

A I R

I N N O V A T I O N



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PRODUCT PORTFOLIO

- Modular Air Handling Units
- Compact Air Handling Units
- Heat Recovery Ventilators
- Ventilation Units with Integrated Heat Pump



AERA is founded in the beginning of 2016 to design, produce and sell modular and compact air handling units and ventilation units with heat recovery with German and Turkish capital and know-how



ABOUT US

After an intensive market research for national and international markets, R&D and design team started product development stage. Our factory is founded in Pancar Organized Industrial Zone in 2016 with modern production systems and the sales office was established in Istanbul to present our product portfolio to HVAC industry.

A production system securing high quality products with efficient production model, low overhead costs and intensive quality control system is developed. Both national and international standards are integrated to product and production quality.

As a company that constantly monitors energy efficiency and recovery to meet ECO-DESIGN criteria, we set out to be permanent, with the conscious of being reliable, responsible, environmentally friendly and respectful, efficient, innovative and predictable.

REFERENCE STANDARDS

- EN 308
- EN 1886
- EN 13053
- EN 13779
- EU No 1253/2014 ECO-DESIGN
- EN 305
- ISO 5167-4:2003

 **ANEMO**
testlab

- EN 308
- EN 1886
- EN 13053
- EN 13779
- EU No 1253/2014 ECO-DESIGN
- EN 305
- ISO 5167-4:2003



"Any creative intelligence, of sufficient complexity to design anything, comes into existence only as the end product of an extended process of gradual evolution."
Richard Dawkins



ANEMO



ERA, which has set out to produce energy efficient ventilation products has developed its products that are designed in line with market expectations and demands, with quality management and quality control systems that will ensure sustainability. Beginning with customer relationship management, we have made our management philosophy traceable, measurable and transparent, including design, procurement, production and after-sales services. Internal trainings and preventive activities are performed by evaluating the harvested data and are delivered as a part of our continuous improvement policy. Every product we produce at AERA, starting from component level are subjected to intensive quality control processes and are observed at every stage of production.

The air handling units are tested and certified by independent organizations, also tests in ANEMO laboratory in accordance with European Norms and Directives are performed, ensuring sustainable product quality.

ECO-DESIGN APPROVED UNITS

- AZURE
- AZURE Wheel
- ERP PRO
- EVO-C
- EVO-R
- EVO-TOP



Sustainability is no longer about doing less harm.
It's about doing more good.
Jochen Zeitz



ECO-DESIGN



All manufacturers are legally obliged to follow ECO-DESIGN directives, which are a set of the European Union's regulations that state use of energy for energy-consuming products.

LOT6 of the directive reviews the ventilation devices and air handling units and is effective in the European Parliament with the EU directive number 1253/2014 and 1254/2014. The ECO-DESIGN directives, prepared by the European Council for the purpose of replacing low energy-efficient products in the market with those of high efficiency, have been accepted as a prerequisite for CE marking with the dates specified and the entry of nonconforming devices into EU countries is prohibited.

Within the scope of the ECO-DESIGN directive, which has been in force since January 1st 2016, a number of sub-limit values have been defined for air handling units, such as fan, heat recovery exchanger and filter efficiency. Thermal by-pass and visual monitoring of filter arresstance has become compulsory with the directive also.

AZURE units are designed to meet today's increasing energy efficiency demand using heat recovery and low electrical energy consumption. Units are built using high technology modern components optimised for market needs and state of the art control systems.

Unique features of AZURE units

- High thermal efficiency, counterflow plate heat exchanger ($\eta > 93\%$).
- F7 on fresh air side, M5 class filter on exhaust air.
- High sound and heat insulation with 50 mm at the casing, 50 mm rock wool insulation on service doors.
- Optional electric preheater and water after heater integrated in the casing.

With advanced web interface automation, constant air flow (CAV), constant pressure (VAV), heating / cooling capacity control, extended alarm options, by-pass ventilation, yearly timer, CO₂ or humidity sensor option with filter pollution, ventilation on demand, connection to building automation systems and many other control options.

AZURE units consist of panels with high sound and heat insulation and rock wool insulation. It is made of Aluzinc sheet with high resistance to corrosion. The appliance is easily serviceable between the designed service doors and the suspended ceiling.

AZURE devices are designed in 6 different models between 150 m³ / h and 3500 m³ / h air flow requirement. F7 class filter is provided on the fresh air side of the units and M5 class filter is provided standard on the exhaust side. The units are produced according to European Union energy criteria and have ECO-DESIGN label. Supply air can be brought to the desired conditions with the optional electric preheater and hot water heater located inside the units.



AZURE

COUNTER FLOW
HEAT RECOVERY VENTILATION





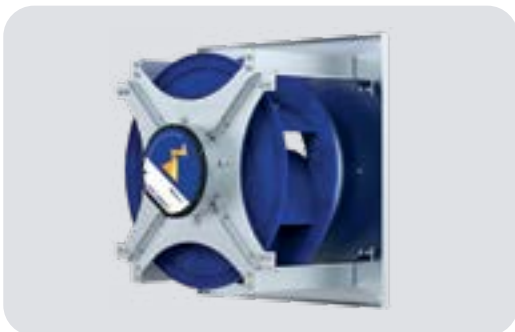
CASING

By using advanced technology components, Azure units achieve efficiency levels of today's and tomorrow's standards. The casing, which is developed using the latest engineering methods, also shows superior performance in terms of aerodynamics. The internal turbulence or dead zone losses are reduced to the minimum with the analysis.

In addition to achieving a high-strength design with patented fan support bracket design, the total efficiency is improved by avoiding dead zones and reverse flows which may occur behind the fan body.

AZURE units are designed with low air velocities, low filter and coil pressure drops are achieved despite its compact design. The fact that the electric preheater and the water type after heater can be placed inside the body contributes to the compact structure, preventing difficulties in wiring and automation. Water heating battery's piping has a specially designed connection, it provides high sealing and easy connection out of the casing.

AZURE units are designed in accordance with VDI6022. Inside of the unit is easily cleanable. The used seals are closed cell and prevent germ reproduction. All components that require service, have their own service doors. This way the unit does not have to be disconnected from ducting system for servicing.



FAN

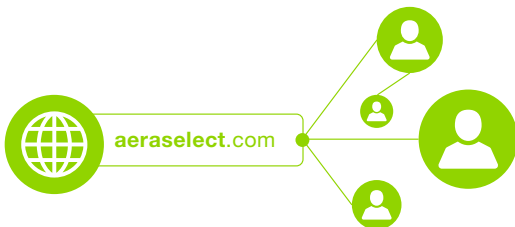
AZURE units are designed with high energy efficiency, low sound pressure and low power consumption plug fans. All the fans are compliant with ECO-DESIGN criteria by European Union Energy Committee and ErP 2015.

Plug fans with EC motors can be driven with 3 fixed speeds or steplessly with the help of an air quality sensor thanks to built in smart control system SENSO PLUS.

Plug fans with EC motors are AC-powered fans with DC motor technology. DC motor provides high electrical efficiency while it can be connected to AC mains via on board converter. It is perfectly in harmony with the hightech electronic components used and magnetic noise transmitted to the network is prevented.

SELECTION SOFTWARE (aerselect.com)

There is selection software to calculate the AZURE devices' performance results at the desired flow rates in the project. With the selection software from the address www.aerselect.com the devices can be selected easily suitable for the heating and cooling need with desired flow rate and the duct pressure. Devices automation and accessories can be defined via the software so, the device configuration is able to be done. Selection software can obtain the thermodynamic values, device measurements, ECO-DESIGN report and BIM file belongs to device as a print.





FILTER

AZURE units are produced with F7 class on the supply air side and M5 class filter on the exhaust side as ECO-DESIGN directives. With these highly efficient filters, indoor air quality is increased by keeping 90% of dust and particles up to diameter of 0,4 μm in the indoor environment.

AZURE units are produced with F7 class on the supply air side and M5 class filter on the exhaust side as ECO-DESIGN directives. With these highly efficient filters, indoor air quality is increased by keeping 90% of dust and particles up to diameter of 0,4 μm in the indoor environment.



HEAT RECOVERY EXCHANGER

For the Azure devices, plate type heat recovery exchangers that works with the cross flow principles are used. Total high efficiency is provided with superior energy efficiency and low pressure drop. At the nominal rates the heat recovery reaches up to 93%. Between the exhaust and fresh air flows high impermeability is provided in the exchangers which are occurred by the aluminium plates which have the high corrosion resistance. The by-pass damper is provided as a standard. When the outside air temperature conditions are suitable, the fresh air directly is given to the place without going into the exchanger.



BIM FILES

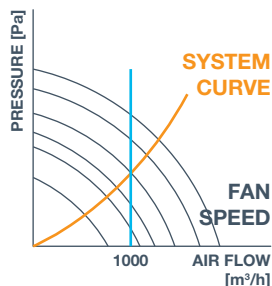
BIM files which belong to AZURE devices are uploaded from the address www.aerabim.com at the revit software can be used automatically. In the same way, with Magiccloud software or its plug-in it is possible to reach BIM files.

SENSO+

The advanced control system SENSO PLUS in AZURE Units, provides the most efficient control of all components which can be installed internally and as external accessories, ensuring the desired airflow conditions.

The SENSO PLUS control also provides system control besides equipment control, which means that the devices can be operated with the Yearly Timer Function according to the working periods: Daily, Weekly, Monthly or Yearly. In the Timer Function, values such as weekly working days, vacation times, daylight savings time can be defined and reported retrospectively.

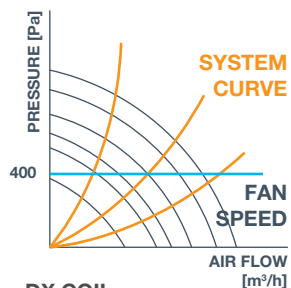
Besides, the Support Function which is used to prevent the undesired conditions from occurring indoors even when the device is not working. The indoor temperature from falling below or exceeding a certain value even during non-working hours is ensured.



Constant Air Volume

To meet the desired constant airflow requirement in the AZURE Handling Units, the SENSO PLUS control measures the air pressure drop in the suction ports of the fans and compares the air flow with the set value to produce a working signal that will change the EC fan fan speed.

Contamination of the filters can be controlled by static flow control within the fan operating curve, to the static pressure requirements of the unit which result in higher or lower than the project values.



Constant Air Pressure

In AZURE Units, constant pressure control is used to meet the variable airflow requirement of the air duct system. The SENSO PLUS control generates a working signal that will change the EC fan speed by continuously measuring the static pressure created in the supply air duct and comparing it with the value defined in the system. When a VAV damper opens or closes, higher or lower external static pressure needs can be met with constant pressure control within the fans operating curve. This way extreme noise in the ducts, unbalanced airflow distribution in different volumes is prevented.

DX COIL

Externally mounted duct type DX batteries are used for purposes such as lowering the supply air temperature, dehumidifying process and bringing the blown air to the desired temperature after dehumidification. It can be step controlled with on / off method, maximum 8 step setting is available.

HUMIDITY CONTROL EQUIPMENT

Humidity control equipments are used to raise or lower the humidity of the supply air. With the SENSO PLUS control, the humidifier / dehumidifiers can be controlled to bring the supply air to the desired humidity value.

COOLING COIL

Externally mounted duct-type water cooling coils are used for such purposes as lowering the blowing temperature and dehumidifying the air in the units. It can be driven either proportionally or by on / off method.

Heating Coil

Heating coils are used for increasing the supply air temperature and for bringing the supply air to the desired temperature after dehumidifying process. Hot water coils can be driven by proportional control via 2 or 3 way valves. With the SENSO PLUS control, frost protection mechanism is available as standard to prevent the temperature of the supply water from reaching freezing conditions in extreme cold climates. If the return water temperature falls below a certain value set on the control, the heating valve is switched to the 100% open position and a run signal is sent to the heating water circulation pump. If the temperature still does not rise to the desired value, the device is stopped and the user is given a freeze alarm.

Indoor Air Quality Control

The air quality sensor or the CO2 sensor, which is placed in the critical volume or return channel in the interior, continuously measures the air quality. This value generates a signal that will change the EC fan speed by comparing it to the set point on the controller. If the indoor air quality is lower than the desired value, the fan speed and thus the fresh air amount is increased; if the indoor air quality is higher than the desired indoor air quality, the fan speed and fresh air speed are decreased; Energy saving is achieved in considerable amounts in heating or cooling loads caused by fresh air.

FILTER POLLUTION CHECK

The pressure drops of the filters used to clean the air, can be controlled by SENSO PLUS control. Users are notified about the filter cleaning and replacement intervals. Pressure drop control can be made according to a constant pressure drop (Static) or variable air flow (Dynamic). Especially with units designed with variable speed fans, Dynamic Filter Control enables filter service at the right time.

USER INTERFACE

With SENSO+ EVO ECO control panel which has buttons or EVO TOUCH 7" touch screen control panel is presented. Also there is a web server for observing or controlling the device which is integrated in the card. On the server the settings can be done, also both of the instantaneous operating values and history of operating values are able to be followed.



The web server on SENSO+, as connecting to web, via a computer/tablet or a mobile phone at anywhere in the world, operating situation can be viewed and the access for changing the settings is provided. Without needing a complex web settings, this feature can be activated with a simple web connected cable.

The devices in the different projects, with cumulating all of the devices in the same display, as it is synchronized, operating values, active alarms etc. values as followed and the settings can be changed if it is desired. Especially in the projects within the multiple devices or for servicing the multiple devices in different places this system is provided optionally together with SENSO+.

COMMUNICATION OPTIONS

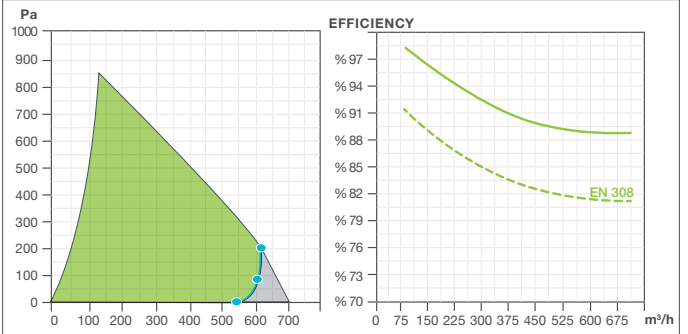
SENSO PLUS control supports all of the universal communication protocols and interacts with other air handling units as well as with other building automation systems. ModBUS, BACnet and EXOline protocols are open as standard and there is also possibility to connect with LONWORKS protocol as an option.



■ AZURE 500



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	AZURE 500
Exchanger Type	Aluminum Plate With Counter Flow
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Inside
Installation Position	Horizontal
Service Location	From side and under
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m3/h)	130
Nominal Flow Rate (m3/h)	590
Efficiency (EN 308)	84%
Efficiency (-5°C OA, 22°C 50%RH RA)	91%
Weight (kg)	130
According to EN 1886 Case Features	D1/L1/TB3/T3
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

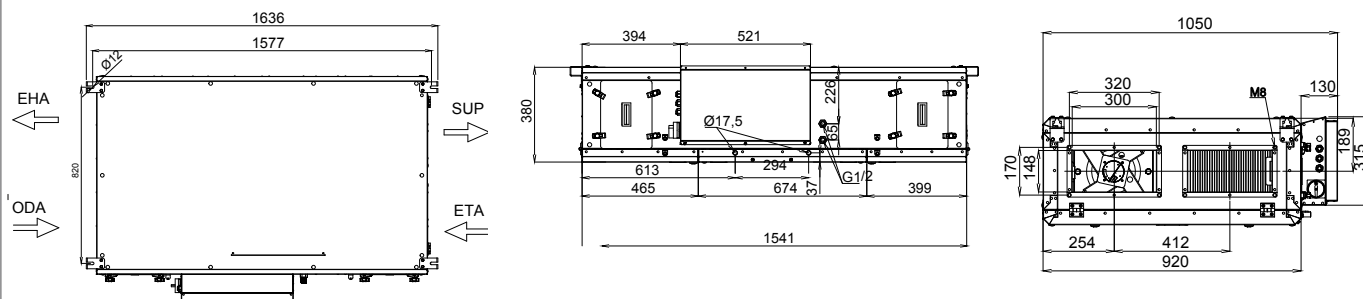
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	230V, 1~, 50 Hz
Total Power (1) (kW)	1,6
Maksimum Current (A)	17,3

Sound Information (2)

Sound Level at Supply (dBA)	71
Sound Level at Return (dBA)	64
Surrounding Sound 1m. Distance (dBA)	43
Surrounding Sound 3m. Distance (dBA)	33
Surrounding Sound 5m. Distance (dBA)	29

■ DIMENSIONS [mm]



ACCESSORIES

Electric Preheater	Standard		
Electric After Heater	Optional	Internal of device	Page 26
Water After Heater	Optional	Internal of device	Page 26
Water Cooler	Optional	External of device	Page 27
Duct Connection Damper	Optional		Page 27
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	Optional		Page 27
Bulk Siphon	Optional		Page 30
Room Control Panel Type1	EVO ECO		Page 28
Room Control Panel Type2	EVO TOUCH		Page 28
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional		Page 29
VOD Sensor CO2	Optional		Page 30
VOD Sensor RH%	Optional		Page 30
VOD Sensor VOC	Optional		Page 30
Signal Converter	Optional		Page 29
Constant Pressure Kit	Optional		Page 29

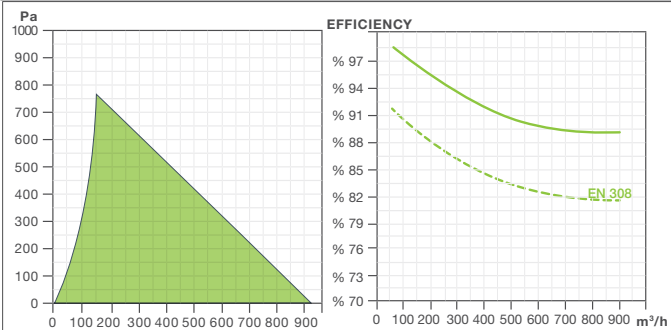
Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 28
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 28

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ AZURE 700



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	AZURE 700
Exchanger Type	Aluminum Plate With Counter Flow
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Inside
Installation Position	Horizontal
Service Location	From side and under
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m³/h)	155
Nominal Flow Rate (m³/h)	905
Efficiency (EN 308)	83%
Efficiency (-5°C OA, 22°C 50%RH RA)	90%
Weight (kg)	155
According to EN 1886 Case Features	D1/L1/TB3/T3
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

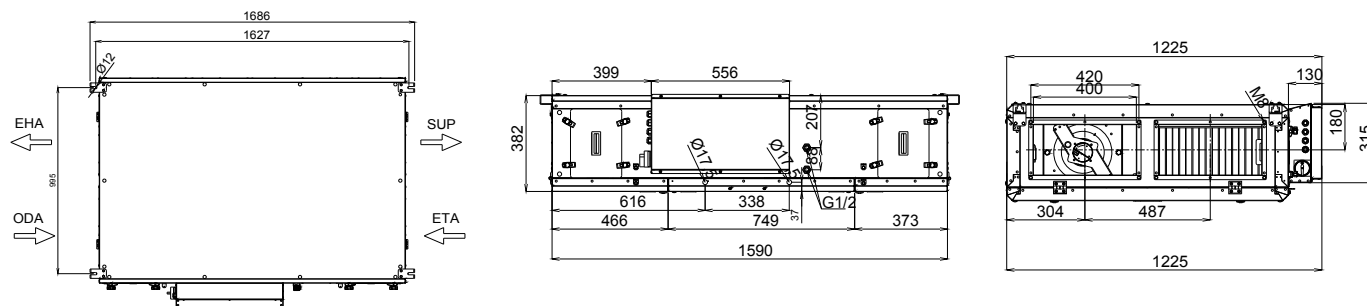
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	2,3
Maksimum Current (A)	9,7

Sound Information (2)

Sound Level at Supply (dBA)	68
Sound Level at Return (dBA)	61
Surrounding Sound 1m. Distance (dBA)	41
Surrounding Sound 3m. Distance (dBA)	31
Surrounding Sound 5m. Distance (dBA)	27

■ DIMENSIONS [mm]



ACCESSORIES

Electric Preheater	Standard		
Electric After Heater	Optional	Internal of device	Page 26
Water After Heater	Optional	Internal of device	Page 26
Water Cooler	Optional	External of device	Page 27
Duct Connection Damper	Optional		Page 27
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	Optional		Page 27
Bulk Siphon	Optional		Page 30
Room Control Panel Type1	EVO ECO		Page 28
Room Control Panel Type2	EVO TOUCH		Page 28
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional		Page 29
VOD Sensor CO2	Optional		Page 30
VOD Sensor RH%	Optional		Page 30
VOD Sensor VOC	Optional		Page 30
Signal Converter	Optional		Page 29
Constant Pressure Kit	Optional		Page 29

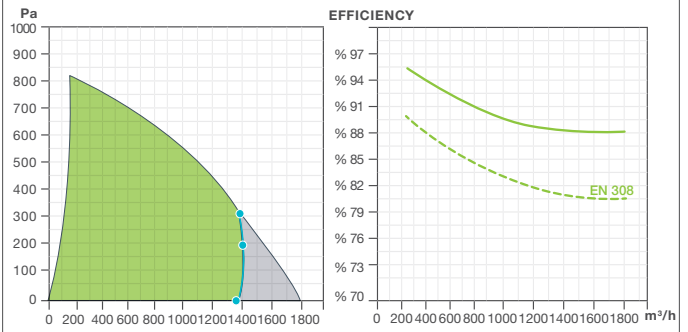
Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 28
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 28

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ AZURE 1400



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	AZURE 1400
Exchanger Type	Aluminum Plate With Counter Flow
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Inside
Installation Position	Horizontal
Service Location	From side and under
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m³/h)	170
Nominal Flow Rate (m³/h)	1520
Efficiency (EN 308)	84%
Efficiency (-5°C OA, 22°C 50%RH RA)	91%
Weight (kg)	200
According to EN 1886 Case Features	D1/L1/TB3/T3
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

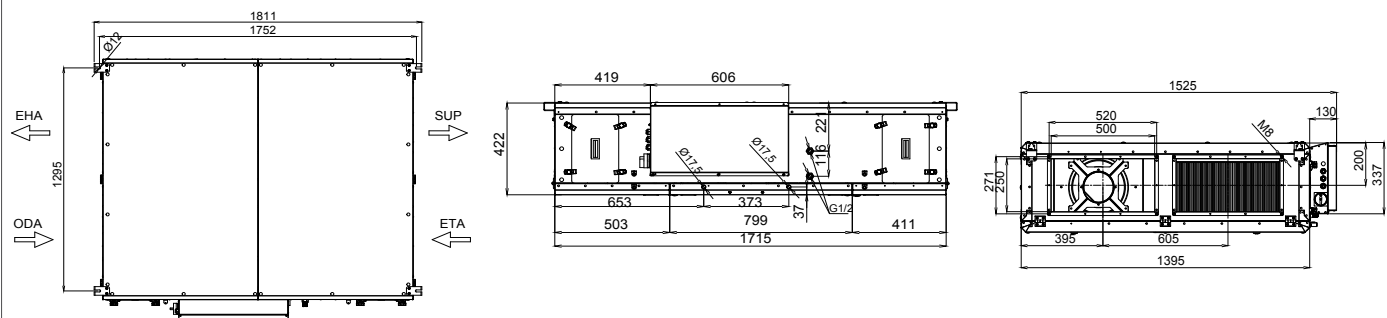
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	4,5
Maksimum Current (A)	15,2

Sound Information (2)

Sound Level at Supply (dBA)	71
Sound Level at Return (dBA)	63
Surrounding Sound 1m. Distance (dBA)	46
Surrounding Sound 3m. Distance (dBA)	37
Surrounding Sound 5m. Distance (dBA)	32

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Standard		
Electric After Heater	Optional	Internal of device	Page 26
Water After Heater	Optional	Internal of device	Page 26
Water Cooler	Optional	External of device	Page 27
Duct Connection Damper	Optional	Page 27	
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	Optional	Page 27	
Bulk Siphon	Optional	Page 30	
Room Control Panel Type1	EVO ECO	Page 28	
Room Control Panel Type2	EVO TOUCH	Page 28	
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional	Page 29	
VOD Sensor CO2	Optional	Page 30	
VOD Sensor RH%	Optional	Page 30	
VOD Sensor VOC	Optional	Page 30	
Signal Converter	Optional	Page 29	
Constant Pressure Kit	Optional	Page 29	

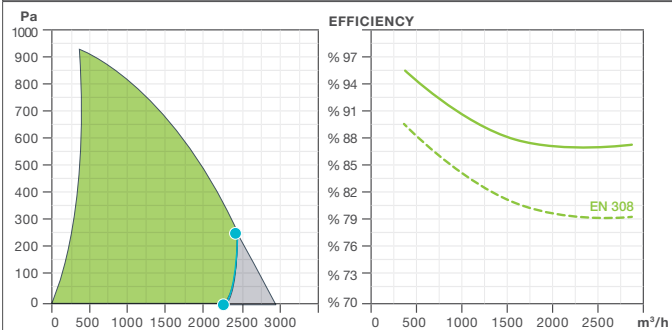
Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 28
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 28

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ AZURE 2200



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	AZURE 2200
Exchanger Type	Aluminum Plate With Counter Flow
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Inside
Installation Position	Horizontal
Service Location	From side and under
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m³/h)	280
Nominal Flow Rate (m³/h)	2360
Efficiency (EN 308)	83%
Efficiency (-5°C OA, 22°C 50%RH RA)	90%
Weight (kg)	285
According to EN 1886 Case Features	D1/L1/TB3/T3
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

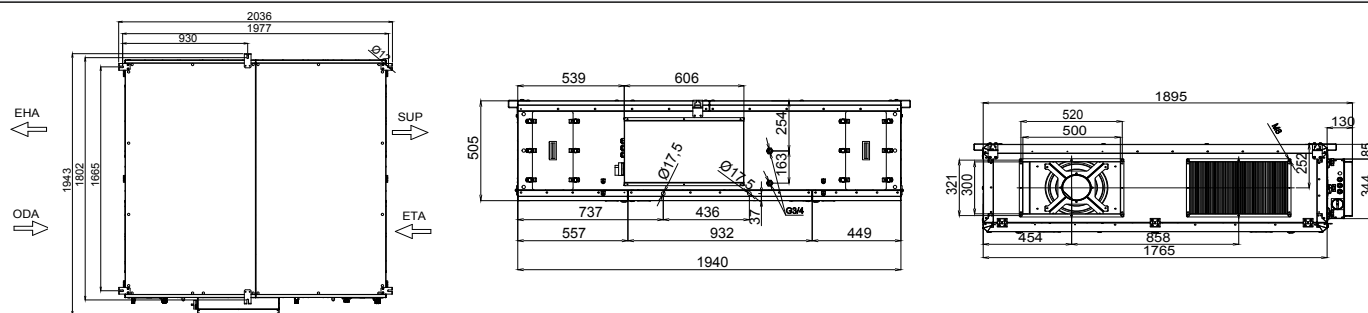
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	7,1
Maksimum Current (A)	23,8

Sound Information (2)

Sound Level at Supply (dBA)	73
Sound Level at Return (dBA)	65
Surrounding Sound 1m. Distance (dBA)	47
Surrounding Sound 3m. Distance (dBA)	38
Surrounding Sound 5m. Distance (dBA)	33

■ DIMENSIONS [mm]



ACCESSORIES

Electric Preheater	Standard		
Electric After Heater	Optional	Internal of device	Page 26
Water After Heater	Optional	Internal of device	Page 26
Water Cooler	Optional	External of device	Page 27
Duct Connection Damper	Optional		Page 27
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	Optional		Page 27
Bulk Siphon	Optional		Page 30
Room Control Panel Type1	EVO ECO		Page 28
Room Control Panel Type2	EVO TOUCH		Page 28
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional		Page 29
VOD Sensor CO2	Optional		Page 30
VOD Sensor RH%	Optional		Page 30
VOD Sensor VOC	Optional		Page 30
Signal Converter	Optional		Page 29
Constant Pressure Kit	Optional		Page 29

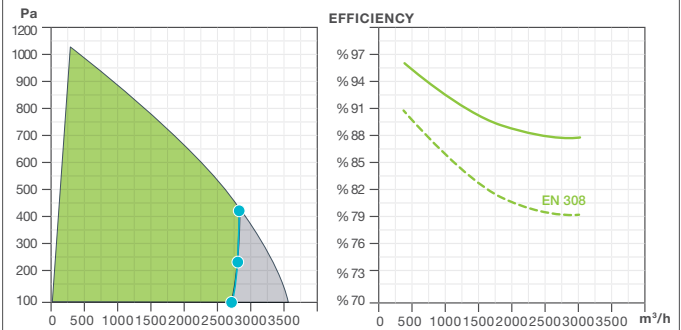
Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 28
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 28

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ AZURE 3200



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	AZURE 3200
Exchanger Type	Aluminum Plate With Counter Flow
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Inside
Installation Position	Horizontal
Service Location	From side and under
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m3/h)	320
Nominal Flow Rate (m3/h)	3100
Efficiency (EN 308)	83%
Efficiency (-5°C OA, 22°C 50%RH RA)	90%
Weight (kg)	370
According to EN 1886 Case Features	D1/L1/TB3/T3
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

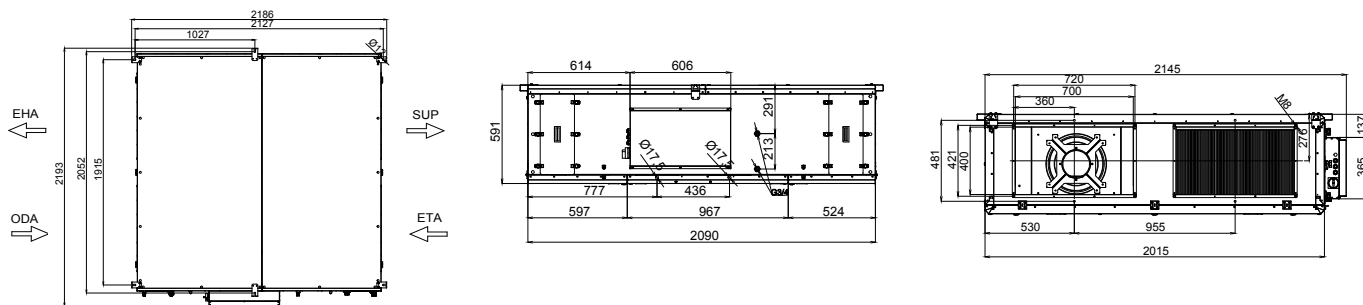
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	10,5
Maksimum Current (A)	36,1

Sound Information (2)

Sound Level at Supply (dBA)	77
Sound Level at Return (dBA)	69
Surrounding Sound 1m. Distance (dBA)	52
Surrounding Sound 3m. Distance (dBA)	43
Surrounding Sound 5m. Distance (dBA)	38

■ DIMENSIONS [mm]



ACCESSORIES

Electric Preheater	Standard		
Electric After Heater	Optional	Internal of device	Page 26
Water After Heater	Optional	Internal of device	Page 26
Water Cooler	Optional	External of device	Page 27
Duct Connection Damper	Optional		Page 27
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	Optional		Page 27
Bulk Siphon	Optional		Page 30
Room Control Panel Type1	EVO ECO		Page 28
Room Control Panel Type2	EVO TOUCH		Page 28
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional		Page 29
VOD Sensor CO2	Optional		Page 30
VOD Sensor RH%	Optional		Page 30
VOD Sensor VOC	Optional		Page 30
Signal Converter	Optional		Page 29
Constant Pressure Kit	Optional		Page 29

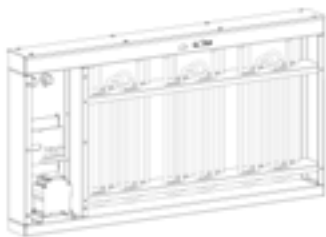
Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 28
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 28

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

ACCESSORIES

■ ELECTRICAL PRE HEATER

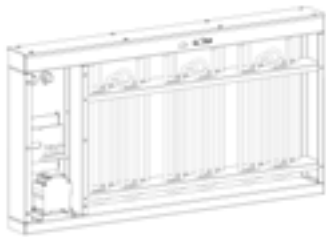
Used in order to prevent freezing at the exchanger in the situations which the outside air is very low. Controlled as a single step with SENSO control. Provides controllable energy efficiency with SENSO+ control via proportional signal.



Model	Heater Capacity (kW)	Current (A)	Control
AZ-PREH 500	1,6	7	Oransal
AZ-PREH 700	2,3	3,3	Oransal
AZ-PREH 1400	4,5	6,5	Oransal
AZ-PREH 2200	7,05	10,2	Oransal
AZ-PREH 3200	10,5	15,2	Oransal

■ ELECTRICAL AFTER HEATER

Used for increasing the supply air temperature. Operates automatically according to desired room temperature or desired supply temperature. Controlled as a single step with SENSO control. Provides controllable energy efficiency with SENSO+ control via proportional signal.



Model	Heater Capacity(kW)	Current (A)	Control
AZ-POEH 500	1,6	7	Oransal
AZ-POEH 700	2,3	3,3	Oransal
AZ-POEH 1400	4,5	6,5	Oransal
AZ-POEH 2200	7,05	10,2	Oransal
AZ-POEH 3200	10,5	15,2	Oransal

■ WATER AFTER HEATER

Used for increasing the supply air temperature. Operates automatically according to desired room temperature or desired supply temperature. Controlled as a single step with SENSO control. Provides controllable energy efficiency with SENSO+ control via proportional signal.



Model	Heater Capacity (kW)	Water Regime	Control
AZ-POWH 500	1,6	80-60	Oransal
AZ-POWH 700	2,3	80-60	Oransal
AZ-POWH 1400	4,5	80-60	Oransal
AZ-POWH 2200	7,05	80-60	Oransal
AZ-POWH 3200	10,5	80-60	Oransal

■ WATER COOLING

Used for cooling inside, water type cooling batteries are existed as accesories. With SENSO+ control, controlled proportionally according to desired supply temperature or desired room temperature.



Model	Heater Capacity (kW)	Water Regime	Control
AZ-KR 500	1,5	7-12	Oransal
AZ-KR 700	2	7-12	Oransal
AZ-KR 1400	4	7-12	Oransal
AZ-KR 2200	6	7-12	Oransal
AZ-KR 3200	9	7-12	Oransal

■ Duct Connection Damper

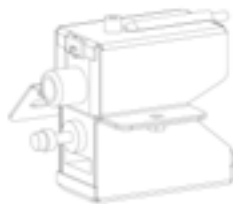
The motor operated damper, as turned itself off when the devices is turned off, prevent the leakage can be occurred via air duct. Has the Class 3 impermeability as a standard.



Model	Operation Time	Energy Supply
AZ-DAMP 500	40...75 s	24C DC , yay geri dönüşlü
AZ-DAMP 700	40...75 s	24C DC , yay geri dönüşlü
AZ-DAMP 1400	40...75 s	24C DC , yay geri dönüşlü
AZ-DAMP 2200	40...75 s	24C DC , yay geri dönüşlü
AZ-DAMP 3200	40...75 s	24C DC , yay geri dönüşlü

■ Drainage Pump

Used when unloading the water occurred from condensation at the exchanger or battery cell in the device not possible via the present slope.

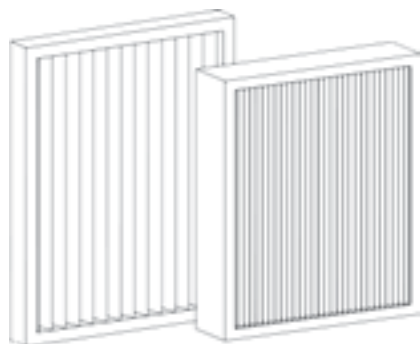


Model	Maximum Flow (l/h)	Max Head (m)	Max Suction Height (m)	Energy Supply
DP 01	13	10	1,5	230 V, 50/60 Hz
DP 02	40	10	2	230 V, 50/60 Hz

ACCESSORIES

■ FILTER

In the projects, it is designed as a standard for more sensitive than the present filter's filtering.



Model	Code
Fresh Air Filter ePM10 50%	AZ500FAEPM10-50
	AZ700FAEPM10-50
	AZ1400FAEPM10-50
	AZ2200FAEPM10-50
	AZ3200FAEPM10-50
Fresh Air Filter ePM1 80%	AZ500FAEPM1-80
	AZ700FAEPM1-80
	AZ1400FAEPM1-80
	AZ2200FAEPM1-80
	AZ3200FAEPM1-80

■ EVO-ECO

Is a user panel used as a user interface in the devices has the SENSO+ control card. Connected to control panel via 4x0.75 cable or RJ-12 Jack.



Model
EVO-ECO

■ EVO-TOUCH

Is a 7" sized touch type user panel used as a user interface. Connected to control panel via 4x0.75 cable or RJ-12 Jack.



Model
EVO-TOUCH

■ CLOUD CONNECTION

The web server on SENSO+, as connecting to web, via a computer/tablet or a mobile phone at anywhere in the world, operating situation can be viewed and the access for changing the settings is provided. Without needing a complex web settings, this feature can be activated with a simple web connected cable.



Model
SENSO+ CLOUD

■ Constant Pressure Kit

Used for serving the purpose of ventilation system's varying flow rate. SENSO+, creates the signal which can change EC fan's fan speed as measuring static pressure value consistently, as comparing with defined value to the system. Turning up or down the VAV damper which are different volume in duct system, serve the purpose of static pressure out of device as a result of higher or lower values than projected values with constant pressure control. In the fan operating characteristic, extreme volume sound occurred in the ducts and flow rate in different volumes are prevented.



Model
SENSO-CAP

■ Signal Converter

SENSO+ devices as make an access that connect up to 3 VOD sensors, both measure gas and different volume gases, change the capacity according to these measurements of air conditioning plants. Via Signal Converter, in 3 different types, for each type up to 6 measurements or obtained values from 18 different measurement volumes are used for controlling air conditioning plant is provided.



