RenewAire
Energy Recovery Ventilation

HE1X EC Motor Field Replacement Kit

Replacement Installation Manual

Service Part 990550

HE1XINH shown

⚠ WARNING

Risk of Fire, Electric Shock, or Injury.
Observe All Codes and the Following:

1. Before servicing or cleaning the unit, switch power off at disconnect switch or service panel and lock-out/tag-out to prevent power from being switched on accidentally. **EVEN THOUGH THE DISCONNECT SWITCH ON THE UNIT IS OFF THERE IS STILL POWER AT THE LOAD SIDE OF THE SWITCH.** More than one disconnect switch may be required to de-energize the equipment for serviceing.
2. This installation manual shows the suggested installation method. Additional measure may be required by local codes and standards.
3. Installation work and electrical wiring must be done by qualified professional(s) in accordance with all applicable codes, standards, and licensing requirements.

⚠ CAUTION

The motor/blower assembly is heavy. Use proper care when lifting to avoid injury or damage.

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1.0 OVERVIEW

1.1 DESCRIPTION

A field replacement kit provides all the parts necessary to replace electronically commutated (EC) motors in an HE1X unit. The kit contains an EC motor/blower package and AC-DC conversion harness, see Figure 2.3.0. Because of differences in the motor control circuitry internal to the replacement motor, additional components in the e-box are required.

NOTE: Every unit has an e-box, commonly referred to as an “E-Box”. Each E-Box is divided into a high voltage side and a low voltage side.

2.0 INSTALLATION

⚠ CAUTION

The motor/blower assembly is heavy. Use proper care when lifting to avoid injury or damage.

2.1 BEFORE YOU START

- Check that the EC motor field replacement kit is complete before starting. The HE1X kit includes a motor/blower assembly(s), AC-DC conversion harness, and hardware kit.
- Verify the unit voltage matches the EC motor voltage rating. EC motor voltages are single phase only, 115 VAC or 208-230 VAC.
- Read these entire instructions prior to beginning the field replacement.

You will also need:

- Wire cutters
- Philips screwdriver or square drive
- 7/16" wrench.
- Aluminum foil tape.

2.2 REMOVAL OF PARTS

The failed motor/blower(s) must be removed from the unit.

1. Turn off the disconnect switch on the unit. **MAKE SURE ELECTRICAL POWER IS SHUT OFF TO THE UNIT AND DISCONNECT SWITCH.**
2. Remove the energy exchanger core and filters from the unit.Set the core aside so it will not be damaged during the field replacement of the motors. The core will be re-installed in the unit later.
3. Determine which motor and blower(s) is/are to be replaced. Only those needing replacement need to be removed.
4. For the motor being replaced disconnect the two motor harness connectors at the motor body. The connectors have small tabbed levers that keep the connectors engaged. Press the lever on the connector and it should disconnect from the motor body.
5. **SUPPORT THE MOTOR AND BLOWER.** Remove the four 1/4"-20 bolts retaining blower housing to the blower plate or rails. Retain the nuts, bolts, and washers. They will be used to re-install the replacement blowers.
6. Lift motor/blower assembly(s) out of the unit.
7. Leave the blower plates and rails in the unit. They will be used for the EC motor replacement.

2.3 INSTALLATION OF REPLACEMENT KIT

The unit is now ready for installation of the replacement kit. The motor/blower assembly(s) are installed first and then the AC-DC harness(es).

