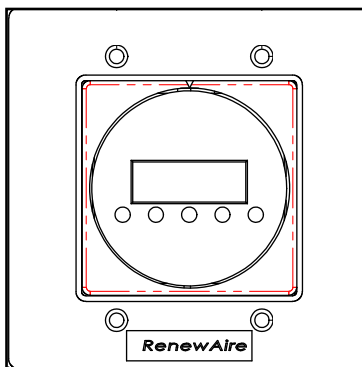![RenewAire — Energy Recovery Ventilation]
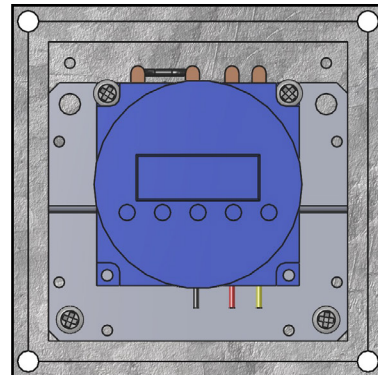
TC7D SERIES DIGITAL TIME CLOCK
Supplemental Installation Manual for Accessories

TC7D-W (Wall Mount)
TC7D-E (Enclosure)

TC7D-W Wall mount

TC7D-E Enclosure

⚠ WARNING
TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING RULES: Use the unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.   Before installing, servicing or troubleshooting the transformer/relay package, switch power off at service panel and lock service panel to prevent power from being switched on accidentally.

⚠ CAUTION
More than one disconnect switch may be required to de-energize the equipment for servicing.   Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction codes and standards.   When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.   NEVER place a switch where it can be reached from a tub or shower.   Intended for use with 24VAC Class 2 power supplies only.   Do not connect loads that exceed the timer's switch rating.   Confirm sufficient 24VAC power is available to operate the timer and the connected loads.

1.0 OVERVIEW

1.1 SPECIFICATIONS

Operating Voltage:	24VAC 50/60Hz
Switching:	Single Pole, Single Throw [SPST]
	(can be field-modified to Single Pole, Double Throw [SPDT])
Power consumption:	3.5VA CR2032 lithium battery back up for the timer-battery needs to be replaced approximately 2–3years
Switch rating:	16 Amps at 131°F
Operating Temperature Range:	32°F–140°F
Connections:	(3) 16 GA pigtails (wire nuts not provided)

> NOTE: When the time comes to replace the battery, use a coin to remove the battery cover to avoid stripping the plastic cover.

Functional description of buttons on panel:

- TIMER: Programs review & setting programs
- MANUAL ON AUTO OFF: To select " , or "
- CLOCK: To adjust current DAY and TIME
- DAY: To adjust day of week
- HOUR: To adjust Hour
- MIN: To adjust minute
- ℗: Reset Timer's setting
- LED: To indicate ON/OFF status

Press ℗ button to reset Timer before programming.

Setting Options:

- 16 pairs of on-off time of day cycles can be programmed.
- Each on-off cycle can be assigned to any one day of the week, or to the following groups of days:

  Monday–Friday; Monday–Saturday; Monday–Sunday; Saturday and Sunday; Monday–Wednesday; Thursday–Saturday; Monday/Wednesday/Friday; Tuesday/Thursday/Saturday.

- Manual Over-ride provided by "On/Auto/Off" switch.

- Program Reset button clears all settings. First, using a small pointed object push the reset button to clear all settings. The reset button is just above the "MIN" dark gray button.

Enclosure (TC7D-W):   Requires a 4" x 4" electrical box by others.

- Box must accommodate (4) mounting screws (see drawing page 5).

- Minimum box depth 1.5". White wall plate and mounting screws provided.

Enclosure (TC7D-E):   NEMA 4X and 12K (see drawing page 5).

