ALFA 95 RTU | HRRU1

2W

Counterflow plate heat recovery exchanger

Enthalpy counterflow heat recovery exchanger

ENERGY SAVING | LOW NOISE | ANTI FREEZE | 3 YEARS WARRANTY | AirGENIO CLOUD

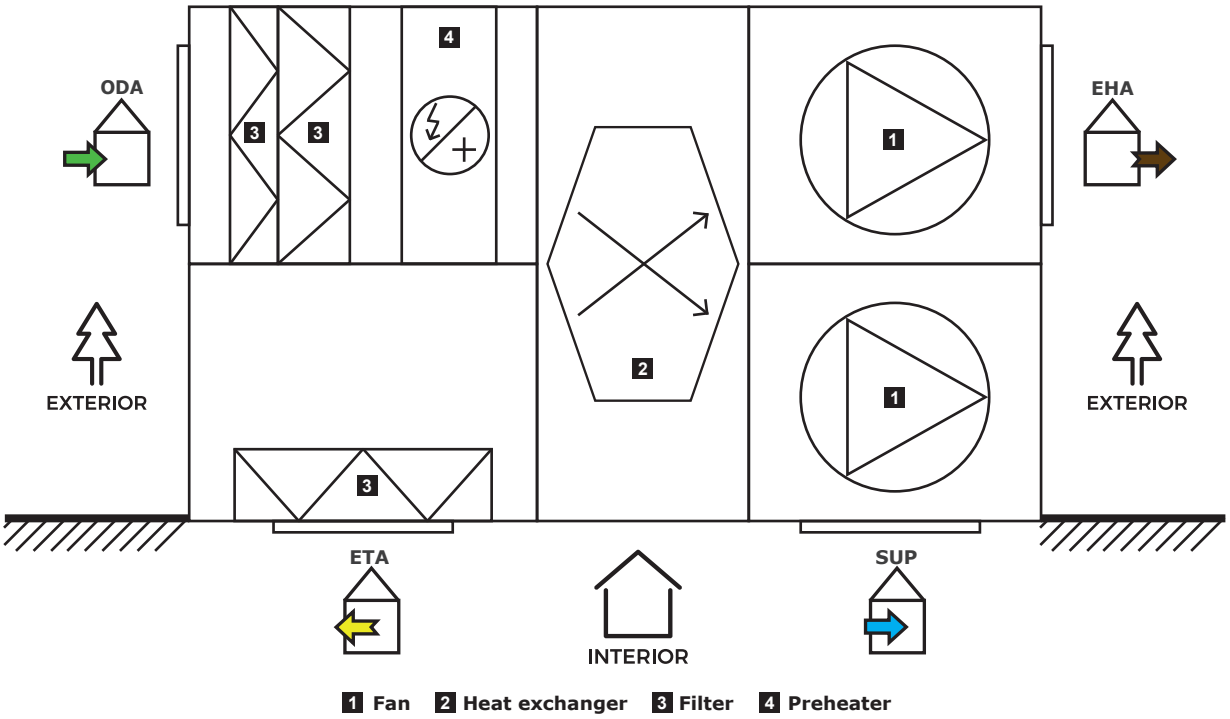
BASIC FEATURES

ALFA 95 RTU – heat recovery ventilation roof top unit designed for commercial and retail constructions such as **offices buildings, hotels, shops and restaurants, leisure centres, public premises**, etc.

- **1 size** with nominal airflow **4900m3/h** @250Pa
- **SPI 2,0** kW/(m3/h) at nominal airflow
- Counterflow desk-plate heat exchanger – **aluminium** or **enthalpy**
- **AirGENIO control system** integrated
- **Rain protection** included in delivery
- **Roof curb** (insert) to facilitate the installation
- Ecodesign directive 1253/2014 compliant

