Universal Single Stage Furnace Controls for PSC and ECMx Blower Motors

50M56U-843, 50X57-843 Product Launch 2018

EMERSON

THE ANSWER TO ALMOST ANY CALL CAN BE AS CLOSE AS YOUR TRUCK.
Universal controls that work in a variety of systems and applications.
Stock your truck with White-Rodgers.

Single Stage Furnace Market Facts

Furnace Type	Installed Base	2017 OEM Market	White-Rodgers Cross References	Universal Control
Single Stage	32M units	2.4M units	445	
PSC Blower	30M units 20+ year installed base	2M units	410	50M56U-843
ECMx Blower	2M Units 10+ year installed base	400K units	35	50X57-843

DOE 2014 "Furnace fan efficiency ruling"
No PSC blowers in new furnaces by July 3rd, 2019

White-Rodgers offers a comprehensive solution for universal single stage furnace control replacement

50M56U-843 Upgrade

Universal Single Stage IFC for PSC Blowers

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Current Universal Integrated Furnace Control
50M56U-843

What does the kit include?

– Integrated universal single stage furnace control for PSC blower motors and hot surface ignition
– HotRod™ 120V ignitor
– Adapter harnesses, accessories, and instructions

The Industry's BEST!

Why is it necessary?

– Universal controls reduce inventory and save time by eliminating extra trips

Why is it better?

– Replaces more controls than any other kit
– Complete upgrade with new ignitor included
– Covered control with fault and service information on the label
– Adds push button fault recall and dedicated FAN only speed to many units

Replaces most single stage residential applications with PSC fan motors and hot surface ignition produced in last 20+ years

50M56U-843 Upgrade
## The Best Single Stage Kit Just Got Better

New design provides easier installation 🔧

– New cover fits all OEM models
  • Easy Carrier/ICP mounting
– Top use "F" harness no longer needed
  • 75% of all applications install without adapter harnesses
– Improved rollout jumper
– Clear, simple color instructions

New features ✔

1. Twinning
2. Tri-color LED & status codes (was red only)
3. 24V humidifier option (still have 120V too)
4. Flame current test pins
5. More dipswitch setup options
6. Field "self-test" checkout mode by pushbutton
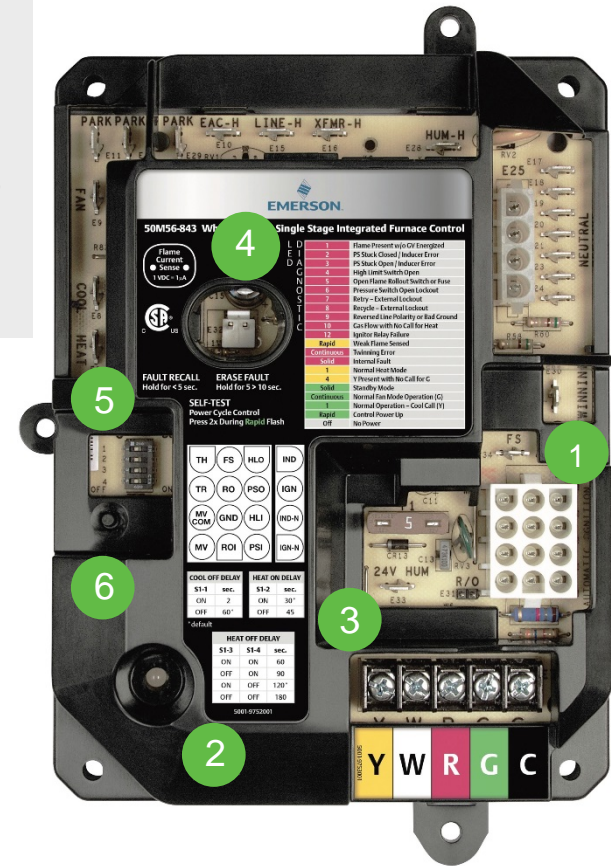
Added 99 cross references. Improved design replaces over 400 models

