SALDA

AIR HANDLING UNITS

Issue 2016 ver. A

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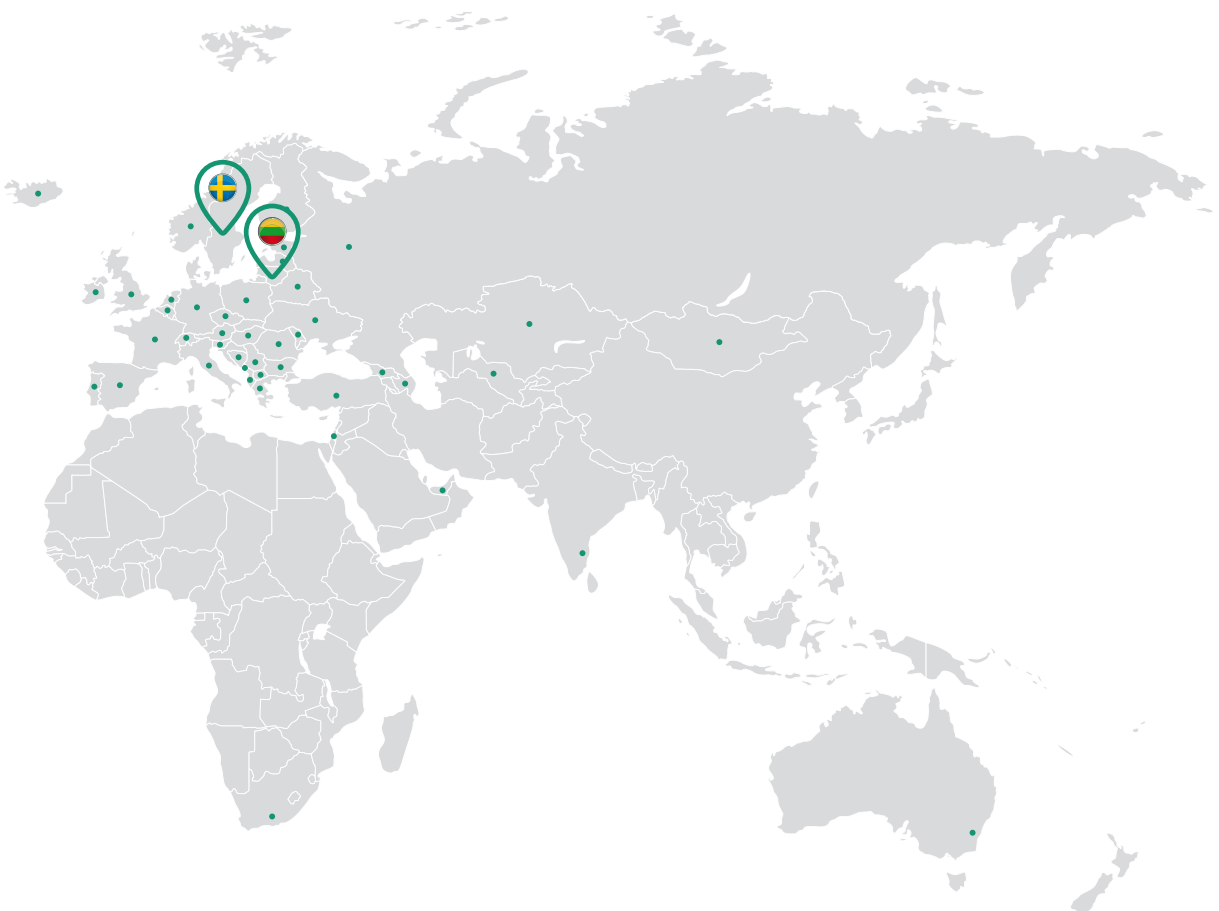
ABOUT
OUR COMPANY

Our approach to business is simple: it's all about being flexible, innovative and doing just a little bit more than our partners expect. With over 25 years in the ventilation market, we have managed to become one of the leading and rapidly growing European manufacturer.
Today SALDA is a privately owned company that has more than 350 employees and owns more than 40,000 square meters factory and office space. Our products are available in more than 30 countries, including all European countries, India, South Africa, the Middle East and South America.
Partners can choose from a comprehensive range of products that will fulfil all of their air-handling needs. Any solution, from a duct fan to a high-tech modular 120,000 m^3/h unit, will be manufactured in the shortest period possible and delivered to your construction site.
Our company constantly invests in manufacturing equipment: modern laser cutters, benders and other machinery enable to achieve high precision, speed and flexibility in the production of standard and non-standard products.
SALDA is entirely focused on air-handling business. Choose our products to experience our true professionalism and our passion for doing things better.

CORRESPONDING MEMBER EUROVENT
Since 2013

We are
close to our clients



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● **Distributing countries**

KEY FOCUS:
THE CLIENT

Our mission, and the essence of our existence, is to identify and realize our clients' future needs, even those that they themselves may not yet be aware of. It is essential that we offer to our clients the convenience. We always stay one step ahead of our competitors by providing our clients with the highest-quality products, materials, and services for which we, as a manufacturer, are absolutely responsible.

INNOVATIONS

FLEXIBILITY

FAST DELIVERY

QUALITY

INNOVATIONS:
From the very beginning, our clients have received premium-class air-handling solutions. Today SALDA is a modern ventilation company, which 70% of administrative staff is engaged in R&D processes. Our newly developed products are tested in external laboratories. Every year our company introduces to the market new products; modern controllers, effective air handling units and reliable fans have become the hallmarks of our company.

FLEXIBILITY:
We listen to our clients' needs. Your desires, needs and ideas are our focus. Customised solutions are available not only for individual modular unit projects, but also for our compact air handling unit range as well.

FAST DELIVERY:
Our company offers prompt deliveries. The 2-week manufacturing term is not a promise, it's a fact. Our company has developed production and management processes and implemented Lean manufacturing to become the fastest in the market.

QUALITY:
100% of our air handling units are tested. We work according to **ISO 9001:2008** quality management standards. All of our equipment passes 3 steps of quality control: (1) inspection of incoming components, (2) interim controls during the production process, and (3) final testing with semiautomatic diagnostic system and a visual inspection. SALDA is actively participating in the **EUROVENT** certification process. Our clients can be 100% sure that their projects will meet technical specifications due to VentMaster, our modular AHU selection program that has been tested and approved by **EUROVENT**, and the fact that the data of our compact AHUs are tested in external laboratories. Our products have **2-year warranty** from any defects.

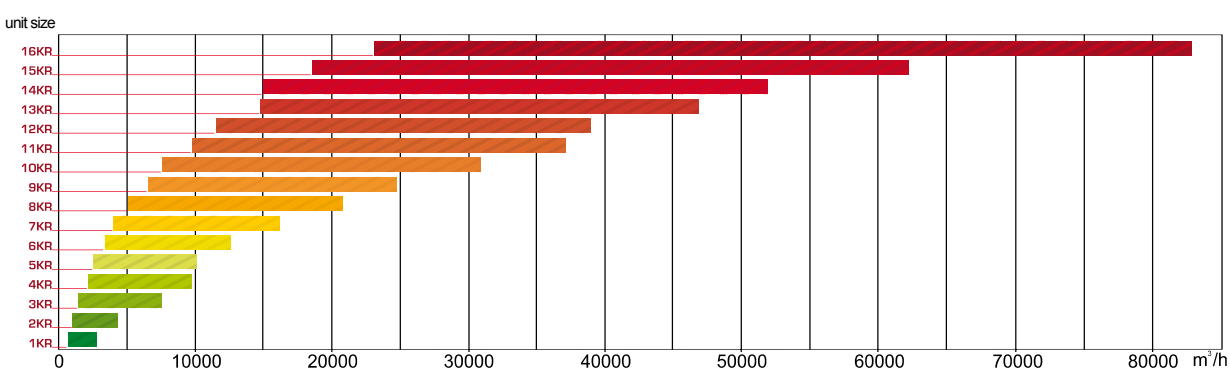
AIR HANDLING UNITS- SHORT DESCRIPTION

SALDA offers a comprehensive range of air handling units. Our units have already been installed in various buildings, from small apartments to large industrial plants. The main features of all of our air handling units are the top-level of air tightness, the maximum efficiency, user-friendly controls, simple maintenance and installation. Logical solutions and high quality reflect our clients' desires for smart air handling devices.

MODULAR AIR HANDLING UNITS

SmartAir

SALDA **SmartAir** modular air handling units are meant for customized large-scale ventilation projects. **SmartAir** units have a wide range of components to meet specific demands and project requirements. Their special design ensures easy assembly and comfortable as well as fast delivery. **SmartAir** offers high-class **SW50+ (D1,L1,F9,T2,TB1)** casing, top energy savings (A+) and easy maintenance.



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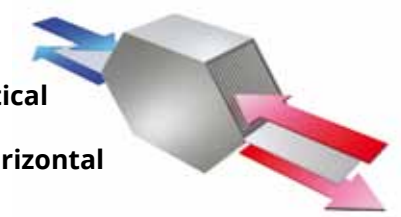
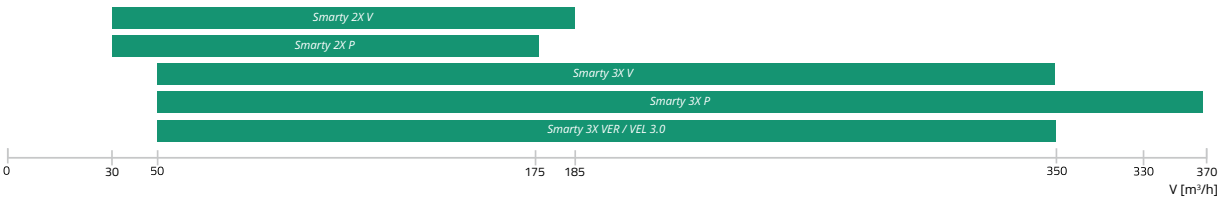
RESIDENTIAL
AIR HANDLING UNITS

Smarty X

Efficiency: **<94%**
Mounting position
(Smarty 2X V/3X V / 3X VER,VEL 3.0): **vertical**
Mounting position
(Smarty 2X P/ 3X P): **ceiling, vertical, horizontal**
Fans: **EC**
Energy efficiency class: **A**





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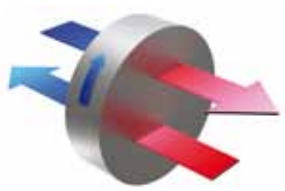
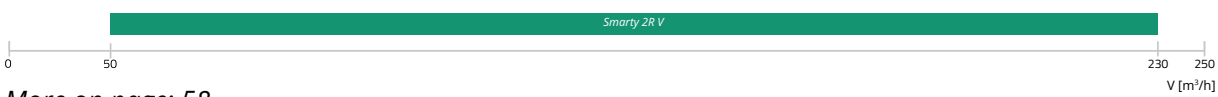
Smarty R

Efficiency: **<80%**
Mounting position: **vertical**
Fans: **EC**
Energy efficiency class: **B**





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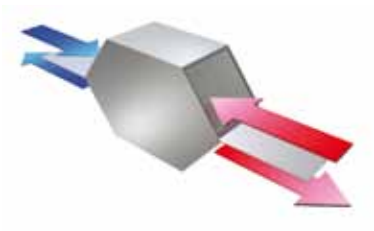
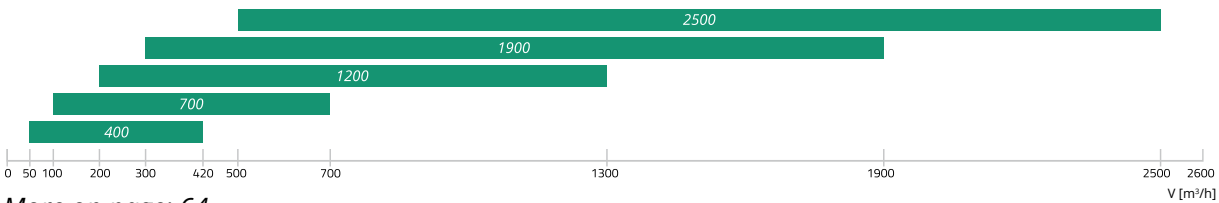
COMPACT
AIR HANDLING UNITS

RIS P EKO

Efficiency: **<90%**
Mounting position: **ceiling**
Fans: **EC**
Energy efficiency class: **A**





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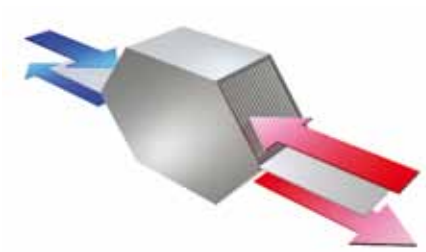
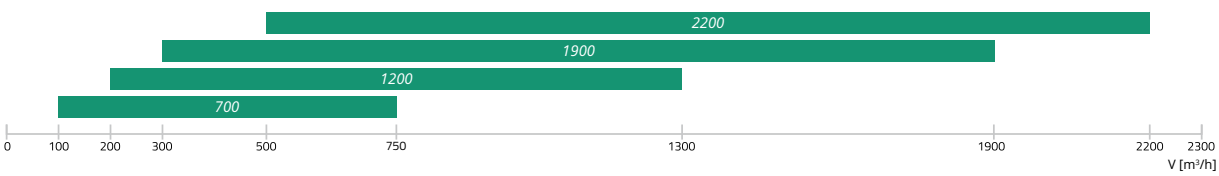
RIS V EKO

Efficiency: **<90%**
Mounting position: **vertical**
Fans: **EC**
Energy efficiency class: **A**





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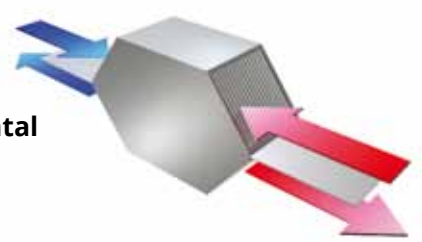
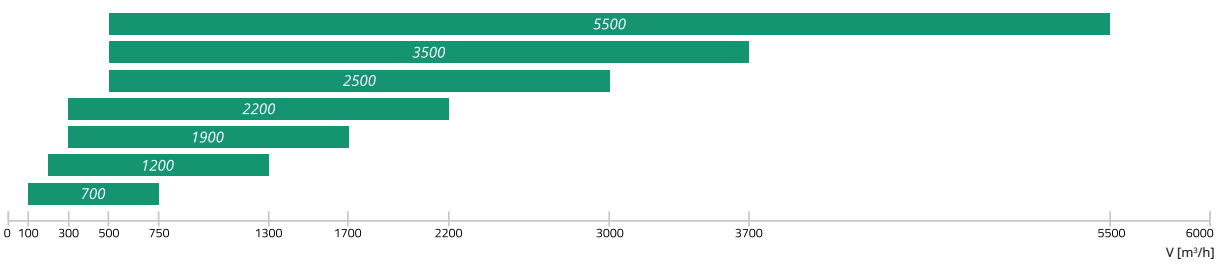
RIS H EKO

Efficiency: **<90%**
Mounting position: **horizontal**
Fans: **EC**
Energy efficiency class: **A**





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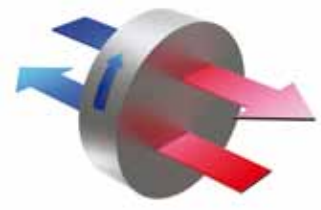
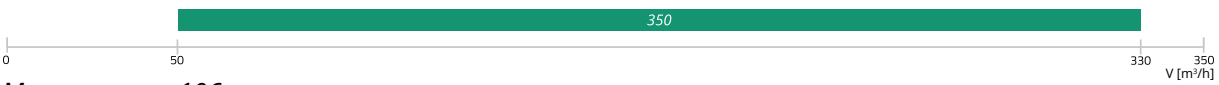
RIRS P EKO

Efficiency: **<85%**
Mounting position: **ceiling**
Fans: **EC**
Energy efficiency class: **A**





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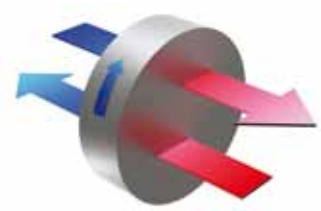
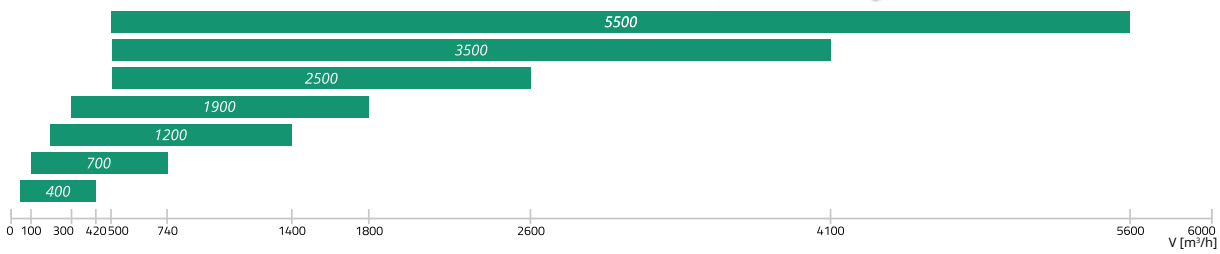
RIRS V EKO

Efficiency: **<85%**
Mounting position: **vertical**
Fans: **EC**
Energy efficiency class: **A**





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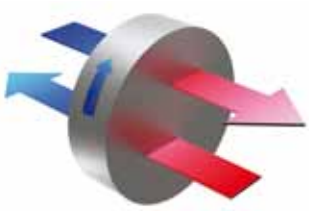
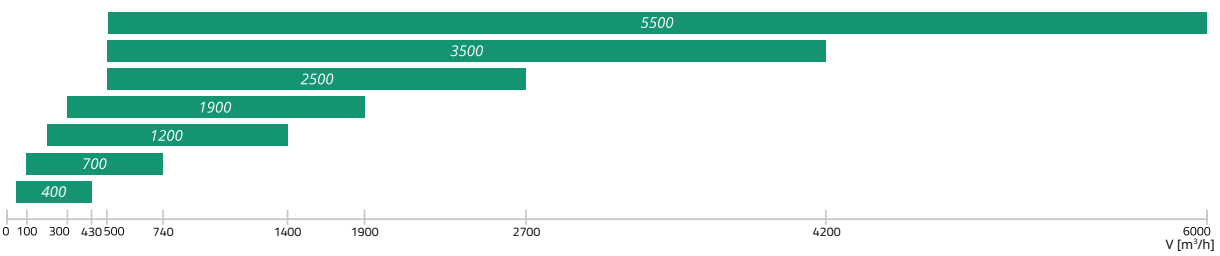
RIRS H EKO

Efficiency: **<85%**
Mounting position: **horizontal**
Fans: **EC**
Energy efficiency class: **A**





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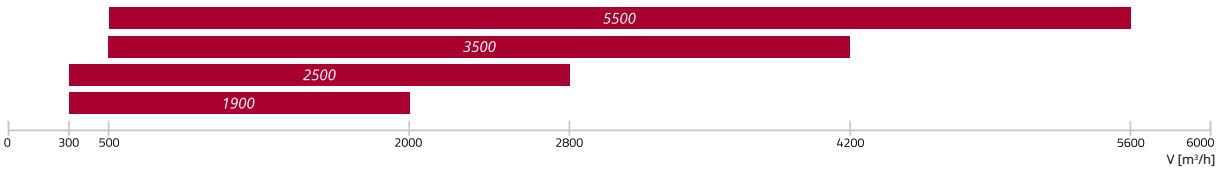
RIS V EC

Efficiency: **<60%**
Mounting position: **vertical**
Fans: **EC**



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RIS H EC

Efficiency: **<60%**
Mounting position: **horizontal**
Fans: **EC**

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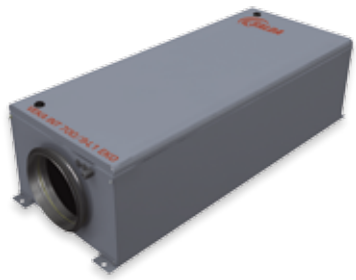
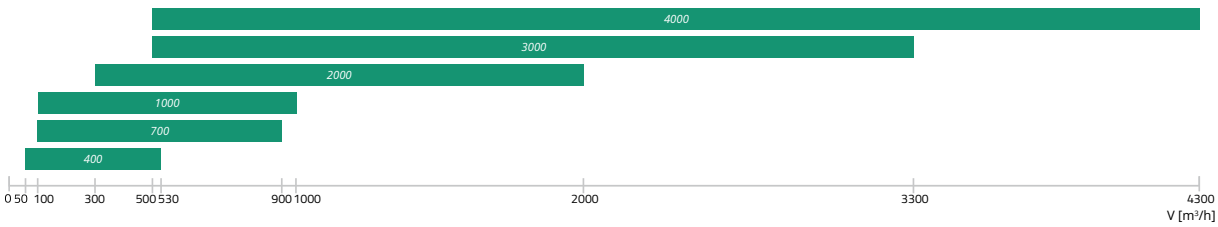
AIR SUPPLY UNITS

VEKA INT EKO

Mounting position: **Mount on any position.**
6 mounting possibilities.
Fans: **EC**





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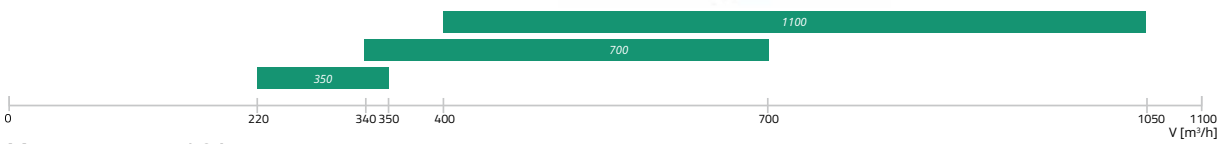
VEGA

Mounting position: **Mount on any position.**
6 mounting possibilities.
Fans: **AC**



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VEKA EC

Mounting position: **Mount on any position.**
6 mounting possibilities.
Fans: **EC**

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PRODUCT RANGE

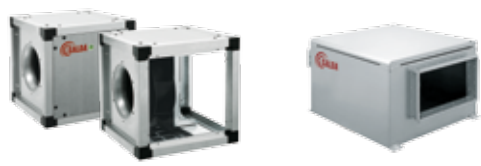
SALDA offers one of the widest ranges of products for ventilation. All of our ventilation products, from air distribution elements (grilles, valves) to complex, high-tech modular air handling units, are manufactured by our company and are subjected to a strict quality control system. SALDA offers complete air distribution solutions for apartments, private homes, offices, public buildings, food production facilities, healthcare premises, large industrial plants, etc.

FANS

SALDA produces a wide spectrum of fans for a comprehensive range of ventilation applications. Our clients can choose from various sets of options to satisfy their needs: from economy to high efficiency and airflow interval from 50 to 17.000m^3/h. All fans have user-friendly control options. The high quality and reliability of our products guarantee rare interventions for maintenance and long product lifetime.. Most of our fans serve for more than 10 years if their maintenance requirements are observed. Select the most suitable fan for your application using our on-line selection program at **www.salda.lt.**

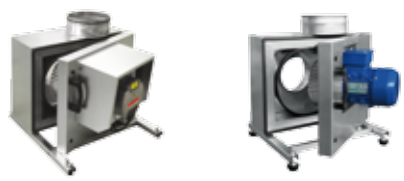
Circular duct fans.
Duct fans with circular connections.

Rectangular duct fans.
Duct fans with rectangular connections.



Roof fans.
Roof fans with circular or square connections.

Kitchen Fans.
Kitchen fans are used where the air is slightly greasy or the air temperature can be up to 120^{0}C.



Fan Heaters.
High capacity and easily serviceable designs.

Fan controllers.

For more information about our fans, contact your distributor for our Fans Catalogue or visit **www.salda.lt.**

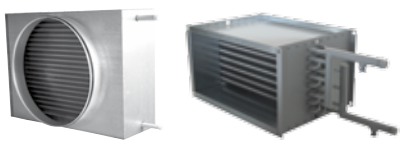
ACCESSORIES
FOR VENTILATION SYSTEMS

Salda manufactures a full range of devices for air distribution. All products are produced with the highest precision and quality.

Duct products and fittings.
Bends, Caps, Outlets, Dampers and other products.

Electrical accessories.
Actuators, cooker hoods, sensors, controllers and other units.

Heating and cooling coils.
Coils may be selected using our product selection program at **www.salda.lt**



Supply, extract or transfer devices.
Exhaust or supply air valves, perforated ceiling diffusers, plenum boxes, grilles.

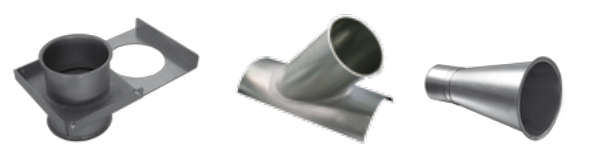
HEAT PUMPS

SALDA manufactures reliable heat pumps for heating and hot water production.
Main features:

- Heat source – ground or water.
- No additional electrical heater required.
- Heating capacity – from 5,5 to 70 kW.
- Coefficient of performance (COP) up to 4,5.
- Passive cooling heat exchanger as an option.
- Optional web browser-based control application.

DUST EXTRACTION
PRODUCTS

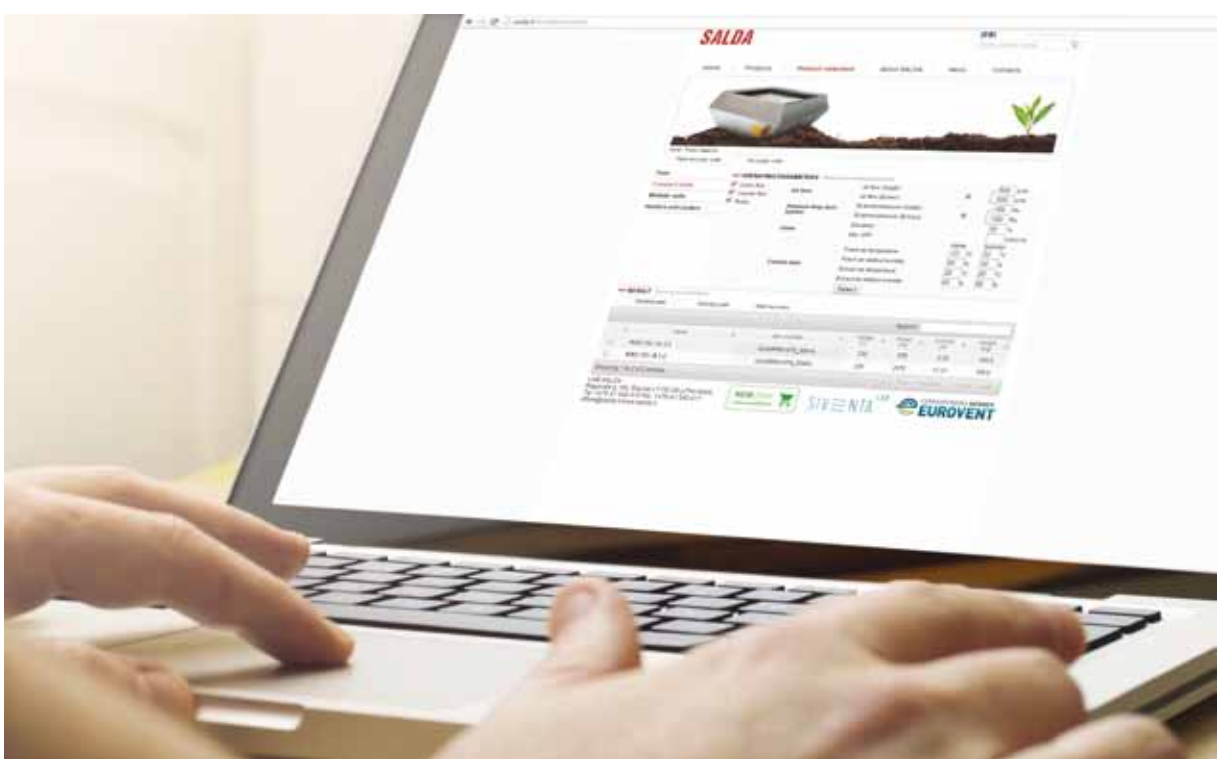
SALDA offers customized solutions for dust extraction projects. We manufacture a comprehensive range of products: pipes, deflectors, dampers, bends and more at diameters of up to 1000 mm. Prompt delivery (manufacturing in 2 weeks) and high quality are some exceptional features of this product line.



PRODUCT SELECTION TIPS

SALDA constantly develops various tools to make the ventilation system design and selection process easier.

Online catalogue and selection program
All the newest data regarding our equipment is available regarding our website at www.salda.lt. The information is presented in variuos languages, and you can download up-to-date drawings, manuals, software and brochures. We release new, more modern, efficient and user-friendly products every year. They will give your applications and solutions a competitive advantage. We recommend to check the latest data before choosing an air handling unit for your application.
SALDA's online product selection software is the best way to save time in your search for the most suitable ventilation solution.The user can enter the required parameters (airflow, pressure, climate data and other) to find the most suitable air handling unit. All of the results can be filtered and sorted according to the required technical criteria.



VENTMASTER V5

VentMaster V5 is user-friendly and innovative software for the selection of modular air handling units manufactured by SALDA. Choose from various parameters and your air handling unit design will be ready in a few moments. New 3D technology allow you to construct customized units and export your drawings to a DXF file to transfer to a CAD engineer. The software provides the price and all necessary technical data for your selected modular unit. Registered users can place orders directly on Ventmaster V5. VentMaster is a smart way to save time.

CLIENT SUPPORT

SALDA has developed a network of experienced distributors in throughout the EU region, Russia, Ukraine, Belarus and elsewhere, as well as sales and support offices in Sweden and Lithuania. We aim to find smart solutions to your ventilation problems at any stage of their design, installation or service. Details on our distributors can be found at **www.salda.lt** or by contacting us at **office@salda.lt.**

ECODESIGN AND ERP 2016: FRESH AIR FOR FUTURE GENERATIONS

The European Union is moving towards its goal to reduce greenhouse gas emissions by 20% and overall energy consumption by 20% up to year 2020. The Ecodesign Directive (2009/125/EC) was issued to help implement the EU's strategy. As a result of the EU's regulation, ErP (Energy Related Products) will be more efficient and clients will be provided with reliable and unified product information. The legislation will affect the production of SALDA's air handling products. The following information reveals all the changes and basic elements of these regulations.

APPLICABLE UNITS

Ecodesign requirements are not applicable to ventilation units:

- with electric power input less than 30W;
- with axial and centrifugal fans with housings;
- for volatile environments;
- for emergency use;
- with air temperatures >100^{0}C and <-40^{0}C, or operating motor temperatures >65^{0}C.
- with supply voltages > 1000 V AC or 1500 V DC;
- for toxic, highly corrosive, flammable or highly abrasive environments;
- that include heat exchangers and heat pumps or other heat transfers in addition to heat recovery;
- that are kitchen appliance hoods.

All Salda AHUs are covered by the regulations.

UNIT CLASSIFICATION

Ventilation units are classified as residential and non-residential. Residential units must have airflows of up to 250 m^3/h and can have airflows of up to 1000 m^3/h at the supplier's decision.

Smarty 2X P/V
RIRS 200VE EKO 3.0

Smarty 3X P/V
RIS 400-700 EKO 3.0
RIRS 300-700 EKO 3.0

VEGA 350/700
VEKA INT 350/700 EKO

RIS 1200-5500 EKO 3.0
RIS 1900-5500 EC 3.0
RIRS 1200-5500 EKO 3.0
VEKA INT 1000-4000 EKO
VEGA 1100
SmartAir

The classifications make distinctions between unidirectional and bidirectional ventilation units. Unidirectional ventilation units (UVU) are ventilation units that produce an air flow in only one direction, while bidirectional units produce air flows between indoor and outdoor spaces.

Unidirectional VU	Bidirectional VU
	Smarty
VEKA INT EKO	RIS EKO
VEGA	RIRS EKO
SmartAir N	RIS EC
	SmartAir R, C, CX, RR

The regulations apply to ducted and non-ducted VUs. Non-ducted units are single-room ventilation units not intended to be equipped with duct connections. All Salda AHUs are classified as ducted VUs.

EFFICIENCY CALCULATIONS

Residential ventilation unit efficiency will be expressed using SEC. SEC is a coefficient expressing energy consumed for ventilation per m^2 of heated floor in a building. It depends on fan efficiency, heat recovery units, ventilation control type, motor speed control and other factors.
Salda allows the client to choose from different air handling unit features. Air handling units (e.g. Smarty 3X P) have standard so-called "clock control." Clients can set various events (such as night-cooling, holiday mode, etc.) to save on their energy bills.
In addition to better performance and higher savings, the company also offers CO_2 and humidity sensors. The control board of an AHU like the Smarty 3X P can automatically adjust ventilation by using sensor data. The data is used to increase performance for greater comfort and minimize ventilation when there's no need for it. This leads to greater energy savings. This control mode is called "local demand control."
The equation gives greater parameters for local demand control units than clock control units, so the energy efficiency coefficient (SEC) for local demand units is higher.

VENTILATION UNIT REQUIREMENTS

Some of air handling units will no longer be sold in the EU. This depends on new efficiency and ergonomic characteristic requirements.

