



ALPENKLANG

Compact air handling unit



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Alpenklang quality

■ First class S2 housing

Classification per DIN EN 1886 (2009) / ISO 14000
L1 housing leakage
T2 heat transition / TB2 thermal bridging factor
Bee-Board-Isolation for Minergie® P-Eco

■ Siemens Synco controller

Compact AHU with controls
Connection to the control system (BUS)

■ EC fans

Continuous and efficient as per ErP 2015

■ Filter cells

Energy efficiency class A as per filter test norm ISO 16890
 $ePM_{10} \geq 70\%$ / F7 - 450
 $ePM_{10} \geq 90\%$ / F9 - 450

■ Hygienic design

To be cleaned in accordance with VDI 6022

■ Energy recovery

Highest recovery thanks to counterflow heat exchanger
Optional humidity recovery
Corresponds to Minergie® P



Functional description

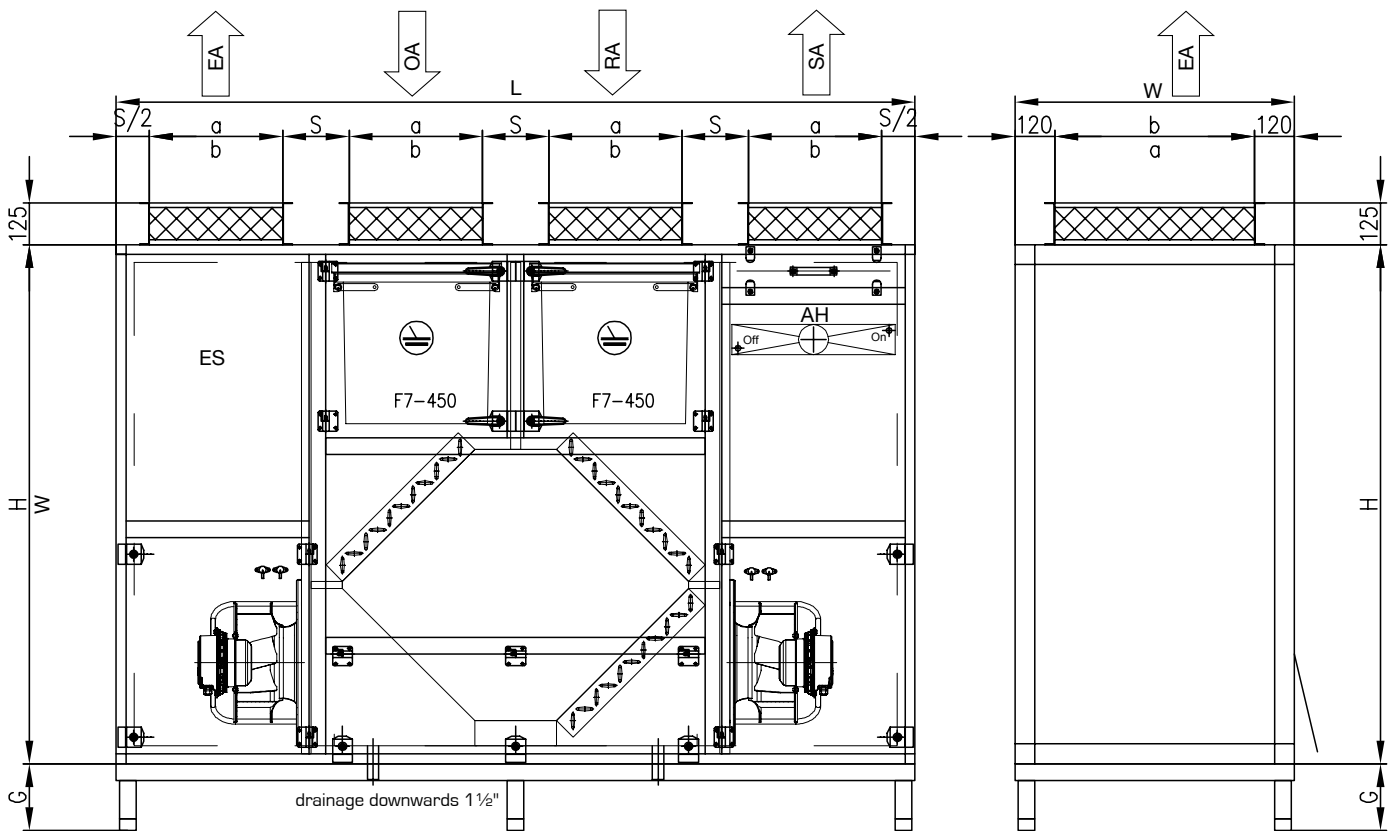
Highly efficient heat recovery via plate heat exchangers (aluminium, hygroscopic membrane). The warm and cold air flows are directed past each other in the counterflow plate heat exchanger, whereby the heat is transferred. In the transition area or in case of frost, a partial airflow of outside air is directed past the exchanger (regulated by bypass flap). Additional heating if required with pump warm water (PWW) and optional cooling. Fans with EC motors for needs-adjusted air volumes. Temperature regulation via the compact controller with electrical control box.