50M56U-843
Competitive Comparison

FEATURE	BRAND X	WR 50M56U-843
For single stage & PSC blower	✓	✓
Cross references	**200**	**400**
Ignitor voltage serviced	120V	80V & 120V
Blower delay dipswitches	4	4
Tri-color LED displays	✓	✓
Rollout accessory	wire	easy jumper
Flame test pins/pads	✗	✓
Full cover	✗	✓
Fault code label	✗	✓
Fault recall & clearing	jumper R & D terminals	simple push button
Electronic air cleaner output	✓	✓
Humidifier output	120V only	24V or 120V
Fuse, twinning, test mode	✓	✓

Ease of Installation
For Any OEM Model

Carrier uses the three tab / tray mount on all furnaces.
Two tabs simply slide in, one tab & screw holds in place.
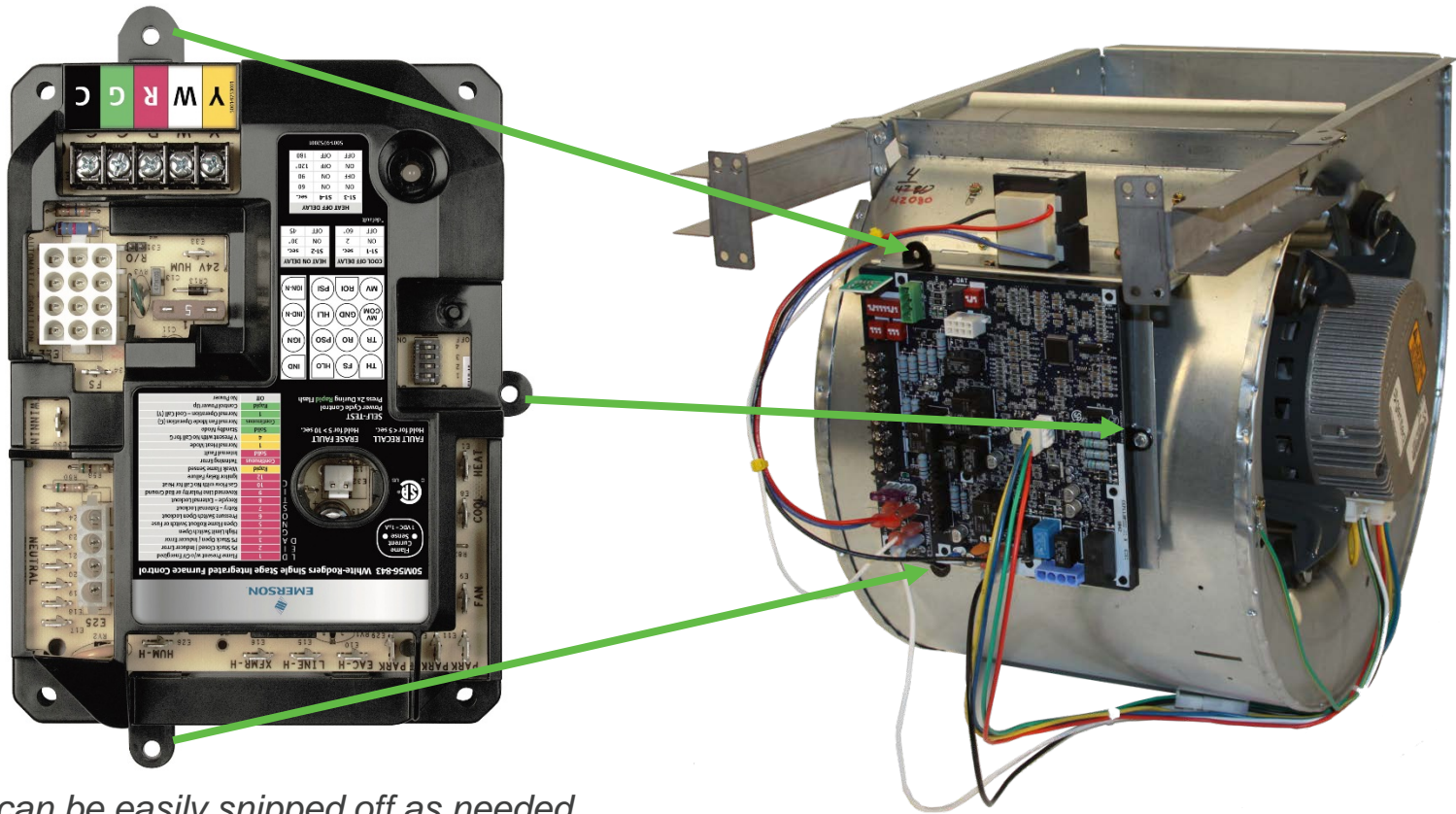
Tabs can be easily snipped off as needed

