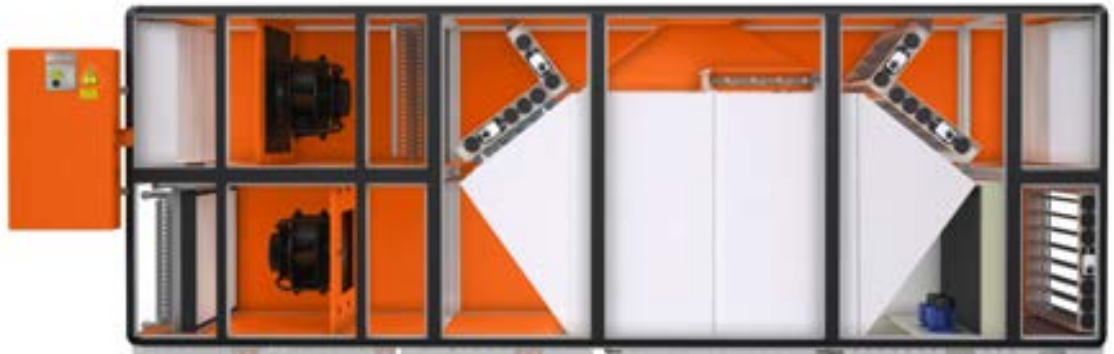


Comfort air conditioning unit with counterflow plate heat exchanger



Automatically selects the most economical operating mode!



Adconair 76 13 01 with Adiabatic Pro - simplified illustration

Adconair 76

AIR VOLUME FLOW: 2,600 – 23,600 m³/h



Eurovent seal refers to range Menerga Air, more information on page 6. Check ongoing validity of certificate: www.eurovent-certification.com or www.certiflash.com

At a glance:

- Suitable for all building types
- Designed for the requirements of the highest energy efficiency classes
- Heat recovery rate of more than 90% with just 150 Pa pressure loss
- HRC class H1, even at high air velocities
- Integrated defrosting function
- Thermal bridge factor $k_b = 0.78$ - class TB1
- Two-stage supply air filtration
- Fulfils the requirements of the German Energy Saving Ordinance (EnEV) and the German Renewable Energies Heat Act (EEWärmeG) and the VDI 6022
- Summer bypass of the heat recovery system for both air flow paths

With its counterflow plate heat exchanger, the Adconair 76 series is setting new standards in the ventilation industry. The new heat exchanger works with a real counterflow proportion of over 80%. The internal pressure losses of the heat recovery system measure just 150 Pa. Adconair units are optimally adapted for use in comfort air conditioning. The unit

series is designed to comply with the requirements of the highest energy efficiency classes. Ideal areas of application include all residential and non-residential buildings. Thanks to its high capacity and intelligent regulation system, the units always create an excellent indoor climate.

Further performance parameters and options:

- Corrosion-free counterflow plate heat exchanger made from polypropylene
 - EC fans/EffiVent
 - Pumped hot water air heater
 - Integrated heat recovery bypass for "free cooling"
 - Integrated freely programmable control and regulation unit
 - Complete unit – the unit is delivered ready to install
 - Intensive quality inspection with factory test run
 - Complete cleaning of the heat exchanger possible without dismantling
- Options:
- Adiabatic evaporative cooling
 - AdiabaticPro
 - Integrated compressor refrigeration system (type approved PED97/23/EG with output-regulated heat-pump and microchannel condenser) - also available as reversable system
 - Constantly regulated recirculation air heating damper
 - Recuperator in short version
 - Outdoor installation
 - Remote maintenance
 - And many more

Sample- configurations

Adconair without optional equipment

Basic unit without additional equipment. The central element is the counter-flow plate heat exchanger. Ideal application areas are applications in which a high heat recovery is in the focus.



Additional equipment adiabatic evaporative cooling

Classic adiabatic evaporative cooling with temperature lowering up to 14 K*. The ideal application area is a high demand for cooling and simultaneously high demands for heat recovery, without the need for dehumidification.



Additional equipment AdiabaticPro

This increases the power of the adiabatic evaporative cooling by additional adiabatic pre-cooling. Temperature reduction up to 15 K*. Ideal application is where a demand for cooling and a high requirement for heat recovery, without demand for dehumidification, is requested.



Additional equipment compressor refrigeration system

To increase the cooling capacity and for dehumidification. This option can be combined with adiabatic evaporation cooling, but not with AdiabaticPro. Ideally suited, if supreme comfort air with minimum energy requirements is in the focus.



