

Counterflow plate heat recovery exchanger



BASIC FEATURES

ALFA 95 FLAT SQ

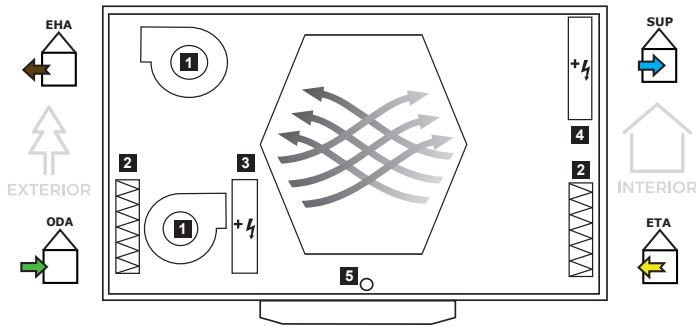
Super Quiet energy efficient heat recovery unit designed for installation above a suspended ceiling with a short local ducting – perfect solution for rooms where exposed decentralized ventilation unit may not be used. Designed for commercial and public interiors, such as **classrooms, meeting and conference rooms, open-space offices**, etc.

- 1 size with nominal airflow **965m³/h** at 100Pa external pressure and **SPI 0,995kW/(m³/s)**
- **33dB** sound pressure (LpA) at 1m distance when professionally installed
- Ecodesign directive 1253/2014 compliant
- Aluminium counterflow exchanger with heat recovery efficiency of up to 83 % (EN308)
- Low installation height – only 477mm
- Energy-efficient EC fans with low SFP and quiet operation
- Electric pre-heater/ post-heater integrated (option)
- **Integrated condensate pump**
- AirGENIO Superior control system with an option of CAV or DCV mode, other supplementary modes, antifreeze protection, BMS control via ModBUS RTU, TCP, BACnet or AirGENIO Cloud.

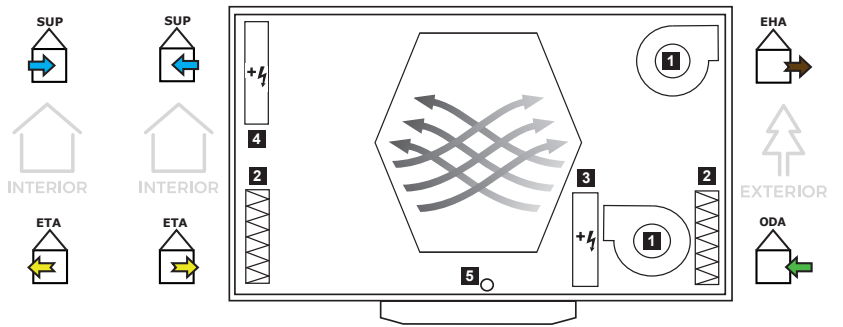
ALFA 95 FLAT SQ heat recovery unit is designed to be operated in a dry indoor environment (relative humidity not exceeding 80 %) and at an ambient temperature in the range from +5 °C up to +40 °C. The unit is designed for transporting standard atmospheric air that is free of dust, grease, chemical emissions and other impurities. The transported air relative humidity must not exceed 90 %. The casing of the unit is made from sandwich panels. Bottom service door is painted, the other parts of the casing are in galvanised sheet. When the unit installed in the duct system its IP rating is 20. The design of the ventilation project must be **always designed by a qualified HVAC designer, engineer or architect.**

