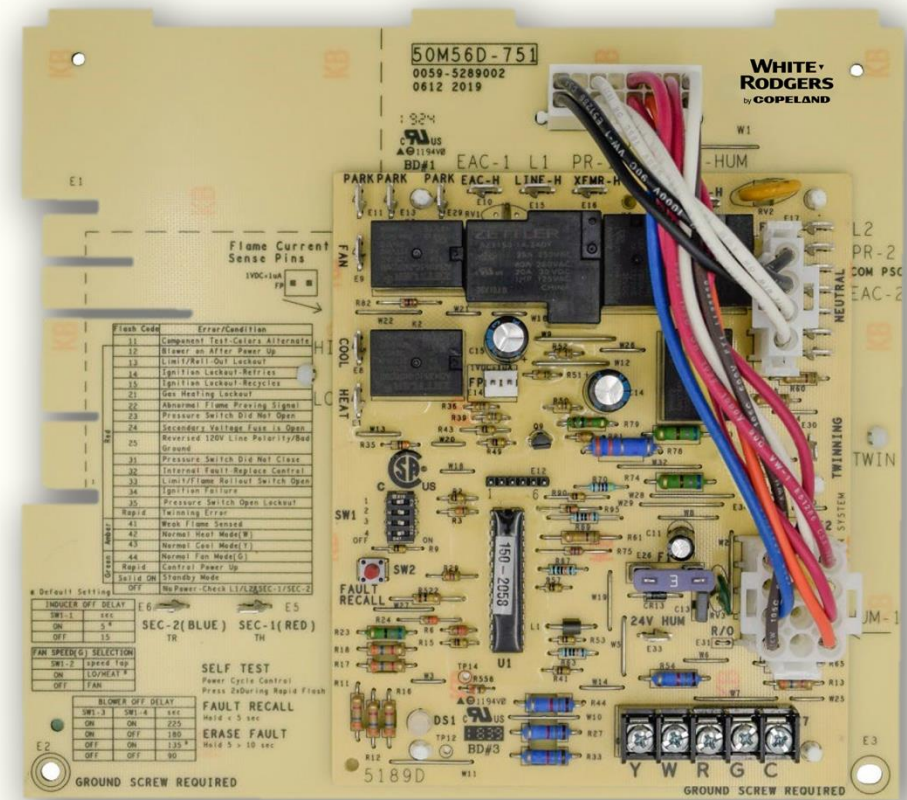


**COPELAND**

# 50M56D-751 Direct OEM replacement Carrier Edge Card IFC



# Introducing White-Rodgers Carrier direct replacement “Edge Card” control

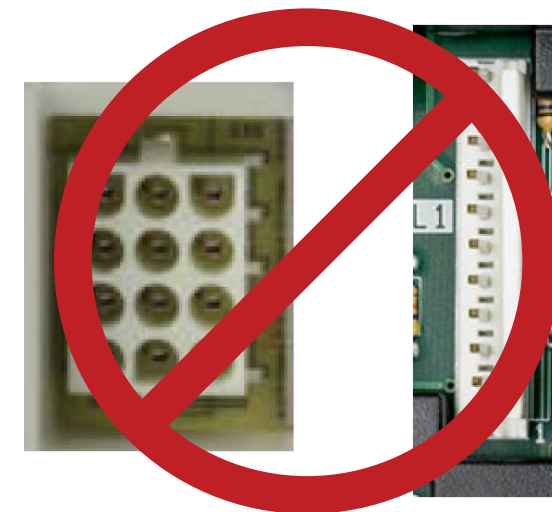
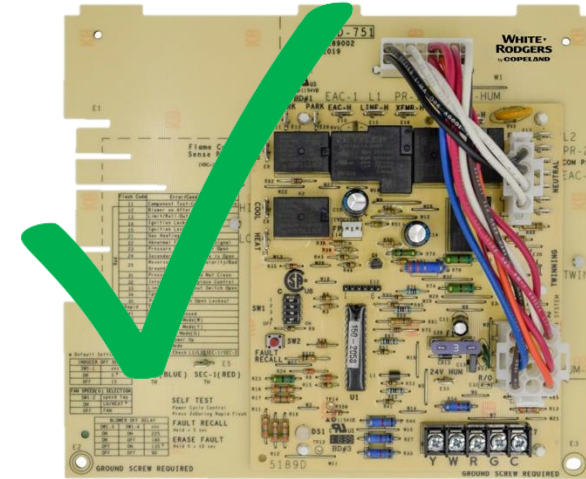
## The White-Rodgers 50M56D-751 integrated furnace control

What is an “Edge Card” control?

