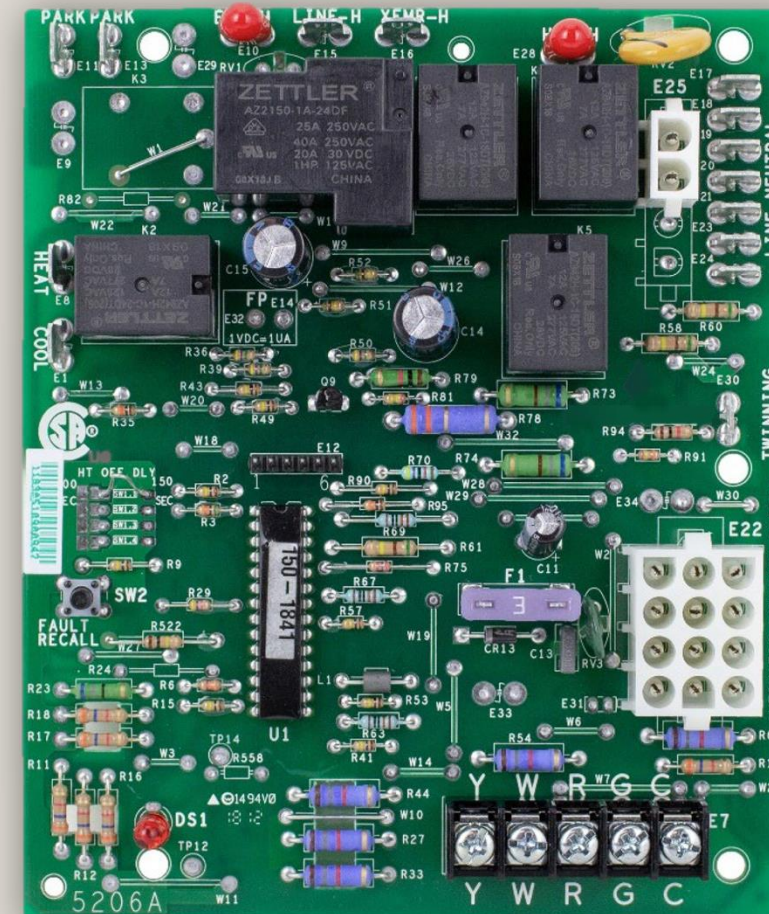


**COPELAND**

# 50M56-707 Direct OEM replacement Goodman single stage IFC

New product introduction



# Introducing White-Rodgers Goodman direct replacement single stage control

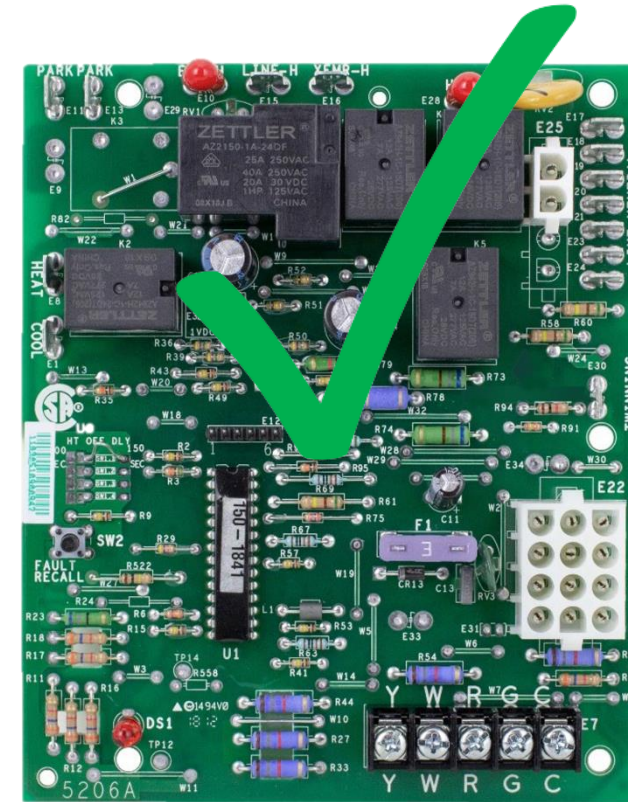
## The White-Rodgers 50M56-707 integrated furnace control