Operational diagram

RIGHT VERSION
Top view



LEFT VERSION
Top view

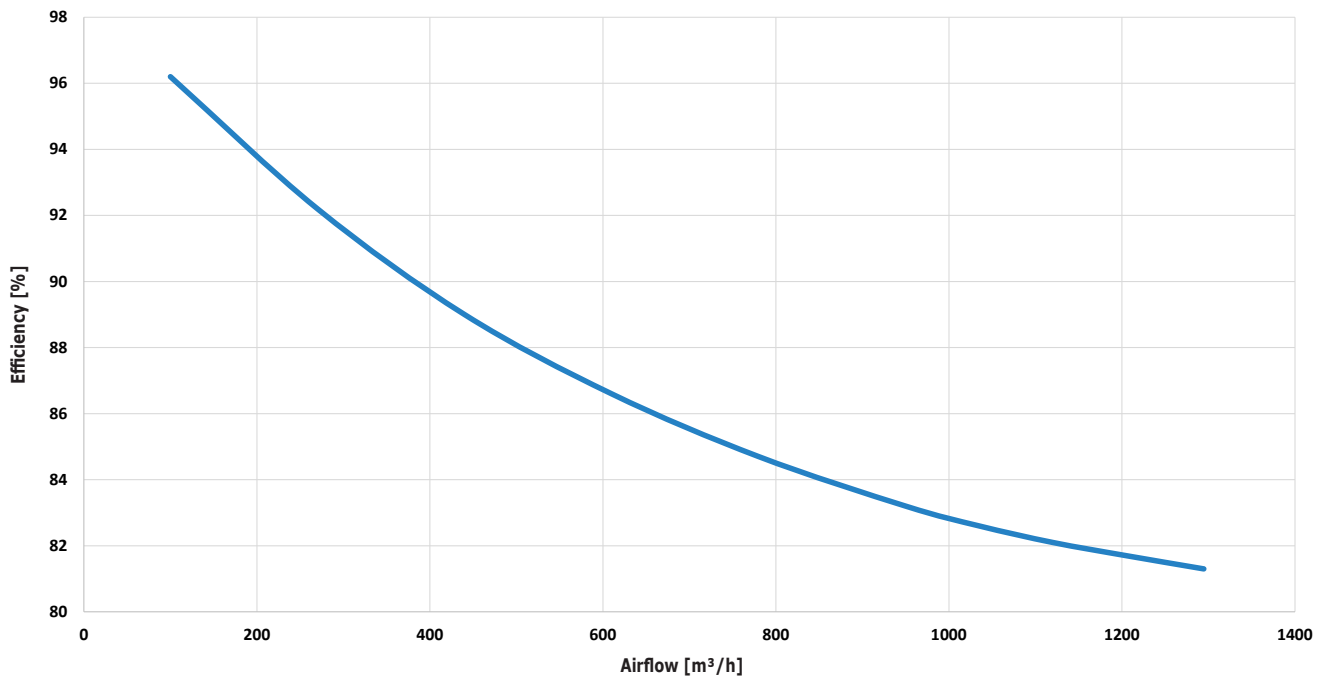


EN	
1	Fan
2	Filter
3	Pre-heater
4	Post-heater
5	Condensate drain (integrated condensate pump)
6	Heat exchanger with by-pass damper



Heat recovery efficiency EN308:

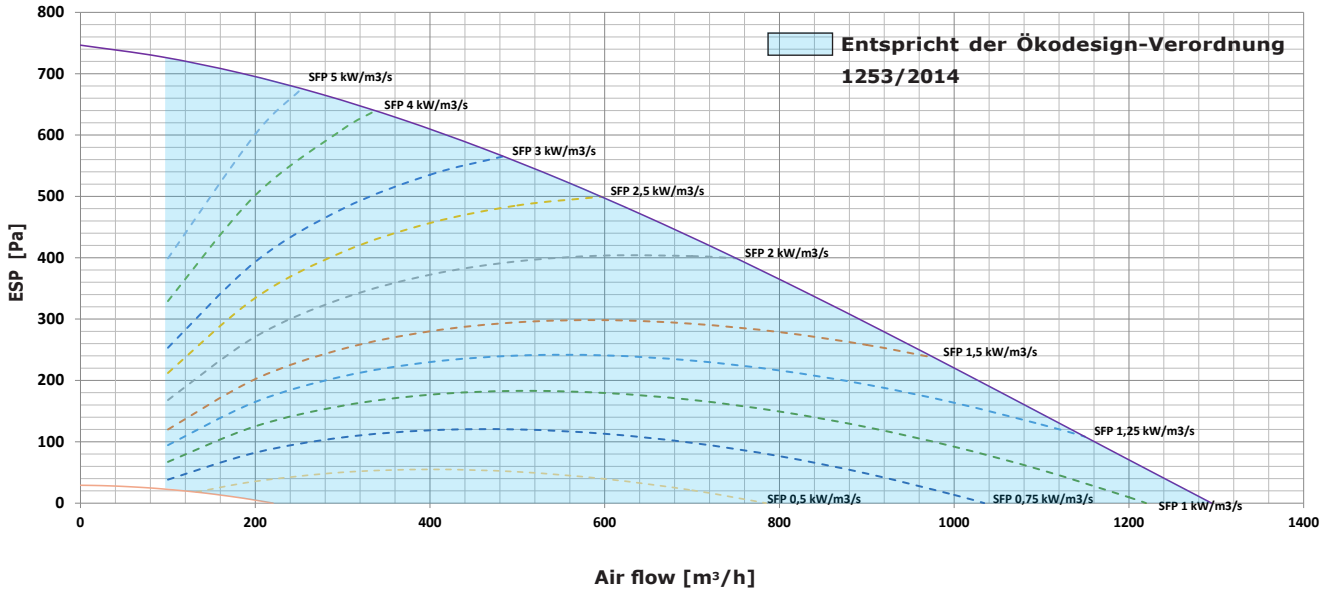
Temperatur – Zuluft 5°C; Relative Luftfeuchtigkeit – Zuluft 72 %
Temperatur – Abluft 25°C; Relative Luftfeuchtigkeit – Abluft 28 %





