

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



ThermoCond 19 20 01 - simplified illustration

Automatically selects the most economical operating mode!



ThermoCond 19

AIR VOLUME FLOW: 1,100 - 3,500 m³/h

At a glance:

- ▶ **Dehumidifies, ventilates and heats**
- ▶ **Corrosion-free heat exchanger made from polypropylene**
- ▶ **Two-stage recuperative heat recovery**
- ▶ **Energy-saving EC fans**
- ▶ **Constantly regulated recirculation air heating damper**
- ▶ **Variable air duct connections**
- ▶ **Compact design for minimal space requirements**
- ▶ **Integrated control and regulation system, compatible with all conventional building management systems**
- ▶ **Optional: operation via smartphone or tablet**

The devices of the ThermoCond 19 series are multifunctional compact systems for air conditioning private swimming pool halls. The design and functionality of all systems are optimally adapted to your requirements. The combination of first-class components with precise control and regulation systems guarantees economical operation at all times, while

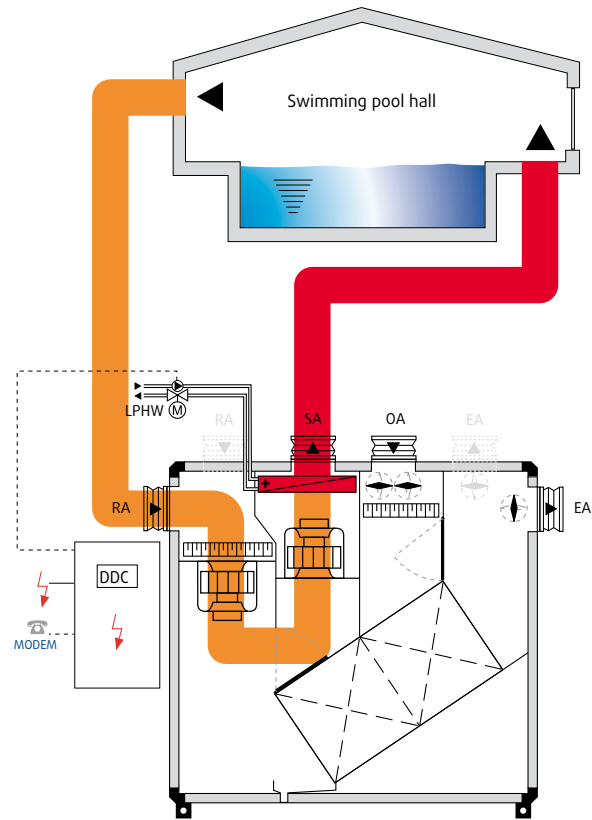
ensuring the highest degree of comfort air conditioning. The ThermoCond systems dehumidify, heat and ventilate the swimming pool hall, and simultaneously create good climate and ideal protection for the material of the building. Additional components such as radiators or panel heating systems are generally not required.

Further performance parameters and options:

- Filtering the air in any operating mode
- pumped hot water air heater
- sound-optimised plastic impellers for even quieter operation (from 19 20 01)
- 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
- Intensive quality inspection with factory test run

- Options
- bypass damper
 - water/air temperature interconnection
 - design complies with VDI 6022
 - remote maintenance
 - and many more

Functional description



Recirculating Air Operation (heating)

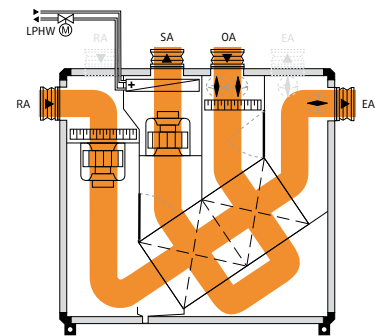
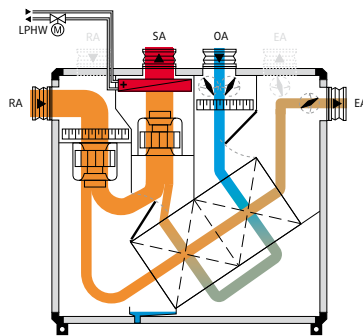
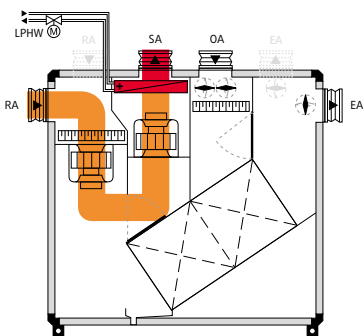
If no requirements are placed on temperature regulation or dehumidification when the device is in standby mode, the system operates only in recirculation mode with reduced air volume flow. The air circulation in the swimming pool hall is guaranteed. If heating is required, the return air is heated up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