Applications

Fresh air systems in restaurants, kitchens and homes. Ventilation of storage and cellar rooms. Simple office ventilation, school buildings, sports halls and cloakrooms.

Mountair Alpenklang Vertical

Drawing and dimensions



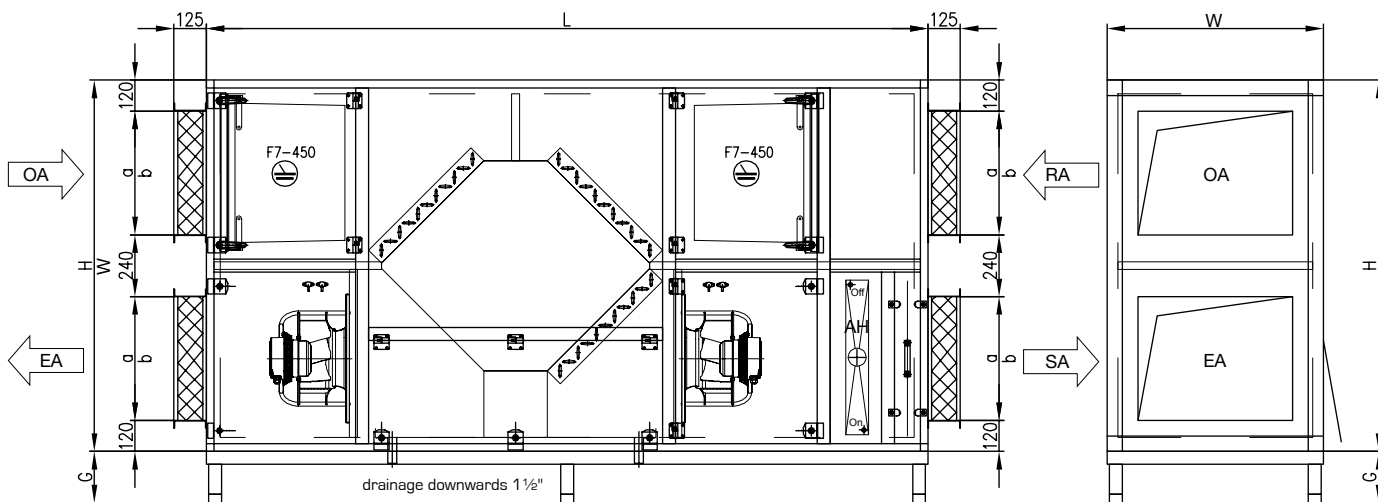
BASIC UNIT, ONE PIECE			A1	A2	A3	A4	A5
Air flow volume	m ³ /h		800	1300	2000	3500	5000
Dimensions	mm	H (Height)	1360	1460	1560	1760	1760
		W (Width)	620	720	840	1080	1440
		L (Length)	1700	2000	2400	2800	2800
		s	200	200	200	220	220
Base frame	mm	G	200	200	200	200	200
Connections			SBM 30				
OA isolated		a × b	225 × 380	300 × 480	400 × 600	480 × 840	480 × 1200
SA		a × b	225 × 380	300 × 480	400 × 600	480 × 840	480 × 1200
RA		a × b	225 × 380	300 × 480	400 × 600	480 × 840	480 × 1200
EA isolated		a × b	225 × 380	300 × 480	400 × 600	480 × 840	480 × 1200
Condensation pan		DN	40 (1 1/2")				
Electrical connection			1 × 230 V	1 × 230 V	1 × 230 V	3 × 400 V	3 × 400 V