Model
SENSO+ SK

ACCESSORIES

■ VOD

Located in inside of critical volume or return duct, the optional air quality sensor (VOC or CO₂) or relative humidity sensor (RH%) consistently measures the air quality or relative humidity. This value, as being compared with set value which is arranged on control, creates operating which changes EC fan's fan speed. If the air in room is lower than desired air quality or the relative humidity is higher than the desired value, the fan speed is increased so, fresh air amount increased, if the air in room is higher than desired air quality or the relative humidity is lower than the desired value, the fan speed is decreased so, fresh air amount decreased; Thus, a significant energy save is provided at the heating or cooling loads caused by the fresh air.



Model	Measurement	Installation Position
VOD-VOC-RM	VOC	Room
VOD-VOC-DUCT	VOC	Channel
VOD-CO ₂ -DUCT	CO ₂	Room
VOD-CO ₂ -RM	CO ₂	Channel
VOD-RH-DUCT	RH%	Room
VOD-RH-RM	RH%	Channel
PS-MW	-	-

■ BALL SIPHON

Used for disposal of water In the heat recovery sections, the result of condensation at the exhaust air or the result of condensation at the cooking batteries. Can operate in both positive negative pressure.



Model
SIPH

NOTES

Unlike the plate type HRV's, AZURE Wheel units offer the humidity transfer at a high rate for both heating and cooling season thanks to the special 3Å Zeolite coating of the rotary wheels.

The AZURE Wheel range is specially designed for projects where the height of the suspended ceiling is low and where moisture transfer is required. Two parallel rotors are used for high heat recovery and moisture transfer, EC fans reach high static pressure values with low energy consumption. To meet the requirements of air flow between 1000 m³ / h and 5500 m³ / h, units are designed in 4 models. The rotary wheel is driven by a special drive system and the rotation speed is adjusted to provide the optimum supply temperature according to temperature differences.

With high efficiency and unique design features, AZURE Wheel devices with ECODESIGN 2018 label have a built-in, advanced web-interface control system as standard. To ensure Plug and Play concept the units are shipped to site with all connections already made and mounted. User friendly interface that helps ease of operation which can be controlled online (**aeracloud.com**), has building automation systems connection (ModBUS, BacNET) and control over network (ModBUS TCP / IP) as standard.

- Compact Design for Ceiling Installations.
- Sorption Rotor ($\eta > 80\%$) allows high sensible and latent heat transfer.
- EC Plug Fan.
- Low sound levels with 50mm insulated casing.
- Automatic rotor control with stepper motor.
- ECODESIGN 2018 Approval.
- ModBus and BacNET compatible.
- Plug and Play Controls with integrated Web interface.
- Heating/Cooling Coil Option.



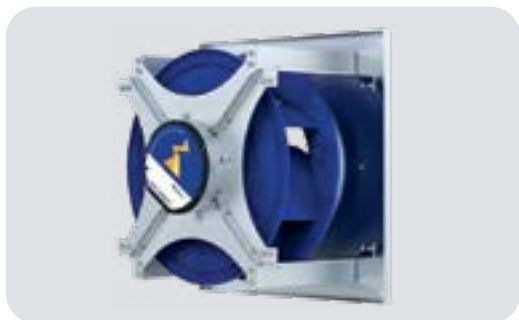
AZURE WHEEL

CEILING TYPE ENERGY RECOVERY UNIT
WITH ROTARY HEAT EXCHANGER





units are designed in accordance with VDI6022. Inside of the unit is easily cleanable. The used seals are closed cell and prevent germ reproduction. All components that require service, have their own service doors. This way the unit does not have to be disconnected from ducting system for servicing.



CASING

By using advanced technology components, Azure Wheel units achieve efficiency levels of today's and tomorrow's standards. The casing, which is developed using the latest engineering methods, also shows superior performance in terms of aerodynamics. The internal turbulence or dead zone losses are reduced to the minimum with the analysis.

In addition to achieving a high-strength design with patented fan support bracket design, the total efficiency is improved by avoiding dead zones and reverse flows which may occur behind the fan body.

AZURE Wheel units are designed with low air velocities, low filter and coil pressure drops are achieved despite its compact design. The fact that the electric preheater and the water type after heater can be placed inside the body contributes to the compact structure, preventing difficulties in wiring and automation. Water heating battery's piping has a specially designed connection, it provides high sealing and easy connection out of the casing. AZURE Wheel

FAN

AZURE wheel units are equipped with EC Plug fans, which offer high aerodynamic efficiency with their engineered impeller design and electrical efficiency (min. IE4) with their unmatched electrical and electronical components. All the fans meet with the ECODSIGN directive and are approved for ERP2015.

With its unique control system AZURE Wheel units are delivered as standard for CAV applications and are also applicable for demand driven systems like VOD (Ventilation on Demand) or VAV (Constant Pressure). For VOD applications one or several room sensors or a return duct sensor can be used, the control decides the air flow accordingly.



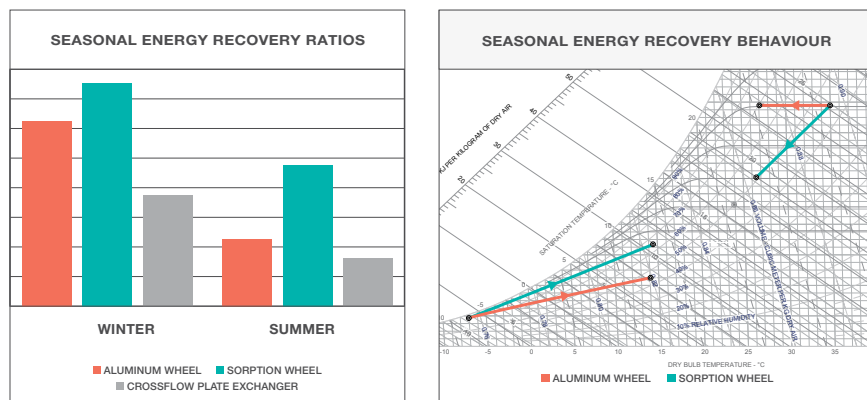
FILTER

AZURE Wheel devices, at the fresh air side ePM1 55% (F7) class, at the exhaust air side ePM10 50% (M5) class filters are comprised as a standard. By these high efficient filters as they are catching 90% of dust particles which have up to 0,4 μm radius, room air quality is increased. Filters have low starting pressure drop values because of having both their high efficiencies and increased surface area. In order to observe filter pollution differential pressure transmitters are applied at fresh air and exhaust air filters. Thus, as the filter's pressure drop is followed instantly, the used is acknowledged. For different flow rates, as different pressure drops are defined, the dynamic filter alarm can be created by SENSO+.

SORPTION WHEEL

AZURE Wheel units present the state of art rotary wheels with high heat and humidity transfer rates. Twin rotary wheels are designed to decrease the height, enabling ceiling installations. Rotary wheel drive consists service free high torque step motor, stepless control drive and polyester chain belt system.

Rotary wheel is coated with 3Å Zeolite material for high humidity efficiency in both winter and summer season, that allows the transfer of water molecules only between air streams. In cooling season, AZURE wheel units promise 115% more energy transfer than a traditional Aluminum wheel and 195% more than a static Aluminum Plate.



SENSO+

The advanced control system SENSO PLUS in AZURE Wheel Units, provides the most efficient control of all components which can be installed internally and as external accessories, ensuring the desired airflow conditions.

DX COIL

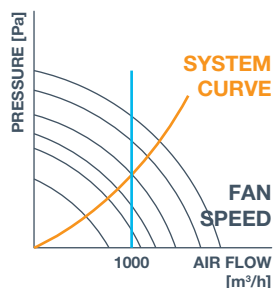
Externally mounted duct type DX batteries are used for purposes such as lowering the supply air temperature, dehumidifying process and bringing the blown air to the desired temperature after dehumidification. It can be step controlled with on / off method, maximum 8 step setting is available.

HUMIDITY CONTROL EQUIPMENT

Humidity control equipments are used to raise or lower the humidity of the supply air. With the SENSO PLUS control, the humidifier / dehumidifiers can be controlled to bring the supply air to the desired humidity value.

The SENSO PLUS control also provides system control besides equipment control, which means that the devices can be operated with the Yearly Timer Function according to the working periods: Daily, Weekly, Monthly or Yearly. In the Timer Function, values such as weekly working days, vacation times, daylight savings time can be defined and reported retrospectively.

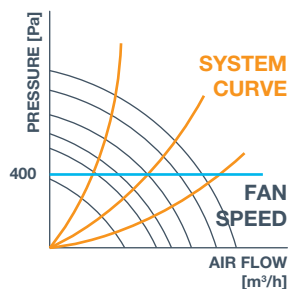
Besides, the Support Function which is used to prevent the undesired conditions from occurring indoors even when the device is not working. The indoor temperature from falling below or exceeding a certain value even during non-working hours is ensured.



Constant Air Volume

To meet the desired constant airflow requirement in the AZURE Handling Units, the SENSO PLUS control measures the air pressure drop in the suction ports of the fans and compares the air flow with the set value to produce a working signal that will change the EC fan fan speed.

Contamination of the filters can be controlled by static flow control within the fan operating curve, to the static pressure requirements of the unit which result in higher or lower than the project values.



Constant Air Pressure

In AZURE Units, constant pressure control is used to meet the variable airflow requirement of the air duct system. The SENSO PLUS control generates a working signal that will change the EC fan speed by continuously measuring the static pressure created in the supply air duct and comparing it with the value defined in the system. When a VAV damper opens or closes, higher or lower external static pressure needs can be met with constant pressure control within the fans operating curve. This way extreme noise in the ducts, unbalanced airflow distribution in different volumes is prevented.

COOLING COIL

Externally mounted duct-type water cooling coils are used for such purposes as lowering the blowing temperature and dehumidifying the air in the units. It can be driven either proportionally or by on / off method.

Heating Coil

Heating coils are used for increasing the supply air temperature and for bringing the supply air to the desired temperature after dehumidifying process. Hot water coils can be driven by proportional control via 2 or 3 way valves. With the SENSO PLUS control, frost protection mechanism is available as standard to prevent the temperature of the supply water from reaching freezing conditions in extreme cold climates. If the return water temperature falls below a certain value set on the control, the heating valve is switched to the 100% open position and a run signal is sent to the heating water circulation pump. If the temperature still does not rise to the desired value, the device is stopped and the user is given a freeze alarm.

Indoor Air Quality Control

The air quality sensor or the CO₂ sensor, which is placed in the critical volume or return channel in the interior, continuously measures the air quality. This value generates a signal that will change the EC fan fan speed by comparing it to the set point on the controller. If the indoor air quality is lower than the desired value, the fan speed and thus the fresh air amount is increased; if the indoor air quality is higher than the desired indoor air quality, the fan speed and fresh air speed are decreased; Energy saving is achieved in considerable amounts in heating or cooling loads caused by fresh air.

CONTROL OF ROTARY HEAT RECOVERY EXCHANGER

For AZURE WHEEL devices, rotary HR with SENSO+, are produced with a varyingspeed rotor driver. As supply heat is checked, according to needed heat recovery, the rotor speed is adjusted automatically, when the outside air conditions are suitable, as the rotor is stopped, Free Cooling is provided. In the situations that rotor is not operated because of any malfunction, by a sensor integrated in the device an alarm signal is sent and the user is noticed. At the Free Cooling mode if the rotor is not operated for 30 minutes, for cleaning a command is sent to turn 25 times for 20 seconds.

USER INTERFACE

With SENSO+ EVO ECO control panel which has buttons or EVO TOUCH 7" touch screen control panel is presented. Also there is a web server for observing or controlling the device which is integrated in the card. On the server the settings can be done, also both of the instanteneous operating values and history of operating values are able to be followed.



The web server on SENSO+, as connecting to web, via a computer/tablet or a mobile phone at anywhere in the world, operating situation can be viewed and the access for changing the settings is provided. Without needing a complex web settings, this feature can be activated with a simple web connected cable.

The devices in the different projects, with cumulating all of the devices in the same display, as it is synchronized, operating values, active alarms etc. values as followed and the settings can be changed if it is desired. Especially in the projects within the multiple devices or for servicing the multiple devices in different places this system is provided optionally together with SENSO+ .

COMMUNICATION OPTIONS

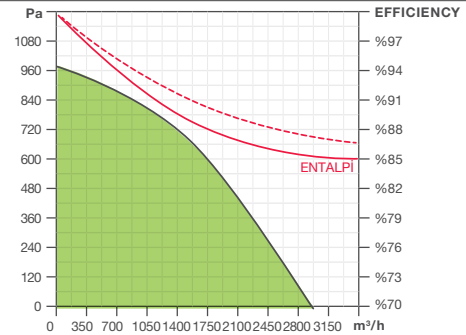
SENSO PLUS control supports all of the universal communication protocols and interacts with other air handling units as well as with other building automation systems. ModBUS, BACnet and EXOline protocols are open as standard and there is also possibility to connect with LONWORKS protocol as an option.



■ AZURE WHEEL 25



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	AZURE WHEEL 25
Exchanger Type	Adsorption Wheel
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Inside
Installation Position	Horizontal
Service Location	From side and under
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m³/h)	350
Nominal Flow Rate (m³/h)	3070
Efficiency (EN 308)	82%
Efficiency (-5°C OA, 22°C 50%RH RA)	86%
Efficiency Humidity Transfer Efficiency	89%
Weight (kg)	260
According to EN 1886 Case Features	D1/L1/TB3/T3
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

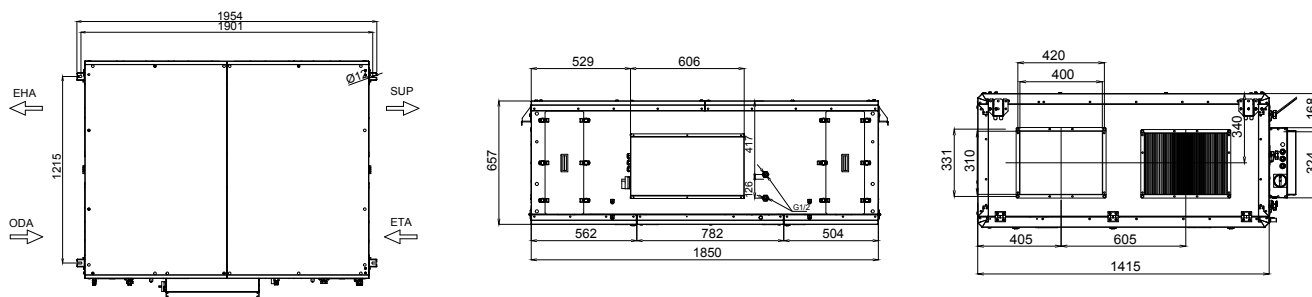
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	2,1
Maksimum Current (A)	5,4

Sound Information (2)

Surrounding Sound 3m. Distance (dBA)	43
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■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	Internal of device	Page 46
Electric After Heater	Optional	Internal of device	Page 46
Water After Heater	Optional	Internal of device	Page 46
Water Cooler	Optional	External of device	Page 47
Duct Connection Damper	Optional		Page 47
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	Optional		Page 50
Bulk Siphon	Optional		Page 49
Room Control Panel Type1	EVO ECO		Page 47
Room Control Panel Type2	EVO TOUCH		Page 49
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional		Page 48
VOD Sensor CO2	Optional		Page 49
VOD Sensor RH%	Optional		Page 49
VOD Sensor VOC	Optional		Page 49
Signal Converter	Optional		Page 48
Constant Pressure Kit	Optional		Page 50

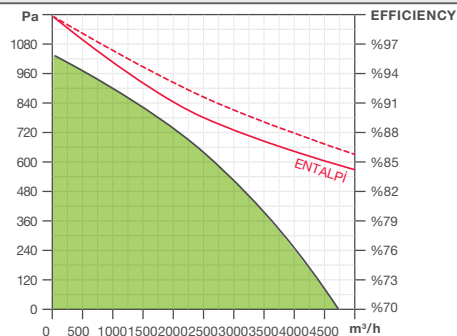
Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 48
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 48

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ AZURE WHEEL 35



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	AZURE WHEEL 35
Exchanger Type	Adsorption Wheel
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Inside
Installation Position	Horizontal
Service Location	From side and under
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATION

Minimum Flow Rate (m³/h)	540
Nominal Flow Rate (m³/h)	4670
Efficiency (EN 308)	82%
Efficiency (-5°C OA, 22°C 50%RH RA)	86%
Efficiency Humidity Transfer Efficiency	88%
Weight (kg)	305
According to EN 1886 Case Features	D1/L1/TB3/T3
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

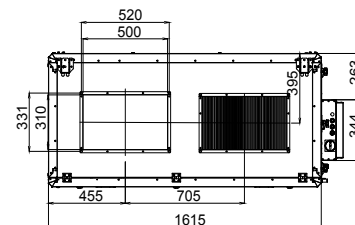
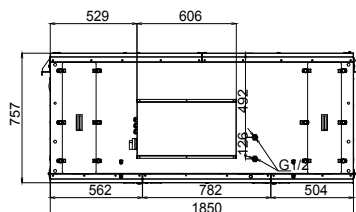
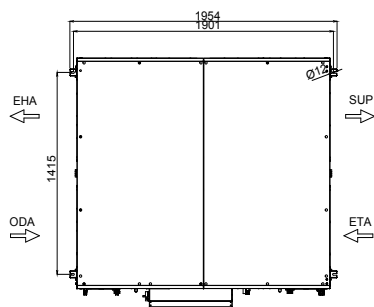
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	3,8
Maksimum Current (A)	6,2

Sound Information (2)

Surrounding Sound 3m. Distance (dBA)	54
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■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	Internal of device	Page 46
Electric After Heater	Optional	Internal of device	Page 46
Water After Heater	Optional	Internal of device	Page 46
Water Cooler	Optional	External of device	Page 47
Duct Connection Damper	Optional	Page 47	
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	Optional	Page 50	
Bulk Siphon	Optional	Page 49	
Room Control Panel Type1	EVO ECO	Page 47	
Room Control Panel Type2	EVO TOUCH	Page 49	
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional	Page 48	
VOD Sensor CO2	Optional	Page 49	
VOD Sensor RH%	Optional	Page 49	
VOD Sensor VOC	Optional	Page 49	
Signal Converter	Optional	Page 48	
Constant Pressure Kit	Optional	Page 50	

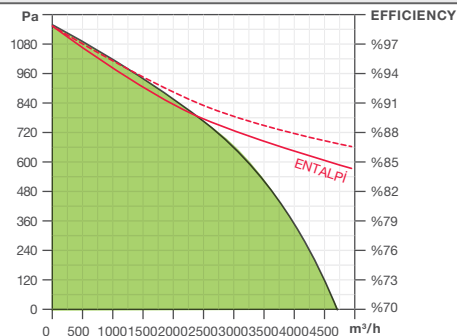
Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 48
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 48

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ AZURE WHEEL 40



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	AZURE WHEEL 40
Exchanger Type	Adsorption Wheel
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Inside
Installation Position	Horizontal
Service Location	From side and under
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m³/h)	710
Nominal Flow Rate (m³/h)	4780
Efficiency (EN 308)	81%
Efficiency (-5°C OA, 22°C 50%RH RA)	85%
Efficiency Humidity Transfer Efficiency	88%
Weight (kg)	390
According to EN 1886 Case Features	D1/L1/TB3/T3
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

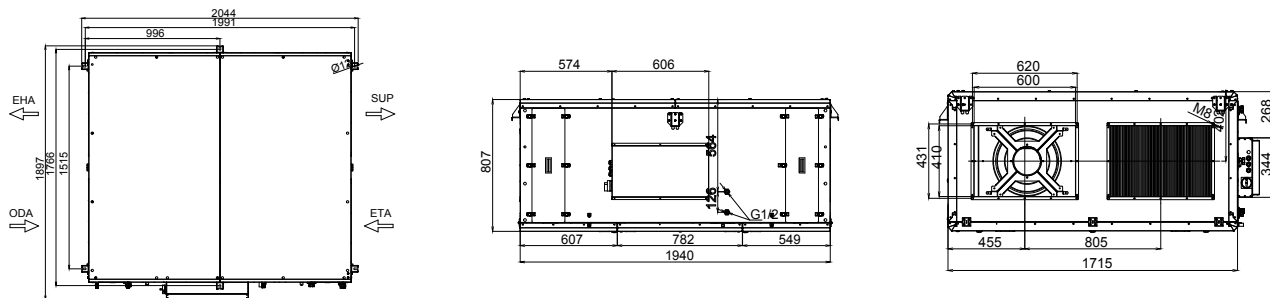
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	5
Maksimum Current (A)	8,4

Sound Information (2)

Surrounding Sound 3m. Distance (dBA)	52
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■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	Internal of device	Page 46
Electric After Heater	Optional	Internal of device	Page 46
Water After Heater	Optional	Internal of device	Page 46
Water Cooler	Optional	External of device	Page 47
Duct Connection Damper	Optional		Page 47
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	Optional		Page 50
Bulk Siphon	Optional		Page 49
Room Control Panel Type1	EVO ECO		Page 47
Room Control Panel Type2	EVO TOUCH		Page 49
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional		Page 48
VOD Sensor CO2	Optional		Page 49
VOD Sensor RH%	Optional		Page 49
VOD Sensor VOC	Optional		Page 49
Signal Converter	Optional		Page 48
Constant Pressure Kit	Optional		Page 50

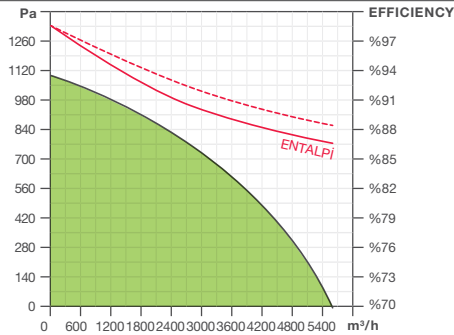
Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 48
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 48

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ AZURE WHEEL 55



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	AZURE WHEEL 55
Exchanger Type	Adsorption Wheel
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Inside
Installation Position	Horizontal
Service Location	From side and under
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m³/h)	940
Nominal Flow Rate (m³/h)	5860
Efficiency (EN 308)	81%
Efficiency (-5°C OA, 22°C 50%RH RA)	85%
Efficiency Humidity Transfer Efficiency	87%
Weight (kg)	455
According to EN 1886 Case Features	D1/L1/TB3/T3
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

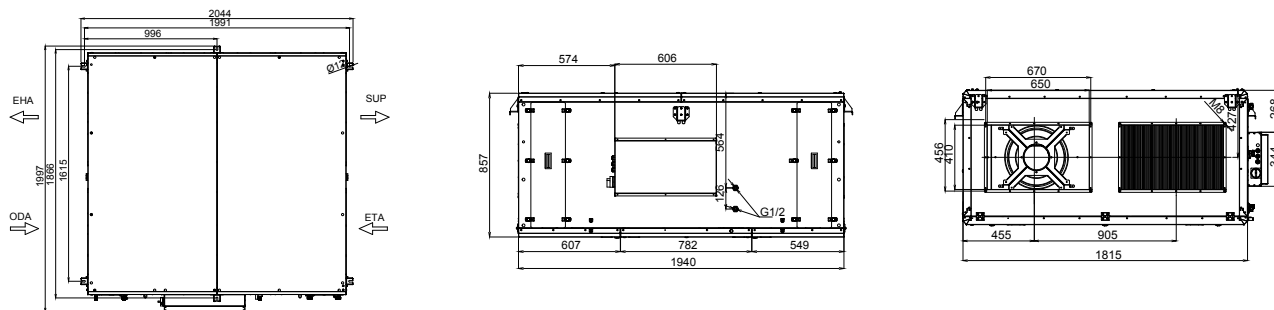
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	5
Maksimum Current (A)	8,4

Sound Information (2)

Surrounding Sound 3m. Distance (dBA)	51
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■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	Internal of device	Page 46
Electric After Heater	Optional	Internal of device	Page 46
Water After Heater	Optional	Internal of device	Page 46
Water Cooler	Optional	External of device	Page 47
Duct Connection Damper	Optional		Page 47
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	Optional		Page 50
Bulk Siphon	Optional		Page 49
Room Control Panel Type1	EVO ECO		Page 47
Room Control Panel Type2	EVO TOUCH		Page 49
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional		Page 48
VOD Sensor CO2	Optional		Page 49
VOD Sensor RH%	Optional		Page 49
VOD Sensor VOC	Optional		Page 49
Signal Converter	Optional		Page 48
Constant Pressure Kit	Optional		Page 50

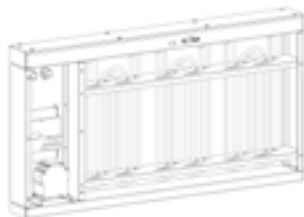
Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 48
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 48

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

ACCESSORIES

■ ELECTRICAL PREHEATER

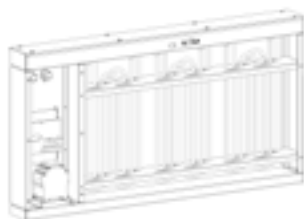
Used in order to prevent freezing at the exchanger in the situations which the outside air is very low. Controlled as a single step with SENSO control. Provides controllable energy efficiency with SENSO+ control via proportional signal.



Model	Heater Capacity (kW)	Current (A)	Control
AW-PREH 25	6	8,4	Oransal
AW-PREH 35	7,5	10,5	Oransal
AW-PREH 40	9	12,6	Oransal
AW-PREH 55	9	12,6	Oransal

■ ELECTRICAL AFTER HEATER

Used for increasing the supply air temperature. Operates automatically according to desired room temperature or desired supply temperature. Controlled as a single step with SENSO control. Provides controllable energy efficiency with SENSO+ control via proportional signal.



Model	Heater Capacity (kW)	Current (A)	Control
AW-POEH 25	6	8,4	Oransal
AW-POEH 35	7,5	10,5	Oransal
AW-POEH 40	9	12,6	Oransal
AW-POEH 55	9	12,6	Oransal

■ WATER AFTER HEATER

Used for increasing the supply air temperature. Operates automatically according to desired room temperature or desired supply temperature. Controlled as a single step with SENSO control. Provides controllable energy efficiency with SENSO+ control via proportional signal.



Model	Heater Capacity (kW)	Water Regime	Control
AW-POWH 25	6	80-60	Oransal
AW-POWH 35	7,5	80-60	Oransal
AW-POWH 40	9	80-60	Oransal
AW-POWH 55	9	80-60	Oransal

■ WATER COOLING

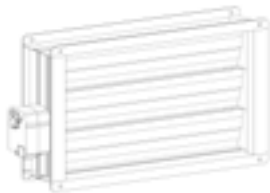
Used for cooling inside, water type cooling batteries are existed as accesories. With SENSO+ control, controlled proportionally according to desired supply temperature or desired room temperature.



Model	Heater Capacity (kW)	Water Regime	Control
AW-KR 25	6	7-12	Oransal
AW-KR 35	9	7-12	Oransal
AW-KR 40	9	7-12	Oransal
AW-KR 55	12	7-12	Oransal

■ Duct Connection Damper

The motor operated damper, as turned itself off when the devices is turned off, prevent the leakage can be occured via air duct. Has the Class 3 impermeability as a standard.



Model	Operation Time	Energy Supply
AW-DAMP 25	40...75 s	24C DC , yay geri dönüşlü
AW-DAMP 35	40...75 s	24C DC , yay geri dönüşlü
AW-DAMP 40	40...75 s	24C DC , yay geri dönüşlü
AW-DAMP 55	40...75 s	24C DC , yay geri dönüşlü

■ EVO-ECO

Is a user panel used as a user interface in the devices has the SENSO+ control card. Connected to control panel via 4x0.75 cable or RJ-12 Jack.



Model
EVO-ECO

ACCESSORIES

■ FILTER

In the projects, it is designed as a standard for more sensitive than the present filter's filtering



Model	Code
Taze Hava filtresi ePM10 50%	AZW25FAEPM10-50
	AZW35FAEPM10-50
	AZW40FAEPM10-50
	AZW55FAEPM10-50
Taze Hava filtresi ePM1 80%	AZW25FAEPM1-80
	AZW35FAEPM1-80
	AZW40FAEPM1-80
	AZW55FAEPM1-80

■ CLOUD CONNECTION

The web server on SENSO+, as connecting to web, via a computer/tablet or a mobile phone at anywhere in the world, operating situation can be viewed and the access for changing the settings is provided. Without needing a complex web settings, this feature can be activated with a simple web connected cable.



Model
SENSO+ CLOUD

■ Signal Converter

SENSO+ devices as make an access that connect up to 3 VOD sensors, both measure gas and different volume gases, change the capacity according to these measurements of air conditioning plants. Via Signal Converter, in 3 different types, for each type up to 6 measurements or obtained values from 18 different measurement volumes are used for controlling air conditioning plant is provided.



Model
SENSO+ SK

■VOD

Located in inside of critical volume or return duct, the optional air quality sensor (VOC or CO2) or relative humidity sensor (RH%) consistently measures the air quality or relative humidity. This value, as being compared with set value which is arranged on control, creates operating which changes EC fan's fan speed. If the air in room is lower than desired air quality or the relative humidity is higher than the desired value, the fan speed is increased so, fresh air amount increased, if the air in room is higher than desired air quality or the relative humidity is lower than the desired value, the fan speed is decreased so, fresh air amount decreased; Thus, a significant energy save is provided at the heating or cooling loads caused by the fresh air.



Model	Measurement	Installation Position
VOD-VOC-RM	VOC	Room
VOD-VOC-DUCT	VOC	Channel
VOD-CO2-DUCT	CO2	Room
VOD-CO2-RM	CO2	Channel
VOD-RH-DUCT	RH%	Room
VOD-RH-RM	RH%	Channel
PS-MW	-	-

■BALL SIPHON

Used for disposal of water In the heat recovery sections, the result of condensation at the exhaust air or the result of condensation at the cooking batteries. Can operate in both positive negative pressure.



Model
SIPH

■EVO-TOUCH

Is a 7" sized touch type user panel used as a user interface. Connected to control panel via 4x0.75 cable or RJ-12 Jack.



Model
EVO-TOUCH

ACCESSORIES

■ Drainage Pump

Used when unloading the water occurred from condensation at the exchanger or battery cell in the device not possible via the present slope.



Model	Maximum Flow (l/h)	Max Head (m)	Max Suction Height (m)	Energy Supply
DP 01	13	10	1,5	230 V, 50/60 Hz
DP 02	40	10	2	230 V, 50/60 Hz

■ Constant Pressure Kit

Used for serving the purpose of ventilation system's varying flow rate. SENSO+, creates the signal which can change EC fan's fan speed as measuring static pressure value consistently, as comparing with defined value to the system. Turning up or down the VAV damper which are different volume in duct system, serve the purpose of static pressure out of device as a result of higher or lower values than projected values with constant pressure control. In the fan operating characteristic, extreme volume sound occurred in the ducts and flow rate in different volumes are prevented.



Model
SENSO-CAP

NOTES

EVO-C units are used in environments where fresh air demand is high. These units are energy efficient, silent, fully automated with plug-and-play logic. Their compact structure allow them to be placed in mechanical spaces inside the buildings and also can be used in open environments such as roofs.

EVO-C Devices Significant Features

- 8 Different models between 300-8500 m3/h flow rate,
- High aerodynamic efficiency via developed fan/motor design,
- EUROVENT certificated Aluminium heat exchanger up to 90% efficiency (EN308),

- AZ150 coated internal/powder coated external sheet which has C4 corrosion resistance,
- High heat insulation and low internal leaks via special case design,
- Low internal pressure loss,
- SENSO+ automation system access to Cloud,
- UP to EVO 45-C models units can fit through standard doors (D<1000),
- Standard By-pass and optional recirculation damper,
- Supply air temperature can be adjusted by electrical and water after heater options integrated in unit.



EVO-C

COMPACT AIR HANDLING UNITS WITH
COUNTERFLOW EXCHANGER





CASING

EVO Compact Air Handling Unit's casings are engineered with today's standards, according to future needs. By eliminating the defects of traditional casings, high thermal and acoustical performance have been achieved, mechanical strength and corrosion resistance have been increased. As a result, a compact body that provides easy operation and service has emerged. Performance values were calculated prior to the actual product testing, using modern engineering methods developed by 3D computerized design and analysis during design stage. Subsequently, these values were verified with tests made in accordance with relevant standards in our modern testing laboratory.

outer panel sheets are not connected, thermal, leakage from metal surfaces is prevented. With the help of the PVC frame used, continuous and homogeneous insulation was obtained on the panels. With this structure on the sides of the panel, the thickness remain the same for each surface. The air gap in the PVC profile increases the thermal resistance of the profile and reduces the total heat transfer coefficient.

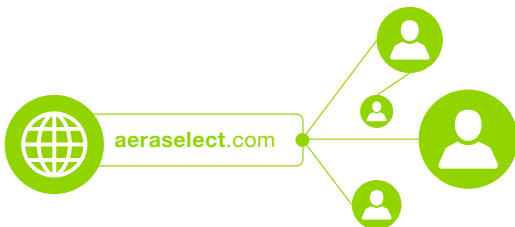


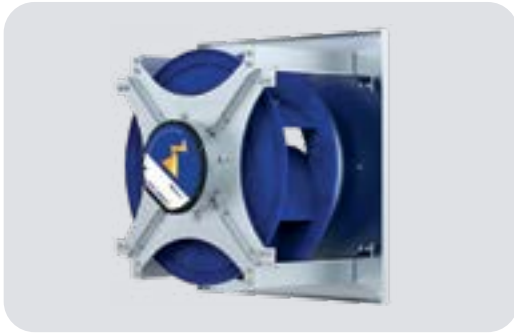
COUNTERFLOW PLATE HEAT EXCHANGER

In EVO-C Compact Air Handling Units, plate type heat recovery exchangers working with counter flow principle are used. Superior energy efficiency and low pressure drops and high total energy efficiency is achieved, and at nominal temperatures the total heat recovery efficiency reaches 93%. The exchanger, which is made of aluminum plates with high corrosion resistance, provides high sealing between exhaust and fresh air flows. Bypass dampers are provided as standard. At temperatures where outdoor weather is convenient, fresh air is provided directly indoors without entering the exchanger. With the help of the optional internal air quality sensor, the recirculation function can be activated by turning off the fresh air intake of the device and more energy can be saved. In EVO-C Compact Air Handling Units, combined type heat exchangers are used to provide compactness for larger air volumes. The device width is thus reduced.

SELECTION SOFTWARE (aerselect.com)

There is selection software to calculate the EVO-C devices' performance results at the desired flow rates in the project. With the selection software from the address www.aerselect.com the devices can be selected easily suitable for the heating and cooling need with desired flow rate and the duct pressure. Devices automation and accessories can be defined via the software so, the device configuration is able to be done. Selection software can obtain the thermodynamic values, device measurements, ECO-DESIGN report and BIM file belongs to device as a print.





FAN

EVO Compact Air Handling Units are designed using plug type EC fans with high aerodynamic efficiency, low noise levels and low energy consumption. All fans meet ECO-DESIGN criteria set by the Energy Commission of the European Union and are compatible with ERP 2015. Plug fans with EC motors with the help of SENSO PLUS control system, can be driven steplessly with an indoor air quality sensor or with constant volume. Fans are ready to provide constant pressure in VAV systems with the VAV kit supplied as accessory. Plug type fans with EC motors are AC-powered fans with DC motor technology. The DC motor provides high electrical efficiency and can be connected to the AC mains with the converter located on them. It is perfectly matched to the high-tech electronic components used and magnetic noise transmitted to the network is prevented. EC motors communicate with the SENSO PLUS control system via Modbus.

This reduces the number of in-line cabling and provides more information to the user and ensures optimum operating point is used in the unit. The computerized analysis of the fan blades has made it possible to optimize the aerodynamic efficiency and reduce the sound levels. The back plate of the fan impeller has been redesigned for a linear air flow. The EC motors used perform well beyond today's efficiency requirements and all motors comply with the IE4 energy efficiency class.



FILTER

EVO-C devices, at the fresh air side ePM1 55% (F7) class, at the exhaust air side ePM10 50% (M5) class filters are comprised as a standard. By these high efficient filters as they are catching 90% of dust particles which have up to 0,4 μm radius, room air quality is increased. Filters have low starting pressure drop values because of having both their high efficiencies and increased surface area. In order to observe filter pollution differential pressure transmitters are applied at fresh air and exhaust air filters. Thus, as the filter's pressure drop is followed instantly, the used is acknowledged. For different flow rates, as different pressure drops are defined, the dynamic filter alarm can be created by SENSO PLUS. In the fresh air side of devices optionally ePM1 80% (F9) filter can be used.

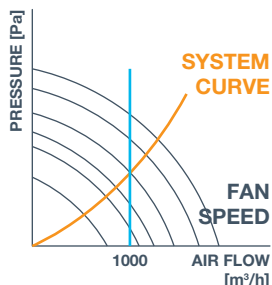


BIM FILES

BIM files which belong to EVO-C devices are uploaded from the address www.aerabim.com at the revit software can be used automatically. In the same way, with Magiccloud software or its plug-in it is possible to reach BIM files.

SENSO+

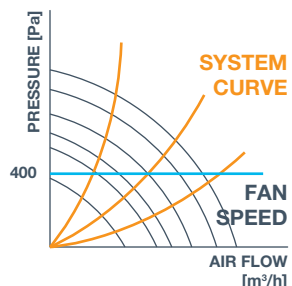
The advanced control system SENSO PLUS in EVO-C Wheel Units, provides the most efficient control of all components which can be installed internally and as external accessories, ensuring the desired airflow conditions.



Constant Air Volume

To meet the desired constant airflow requirement in the EVO-C Handling Units, the SENSO PLUS control measures the air pressure drop in the suction ports of the fans and compares the air flow with the set value to produce a working signal that will change the EC fan fan speed.

Contamination of the filters can be controlled by static flow control within the fan operating curve, to the static pressure requirements of the unit which result in higher or lower than the project values.



Constant Air Pressure

In EVO-C Units, constant pressure control is used to meet the variable airflow requirement of the air duct system. The SENSO PLUS control generates a working signal that will change the EC fan speed by continuously measuring the static pressure created in the supply air duct and comparing it with the value defined in the system. When a VAV damper opens or closes, higher or lower external static pressure needs can be met with constant pressure control within the fans operating curve. This way extreme noise in the ducts, unbalanced airflow distribution in different volumes is prevented.

DX COIL

Externally mounted duct type DX batteries are used for purposes such as lowering the supply air temperature, dehumidifying process and bringing the blown air to the desired temperature after dehumidification. It can be step controlled with on / off method, maximum 8 step setting is available.

