

**FAILURE TO READ AND FOLLOW ALL INSTRUCTIONS CAREFULLY BEFORE INSTALLING OR OPERATING THIS CONTROL COULD CAUSE PERSONAL INJURY AND/OR PROPERTY DAMAGE.**

**DESCRIPTION**

The 50E70-820 is an Integrated Furnace Control for aftermarket service direct replacements, including the Trane Kit 17852 on Trane Commercial Systems packaged units.

**Parts included:**

- 50E70-820 Integrated Furnace Control
- 24 VAC Wiring Harness (0155-0263)
- 59-4819 (3AD-2) Adapter Board
- 3 – Plastic tie wraps
- Installation Instructions
- Fault code label

**SPECIFICATIONS**

**ELECTRICAL RATINGS:**

**Input Voltage:** 18 to 30 VAC, 60 Hz

**Relay Contract Ratings:**

Gas Valve Relay: 1.5 A 0.6 PF @ 30 VAC

Ignitor Relay: 5.0 A @ 132 VAC

**Flame Current Requirements:**

Min current to insure flame detection: 1.0  $\mu$ A DC\*

Nominal current: 2 to 8  $\mu$ A DC\*

\*Measured with a DC microammeter in series with the flame probe lead

**OPERATING TEMPERATURE RANGE:**

-40° to 158°F (-40 to 70°C)

**HUMIDITY RANGE:**


To 95% relative humidity (non-condensing)

**AGENCY APPROVALS:**

CSA USA / Canada

**GASES APPROVED:** Natural, Manufactured, Mixed, Liquid Petroleum, and LP Gas Air Mixtures

**⚠ CAUTION**



**Risk of Electric Shock. Disconnect electric power to system until installation is complete. Do not use on circuit exceeding specified voltage. Higher voltage will damage control and could cause shock or fire hazard.**

**This control is not intended for use in locations where it may come in contact with water.**

**May cause flame rollout. Shut off main gas to heating system until installation is complete.**



# INSTALLATION

## MOUNTING AND WIRING

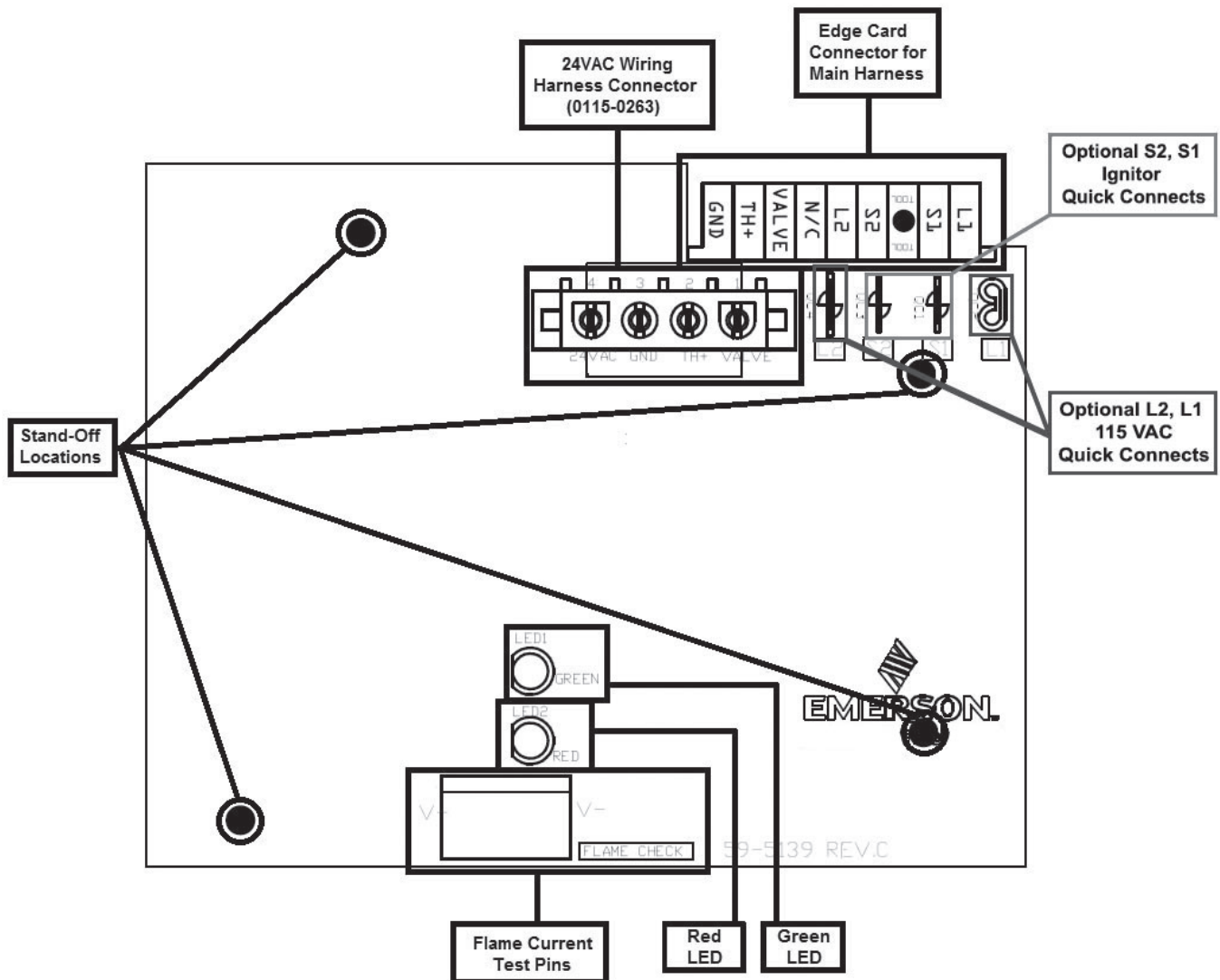
**NOTE:** All wiring should be installed according to local and national electrical codes and ordinances.