Technical data

UNIT SIZE	A1	A2	A3	A4	A5	ACCESSORIES
Air flow volume with 2 m/s	800 m ³ /h	1300 m ³ /h	2000 m ³ /h	3500 m ³ /h	5000 m ³ /h	
External pressure	250 Pa	250 Pa	250 Pa	250 Pa	250 Pa	
Fan	ebm Papst / Ziehl Abegg					EC motor
Type, incl. EC motor with commutation unit	250	280	280	355	400	Measurement ring
Connection	1 × 230 V	1 × 230 V	1 × 230 V	3 × 400 V	3 × 400 V	0 - 10 V Signal
Specific fan performance	SFP 3	SFP 2 ≥ 500 to ≤ 750 W/(m ³ /s)				incl. air heater
Heat recovery	Belimo damper actuator, drive axis exterior					
PHE size	CR2-53-450	CR2-67-530	CR2-81-630	CR2-95-850	CR2-95-1200	
Heat recovery coefficient, humid	87,6 %	87,8 %	87,5 %	87,2 %	87,1 %	
Performance	7,4 kW	12 kW	18,4 kW	32,1 kW	45,9 kW	
Efficiency class H1	83,7 %	83,8 %	84 %	84,3 %	85,6 %	
Pressure loss	101 Pa	118 Pa	134 Pa	158 Pa	162 Pa	
Outside air OA	-11 °C / 90 % r.F.					
Room return air RA temperature	22 °C / 40 % r.F.					
Air heater incl. frost protection	Supply air 15 - 22 °C					
Air heating performance	1,8 kW	2,9 kW	4,4 kW	7,7 kW	11,0 kW	FS thermostat
Pump warm-water (PWW)	VL 40 °C / RL 30 °C					Pump 1 × 230 V exclusive
Water volume	0,15 m ³ /h	0,25 m ³ /h	0,38 m ³ /h	0,67 m ³ /h	0,96 m ³ /h	Loose Belimo valve
Filter Filter class	SA: F7 / RA: F7 - Energy class A Differential pressure filter display, 0 - 250 Pa					ePM ₁ ≥ 70 %
Filter size Filter type	<u>300 × 300</u> 305/2	<u>300 × 600</u> 305	<u>400 × 600</u> 420	<u>300 × 600</u> <u>600 × 600</u> 305 + 610	<u>2 pieces.</u> <u>600 × 600</u> 2 × 610	
Outside air and exhaust air separation flap	In the Monobloc/AHU Belimo damper actuator, drive axis exterior					

