Universal Two-Stage HSI Integrated 3-Speed (PSC) Circulator Furnace Control Kit

21M51U-843

Replaces:
White-Rodgers 50M51-242 and All 50M61-XXX’s Two-Stage HSI Systems with 80V or 120V Ignitor

INCLUDED
HotRod™ Universal Ignitor Kit – 21D64-2

Replace the Original with the Original.

21M51U-843 simplifies stocking, installation and ensures peak system performance.

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

- Ignition Control Module — 50M51-843
- HotRod™ Universal Ignitor Kit — 21D64-2
- Installation Instructions and OEM Cross-Reference

Universal Integrated Furnace Module 50M51-843
Universal Two-Stage HSI Integrated 3-Speed (PSC) Circulator Furnace Control Kit

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
- 120 VAC 3-Speed PSC Circulator Output
- 2-Stage Gas Valve Output
- Fuse Protection – 3 Amp
- Furnace Status LED – Tri-Color (Green, Red and Amber)
- 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, W1, W2, R, G, C, TWIN Terminals
- Pressure Switch Inputs and Monitoring
- Flash Microprocessor with Non-Volatile Memory
- Flame Current Measurement Points

Specifications

Electrical Ratings [at 77°F (25°C)]
- Input Voltage: 24 VAC, 60 Hz (Class II transformer required)
- Nom. Input Current @ 24 VAC: 530 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
- Circulator Relays: 14.5 FLA – 25.0 LRA @ 120 VAC
- Humidifier Load: 1.0 amp max. @ 120 VAC
- Electronic Air Cleaner Load: 1.0 amp max. @ 120 VAC
- Ignitor Relay: 4.0 amps max. @ 120 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)

### 21M51U-843

- Pre-purge: 15
- Ignitor warm-up: 17
- Final 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
- Auto reset: 60 minutes
- Electronic air cleaner: Yes
- Humidifier: Yes
- TWIN: Yes

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

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

### Module Model #  Furnace Model  Ignitor  Furnace OEM

| 18M3401 | G60DF(X) or G60UH(X) | 21D64-2* | Lennox |
| 20300001 | N/A | 21D64-2* | Goodman |
| 2030003 | N/A | Use existing or 21D64-2 | Coleman, Evcon, Luxaire, York |
| 20310003 | G61MP | 21D64-2* | Lennox |
| 46M9901 | FC0T | | |
| 50M51-242 | FL0T | | |
| 50M51-242 | PT9A | | |
| 50M51-242 | PT9B | | |
| 50M51-242 | PY0C | | |
| 50M51-242 | PT0D | | |
| 50M51-242 | GM9T | | |
| 50M51-242 | FC8T | | |
| 50M51-242 | FL8T | | |
| 50M51-242 | LC0T | | |
| 50M51-242 | LL8T | | |
| 50M51-242 | PT8A | | |

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

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**Universal Two-Stage HSI Integrated 3-Speed (PSC) Circulator Furnace Control Kit**

**21M51U-843 Cross Reference Application Data:**

18M3401

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