ALFA 95 RTU is a ventilation unit with frameless self-supporting construction designed for outdoor roof-top installation. Casing is made from double skin mineral wool insulation panels of 50mm thickness with powder coating in RAL9010 and RAL9005. Rain protection accessories are included in delivery – rain hoods for air intake and air exhaust and arched roof with smart drip edges. Highly recommended external accessory is an attenuating roof curb, which is designed to fit precisely to the unit, to easy up the installation and prevent a water leakage. The supply and extract of the unit is equipped with energy efficient centrifugal fans and air filters monitored by pressure transmitters (pre-filter - Coarse 65%, supply filter – ePM1 60%, extract filter – ePM10 50%).
The unit is fitted with counterflow desk-plate heat recovery system – aluminium or enthalpy core, which are EUROVENT certified. The heat recovery system has an integrated modulating by-pass damper.
Complete control system AirGENIO is factory fitted and wired in the unit together with the touch screen control panel and communication UTP cable.
ALFA 95 RTU heat recovery unit is designed to be operated at an outdoor environment and at an ambient temperature in the range from -20°C up to +60°C, for transporting standard atmospheric air that is free of dust, grease, chemical emissions and other impurities. The unit, when installed in the ducting system has an IP rating of IP43. The design of the ventilation project must be **always designed by a qualified HVAC designer, engineer or architect**.

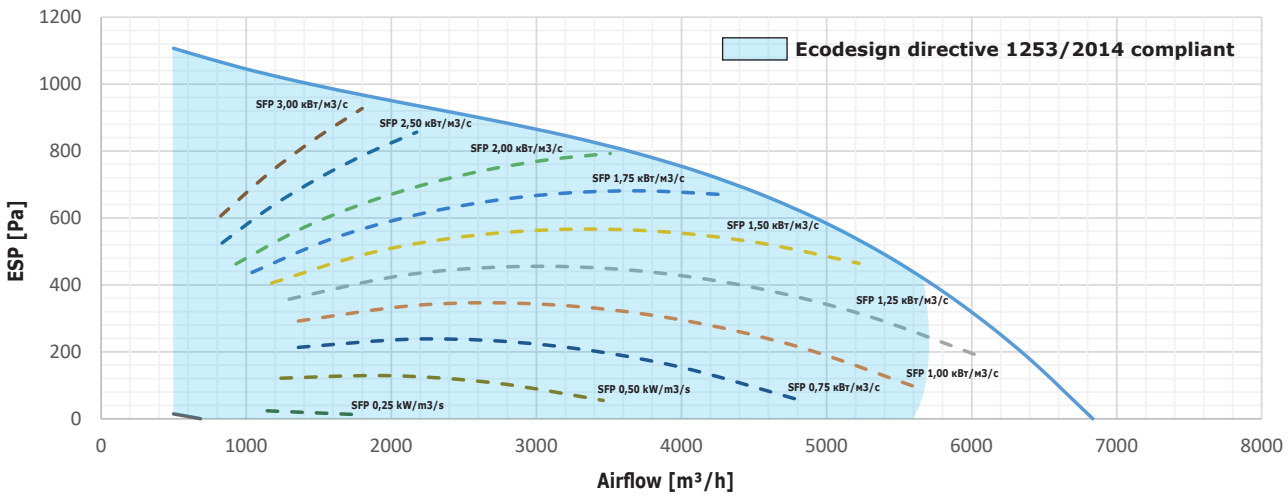
Operational diagram



PRIMARY PARAMETERS

HRRU1-500 CB

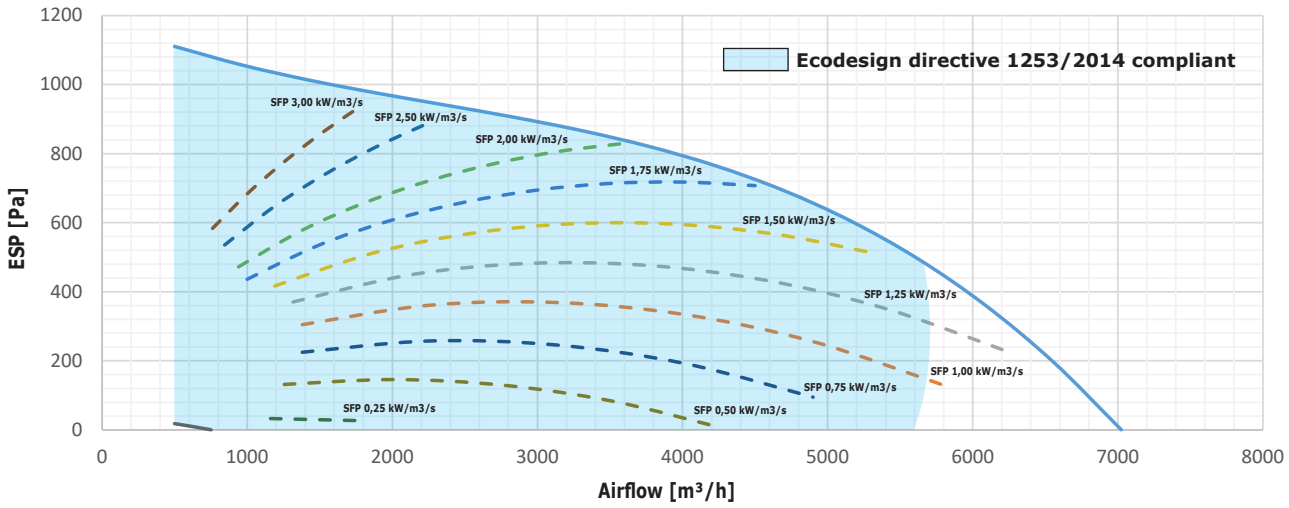
SFP = Fan Power input / supply airflow (kW/m³/s)