White-Rodgers has added a 5th IFC to our portfolio

The 50M56-707 integrated furnace control fills a niche in covering a newer series of Goodman furnaces. As older furnaces are being replaced, older boards are less in demand. With newer furnaces beginning to see parts fail, the White-Rodgers portfolio is shifting to include these units. Adding newer controls will help to ensure White-Rodgers continues to be the source for OEM aftermarket replacement parts.

White-Rodgers has added a new Goodman direct replacement IFC for the application of:

- Single stage gas
- Hot surface ignition
- PSC blower



**White-Rodgers – Keeping up with newer OEM systems.**

# Why extend the Goodman family?

## White-Rodgers new addition.

With four Goodman OEM controls, why a fifth?

- Cover more Goodman direct replacement solutions

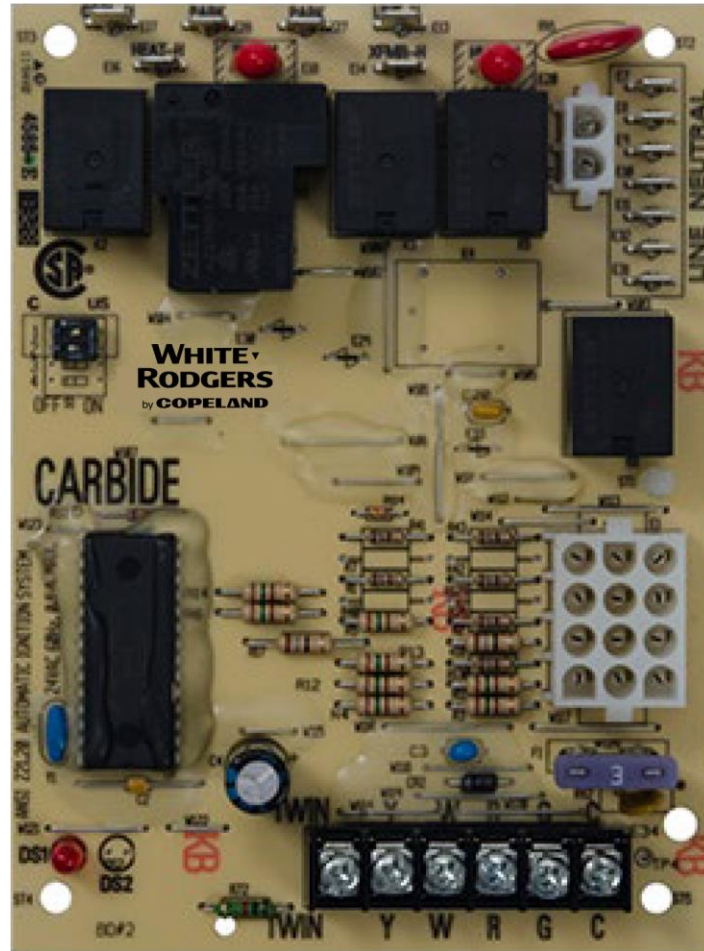
What is the difference in the four and the new one?

- This presentation will review the four existing Goodman OEM controls, introduce the new one, and then show a comparison of the five.



The White-Rodgers Goodman family

# White-Rodgers 50A55-743



Uniqueness:  
7 second ignitor warm-up

## Application & features

### Application

- Single stage gas
- 120v HSI
- PSC blower motor
- Twinning
- Standoff mounting
- Replaces 15 SKU's

### Features

- Red LED status indicator light
- HSI 7sec warm-up
- Dipswitch settings
  - Heat off delay
- 2 park terminals
- Built-in 24v 3A fuse
- Hum & EAC terminals