Special design option: shortened recuperator

This variant can be combined with each option /additional equipment mentioned above (except AdiabaticPro). It shortens the length of the unit by 960 mm. Ideally suited, if high heat recovery needs to go into a small plant room.



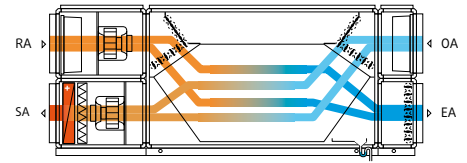
* for RA=26° C; 55 % r.h., OA=34° C; 40% r.h. and optimum air volume flow and standard density

Functional description

Wintertime conditions

In case of low outside temperatures the system operates completely in heat recovery mode. The counterflow-plate heat exchanger enables the recovery of more than 90% of the heat contained in

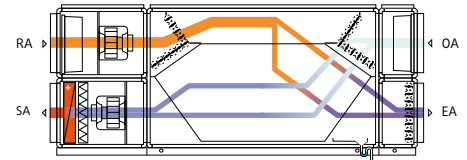
the return air. The standard heating coil compensates for ventilation and transmission heat losses of the building as required.



Defrosting Circuit

All recuperative heat exchangers tend to ice over in the exhaust air section in the case of low outside temperatures. The integrated defrosting circuit melts any ice build-up by opening the RA-EA

bypass, which directs the return air straight to the area of any possible ice. The intake of fresh air is not interrupted during defrost mode.

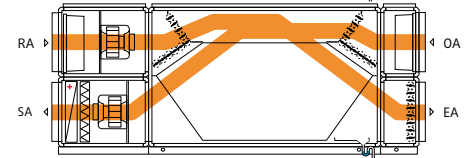
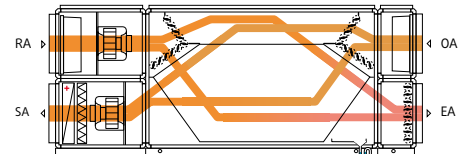


Transitional Period

As the outside air temperatures rise, the heat recovery requirement is reduced. The bypass dampers, which run along the entire depth of the unit, are continuously regulated in order to achieve the desired supply air temperature..

If the outside temperatures continue to

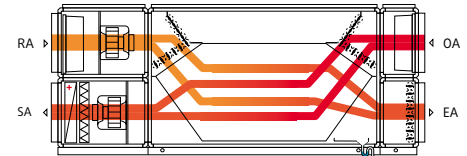
rise, the heat recovery is completely bypassed. The structural design of the bypasses over both airflow paths ensures that the pressure losses within the device are low and that the power consumption of both fans in bypass mode is also reduced to a minimum.



Summertime conditions

If the outside temperature rises above the return air temperature, the highly efficient heat exchanger is used as a

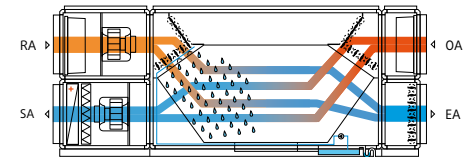
“cooling recovery system”. The warm outside air is cooled by the return air.



Adiabatic (optional)*

A major component of the indirect adiabatic evaporation cooling is the counterflow plate heat exchanger in which the return air is adiabatically cooled. In turn, the outside air is cooled by the humid, cold exhaust air, without itself being humidified. The high efficiency

rate is due to the fact that both processes (adiabatic evaporative cooling of the return air + cooling of the outside air) take place simultaneously in the heat exchanger. The high degree of temperature efficiency of the counterflow plate heat exchanger allows significant cooling of the OA-SA.

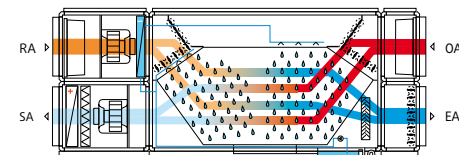


* If option Adiabatic is chosen, we recommend optimum flow rate as maximum.

AdiabaticPro (optional)*

In addition to the humidification at the return air intake of the counterflow plate heat exchanger the return air is pre-cooled lowering the wet bulb tempera-

ture by a partial flow of the circulating water. As well an additional precooling of the outside air by humidifying the exhaust air section is provided.

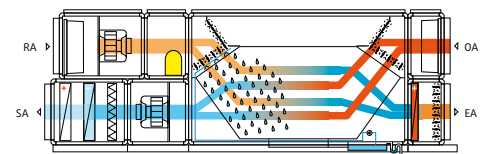


* If option Adiabatic is chosen, optimum flow rate is maximum flow rate.

