AIR COMFORT

AIR TREATMENT

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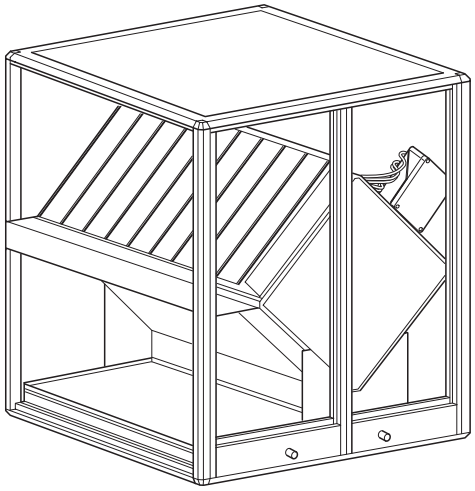
RECUTERM®

EQRK CROSSFLOW - PLATE HEAT EXCHANGER

» INSTALLATION AND MAINTENANCE



GENERAL DESCRIPTION

The Recuterm Crossflow is delivered complete with the plate heat exchanger, drain tray, by-pass section and dampers.

The high efficient Recuterm Crossflow has to be protected from freezing during winter period. There are 3 levels of freezing protections available:

- Level 1 By pass damper, a simplified freezing protection. For warm winter climate > -5 °C
- Level 2 Advanced freezing protection, sectionalized freezing protection combined with a by pass function. For winter climate > -26 °C.
- Level 3 Advanced freezing protection + pre-heater. Function as Level 2 combined with an electrical pre-heater. For cold winter climate < -26 °C or/and high humidity level in extract air.

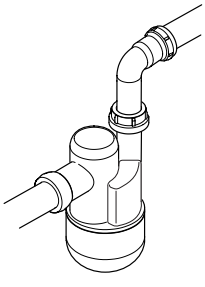
Level 2 and 3 includes a stand alone freezing protection controller with necessary sensors, an active freezing protection function.

See page 2 for further details.

The eQ unit is delivered complete with factory fitted freezing protection controls (Level 2 and 3), this functionality is included. Where controls are fitted on site, this control signal must be provided on site.

The Recuterm Crossflow is equipped with a sloping drain tray on the supply and exhaust air side for collecting the condensate.

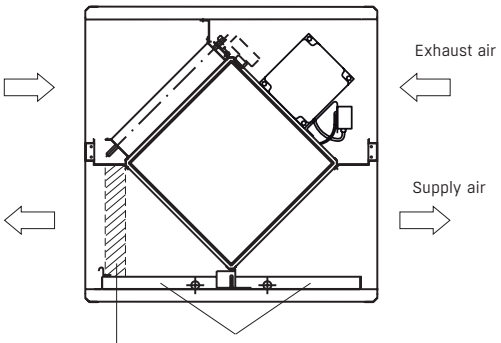
The drain trays have separate drain connections and should be connected to a water trap. The drain connection has an outside diameter of 32 mm. The EQAZ-08 water trap is available as an accessory.



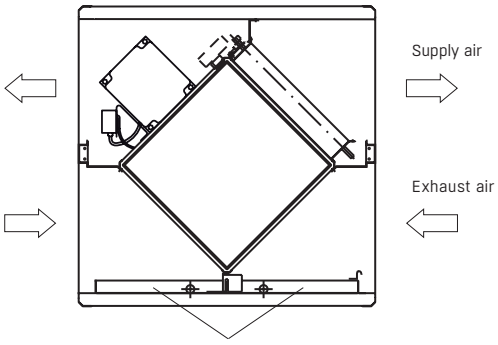
EQAZ-08

Basic design

Supply air at the bottom



Supply air at the top (Climate winter >-5 °C)



Ensure that the damper blades are open during flushing

Freezing protection

Level 1 Freezing protection with shut-off and by-pass damper
The by-pass and shut-off dampers of the heat exchanger are mechanically interconnected. As one of the dampers closes, the other will open. The dampers are designed for heat transfer control and defrosting.

