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# INTEGRATED CONTROL REPLACEMENT kIT

**INSTALLATION INSTRUCTIONS FOR INTEGRATED CONTROL REPLACEMENT KIT (22K51) USED WITH COMMUNICATING ENABLED SL280UHV, SL280DFV, EL296UHV and EL296DFV UNITS**

## ⚠ WARNING

**This conversion kit is to be installed by a licensed professional service technician (or equivalent) or other qualified agency in accordance with the manufacturer's instructions, all codes and requirements of the authority having jurisdiction.**

## Shipping and Packing List

**Package 1 of 1 contains:**

1 - Integrated control - 107045-XX (two-digit suffix) -

1 - Diagnostic sticker 107343-XX (two-digit suffix)

## Application

Use replacement integrated control kit (22K51) with communicating enabled SL280 and EL296 units. This control is designed for use with a 120V ignitor only. Do not install this integrated control in a furnace equipped with a 95V ignitor. Integrated control 107045 (two-digit suffix) can be used in communicating or non-communicating applications.

## Installation

## ⚠ WARNING

**Protect the control from direct contact with water. If the control has been in direct contact with water, replace the control.**

**WHEN SERVICING CONTROLS, label all wires prior to disconnecting. Wiring errors can cause improper and dangerous operation.**

**VERIFY proper operation after servicing.**

## ⚠ WARNING

**Disconnect power before servicing unit.**

**Shut off main gas supplies to appliance until installation is complete.**

**ELECTROSTATIC DISCHARGE (ESD)**
**Precautions and Procedures**

## ⚠ CAUTION

**Electrostatic discharge can affect electronic components. Take precautions to neutralize electrostatic charge by touching your hand and tools to metal prior to handling the control.**

1 - Turn off electrical and gas supplies to the furnace.

2 - Remove the access panel and the control box cover. Label the wires before disconnecting.

3 - Disconnect the wires and harness connectors from the existing control.

4 - Remove control by unlatching the two mounting legs on the right side of the control and then rotate the control toward you.

5 - Replace with the provided control and reconnect the marked wires and harness connectors.

6 - Replace the current diagnostic sticker with provided diagnostic sticker.

7 - Restore electrical and gas supplies to the furnace.

**Non-Communicating System**

For non-communicating applications set all DIP switch settings and on-board links exactly as the control being replaced.

When replacing the control in a non-communicating system, it must be configured using the flow chart on page 4.

## ⚠ WARNING

**Ensure proper earth grounding of appliance.**

**Ensure proper connection of line neutral and line hot wires.**



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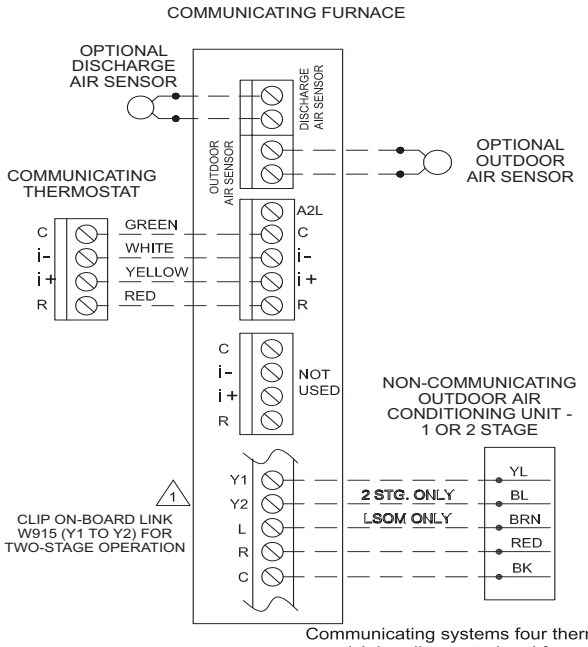
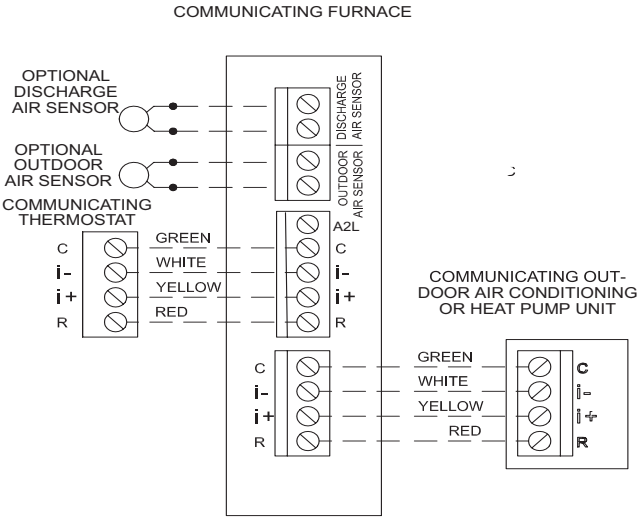
## Communicating Enabled Furnace and Non-Communicating Outdoor Unit




## Communicating Enabled Furnace and Communicating Enabled Outdoor Unit




Communicating systems four thermostat wires between the thermostat and the furnace/air handler control and four wires between the outdoor unit and the furnace/air handler control. When a thermostat cable with more than four wires is used, the extra wires must be properly connected to avoid electrical noise. The wires must not be left disconnected.