Most furnaces have a main wiring harness that plugs into the front of an IFC. Carrier made a unit that plugs into the side of the control board, making the connection on the “edge of the card”. The White-Rodgers 50M56D-751 is a direct replacement utilizing a board that can be plugged into the furnace and a 2nd board layered on top that operates as a fully integrated furnace control.

White-Rodgers now has a new Carrier direct replacement IFC for the application of:

- Edge harness connection
- Single stage gas
- Hot surface ignition
- PSC blower

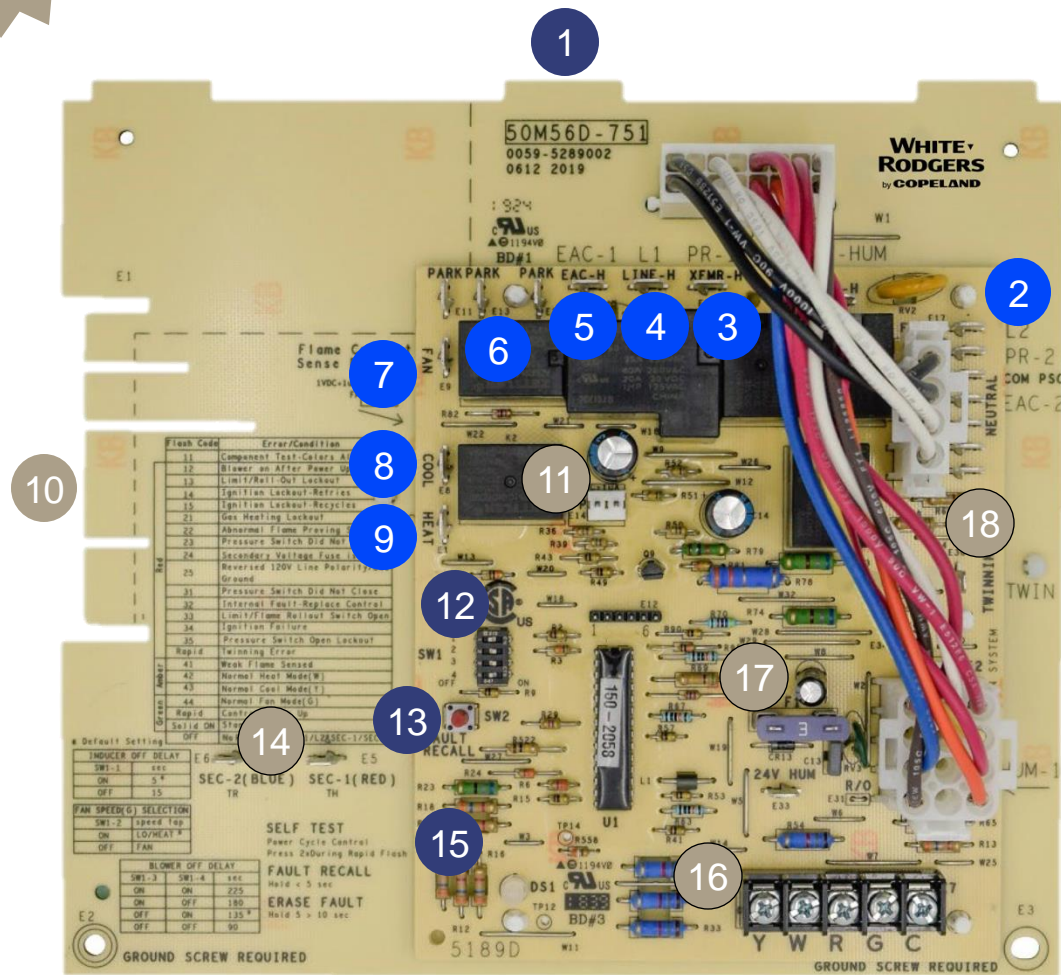


**White-Rodgers now offers another common Carrier IFC**

# White-Rodgers Carrier 50M56D-751 components



**Carrier 50M56D-751**

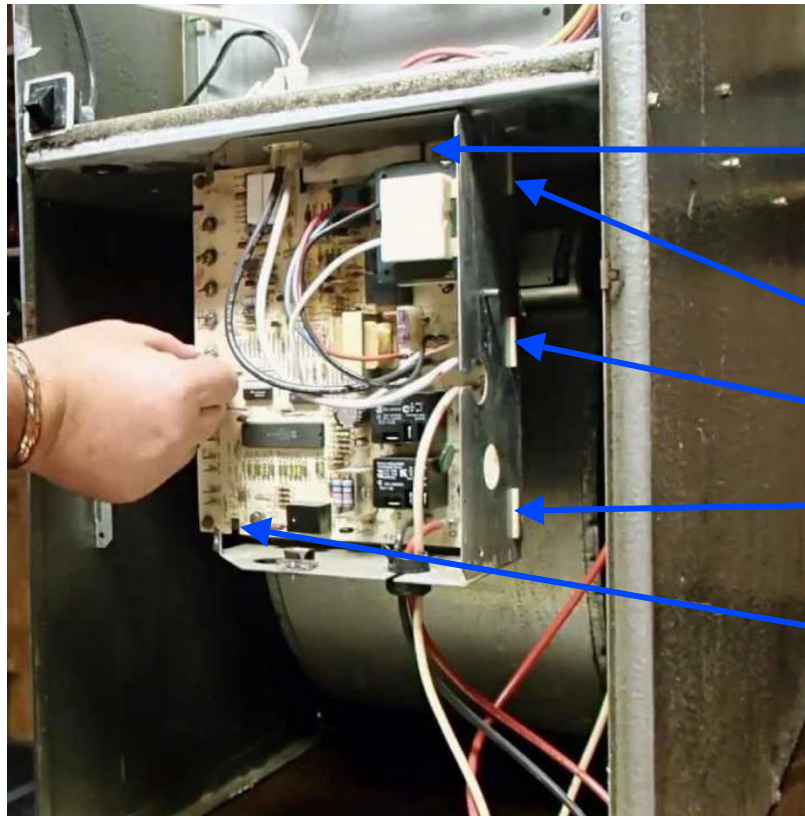


## 120v & 24v components:

1. Mounting tabs
2. 7 120v neutral spades
3. 120v to transformer spade
4. 120v hot input spade
5. 120v EAC Spade
6. 3 Extra blower speed park spades
7. PSC blower fan only spade
8. PSC blower cool spade
9. PSC blower heat spade
10. Edge tabs for connection to furnace
11. Flame test pins
12. Heat on/off, fan dipswitches
13. Fault recall button
14. 24v hot & common spades
15. Status / fault LED
16. 24v thermostat bus
17. 3a low voltage fuse
18. Twinning spade

