

Eurovent certified air handling unit for precision temperature & humidity controls AHE/AHD Series



We provide a better solution

Enercov's eurovent certified AHU, integrated air handling unit is a fully assembled AHU with DX heat recovery unit, air to air heat exchanger, energy recovery wheel and other equipment from the factory. It is designed to treat air to provide higher air quality for space. It also provides more accurate with DDC controls and energy saving as needed.





Integrated Air Handling Unit

Enercov AHE/AHD Series are Air Handling Unit that forms a prefabricated air conditioner. In addition to the basic components of fan blower, cooling coil, heating coil, filter housing and double skin casing, it also includes other additional systems for key applications which off : Refrigerant Heat Recovery Unit (HRU) or heat pump, run around coil and other equipment such as automatic controller with sensor & transducer designed and installed with factory-tested application. This reduces on-site installation works and duration at a reasonable cost and provides precise control of various parameters such as temperature, humidity control and room pressure control, etc.

- > **AHE** series constructs with aluminium frame, double skin PU insulation thickness 50 mm. It is suitable for general application.
- > **AHD** series constructs frameless panel, double skin PU insulation thickness 60 mm. It is suitable for low temperature or outdoor application.

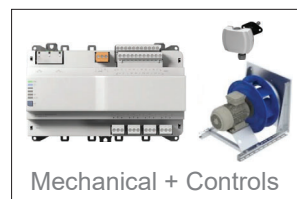


Application

Enercov AHE/AHD Series, Air Handling Unit for clean room system, laboratory, humidity control rooms, including aeration units used in high-rise buildings such as hotels, factories, etc. It is said that it can meet the use of special air conditioning systems in a comprehensive and complete manner.

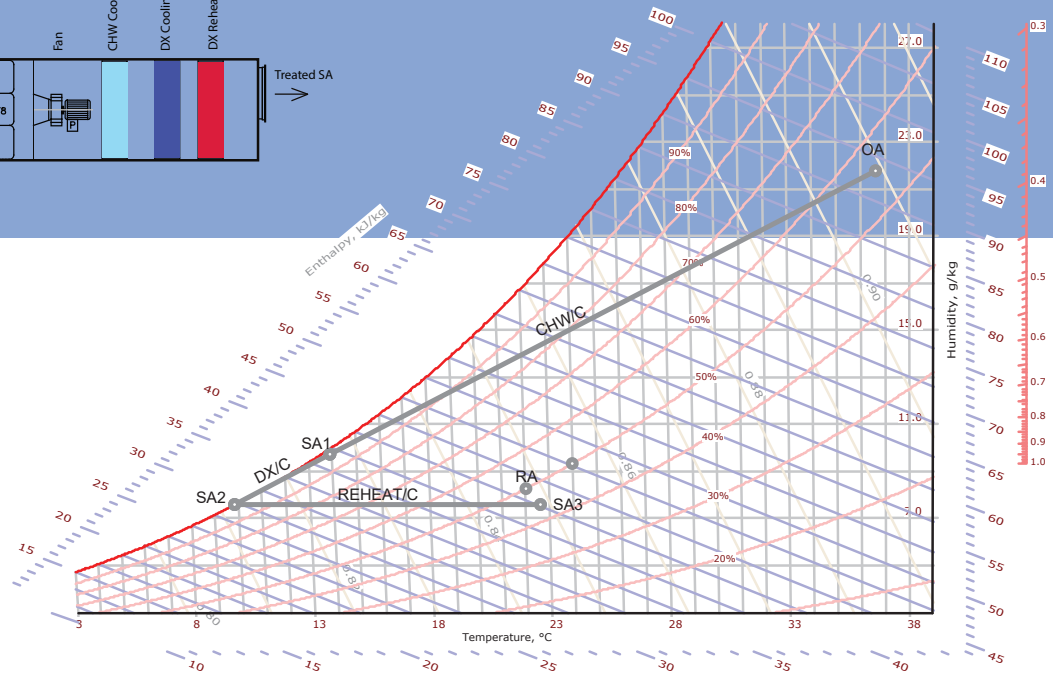
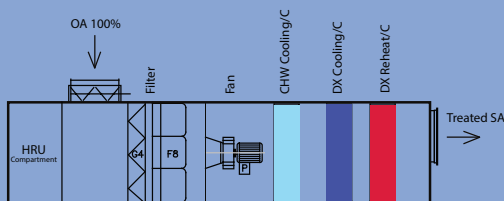
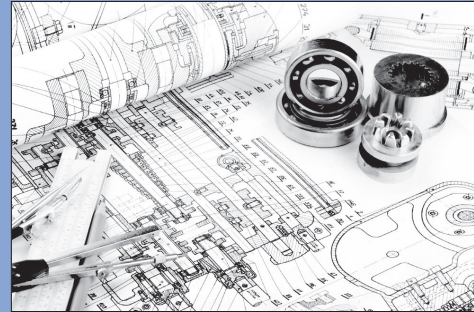
However, the information contained in this document is for reference only. Please refer to the AHU selection data for the exact technical engineering data and select the data according to the customer's request for each task.