Use wire nuts to bundle the four unused wires at each end of the cable. A single wire should then be connected to the indoor unit end of the wire bundle and attached to the "C" terminals as shown below.

Communicating Integrated Control

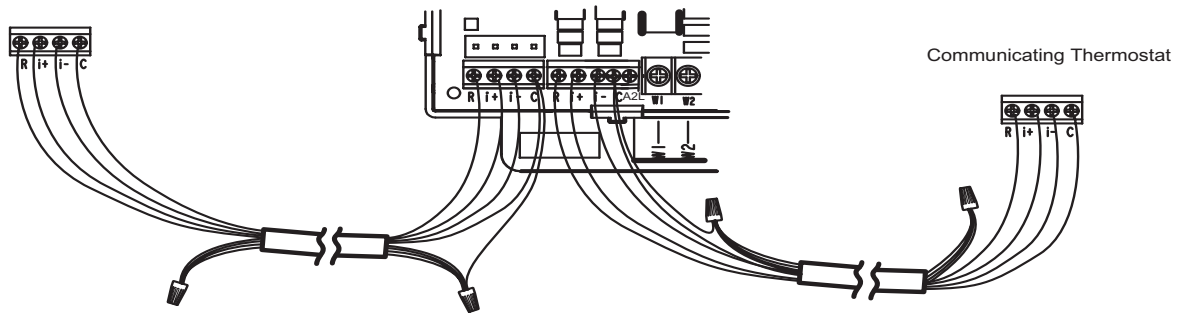


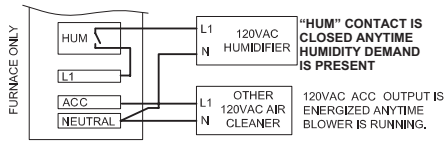

**FIGURE 1**

## Optional Accessories for use with Communicating System

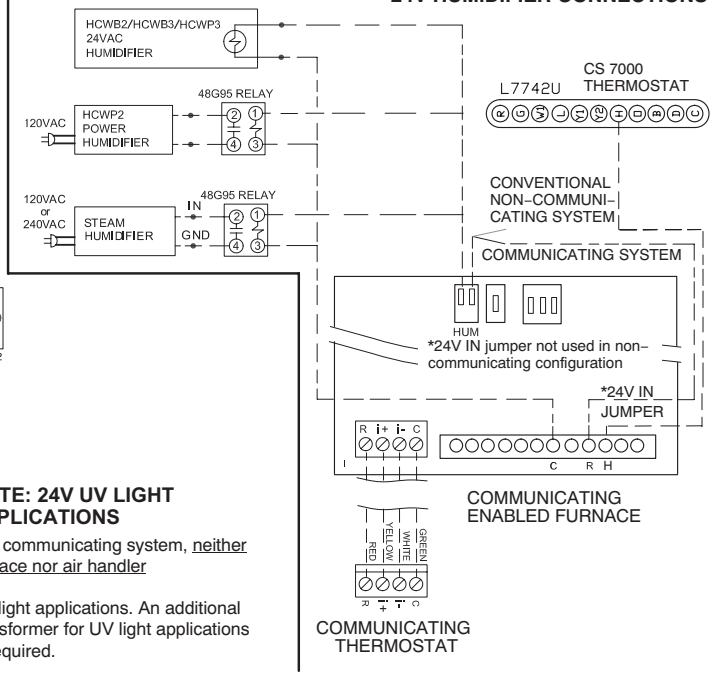
**NOTE:** COMMUNICATING THERMOSTAT SENSES HUMIDITY & CONTROLS HUM CONTACTS TO CYCLE HUMIDIFIER BASED ON DEMAND. NO OTHER CONTROL OR HUMIDISTAT REQUIRED.