- Use installation instructions that come with enclosure.
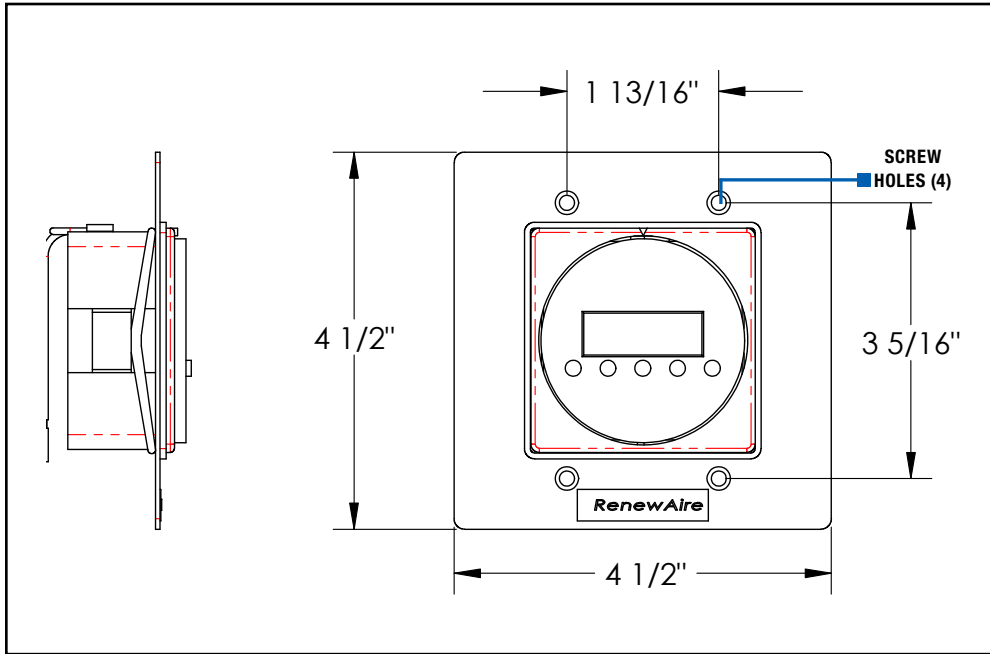
1.2 DIMENSION DRAWINGS
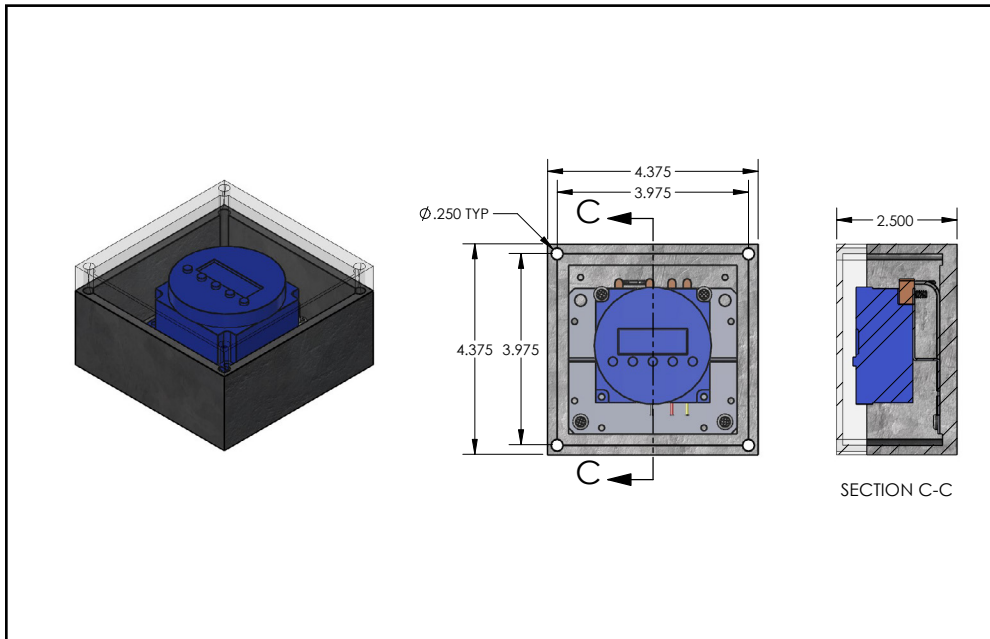

FIGURE 1.2.0 TC7D-W DIMENSIONS

FIGURE 1.2.1 TC7D-E ENCLOSURE DIMENSIONS

2.0 SETTINGS

2.1 SETTING INSTRUCTIONS

SETTING THE CLOCK:
- Press and hold the CLOCK button.
- Press the DAY key until the correct day is displayed.
- Do the same with the HOUR and MIN. Now the clock is set!