PRIMARY PARAMETERS

SFP=Unit Power input/supply airflow (kW/m³/s)



Noise specifications:

Casing breakout

Airflow [m ³ /h]	Pressure [Pa]	Sound power level per frequency band [L _w]								Overall		
		63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{pA} [dB] at 1m	L _{pA} [dB] at 3m
200	100	49	59	43	29	28	23	20	19	44	28	22
600		49	52	47	33	32	28	24	21	42	26	20
965		59	56	52	39	36	35	33	24	47	32	25

Sound power level in ducts

Branch	Airflow [m ³ /h]	Pressure [Pa]	Sound power level per frequency band [L _w]								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]
EHA	965	100	73	66	72	61	58	59	58	56	68
SUP			68	63	56	52	51	48	43	34	57
ETA			71	63	53	46	45	41	37	28	53
ODA			74	68	66	52	52	52	48	40	61

Basic technical parameters of the heat recovery units:

Model without electric pre-heater:

Model without electric coil

Type	Voltage [V]	Frequency [Hz]	Rated input [kW]	Total current [A]
HRFS1-100...-XS0S	230	50/60	0,4	3,0

Model with electric coil (post-heater)

Type	Voltage [V]	Frequency [Hz]	Rated input [kW]	Total current [A]
HRFS1-100...-XE1S	230	50/60	1,2	6,5

Model with electric pre-heater:

Model without electric coil (post-heater)

Type	Voltage [V]	Frequency [Hz]	Rated input [kW]	Total current [A]
HRFS1-100...-ES0S	230	50/60	2,4	11,7

Model with electric preheater and post-heater

Type	Voltage [V]	Frequency [Hz]	Rated input [kW]	Total current [A]
HRFS1-100...-EE1S	230	50/60	3,2	15,2

Type	Weight of unit [kg]		
	Without heating	With preheater or post heating	With preheater and post heating
HRFS1-100	175	176	177

Characteristics of electric motors (1 fan only)

Type	Voltage [V]	Frequency [Hz]	Rated input [W]	Total current [A]	Speed [r/min]	Protection IP	Insulation class
HRFS1-100...	230	50/60	180	1,35	2930	44	B

Characteristics of electric coil (post-heater)

Type	Voltage [V]	Frequency [Hz]	Rated input [kW]	ΔT [°C]
HRFS1-100...-E1.	230	50/60	0,8	2,5

Characteristics of electric pre-heater

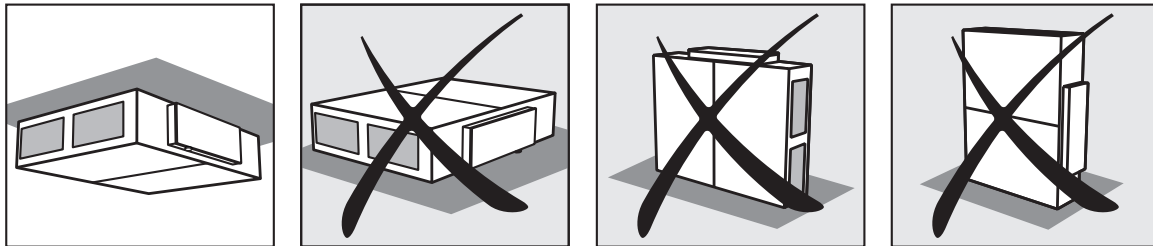
Type	Voltage [V]	Frequency [Hz]	Rated input [kW]	ΔT [°C]
HRFS1-100...-E...	230	50/60	2,0	6,2