HUMIDITY CONTROL EQUIPMENT

Humidity control equipments are used to raise or lower the humidity of the supply air. With the SENSO PLUS control, the humidifier / dehumidifiers can be controlled to bring the supply air to the desired humidity value.

The SENSO PLUS control also provides system control besides equipment control, which means that the devices can be operated with the Yearly Timer Function according to the working periods: Daily, Weekly, Monthly or Yearly. In the Timer Function, values such as weekly working days, vacation times, daylight savings time can be defined and reported retrospectively.

Besides, the Support Function which is used to prevent the undesired conditions from occurring indoors even when the device is not working. The indoor temperature from falling below or exceeding a certain value even during non-working hours is ensured.

COOLING COIL

Externally mounted duct-type water cooling coils are used for such purposes as lowering the blowing temperature and dehumidifying the air in the units. It can be driven either proportionally or by on / off method.

Heating Coil

Heating coils are used for increasing the supply air temperature and for bringing the supply air to the desired temperature after dehumidifying process. Hot water coils can be driven by proportional control via 2 or 3 way valves. With the SENSO PLUS control, frost protection mechanism is available as standard to prevent the temperature of the supply water from reaching freezing conditions in extreme cold climates. If the return water temperature falls below a certain value set on the control, the heating valve is switched to the 100% open position and a run signal is sent to the heating water circulation pump. If the temperature still does not rise to the desired value, the device is stopped and the user is given a freeze alarm.

Indoor Air Quality Control

The air quality sensor or the CO2 sensor, which is placed in the critical volume or return channel in the interior, continuously measures the air quality. This value generates a signal that will change the EC fan speed by comparing it to the set point on the controller. If the indoor air quality is lower than the desired value, the fan speed and thus the fresh air amount is increased; if the indoor air quality is higher than the desired indoor air quality, the fan speed and fresh air speed are decreased; Energy saving is achieved in considerable amounts in heating or cooling loads caused by fresh air.

FILTER POLLUTION CHECK

The pressure drops of the filters used to clean the air, can be controlled by SENSO PLUS control. Users are notified about the filter cleaning and replacement intervals. Pressure drop control can be made according to a constant pressure drop (Static) or variable air flow (Dynamic). Especially with units designed with variable speed fans, Dynamic Filter Control enables filter service at the right time.

USER INTERFACE

With SENSO+ EVO ECO control panel which has buttons or EVO TOUCH 7" touch screen control panel is presented. Also there is a web server for observing or controlling the device which is integrated in the card. On the server the settings can be done, also both of the instantaneous operating values and history of operating values are able to be followed.



The web server on SENSO+, as connecting to web, via a computer/tablet or a mobile phone at anywhere in the world, operating situation can be viewed and the access for changing the settings is provided. Without needing a complex web settings, this feature can be activated with a simple web connected cable.

The devices in the different projects, with cumulating all of the devices in the same display, as it is synchronized, operating values, active alarms etc. values as followed and the settings can be changed if it is desired. Especially in the projects within the multiple devices or for servicing the multiple devices in different places this system is provided optionally together with SENSO+ .

COMMUNICATION OPTIONS

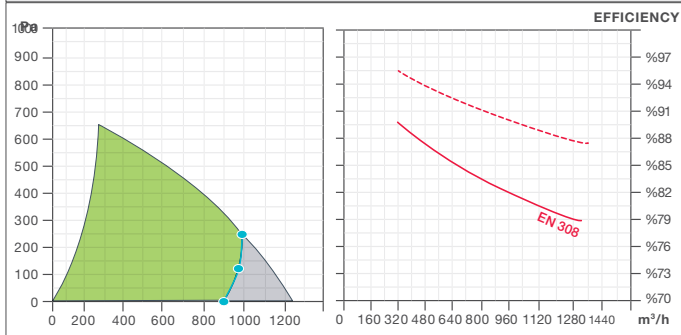
SENSO PLUS control supports all of the universal communication protocols and interacts with other air handling units as well as with other building automation systems. ModBUS, BACnet and EXOline protocols are open as standard and there is also possibility to connect with LONWORKS protocol as an option.



■ EVO 10 C



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	EVO 10 C
Exchanger Type	Aluminum Plate With Counter Flow
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front and Rear surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m³/h)	190
Nominal Flow Rate (m³/h)	1010
Efficiency (EN 308)	82%
Efficiency (-5°C OA, 22°C 50%RH RA)	91%
Weight (kg)	275
According to EN 1886 Case Features	D1/L1/TB2/T2
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

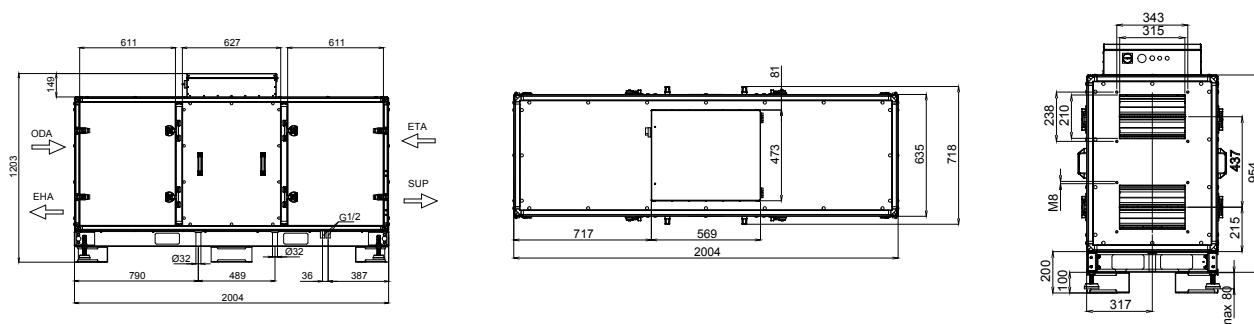
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	2,6
Maksimum Current (A)	8,9

Sound Information (2)

Sound Level at Supply (dBA)	73
Sound Level at Return (dBA)	68
Surrounding Sound 1m. Distance (dBA)	47
Surrounding Sound 3m. Distance (dBA)	38
Surrounding Sound 5m. Distance (dBA)	33

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Standard		
Electric After Heater	Optional	Internal of device	Page 74
Water After Heater	Optional	Internal of device	Page 74
Water Cooler	Optional	External of device	Page 75
Duct Connection Damper	Optional	Page 75	
Outside Protection Sheet	Optional	Page 76	
Fresh Air Spigot	Optional	Page 79	
Exhaust Spigot	Optional	Page 79	
Drainage Pump	-	-	
Bulk Siphon	Optional	Page 76	
Room Control Panel Type1	EVO ECO	Page 76	
Room Control Panel Type2	EVO TOUCH	Page 77	
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional	Page 78	
VOD Sensor CO2	Optional	Page 80	
VOD Sensor RH%	Optional	Page 80	
VOD Sensor VOC	Optional	Page 80	
Signal Converter	Optional	Page 77	
Constant Pressure Kit	Optional	Page 77	

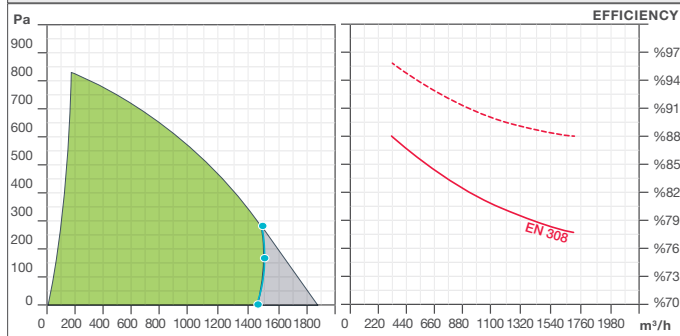
Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 78
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 78

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ EVO 15 C



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	EVO 15 C
Exchanger Type	Aluminum Plate With Counter Flow
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front and Rear surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m³/h)	205
Nominal Flow Rate (m³/h)	1530
Efficiency (EN 308)	82%
Efficiency (-5°C OA, 22°C 50%RH RA)	90%
Weight (kg)	335
According to EN 1886 Case Features	D1/L1/TB2/T2
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

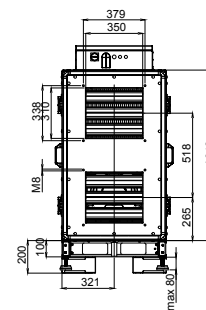
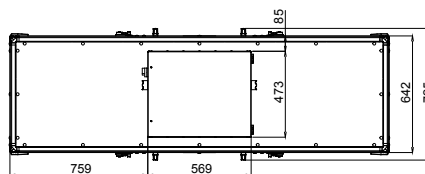
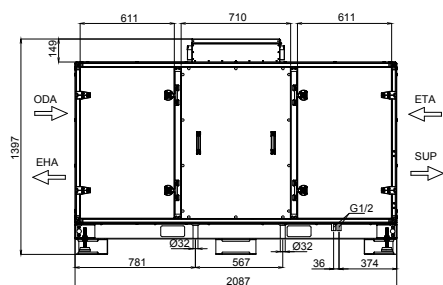
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	3,9
Maksimum Current (A)	13,5

Sound Information (2)

Sound Level at Supply (dBA)	72
Sound Level at Return (dBA)	65
Surrounding Sound 1m. Distance (dBA)	49
Surrounding Sound 3m. Distance (dBA)	40
Surrounding Sound 5m. Distance (dBA)	35

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Standard		
Electric After Heater	Optional	Internal of device	Page 74
Water After Heater	Optional	Internal of device	Page 74
Water Cooler	Optional	External of device	Page 75
Duct Connection Damper	Optional	Page 75	
Outside Protection Sheet	Optional	Page 76	
Fresh Air Spigot	Optional	Page 79	
Exhaust Spigot	Optional	Page 79	
Drainage Pump	-	-	
Bulk Siphon	Optional	Page 76	
Room Control Panel Type1	EVO ECO	Page 76	
Room Control Panel Type2	EVO TOUCH	Page 77	
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional	Page 78	
VOD Sensor CO2	Optional	Page 80	
VOD Sensor RH%	Optional	Page 80	
VOD Sensor VOC	Optional	Page 80	
Signal Converter	Optional	Page 77	
Constant Pressure Kit	Optional	Page 77	

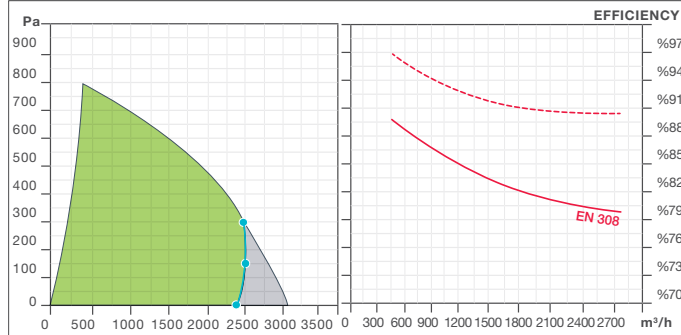
Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 78
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 78

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ EVO 25 C



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	EVO 25 C
Exchanger Type	Aluminum Plate With Counter Flow
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front and Rear surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m³/h)	520
Nominal Flow Rate (m³/h)	2510
Efficiency (EN 308)	81%
Efficiency (-5°C OA, 22°C 50%RH RA)	91%
Weight (kg)	510
According to EN 1886 Case Features	D1/L1/TB2/T2
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

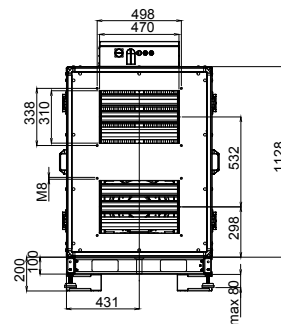
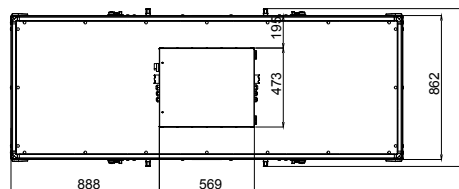
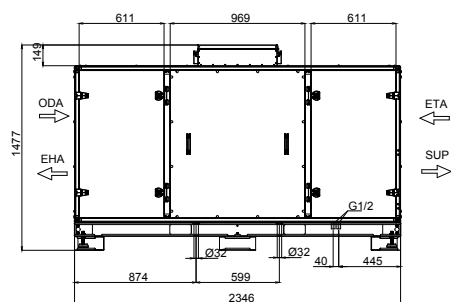
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	6,6
Maksimum Current (A)	22,5

Sound Information (2)

Sound Level at Supply (dBA)	74
Sound Level at Return (dBA)	65
Surrounding Sound 1m. Distance (dBA)	48
Surrounding Sound 3m. Distance (dBA)	38
Surrounding Sound 5m. Distance (dBA)	34

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Standard		
Electric After Heater	Optional	Internal of device	Page 74
Water After Heater	Optional	Internal of device	Page 74
Water Cooler	Optional	External of device	Page 75
Duct Connection Damper	Optional		Page 75
Outside Protection Sheet	Optional		Page 76
Fresh Air Spigot	Optional		Page 79
Exhaust Spigot	Optional		Page 79
Drainage Pump	-	-	
Bulk Siphon	Optional		Page 76
Room Control Panel Type1	EVO ECO		Page 76
Room Control Panel Type2	EVO TOUCH		Page 77
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional		Page 78
VOD Sensor CO2	Optional		Page 80
VOD Sensor RH%	Optional		Page 80
VOD Sensor VOC	Optional		Page 80
Signal Converter	Optional		Page 77
Constant Pressure Kit	Optional		Page 77

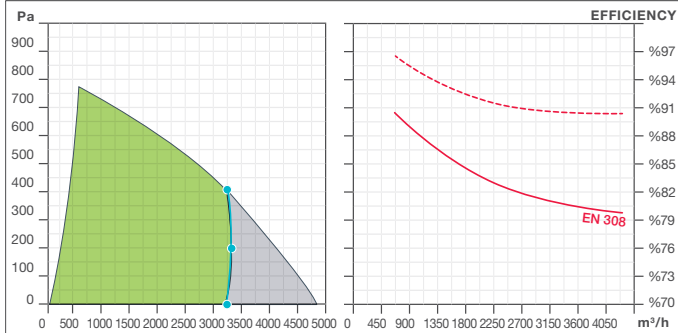
Exhaust Filter Coarse	-
Exhaust Filter ePM10 50%	Standard
Fresh Air Filter Coarse	-
Fresh Air Filter ePM10 50%	Optional
Fresh Air Filter ePM1 55%	Standard
Fresh Air Filter ePM1 80%	Optional

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ EVO 35 C



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	EVO 35 C
Exchanger Type	Aluminum Plate With Counter Flow
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front and Rear surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m³/h)	560
Nominal Flow Rate (m³/h)	3200
Efficiency (EN 308)	81%
Efficiency (-5°C OA, 22°C 50%RH RA)	91%
Weight (kg)	687
According to EN 1886 Case Features	D1/L1/TB2/T2
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

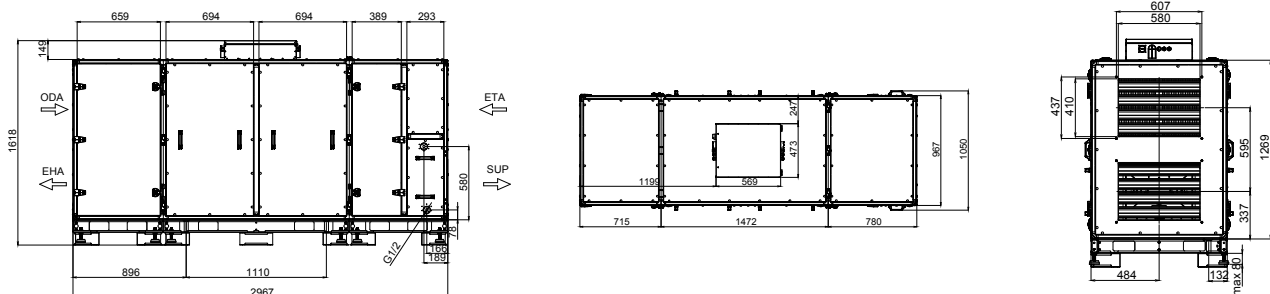
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	9,6
Maksimum Current (A)	32,4

Sound Information (2)

Sound Level at Supply (dBA)	81
Sound Level at Return (dBA)	73
Surrounding Sound 1m. Distance (dBA)	54
Surrounding Sound 3m. Distance (dBA)	45
Surrounding Sound 5m. Distance (dBA)	40

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Standard		
Electric After Heater	Optional	Internal of device	Page 74
Water After Heater	Optional	Internal of device	Page 74
Water Cooler	Optional	External of device	Page 75
Duct Connection Damper	Optional	Page 75	
Outside Protection Sheet	Optional	Page 76	
Fresh Air Spigot	Optional	Page 79	
Exhaust Spigot	Optional	Page 79	
Drainage Pump	-	-	
Bulk Siphon	Optional	Page 76	
Room Control Panel Type1	EVO ECO	Page 76	
Room Control Panel Type2	EVO TOUCH	Page 77	
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional	Page 78	
VOD Sensor CO2	Optional	Page 80	
VOD Sensor RH%	Optional	Page 80	
VOD Sensor VOC	Optional	Page 80	
Signal Converter	Optional	Page 77	
Constant Pressure Kit	Optional	Page 77	

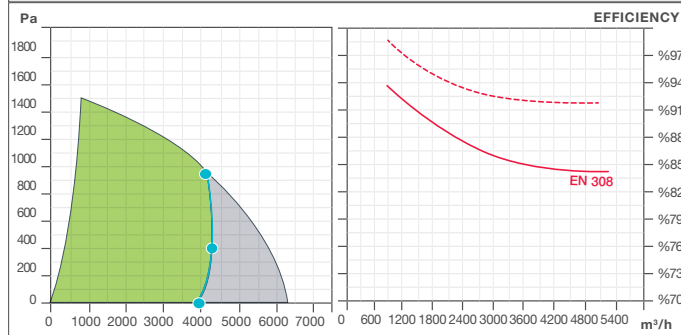
Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 78
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 78

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ EVO 45 C



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	EVO 45 C
Exchanger Type	Aluminum Plate With Counter Flow
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front and Rear surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m³/h)	720
Nominal Flow Rate (m³/h)	4180
Efficiency (EN 308)	84%
Efficiency (-5°C OA, 22°C 50%RH RA)	92%
Weight (kg)	710
According to EN 1886 Case Features	D1/L1/TB2/T2
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

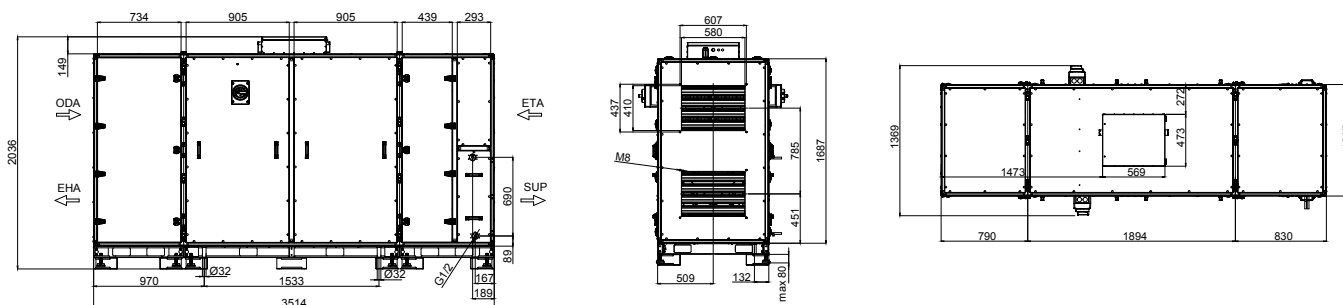
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	12,9
Maksimum Current (A)	44,9

Sound Information (2)

Sound Level at Supply (dBA)	75
Sound Level at Return (dBA)	65
Surrounding Sound 1m. Distance (dBA)	49
Surrounding Sound 3m. Distance (dBA)	40
Surrounding Sound 5m. Distance (dBA)	35

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Standard		
Electric After Heater	Optional	Internal of device	Page 74
Water After Heater	Optional	Internal of device	Page 74
Water Cooler	Optional	External of device	Page 75
Duct Connection Damper	Optional	Page 75	
Outside Protection Sheet	Optional	Page 76	
Fresh Air Spigot	Optional	Page 79	
Exhaust Spigot	Optional	Page 79	
Drainage Pump	-	-	
Bulk Siphon	Optional	Page 76	
Room Control Panel Type1	EVO ECO	Page 76	
Room Control Panel Type2	EVO TOUCH	Page 77	
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional	Page 78	
VOD Sensor CO2	Optional	Page 80	
VOD Sensor RH%	Optional	Page 80	
VOD Sensor VOC	Optional	Page 80	
Signal Converter	Optional	Page 77	
Constant Pressure Kit	Optional	Page 77	

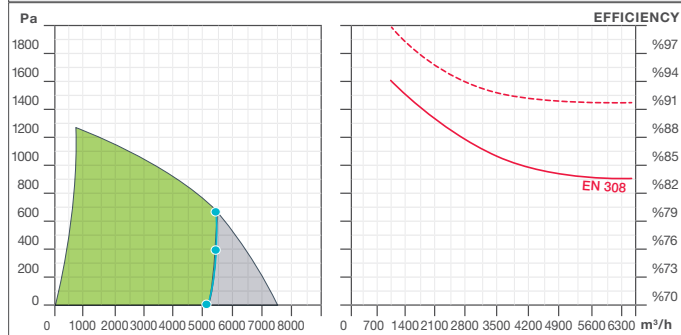
Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 78
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 78

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ EVO 55 C



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	EVO 55 C
Exchanger Type	Aluminum Plate With Counter Flow
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front and Rear surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m³/h)	760
Nominal Flow Rate (m³/h)	5340
Efficiency (EN 308)	84%
Efficiency (-5°C OA, 22°C 50%RH RA)	91%
Weight (kg)	873
According to EN 1886 Case Features	D1/L1/TB2/T2
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

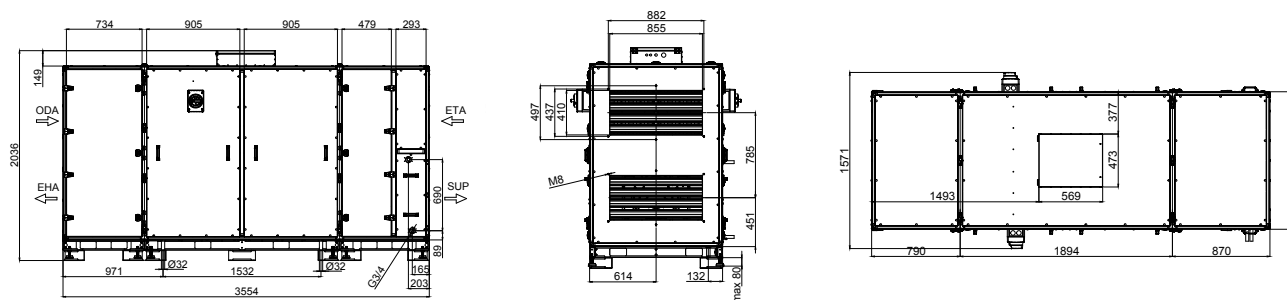
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	17,7
Maksimum Current (A)	58,4

Sound Information (2)

Sound Level at Supply (dBA)	78
Sound Level at Return (dBA)	68
Surrounding Sound 1m. Distance (dBA)	52
Surrounding Sound 3m. Distance (dBA)	43
Surrounding Sound 5m. Distance (dBA)	38

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Standard		
Electric After Heater	Optional	Internal of device	Page 74
Water After Heater	Optional	Internal of device	Page 74
Water Cooler	Optional	External of device	Page 75
Duct Connection Damper	Optional	Page 75	
Outside Protection Sheet	Optional	Page 76	
Fresh Air Spigot	Optional	Page 79	
Exhaust Spigot	Optional	Page 79	
Drainage Pump	-	-	
Bulk Siphon	Optional	Page 76	
Room Control Panel Type1	EVO ECO	Page 76	
Room Control Panel Type2	EVO TOUCH	Page 77	
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional	Page 78	
VOD Sensor CO2	Optional	Page 80	
VOD Sensor RH%	Optional	Page 80	
VOD Sensor VOC	Optional	Page 80	
Signal Converter	Optional	Page 77	
Constant Pressure Kit	Optional	Page 77	

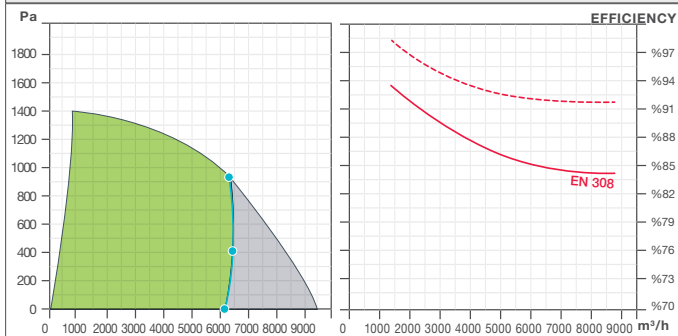
Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 78
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 78

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ EVO 70 C



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	EVO 70 C
Exchanger Type	Aluminum Plate With Counter Flow
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front and Rear surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m³/h)	840
Nominal Flow Rate (m³/h)	6500
Efficiency (EN 308)	84%
Efficiency (-5°C OA, 22°C 50%RH RA)	91%
Weight (kg)	1080
According to EN 1886 Case Features	D1/L1/TB2/T2
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

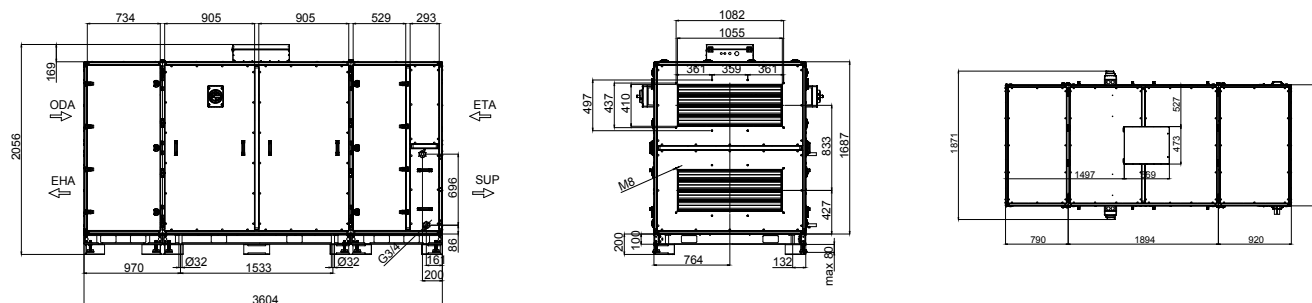
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	21
Maksimum Current (A)	71,6

Sound Information (2)

Sound Level at Supply (dBA)	80
Sound Level at Return (dBA)	69
Surrounding Sound 1m. Distance (dBA)	54
Surrounding Sound 3m. Distance (dBA)	45
Surrounding Sound 5m. Distance (dBA)	40

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Standard		
Electric After Heater	Optional	Internal of device	Page 74
Water After Heater	Optional	Internal of device	Page 74
Water Cooler	Optional	External of device	Page 75
Duct Connection Damper	Optional	Page 75	
Outside Protection Sheet	Optional	Page 76	
Fresh Air Spigot	Optional	Page 79	
Exhaust Spigot	Optional	Page 79	
Drainage Pump	-	-	
Bulk Siphon	Optional	Page 76	
Room Control Panel Type1	EVO ECO	Page 76	
Room Control Panel Type2	EVO TOUCH	Page 77	
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional	Page 78	
VOD Sensor CO2	Optional	Page 80	
VOD Sensor RH%	Optional	Page 80	
VOD Sensor VOC	Optional	Page 80	
Signal Converter	Optional	Page 77	
Constant Pressure Kit	Optional	Page 77	

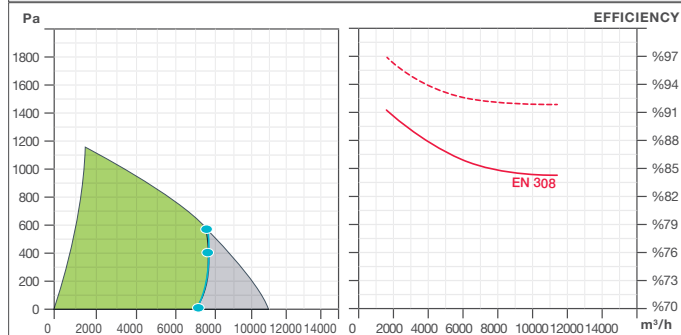
Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 78
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 78

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ EVO 85 C



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	EVO 85 C
Exchanger Type	Aluminum Plate With Counter Flow
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front and Rear surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m³/h)	1640
Nominal Flow Rate (m³/h)	8280
Efficiency (EN 308)	83%
Efficiency (-5°C OA, 22°C 50%RH RA)	91%
Weight (kg)	1260
According to EN 1886 Case Features	D1/L1/TB2/T2
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

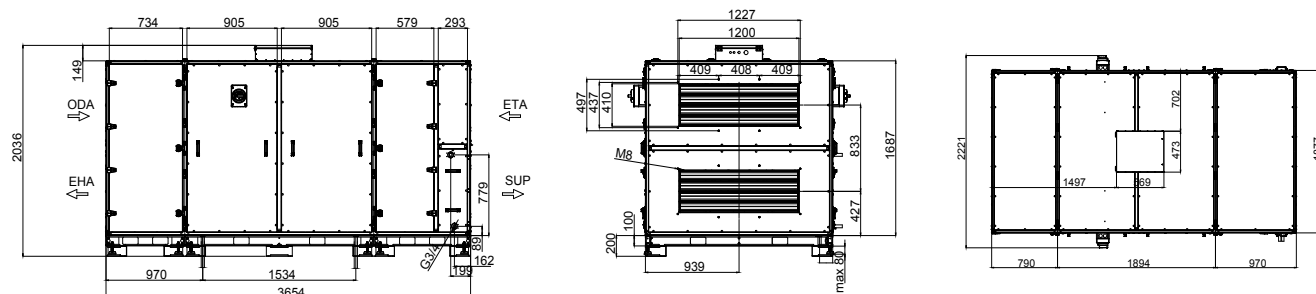
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	22
Maksimum Current (A)	74,2

Sound Information (2)

Sound Level at Supply (dBA)	79
Sound Level at Return (dBA)	70
Surrounding Sound 1m. Distance (dBA)	54
Surrounding Sound 3m. Distance (dBA)	44
Surrounding Sound 5m. Distance (dBA)	40

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Standard		
Electric After Heater	Optional	Internal of device	Page 74
Water After Heater	Optional	Internal of device	Page 74
Water Cooler	Optional	External of device	Page 75
Duct Connection Damper	Optional		Page 75
Outside Protection Sheet	Optional		Page 76
Fresh Air Spigot	Optional		Page 79
Exhaust Spigot	Optional		Page 79
Drainage Pump	-	-	
Bulk Siphon	Optional		Page 76
Room Control Panel Type1	EVO ECO		Page 76
Room Control Panel Type2	EVO TOUCH		Page 77
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional		Page 78
VOD Sensor CO2	Optional		Page 80
VOD Sensor RH%	Optional		Page 80
VOD Sensor VOC	Optional		Page 80
Signal Converter	Optional		Page 77
Constant Pressure Kit	Optional		Page 77

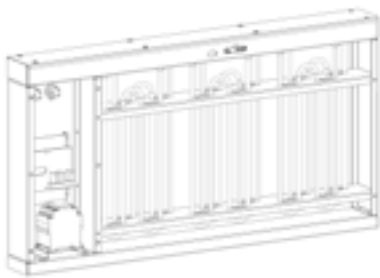
Exhaust Filter Coarse	-
Exhaust Filter ePM10 50%	Standard
Fresh Air Filter Coarse	-
Fresh Air Filter ePM10 50%	Optional
Fresh Air Filter ePM1 55%	Standard
Fresh Air Filter ePM1 80%	Optional

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

ACCESSORIES

■ ELECTRICAL AFTER HEATER

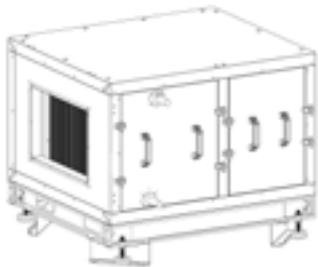
Used for increasing the supply air temperature. Operates automatically according to desired room temperature or desired supply temperature. Controlled as a single step with SENSO control. Provides controllable energy efficiency with SENSO+ control via proportional signal.



Model	Heater Capacity (kW)	Current (A)	Control
EC-POEH 1000	2,6	3,8	Oransal
EC-POEH 1500	3,9	5,7	Oransal
EC-POEH 2500	6,6	9,6	Oransal
EC-POEH 3500	9,6	14,0	Oransal
EC-POEH 4500	12,9	18,9	Oransal
EC-POEH 5500	17,7	25,9	Oransal
EC-POEH 7000	21	30,7	Oransal
EC-POEH 8500	22	32,2	Oransal

■ WATER AFTER HEATER

Used for increasing the supply air temperature. Operates automatically according to desired room temperature or desired supply temperature. Controlled as a single step with SENSO control. Provides controllable energy efficiency with SENSO+ control via proportional signal.



Model	Heater Capacity (kW)	Water Regime	Control
EC-KR 1000	3	7-12	Oransal
EC-KR 1500	4,5	7-12	Oransal
EC-KR 2500	6	7-12	Oransal
EC-KR 3500	9	7-12	Oransal
EC-KR 4500	13,5	7-12	Oransal
EC-KR 5500	13,5	7-12	Oransal
EC-KR 7000	18	7-12	Oransal
EC-KR 8500	21	7-12	Oransal

■ WATER COOLING

Used for cooling inside, water type cooling batteries are existed as accesories. With SENSO+ control, controlled proportionally according to desired supply temperature or desired room temperature.



Model	Heater Capacity (kW)	Water Regime	Control
EC-POWH 1000	2,6	80-60	Oransal
EC-POWH 1500	3,9	80-60	Oransal
EC-POWH 2500	6,6	80-60	Oransal
EC-POWH 3500	9,6	80-60	Oransal
EC-POWH 4500	12,9	80-60	Oransal
EC-POWH 5500	17,7	80-60	Oransal
EC-POWH 7000	21	80-60	Oransal
EC-POWH 8500	22	80-60	Oransal

■ Duct Connection Damper

The motor operated damper, as turned itself off when the devices is turned off, prevent the leakage can be occured via air duct. Has the Class 3 impermeability as a standard.

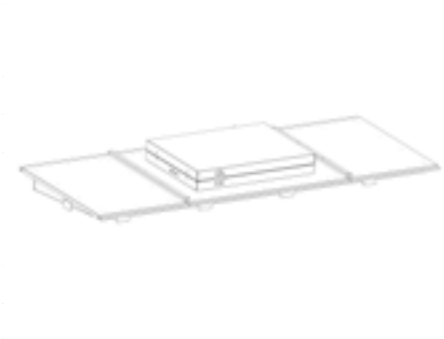


Model	Operation Time	Energy Supply
EC-DAMP 1000	40...75 s	24C DC , spring return
EC-DAMP 1500	40...75 s	24C DC ,spring return
EC-DAMP 2500	40...75 s	24C DC , spring return
EC-DAMP 3500	40...75 s	24C DC , spring return
EC-DAMP 4500	40...75 s	24C DC , spring return
EC-DAMP 5500	40...75 s	24C DC , spring return
EC-DAMP 7000	40...75 s	24C DC ,spring return
EC-DAMP 8500	40...75 s	24C DC , spring return

ACCESSORIES

■ Outdoor Protection Sheet

If the devices are used outdoors, they are used for water insulation. The devices thus achieve the insulation class IP 54.

	Model
	EC-WPC 1000
	EC-WPC 1500
	EC-WPC 2500
	EC-WPC 3500
	EC-WPC 4500
	EC-WPC 5500
	EC-WPC 7000
	EC-WPC 8500

■ BALL SIPHON

Used for disposal of water In the heat recovery sections, the result of condensation at the exhaust air or the result of condensation at the cooking batteries. Can operate in both positive negative pressure.

	Model
	SIPH

■ EVO-ECO

Is a user panel used as a user interface in the devices has the SENSO+ control card. Connected to control panel via 4x0.75 cable or RJ-12 Jack.

	Model
	EVO-ECO

■EVO-TOUCH

Is a 7" sized touch type user panel used as a user interface. Connected to control panel via 4x0.75 cable or RJ-12 Jack.



Model
EVO-TOUCH

■Constant Pressure Kit

Used for serving the purpose of ventilation system's varying flow rate. SENSO+, creates the signal which can change EC fan's fan speed as measuring static pressure value consistently, as comparing with defined value to the system. Turning up or down the VAV damper which are different volume in duct system, serve the purpose of static pressure out of device as a result of higher or lower values than projected values with constant pressure control. In the fan operating characteristic, extreme volume sound occurred in the ducts and flow rate in different volumes are prevented.



Model
SENSO-CAP

■Signal Converter

SENSO+ devices as make an access that connect up to 3 VOD sensors, both measure gas and different volume gases, change the capacity according to these measurements of air conditioning plants. Via Signal Converter, in 3 different types, for each type up to 6 measurements or obtained values from 18 different measurement volumes are used for controlling air conditioning plant is provided.

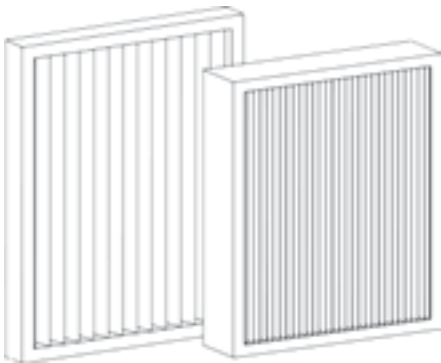


Model
SENSO+ SK

ACCESSORIES

■ FILTER

In the projects, it is designed as a standard for more sensitive than the present filter's filtering



Model	Code
Taze Hava filtresi ePM10 50%	EC10FAEPM10-50
	EC15FAEPM10-50
	EC25FAEPM10-50
	EC35FAEPM10-50
	EC45FAEPM10-50
	EC55FAEPM10-50
	EC70FAEPM10-50
	EC85FAEPM10-50
Taze Hava filtresi ePM1 80%	EC10FAEPM1-80
	EC15FAEPM1-80
	EC25FAEPM1-80
	EC35FAEPM1-80
	EC45FAEPM1-80
	EC55FAEPM1-80
	EC70FAEPM1-80
	EC85FAEPM1-80

■ CLOUD CONNECTION

The web server on SENSO+, as connecting to web, via a computer/tablet or a mobile phone at anywhere in the world, operating situation can be viewed and the access for changing the settings is provided. Without needing a complex web settings, this feature can be activated with a simple web connected cable.



