ICM Controls ICM288

ICM Controls ICM288 Furnace Control Manual

Model: **ICM288** | Brand: **ICM Controls**

Product Overview

The ICM Controls ICM288 is a microprocessor-based furnace control board designed as a low-cost replacement for Rheem 62-24084-82 control boards. This unit is engineered to provide reliable and efficient control over various furnace functions, ensuring optimal performance of your heating system.

Key Features

- Microprocessor-based design for precise control.
- Monitors pressure, roll-out, and limit switches for safety and operational integrity.
- Controls gas valve, inducer draft motor, circulating blower, and hot surface ignitor.
- Includes reverse polarity detection for safe installation.
- Twinning compatible with other ICM288 control boards for multi-furnace setups.

Installation and Setup

Safety Precautions

WARNING: Before attempting any installation or maintenance, ensure that all power to the furnace is completely disconnected at the main breaker or fuse box. Failure to do so can result in severe electrical shock, injury, or death. Always verify power is off with a voltage tester.

Capacitors on the control board can store electrical charge even after power is disconnected. Exercise caution and avoid touching exposed terminals. Wearing insulated gloves is recommended.

Pre-Installation Checklist

- Verify that the ICM288 is the correct replacement board for your furnace model (Rheem 62-24084-82 or compatible).
- Gather necessary tools: screwdrivers, wire strippers, needle-nose pliers, voltage tester, camera (for documenting wiring).

- Familiarize yourself with the existing furnace wiring and the layout of the old control board.

Installation Steps

1. **Disconnect Power:** Turn off the main power to the furnace at the circuit breaker. Confirm power is off using a voltage tester.
2. **Access Old Board:** Open the furnace access panel to expose the existing control board.
3. **Document Wiring:** Before disconnecting any wires, take clear photos of the existing wiring connections on the old board. Label each wire with its corresponding terminal designation (e.g., "R", "W", "Y", "G", "C", "GAS VALVE", "INDUCER", etc.) as you remove it. This is crucial for correct re-installation.
4. **Remove Old Board:** Carefully disconnect all wires and mounting hardware from the old control board. Note the type of standoffs used; the ICM288 may come with replacement standoffs.
5. **Install New Board:** Mount the ICM288 control board in the furnace enclosure. Ensure it is securely fastened using appropriate standoffs or screws.
6. **Connect Wiring:** Refer to your documented photos and labels. Connect each wire to its corresponding terminal on the new ICM288 board. The terminals on the ICM288 are clearly labeled, often matching the original board's designations. Pay close attention to the polarity of power connections. The board features reverse polarity detection.
7. **Verify Connections:** Double-check all wiring connections to ensure they are secure and correctly matched to the terminal labels.
8. **Close Panel & Restore Power:** Close the furnace access panel. Restore power to the furnace at the circuit breaker.
9. **Test Operation:** Initiate a heating cycle to verify proper operation of the furnace. Observe the furnace's startup sequence, including the inducer motor, ignitor, gas valve, and blower.

Figure 1: Top-down view of the ICM288 control board, highlighting the layout of terminals and components for wiring.

Figure 2: Angled view of the ICM288 control board, providing a perspective on the various connection points and the board's compact design.

Operation

The ICM288 furnace control board acts as the central command unit for your furnace, orchestrating the sequence of operations required for safe and efficient heating. It continuously monitors critical safety components and controls the activation of various furnace parts.

Functional Overview

- **Ignition Sequence:** Manages the pre-purge, hot surface ignitor warm-up, gas valve opening, and flame sensing.
- **Blower Control:** Activates the circulating blower at the appropriate times during heating and cooling cycles.
- **Safety Monitoring:** Monitors inputs from pressure switches, roll-out switches, and limit switches to ensure safe operation and shut down the furnace if a fault is detected.
- **Inducer Draft Motor Control:** Controls the inducer motor to ensure proper venting of combustion gases before ignition.

Diagnostic Indicators

The ICM288 board is equipped with diagnostic LEDs that provide visual feedback on the board's status and any detected faults. These LEDs typically indicate:

- **Power:** Indicates the board is receiving power.
- **Firing/Flame:** Indicates successful ignition and flame presence.
- **Fault Codes:** Flashing patterns or specific LED combinations can indicate various system faults (e.g., pressure switch error, limit switch open, ignition failure). Refer to the furnace manufacturer's manual or the ICM288's specific diagnostic chart (if provided separately) for detailed fault code interpretations.

Maintenance

The ICM288 furnace control board itself is a solid-state electronic component and does not require routine user maintenance. Its robust design ensures long-term reliability under normal operating conditions.

However, regular maintenance of your overall furnace system is crucial for the longevity and proper functioning of all components, including the control board. It is recommended to:

- Ensure furnace filters are clean and replaced regularly.
- Keep the area around the furnace clean and free of obstructions.
- Schedule annual professional furnace inspections and tune-ups.
- Periodically inspect wiring connections to the control board for tightness and signs of wear.

Troubleshooting Guide

This section provides general troubleshooting steps for common furnace issues that may relate to the control board. Always ensure power is off before inspecting or adjusting any components.

Common Issues and Solutions

- **No Power to Furnace:**
  - Check the circuit breaker for the furnace; reset if tripped.
  - Verify the furnace access panel is securely closed, as some furnaces have safety switches.
  - Check the main power connections to the control board.
- **Furnace Not Igniting:**
  - Check the diagnostic LEDs on the ICM288 board for fault codes related to ignition.
  - Ensure the gas supply valve to the furnace is open.
  - Inspect the hot surface ignitor for cracks or damage.
  - Verify the flame sensor is clean and properly positioned.
- **Blower Not Running:**
  - Check thermostat settings to ensure the fan is set to "Auto" or "On" as desired.
  - Listen for the inducer motor; the main blower will not run if the inducer or pressure switch is faulty.
  - Check diagnostic LEDs for blower-related fault codes.
- **Furnace Cycles On and Off Rapidly (Short Cycling):**
  - Check for clogged air filters, which can cause overheating and trigger limit switches.

- Ensure all supply and return air vents are open and unobstructed.
- Verify proper airflow through the furnace.

If troubleshooting steps do not resolve the issue, or if you are unsure about any procedure, it is highly recommended to contact a qualified HVAC technician for diagnosis and repair.

Technical Specifications

Attribute	Detail
Model Number	ICM288
Manufacturer	ICM Controls
Product Dimensions	23.11 x 5.59 x 19.05 cm
Item Weight	340 g
First Available Date	July 15, 2015
Replacement For	Rheem 62-24084-82 Control Boards

Warranty Information

ICM Controls products are manufactured to high standards and typically come with a manufacturer's warranty covering defects in materials and workmanship. The specific warranty period and terms may vary. Please refer to the packaging or the official ICM Controls website for the most current and detailed warranty information applicable to the ICM288 furnace control board.

Retain your proof of purchase for warranty claims.

Customer Support

For technical assistance, installation questions, or warranty inquiries regarding your ICM Controls ICM288 furnace control board, please contact ICM Controls customer support directly. Their contact information can typically be found on their official website or product packaging.

When contacting support, please have your product model number (ICM288) and any relevant purchase details ready to assist them in providing prompt service.