Mountair Alpenklang Horizontal

Drawing and dimensions



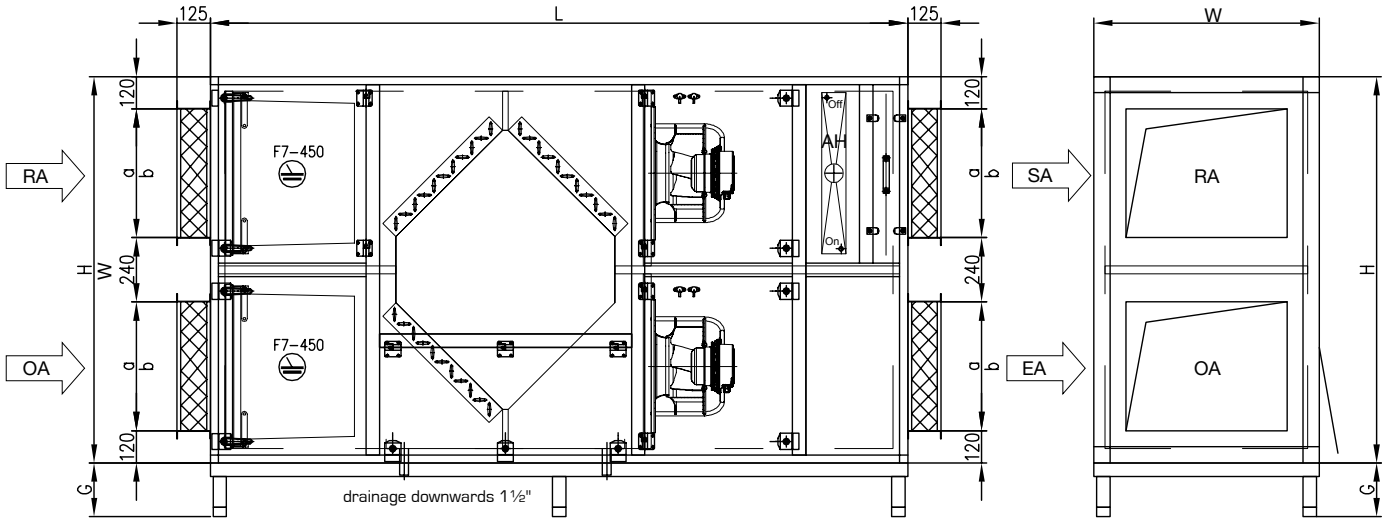
BASIC DEVICE, ONE PIECE			A1	A2	A3	A4	A5
Air flow volume	m ³ /h		800	1300	2000	3500	5000
Dimensions	mm	H (Height)	1040	1240	1440	1440	1440
		B (Width)	620	720	840	1080	1440
		L (Length)	2350	2500	2800	3000	3000
Base frame	mm	G	200	200	200	200	200
Connections			SBM 30				
OA isolated		a × b	280 × 380	380 × 480	480 × 600	480 × 840	480 × 1200
SA		a × b	280 × 380	380 × 480	480 × 600	480 × 840	480 × 1200
RA		a × b	280 × 380	380 × 480	480 × 600	480 × 840	480 × 1200
EA isolated		a × b	280 × 380	380 × 480	480 × 600	480 × 840	480 × 1200
Condensation pan		DN	40 (1 1/2")				
Electrical connection			1 × 230 V	1 × 230 V	1 × 230 V	3 × 400 V	3 × 400 V

Technical data

UNIT SIZE	A1	A2	A3	A4	A5	ACCESSORIES
Air flow volume with 2 m/s	800 m ³ /h	1300 m ³ /h	2000 m ³ /h	3500 m ³ /h	5000 m ³ /h	
External pressure	250 Pa	250 Pa	250 Pa	250 Pa	250 Pa	
Fan	ebm Papst / Ziehl Abegg					EC motor
Type, incl. EC motor with commutation unit	250	280	280	355	400	Measurement ring
Connection	1 × 230 V	1 × 230 V	1 × 230 V	3 × 400 V	3 × 400 V	0 - 10 V Signal
Specific fan performance	SFP 2 ≥ 500 bis ≤ 750 W/(m ³ /s)					incl. air heater
Heat recovery	Belimo damper actuator, drive axis exterior					
PHE size	CR2-53-450	CR2-67-530	CR2-81-630	CR2-95-850	CR2-95-1200	
Heat recovery coefficient, humid	87,6 %	87,8 %	87,5 %	87,2 %	87,1 %	
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Efficiency class H1	83,7 %	83,8 %	84 %	84,3 %	85,6 %	
Pressure loss	101 Pa	118 Pa	134 Pa	158 Pa	162 Pa	
Outside air OA	-11 °C/ 90 % r.F.					
Room return air RA temperature	22 °C/ 40 % r.F.					
Air heater incl. frost protection	Supply air 15 - 22 °C					
Air heating performance	1,8 kW	2,9 kW	4,4 kW	7,7 kW	11,0 kW	FS thermostat
Pump warm-water (PWW)	VL 40 °C/ RL 30 °C					Pump 1 × 230 V exclusive
Water volume	0,15 m ³ /h	0,25 m ³ /h	0,38 m ³ /h	0,67 m ³ /h	0,96 m ³ /h	Loose Belimo valve
Filter Filter class	SA: F7 / RA: F7 - Energy class A Differential pressure filter display, 0 - 250 Pa					ePM ₁ ≥ 70 %
Filter size Filter type	<u>400 × 400</u> 410	<u>600 × 500</u> 508Q	<u>600 × 600</u> 610	<u>300 × 600</u> <u>600 × 600</u> 305 + 610	<u>2 pieces.</u> <u>600 × 600</u> 2 × 610	
Outside air and exhaust air separation flap	In the Monobloc/AHU Belimo damper actuator, drive axis exterior					