# How it connects

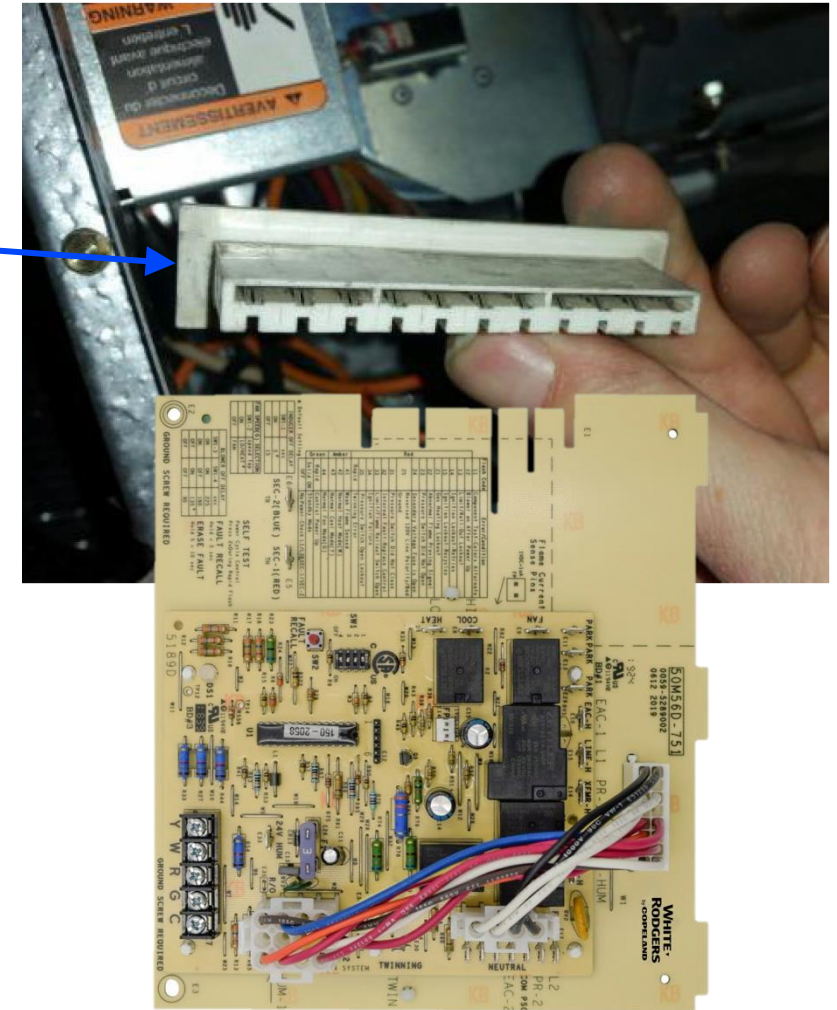
## Control board contacts



Furnace harness connector

Mounting tabs

Mounting screws