New cover allows simple Carrier mounting option

Ease of Installation
## Eliminated the "F" or Flame Sense Harness

Current Design

Control being replaced connected flame sensor through 12-pin main harness

"F"

No flame sensor connection available so external connection via wire required
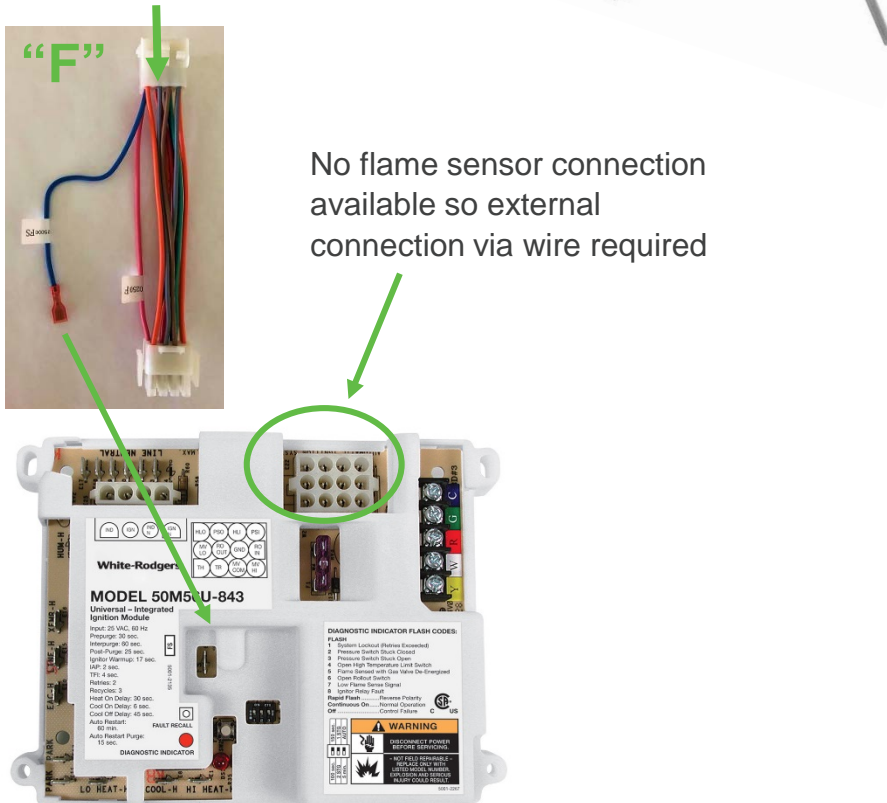
New Design