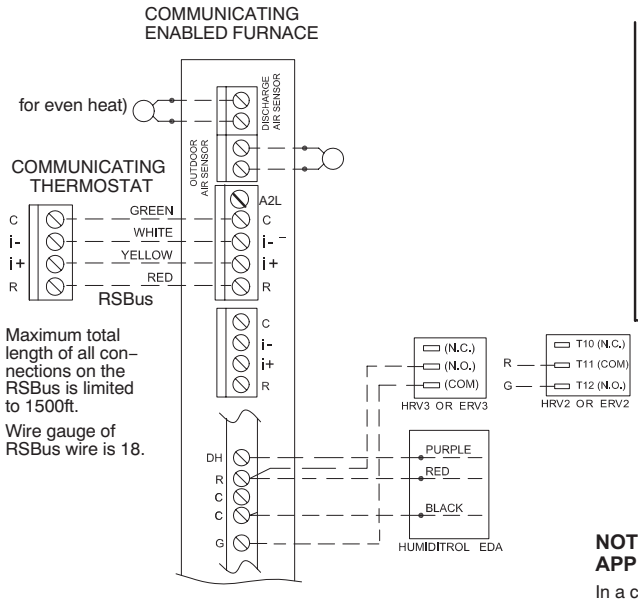
OPTIONAL OUTDOOR AIR SENSOR FOR USE WITH HUMIDIFIER (IF NOT ALREADY IN THE SYSTEM FOR OTHER FUNCTIONS. BUILT INTO ALL COMMUNICATING ENABLED OUTDOOR UNITS).

### 120V CONNECTIONS




### 24V HUMIDIFIER CONNECTIONS



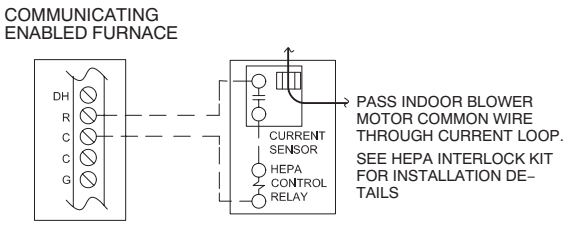




### NOTE: 24V UV LIGHT APPLICATIONS

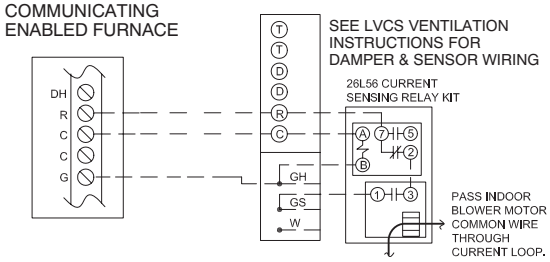
In a communicating system, neither furnace nor air handler

UV light applications. An additional transformer for UV light applications is required.

### HEPA BYPASS FILTER X2680 HEPA INTERLOCK KIT




### LVCS VENTILATION CONTROL SYSTEM



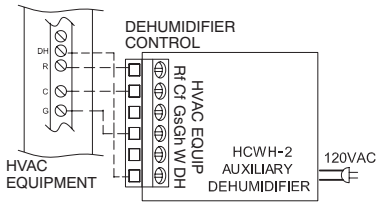




**FIGURE 2**

## Program Unit Capacity/Size Mode

**Power-Up** - Number displayed represents by integrated control unit size code (furnace model and capacity). If three horizontal bars are displayed followed by continuous E203, furnace control does not recognize **unit size code.** Configure per the following:

Furnace control in **IDLE** mode No heating, cooling or indoor fan operation)

Yes

No

Turn room thermostat to **OFF**

To enter **Program Unit Capacity/Size:** push and hold button next to 7-segment LED display until **solid "P"** symbol appears. Release button.

***IMPORTANT**: Field replacement controls may need to be manually configured to validate furnace unit size code.*

Solid **P** starts blinking on 7-Segment LED

Push and hold button. Integrated control will display unit size code number for each furnace model for three seconds.

**SL280 UNITS**

| CODE | FURNACE | CODE | FURNACE | CODE | FURNACE |
|---|---|---|---|---|---|
| A | SL280UH070V36A | H | SL280DF070V36A | A | SL280UH060NV36A |
| b | SL280UH090V36B | J | SL280DF090V48B | C | SL280UH080NV48B |
| C | SL280UH090V48B | L | SL280DF090V60C | d | SL280UH080NV60C |
| d | SL280UH090V60C | n | SL280DF110V60C | E | SL280UH100NV60C |
| E | SL280UH110V60C | | | | |
| F | SL280UH135V60D | | | | |

When the correct unit size code is displayed, release button. Selected code will flash for 10-second period. During that period, press and hold push button for 5 seconds. Integrated control will store code in memory and will automatically exit **Program Unit Capacity/Size Mode** and reset. (If second period expires or push button is held less than five seconds, control will automatically exit **Program Capacity/Size Mode** and go into **IDLE** mode without storing unit size code. If this happens, programming function must be repeated).