# White-Rodgers 50T35-743



Uniqueness:  
9-pin Molex & Edge connector

## Application & features

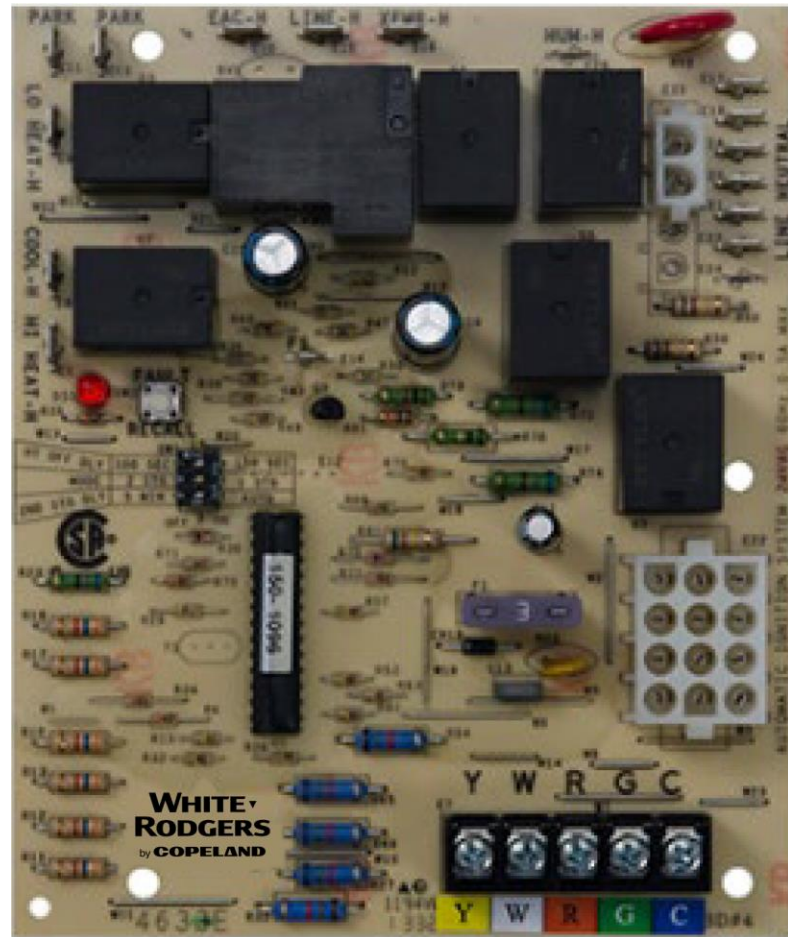
### Application

- Single stage gas
- 120v HSI
- PSC blower motor
- Twinning
- Standoff mounting
- Replaces 12 SKU's

### Features

- Red LED status indicator light
- Jumper pin settings
  - Heat off delay
- 2 park terminals
- Built-in 24v 3A fuse
- Hum & EAC terminals

