Ability

EVO Range Specification

Fan Motors

All units feature Electronically Commutated (EC), Direct Current (DC), direct drive motors, which utilise matched electronics for improved performance and enhanced reliability. Motor efficiency exceeds class IE4. Motor safety features include soft start, current limitation and overvoltage detection, with reverse polarity, locked-rotor and thermal overload protection as standard. Motors are fitted with maintenance free ball bearings for enhanced performance and reliability, with each motor connected into the wiring loom by a quick connector. Upon request, the option of a fan status monitoring board is available to provide a volt free contact alarm in the unlikely event of fan failure.

Fans

Fans are of the direct drive, forward curved, centrifugal type. Both the impeller and impeller housing are of galvanised steel. Fan and motor assemblies are resiliently mounted separately to the fan bulkhead of 1.2mm thickness, using M6 machine screws into captive 'Nutserts' and can be easily removed for non-routine servicing or replacement. Motor and impeller assemblies are statically and dynamically balanced in two planes to grade G 6.3 in accordance with DIN ISO 1940.

Speed Control

EC motors allow for infinite speed control through adjustment of the fan signal voltage (O-off 2-10Vdc control). This can be undertaken through the addition of a simple, manual rotary potentiometer, an individual fan coil controller or via a signal from the Building Management System. For additional energy saving, an optional fan enable relay can be supplied.

Harmonic Filter

Harmonic filters are fitted to suppress the level and severity of harmonic distortion to the mains supply.

Power Factor Correction

Where required, power factor correction should be carried out at the mains distribution board by others. The power factor of an EC-DC motor is approximately 0.6.

Coils

Coils are manufactured from seamless 3/8" copper tube, mechanically expanded onto aluminium fins. Fins are die punched to form collars which maximise surface contact with the copper coil tubes, ensuring optimal heat transfer. Slotted type vents and drains are fitted as standard to aid installation/commissioning. Coil terminations are 15mm diameter plain copper at 40mm centres through a copper support plate for rigidity. Coils are fixed to the unit chassis to create a rigid structure. Every coil is leak tested using dry air under water to 20 bar pressure. Where factory fitted, valve to coil connections are tested with leak detection spray, using air under 6 bar pressure. Operating pressure is dependent upon specific installation and is available upon request.

Condensate Tray

The condensate tray covers the entire coil and valve assembly area and has a positive fall to the 15mm drain point of copper, plain end. A 22mm option is available upon request. The tray is manufactured from galvanised steel, corners are brazed, and the termination is silver soldered into position. Each condensate tray additionally incorporates a pressure normalising external cover which permits the easy flow of the condensation all the way to the drain point. Stainless steel trays are available as an option. All condensate trays are covered with 3mm closed cell, class 'O' insulation to prevent condensation forming on the outside. Optional galvanised steel covers can be fitted for enhanced aesthetics in exposed to view installations. Fitted condensate pumps are available as an optional extra.

Casing

Chassis panel work is manufactured from 1.2mm galvanised steel. Where possible, flanges are formed inward facing to reduce exposure to bare metal edges. Sufficient forms and folds are incorporated to provide a vibration free, robust structure. Integral mounting slots within the unit back panel are provided for up to M12 drop rod or Gripple wire installation. The panel work is jointed throughout using self-adjusting 'air tight' rivets. All rivets are mild steel and aluminium, bolts nuts etc. are zinc coated steel.

Insulation

Insulation is used throughout on internal surfaces for both thermal and acoustic damping. Insulation is 12mm open cell, class 'O', CFC and HFC free expanded foam. Vapour seal foam within the discharge plenum is available upon request.

Access

Access to internal components is provided through one main panel. This covers the fan/motor sets and facilitates access to the coil and condensate tray. The fan access hooks in place on a front lip and swings closed. This is then retained by machine screws into captive 'Nutserts' The coil / condensate tray assembly is also retained by machine screws into 'Nutserts'. Access panels are sealed with open cell foam gaskets

Spigots

Offered as standard are multiple, removable circular (150mm, 200mm, 250mm), or fixed size rectangular spigots, manufactured from galvanised steel. These are screw fixed to the front/side of the fan coil unit. Unused spigot positions are closed off by way of blanking plates, remaining available for future use if layout changes occur.

Controls Enclosure

All controls are, as standard, fitted to a control back plate which is located on the side of the fan coil. A separate L shape cover then encloses the controls and gives access from both the side and below. The whole electrical assembly, including switches, is mounted on the side of the fan coil unit alongside the coil terminations and valve assembly. The electrical enclosure contains a 24Vac transformer, illuminated isolating switch and protective fuse, and is protected to IP20 to allow ventilation of the electrical equipment contained within. A terminal block is provided for power connections to be made by others, to suit the onsite installation, with plastic grommets provided for site cable entry. LSF flying leads are available upon request.

Filter

Standard filters are made using lofted, continuous filament, reusable polyester media which conform to both EU2/G2 and EU3/G3 grade. The media is secured to a flexible wire metal frame, spring loaded to allow removal from below for routine maintenance, cleaning or replacement. Standard alternatives include metal frame, side withdrawal or wire mesh. A filter access panel is also provided.

Electric Heating Elements

When fitted, electric elements are spiral wound, open wire type. Manual and automatic reset over temperature cut-outs are provided as standard.