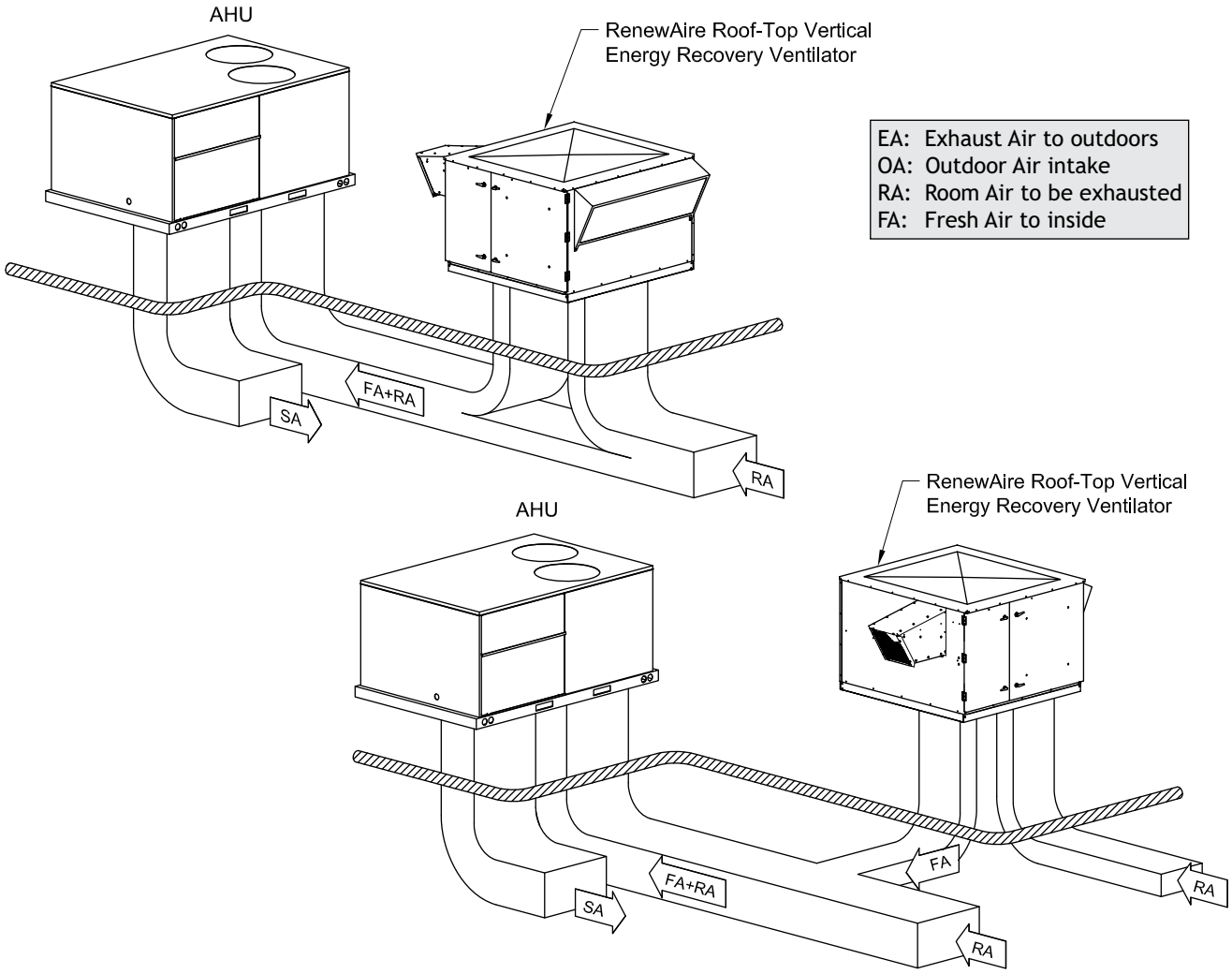
RenewAire
Energy Recovery Ventilation
Think Greener. Breathe Better.

Commercial Outdoor Products

- Many airflow orientation options.
- Weatherized cabinets with hoods for outdoor applications.
- Wide range of airflow and static capacities.
- Easy installation and service.
- AHRI certified performance data for efficiency and cross leakage.
- UL tested flammability and smoke generation that meets NFPA 90A and 90B test standards for commercial applications.
- Ten year core warranty.

RenewAire means *Trouble-Free* ERV.



Contact RenewAire for other application schematics.

(800) 627-4499 • Fax: (608) 221-2824

Packaged Rooftop Energy Recovery Ventilators: EV450RT, HE1XRT, HE2XRT, HE3XRT, HE4XRT, HE6XRT & HE8XRT

Part I - General

A. Product Specification

1. Energy Recovery Ventilator (ERV) shall be a packaged unit as manufactured by RenewAire and shall transfer both heat and humidity using static plate core technology.

B. Quality Assurance

1. The energy recovery cores used in these products shall be third party Certified by AHRI under its Standard 1060 for Energy Recovery Ventilators. AHRI published certifications shall confirm manufacture's published performance for airflow, static pressure, temperature and total effectiveness, purge air (OACF) and exhaust air leakage (EATR). Products that are not currently AHRI Certified will not be accepted.

