

Single-Stage/HSI Integrated Furnace Control Kit

OEM Replacement

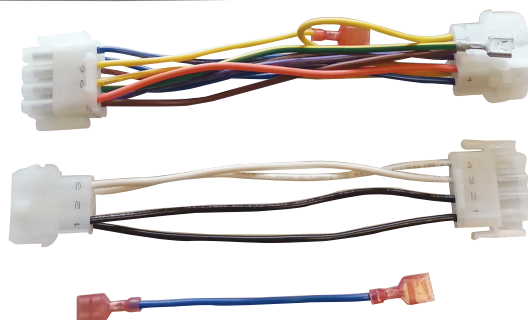
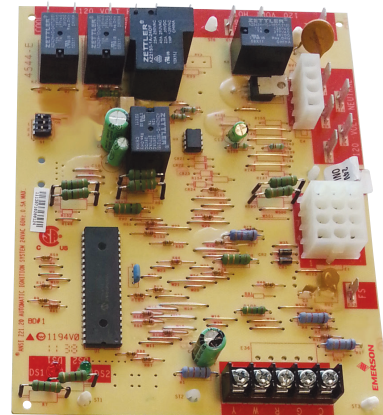
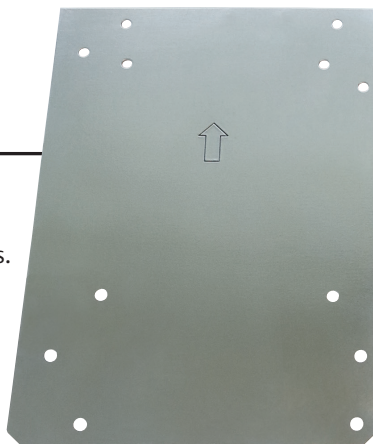
21D83M-843

Nitride Ignition Integrated Furnace Control

Controls Gas Valve, Ignitor, Blower, Inducer, Humidifier and Air Cleaner. Replaces Lennox models.

Kit includes:

- 1 – 50A66-843 Ignition Control Board
- 1 – Wiring harness (9-pin to 12-pin)
- 1 – Wiring harness (4-pin to 6-pin)
- 1 – Mounting panel
- 4 – Stand-off fasteners
- 1 – Circuit breaker
- 1 – 4" blue wire
- 2 – Wiring diagrams



Integrated Furnace
Control – 21D83M-843

Replace the Original with the Original.

21D83M-843 simplifies installation and ensures peak system performance.

Features:

- Includes diagnostic indicator flash codes
- 3 fan speeds
- Remote flame sense
- Humidifier and electronic air cleaner connections (optional)

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Input Voltage: 25 VAC 50 / 60 Hz

Maximum Input Current @ 25 VAC: 0.45 amp

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Valve Relay: 1.5 amp @ 25 VAC 50 / 60 Hz 0.6 pf

Ignitor Relay: 2.0 amp @ 120 VAC 50 / 60 Hz (resistive)

Inducer Relay: 2.2 FLA – 3.5 LRA @ 120 VAC

Circulator Relay: 14.5 FLA – 25.0 LRA @ 120 VAC

Operating Temperature Range: -40 to +175°F (-40 to +79°C)

Humidity Range: 5% to 93% relative humidity (non-condensing)

21D83M-843 Replaces:

Timing Specifications

(All times are in seconds unless noted otherwise)

TYPICAL SYSTEM WIRING DIAGRAM

The diagram illustrates the electrical wiring for a furnace system. Key components and their connections are as follows:

- Power Input:** 120 VAC (HOT LINE) and NEUTRAL (LINE) enter the system.
- Transformer:** A 24 VAC CLASS II TRANSFORMER is connected to the 120 VAC lines, providing 24 VAC to the control board.
- Control Board (50A66):** This central unit manages the system's operation. It includes terminals for:
 - FAN, COOL, HEAT, PARK, LINE, XFMR, EAC, HUM, PARK:** These terminals are connected to the CIRCULATOR BLOWER.
 - IND, IND N:** These terminals are connected to the INDUCER.
 - IGN, IND N:** These terminals are connected to the IGNITOR.
 - 120VOLT NEUTRAL:** This terminal is connected to the 120VAC NEUTRAL line.
 - Y, W, G, R, C:** These terminals are connected to the THERMOSTAT.
 - PS, HLI, HLO:** These terminals are connected to the GAS VALVE.
 - RO1, GND, RO2, MV, TR, TH:** These terminals are connected to the GAS VALVE.
- Humidifier:** A 24 V HUMIDIFIER is connected to the 24 VAC lines and the HUM terminal on the control board.
- Electronic Air Cleaner:** This component is connected to the 24 VAC lines and the EAC terminal on the control board.
- Compressor Contactor:** This component is connected to the 24 VAC lines and the Y, W, G, R, and C terminals on the thermostat.
- Sensors and Switches:**
 - FLAME SENSOR PROBE:** Connected to the FP (E33) terminal on the control board.
 - 24 V HUM:** Connected to the 24 V HUMIDIFIER.
 - PRESSURE SWITCH (N. O.):** Connected to the PS terminal on the control board.
 - HIGH LIMIT (N. C.):** Connected to the HLI terminal on the control board.
 - AUX. HIGH LIMIT (N. C.):** Connected to the HLO terminal on the control board.
 - ROLLOUT (N. C.):** Connected to the RO1 terminal on the control board.

LEGEND

- Low Voltage (24 VAC)
- Line Voltage (120 VAC)
- N. C. = Normally closed switch
- N. O. = Normally open switch

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