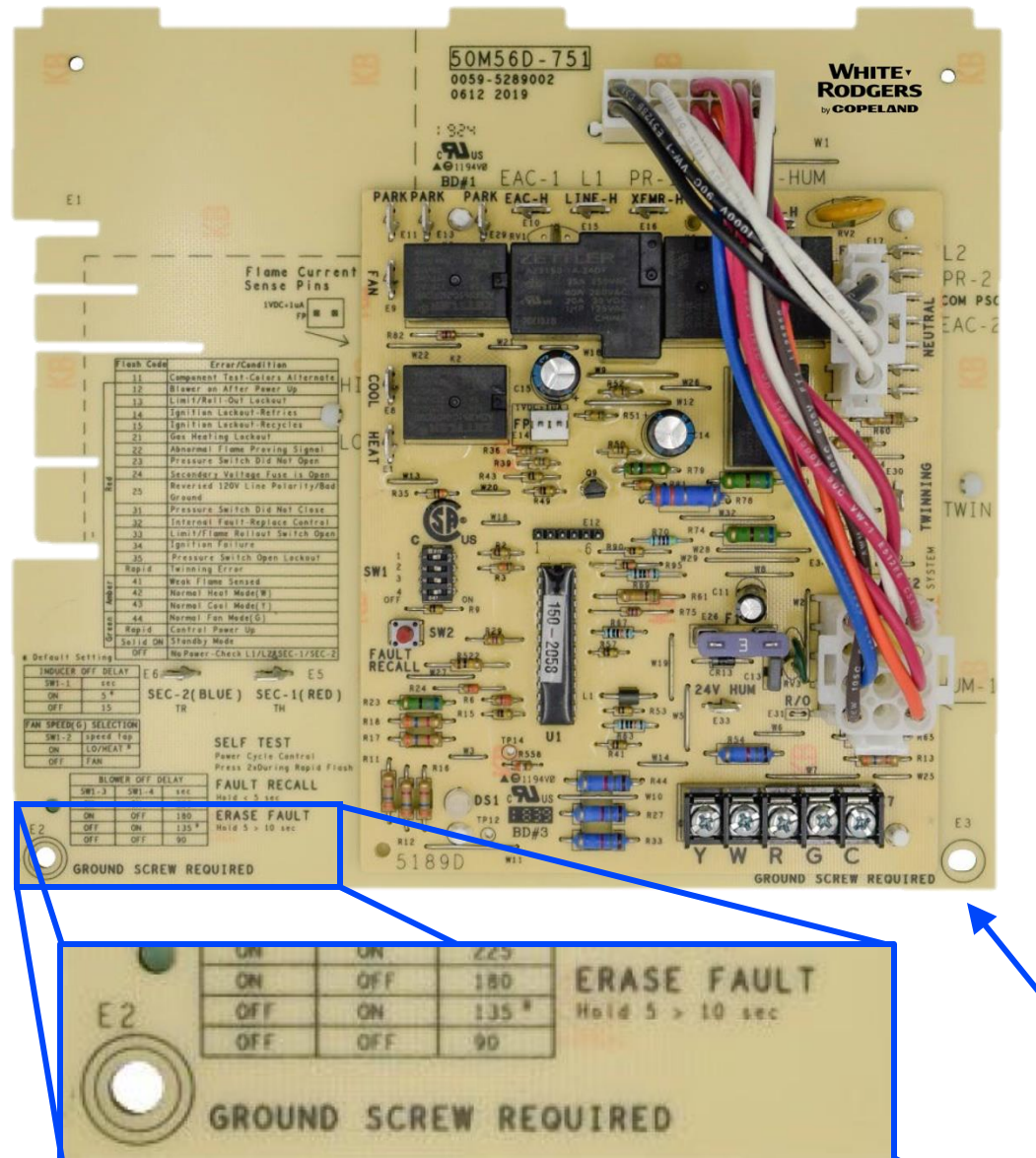
The Edge Card slides in the connector located in the panel between the burner & blower compartment