SETTING THE TIMER:
Press the "DAY" key to scroll through these settings.

	MON	TUE	WED	THU	FRI	SAT	SUN
1.	X	X	X	X	X	X	X
2.	X						
3.		X					
4.			X				
5.				X			
6.					X		
7.						X	
8.							X
9.	X	X	X	X	X		
10.						X	X
11.	X	X	X	X	X	X	
12.	X	X	X				
13.				X	X	X	
14.	X		X		X		
15.		X		X		X	

These can be used to simplify programming. All times must be the same for the days chosen! Let us say you want to run a device Monday through Friday at the same time. Scroll down to #9 and you will have the days set!

Press the "TIMER" key and the display will show "1^{ON}--:--$_{--}$" set the time you want the unit to turn on by pressing the "HOUR" and "MIN" buttons respectively. To set the turn off time, press the "TIMER" key again and "1^{OFF}--:--$_{--}$" will show in the display. Again, set the "HOUR" and "MIN" time. If you want more than 1 on/off per day, press the "TIMER" key again and set "2^{ON}--:--$_{--}$," "2^{OFF}--:--$_{--}$" until you reach the maximum of 8 on/off's per day.

The timer is now set, but you need to push the "MANUAL" button until the line is under "AUTO." If you only want 1 on/off per day or if you have more on/off's per day, when you are done programming them in, press the "CLOCK" key again and you are almost done.

Reset the setting: If you wish to change any or all on/off times, you must reset the timer. You cannot change just one setting.

Clear all: To erase all settings, Press the ⊗ button.

Operation Modes:

There are three operation modes: "ON," "AUTO," and "OFF"; selected through the "MANUAL" key. When the "MANUAL" key is pressed, observe that the indicator (line) on the screen moves upon the words.

- MODE ON: When the indicator is on "ON," the output turns on immediately and keeps this status while in "ON" mode.
- MODE OFF: When the indicator is on "OFF," the output turns off immediately and keeps this status while in "OFF" mode.
- MODE AUTO: When the indicator is on "AUTO," the output turn on and turn off based on the programs.

When the timer is not powered, it turns off the output permanently.
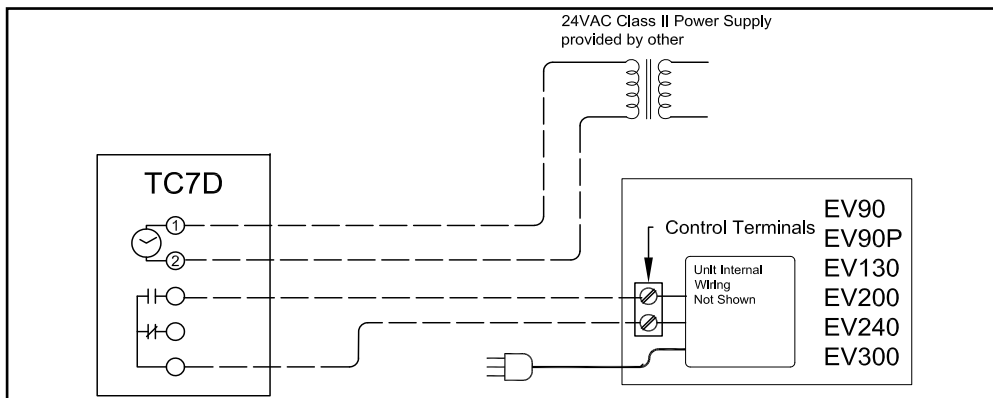
3.0 ELECTRICAL

