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
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Replaces:
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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
- 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.

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

**Timing Specifications**

**Dimensions**
- 5.25" W x 8" H x 1.25" D

For Additional Information
Visit www.white-rodgers.com

**21V51U-843**
- Pre-purge: 15
- Ignitor warm-up: 17
- Trial for ignition period: 4
- Ignition activation period: 3
- Retries: 2 times
- Value 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

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<table>
<thead>
<tr>
<th>Module Model #</th>
<th>Furnace Model</th>
<th>Harness</th>
<th>Ignitor</th>
<th>Furnace OEM</th>
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**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.

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