

Air conditioning unit with cross-counterflow-cross heat exchanger for private swimming pool halls



Automatically selects the most economical operating mode!



ThermoCond 23

AIR VOLUME FLOW: 1,600 – 5,000 m³/h

At a glance:

- **Dehumidifies, ventilates and heats**
- **Corrosion-free heat exchanger made from polypropylene**
- **Over 80% temperature efficiency through three-stage recuperative heat recovery**
- **Energy-saving EC fans**
- **Constantly regulated recirculation air heating damper**
- **Flat design, ideal for integration into pool periphery**
- **Integrated control and regulation system, compatible with all conventional building management systems**
- **Optional: operation via smartphone or tablet**

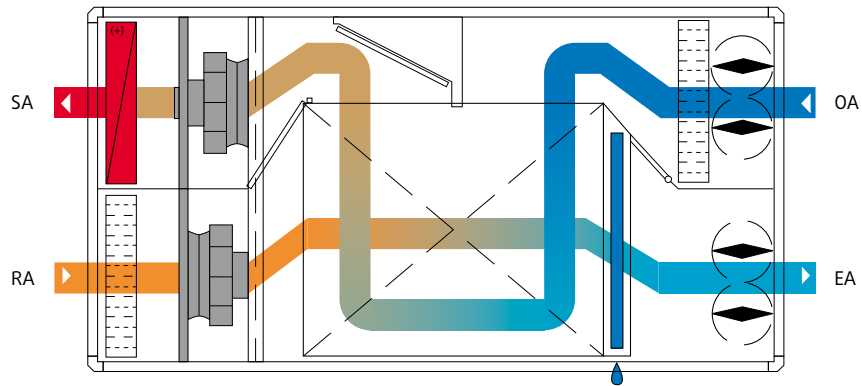
Devices of the series 23 dehumidify and heat the swimming pool hall and they reduce a possible concentration of harmful substances in the air. The devices are multifunctional compact systems with integrated control and

regulation. ThermoCond 23 achieves a very high heat recovery rate based on a special heat exchanger. The design ensures the cleanliness according to VDI 6022.

Further performance parameters and options:

- Filtering the air in any operating mode
 - Pumped hot water air heater
 - Individually controllable performance parameters
 - Complete unit, ready to connect, contains all structural elements for air conditioning swimming pool hall air, including all control and regulation fittings
 - Bypass damper
 - Intensive quality inspection with factory test run
- Options
- Water/air temperature interconnection
 - Remote maintenance
 - And many more

Functional description



Dehumidification using outside air in winter

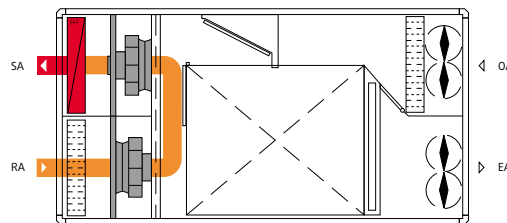
A large proportion of the sensitive and latent heat is recovered from the return

air and is transferred to the supply air in the heat exchanger. The cross-counter-flow-cross heat exchanger enables the recovery of up to 80% of the heat

contained in the return air. The ventilation heat losses that have to be covered by the pumped hot water heating coil are thus kept to a minimum.

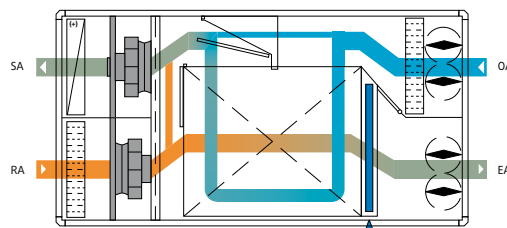
Recirculating Air Operation (heating)

If no requirements are placed on temperature regulation or dehumidification when the device is in standby mode, the system operates only in recirculating mode with reduced air volume flow. The air circulation in the swimming pool hall is guaranteed. If heating is required, the return air is heated to the supply air temperature as required using the heating coil.



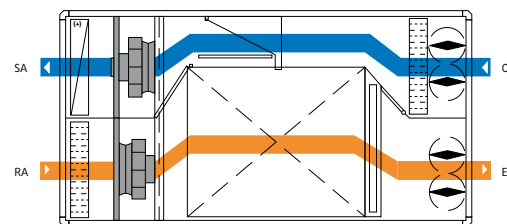
Dehumidification in the transitional period

When outside air temperatures rise, the output of the heating coil can be reduced. The heat recovered can be regulated by means of the controllable bypass damper. A proportion of the outside air is by-passed the plate heat exchanger.



