

Universal Two-Stage HSI Integrated Variable-Speed (ECM) Circulator Furnace Control Kit

21V51U-843

Replaces:

All White-Rodgers 50V51-XXX's
and 50V61-XXX's Two-Stage HSI
Systems with 80V or 120V Ignitor

INCLUDED

HotRod™ Universal
Ignitor Kit – 21D64-2

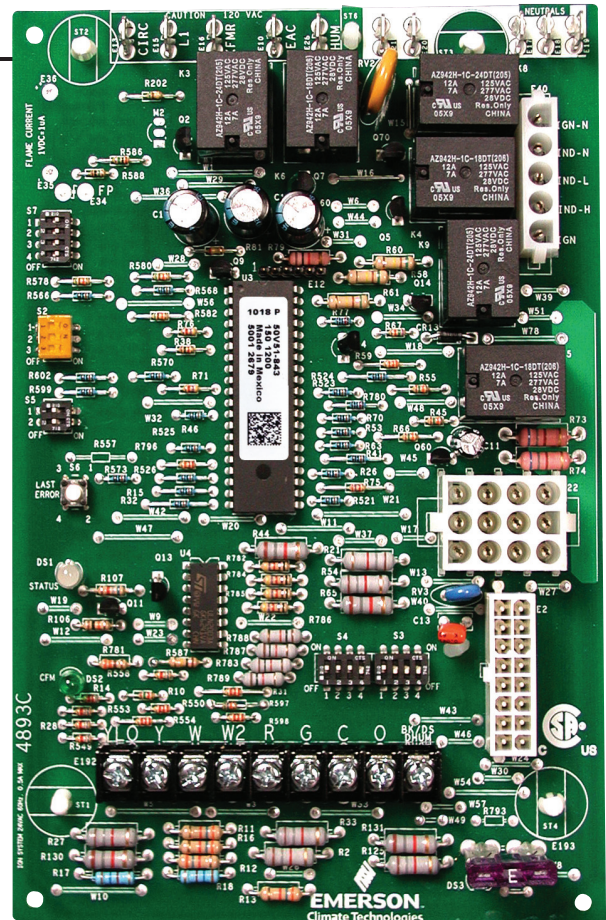


Replace the Original with the Original.

21V51U-843 simplifies stocking,
installation and ensures peak
system performance.

Easy-Install Kit includes everything you need
for quick and accurate replacement:

- Ignition Control Module – 50V51-843
- Wiring Harnesses for Amana/Goodman
- HotRod™ Universal Ignitor Kit – 21D64-2
- Installation Instructions and OEM Cross-Reference



Universal Integrated Furnace Module 50V51-843



White-Rodgers™

EMERSON
Climate Technologies

Universal Two-Stage HSI Integrated Variable-Speed (ECM) Circulator Furnace Control Kit

Replaces:

All White-Rodgers 50V51-XXX's and 50V61-XXX's Two-Stage HSI Systems with 80V or 120V Ignitor

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Features

- 120 VAC Ignitor Output
- 120 VAC Two-Speed Inducer Output
- 120 VAC Humidifier Output
- 120 VAC Electronic Air Cleaner Output
- 2-Stage Gas Valve Output
- 16-Pin Variable Speed Circulator Output
- OEM Application – Dipswitch Selectable
- Fuse Protection – 3 Amp
- Furnace Status LED – Tri-Color (Green, Red and Amber)
- CFM LED – (Green)
- Heat Fan OFF Delay (Dipswitch Selectable)
- Fan ON Delay for Cooling
- Auto Second Stage Delay (Dipswitch Selectable Mode)
- Historical Fault Retrieval by Pushbutton
- YLO, Y, W, W2, R, G, C, O, BK/DS/ Dehum Terminals
- Pressure Switch Inputs and Monitoring
- Flash Microprocessor with Non-Volatile Memory
- Flame Current Measurement Points

Specifications

Electrical Ratings [@ 77°F (25°C)]

Input Voltage: 24 VAC, 60 Hz (Class II transformer required)
Nom. Input Current @ 24 VAC: 595 mA + MV

Relay Load Ratings

Gas Valve Relays: 1.5 amps @ 24 VAC, 60 Hz
Inducer Relays: 2.2 FLA – 3.5 LRA @ 120 VAC, 60 Hz
Humidifier Load: 1.0 amp max. @ 120 VAC, 60 Hz
Electronic Air Cleaner Load: 1.0 amp max. @ 120 VAC, 60 Hz
Ignitor Relay: 4.0 amps max. @ 132 VAC, 60 Hz

Flame Current Requirements

Minimum current to insure flame detection: 0.3 µA DC*
Maximum current for non-detection: 0.1 µA DC*
Maximum allowable leakage resistance: 100 M ohms
*Measured with a DC microammeter in the flame probe lead

Operating Temperature Range

-40° to 175°F (-40° to 80°C)

Humidity Range

5% to 93% relative humidity (non-condensing)

Timing Specifications (@ 60 Hz)

Flame Failure Response Time: 2.0 sec. max.

