

## SECTION 23 – Energy Recovery Systems MiniCore Ventilator Series

### 1. GENERAL

#### 1.1. RELATED DOCUMENTS

- A. This Section is defined within the general conditions and drawings in the contract, in reference to Division 01, General Requirements, and the Facility Services Subgroup 23 (Heating Ventilating and Air Conditioning).

#### 1.2. SUMMARY

- A. The MiniCore Ventilator Series Energy Recovery units pertain to the integral recovery of a building's ventilation system to reduce the building's tempering loads in all climates. The MiniCore shall be utilized for use in the indoor applications, applying blending of outside air with return air by use of a static core.

#### 1.3. UNITS

- A. **MCV500E:** 300 CFM to 750 CFM range; 44.25 x 42.25 x 15.50 in. (L x W x H)
- B. **MCV1000E:** 750 CFM to 1250 CFM range; 44.25 x 42.25 x 20.66 in. (L x W x H)

#### 1.4. QUALITY ASSURANCE

- A. **ARI Certification:** Units and their components shall be factory tested according to ARI and shall be listed and labeled by ARI 1060.
- B. **Air performance data:** Based on tests and procedures performed in accordance with AMCA publication 211 and in compliance with the requirements of the AMCA Ratings Program.
- C. **Electrical Components, Devices, and Accessories:** Listed and labeled and defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction and marked for intended use.
- D. **NFPA Compliance:** Units shall be designed and fabricated in compliance with NFPA 70 and 90A.
- E. **Safety:** ETL certified per UL 1995 and CSA 22.2
- F. **AHRI Compliance:** Minimum of 50% total energy recovery effectiveness tested to AHRI 1060, 0% EATR (Cross-contamination) tested to AHRI 1060
- G. **ISO Standards:** Mold and bacteria resistance tested to ISO 846a and ISO 846c with a rating of 0 for both
- H. **UL Compliance:** Certified to UL 723 and UL 900 specifications.

#### 1.5. WARRANTY

- A. Provide warranty for 12 months from date of shipment. Warranty shall cover manufacturer defects. Warranty work shall be performed by manufacturer's factory trained and factory employed technician.
- B. Include factory-provided controls in the parts warranties.
- C. Parts associated with routine maintenance, such as air filters shall be excluded.

#### 1.6. COORDINATION

- A. Coordinate with contractor the specifics for electrical and HVAC location.
- B. Installation, Operation, Maintenance Manual (IOM) shall come packaged with each unit for installation instructions

## 1.7. SUBMITTALS

- A. Supply and exhaust blowers performance curves for unit
- B. Unit data (filter sizes, supply and exhaust performance, motor information, unit weights, CFM range and unit voltage)
- C. Summer and winter psychrometric charts
- D. Summer and winter static core performance data
- E. Unit wiring diagrams
- F. Unit drawings
- G. AHRI Certified Ratings

## 2. PRODUCTS

### 2.1. MiniCore Ventilator Series Energy Recovery Systems

- A. **Description:** The MiniCore Ventilator product shall combine the features of the static core, supply and exhaust forward curved blowers, and control center with single point high voltage connection, with the added benefit of indoor use.
  
- B. **Cabinet:**
  - 1. There shall be 2 basic cabinets of MiniCore Ventilator Series Energy Recovery units. The cabinets will be factory built and field convertible in a flow configuration that corresponds with the positioning of the unit.
  - 2. **Multi-positional:** The unit shall be multi-positional, therefore it can be placed in a horizontal, vertical, or side position.
  - 3. **Access Doors:** Will be provided for top access and controls.
  - 4. **Door Panels:** Shall be removable with spring loaded hinges and latches to provide for easy access.
  - 5. **Exterior panels:** 20 gauge, painted steel with 500 hour salt spray certification.
  - 6. **Internal assemblies:** Single wall door panels consist of 20 gauge, galvanized (G90) steel with an internal core coating of standard ¼ inch rubberized foam insulation.
  - 7. **External assemblies:** Shall contain four hanging brackets/floor mounts for ease of installation.
  
- C. **Features (Standard)**
  - 1. **Duct Connectors:** Shall be placed on inlet and outlet air openings and shall be field convertible.
  - 2. **Blowers:** Intake and exhaust blowers to be arranged in a draw-through position. Both blowers are to be direct drive.
  - 3. **Static Core:** Static Core shall be the dPoint Technologies ERV Core with a polymer membrane. Shall operate at lower temperatures without defrost (23°F or -5°C). The exhaust air pre-conditions the outside air by transferring heat and humidity from one air stream to another. Allows for latent and sensible energy recovery with no cross contamination or moving parts. Shall withstand pressure differentials up to 10" w.c. Slide out core assembly will provide ease for external cleaning or replacement.
  - 4. **Filters:** Filter options will be available. Shall be 1 inch throw away, 2 inch MERV 8 or 13, medium efficiency, pleated filters before the static core in both the intake and exhaust sides.

5. **Motors:** Shall be 3 speed permanent split capacitor (PSC) motors or electronically commutated motors (ECM). The 500 model will contain ½ horsepower motors and the 1000 model will be ¾ horsepower motors. They will be permanently lubricated, heavy-duty type matched to the fan load and furnished at the specified voltage, phase, and enclosure. Units will be offered in 120V or 208/230V, single phase version for the 500 model and 208/230V, single phase for the 1000 model.
6. **Insulation:** Consists of ¼ inch rubberized foam insulation with peel and stick backing.
7. **Disconnect:** A wired in non-fused NEMA 3R disconnect switch placed on the outside of the unit.

#### D. Options (Factory Provided)

1. Speed Controllers (PSC)
2. Vibration isolators/Ceiling and Floor as required
3. FAC Controls + MAP Gateway

### 2.2. CONTROLS

- A. All internal electrical components will be factory wired for single point power connections.
- B. All electrical components will be UL Listed, Approved or Recognized where applicable and wired in compliance with the National Electrical Code (NEC).
- C. The unit will have a control panel access door. Behind this access panel will be a control box containing all the major electrical control components with a removable cover panel.
- D. A terminal block will be placed on the outside of the unit for field connections of control signals.
- E. The unit shall have a control transformer, relays to activate the blowers and a fuse block which will be located inside the control panel in the unit.

END OF SECTION 23