

ACCUBLOC high performance Heat Recovery

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ACCUBLOC high performance Heat Recovery



Efficiency up to 90 % and humidity transfer with Accubloc®

Accubloc is a regenerative heat exchanger with two or more energy storage matrixes, designed for installation in an air handling unit. Instead of rotating a heavy storage media between the air streams, a damper system periodically alternates the air streams through the stationary storage media. While one storage matrix is loaded (cooling of warm airstream) the other matrix is unloaded (heating of cold airstream).

- Highest efficiency up to 90 %.
- Humidity is transferred in cases when one of the airstreams cools below dew point – therefore no freezing, no condensate.
- No supplementary heater required.
- Controllable efficiency by 0-10 V input signal to the integrated controller.
- Individual dimensions exactly fitting the AHU. No extra width of AHU necessary.
- Independent tests in line with EN 308 from HTA Lucerne.
- Removable storage matrixes for easy cleaning.
- Fulfilling VDI 6022.



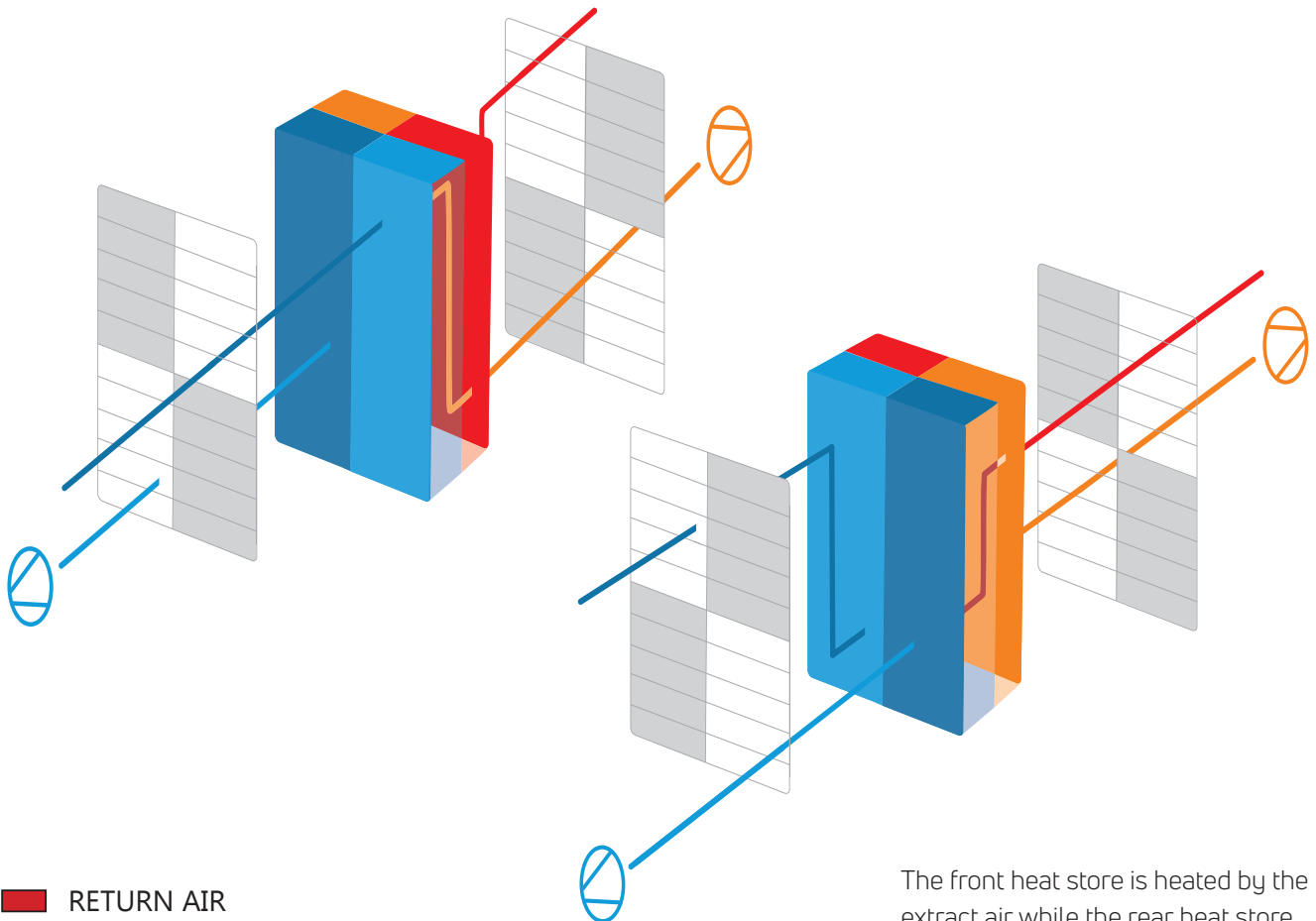
Humidity transfer over 85 % with sorption coating

