

Amana 50A51-215

Amana 50A51-215 OEM Replacement Furnace Control Board Instruction Manual

This manual provides essential information for the safe and effective installation, operation, and maintenance of your Amana 50A51-215 Furnace Control Board.

IMPORTANT SAFETY INFORMATION

WARNING: Installation and servicing of this furnace control board must be performed by a qualified service technician. Failure to follow these instructions could result in property damage, personal injury, or death.

- Disconnect all power to the furnace before installing or servicing this control board.
- Verify all wiring connections are secure and correct according to the furnace manufacturer's specifications.
- Do not bypass any safety devices.
- Ensure proper grounding.

PRODUCT OVERVIEW

The Amana 50A51-215 is an OEM replacement two-stage integrated furnace control board designed for specific Amana furnace models. It manages the ignition sequence, monitors safety limits, and controls the furnace's operational cycles.



Figure 1: Amana 50A51-215 Furnace Control Board. This image displays the front view of the control board, showing various terminals, connectors, LED indicators, and labels for components like "Flame Current Sense" and "Fault Recall."

Key Components

- **Terminal Blocks:** For connecting power, thermostat wires (Y1, Y2, W, R, G, C), and other furnace components.
- **LED Indicators:** Provide diagnostic feedback through flash patterns and colors.
- **Flame Current Sense:** Monitors the presence of a flame during operation.
- **Fault Recall Button:** Used to retrieve stored fault codes.
- **Erase Fault Button:** Used to clear stored fault codes.

SETUP AND INSTALLATION

This section provides general guidelines. Always refer to the specific furnace manufacturer's service manual for detailed installation instructions.

1. **Power Disconnection:** Turn off all electrical power to the furnace at the main service panel.
2. **Access Control Board:** Locate and open the furnace access panel to expose the existing control board.
3. **Document Wiring:** Carefully label all wires connected to the old control board before disconnecting them. Take photographs for reference if necessary.
4. **Remove Old Board:** Disconnect all wires and mounting screws, then remove the old control board.
5. **Install New Board:** Mount the new Amana 50A51-215 control board in the same location using the existing mounting hardware.
6. **Connect Wiring:** Reconnect all wires to the new board, ensuring each wire is attached to its corresponding terminal as documented in step 3. Pay close attention to the "CAUTION 120V" and "NEUTRALS" connections, as well as thermostat wires (Y1, Y2, W, R, G, C).
7. **Verify Connections:** Double-check all wiring for correctness and secure connections.
8. **Restore Power:** Close the furnace access panel and restore electrical power to the furnace.

9. **Test Operation:** Initiate a heating cycle to verify proper furnace operation.

OPERATING INSTRUCTIONS

Once installed, the control board operates automatically in conjunction with your thermostat to manage the furnace's heating cycles.

LED Indicator

The integrated LED on the control board provides status and diagnostic information. During normal operation, the LED will typically flash slowly. Refer to the Troubleshooting section for specific flash patterns and their meanings.

Fault Recall

To recall the last stored fault code, press and hold the**FAULT RECALL** button for approximately 2 seconds. The LED will then display the fault code.

Erase Fault

To erase all stored fault codes, press and hold the**ERASE FAULT** button for approximately 5 seconds.

MAINTENANCE

The Amana 50A51-215 control board itself requires no routine maintenance. However, regular maintenance of the entire furnace system is crucial for its longevity and efficient operation.

- Ensure furnace filters are replaced or cleaned regularly according to the furnace manufacturer's recommendations.
- Have the furnace inspected and serviced annually by a qualified technician.
- Keep the area around the furnace clear of obstructions and combustible materials.

TROUBLESHOOTING

The LED indicator on the control board provides diagnostic codes to assist in troubleshooting. Observe the flash pattern and color, then refer to the table below.