# Required grounding

## Proper grounding

For the control to properly function, a mounting screw is required to be installed in one of the 2 corners of the control board.

2x 1/2" screws are provided



# Utilizing the flame test pin feature

## Understanding test pins

2 short pins are located on upper left quadrant of the control board.

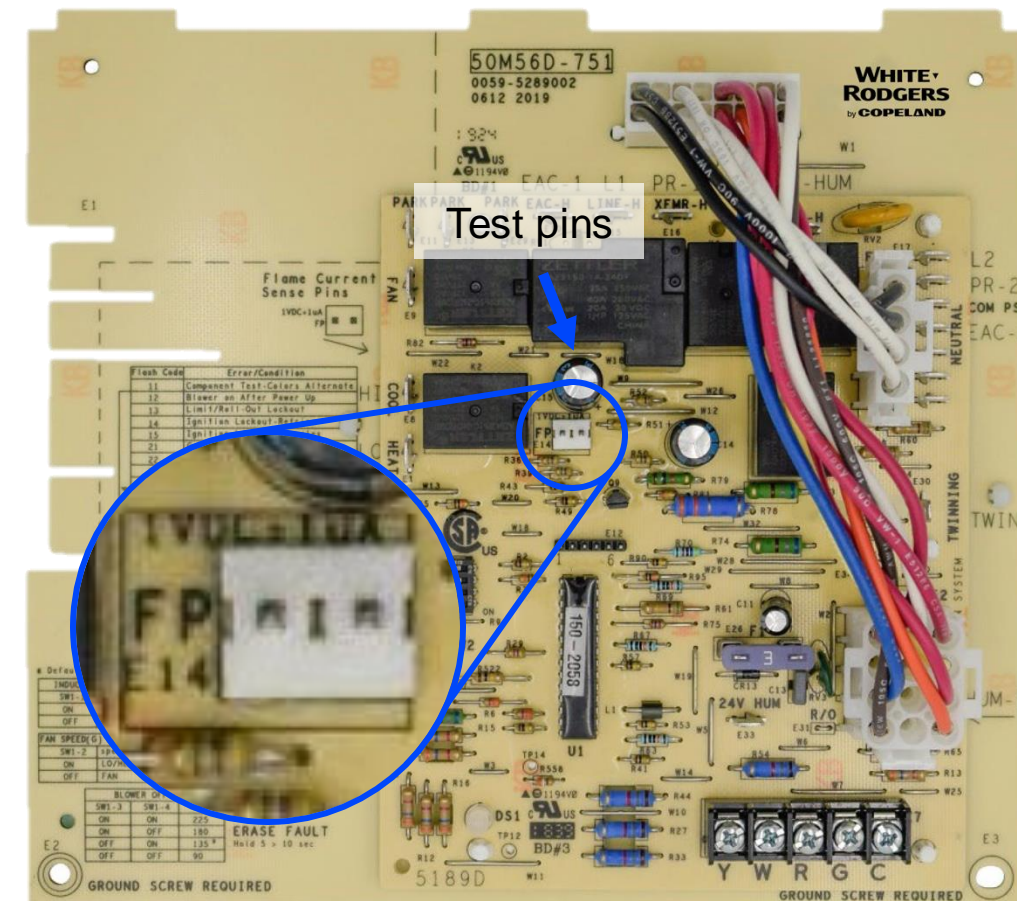
To test:

The furnace must have a call for heat and the burners producing flame.