Most factory wiring plugs directly into control

New design accommodates flame sensor connected either externally or through the main harness…no more "F" harness needed!
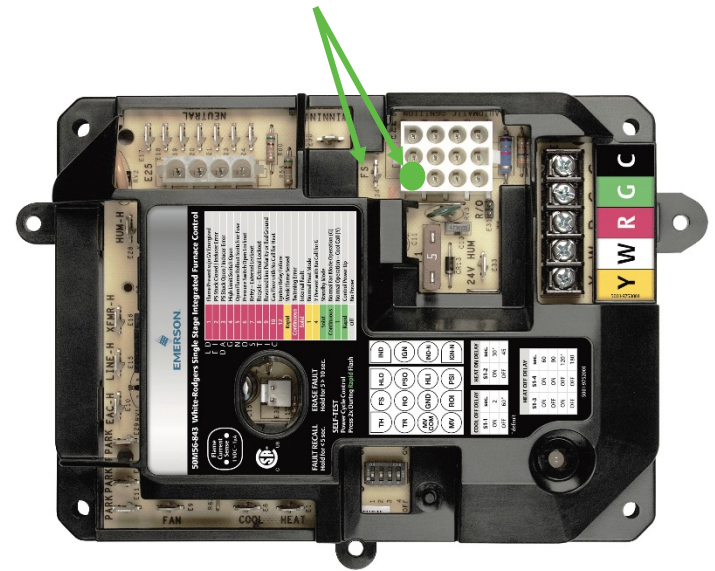
75% of all applications now install without any adapter harnesses!

Ease of Installation
Improved Rollout Jumper

Current Design 🙁

Pin 11 (RO In)

Jumper 0151-290600
(for Trane and American
Standard applications and
York P3UR/PCLU only)

Pin 5 (RO Out)
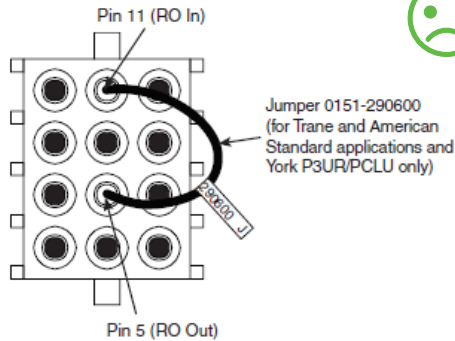
**Figure 2. 12 Pin Connector (back view)
on existing Wire Harness in Furnace**

Jumper wire manually inserted into factory wiring

White-Rodgers
MODEL 50M56U-843
Universal – Integrated Ignition Module
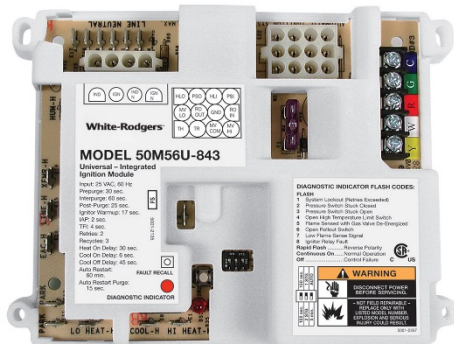
New Design
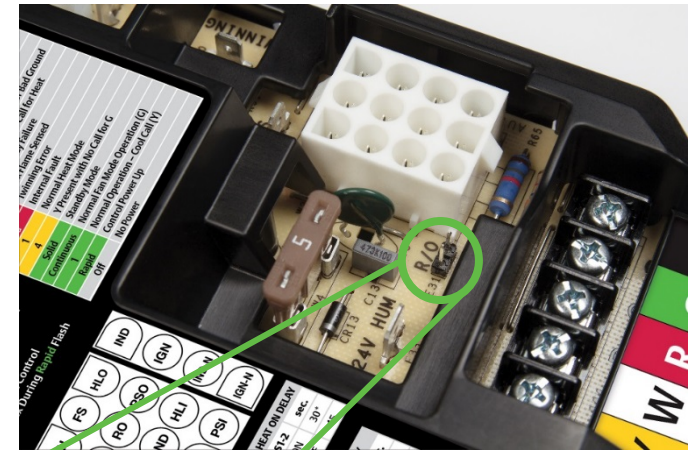
Rollout Shunt Jumper

Required on all TRANE/AMERICAN STANDARD furnaces and YORK P3UR/PCLU models
0092-1040

Shunt jumper easily placed onto 2-pin header 🙂

Part will be taped to control cover

Some furnaces are mfg. without a separate rollout switch. The jumper "closes" the I/O in the 12-pin connector to avoid false errors.