2. Manufacturer shall be able to provide evidence of independent testing of the core by Underwriters Laboratory (UL), verifying a maximum flame spread index (FSI) of 25 and a maximum smoke developed index (SDI) of 50 thereby meeting NFPA 90A and NFPA 90B requirements for materials in a compartment handling air intended for circulation through a duct system. The method of test shall be UL Standard 723.

3. Unit shall be Listed under UL 1812 Standard for Ducted Air to Air Heat Exchangers. Some exceptions to UL Listing may apply. Units intended for "Outdoor Use" shall be listed using the specific UL requirements for rain penetration, corrosion protection and seal durability and shall be so labeled.

4. The ERV core shall be warranted to be free of manufacturing defects and to retain its functional characteristics, under circumstances of normal use, for a period of ten years from the date of purchase. The balance-of-unit shall be warranted to be free of manufacturing defects and to retain its functional characteristics, under circumstances of normal use, for a period of two years from the date of purchase.

Part II - Performance

A. Energy Transfer

The ERV shall be capable of transferring both sensible and latent energy between airstreams. Latent energy transfer shall be accomplished by direct water vapor transfer from one airstream to the other, without exposing transfer media in succeeding cycles directly to the exhaust air and then to the fresh air.

B. Passive Frost Control

The ERV core shall perform without condensing or frosting under normal operating conditions (defined as outside temperatures above -10°F and inside relative humidity below 40%). Occasional more extreme conditions shall not affect the usual function, performance or durability of the core. No condensate drains will be allowed.

C. Continuous Ventilation

Unit shall have the capacity to operate continuously without the need for bypass, recirculation, pre-heaters, or defrost cycles under normal operating conditions.

D. Positive Airstream Separation

Water vapor transfer shall be through molecular transport by hydroscopic resin and shall not be accomplished by "porous plate" mechanisms. Exhaust and fresh airstreams shall travel at all times in separate passages, and airstreams shall not mix.

E. Laminar Flow

Airflow through the ERV core shall be laminar over the products entire operating airflow range, avoiding deposition of particulates on the interior of the energy exchange plate material.

Part III - Product

A. Construction

1. The energy recovery component shall be of fixed-plate cross-flow construction, with no moving parts.

2. No condensate drain pans or drains shall be allowed and unit shall be capable of operating in both winter and summer conditions without generating condensate.

3. The unit case shall be constructed of G90 galvanized, 20-gauge steel, with lapped corners and zinc plated screw fasteners. The unit roof shall be one piece or have watertight standing seam joints and shall overlap wall panels and doors in order to positively shed water.

4. Access doors shall provide easy access to blowers, ERV cores, and filters. Doors shall have an airtight compression seal using closed cell foam gaskets rated for outdoor exposure. Pressure taps, with captive plugs, shall be provided allowing cross-core pressure measurement allowing for accurate airflow measurement.

5. Weatherhoods shall be screened to exclude birds and animals. Inlet weatherhoods shall be sized to maintain inlet velocities below 500 fpm, and equipped with rain excluder baffles.

6. Case walls and doors shall be insulated with 1 inch, 4 pound density, foil/scrim faced, high-density fiberglass board insulation, providing a cleanable surface and eliminating the possibility of exposing the fresh air to glass fibers, and with minimum R-value of 4.3 (hr ft2 °F/BTU).

7. The ERV cores shall be protected by a MERV-8 rated, 2" nominal, pleated, disposable filter in both airstreams.

8. Unit shall have single-point power connection and a single-point 24 VAC contactor control connection.

9. The unit electrical box shall include a factory installed, non-fused disconnect switch and a 24 VAC, Class II transformer/relay package.

10. Blower motors shall be Premium Efficiency, EISA compliant for energy efficiency. The blower motors shall be totally enclosed (TEFC) and shall be supplied with factory installed motor starters (HE6X and HE8X 208-230/460V models are open drip proof). Direct drive models (EV450 and HE1X models) shall be EISA compliant for energy efficiency with open drip proof design and integral thermal protection.

11. Blowers shall be quiet running, forward curve type and be either direct drive (EV450 and HE1X only) or belt drive. HE6X and HE8X units use backward incline, belt drive blower packages. Belt drive motors shall be provided with adjustable pulleys and motor mounts allowing for blower speed adjustment, proper motor shaft orientation and proper belt tensioning.

12. The ERV shall be provided "inverter-ready" allowing for applications of inverters supplied and installed by others.

B. Options *(Select options based on application requirements)*

1. Provide unit and duct connection orientation per project schedule.

2. Provide double wall construction with 24-gauge galvanized steel liner.

3. Units are available single or three phase at a full range of operating voltages. See project schedule.

4. Provide motor horsepower as specified in project schedule.

5. Provide factory installed disconnect fuses.

6. Provide factory installed filter monitors for each airstream.

7. Provide MERV-13 filters for final installation after construction phase.

8. Provide 14 inch high, non-pitched roof curbs as available from the factory. Pitched curbs, vibration curbs, seismic curbs and other custom curbs are available directly from curb manufacturer.

9. RTC (RoofTop Connect) units shall have return air and fresh air ducts configured to permit direct tie-in to rooftop air handlers using factory offered transition piece. (See separate specification for factory transition availability.)

10. Provide high wind tie-down kit.

See www.renewaire.com for Installation Specifications.