**EL296 UNITS**

**SL297 UNITS**

| CODE | FURNACE | CODE | FURNACE | CODE | FURNACE |
|---|---|---|---|---|---|
| 0 | EL296UH045V36B | 8 | EL296DF0450V36A | 0 | SL297UH040NV36B |
| 1 | EL296UH070V36B | 9 | EL296DF070V48B | 1 | SL297UH060NV36B |
| 2 | EL296UH090V36B | 11 | EL296DF090V60C | 3 | SL297UH080NV48C |
| 3 | EL296UH09048C | U | EL296DF110V60C | 4 | SL297UH080NV60C |
| 4 | EL296UH090V60C | | | | |
| 5 | EL296UH110V48C | | | | |
| 6 | EL296UH110V60C | | | | |
| 7 | EL296UH135V60D | | | | |

Verify that the selected unit size code is correct and stored in non-volatile memory by cycling the 24 volt power to the furnace control. (At 24 volt power-up of the furnace control, the 7-segment LED will display a unit size code. If three horizontal bars display, board does not recognize unit size code. Programming function must be repeated)

FINISHED

**FIGURE 3**

# SL280UHV Schematic Wiring Diagram

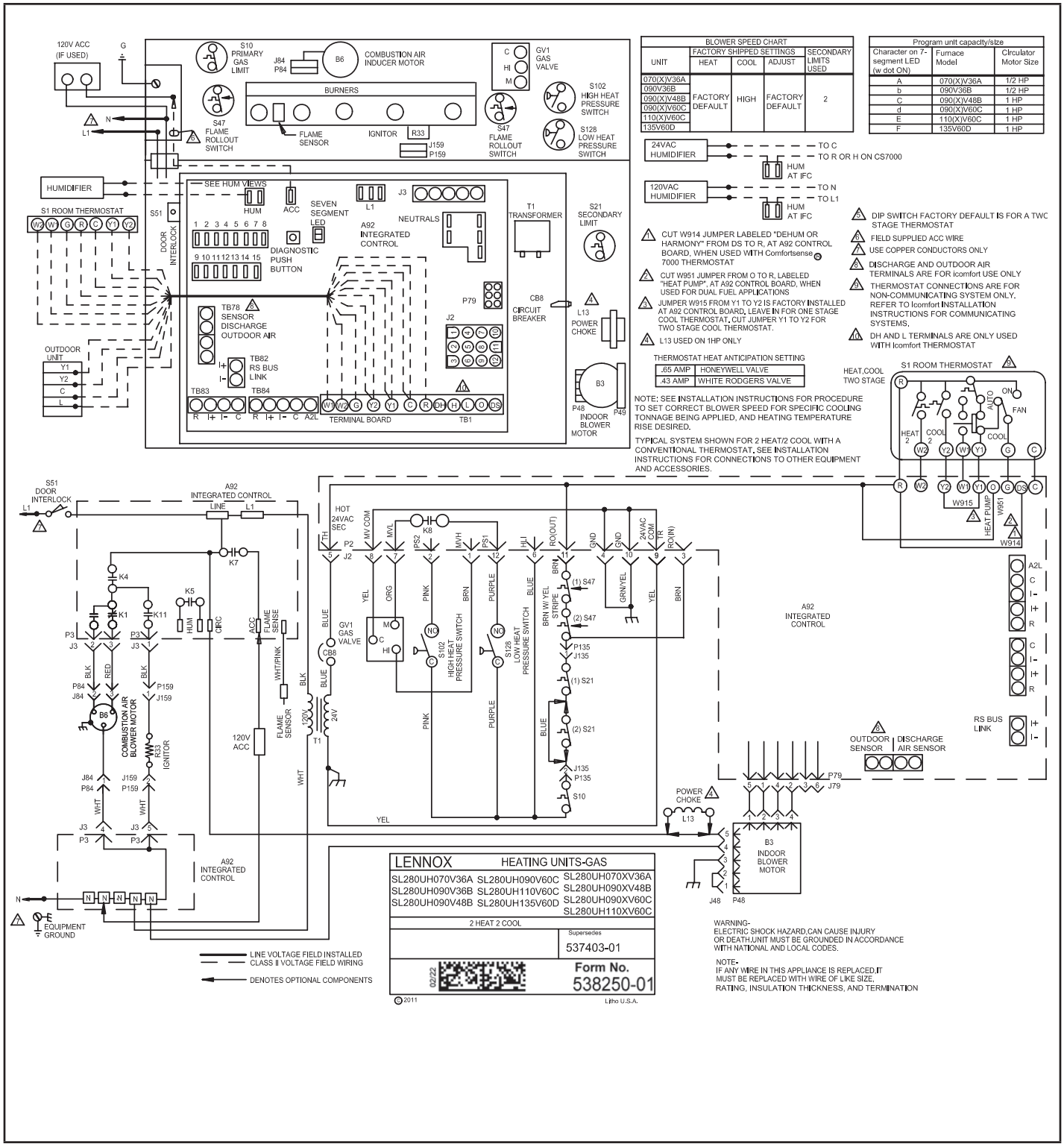
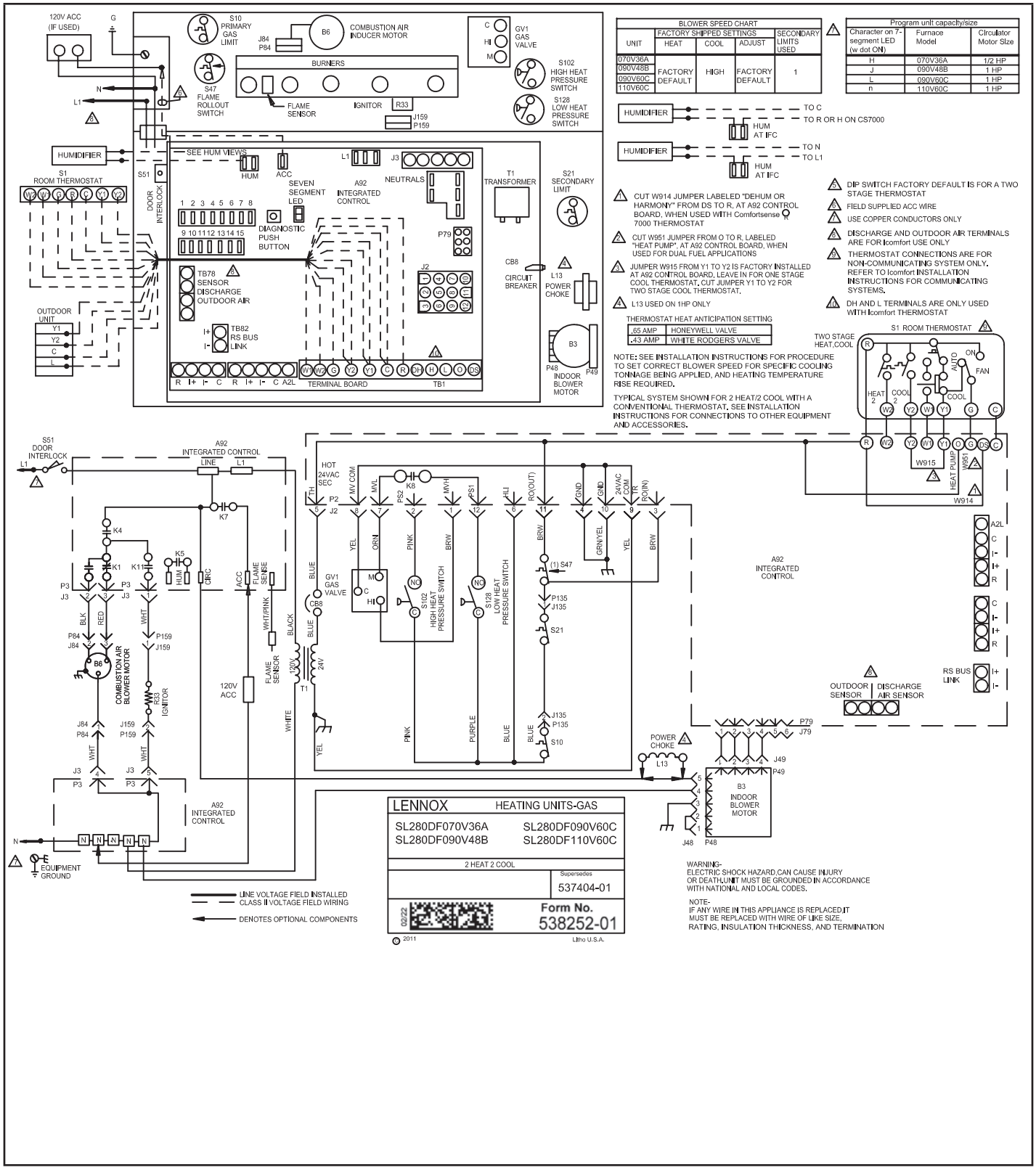