Clear, Simplified Color Instructions
Every Item Included and Its Use Described

MAIN HARNESS ADAPTERS A, B, & M

A — Goodman/Amana Brands, ICM (50T35 variants)

B — Nordyne Brands, Rheem/Ruud Brands
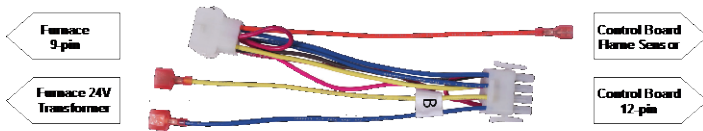
M — Carrier/ICP Brands

CARRIER/ICP BRANDS BLOWER MOTOR NEUTRAL ADAPTER

L

INSTALLATION ACCESSORIES

- Wiring Extensions can be used if any existing wires do not reach the new control board, for example blower motor leads or transformer wiring
- Plastic Standoffs can be used if mounting the control without plastic cover
- Mounting Screws can be used with the plastic cover CORNER HOLES or MOUNTING TABS
- Wire Ties can be used to secure any wiring as needed

¼" x ¼" Spade Wire Extensions 8.5" Length
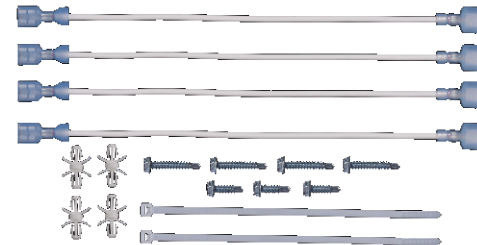
INSTALLATION

MOUNTING AND WIRING

NOTE: All wiring should be installed according to local and national electrical codes and ordinances.

1. Disconnect electrical power and gas supply to unit, then remove unit access panels.
2. Mark and disconnect all wires from the existing control, then remove existing control.
3. 50M56U-843 can be mounted in any orientation. Select a location that will not damage, obstruct or place any stress on the terminations or harnesses.
4. Mount 50M56U-843 in the unit using one of the three mounting options noted on page 7. Be certain not to damage any components such as transformers, wire harness or blower wheels when drilling or installing screws.
5. Refer to **Harness Selection Table** and select the proper wire adapter(s) needed to replace the board (if applicable).
6. Connect all the wires back onto 50M56U-843 control board referencing **Harness Descriptions** and **Wiring Diagram** as needed.
7. Replace existing ignitor with the new 120V HotRod ignitor furnished in the kit.
8. Ensure all wires are secure to the control board and unused blower speed wires are attached to the PARK terminals. Apply wire ties as needed to secure wiring.
9. Verify Cool Off Delay, Heat On Delay, and Heat Off Delay Dipswitch settings.
10. Reinstall unit access panels and reconnect electric power and gas supply to the unit.
11. Verify unit operation in heating, cooling, and fan only modes.

