



Manuals.plus /

› White Rodgers /

› White Rodgers DLCNT05165_760 Furnace Control Board: Installation and Operation Manual

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White Rodgers DLCNT05165_760 Furnace Control Board: Installation and Operation Manual

Model: DLCNT05165_760 | Replaces: American Standard & Trane CNT03076

1. INTRODUCTION

This manual provides detailed instructions for the safe and proper installation, operation, and maintenance of the White Rodgers DLCNT05165_760 Upgraded Replacement Furnace Control Board. This board is designed as a direct replacement for specific American Standard and Trane furnace models, including those using the CNT03076 control board. Please read this manual thoroughly before proceeding with any installation or service to ensure optimal performance and safety.

2. SAFETY INFORMATION

WARNING: Improper installation, adjustment, alteration, service, or maintenance can cause property damage, personal injury, or loss of life. Installation and service must be performed by a qualified installer, service agency, or the gas supplier.

- Always disconnect electrical power to the furnace before installing or servicing the control board. Failure to do so can result in electrical shock, personal injury, or death.
- Ensure all wiring connections are secure and comply with local and national electrical codes.
- Do not bypass any safety devices.
- Wear appropriate personal protective equipment (PPE) during installation and service.

3. PRODUCT OVERVIEW

The White Rodgers DLCNT05165_760 is an upgraded replacement furnace control board designed for reliable operation and enhanced diagnostics. It manages the sequence of operation for the furnace, including ignition, blower motor control, and safety monitoring.



Figure 1: White Rodgers DLCNT05165_760 Furnace Control Board

This image displays the green circuit board with various components. Key features include multiple relays (black rectangular components), terminal blocks for wiring connections (e.g., C G R W Y TWIN at the bottom, and various LINE, HUM, EAC, XFMR, CIR terminals at the top right), and a bank of DIP switches (labeled OFF/ON) for configuration. Two diagnostic LEDs (DS1, DS2) are visible at the bottom left, and a fuse (F1, 5A) is located near the bottom right. The board is marked with "Intell-Ignition" and "4574-REV.B".

4. SETUP AND INSTALLATION

4.1. Pre-Installation Steps

1. **Disconnect Power:** Turn off all electrical power to the furnace at the main service panel. Verify power is off using a voltmeter.
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 to ensure correct re-connection to the new board.
4. **Remove Old Board:** Carefully disconnect all wires and mounting hardware from the old control board.

4.2. Installing the New Control Board

1. **Mount New Board:** Install the White Rodgers DLCNT05165_760 board in the same location as the old board, securing it with appropriate mounting hardware. The new board typically comes with new plastic mounting clips.
2. **Connect Wiring:** Refer to your documented photographs and labels. Connect each wire to its corresponding terminal on the new control board. Ensure all connections are tight and secure. The terminal layout on the new board should match the old board.
3. **Set DIP Switches:** Locate the DIP switches on the new board (refer to Figure 1). Set these switches to match the configuration of the old board. Incorrect DIP switch settings can lead to improper furnace operation.
4. **Igniter Compatibility:** This upgraded board may require an 80-volt silicon nitride igniter. If your

previous system used a 120-volt igniter, it is crucial to replace it with an 80-volt igniter to ensure proper ignition. Failure to do so will prevent the igniter from glowing sufficiently.

4.3. Post-Installation Checks

1. **Double-Check Connections:** Visually inspect all wiring to confirm correct and secure connections.
2. **Restore Power:** Close the furnace access panel and restore electrical power to the furnace.
3. **Test Operation:** Initiate a call for heat from your thermostat to observe the furnace's ignition sequence and operation.

5. OPERATING INSTRUCTIONS

The White Rodgers DLCNT05165_760 control board automatically manages the furnace's operational sequence. Once installed and configured correctly, the furnace will operate as follows when a call for heat is initiated:

1. The thermostat signals the control board for heat.
2. The inducer motor starts, clearing any residual combustion gases.
3. After a pre-purge period, the igniter (hot surface igniter) is energized and begins to glow.
4. Once the igniter reaches sufficient temperature, the gas valve opens, allowing gas to flow to the burners.
5. The gas ignites, and the flame sensor confirms the presence of a flame.
6. After a short delay, the main blower motor starts, circulating heated air throughout the building.
7. When the thermostat's set temperature is reached, the gas valve closes, the igniter de-energizes, and the inducer motor and blower motor shut off after a cool-down period.

6. MAINTENANCE

The control board itself requires minimal maintenance. However, regular furnace maintenance is essential for its longevity and proper function.

- **Annual Inspection:** Have a qualified HVAC technician inspect your furnace annually.
- **Keep Clean:** Ensure the area around the furnace and control board is free from dust and debris.
- **Check Connections:** Periodically, with power disconnected, inspect wiring connections for tightness and signs of corrosion.
- **Air Filter:** Regularly replace or clean your furnace's air filter to maintain proper airflow and prevent overheating, which can stress components like the control board.

7. TROUBLESHOOTING

The White Rodgers DLCNT05165_760 control board includes diagnostic LEDs (DS1, DS2) to assist in troubleshooting. Refer to your furnace's specific diagnostic codes, which are often printed on the furnace door or within its manual.

Common Troubleshooting Scenarios

Symptom	Possible Cause	Action
No heat, furnace not starting	No power, thermostat issue, blown fuse (F1), safety limit tripped.	Check circuit breaker. Verify thermostat settings. Inspect fuse F1 on the board (5A). Check for tripped safety limits (e.g., rollout switch, high limit switch).
Inducer motor runs, but no ignition	Faulty igniter, incorrect igniter voltage, gas supply issue, flame sensor dirty/faulty.	Ensure the igniter is an 80-volt silicon nitride type. Inspect igniter for cracks or damage. Verify gas supply is on. Clean or replace flame sensor.
Blower runs continuously	Thermostat fan setting, control board issue, stuck relay.	Check thermostat fan setting (should be "Auto"). If issue persists, consult a qualified technician.
Diagnostic LEDs (DS1, DS2) flashing	Indicates a fault code.	Count the flashes and refer to your furnace's specific diagnostic code chart for interpretation. Common codes include open limit switch (4 flashes) or igniter error.

If you are unable to resolve an issue, it is recommended to contact a qualified HVAC technician.

8. SPECIFICATIONS

- **Model Number:** DLCNT05165_760
- **Replaces:** American Standard & Trane CNT03076
- **Manufacturer:** White Rodgers (Replacement Part)
- **Package Dimensions:** 7.91 x 5.51 x 2.76 inches
- **Item Weight:** 10.79 ounces
- **Igniter Compatibility:** Designed for 80-volt silicon nitride igniters.

9. WARRANTY AND SUPPORT

For warranty information, please refer to the documentation provided with your purchase or contact the manufacturer directly. For technical support, it is recommended to consult a qualified HVAC professional or contact White Rodgers customer service.