Direct flow special model

Drawing and dimensions



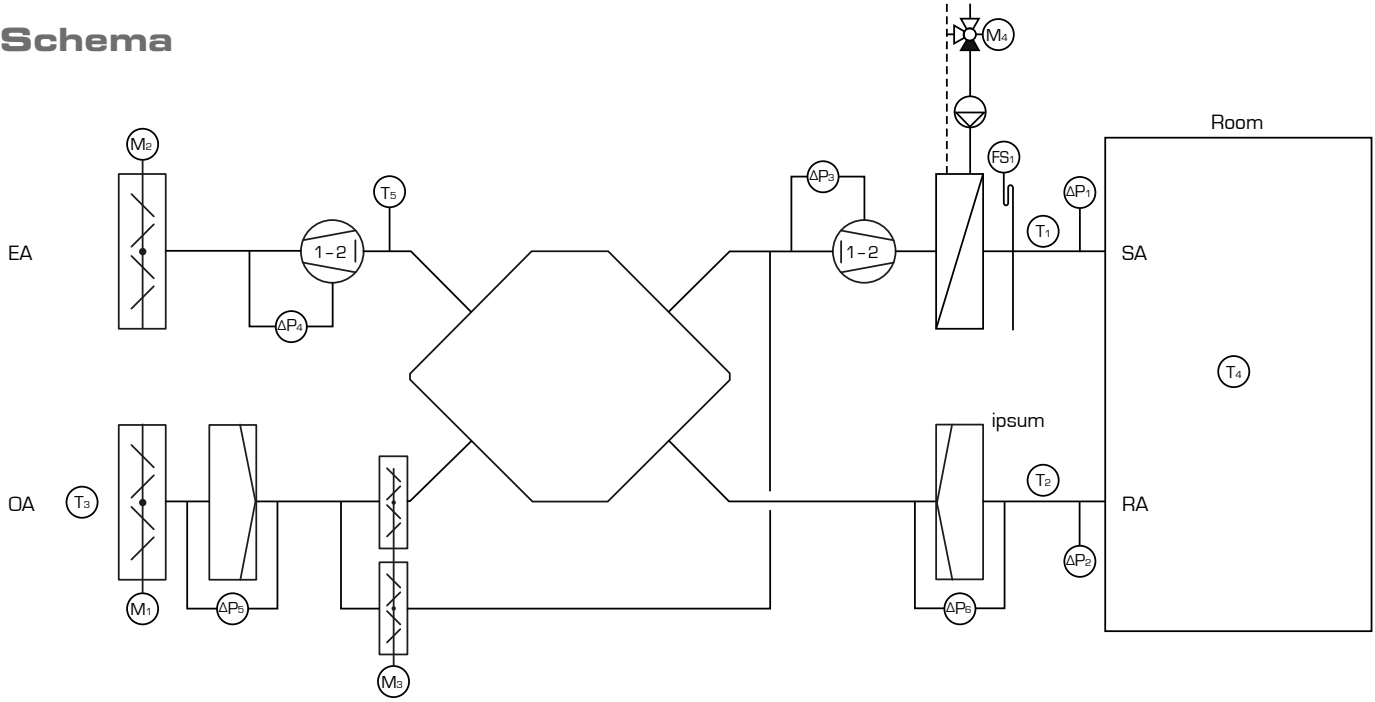
BASIC DEVICE, ONE PIECE			A1	A2	A3	A4	A5
Air flow volume	m ³ /h		800	1300	2000	3500	5000
Dimensions	mm	H (Height)	1040	1240	1440	1440	1440
		W (Width)	620	720	840	1080	1440
		L (Length)	2150	2300	2600	2800	2800
Base frame	mm	G	200	200	200	200	200
Connections			SBM 30				
OA isolated		a × b	280 × 380	380 × 480	480 × 600	480 × 840	480 × 1200
SA		a × b	280 × 380	380 × 480	480 × 600	480 × 840	480 × 1200
RA		a × b	280 × 380	380 × 480	480 × 600	480 × 840	480 × 1200
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Condensation pan		DN	40 (1 1/2")				
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Technical data