Residential units **Requirements for ventilation units**

Criteria	ErP 2016	ErP 2018
SEC for average climate kWh/(a.m^2)	<0	<-20
Min. SEC class	F	D
Sound power level max., dB (Non-ducted units only)	45	40
Multi-speed drive or variable speed drive	Required	Required
Thermal bypass facility	Required	Required
Visual filter change warning signal	Not required	Required

Nonresidential

Criteria	ErP 2016	ErP 2018
Multi-speed drive or variable speed drive	Required	Required
Visual filter change warning signal	Not required	Required
Bidirectional ventilation units		
Heat recovery system	Required	Required
Thermal bypass facility	Required	Required
Run-around HRS		
Thermal efficiency heat recovery min., %	63	68
Internal specific fan power max, W/(m^3/s)	1700+E– 300*q_{nom}/2–F	1600+E– 300*q_{nom}/2–F
If qnom < 2 m^3/s	1400+E–F	1300+E–F
If qnom ≥ 2 m^3/s		
Non run-around HRS		
Thermal efficiency heat recovery min., %	67	73
Internal specific fan power max, W/(m^3/s)	1200+E– 300*q_{nom}/2–F	1100+E– 300*q_{nom}/2–F
If qnom < 2 m^3/s	900+E–F	800+E–F
If qnom ≥ 2 m^3/s		
Unidirectional ventilation units		
Fan efficiency min, %	6,2 % * ln(P) + 35,0 %	6,2 % * ln(P) + 42,0 %
Internal specific fan power max, W/(m^3/s)	250	230

Calculation of the maximum specific fan power limits depends on the filter type and heat recovery factors. Effective heat recovery may lead to higher pressure losses, so higher limits are permissible.

SALDA AHU COMPLIANCE TABLE

Compact air handling unit range	ErP 2016	ErP 2018
Smarty	+	+
RIS EKO 3.0	+	+
RIRS EKO 3.0	+	+
RIS EC 3.0	-	-
VEKA INT EKO	+	+
VEGA	+	-

For modular units, all information about ErP requirement compatibility will be provided by the VentMaster selection software.

PRODUCT INFORMATION

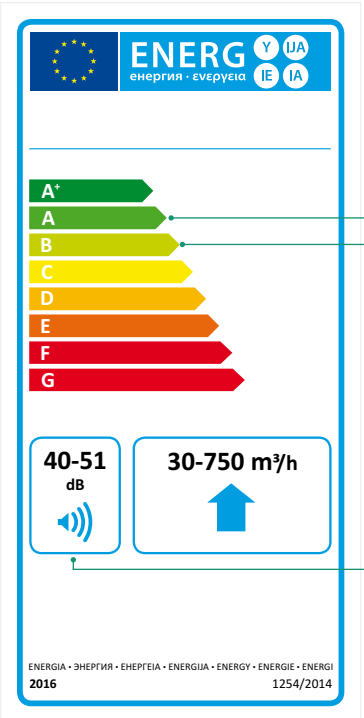
Manufacturers are obligated to provide additional technical information about their units' technical parameters. This information allows consumers to compare the performance of different AHUs and helps them make purchasing decisions based on important parameters besides pricing, such as efficiency and sound level. SALDA has always provided reliable and tested data on its AHUs in technical manuals, catalogues and its website. Starting from 2016, ErP-related information will be available as an annex in the technical manual and on the product page at **www.salda.lt** as a PDF document. Our clients can easily compare the efficiency of our different ventilation products.

ECOLABEL

Starting from 2016, residential ventilation units will have Ecolabels with their efficiency (SEC) class.

SEC class	SEC in kWh/a.m^2	ErP 2016	ErP 2018
A+ (highest efficiency)	SEC < – 42 A	+	+
A	– 42 ≤ SEC < – 34	+	+
B	– 34 ≤ SEC < – 26	+	+
C	– 26 ≤ SEC < – 23	+	+
D	– 23 ≤ SEC < – 20	+	+
E	– 20 ≤ SEC < – 10	+	-
F	– 10 ≤ SEC < 0	+	-
G (lowest efficiency)	0 ≤ SEC	-	-

There will also be significant differences between various control modes. There are 4 control modes: manual control, time control, central demand control and local demand control. **All SALDA residential AHUs come with time control standard**, and their control boards are demand-control-ready. With additional sensor packages, clients can get higher-class products. For example, the Smarty 3X P is a standard "A" class product, but with an additional package of 2 sensorsit can reach "A+".



CLOCK CONTROLLED

DEMAND CONTROLLED

The maximum flow is related to the air flow at 100 Pa of external static pressure difference.

Unit characteristic
SOUND POWER LEVEL

SOUND PRESSURE LEVEL
room <30 dB (A) depending on the installation

SALDA AIR HANDLING UNIT EFFICIENCY

SALDA always seeks to improve the efficiency of their ventilation products. Our AHUs have high efficiency ratings due to our continuous improvements and innovations. By working closely with suppliers, universities and testing laboratories, our company offers optimal ventilation solutions. The high efficiency of our AHUs is related to these features:
1. Highly efficient EC fans and new, even more-efficient PM[1] fans.
2. More efficient plate counter-flow and rotor heat exchangers.
3. Minimization of air leakages. SALDA tests the air tightness of its AHUs and has made improvements in construction.
4. New casing construction for residential *Smarty* and *SmartAir* units assures the best thermal properties and eliminates thermal bridges.
5. Improvements of control boards and remote controllers: New PRV 2 and MCB control boards provide full central demand control options.

A wide range of high-efficiency ErP-ready ventilation solutions are presented in this catalogue.

To find the Ecodesign Directive itself, please visit http://eur-lex.europa.eu.

[1] PM fans are currently available for modular AHUs only.

Notes

SmartAir
TOP CLASS Modular Air Handling Units

- Wide range of various solutions: from economic to high-efficiency units.
- 3D modelling software with price calculation and export to CAD.
- Perfect for all climatic conditions.
- Easy and quick installation as well as simple maintenance.
- Certified SW 50+ casing, featured among the top 5 European manufacturers*: ultra-strength (class D1(M)), highest air tightness (class L1(M)), good thermal transmittance (class T2), and the best thermal bridging factor (class TB1).
- Post-sale service.

* - Eurovent data from 2015-11-02

Smart Air 1KR SW50+ R

AHU type
R - rotor heat recovery
C - cross flow heat recovery
CX - cross counterflow heat recovery
N - supply/exhaust unit without heat recovery
RR - run round coil heat recovery

AHU model box insulation type
SW50 - 50mm frame thickness (Eurovent certified)
SW50+ - 50mm frame thickness and eliminated cold bridges (Eurovent certified)

AHU model box size (01-16KR)
01KR - first size
16KR - last size

AHU range name

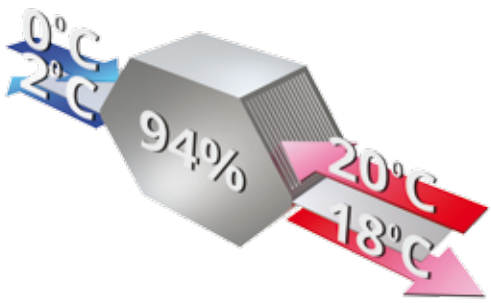
SALDA *SmartAir* modular units reveal unlimited possibilities for ventilation solutions. Aside from their flexibility and high quality, SmartAir units also feature simple modelling, easy installation, fast servicing, and highly efficient solutions.

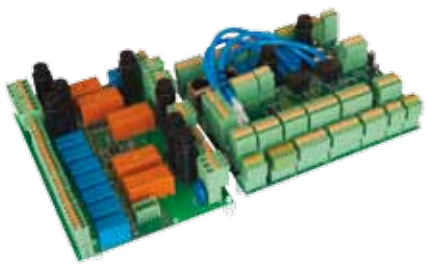
Simple design and rapid delivery
A large range of components for indoor and outdoor installation can be easily combined together and ordered by our modern VentMaster v5 3D modelling software, manufactured in our factory in the EU and delivered to your site.

Service-friendly
Filters, fans, heat exchangers, and other components are easy accessible during use. Doors with ergonomic handles and service sections with windows and lighting make maintenance quick and easy.

Easy assembly and installation
A range of possibilities provided by our modular design solutions offer quick assembly on site and convenient transportation. Manufactured units are ready to be installed.

TOP PERFORMACE
SmartAir can be designed according to custom project requirements. Economical and highly efficient options are available. For top performance and maximum efficiency, we offer:
› SW50+ model box with eliminated cold bridges;
› The most modern and efficient PM fans or highly efficient EC fans;
› Reliable control board MCBs with options for indoor or outdoor installation;
› A wide range of highly efficient heat exchangers with efficiencies: rotor up to 85%, plate counterflow up to 94%.





NEW SmartAir FEATURES

Counter-flow plate heat exchanger: efficient (up to 94%), long life, maintenance-free, low pressure drop, highest air tightness.

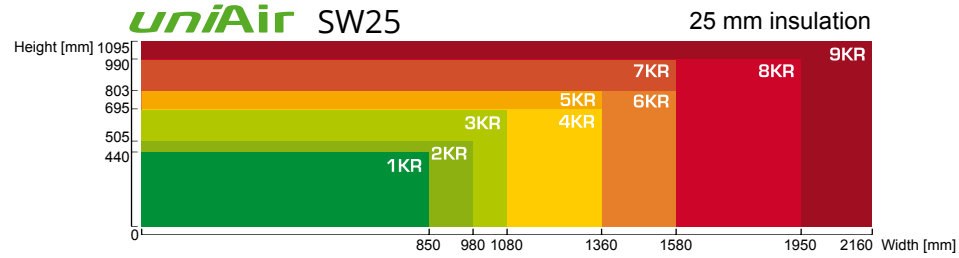
MCB control board: reliable, durable, with new control features.

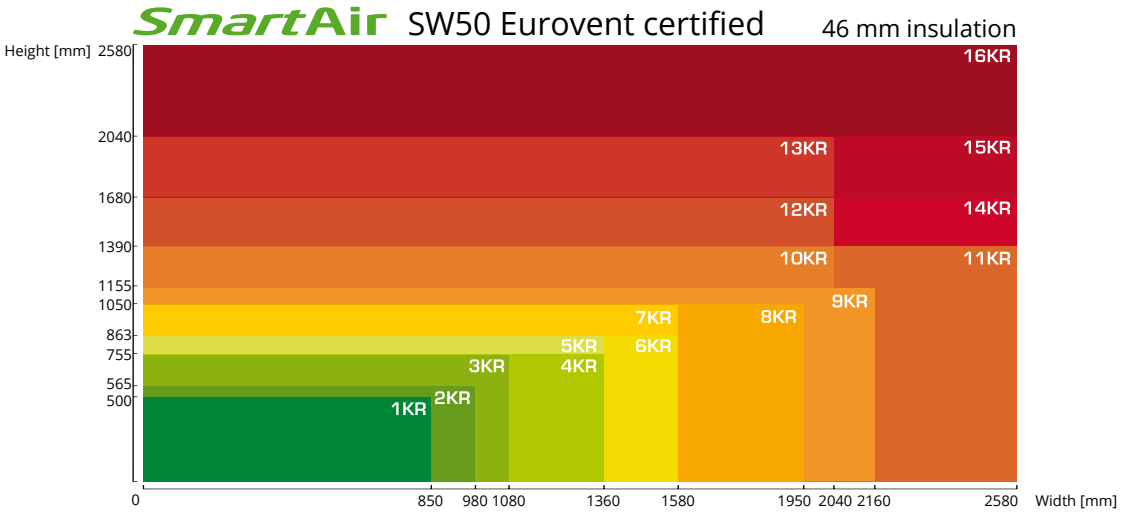
MB-Gateway enables connection to Salda ventilation units via TCP/IP to a wide range of control devices.

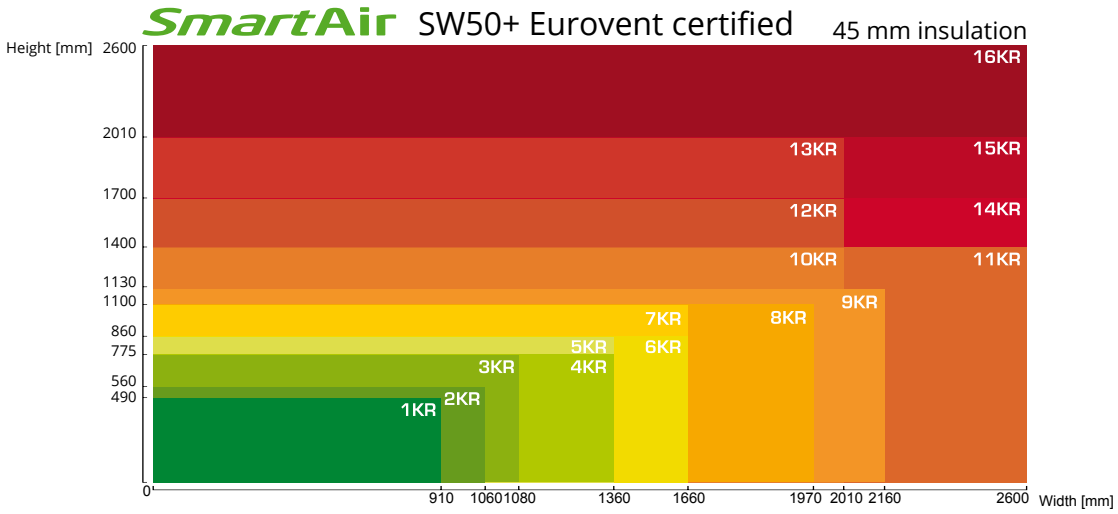
PM fans: up to 10% more efficient and reliable than EC fans.

New VentMaster v5 3D modelling software.

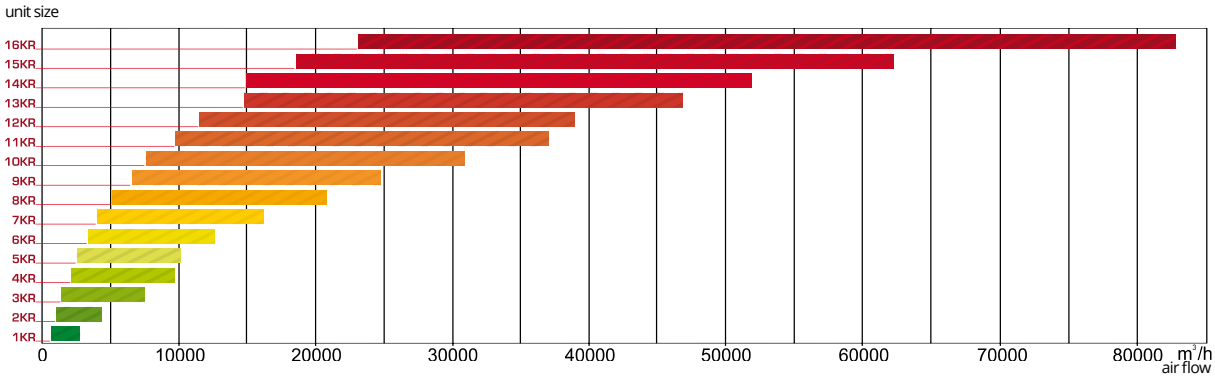
SIZES
OF UNITS







SUPPLY AIR FLOW
VOLUME



FANS

PM
› Direct drive centrifugal.
› IE4 class motor.
› Top efficiency.

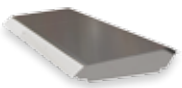
EC
› Direct drive centrifugal.
› IE4 class motor.
› High efficiency.

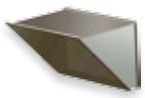
AC
› Direct drive centrifugal.
› IE2 class motor.
› Economy.

Belt-drive
› Centrifugal.
› IE2 class motor.

ATEX
› Fans for explosive environments.

OUTDOOR INSTALATION





› Roof.
› Branch with net.
› Outdoor grilles.

DAMPER

› With casing /duct mounted dampers.
› Aluminum blades.
› Damper leakage class: 2/4.

FILTER

› Panel (prefilter).
› Pocket.
› HEPA/EPA.
› Grease.
› Activated carbon cartridge.

SILENCER

› With casing /duct mounted silencers.
› Baffles filled with mineral wool.

HEAT EXCHANGER

Rotor
› Efficiency – up to 85%.
› For large air volumes.
› Humidity transfer.

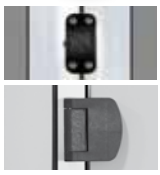
Cross-flow plate
› Efficiency – up to 75%.
› No moving parts and mixing air flows.

Counter-flow plate
› Efficiency – up to 94%.
› No moving parts and mixing air flows.

Glycol run around coils
› Heat recovery rate up to 80%.
› No intermixing of air flows.
› Small space requirements.

CONSTRUCTION

INSPECTION WINDOW
› Lightning inside available.
› Easy monitoring of the section.



JOINT BRACKETS & HINGES
› Supreme air-tightness.
› Low thermal losses.
› Perfect adjusting section to each other.
› Easy mounting.
› Extremely strong and reliable.

LOCKS AND ERGONOMIC HANDLES
› Prevention from accident opening with lock.
› Easy and safe maintenance.

HUMIDIFIER

Steam
› No water treatment required.
› Very reliable operation.

Evaporative
› Water supply is controlled by a built-in solenoid valve.

BASE

Base frame
› Rigid frame for lifting the unit.
› Optional height.

Adjustable legs
› Leveling the unit on site.
› Antivibration.

HEATER

› **Water/Steam**
› **Electric**
› **Gas**

COOLER

› **Water cooler**
› **DX cooler**

SMART control equipment

› Indoor/outdoor installation options.
› Plug-and-play.
› New powerful MCB control board.
› Siemens or Regin control systems ready.
› Positioning: in section, on the doors, mounted in distance.

SW50+
BENEFITS

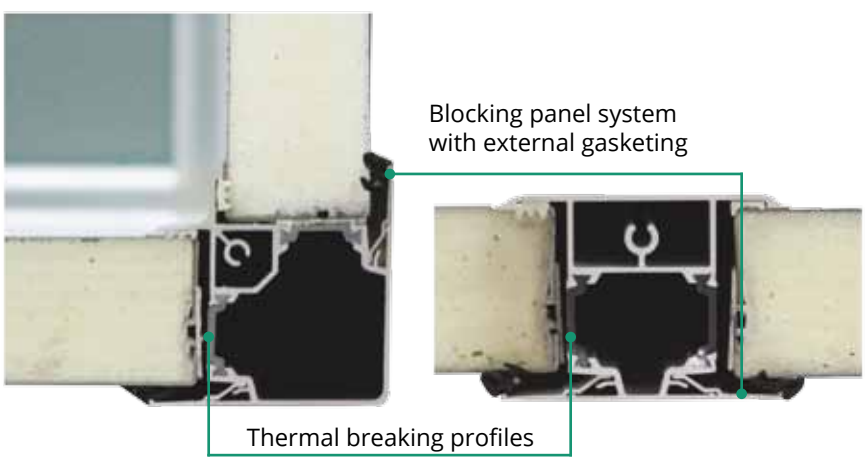
Construction **FEATURES**

- Joints-profile connected with blocking screws which ensures air tightness.
- Thermal breaking profiles with 25 mm plastic strips.
- Profiles internally rounded for easy cleaning.
- Galvanized steel and powder coated grey color RAL 7040.
- New generation polyurethane panels 45 mm.
- Internal adhesive gasket insulation.
- External gasket insulation.
- Extremely rigid plastic corners.
- Special plastic panels covering.

TB1
Thermal bridging factor class

L1(M)
Casing air leakage class at -400Pa

D1(M)
Casing strength class



Blocking panel system
with external gasketing

Thermal breaking profiles

Joint-profile
connecting screw

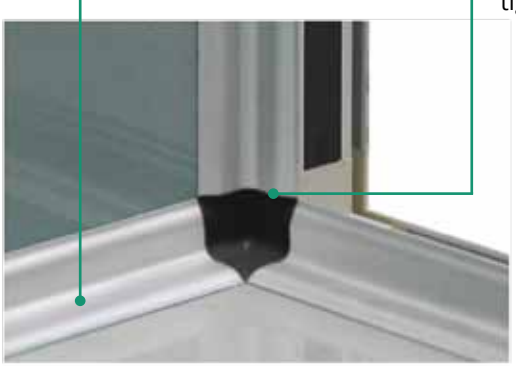
F9(M)
Filter bypass leakage class

L1(M)
Casing air leakage class at +700Pa

T2
Thermal transmittance class of the casing

Rounded internal profile

Internal air tight connection



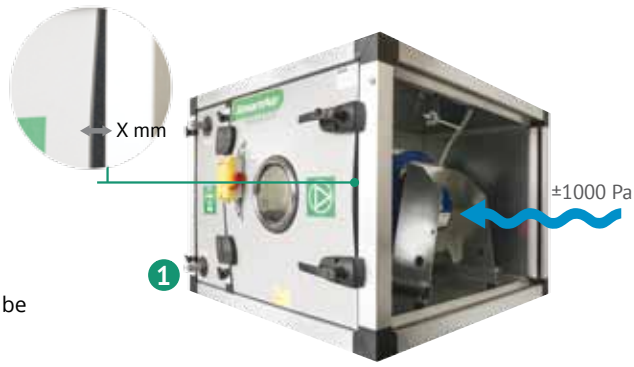
Unique and hygienic external doors lock

SmartAir units tested at **TÜV SÜD** Industrie Service GmbH Center of Competence for Refrigeration and Air Conditioning.

The model box tested according to the standard EN 1886:2008

1. Mechanical strength of the casing (X = mm × m^{-1})

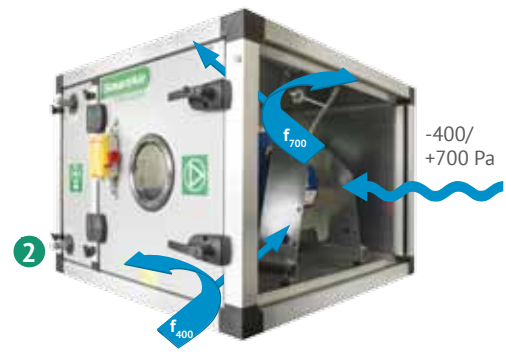
Test pressure: ±1000 Pa
Classification:
Max. deflection ≤ 4 mm class D1(M) **SmartAir SW50+**
Max. deflection ≤ 10 mm class D2(M)
Max. deflection > 10 mm class D3(M)
The remaining deflection after a test pressure of ±2500 Pa must be less than 2 mm.



2. Casing air leakage (f_{400}= l/s×m^{-1}×m^{-2})

Test pressure: -400 Pa
Classification:
Max. leakage rate f_{400} ≤ 0,15 class L1(M) **SmartAir SW50+**
Max. leakage rate 0,15 < **f_{400} ≤** 0,44 class L2(M)
Max. leakage rate 0,44 < **f_{400} ≤** 1,32 class L3(M)

Test pressure: +700 Pa
Classification:
Max. leakage rate f_{700} ≤ 0,22 class L1(M) **SmartAir SW50+**
Max. leakage rate 0,22 < **f_{700} ≤** 0,63 class L2(M)
Max. leakage rate 0,63 < **f_{700} ≤** 1,90 class L3(M)



3. Thermal transmittance* (U=W×m^{-2}×K^{-1})

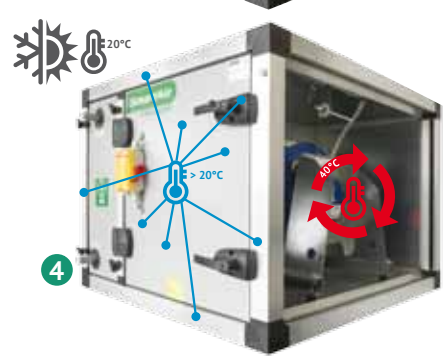
Max. thermal transmittance factor U ≤ 0,5 T1
Max. thermal transmittance factor 0,5 < U ≤ 1,0 T2 **SmartAir SW50+**
Max. thermal transmittance factor 1,0 < U ≤ 1,4 T3
Max. thermal transmittance factor 1,4 < U ≤ 2,0 T4
Max. thermal transmittance factor No requirem.T5

* The thermal transmittance U=W×m^{-2}×K^{-1} is the rate of the heat transfer (in watts) through one square meter of the external AHU surface per 1K. It determined then the steady state temperature difference is 20K.

4. Thermal bridging* (k_b = $\Delta t_{min}/\Delta_{tair}$)

Max. thermal bridging factor 0,75 < kb ≤ 1,00 TB1 **SmartAir SW50+**
Max. thermal bridging factor 0,60 < kb ≤ 0,75 TB2
Max. thermal bridging factor 0,45 < kb ≤ 0,60 TB3
Max. thermal bridging factor 0,30 < kb ≤ 0,45 TB4
Max. thermal bridging factor No requirem. TB5

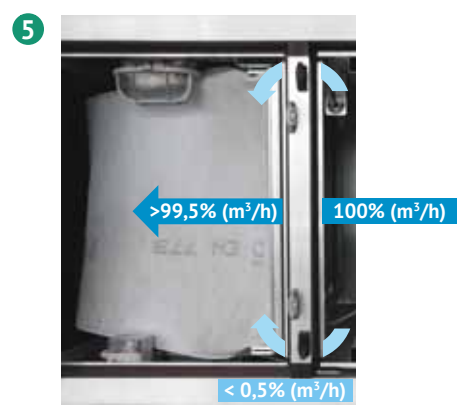
*The thermal bridging factor is the ratio between the lowest temperature difference and the mean air-to-air temperature difference.
The lowest value of the temperature difference between any point on the external surface and the mean internal air temperature are established when the mean temperature difference between internal and external temperatures is stabilized at 20K.



5. Filter bypass leakage

Filter bypass leakage class*	G1toF5	F6	F7	F8	**F9**
Maximum filter bypass leakage rate k in % of the volume flow rate	6	4	2	1	0,5

**Filter bypass leakage class is not the same as filter material class!*



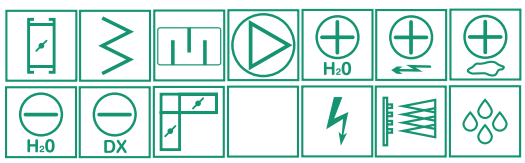
Casing acoustical insulation SmartAir SW50+

Casing acoustical insulation at	
125 Hz dB	13
250 Hz dB	11
500 Hz dB	14
1000 Hz dB	18
2000 Hz dB	19
4000 Hz dB	19
8000 Hz dB	36

TYPES OF
MODULAR AIR HANDLING UNITS

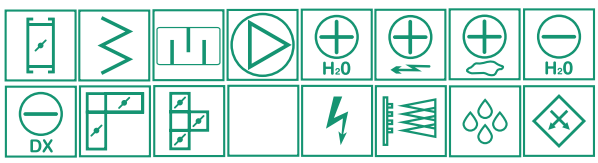
Air handling unit consists of appropriate size and function modules. It depends on air flow and pressure of air handling unit. SmartAir R/C/CX/N/RR can supply and/or exhaust air in different directions.Air can be heated, cooled, filtered (depends on function of modules) saving warmth and electricity. Air handling can be all-in-one (depends on configuration and size of unit) or made from modules.

SmartAir N



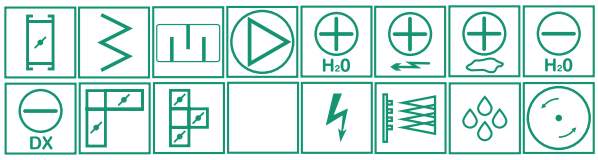
Air supply unit, intended for supply of fresh air into premises. The unit may consist of fan, heater (water, electric, gas or steam), cooler (water or DX), humidifier (steam or evaporative), filters, recirculation, silencer, control, sections also service section and damper can be added.

SmartAir C



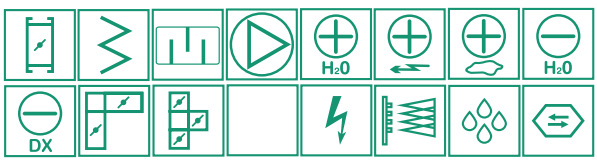
Heat recovery unit with plate cross flow heat exchanger. The unit may consist of fans, heater (water, electric, gas or steam), cooler (water or DX), humidifier (steam or evaporative), filters, recirculation, silencer, control, sections also service section and damper can be added.

SmartAir R



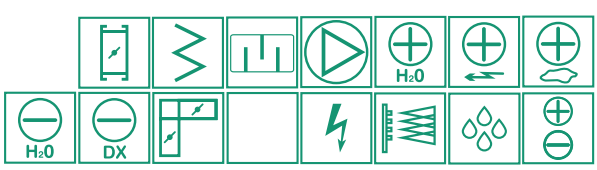
Heat recovery unit with rotor heat exchanger. The unit may consist of fans, heater (water, electric, gas or steam), cooler (water or DX), humidifier (steam or evaporative), filters, recirculation, silencer, control, sections also service section and damper can be added.

SmartAir CX



Heat recovery unit with plate counterflow heat exchanger. The unit may consist of fans, heater (water, electric, gas or steam), cooler (water or DX), humidifier (steam or evaporative), filters, recirculation, silencer, control, sections also service section and damper can be added.

SmartAir RR



Heat recovery unit with heat recovery coil. The unit may consist of fans, heater (water, electric, gas or steam), cooler (water or DX), humidifier (steam or evaporative), filters, recirculation, silencer, control, sections also service section and damper can be added.

SmartAir
SECTIONS

FILTERS

Panel pre-filter

› Panel filter with galvanized steel frame and G4 filtration class synthetic media. Pre-filter for comfortable air conditioning applications.
› Slide-type filter rack.
› Temperature resistant up to 110°C.

Pocket filter

› Pocket filter with galvanized steel frame and M5, F7 or F9 filtration-class synthetic media. Main filter for comfort air conditioning applications.
› Slide-type filter rack.
› M5 temperature resistant up to 110°C, F7 and F9 up to 80°C.

EPA / HEPA filter

› Efficient particulate arrestance (EPA) air filters - class E10, E11 or E12.
› High-efficiency particulate arrestance (HEPA) air filters - class H13 or H14.
› Very high efficiency final filtration in air conditioning systems.
› Special coated galvanized steel holding frame.
› MDF filter frame with separate aluminum and fiberglass media.
› Temperature resistant up to 100°C.

Activated carbon cartridge filter

› For purification of supply air, exhaust air and circulating air streams from harmful gases, steams and odors in kitchens, museums, hospitals, laboratories, computer areas, chemical industrial spaces, paint shops, airports, petrol stations, parking garages.
› Galvanized steel cartridges filled with untreated carbon.
› Galvanized steel holding frame.
› Temperature resistant up to 70°C.
› Minimum contact period depending on application - 0.05s to 1.0s.
› Pre-filtration with F7-class filters is necessary.

Grease filter

› Filter for grease elimination or coarse dust removal. Used in kitchen extract systems or as pre-filtration within air conditioning systems.
› Panel filter cells in an aluminium wire mesh.
› Slide-type filter rack.
› Filter section with grease-collecting tray.
› Temperature resistant up to 200°C.

FANS

With PM motor

› Energy efficiency category IE4 (IEC 60034-30).
› Permanent magnet AC-motor.
› The highest efficiency available (exceeds EC-motor by up to 10%).
› Low losses: The high-efficiency motor, optimal fan impeller air flow, and high-efficiency fan impeller provide very high energy savings.
› 100% controllability.
› Ultra-low noise generation.
› Free flow through impeller.
› Very long service life.
› High control accuracy.
› Extremely high system efficiency.

With EC motor

› Energy efficiency category IE4 (IEC 60034-30).
› DC motor with electronic commutation.
› 100% controllability.
› Low noise generation.
› Highly efficient, even in the partial load range.
› Easy to clean due to unimpeded access to all components.
› High operational reliability and easy maintenance.
› Very long service life.
› High control accuracy.

With AC motor

› High fan efficiency levels.
› High pressure increases possible.
› Low sound emissions.
› Forward or backward impellers.
› Very long service life.

Belt drive fan

› High fan efficiency levels.
› High pressure increases possible.
› Low sound emissions.
› Forward or backward impellers.
› At least 40,000 hours of operating life for motor and fan, and at least 25,000 hours for the belts.

ATEX fan

› Explosion protected design fulfill the requirements of the 94/9/EU (ATEX 95) directive, in accordance with the device group II, device group 2G and 3G, explosion group IIB, and can be utilized in zone 1 and zone 2.

HEATERS, COOLERS, HUMIDIFIERS

Water/ Steam

› Copper pipes and aluminium plates.
› Max. operating pressure: 16 bar at a max. operating temperature of 100°C.
› Max. operating pressure: 10 bar at a max. operating temperature of 150°C.
› Wide range of heaters, which can match the special requirements of most applications.
› Special coil options available.

Electrical

› Long-life three-phase (3 x 230V, 3 x 400V) heating elements.
› Two thermal protection capabilities.
› Heating by steps.

Gas heater

› Suitable for air-supply units for warm-air heating in industrial or commercial buildings that are connected to a natural gas supply.
› Equipped with modulating gas fan burners for natural gas;
› Short heat-up time, very economical.
› Produced with corrosion-resistant stainless steel so that additional latent heat available through the condensation of the exhaust gas can be used for heating purposes.