PRIMARY PARAMETERS

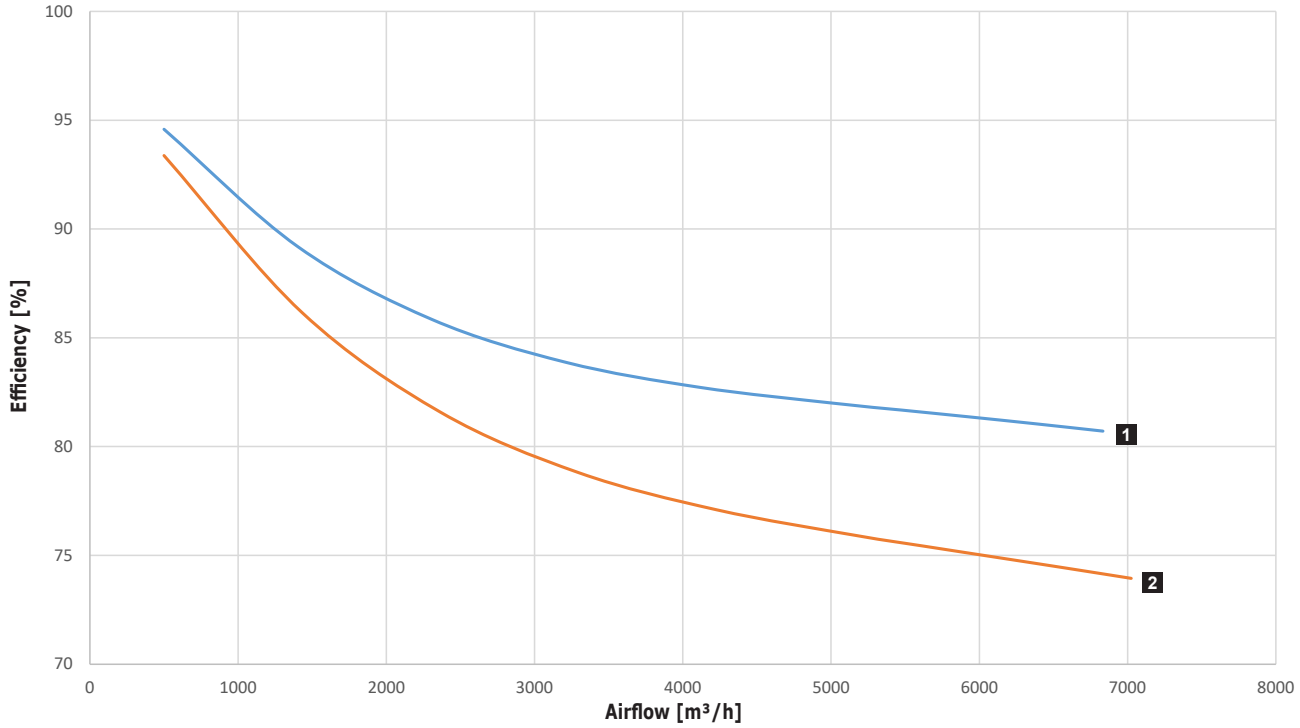
HRRU1-500 EB

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



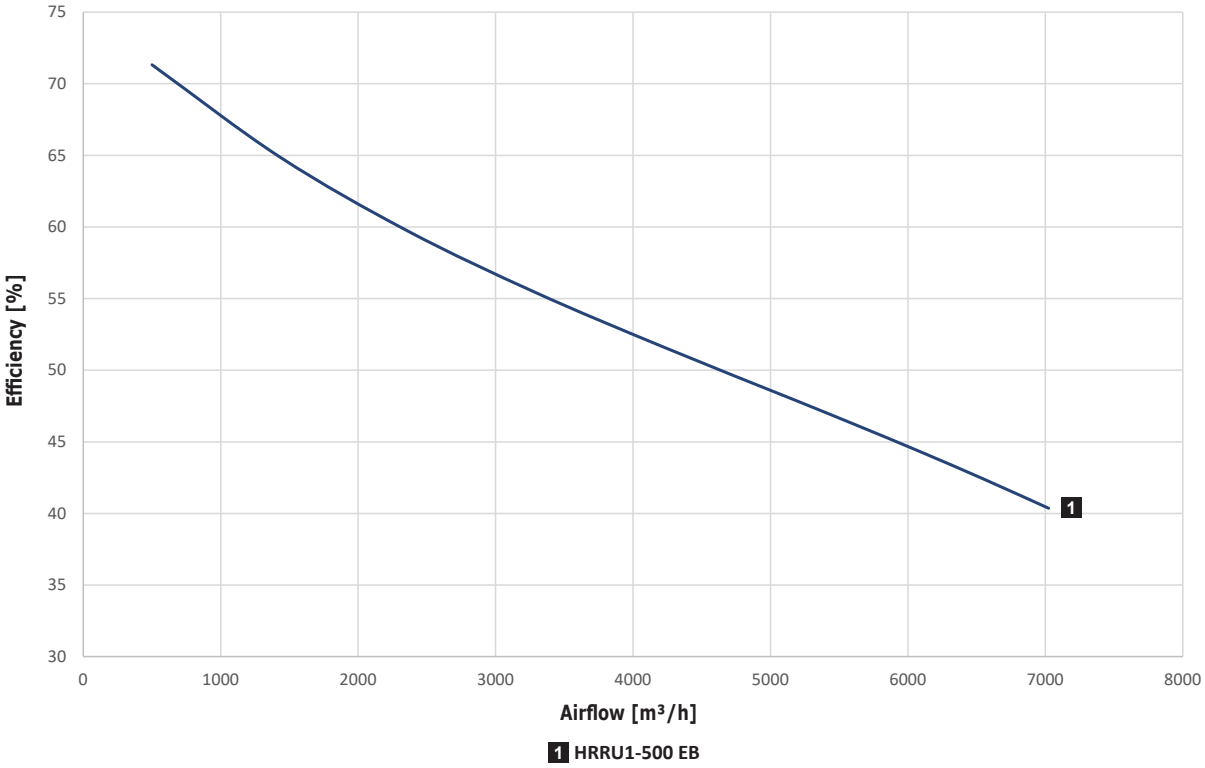
Heat recovery efficiency:

EN308-W1 (T-out 5°C/72%RH, T-in 25°C/28%RH)



1 HRRU1-500 CB 2 HRRU1-500 EB

Humidity efficiency:
Enthalpy exchanger - EN308-W2 (T-out 5°C/72%RH, T-in 25°C/51%RH)



1 HRRU1-500 EB

Basic technical parameters of the heat recovery units:

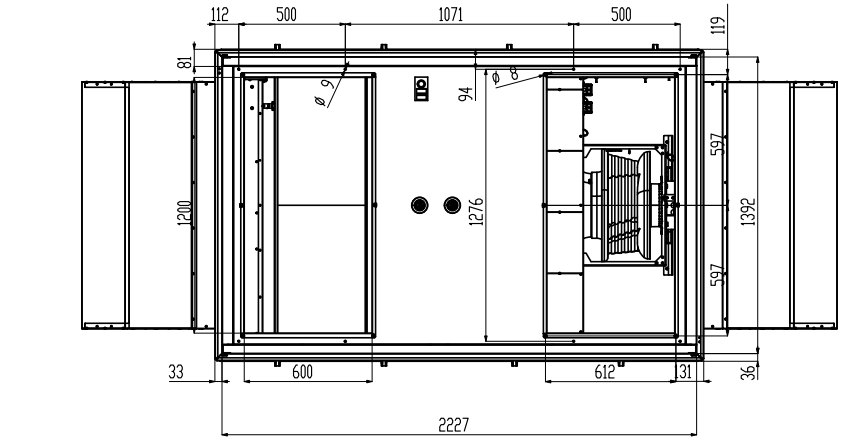
Model	Phase [pcs]	Voltage [V]	Frequency [Hz]	Rated input [kW]	Total current [A]
HRRU1-500	3	400	50/60	21,4	33,5