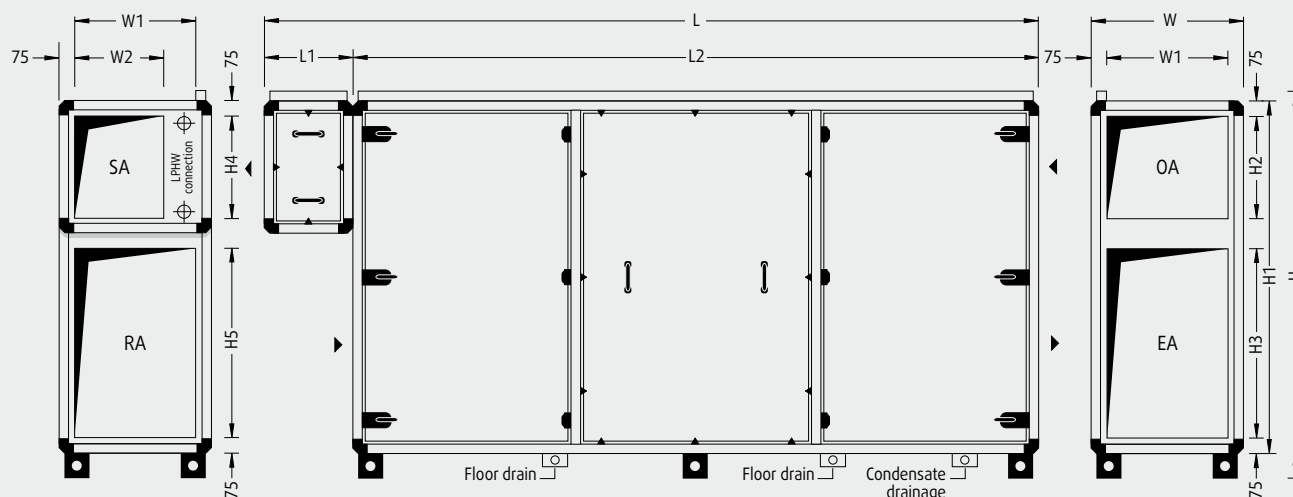
Summertime conditions

In the case of rising outside air humidity, the recirculation air damper is continuously closing as required. When the outside air humidity is high, the damper closes completely. The system works at 100% outside air / exhaust air operation through the heat exchanger. Heat recovery is not required.



ThermoCond Type 23

System dimensions and weights



Unit feet 100mm
 Optionally: adjustable feet from 100 to 120 mm

Unit type	L	W ¹	H ²	L1	L2	W1	W2	H1	H2	H3	H4	H5	Weight
23 12 01	2,580	570	1,210	410	2,170	420	350	1,050	325	420	420	325	450
23 18 01	3,060	730	1,530	410	2,650	580	505	1,370	485	580	580	485	600
23 26 01	3,700	730	1,850	410	3,290	580	505	1,690	485	900	580	580	870
23 36 01	3,700	1,050	1,850	410	3,290	900	825	1,690	485	900	580	580	1,100

Controls cabinet

Unit Type	H x W x D	Position at unit
23 12 01	600 x 600 x 200	OA/EA side
23 18 01	600 x 600 x 200	OA/EA side
23 26 01	600 x 600 x 200	OA/EA side
23 36 01	600 x 600 x 200	OA/EA side

For service work, a clearance corresponding to dimension W is required on the operating side of the unit. If dimension W is smaller than one metre, please leave a clearance of one metre. For service work above the unit, please allow 50 mm working height clearance above the cable duct.

Please comply with the dimensions for body size, air duct connections and electrical switch cabinet.

Partitioning of unit for smaller apertures possible (at extra cost).

All lengths are given in mm, weights in kg, weight incl. controls cabinet.

- 1 Door fitting assembly increase unit width by 25 mm each operating side
- 2 incl. 100 mm unit feet and 60 mm cable duct

Technical specifications and services

Unit Type		23 12 01	23 18 01	23 26 01	23 36 01
Optimum flow rate	m ³ /h	1,600	2,500	3,200	5,000
Dehumidification capacity according to VDI 2089	kg/h	10.3	16.2	20.7	30.2
Total electrical power rating ¹	kW	1.08	1.78	2.39	3.24
Max. current consumption ¹	A	6.6	13.8	8.0	6.6
Operating voltage		1 / N / PE 230 V 50 Hz		3 / N / PE 400 V 50 Hz	
Ext. pressure losses					
Supply and fresh air channel	Pa	300	300	300	300
Return and exhaust air channel	Pa	300	300	300	300
Sound power level ²					
Supply air vent	dB(A)	60	67	68	70
RA connection	dB(A)	58	65	65	67
Outside air vent	dB(A)	50	55	59	57
EA connection	dB(A)	54	62	62	65
Acoustic pressure at a distance of 1 m from the device ²	dB(A)	43	51	51	54
Fan units					
Rated motor input for supply air ³	kW	0.52	0.82	1.11	1.48
Rated motor input for return air ³	kW	0.56	0.96	1.28	1.76
Rated motor input for supply air recirc mode ³	kW	0.29	0.45	0.57	0.79
Rated motor input for return air recirc mode ³	kW	0.29	0.45	0.57	0.79
SFP category (supply air return air) recirc mode		1 1	1 1	1 1	1 1
Nominal rating supply air return air	kW	0.8 0.8	1.4 1.4	2.5 2.5	2.0 2.0
Filtration according to DIN EN 779					
Outside air				M5	
Return air				M5	
LPHW					
Heating capacity recirc mode ⁴	kW	9.2	14.8	17.6	28.8
Heating capacity OA-EA operation ⁴	kW	10.9	17.7	20.1	33.7
Water flow rate and pressure losses					
LPHW	m ³ /h kPa	0.48 7.4	0.78 4.4	0.88 5.4	1.47 9.8
LPHW valve	m ³ /h kPa	0.48 9.0	0.78 9.6	0.88 12.4	1.47 13.6
Connections					
LPHW connection	DN	32	32	32	32
LPHW control valve connection	DN	10	15	15	20
Condensate drainage	DN	20	20	20	20
Floor drain	DN	20	20	20	20

Specifications of technical data relate to the optimum flow rate and return air condition 30° C / 54% r.h., outside air condition 15° C / 84% r.h. and standard density (1.204 kg/m³), unless otherwise specified.

² depends on configuration of measurement and control system/unit

³ at 250 Hz mid-band frequency

⁴ with average filter contamination

⁵ FL/RL = 70/50° C, SA = 50° C

Please seek approval of technical data and specifications prior to start of the planning process.