1. Place a motor/blower assembly into the unit and fasten the blower housing to the blower plate or rails with the 1/4-20 bolts, flat washers, lock washers, and Tinnermann nuts removed from the old blower assembly. Tighten the bolts securely. Repeat with the other motor/blower assembly.
2. Re-connect the two motor harnesses at the motor. You should hear a click when the connectors are properly seated.
3. Tidy up harness wires with zip ties provided. Make sure the wires are taut and away from the blower inlet.
4. Next the AC-DC conversion harness is installed. See the appropriate section below for your specific unit.
   See the HE1X wiring schematics at the end of the instructions.
5. MAKE SURE ELECTRICAL POWER IS SHUT OFF TH THE UNIT AND DISCONNECT SWITCH.
6. Loosen the strain reliefs in the low voltage divider in the e-box. This can be done by pinching together legs on the strain relief.
7. Disconnect the blue wire quick-connect terminal from the transformer.
8. In the low voltage compartment, disconnect the blue wire from the EA terminal block station
   1. Pull the blue wire through the train relief and set it aside. It will not be used.
9. In the low voltage compartment, disconnect the red wire from the FA terminal block station
   1. Pull the red wire through the strain relief and connect it to the 3-wire connector on the AC-DC conversion harness with the matching red wire.
10. In the low voltage compartment, disconnect the orange wire from the EA terminal block station 8 and the orange wire from the FA terminal block station 8. These are the orange wires that pass through the strain reliefs. Pull the two orange wires through the strain reliefs.
    DO NOT DISCONNECT THE ORANGE WIRES FROM THE POTENTIOMETERS THAT ARE IN THE TERMINAL BLOCKS.
11. Cap the end of each orange wire separately with the two crimp caps provided.
12. On the AC-DC conversion harness, feed the two orange wires through the strain relief into the low voltage compartment and connect one wire to the EA terminal block station 8 and the other wire to the FA terminal block station 8. The order does not matter.
13. On the AC-DC conversion harness, feed the red wire through the strain relief into the low voltage compartment and connect it to the FA terminal block station 1.
14. On the AC-DC conversion harness, connect the blue quick-connect terminal to the transformer. Feed the clue wire through the strain relief into the low voltage compartment and connect it to the EA terminal block station 1.
15. In the e-box, find the purple wire from each motor harness. Cut both purple wires so the cut ends (4 total) can reach the 5-wire connector on the AC-DC harness with the purple wire. Strip the ends of each cut purple wire 3/8" and install the four wires into the 5-wire connector.
16. Tidy up wire routings in the e-box with the zip ties provided.
17. Tighten any strain reliefs where necessary.
18. Select the proper wire schematic label for the unit and attach to the underside of the E-Box cover.
19. Install the E-Box cover and fasten.