3.1 ELECTRICAL SCHEMATICS

FIGURE 3.1.0 EV90, EV90P, EV130, EV200, EV240, AND EV300 SCHEMATIC

NOTE: There is a wire on the TC7D that connects Terminal 1 to the relay common of the timer. You must cut this wire to eliminate voltage to relay common.
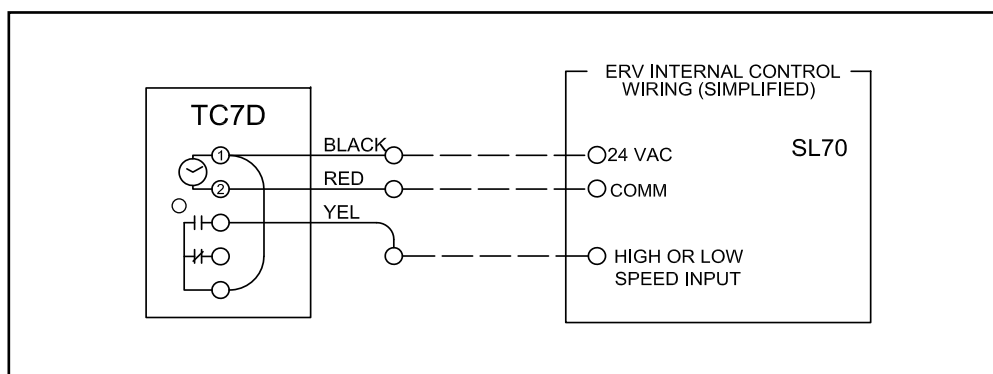

FIGURE 3.1.1 SL70 SCHEMATIC

In this example, the timer turns the Energy Recovery Ventilator (ERV) on at High speed when the timer dictates it is an occupied time.
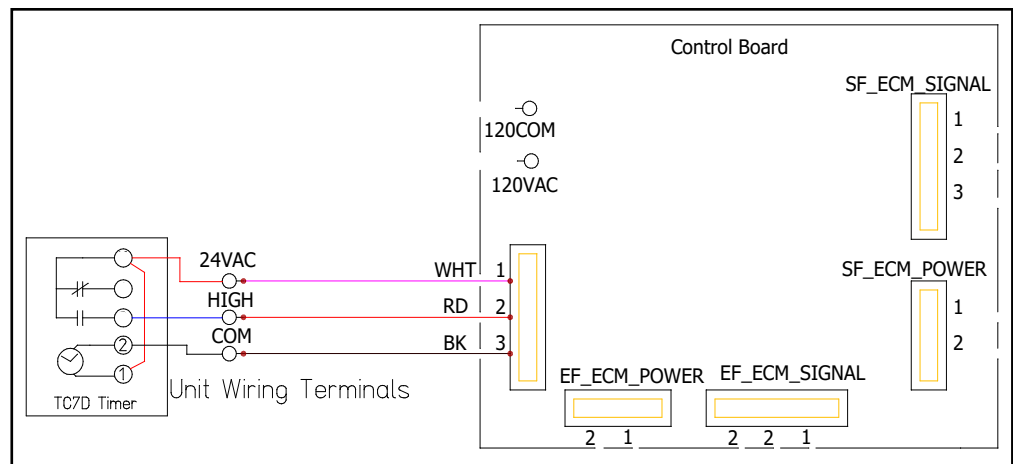
FIGURE 3.1.2 EV PREMIUM AND SL75 SCHEMATIC

NOTE: For EV450 and HE1XIN models built prior to 1/22/2011, please call RenewAire Customer Service at 800-627-4499 or email RenewAireSupport@RenewAire.com.
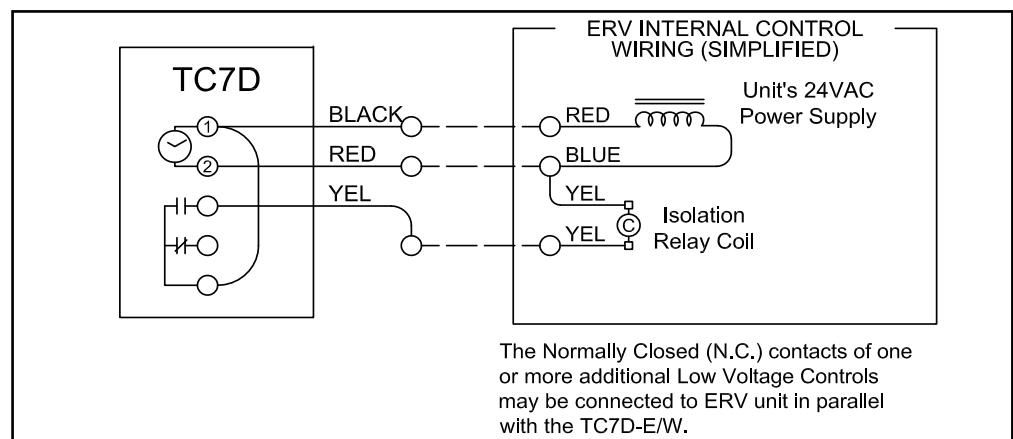