INSTALLATION AND ASSEMBLY

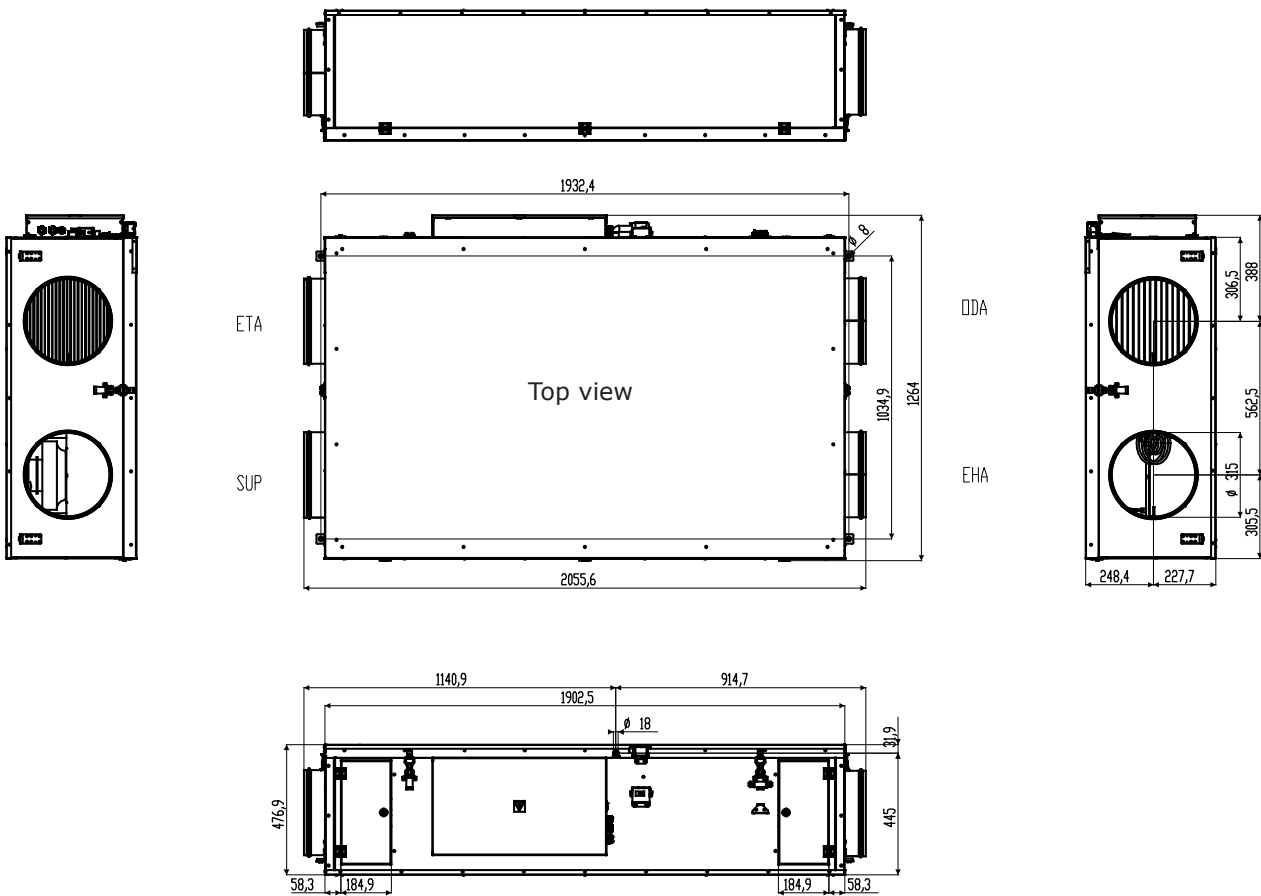
ALFA 95 FLAT SQ units must be installed according to the pictures (see below).

