurring patterns that may indicate a specific issue.

For complex issues or if diagnostic codes persist after basic troubleshooting, contact a qualified HVAC technician.

SPECIFICATIONS

Feature	Detail
Model	ICM2807
Replacement For	Carrier HK42FZ017
Input Voltage	24 VAC (Thermostat compatible)
Dimensions	Approximately 9.2 x 9.1 x 2.3 inches
Weight	Approximately 1 Pound
Controls	Gas valve, ignitor, blower motor, inducer, humidifier, air cleaner
Special Features	100% gas shutoff, Twinning compatible, Reverse polarity protection

WARRANTY AND SUPPORT

For specific warranty information regarding your ICM Controls ICM2807 furnace control board, please refer to the documentation included with your purchase or contact ICM Controls directly through their official channels. For technical support or further assistance with installation, operation, or troubleshooting, please visit the official ICM Controls website or contact their customer service department. Contact information can typically be found on the product packaging or the manufacturer's website.

Note: This manual provides general guidance. Always refer to the specific wiring diagrams and instructions provided by your furnace manufacturer for detailed system information.

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.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

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