Product Specification

ecovent® counterflow Health Care (EVCH) Heat Recovery Units

1.1. General

A. Provide a heat recovery air handling unit to meet the performance and configuration as indicated in the schedule and detail drawings. The heat recovery air handling unit shall be tested to EN ISO 5801:2017 and shall be of the Ecovent type as manufactured by VES Andover Ltd, a company accredited with BS EN ISO 9001:2015.

1.2. Unit Construction

A. The unit shall be provided pre-assembled comprising a rigidly constructed aluminium case with thermal break tubes, double skinned sheet steel panels (Painted externally, stainless steel internally), supply and extract centrifugal fans with direct drive motor, supply and extract M5 pleated panel filters with metal frames, and an epoxy coated plate heat exchanger with removable stainless-steel drain pan.

B. The construction shall be tested by BSRIA in accordance with BS EN 1886:2007.

C. The unit shall be supplied in one section.

D. The unit shall be available with optional fitted electric or hot water heating as indicated in the schedule and detail drawings.

E. The unit shall be available in plantroom or weatherproof construction as indicated in the schedule and detail drawings.

F. The unit shall be fitted with a heat exchanger bypass duct, incorporating a face and bypass damper to allow heating / cooling recovery and free heating / cooling.

G. The unit shall have rectangular connections compatible with 20 mm Mez flange connections as indicated in the schedule and detail drawings.

H. The unit casework shall incorporate high quality rubber gasket seals on service doors and panels.

I. Access for maintenance shall be via a removable lid or panels, allowing access for the cleaning or removal of internal components as indicated in the detail drawings. The filters shall be side withdrawal as standard. Top/bottom filter access may also be available.

J. Flat plantroom casework shall incorporate mounting brackets compatible with drop-rod systems.

K. The unit shall be compatible with optional self-levelling feet as provided by VES Andover Ltd.

L. The unit shall be supplied in the configuration: flat, plantroom/weatherproof. Access and handing options shall be as indicated in the schedule and detail drawings.

1.3. Fans

A. The fan impellers shall be statically and dynamically balanced to G 2.5 / G 6.3 according to ISO 21940-11:2016.

B. The fan impellers shall be mated with aerodynamic bell inlet eyes for high efficiency and low noise generation.

C. The fan impellers shall be supplied in natural uncoated finish as standard.

1.4. Motors

A. The fans shall incorporate external rotor motors to insulation class F, IP4X environmental protection rating and shall be supplied with thermal protection cut-out as standard.

1.5. Plate Heat Exchanger

A. The unit shall be supplied with a Counterflow heat exchanger tested in accordance with BS EN 308:2022.

B. The heat exchanger shall be to an efficiency of at least 73% (5/+25°C) at nominal duty in accordance with ErP 1253/2014 Lot 6.

C. The plate heat exchanger matrix shall be aerodynamically designed, with built-in spacers ensuring a constant plate separation.

D. It shall be a treated version for extra protection with epoxy coated casing and gold aluminium fins.

1.6. Drain Pan

A. The unit shall include a removable condensate drain pan as standard made from stainless steel material.

1.7. Filtration

A. The filters shall be pleated filter media as standard, with metal frame construction.

B. The fresh air and extract filters shall be to minimum BS EN ISO 16890 classification ePM10 50% (M5 EN 779:2012) grade, as indicated in the schedule and detail drawings.

C. Visual differential pressure drop gauges shall be included as standard, such as magnahelic gauges.

1.8. Heating

A. The units shall be available with hot water or electric element heating as indicated in the schedule and detail drawings.

B. The hot water heater battery shall be of copper tube, copper fin block construction, with painted steel casework. The flow and return pipe connections shall be handed as indicated in the schedule and detail drawings.

Product Specification continued

1.8. Heating continued

C. The electric heater battery shall be suitable for single-phase or three-phase supply and compatible with thyristor control as indicated in the schedule and detail drawings.

D. The electric heater battery shall consist of an element array, sized to suit the steps and phases as indicated in the schedule and detail drawings. The elements shall consist of a tubular incolloy shroud containing compressed magnesium oxide powder packed around a nickel chromium resistance wire. The element array shall be evenly spread across the open area of the duct.

E. Where multiple elements are required to achieve the steps and phases as indicated in the schedule, elements shall be linked by copper busbar or terminated with electrical connectors.

F. The electric heater battery shall be fitted as standard with a thermal safety cut out, adjustable from +40°C to + 80°C , with automatic reset.

G. All electric heaters shall be 1500 V flash tested, and resistance tested for correct component assembly. Test certificates shall be available on request.

1.9. Operation Environment

A. The unit shall be designed to operate in ambient temperatures from -20°C up to +40°C and to run continuously at up to 90% relative humidity level.

2.0. Controls

A. The unit shall be fitted with an EC fan speed control system with max/min speed and 0-10 VDC BMS control, i.e. Air Quality or Temperature sensor as standard.

B. The unit shall be available with optional unit mounted control panel as manufactured and factory fitted by VES Andover Ltd to suit electric or hot water heating, or alternative loose control panel for installation by others. If no control panel is ordered, the unit shall be supplied with local isolator for unit mains connections.

C. Fitted Controls shall be positioned as indicated in the schedule and detail drawings.

D. Controls shall be supplied with internally mounted circuit breakers, run, trip and panel live indication and lockable door isolation switch.

E. Control panels shall have individual circuit breakers for Supply, Extract, Control and Electric Heater Battery where indicated in the schedule and detail drawings.

F. Fitted controls shall be supplied with a supply air duct sensor as indicated in the schedule.

G. Fitted controls shall be supplied with a wired AHU mounted LCD controller unless otherwise specified. Optional room user interfaces are available.

H. Fitted controls shall be fully pre-wired to internal components. Hot water controls shall be pre-wired to a local junction box for easy electrical connection to optional valve actuator supplied by VES Andover Ltd as indicated in the schedule.

2.1. Ancillaries

A. The unit shall be fully compatible with a standard range of spigot and unit mounted silencers. The silencers shall be suitable for direct mounting to the unit.

B. The silencer shall be a rigidly constructed single skinned galvanised sheet steel case lining incorporating internal splitting vanes lined with resin bonded mineral wool.

C. The silencer casework shall be provided naturally finished in high quality galvanised steel as standard. Internal and External powder coat shall be available as indicated in the schedule. Colour shall be in accordance with schedule.

D. Cooling coil options including chilled water (CW) and direct expansion (DX) to be offered as ancillary bolt-on versions

E. They shall be constructed with copper tubes, polyester coated aluminium fins and painted steel casing. Eliminators should be removable type and include a stainless-steel removable drain pan.

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