The unit must be installed in such a way that the direction of the airflow corresponds to the direction of air circulation in the distribution system. The unit must be installed so as to give free access for maintenance, service or dismantling. This is to allow access to service flaps and possibility to open them, access to the lid of the control panel, access to the lateral connections and access to the filter cover.



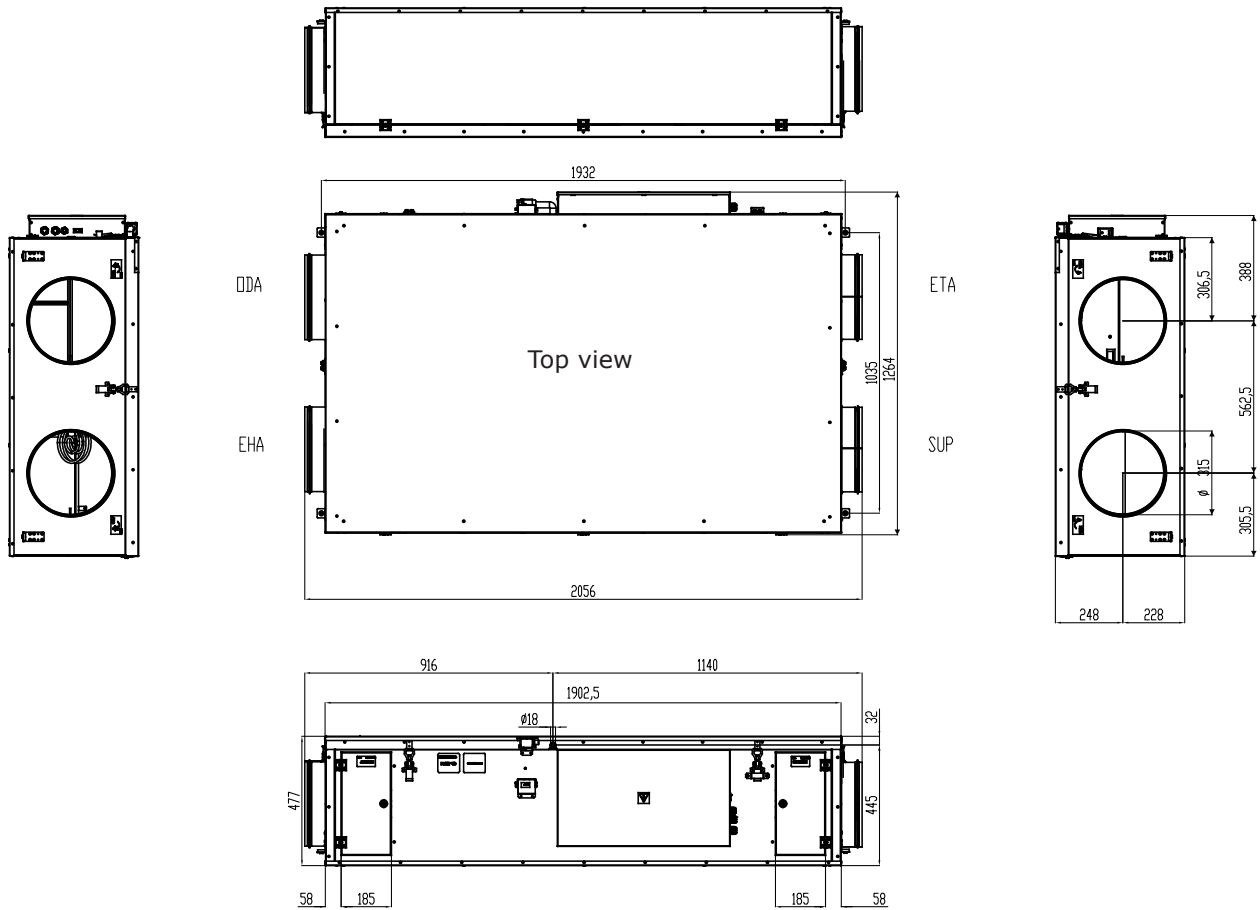
DIMENSIONS

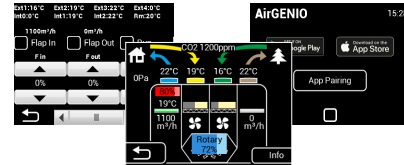
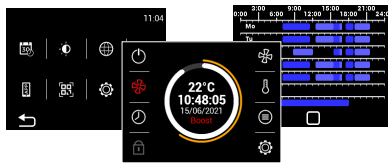
Right version