Set a multimeter to vDC and place a meter probe on each pin.

Convert vDc to MicroAmps using a 1:1 ratio.

A good flame sense reading will be between 1.0 – 5.0  $\mu$ A.

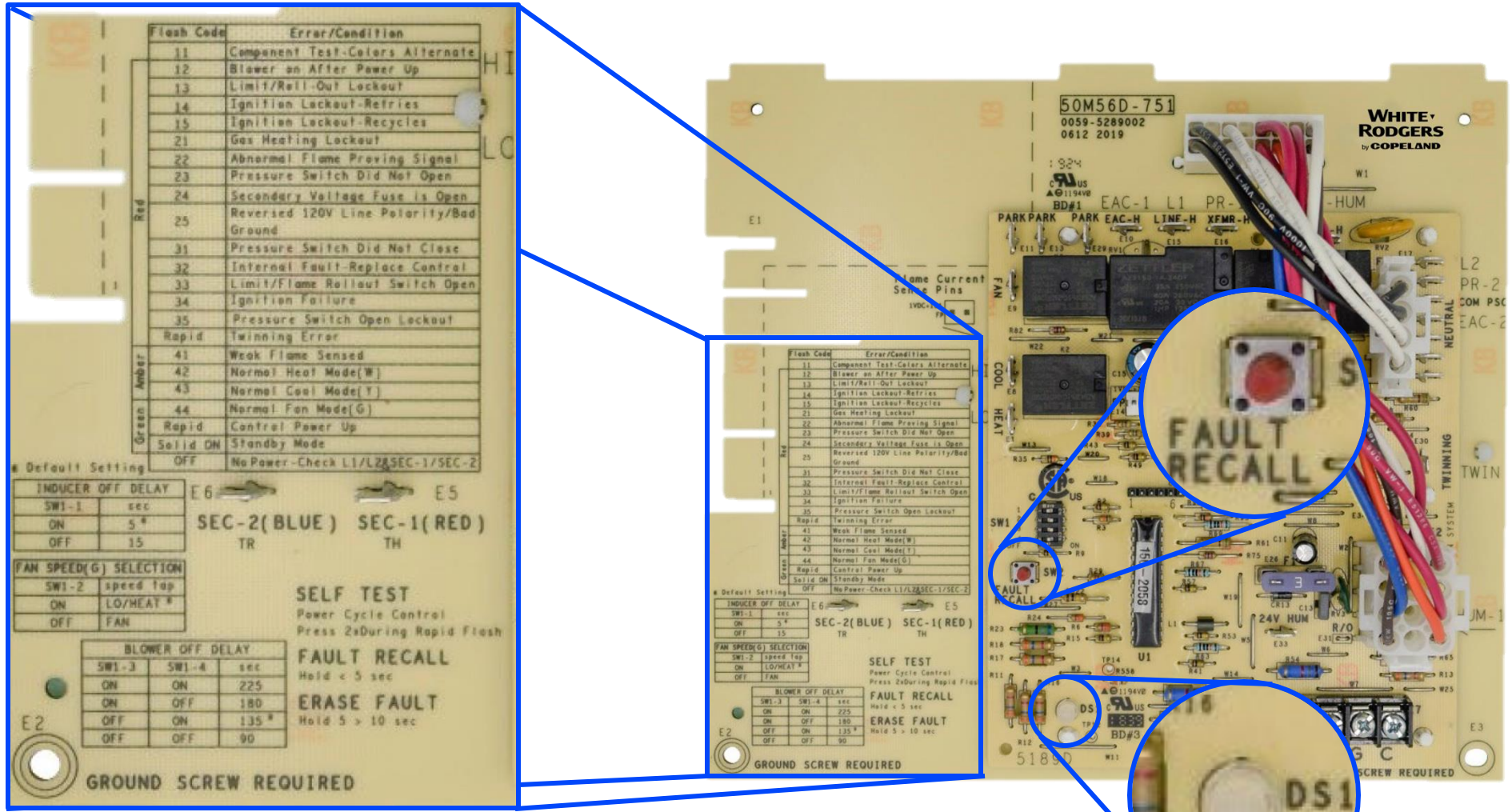


Early board – modern feature

# Status & fault codes for troubleshooting

Only White-Rodgers offers the fault recall / clearing feature

- The Fault Button allows for:
- Recall of the last 5 faults
  - Fault code erasure
  - Place the control into the Self-Test mode