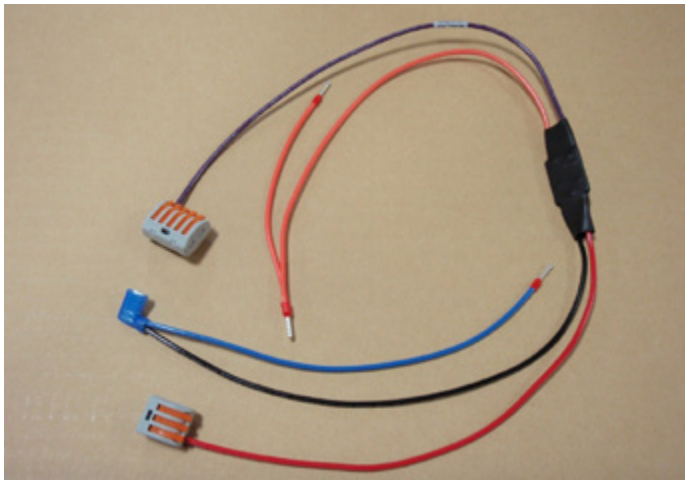


FIGURE 2.3.0 AC-DC HARNESS FOR HE1X

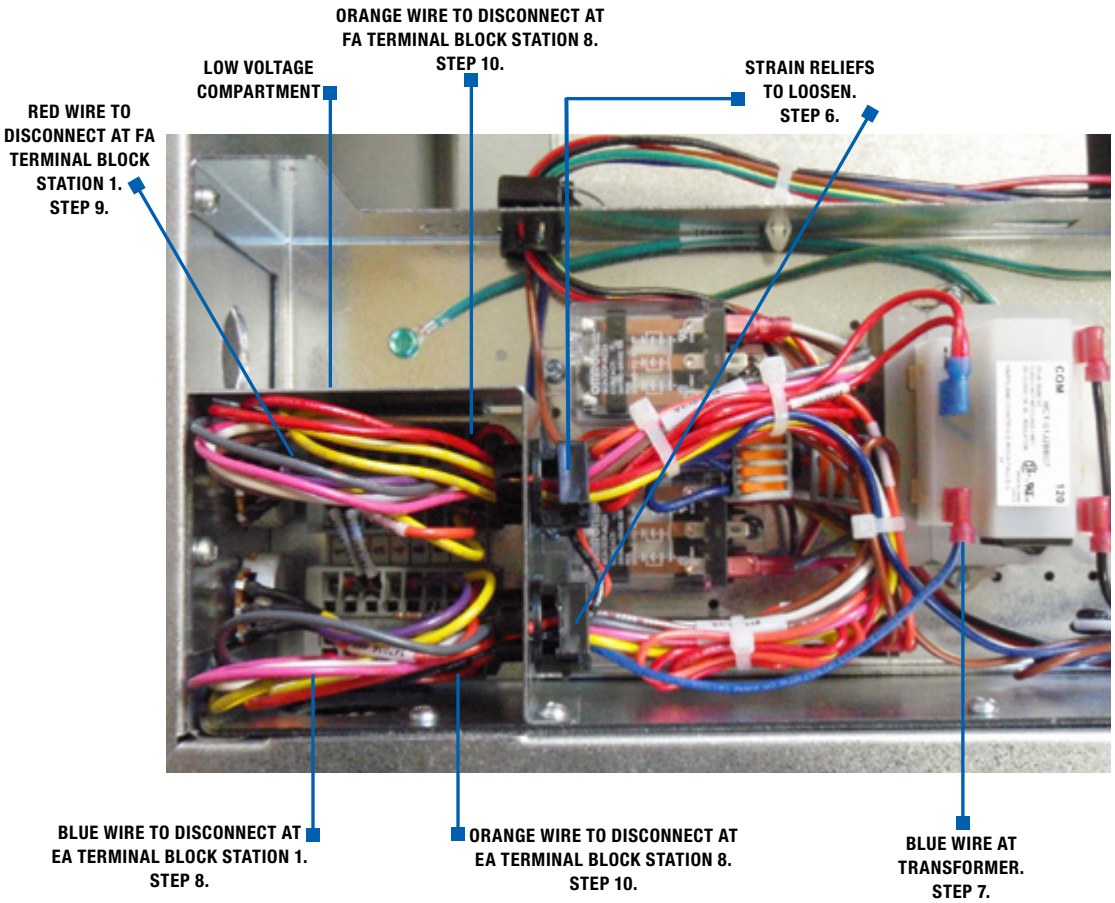


FIGURE 2.3.1 HE1XIN E-BOX (TYPICAL)