**FIGURE 4**

# SL280DFV Schematic Wiring Diagram




| BLOWER SPEED CHART | | | | |
|---|---|---|---|---|
| UNIT | FACTORY SHIPPED SETTINGS | | | SECONDARY LIMITS USED |
| | HEAT | COOL | ADJUST | |
| 070V36A<br>090V48B<br>090V60C<br>110V60C | FACTORY DEFAULT | HIGH | FACTORY DEFAULT | 1 |

| Program unit capacity/size | | |
|---|---|---|
| Character on 7-segment LED (w dot ON) | Furnace Model | Circulator Motor Size |
| H | 070V36A | 1/2 HP |
| J | 090V48B | 1 HP |
| L | 090V60C | 1 HP |
| n | 110V60C | 1 HP |

1. CUT W914 JUMPER LABELED "DEHUM OR HARMONY" FROM DS TO R, AT A92 CONTROL BOARD, WHEN USED WITH Comfortsense 7000 THERMOSTAT
2. CUT W951 JUMPER FROM O TO R, LABELED "HEAT PUMP", AT A92 CONTROL BOARD, WHEN USED FOR DUAL FUEL APPLICATIONS
3. JUMPER W915 FROM Y1 TO Y2 IS FACTORY INSTALLED AT A92 CONTROL BOARD, LEAVE IN FOR ONE STAGE COOL THERMOSTAT, CUT JUMPER Y1 TO Y2 FOR TWO STAGE COOL THERMOSTAT.
4. L13 USED ON 1HP ONLY
5. DIP SWITCH FACTORY DEFAULT IS FOR A TWO STAGE THERMOSTAT
6. FIELD SUPPLIED ACC WIRE
7. USE COPPER CONDUCTORS ONLY
8. DISCHARGE AND OUTDOOR AIR TERMINALS ARE FOR Icomfort USE ONLY
9. THERMOSTAT CONNECTIONS ARE FOR NON-COMMUNICATING SYSTEM ONLY. REFER TO Icomfort INSTALLATION INSTRUCTIONS FOR COMMUNICATING SYSTEMS.
10. DH AND L TERMINALS ARE ONLY USED WITH Icomfort THERMOSTAT

| THERMOSTAT HEAT ANTICIPATION SETTING | |
|---|---|
| .65 AMP | HONEYWELL VALVE |
| .43 AMP | WHITE RODGERS VALVE |

NOTE: SEE INSTALLATION INSTRUCTIONS FOR PROCEDURE TO SET CORRECT BLOWER SPEED FOR SPECIFIC COOLING TONNAGE BEING APPLIED, AND HEATING TEMPERATURE RISE REQUIRED.

TYPICAL SYSTEM SHOWN FOR 2 HEAT/2 COOL WITH A CONVENTIONAL THERMOSTAT. SEE INSTALLATION INSTRUCTIONS FOR CONNECTIONS TO OTHER EQUIPMENT AND ACCESSORIES.

WARNING-
ELECTRIC SHOCK HAZARD.CAN CAUSE INJURY OR DEATH.UNIT MUST BE GROUNDED IN ACCORDANCE WITH NATIONAL AND LOCAL CODES.

NOTE-
IF ANY WIRE IN THIS APPLIANCE IS REPLACED,IT MUST BE REPLACED WITH WIRE OF LIKE SIZE, RATING, INSULATION THICKNESS, AND TERMINATION