The storage blocks can be coated with a high-efficient sorption coating. The humidity transfer reaches a minimum of 85% over the complete temperature range. During heating period most humidifying energy can be saved.



Accubloc principle

The front heat store heats the outdoor air while the rear heat store is heated by the return air



- RETURN AIR
- SUPPLY AIR
- EXHAUST AIR
- OUTDOOR AIR

The front heat store is heated by the extract air while the rear heat store heats the outdoor air



Engineering information

Heat bank length 500 mm / 600 mm

Number of heat stores

Total heat store weight	Weight per heat store	Number of heat stores
Up to 160 kg	Up to 160 kg	1
Up to 320 kg	Up to 160 kg	2
Up to 580 kg	Up to 160 kg	3
Up to 640 kg	Up to 160 kg	4

Accubloc length

Heat store length	Duct arrangement		Side by Side
	Over / Under		
	Flow rate		
	< 2 m/s	> 2 m/s	
500 mm	1440 mm	1640 mm	1740 mm
600 mm	1540 mm	1740 mm	1840 mm

Fan arrangement

Exhaust and Supply Air Fans should be placed behind the Accubloc® (both Fans pulling through the Accubloc®). As with all regenerative heat exchangers this reduces EATR and minimizes pressure fluctuation in the duct.

Pressure drop

The pressure drop should not exceed 250 Pa as this could lead to problematic pressure fluctuations in the ductwork.

Control unit

Input: 0 – 10 V

Cleaning operation: changeover once per hour

Inputs/outputs for enabling and faults

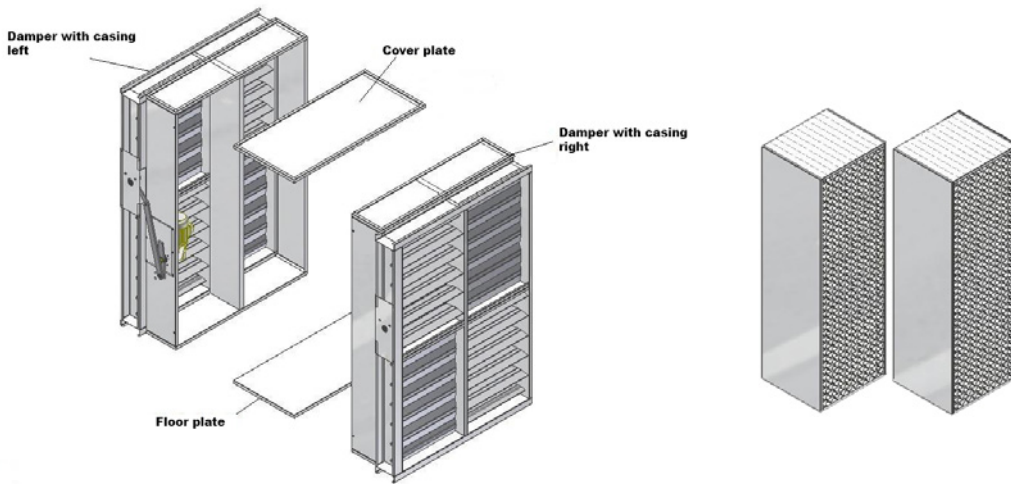


VDI 6022

The heat stores can be removed for cleaning as per VDI 6022

Splitting into sections if too large

If Accublocs are too large, the system must be supplied in sections to facilitate transportation. Two options are available.