UNIT SIZE	A1	A2	A3	A4	A5	ACCESSORIES
Air flow volume with 2 m/s	800 m ³ /h	1300 m ³ /h	2000 m ³ /h	3500 m ³ /h	5000 m ³ /h	
External pressure	250 Pa	250 Pa	250 Pa	250 Pa	250 Pa	
Fan	ebm Papst / Ziehl Abegg					EC motor
Type, incl. EC motor with commutation unit	250	280	280	355	400	Measurement ring
Connection	1 × 230 V	1 × 230 V	1 × 230 V	3 × 400 V	3 × 400 V	0 – 10 V Signal
Specific fan performance	SFP 2 ≥ 500 bis ≤ 750 W/(m ³ /s)					incl. air heater
Heat recovery	Belimo damper actuator, drive axis exterior					
PHE size	CR2-53-450	CR2-67-530	CR2-81-630	CR2-95-850	CR2-95-1200	
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Air heating performance	1,8 kW	2,9 kW	4,4 kW	7,7 kW	11,0 kW	FS thermostat
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Filter size Filter type	<u>400 × 400</u> 410	<u>600 × 500</u> 508Q	<u>600 × 600</u> 610	<u>300 × 600</u> <u>600 × 600</u> 305 + 610	<u>2 pieces.</u> <u>600 × 600</u> 2 × 610	
Outside air and exhaust air separation flap	In the Monobloc/AHU Belimo damper actuator, drive axis exterior					

Regulation / Controls

Schema



Siemens Synco controller specifications

Fans

- 1 stage timer-controlled
 - with potentiometer (standard without)
- 2 stages timer-controlled
 - with potentiometer (standard without)
- Constant pressure
- Constant flow volume

Temperature

- SA temperature
- RA temperature
- SA-RA cascade
- Bypass (constant damper motor)
- Air heater (incl. valve/excl. pump)
- Changeover System
- Night-time cooling

Options

- Anti-freeze protection with defrost function (T EA)
- Electrical filter monitoring
- Without OA and EA flaps
- Remote operation 0-1-2-Auto
- Remote signalling: operation, disturbance
- Inclusion of fire protection flaps (FPF) _____ pc.
- Smoke detectors _____ pc.
- Inclusion of flow volume regulator (FVR) _____ pc.
- Inclusion of room sensor CO₂ / movement sensor

Electrical cabinet

- Included loose in delivery
- Internally wired onto the terminal box
- Internally wired with _____ m of cable
- Built in and fully wired

Regulator

- Service panel on the cabinet doors
(usually the panel is **in the** cabinet)
- Detached service panel (KNX Bus)
- With bus connection (KNX, Bacnet, Modbus)

The controller is a standard commercially available product. The control cabinet is installed and wired ready for use. Service and maintenance work can be commissioned independently from the manufacturer. The replacement parts are guaranteed, follow-up products are compatible.