# White-Rodgers 50M56-743



Uniqueness:  
2 stage gas valve & blower heat speeds

## Application & features

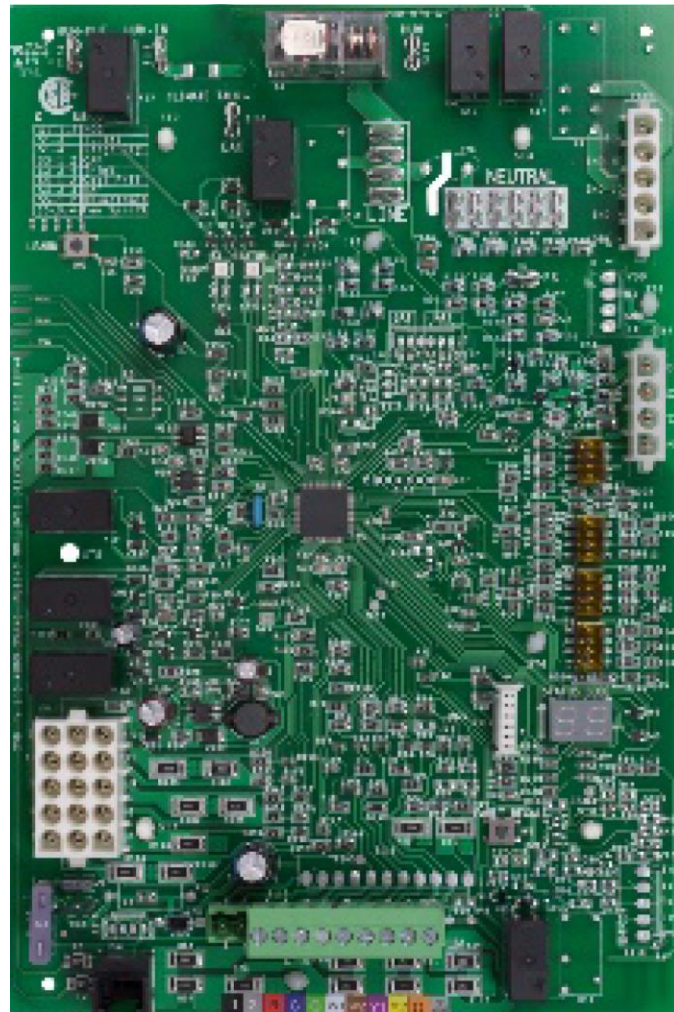
### Application

- Single or two stage gas
- 120v HSI
- PSC blower motor
- Standoff mounting
- Replaces 11 SKU's

### Features

- Red LED status indicator
- Fault recall button
- Dipswitch settings
  - Heat off delay
  - 1 or 2 stage
  - 2nd stage activator
- 2 Park terminals
- Built-in 24v 3A fuse
- 1 Hum & EAC terminal

