

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

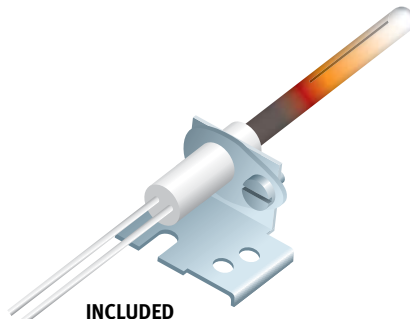
Universal

21V51U-843

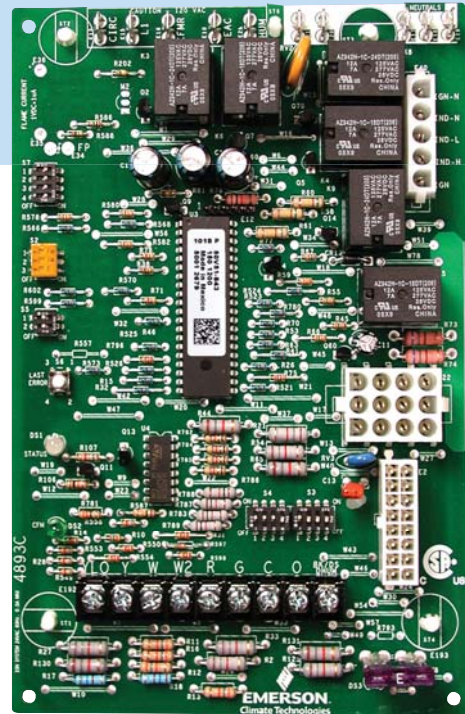


Replaces:

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



INCLUDED
Universal 120V Nitride
Ignitor Kit – 21D64-2



Universal Integrated Furnace Module
50V51-843



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
- Wiring Harnesses for Amana/Goodman
- Universal 120V Nitride Ignitor Kit – 21D64-2
- Installation Instructions and OEM Cross-Reference

White
Rodgers™

EMERSON
Climate Technologies™

21V51U-843

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

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

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-rodgers.com

Timing Specifications

(All times are in seconds unless noted otherwise)

50V51-843	
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
Automatic reset time:	60 minutes
Electronic air cleaner:	yes
Humidifier:	yes

* These times will vary depending on option switch position.

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			
20300006	Same as 50V61-289			
49M5901	G60UHV or G61MPV	A,B	Use existing or 21D64-2	Lennox
50V51-243	FC8V, FC9V, FL8V, FL9V, GM8V, GM9V, LC8V, LL8V, LM8V, PV8A, PV9A or PV9B			Coleman/Evcon/Luxaire/York
50V51-288	N/A			Amana/Goodman
50V51-289	N/A			
50V51-290	N/A	None required	21D64-2*	American Standard/Trane
50V51-507	XV80 or XV80i			
50V61-120	G60DFV (X), G60UHV or G61MPV			Lennox
50V61-143	CDX1-75N, CDX1-100N, CDX1-125N, CHX1-75N, CHX1-100N or CHX1-125N			Thermo Pride
50V61-288	N/A	None required	21D64-2*	Amana/Goodman
50V61-289	AMV91155DXA			
50V61-289	AMV81155CXA			
50V61-289	ADV80703BXA			
50V61-289	ADV80905CXA			
50V61-289	AMV90453BXA			
50V61-289	AMV90453BXA			
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Module Model #	Furnace Model	Harness	Ignitor	Furnace OEM		
50V61-289	AMV90704CXA	None required	21D64-2*	Amana/Goodman		
50V61-289	AMV90905DXA					
50V61-289	AMV80703BXA					
50V61-289	AMV80905CXA					
50V61-289	AMV80704BXA					
50V61-289	ADV81155CXA					
50V61-289	AMV90704CXA					
50V61-507	XV80 or XV80i					
B1809925	N/A			A,B	Use existing or 21D64-2	Amana/Goodman
B1809927	N/A					
B1809927S	N/A					
CNT03078	XV80 or XV80i	None required	21D64-2*	American Standard/Trane		
D156245P01	XV80 or XV80i					
D34142P01	XV80 or XV80i					
PCB00106	N/A	A,B	Use existing or 21D64-2	Amana/Goodman		
PCB00106S	N/A					
PCBBF106	N/A					
PCBBF106S	N/A					
PCBBF107S	N/A					
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.