Controller

- Standard Siemens Synco controller
- Parametrizable controller for ventilation devices
- Extensive functionality
- Simple operation
- Fast commissioning
- Best support from a reliable partner
- High quality and reliability

Field devices

- Sensors with normalised signals
- Actuators: Belimo
- Valves dimensioned according to the system

Electrical control cabinet and wiring

- Control cabinet with Swiss low voltage regulations (NIV) protocol
- Standard cabinet/standard terminal/tight screw connection
- Wiring in accordance with Swiss Electrotechnical Association (SEV)
- Incorporation of additional components such as fire protection flaps

Service

- Individual and system-specific electrical wiring diagrams
- Commissioning and documentation

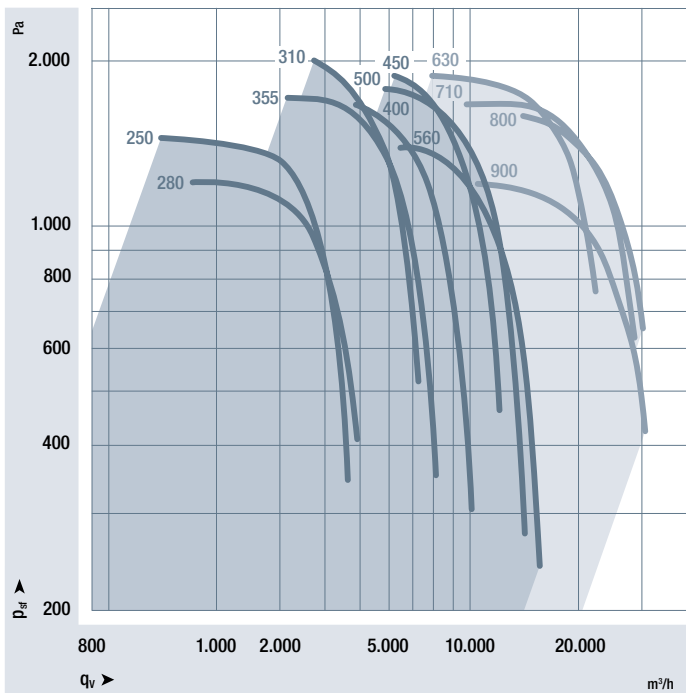


EC fans

In the fans, direct-drive radial fans, so-called free-running fans, are used. Thanks to the large number of finely graduated impellers and motors, the fan that best corresponds to the requirements can be built into the Monoblock.

The motors are speed-controlled through electronic commutation units (EC motors) and demonstrate excellent motor efficiency even in the partial load range. The compactly built EC motors are equivalent to the energy class IE4, and do not only allow small Monoblock dimensions but also ensure a constant air flow volume.

Increased pressure losses due to dirty air filters or dirty air channels can thus be compensated, as can changing filter type requirements.

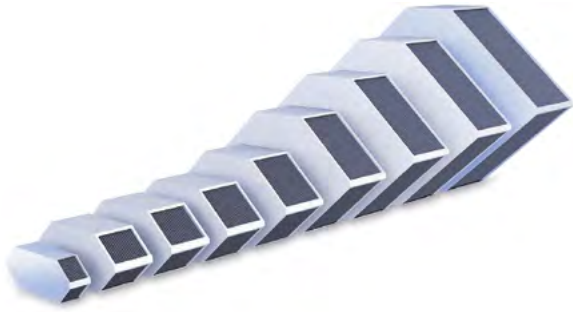


Characteristics overview

If less performance is needed, variants with smaller motors can be used. This makes it possible to save additional costs. The right fan for each application case.

Heat recovery plate heat exchanger (PHE)

Heat recovery is ensured through a high-performance plate heat exchanger. It prevents noise transfer and has no movable parts. The heat recovery is also maintenance-free in the long term.



The counterflow PHE

**Up to 90 % energy savings and more
in case of condensation**

Machine-produced "real counterflow exchanger with duct air conveyance" in saltwater-resistant aluminium to achieve a high degree of efficiency across the entire air volume range.



The enthalpy PHE

Enthalpy plate heat exchangers with the same construction form as sensitive PHE are available in metal. The separation layer between the two air flows is a membrane that is permeable for water molecules. The quality of the membrane and the density of the exchanger are decisive factors for proper functioning.