This is because AHU is a device that is assembled according to various needs (make to order).



System Design and Warranty

Enercov's core value is that we design, assembly, testing and functional guarantees to achieve the standard of use in its entirety to meet the customer's requirements. It covers performance products, capacity, housing leakage and prevent condensation including the ability to deliver air system to be sufficient both at the start (initial state) and when the filter clog at final state.



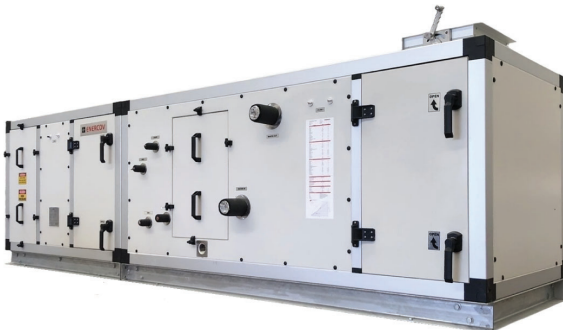
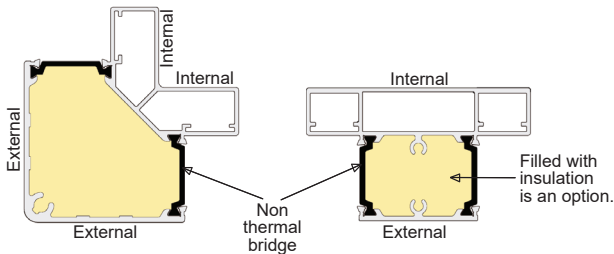
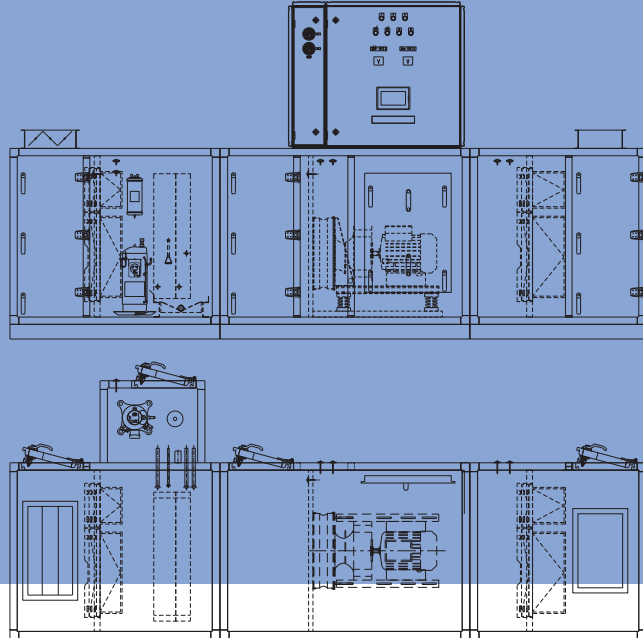
Quality Control ISO-9001:2015

To ensure that all products that come out of the Enercov factory are of standard quality, meets the needs of customers in terms of product quality after sales service longer use timely delivery In order to ensure that customers are satisfied with Enercov's products. The standard quality control process in accordance with the requirements of ISO-9001 :2015 is implemented in the production process within the factory. Customers can be confident that every AHU that leaves the Enercov factory meets the quality requirements of the customer in all respects.