Compressor refrigeration system (optional)

When outside air temperatures are sufficiently high, the integrated

compressor refrigeration system cools the supply air to the desired temperature and dehumidifies it if required.

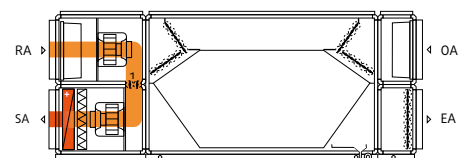


Recirculation Air Operation (heating)*

In recirculation air mode, the outdoor and exhaust air dampers are closed. The air is heated as required via the heating coil. Rooms which are not used all of the time,

such as lecture halls or sports halls, can therefore be quickly heated before being used.

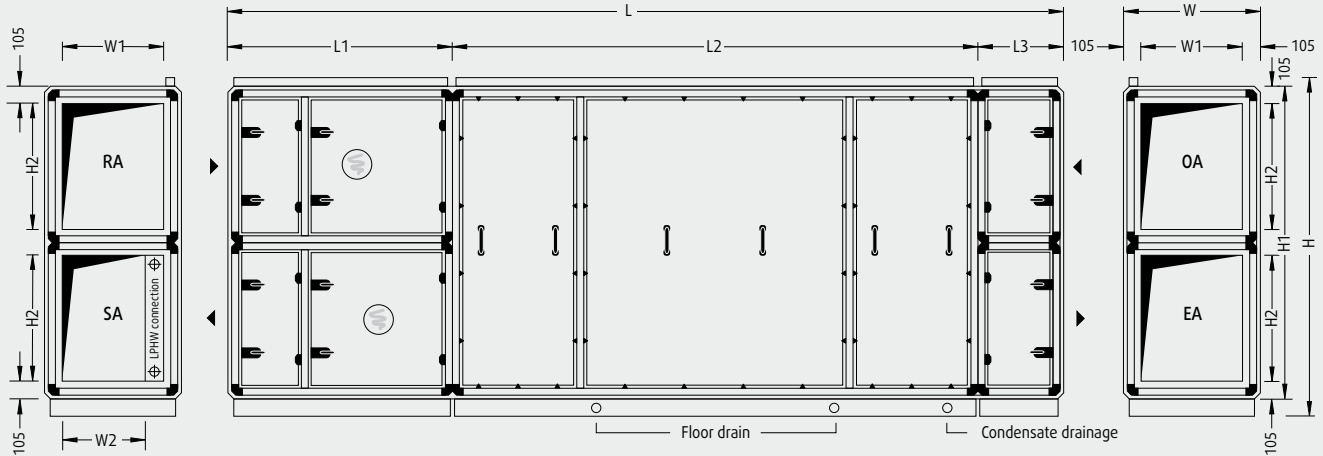
* only possible with optional recirculation air heating damper



1 Recirculation air heating damper (additional equipment)

Adconair Type 76

System dimensions and weights



Important! Where a system is operated in parallel, the supply air and return air ducts of the two units have to be brought together.

Where units are run in parallel, each unit has a controls cabinet.

Mirror-image design possible.

Unit type	L ¹	W ²	H ³	L ¹¹	L ²¹	L ³¹	W1	W2	H1	H2	Weight ^{1,4}
76 03 01	4,810	790	1,700	1,240	2,970	600	580	510	1,520	580	1,220
76 05 01	4,970	1,110	1,700	1,400	2,970	600	900	830	1,520	580	1,500
76 06 01	5,610	790	2,340	1,400	3,610	600	580	420	2,160	900	1,650
76 10 01	5,610	1,110	2,340	1,400	3,610	600	900	740	2,160	900	1,900
76 13 01	5,770	1,430	2,340	1,560	3,610	600	1,220	1,060	2,160	900	2,350
76 16 01	5,770	1,750	2,340	1,560	3,610	600	1,540	1,380	2,160	900	2,650
76 19 01	5,770	2,070	2,340	1,560	3,610	600	1,860	1,700	2,160	900	3,000
76 25 01	6,250	2,070	2,980	1,560	4,090	600	1,860	1,700	2,800	1,220	3,900
76 29 01	6,250	2,390	2,980	1,560	4,090	600	2,180	2,020	2,800	1,220	4,300
76 37 01	6,250	3,030	2,980	1,560	4,090	600	2,820	2,660	2,800	1,220	5,700

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. For service work at unit type 76 37 01 a clearance at the rear of at least 1.500 mm is required.