Cooler

› Coolers come in two types: water or evaporative refrigerant.
› Water coolers are used when cold water connections are available, and the cooling energy is transmitted via water.
› DX cooler is used when the cooling energy is transmitted via cooling refrigerant.
› Copper pipes and aluminium plates.
› Max. operating pressure: 16 bar at a max. operating temperature of 100°C (water).
› Max. operating pressure: 10 bar at a max. operating temperature of 150°C (water).
› Max. operating pressure: 22 bar at a max. operating temperature of 100°C (DX).
› Cooling section has a drop eliminator and stainless steel drip tray for water draining.
› Our wide range of coolers can match the special requirements of most applications.
› Special coil options available.

Humidifier

› Increases moisture of the supplied air.
› Evaporative or steam versions.
› Possibility of air cooling with evaporative humidifier.
› Operates on standard mains water.
› Low energy consumptions.
› Hygienic and service friendly.

HEAT EXCHANGERS

Rotor

› Efficiency up to 85%.
› Humidity transfer.
› Aluminium rotor with galvanized steel frame.
› Special coatings for various applications: condensation, condensation (epoxy coating), condensation (aluminium alloy), hygroscopic, sorption.
› Space-saving installation.
› Suitable for high air volumes.
› Can be equipped with variable control (0- 10V signal).
› Freeze resistant and condensate-free.
› Low pressure loss.

Cross-flow plate

› Efficiency up to 75%.
› Separated supply and exhaust air: almost no moisture transfer, no mixing.
› Low maintenance.
› No moving parts.
› Frost protection function.
› Variable output control via bypass: summer function, etc.
› Aluminium heat exchanger.
› Aluminium- or epoxy-coated plates.
› Stainless steel drip tray.
› Large inspection door that provides access for inspection and service.

Counter-flow plate

› Efficiency up to 94 %.
› Separated supply and exhaust air: almost no moisture transfer, no mixing.
› Low maintenance.
› No moving parts.
› Variable output control via bypass: summer function, etc.
› Aluminium heat exchanger.
› Aluminium- or epoxy-coated plates.
› Compact, efficient and economically ideal solution for small and medium-sized air volumes.
› Variable output control via bypass: summer function, etc.
› Stainless steel drip tray.
› Large inspection door that provides access for inspection and service.

Heat recovery coil

› Heat recovery rate up to 80%.
› Energy transfer due to closed media circuit.
› Supply and extract parts can be placed separately.
› Can be retrofitted into existing equipment.
› Compact construction.
› No intermixing of air flows.
› Small space requirements.

OTHER SECTIONS

Mixing section

› For mixing air flows.
› Perfect for low-energy recirculation operations.
› Heat energy transferred by mixing removed and supplied air flows.
› Shut-off or recirculation.

Damper

› For closing or regulating air flows.
› Aluminium damper blades with rubber sealing gaskets.
› Counter-rotating damper blades with double-skin design.
› Suitable to use from -40°C to 80°C temperature ranges.
› Damper leakage class: 2/4.
› With/without housing.

Silencer

› Absorbs noise with baffles filled with mineral wool.
› Section length: from 600 mm to 1800 mm.
› Minimal pressure loss.
› Option without housing.
› Consists of casing and perforated division walls.
› Walls filled with mineral wool.

Service section

› For inspection and maintenance operations.
› Can be used to integrate special components into the unit.
› With/without inspection window.
› With/without lighting.
› Section length from 300 up to 2000 mm.

Control

Control equipment may be customized according to every client's need. SmartAir units are factory-configured and tested together with all necessary field components. The control system complies with EU directives (MD, EMC and LVD) and is CE-marked. SmartAir is the perfect solution for both small installations with straight-forward control functions and large installations with data communication requirements. Units are self-contained and require no major on-site electrical installation. The control equipment is ready to go as soon as the unit is installed (plug-and-play). The control unit can be built into its unit, built into its doors or mounted at a particular distance from the unit if necessary. Siemens (with POL871; POL822; POL 895 remote controller), Regin (ED9200; E3-DSP) or MCB (Stouch; Ptouch) control systems are available.

SmartAir control features:

- Indoor/outdoor operation capabilities (up to IP65).
- PC control via Modbus (RS485); TCP/IP; LON; BACNet MSTP; Mbus; BACNet IP; Web; KNX.
- Air quality control: CO_2, Humidity, Constant pressure.
- One or two remote controllers can be plugged in.
- Plug and play – all components connected and tested.
- Water heater/cooler actuator.
- Filter contamination control (PS 600B).
- Motorized air supply, exhaust and mixing dampers.
- Sensors for different parameters.
- Fire thermostat.
- External ventilator switches.
- Duct/room sensors for night cooling.
- Frost protection for heating coil.
- Smoke detector and fire damper with accompanying control unit.

Standards

The design is based on the demands in following CE and ISO standards:

EN 308 Heat exchangers. Test procedures.
EN 779 Particulate air filters for general ventilation.
EN 1751 Aerodynamic testing of dampers and valves.
EN 1886 Air handling units. Mechanical performance.
EN 13053 Ratings and performance for units and components.
EN 13779 Ventilation for non-residential buildings. Performance requirements.
EN 60204. Electrical equipment of machines.
EN ISO 3741 Determination of sound power level in reverberation rooms.
EN ISO 5136 Determination of sound power level in a duct.
EN ISO 9001 Quality management systems.
EN ISO 12100 Safety of machinery.
ISO 9001:2008 SmartAir units tested **TÜV SÜD** Industrie Service GmbH Center of Competence for Refrigeration and Air Conditioning.

SMART SELECTION SOFTWARE FOR MODULAR AIR HANDLING UNITS **VentMaster v5**

Designing of air handling units is easy with VentMaster: save your time and money. VentMaster v5 is user-friendly and innovative software for selection of modular air handling units manufactured by SALDA. Choose various parameters and an air handling unit, corresponding to your needs, will be selected in a few moments.
New 3D technology allows to design customized unit, to export drawing in DXF file and to transfer it to CAD engineer. Software can provide price and all necessary technical data concerning the selected modular unit. After becoming a registered user, it is possible to place orders directly on VentMaster v5. A range of possibilities provided by our modular design solutions offer quick assembly on site and convenient transportation. Manufactured units are ready to be installed.

Key features:
› Online price calculator (for registered users);
› Saving of selected unit data on SALDA server (for registered users);
› Export of drawing in DXF file;
› Export of technical specification to PDF;
› Direct ordering through VentMaster (for registered users):
› Automatic software updates;
› Tested and certified by Eurovent.

Software is free of charge. Go to **www.salda.lt** to get your **VentMaster**.

REFERENCES

TAMPERE TOWER HOTEL,
Tampere, Finland

Tampere has a humid continental climate with severe winters (a record of -35°C), warm summers and strong seasonality. Salda accepted the challenge of supplying air handling units for the highest builing in the city. Tampere Tower hotel is the highest hotel in Finland. The building is 88 meters high. Salda supplied it with 8 SmartAir modular units with rotary and cross-flow heat exhangers for their fresh-air solution.

KLAIPĖDA PASSENGER AND CARGO TERMINAL,
Klaipėda, Lithuania

Klaipėda passenger and cargo terminal is located at the eastern coast of the Baltic sea. The area is dominated by a cool and humid climate. The terminal expects to process up to 500,000 visitors and 6 million tons of cargo each year. This project required solutions for high-quality air in different types of premises: administrative, public and warehousing. Salda supplied it with modular SmartAir units with gas heaters and rotary heat exchangers, a RIRS 1500HW compact rotary unit and a VEKA 2000 air supply unit for comfortable air handling.

SMARTY X

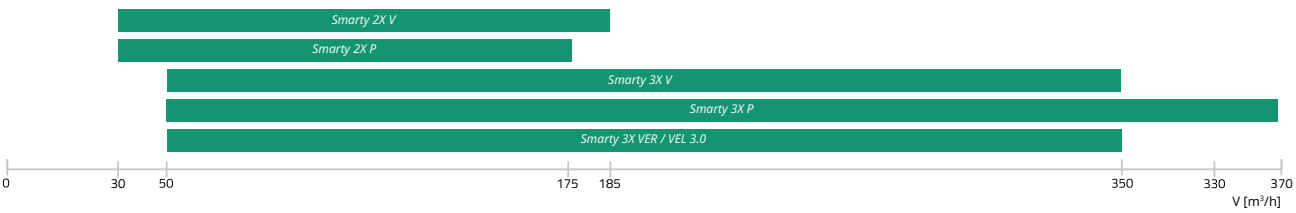
NEW!

ErP READY

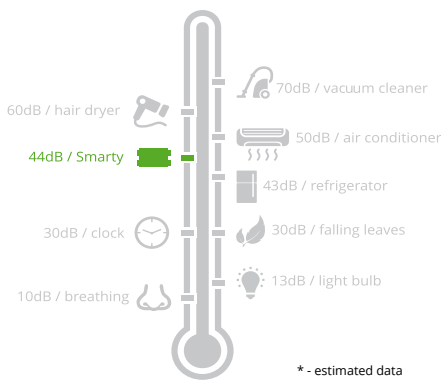
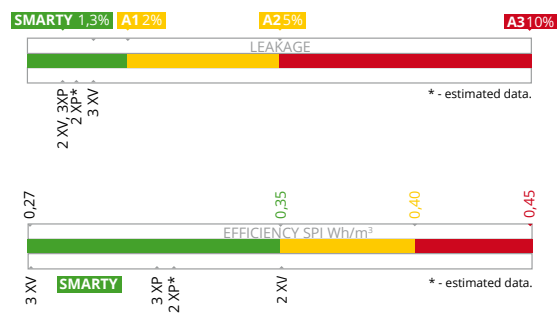
EC

A1

With additional sensors: CO_2



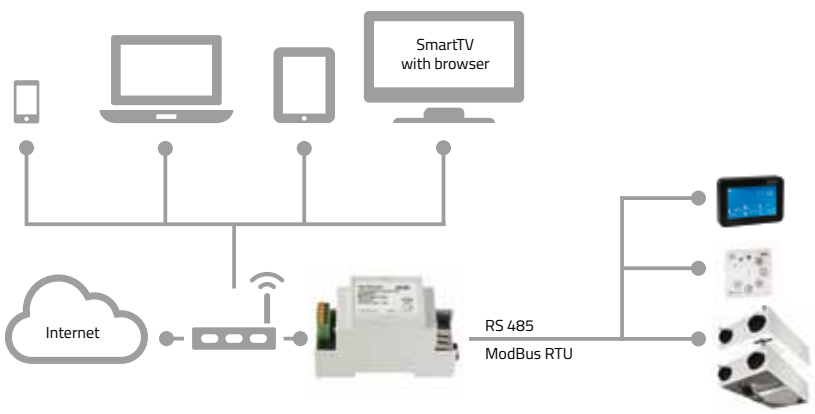
AIR HANDLING UNITS

Application	Apartments, private houses, villas, passive houses.
Description	Smarty is a range of heat recovery units with the highest-efficiency counter-flow heat exchanger available. The units are designed for residential users and reflect the concept of the “Smart way to handle the air” › Energy efficient. › Ergonomic. › User-friendly. Smarty come in 2 sizes (max. airflow interval 175-370 m³/h) for a total of 5 models. Smarty units have high overall energy savings due to the highly efficient heat recovery (up to 94%), quiet and economical EC fans, effective low-pressure-drop filters, 100% motorized bypass dampers, top-level air tightness and smart control options. All Smarty units are fully equipped with automatic controls. With optional humidity and CO_2 sensors, these units have demand-level controls and an A+ efficiency class. Smarty are service-friendly and are easy to mount. All required service tasks can be performed by a single person. Units are supplied tested and ready to install. Smarty are designed in accordance with hygiene requirements VDI 6022-1.
Ergonomic and energy efficiency	 
Construction features	› One layer of galvanized steel with efficient insulation materials. › Advanced mineral wool casing insulation or EPP. › Hygienic condensate drip tray. › High-efficiency panel filters with large filtering area and long service periods (~ 6 months). › Easy filter change and order. › New-generation EC fans: EBM-papst RadiCal. › Fans are expected to work for 10 years (40,000 hours). › Heat exchanger: counter-flow from plastic or aluminum. › 100% bypass damper (night-cooling). › Bypass monitoring sensor for smooth operation. › Automatic safety disconnector activates when doors open.

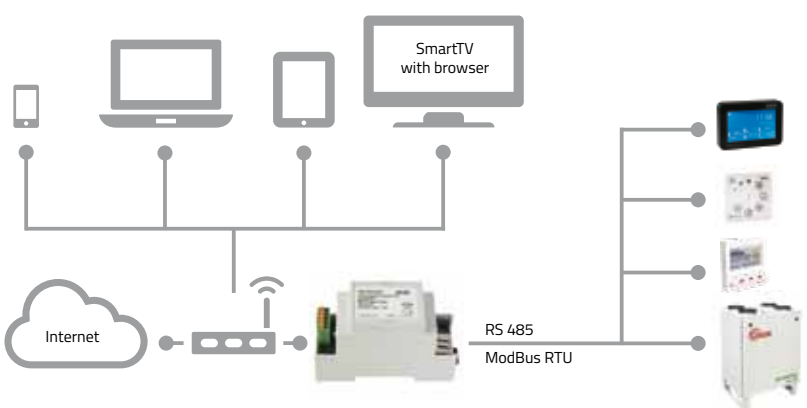
Smarty 2X P	Residential ceiling mounted air handling unit: › Low height; › 6 mounting positions; › **Casing:** 1 layer of galvanized steel and 20 mm EPP insulation. › **Filters:** panel filters G4/G4, optionally F7; › **Heat exchanger:** plastic counterflow.
Smarty 3X P	Residential ceiling mounted air handling unit: › Low height; › 6 mounting positions; › **Casing:** 1 layer of galvanized steel and 30 mm EPP insulation. › **Filters:** panel filters G4/G4, optionally F7; › **Heat exchanger:** plastic counterflow.
Smarty 2X V / 3X V	Vertical residential air handling unit: › **Casing:** 1 layer of galvanized steel and 30 mm EPP insulation. › **Filters:** panel filters G4/G4, optionally F7; › **Heat exchanger:** plastic counterflow. › Integrated preheater in version V1.1
Smarty 3X VER / VEL 3.0	Vertical residential air handling unit: › **Casing:** 1 layer of galvanized steel and 30 mm mineral wool insulation. › **Filters:** panel filters M5/F7. › **Heat exchanger:** aluminum counterflow.

Remote control options

Smarty 2X P / 3X P 2X V / 3X V



Smarty 3X VER / VEL 3.0



VERSIONS

Save on equipment: select the unit according to the climate zone and project requirements.

Product name	**Smarty 2X V 1.1**	Smarty 2X V 1.2	Smarty 2X V 1.3	**Smarty 3X V 1.1**	Smarty 3X V 1.2	Smarty 3X V 1.3	**Smarty 2X P 1.1**	Smarty 2X P 1.2	**Smarty 3X P 1.1**	Smarty 3X P 1.2	Smarty 3X P 1.3	Smarty 3X P 1.4
Control board	**Mini MCB**	Mini MCB Basic	Mini MCB Basic	Mini MCB	Mini MCB Basic	Mini MCB Basic	**Mini MCB**	Mini MCB Basic	**Mini MCB**	Mini MCB Basic	Mini MCB Basic	MCB
Version	Premium	Advanced	Basic	Premium	Advanced	Basic	Premium	Advanced	Premium	Advanced	Basic	Premium*
Heat recovery	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temp. control	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bypass damper	✓	✓		✓	✓		✓	✓	✓	✓		✓
Pressure sensor (filter pollution monitoring)				✓					✓			✓
Integrated pre-heater	✓			✓								
Optional heating elements												
Duct-based pre-heater		✓*	✓*		✓*	✓*	✓	✓*	✓	✓*	✓*	✓
Duct-based heater	✓	✓*	✓*	✓	✓*	✓*	✓	✓*	✓	✓*	✓*	✓

* - only pre-heater or heater.

Accessories

Network Module

MB-Gateway p. 178

Remote controller

Ptouch p. 175

Control panel

FLEX p. 177

Remote controller

Stouch p. 176

Electrical duct pre-heater

EKA NIS p. 198

Electrical duct pre-heater

EKA NV PH p. 201

Electrical heater

EKA p. 198

Actuator for dampers

SP p. 210

Thermic water valve actuator

SSB p. 195

Shut-off damper

SKG p. 212

Mounting clamp

AP p. 219

Circular duct silencer

AKS p. 216

Circular duct water cooler

AVA p. 193

CO2 sensor

S-RC02-F2 p. 180

Pressure transmitter

S-1141 p. 179

Humidity sensor

S-KFF-U p. 181

Supply and exhaust air grill

WSG p. 218

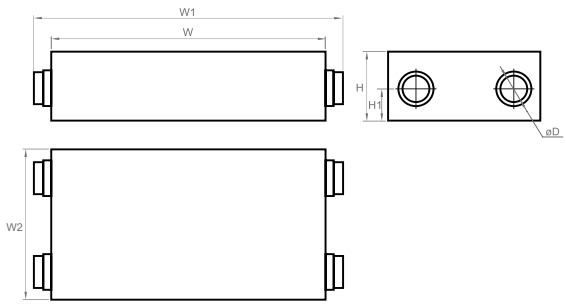
Couplings with sealing rubber

NPU

Smarty legs

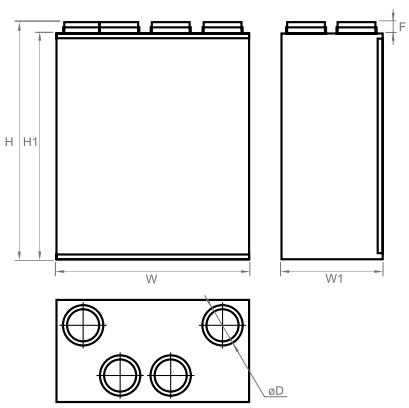

CONSTRUCTION

Smarty 2X P - 3X P

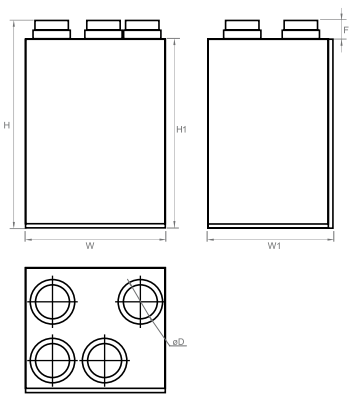


	Dimensions [mm]					
Unit	**W**	**W1**	**W2**	**H**	**H1**	**øD**
Smarty 2X P	1009	1086	590	250	112	125/160
Smarty 3X P	1225	1381,5	685,5	318	150	149/159

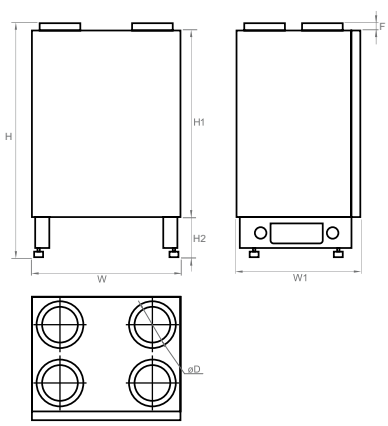
Smarty 2X V



Smarty 3X V



Smarty 3X VEL/VER 3.0



	Dimensions [mm]						
Unit	**W**	**W1**	**H**	**H1**	**H2**	**F**	**øD**
Smarty 2X V	595	316	732	697	-	35	125/100
Smarty 3X V	599	538	890	810	-	80	150/160
Smarty 3X VER/VEL 3.0	598	500	943	750	163	30	160

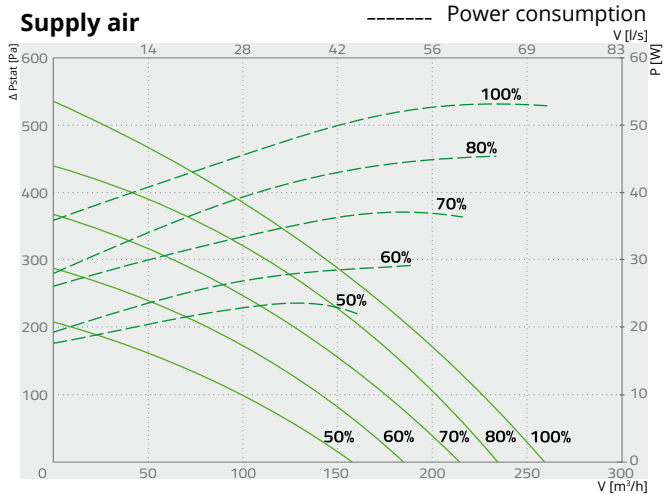
	Optional accessories									
Unit	**Stouch Ptouch MB- Gateway**	**FLEX**	**EKA NIS**	**EKA NV PH**	**EKA**	**SP** *Supply*	**SP** *Exhaust*	**SSB**	**WSG**	**NPU**
Smarty 2X P	+	-	125	-	125	CM230-1-F-L	CM230-1-F-L	-	125	125
Smarty 3X P	+	-	160	-	160	CM230-1-F-L	CM230-1-F-L	-	160	160
Smarty 2X V	+	-	125	-	125	CM230-1-F-L	CM230-1-F-L	-	125	125
Smarty 3X V	+	-	160	-	160	CM230-1-F-L	CM230-1-F-L	-	160	160
Smarty 3X VER/VEL 3.0	+	+	160	160	-	CM230-1-F-L	CM230-1-F-L	81	160	160

	Optional accessories						
Unit	**AKS**	**SKG**	**AVA**	**S-RCO2-F2**	**S-1141**	**S-KFF-U**	**Legs**
Smarty 2X P	125	125	-	+	-	+	optional
Smarty 3X P	160	160	-	+	-	+	optional
Smarty 2X V	125	125	-	+	-	+	optional
Smarty 3X V	160	160	-	+	-	+	optional
Smarty 3X VER/VEL 3.0	160	160	160	+	+	-	integrated

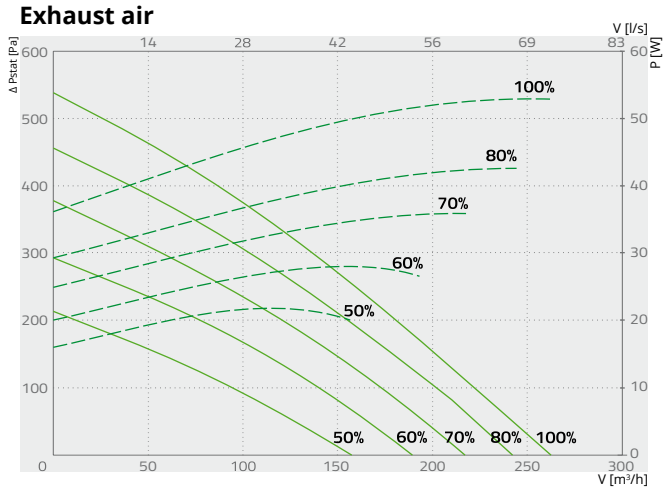
Smarty 2X P

Performance
Power consumption

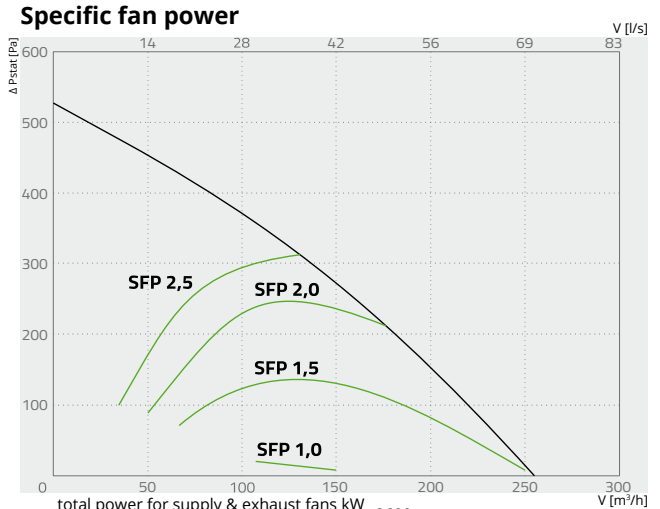
Supply air



Exhaust air

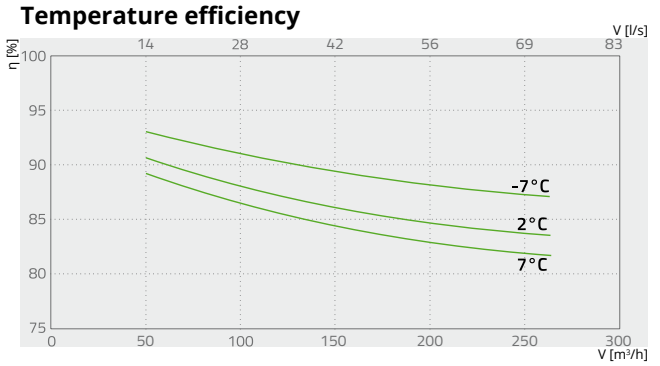


Specific fan power



$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency



NEW!

View from inspection side

Exhaust air Extract air outdoor air Supply air

Smarty 2X P			
EC fans	phase/voltage	[50Hz/VAC]	~1, 230
exhaust	power/current	[kW/A]	0,051/0,4
	fan speed	[min⁻¹]	4525
supply	power/current	[kW/A]	0,051/0,4
	fan speed	[min⁻¹]	4525
Thermal efficiency up to*			94%
Max power consumption		[kW/A]	0,11/0,9
Filter class	exhaust/supply		G4/G4 (F7 optional)
Housing insulation, Elastic Polyether Polyurethane		[mm]	20-30
Colour	RAL	white	9016
Weight (net, without packing)		[kg]	40
Comply with ERP			2018
Operation			indoors
Housing protection class	IP		34

*DIBt and EN13141-7

Temperature efficiency (balanced mass flow):
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

Smarty 2X P	L_{wa} total, dB(A)	L_{WA} dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	58	42	51	50	52	53	49	34
Extract	54	40	47	46	49	47	43	26
Surrounding	48	28	37	43	38	31	24	21
Measured at 153 m³/h, 50 Pa								

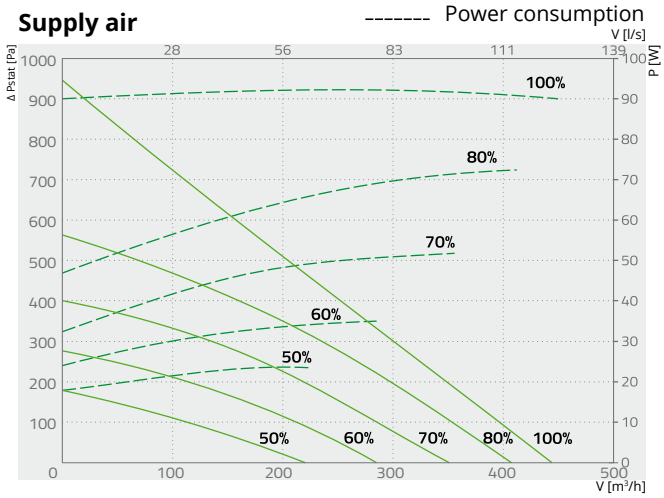
Certifications

EUROVENT certified
heat exchanger performance

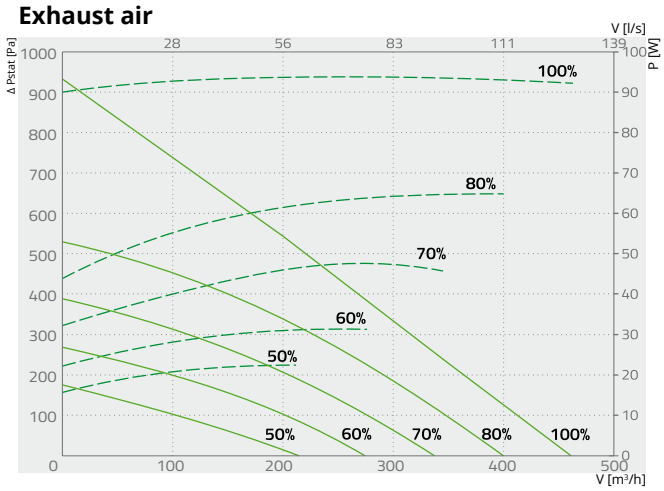
Smarty 3X P

Performance
Power consumption

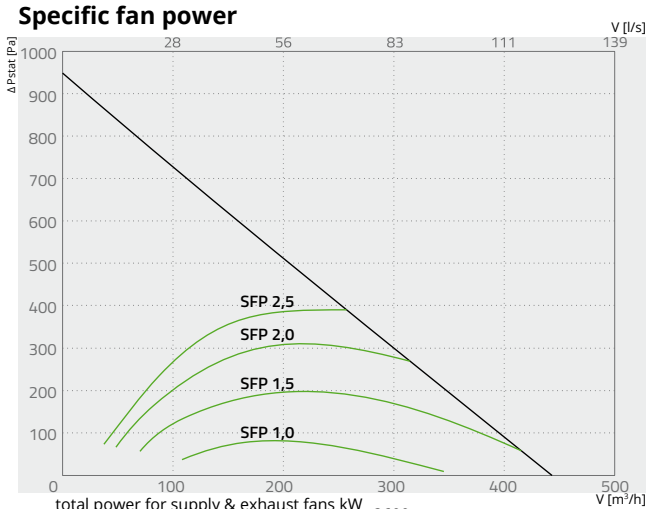
Supply air



Exhaust air

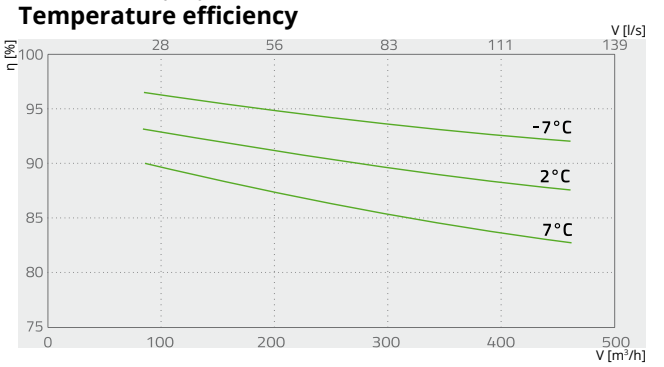


Specific fan power

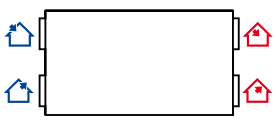


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency



NEW!



View from inspection side

Exhaust air Extract air outdoor air Supply air

Smarty 3X P			
EC fans	phase/voltage	[50Hz/VAC]	~1, 230
exhaust	power/current	[kW/A]	0,084/0,75
	fan speed	[min⁻¹]	3200
supply	power/current	[kW/A]	0,084/0,75
	fan speed	[min⁻¹]	3200
Thermal efficiency up to*			94%
Max power consumption		[kW/A]	0,168/1,5
Filter class	exhaust/supply		G4/G4 (F7 optional)
Housing insulation, Elastic Polyether Polyurethane		[mm]	30
Colour	RAL	white	9016
Weight (net, without packing)		[kg]	53
Comply with ERP			2018
Operation			indoors
Housing protection class	IP		34

*DIBt and EN13141-7

Temperature efficiency (balanced mass flow):
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

Smarty 3X P	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	57	49	50	53	48	47	45	40
Extract	50	41	43	44	42	39	37	34
Surrounding	42	34	35	36	34	32	31	27
Measured at 230 m³/h, 99 Pa								

Certifications

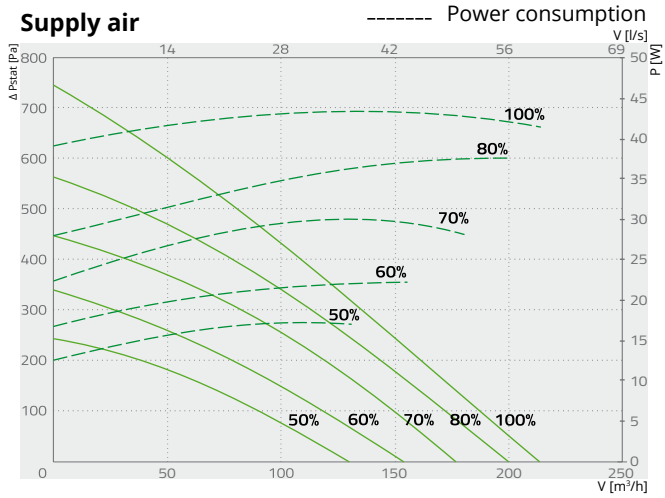
EUROVENT certified
heat exchanger performance

EUROVENT CERTIFIED PERFORMANCE
AHU N°: 05.05.298
Range: SmartAir
www.eurovent-certification.com

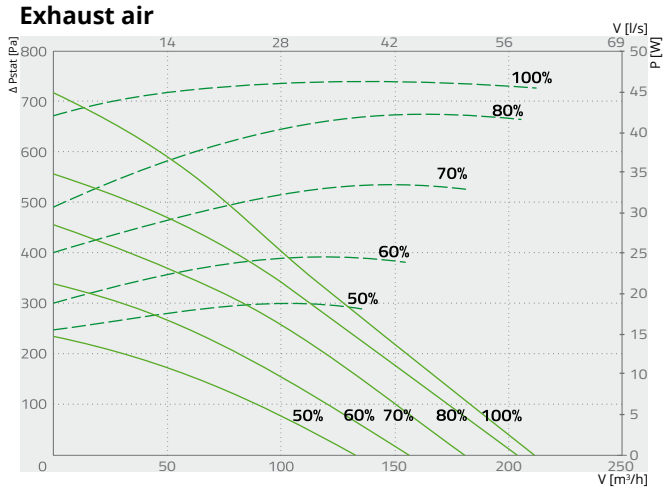
AIR HANDLING UNITS

Smarty 2X V

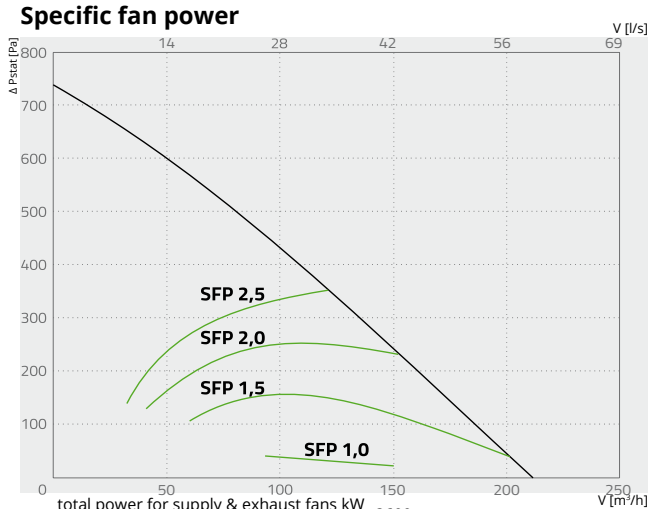
Supply air



Exhaust air

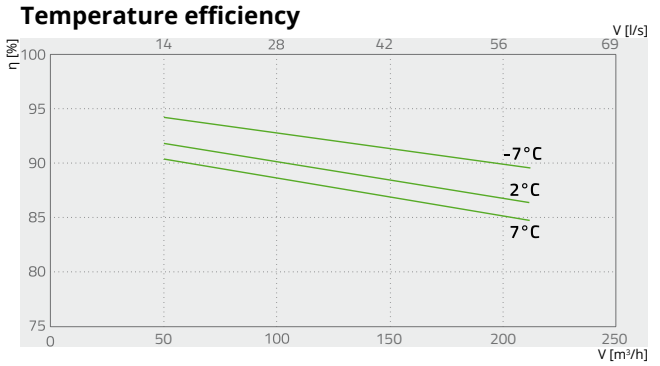


Specific fan power



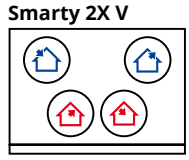
$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency



NEW!

