

Actionair Enviropac Series EHW 230



230mm Deep Horizontal Ceiling Void Mountable
Fan Coil Unit with Energy Efficient EC Fan Motor

● **40% Less Motor Energy** ● **1/3 Less Fan Heat** ● **Constant Volume**

Application

Actionair Enviropac EHW 230 fan coil units are designed for horizontal mounting in ceiling voids.

The fan coil units are of the chassis type with the fans mounted to draw air through the heat transfer coils.

The coils have two sections, one for chilled water and one for medium or low pressure hot water.

The electrical supply required to the units is 230Vac. An on-board transformer is available to give a 24Vac supply to any associated controllers.

The units incorporate state of the art DC electronically commutated motors (ECM's) which give many exciting benefits.

- **40% Less Motor Energy**
Motors use 40% less energy than conventional AC Motors.
- **1/3 Less Fan Heat**
The Motors generate only 1/3 of the heat of AC Motors therefore reducing the load on the chiller.
- **Constant Volume**
Constant volume regardless of downstream pressure drop.

Energy Savings

A two fan standard AC fan coil unit producing 225 l/s typically uses around 0.16 kW of energy.

The corresponding two fan ECM unit using 40% less energy will typically require 0.096 kW of energy, a saving of 0.064 kW or an annual saving of 280 kW per unit, (based on running 12 hours a day, 365 days per year).

EC Fan Motors

The fan motors are of the electronically commutated DC type with external rotors, manufactured by ebm – ZIEHL. The motors are totally enclosed with in-built electronics to allow the various speed control options and high efficiencies.

The motor bearings are sealed for life, maintenance free ball type, having a minimum life expectancy of 50,000 hours, under normal operating conditions.

The motor electrical insulation is to class 'B' with enclosure to IP44. Motor/fan speed is controlled by an on-board dedicated electronic controller/power supply. This generates the 48Vdc required to power the motor and the 0-10Vdc digital signal to give direct control and constant volume control (factory set potentiometer). It also allows the use of direct speed control by a 0-10Vdc digital input from a DDC controller.

A panel mounted illuminated two position switch gives on/off control of the unit.

Fans

The fans are double width, resiliently mounted, direct driven, forward curved centrifugal type. They have high efficiency, low noise multiblade impellers housed within heavy gauge galvanised steel scrolls. The complete impeller/motor assemblies are statically and dynamically balanced in two planes in accordance with BS5265 Part 1, 1979 to G2.5. The fans are individually mounted on an easily removable 1.6mm galvanised sheet steel deck.

Control Options

Factory set unit air volume – the fan speed adjusts automatically depending on the external pressure, this maintains a constant unit supply air volume
BMS/Controller Input – a 0-10Vdc digital input will allow the unit air volume to be locally controlled to allow standard running, night set back or meeting mode.
Stepless control – via on board potentiometer.

Chassis

The unit chassis is manufactured from 1.2mm galvanised sheet steel with 1.6mm fan decks and back plates for stiffness and durability.
The construction has a flush external finish to prevent exposure to bare edges or sharp objects.
It gives unhindered access to filters, controls and allows the fitting of flexible or circular steel ductwork.
The chassis incorporates recessed, reinforced slotted mounting points. The integral discharge plenum is acoustically lined.
It is fitted with easily interchangeable spun steel spigots and insulated blanking plates.

Insulation

For both thermal and acoustic insulation 100kg/m³ density, class 'O' CFC and HFC free open cell foam is used. This complies with 'Section 20' requirements. The external condensate tray insulation has a similar specification, but is closed cell.

Access

Access to the fans, motors and ECM controller is allowed by removal of the insulated bottom panel, which has keyhole slots for accurate positioning and easy removal in a restricted space.

Coils

The coil matrix blocks are manufactured from seamless copper tubes mechanically expanded into aluminium fins. The collar design of the fins and the expansion of the tubes into them provides a tight bond to maximise heat transfer.

Vents and drains are provided as standard and are fitted with easily accessible slotted/hexagonal plugs.

A plate is provided to help support and protect any valve assemblies and connecting pipework.

Condensate Trays

Condensate trays are of a one piece fully welded construction. They have a full powder coated paint finish.

The trays extend the full width of the unit and extend beneath the valve assembly. They are easily removable for cleaning without disturbing any hot or cold water pipework.

Filters

Filters are provided at the inlet to the unit. The filter media is supported in a galvanised steel frame.

Standard - EU3 washable continuous filament media to Eurovent 4/5, F1 fire resistance to DIN 53438, supported with a steel mesh.