Packaging and Cross Reference Improvements

Cross Reference

– Orange shading indicates 80V application where ignitor must be changed
– Added 99 cross references

Removed 7 Cross References

PCB00109	PCBBF122S
PCBBF109	PCBBF132
PCBBF109S	PCBBF132S
PCBBF122	

50M56U-843 upgrade design
doesn't support 2-stage gas valve

Use 50M56-743 for Goodman Hybrid
or multi-speed furnaces

Update your cross reference databases

50X57-843 First Launch

Universal Single Stage IFC for ECMx Blowers

The Industry's First Universal Solution for the Expanding ECMx (X13) Single Stage Market

Easy installation 🔧

- Cover fits all OEM models
  - Easy Carrier/ICP mounting
- Minimal harnesses
  - Patented parallel connectors
- Clear, simple color instructions

Best features from PSC Blower Model 👍

- Twinning
- Tri-color LED & status codes
- 24V & 120V humidifier options
- Flame current test pins
- Easy rollout jumper installation
- More dipswitch setup options
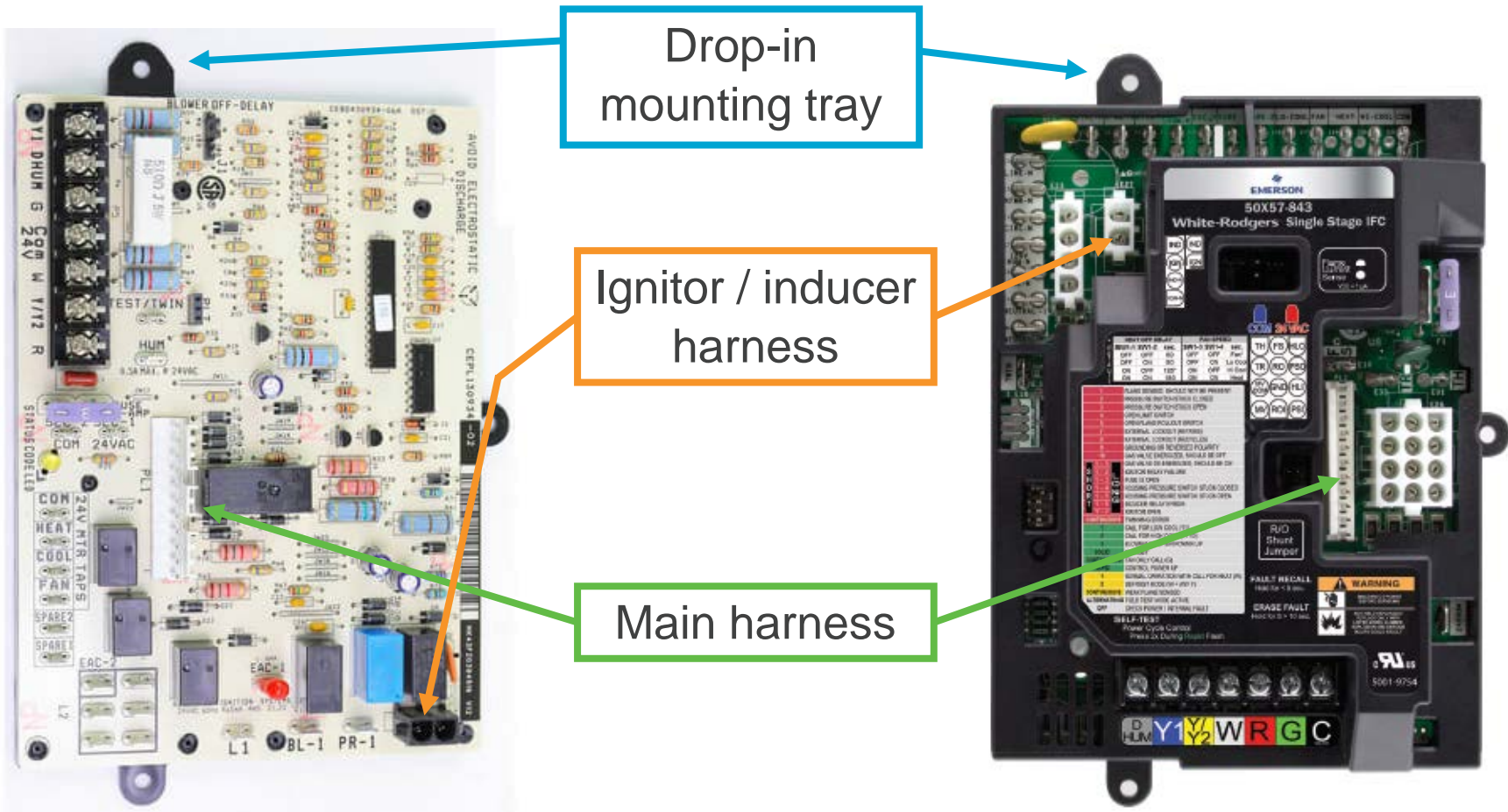- Field "self-test" mode for checkout
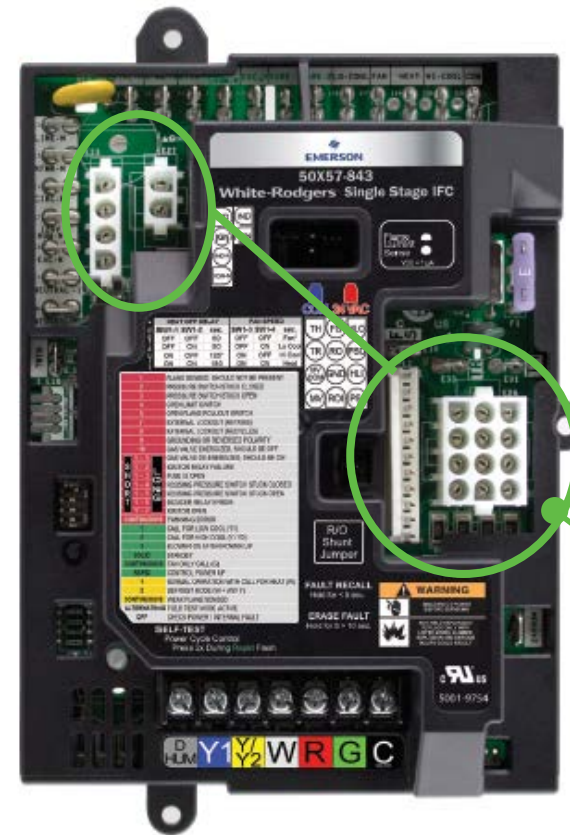
Does not include an ignitor because most units are built with 120V
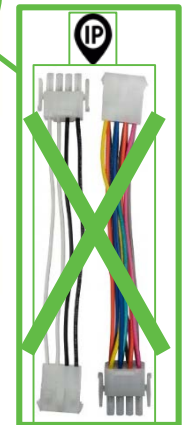
50X57-843 for ECMx provides the same great features as 50M56U