# White-Rodgers 50C51-707



Uniqueness:  
2 stage communicating control with ECMv blower

## Application & features

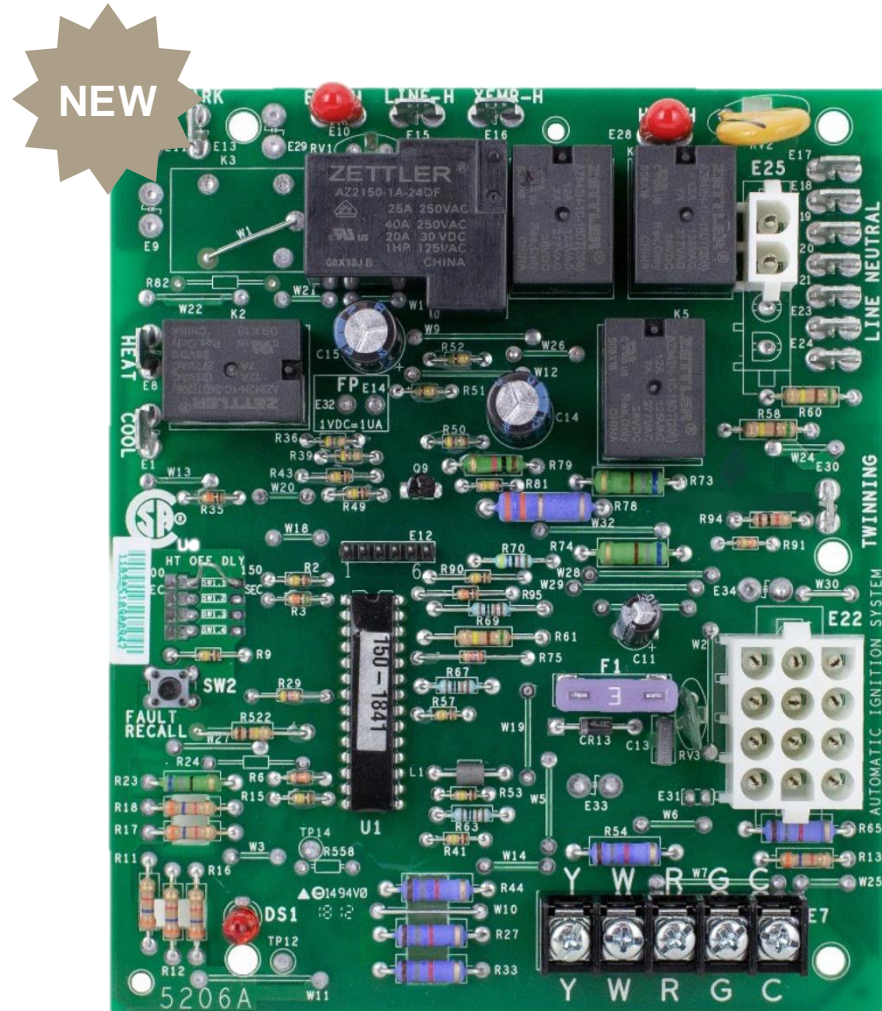
### Application

- Two-stage gas
- 120v HSI
- ECMv blower motor
- Standoff mounting
- Replaces 18 SKU's

### Features

- Works with a communicating or legacy control system
- 2x 7 Segment indicator
- Fault recall button
- Dipswitch settings
  - Heat off delay
  - 1 or 2 stage
  - 2nd stage activator
- Built-in 24v 3A fuse