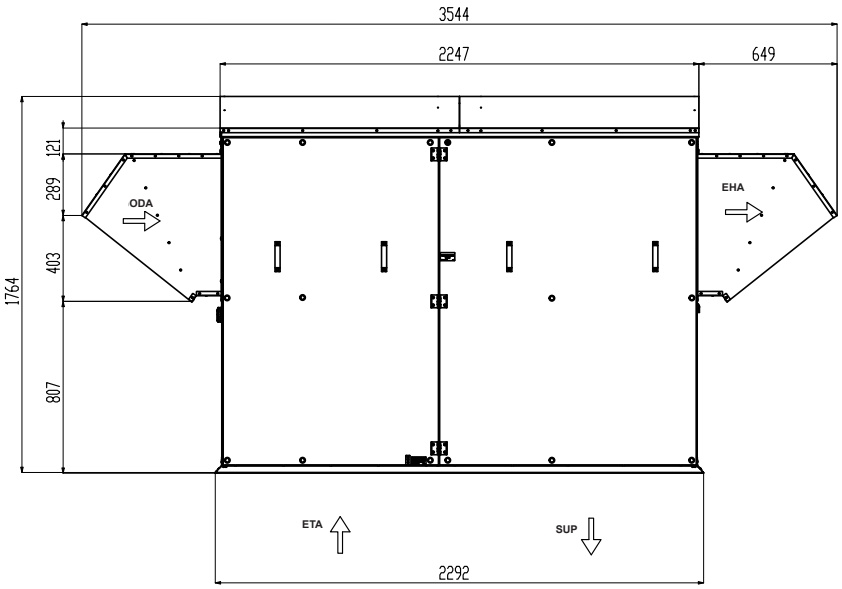
Noise specifications (casing radiated):

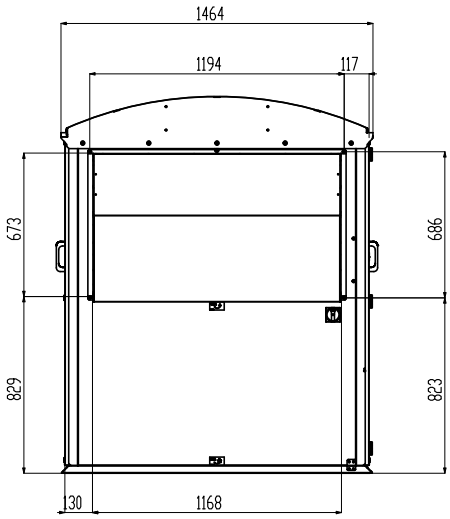
Type	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band Lw (dB(A))								Overall	
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L_W [dB]	L_{pA} [dB] at 3m
HRRU1-500	1000	300	86,0	79,1	74,0	70,2	65,4	58,8	50,1	45,0	**72,1**	**48,9**
	3000	300	85,3	82,2	73,7	71,5	69,2	66,5	59,8	54,9	**74,9**	**51,7**
	5000	300	79,6	88,6	76,9	77,8	76,4	72,9	67,9	64,1	**81,2**	**58,0**

Branch	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L_{WA} [dB]
SUP	5000	300	80,0	84,3	74,5	72,6	69,9	67,1	62,1	60,1	**75,9**
ETA			78,3	76,2	68,8	65,1	60,1	54,9	48,0	40,0	**67,2**