Troubleshooting is made easy with a fault code label on the control card

Tri-color LED indicator

# What's in the box

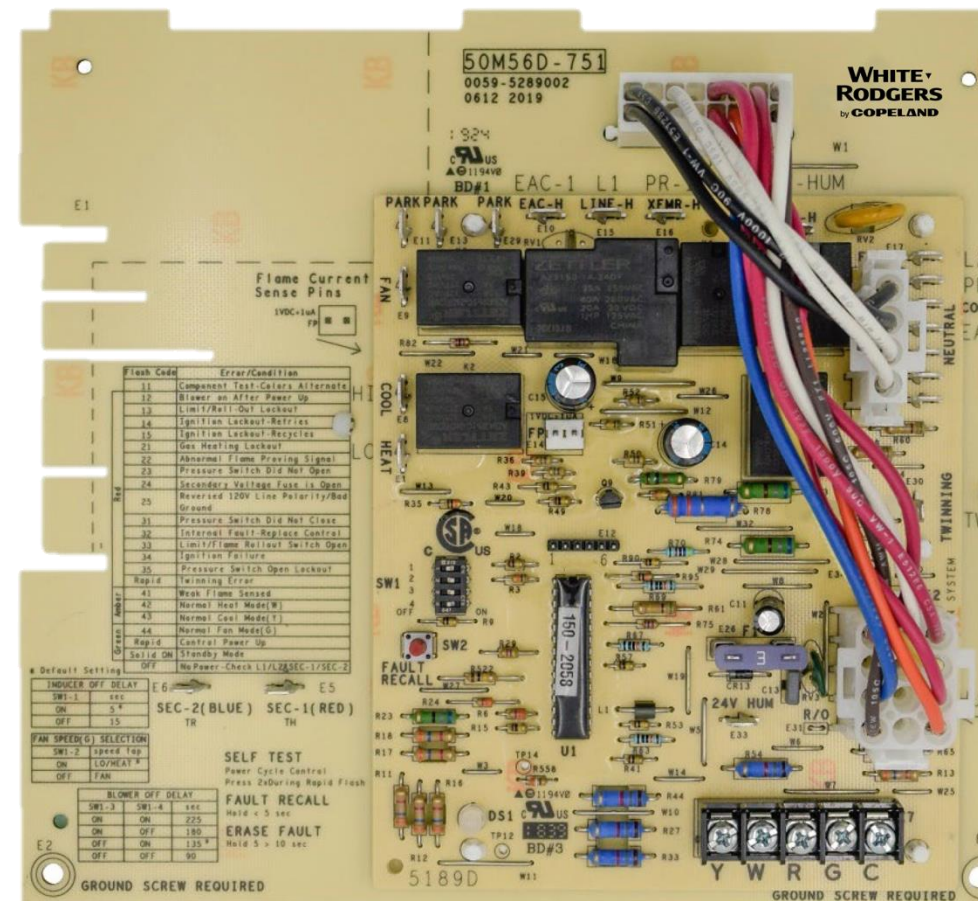
## List of contents:

- Carrier "Edge Card" IFC
- Instruction sheet
- 2x -1/2" mounting screws

## Cross-References:

- 784-9-I
- CESO110020
- CESO110057-01
- CESO110057-02
- HH84AA016CB1201-2A
- ICM281

## Integrated furnace control



**WHITE RODGERS**  
by COPELAND

**50M56D-751**  
Carrier Integrated Single Stage  
120V Hot Surface Ignition Control Kit  
**INSTALLATION INSTRUCTIONS**

**FAILURE TO READ AND FOLLOW ALL INSTRUCTIONS CAREFULLY BEFORE INSTALLING OR OPERATING THIS CONTROL COULD CAUSE PERSONAL INJURY AND/OR PROPERTY DAMAGE.**

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**PARTS INCLUDED**

- 50M56D-751 Integrated Furnace Control
- Installation Instructions
- 2 - 1/2" Sheet Metal Screws

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**DESCRIPTION**

50M56D-751 is an aftermarket direct replacement control kit for Carrier single stage furnace products with PSC blower motors.