**FIGURE 5**

## EL296DFV Schematic Diagram

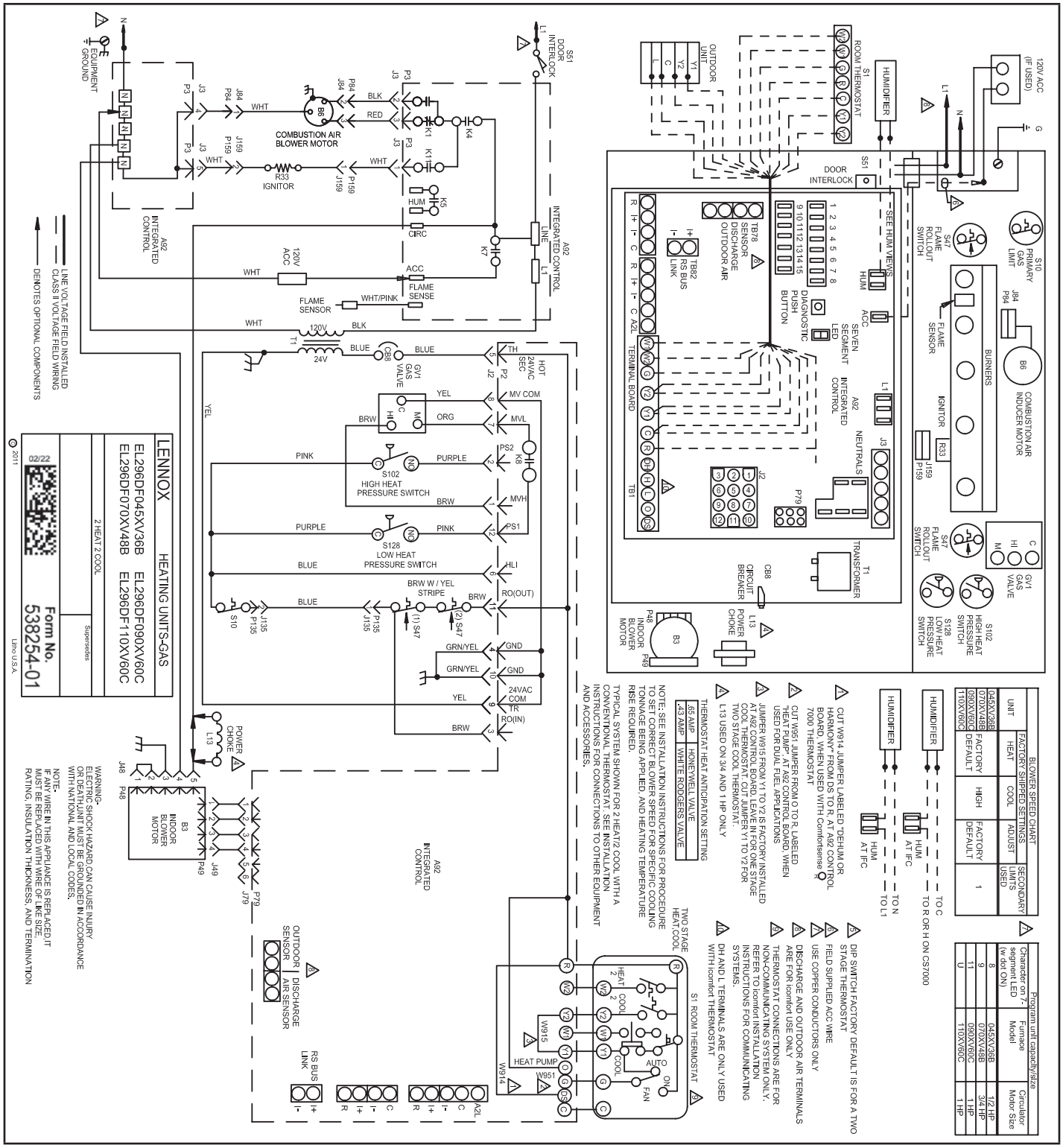



**FIGURE 6**

# EL296UHV Schematic Wiring Diagram