DIMENSIONS

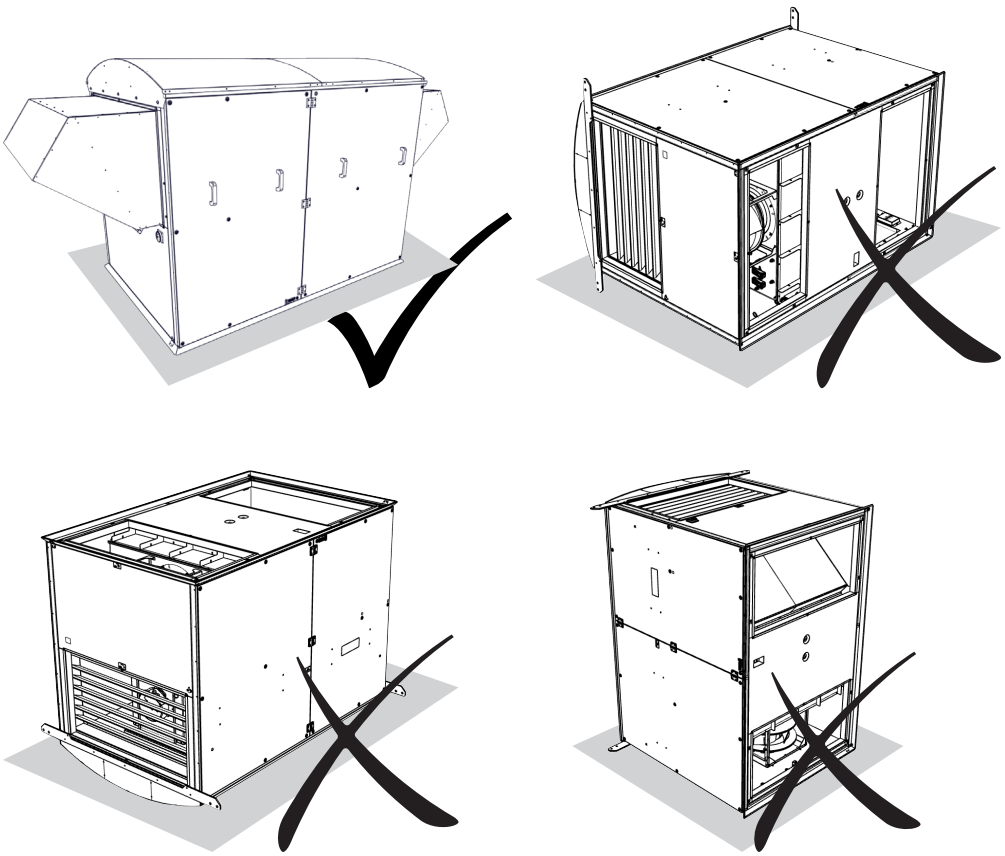

112
500
1071
500
119
81
94
597
1200
1276
1392
597
33
600
612
31
36
2227


3544
2247
649
121
289
403
807
1764
ODA
EHA
ETA
SUP
2292

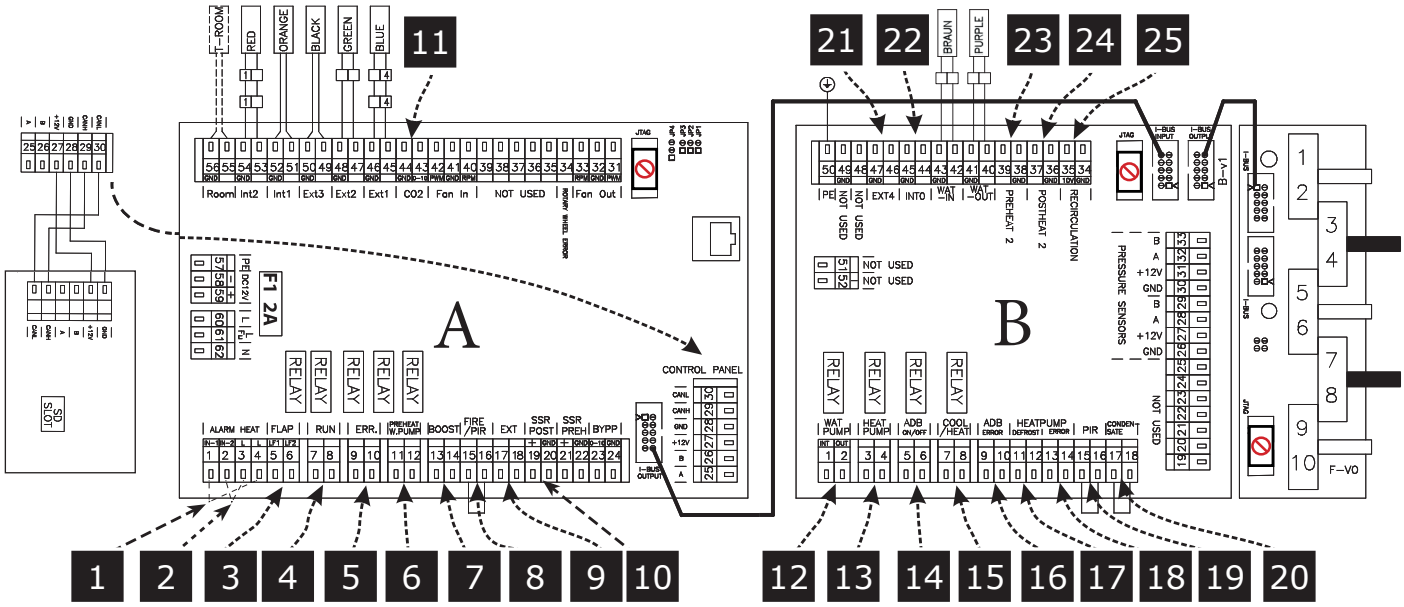

1464
1194
117
673
686
829
823
130
1168

INSTALLATION AND ASSEMBLY

The ventilation unit must be installed according to the pictures (see below).
The unit must be installed in such a way that the direction of the air blown 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 doors and possibility to open them, access to the lid of the control panel, access to the lateral connections and access to the filter cover.



WIRING DIAGRAMS



1.	**A** (1,4)	SAFETY THERMOSTAT POSTHEATING
2.	**A** (2,3)	SAFETY PREHEATING THERMOSTAT
3.	**A** (5-6)	LF1 - FLAP INLET (output L-open), LF2 - FLAP OUTLET (output L-open)
4.	**A** (7-8)	RUN CONTACT (output - NO/NC settable)
5.	**A** (9-10)	ERROR CONTACT (output NO)
6.	**A** (11-12)	PREHEATER WATER PUMP (11 - Lint, 12 - Lout)
7.	**A** (13-14)	BOOST (input NO)
8.	**A** (15-16)	FIRE (input NC)
9.	**A** (17-18)	EXTERNAL CONTROL ON/OFF (input NC)
10.	**A** (19,20)	OUTPUT PERFORMANCE OF POSTHEATING (0-10V OR PWM)
11.	**A** (43-44)	AQS SENSOR 0-10V (input)
12.	**B** (1-2)	WATER PUMP (1 - Lint, 2 - Lout)
13.	**B** (3-4)	HEAT PUMP CONTROL settable (output - ON/OFF)
14.	**B** (5-6)	ADIABATIC MODULE (output - ON/OFF)
15.	**B** (7-8)	COOL / HEAT settable (CO = NC/NO - DX = output settable)
16.	**B** (9-10)	ADIABATIC MODULE ERROR (input NO)
17.	**B** (11-12)	HEAT PUMP DEFROST settable (input NC/NO)
18.	**B** (13-14)	HEAT PUMP ERROR settable (input NC/NO)