- 1 Hum & EAC terminal

# White-Rodgers 50M56-707



Uniqueness:  
17 second ignitor warm-up

## Application & features

### Application

- Single stage gas
- 120v HSI
- PSC blower motor
- Twinning
- Standoff mounting
- Replaces 14 SKU's

### Features

- Red LED status / Fault indicator
- Fault recall button
- Heat off delay jumper
- 2 park terminals
- Built-in 24v 3A fuse
- 1 Hum & EAC terminal



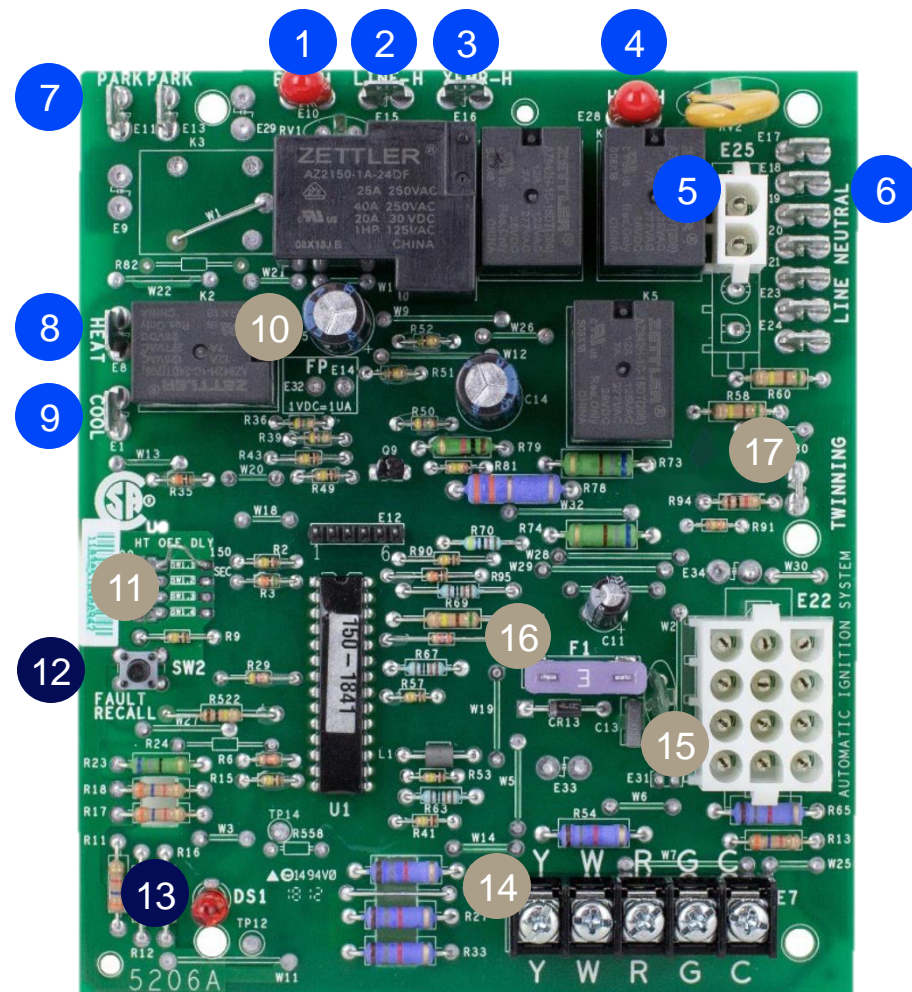
# Integrated furnace controls Goodman comparison