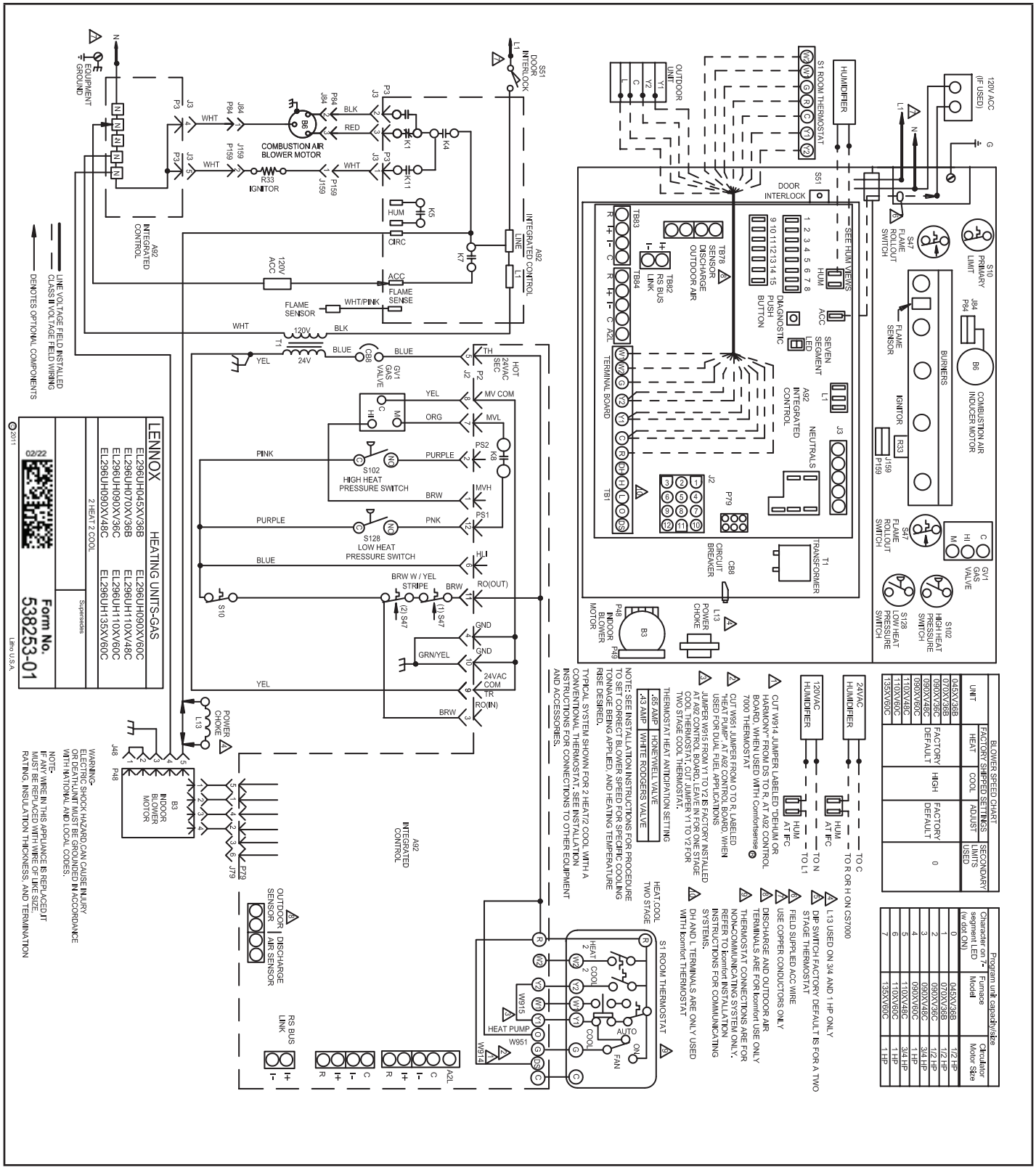



**FIGURE 7**

# EL296UHV With Blower Drive Schematic Wiring Diagram

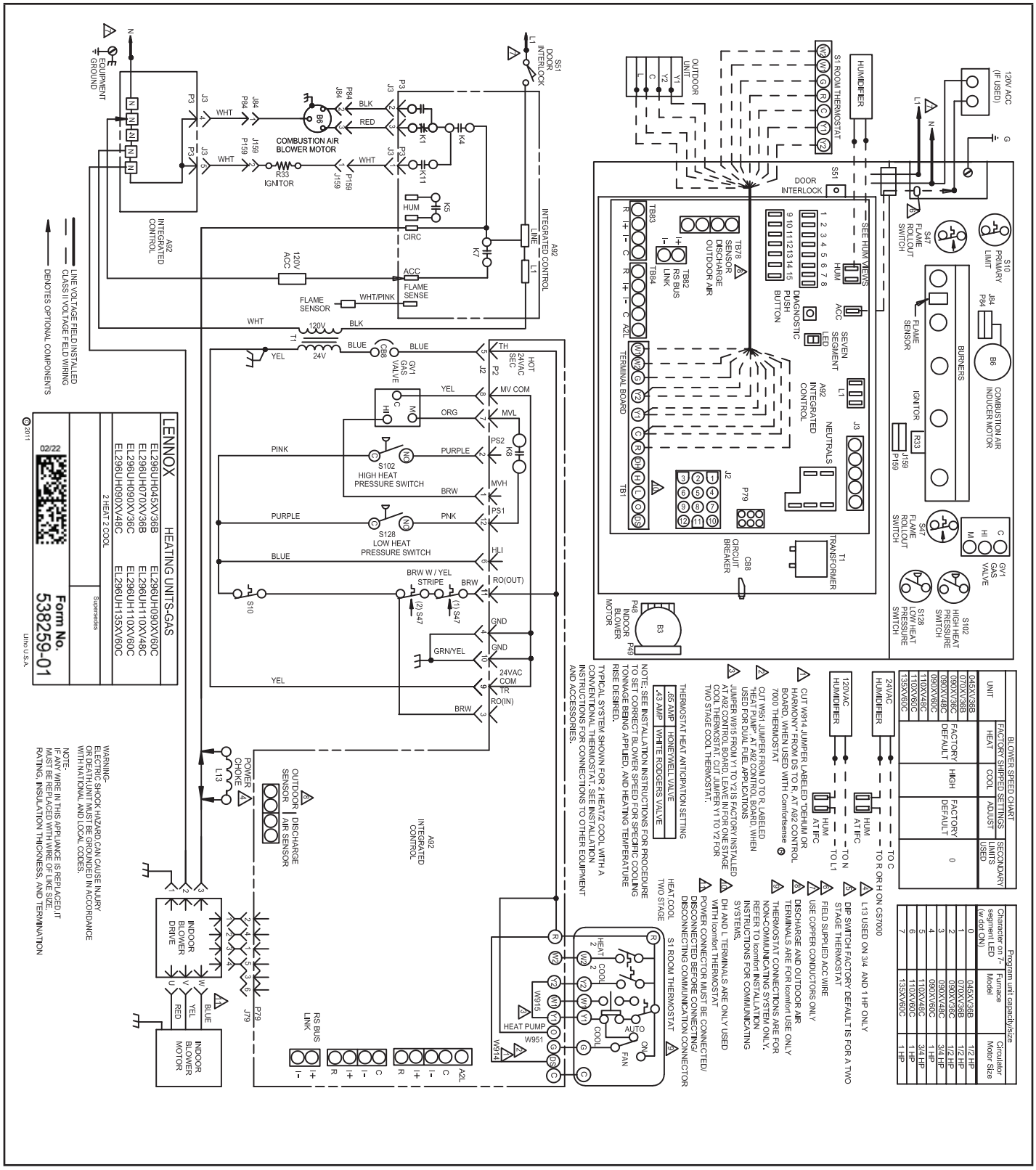



**FIGURE 8**