Dehumidification using outside air in winter

The swimming pool hall is dehumidified through the addition of outside air to the recirculated air volume flow. The proportion of outside air depends on the current evaporation of water (and therefore the occupancy level of the swimming pool hall), as well as the outside air humidity. This is continuously and automatically adjusted. If the waste heat recovery is not sufficient for achieving the desired supply air temperature, the supply air is reheated in the heating coil.

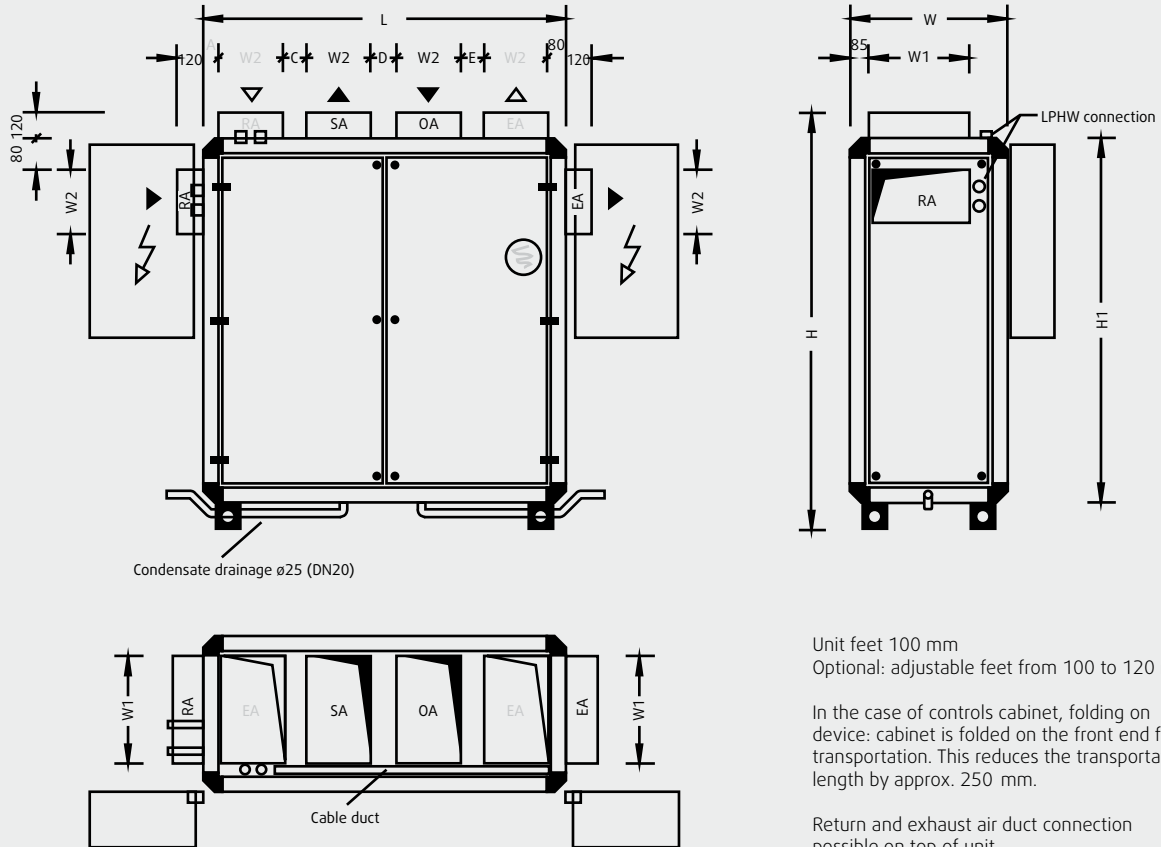
Dehumidification using outside air in summer

In case of rising outside air humidity, the recirculated 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.



ThermoCond Type 19

System dimensions and weights



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

In the case of controls cabinet, folding on device: cabinet is folded on the front end for transportation. This reduces the transportation length by approx. 250 mm.

Return and exhaust air duct connection possible on top of unit.
Mirror-image design possible.

