RenewAire
Energy Recovery Ventilation

Solid State Speed Controls

Supplemental Installation Manual for Accessories

EV450
HE1X

208-230 VAC

120 VAC

⚠ WARNING

Danger of Electrical Shock when servicing an installed unit.

ALWAYS DISCONNCECT POWER SOURCE BEFORE SERVICING.

More than one disconnect switch may be required.

Proper Wiring Size Selection and Wiring Installation are the Respondsibility of the Electrical Contractor.

⚠ WARNING

The solid state speed controls provided must be grouded when installed.

⚠ CAUTION

THIS INFORMATION IS ADVISORY ONLY

Installation of solid state speed controls should only be performed by qualified personel.

⚠ CAUTION

If applicable, set solid state speed control minimum speed adjustment per control manufacturer instructions.

⚠ CAUTION

One solid state control should be used per one motor only. Do NOT control multiple motors with a single control.

1.0 OVERVIEW

1.1 DESCRIPTION

SOLID STATE SPEED CONTROLS FOR MOTOR & BLOWER SPEED CONTROL OF
RENEWAIRE EV450 AND HE1X ENERGY RECOVERY VENTILATORS

RenewAire single-phase EV450 and HE1X (non-ECM) indoor and rooftop units can be operated using solid state speed controls following the procedures below.

Electrical specifications are identified on the unit rating label (located near the electrical box). Locate the voltage (V) and phase of each motor on the unit rating label. Select the solid state speed control appropriate for the voltage rating on the label. Solid state speed controls may be used only to control single-phase EV450 and HE1X indoor and rooftop units.

2.0 INSTALLATION

ABBREVIATIONS
SC: Speed Control
C: Contactor

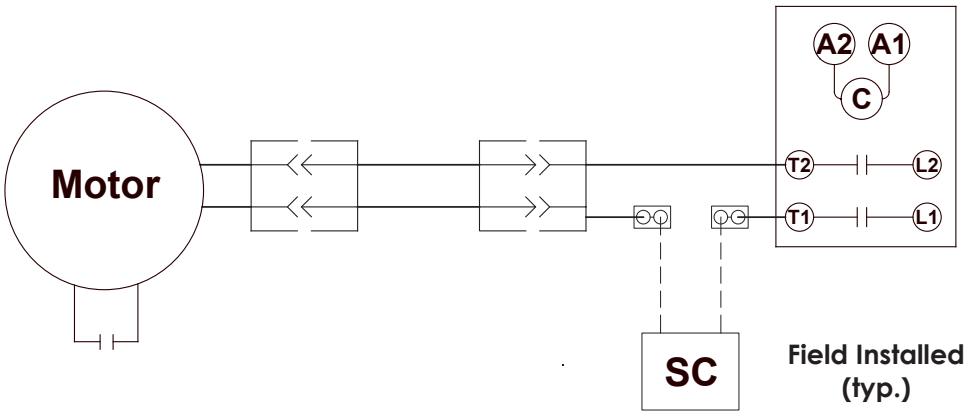
2.1 PROCEDURES

1. Ensure power is disconnected to the unit prior to opening electrical box. See Warnings on page 2 of this manual.
2. The electrical box of the unit contains existing wiring harnesses that connect the contactor to the motor wiring harnesses. For motors which will receive solid state speed controls, these wiring harnesses will be replaced with a new harness, which is provided.
3. NOTE: Do NOT remove harnesses that directly connect the motor to the electrical box.
4. There are multiple electrical knock-outs located at the base of the unit electrical box to attach conduit for routing wires for the solid state speed controls. Only remove the number of knock-outs needed.
5. Remove the existing wiring harness inside the electrical box that connects the unit contactor with the motor wiring adapter harness. See the chart below to identify the part number of the existing wiring harness to be replaced.
6. Replace the existing wiring harness with the wiring harness from the kit. This harness is modified to accept the connection to and from the solid state speed control, which is to be wired in series with the speed-controlled motor and line voltage. Discard the original wiring harness which was removed from the unit.
7. Use the two-position wire connectors which are attached to the replacement wiring harness to connect field-supplied wiring that will run from the unit out to the solid state speed control.
8. Use the provided wiring ties to secure and tidy replacement wiring harness inside the unit electrical box.
9. Properly route field-supplied wires from the unit to the location of the solid state speed controls. Use the loose wire connectors supplied with the kit to connect the solid state speed controls in series with the unit wiring.
10. Ensure that the solid state speed controls are properly grounded per the speed control manufacturer instructions. Use the provided wire connector to attach field-supplied ground wire to the speed control.
11. Ensure that solid state speed controls are properly installed in a standard electrical box and secured per control manufacturer instructions.
12. Ensure all electrical boxes and unit doors are properly closed.