FIGURE 3.1.3 EV450, HE1X, AND HE1.5 STANDARD WIRING SCHEMATIC

NOTE: For HE1XRT and HE2X through LE10X models built prior to 1/22/2011, please call RenewAire Customer Service at 800-627-4499 or email RenewAireSupport@RenewAire.com.
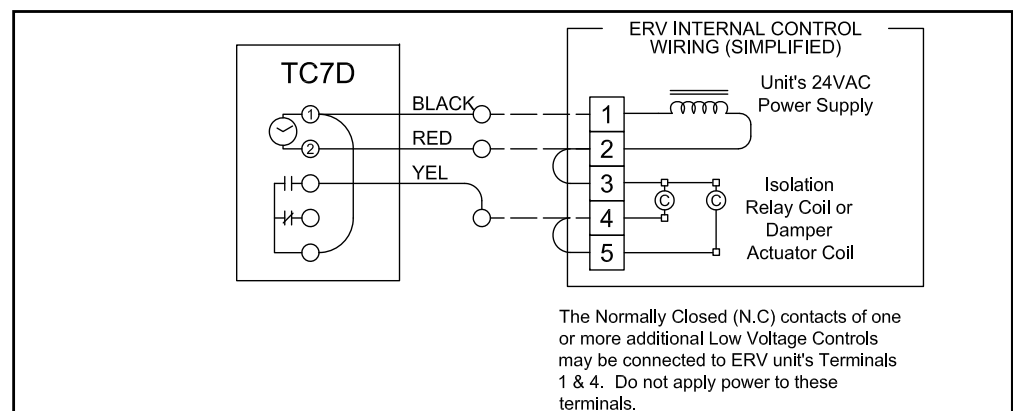

FIGURE 3.1.4 HE1XRT AND HE1.5RT WITH INDEPENDENT BLOWER CONTROL AND HE2X–LE10X SCHEMATIC
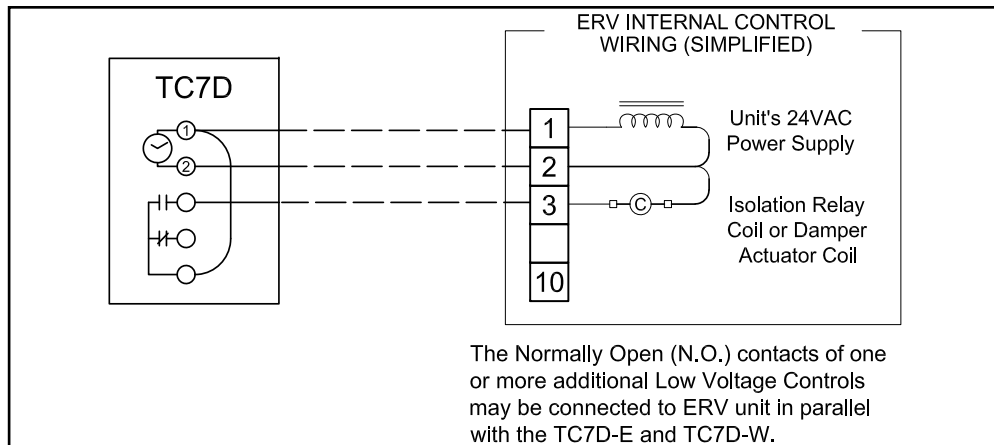
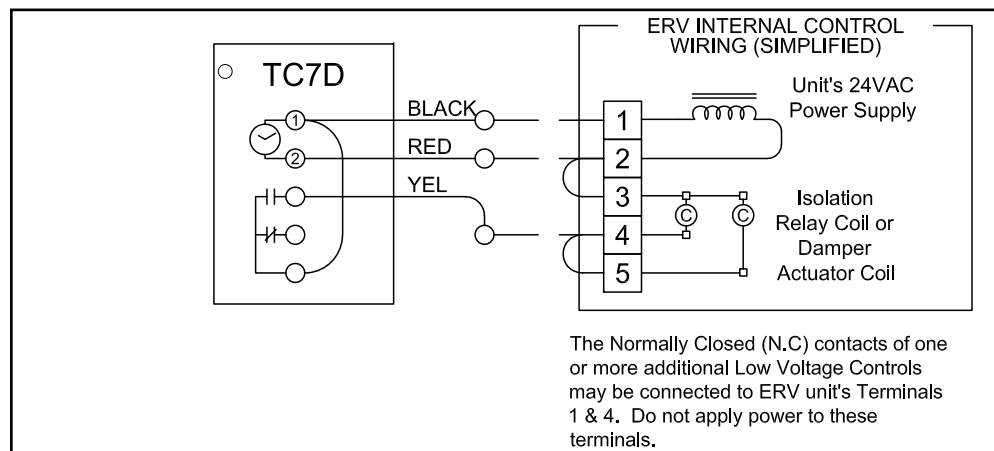**FIGURE 3.1.5 EV450 ECM WITH TERMINAL BLOCK SCHEMATIC**