Feature	50A55-743	50T35-743	50M56-743	50C51-707	50M56-707
Stages available	Single stage	Single stage	1 or two-stage	Two-stage	Single stage
Main harness size	12 pin	9 pin	12 pin	15 pin	12 pin
Ignition type	HSI	HSI	HSI	HSI	HSI
Ignitor voltage	120v	120v	120v	120v	120v
Ignitor warm-up time (seconds)	7				17
Inducer motor type	PSC	PSC	PSC	Variable speed	PSC
Blower motor type	PSC	PSC	PSC	Variable speed	PSC
Blower speed taps	Heat, Cool	Heat, Cool	Lo Ht, Hi Ht, CI	4 wire interface	Heat, Cool
Adjustable heat off delay (seconds)	90/120/150/180	90/120/150	100/150	90/120/150/180	100/150
Dedicated humidification terminal	24v or 120v	120v	120v	120v	120v
Dedicated electronic air cleaner terminal	120v	120v	120v	120v	120v
Mounting style	Standoff	Standoff	Standoff	Standoff	Standoff
Twinning	✓	✓			✓
LED display	Diagnostic LED	Diagnostic LED	Diagnostic LED w/ Fault recall	2x 7 Segment display	Diagnostic LED w/ Fault recall
Fault recall button			✓		✓
Main differences	7s Ignitor warm-up	9-pin harness connector	2 stage gas valve & blower capability	Communicating or legacy capability	17s Ignitor warm-up & flame pads
Number of SKU's crossed	15	12	11	18	14

# White-Rodgers Goodman 50M56-707 components



Goodman 50M56-707



## 120v & 24v components:

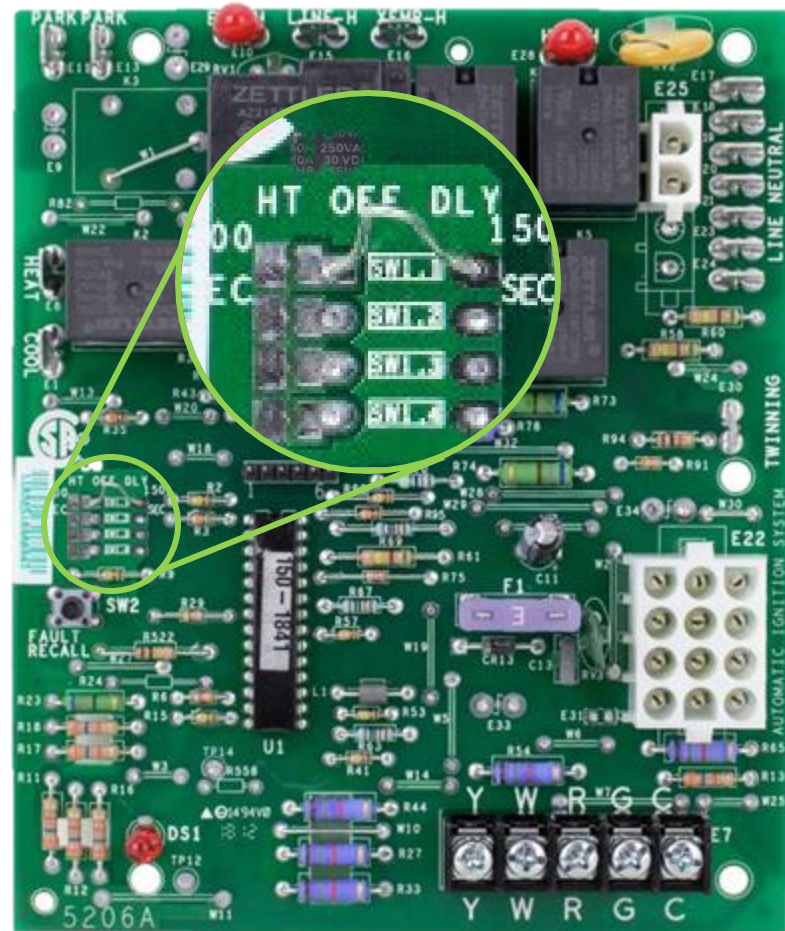
1. 120v EAC spade
2. Line 120v input spade
3. 120v to transformer spade
4. 120v humidifier spade
5. 2 pin inducer/ignitor Molex plug
6. 7 line neutral spades
7. Extra blower speed park spades
8. PSC blower heat spade
9. PSC blower cool spade
10. Flame sense test pad
11. Heat-off delay jumper
12. Fault recall button
13. Status / Fault LED
14. 24v thermostat bus
15. 12 pin Molex furnace connector
16. 3a low voltage fuse
17. Twinning spade