Option: fine woven vacuum cleanable metal mesh.

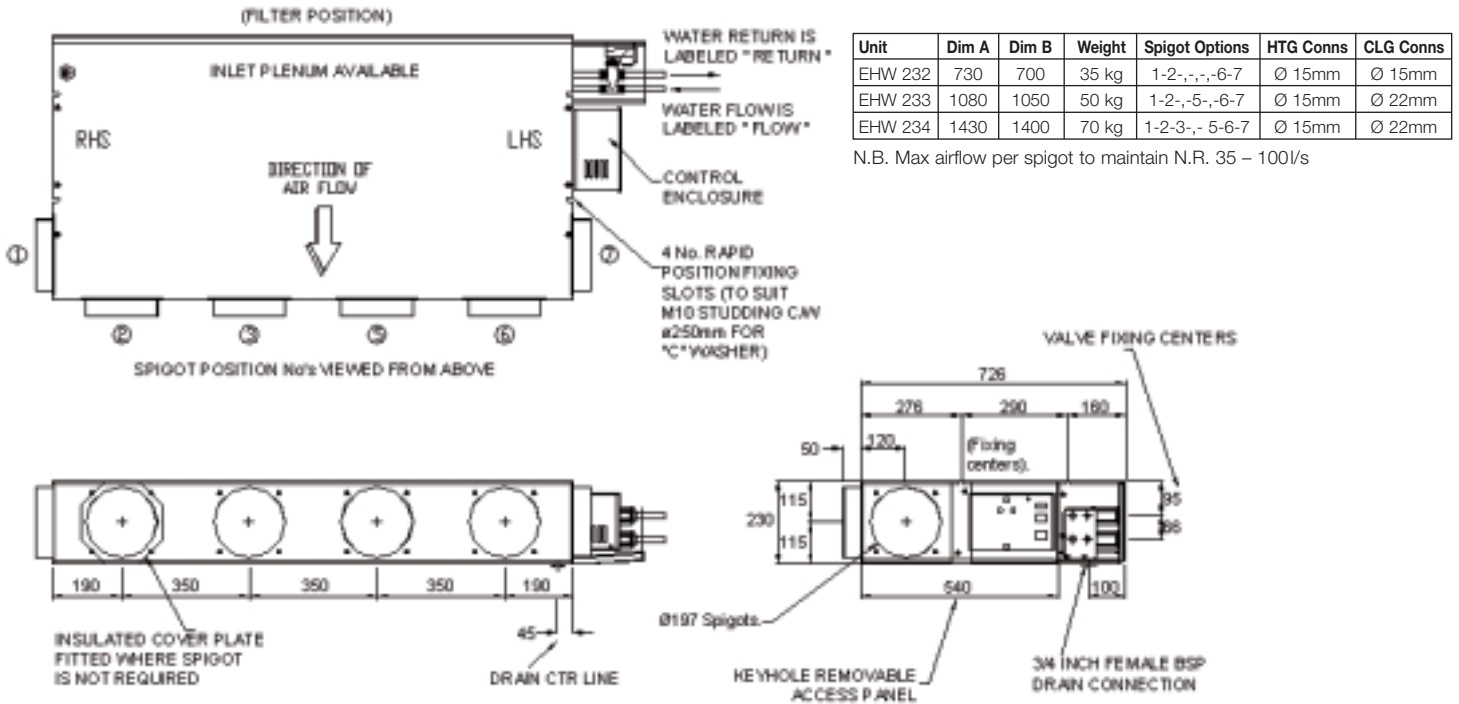
Control Housing

The control housing is purpose designed with a hinged removable cover and is mounted on the side of the chassis.

It incorporates a 1m flying lead for connection to an adjacent fused spur (by others), an on/off switch, a fan speed setting pcb with multi turn potentiometer, and a 24 volt transformer to power temperature controller.

Dimensional Data

Series EHW 230 – Enviropac horizontal ceiling void mount waterside fan coil units are available in 3 models, all 230mm deep.



The Actionair fan coil range also includes:

- Hydropac Series PHW 230** - 230mm deep horizontal waterside control – standard AC fans
- Hydropac Series PHW 170** - 170mm deep horizontal waterside control – standard AC fans
- Hydropac Series PVW 230** - 230mm deep vertical waterside control – standard AC fans
- Aeropac Series PHA 230** - 230mm deep horizontal airside control – standard AC fans

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Quality System
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Assessed to ISO 9002

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For further information, please refer to the Enviropac product catalogue or contact Actionair Sales Office.

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