Model
SENSO+ CLOUD

■ **Fresh Air Spigot :**

Is used as connected to fresh air duct of devices installed at the areas open to atmosphere and prevent the water to enter in device by drift eliminator on the device.



Model
EC-FAS 1000
EC-FAS 1500
EC-FAS 2500
EC-FAS 3500
EC-FAS 4500
EC-FAS 5500
EC-FAS 7000
EC-FAS 8500

■ **Exhaust Air Spigot**

Is used as connected to exhaust air duct of devices at the areas open to atmosphere and prevent the water to enter in device.



Model
EC-FAS 1000
EC-FAS 1500
EC-FAS 2500
EC-FAS 3500
EC-FAS 4500
EC-FAS 5500
EC-FAS 7000
EC-FAS 8500

ACCESSORIES

■ VOD

Located in inside of critical volume or return duct, the optional air quality sensor (VOC or CO2) or relative humidity sensor (RH%) consistently measures the air quality or relative humidity. This value, as being compared with set value which is arranged on control, creates operating which changes EC fan's fan speed. If the air in room is lower than desired air quality or the relative humidity is higher than the desired value, the fan speed is increased so, fresh air amount increased, if the air in room is higher than desired air quality or the relative humidity is lower than the desired value, the fan speed is decreased so, fresh air amount decreased; Thus, a significant energy save is provided at the heating or cooling loads caused by the fresh air.



Model	Measurement	Installation Position
VOD-VOC-RM	VOC	Room
VOD-VOC-DUCT	VOC	Channel
VOD-CO2-DUCT	CO2	Room
VOD-CO2-RM	CO2	Channel
VOD-RH-DUCT	RH%	Room
VOD-RH-RM	RH%	Channel
PS-MW	-	-

NOTES

EVO-R units are used in environments where fresh air demand is high. These units are energy efficient, silent, fully automated with plug-and-play logic. Their compact structure allow them to be placed in mechanical spaces inside the buildings and also can be used in open environments such as roofs.

EVO-R Devices Significant Features

- 9 different models between 800-15000 m3/h flow rate scale,
- Very high aerodynamic efficiency via developed fan/motor design,
- EUROVENT certificated rotor exchanger up to 84% thermal and humidity efficiency (EN308),
- AZ150 coated internal/powder coated external sheet which has C4 corrosion resistance,
- High heat insulation and low internal leaks via special case design,
- Low internal pressure loss,
- SENSO+ automation system access to Cloud,
- Easy access to mechanical volumes in building via modular case structure.



EVO-R

COMPACT AIR HANDLING UNITS WITH
ROTARY HEAT EXCHANGER





CASING

EVO Compact Air Handling Unit's casings are engineered with today's standards, according to future needs. By eliminating the defects of traditional casings, high thermal and acoustical performance have been achieved, mechanical strength and corrosion resistance have been increased. As a result, a compact body that provides easy operation and service has emerged. Performance values were calculated prior to the actual product testing, using modern engineering methods developed by 3D computerized design and analysis during design stage. Subsequently, these values were verified with tests made in accordance with relevant standards in our modern testing laboratory.

the formation of thermal bridging are made up of sheet metals and sealing gaskets that are fixed on a specially designed PVC frame. Since the inner and outer panel sheets are not connected, thermal, leakage from metal surfaces is prevented. With the help of the PVC frame used, continuous and homogeneous insulation was obtained on the panels. With this structure on the sides of the panel, the thickness remain the same for each surface. The air gap in the PVC profile increases the thermal resistance of the profile and reduces the total heat transfer coefficient.

EXCHANGER

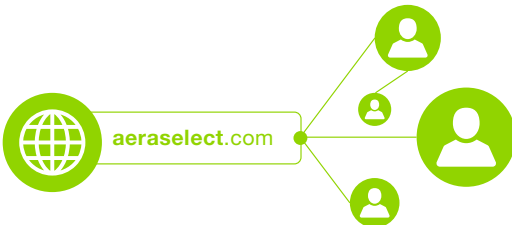
EVO-R Compact Air Conditioning Plants are produced with new materials and producing technologies. Heat transfer efficiency is reaching up to 84% in the heating and cooling seasons via high technology.

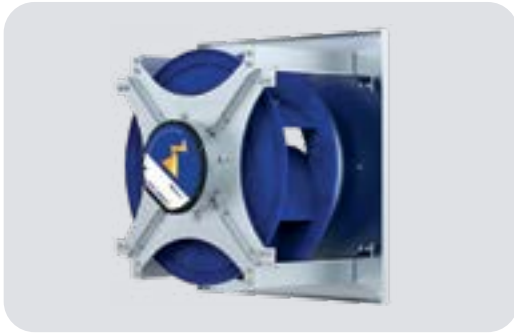
Steo motor which is used as rotor driver is suitable for automation, changes the speed according to heating and cooling needs so optimum energy recovery is provided. The step motor in use provides 55% energy saving compared with AC motors. The part in the rotor transfers the heat is called as matrix and occurs as high resistant Aluminium sheets shaped undulated rolling on each other. If the distance between the turns (vane distance) increase, transferring heat is decreasing with pressure drop, if the vane distance decrease, transferring heat is increasing with rotor pressure drop. For EVO-R Compact Air

Conditioning Plants condensating type rotor which has 1,6 mm vane distance as a standard is used. For higher heat transferring need 1,4 mm vane distance rotors or for low pressure drop need 1,8, 2,0 or 2,5 mm vane distance rotors can be used. Rotors can be produced as Condensating or Sorption type according to meet the purpose that different humidity transferring needs.

SELECTION SOFTWARE (aerselect.com)

There is selection software to calculate the EVO-r devices' performance results at the desired flow rates in the project. With the selection software from the address www.aerselect.com the devices can be selected easily suitable for the heating and cooling need with desired flow rate and the duct pressure. Devices automation and accessories can be defined via the software so, the device configuration is able to be done. Selection software can obtain the thermodynamic values, device measurements, ECO-DESIGN report and BIM file belongs to device as a print.





FAN

EVO Compact Air Handling Units are designed using plug type EC fans with high aerodynamic efficiency, low noise levels and low energy consumption. All fans meet ECO-DESIGN criteria set by the Energy Commission of the European Union and are compatible with ERP 2015. Plug fans with EC motors with the help of SENSO PLUS control system, can be driven steplessly with an indoor air quality sensor or with constant volume. Fans are ready to provide constant pressure in VAV systems with the VAV kit supplied as accessory. Plug type fans with EC motors are AC-powered fans with DC motor technology. The DC motor provides high electrical efficiency and can be connected to the AC mains with the converter located on them. It is perfectly matched to the high-tech electronic components used and magnetic noise transmitted to the network is prevented. EC motors communicate with the SENSO PLUS control system via Modbus.

This reduces the number of in-line cabling and provides more information to the user and ensures optimum operating point is used in the unit. The computerized analysis of the fan blades has made it possible to optimize the aerodynamic efficiency and reduce the sound levels. The back plate of the fan impeller has been redesigned for a linear air flow. The EC motors used perform well beyond today's efficiency requirements and all motors comply with the IE4 energy efficiency class.



FILTER

EVO-R devices, at the fresh air side ePM1 55% (F7) class, at the exhaust air side ePM10 50% (M5) class filters are comprised as a standard. By these high efficient filters as they are catching 90% of dust particles which have up to 0,4 μm radius, room air quality is increased. Filters have low starting pressure drop values because of having both their high efficiencies and increased surface area. In order to observe filter pollution differential pressure transmitters are applied at fresh air and exhaust air filters. Thus, as the filter's pressure drop is followed instantly, the used is acknowledged. For different flow rates, as different pressure drops are defined, the dynamic filter alarm can be created by SENSO PLUS. In the fresh air side of devices optionally ePM1 80% (F9) filter can be used.

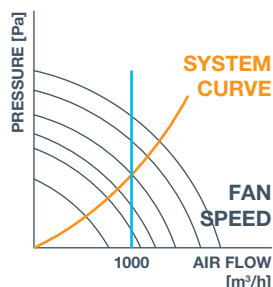


BIM FILES

BIM files which belong to EVO-R devices are uploaded from the address www.aerabim.com at the revit software can be used automatically. In the same way, with Magiccloud software or its plug-in it is possible to reach BIM files.

SENSO+

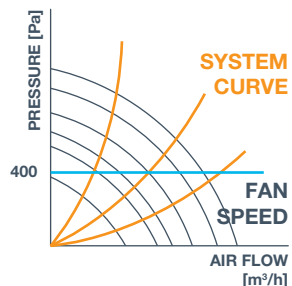
The advanced control system SENSO PLUS in EVO-C Wheel Units, provides the most efficient control of all components which can be installed internally and as external accessories, ensuring the desired airflow conditions.



Constant Air Volume

To meet the desired constant airflow requirement in the EVO-C Handling Units, the SENSO PLUS control measures the air pressure drop in the suction ports of the fans and compares the air flow with the set value to produce a working signal that will change the EC fan fan speed.

Contamination of the filters can be controlled by static flow control within the fan operating curve, to the static pressure requirements of the unit which result in higher or lower than the project values.



Constant Air Pressure

In EVO-C Units, constant pressure control is used to meet the variable airflow requirement of the air duct system. The SENSO PLUS control generates a working signal that will change the EC fan speed by continuously measuring the static pressure created in the supply air duct and comparing it with the value defined in the system. When a VAV damper opens or closes, higher or lower external static pressure needs can be met with constant pressure control within the fans operating curve. This way extreme noise in the ducts, unbalanced airflow distribution in different volumes is prevented.

ROTARY HEAT EXCHANGER CONTROL

In EVO R air handling units, rotary heat recovery exchanger is produced with a variable revolution rotor drive with SENSO PLUS control. By controlling the supply air temperature, the rotor revolution is automatically adjusted according to the required heat recovery. If the outside air conditions are appropriate, the rotor is stopped and free cooling is performed. An alarm signal is sent and the user is warned by the sensor attached to the device if the rotor does not rotate due to any malfunction. If the rotor is not spinning for 30 minutes due to suitable outdoor conditions, rotor will turn for 20 seconds at 12 rpm for automatic cleaning.

HUMIDITY CONTROL EQUIPMENT

Humidity control equipments are used to raise or lower the humidity of the supply air. With the SENSO PLUS control, the humidifier / dehumidifiers can be controlled to bring the supply air to the desired humidity value.

The SENSO PLUS control also provides system control besides equipment control, which means that the devices can be operated with the Yearly Timer Function according to the working periods: Daily, Weekly, Monthly or Yearly. In the Timer Function, values such as weekly working days, vacation times, daylight savings time can be defined and reported retrospectively.

Besides, the Support Function which is used to prevent the undesired conditions from occurring indoors even when the device is not working. The indoor temperature from falling below or exceeding a certain value even during non-working hours is ensured.

COOLING COIL

Externally mounted duct-type water cooling coils are used for such purposes as lowering the blowing temperature and dehumidifying the air in the units. It can be driven either proportionally or by on / off method.

Heating Coil

Heating coils are used for increasing the supply air temperature and for bringing the supply air to the desired temperature after dehumidifying process. Hot water coils can be driven by proportional control via 2 or 3 way valves. With the SENSO PLUS control, frost protection mechanism is available as standard to prevent the temperature of the supply water from reaching freezing conditions in extreme cold climates. If the return water temperature falls below a certain value set on the control, the heating valve is switched to the 100% open position and a run signal is sent to the heating water circulation pump. If the temperature still does not rise to the desired value, the device is stopped and the user is given a freeze alarm.

DX COIL

Externally mounted duct type DX batteries are used for purposes such as lowering the supply air temperature, dehumidifying process and bringing the blown air to the desired temperature after dehumidification. It can be step controlled with on / off method, maximum 8 step setting is available.

Indoor Air Quality Control

The air quality sensor or the CO2 sensor, which is placed in the critical volume or return channel in the interior, continuously measures the air quality. This value generates a signal that will change the EC fan speed by comparing it to the set point on the controller. If the indoor air quality is lower than the desired value, the fan speed and thus the fresh air amount is increased; if the indoor air quality is higher than the desired indoor air quality, the fan speed and fresh air speed are decreased; Energy saving is achieved in considerable amounts in heating or cooling loads caused by fresh air.

FILTER POLLUTION CHECK

The pressure drops of the filters used to clean the air, can be controlled by SENSO PLUS control. Users are notified about the filter cleaning and replacement intervals. Pressure drop control can be made according to a constant pressure drop (Static) or variable air flow (Dynamic). Especially with units designed with variable speed fans, Dynamic Filter Control enables filter service at the right time.

USER INTERFACE

With SENSO+ EVO ECO control panel which has buttons or EVO TOUCH 7" touch screen control panel is presented. Also there is a web server for observing or controlling the device which is integrated in the card. On the server the settings can be done, also both of the instantaneous operating values and history of operating values are able to be followed.



The web server on SENSO+, as connecting to web, via a computer/tablet or a mobile phone at anywhere in the world, operating situation can be viewed and the access for changing the settings is provided. Without needing a complex web settings, this feature can be activated with a simple web connected cable.

The devices in the different projects, with cumulating all of the devices in the same display, as it is synchronized, operating values, active alarms etc. values as followed and the settings can be changed if it is desired. Especially in the projects within the multiple devices or for servicing the multiple devices in different places this system is provided optionally together with SENSO+.

COMMUNICATION OPTIONS

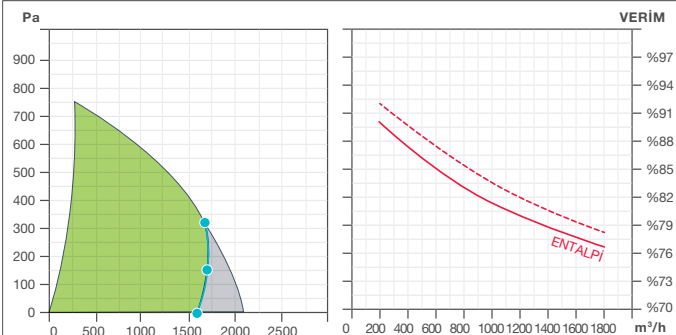
SENSO PLUS control supports all of the universal communication protocols and interacts with other air handling units as well as with other building automation systems. ModBUS, BACnet and EXOline protocols are open as standard and there is also possibility to connect with LONWORKS protocol as an option.



■ EVO-R (S) 15



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	EVO-R (S) 15
Exchanger Type	Aluminum/Adsorption Rotor ⁽⁵⁾
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front and Rear surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m³/h)	260
Nominal Flow Rate (m³/h)	1720
Efficiency (EN 308)	81%
Efficiency (-5°C OA, 22°C 50%RH RA)	83%
Verim, Nem Transfer Verimi	83%
According to EN 1886 Case Features	D1/L1/TB2/T2
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

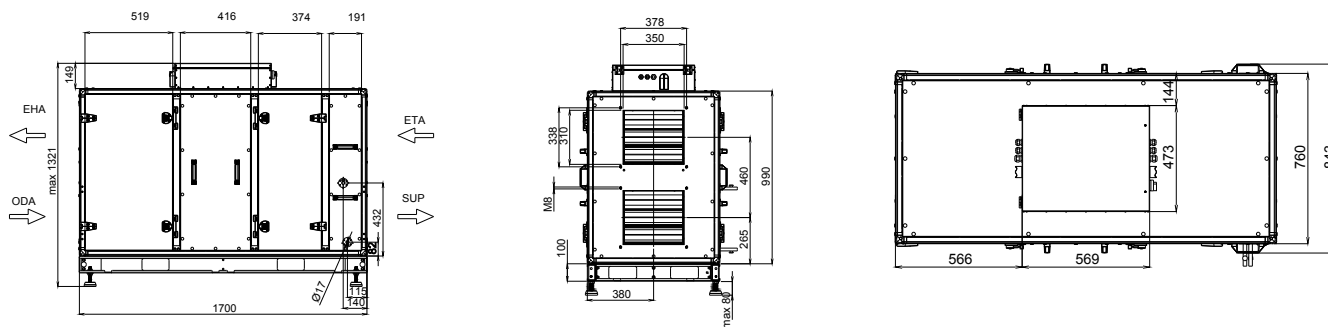
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	0,9
Maksimum Current (A)	5,6

Sound Information (2)

Sound Level at Supply (dBA)	72
Sound Level at Return (dBA)	65
Surrounding Sound 1m. Distance (dBA)	48
Surrounding Sound 3m. Distance (dBA)	38
Surrounding Sound 5m. Distance (dBA)	34

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	External of device	Page 106
Electric After Heater	Optional	Internal of device	Page 06
Water After Heater	Optional	Internal of device	Page 107
Water Cooler	Optional	External of device	Page 107
Duct Connection Damper	Optional		Page 108
Outside Protection Sheet	Optional		Page 108
Fresh Air Spigot	Optional		Page 109
Exhaust Spigot	Optional		Page 109
Drainage Pump	Optional		Page 112
Bulk Siphon	Optional		Page 112
Room Control Panel Type1	EVO ECO		Page 112
Room Control Panel Type2	EVO TOUCH		Page 113
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional		Page 111
VOD Sensor CO2	Optional		Page 110
VOD Sensor RH%	Optional		Page 110
VOD Sensor VOC	Optional		Page 110
Signal Converter	Optional		Page 111
Constant Pressure Kit	Optional		Page 111

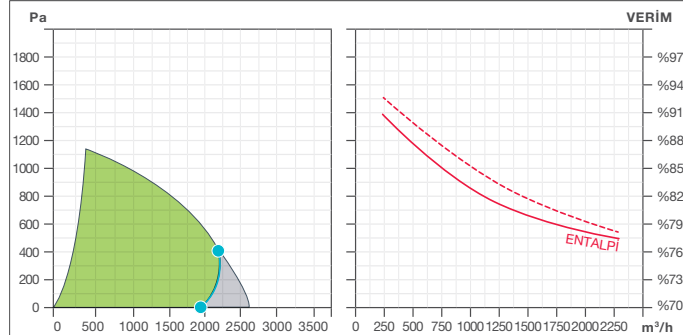
Exhaust Filter Coarse	-
Exhaust Filter ePM10 50%	Standard
Fresh Air Filter Coarse	-
Fresh Air Filter ePM10 50%	Optional
Fresh Air Filter ePM1 55%	Standard
Fresh Air Filter ePM1 80%	Optional

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ EVO-R (S) 20



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	EVO-R (S) 20
Exchanger Type	Aluminum/Adsorption Rotor ⁽⁵⁾
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front and Rear surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m³/h)	310
Nominal Flow Rate (m³/h)	2210
Efficiency (EN 308)	80%
Efficiency (-5°C OA, 22°C 50%RH RA)	82%
Verim, Nem Transfer Verimi	82%
According to EN 1886 Case Features	D1/L1/TB2/T2
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

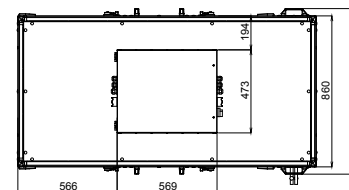
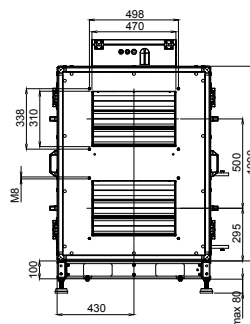
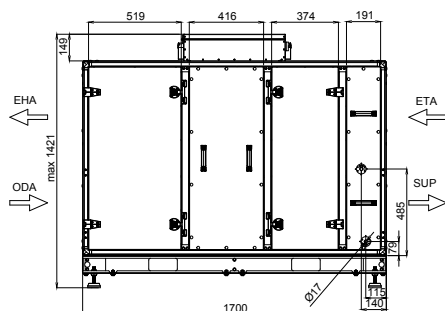
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	1
Maksimum Current (A)	4,4

Sound Information (2)

Sound Level at Supply (dBA)	74
Sound Level at Return (dBA)	65
Surrounding Sound 1m. Distance (dBA)	47
Surrounding Sound 3m. Distance (dBA)	38
Surrounding Sound 5m. Distance (dBA)	33

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	External of device	Page 106
Electric After Heater	Optional	Internal of device	Page 06
Water After Heater	Optional	Internal of device	Page 107
Water Cooler	Optional	External of device	Page 107
Duct Connection Damper	Optional	Page 108	
Outside Protection Sheet	Optional	Page 108	
Fresh Air Spigot	Optional	Page 109	
Exhaust Spigot	Optional	Page 109	
Drainage Pump	Optional	Page 112	
Bulk Siphon	Optional	Page 112	
Room Control Panel Type1	EVO ECO	Page 112	
Room Control Panel Type2	EVO TOUCH	Page 113	
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional	Page 111	
VOD Sensor CO2	Optional	Page 110	
VOD Sensor RH%	Optional	Page 110	
VOD Sensor VOC	Optional	Page 110	
Signal Converter	Optional	Page 111	
Constant Pressure Kit	Optional	Page 111	

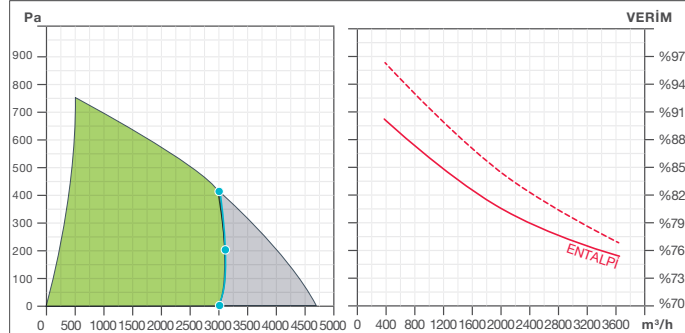
Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 110
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 110

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ EVO-R (S) 30



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	EVO-R (S) 30
Exchanger Type	Aluminum/Adsorption Rotor ⁽⁵⁾
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front and Rear surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m³/h)	480
Nominal Flow Rate (m³/h)	3160
Efficiency (EN 308)	78%
Efficiency (-5°C OA, 22°C 50%RH RA)	80%
Verim, Nem Transfer Verimi	80%
According to EN 1886 Case Features	D1/L1/TB2/T2
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

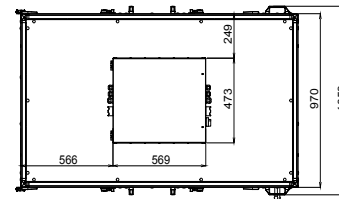
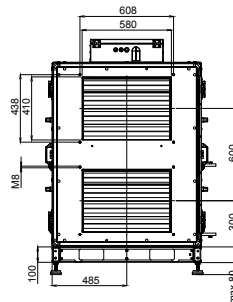
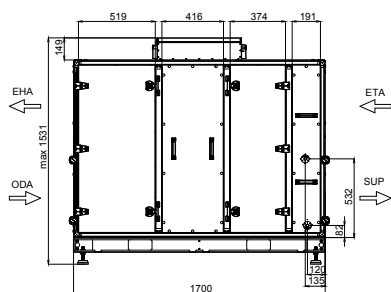
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	2
Maksimum Current (A)	3,3

Sound Information (2)

Sound Level at Supply (dBA)	82
Sound Level at Return (dBA)	74
Surrounding Sound 1m. Distance (dBA)	56
Surrounding Sound 3m. Distance (dBA)	46
Surrounding Sound 5m. Distance (dBA)	42

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	External of device	Page 106
Electric After Heater	Optional	Internal of device	Page 06
Water After Heater	Optional	Internal of device	Page 107
Water Cooler	Optional	External of device	Page 107
Duct Connection Damper	Optional		Page 108
Outside Protection Sheet	Optional		Page 108
Fresh Air Spigot	Optional		Page 109
Exhaust Spigot	Optional		Page 109
Drainage Pump	Optional		Page 112
Bulk Siphon	Optional		Page 112
Room Control Panel Type1	EVO ECO		Page 112
Room Control Panel Type2	EVO TOUCH		Page 113
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional		Page 111
VOD Sensor CO2	Optional		Page 110
VOD Sensor RH%	Optional		Page 110
VOD Sensor VOC	Optional		Page 110
Signal Converter	Optional		Page 111
Constant Pressure Kit	Optional		Page 111

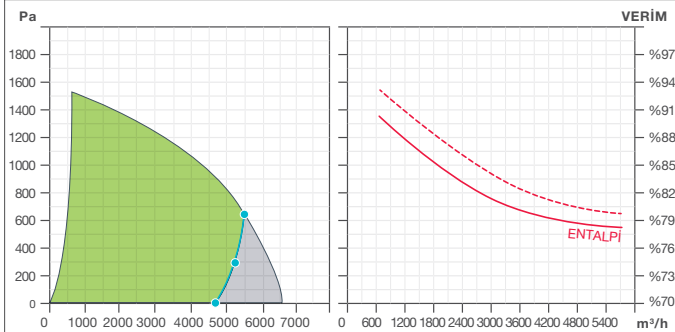
Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 110
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 110

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ EVO-R (S) 50



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	EVO-R (S) 50
Exchanger Type	Aluminum/Adsorption Rotor ⁽⁵⁾
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front and Rear surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m³/h)	690
Nominal Flow Rate (m³/h)	5180
Efficiency (EN 308)	79%
Efficiency (-5°C OA, 22°C 50%RH RA)	81%
Verim, Nem Transfer Verimi	81%
According to EN 1886 Case Features	D1/L1/TB2/T2
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

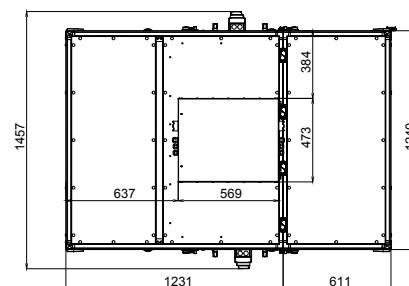
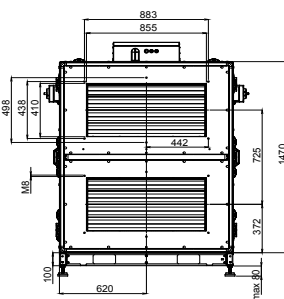
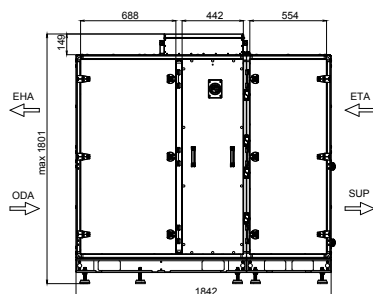
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	3,4
Maksimum Current (A)	5,2

Sound Information (2)

Sound Level at Supply (dBA)	80
Sound Level at Return (dBA)	70
Surrounding Sound 1m. Distance (dBA)	54
Surrounding Sound 3m. Distance (dBA)	45
Surrounding Sound 5m. Distance (dBA)	40

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	External of device	Page 106
Electric After Heater	Optional	Internal of device	Page 06
Water After Heater	Optional	Internal of device	Page 107
Water Cooler	Optional	External of device	Page 107
Duct Connection Damper	Optional	Page 108	
Outside Protection Sheet	Optional	Page 108	
Fresh Air Spigot	Optional	Page 109	
Exhaust Spigot	Optional	Page 109	
Drainage Pump	Optional	Page 112	
Bulk Siphon	Optional	Page 112	
Room Control Panel Type1	EVO ECO	Page 112	
Room Control Panel Type2	EVO TOUCH	Page 113	
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional	Page 111	
VOD Sensor CO2	Optional	Page 110	
VOD Sensor RH%	Optional	Page 110	
VOD Sensor VOC	Optional	Page 110	
Signal Converter	Optional	Page 111	
Constant Pressure Kit	Optional	Page 111	

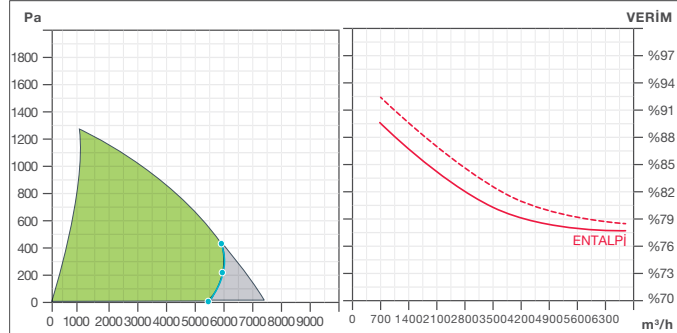
Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 110
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 110

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ EVO-R (S) 60



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	EVO-R (S) 60
Exchanger Type	Aluminum/Adsorption Rotor ⁽⁵⁾
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front and Rear surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m³/h)	840
Nominal Flow Rate (m³/h)	6120
Efficiency (EN 308)	80%
Efficiency (-5°C OA, 22°C 50%RH RA)	82%
Verim, Nem Transfer Verimi	82%
According to EN 1886 Case Features	D1/L1/TB2/T2
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

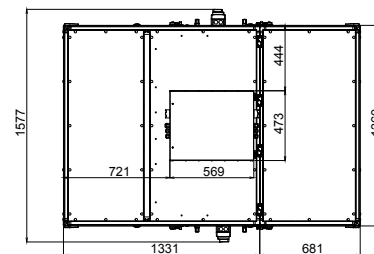
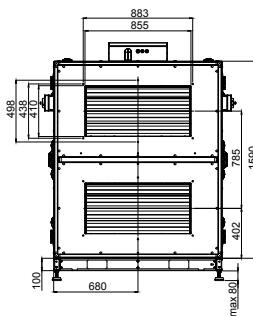
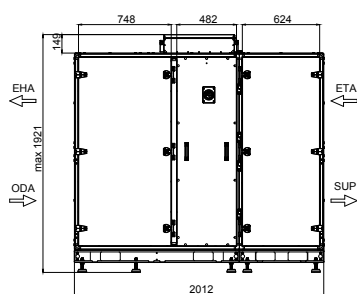
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	3,7
Maksimum Current (A)	5,8

Sound Information (2)

Sound Level at Supply (dBA)	79
Sound Level at Return (dBA)	70
Surrounding Sound 1m. Distance (dBA)	53
Surrounding Sound 3m. Distance (dBA)	44
Surrounding Sound 5m. Distance (dBA)	39

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	External of device	Page 106
Electric After Heater	Optional	Internal of device	Page 06
Water After Heater	Optional	Internal of device	Page 107
Water Cooler	Optional	External of device	Page 107
Duct Connection Damper	Optional	Page 108	
Outside Protection Sheet	Optional	Page 108	
Fresh Air Spigot	Optional	Page 109	
Exhaust Spigot	Optional	Page 109	
Drainage Pump	Optional	Page 112	
Bulk Siphon	Optional	Page 112	
Room Control Panel Type1	EVO ECO	Page 112	
Room Control Panel Type2	EVO TOUCH	Page 113	
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional	Page 111	
VOD Sensor CO2	Optional	Page 110	
VOD Sensor RH%	Optional	Page 110	
VOD Sensor VOC	Optional	Page 110	
Signal Converter	Optional	Page 111	
Constant Pressure Kit	Optional	Page 111	

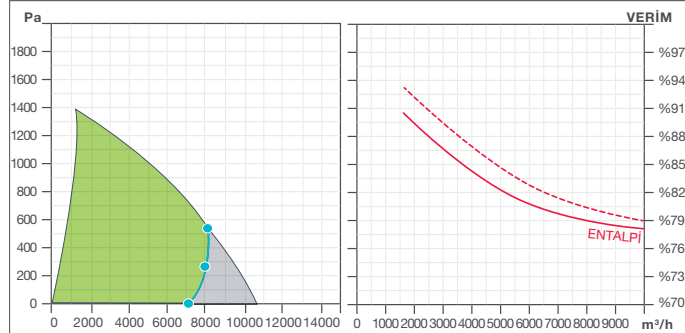
Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 110
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 110

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ EVO-R (S) 80



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	EVO-R (S) 80
Exchanger Type	Aluminum/Adsorption Rotor ⁽⁵⁾
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front and Rear surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m3/h)	1160
Nominal Flow Rate (m3/h)	8090
Efficiency (EN 308)	79%
Efficiency (-5°C OA, 22°C 50%RH RA)	81%
Verim, Nem Transfer Verimi	81%
According to EN 1886 Case Features	D1/L1/TB2/T2
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

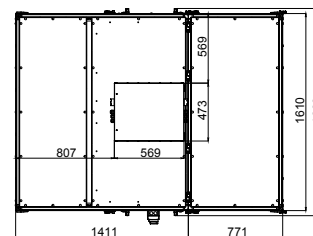
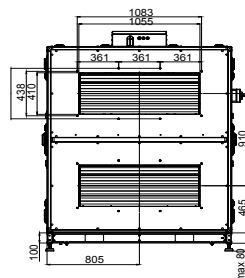
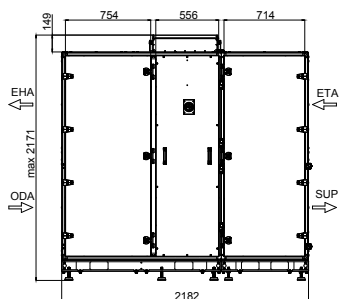
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	5,3
Maksimum Current (A)	8

Sound Information (2)

Sound Level at Supply (dBA)	83
Sound Level at Return (dBA)	72
Surrounding Sound 1m. Distance (dBA)	57
Surrounding Sound 3m. Distance (dBA)	48
Surrounding Sound 5m. Distance (dBA)	43

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	External of device	Page 106
Electric After Heater	Optional	Internal of device	Page 06
Water After Heater	Optional	Internal of device	Page 107
Water Cooler	Optional	External of device	Page 107
Duct Connection Damper	Optional	Page 108	
Outside Protection Sheet	Optional	Page 108	
Fresh Air Spigot	Optional	Page 109	
Exhaust Spigot	Optional	Page 109	
Drainage Pump	Optional	Page 112	
Bulk Siphon	Optional	Page 112	
Room Control Panel Type1	EVO ECO	Page 112	
Room Control Panel Type2	EVO TOUCH	Page 113	
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional	Page 111	
VOD Sensor CO2	Optional	Page 110	
VOD Sensor RH%	Optional	Page 110	
VOD Sensor VOC	Optional	Page 110	
Signal Converter	Optional	Page 111	
Constant Pressure Kit	Optional	Page 111	

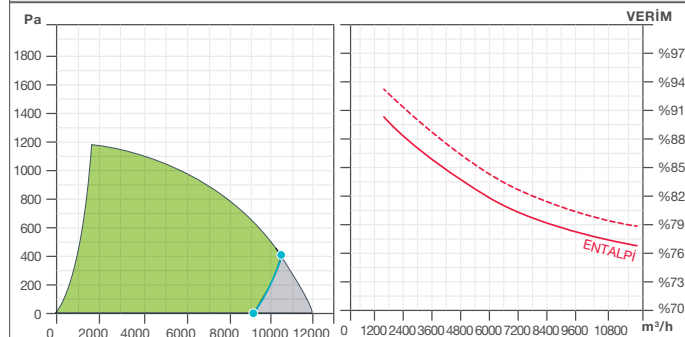
Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 110
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 110

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ EVO-R (S) 95



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	EVO-R (S) 95
Exchanger Type	Aluminum/Adsorption Rotor ⁽⁵⁾
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front and Rear surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m³/h)	1640
Nominal Flow Rate (m³/h)	10400
Efficiency (EN 308)	78%
Efficiency (-5°C OA, 22°C 50%RH RA)	81%
Verim, Nem Transfer Verimi	80%
According to EN 1886 Case Features	D1/L1/TB2/T2
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

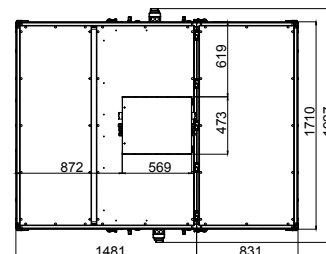
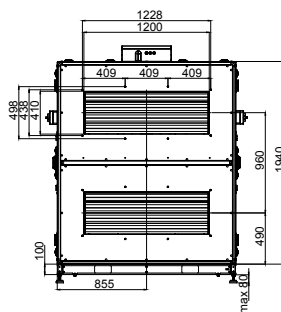
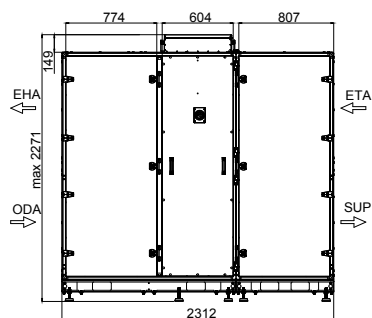
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	6,9
Maksimum Current (A)	10,6

Sound Information (2)

Sound Level at Supply (dBA)	81
Sound Level at Return (dBA)	72
Surrounding Sound 1m. Distance (dBA)	56
Surrounding Sound 3m. Distance (dBA)	47
Surrounding Sound 5m. Distance (dBA)	42

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	External of device	Page 106
Electric After Heater	Optional	Internal of device	Page 06
Water After Heater	Optional	Internal of device	Page 107
Water Cooler	Optional	External of device	Page 107
Duct Connection Damper	Optional		Page 108
Outside Protection Sheet	Optional		Page 108
Fresh Air Spigot	Optional		Page 109
Exhaust Spigot	Optional		Page 109
Drainage Pump	Optional		Page 112
Bulk Siphon	Optional		Page 112
Room Control Panel Type1	EVO ECO		Page 112
Room Control Panel Type2	EVO TOUCH		Page 113
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional		Page 111
VOD Sensor CO2	Optional		Page 110
VOD Sensor RH%	Optional		Page 110
VOD Sensor VOC	Optional		Page 110
Signal Converter	Optional		Page 111
Constant Pressure Kit	Optional		Page 111