FIGURE 3.1.6 HE1X AND HE1.5 ECM WITH TERMINAL BLOCK SCHEMATIC

In this example, the timer turns ERV on at speed set by potentiometer(s) when space is occupied. EV450 Circuit Board shown with one potentiometer. HE1X and HE1.5 Circuit Boards have two potentiometers.
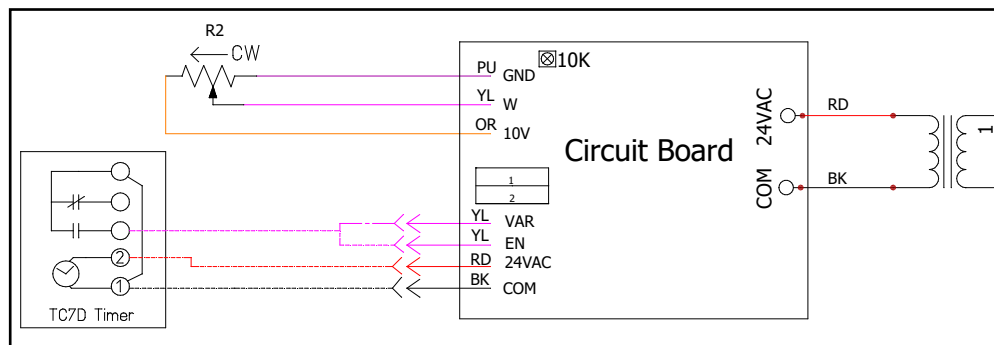