19.	**B** (15-16)	PIR (input NC)
20.	**B** (17-18)	CONDENSATE OVERFLOW (input NC)
21.	**B** (46-47)	EXTERNAL TEMPERATURE SENSOR (external postheater - input)
22.	**B** (44-45)	EXTERNAL TEMPERATURE SENSOR (adiabatic module / recirc. chamber - input)
23.	**B** (38-39)	EXTERNAL PREHEATER (output 0-10V)
24.	**B** (36-37)	EXTERNAL POSTHEATER (output 0-10V)
25.	**B** (34-35)	RECIRCULATION CHAMBER (output 0-10V)

CONTROL

AirGENIO SUPERIOR - Main control functions

- Touch-screen control panel for easy control and complete overview of device operational status (recommended connecting data cable to control panel is UTP cable and it should not exceed 50m length).
- Manual stepless fans control (PWM)
- CAV, VAV or DCV ventilation in automatic mode
- BOOST mode - intensive airflow for a pre-set time period
- Freecooling mode - night ventilation (cooling)
- Occupancy mode - reducing ventilation intensity according to the PIR sensor
- FIRE protection mode with settable logic
- Thermal wheel control (temperature control: freecooling, antifreeze protection)
- Integrated timer (day, week, year)
- Optional connection of sensors: $C0_2$, RH, VOC (0-10)
- Clogged filter indication by pressure sensors
- Stepless post-heating control
- Electric coil control (PWM) and LPHW coil control (0-10 V)
- Change-over control with automatic detection of the heating / cooling (0-10 V)
- Wide choice of different ways for DX coil control*
- Possible control of external pre-heater and post-heater
- Offset fan adjustment (over-pressure / underpressure)
- BMS control via Modbus RTU / TCP or BACnet
- Remote control via smart device