Filter cells

Filter cells are built into the system with standard dimensions. This allows various filter types to be used without any problems. This ensures that the filtration can be adjusted to changing requirements if needed.



Properties

- All models are available in various depths and with different numbers of bags.
- Filter classes according to the norm ISO 16890
- ISO ePM₁₀ 50% (M6)
- ISO ePM₁ 70% (F7)
- ISO ePM₁ 90% (F9)
- Energy efficiency class A according to Eurovent
- High dust holding capacity
- Recommended final pressure loss: Initial pressure loss × 2, max. however initial pressure loss + 100 Pa
- Temperature resistance 80°C
- Conform with hygiene guidelines SWKI VA104-01
- Simple filter change thanks to filter rapid tensioning frames



Panel fillings

The choice of insulating materials depends on the preferences of the customer. The noise insulation, stability, thermal insulation and fire protection requirements can be ideally fulfilled for every application.

- Mineral wool
- PIR hard foam
- Cardboard honeycomb
- Idikell as additional insulation material for noise insulation

Quote enquiry Alpenklang

Project name	
Company	Date
Contact person	Deadline
E-mail	Phone

TECHNICAL DATA

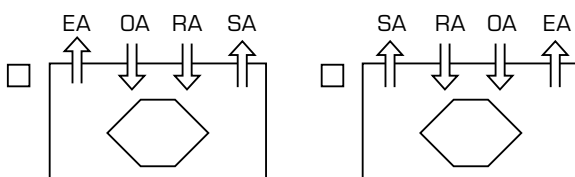
System number / Name	
Height above the sea	m a.s.l.
Construction form	<input type="checkbox"/> Vertical <input type="checkbox"/> Horizontal <input type="checkbox"/> Direct flow special model
Unit size	<input type="checkbox"/> A1 <input type="checkbox"/> A2 <input type="checkbox"/> A3 <input type="checkbox"/> A4 <input type="checkbox"/> A5
Supply air quality	<input type="checkbox"/> Q1 <input type="checkbox"/> Q2
Supply air flow volume (20 °C/40 %)	m ³ /h
External pressure SA	Pa
Filtration supply air	<input type="checkbox"/> M6 <input type="checkbox"/> F7 <input type="checkbox"/> F9
Return air quality	<input type="checkbox"/> Q1 <input type="checkbox"/> Q2
RA flow volume (20 °C/40%)	m ³ /h
External pressure RA	Pa
Filtration return air	<input type="checkbox"/> M6 <input type="checkbox"/> F7 <input type="checkbox"/> F9
Design	<input type="checkbox"/> inside <input type="checkbox"/> outside
Colour	<input type="checkbox"/> Standard: RAL5012, blue (inside) <input type="checkbox"/> Standard: RAL7015, grey (outside) <input type="checkbox"/>

Cuffs	<input type="checkbox"/> Yes <input type="checkbox"/> No
Flaps	<input type="checkbox"/> OA <input type="checkbox"/> EA <input type="checkbox"/> SA <input type="checkbox"/> RA
Base frame height	mm
Air heater	Flow °C Return °C
Air cooler	Flow °C Return °C
Controller	<input type="checkbox"/> Siemens Synco <input type="checkbox"/> without

AIR CONDITIONS	SUMMER	WINTER
OA: Temperature	°C	°C
OA: Relative/Absolute humidity	%/g/kg	%/g/kg
SA: Temperature	°C	°C
SA: Relative/Absolute humidity	%/g/kg	%/g/kg
RA: Temperature	°C	°C
RA: Relative/Absolute Feuchte	%/g/kg	%/g/kg

The Alpenklang compact air handling unit can be delivered in the following construction forms:
 (Please tick the desired connection placing):

VERTICAL



HORIZONTAL



SONDERMODELL GLEICHSTROM





MOUNTAIR SOLUTIONS

Best Technology - sustainable packaging!

ALPENKLANG

Compact air handling unit

Fresh air is a victual

Alpenklang is energy-efficient and environmentally friendly through its high quality and low operating costs.



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