Simple Replacement for Carrier / ICP Brands OEM Style Mounting and Wiring Connectors

Drop-in mounting tray

Ignitor / inducer harness

Main harness

Carrier brands factory wiring plugs directly into 50X57 without adapters

50X57-843 – 35 Cross References

Carrier / ICP Brands
1183386
1184412
CEPL130934-01
CEPL130934-02
CEPL131011-01
CEPL131011-02
HK42FZ027
HK42FZ033
HK42FZ039
HK42FZ047

Grainger
115Z36
115Z39
116J02

Johnstone
L45-086

Lennox Brands
103217-01
103217-02

607436-01
607436-02
79W84
85W79

Trane / American Standard Brands
CNT04711
CNT06664
CNT07737
CNT07738

D342359P01
D342359P02
D342359P03
D342359P04

White-Rodgers
50A67-476-01
50A67-476-02
50A67-507-01
50A67-507-02
50X57-843

York / JCI Brands
542760
S1 03102951001

▨ 80V application which requires 120V Ignitor upgrade

Services Carrier, Lennox, Trane, & York

- Goodman doesn't manufacture a single stage ECMx furnace yet
- Rheem is SPARK ignition, can't replace with this platform
- Nordyne has very small volume to date, no adapter harness at this time

The only universal single stage control for ECMx on the market