FIGURE 3.1.7 EV450, HE1X AND HE1.5 ECM WITH CIRCUIT BOARD SCHEMATIC

In this example, the ERV does not run while unoccupied, set by timer. During occupancy, ERV runs at variable Speed. CO2 Controller sets speed based on CO2 levels. Remove the potentiometer(s) by cutting the wires at the potentiometer. Cap the orange and purple wires from the potentiometer with wire nuts. EV450 Circuit Board shown with one potentiometer. HE1X and HE1.5 Circuit Board has two potentiometers and the cut wires can be wired in parallel back to the CO2 Controller.
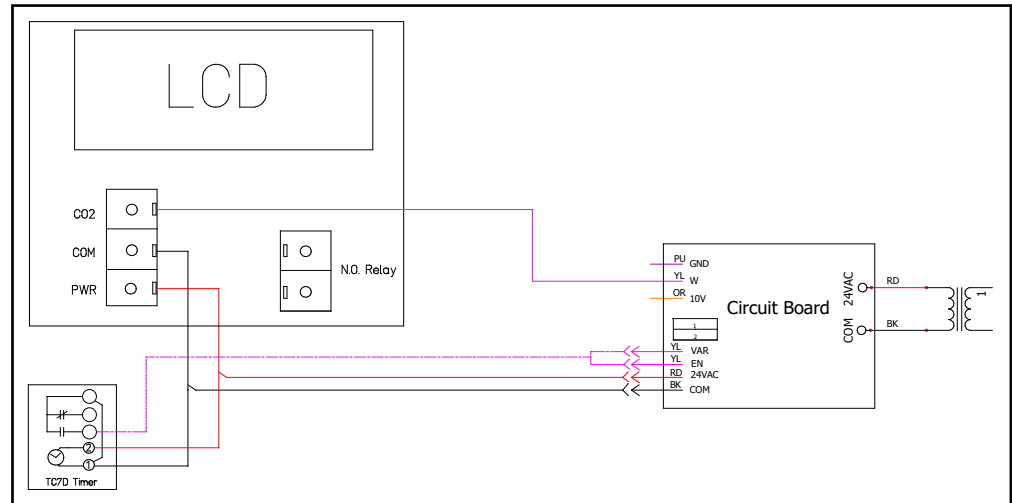

FIGURE 3.1.8 EV450, HE1X, AND HE1.5 ECM WITH CIRCUIT BOARD AND CO2 SCHEMATIC

NOTE: Remove supplied wires from the time clock spade terminals prior to wiring to a RH-W thermostat as shown.
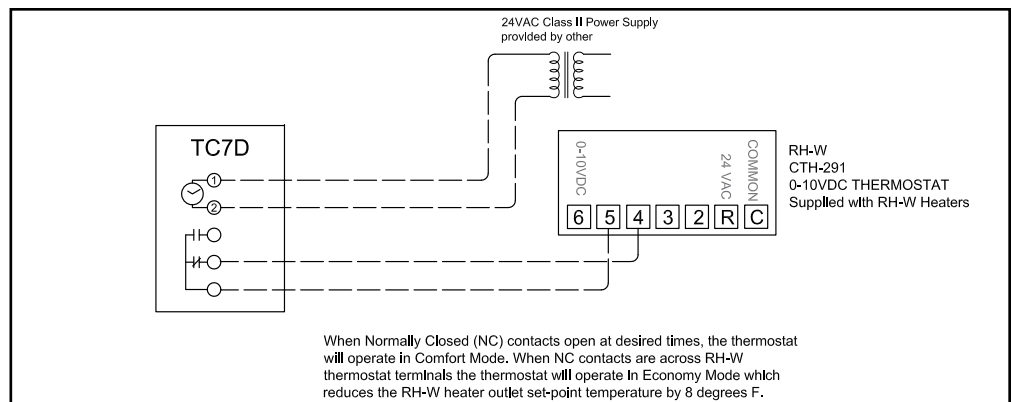

FIGURE 3.1.9 RH-W ELECTRIC HEATER SCHEMATIC

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About RenewAire

For over 35 years, **RenewAire has been a pioneer in enhancing indoor air quality (IAQ)** in commercial and residential buildings of every size.This is achieved while maximizing sustainability through our fifth-generation, static-plate, enthalpic-core **Energy Recovery Ventilators (ERVs) that optimize energy efficiency**, lower capital costs via load reduction and decrease operational expenses by minimizing equipment needs, resulting in significant energy savings. Our ERVs are competitively priced, simple to install, easy to use and maintain and have a quick payback. They also enjoy the industry's best warranty with the lowest claims due to long-term reliability derived from innovative design practices, expert workmanship and **Quick Response Manufacturing (QRM)**.

As the pioneer of static-plate core technology in North America, RenewAire is the largest ERV producer in the USA. We're **committed to sustainable manufacturing** and lessening our environmental footprint, and to that end our Waunakee, WI plant is 100% powered by wind turbines. The facility is also one of the few buildings worldwide to be LEED and Green Globes certified, as well as having achieved ENERGY STAR Building status. In 2010, RenewAire joined the Soler & Palau (S&P) Ventilation Group in order to provide direct access to the latest in energy-efficient air-moving technologies. For more information, visit: renewaire.com

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