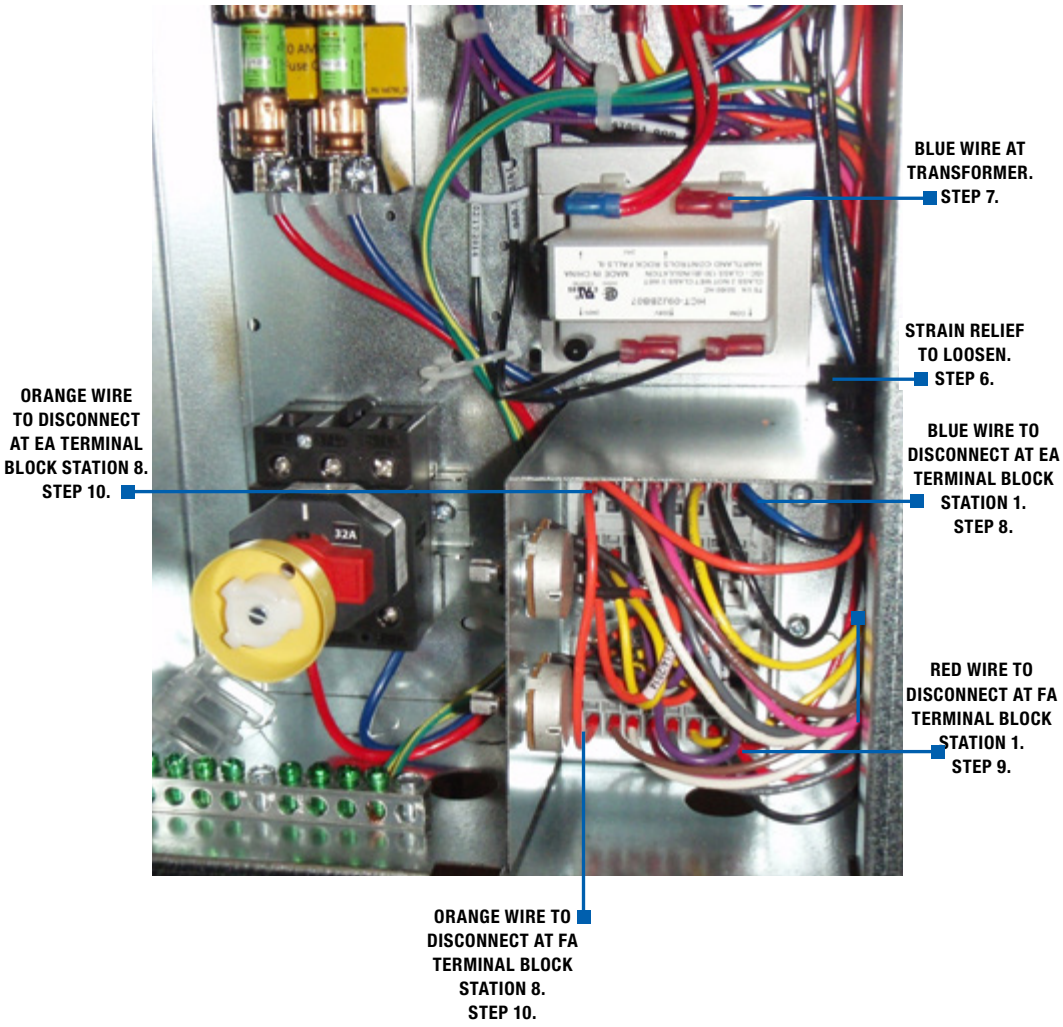


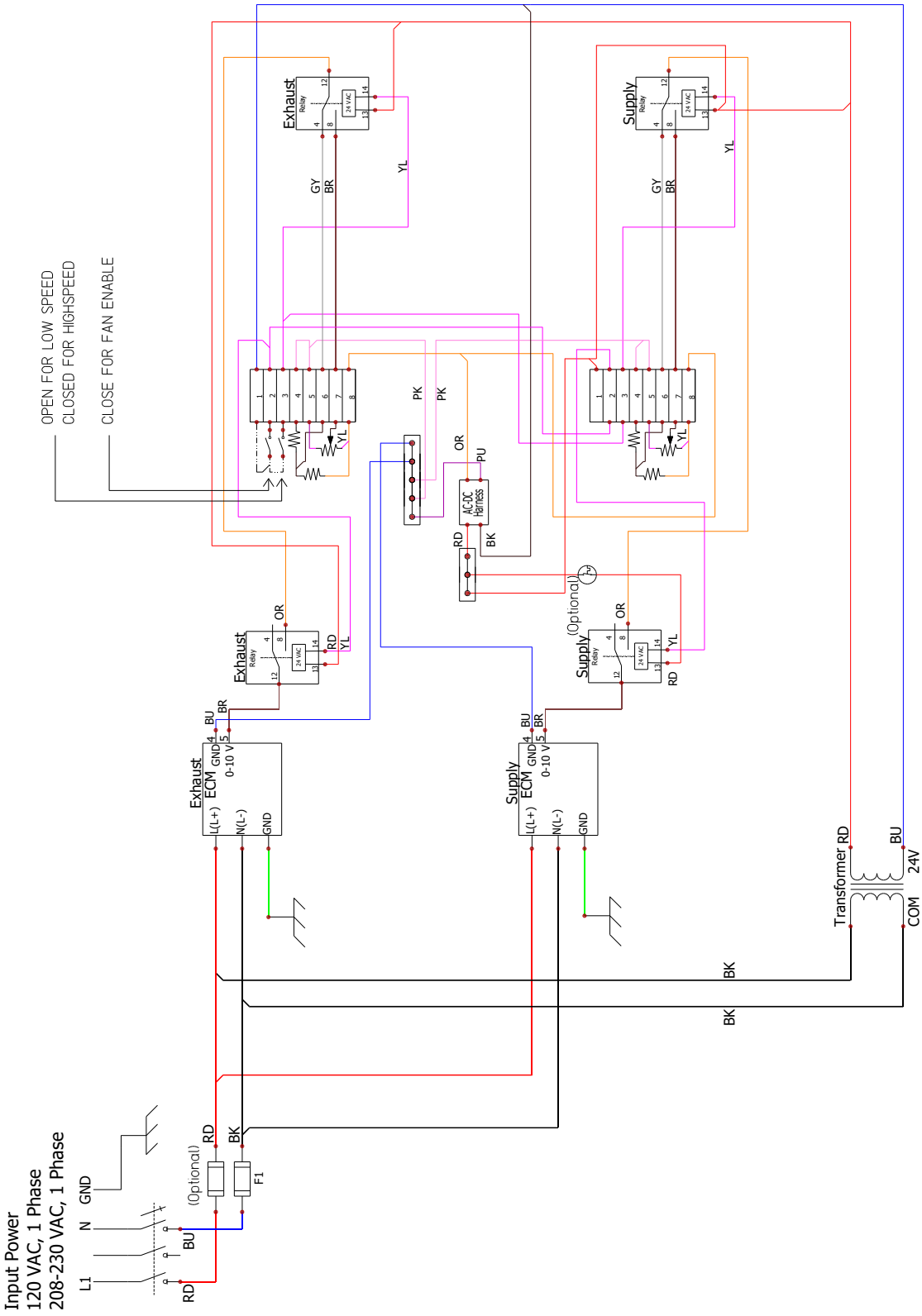
FIGURE 2.3.2 HE1XRT E-BOX (TYPICAL)

2.4 OPERATIONAL CHECKS

1. Clean out the interior of the unit to remove any debris.
2. Re-install the energy exchanger core and filters into the unit.
3. Verify all connections have been made in the e-box.
4. Close and latch both doors on the unit.
5. Turn the unit disconnect switch to on.
6. If there is a call for Unit Operation, the motors should operate at Speed 1.
7. If there is a call for Speed 2 operation, the motors should operate at Speed 2.
8. Adjustment of airflow may be required. Refer to *EC Motor Supplemental Manual* provided with the unit for additional operational instructions.