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

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

Largest transport unit

Unit Type	L ¹	W	H ³	Weight ^{1,4}
76 03 01	2,970	790	1,700	660
76 05 01	2,970	1,110	1,700	810
76 06 01	3,610	790	2,340	930
76 10 01	3,610	1,110	2,340	1,110
76 13 01	3,610	1,430	2,340	1,300
76 16 01	3,610	1,750	2,340	1,500
76 19 01	3,610	2,070	2,340	1,720
76 25 01	4,090	2,070	2,980	2,330
76 29 01	4,090	2,390	2,980	2,600
76 37 01	4,090	1,515	2,980	1,750

Controls cabinet

Unit Type	H x W x D ¹	Position at unit
76 03 01	1,120 x 640 x 210	SA/RA side
76 05 01	1,120 x 640 x 210	SA/RA side
76 06 01	1,120 x 640 x 210	SA/RA side
76 10 01	1,120 x 640 x 210	SA/RA side
76 13 01	1,120 x 640 x 210	SA/RA side
76 16 01	1,120 x 640 x 210	SA/RA side
76 19 01	1,120 x 640 x 210	SA/RA side
76 25 01	1,280 x 640 x 210	SA/RA side
76 29 01	1,280 x 640 x 210	SA/RA side
76 37 01	1,280 x 640 x 210	SA/RA side

- 1 May change depending on chosen option, e.g. AdiabaticPro, compressor refrigeration system, recuperator in short version (- 960 mm)
- 2 Door fitting assembly increase unit width by 65 mm each operating side
- 3 incl. 120 mm base frame, incl. 60 mm cable duct
- 4 If option Adiabatic or AdiabaticPro is chosen, please affirm possible additional weight.!

Three transportation units are supplied, including controls cabinet until unit type 38 29 01. Unit type 38 37 01 is delivered in 4 transportation units including controls cabinet. Further partitioning for smaller apertures possible (at extra cost).