Smarty 2X V



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.	Version
GAGSMARTY1933_1035	SMARTY 2XV 1.1 Premium
GAGSMARTY1933_1036	SMARTY 2XV 1.2 Advanced
GGAGSMARTY1933_1037	SMARTY 2XV 1.3 Basic

			Smarty 2X V
EC fans	phase/voltage	[50Hz/VAC]	~1, 230
exhaust	power/current	[kW/A]	0,035/0,35
	fan speed	[min⁻¹]	4060
supply	power/current	[kW/A]	0,035/0,35
	fan speed	[min⁻¹]	4060
Thermal efficiency up to*			94%
Max power consumption		[kW/A]	0,67/3,30
Filter class	exhaust/supply		G4/G4 (F7 optional)
Housing insulation, Elastic Polyether Polyurethane		[mm]	30
Colour	RAL	white	9016
Weight (net, without packing)		[kg]	25
Comply with ERP			2018
Operation			indoors
Housing protection class	IP		34

*DIBt and EN13141-7

Temperature efficiency (balanced mass flow):
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

Smarty 2X V	L_{wa} total, dB(A)	L_{WA}, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	51	41	45	46	43	41	37	33
Extract	48	38	42	43	39	37	31	29
Surrounding	46	28	39	43	37	33	18	16
Measured at 177 m³/h, 50 Pa								

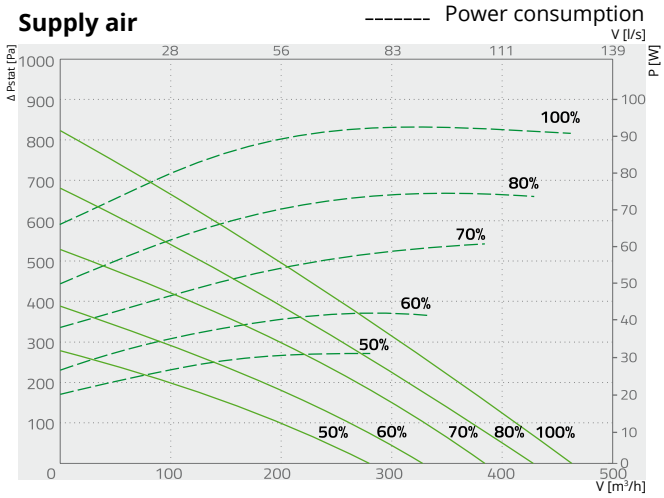
Certifications

EUROVENT certified
heat exchanger performance

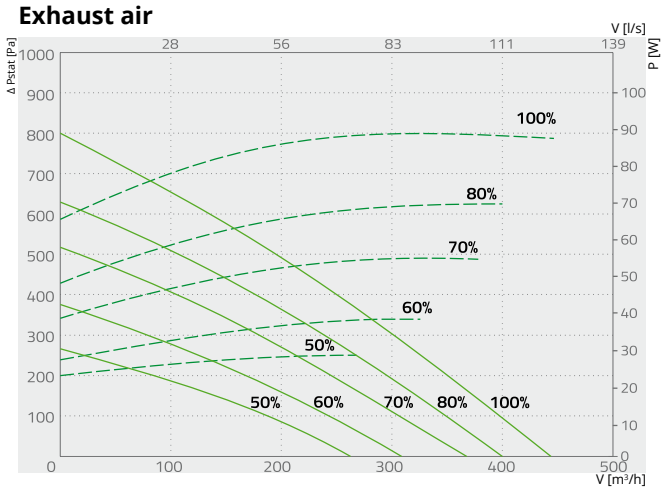
Smarty 3X V

Performance
Power consumption

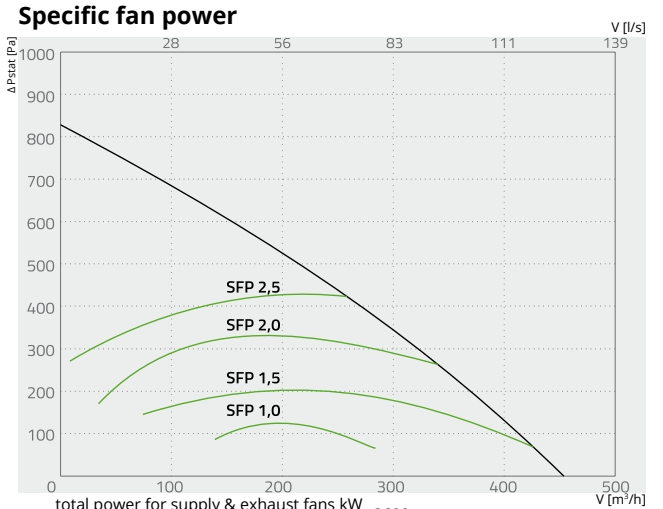
Supply air



Exhaust air

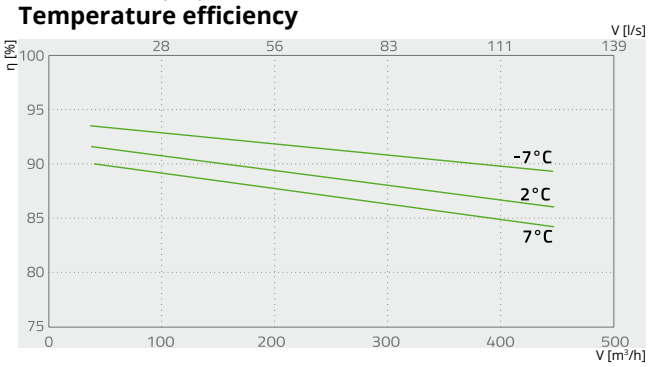


Specific fan power

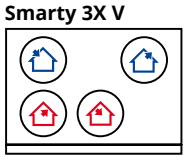


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency



Smarty 3X V



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.	Version
GAGSMARTY1923_1044	SMARTY 3XV 1.1 Premium
GAGSMARTY1966_1045	SMARTY 3XV 1.2 Advanced
GAGSMARTY1967_1046	SMARTY 3XV 1.3 Basic

Smarty 3X V			
EC fans	phase/voltage	[50Hz/VAC]	~1, 230
exhaust	power/current	[kW/A]	0,083/0,75
	fan speed	[min⁻¹]	3200
supply	power/current	[kW/A]	0,083/0,75
	fan speed	[min⁻¹]	3200
Thermal efficiency up to*			94%
Max power consumption		[kW/A]	1,37/6,70
Filter class	exhaust/supply		G4/G4 (F7 optional)
Housing insulation, Elastic Polyether Polyurethane		[mm]	50
Colour	RAL	white	9016
Weight (net, without packing)		[kg]	39
Comply with ERP			2018
Operation			indoors
Housing protection class	IP		34

*DIBt and EN13141-7

Temperature efficiency (balanced mass flow):
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

Smarty 3X V	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	55	46	48	49	48	46	45	42
Extract	51	43	45	44	42	41	39	35
Surrounding	46	31	41	43	35	30	25	22
Measured at 285 m³/h, 50 Pa								

Certifications

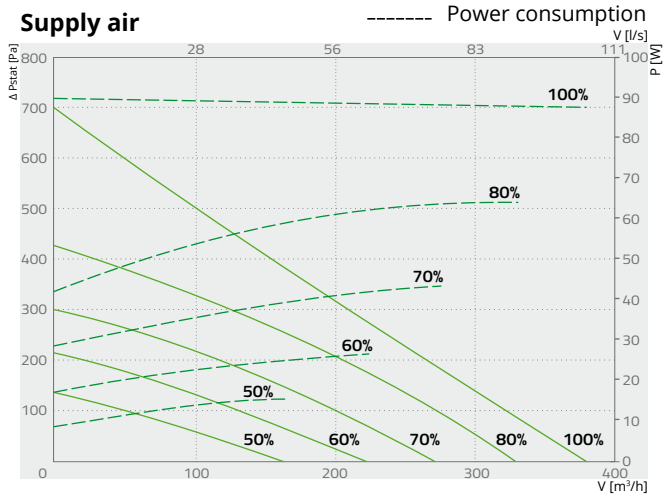
EUROVENT certified
heat exchanger performance

EUROVENT CERTIFIED PERFORMANCE
AHU N°: 05.05.298
Range: SmartAir
www.eurovent-certification.com

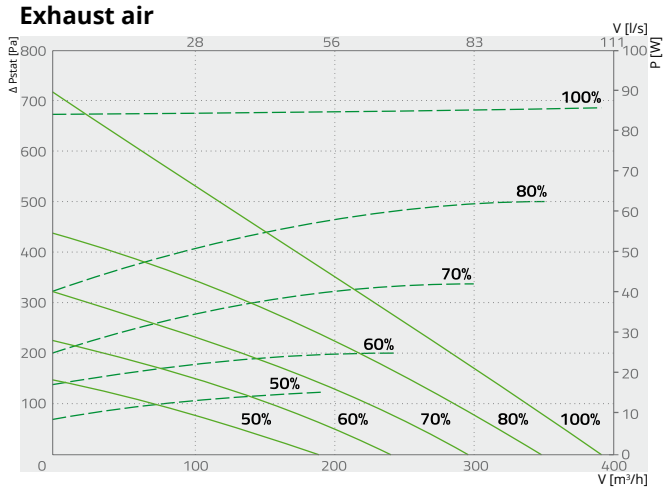
Smarty 3X VEL/VER 3.0

Performance
Power consumption

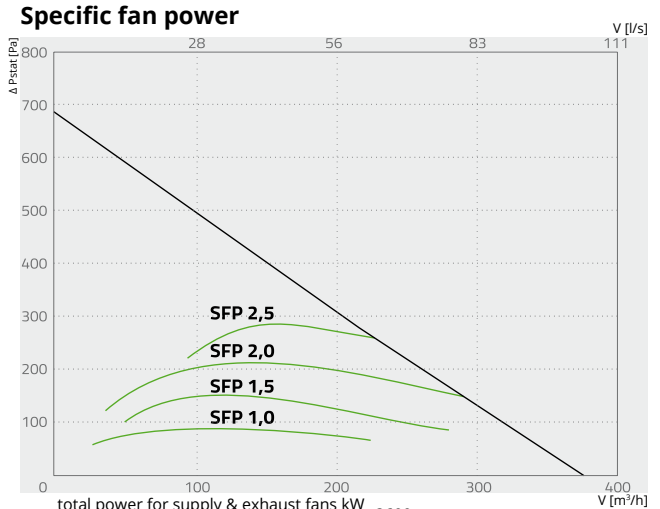
Supply air



Exhaust air

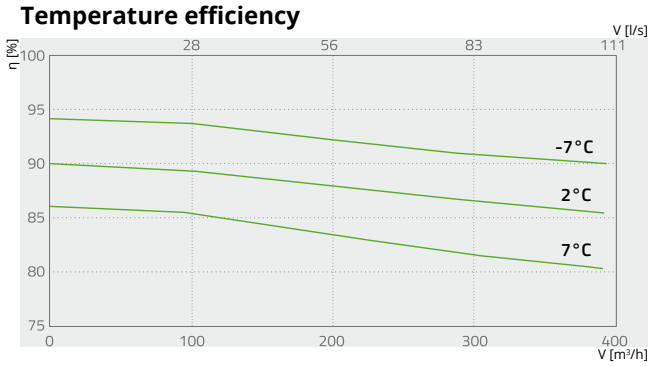


Specific fan power

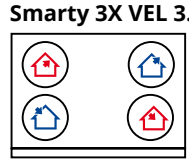


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency

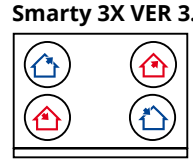


Smarty 3X VEL 3.0



View from inspection side

Smarty 3X VER 3.0



View from inspection side

Exhaust air Extract air outdoor air Supply air

Unit	Version
Smarty 3X VER	Certified DIBt; PRV 2.3 control board
Smarty 3X VEL	Standard; PRV 2.5 control board
Smarty 3X VER 3.0	Standard; PRV 2.5 control board
Smarty 3X VEL 3.0	Standard; PRV 2.5 control board

Smarty 3X VER/VEL/3.0			
EC fans	phase/voltage	[50Hz/VAC]	~1, 230
exhaust	power/current	[kW/A]	0,089/0,83
	fan speed	[min⁻¹]	3200
supply	power/current	[kW/A]	0,086/0,92
	fan speed	[min⁻¹]	3200
Thermal efficiency up to*			90%
Max power consumption		[kW/A]	0,18/1,77
Filter class	exhaust/supply		M5/F7
Housing insulation, mineral wool		[mm]	30
Colour	RAL	white	9016
Weight (net, without packing)		[kg]	57,0
Comply with ERP			2018
Operation			indoors
Housing protection class	IP		34

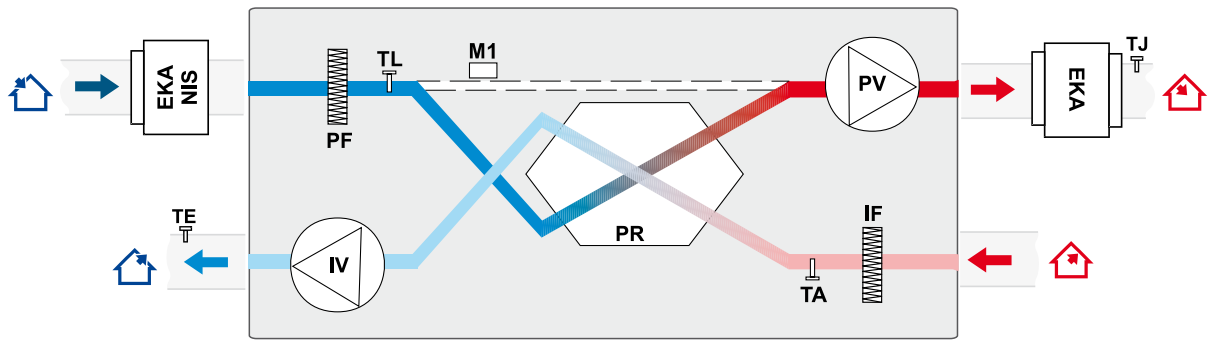
Temperature efficiency (balanced mass flow):
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

Smarty 3X VEL/ VER/3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	66	55	58	60	61	59	55	44
Extract	57	52	51	50	48	44	36	32
Surrounding	48	41	42	43	41	38	34	27
Measured at 300 m³/h, 100 Pa								

Certifications

EUROVENT certified
heat exchanger performance

Smarty 2X P / 3X P versions v1.1 with electrical heater *

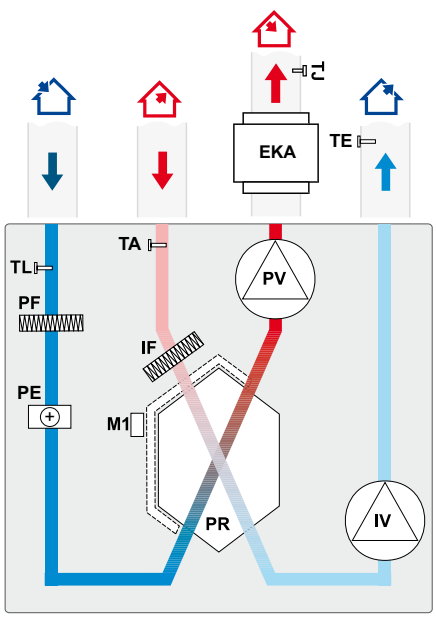


*V.1.2 only electric pre-heater or heater;
V.1.3 no by-pass, only electric pre-heater or heater;
V.1.4 same as v1.1 only with other control board (MCB).

IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
PF - filter for supply air
IF - filter for extract air
M1 - actuator of by-pass damper

TA - extract air temperature sensor
TL - fresh air temperature sensor
TJ - supply air temperature sensor
TE - exhaust air temperature sensor
EKA NIS - electric pre-heater
EKA - electric heater

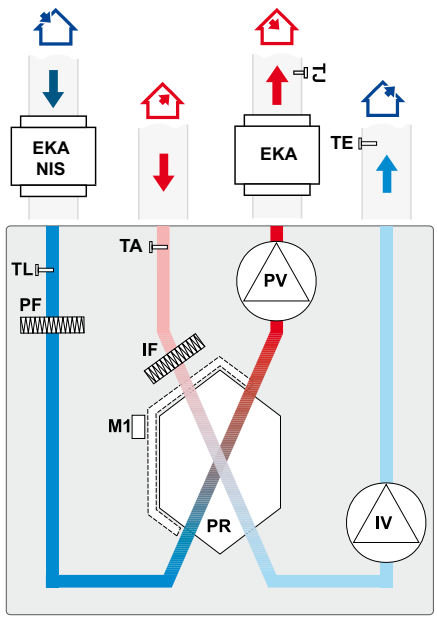
Smarty 2X V / 3X V versions v1.1 with electrical heater



IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
PF - filter for supply air
IF - filter for extract air
M1 - actuator of by-pass damper

TA - extract air temperature sensor
TL - fresh air temperature sensor
TJ - supply air temperature sensor
TE - exhaust air temperature sensor
EKA - electric heater
PE - electric pre-heater

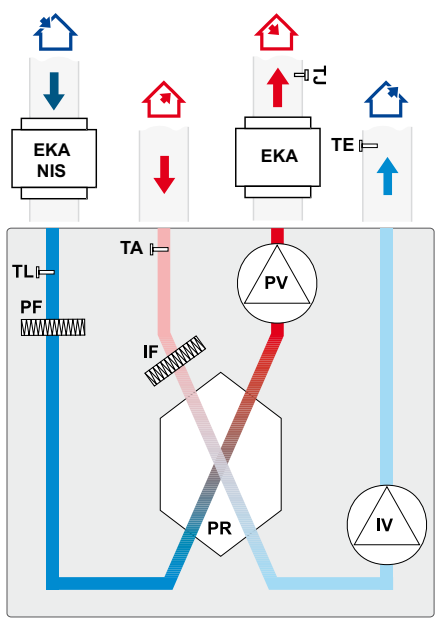
Smarty 2X V / 3X V versions v1.2 with electrical heater



IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
PF - filter for supply air
IF - filter for extract air
M1 - actuator of by-pass damper

TA - extract air temperature sensor
TL - fresh air temperature sensor
TJ - supply air temperature sensor
TE - exhaust air temperature sensor
EKA - electric heater
EKA NIS - electric pre-heater

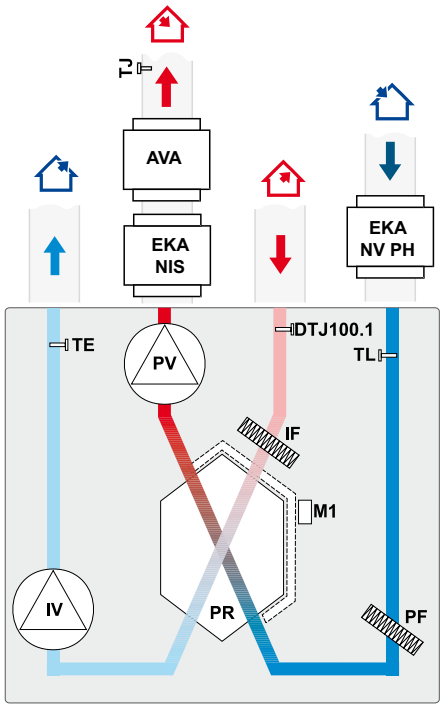
Smarty 2X V / 3X V versions v1.3 with electrical heater



IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
PF - filter for supply air
IF - filter for extract air

TA - extract air temperature sensor
TL - fresh air temperature sensor
TJ - supply air temperature sensor
TE - exhaust air temperature sensor
EKA - electric heater
EKA NIS - electric pre-heater

Smarty 3X VEL / VER 3.0 versions with electrical heater



IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
PF - filter for supply air
IF - filter for extract air
M1 - actuator of by-pass damper
AVA - optionally suppllied water cooler

TA - extract air temperature sensor
TL - fresh air temperature sensor
TJ - supply air temperature sensor
EKA NIS - electrical heater
EKA NV PH - optional fresh air pre-heater
DTJ 100.1 - humidity + temperature sensor

FUNCTIONS					
Descriptions of the functions	MCB	MiniMCB	MiniMCB basic	PRV V2.3	PRV V2.5
	Smarty 3X P	Smarty range		SMARTY 3X VEL/VER	SMARTY 3X VEL/VER 3.0
	E	E	E	E	E
Functions					
Date and time settings	✓	✓	✓	✓	✓
System modes for easy and-user friedly control: Stand-by, Building protection, Economy, Comfort. (Specific air flows are used in the system and they are dedicated to each type of mode.)	✓	✓	✓	✓	
4 speeds for easy and-user control ("Stop" – the unit is stopped; "Low", medium", and "High". Service menu allows adjusting each speed individually)					✓
BOOST function (Fans operate at highest speed)	✓	✓	✓	✓	✓
Comfortable air temperature function	✓	✓	✓	✓	✓
Cold/heat recovery	✓	✓	✓	✓	✓
Fire place function	✓	✓	✓	✓	✓
Heating season (from a selected date, 3-day temperature average or manually)	✓	✓	✓	✓	
Dryness protection	✓	✓	✓	✓	✓
Weekly schedule	✓	✓	✓	✓	✓
Holiday schedule	✓	✓	✓	✓	✓
User and service control levels	✓	✓	✓	✓	✓
Automatic air flow balancing (using integrated pressure transducers)	✓	✓			
Manual air flow balancing	✓	✓	✓	✓	✓
CO_2 level indication and reduction function	✓	✓	✓	✓	✓
Night cooling function	✓	✓	✓	✓	✓
Relative humidity (RH) level indication and reduction function	✓ **P**	✓ **P**	✓ **P**		✓
Software and configuration update possibility	✓	✓	✓	✓	✓
Supply air temperature control according to the extract air sensor	✓	✓	✓	✓	✓
Monitoring function (all sensors and I/O)	✓	✓	✓	✓ **5**	✓ **5**
Mode switch (start/stop)	✓	✓	✓	✓	✓
Extracted air relative humidity converter				✓	✓
Manual components control	✓	✓	✓	✓ **3**	✓ **3**
Functional units					
Fans					
Soft start and stop	✓	✓	✓	✓	✓
Fan failure protection	✓	✓ **4**	✓ **4**	✓ **6**	✓
Protection by RPM	✓	✓	✓		
Protection by pressure	✓	✓			
Speed synchronous/asynchronous 0-10V control	✓	✓	✓	✓	✓
Electric heater					
On/Off / PWM control	✓	✓	✓ **1**	✓	✓
Manual protection	✓	✓	✓ **2**	✓	✓
Automatic protection	✓	✓	✓ **2**		
Overheat protection (additional protection software)	✓	✓	✓	✓	✓
Electric pre-heater					
On/Off / PWM control	✓	✓	✓ **1**		
Pre-heater manual/automatic protection (NC)	✓	✓	✓ **2**		
Return water temperature sensor	✓	✓			✓
Water temperature sensor	✓				
DX cooler					
Control On/Off	✓ **P**			✓	✓
Temperature sensor	✓				
Control with three-positional valve actuator				✓	✓
Bypass damper					
3-position actuator control	✓			✓	✓
Step motor control	✓	✓	✓		
Filter pollution monitoring					
By pressure switch (NC)	✓	✓			✓
By filter timer	✓	✓	✓	✓	✓
Sensors					
Temperature sensor input calibration (Calibration is carried out by standard)	✓	✓	✓		
Temperature sensor failure protection (with emergency mode)	✓	✓	✓		
Supply air temperature sensor	✓	✓	✓	✓	✓
Fresh air temperature sensor	✓	✓	✓	✓	✓
Exhaust air temperature sensor	✓	✓	✓	✓	✓
Extract air temperature sensor	✓	✓	✓	✓	✓

FUNCTIONS					
Descriptions of the functions	MCB	MiniMCB	MiniMCB basic	PRV V2.3	PRV V2.5
	Smarty 3X P	Smarty range		SMARTY 3X VEL/VER	SMARTY 3X VEL/VER 3.0
	E	E	E	E	E
Emergency signals and inputs/outputs					
Fire damper actuator control On/Off	✓				
Fire damper test function	✓				
Fire protection input	✓	✓	✓	✓	✓
Configurable digital inputs	✓	✓	✓		
Working indication output	✓	✓		✓	✓
Alarm indication output	✓	✓		✓	✓
Fireplace protection (NC)	✓	✓			
Remote controllers					
Stouch	✓	✓	✓	✓	✓
Flex				✓	✓
Ptouch	✓	✓	✓		✓
MB Gateway	✓	✓	✓	✓	✓

1	MiniMCB basic can control only pre-heater or heater
2	MiniMCB basic have protections only for pre-heater or heater
3	With FLEX TEST remote controler
4	MiniMCB has RPM or TK input

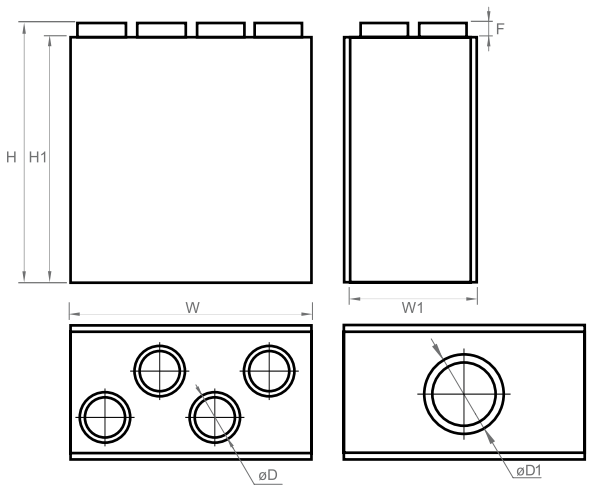
5	Only sensors
6	Can be connected in sequential circuit
P	Function will be available in IIQ 2016

SMARTY R

NEW!

ErP READY

Application	Apartments, private houses, villas and ither heated premises.
Description	Smarty R V is a heat recovery unit with high-efficiency rotor heat exchanger. Unit is designed for vertical placement in auxiliary heated or non-heated premises. Smarty R V is designed for placement in tight spaces: kitchen cabinets, boiler rooms and etc. Unit has high overall energy savings due to the highly efficient heat recovery (up to 80%), quiet and economical EC fans, effective low-pressure-drop filters, and top-level air tightness. Smarty R V is fully equipped with automatic control. Demand-level control options with CO_2 and humidity sensors and summer mode are available for highest comfort. Smarty is service-friendly and are easy to mount. Rotor fault indicators are included in every AHU. Units are supplied tested and ready to install.
Controls	Three remote control options are available: 1. Stouch remote controller. 2. Building management system connections. 3. Remote control via PC MB-Gateway.
Features	› Efficient rotor heat exchanger with up to 80% heat recovery. › Electrical heating. › Easy and quick installation. › Controlled airflow. › Fully integrated plug-and-play control system.
Rotor	› Eurovent certified. › Plate gap 1,5 mm. › Rotor fault indicator. › Minimal airflow mixing.
Construction	› Frameless construction from double-skinned steel, with powder coated paint, panels. › Acoustic wall insulation – 20 mm, › 3 sensors for fresh, supply and extract air temperatures. › Low-pressure-drop filters: F7/M5. › Integrated electrical heater. › Kitchen hood connection d125



View from buttom

	Dimensions [mm]							
Unit	**W**	**W1**	**L**	**H**	**H1**	øD	øD1	**F**
Smarty 2R VE	598	320	320	653	620	125	175	30

	Optional accessories					
Unit	**Stouch MB-Gateway**	**EKA NV PH**	**WSG**	**S-RC02-F2 S-KFF-U S-RFF-U-D-F2 S-KCO2**	**AKS AP SKG**	**SP**
Smarty 2R VE	+	125	125	+	125	CM24-F-L

Accessories

Network Module

MB-Gateway p. 178

Remote controller

Stouch p. 176

Electrical duct pre-heater

EKA NV PH p. 201

Actuator for dampers

SP p. 210

Shut-off damper

SKG p. 212

Mounting clamp

AP p. 219

Circular duct silencer

AKS p. 216

Supply and exhaust air grill

WSG p. 218

CO2 sensor

S-RC02-F2 p. 180

CO2 sensor

S-KCO2 p. 180

Humidity sensor

S-RFF-U-D-F2 p. 181

Humidity sensor

S-KFF-U p. 181

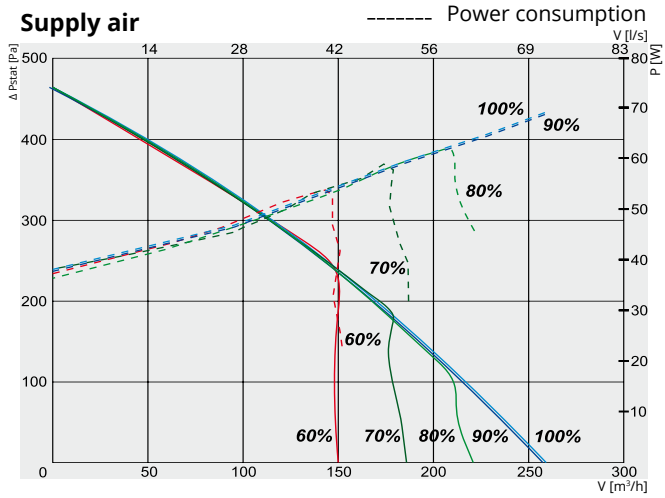
Kitchen hood


Front cover

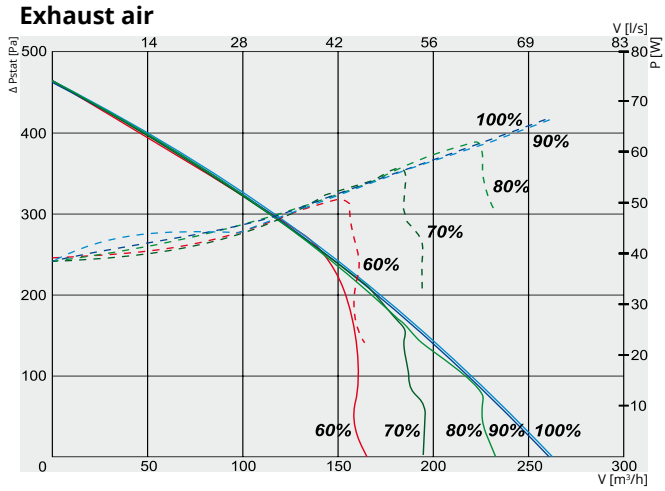

Smarty 2R V

Performance
Power consumption

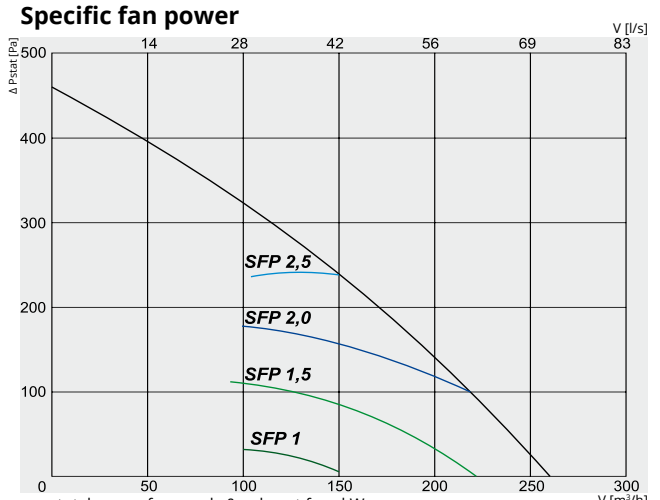
Supply air



Exhaust air

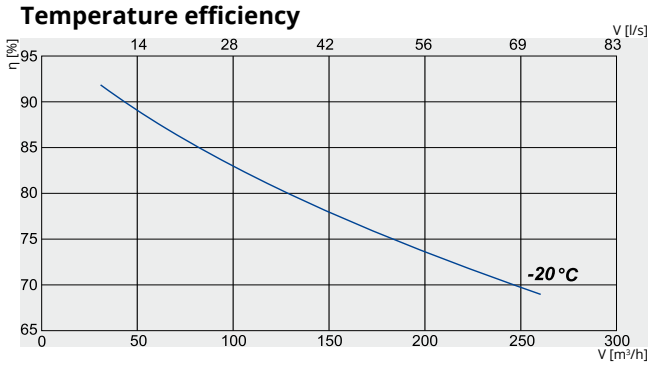


Specific fan power



$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

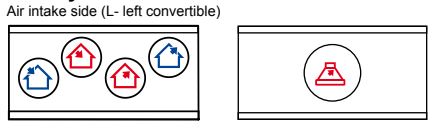
Temperature efficiency



NEW!