LED Flash Patterns and Conditions

LED Flash Pattern / Color	Condition
1 Red Flash	Flame Sense Current When No Flame Should Be Present
2 Red Flashes	Pressure Switch Stuck Closed Inducer Error
3 Red Flashes	1st Stage Pressure Switch Stuck Open Inducer Error
4 Red Flashes	Open Limit Switch
5 Red Flashes	Open Rollout Open Fuse Detect
6 Red Flashes	Pressure Switch Cycle Lockout
7 Red Flashes	Ignition Lockout
8 Red Flashes	External Lockout (Recycled)
9 Red Flashes	Grounding or Reversed Polarity

LED Flash Pattern / Color	Condition
10 Red Flashes	Call for Heat with No Call for Heat
11 Red Flashes	Limit Switch Open - Motor Failure
12 Red Flashes	Ignition Failure
13 Red Flashes	Invalid Line Voltage, Micro, and Frequency Check
14 Red Flashes	Blower Error, Incorrect Idle Proving
15 Red Flashes	2nd Stage Pressure Switch Stuck Open Inducer Error
1 Yellow Flash	Normal Operation with Call for First Stage Heat
2 Yellow Flashes	Normal Operation with Call for Second Stage Heat
3 Yellow Flashes	Call for Heat
4 Yellow Flashes	1st Stage Heat with No C-Call, Y1 Present with No C-Call
5 Yellow Flashes	Low Flame Sense Current
Rapid Yellow Flashes	Call for Cool, Humidity

If troubleshooting steps do not resolve the issue, contact a qualified HVAC technician.

SPECIFICATIONS

Model: 50A51-215

Type: OEM Replacement Furnace 2 Stage Control Circuit Board

Manufacturer: Amana

Product Dimensions: 9 x 7 x 10 inches





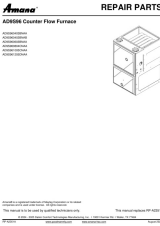
WARRANTY AND SUPPORT

For specific warranty information, please refer to the documentation provided with your purchase or contact Amana customer support.

For technical assistance or service, it is recommended to contact a certified HVAC professional.

This manual is for informational purposes only. Amana is a registered trademark.

