

General Design Specifications for ConsERV™ D-Series System Construction

▪ Construction

- The unit shall be aluminum space frame with corrosion resistant hardware and double-walled coated aluminum panels.
- The air-to-air enthalpy exchanger shall be of the fixed plate type and have no moving parts.
- The unit shall be capable of both summer and winter operation with no condensation buildup or condensate management
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- Roof panels shall include a stiffening structure such as a cross-brake or standing seam to limit dimpling or sagging when loaded with water or snow and ice.
- The unit housing panels shall have an R-value of no less than 4.3 hr ft²/Btu and comply with ASTM E84 Class A.
- Hinged access doors shall be provided with latches, full perimeter, dual durometer automotive style gasket and double wall construction. Hinges shall allow for field removal, preferably through a lift-off mechanism.

▪ Filtration

- Exhaust and fresh air streams shall have 2" thick MERV 8 air filters to prevent larger particulate contamination from entering the energy recovery cores.
- Filters shall be removable without the use of power tools. A simple hand tool may be required for the maintenance person to reach the furthest filters inside the cabinet.
- Static pressure taps to monitor pressure loss through the filters shall be an option.

▪ Fans & Motors

- Supply and exhaust fans Impeller made of aluminum (AlMg3) with 7 backward curved blades and efficiency optimized circumferential diffusor. Sound optimized. Pressure orientated behaviour. Fluidic optimized inlet cone made of galvanised sheet steel.
- Motorized Impeller, includes motor and impeller. Mounting either with horizontal or vertical motor shaft. Motorized Impeller statically and dynamically balanced according to DIN ISO 21940-11 at least with quality level G6.3.
- Exceeds in accordance with IEC 60034-30-2 minimum requirements for IE5 (Ultra Premium Efficiency). Maintenance free ball bearings, closed on both sides with long-term lubrication. Magnets without rare earth elements. Motor made of die casted aluminum. Protection Class IP54 and insulation class F. Electronic with integrated terminal box and environmental resistant cable glands (2x M16 and 1x M20). Status LED integrated.



- Comes with 100% speed controllable with integrated Motor Protection and Soft Start, eliminating the need for vibration isolation protection.
- ModBus RTU Interface integrated. Bus configuration possible on site by customer. Potential-free Alarm Contact and integrated 24V Supply for accessories. Applicable in all common energy grids and IT-Network. Low noise commutation. Fan complies with the guidelines required (Machinery-, EMC- and Low Voltage Directive) to comply with installation and conformity declaration as well as CE marking. Standard version with UL approval. **Optional** Air Flow measuring equipment by circular pressure connections

▪ Electrical

- All electrical connections to the unit shall enter the cabinet through a single location. All systems shall be wired for single point power connection and include contactors, motor starters, motor protection, and 24V transformer.
- Units shall be provided with an optional control board or panel that can communicate bidirectionally with common building information systems such as BACnet.
- Safety switches and interlocks shall be provided, including at a minimum the provision of switches that interrupt fan operation when door panels are opened.

▪ Performance

- Enthalpic Transfer the enthalpy exchanger shall provide high performance sensible and latent transfer between the airstreams. This transfer shall be accomplished by moving energy (both sensible and latent) through the enthalpy exchanger surface while keeping the airstreams physically separated.
- Frost Control the enthalpy exchanger shall operate with no frosting or condensation formed at outside air conditions above -10° F and exhaust air RH below 40%. Infrequent excursions outside these conditions shall not impact the function of the exchanger. Drain pans are not required.
- Defrost under normal conditions, defrost cycles are not required. Bypass for economizer cycle shall be allowed

▪ Quality

- The energy recovery enthalpy exchangers internal to the energy recovery ventilator shall be certified by ARI within the ARI Standard 1060 Certification program. At the nominal certified CFM, the enthalpy exchanger shall provide at least 68% total effectiveness for both heating and cooling conditions and 0% exhaust air transfer ratio (EATR) when tested at zero pressure differential between airstreams. These values are to be produced from official ARI certification data, which is made available to
- Energy recovery ventilation units shall be factory assembled, wired and tested prior to shipment. Units shall be constructed and assembled and inspected by an approved NRTL. Field wiring shall require a single point power connection and a numbered terminal strip for low voltage remote wiring connections.



▪ **Warranty**

- The ConSERV enthalpy exchanger core shall be covered by the manufacturer's limited warranty to be free from manufacturing defects under normal use for a period of 2 – 10 years at Dais' discretion.
- The remainder of the unit shall be covered by the manufacturer's limited warranty to be free of manufacturing defects under normal use for a period of at least 1 year.