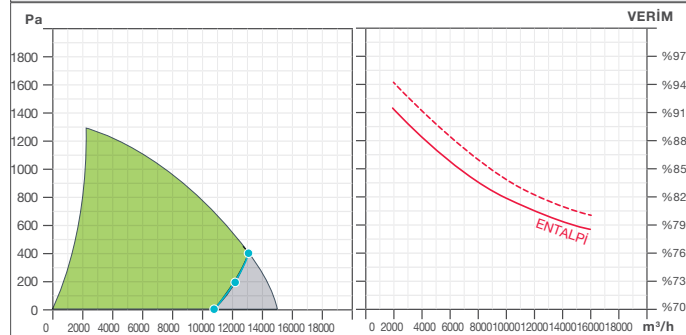
Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 110
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 110

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ EVO-R (S) 120



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	EVO-R (S) 120
Exchanger Type	Aluminum/Adsorption Rotor ⁽⁵⁾
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front and Rear surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m3/h)	2000
Nominal Flow Rate (m3/h)	12980
Efficiency (EN 308)	79%
Efficiency (-5°C OA, 22°C 50%RH RA)	81%
Verim, Nem Transfer Verimi	81%
According to EN 1886 Case Features	D1/L1/TB2/T2
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

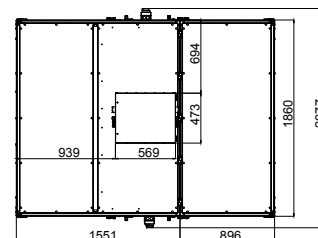
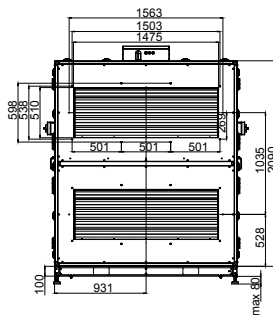
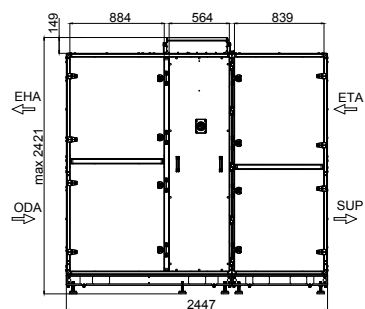
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	9,4
Maksimum Current (A)	14,4

Sound Information (2)

Sound Level at Supply (dBA)	82
Sound Level at Return (dBA)	74
Surrounding Sound 1m. Distance (dBA)	57
Surrounding Sound 3m. Distance (dBA)	47
Surrounding Sound 5m. Distance (dBA)	43

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	External of device	Page 106
Electric After Heater	Optional	Internal of device	Page 06
Water After Heater	Optional	Internal of device	Page 107
Water Cooler	Optional	External of device	Page 107
Duct Connection Damper	Optional		Page 108
Outside Protection Sheet	Optional		Page 108
Fresh Air Spigot	Optional		Page 109
Exhaust Spigot	Optional		Page 109
Drainage Pump	Optional		Page 112
Bulk Siphon	Optional		Page 112
Room Control Panel Type1	EVO ECO		Page 112
Room Control Panel Type2	EVO TOUCH		Page 113
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional		Page 111
VOD Sensor CO2	Optional		Page 110
VOD Sensor RH%	Optional		Page 110
VOD Sensor VOC	Optional		Page 110
Signal Converter	Optional		Page 111
Constant Pressure Kit	Optional		Page 111

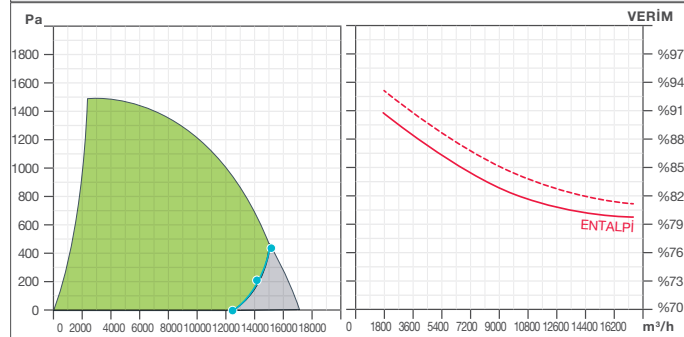
Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 110
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 110

- Together with Electrical Preheater
- As a result of the measurement according to ISO 5136
- Outside Kit is used
- Bidirectional installation is provided via service covers located at front and back
- Humidity transfer is possible with the selection of Adsorption Rotor

■ EVO-R (S) 150



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	EVO-R (S) 150
Exchanger Type	Aluminum/Adsorption Rotor ⁽⁵⁾
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front and Rear surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m3/h)	2190
Nominal Flow Rate (m3/h)	15400
Efficiency (EN 308)	80%
Efficiency (-5°C OA, 22°C 50%RH RA)	82%
Verim, Nem Transfer Verimi	82%
According to EN 1886 Case Features	D1/L1/TB2/T2
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

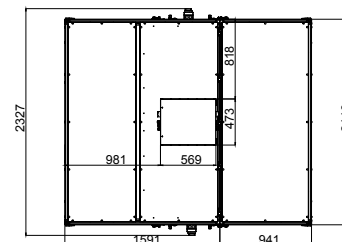
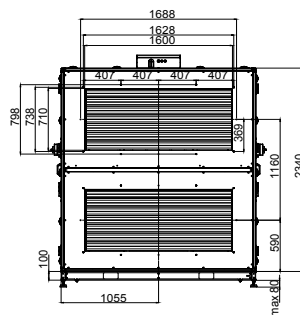
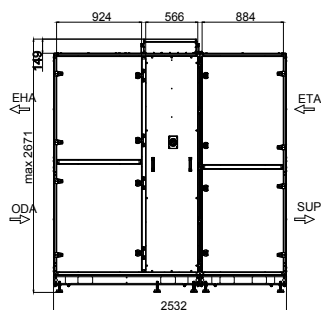
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	10
Maksimum Current (A)	15,4

Sound Information (2)

Sound Level at Supply (dBA)	84
Sound Level at Return (dBA)	76
Surrounding Sound 1m. Distance (dBA)	59
Surrounding Sound 3m. Distance (dBA)	50
Surrounding Sound 5m. Distance (dBA)	45

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	External of device	Page 106
Electric After Heater	Optional	Internal of device	Page 06
Water After Heater	Optional	Internal of device	Page 107
Water Cooler	Optional	External of device	Page 107
Duct Connection Damper	Optional		Page 108
Outside Protection Sheet	Optional		Page 108
Fresh Air Spigot	Optional		Page 109
Exhaust Spigot	Optional		Page 109
Drainage Pump	Optional		Page 112
Bulk Siphon	Optional		Page 112
Room Control Panel Type1	EVO ECO		Page 112
Room Control Panel Type2	EVO TOUCH		Page 113
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional		Page 111
VOD Sensor CO2	Optional		Page 110
VOD Sensor RH%	Optional		Page 110
VOD Sensor VOC	Optional		Page 110
Signal Converter	Optional		Page 111
Constant Pressure Kit	Optional		Page 111

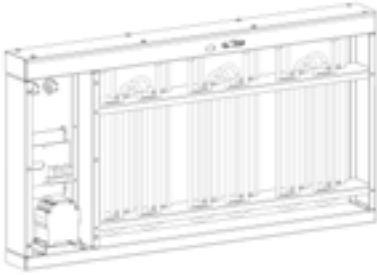
Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 110
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 110

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

ACCESSORIES

■ ELECTRICAL PREHEATER

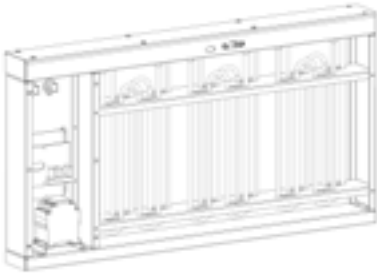
Used in order to prevent freezing at the exchanger in the situations which the outside air is very low. Controlled as a single step with SENSO control. Provides controllable energy efficiency with SENSO+ control via proportional signal.



Model	Heater Capacity (kW)	Current (A)	Control
ER-PREH 1500	4,2	6,1	Oransal
ER-PREH 2000	5,8	8,4	Oransal
ER-PREH 3000	9,1	13,2	Oransal
ER-PREH 5000	15,6	22,7	Oransal
ER-PREH 6000	18,1	26,3	Oransal
ER-PREH 8000	22	32,0	Oransal
ER-PREH 9500	22	32,0	Oransal
ER-PREH 12000	22	32,0	Oransal
ER-PREH 15000	22	32,0	Oransal

■ ELECTRICAL AFTER HEATER

Used for increasing the supply air temperature. Operates automatically according to desired room temperature or desired supply temperature. Controlled as a single step with SENSO control. Provides controllable energy efficiency with SENSO+ control via proportional signal.

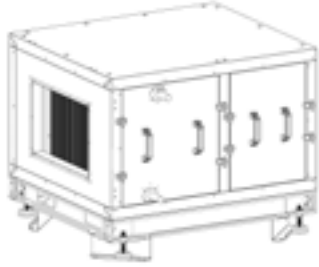


Model	Heater Capacity (kW)	Current (A)	Control
ER-POEH 1500*	4,2	6,1	Oransal
ER-POEH 2000*	5,8	8,4	Oransal
ER-POEH 3000*	9,1	13,2	Oransal
ER-POEH 5000	15,6	22,7	Oransal
ER-POEH 6000	18,1	26,3	Oransal
ER-POEH 8000	22	32,0	Oransal
ER-POEH 9500	22	32,0	Oransal
ER-POEH 12000	22	32,0	Oransal
ER-POEH 15000	22	32,0	Oransal

* Cihaz içine uygulanabilmektedir.

■ WATER COOLING

Used for cooling inside, water type cooling batteries are existed as accesories. With SENSO+ control, controlled proportionally according to desired supply temperature or desired room temperature.

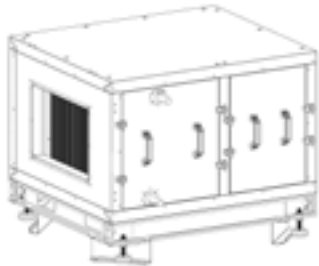


Model	Heater Capacity (kW)	Water Regime	Control
ER-POWH 1500*	4,2	80-60	Oransal
ER-POWH 2000*	5,8	80-60	Oransal
ER-POWH 3000*	9,1	80-60	Oransal
ER-POWH 5000	15,6	80-60	Oransal
ER-POWH 6000	18,1	80-60	Oransal
ER-POWH 8000	22	80-60	Oransal
ER-POWH 9500	22	80-60	Oransal
ER-POWH 12000	22	80-60	Oransal
ER-POWH 15000	22	80-60	Oransal

* Cihaz içine uygulanabilmektedir.

■ WATER AFTER HEATER

Used for increasing the supply air temperature. Operates automatically according to desired room temperature or desired supply temperature. Controlled as a single step with SENSO control. Provides controllable energy efficiency with SENSO+ control via proportional signal.

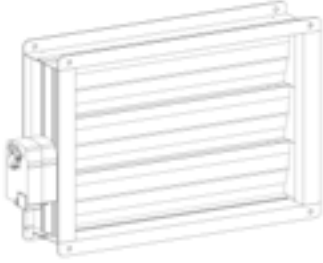


Model	Heater Capacity (kW)	Water Regime	Control
ER-KR 1500	4,5	7-12	Oransal
ER-KR 2000	4,5	7-12	Oransal
ER-KR 3000	6	7-12	Oransal
ER-KR 5000	9	7-12	Oransal
ER-KR 6000	15	7-12	Oransal
ER-KR 8000	18	7-12	Oransal
ER-KR 9500	21	7-12	Oransal
ER-KR 12000	24	7-12	Oransal
ER-KR 15000	30	7-12	Oransal

ACCESSORIES

■ Duct Connection Damper

The motor operated damper, as turned itself off when the devices is turned off, prevent the leakage can be occurred via air duct. It can be implemented in or out of device. Has the Class 3 impermeability as a standard.



* Cihaz içine uygulanabilmektedir.

Model	Heater Capacity (kW)	Current (A)	Control
ER-DAMP 1500*	40...75 s	24C DC , yay geri dönüşlü	Oransal
ER-DAMP 2000*	40...75 s	24C DC , yay geri dönüşlü	Oransal
ER-DAMP 3000*	40...75 s	24C DC , yay geri dönüşlü	Oransal
ER-DAMP 5000	40...75 s	24C DC , yay geri dönüşlü	Oransal
ER-DAMP 6000	40...75 s	24C DC , yay geri dönüşlü	Oransal
ER-DAMP 8000	40...75 s	24C DC , yay geri dönüşlü	Oransal
ER-DAMP 9500	40...75 s	24C DC , yay geri dönüşlü	Oransal
ER-DAMP 12000	40...75 s	24C DC , yay geri dönüşlü	Oransal
ER-DAMP 15000	40...75 s	24C DC , yay geri dönüşlü	Oransal

■ Outdoor Protection Sheet

If the devices are used outdoors, they are used for water insulation. The devices thus achieve the insulation class IP 54.



Model
ER-WPC 1500
ER-WPC 2000
ER-WPC 3000
ER-WPC 5000
ER-WPC 6000
ER-WPC 8000
ER-WPC 9500
ER-WPC 12000
ER-WPC 15000

■ **Fresh Air Spigot :**

Is used as connected to fresh air duct of devices installed at the areas open to atmosphere and prevent the water to enter in device by drift eliminator on the device.



Model
ER-FAS 1500
ER-FAS 2000
ER-FAS 3000
ER-FAS 5000
ER-FAS 6000
ER-FAS 8000
ER-FAS 9500
ER-FAS 12000
ER-FAS 15000

■ **Exhaust Air Spigot**

Is used as connected to exhaust air duct of devices at the areas open to atmosphere and prevent the water to enter in device.

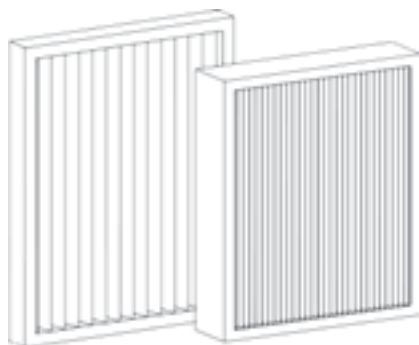


Model
ER-FAS 1500
ER-FAS 2000
ER-FAS 3000
ER-FAS 5000
ER-FAS 6000
ER-FAS 8000
ER-FAS 9500
ER-FAS 12000
ER-FAS 15000

ACCESSORIES

■ FILTER

In the projects, it is designed as a standard for more sensitive than the present filter's filtering



Model	Code
Taze Hava filtresi ePM10 50%	ER15FAEPM10-50
	ER20FAEPM10-50
	ER30FAEPM10-50
	ER50FAEPM10-50
	ER60FAEPM10-50
	ER80FAEPM10-50
	ER95FAEPM10-50
	ER120FAEPM10-50
	ER150FAEPM10-50
	ER15FAEPM1-80
Taze Hava filtresi ePM1 80%	ER20FAEPM1-80
	ER30FAEPM1-80
	ER50FAEPM1-80
	ER60FAEPM1-80
	ER80FAEPM1-80
	ER95FAEPM1-80
	ER120FAEPM1-80
	ER150FAEPM1-80

■ VOD

Located in inside of critical volume or return duct, the optional air quality sensor (VOC or CO₂) or relative humidity sensor (RH%) consistently measures the air quality or relative humidity. This value, as being compared with set value which is arranged on control, creates operating which changes EC fan's fan speed. If the air in room is lower than desired air quality or the relative humidity is higher than the desired value, the fan speed is increased so, fresh air amount increased, if the air in room is higher than desired air quality or the relative humidity is lower than the desired value, the fan speed is decreased so, fresh air amount decreased; Thus, a significant energy save is provided at the heating or cooling loads caused by the fresh air.



Model	Measurement	Installation Position
VOD-VOC-RM	VOC	Room
VOD-VOC-DUCT	VOC	Channel
VOD-CO ₂ -DUCT	CO ₂	Room
VOD-CO ₂ -RM	CO ₂	Channel
VOD-RH-DUCT	RH%	Room
VOD-RH-RM	RH%	Channel
PS-MW	-	-

■ CLOUD CONNECTION

The web server on SENSO+, as connecting to web, via a computer/tablet or a mobile phone at anywhere in the world, operating situation can be viewed and the access for changing the settings is provided. Without needing a complex web settings, this feature can be activated with a simple web connected cable.



Model
SENSO+ CLOUD

■ Constant Pressure Kit

Used for serving the purpose of ventilation system's varying flow rate. SENSO+, creates the signal which can change EC fan's fan speed as measuring static pressure value consistently, as comparing with defined value to the system. Turning up or down the VAV damper which are different volume in duct system, serve the purpose of static pressure out of device as a result of higher or lower values than projected values with constant pressure control. In the fan operating characteristic, extreme volume sound occurred in the ducts and flow rate in different volumes are prevented.



Model
SENSO-CAP

■ Signal Converter

SENSO+ devices as make an access that connect up to 3 VOD sensors, both measure gas and different volume gases, change the capacity according to these measurements of air conditioning plants. Via Signal Converter, in 3 different types, for each type up to 6 measurements or obtained values from 18 different measurement volumes are used for controlling air conditioning plant is provided.



Model
SENSO+ SK

ACCESSORIES

■ BALL SIPHON

Used for disposal of water In the heat recovery sections, the result of condensation at the exhaust air or the result of condensation at the cooking batteries. Can operate in both positive negative pressure.



Model
SIPH

■ Drainage Pump

Used when unloading the water occurred from condensation at the exchanger or battery cell in the device not possible via the present slope.



Model	Maximum Flow (l/h)	Max Head (m)	Max Suction Height (m)	Energy Supply
DP 01	13	10	1,5	230 V, 50/60 Hz
DP 02	40	10	2	230 V, 50/60 Hz

■ EVO-ECO

Is a user panel used as a user interface in the devices has the SENSO+ control card. Connected to control panel via 4x0.75 cable or RJ-12 Jack.



Model
EVO-ECO

■EVO-TOUCH

Is a 7" sized touch type user panel used as a user interface. Connected to control panel via 4x0.75 cable or RJ-12 Jack.



Model
EVO-TOUCH

Heat recovery exchangers which are selected according to criteria that high efficiency and low pressure drop, plug fans suitable for Erp 2015 criteria, filters suitable for green building classification (LEED, BREEAM), resistive and compact structure are the main components of VESTA HR. Developed Senso automation system which is given together with the device controls both ventilation functions and like heating/cooling air conditioning functions provided by accessories as a standard.

As VESTA HR devices are used;;

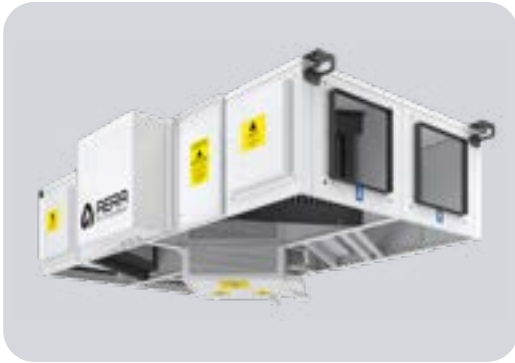
- Fresh air is provided for outside to inside.
- Decreased quality of inside air is given to outside.
- Energy economy is provided by heat transfer between disposal air and fresh air.
- As the fresh air is filtered the air quality is increased.
- By the smart control system which is given together with the device controlling is provided according to user's varying needs.



VESTA HR

CROSS FLOW
HEAT RECOVERY VENTILATION





CASING

VESTA HR units are produced using polyester painted sheet metal with high corrosion resistance. Inside the unit, Aluminum and Zinc coated AZ 150 quality Aluzinc sheet metal is used. The casing is patented with its low pressure drop and high stability.

All components that require service, have their own service doors. This way the unit does not have to be disconnected from ducting system for servicing. Units are serviceable from left and right by design. This prevents problematic installations where service doors and electrical panel removals might cause.



FILTER

Air is cleaned with standard G4 type filters before it reaches any component in VESTA HR units. Low pressure drop filters have a rate of 98% when it comes to particulate catching efficiency. Long lasting filters are easily cleaned with pressured air and after completing their lifecycle, they can be replaced easily. Optionally, F7 (MERV 13) filters can be used for if green building directives. High efficiency filters are produced especially for extending the surface area and reducing pressure drops. Filters fill up because of the particles they hold and this results in reduced air flow. In order to avoid dirty filters to affect air balance in the building, the unit has a filter cleaning alarm based on working hours.



HEAT RECOVERY EXCHANGER

The heat recovery exchangers are occurred by Aluminium plates which has high corrosion resistance in VESTA HR devices. In cross flow exchangers in order to increase the heat recovery efficiency and to decrease pressure drop, the plates are designed developed with engineering methods. Thus, it reaches the highest efficiency heat recovery exchanger performance values continuity is provided with EUROVENT certificate in their class. VESTA HR devices' heat recovery exchangers, have larger heat transfer surface up to 22-35% than competitors in market. The speed in air passing section is lower 11-29% than competitors in market also. Thus, by VESTA HR devices, high heat recovery efficiency and low pressure drop are provided.



FAN

VESTA HR units are designed with high energy efficiency, low sound pressure and low power consumption plug fans. All of our fans are compliant with ECO-DESIGN criteria by European Union Energy Committee and ErP 2015. All of the fans are suitable for variable speed control. Fans up to VESTA HR 5000 are controlled with built-in SENSO control. They have 3 fixed speeds or stepless control with the help of an air quality sensor.

Vesta HR units use single phase AC motors up to HR50 and 3 phase AC motors up to HR60. Required electrical protection is taken with electronic components against high temperature or locked rotor.

SENSO

SENSO Smart Control which is specifically developed and adjusted for Ceiling Type devices, controls both standard components in device and components attachable to ducts optionally to manage the desired supply air conditions. All of our devices work with plug and play logics and are sent after complete comprehensive tests of control equipments and all components.



The basic functions provided by SENSO control in ventilation;

- Fan speeds are adjusted in 3 different speed independently
- Weekly time schedule
- Building automation connection (ModBUS)
- Preheater control (Step control)
- Afterheater Control
- Exchanger Freezing Control
- Battery Freezing Control (with Optional Sensor)
- Automatic BOOST Mode (with Optional Sensor)
- Automatic Flow Rate Control (with Optional Sensor)
- Filter Pollution Control (with Optional Sensor)

Room Control Panel

The devices have a room control panel to adjust operating status easily. This user friendly interface panel can manage flow rate, heat settings, selection of operation mode, season selection, weekly time schedule easily and fast.



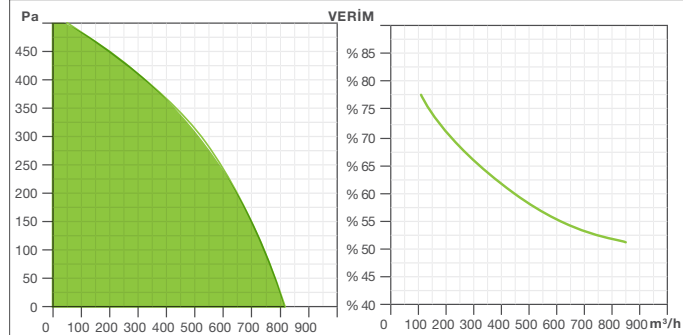
Building Automation Connection

SENSO control, works in interaction with other air conditioning devices and building automation systems via Modbus protocol.

■ VESTA HR 07



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	VESTA HR 07
Exchanger Type	Aluminum Plate Cross Flow
Fan Type	AC Plug Fan
ERP Compatibility	-
Installation	Indoor
Installation Position	Horizontal
Service Location	Side and Bottom
Case structure	10 mm Insulated Single Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m3/h)	160
Nominal Flow Rate (m3/h)	810
Efficiency (-5°C OA, 22°C 50%RH RA)	56%
Weight (kg)	60
Fresh Air Filter	Coarse (G4)
Exhaust Filter	Coarse (G4)
Operating Temperature (1) (°C)	-12/+46

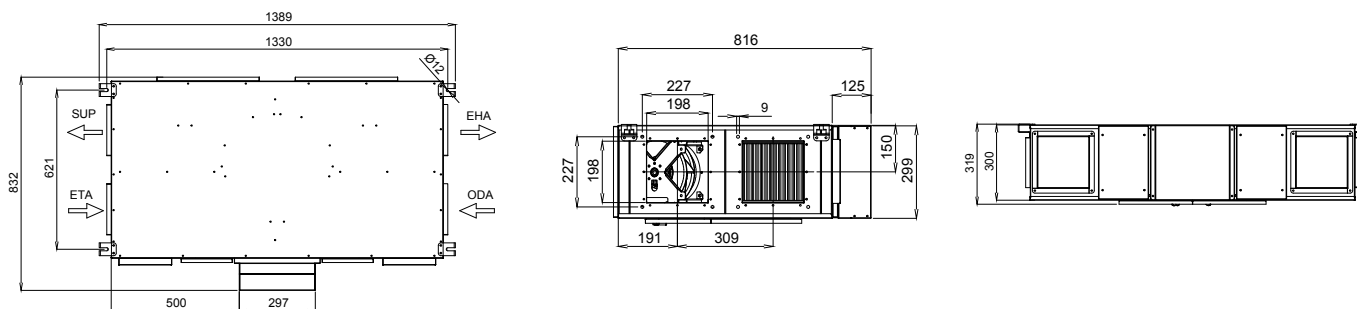
Electrical Informations

Communicating Informations	Modbus RTU
Supply Voltage	230V, 1~, 50 Hz
Total Power (1) (kW)	0,27
Maksimum Current (A)	1,2

Sound Information (2)

Surrounding Sound 3m. Distance (dBA)	57
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■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	External of device	Page 134
Electric After Heater	Optional	Internal of device	Page 134
Water After Heater	Optional	Internal of device	Page 134
Water Cooler	-	-	-
Duct Connection Damper	-	-	
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	Optional	Page 135	
Bulk Siphon	Optional	Page 137	
Room Control Panel Type1	Standard	-	
Room Control Panel Type2	-	-	
Room Control Panel Type3	-	-	
Cloud Connections Right	-	-	
VOD Sensor CO2	Optional	Page 137	
VOD Sensor RH%	Optional	Page 137	
VOD Sensor VOC	Optional	Page 137	
Signal Converter	Optional	Page 137	
Constant Pressure Kit	-	-	

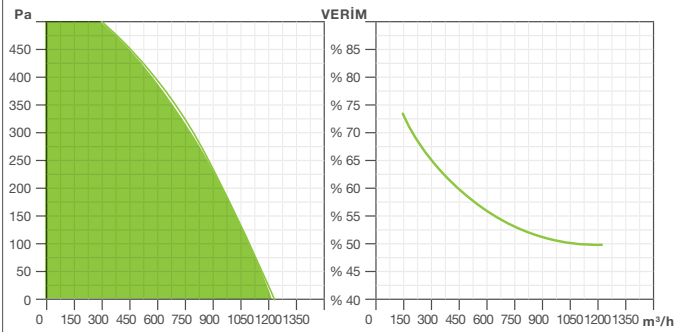
Exhaust Filter Coarse	Standard	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	Standard	
Fresh Air Filter ePM10 50%	Optional	Page 136
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 136

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ VESTA HR 12



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	VESTA HR 12
Exchanger Type	Aluminum Plate Cross Flow
Fan Type	AC Plug Fan
ERP Compatibility	-
Installation	Indoor
Installation Position	Horizontal
Service Location	Side and Bottom
Case structure	10 mm Insulated Single Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m3/h)	310
Nominal Flow Rate (m3/h)	1340
Efficiency (-5°C OA, 22°C 50%RH RA)	51%
Weight (kg)	75
Fresh Air Filter	Coarse (G4)
Exhaust Filter	Coarse (G4)
Operating Temperature (1) (°C)	-12/+46

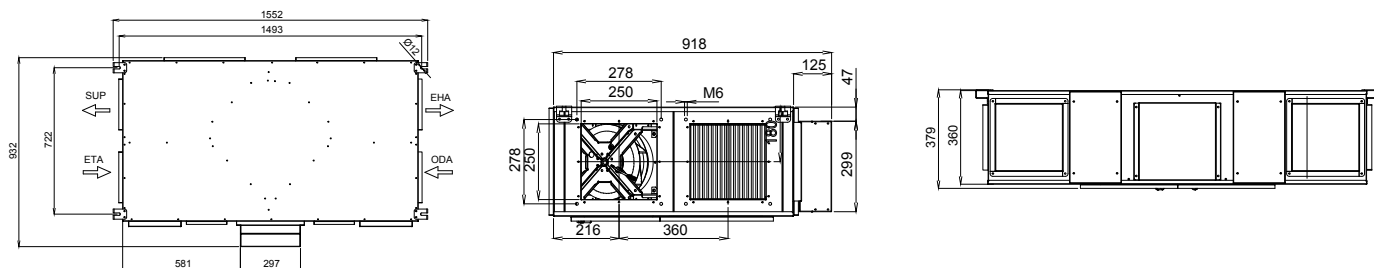
Electrical Informations

Communicating Informations	Modbus RTU
Supply Voltage	230V, 1~, 50 Hz
Total Power (1) (kW)	0,44
Maksimum Current (A)	1,8

Sound Information (2)

Surrounding Sound 3m. Distance (dBA)	59
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■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	External of device	Page 134
Electric After Heater	Optional	Internal of device	Page 134
Water After Heater	Optional	Internal of device	Page 134
Water Cooler	-	-	-
Duct Connection Damper	-	-	
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	Optional	Page 135	
Bulk Siphon	Optional	Page 137	
Room Control Panel Type1	Standard	-	
Room Control Panel Type2	-	-	
Room Control Panel Type3	-	-	
Cloud Connections Right	-	-	
VOD Sensor CO2	Optional	Page 137	
VOD Sensor RH%	Optional	Page 137	
VOD Sensor VOC	Optional	Page 137	
Signal Converter	Optional	Page 137	
Constant Pressure Kit	-	-	

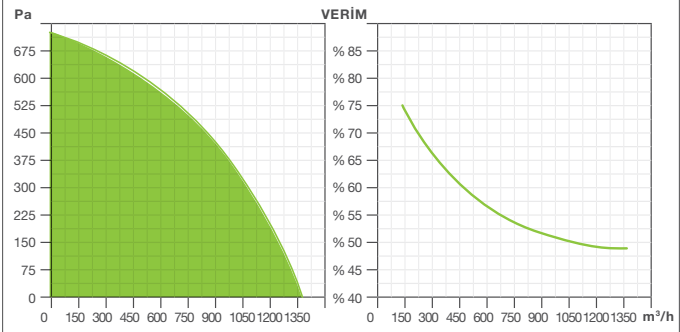
Exhaust Filter Coarse	Standard	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	Standard	
Fresh Air Filter ePM10 50%	Optional	Page 136
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 136

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ VESTA HR 15



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	VESTA HR 15
Exchanger Type	Aluminum Plate Cross Flow
Fan Type	AC Plug Fan
ERP Compatibility	-
Installation	Indoor
Installation Position	Horizontal
Service Location	Side and Bottom
Case structure	10 mm Insulated Single Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m3/h)	480
Nominal Flow Rate (m3/h)	1470
Efficiency (-5°C OA, 22°C 50%RH RA)	50%
Weight (kg)	88
Fresh Air Filter	Coarse (G4)
Exhaust Filter	Coarse (G4)
Operating Temperature (1) (°C)	-12/+46

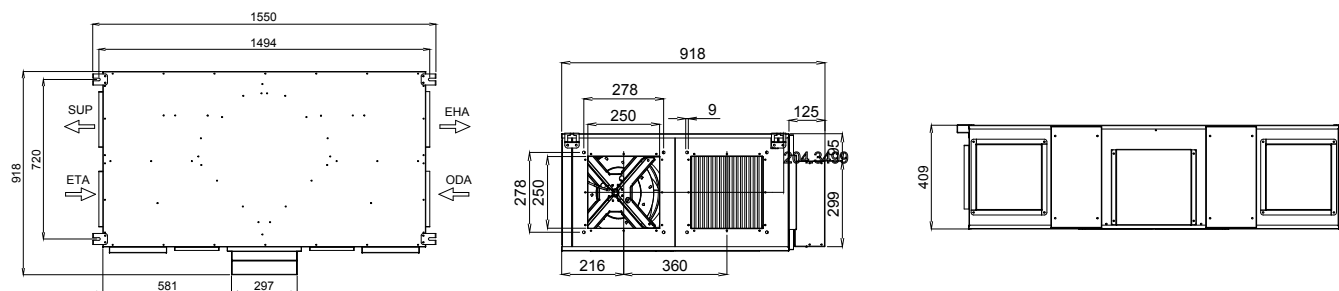
Electrical Informations

Communicating Informations	Modbus RTU
Supply Voltage	230V, 1~, 50 Hz
Total Power (1) (kW)	0,56
Maksimum Current (A)	2,4

Sound Information (2)

Surrounding Sound 3m. Distance (dBA)	61
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■ DIMENSIONS [mm]



Electric Pre Heater	Optional	External of device	Page 134
Electric After Heater	Optional	Internal of device	Page 134
Water After Heater	Optional	Internal of device	Page 134
Water Cooler	-	-	-
Duct Connection Damper	-	-	
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	Optional	Page 135	
Bulk Siphon	Optional	Page 137	
Room Control Panel Type1	Standard	-	
Room Control Panel Type2	-	-	
Room Control Panel Type3	-	-	
Cloud Connections Right	-	-	
VOD Sensor CO2	Optional	Page 137	
VOD Sensor RH%	Optional	Page 137	
VOD Sensor VOC	Optional	Page 137	
Signal Converter	Optional	Page 137	
Constant Pressure Kit	-	-	

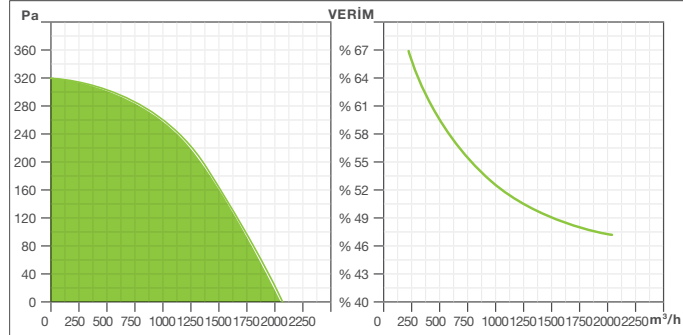
Exhaust Filter Coarse	Standard	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	Standard	
Fresh Air Filter ePM10 50%	Optional	Page 136
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 136

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ VESTA HR 20



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	VESTA HR 20
Exchanger Type	Aluminum Plate Cross Flow
Fan Type	AC Plug Fan
ERP Compatibility	-
Installation	Indoor
Installation Position	Horizontal
Service Location	Side and Bottom
Case structure	10 mm Insulated Single Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m3/h)	630
Nominal Flow Rate (m3/h)	2160
Efficiency (-5°C OA, 22°C 50%RH RA)	48%
Weight (kg)	110
Fresh Air Filter	Coarse (G4)
Exhaust Filter	Coarse (G4)
Operating Temperature (1) (°C)	-12/+46

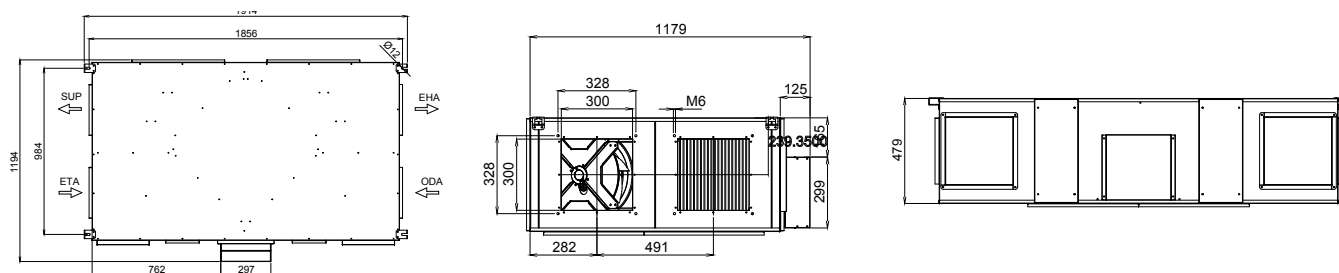
Electrical Informations

Communicating Informations	Modbus RTU
Supply Voltage	230V, 1~, 50 Hz
Total Power (1) (kW)	0,65
Maksimum Current (A)	2,9

Sound Information (2)

Surrounding Sound 3m. Distance (dBA)	60
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■ DIMENSIONS [mm]



Electric Pre Heater	Optional	External of device	Page 134
Electric After Heater	Optional	Internal of device	Page 134
Water After Heater	Optional	Internal of device	Page 134
Water Cooler	-	-	-
Duct Connection Damper	-	-	
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	Optional	Page 135	
Bulk Siphon	Optional	Page 137	
Room Control Panel Type1	Standard	-	
Room Control Panel Type2	-	-	
Room Control Panel Type3	-	-	
Cloud Connections Right	-	-	
VOD Sensor CO2	Optional	Page 137	
VOD Sensor RH%	Optional	Page 137	
VOD Sensor VOC	Optional	Page 137	
Signal Converter	Optional	Page 137	
Constant Pressure Kit	-	-	

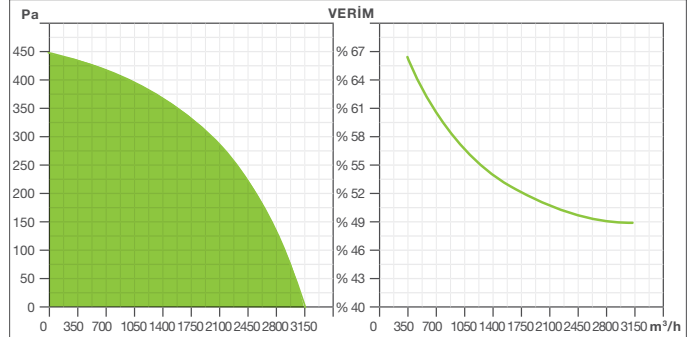
Exhaust Filter Coarse	Standard	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	Standard	
Fresh Air Filter ePM10 50%	Optional	Page 136
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 136