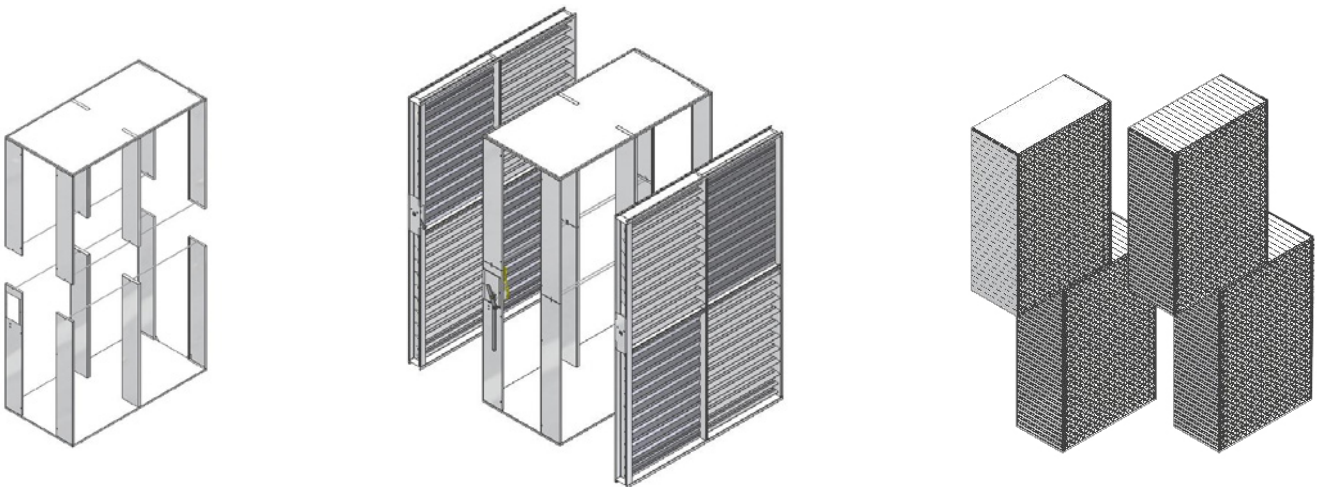


Standard delivery:

- 2 dampers with casing – left and right
- Cover and floor plate
- 2 or 4 heat stores

Splitting by height

If Accublocs are too large, the system must be supplied in sections to facilitate transportation. Two options are available.



Standard delivery:

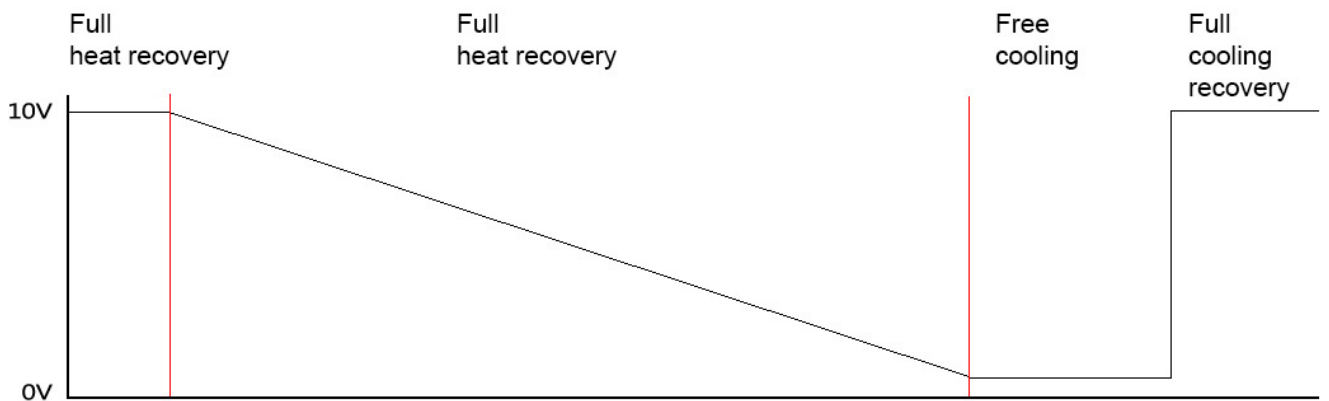
- 2 dampers (poss. split again)
- Casing and lower section
- 2 or 4 heat stores