3.0 ELECTRICAL

3.1 HE1X WIRING SCHEMATIC–NO DAMPERS



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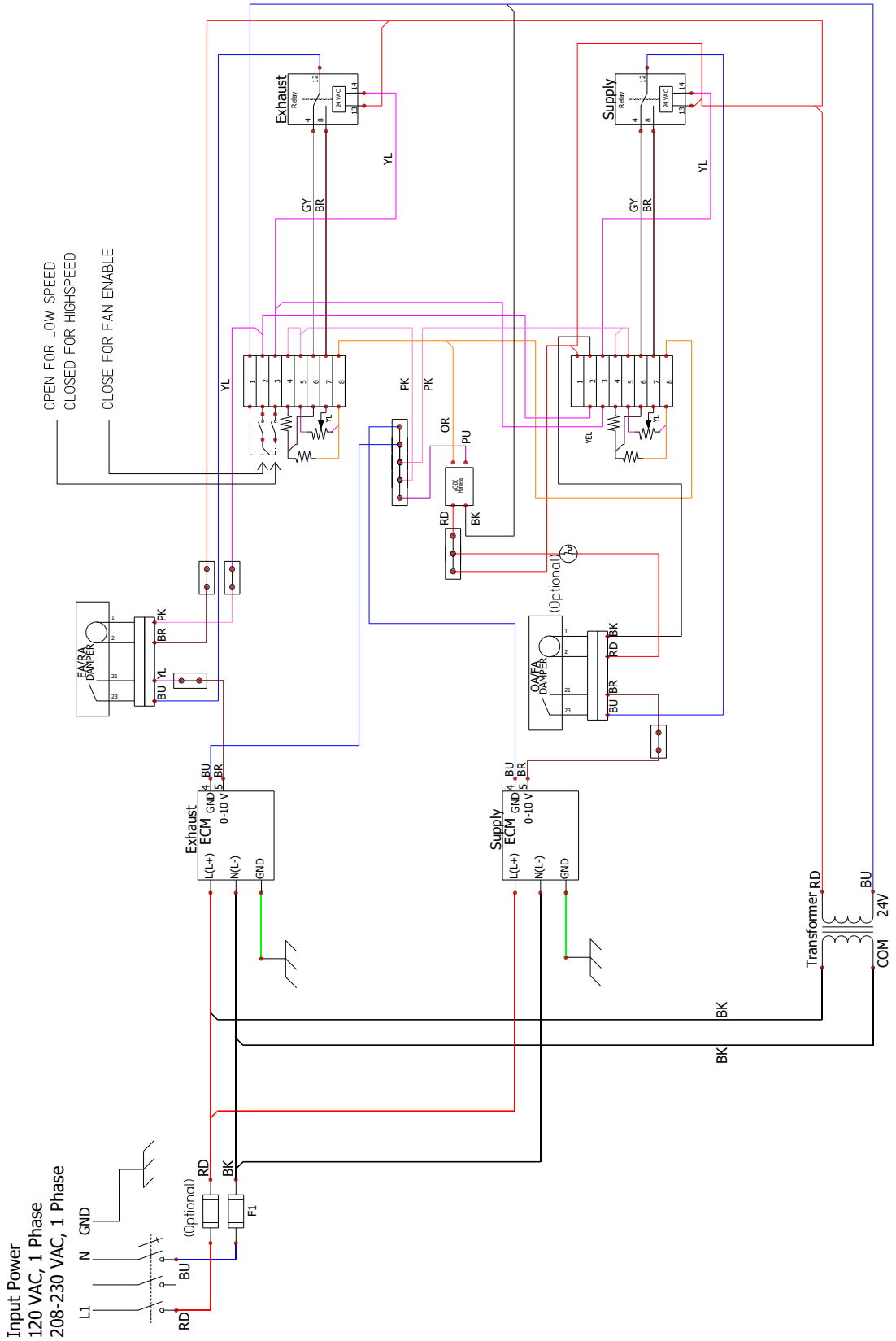
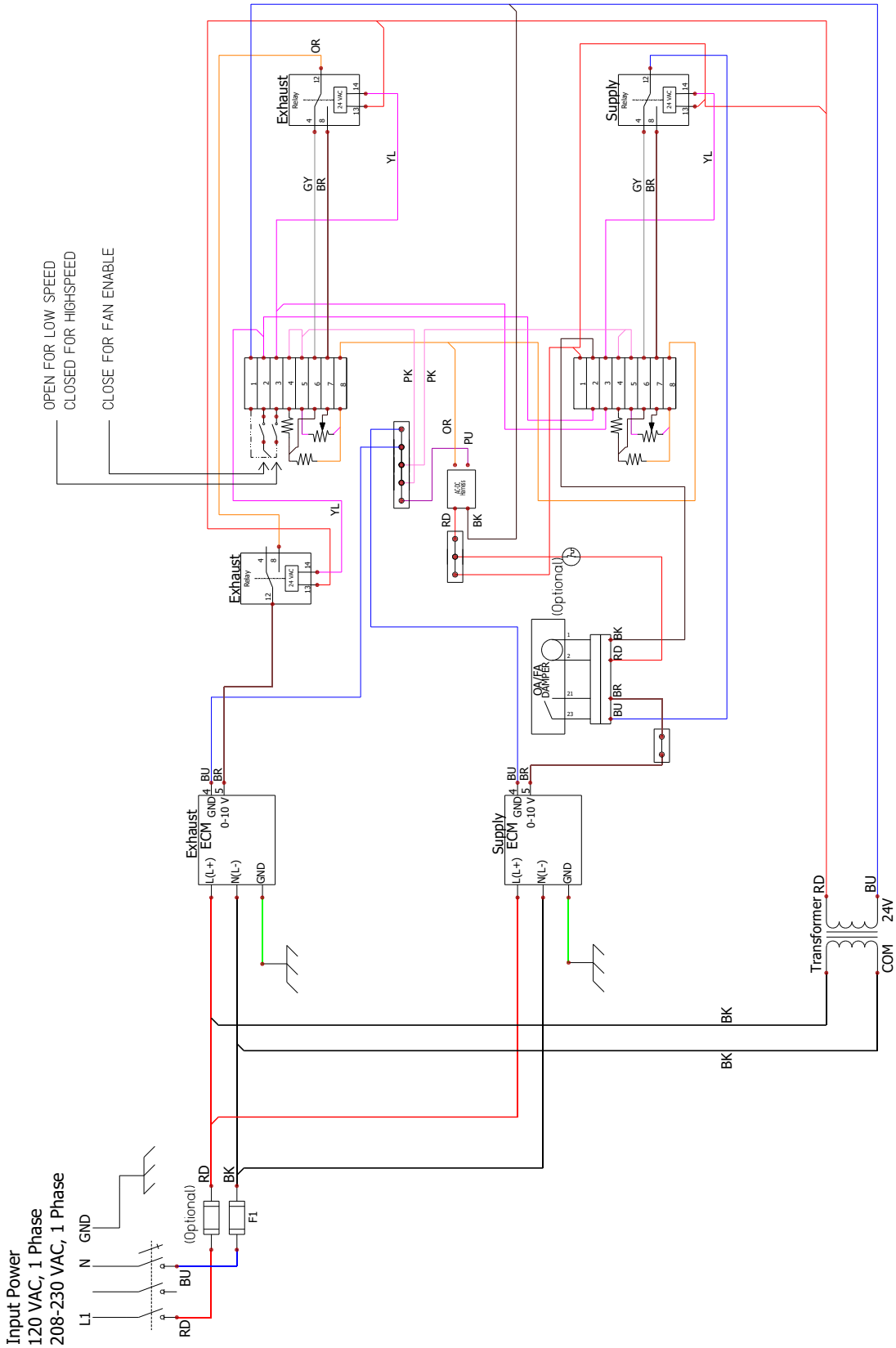
3.2 HE1X WIRING SCHEMATIC–TWO DAMPERS