Smarty 2R VEL

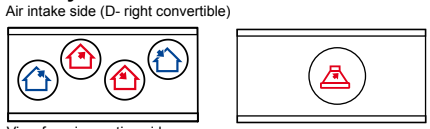
Air intake side (L- left convertible)



View from inspection side

Smarty 2R VER

Air intake side (D- right convertible)



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air | Kitchen hood

Article No.		Version
GAGSMARTY1981_0102A	Smarty 2R VEL	Left-hand maintenace version with integrated electrical heater.
GAGSMARTY1975_0102A	Smarty 2R VER	Right-hand maintenace version with integrated electrical heater.

			Smarty 2R V
Heater	-phase/voltage	[50Hz/VAC]	~1, 230
	-power consumption	[kW]	0,6
EC Fans	-phase/voltage	[50Hz/VAC]	1/230
exhaust	-power/current	[kW/A]	0,07/0,6
	-fan speed	[min⁻¹]	1380
supply	-power/current	[kW/A]	0,07/0,6
	-fan speed	[min⁻¹]	1380
Motor protection class			IP-44
Thermal efficiency			80%
Max power consumption		[kW/A]	0,75 / 3,91
Automatic control			integrated
Filter class	-exhaust		M5
	-supply		M5
Thermal insulation		[mm]	20
Weight		[kg]	36,0
Comply with ERP			2018

Air flow temperature range from -20°C to +40°C.
Designed for operation indoors only.

Temperature efficiency (balanced mass flow):
Extract air = 20°C/60%RH
Outdoor air = -20°C

Smarty 2R V	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	65	50	59	61	59	55	51	40
Extract	60	45	58	53	45	37	28	21
Surrounding	46	37	40	42	38	29	19	16
Measured at 214 m³/h, 100 Pa								

Certifications

EUROVENT certified
heat exchanger performance

EUROVENT CERTIFIED PERFORMANCE
AHU N° 05.05.298
Range: SmartAir
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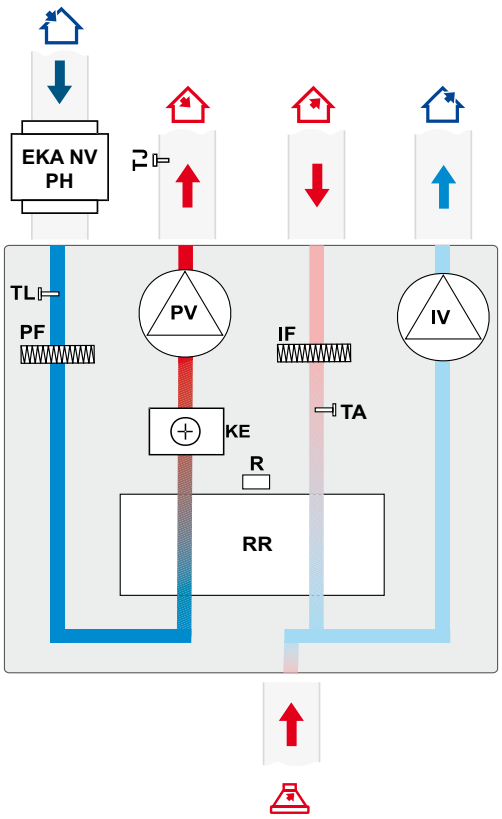
Smarty 2R VE (vertical) **with electrical heater**



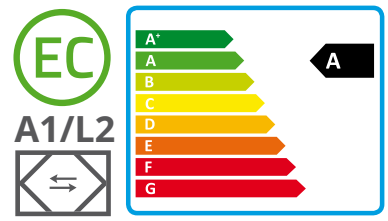
EKA NV PH - optional fresh air pre-heater
TL - fresh air temperature sensor
PF - filter for supply air
PV - supply air fan
KE - electrical heater
R - motor of rotor heat exchanger
RR - rotary heat exchanger
TJ - supply air temperature sensor
IF - filter for extract air
TA - extract air temperature sensor
IV - exhaust air fan

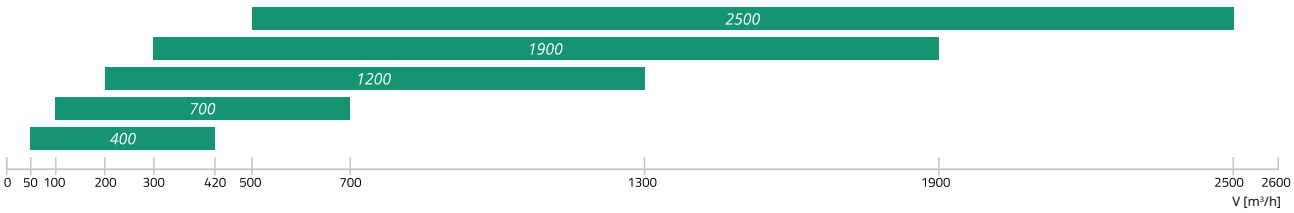
FUNCTIONS	
Descriptions of the functions	MCB **Smarty R** **E**
Functions	
Date and time settings	✓
System modes for easy and-user friedly control: Stand-by, Building protection, Economy, Comfort. (Specific air flows are used in the system and they are dedicated to each type of mode.)	✓
BOOST function (Fans operate at highest speed)	✓
Comfortable air temperature function	✓
Cold/heat recovery	✓
Fire place function	✓
Heating season (from a selected date, 3-day temperature average or manually)	✓
Dryness protection	✓
Weekly schedule	✓
Holiday schedule	✓
User and service control levels	✓
Automatic air flow balancing (using integrated pressure transducers)	✓
Manual air flow balancing	✓
CO_2 level indication and reduction function	✓
Night cooling function	✓
Relative humidity (RH) level indication and reduction function	✓ **P**
Software and configuration update possibility	✓
Supply air temperature control according to the extract air sensor	✓
Monitoring function (all sensors and I/O)	✓
Mode switch (start/stop)	✓
Manual components control	✓
Functional units	
Fans	
Soft start and stop	✓
Fan failure protection	✓
Protection by RPM	✓
Protection by pressure	✓
Speed synchronous/asynchronous 0-10V control	✓
Electric heater	
On/Off / PWM control	✓
Manual protection	✓
Automatic protection	✓
Overheat protection (additional protection software)	✓
Electric pre-heater	
On/Off / PWM control	✓
Pre-heater manual/automatic protection (NC)	✓
DX cooler	
Control On/Off	✓ **P**
Protection (NC)	✓ **P**
Reverse (NO-cooling, NC-heating)	✓ **P**
Temperature sensor	✓
Filter pollution monitoring	
By filter timer	✓
Rotor	
Pulse-width modulation (PWM) (0-10VDC) motor control	✓
On/Off motor control	✓
Motor belt levers protection	✓
Rotation speed indication	✓
Service timer	✓
Sensors	
Temperature sensor input calibration (Calibration is carried out by standard)	✓
Temperature sensor failure protection (with emergency mode)	✓
Supply air temperature sensor	✓
Fresh air temperature sensor	✓
Extract air temperature sensor	✓

FUNCTIONS	
Descriptions of the functions	MCB Smarty R E
Emergency signals and inputs/outputs	
Fire damper actuator control On/Off	✓
Fire damper test function	✓
Fire protection input	✓
Configurable digital inputs	✓
Working indication output	✓
Alarm indication output	✓
Fireplace protection (NC)	✓
Remote controllers	
Stouch	✓
MB Gateway	✓

P	Function will be available in IIQ 2016

RIS P EKO



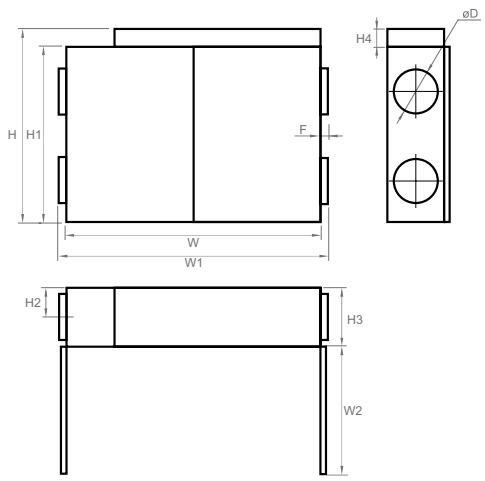


Application	Ventilation of houses, offices or other heated premises (classrooms, apartments, conference rooms, etc.)
Description	RIS P EKO 3.0 is a range of heat recovery units with high-efficiency counter-flow heat exchangers and low height. The units are designed for mounting under ceilings in order to save space. There are 5 sizes (airflow interval 420-2500 m³/h) with separate heaters available for different climate zones. RIS P EKO 3.0 units have high overall energy savings due to the highly efficient heat recovery (up to 90%), quiet and economical EC fans, effective low-pressure-drop filters, 100% motorized bypass dampers (for the 1900 and 2500 versions) and top-level of air tightness. Energy efficiency ensures full thermal comfort for passive houses, without an additional pre-heater at temperatures above -5°C. All the RIS P EKO 3.0 units are fully equipped with automatic controls. Optional external sensors for CO_2 and humidity and the event planning feature will help to control automatically your climate (demand-level control). RIS P EKO 3.0 units are service-friendly and are easy to mount. Filter pollution may be identified by timers or contamination controls (RIS 1200-2500 P EKO 3.0). All units are supplied tested and ready to install.
Remote control	Three remote control options are available: 1. Flex, Stouch or Ptouch remote controllers. 2. Building management system connections. 3. Remote control via PC MB-Gateway.
Features	› Ideal for ceiling installations. › Ready for Passive House technology: high efficiency. › Easy and quick mounting. › Water/electrical heating options. › Fully integrated plug-and-play control system.
Construction	› Frameless construction from double-skinned panels. › Acoustic and thermal wall insulation: RIS 400–2500 P EKO 3.0 – 30/50 mm. › RIS 400-700 P EKO 3.0 powder-coated white housing RAL 9016; RIS 1200–2500 P EKO 3.0 powder-coated grey housing RAL 7040. › Integrated electrical heater or optional duct-based water heater/cooler. › Low-pressure-drop filters: F7/M5. › Hinged door with locks grants easy access to internal components. › Separate compartment on the side of the unit grants quick access to the control board (plug-and-play). › Stainless steel condensate tray. › Fitted with mounting brackets. › Integrated anti-frost pressure switch (RIS 1200-2500 P EKO 3.0).

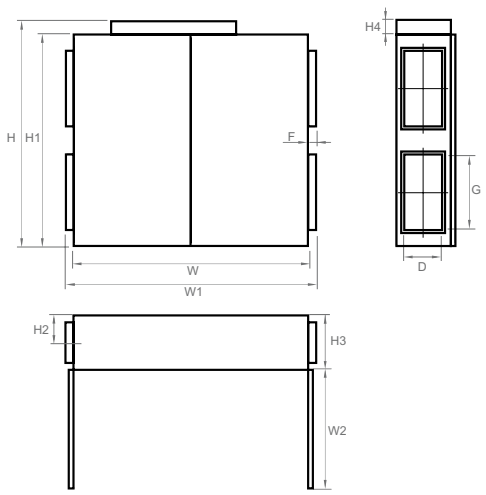
RIS 400 P E 0.9 EKO 3.0

- RIS — AHU with plate heat exchanger
- 400 — AHU size according to maximum airflow range m³/h
- P — Housing type (V - vertical, H - horizontal, P - ceiling)
- E — Heater type (E - integrated electrical heater; W - prepared for water heater)
- 0.9 — Electrical heater power in kW
- EKO — AHU with EC motors and efficient heat exchanger
- 3.0 — Equipped with new PRV V2 control board

RIS 400P EKO - RIS 700P EKO 3.0



RIS 1200P EKO - RIS 2500P EKO 3.0



	Dimensions [mm]											
Unit	**W**	**W1**	**W2**	**H**	**H1**	**H2**	**H3**	**H4**	**F**	**øD**	**G**	**D**
RIS 400PE/PW EKO 3.0	1300	1361	650	768	670	158	330	98	31	200	-	-
RIS 700PE/PW EKO 3.0	1380	1461	695	1069	970	160	350	99	40	250	-	-
RIS 1200PE/PW EKO 3.0	1550	1655	780	1497	1397	172	390	100	52	-	500	250
RIS 1900PE/PW EKO 3.0	1750	1870	710	1955	1850	194	399	105	60	-	700	300
RIS 2500PE/PW EKO 3.0	1850	1970	720	2055	1950	244	499	105	60	-	700	400

	Optional accessories												
Unit	**Flex Stouch Ptouch MB-Gateway**	**S-1141 S-RC02-F2 S-KFF-U**	**SSB** *Heating*	**SSB** *Cooling*	**SP** *Supply*	**SP** *Exhaust*	**SVS**	**SSK SKS**	**RMG**	**VVP/ VXP**	**SKG AKS AP**	**AVS AVA EKA NV PH**	**EKS NV PH**
RIS 400PE EKO 3.0	+	+	-	81	CM230-1-F-L	CM230-1-F-L	-	-	-	-	200	200	-
RIS 400PW EKO 3.0	+	+	61	81	TF230	CM230-1-F-L	-	-	+	+	200	200	-
RIS 700PE EKO 3.0	+	+	-	81	CM230-1-F-L	CM230-1-F-L	-	-	-	-	250	250	-
RIS 700PW EKO 3.0	+	+	61	81	TF230	CM230-1-F-L	-	-	+	+	250	250	-
RIS 1200PE EKO 3.0	+	+	-	-	LM230A-TP	LM230A-TP	-	500x250	-	-	-	-	500x250
RIS 1200PW EKO 3.0	+	+	61	-	NF230A	LM230A-TP	500x250	500x250	+	+	-	-	500x250
RIS 1900PE EKO 3.0	+	+	-	-	LM230A-TP	LM230A-TP	-	700x400*	-	-	-	-	700x400*
RIS 1900PW EKO 3.0	+	+	61	-	NF230A	LM230A-TP	700x400*	700x400*	+	+	-	-	700x400*
RIS 2500PE EKO 3.0	+	+	-	-	LM230A-TP	LM230A-TP	-	700x400	-	-	-	-	700x400
RIS 2500PW EKO 3.0	+	+	61	-	NF230A	LM230A-TP	700x400	700x400	+	+	-	-	700x400

*necessary to order flange adapter STP 700x400-700x300

Accessories

Network Module

MB-Gateway p. 178

Remote controller

Ptouch p. 175

Control panel

FLEX p. 177

Remote controller

Stouch p. 176

Pressure transmitter

S-1141 p. 179

CO2 sensor

S-RC02-F2 p. 180

Humidity sensor

S-KFF-U p. 181

Thermic water valve actuator

SSB p. 195

Actuator for dampers

SP p. 210

Water heater coil

SVS p. 190

Damper for rectangular duct

SSK p. 213

Rectangular duct silencer

SKS p. 215

Shut-off damper

SKG p. 212

Circular duct silencer

AKS p. 216

Mounting clamps

AP p. 219

Heating coil

AVS p. 185

Circular duct water cooler

AVA p. 193

Electrical duct pre-heater

EKS NV PH p. 203

Electrical duct pre-heater

EKA NV PH p.201

Mixing point

RMG p. 196

2 and 3 way valves

VVP/VXP p. 197

Flange adapter

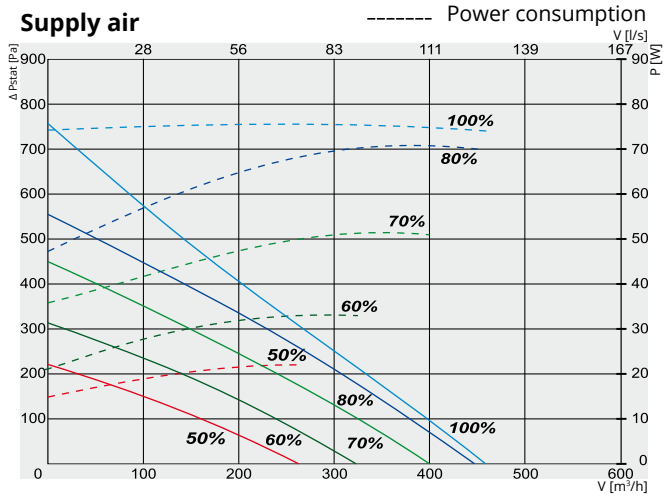
STP p. 220

RIS P EKO

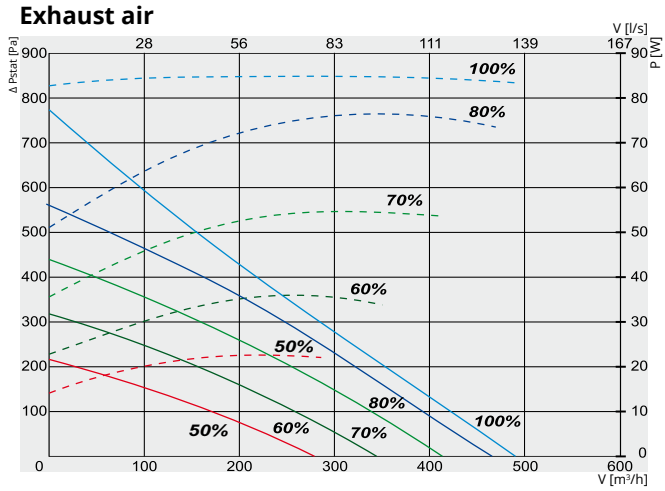
RIS 400PE EKO 3.0

Performance
Power consumption

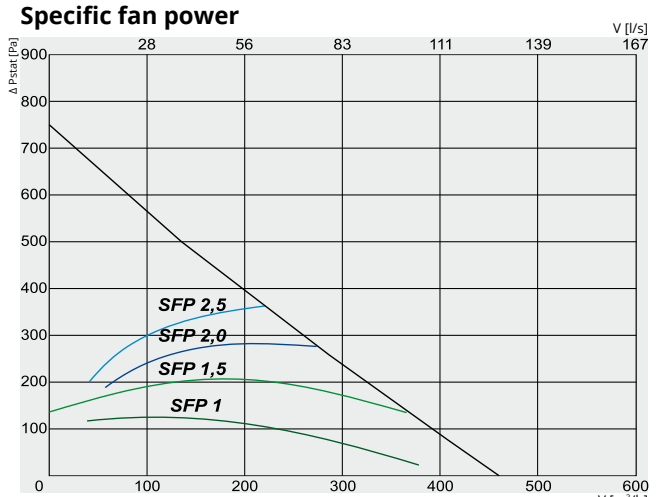
Supply air



Exhaust air

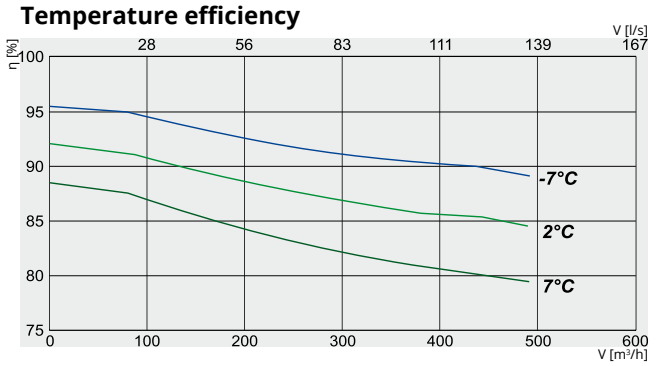


Specific fan power

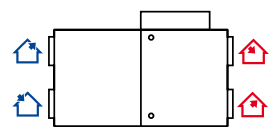


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency



RIS 400PE EKO 3.0



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.		Version			
GAGRIS1747_0017A	400PE 0.9 EKO 3.0	Integrated electrical heater			
GAGRIS1746_0017A	400PE 1.6 EKO 3.0	Integrated electrical heater			
GAGRIS1692_0016A	400PE 3.0 EKO 3.0	Integrated electrical heater			

			0.9 EKO 3.0	1.6 EKO 3.0	3.0 EKO 3.0
Electrical heater	phase/voltage	[50Hz/VAC]	~1, 230	~1, 230	~1, 230
		[kW]	0,9	1,6	3,0
EC fans	phase/voltage	[50Hz/VAC]		~1, 230	
exhaust	power/current	[kW/A]		0,085/0,73	
	fan speed	[min⁻¹]		3200	
supply	power/current	[kW/A]		0,085/0,73	
	fan speed	[min⁻¹]		3200	
Thermal efficiency up to*				90%	
Motorized by-pass				+	
Max power consumption		[kW/A]	1,07/5,50	1,77/8,50	3,17/14,50
Control board				PRV V2	
Filter class	exhaust/supply			M5/F7	
Housing insulation, mineral wool		[mm]		30	
Colour	RAL	white		9016	
Weight (net, without packing)		[kg]		74	
Comply with ERP				2016; 2018	
Operation				indoors	
Fresh air temperature limits**		°C		-5 - +40	
Housing protection class	IP			34	

* Calculated according EN 13141-7.
**For temperatures lower than recommended, use electrical pre-heater to ensure balanced operation.

Temperature efficiency (balanced mass flow) EN 13141-7:
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

RIS 400PE EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	67	54	59	64	58	57	54	47
Extract	58	48	50	53	51	48	46	41
Surrounding	51	40	43	46	45	40	39	36
Measured at 395 m³/h, 100 Pa								

Certifications

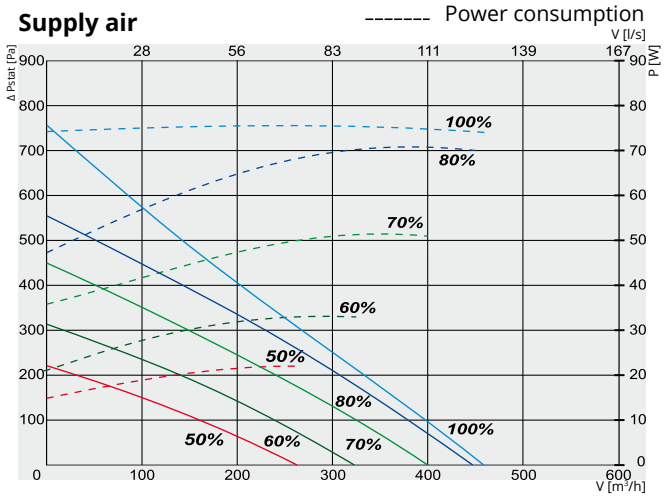
EUROVENT certified
heat exchanger performance

EUROVENT CERTIFIED PERFORMANCE
AHU N° 05.05.298
Range: SmartAir
www.eurovent-certification.com

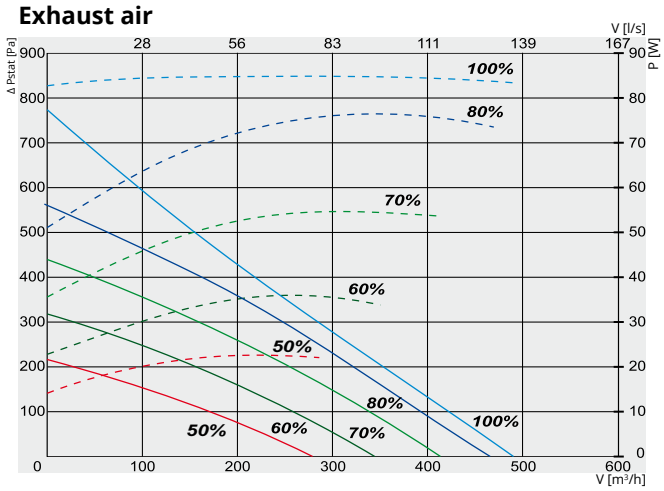
RIS 400PW EKO 3.0

Performance
Power consumption

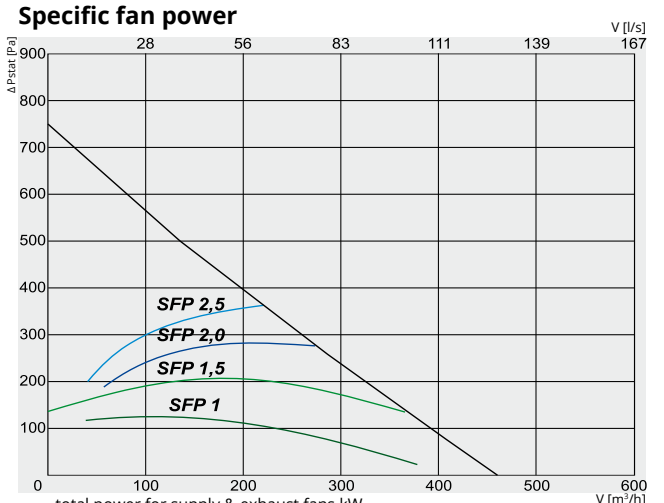
Supply air



Exhaust air

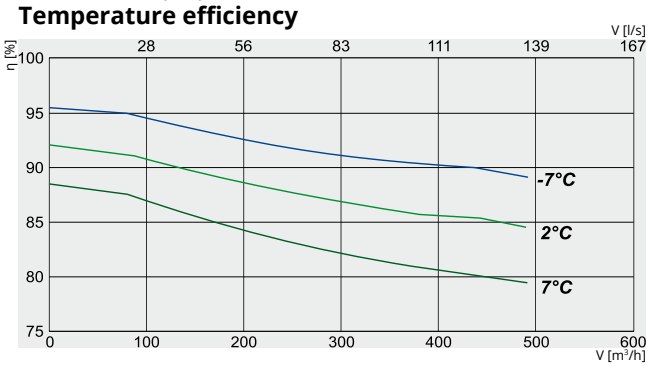


Specific fan power

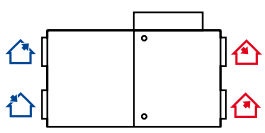


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency



RIS 400PW EKO 3.0



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.	Version
GAGRIS1748_0019A	400PW EKO 3.0 Optional water heater

			400PW EKO 3.0
Water heater (optional)			AVS 200
Fans	phase/voltage	[50Hz/VAC]	~1, 230
exhaust	power/current	[kW/A]	0,085/0,73
	fan speed	[min⁻¹]	3200
supply	power/current	[kW/A]	0,085/0,73
	fan speed	[min⁻¹]	3200
Thermal efficiency up to*			90%
Motorized by-pass			+
Max power consumption		[kW/A]	0,17/1,50
Control board			PRV V2
Filter class	exhaust/supply		M5/F7
Housing insulation, mineral wool		[mm]	30
Colour	RAL	white	9016
Weight (net, without packing)		[kg]	73
Comply with ERP			2016; 2018
Operation			indoors
Fresh air temperature limits**		°C	-5 - +40
Housing protection class	IP		34

* Calculated according EN 13141-7.
**For temperatures lower than recommended, use electrical pre-heater to ensure balanced operation.

Temperature efficiency (balanced mass flow) EN 13141-7:
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

RIS 400PW EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	67	54	59	64	58	57	54	47
Extract	58	48	50	53	51	48	46	41
Surrounding	51	40	43	46	45	40	39	36
Measured at 395 m³/h, 100 Pa								

Certifications

EUROVENT certified
heat exchanger performance

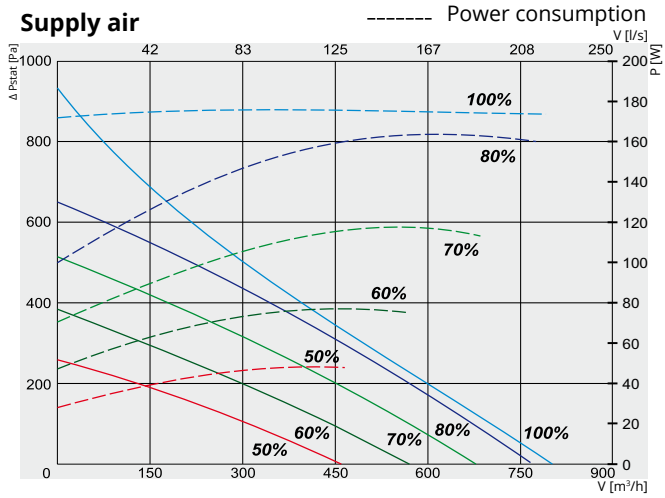
EUROVENT CERTIFIED PERFORMANCE
AHU N° 05.05.298
Range: SmartAir
www.eurovent-certification.com

RIS P EKO

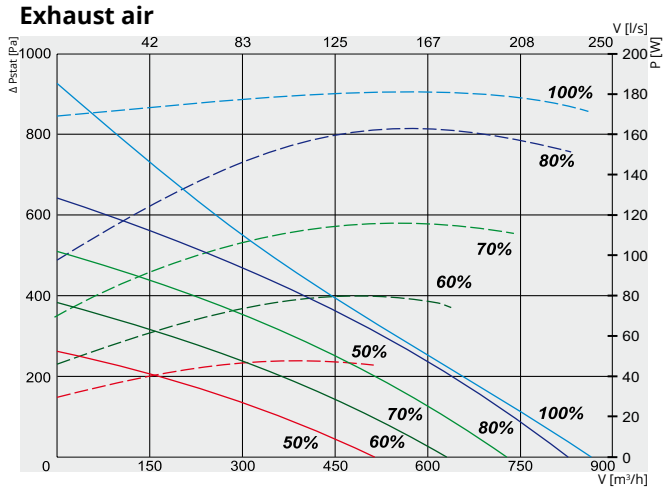
RIS 700PE EKO 3.0

Performance
Power consumption

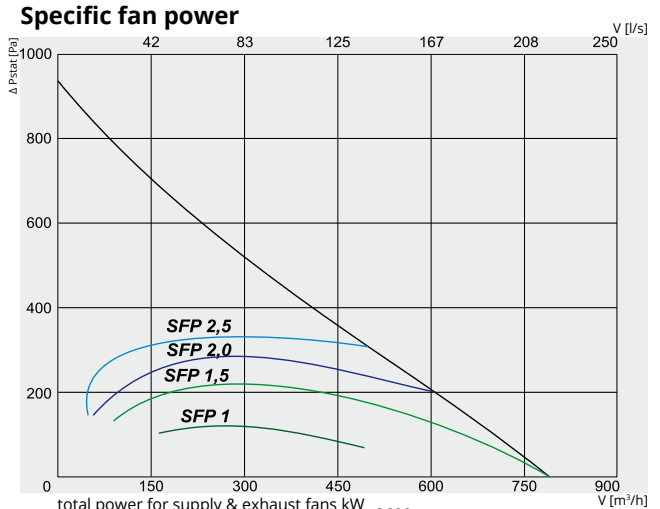
Supply air



Exhaust air

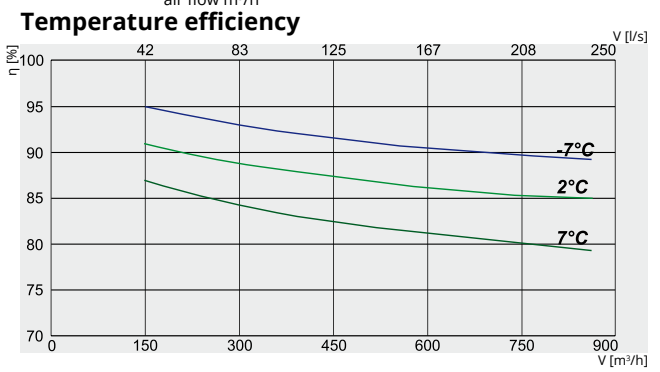


Specific fan power

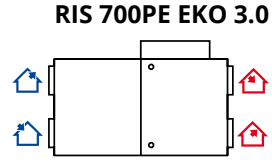


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3\text{/h}} \times 3600$$

Temperature efficiency



RIS 700PE EKO 3.0



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.		Version
GAGRIS1737_0008A	700PE 1.2 EKO 3.0	Integrated electrical heater
GAGRIS1736_0007A	700PE 3.0 EKO 3.0	Integrated electrical heater
GAGRIS1693_0005B	700PE 4.5 EKO 3.0	Integrated electrical heater

			1.2 EKO 3.0	3.0 EKO 3.0	4.5 EKO 3.0
Electrical heater	phase/voltage	[50Hz/VAC]	~1, 230	~1, 230	~3, 400
		[kW]	1,2	3,0	4,5
EC fans	phase/voltage	[50Hz/VAC]		~1, 230	
exhaust	power/current	[kW/A]		0,168/1,4	
	fan speed	[min⁻¹]		3230	
supply	power/current	[kW/A]		0,168/1,4	
	fan speed	[min⁻¹]		3230	
Thermal efficiency up to*				90%	
Motorized by-pass				+	
Max power consumption		[kW/A]	1,54/8,34	3,34/15,84	4,84/9,3
Control board				PRV V2	
Filter class	exhaust/supply			M5/F7	
Housing insulation, mineral wool		[mm]		30	
Colour	RAL	white		9016	
Weight (net, without packing)		[kg]	103,5	104	104,5
Comply with ERP				2016;2018	
Operation				indoors	
Fresh air temperature limits**		°C		-5 - +40	
Housing protection class	IP			34	

* Calculated according EN 13141-7.
**For temperatures lower than recommended, use electrical pre-heater to ensure balanced operation.