Gases Approved: Natural, Manufactured, Mixed, Liquefied
Petroleum and LP Gas/Air Mixtures are all approved for use.

Dimensions

5.25" W x 8" H x 1.25" D

For Additional Information

Visit www.white-roddgers.com

Timing Specifications

(All times are in seconds unless noted otherwise)

21V51U-843	
Pre-purge	15
Ignitor warm-up	17
Trial for ignition period	4
Ignition activation period	3
Retries	2 times
Valve sequence period	12
Interpurge	60
Post-purge	15
Lockout time	300
Heat delay to fan ON	45
Heat delay to fan OFF*	90/120/150/180
Cool delay to fan ON	5
Cool delay to fan OFF	60
Delay to fan ON	0
Auto reset	60 minutes
Electronic air cleaner	Yes
Humidifier	Yes

* These times will vary depending on option switch position. See OPERATION section for further information.

21V51U-843 Cross Reference Application Data:

Module Model #	Furnace Model	Harness	Ignitor	Furnace OEM
18M9901	G60DFV (X) or G60UHV	None required	21D64-2*	Lennox
20300002	N/A			Amana Goodman
20300004	N/A			Amana Goodman
20300006	Same as 50V61-289			Amana Goodman
49M5901	G60UHV or G61MPV			Lennox
50V51-243	FC8V, FC9V, FL8V, FL9V, GM8V, GM9V, LC8V, LL8V, LM8V, PV8A, PV9A or PV9B	A,B	Use existing or 21D64-2	Coleman Evcon/Luxaire York
50V51-288	N/A			Amana Goodman
50V51-289	N/A			Amana Goodman
50V51-290	N/A			Amana Goodman
50V51-507	XV80 or XV80i			American Standard/Trane
50V61-120	G60DFV (X), G60UHV or G61MPV	None required	21D64-2*	American Standard/Trane
50V61-143	CDX1-75N, CDX1-100N, CDX1-125N, CHX1-75N, CHX1-100N or CHX1-125N			Lennox
50V61-288	N/A			Thermo Pride
50V61-289	AMV91155DXA			Amana Goodman
50V61-289	AMV81155CXA			Amana Goodman
50V61-289	ADV80703BXA			Amana Goodman
50V61-289	ADV80905CXA			Amana Goodman
50V61-289	AMV90453BXA			Amana Goodman

Module Model #	Furnace Model	Harness	Ignitor	Furnace OEM		
50V61-289	AMV90704CXA	None required	21D64-2*	Amana Goodman		
50V61-289	AMV90905DXA			Amana Goodman		
50V61-289	AMV80703BXA			Amana Goodman		
50V61-289	AMV80905CXA			Amana Goodman		
50V61-289	AMV80704BXA			Amana Goodman		
50V61-289	ADV81155CXA			Amana Goodman		
50V61-289	AMV90704CXA			Amana Goodman		
50V61-507	XV80 or XV80i			American Standard Trane		
B1809925	N/A			A,B	Use existing or 21D64-2	Amana/Goodman
B1809927	N/A					Amana/Goodman
B1809927S	N/A	Amana/Goodman				
CNT03078	XV80 or XV80i	None required	21D64-2*	American Standard Trane		
D156245P01	XV80 or XV80i			American Standard Trane		
D34142P01	XV80 or XV80i			American Standard Trane		
PCB00106	N/A	A,B	Use existing or 21D64-2	Amana Goodman		
PCB00106S	N/A			Amana Goodman		
PCBBF106	N/A			Amana Goodman		
PCBBF106S	N/A			Amana Goodman		
PCBBF107S	N/A			Amana Goodman		
X13650840010	XV80 or XV80i	None required	21D64-2*	American Standard Trane		

Note: The installer may have to modify existing ignitor hole to accommodate the new 21D64-2, with ceramic diameter (0.394").

***21D64-2 Ignitor Note:** In these applications, the existing 80V ignitor must be replaced by the 120V 21D64-2 ignitor.