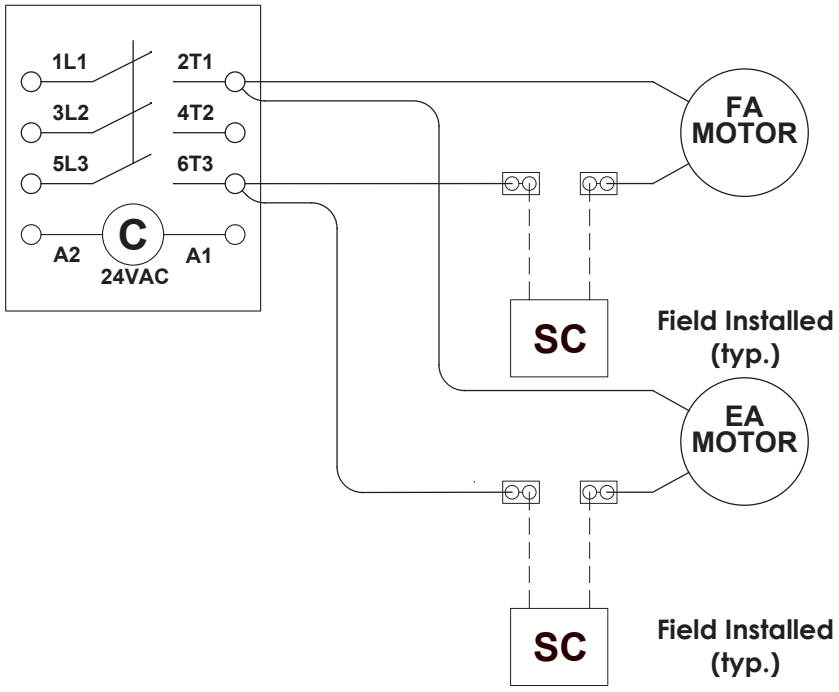
3.0 ELECTRICAL

3.1 WIRING SCHEMATICS

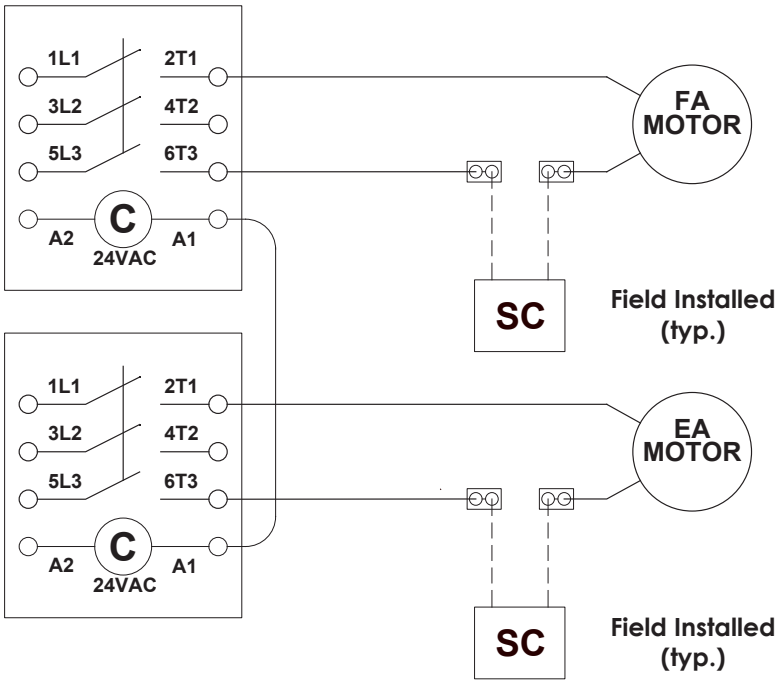
3.1.1 EV450 Wiring Schematics - Standard



3.1.2 HE1X Wiring Schematics - Standard



3.1.3 HE1X Wiring Schematics with Independend Blower Control (IBC)



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About RenewAire

For over 30 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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