Why integrated air handling unit?

Some special rooms, such as clean rooms, operating rooms, and laboratory air conditioning systems, require more climate control than normal air conditioning in humidity control, indoor pressure control, etc. Air conditioning systems should also be designed to save energy and provide high-precision climate control. Therefore, AHU should work with other equipment such as heat recovery unit (HRU) or heat pump, including inverter compressor. The system has a wide range of important devices including fan motor, control valve, compressor, solenoid valve, refrigerant valve, variable speed driver and other accessories. All equipment must be properly operated to control the desired range and should be set to an alarm in the event of a system malfunction, including a connection to another BAS system that requires information. The design of the air conditioning system is used to program the control of the system, which must be accurate and must be tested and developed several times until it is available.

Enercov's AHU, equipped with a heat recovery device or an automatic heat pump, has been tested and developed for decades. Therefore, it is a product that can guarantee the performance of various systems of the customer's air conditioning system. High job accuracy, easy maintenance and long service life.



Note : Picture shown above is off white and corner is black.

Structure

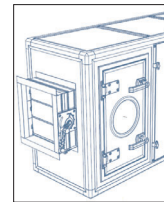
Casing :

AHU's casing wall is a double skin casing or sandwich panel wall, the interior is a 40 kgs/cu.m density, thermal conductivity 0.02047 W/m.K (0.0176 kcal/m.hr.°C) of polyurethane foam (PU Foam) insulation (PIR Foam is an option) that injects foam with high pressure injection process, which ensures that there is no air gap between the sheet metals. Galvanized steel sheet color bond, thickness 0.50 mm., insulation thickness various from 50 or 60 mm. depending on customer specifications.

Frame :

AHE series's frame is made of a strong aluminum thickness zigzag frame 2.0 mm and 3.0 mm. Includes anti-condensation with the thermal break profile structure. Internal air gap shall be filled with insulation for low temperature application (optional). Panel thickness 50 mm.

AHD series is frameless construction, PU or PIR insulation thickness 60 mm. It is suitable for low temperature application.



Structure (con't)

Service Door :

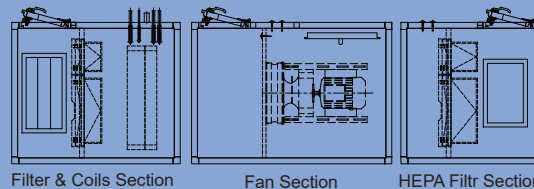
The door of AHU has the same structure as the wall or casing, with a door handle and a one-piece rubber seal embedded in the interior frame of the door.

Base :

Support base made of C steel (C-Structure) thickness 5.0 mm., height 100 mm. or I shape iron, height 50 to 100 mm., either depending on the weight of the AHU

Modular Structure :

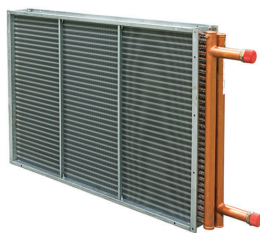
The AHU housing is a modular design that can be assembled together to facilitate transport. Each frame is connected by a strong screw & nut and sealed with gasket rubber to prevent air leakage.



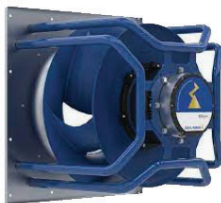
AHU Component

Cooling Coil & Heating Coil :

The aluminum fin is fixed on a 3/8" or 1/2" copper tube. The cooling coil has a number of rows of copper pipe between 2 and 10. However, in some applications the heating coil may be designed to have a single number of rows. The number of fins per inch is between 8 - 14 FPI and the face velocity of the airflow does not exceed 2.50 m/s or is subject to customer requirements. Includes the installation of a water eliminator, if the air velocity is higher than 2.50 m/s. There must be several cooling coils in one unit, for example 2 sets of cooling coils and 1 set of heating coil.