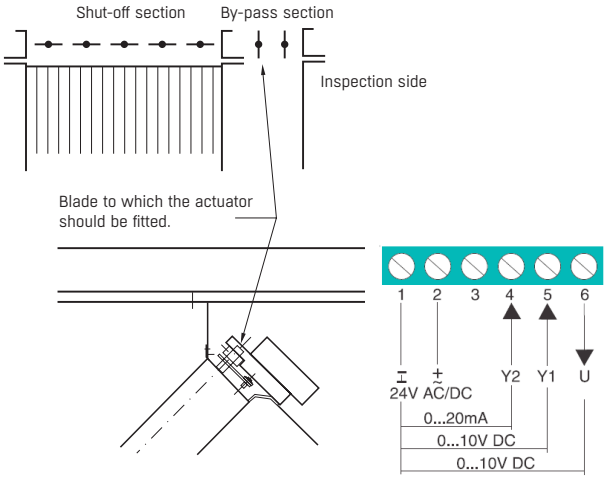
Level 2/3 Advanced freezing protection
The advanced freezing protection, level 2/3 includes a stand alone freezing protection controller with necessary components, a temperature and humidity sensor in the extract air and temperature sensor in the exhaust air.

The function is based on dew point control on the exhaust air side and frost is prevented by controlling a 4 damper sectional defrosting, a by-pass damper and for very cold climates, a pre-heater.

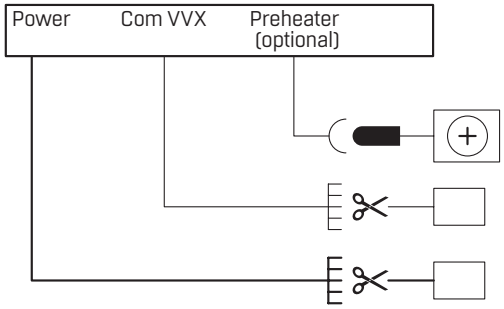
The dampers are intended for heat transfer control and defrosting. During the defrosting period, one damper section at a time closes for a time depending on the outdoor temperature. In extreme cases two dampers can be closed. The by-pass damper is closed. Since only a small part of the heat exchanger is shut off, the supply air flow rate will be reduced by not more than 5-10 % during the actual defrosting period. During extreme conditions the flow can decrease further. The magnitude of the flow reduction is dependent on the fan type and the operating point of the fan.
When section-by-section defrosting is not sufficient, the by-pass damper function will be activated. For extrem cold climates an electrical pre-heater is required and will be activated when the out door reaches the set point (-26 °C dependent on the type of Recuterm).
If water/liquid heater is choosen instead of the electrical pre-heater the coil control must controlled by the AHU controller. This is included in Fläkt Woods AHU controller if used.

INSTALLATION

Fitting the actuator to the by-pass damper (if not mounted)
Fit the actuator to the blade which is nearest to the heat exchanger. As an example, if the exchanger has two blades as by-pass section, fit the actuator to the second shaft viewed from the inspection side.
Check that the damper closes and opens at the end of the actuator travel.



Connection diagram for Recuterm - Counterflow, exchanger with section-by section defrosting



Cable	Part	Color	Description
Power	1 2 3 4	Black Black Black Yellow/Green	Phase Neutral – PE
Com VVX	1 2 3 4 5	Brown White Blue Black Grey or Y/G	External pre-heater activation relay NO Alarm relay C (Max 24 VAC/DC 0,2 A) External pre-heater activation relay C Heat.Rec. Signal (0-10 V) Heat.Rec. Ref
Pre-heat (optional)	1 2 3 4 5	Brown White Blue Black Grey or Y/G	24V start signal C Alarm overheat 24V start signal NO Ctrl.Signal (0-10 V) Ctrl.Ref

Note! If Alarm relay is used (Com VVX part 2), section-by-section defrosting control equipment and AHU control equipment must have a common signal ground.

Note! The Pre-heater can only start when the external activation relay is closed. This relay can be used to turn off the pre-heater before the fans are shut down in order to cool down the pre-heater.

MAINTENANCE

Service intervals

Inspection and possible cleaning should normally be carried out at intervals of 6 months.
This interval is based on an assumed operating time of about 2000 hours over a 12-month period and a normal comfort ventilation installation. If the dust content in the supply and/or exhaust air is high, the unit should be inspected more frequently.

To remove dry dust

Vaccum or blow trough the heat exchanger with compressed air. Check the inspection door gasket.

To remove fatty dust

A. Apply cleaning agent to the face areas of the heat ex changer. A suitable degreasing agent is ULCZ-01 which can be ordered from your nearest sales office.
B. Wait for 10–15 minutes.
C. Flush with water.
D. Vacuum clean or blow clean with compressed air.
E. Check the inspection door gasket. Cleaning can also be carried out by high-pressure spraying, and the nozzle should then be held 3 - 5 cm from the face.After flushing, remove the water as above.

Caution!
If a nozzle that delivers 2 l/min at 7 bar is used, the pressure at the nozzle must not exceed 25 bar if the nozzle is used at an angle of more than 20 ° to the face. The face area may otherwise be deformed.