Left version





- Touch control
- Stepless fans (0-10V)
- Stepless afterheating (internal electrical: SSR)
- Stepless automatic control of preheating
- Integrated timer (daily, weekly)
- Optional connection of sensors: CO2, RH, VOC (0-10)
- Stepless Bypass (temperature control: freecooling, antifreeze protection)
- Offset fan adjustment (over-pressure and underpressure)
- Indication of filter clogging
- DCV and CAV ventilation modes
- BOOST function - intensive airflow for a set period
- Freecooling functions - night ventilation (cooling)
- Occupancy functions - reducing ventilation according to the PIR sensor
- BMS - connection via Modbus RTU / TCP, BACnet
- AirGENIO cloud connectivity

2VW AirGENIO Application:

- Product control on your smartphone
- Info about operation status
- Notifications – request for service, filter exchange, error status, etc.
- Download the 2VW AirGENIO APP and control it remotely from your smart phone!



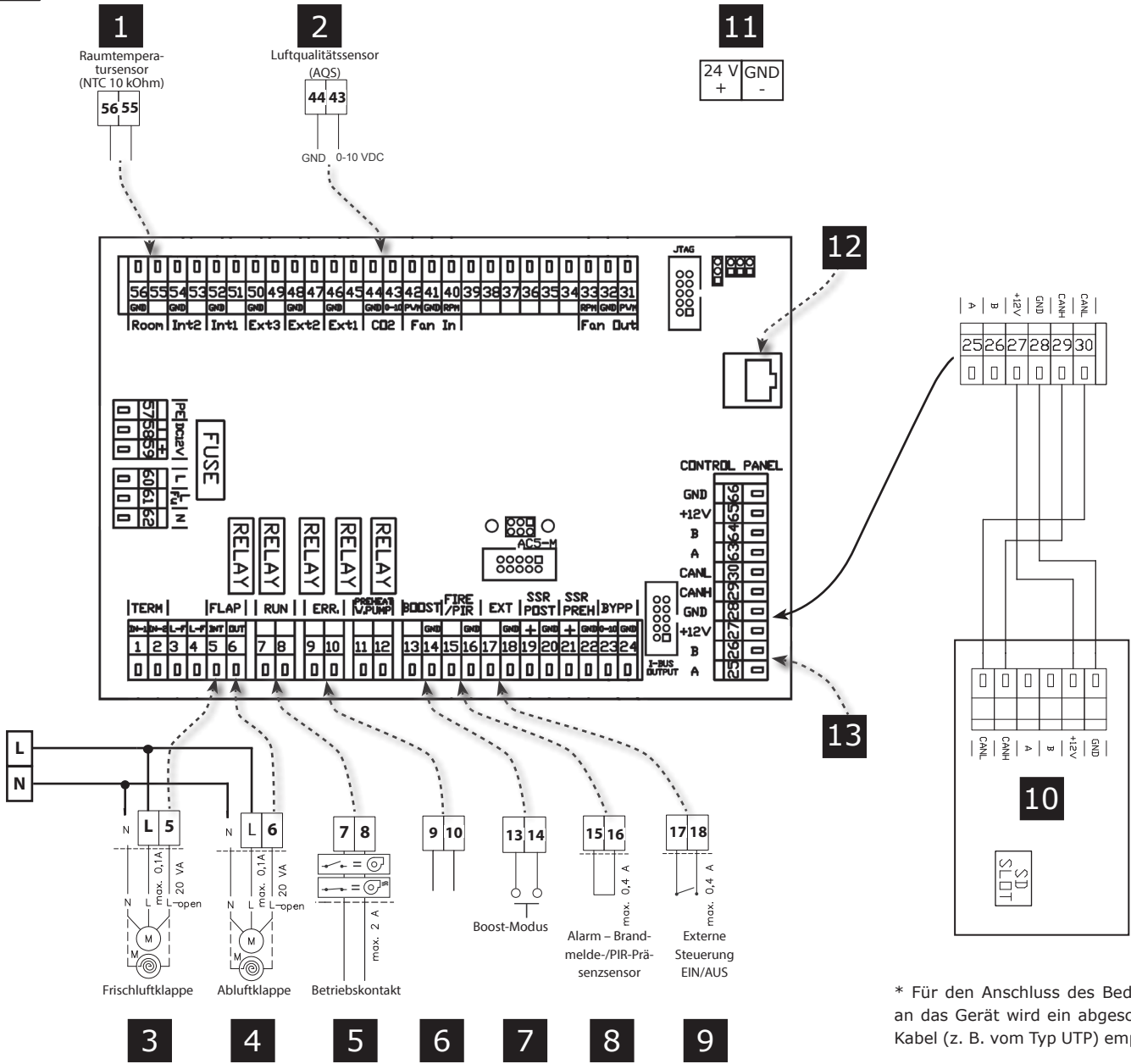
2VW Service software:

- Easy and quick commissioning from your computer
- Error log – error display and identification
- Easy service (device status loading/reset to backup setting)
- Fast FW update
- OFFLINE version





WIRING DIAGRAMS



* Für den Anschluss des Bedienfelds an das Gerät wird ein abgeschirmtes Kabel (z. B. vom Typ UTP) empfohlen.

1	Raumtemperatursensor (Eingang)
2	Luftqualitätssensor – Steuersignal (Eingang)
3	Zuluftklappe (L-in)
4	Abluftklappe (L-out)
5	Betriebskontakt (Relaiskontakt)
6	Fehlerkontakt (Relaiskontakt)
7	BOOST-Modus (Eingang)
8	Alarm – Brand (Eingang) oder PIR (Eingang)
9	Externe Steuerung – EIN/AUS
10	Bedienfeld
11	24-V-Stromversorgung
12	RJ45-Anschluss – Ethernet, Modbus TCP, BACnet
13	Modbus RTU (A-25, B-26, 28 oder 66-GND)



ACCESSORIES

RECOMMENDED ACCESSORIES

Spatial sensor CO₂: *CI-CO2-R*

Sensor combines CO₂. The snap-in mounting concept stands for easy installation.



Spatial sensor RH: *CI-RH-R*

Capacitive relative humidity sensor with 0-10V analog and relay output.



CI-AQS-COMBI

is a signal combiner for AQS sensors using 0-10V logic which you can connect up to 10 different sensors. The input signal with the highest voltage will be the signal that is on the output terminal.



CT-ROOM

Temperature sensor for air temperature measurement in a reference room.



Shutting flap with servo drive

KRTK-A-SB

Shutting flap for tight closing of inlet branch when unit is not in use.

Type of unit	Flap type
HRFS1-100	KRTK-A-315-SB



Shutting flap

KRTK-A

Shutting flap for tight closing of inlet branch when unit is not in use.

Type of unit	Flap type
HRFS1-100	KRTK-A315



Servodrive

SERVO-LM230-05

Necessary accessory for automatic control of the closing flap.



OPTIONAL ACCESSORIES

More details can be found on the relevant page in this catalog

Spare air filters

Filter replacements of different classes and configurations.

Type of unit	Supply air filter	Exhaust air filter
	ePM 1 60%	ePM10 50%
HRFS1-100	HRFS1-100-FI-M7	HRFS1-100-FI-M5



Connection sleeve

MK

Connection sleeve for easier removal of unit when servicing and for elimination of vibrations in duct.

Type of unit	Connection sleeve
HRFS1-100	MK315



Threaded rods

ZTZ-M8-1,0 – threaded rod, thread M8, length 1m, suitable for all types of under the ceiling type units.





KEY TO CODING

HRFS1-100 H P CB E 75 - E E1 S- 0 A0

	A0	Standard version
	P0	Version without control panel
	0	Standard galvanized
	S	AirGENO Superior control
	S0	Without post-heater
	E1	With el.post-heater
	X	Without pre-heater
	E	With pre-heater
	75	ePM1 60% supply filter ePM10 50% exhaust filter
	E	EC fans
	CB	Counteflow exchanger with by-pass
	P	Right side version
	L	Left side version
	H	Horizontal
	100	Nominal airflow 965m ³ /h
	HRFS1	Heat recovery unit ALFA 95 FLAT SQ 1st generation