***AirGENIO SUPERIOR control system allows a different ways of DX coil control**

- ON-OFF
- 0-10 V
- 0-10 V - 0-10 V signal control
- On/Off - On/Off switching
- Off/On - Off/On switching
- 0-10 V + On/Off - On/Off switching + 0-10 V signal control
- 0-10 V + Off/On - Off/On switching + 0-10 V signal control

With reverse control cycle (heating - cooling mode)

- 10-0 V + On/Off - On/Off switching + 0-10 V signal control cooling, heating 10-0 V
- 10-0 V Off/On - Off/On switching + 0-10 V signal control cooling, heating 10-0 V
-

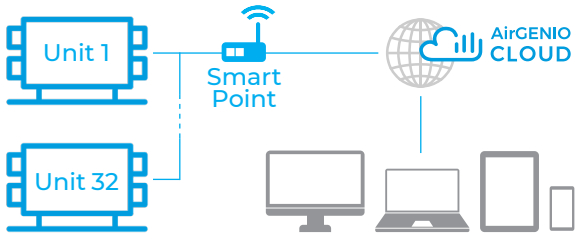
2VV Service software:

- 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

AirGENIO CLOUD - Connections you can trust

2VV cloud service operated on secure cloud server.

- Control, monitoring and servicing
- Web communication interface with clear and structured layout
- Easy customization of settings
- History logs providing accurate and timely info
- Smart notifications and warning/error messages clearly displayed in overview dashboard
- Backup and restore setings



ACCESSORIES

Filtration inserts

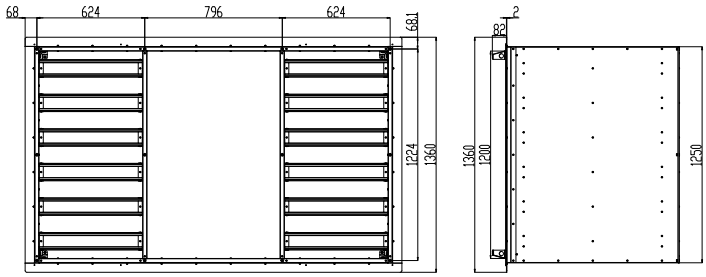
Replacement filtration inserts of various filtration classes.

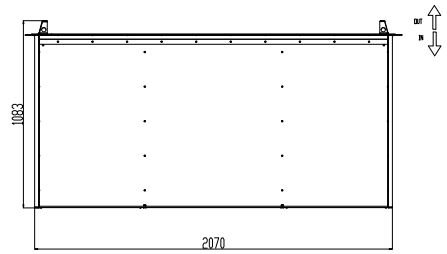
Unit type	Pre-filter type – Coarse 65%	Inlet filter type – ePM 1 60%	Extract filter type – ePM 10 50%
HRRU1-500	HRRU1-500X-FI-G4-0A0	HRRU1-500X-FI-F7-0A0	HRRU1-500X-FI-M5-0A0

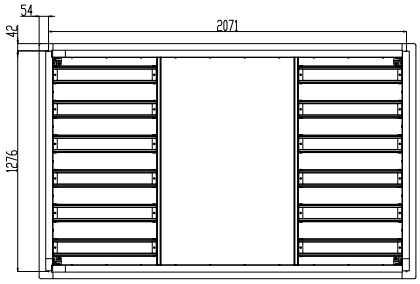
Roof insert

HRRU1-500-DI100-0A0

The roof insert for installation of the unit to the roof opening.



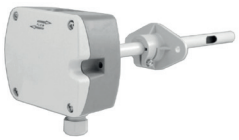




ACCESSORIES

Channel sensor CO_2
CI-EE850-C3xx-FP

The transmitter is ideally suited for duct mounting in the fields of building management and demand controlled ventilation. The elegant, compact housing enables easy installation directly at the ventilation duct using a mounting flange.



Duct sensor of relative humidity
CI-LCN-FTK140VV

Duct sensor for measuring relative humidity in air-conditioning systems.

Spatial sensor CO_2
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.

Signal combiner
CI-AQS-COMBI

The signal combiner for AQS sensors uses 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.

PIR sensor
CI-PS 1003
Spatial infrared sensor for automatic ventilation based on presence of people in the ventilated area.
Power supply of this sensor must be outsourced. Unit doesn't support this kind of power supply (15-24V DC).

AirGENIO CLOUD smart point
AirGENIO-SMART-POINT

2VV cloud service operated on secure cloud server

KEY TO CODING