# Twinning feature

- Two 50M56-707 controls can be connected to operate the simultaneously.
- Twinning requires a connection of the **twin** terminal on both boards using an 18ga wire.
- The board with the thermostat connection will fully function including the LED indicator and dipswitch settings. The twinned board will operate simultaneously as determined by the wired board unless “W” or “Y” are powered to it.
- The twinned unit can be wired for heat to come on by utilizing the “W” terminal either with the 1st unit or as a 2nd stage.



# Heat-off delay jumper settings



## Adjusting the Heat-off delay

- The Heat-off delay options are 100 seconds or 150 seconds.
- The default setting with the jumper in place is 150 sec.
- To change the Heat-off delay setting to 100 sec, cut the jumper shown in the magnifier.

# Utilizing the flame test pad feature

## Understanding test pins

2 pads have been placed on the control board to read the flame sense current level.

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 pad.
- Convert vDc to MicroAmps using a 1:1 ratio.
- A good flame sense reading will be between 1.0 – 5.0  $\mu$ A.

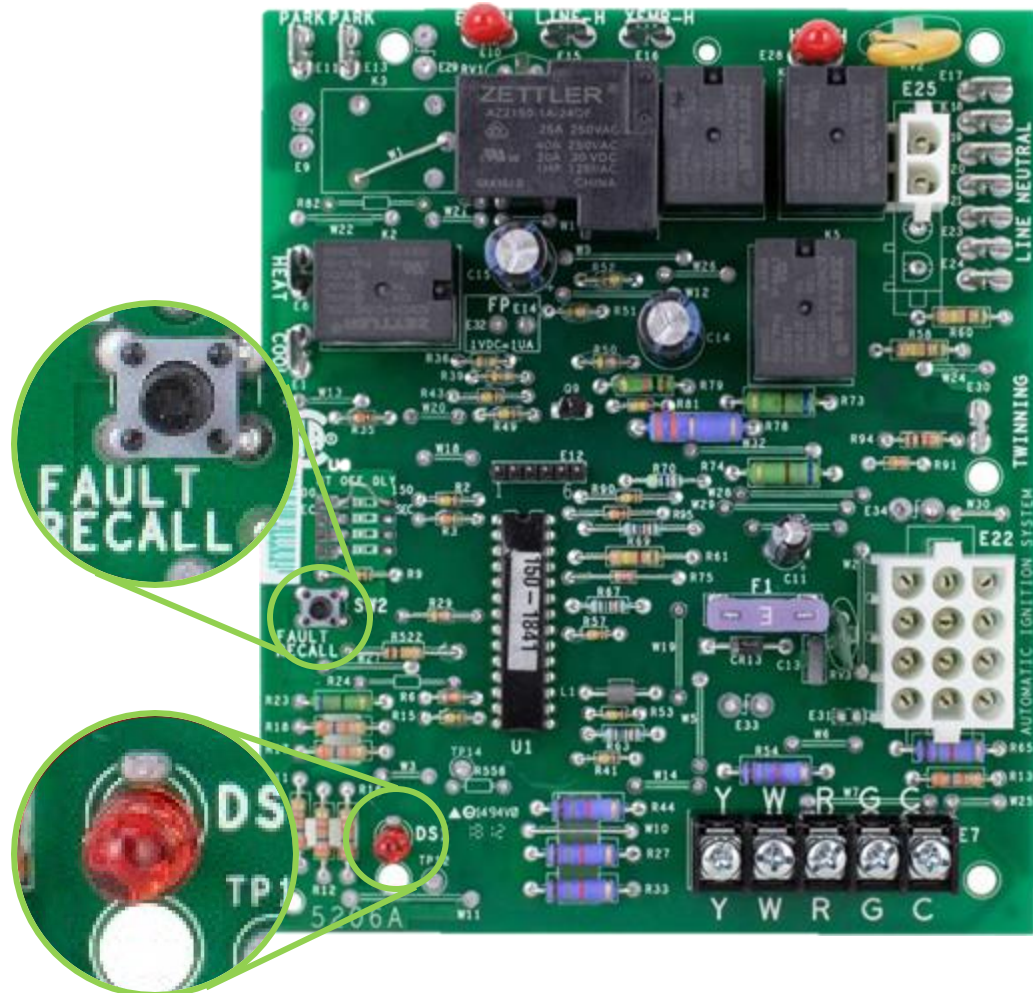


# Fault codes & clearing for troubleshooting

Fault codes match OEM control & existing furnace label.

Red LED Flash	Status/Error Condition
1	External lockout (exceeded retries)
2	Pressure switch stuck closed
3	Pressure switch stuck open
4	Open high temperature limit switch
5	Flame sensed with gas valve de-energized
6	Open rollout switch or open fuse
7	Low flame sense current
8	Ignitor relay fault
9	Twinning error
Continuous On	Normal operation
Off	Control failure

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



Easy to see red LED indicator

# What's in the box

## List of contents:

- Goodman IFC
- Instruction sheet
- 4x Stand-off mounts
- 1x Stand-off isolator

## Integrated furnace control



Cross Reference Replacement / Tableau de renvoi

Goodman	White-Rodgers	ICM
PCBBF140S	50M56-291	ICM2810
PCBBF140	50M56-281	
PCBBF138S		
PCBBF138		
PCBBF136S		
PCBBF136		
PCBBF135S		
PCBBF135		
PCBBF134S		
PCBBF134		

Cross-references are listed on the box

50M56-707

# 50M56-707 competitive comparison

Feature	White-Rodgers 50M56-707	Competition ICM2810
Board cross references	14	2
Standard mounting options	4 corners	4 corners
Ignitor warm-up time in seconds	17	18
Flame sense test points	Test pads	X
Twinning feature	✓	✓
Unused motor / park terminals	2	2
LED display	Easy to see red	Small
Fault recall	Simple push button	Jumper pins
Fault clearing	Simple push button	X

**White-Rodgers has more cross references**



# White Rodgers one-stop Goodman solution

**Goodman** OEM replacement components

**GOODMAN**

50A55-743



**GOODMAN**

50T35-743



**GOODMAN**

50M56-743



**GOODMAN**

50C51-707



**GOODMAN**

50M56-707



**GOODMAN**

790-707A1



**GOODMAN**

789A-707A1



Integrated controls  
Flame sensor  
120v Nitride ignitor  
Air handler control  
A/C / H/P control

**GOODMAN**

48C21-707



**GOODMAN**

49S25-707



Offer a complete Goodman portfolio with these great products!

# Why contractors trust White-Rodgers

- Industry leading products
  - Used by more OEM's
  - 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**