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ VESTA HR 30



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	VESTA HR 30
Exchanger Type	Aluminum Plate Cross Flow
Fan Type	AC Plug Fan
ERP Compatibility	-
Installation	Indoor
Installation Position	Horizontal
Service Location	Side and Bottom
Case structure	10 mm Insulated Single Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m3/h)	940
Nominal Flow Rate (m3/h)	3220
Efficiency (-5°C OA, 22°C 50%RH RA)	49%
Weight (kg)	140
Fresh Air Filter	Coarse (G4)
Exhaust Filter	Coarse (G4)
Operating Temperature (1) (°C)	-12/+46

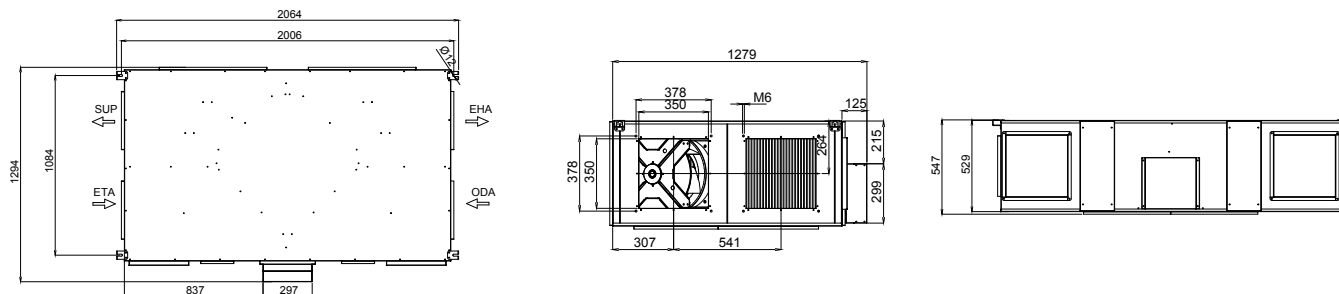
Electrical Informations

Communicating Informations	Modbus RTU
Supply Voltage	230V, 1~, 50 Hz
Total Power (1) (kW)	1
Maksimum Current (A)	4,6

Sound Information (2)

Surrounding Sound 3m. Distance (dBA)	55
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■ DIMENSIONS [mm]



Electric Pre Heater	Optional	External of device	Page 134
Electric After Heater	Optional	Internal of device	Page 134
Water After Heater	Optional	Internal of device	Page 134
Water Cooler	-	-	-
Duct Connection Damper	-	-	
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	Optional	Page 135	
Bulk Siphon	Optional	Page 137	
Room Control Panel Type1	Standard	-	
Room Control Panel Type2	-	-	
Room Control Panel Type3	-	-	
Cloud Connections Right	-	-	
VOD Sensor CO2	Optional	Page 137	
VOD Sensor RH%	Optional	Page 137	
VOD Sensor VOC	Optional	Page 137	
Signal Converter	Optional	Page 137	
Constant Pressure Kit	-	-	

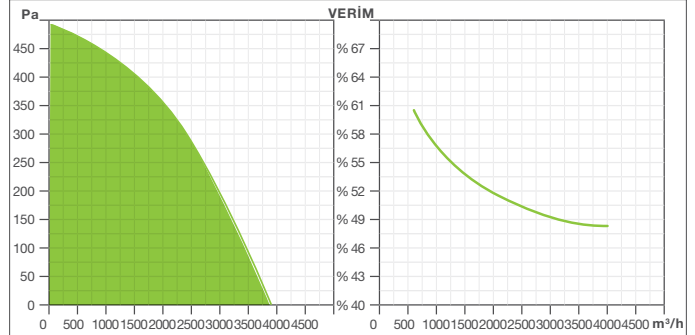
Exhaust Filter Coarse	Standard	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	Standard	
Fresh Air Filter ePM10 50%	Optional	Page 136
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 136

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ VESTA HR 40



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	VESTA HR 40
Exchanger Type	Aluminum Plate Cross Flow
Fan Type	AC Plug Fan
ERP Compatibility	-
Installation	Indoor
Installation Position	Horizontal
Service Location	Side and Bottom
Case structure	10 mm Insulated Single Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m3/h)	1140
Nominal Flow Rate (m3/h)	4200
Efficiency (-5°C OA, 22°C 50%RH RA)	49%
Weight (kg)	170
Fresh Air Filter	Coarse (G4)
Exhaust Filter	Coarse (G4)
Operating Temperature (1) (°C)	-12/+46

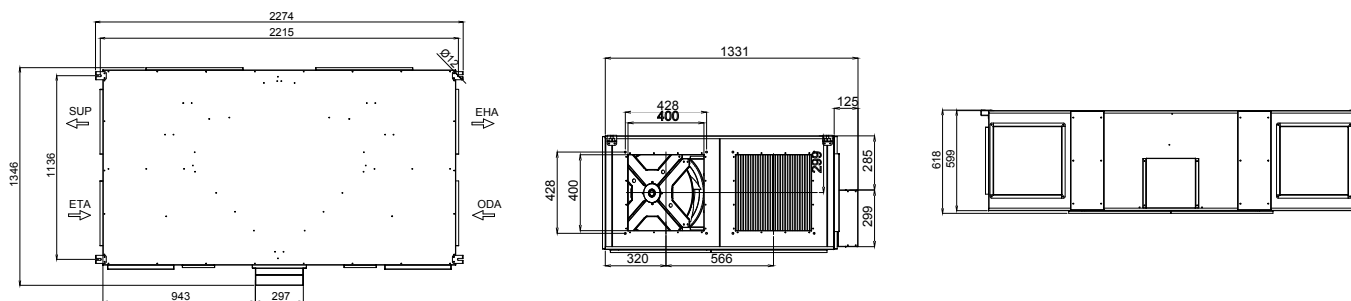
Electrical Informations

Communicating Informations	Modbus RTU
Supply Voltage	230V, 1~, 50 Hz
Total Power (1) (kW)	1,2
Maksimum Current (A)	4,8

Sound Information (2)

Surrounding Sound 3m. Distance (dBA)	53
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■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	External of device	Page 134
Electric After Heater	Optional	Internal of device	Page 134
Water After Heater	Optional	Internal of device	Page 134
Water Cooler	-	-	-
Duct Connection Damper	-	-	
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	Optional	Page 135	
Bulk Siphon	Optional	Page 137	
Room Control Panel Type1	Standard	-	
Room Control Panel Type2	-	-	
Room Control Panel Type3	-	-	
Cloud Connections Right	-	-	
VOD Sensor CO2	Optional	Page 137	
VOD Sensor RH%	Optional	Page 137	
VOD Sensor VOC	Optional	Page 137	
Signal Converter	Optional	Page 137	
Constant Pressure Kit	-	-	

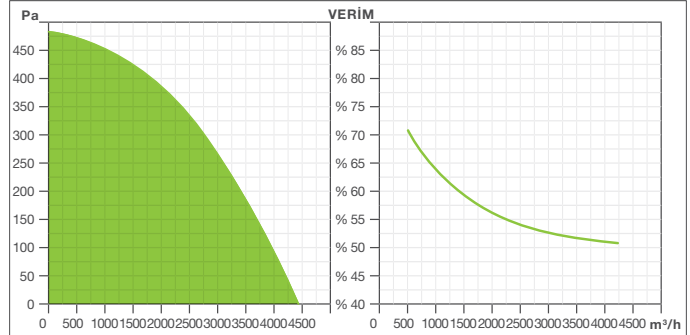
Exhaust Filter Coarse	Standard
Exhaust Filter ePM10 50%	Standard
Fresh Air Filter Coarse	Standard
Fresh Air Filter ePM10 50%	Optional
Fresh Air Filter ePM1 55%	Standard
Fresh Air Filter ePM1 80%	Optional

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ VESTA HR 50



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	VESTA HR 50
Exchanger Type	Aluminum Plate Cross Flow
Fan Type	AC Plug Fan
ERP Compatibility	-
Installation	Indoor
Installation Position	Horizontal
Service Location	Side and Bottom
Case structure	10 mm Insulated Single Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m3/h)	1270
Nominal Flow Rate (m3/h)	4950
Efficiency (-5°C OA, 22°C 50%RH RA)	51%
Weight (kg)	190
Fresh Air Filter	Coarse (G4)
Exhaust Filter	Coarse (G4)
Operating Temperature (1) (°C)	-12/+46

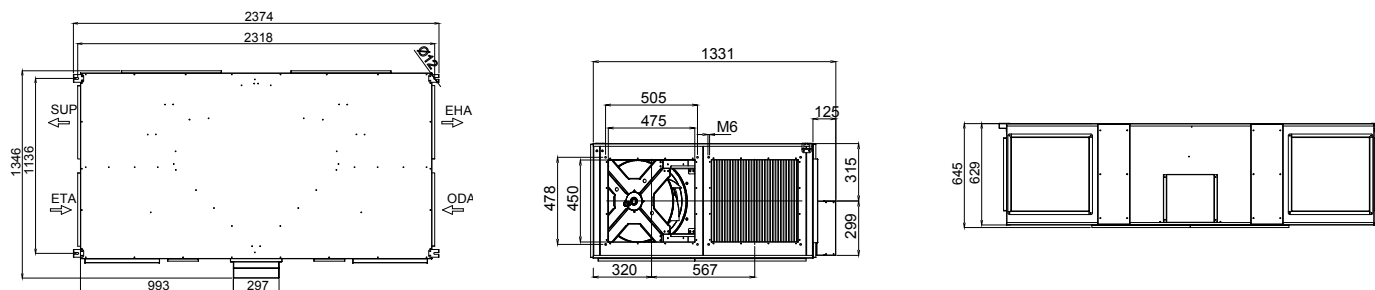
Electrical Informations

Communicating Informations	Modbus RTU
Supply Voltage	230V, 1~, 50 Hz
Total Power (1) (kW)	1,3
Maksimum Current (A)	5,4

Sound Information (2)

Surrounding Sound 3m. Distance (dBA)	58
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■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	External of device	Page 134
Electric After Heater	Optional	Internal of device	Page 134
Water After Heater	Optional	Internal of device	Page 134
Water Cooler	-	-	-
Duct Connection Damper	-	-	
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	Optional	Page 135	
Bulk Siphon	Optional	Page 137	
Room Control Panel Type1	Standard	-	
Room Control Panel Type2	-	-	
Room Control Panel Type3	-	-	
Cloud Connections Right	-	-	
VOD Sensor CO2	Optional	Page 137	
VOD Sensor RH%	Optional	Page 137	
VOD Sensor VOC	Optional	Page 137	
Signal Converter	Optional	Page 137	
Constant Pressure Kit	-	-	

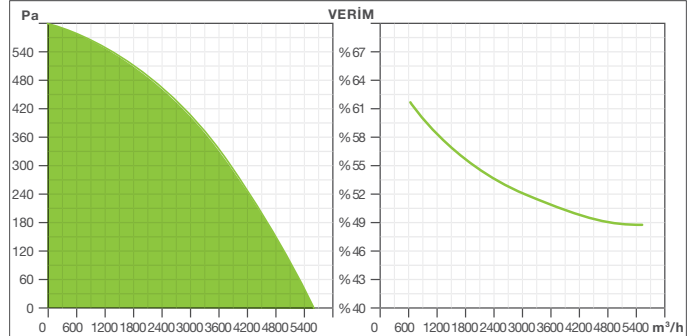
Exhaust Filter Coarse	Standard	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	Standard	
Fresh Air Filter ePM10 50%	Optional	Page 136
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 136

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ VESTA HR 60



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	VESTA HR 60
Exchanger Type	Aluminum Plate Cross Flow
Fan Type	AC Plug Fan
ERP Compatibility	-
Installation	Indoor
Installation Position	Horizontal
Service Location	Side and Bottom
Case structure	10 mm Insulated Single Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m3/h)	2240
Nominal Flow Rate (m3/h)	5640
Efficiency (-5°C OA, 22°C 50%RH RA)	49%
Weight (kg)	210
Fresh Air Filter	Coarse (G4)
Exhaust Filter	Coarse (G4)
Operating Temperature (1) (°C)	-12/+46

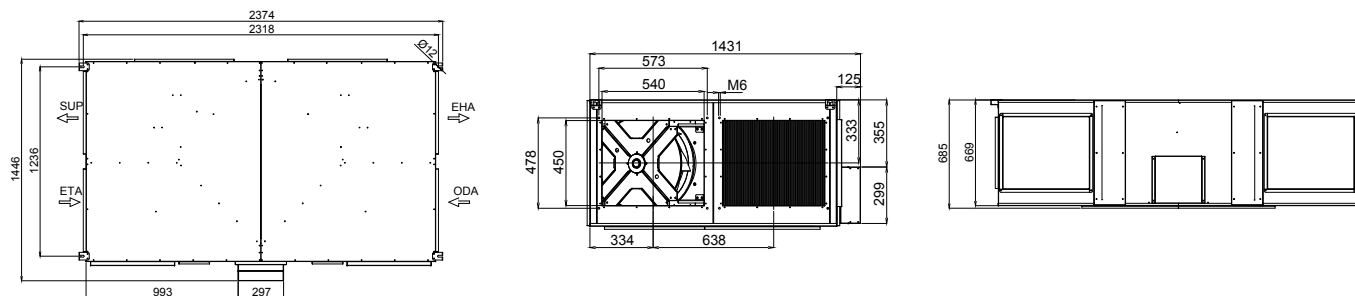
Electrical Informations

Communicating Informations	Modbus RTU
Supply Voltage	230V, 1~, 50 Hz
Total Power (1) (kW)	1,9
Maksimum Current (A)	3,8

Sound Information (2)

Surrounding Sound 3m. Distance (dBA)	52
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■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	External of device	Page 134
Electric After Heater	Optional	Internal of device	Page 134
Water After Heater	Optional	Internal of device	Page 134
Water Cooler	-	-	-
Duct Connection Damper	-	-	
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	Optional	Page 135	
Bulk Siphon	Optional	Page 137	
Room Control Panel Type1	Standard	-	
Room Control Panel Type2	-	-	
Room Control Panel Type3	-	-	
Cloud Connections Right	-	-	
VOD Sensor CO2	Optional	Page 137	
VOD Sensor RH%	Optional	Page 137	
VOD Sensor VOC	Optional	Page 137	
Signal Converter	Optional	Page 137	
Constant Pressure Kit	-	-	

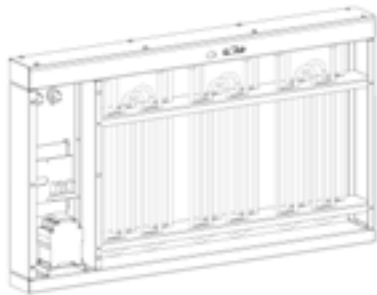
Exhaust Filter Coarse	Standard	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	Standard	
Fresh Air Filter ePM10 50%	Optional	Page 136
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 136

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

ACCESSORIES

■ ELECTRICAL PREHEATER

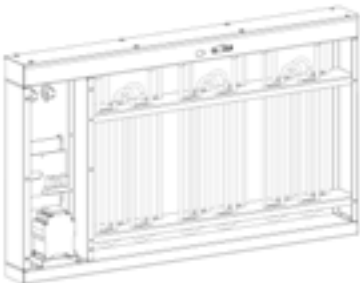
Used in order to prevent freezing at the exchanger in the situations which the outside air is very low. Controlled as a single step with SENSO control. Provides controllable energy efficiency with SENSO+ control via proportional signal.



Model	Heater Capacity (kW)	Current (A)	Control
VT-PREH-07	1,2	5,2	On/off
VT-PREH-12	2	2,8	On/off
VT-PREH-15	2,4	3,4	On/off
VT-PREH-20	3	4,2	On/off
VT-PREH-30	4,5	6,3	On/off
VT-PREH-40	6	8,4	On/off
VT-PREH-50	7,5	10,5	On/off
VT-PREH-60	9	12,6	On/off

■ ELECTRICAL AFTER HEATER

Used for increasing the supply air temperature. Operates automatically according to desired room temperature or desired supply temperature. Controlled as a single step with SENSO control. Provides controllable energy efficiency with SENSO+ control via proportional signal.



Model	Heater Capacity (kW)	Current (A)	Control
VT-POEH-07	1,2	5,2	On/off
VT-POEH-12	2	2,8	On/off
VT-POEH-15	2,4	3,4	On/off
VT-POEH-20	3	4,2	On/off
VT-POEH-30	4,5	6,3	On/off
VT-POEH-40	6	8,4	On/off
VT-POEH-50	7,5	10,5	On/off
VT-POEH-60	9	12,6	On/off

■ WATER AFTER HEATER

Used for increasing the supply air temperature. Operates automatically according to desired room temperature or desired supply temperature. Controlled as a single step with SENSO control. Provides controllable energy efficiency with SENSO+ control via proportional signal.



Model	Heater Capacity (kW)	Water Regime	Control
VT-POWH 07	1,2	80-60	On/off
VT-POWH-12	2	80-60	On/off
VT-POWH-15	2,4	80-60	On/off
VT-POWH-20	3	80-60	On/off
VT-POWH-30	4,5	80-60	On/off
VT-POWH-40	6	80-60	On/off
VT-POWH-50	7,5	80-60	On/off
VT-POWH-60	9	80-60	On/off

■ Drainage Pump

Used when unloading the water occurred from condensation at the exchanger or battery cell in the device not possible via the present slope.



Model	Maximum Flow (l/h)	Max Head (m)	Max Suction Height (m)	Energy Supply
DP 01	13	10	1,5	230 V, 50/60 Hz
DP 02	40	10	2	230 V, 50/60 Hz

■SENSO HMI

The keypad user panel provides the communication with main PCB via the AERA-link protocol. Connection is made with 2x0.75 mm2 cable.



Model
SENSO HMI

ACCESSORIES

■ FILTER

In the projects, it is designed as a standard for more sensitive than the present filter's filtering



Model	Code
Egzoz Hava filtresi ePM10 50%	HR7EAEP10-50
	HR12EAEP10-50
	HR15EAEP10-50
	HR20EAEP10-50
	HR30EAEP10-50
	HR40EAEP10-50
	HR50EAEP10-50
Taze Hava filtresi ePM10 50%	HR60EAEP10-50
	HR7FAEP10-50
	HR12FAEP10-50
	HR15FAEP10-50
	HR20FAEP10-50
	HR30FAEP10-50
	HR40FAEP10-50
Taze Hava filtresi ePM1 55%	HR50FAEP10-50
	HR60FAEP10-50
	HR7FAEP1-55
	HR12FAEP1-55
	HR15FAEP1-55
	HR20FAEP1-55
	HR30FAEP1-55
	HR40FAEP1-55
	HR50FAEP1-55
	HR60FAEP1-55

■BALL SIPHON

Used for disposal of water In the heat recovery sections, the result of condensation at the exhaust air or the result of condensation at the cooking batteries. Can operate in both positive negative pressure.



Model
SIPH

■VOD

Located in inside of critical volume or return duct, the optional air quality sensor (VOC or CO₂) or relative humidity sensor (RH%) consistently measures the air quality or relative humidity. This value, as being compared with set value which is arranged on control, creates operating which changes EC fan's fan speed. If the air in room is lower than desired air quality or the relative humidity is higher than the desired value, the fan speed is increased so, fresh air amount increased, if the air in room is higher than desired air quality or the relative humidity is lower than the desired value, the fan speed is decreased so, fresh air amount decreased; Thus, a significant energy save is provided at the heating or cooling loads caused by the fresh air.



Model	Measurement	Installation Position
VOD-VOC-RM	VOC	Room
VOD-VOC-DUCT	VOC	Channel
VOD-CO ₂ -DUCT	CO ₂	Room
VOD-CO ₂ -RM	CO ₂	Channel
VOD-RH-DUCT	RH%	Room
VOD-RH-RM	RH%	Channel
PS-MW	-	-

■Signal Converter

SENSO+ devices as make an access that connect up to 3 VOD sensors, both measure gas and different volume gases, change the capacity according to these measurements of air conditioning plants. Via Signal Converter, in 3 different types, for each type up to 6 measurements or obtained values from 18 different measurement volumes are used for controlling air conditioning plant is provided.



Model
SENSO+ SK

Energy sources are limited thus it increases the energy costs and makes availability harder. The governments to decrease the limited energy consuming, started to create the efficiency criterias for devices that use energy and these criterias became mandatory for manufacturers to obey. For ventilation devices too the energy criterias are defined by Europe Union with their Ecodesign directives and since 2016 it was accepted as mandatory for CE certificate's precondition.

In Turkey, heat recovery ventilation devices in significant amount of small, big and medium projects, listed according to heat recovery efficiency and consumed fan power criterias in the directives effectuated after 2016, the devices not regular for standards are forbidden to enter in EU countries.

ERP PRO Device's Significant Features

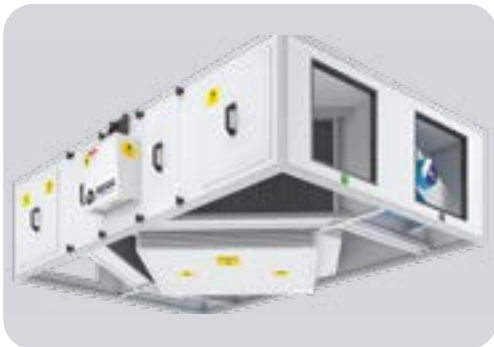
- EC Fan which has low SFP values,
- Platter heat recovery exchanger which has large heat transfer surface area ($\eta > \% 73$),
- Filtration at fresh air side F7 (ePM1 55%), at exhaust air side M5 (ePM10 50%),
- Performance suitable for ECO-DESIGN 2018,
- Case design allows servicing and cleaning components easily,
- By-pass ventilation
- Alternative duct connection.



ERP PRO

CROSS FLOW
HEAT RECOVERY VENTILATION





CASING

The body of ERP PRO devices are basically 2 different types. ERP PRO 1200 and ERP PRO 2200 body are manufactured from polyester coated sheet with high corrosion resistance as single wall. Insulation is provided by placing 10 mm sponge on the inner part of the neighborhood. ERP PRO 3200 and ERP PRO 4200 body are manufactured from polyester coated outer sheet with high corrosion resistance, and the sheets used in the device are manufactured from Aluminum and Zinc coated AZ 150 quality Aluzinc inner sheet. High insulation is provided by using 25 mm thick fire protection rock wool between inner and outer sheet. The body is designed with high strength principle and its design is patented and protected.



FAN

ERP PRO units are designed with high energy efficiency, low sound pressure and low power consumption plug fans. All the fans are compliant with ECO-DESIGN criteria by European Union Energy Committee and ErP 2015. Plug fans with EC motors can be driven with 3 fixed speeds or steplessly with the help of an air quality sensor thanks to built in smart control system SENSO

Plug fans with EC motors are AC-powered fans with DC motor technology. DC motor provides high electrical efficiency while it can be connected to AC mains via on board converter. It is perfectly in harmony with the high-tech electronic components used and magnetic noise transmitted to the network is prevented.



HEAT RECOVERY EXCHANGER

The heat recovery exchangers used in ERP PRO units reaches up to 90% efficiency by offering a combination of cross and counter flow with special fin structure. The special fin structure increases efficiency and helps to achieve low pressure drops. The heat exchanger consists of Aluminum plates with high corrosion resistance. Thus, the highest versatility of heat recovery exchangers in their class ensures the continuity of the performance values with the EUROVENT certificate.



FILTER

ERP PRO units are produced with F7 (ePM1 55%) class on the supply air side and M6 (ePM10 65%) class filter on the exhaust side as ECO-DESIGN directives. With these highly efficient filters, indoor air quality is increased by keeping 90% of dust and particles up to diameter of 0,4 μm in the indoor environment.

High efficiency filters are produced especially for extending the surface area and reducing pressure drops. Filters fill up because of the particles they hold and this results in reduced air flow. In order to avoid dirty filters to affect air balance in the building, the unit has a filter cleaning alarm based on working hours.



SENSO

SENSO Smart Control which is specifically developed and adjusted for Ceiling Type devices, controls both standard components in device and componets attachable to ducts optionally to manage the desired supply air conditions. All of our devices works with plug and play logics are sent after complete comprehensive tests of control equipments and all components.

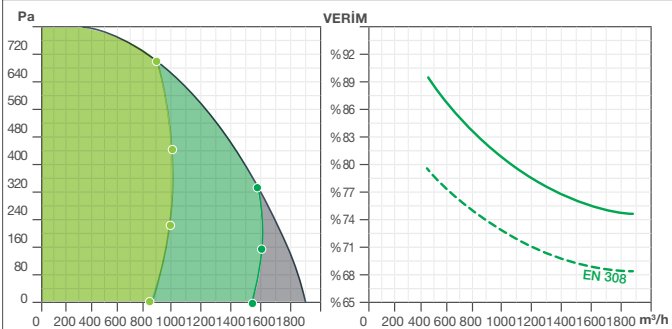
The basic functions provided by SENSO control in ventilation

- Fan speeds are adjusted in 3 different speed independently
- Weekly time schedule
- Building automation connection (ModBUS)
- Preheater control (Step control)
- Afterheater Control
- Exchanger Freezing Control
- Battery Freezing Control (with Optional Sensor)
- Automatical BOOST Mode (with Optional Sensor)
- Automatical Flow Rate Controll (with Optional Sensor)
- Filter Polution Control (with Optional Sensor)

■ ERP PRO 1200



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	ERP PRO 1200
Exchanger Type	Aluminum Plate Cross Flow
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Indoor
Installation Position	Horizontal
Service Location	Side and Bottom
Case structure	10 mm Insulated Single Walled

TECHNICAL INFORMATION

Minimum Flow Rate (m³/h)	180
Nominal Flow Rate (m³/h)	940
Efficiency (EN 308)	73%
Efficiency (-5°C OA, 22°C 50%RH RA)	81%
Weight (kg)	185
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-12/+46

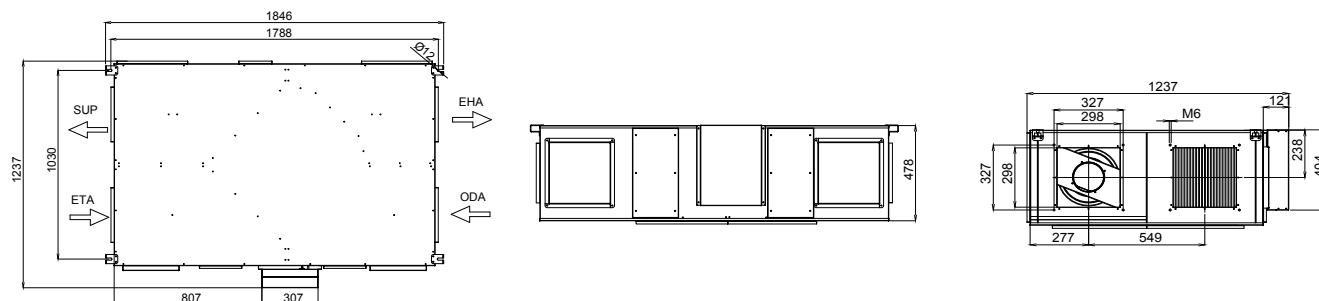
Electrical Informations

Communicating Informations	Modbus RTU
Supply Voltage	230V, 1~, 50 Hz
Total Power (1) (kW)	0,9
Maksimum Current (A)	4,9

Sound Information (2)

Surrounding Sound 3m. Distance (dBA)	43
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■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	External of device	Page 150
Electric After Heater	Optional	Internal of device	Page 150
Water After Heater	Optional	Internal of device	Page 150
Water Cooler	-	-	-
Duct Connection Damper	-	-	
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	Optional	Page 151	
Bulk Siphon	Optional	Page 152	
Room Control Panel Type1	Standard	-	
Room Control Panel Type2	-	-	
Room Control Panel Type3	-	-	
Cloud Connections Right	-	-	
VOD Sensor CO2	Optional	Page 152	
VOD Sensor RH%	Optional	Page 152	
VOD Sensor VOC	Optional	Page 152	
Signal Converter	Optional	Page 153	
Constant Pressure Kit	-	-	

Exhaust Filter Coarse	-
Exhaust Filter ePM10 50%	Standard
Fresh Air Filter Coarse	-
Fresh Air Filter ePM10 50%	-
Fresh Air Filter ePM1 55%	Standard
Fresh Air Filter ePM1 80%	Optional

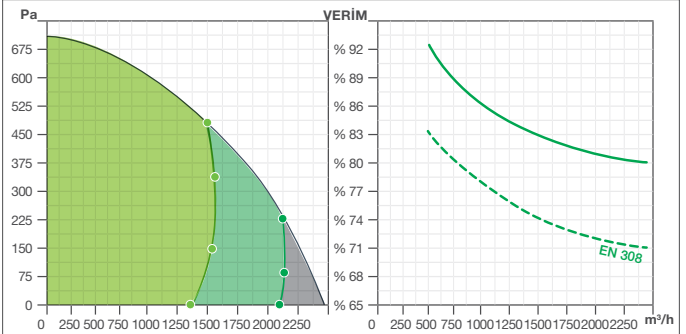
Page 151

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ ERP PRO 2200



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	ERP PRO 2200
Exchanger Type	Aluminum Plate Cross Flow
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Indoor
Installation Position	Horizontal
Service Location	Side and Bottom
Case structure	10 mm Insulated Single Walled

TECHNICAL INFORMATION

Minimum Flow Rate (m3/h)	230
Nominal Flow Rate (m3/h)	1520
Efficiency (EN 308)	73%
Efficiency (-5°C OA, 22°C 50%RH RA)	82%
Weight (kg)	265
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-12/+46

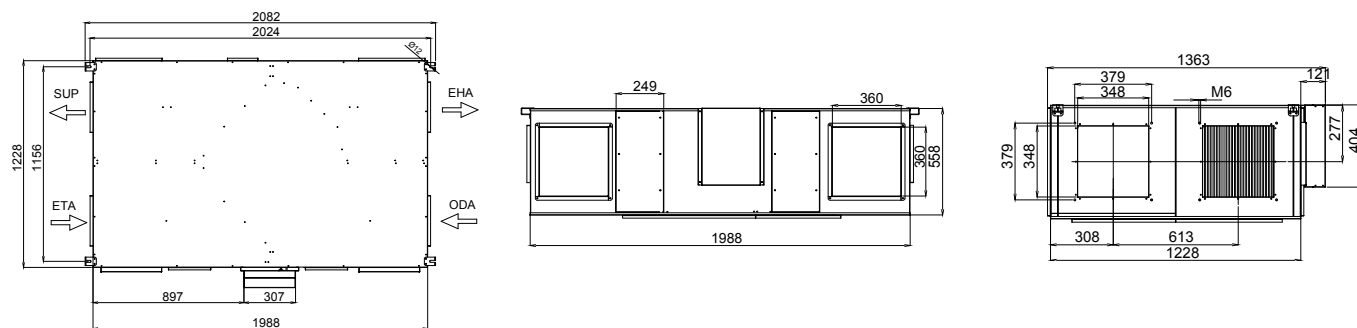
Electrical Informations

Communicating Informations	Modbus RTU
Supply Voltage	230V, 1~, 50 Hz
Total Power (1) (kW)	1,1
Maksimum Current (A)	5,1

Sound Information (2)

Surrounding Sound 3m. Distance (dBA)	54
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■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	External of device	Page 150
Electric After Heater	Optional	Internal of device	Page 150
Water After Heater	Optional	Internal of device	Page 150
Water Cooler	-	-	-
Duct Connection Damper	-	-	
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	Optional	Page 151	
Bulk Siphon	Optional	Page 152	
Room Control Panel Type1	Standard	-	
Room Control Panel Type2	-	-	
Room Control Panel Type3	-	-	
Cloud Connections Right	-	-	
VOD Sensor CO2	Optional	Page 152	
VOD Sensor RH%	Optional	Page 152	
VOD Sensor VOC	Optional	Page 152	
Signal Converter	Optional	Page 153	
Constant Pressure Kit	-	-	

Exhaust Filter Coarse	-
Exhaust Filter ePM10 50%	Standard
Fresh Air Filter Coarse	-
Fresh Air Filter ePM10 50%	-
Fresh Air Filter ePM1 55%	Standard
Fresh Air Filter ePM1 80%	Optional

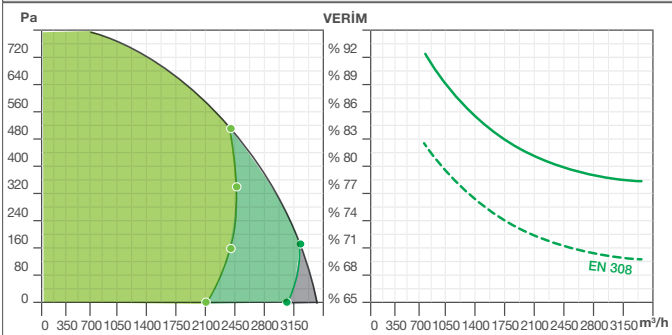
Page 151

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ ERP PRO 3200



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	ERP PRO 3200
Exchanger Type	Aluminum Plate Cross Flow
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Indoor
Installation Position	Horizontal
Service Location	Side and Bottom
Case structure	25 mm Insulated Double Walled

TECHNICAL INFORMATION

Minimum Flow Rate (m³/h)	310
Nominal Flow Rate (m³/h)	2420
Efficiency (EN 308)	73%
Efficiency (-5°C OA, 22°C 50%RH RA)	82%
Weight (kg)	405
According to EN 1886 Case Features	D1/L2/TB4/T4
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-12/+46
Protecting Class	IP 20

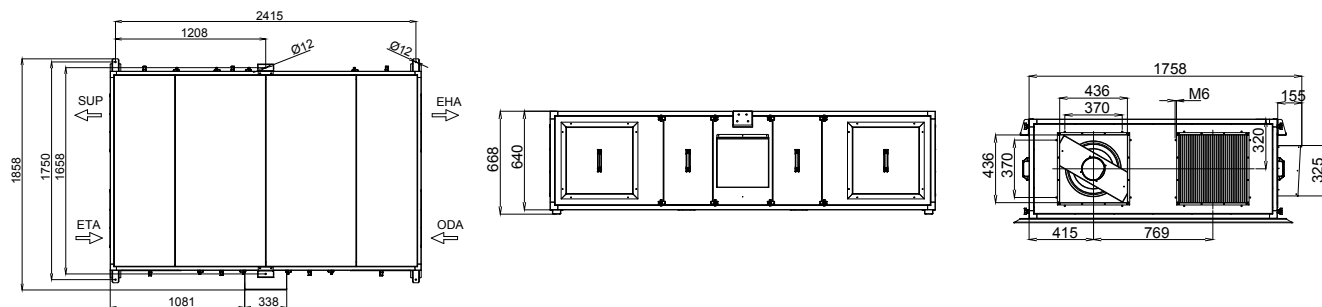
Electrical Informations

Communicating Informations	Modbus RTU
Supply Voltage	230V, 1~, 50 Hz
Total Power (1) (kW)	1,6
Maksimum Current (A)	7,8

Sound Information (2)

Surrounding Sound 3m. Distance (dBA)	52
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■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	External of device	Page 150
Electric After Heater	Optional	Internal of device	Page 150
Water After Heater	Optional	Internal of device	Page 150
Water Cooler	-	-	-
Duct Connection Damper	-	-	
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	Optional	Page 151	
Bulk Siphon	Optional	Page 152	
Room Control Panel Type1	Standard	-	
Room Control Panel Type2	-	-	
Room Control Panel Type3	-	-	
Cloud Connections Right	-	-	
VOD Sensor CO2	Optional	Page 152	
VOD Sensor RH%	Optional	Page 152	
VOD Sensor VOC	Optional	Page 152	
Signal Converter	Optional	Page 153	
Constant Pressure Kit	-	-	

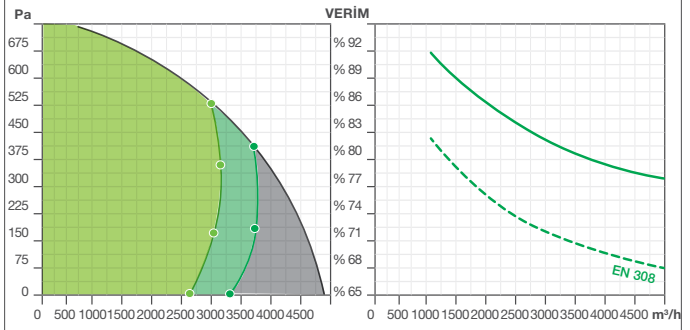
Exhaust Filter Coarse	-
Exhaust Filter ePM10 50%	Standard
Fresh Air Filter Coarse	-
Fresh Air Filter ePM10 50%	-
Fresh Air Filter ePM1 55%	Standard
Fresh Air Filter ePM1 80%	Optional
	Page 151

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ ERP PRO 4200



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	ERP PRO 4200
Exchanger Type	Aluminum Plate Cross Flow
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Indoor
Installation Position	Horizontal
Service Location	Side and Bottom
Case structure	25 mm Insulated Double Walled

TECHNICAL INFORMATION

Minimum Flow Rate (m³/h)	510
Nominal Flow Rate (m³/h)	2950
Efficiency (EN 308)	73%
Efficiency (-5°C OA, 22°C 50%RH RA)	83%
Weight (kg)	445
According to EN 1886 Case Features	D1/L2/TB4/T4
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-12/+46
Protecting Class	IP 20

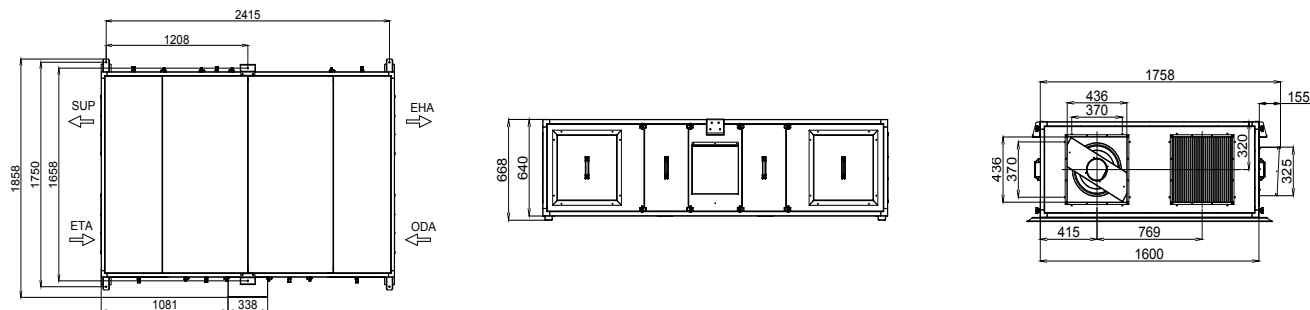
Electrical Informations

Communicating Informations	Modbus RTU
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	3
Maksimum Current (A)	4,8

Sound Information (2)

Surrounding Sound 3m. Distance (dBA)	48
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■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	External of device	Page 150
Electric After Heater	Optional	Internal of device	Page 150
Water After Heater	Optional	Internal of device	Page 150
Water Cooler	-	-	-
Duct Connection Damper	-	-	-
Outside Protection Sheet	-	-	-
Fresh Air Spigot	-	-	-
Exhaust Spigot	-	-	-
Drainage Pump	Optional	Page 151	
Bulk Siphon	Optional	Page 152	
Room Control Panel Type1	Standard	-	
Room Control Panel Type2	-	-	
Room Control Panel Type3	-	-	
Cloud Connections Right	-	-	
VOD Sensor CO2	Optional	Page 152	
VOD Sensor RH%	Optional	Page 152	
VOD Sensor VOC	Optional	Page 152	
Signal Converter	Optional	Page 153	
Constant Pressure Kit	-	-	

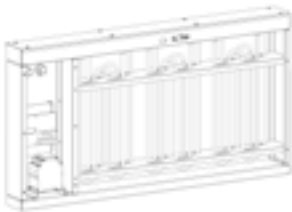
Exhaust Filter Coarse	-
Exhaust Filter ePM10 50%	Standard
Fresh Air Filter Coarse	-
Fresh Air Filter ePM10 50%	-
Fresh Air Filter ePM1 55%	Standard
Fresh Air Filter ePM1 80%	Optional
	Page 151

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

ACCESSORIES

■ ELECTRICAL PREHEATER

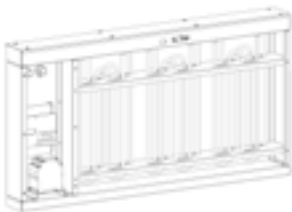
Used in order to prevent freezing at the exchanger in the situations which the outside air is very low. Controlled as a single step with SENSO control. Provides controllable energy efficiency with SENSO+ control via proportional signal.