Coils



EC Fan



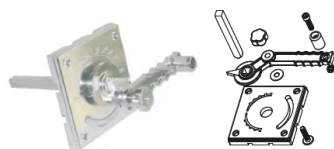
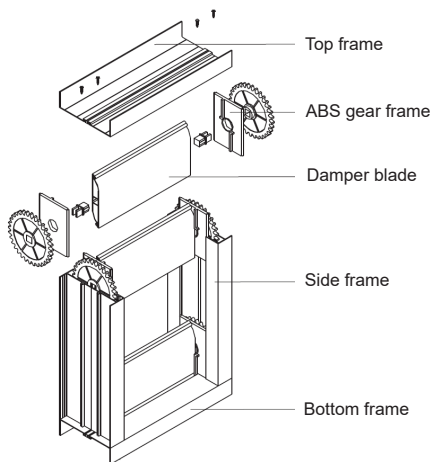
Plug Fan

Fan & Blower :

Energov' AHU's fans and motors are available in either a centrifugal plug fan type that can be operated with either a variable speed drive (VSD) or an electronically commutated fan (EC Fan) that selects the point of operation for maximum efficiency. The fan and motor unit are mounted on the same steel support platform that has been aligned from the factory. In case of use where there is a risk of fire such as areas with solution vapors also can design explosion proof fan & blower. Fan motor can be controlled by hard wire with 0-10VDC signal or 4-20 mA signal, or can be controlled via high level communication protocol such as modbus via RS485 communication cable.



Pre/Medium Filter & Frame



Aluminum handle



Silicone gasket

AHU Component (con't)

Air Filter :

The air filter frame is designed to install the pre-filter, medium filter and final filter with two cross-sectional areas : 300 x 600 mm. and 600 x 600 mm. The pre-filter panel can be equipped with panels up to 100 mm thickness and the medium filter housing and the final filter can be installed an air filter with a thickness of up to 300 mm. Maintenance is easily accessible and can be replaced by a door opening.

Damper :

The air volume adjustment door is made of aluminum. The shape is similar as an air valve blade that reduces wind resistance in case the door is opened up to 100%. There is a rubber support to reduce air leakage by closing the door as much as possible and there is a hand-adjustable hand-crank lock. Alternatively, an electric rotary damper actuator can be installed.

SS304 Drain Pan :

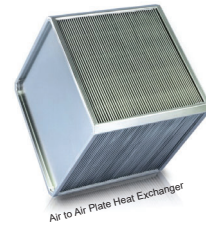
The water tray is made of rust-resistant material (SS304), designed to be sloped to prevent water logging. Sewer pipes are standard size 1-1/2" or special order to be larger to 2" in case of needing more convenient water flow. Even the whole housing of drain pan is installed inside AHU casing. However we install 1/2" to 3/4" thick insulation under the drain pan.



AHU Component (con't)