Temperature efficiency (balanced mass flow) EN 13141-7:
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

RIS 700PE EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	75	64	66	68	70	66	60	59
Extract	62	53	55	57	56	52	49	45
Surrounding	56	45	47	50	50	47	43	42
Measured at 700 m³/h, 100 Pa								

Certifications

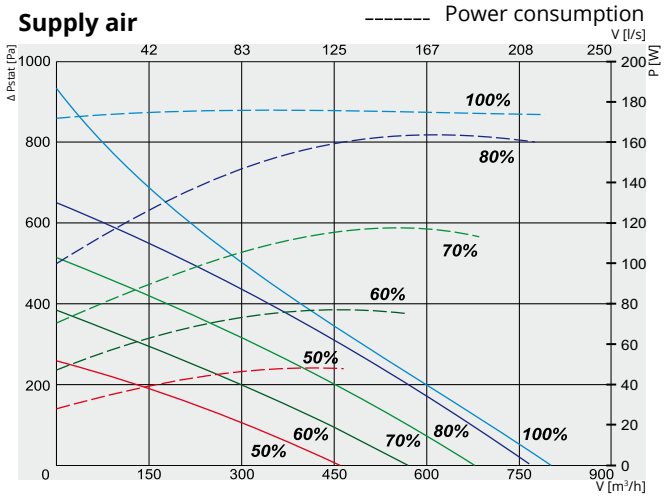
EUROVENT certified
heat exchanger performance

EUROVENT CERTIFIED PERFORMANCE
AHU N° 05.05.298
Range: SmartAir
www.eurovent-certification.com

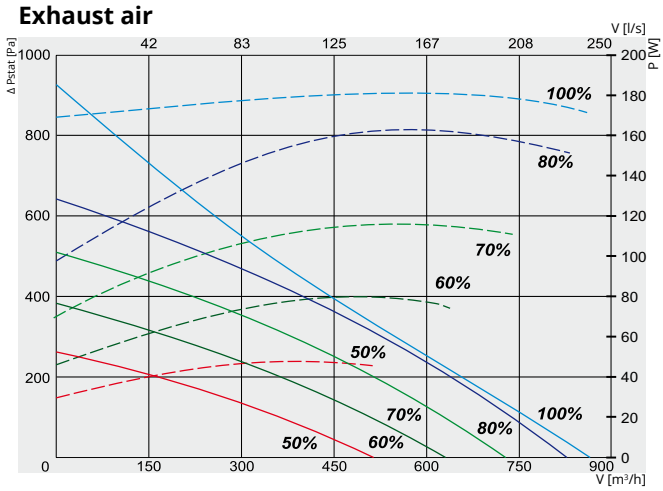
RIS 700PW EKO 3.0

Performance
Power consumption

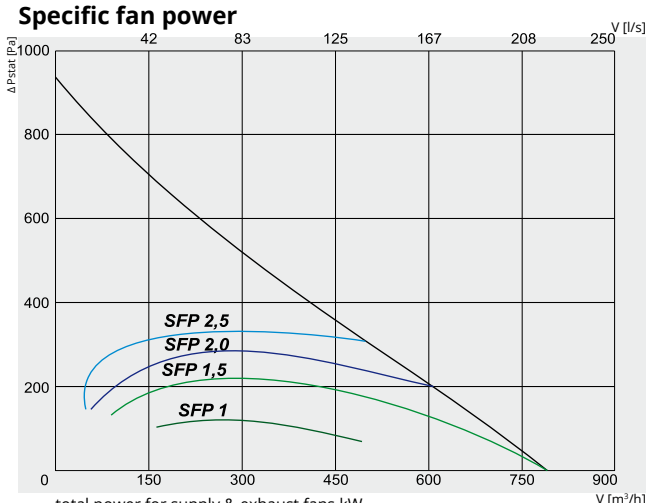
Supply air



Exhaust air

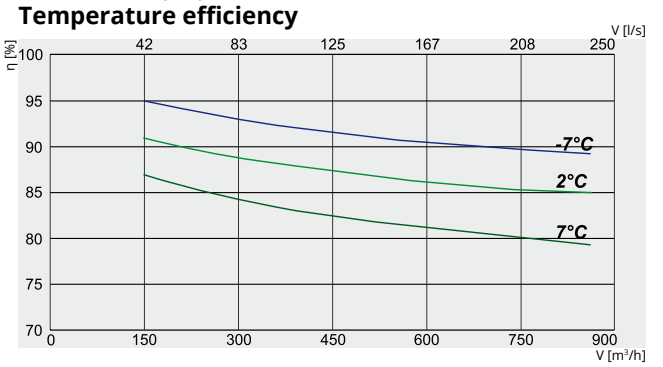


Specific fan power

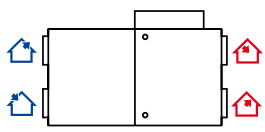


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency



RIS 700PW EKO 3.0



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.	Version	
GAGRIS1738_0009A	700PW EKO 3.0	Optional water heater

			700PW EKO 3.0
Water heater (optional)			AVS 250
Fans	phase/voltage	[50Hz/VAC]	~1,230
exhaust	power/current	[kW/A]	0,168/1,4
	fan speed	[min^{-1}]	3230
supply	power/current	[kW/A]	0,168/1,4
	fan speed	[min^{-1}]	3230
Thermal efficiency up to*			90%
Motorized by-pass			+
Max power consumption		[kW/A]	0,34/2,84
Control board			PRV V2
Filter class	exhaust/supply		M5/F7
Housing insulation, mineral wool		[mm]	30
Colour	RAL	white	9016
Weight (net, without packing)		[kg]	103
Comply with ERP			2016;2018
Operation			indoors
Fresh air temperature limits**		°C	-5 - +40
Housing protection class	IP		34

* Calculated according EN 13141-7.
**For temperatures lower than recommended, use electrical pre-heater to ensure balanced operation.

Temperature efficiency (balanced mass flow) EN 13141-7:
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

RIS 700PW EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	75	64	66	68	70	66	60	59
Extract	62	53	55	57	56	52	49	45
Surrounding	56	45	47	50	50	47	43	42
Measured at 700 m³/h, 100 Pa								

Certifications

EUROVENT certified
heat exchanger performance

EUROVENT CERTIFIED PERFORMANCE
AHU N° 05.05.298
Range: SmartAir
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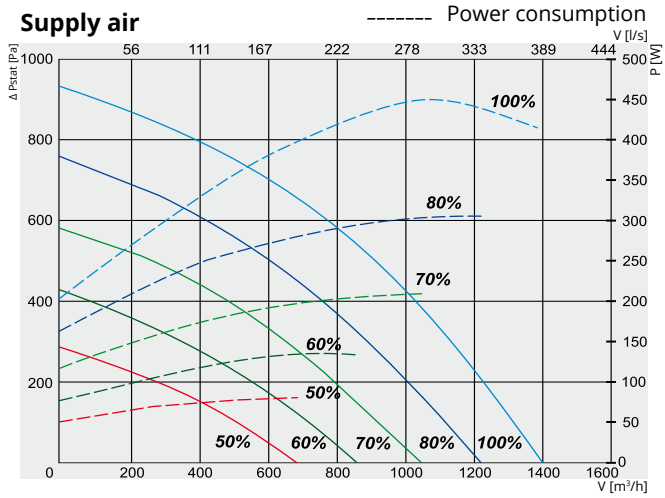
RIS P EKO

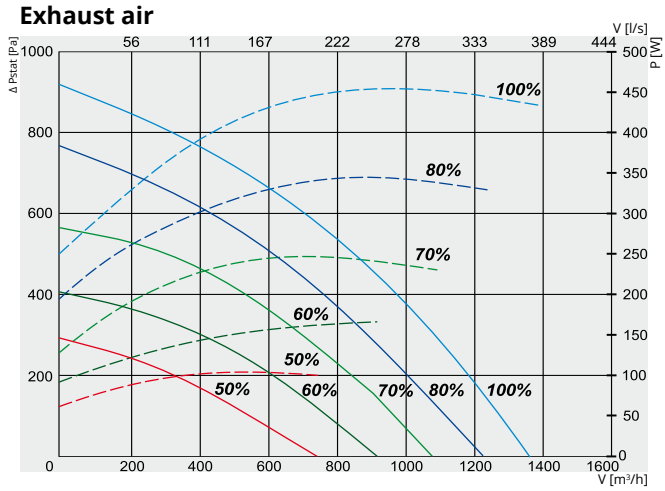
RIS 1200PE EKO 3.0

Performance
Power consumption

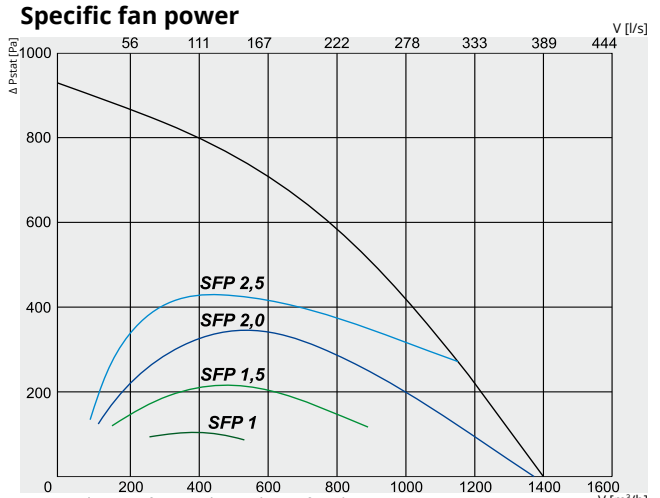
Supply air



Exhaust air

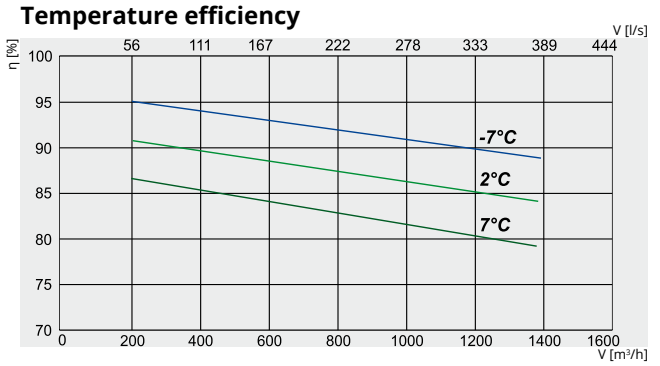


Specific fan power

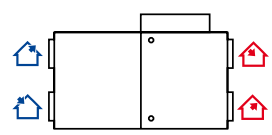


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency



RIS 1200PE EKO 3.0



View from inspection side

Exhaust air Extract air outdoor air Supply air

Article No.		Version
GAGRIS1744_0022A	1200PE 3.0 EKO 3.0	Integrated electrical heater
GAGRIS1745_0021B	1200PE 6.0 EKO 3.0	Integrated electrical heater
GAGRIS1701_0020B	1200PE 9.0 EKO 3.0	Integrated electrical heater

			3.0 EKO 3.0	6.0 EKO 3.0	9.0 EKO 3.0
Electrical heater	phase/voltage	[50Hz/VAC]	~1, 230	~3, 400	~3, 400
		[kW]	3,0	6,0	9,0
EC fans	phase/voltage	[50Hz/VAC]		~1,230	
exhaust	power/current	[kW/A]		0,450/2,95	
	fan speed	[min⁻¹]		3400	
supply	power/current	[kW/A]		0,370/2,5	
	fan speed	[min⁻¹]		3400	
Thermal efficiency up to*				90%	
Motorized by-pass				+	
Max power consumption		[kW/A]	3,82/18,49	6,82/14,19	9,82/18,49
Control board				PRV V2	
Filter class	exhaust/supply			M5/F7	
Housing insulation, mineral wool		[mm]		50	
Colour	RAL	grey		7040	
Weight (net, without packing)		[kg]		170	
Comply with ERP				2016;2018	
Operation				indoors	
Fresh air temperature limits**		°C		-5 - +40	
Housing protection class	IP			34	

* Calculated wet efficiency.
**For temperatures lower than recommended, use electrical pre-heater to ensure balanced operation.

Temperature efficiency (balanced mass flow) :
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

RIS 1200PE EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	76	58	69	71	69	67	64	56
Extract	64	52	56	61	56	50	45	42
Surrounding	56	42	48	50	49	48	46	40
Measured at 1298 m³/h, 100 Pa								

Certifications

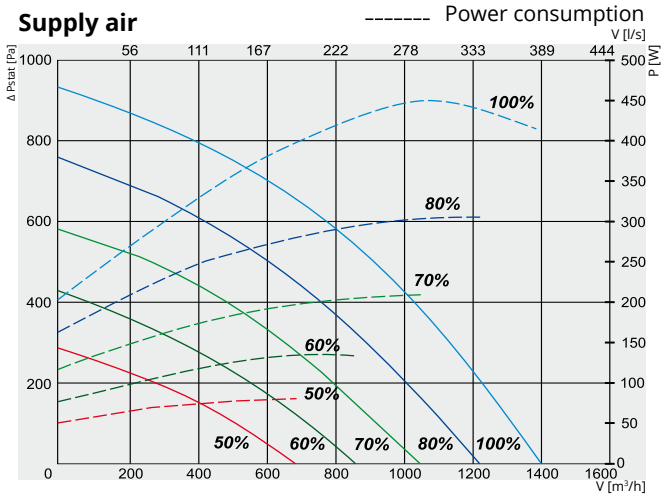
EUROVENT certified
heat exchanger performance

EUROVENT CERTIFIED PERFORMANCE
AHU N° 05.05.298
Range: SmartAir
www.eurovent-certification.com

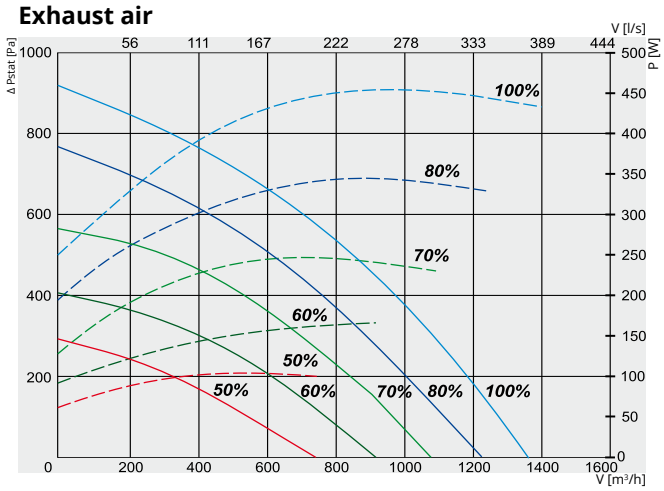
RIS 1200PW EKO 3.0

Performance
Power consumption

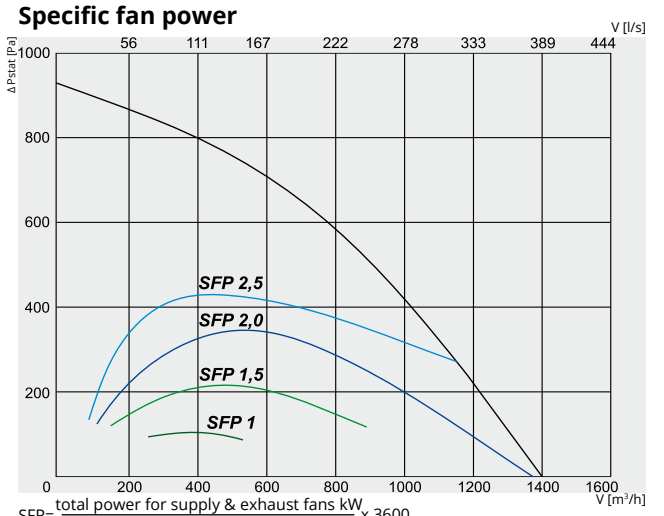
Supply air



Exhaust air

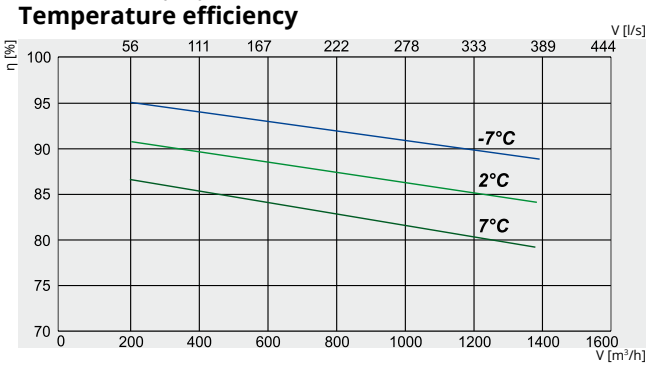


Specific fan power

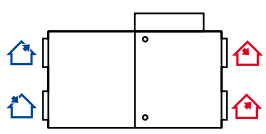


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency



RIS 1200PW EKO 3.0



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.	Version	
GAGRIS1721_0023A	1200PW EKO 3.0	Optional water heater

			1200PW EKO 3.0
Water heater (optional)			SVS 500x250
Fans	phase/voltage	[50Hz/VAC]	~1,230
exhaust	power/current	[kW/A]	0,450/2,95
	fan speed	[min^{-1}]	3400
supply	power/current	[kW/A]	0,370/2,5
	fan speed	[min^{-1}]	3400
Thermal efficiency up to*			90%
Motorized by-pass			+
Max power consumption		[kW/A]	0,82/5,49
Control board			PRV V2
Filter class	exhaust/supply		M5/F7
Housing insulation, mineral wool		[mm]	50
Colour	RAL	grey	7040
Weight (net, without packing)		[kg]	170
Comply with ERP			2016;2018
Operation			indoors
Fresh air temperature limits**		°C	-5 - +40
Housing protection class	IP		34

* * Calculated wet efficiency.
**For temperatures lower than recommended, use electrical pre-heater to ensure balanced operation.

Temperature efficiency (balanced mass flow) EN :
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

RIS 1200PE EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	76	58	69	71	69	67	64	56
Extract	64	52	56	61	56	50	45	42
Surrounding	56	42	48	50	49	48	46	40
Measured at 1298 m³/h, 100 Pa								

Certifications

EUROVENT certified
heat exchanger performance

EUROVENT CERTIFIED PERFORMANCE
AHU N° 05.05.298
Range: SmartAir
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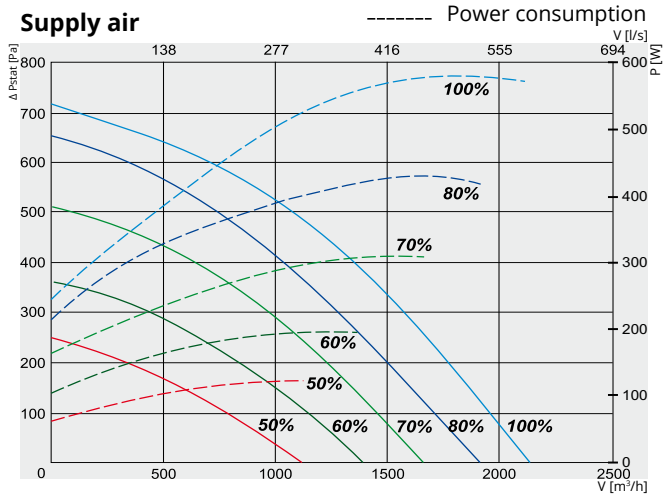
RIS P EKO

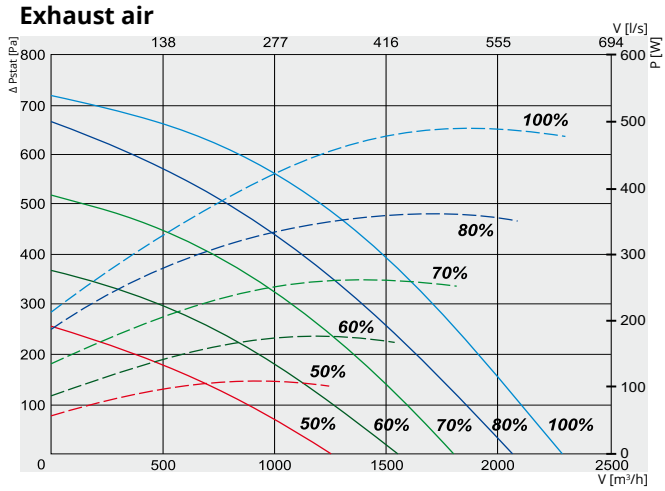
RIS 1900PE EKO 3.0

Performance
Power consumption

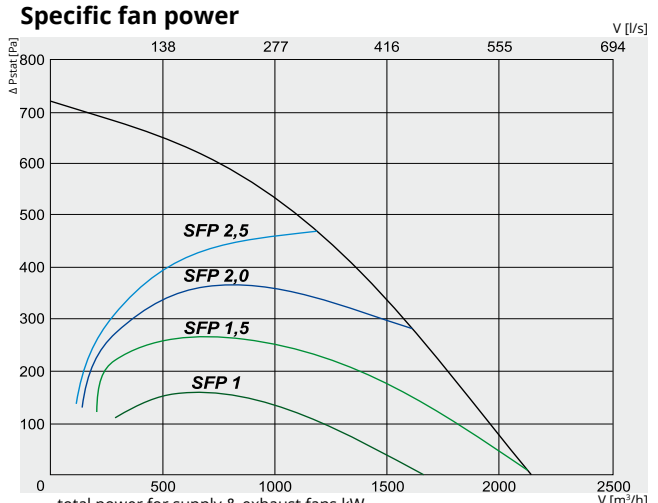
Supply air



Exhaust air

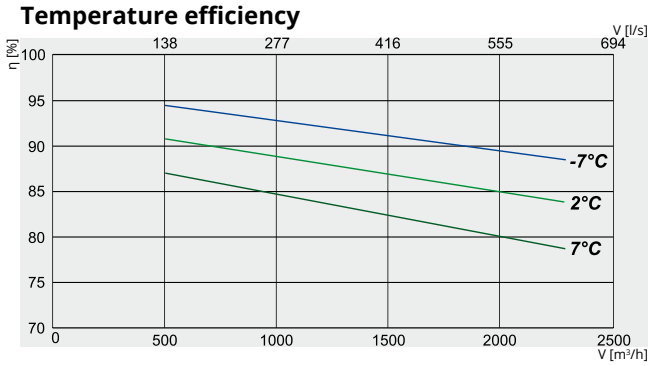


Specific fan power

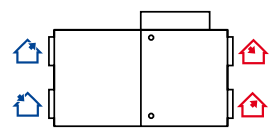


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency



RIS 1900PE EKO 3.0



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.		Version		
GAGRIS1751_0025A	1900PE 3.0 EKO 3.0	Integrated electrical heater		
GAGRIS1752_0024B	1900PE 6.0 EKO 3.0	Integrated electrical heater		
GAGRIS1706_0001B	1900PE 12.0 EKO 3.0	Integrated electrical heater		

			3.0 EKO 3.0	6.0 EKO 3.0	12.0 EKO 3.0
Electrical heater	phase/voltage	[50Hz/VAC]	~1, 230	~3, 400	~3, 400
		[kW]	3,0	6,0	12,0
EC fans	phase/voltage	[50Hz/VAC]		~1, 230	
exhaust	power/current	[kW/A]		0,485/3,12	
	fan speed	[min⁻¹]		2540	
supply	power/current	[kW/A]		0,488/3,16	
	fan speed	[min⁻¹]		2540	
Thermal efficiency up to*				90%	
Motorized by-pass				+	
Max power consumption		[kW/A]	3,97 /20,32	6,97 /14,92	12,97 /24,32
Control board				PRV V2	
Filter class	exhaust/supply			M5/F7	
Housing insulation, mineral wool		[mm]		50	
Colour	RAL	grey		7040	
Weight (net, without packing)		[kg]	269	270	272
Comply with ERP				2016;2018	
Operation				indoors	
Fresh air temperature limits**		°C		-5 - +40	
Housing protection class	IP			34	

* Calculated wet efficiency.
**For temperatures lower than recommended, use electrical pre-heater to ensure balanced operation.

Temperature efficiency (balanced mass flow) :
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

RIS 1900PE EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	77	53	64	69	73	70	65	61
Extract	68	42	58	64	62	61	58	55
Surrounding	60	50	52	54	54	50	48	41
Measured at 1938 m³/h, 100 Pa								

Certifications

EUROVENT certified
heat exchanger performance

EUROVENT CERTIFIED PERFORMANCE
AHU N° 05.05.298
Range: SmartAir
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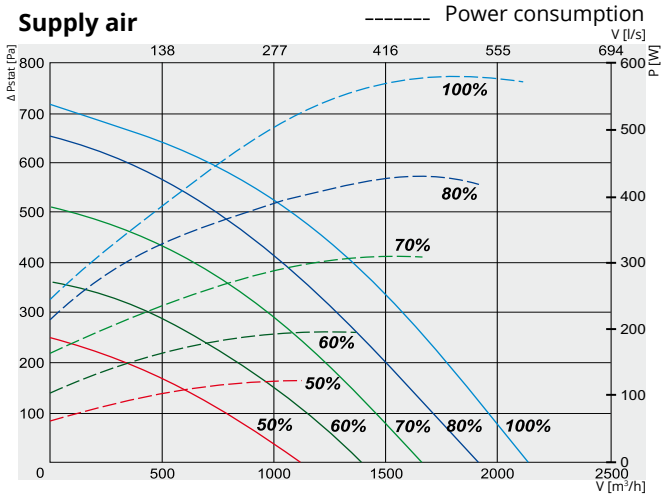
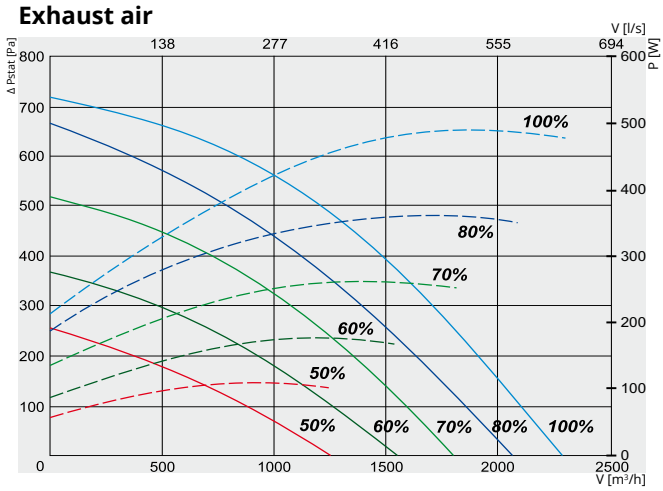
RIS 1900PW EKO 3.0

Performance
Power consumption

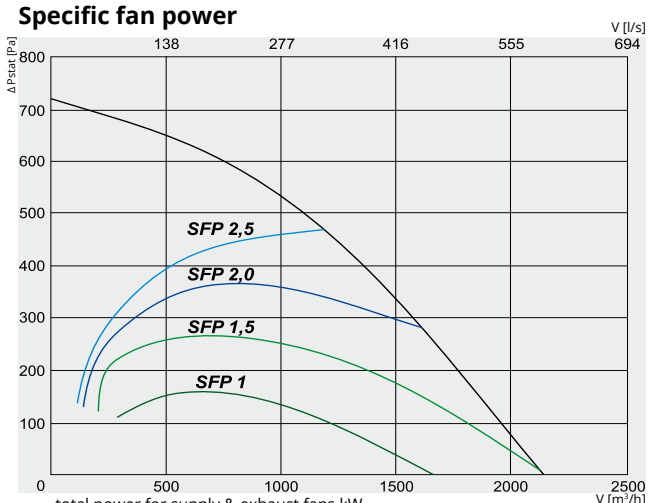
Supply air



Exhaust air

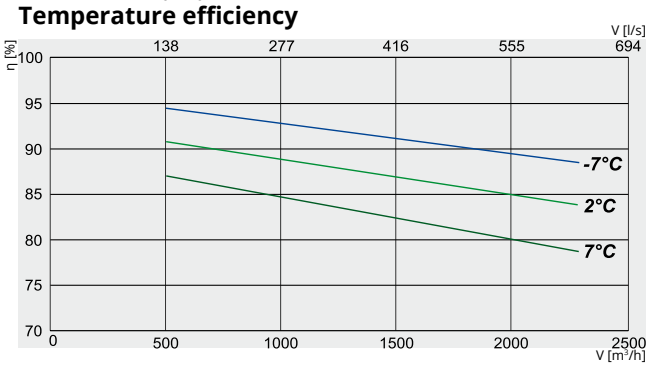


Specific fan power

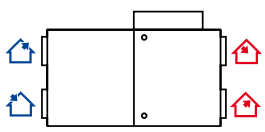


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency



RIS 1900PW EKO 3.0



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.	Version	
GAGRIS1753_0026A	1900PW EKO 3.0	Optional water heater

			1900PW EKO 3.0
Water heater (optional)			SVS 700x400
Fans	phase/voltage	[50Hz/VAC]	~1, 230
exhaust	power/current	[kW/A]	0,485/3,12
	fan speed	[min^{-1}]	2540
supply	power/current	[kW/A]	0,488/3,16
	fan speed	[min^{-1}]	2540
Thermal efficiency up to*			90%
Motorized by-pass			+
Max power consumption		[kW/A]	0,97 /6,32
Control board			PRV V2
Filter class	exhaust/supply		M5/F7
Housing insulation, mineral wool		[mm]	50
Colour	RAL	grey	7040
Weight (net, without packing)		[kg]	269
Comply with ERP			2016;2018
Operation			indoors
Fresh air temperature limits**		°C	-5 - +40
Housing protection class	IP		34

* Calculated wet efficiency.
**For temperatures lower than recommended, use electrical pre-heater to ensure balanced operation.