Technical specifications and services

Gerätetyp		76 03 01	76 05 01	76 06 01	76 10 01	76 13 01	76 16 01	76 19 01	76 25 01	76 29 01	76 37 01
Optimum flow rate	m ³ /h	2,600	3,900	4,000	6,000	7,900	9,800	11,800	15,800	18,400	23,600
Coefficient of power efficiency acc. to EN 13053:2012	%	74	74	76	76	76	76	76	78	78	77
Heat recovery rate according to EN 308	%	76	76	78	78	78	79	78	80	80	80
Total electrical power rating ¹	kW	1.75	2.51	2.69	4.07	5.10	6.25	8.54	11.94	15.22	20.15
Max. current consumption ¹	A	8.0	8.0	8.0	9.6	16.0	16.0	18.8	32.0	34.8	44.0
Operating voltage		3 / N / PE 400 V 50 Hz									
Ext. pressure losses											
Supply and fresh air channel	Pa	300	300	300	300	300	300	400	400	500	500
Return and exhaust air channel	Pa	300	300	300	300	300	300	400	400	500	500
Sound power level ²											
Supply air vent	dB(A)	67	65	66	71	68	74	78	74	81	84
RA connection	dB(A)	60	65	65	69	64	68	74	68	73	77
Outside air vent	dB(A)	58	57	59	64	58	63	67	64	68	72
EA connection	dB(A)	59	63	62	67	64	67	77	68	75	79
Acoustic pressure in 1 m distance from device ²	dB(A)	52	52	52	57	53	59	66	60	66	70
Fan units											
Rated motor input for supply air ³	kW	0.95	1.34	1.44	2.18	2.73	3.34	4.49	6.34	7.94	10.89
Rated motor input for return air ³	kW	0.80	1.17	1.25	1.89	2.37	2.91	4.05	5.60	7.28	9.26
SFP category supply air return air		1 2	1 2	1 2	1 2	1 2	1 2	2 3	2 3	2 3	3 3
Nominal rating supply air return air	kW	2.5 2.5	2.5 2.5	2.5 2.5	2.9 2.9	5.0 5.0	5.0 5.0	6.0 6.0	10.0 10.0	12.0 10.0	15.0 12.0
Inner specific fan power (SFP _{int}) ⁴	Ws/m ³	700	704	776	785	735	731	750	787	774	824
Adiabatic / evaporative cooling (optional) ⁵ we recommend: optimum flow rate = max. flow rate											
Cooling capacity evaporative cooling ⁶	kW	10.1	15.1	15.7	23.5	31.1	38.5	46.3	62.9	73.2	93.7
Rated pump input	kW	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.90
Rated input reverse osmosis system ⁷	kW	0.25	0.25	0.25	0.25	0.25	0.38	0.38	0.38	0.38	0.38
AdiabaticPro (optional) ^{5,8,9} optimum flow rate = max. flow rate											
Cooling capacity evaporative cooling ⁶	kW	11.2	16.6	17.3	25.9	34.0	42.3	50.8	69.1	80.3	102.7
Rated pump input	kW	0.90	0.90	0.90	0.90	0.90	0.90	0.90	1.00	1.00	2.00
Rated input reverse osmosis system ⁷	kW	0.25	0.25	0.25	0.25	0.38	0.38	0.38	0.38	0.38	0.78
Rated motor input for return air ³	W	200	250	290	390	480	550	580	920	1,020	1,630
Compressor refrigeration system (optional) ^{8,9}											
Filling volume for refrigerant type R410A	kg	3.0	4.0	4.0	5.0	7.0	8.0	12.0	18.0	21.0	22.0
Rated compressor input	kW	2.2	2.5	2.0	3.0	3.5	4.9	5.8	6.6	7.4	10.3
Mechanical cooling capacity ^{6,10}	kW	8.2	11.7	9.9	15.8	18.7	24.5	30.4	37.2	42.3	54.9
Additional motor input for fans ³	W	120	190	230	400	330	420	440	720	780	910
Efficiency classes according to EN 13053:2012											
Heat recovery class		H1	H1	H1	H1	H1	H1	H1	H1	H1	H1
Power consumption of fan motors SA RA		P1 P1	P1 P1	P1 P1	P1 P1	P1 P1	P1 P1	P1 P1	P1 P1	P1 P1	P2 P1
Air velocity class		V1	V1	V2	V2	V2	V2	V2	V2	V2	V2
Filtration according to DIN EN 779											
Supply air Outside air		F7 M5									
Return Air		M5									
LPHW ¹¹											
Heating capacity SA=22° C	kW	4.5	6.9	5.9	9.0	11.9	14.8	17.8	19.2	22.0	28.9
Heating capacity SA=30° C	kW	11.5	17.4	16.7	25.1	33.3	41.4	49.4	62.0	71.9	92.4
Heating capacity Defrost ¹²	kW	7.0	10.6	10.9	16.3	21.4	26.6	32.1	42.4	49.1	63.2
Water flow rate and pressure losses											
LPHW	m ³ /h kPa	0.51 5.3	0.88 4.4	0.88 4.8	1.38 4.4	2.14 3.6	2.16 4.3	2.13 4.9	3.83 3.9	3.89 4.5	3.89 5.3
LPHW (pump warm water) valve	m ³ /h kPa	0.51 10.1	0.88 4.9	0.88 12.4	1.38 4.8	2.14 4.6	2.16 4.7	2.13 7.1	3.83 5.7	3.89 5.9	3.89 5.9
Connections											
LPHW connection	DN	32	32	32	32	40	40	40	50	65	65
LPHW control valve connection	DN	15	15	15	20	25	25	25	32	32	32
Condensate drainage	DN	40	40	40	40	40	40	40	40	40	40
Floor drain	DN	20	20	20	20	20	20	20	20	20	20

Specifications of technical data relate to the optimum flow rate and return air condition 22° C / 40% r.h., outside air condition -12° C / 90% r.h. and standard density (1.204 kg/m³), unless otherwise specified.

- dependent on configuration of measurement and control system/unit
- at 250 Hz mid-band frequency
- with average filter contamination
- According EU guideline No. 1253/2014 [Ecodesign guideline]

- water quality of make-up water corresponds to VDI 3803 table B3 with a bacteria count < 100 CFU/ml, maximum water hardness 15° dH
- for RA=26° C / 55 % r.h., OA=32° C / 40% r.h. and optimum air volume flow and standard density
- discontinuous operation, dependent on water consumption
- may require alteration of the technical equipment.
- supplementary equipment, device length extends. Note higher power consumption of RA/SA fan units

- SA = 17° C
- FL = 70° C
- at OA=-15° C, SA=18° C, 66% of optimum flow rate and active defrost function

Please seek approval of technical data and specifications prior to start of the planning process. With every single selection we do to your individual requirements our certified selection software automatically checks the Ecodesign compliance level 1 and 2.