Related Documents - 50A51-215

 <p>Amana AM9C96 Two-Stage ECM Gas Furnace LP or NG (50% AFUE)</p> <p>Model Number: AM9C96 Part Number: 54-010-0000 ECM Gas Furnace LP or NG (50% AFUE)</p> <p>Key Features:</p> <ul style="list-style-type: none"> Two-stage ECM motor for improved efficiency and quiet operation. Variable speed blower for better air distribution and reduced energy consumption. Advanced safety features including flame rollout protection and gas valve safety. Compatible with Amana's SmartSense™ control system for smart home integration. Compact design for easy installation in tight spaces. <p>Specifications:</p> <ul style="list-style-type: none"> Heating Input: 40,000 BTU/hr Heating Output: 100,000 BTU/hr AFUE Rating: 50% Dimensions: 24" H x 24" W x 30" D Weight: 45 lbs 	<p>Amana AM9C96 Two-Stage ECM Gas Furnace: Features, Specifications, and Airflow Data</p> <p>Comprehensive technical specifications, features, dimensions, airflow data, and wiring diagrams for the Amana AM9C96 two-stage, multi-speed ECM gas furnace. Learn about its energy efficiency, installation clearances, and available accessories.</p>
 <p>Amana AR9S96 / AD9S96 Single-Stage ECM Gas Furnace LP or NG (50% AFUE)</p> <p>Model Number: AR9S96 / AD9S96 Part Number: 54-010-0000 ECM Gas Furnace LP or NG (50% AFUE)</p> <p>Key Features:</p> <ul style="list-style-type: none"> Single-stage ECM motor for reliable performance. Variable speed blower for improved air circulation. Advanced safety features including flame rollout protection and gas valve safety. Compatible with Amana's SmartSense™ control system. Compact design for easy installation. <p>Specifications:</p> <ul style="list-style-type: none"> Heating Input: 40,000 BTU/hr Heating Output: 100,000 BTU/hr AFUE Rating: 50% Dimensions: 24" H x 24" W x 30" D Weight: 45 lbs 	<p>Amana AR9S96/AD9S96 Single-Stage ECM Gas Furnace - Product Specifications and Features</p> <p>Detailed specifications, features, and installation data for the Amana AR9S96 and AD9S96 single-stage, multi-speed ECM gas furnaces, including heating input, output, AFUE ratings, dimensions, airflow data, and accessories.</p>
<p>Amana S Series Installation Requirements</p> <p>Key Features:</p> <ul style="list-style-type: none"> Comprehensive installation requirements and guidelines for Amana S Series HVAC systems. Essential safety procedures and operational checks. Detailed instructions for installation contractors. Emphasis on critical steps and considerations for proper system setup and performance. <p>Specifications:</p> <ul style="list-style-type: none"> Heating Input: 40,000 BTU/hr Heating Output: 100,000 BTU/hr AFUE Rating: 50% Dimensions: 24" H x 24" W x 30" D Weight: 45 lbs 	<p>Amana S Series Installation Requirements Guide</p> <p>Essential installation requirements and guidelines for Amana S Series HVAC systems. This document serves as a supplementary guide for installation contractors, emphasizing critical steps and considerations for proper system setup and performance.</p>
 <p>INSTALLATION INSTRUCTIONS FOR MES9 & CES9 Single-Stage Gas Furnace</p> <p>Model Number: MES9 / CES9 Part Number: 54-010-0000 ECM Gas Furnace LP or NG (50% AFUE)</p> <p>Key Features:</p> <ul style="list-style-type: none"> Detailed installation instructions for Amana MES9 and CES9 series single-stage gas furnaces. Covers critical safety procedures, installation requirements, venting, electrical connections, and operational checks. Essential for qualified installers to ensure safe and efficient operation. <p>Specifications:</p> <ul style="list-style-type: none"> Heating Input: 40,000 BTU/hr Heating Output: 100,000 BTU/hr AFUE Rating: 50% Dimensions: 24" H x 24" W x 30" D Weight: 45 lbs 	<p>Amana MES9 & CES9 Series Gas Furnace Installation Instructions</p> <p>This comprehensive installation manual provides detailed guidance for Amana MES9 and CES9 series single-stage gas furnaces. It covers critical safety procedures, installation requirements, venting, electrical connections, and operational checks for qualified installers to ensure safe and efficient operation.</p>
 <p>INSTALLATION INSTRUCTIONS FOR MES9 & CES9 Single-Stage Gas Furnace</p> <p>Model Number: MES9 / CES9 Part Number: 54-010-0000 ECM Gas Furnace LP or NG (50% AFUE)</p> <p>Key Features:</p> <ul style="list-style-type: none"> Comprehensive installation instructions for Amana and Goodman MES9/CES9 single-stage gas furnaces. Covers safety, setup, operation, and troubleshooting for Category IV direct/non-direct vent models. Essential for qualified installers to ensure safe and efficient operation. <p>Specifications:</p> <ul style="list-style-type: none"> Heating Input: 40,000 BTU/hr Heating Output: 100,000 BTU/hr AFUE Rating: 50% Dimensions: 24" H x 24" W x 30" D Weight: 45 lbs 	<p>Amana & Goodman MES9/CES9 Gas Furnace Installation Guide</p> <p>Comprehensive installation instructions for Amana and Goodman MES9/CES9 single-stage gas furnaces, covering safety, setup, operation, and troubleshooting for Category IV direct/non-direct vent models.</p>
 <p>Amana AD9S96 Counter Flow Furnace</p> <p>Model Number: AD9S96 Part Number: 54-010-0000 ECM Gas Furnace LP or NG (50% AFUE)</p> <p>Key Features:</p> <ul style="list-style-type: none"> Comprehensive list of repair parts for the Amana AD9S96 Counter Flow Furnace. Includes part numbers, descriptions, and model applicability. Intended for qualified technicians. <p>Specifications:</p> <ul style="list-style-type: none"> Heating Input: 40,000 BTU/hr Heating Output: 100,000 BTU/hr AFUE Rating: 50% Dimensions: 24" H x 24" W x 30" D Weight: 45 lbs 	<p>Amana AD9S96 Counter Flow Furnace Repair Parts</p> <p>Comprehensive list of repair parts for the Amana AD9S96 Counter Flow Furnace, including part numbers, descriptions, and model applicability. This document is intended for qualified technicians.</p>