Control with control unit

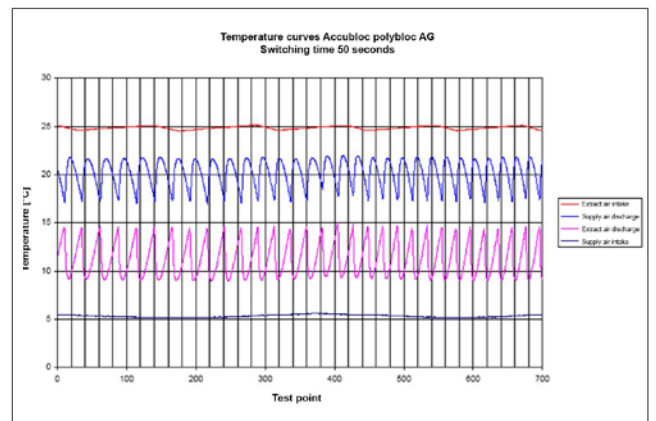
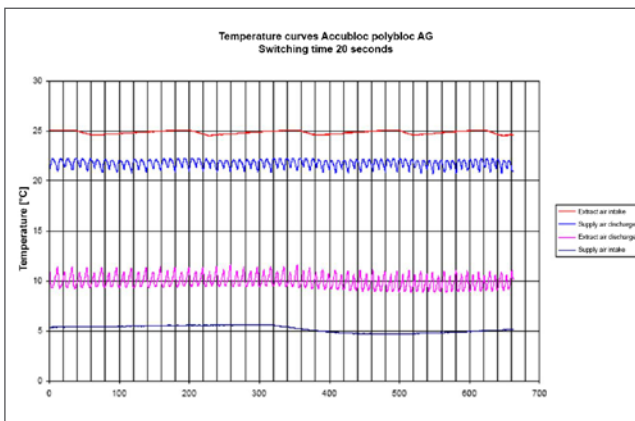


Heat recovery is controlled with the Accubloc control unit via 0 – 10 V signal from the DDC controller.



10 V = 100 % heat recovery
 0 – 10 V = 0-100 % heat recovery
 0 V = 0 % heat recovery/free outdoor air cooling
 10 V = 100 % cooling recovery

For monitoring the actual supply air temperature, apply sufficient inertia of approx. 2 min or an average value derived from the temperature signal.



Accubloc Engineering Specifications

1 unit Accubloc regenerative heat exchanger

- Comprising 2 aluminium heat stores which can be removed for cleaning. An upstream and downstream damper system.
- Temperature efficiency up to 90 %. Moisture recovery up to 75 %. The heat storage blocks can be removed for cleaning as per VDI 6022.
- Sound absorption at 125 – 4 K Hz over 10 dB. The Accubloc system has been tested in Switzerland by the HVAC test centre (Lucerne University of Applied Sciences and Arts – School of Engineering and Architecture) in accordance with EN 308:

Leakage rate: Measured according to EN 308 category 3, using tracer gas monitor, without increase during service life

High-performance damper

- Aluminum-Profile blades with EPDM sealing.
- Ball bearings.
- Special designed for rapid switch-over of less than 0.5s.
- Tested for more than 10 Million switches.

ACB control unit

Non-contact, fully electronic version for high wear resistance during continuous operation. The changeover of the louvre dampers is controlled, subject to the thermal output demand, via an external 0 ... 10 V signal and an enabling contact. Output for fault display.

Optional – sorption coating

The heat storage blocks have a high quality sorption coating. The humidity transfer therefore achieves a level of over 75 % in winter and summer alike.