Temperature efficiency (balanced mass flow) :
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

RIS 1900PW EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	77	53	64	69	73	70	65	61
Extract	68	42	58	64	62	61	58	55
Surrounding	60	50	52	54	54	50	48	41
Measured at 1938 m³/h, 100 Pa								

Certifications

EUROVENT certified
heat exchanger performance

EUROVENT CERTIFIED PERFORMANCE
AHU N° 05.05.298
Range: SmartAir
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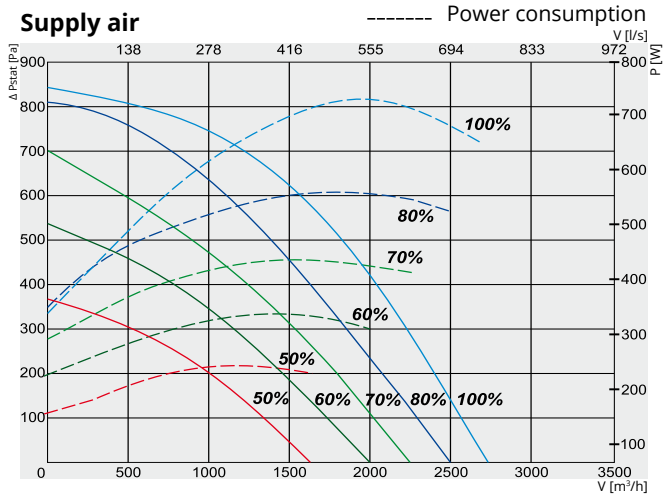
RIS P EKO

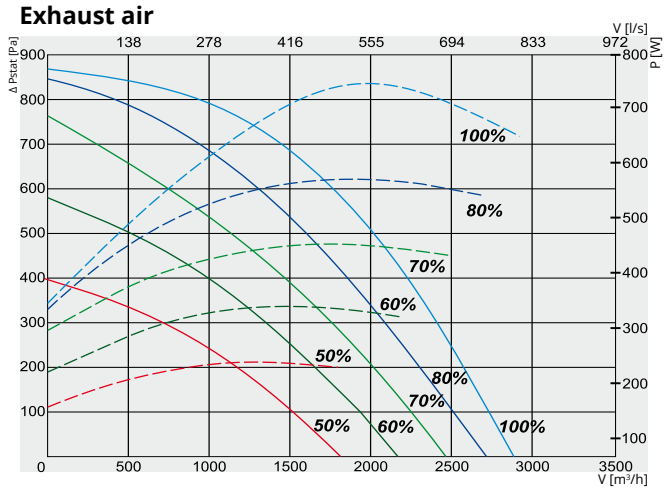
RIS 2500PE EKO 3.0

Performance
Power consumption

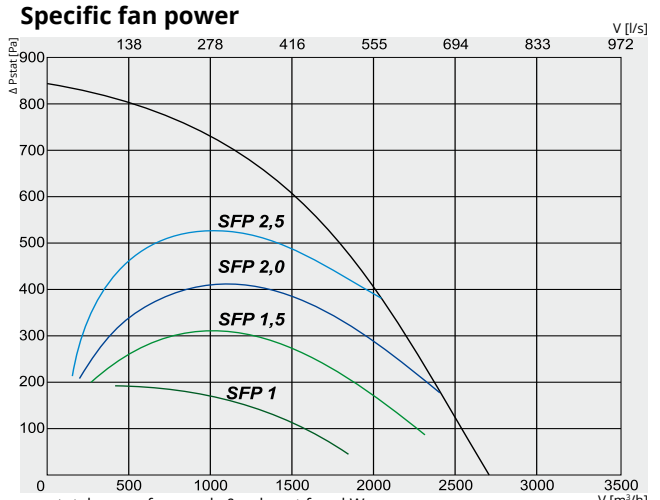
Supply air



Exhaust air

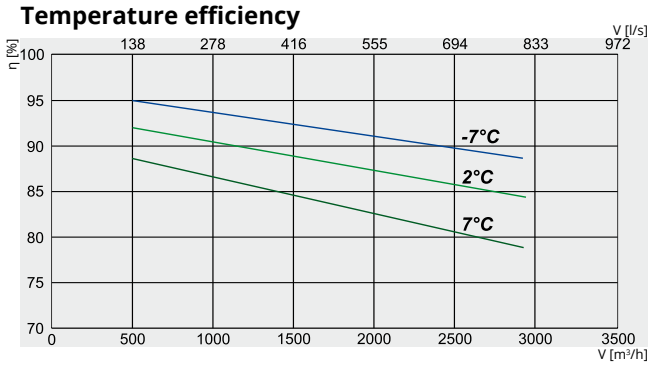


Specific fan power

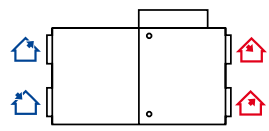


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency



RIS 2500PE EKO 3.0



View from inspection side

Exhaust air Extract air outdoor air Supply air

Article No.		Version
GAGRIS1754_0027B	2500PE 4.5 EKO 3.0	Integrated electrical heater
GAGRIS1755_0028B	2500PE 9.0 EKO 3.0	Integrated electrical heater
GAGRIS1707_0015B	2500PE 18.0 EKO 3.0	Integrated electrical heater

			4.5 EKO 3.0	9.0 EKO 3.0	18.0 EKO 3.0
Electrical heater	phase/voltage	[50Hz/VAC]	~3, 400	~3, 400	~3, 400
		[kW]	4,5	9,0	18,0
EC fans	phase/voltage	[50Hz/VAC]		~1,230	
exhaust	power/current	[kW/A]		0,725/3,24	
	fan speed	[min⁻¹]		2800	
supply	power/current	[kW/A]		0,675/3	
	fan speed	[min⁻¹]		2800	
Thermal efficiency up to*				90%	
Motorized by-pass				+	
Max power consumption		[kW/A]	5,90 /12,78	10,40 /19,28	19,40 /32,28
Control board				PRV V2	
Filter class	exhaust/supply			M5/F7	
Housing insulation, mineral wool		[mm]		50	
Colour	RAL	grey		7040	
Weight (net, without packing)		[kg]		322	
Comply with ERP				2016;2018	
Operation				indoors	
Fresh air temperature limits**		°C		-5 - +40	
Housing protection class	IP			34	

* Calculated wet efficiency.
**For temperatures lower than recommended, use electrical pre-heater to ensure balanced operation.

Temperature efficiency (balanced mass flow) :
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

RIS 2500PE EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	80	60	68	72	75	74	71	65
Extract	69	56	60	64	63	60	58	41
Surrounding	62	46	54	56	57	54	50	45
Measured at 2548 m³/h, 102 Pa								

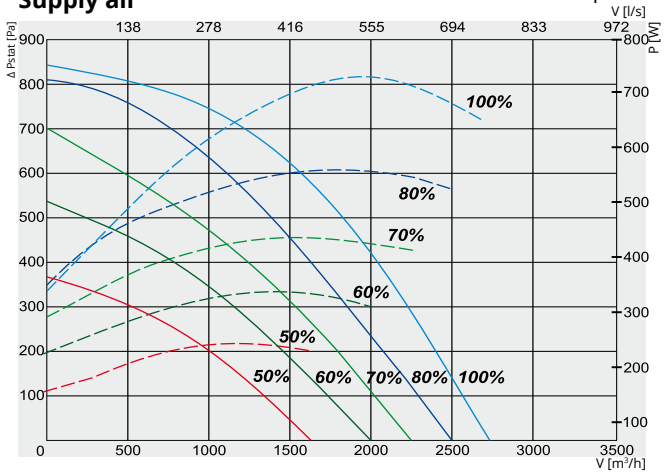
Certifications

EUROVENT certified
heat exchanger performance

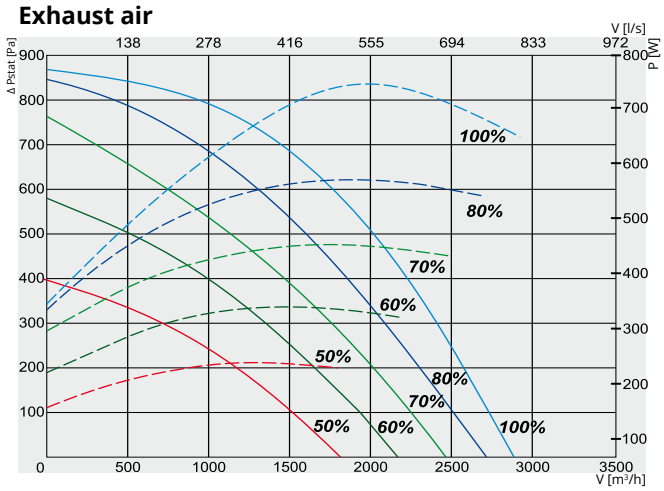
RIS 2500PW EKO 3.0

Performance
Power consumption

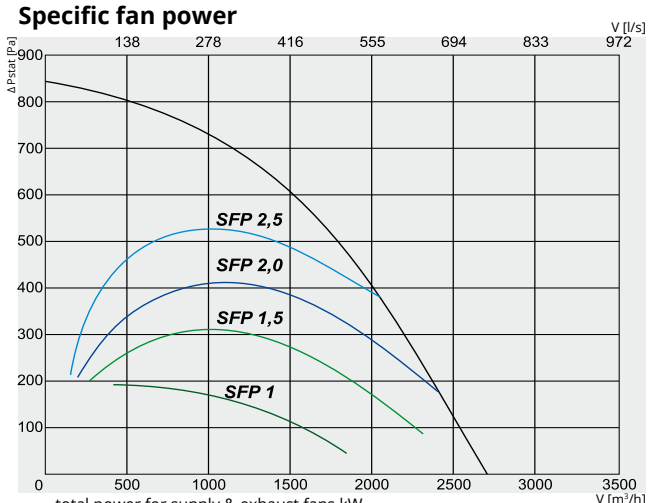
Supply air



Exhaust air

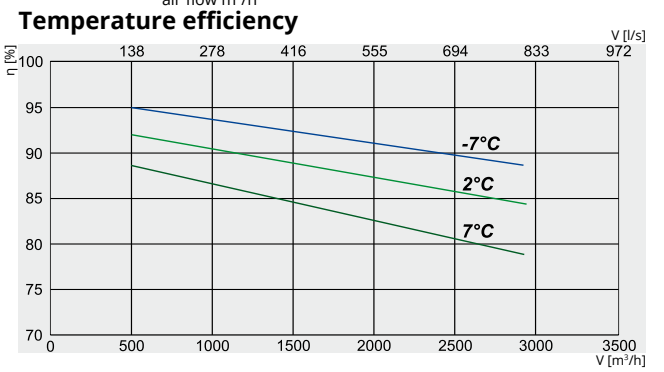


Specific fan power

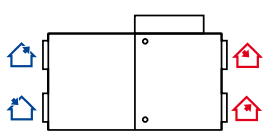


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3\text{/h}} \times 3600$$

Temperature efficiency



RIS 2500PW EKO 3.0



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.	Version
GAGRIS1756_0029A	2500PW EKO 3.0 Optional water heater

			2500PW EKO 3.0
Water heater (optional)	phase/voltage	[50Hz/VAC]	SVS 700x400
Fans	phase/voltage	[50Hz/VAC]	~1, 230
exhaust	power/current	[kW/A]	0,725/3,24
	fan speed	[min^{-1}]	2800
supply	power/current	[kW/A]	0,675/3
	fan speed	[min^{-1}]	2800
Thermal efficiency up to*			90%
Motorized by-pass			+
Max power consumption		[kW/A]	1,40 /6,28
Control board			PRV V2
Filter class	exhaust/supply		M5/F7
Housing insulation, mineral wool		[mm]	50
Colour	RAL	grey	7040
Weight (net, without packing)		[kg]	322
Comply with ERP			2016;2018
Operation			indoors
Fresh air temperature limits**		°C	-5 - +40
Housing protection class	IP		34

* Calculated wet efficiency.
**For temperatures lower than recommended, use electrical pre-heater to ensure balanced operation.

Temperature efficiency (balanced mass flow) :
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

RIS 2500PW EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	80	60	68	72	75	74	71	65
Extract	69	56	60	64	63	60	58	41
Surrounding	62	46	54	56	57	54	50	45
Measured at 2548 m³/h, 102 Pa								

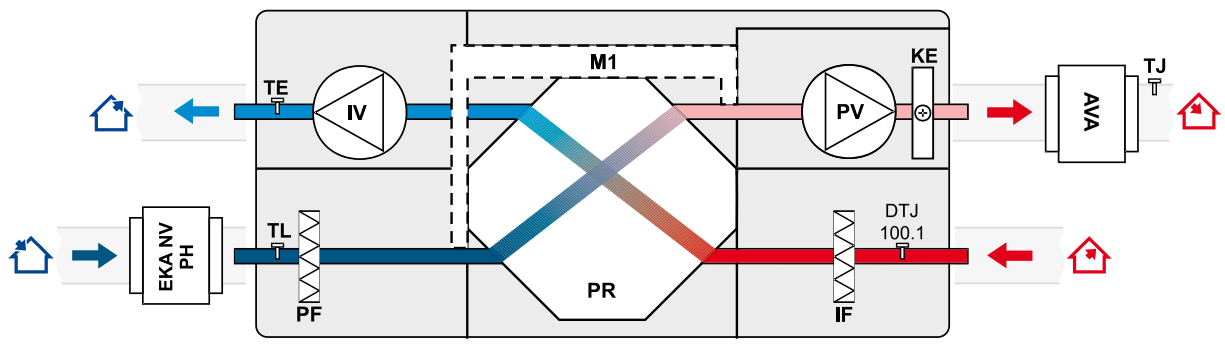
Certifications

EUROVENT certified
heat exchanger performance

EUROVENT CERTIFIED PERFORMANCE
AHU N°: 05.05.298
Range: SmartAir
www.eurovent-certification.com

RIS 400PE EKO 3.0 / RIS 700PE EKO 3.0

(ceiling mounted) **versions with electrical heater**

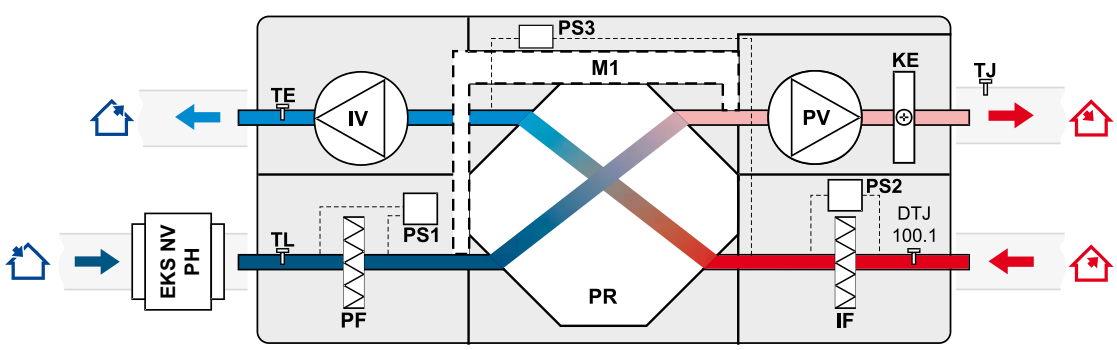


IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
PF - filter for supply air (class F7)
IF - filter for extract air (class M5)
KE - electrical heater
M1 - actuator of by-pass damper

TL - fresh air temperature sensor
TJ - supply air temperature sensor
TE - exhaust air temperature sensor
DTJ 100.1- humidity + temperature sensor
AVA - optionally supplied water cooler
EKA NV PH - optional fresh air pre-heater

RIS 1200PE EKO 3.0 / 1900PE EKO 3.0 / 2500PE EKO 3.0

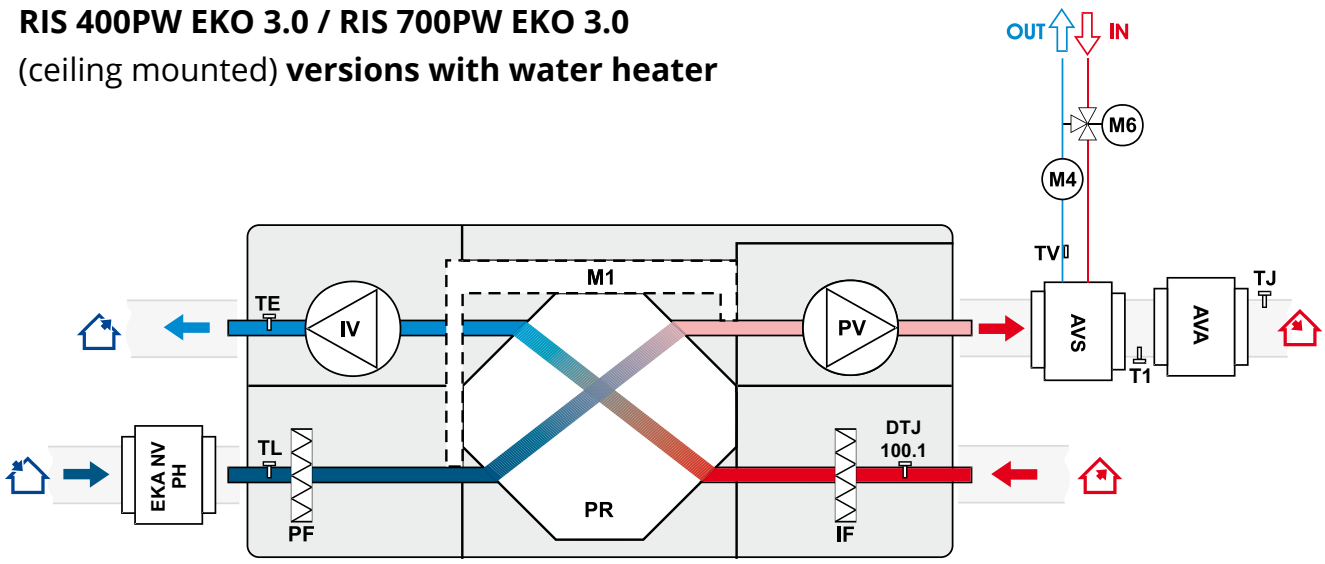
(ceiling mounted) **versions with electrical heater**



IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
KE - electrical heater
PF - filter for supply air (class F7)
IF - filter for extract air (class M5)
TE - temperature sensor for exhaust air
TL - temperature sensor for fresh air

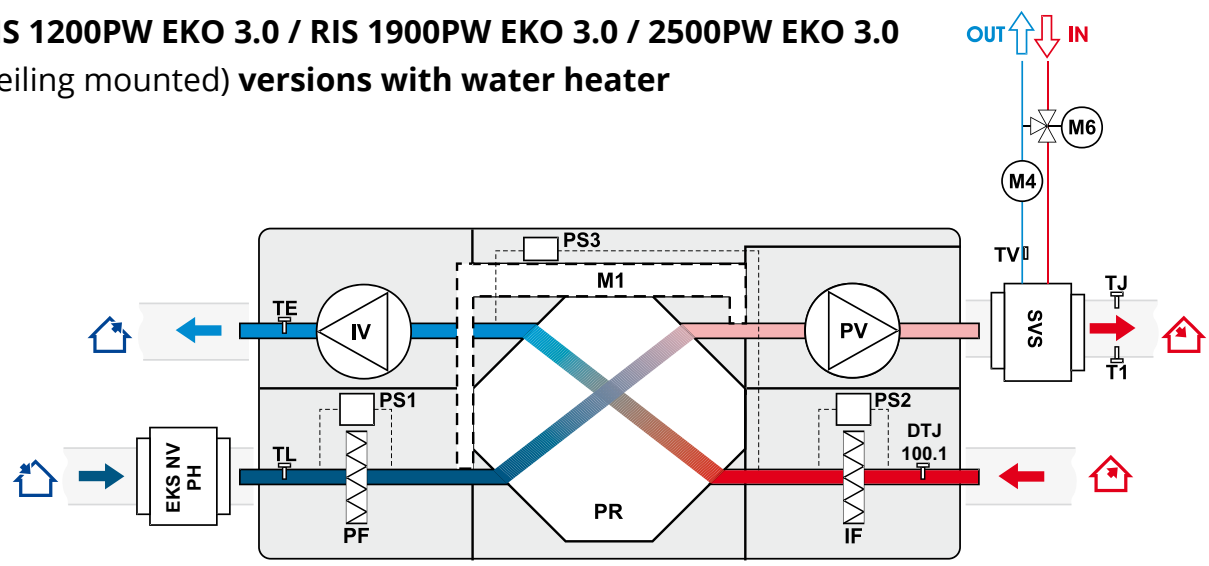
EKS NV PH - optional fresh air pre-heater
DTJ 100.1 - humidity + temperature sensor
TJ - temperature sensor for supply air
M1 - actuator of by-pass damper
PS1 - supply air differential pressure switch
PS2 - extract air differential pressure switch
PS3 - heat exchanger antifrost pressure switch

RIS 400PW EKO 3.0 / RIS 700PW EKO 3.0
(ceiling mounted) **versions with water heater**



IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
PF - filter for supply air (class F7)
IF - filter for extract air (class M5)
TV - antifrost sensor
M1 - actuator of by-pass damper
AVA - optionally supplied water cooler
M4 - water heater circulation pump
M6 - optionally supplied mixing valve and motor
TL - fresh air temperature sensor
TJ - supply air temperature sensor
TE - exhaust air temperature sensor
T1 - antifrost thermostat
DTJ 100.1 - humidity + temperature sensor
AVS - optionally supplied water heater
EKA NV PH - optional fresh air pre-heater

RIS 1200PW EKO 3.0 / RIS 1900PW EKO 3.0 / 2500PW EKO 3.0
(ceiling mounted) **versions with water heater**



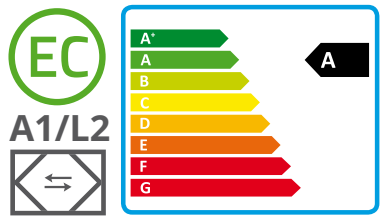
IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
PF - filter for supply air (class F7)
IF - filter for extract air (class M5)
TE - temperature sensor for exhaust air
TL - temperature sensor for fresh air
TJ - temperature sensor for supply air
T1 - antifrost thermostat
TV - antifrost sensor
DTJ 100.1 - humidity + temperature sensor
M1 - actuator of by-pass damper
M4 - water heater circulation pump
M6 - optionally supplied mixing valve and motor
PS1 - supply air differential pressure switch
PS2 - extract air differential pressure switch
PS3 - heat exchanger antifrost pressure switch
SVS - optionally supplied water heater
EKS NV PH - optional fresh air heater

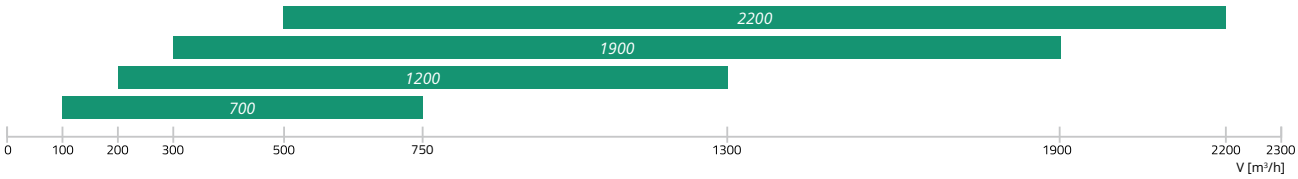
FUNCTIONS		
Description of the functions	PRV V2	
	RIS EKO 3.0	
	E	W
Functions		
Date and time settings	✓	✓
4 speeds for easy and user-friendly control ("Stop" – the unit is stopped; "Low", medium", and "High". Service menu allows adjusting each speed individually)	✓	✓
BOOST function (Fans operate at highest speed)	✓	✓
Comfortable air temperature function	✓	✓
Cold/heat recovery	✓	✓
Fire place function	✓	✓
Dryness protection	✓	✓
Weekly schedule	✓	✓
Holiday schedule	✓	✓
User and service control levels	✓	✓
Manual air flow balancing	✓	✓
CO_2 level indication and reduction function	✓	✓
Night cooling function	✓	✓
Relative humidity (RH) level indication and reduction function	✓	✓
Software and configuration update possibility	✓	✓
Supply air temperature control according to the extract air sensor	✓	✓
Monitoring function (all sensors and I/O)	✓2	✓2
Mode switch (start/stop)	✓	✓
Extracted air relative humidity converter	✓	✓
Manual components control	✓1	✓1
Functional units		
Fans		
Soft start and stop	✓	✓
Fan failure protection	✓	✓
Speed synchronous/asynchronous 0-10V control	✓	✓
Electric heater		
On/Off / PWM control	✓	
Manual protection	✓	
Overheat protection (additional protection software)	✓	✓
Water heater		
Pulse-width modulation (PWM) valve actuator control		✓
Protection using temperature sensor		✓
Protection using termostat (NC)		✓
Circulation pump control		✓
Return water temperature sensor	✓	✓
DX cooler		
Control On/Off	✓	✓
Water cooler		
Pulse-width modulation (PWM) valve actuator control		✓
Control with three-positional valve actuator	✓	✓
Bypass damper		
3-position actuator control	✓	✓
Filter pollution monitoring		
By pressure switch (NC)	✓	✓
By filter timer	✓	✓
Sensors		
Supply air temperature sensor	✓	✓
Fresh air temperature sensor	✓	✓
Exhaust air temperature sensor	✓	✓
Extract air temperature sensor	✓	✓
Emergency signals and inputs/outputs		
Fire protection input	✓	✓
Working indication output	✓	✓
Alarm indication output	✓	✓
Remote controllers		
Stouch	✓	✓
Flex	✓	✓
Ptouch	✓	✓
MB-Gateway	✓	✓

1	**With FLEX TEST remote controler**	**2**	**Only sensors**

Notes

RIS V EKO



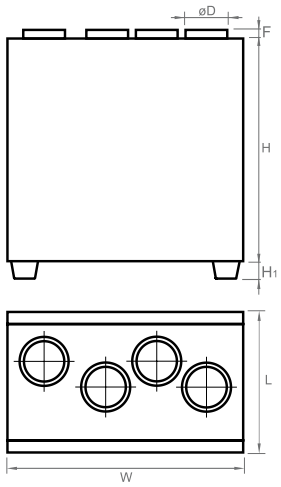


AIR HANDLING UNITS

Application	Ventilation of houses, offices or other heated premises (classrooms, apartments, conference rooms, etc.)
Description	RIS V EKO 3.0 is a range of heat recovery units with high-efficiency counter-flow heat exchangers and vertical duct connections. Units are designed for placement on the floor. Due to vertical ducting, the units are suitable for installation in various premises (basements, boiler rooms, etc). There are 4 sizes (airflow interval 700-2200 m³/h) with left/right connection sides. RIS V EKO 3.0 units have high overall energy savings due to the highly efficient heat recovery (up to 90%), quiet and economical EC fans, effective low-pressure-drop filters and top-level of air tightness. Energy efficiency ensures full thermal comfort for passive houses, without an additional pre-heater at temperatures above -5°C. All the RIS V EKO 3.0 units are fully equipped with automatic controls. Optional external sensors for CO_2 and humidity and so the event planning feature will help to control automatically your climate (demand-level control). RIS V EKO 3.0 units are service-friendly and are easy to mount. Filter pollution may be identified by timers or contamination controls (RIS 1200-2200 V EKO 3.0). All units are supplied tested and ready to install.
Remote control	Three remote control options are available: 1. Flex, Stouch or Ptouch remote controllers. 2. Building management system connections. 3. Remote control via PC MB-Gateway.
Features	› Vertical mounting with left/right versions. › Ready for Passive House technology: high efficiency. › Easy and quick mounting. › Water/electrical heating options. › Fully integrated plug-and-play control system.
Construction	› Construction from double-skinned steel, with powder coated paint, panels. › Acoustic and thermal wall insulation: RIS 700 V EKO 3.0 – 30 mm, RIS1200-2200 V EKO 3.0 – 50 mm. › RIS 700 V EKO 3.0 powder-coated white housing RAL 9016; RIS 1200–2200 V EKO 3.0 powder-coated grey housing RAL 7040. › Integrated electrical heater or optional water heater/cooler on the duct. › Low-pressure-drop filters: F7/M5. › Hinged door with locks grants easy access to internal components by. › Stainless steel condensate tray. › Fitted with mounting brackets (optional). › Integrated anti-frost pressure switch (RIS 1200-2200 V EKO 3.0).

RIS 700 V E L EKO 3.0

EKO 3.0	Equipped with new PRV V2 control board
L	AHU with EC motors and efficient heat exchanger
L	Air intake side (L - left; R - right)
E	Heater type (E - integrated electrical heater; W - prepared for water heater)
V	Housing type (V - vertical, H - horizontal, P - ceiling)
700	AHU size according to maximum airflow range m³/h
RIS	AHU with plate heat exchanger



	Dimensions [mm]					
Unit	**L**	**W**	**H**	**øD**	**H_1**	**F**
RIS 700VE/VW EKO 3.0	670	1000	980	250	126	40
RIS 1200VE/VW EKO 3.0	760	1350	1200	315	126	40
RIS 1900VE/VW EKO 3.0	800	2000	1600	400	140	70
RIS 2200VE/VW EKO 3.0	800	2000	1600	400	140	70

	Optional accessories									
Unit	**Flex Stouch Ptouch MB-Gateway**	**S-1141 S-RC02-F2 S-KFF-U**	**AKS**	**AVS**	**AVA**	**OC**	**EKA NV PH**	**AP SKG**	**SP** *Supply*	**SP** *Exhaust*
RIS 700VE EKO 3.0	+	+	250	-	250	250	250	250	CM230-1-F-L	
RIS 700VW EKO 3.0	+	+	250	250	250	250	250	250	TF230	CM230-1-F-L
RIS 1200VE EKO 3.0	+	+	315	-	315	315	315	315	LM230A-TP	
RIS 1200VW EKO 3.0	+	+	315	315	315	315	315	315	LF230	LM230A-TP
RIS 1900VE EKO 3.0	+	+	400	-	400	400	400	400	SM230A-TP	
RIS 1900VW EKO 3.0	+	+	400	400	400	400	400	400	NF230	SM230A-TP
RIS 2200VE EKO 3.0	+	+	400	-	400	400	400	400	SM230A-TP	SM230A-TP
RIS 2200VW EKO 3.0	+	+	400	400	400	400	400	400	NF230	SM230A-TP

	Optional accessories					
Unit	**SSB** *Heating*	**SSB** *Cooling*	**RMG 80/60°C**	**RMG 60/40°C**	**VVP/VXP 80/60°C**	**VVP/VXP 60/40°C**
RIS 700VE EKO 3.0	-	81	-	-	-	-
RIS 700VW EKO 3.0	61	81	3-1,0-4	3-0,63-4	45.10-1,0	45.10-0,63
RIS 1200VE EKO 3.0	-	81	-	-	-	-
RIS 1200VW EKO 3.0	61	81	3-0,63-4	3-0,63-4	45.10-0.63	45.10-0.63
RIS 1900VE EKO 3.0	-	81				
RIS 1900VW EKO 3.0	61	81				
RIS 2200VE EKO 3.0	-	81				
RIS 2200VW EKO 3.0	61	81				

Heaters, coolers and RMG/VVP/VXP data online selection program: ***www.salda.lt***

Accessories

Remote controller

Ptouch p. 175

Control panel

Flex p. 177

Remote controller

Stouch p. 176

Network Module

MB-Gateway p. 178

Pressure transmitter

S-1141 p. 179

CO2 sensor

S-RC02-F2 p. 180

Humidity sensor

S-KFF-U p. 181

Shut-off damper

SKG p. 212

Thermic water valve actuator

SSB p. 195

Actuator for dampers

SP p. 210

Circular duct silencer

AKS p. 216

Electric duct heater

EKA NV PH p. 201

Heating coil

AVS p. 185

Circular duct water cooler

AVA p. 193

Mixing point

RMG p. 196

2 and 3 way valves

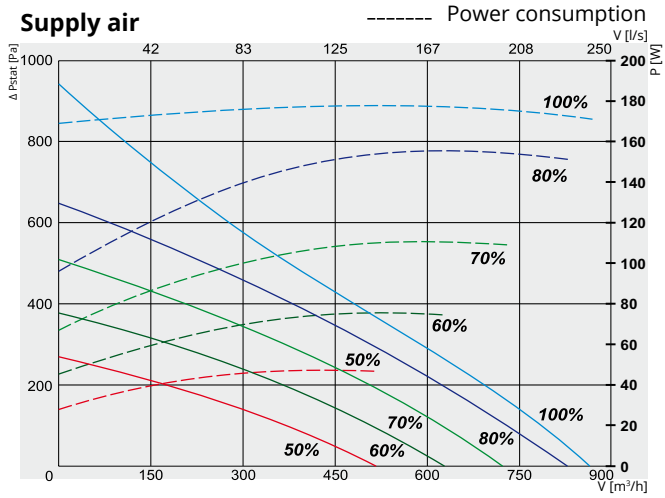
VVP/VXP p. 197

RIS V EKO

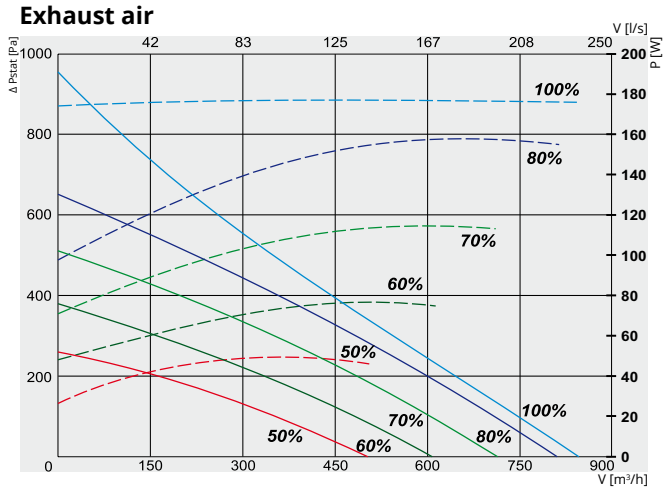
RIS 700V EKO 3.0

Performance
Power consumption

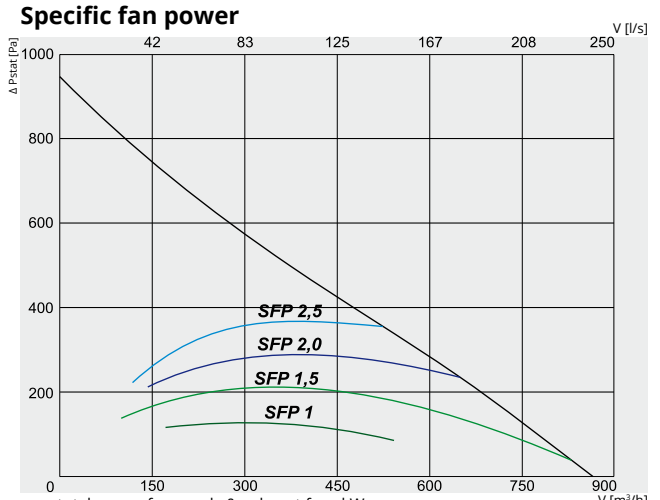
Supply air



Exhaust air

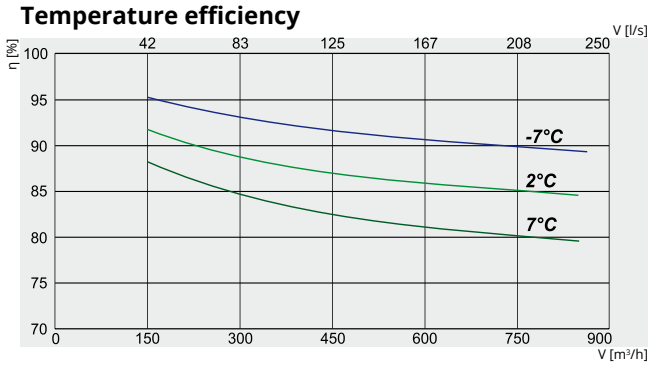


Specific fan power

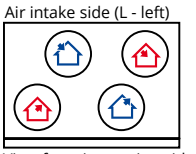


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency

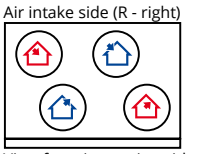


RIS 700VL EKO 3.0
Air intake side (L - left)



View from inspection side

RIS 700VR EKO 3.0
Air intake side (R - right)



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.		Version
GAGRIS1778_0039A	700VEL EKO 3.0	Left-hand maintenace version with integrated electrical heater
GAGRIS1780_0041A	700VWL EKO 3.0	Left-hand maintenace version prepared for optional water heater
GAGRIS1777_0038A	700VER EKO 3.0	Right-hand maintenace version with integrated electrical heater
GAGRIS1779_0040A	700VWR EKO 3.0	Right-hand maintenace version prepared for optional water heater

700VE / VW EKO 3.0				
Water heater (optional) VW ver.				AVS 250
Electrical heater VE ver.	phase/voltage	[50Hz/VAC]		~1, 230
		[kW]		1,2
EC fans	phase/voltage	[50Hz/VAC]		~1, 230
exhaust	power/current	[kW/A]		0,168/1,4
	fan speed	[min⁻¹]		3230
supply	power/current	[kW/A]		0,168/1,4
	fan speed	[min⁻¹]		3230
Thermal efficiency up to*				90%
Motorized by-pass				+
Max power consumption VE / VW		[kW/A]	1,54/8,01	0,34/2,80
Control board				PRV V2
Filter class	exhaust/supply			M5/M5
Housing insulation, mineral wool		[mm]		30
Colour	RAL	white		9016
Weight (net, without packing)		[kg]	112,5	112
Comply with ERP				2016; 2018
Operation				indoors
Fresh air temperature limits**		°C		-5 - +40
Housing protection class	IP			34

* Calculated according EN 13141-7.
**For temperatures lower than recommended, use electrical pre-heater to ensure balanced operation.