Model	Heater Capacity (kW)	Current (A)	Control
EP-PREH 1200	3	4,2	On/off
EP-PREH 2200	6	8,4	On/off
EP-PREH 3200	7,5	10,5	On/off
EP-PREH 4200	9	12,6	On/off

■ ELECTRICAL AFTER HEATER

Used for increasing the supply air temperature. Operates automatically according to desired room temperature or desired supply temperature. Controlled as a single step with SENSO control. Provides controllable energy efficiency with SENSO+ control via proportional signal.



Model	Heater Capacity (kW)	Current (A)	Control
EP-POEH 1200	3	4,2	On/off
EP-POEH 2200	6	8,4	On/off
EP-POEH 3200	7,5	10,5	On/off
EP-POEH 4200	9	12,6	On/off

■ WATER AFTER HEATER

Used for increasing the supply air temperature. Operates automatically according to desired room temperature or desired supply temperature. Controlled as a single step with SENSO control. Provides controllable energy efficiency with SENSO+ control via proportional signal.



Model	Heater Capacity (kW)	Water Regime	Control
EP-POWH 1200	3	80-60	On/off
EP-POWH 2200	6	80-60	On/off
EP-POWH 3200	7,5	80-60	On/off
EP-POWH 4200	9	80-60	On/off

■ Drainage Pump

Used when unloading the water occurred from condensation at the exchanger or battery cell in the device not possible via the present slope.



Model	Maximum Flow (l/h)	Max Head (m)	Max Suction Height (m)	Energy Supply
DP 01	13	10	1,5	230 V, 50/60 Hz
DP 02	40	10	2	230 V, 50/60 Hz

■ FILTER

In the projects, it is designed as a standard for more sensitive than the present filter's filtering



Model	Code
Taze Hava Filtresi ePM1 80%	ERP1200FAEPM1-80
	ERP2200FAEPM1-80
	ERP3200FAEPM1-80
	ERP4200FAEPM1-80

■SENSO HMI

The keypad user panel provides the communication with main PCB via the AERA-link protocol. Connection is made with 2x0.75 mm2 cable.



Model
SENSIO HMI

ACCESSORIES

■ BALL SIPHON

Used for disposal of water In the heat recovery sections, the result of condensation at the exhaust air or the result of condensation at the cooking batteries. Can operate in both positive negative pressure.



Model
SIPH

■ VOD

Located in inside of critical volume or return duct, the optional air quality sensor (VOC or CO₂) or relative humidity sensor (RH%) consistently measures the air quality or relative humidity. This value, as being compared with set value which is arranged on control, creates operating which changes EC fan's fan speed. If the air in room is lower than desired air quality or the relative humidity is higher than the desired value, the fan speed is increased so, fresh air amount increased, if the air in room is higher than desired air quality or the relative humidity is lower than the desired value, the fan speed is decreased so, fresh air amount decreased; Thus, a significant energy save is provided at the heating or cooling loads caused by the fresh air.



Model	Measurement	Installation Position
VOD-VOC-RM	VOC	Room
VOD-VOC-DUCT	VOC	Channel
VOD-CO ₂ -DUCT	CO ₂	Room
VOD-CO ₂ -RM	CO ₂	Channel
VOD-RH-DUCT	RH%	Room
VOD-RH-RM	RH%	Channel
PS-MW	-	-

■Signal Converter

SENSO+ devices as make an access that connect up to 3 VOD sensors, both measure gas and different volume gases, change the capacity according to these measurements of air conditioning plants. Via Signal Converter, in 3 different types, for each type up to 6 measurements or obtained values from 18 different measurement volumes are used for controlling air conditioning plant is provided.



Model
SENSO+ SK

In the office buildings which has a high population density, shopping centers etc. at the applications, air ventilation needs are more than the other buildings needs. Because of a reason that fresh air's conditioning cost is higher, in these systems air conditioning systems which have high energy efficiency, ability to manage heat and humidity recovery with a high percentage, low electricity consuming and sound leveled, high automation qualification are used.

Nowadays increasing building cost increased the cost of unit areas in buildings and building systems rooming less became a priority for investors. With EVO-TOP DEVICES developed by AERA can minimize the the room volume for air conditioning up to 40% and the trading volume amount can be increased significantly.

Fresh air and exhaust air changing can be managed easily by a shaft in the building with the duct connections over EVO-TOP devices. With an integrated heating battery in device without a additional module the heating can be existed. By SENSO+ integrated in the device developed control selections are provided as a standard. The rotor in use is covered with a coating material which allows to transfer steam only and as both heat transfer efficiency up to 84% and humidity transfer efficiency up to 84% provides, fresh air hided heat load is increased up to 84%. Because of the structure of rotor in use condensation is not occurred so, drainage is not needed.



EVO-TOP

ROTOR TYPE HEAT RECOVERY UNIT
COMPACT AIR CONDITIONING PLANT



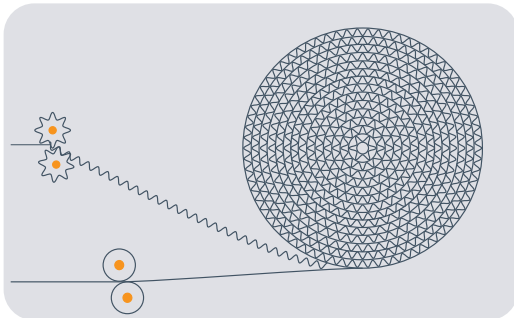


CASING

EVO TOP devices with their compact construction can be placed in building volumes with very low space and easily transported inside the building. By using advanced technology components, EVO-TOP units achieve efficiency levels of today's and tomorrow's standards. The casing, which is developed using the latest engineering methods, also shows superior performance in terms of aerodynamics. The internal turbulence or dead zone losses are reduced to the minimum with the analysis.

In addition to achieving a high-strength design with patented fan support bracket design, the total efficiency is improved by avoiding dead zones and reverse flows which may occur behind the fan body.

EVO-TOP units are designed with low air velocities, low filter and coil pressure drops are achieved despite its compact design. The fact that the electric preheater and the water type after heater can be placed inside the body contributes to the compact structure, preventing difficulties in wiring and automation. Water heating battery's piping has a specially designed connection, it provides high sealing and easy connection out of the casing. EVO-TOP units are designed in accordance with VDI6022. Inside of the unit is easily cleanable. The used seals are closed cell and prevent germ reproduction. All components that require service, have their own service doors. This way the unit does not have to be disconnected from ducting system for servicing.



SORPTION WHEEL

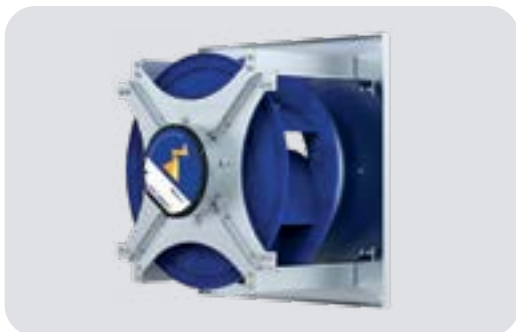
EVO-TOP units present the state of art rotary wheels with high heat and humidity transfer rates. Twin rotary wheels are designed to decrease the height, enabling ceiling installations. Rotary wheel drive consists service free high torque step motor, stepless control drive and polyester chain belt system.

Rotary wheel is coated with 3Å Zeolite material for high humidity efficiency in both winter and summer season, that allows the transfer of water molecules only between air streams. In cooling season, EVO-TOP units promise 115% more energy transfer than a traditional Aluminum wheel and 195% more than a static Aluminum Plate.



FILTER

EVO-TOP devices, at the fresh air side ePM1 55% (F7) class, at the exhaust air side ePM10 50% (M5) class filters are comprised as a standard. By these high efficient filters as they are catching 90% of dust particles which have up to 0,4 µm radius, room air quality is increased. Filters have low starting pressure drop values because of having both their high efficiencies and increased surface area. In order to observe filter pollution differential pressure transmitters are applied at fresh air and exhaust air filters. Thus, as the filter's pressure drop is followed instantly, the used is acknowledged. For different flow rates, as different pressure drops are defined, the dynamic filter alarm can be created by SENSO+. In the fresh air side of devices optionally ePM1 80% (F9) filter can be used.



FAN

EVO-TOP Units are designed using plug type EC fans with high aerodynamic efficiency, low noise levels and low energy consumption. All fans meet ECO-DESIGN criteria set by the Energy Commission of the European Union and are compatible with ERP 2015. Plug fans with EC motors with the help of SENSO PLUS control system, can be driven steplessly with an indoor air quality sensor or with constant volume. Fans are ready to provide constant pressure in VAV systems with the VAV kit supplied as accessory. Plug type fans with EC motors are AC-powered fans with DC motor technology. The DC motor provides high electrical efficiency and can be connected to the AC mains with the converter located on them. It is perfectly matched to the high-tech electronic components used and magnetic noise transmitted to the network is prevented. EC motors communicate with the SENSO PLUS

control system via Modbus. This reduces the number of in-line cabling and provides more information to the user and ensures optimum operating point is used in the unit. The computerized analysis of the fan blades has made it possible to optimize the aerodynamic efficiency and reduce the sound levels. The back plate of the fan impeller has been redesigned for a linear air flow. The EC motors used perform well beyond today's efficiency requirements and all motors comply with the IE4 energy efficiency class.

SENSO+

The advanced control system SENSO PLUS in EVO-C Wheel Units, provides the most efficient control of all components which can be installed internally and as external accessories, ensuring the desired airflow conditions.

DX COIL

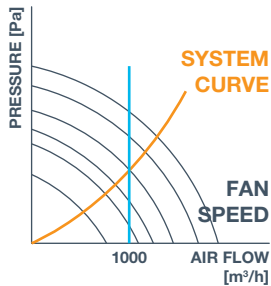
Externally mounted duct type DX batteries are used for purposes such as lowering the supply air temperature, dehumidifying process and bringing the blown air to the desired temperature after dehumidification. It can be step controlled with on / off method, maximum 8 step setting is available.

HUMIDITY CONTROL EQUIPMENT

Humidity control equipments are used to raise or lower the humidity of the supply air. With the SENSO PLUS control, the humidifier / dehumidifiers can be controlled to bring the supply air to the desired humidity value.

The SENSO PLUS control also provides system control besides equipment control, which means that the devices can be operated with the Yearly Timer Function according to the working periods: Daily, Weekly, Monthly or Yearly. In the Timer Function, values such as weekly working days, vacation times, daylight savings time can be defined and reported retrospectively.

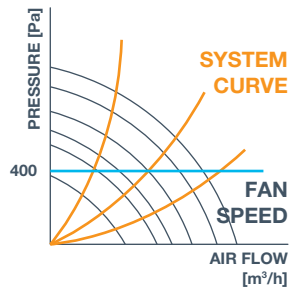
Besides, the Support Function which is used to prevent the undesired conditions from occurring indoors even when the device is not working. The indoor temperature from falling below or exceeding a certain value even during non-working hours is ensured.



Constant Air Volume

To meet the desired constant airflow requirement in the EVO-C Handling Units, the SENSO PLUS control measures the air pressure drop in the suction ports of the fans and compares the air flow with the set value to produce a working signal that will change the EC fan fan speed.

Contamination of the filters can be controlled by static flow control within the fan operating curve, to the static pressure requirements of the unit which result in higher or lower than the project values.



Constant Air Pressure

In EVO-C Units, constant pressure control is used to meet the variable airflow requirement of the air duct system. The SENSO PLUS control generates a working signal that will change the EC fan speed by continuously measuring the static pressure created in the supply air duct and comparing it with the value defined in the system. When a VAV damper opens or closes, higher or lower external static pressure needs can be met with constant pressure control within the fans operating curve. This way extreme noise in the ducts, unbalanced airflow distribution in different volumes is prevented.

ROTARY HEAT EXCHANGER CONTROL

In EVO R air handling units, rotary heat recovery exchanger is produced with a variable revolution rotor drive with SENSO PLUS control. By controlling the supply air temperature, the rotor revolution is automatically adjusted according to the required heat recovery. If the outside air conditions are appropriate, the rotor is stopped and free cooling is performed. An alarm signal is sent and the user is warned by the sensor attached to the device if the rotor does not rotate due to any malfunction. If the rotor is not spinning for 30 minutes due to suitable outdoor conditions, rotor will turn for 20 seconds at 12 rpm for automatic cleaning.

COOLING COIL

Externally mounted duct-type water cooling coils are used for such purposes as lowering the blowing temperature and dehumidifying the air in the units. It can be driven either proportionally or by on / off method.

Heating Coil

Heating coils are used for increasing the supply air temperature and for bringing the supply air to the desired temperature after dehumidifying process. Hot water coils can be driven by proportional control via 2 or 3 way valves. With the SENSO PLUS control, frost protection mechanism is available as standard to prevent the temperature of the supply water from reaching freezing conditions in extreme cold climates. If the return water temperature falls below a certain value set on the control, the heating valve is switched to the 100% open position and a run signal is sent to the heating water circulation pump. If the temperature still does not rise to the desired value, the device is stopped and the user is given a freeze alarm.

Indoor Air Quality Control

The air quality sensor or the CO2 sensor, which is placed in the critical volume or return channel in the interior, continuously measures the air quality. This value generates a signal that will change the EC fan speed by comparing it to the set point on the controller. If the indoor air quality is lower than the desired value, the fan speed and thus the fresh air amount is increased; if the indoor air quality is higher than the desired indoor air quality, the fan speed and fresh air speed are decreased; Energy saving is achieved in considerable amounts in heating or cooling loads caused by fresh air.

FILTER POLLUTION CHECK

The pressure drops of the filters used to clean the air, can be controlled by SENSO PLUS control. Users are notified about the filter cleaning and replacement intervals. Pressure drop control can be made according to a constant pressure drop (Static) or variable air flow (Dynamic). Especially with units designed with variable speed fans, Dynamic Filter Control enables filter service at the right time.

USER INTERFACE

With SENSO+ EVO ECO control panel which has buttons or EVO TOUCH 7" touch screen control panel is presented. Also there is a web server for observing or controlling the device which is integrated in the card. On the server the settings can be done, also both of the instantaneous operating values and history of operating values are able to be followed.



The web server on SENSO+, as connecting to web, via a computer/tablet or a mobile phone at anywhere in the world, operating situation can be viewed and the access for changing the settings is provided. Without needing a complex web settings, this feature can be activated with a simple web connected cable.

The devices in the different projects, with cumulating all of the devices in the same display, as it is synchronized, operating values, active alarms etc. values as followed and the settings can be changed if it is desired. Especially in the projects within the multiple devices or for servicing the multiple devices in different places this system is provided optionally together with SENSO+ .

COMMUNICATION OPTIONS

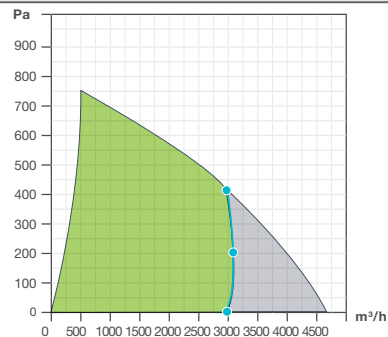
SENSO PLUS control supports all of the universal communication protocols and interacts with other air handling units as well as with other building automation systems. ModBUS, BACnet and EXOline protocols are open as standard and there is also possibility to connect with LONWORKS protocol as an option.



■ EVO-TOP 30



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	EVO-TOP 30
Exchanger Type	Adsorption Wheel (5)
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m³/h)	480
Nominal Flow Rate (m³/h)	3080
Efficiency (EN 308)	79%
Efficiency (-5°C OA, 22°C 50%RH RA)	81%
Efficiency Humidity Transfer Efficiency	81%
According to EN 1886 Case Features	D1/L1/TB3/T3
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

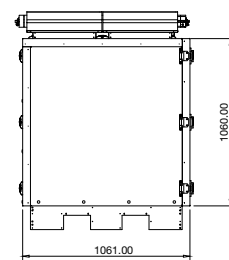
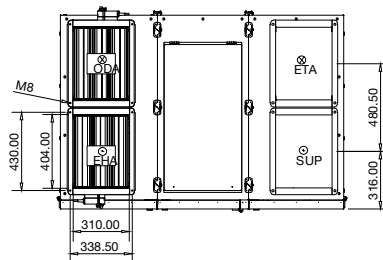
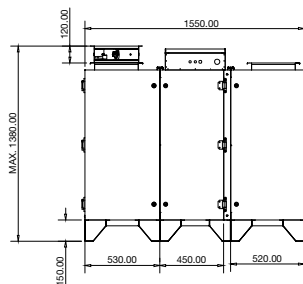
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	2,9
Maksimum Current (A)	3,4

Sound Information (2)

Sound Level at Supply (dBA)	74
Sound Level at Return (dBA)	65
Surrounding Sound 1m. Distance (dBA)	48
Surrounding Sound 3m. Distance (dBA)	38
Surrounding Sound 5m. Distance (dBA)	34

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	External of device	Page 168
Electric After Heater	Optional	Internal of device	Page 168
Water After Heater	Optional	Internal of device	Page 168
Water Cooler	Optional	External of device	Page 169
Duct Connection Damper	Optional	Page 169	
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	-	-	
Bulk Siphon	-	-	
Room Control Panel Type1	EVO ECO	Page 172	
Room Control Panel Type2	EVO TOUCH	Page 172	
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional	Sayfa 171	
VOD Sensor CO2	Optional	Page 170	
VOD Sensor RH%	Optional	Page 170	
VOD Sensor VOC	Optional	Page 170	
Signal Converter	Optional	Page 171	
Constant Pressure Kit	Optional	Page 171	

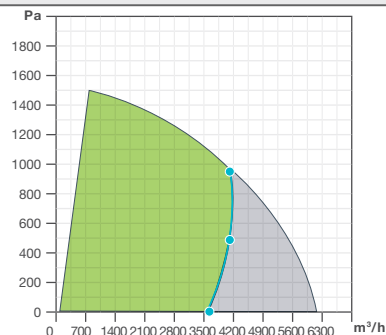
Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 170
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 170

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ EVO-TOP 40



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	EVO-TOP 40
Exchanger Type	Adsorption Wheel (5)
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m³/h)	670
Nominal Flow Rate (m³/h)	4140
Efficiency (EN 308)	80%
Efficiency (-5°C OA, 22°C 50%RH RA)	82%
Efficiency Humidity Transfer Efficiency	82%
According to EN 1886 Case Features	D1/L1/TB3/T3
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

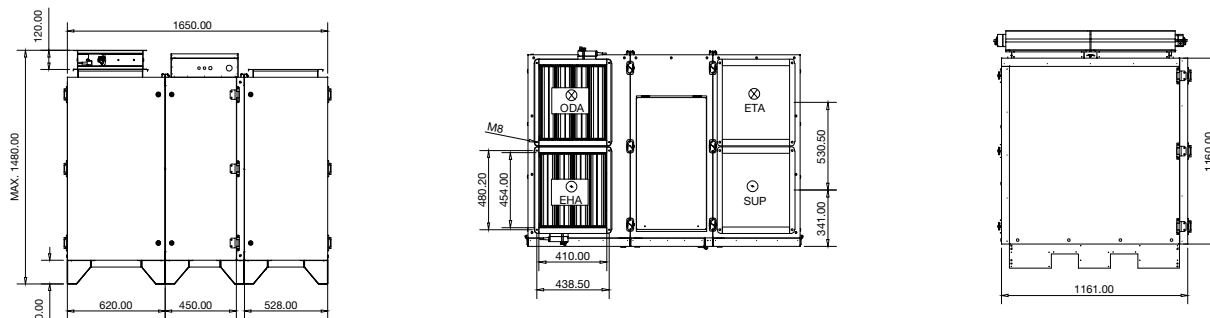
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	5,2
Maksimum Current (A)	7,8

Sound Information (2)

Sound Level at Supply (dBA)	81
Sound Level at Return (dBA)	73
Surrounding Sound 1m. Distance (dBA)	54
Surrounding Sound 3m. Distance (dBA)	45
Surrounding Sound 5m. Distance (dBA)	40

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	External of device	Page 168
Electric After Heater	Optional	Internal of device	Page 168
Water After Heater	Optional	Internal of device	Page 168
Water Cooler	Optional	External of device	Page 169
Duct Connection Damper	Optional	Page 169	
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	-	-	
Bulk Siphon	-	-	
Room Control Panel Type1	EVO ECO	Page 172	
Room Control Panel Type2	EVO TOUCH	Page 172	
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional	Sayfa 171	
VOD Sensor CO2	Optional	Page 170	
VOD Sensor RH%	Optional	Page 170	
VOD Sensor VOC	Optional	Page 170	
Signal Converter	Optional	Page 171	
Constant Pressure Kit	Optional	Page 171	

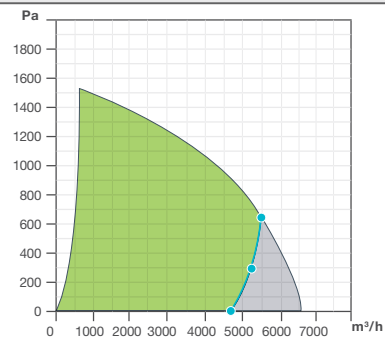
Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 170
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 170

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ EVO-TOP 50



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	EVO-TOP 50
Exchanger Type	Adsorption Wheel (5)
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m³/h)	730
Nominal Flow Rate (m³/h)	5470
Efficiency (EN 308)	80%
Efficiency (-5°C OA, 22°C 50%RH RA)	82%
Efficiency Humidity Transfer Efficiency	82%
According to EN 1886 Case Features	D1/L1/TB3/T3
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

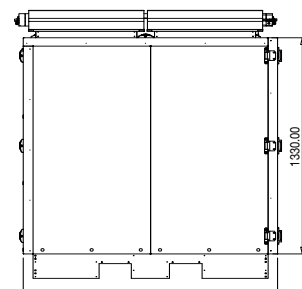
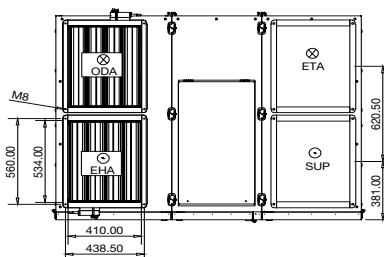
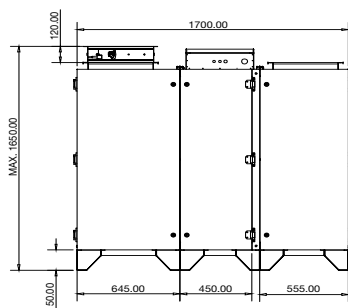
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	5,2
Maksimum Current (A)	7,8

Sound Information (2)

Sound Level at Supply (dBA)	75
Sound Level at Return (dBA)	65
Surrounding Sound 1m. Distance (dBA)	49
Surrounding Sound 3m. Distance (dBA)	40
Surrounding Sound 5m. Distance (dBA)	35

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	External of device	Page 168
Electric After Heater	Optional	Internal of device	Page 168
Water After Heater	Optional	Internal of device	Page 168
Water Cooler	Optional	External of device	Page 169
Duct Connection Damper	Optional	Page 169	
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	-	-	
Bulk Siphon	-	-	
Room Control Panel Type1	EVO ECO	Page 172	
Room Control Panel Type2	EVO TOUCH	Page 172	
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional	Sayfa 171	
VOD Sensor CO2	Optional	Page 170	
VOD Sensor RH%	Optional	Page 170	
VOD Sensor VOC	Optional	Page 170	
Signal Converter	Optional	Page 171	
Constant Pressure Kit	Optional	Page 171	

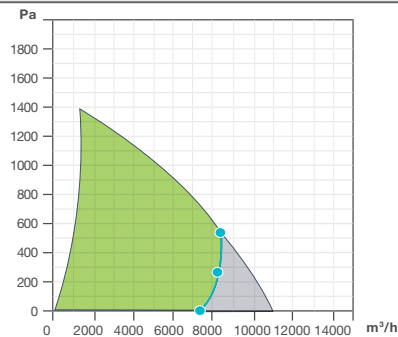
Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 170
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 170

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ EVO-TOP 70



■ FAN PERFORMANCE CURVES



UNIT INFORMATION

	EVO-TOP 70
Exchanger Type	Adsorption Wheel (5)
Fan Type	EC Plug Fan
ERP Compatibility	ERP 2018
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Minimum Flow Rate (m ³ /h)	1240
Nominal Flow Rate (m ³ /h)	7800
Efficiency (EN 308)	79%
Efficiency (-5°C OA, 22°C 50%RH RA)	81%
Efficiency Humidity Transfer Efficiency	81%
According to EN 1886 Case Features	D1/L1/TB3/T3
Fresh Air Filter	ePM1 55% (F7)
Exhaust Filter	ePM10 50% (M5)
Operating Temperature (1) (°C)	-20/+50
Protecting Class	IP 31

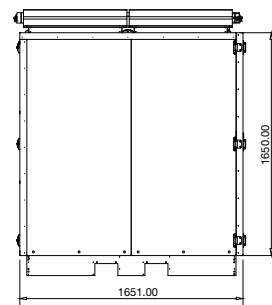
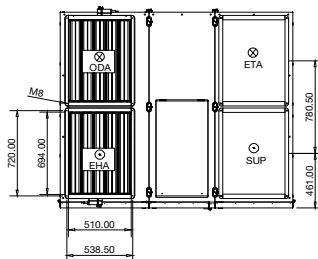
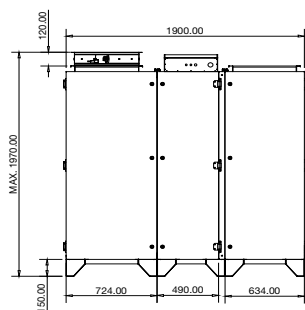
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	10
Maksimum Current (A)	15,4

Sound Information (2)

Sound Level at Supply (dBA)	84
Sound Level at Return (dBA)	76
Surrounding Sound 1m. Distance (dBA)	59
Surrounding Sound 3m. Distance (dBA)	50
Surrounding Sound 5m. Distance (dBA)	45

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	External of device	Page 168
Electric After Heater	Optional	Internal of device	Page 168
Water After Heater	Optional	Internal of device	Page 168
Water Cooler	Optional	External of device	Page 169
Duct Connection Damper	Optional	Page 169	
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	-	-	
Bulk Siphon	-	-	
Room Control Panel Type1	EVO ECO	Page 172	
Room Control Panel Type2	EVO TOUCH	Page 172	
Room Control Panel Type3	-	-	
Cloud Connections Right	Optional	Sayfa 171	
VOD Sensor CO2	Optional	Page 170	
VOD Sensor RH%	Optional	Page 170	
VOD Sensor VOC	Optional	Page 170	
Signal Converter	Optional	Page 171	
Constant Pressure Kit	Optional	Page 171	

Exhaust Filter Coarse	-	
Exhaust Filter ePM10 50%	Standard	
Fresh Air Filter Coarse	-	
Fresh Air Filter ePM10 50%	Optional	Page 170
Fresh Air Filter ePM1 55%	Standard	
Fresh Air Filter ePM1 80%	Optional	Page 170

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

ACCESSORIES

■ ELECTRICAL PREHEATER

Used in order to prevent freezing at the exchanger in the situations which the outside air is very low. Controlled as a single step with SENSO control. Provides controllable energy efficiency with SENSO+ control via proportional signal.



Model	Heater Capacity (kW)	Current (A)	Control
ET-PREH 30	7,5	10,5	Oransal
ET-PREH 40	9	12,6	Oransal
ET-PREH 50	9	12,6	Oransal
ET-PREH 70	12	16,8	Oransal

■ ELECTRICAL AFTER HEATER

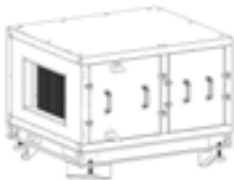
Used for increasing the supply air temperature. Operates automatically according to desired room temperature or desired supply temperature. Controlled as a single step with SENSO control. Provides controllable energy efficiency with SENSO+ control via proportional signal.



Model	Heater Capacity (kW)	Current (A)	Control
ET-PREH 30	7,5	10,5	Oransal
ET-PREH 40	9	12,6	Oransal
ET-PREH 50	9	12,6	Oransal
ET-PREH 70	12	16,8	Oransal

■ WATER AFTER HEATER

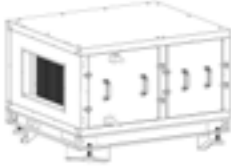
Used for increasing the supply air temperature. Operates automatically according to desired room temperature or desired supply temperature. Controlled as a single step with SENSO control. Provides controllable energy efficiency with SENSO+ control via proportional signal.



Model	Heater Capacity (kW)	Water Regime	Control
ET-POWH 30	7,5	80-60	Oransal
ET-POWH 40	9	80-60	Oransal
ET-POWH 50	9	80-60	Oransal
ET-POWH 70	12	80-60	Oransal

■ WATER COOLING

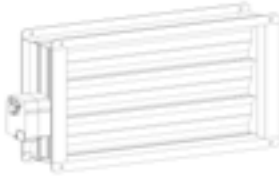
Used for cooling inside, water type cooling batteries are existed as accesories. With SENSO+ control, controlled proportionally according to desired supply temperature or desired room temperature.



Model	Heater Capacity (kW)	Water Regime	Control
ET-KR 30	6	7-12	Oransal
ET-KR 40	6	7-12	Oransal
ET-KR 50	9	7-12	Oransal
ET-KR 70	12	7-12	Oransal

■ Duct Connection Damper

The motor operated damper, as turned itself off when the devices is turned off, prevent the leakage can be occurred via air duct. It can be implemented in or out of device. Has the Class 3 impermeability as a standard.



Model	Operation Time	Energy Supply
ET-DAMP 30	40...75 s	24C DC , yay geri dönüşlü
ET-DAMP 40	40...75 s	24C DC , yay geri dönüşlü
ET-DAMP 50	40...75 s	24C DC , yay geri dönüşlü
ET-DAMP 70	40...75 s	24C DC , yay geri dönüşlü

■ SENSO HMI

The keypad user panel provides the communication with main PCB via the AERA-link protocol. Connection is made with 2x0.75 mm2 cable.



Model
SENSO HMI

ACCESSORIES

■ FILTER

In the projects, it is designed as a standard for more sensitive than the present filter's filtering



Model	Code
Taze Hava filtresi ePM10 50%	ET30FAEPM10-50
	ET40FAEPM10-50
	ET50FAEPM10-50
	ET70FAEPM10-50
Taze Hava filtresi ePM1 80%	ET30FAEPM1-80
	ET40FAEPM1-80
	ET50FAEPM1-80
	ET70FAEPM1-80

■ VOD

Located in inside of critical volume or return duct, the optional air quality sensor (VOC or CO₂) or relative humidity sensor (RH%) consistently measures the air quality or relative humidity. This value, as being compared with set value which is arranged on control, creates operating which changes EC fan's fan speed. If the air in room is lower than desired air quality or the relative humidity is higher than the desired value, the fan speed is increased so, fresh air amount increased, if the air in room is higher than desired air quality or the relative humidity is lower than the desired value, the fan speed is decreased so, fresh air amount decreased; Thus, a significant energy save is provided at the heating or cooling loads caused by the fresh air.



Model	Measurement	Installation Position
VOD-VOC-RM	VOC	Room
VOD-VOC-DUCT	VOC	Channel
VOD-CO ₂ -DUCT	CO ₂	Room
VOD-CO ₂ -RM	CO ₂	Channel
VOD-RH-DUCT	RH%	Room
VOD-RH-RM	RH%	Channel
PS-MW	-	-

■ CLOUD CONNECTION

The web server on SENSO+, as connecting to web, via a computer/tablet or a mobile phone at anywhere in the world, operating situation can be viewed and the access for changing the settings is provided. Without needing a complex web settings, this feature can be activated with a simple web connected cable.



Model
SENSO+ CLOUD

■ Constant Pressure Kit

Used for serving the purpose of ventilation system's varying flow rate. SENSO+, creates the signal which can change EC fan's fan speed as measuring static pressure value consistently, as comparing with defined value to the system. Turning up or down the VAV damper which are different volume in duct system, serve the purpose of static pressure out of device as a result of higher or lower values than projected values with constant pressure control. In the fan operating characteristic, extreme volume sound occurred in the ducts and flow rate in different volumes are prevented.



Model
SENSO-CAP

■ Signal Converter

SENSO+ devices as make an access that connect up to 3 VOD sensors, both measure gas and different volume gases, change the capacity according to these measurements of air conditioning plants. Via Signal Converter, in 3 different types, for each type up to 6 measurements or obtained values from 18 different measurement volumes are used for controlling air conditioning plant is provided.



Model
SENSO+ SK

ACCESSORIES

■EVO-ECO

Is a user panel used as a user interface in the devices has the SENSO+ control card. Connected to control panel via 4x0.75 cable or RJ-12 Jack.



Model
EVO-ECO

■EVO-TOUCH

Is a 7" sized touch type user panel used as a user interface. Connected to control panel via 4x0.75 cable or RJ-12 Jack.



Model
EVO-TOUCH

NOTES

High efficient dehumidification units are important in places such as pool areas which has high amount of evaporating water. EVOPOOL units with their high humidification capacity create a comfortable environment and also protect the building from corrosion.

EVOPOOL units are designed to be used for dehumidification process of swimming pools according to the calculated conditions of the pools. Dehumidification efficiency is maximized by hermetic scroll compressors with high COP.

EVOPOOL units are equipped with SENSPOOL control system as standard. SENSPOOL is designed specially for these units and has different intelligent energy efficient modes based on occupancy and outdoor enthalpy.

EC type plug fans with high corrosion resistance impellers are used in EVOPOOL units. EC Fans don't require frequency inverters and always ensures high efficiency operation. SENSPOOL controls provides constant airflow mode as standard.



EVO-POOL

POOL DEHUMIDIFICATION UNIT





CASING

EVOPOOL Unit's casings are engineered with today's standards, according to future needs. By eliminating the defects of traditional casings, high thermal and acoustical performance have been achieved, mechanical strength and corrosion resistance have been increased. As a result, a compact body that provides easy operation and service has emerged.

EVAPORATOR

In the units, direct expansion type coils are used in order to obtain the humidity of the return air . Evaporator carry the air taken from indoor to the dew point to 100% relative humidity curve and reduce the absolute humidity by condensing. Evaporator is produced with epoxy paint against corrosion and special structure for easy discharge of condensate.



COMPRESSORS

High efficiency, hermetic scroll type, working with R407C gas compressors are used in units. All cooling circuit and control equipments are implemented in the system and system security is ensured.

CONDENSER

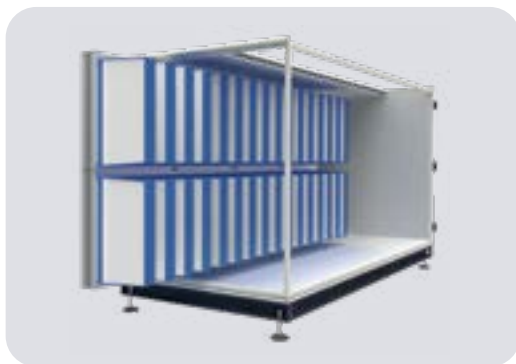
Before dehumidified cold air being blown into the interior it is providing heating via waste heat of cooling cycle.

PLATE HEAT EXCHANGER

It collects energy from the extract air and transfers it to supply air. Return and fresh air fully separated from each other, only heat transfer happens. Plate heat recovery is coated with epoxy paint against corrosion.

EXTRACT AND FRESH AIR FANS

High electrical and aerodynamic efficiency, self-propelled, backward curved blade, EC fans or AC fans are used. Motors are protected against high electric current and mechanical obstruction and have constant flow control with SENSOPOOL. The body of fans is made of aluminum alloy sheet metal with high corrosion resistance.



FILTRATION

The units are equipped with epm1 55% (F7) class filters on the fresh air side and epm10 50% (M5) class filters on the exhaust side. Depending on the project, filtration classes can be changed.