Unit type	L	W ¹	H ²	W1	W2	H1	A	C	D	E	Weight
19 11 01	1,530	570	1,590	350	200	1,370	215	150	150	135	410
19 15 01	1,530	730	1,590	500	200	1,370	215	150	150	135	440
19 20 01	1,690	730	1,910	500	300	1,690	80	105	120	105	540
19 25 01	1,690	890	1,910	600	300	1,690	80	105	120	105	610
19 35 01	1,690	1,210	1,910	920	300	1,690	80	105	120	105	720

For service work, a clearance corresponding to dimension B is required on the operating side of the unit. If dimension W is smaller than one metre, please leave a clearance of one metre.

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

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

All lengths are given in mm, weights in kg.

- 1 Door fitting assembly increase unit width by 25 mm each operating side
- 2 incl. 100 mm unit feet, incl. 120 mm duct connection

Controls cabinet

Unit Type	H x W x D	Position at unit
19 11 01	900 x 480 x 210	SA/RA side
19 15 01	900 x 480 x 210	SA/RA side
19 20 01	900 x 480 x 210	SA/RA side
19 25 01	900 x 480 x 210	SA/RA side
19 35 01	900 x 480 x 210	SA/RA side

Technical specifications and services

Unit Type		19 11 01	19 15 01	19 20 01	19 25 01	19 35 01
Optimum flow rate	m ³ /h	1,100	1,500	2,000	2,500	3,500
Heat recovery efficiency ¹	%	76	76	79	79	80
Dehumidification capacity according to VDI 2089	kg/h	6.6	9.0	12.1	15.1	21.1
Total electrical power rating ²	kW	0.87	0.98	1.52	1.73	2.76
Current consumption ²	A	3.3	3.3	3.8	3.8	7.6
Operating voltage		3 / N / PE 400 V 50 Hz				
Ext. pressure losses						
Supply and fresh air channel	Pa	300	300	300	300	300
Return and exhaust air channel	Pa	300	300	300	300	300
Sound power level³						
Supply air vent	dB(A)	79	81	71	68	76
RA connection	dB(A)	71	70	61	61	64
Outside air vent	dB(A)	66	65	57	55	62
EA connection	dB(A)	71	70	60	59	64
Acoustic pressure at a distance of 1 m from the device ³	dB(A)	61	62	52	50	57
Fan units						
Rated motor input for supply air ⁴	kW	0.51	0.56	0.84	0.96	1.58
Rated motor input for return air ⁴	kW	0.36	0.42	0.68	0.77	1.18
Rated motor input for supply air recirc mode ⁴	kW	0.18	0.22	0.37	0.49	0.66
Rated motor input for return air recirc mode ⁴	kW	0.18	0.22	0.37	0.49	0.66
SFP category (supply air return air) recirc mode		1 1	1 1	1 1	1 1	1 1
Nominal rating supply air return air	kW	1.0 1.0	1.0 1.0	1.2 1.2	1.2 1.2	2.4 2.4
Filtration according to DIN EN 779						
Outside air		M5				
Return air		M5				
LPHW						
Heating capacity ⁵ recirc mode	kW	8.2	11.7	13.9	18.1	25.8
Heating capacity ^{5,6} OA-EA operation	kW	9.9	14.2	16.7	21.7	30.7
Water flow rates and pressure losses^{5,6}						
LPHW	m ³ /h kPa	0.43 3.6	0.62 7.9	0.73 3.8	0.95 6.9	1.34 6.4
LPHW valve	m ³ /h kPa	0.43 7.4	0.62 15.0	0.73 8.6	0.95 14.4	1.34 11.3
Connections						
LPHW connection	DN	15	15	20	20	20
LPHW control valve connection	DN	10	10	15	15	20
Condensate drainage	DN	20	20	20	20	20
Floor drain	DN	20	20	20	20	20

Specifications of technical data relate to the optimum flow rate and return air condition 30°C / 53.7% r.h., outside air condition 15°C / 84% r.h. and an altitude height of zero metres above sea level, unless otherwise specified

- 1 depends on operating condition
- 2 depends on configuration of measurement and control system/unit
- 3 at 250 Hz mid-band frequency
- 4 with average filter contamination
- 5 FL = 70°C, SA ≈ 50°C
- 6 OA = -12°C / 90% r.h., 2/3 proportion of air from outside

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