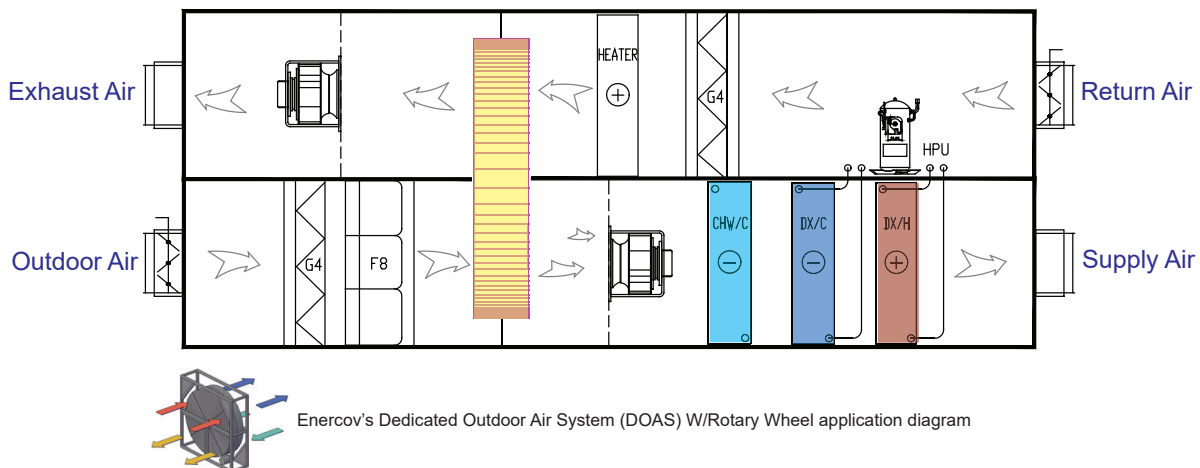
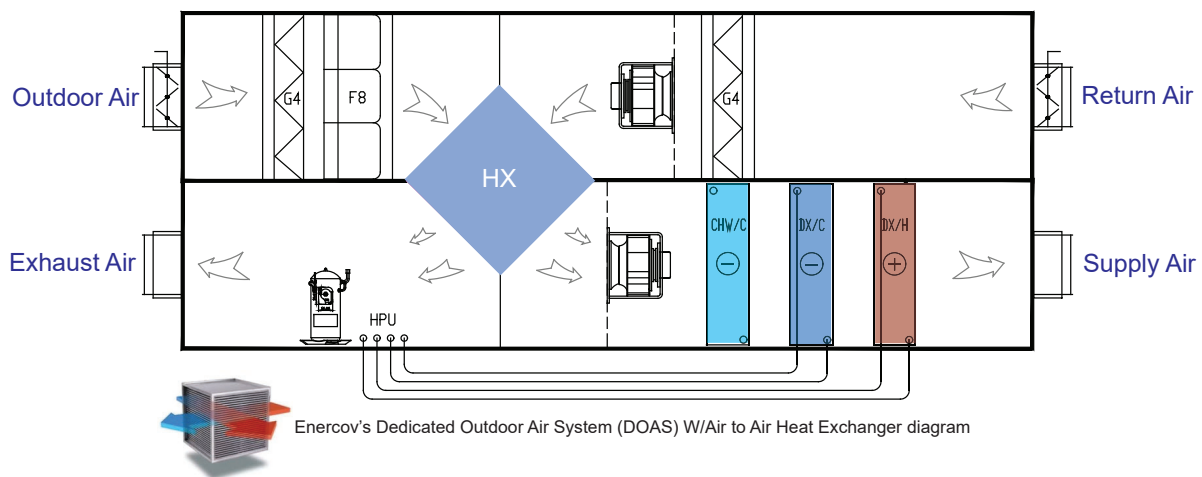
Air to Air Heat Exchanger :

The indoor air quality in a building is one of the main factors for space internal comfort. The air must be continuously changed to maintain safe conditions. This system process wastes energy, which can be recovered by installing a plate heat exchanger (HX). Enercov's AHU provides high efficiency and performance equipment which also complied with eurovent certification. This plate heat exchanger is one of the core of any heat recovery system. The high efficiency allows a drastic reduction of energy consumption and air pollution.



Rotary Heat Wheel :

A rotary heat exchange is based on the accumulation principle, it works as the rotating wheel is heated up by the warmth from the extract indoor air, this heat is then transferred to air that is taken in from outdoors and is filtered, heated and then supplied to the living areas around your home. A rotary heat exchanger may also be known as a condensing or thermal heat exchanger as in lower temperatures, humidity from extracted air condenses on the rotor surface and humidifies the air that is brought in from outdoors to be able to still provide indoor thermal comfort.





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Specialist in Precision Temperature and Humidity Controls