3.3 HE1X WIRING SCHEMATIC–OA/FA DAMPER



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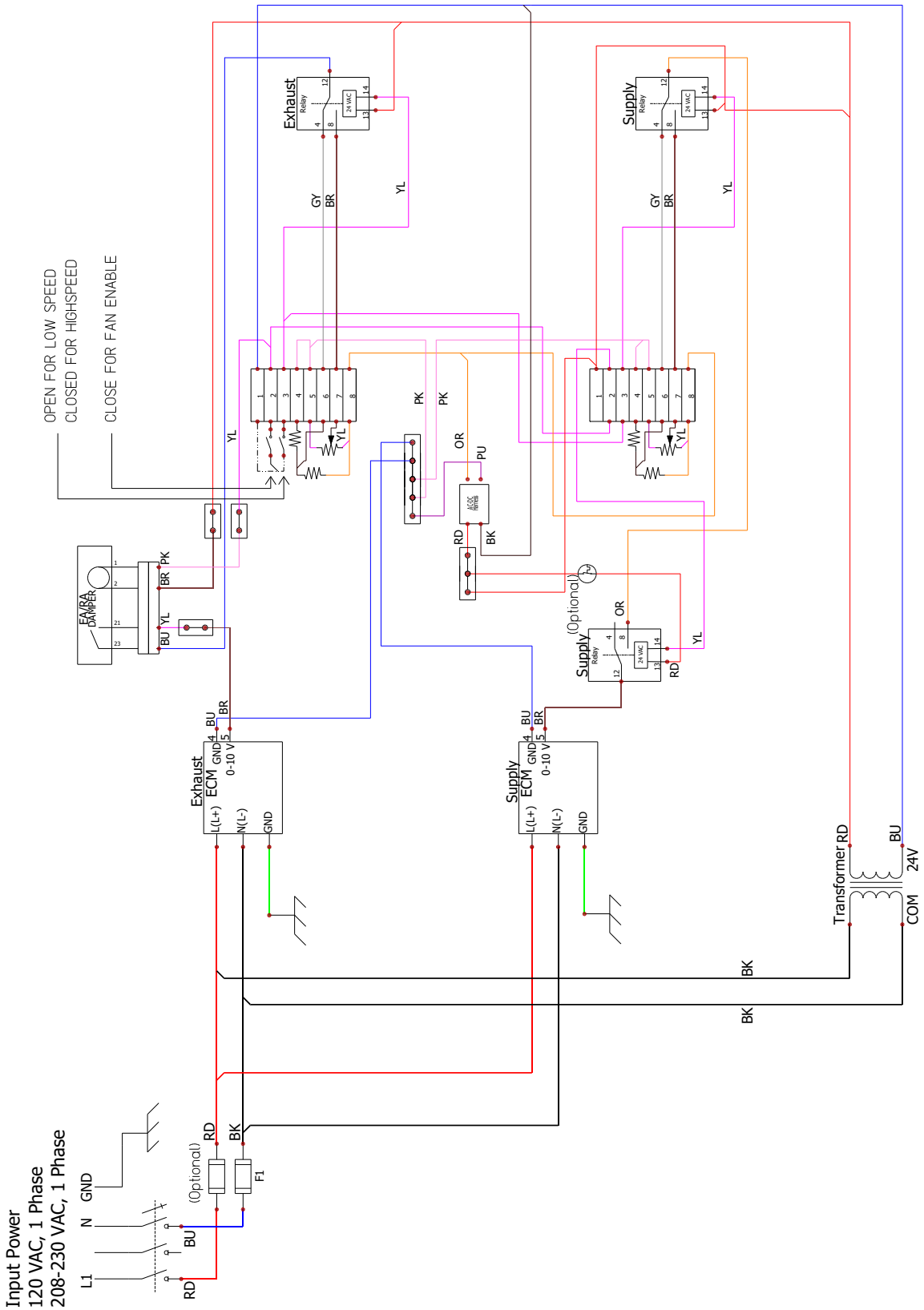
3.4 HE1X WIRING SCHEMATIC–EA/RA DAMPER



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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