1. If the control being replaced is a Sensata Technologies 3HS-1 or 3HS-2, remove old control and skip to step 6.
2. Before removing the old control, note whether the edge card connector slides into the control on the top side or bottom side. If it comes in on the top, skip to step 4.
3. Remove the old control. Position the 59-4819 (3AD-2) Adapter Board so that the text is right side up, then fasten it in place using the holes marked "METAL STANDOFF".

4. Attach the quick connect end of the 24 VAC Wiring Harness (0115-0263) to the HOT 24 VAC tap of the low voltage transformer.
5. Align the plastic standoffs on the 50E70-820 control with the remaining holds on the 59-4819 (3AD-2) adapter board and gently press on the control until all 4 standoffs snap into place.
6. Connect the 4 pin plug of the 24 VAC Wiring Harness (0115-0263) to the 50E70-820 control. Reconnect the remainder of the wiring (edge card connector or quick connects).

**NOTE:** Equipment manufactured after 1/8/1996 do not require the 59-4819 (3AD-2) adapter board or 24 VAC wiring harness (0115-0263)

## WIRING DIAGRAM



Output	Standby	Call for Heat	Self-Check	Ignitor Warm-Up (45 sec)	Ignition Activation Period (< 5 sec)	Heating until Thermostat is Satisfied	System Off	
Thermostat - W (TH+)								
Ignitor (S1)								
Flame Sense								
Gas Valve								
LED		LED – flashing						

**Status Codes**

The LEDs will indicated a status code as shown in the table below:

Green LED	Red LED	Status/Error Condition
OFF	OFF	Powered with no call for heat
Flashing*	OFF	Call for heat – no fault detected
OFF	Flashing*	No flame signal on try for ignition or flame signal established and lost prior to a lockout condition
ON	Flashing*	Gas valve miswired or flame signal present at a call for heat
OFF	Flashing*	Internal fault – anytime

NOTE:

- Flashing at 50% duty cycle.
- At the start of each retry for ignition, the Red LED will flash for 5 seconds along with a flashing Green LED.

**TECHNICAL SUPPORT: 1-888-725-9797**

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