**TWINNING:** 50M56D-751 can be twinned. The other control must also be a 50M56D-751 to ensure proper functionality.

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**SPECIFICATIONS & TIMINGS**

**ELECTRICAL RATINGS:**  
**Input Low Voltage:** 24 VAC, 60 Hz  
**Input Line Voltage:** 120 VAC, 60 Hz, 1φ  
**Max Input Current:** 0.45 A @ 24 VAC

**Relay Contact Ratings:**  
 Gas Valve: 1.5 A, 0.6 PF @ 24 VAC  
 Ignitor Relay: 1.2 A @ 120 VAC  
 Inducer Relay: 2.8 A @ 120 VAC  
 Circulator Relay: 10 FLA, 25 LRA @ 120 VAC  
 Humidifier Load: 1.0 A @ 24 or 120 VAC  
 Electronic Air Cleaner: 1.0 A @ 120 VAC

**Flame Current Requirements:**  
 Minimum current to ensure flame detection: 0.25 µA DC\*  
 Maximum current for non-detection: 0.1 µA DC  
 Maximum allowable leakage resistance: 100 M ohms  
 \* Measured with a DC ammeter

**Flame Establishing Time:** 0.8 seconds maximum  
**Flame Failure Response Time:** 2.0 seconds maximum

**OPERATING TEMPERATURE RANGE:**  
 -40° to 176°F (-40° to 80°C)

**HUMIDITY RANGE:**  
 5 to 95% relative humidity (non-condensing)

**AGENCY APPROVALS:** UL USA / Canada

**GASES APPROVED:** Natural, Manufactured, Mixed, Liquid Petroleum, and LP Gas Air Mixtures.

**CAUTION**

Risk of Electric Shock. Disconnect electric power to system until installation is complete. Do not use on circuit exceeding specified voltage. Higher voltage will damage control and could cause shock or fire hazard.

This control is not intended for use in locations where it may come in contact with water.

May cause flame rollout. Shut off main gas to heating system until installation is complete.

emerson.com/white-roddgers

PART NO. 37-7757001  
2031

50M56D-751



# White Rodgers one-stop Carrier solution



## HSI gas furnace components



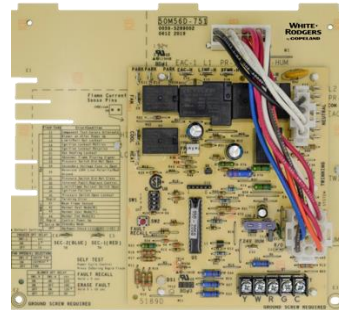
**CARRIER**

50M56U-751



**CARRIER**

50M56D-751



**CARRIER**

21V51D-751



**CARRIER / ICP**

790-751A1



**CARRIER / ICP**

**CARRIER / ICP**

789A-751A1



**CARRIER / ICP**

**CARRIER / ICP**

789A-751KT1



**CARRIER / ICP**

**CARRIER / ICP**

789A-751KT2



### Control boards

- **50M56U-751**  
Redesigned universal
- **50M56D-751**  
New Edge Card
- **21V51D-751** 2-stage PSC,  
ECMx & ECMv

### Flame sensor

- **790-751A1**  
New with OEM adapter

### 120v nitride ignitors

- **789A-751A1** w/o bracket
- **789A-751KT1** w/ bracket &  
connector for 33 1/3" furnaces
- **789A-751KT2** w/ bracket &  
connector for 40" furnaces

Stock your Carrier portfolio with these great products!

# Why contractors trust White-Rodgers

- Industry leading products
  - Used by more OEMs
  - Offering the widest range of universal replacement controls
- Ease of installation
  - Simple, easy to understand instructions
- Reliability of product
  - Quality control provides reliable products
- Affordable
  - Competitive prices
- Supported by knowledgeable representatives
  - Contractor direct phone support



**One stop. One solution.**  
**White-Rodgers comprehensive solutions – delivered**