SENSOPOOL

EVOPOOL units are shipped with SENSOPOOL controls as standard. The SENSOPOOL control board automatically regulates extract and fresh air fans, safety and control of refrigeration cycle, the damper automation. With the control panel, the user can control the unit up to 200 meters distance with a wired control, weekly time program, filter pollution, operation/alarm control.

Calculating Steam Amount in Pools (according to VDI 2089)

Covered pools can have different temperatures according to their purpose of use. For their purposes of use, the average of comfortness conditions are provided situations values are given in the table below.

Purpose of Use	Indoor Temperature	Pool Water Temperature
Fun Pools	24-29 °C	24-29 °C
Sports Pools	26-29 °C	24-28 °C
Hotel Pools	28-29 °C	28-30 °C
Spas	27-29 °C	36-40 °C

Pools based on their usage are classified as follows and calculations are made according to activity factor.

Application	"Activity Factor, E gxm-2xh-1xmbar-1"
Covered Pools	0,5
Stationary Pools (Out of Service)	5
Residential Pools	15
Public Pools	20
Fun Pools	28
Undulating, waterslide etc. The pools include equipments	35

Steaming Amount : $W=ExAx(P_W-P_R)$

E= Pool Activity Factor

A= Pool Area

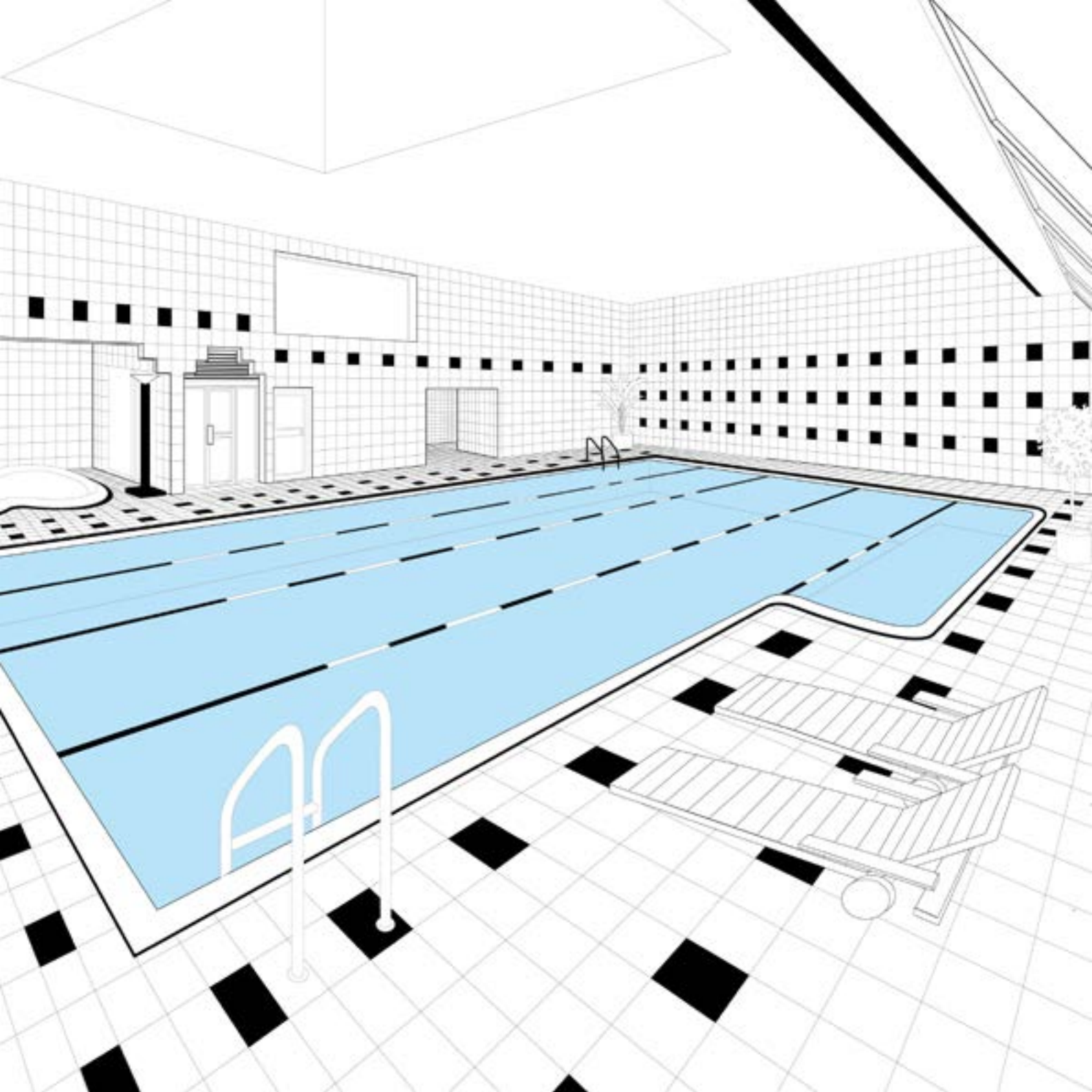
P_W =At pool water temperature saturated air's steam pressure (%100RH)

P_R =Desired air's steam pressure indoor

Calculating Example

Pool Area : 154 m2
Purpose of use : Hotel Pool
Pool Water Temperature : 28 °C
Indoor Conditions : 30 °C, %60 RH

Calculating Steam Pressure Values
 P_W :8 °C, %100 RH steam pressure, 37.78 mbar
 P_R :30 °C, %60 RH steam pressure, 25.45 mbar
Activity Factor, Public Pool; 20 gxm-2xh-1xmbar-1
 $W=ExAx(P_W-P_R)$
 $W=20 \times 154 \times (37.78-24.45)$
Calculated as $W = 41056 \text{ g/h}=41.1 \text{ l/h}$.



■ EVO POOL 30



UNIT INFORMATION

	EVO POOL 30
Exchanger Type	Aluminum Plate Cross Flow
Fan Type	EC Plug Fan
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATION

Nominal Air Flow Ratio (m3/h)	3000
Total Dehumidification Capacity (kg/h)	19
Case features according to EN 1886	D1/L1/TB2/T2
Fresh Air Front Filter	Coarse (G4)
Fresh air Filter	ePM1 55% (F7)
Exhaust Filter	Coarse (G4)
Operating Temperature (1) (°C)	-20/+50
Protection Class	IP 31

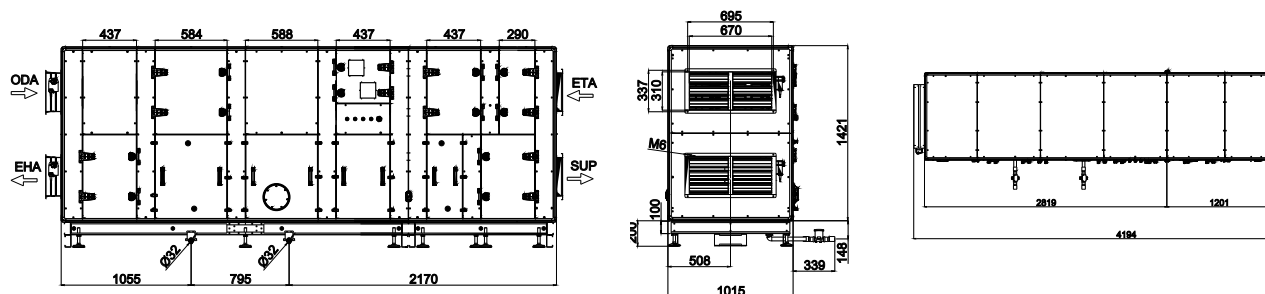
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	7,85
Maksimum Current (A)	15,43

Sound Information (2)

Sound Level at Supply (dBA)	81
Sound Level at Return (dBA)	73
Surrounding Sound 1m. Distance (dBA)	54
Surrounding Sound 3m. Distance (dBA)	45
Surrounding Sound 5m. Distance (dBA)	40

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	Internal of device	Page 198
Electric After Heater	Optional	Internal of device	Page 198
Water After Heater	Standard		
Water Cooler	-	-	-
Duct Connection Damper	Optional	Page 200	
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	-	-	
Bulk Siphon	Standard	-	
Room Control Panel Type1	EVO ECO	Page 201	
Room Control Panel Type2	EVO TOUCH	Page 201	
Room Control Panel Type3	-	-	
Cloud Connections Right	-	-	
VOD Sensor CO2	Standard		
VOD Sensor RH%	Optional	Page 200	
VOD Sensor VOC	Optional	Page 200	
Signal Converter	Optional	Page 201	
Constant Pressure Kit	-	-	

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ EVO POOL 50



UNIT INFORMATION

	EVO POOL 50
Exchanger Type	Aluminum Plate Cross Flow
Fan Type	EC Plug Fan
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATION

Nominal Air Flow Ratio (m3/h)	5000
Total Dehumidification Capacity (kg/h)	31
Case features according to EN 1886	D1/L1/TB2/T2
Fresh Air Front Filter	Coarse (G4)
Fresh air Filter	ePM1 55% (F7)
Exhaust Filter	Coarse (G4)
Operating Temperature (1) (°C)	-20/+50
Protection Class	IP 31

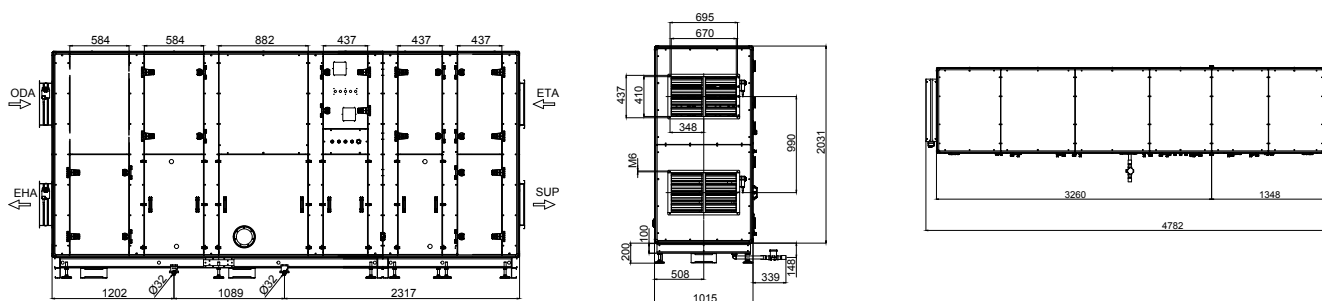
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	11,76
Maksimum Current (A)	22,47

Sound Information (2)

Sound Level at Supply (dBA)	75
Sound Level at Return (dBA)	65
Surrounding Sound 1m. Distance (dBA)	49
Surrounding Sound 3m. Distance (dBA)	40
Surrounding Sound 5m. Distance (dBA)	35

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	Internal of device	Page 198
Electric After Heater	Optional	Internal of device	Page 198
Water After Heater	Standard		
Water Cooler	-	-	-
Duct Connection Damper	Optional	Page 200	
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	-	-	
Bulk Siphon	Standard	-	
Room Control Panel Type1	EVO ECO	Page 201	
Room Control Panel Type2	EVO TOUCH	Page 201	
Room Control Panel Type3	-	-	
Cloud Connections Right	-	-	
VOD Sensor CO2	Standard		
VOD Sensor RH%	Optional	Page 200	
VOD Sensor VOC	Optional	Page 200	
Signal Converter	Optional	Page 201	
Constant Pressure Kit	-	-	

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ EVO POOL 70



UNIT INFORMATION

	EVO POOL 70
Exchanger Type	Aluminum Plate Cross Flow
Fan Type	EC Plug Fan
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATION

Nominal Air Flow Ratio (m ³ /h)	7000
Total Dehumidification Capacity (kg/h)	44
Case features according to EN 1886	D1/L1/TB2/T2
Fresh Air Front Filter	Coarse (G4)
Fresh air Filter	ePM1 55% (F7)
Exhaust Filter	Coarse (G4)
Operating Temperature (1) (°C)	-20/+50
Protection Class	IP 31

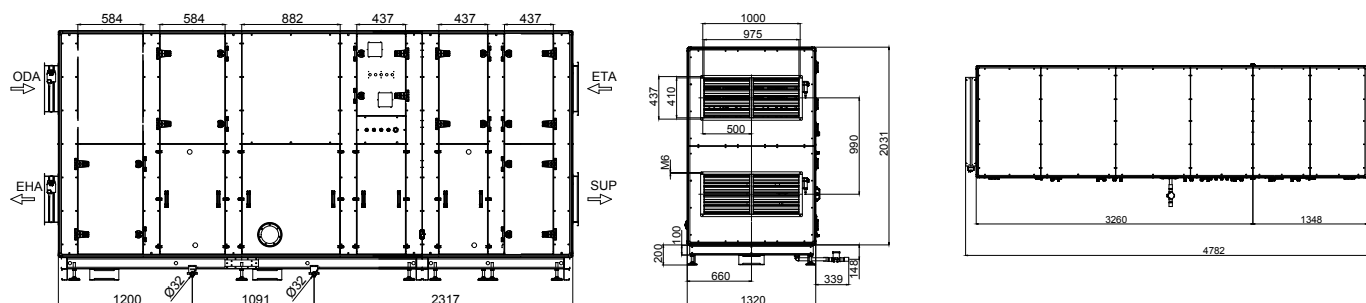
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	15,76
Maksimum Current (A)	30,94

Sound Information (2)

Sound Level at Supply (dBA)	78
Sound Level at Return (dBA)	68
Surrounding Sound 1m. Distance (dBA)	52
Surrounding Sound 3m. Distance (dBA)	43
Surrounding Sound 5m. Distance (dBA)	38

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	Internal of device	Page 198
Electric After Heater	Optional	Internal of device	Page 198
Water After Heater	Standard		
Water Cooler	-	-	-
Duct Connection Damper	Optional	Page 200	
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	-	-	
Bulk Siphon	Standard	-	
Room Control Panel Type1	EVO ECO	Page 201	
Room Control Panel Type2	EVO TOUCH	Page 201	
Room Control Panel Type3	-	-	
Cloud Connections Right	-	-	
VOD Sensor CO2	Standard		
VOD Sensor RH%	Optional	Page 200	
VOD Sensor VOC	Optional	Page 200	
Signal Converter	Optional	Page 201	
Constant Pressure Kit	-	-	

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ EVO POOL 100



UNIT INFORMATION

	EVO POOL 100
Exchanger Type	Aluminum Plate Cross Flow
Fan Type	EC Plug Fan
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATIONS

Nominal Air Flow Ratio (m3/h)	10000
Total Dehumidification Capacity (kg/h)	63
Case features according to EN 1886	D1/L1/TB2/T2
Fresh Air Front Filter	Coarse (G4)
Fresh air Filter	ePM1 55% (F7)
Exhaust Filter	Coarse (G4)
Operating Temperature (1) (°C)	-20/+50
Protection Class	IP 31

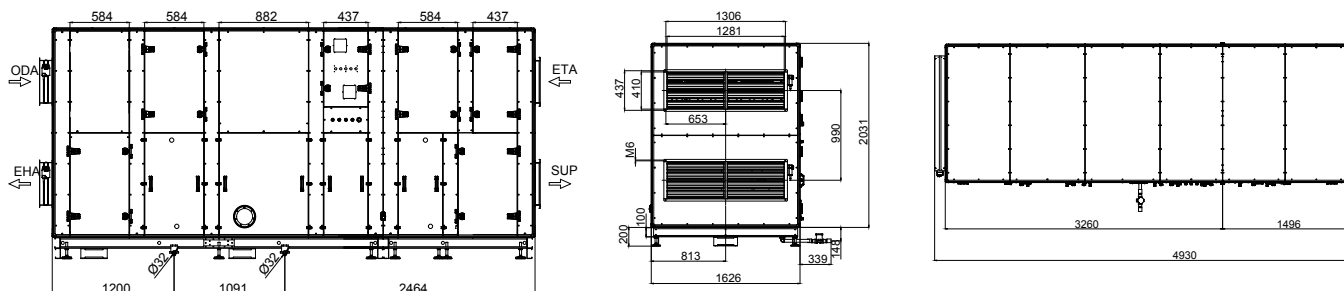
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	22,21
Maksimum Current (A)	41,01

Sound Information (2)

Sound Level at Supply (dBA)	80
Sound Level at Return (dBA)	69
Surrounding Sound 1m. Distance (dBA)	54
Surrounding Sound 3m. Distance (dBA)	45
Surrounding Sound 5m. Distance (dBA)	40

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	Internal of device	Page 198
Electric After Heater	Optional	Internal of device	Page 198
Water After Heater	Standard		
Water Cooler	-	-	-
Duct Connection Damper	Optional	Page 200	
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	-	-	
Bulk Siphon	Standard	-	
Room Control Panel Type1	EVO ECO	Page 201	
Room Control Panel Type2	EVO TOUCH	Page 201	
Room Control Panel Type3	-	-	
Cloud Connections Right	-	-	
VOD Sensor CO2	Standard		
VOD Sensor RH%	Optional	Page 200	
VOD Sensor VOC	Optional	Page 200	
Signal Converter	Optional	Page 201	
Constant Pressure Kit	-	-	

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ EVO POOL 120



UNIT INFORMATION

	EVO POOL 120
Exchanger Type	Aluminum Plate Cross Flow
Fan Type	EC Plug Fan
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATION

Nominal Air Flow Ratio (m3/h)	12000
Total Dehumidification Capacity (kg/h)	76
Case features according to EN 1886	D1/L1/TB2/T2
Fresh Air Front Filter	Coarse (G4)
Fresh air Filter	ePM1 55% (F7)
Exhaust Filter	Coarse (G4)
Operating Temperature (1) (°C)	-20/+50
Protection Class	IP 31

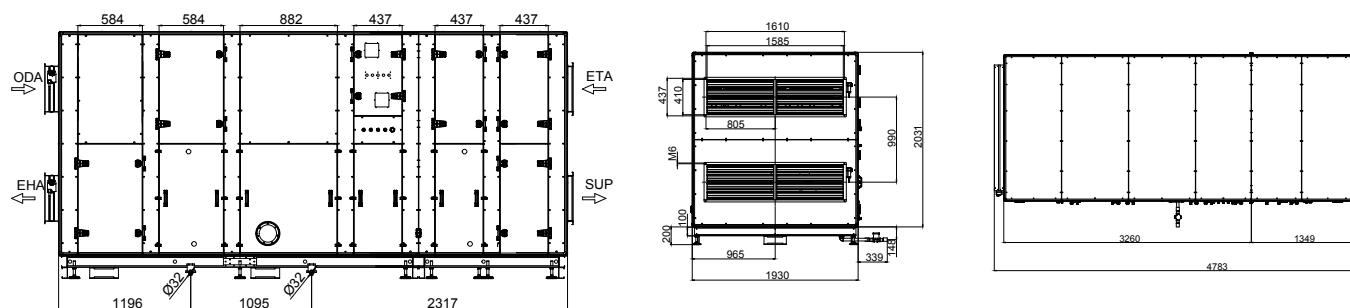
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	27,57
Maksimum Current (A)	47,48

Sound Information (2)

Sound Level at Supply (dBA)	79
Sound Level at Return (dBA)	70
Surrounding Sound 1m. Distance (dBA)	54
Surrounding Sound 3m. Distance (dBA)	44
Surrounding Sound 5m. Distance (dBA)	40

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	Internal of device	Page 198
Electric After Heater	Optional	Internal of device	Page 198
Water After Heater	Standard		
Water Cooler	-	-	-
Duct Connection Damper	Optional	Page 200	
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	-	-	
Bulk Siphon	Standard	-	
Room Control Panel Type1	EVO ECO	Page 201	
Room Control Panel Type2	EVO TOUCH	Page 201	
Room Control Panel Type3	-	-	
Cloud Connections Right	-	-	
VOD Sensor CO2	Standard		
VOD Sensor RH%	Optional	Page 200	
VOD Sensor VOC	Optional	Page 200	
Signal Converter	Optional	Page 201	
Constant Pressure Kit	-	-	

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ EVO POOL 150



UNIT INFORMATION

	EVO POOL 150
Exchanger Type	Aluminum Plate Cross Flow
Fan Type	EC Plug Fan
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATION

Nominal Air Flow Ratio (m3/h)	15000
Total Dehumidification Capacity (kg/h)	95
Case features according to EN 1886	D1/L1/TB2/T2
Fresh Air Front Filter	Coarse (G4)
Fresh air Filter	ePM1 55% (F7)
Exhaust Filter	Coarse (G4)
Operating Temperature (1) (°C)	-20/+50
Protection Class	IP 31

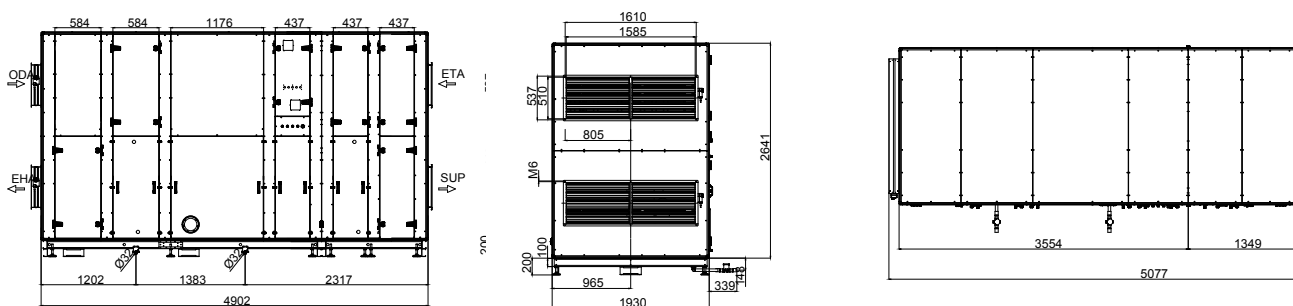
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	33,01
Maksimum Current (A)	66,52

Sound Information (2)

Sound Level at Supply (dBA)	82
Sound Level at Return (dBA)	74
Surrounding Sound 1m. Distance (dBA)	57
Surrounding Sound 3m. Distance (dBA)	47
Surrounding Sound 5m. Distance (dBA)	43

DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	Internal of device	Page 198
Electric After Heater	Optional	Internal of device	Page 198
Water After Heater	Standard		
Water Cooler	-	-	-
Duct Connection Damper	Optional	Page 200	
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	-	-	
Bulk Siphon	Standard	-	
Room Control Panel Type1	EVO ECO	Page 201	
Room Control Panel Type2	EVO TOUCH	Page 201	
Room Control Panel Type3	-	-	
Cloud Connections Right	-	-	
VOD Sensor CO2	Standard		
VOD Sensor RH%	Optional	Page 200	
VOD Sensor VOC	Optional	Page 200	
Signal Converter	Optional	Page 201	
Constant Pressure Kit	-	-	

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ EVO POOL 200



UNIT INFORMATION

	EVO POOL 200
Exchanger Type	Aluminum Plate Cross Flow
Fan Type	EC Plug Fan
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATION

Nominal Air Flow Ratio (m3/h)	20000
Total Dehumidification Capacity (kg/h)	127
Case features according to EN 1886	D1/L1/TB2/T2
Fresh Air Front Filter	Coarse (G4)
Fresh air Filter	ePM1 55% (F7)
Exhaust Filter	Coarse (G4)
Operating Temperature (1) (°C)	-20/+50
Protection Class	IP 31

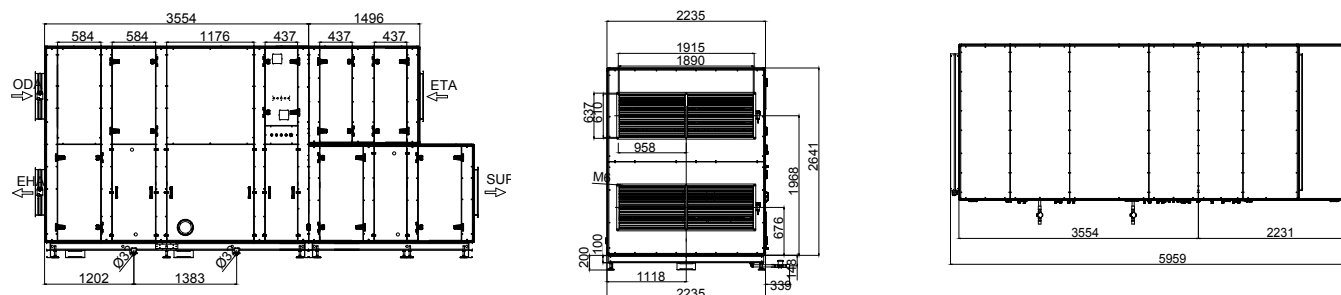
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	45,37
Maksimum Current (A)	82,02

Sound Information (2)

Sound Level at Supply (dBA)	85
Sound Level at Return (dBA)	78
Surrounding Sound 1m. Distance (dBA)	61
Surrounding Sound 3m. Distance (dBA)	51
Surrounding Sound 5m. Distance (dBA)	47

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	Internal of device	Page 198
Electric After Heater	Optional	Internal of device	Page 198
Water After Heater	Standard		
Water Cooler	-	-	-
Duct Connection Damper	Optional	Page 200	
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	-	-	
Bulk Siphon	Standard	-	
Room Control Panel Type1	EVO ECO	Page 201	
Room Control Panel Type2	EVO TOUCH	Page 201	
Room Control Panel Type3	-	-	
Cloud Connections Right	-	-	
VOD Sensor CO2	Standard		
VOD Sensor RH%	Optional	Page 200	
VOD Sensor VOC	Optional	Page 200	
Signal Converter	Optional	Page 201	
Constant Pressure Kit	-	-	

- (1) Together with Electrical Preheater
- (2) As a result of the measurement according to ISO 5136
- (3) Outside Kit is used
- (4) Bidirectional installation is provided via service covers located at front and back
- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ EVO POOL 250



UNIT INFORMATION

	EVO POOL 250
Exchanger Type	Aluminum Plate Cross Flow
Fan Type	EC Plug Fan
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATION

Nominal Air Flow Ratio (m3/h)	25000
Total Dehumidification Capacity (kg/h)	159
Case features according to EN 1886	D1/L1/TB2/T2
Fresh Air Front Filter	Coarse (G4)
Fresh air Filter	ePM1 55% (F7)
Exhaust Filter	Coarse (G4)
Operating Temperature (1) (°C)	-20/+50
Protection Class	IP 31

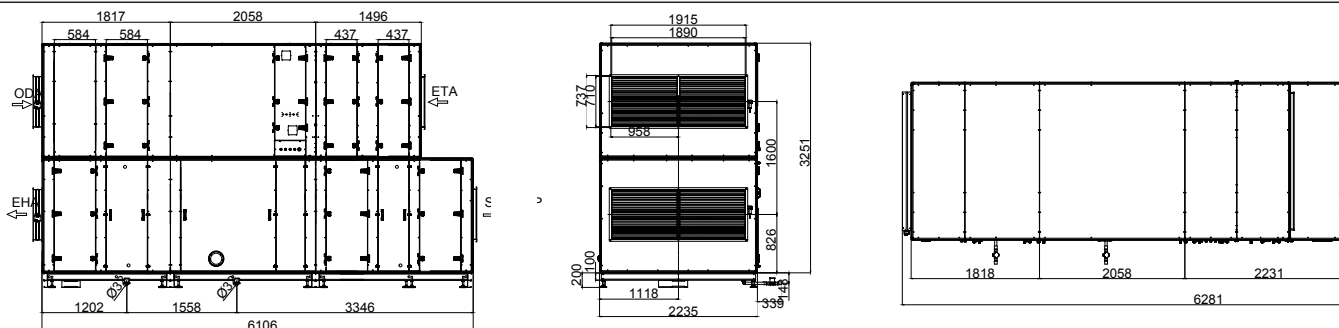
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	56,04
Maksimum Current (A)	98,44

Sound Information (2)

Sound Level at Supply (dBA)	85
Sound Level at Return (dBA)	79
Surrounding Sound 1m. Distance (dBA)	63
Surrounding Sound 3m. Distance (dBA)	53
Surrounding Sound 5m. Distance (dBA)	50

■ DIMENSIONS [mm]



ACCESSORIES

Electric Pre Heater	Optional	Internal of device	Page 198
Electric After Heater	Optional	Internal of device	Page 198
Water After Heater	Standard		
Water Cooler	-	-	-
Duct Connection Damper	Optional	Page 200	
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	-	-	
Bulk Siphon	Standard	-	
Room Control Panel Type1	EVO ECO	Page 201	
Room Control Panel Type2	EVO TOUCH	Page 201	
Room Control Panel Type3	-	-	
Cloud Connections Right	-	-	
VOD Sensor CO2	Standard		
VOD Sensor RH%	Optional	Page 200	
VOD Sensor VOC	Optional	Page 200	
Signal Converter	Optional	Page 201	
Constant Pressure Kit	-	-	

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- (5) Humidity transfer is possible with the selection of Adsorption Rotor

■ EVO POOL 300



UNIT INFORMATION

	EVO POOL 300
Exchanger Type	Aluminum Plate Cross Flow
Fan Type	EC Plug Fan
Installation	Indoor / Outdoor (3)
Installation Position	Vertical
Service Location	Front surface (4)
Case structure	50 mm Insulated Double Walled

TECHNICAL INFORMATION

Nominal Air Flow Ratio (m3/h)	30000
Total Dehumidification Capacity (kg/h)	190
Case features according to EN 1886	D1/L1/TB2/T2
Fresh Air Front Filter	Coarse (G4)
Fresh air Filter	ePM1 55% (F7)
Exhaust Filter	Coarse (G4)
Operating Temperature (1) (°C)	-20/+50
Protection Class	IP 31

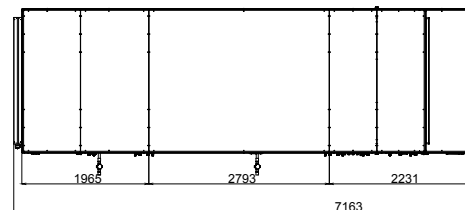
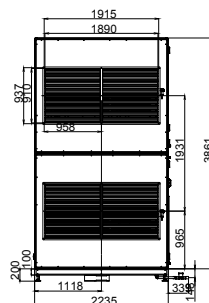
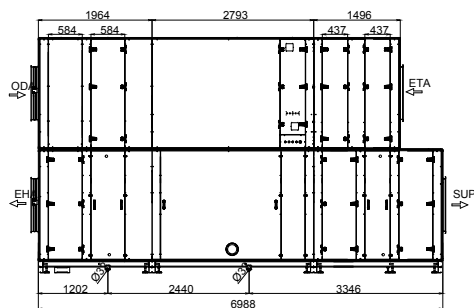
Electrical Informations

Communicating Informations	BACnet, Modbus TCP/IP
Supply Voltage	400V, 3~, 50 Hz
Total Power (1) (kW)	67,41
Maksimum Current (A)	123,03

Sound Information (2)

Sound Level at Supply (dBA)	88
Sound Level at Return (dBA)	83
Surrounding Sound 1m. Distance (dBA)	69
Surrounding Sound 3m. Distance (dBA)	58
Surrounding Sound 5m. Distance (dBA)	51

■ DIMENSIONS [mm]



ACCESSORIES

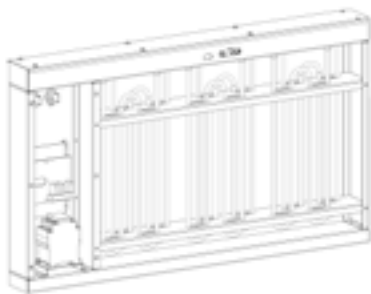
Electric Pre Heater	Optional	Internal of device	Page 198
Electric After Heater	Optional	Internal of device	Page 198
Water After Heater	Standard		
Water Cooler	-	-	-
Duct Connection Damper	Optional	Page 200	
Outside Protection Sheet	-	-	
Fresh Air Spigot	-	-	
Exhaust Spigot	-	-	
Drainage Pump	-	-	
Bulk Siphon	Standard	-	
Room Control Panel Type1	EVO ECO	Page 201	
Room Control Panel Type2	EVO TOUCH	Page 201	
Room Control Panel Type3	-	-	
Cloud Connections Right	-	-	
VOD Sensor CO2	Standard		
VOD Sensor RH%	Optional	Page 200	
VOD Sensor VOC	Optional	Page 200	
Signal Converter	Optional	Page 201	
Constant Pressure Kit	-	-	

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ACCESSORIES

■ ELECTRICAL PREHEATER

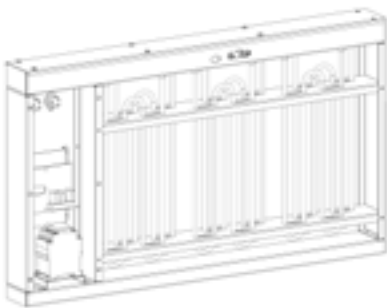
Used in order to prevent freezing at the exchanger in the situations which the outside air is very low. Controlled as a single step with SENSO control. Provides controllable energy efficiency with SENSO+ control via proportional signal.



Model	Heater Capacity (kW)	Current (A)	Control
EP-PREH 30	9	13	Oransal
EP-PREH 50	12	17,3	Oransal
EP-PREH 70	15	21,7	Oransal
EP-PREH 100	24	34,7	Oransal
EP-PREH 120	24	34,7	Oransal
EP-PREH 150	30	43,3	Oransal
EP-PREH 180	30	43,3	Oransal
EP-PREH 200	48	69,3	Oransal
EP-PREH 250	48	69,3	Oransal
EP-PREH 300	60	86,7	Oransal

■ ELECTRICAL AFTER HEATER

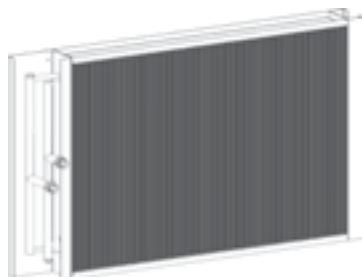
Used for increasing the supply air temperature. Operates automatically according to desired room temperature or desired supply temperature. Controlled as a single step with SENSO control. Provides controllable energy efficiency with SENSO+ control via proportional signal.



Model	Heater Capacity (kW)	Current (A)	Control
EP-POEH 30	9	13	Oransal
EP-POEH 50	12	17,3	Oransal
EP-POEH 70	15	21,7	Oransal
EP-POEH 100	24	34,7	Oransal
EP-POEH 120	24	34,7	Oransal
EP-POEH 150	30	43,3	Oransal
EP-POEH 180	30	43,3	Oransal
EP-POEH 200	48	69,3	Oransal
EP-POEH 250	48	69,3	Oransal
EP-POEH 300	60	86,7	Oransal

■ WATER AFTER HEATER

Used for increasing the supply air temperature. Operates automatically according to desired room temperature or desired supply temperature. Controlled as a single step with SENSO control. Provides controllable energy efficiency with SENSO+ control via proportional signal.



Model	Heater Capacity (kW)	Water Regime	Control
EP-POWH 30	9	80-60	Oransal
EP-POWH 50	12	80-60	Oransal
EP-POWH 70	15	80-60	Oransal
EP-POWH 100	24	80-60	Oransal
EP-POWH 120	24	80-60	Oransal
EP-POWH 150	30	80-60	Oransal
EP-POWH 180	30	80-60	Oransal
EP-POWH 200	48	80-60	Oransal
EP-POWH 250	48	80-60	Oransal
EP-POWH 300	60	80-60	Oransal

■ Duct Connection Damper

The motor operated damper, as turned itself off when the devices is turned off, prevent the leakage can be occurred via air duct. It can be implemented in or out of device. Has the Class 3 impermeability as a standard.



Model	Heater Capacity (kW)	Current (A)
EP-DAMP 30	40...75 s	24C DC, spring return
EP-DAMP 50	40...75 s	24C DC, spring return
EP-DAMP 70	40...75 s	24C DC, spring return
EP-DAMP 100	40...75 s	24C DC, spring return
EP-DAMP 120	40...75 s	24C DC, spring return
EP-DAMP 150	40...75 s	24C DC, spring return
EP-DAMP 180	40...75 s	24C DC, spring return
EP-DAMP 200	40...75 s	24C DC, spring return
EP-DAMP 250	40...75 s	24C DC, spring return
EP-DAMP 300	40...75 s	24C DC, spring return

ACCESSORIES

■Outdoor Protection Sheet

If the devices are used outdoors, they are used for water insulation. The devices thus achieve the insulation class IP 54.



Model
EP-WPC 30
EP-WPC 50
EP-WPC 70
EP-WPC 100
EP-WPC 120
EP-WPC 150
EP-WPC 180
EP-WPC 200
EP-WPC 250

■VOD

Located in inside of critical volume or return duct, the optional air quality sensor (VOC or CO₂) or relative humidity sensor (RH%) consistently measures the air quality or relative humidity. This value, as being compared with set value which is arranged on control, creates operating which changes EC fan's fan speed. If the air in room is lower than desired air quality or the relative humidity is higher than the desired value, the fan speed is increased so, fresh air amount increased, if the air in room is higher than desired air quality or the relative humidity is lower than the desired value, the fan speed is decreased so, fresh air amount decreased; Thus, a significant energy save is provided at the heating or cooling loads caused by the fresh air.



Model	Measurement	Installation Position
VOD-VOC-RM	VOC	Room
VOD-VOC-DUCT	VOC	Channel
VOD-CO ₂ -DUCT	CO ₂	Room
VOD-CO ₂ -RM	CO ₂	Channel
VOD-RH-DUCT	RH%	Room
VOD-RH-RM	RH%	Channel
PS-MW	-	-

■Signal Converter

SENSO+ devices as make an access that connect up to 3 VOD sensors, both measure gas and different volume gases, change the capacity according to these measurements of air conditioning plants. Via Signal Converter, in 3 different types, for each type up to 6 measurements or obtained values from 18 different measurement volumes are used for controlling air conditioning plant is provided.



Model

SENSO+ SK

■EVO-ECO

Is a user panel used as a user interface in the devices has the SENSO+ control card. Connected to control panel via 4x0.75 cable or RJ-12 Jack.



Model

EVO-ECO

■EVO-TOUCH

Is a 7" sized touch type user panel used as a user interface. Connected to control panel via 4x0.75 cable or RJ-12 Jack.



Model

EVO-TOUCH



SEPTEMBER 2019
THE MANUFACTURER RESERVES THE RIGHT TO CHANGE THE SPECIFICATION WITHOUT PRIOR NOTICE.

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