Temperature efficiency (balanced mass flow) EN 13141-7:
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

700V EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	74	68	65	67	66	65	58	56
Extract	60	45	57	53	52	47	42	38
Surrounding	56	51	50	49	45	44	41	37
Measured at 750 m³/h, 100 Pa								

Certifications

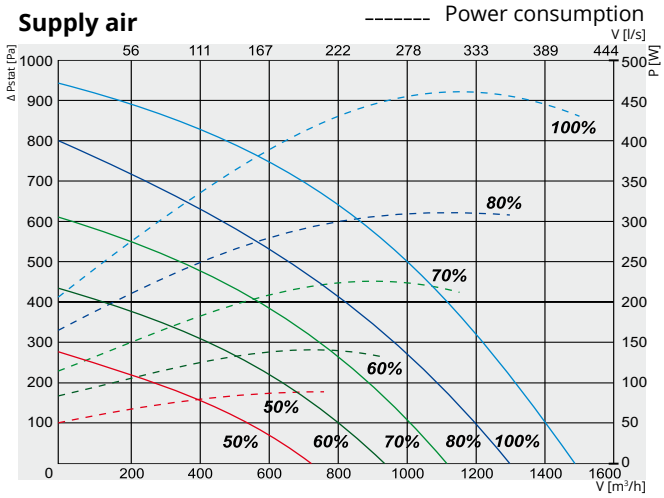
EUROVENT certified
heat exchanger performance

EUROVENT CERTIFIED PERFORMANCE
AHU N° 05.05.298
Range: SmartAir
www.eurovent-certification.com

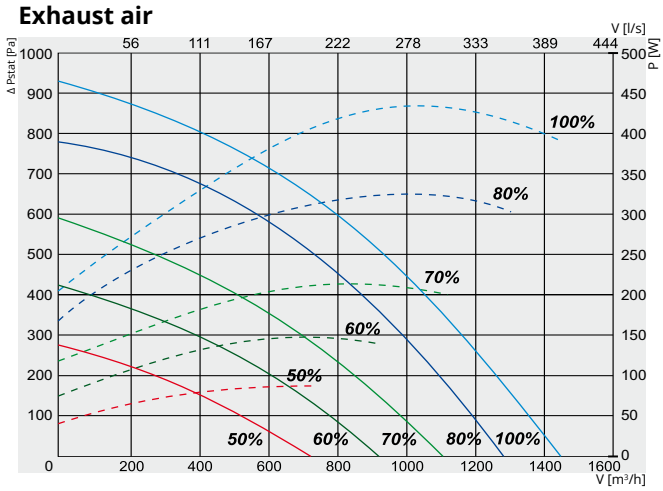
RIS 1200V EKO 3.0

Performance
Power consumption

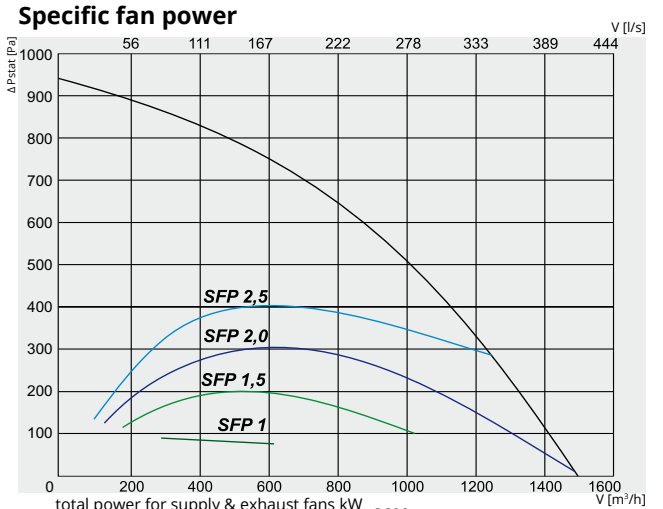
Supply air



Exhaust air

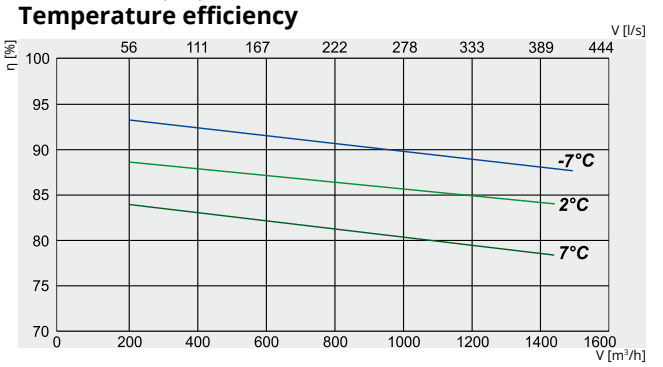


Specific fan power

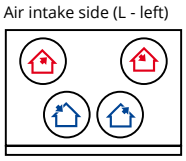


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency

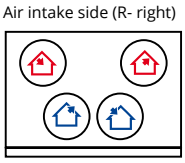


RIS 1200VL EKO 3.0
Air intake side (L - left)



View from inspection side

RIS 1200VR EKO 3.0
Air intake side (R- right)



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.	Version
GAGRIS1776_0043A 1200VEL EKO 3.0	Left-hand maintenace version with integrated electrical heater
GAGRIS1784_0045A 1200VWL EKO 3.0	Left-hand maintenace version prepared for optional water heater
GAGRIS1775_0042A 1200VER EKO 3.0	Right-hand maintenace version with integrated electrical heater
GAGRIS1783_0044A 1200VWR EKO 3.0	Right-hand maintenace version prepared for optional water heater

			1200VE / VW EKO 3.0
Water heater (optional) VW ver.			AVS/AVA 315
Electrical heater VE ver.	phase/voltage	[50Hz/VAC]	~1, 230
		[kW]	2,0
EC fans	phase/voltage	[50Hz/VAC]	~1, 230
exhaust	power/current	[kW/A]	0,430/2,95
	fan speed	[min⁻¹]	3400
supply	power/current	[kW/A]	0,435/2,9
	fan speed	[min⁻¹]	3400
Thermal efficiency up to*			90%
Motorized by-pass			+
Max power consumption VE / VW		[kW/A]	2,87/14,49 0,87/5,89
Control board			PRV V2
Filter class	exhaust/supply		M5/F7
Housing insulation, mineral wool		[mm]	50
Colour	RAL	grey	7040
Weight (net, without packing)		[kg]	152
Comply with ERP			2016; 2018
Operation			indoors
Fresh air temperature limits**		°C	-5 - +40
Housing protection class	IP		34

* Calculated wet efficiency.
**For temperatures lower than recommended, use electrical pre-heater to ensure balanced operation.

Temperature efficiency (balanced mass flow) :
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

1200V EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	79	66	75	73	72	70	67	58
Extract	68	62	63	64	58	53	48	43
Surrounding	58	51	52	53	50	49	45	40
Measured at 1300 m³/h, 120 Pa								

Certifications

EUROVENT certified
heat exchanger performance

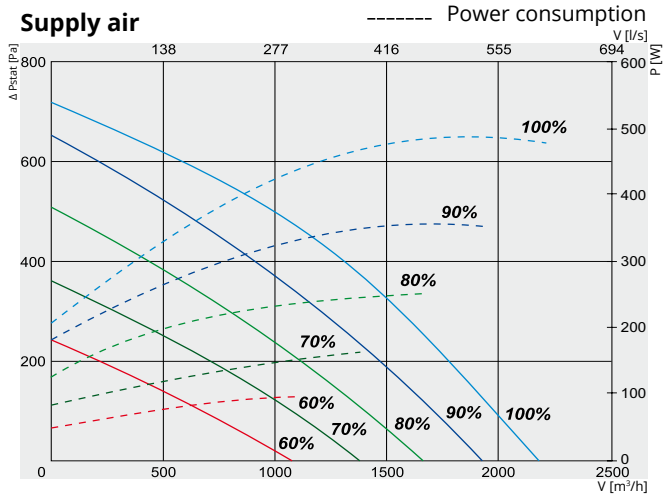
EUROVENT CERTIFIED PERFORMANCE
AHU N°: 05.05.298
Range: SmartAir
www.eurovent-certification.com

RIS V EKO

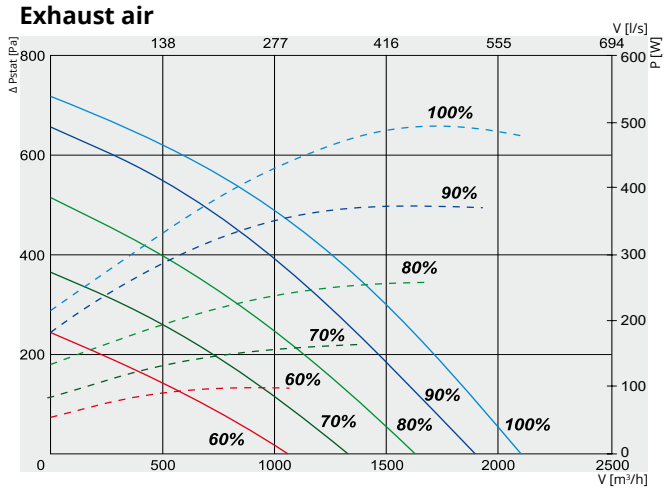
RIS 1900V EKO 3.0

Performance
Power consumption

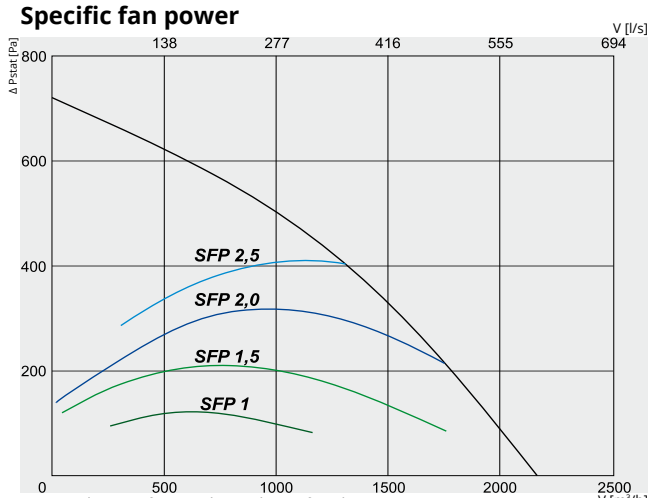
Supply air



Exhaust air

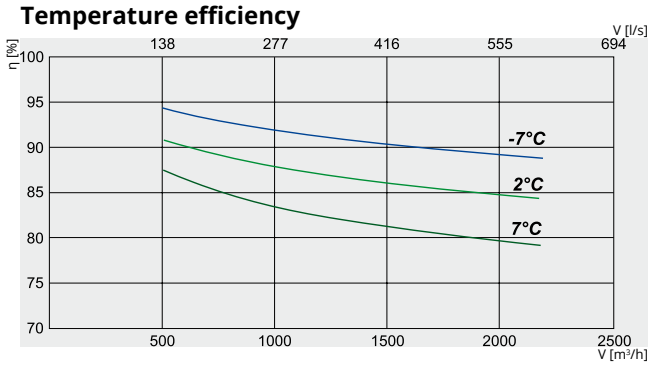


Specific fan power

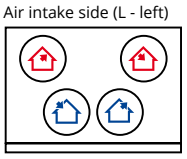


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency

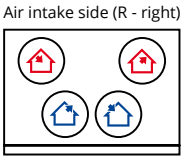


RIS 1900VL EKO 3.0
Air intake side (L - left)



View from inspection side

RIS 1900VR EKO 3.0
Air intake side (R - right)



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.		Version
GAGRIS1786_0049A	1900VEL EKO 3.0	Left-hand maintenace version with integrated electrical heater
GAGRIS1788_0051A	1900VWL EKO 3.0	Left-hand maintenace version prepared for optional water heater
GAGRIS1785_0048A	1900VER EKO 3.0	Right-hand maintenace version with integrated electrical heater
GAGRIS1787_0050A	1900VWR EKO 3.0	Right-hand maintenace version prepared for optional water heater

			1900VE / VW EKO 3.0
Water heater (optional) VW ver.			AVS / AVA / Comfort Box 250
Electrical heater VE ver.	phase/voltage	[50Hz/VAC]	~1, 230
		[kW]	3,0
EC fans	phase/voltage	[50Hz/VAC]	~1, 230
exhaust	power/current	[kW/A]	0,49/3,1
	fan speed	[min⁻¹]	2540
supply	power/current	[kW/A]	0,49/3,2
	fan speed	[min⁻¹]	2540
Thermal efficiency up to*			90%
Motorized by-pass			+
Max power consumption VE / VW		[kW/A]	3,98 /19,32 0,98/6,31
Control board			PRV V2
Filter class	exhaust/supply		M5/F7
Housing insulation, mineral wool		[mm]	50
Colour	RAL	grey	7040
Weight (net, without packing)		[kg]	290
Comply with ERP			2016;2018
Operation			indoors
Fresh air temperature limits**		°C	-5 - +40
Housing protection class	IP		34

* Calculated wet efficiency.
**For temperatures lower than recommended, use electrical pre-heater to ensure balanced operation.

Temperature efficiency (balanced mass flow) :
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

1900V EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	77	64	73	70	71	68	65	59
Extract	66	57	62	60	55	58	56	45
Surrounding	59	48	53	52	50	51	49	42
Measured at 2077 m³/h, 150 Pa								

Certifications

EUROVENT certified
heat exchanger performance

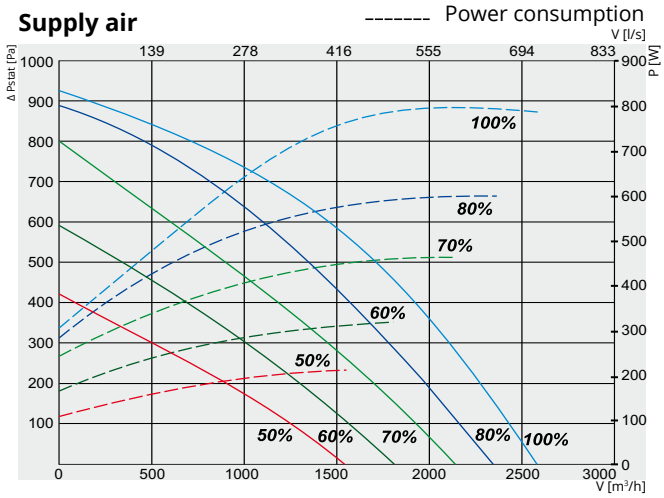
EUROVENT CERTIFIED PERFORMANCE
AHU N° 05.05.298
Range: SmartAir
www.eurovent-certification.com

AIR HANDLING UNITS

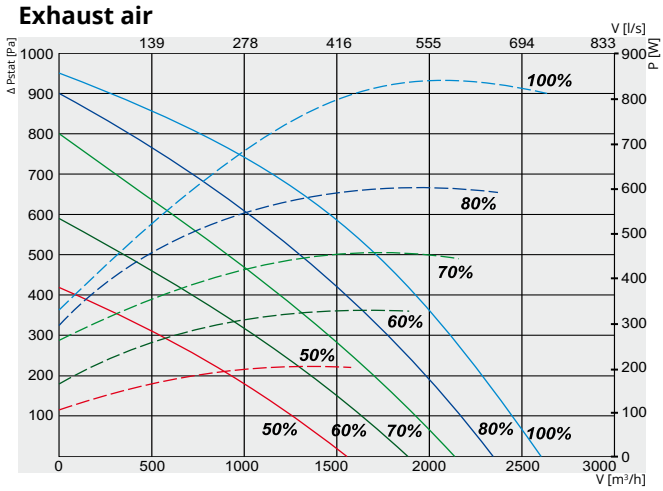
RIS 2200V EKO 3.0

Performance
Power consumption

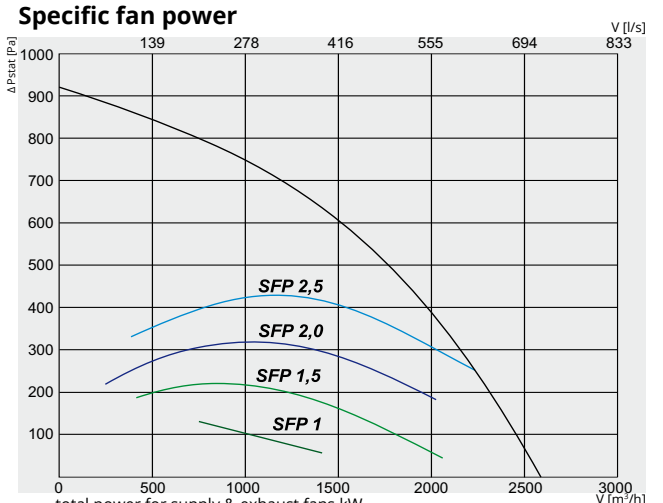
Supply air



Exhaust air

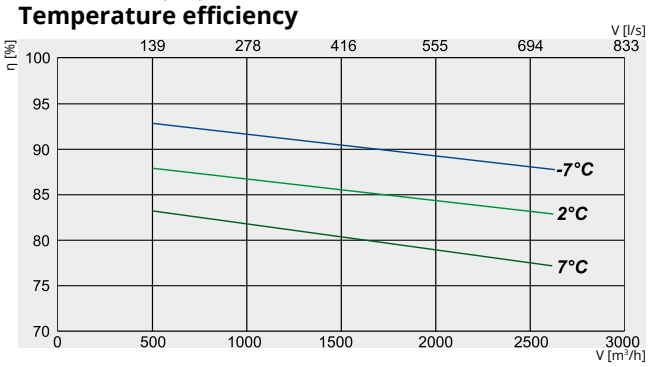


Specific fan power

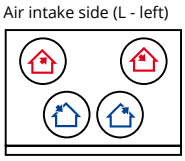


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency

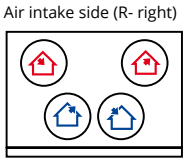


RIS 2200VL EKO 3.0
Air intake side (L - left)



View from inspection side

RIS 2200VR EKO 3.0
Air intake side (R- right)



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.	Version
GAGRIS1935_0134B	2200VEL EKO 3.0 — Left-hand maintenace version with integrated electrical heater
GAGRIS1954_0135B	2200VWL EKO 3.0 — Left-hand maintenace version prepared for optional water heater
GAGRIS1955_0134B	2200VER EKO 3.0 — Right-hand maintenace version with integrated electrical heater
GAGRIS156_0135B	2200VWR EKO 3.0 — Right-hand maintenace version prepared for optional water heater

			2200VE / VW EKO 3.0
Water heater (optional) VW ver.			AVS/AVA 400
Electrical heater VE ver.	phase/voltage	[50Hz/VAC]	~1, 230
		[kW]	3,0
EC fans	phase/voltage	[50Hz/VAC]	~1, 230
exhaust	power/current	[kW/A]	0,715/3,2
	fan speed	[min⁻¹]	2800
supply	power/current	[kW/A]	0,715/3,1
	fan speed	[min⁻¹]	2800
Thermal efficiency up to*			90%
Motorized by-pass			+
Max power consumption VE / VW		[kW/A]	4,43/19,32 1,43/6,31
Control board			PRV V2
Filter class	exhaust/supply		M5/F7
Housing insulation, mineral wool		[mm]	50
Colour	RAL	grey	7040
Weight (net, without packing)		[kg]	290
Comply with ERP			2016;2018
Operation			indoors
Fresh air temperature limits**		°C	-5 - +40
Housing protection class	IP		34

* Calculated wet efficiency.
**For temperatures lower than recommended, use electrical pre-heater to ensure balanced operation.

Temperature efficiency (balanced mass flow) :
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

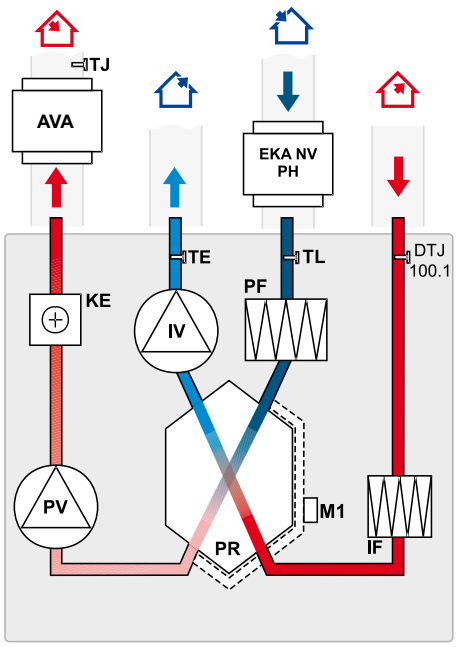
2200V EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	80	63	65	69	71	74	74	71	65
Extract	72	60	61	63	66	65	64	62	58
Surrounding	63	44	51	58	57	55	54	51	46
Measured at 2150 m³/h, 250 Pa									

Certifications

EUROVENT certified
heat exchanger performance

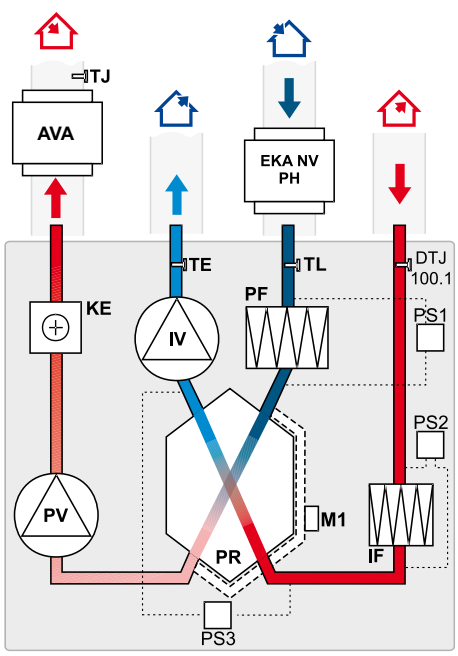
EUROVENT CERTIFIED PERFORMANCE
AHU N° 05.05.298
Range: SmartAir
www.eurovent-certification.com

RIS 700VE EKO 3.0 (vertical) **version with electrical heater**



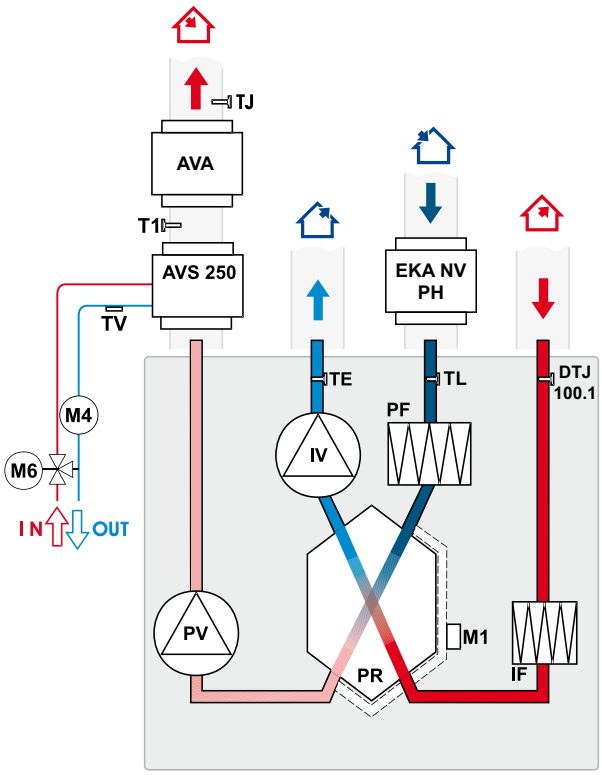
IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
KE - electrical heater
PF - filter for fresh air (class M5)
IF - filter for extract air (class M5)
M1 - actuator of by-pass damper
TL - temperature sensor for fresh air
TJ - temperature sensor for supply air
TE - temperature sensor for exhaust air
DTJ 100.1 - humidity + temperature sensor
EKA NV PH - optional fresh air pre-heater
AVA - optionally supplied water cooler

RIS 1200VE EKO 3.0 / RIS 1900VE EKO 3.0 / RIS 2200VE EKO 3.0
(vertical) **versions with electrical heater**



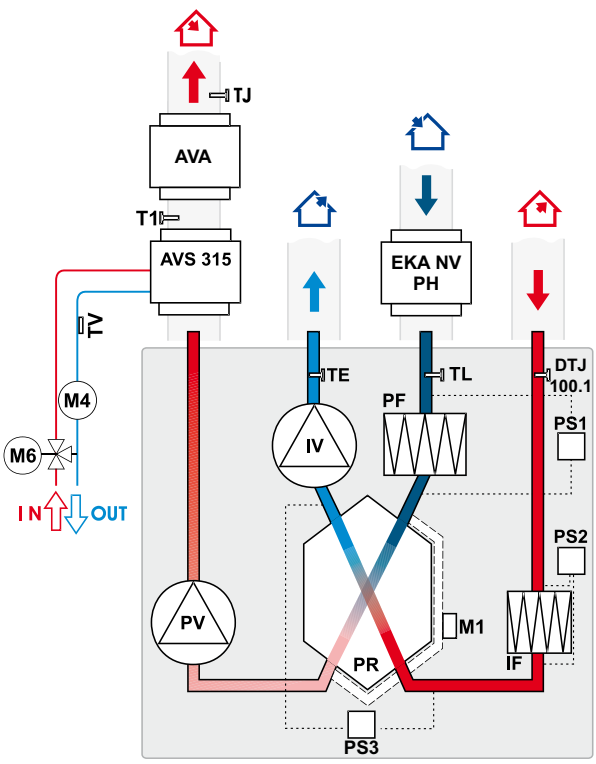
IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
KE - electrical heater
PF - filter for fresh air (class F7)
IF - filter for extract air (class M5)
M1 - actuator of by-pass damper
TE - temperature sensor for exhaust air
TL - temperature sensor for fresh air
TJ - temperature sensor for supply air
DTJ100.1 - humidity + temperature sensor
PS1 - supply air differential pressure switch
PS2 - extract air differential pressure switch
PS3 - heat exchanger antifrost pressure switch
EKA NV PH - optional fresh air pre-heater
AVA - optionally supplied water cooler

RIS 700VW EKO 3.0 (vertical) **version with water heater**



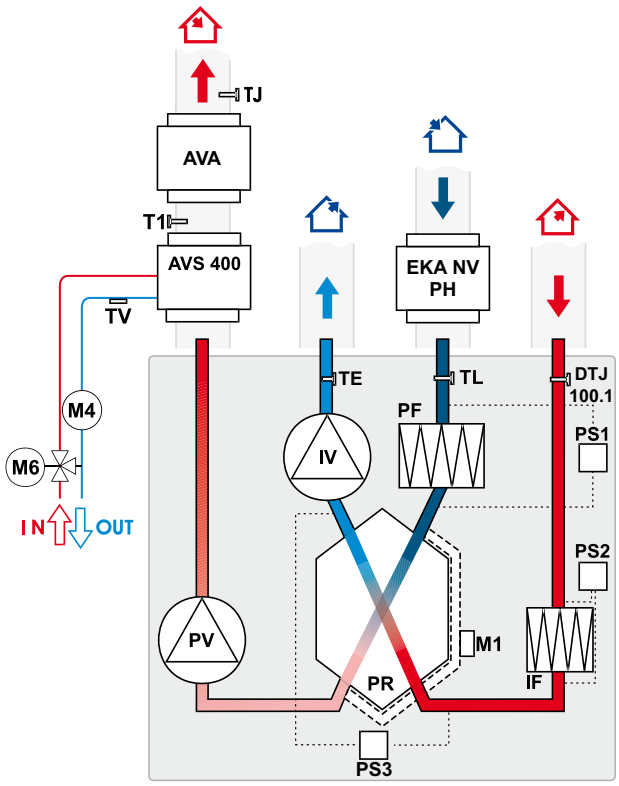
AVS - optionally supplied water heater
AVA - optionally supplied water cooler
IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
PF - filter for fresh air (class M5)
IF - filter for extract air (class M5)
M1 - actuator of by-pass damper
M6 - optionally supplied mixing valve and motor
M4 - water heater circulation pump
TJ - temperature sensor for supply air
TE - temperature sensor for exhaust air
TL - temperature sensor for fresh air
DTJ 100.1 - humidity + temperature sensor
TV - antifrost sensor
T1 - antifrost thermostat
EKA NV PH - optional fresh air pre-heater

RIS 1200VW EKO 3.0 (vertical) **version with water heater**



AVS - optionally supplied water heater
AVA - optionally supplied water cooler
IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
PF - filter for supply air (class F7)
IF - filter for extract air (class M5)
M1 - actuator of by-pass damper
M4 - optionally supplied water heater circulation pump
M6 - optionally supplied mixing valve and motor
TJ - temperature sensor for supply air
TE - temperature sensor for exhaust air
TL - temperature sensor for fresh air
TV - antifrost sensor
T1 - antifrost thermostat
DTJ100.1 - humidity + temperature sensor
PS1 - supply air differential pressure switch
PS2 - extract air differential pressure switch
PS3 - heat exchanger antifrost pressure switch
EKA NV PH - optional fresh air pre-heater

RIS 1900VW EKO 3.0 / RIS 2200VW EKO 3.0 (vertical) versions with water heater

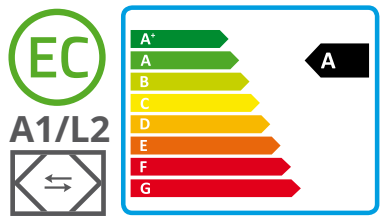


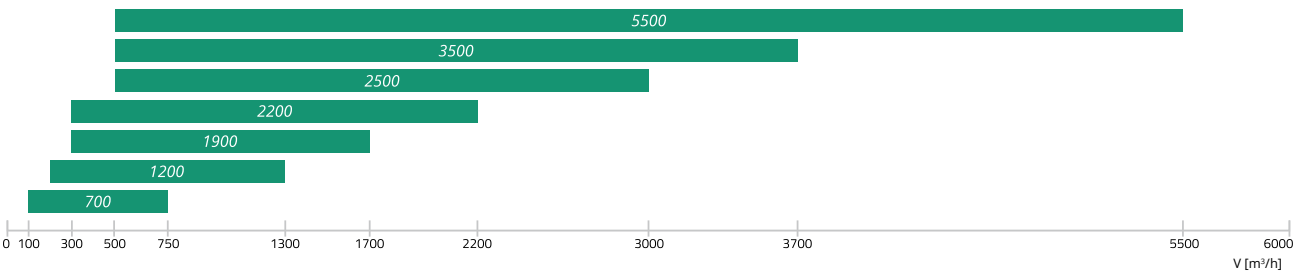
AVS - optionally supplied water heater
AVA - optionally supplied water cooler
IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
PF - filter for supply air (class F7)
IF - filter for extract air (class M5)
TL - temperature sensor for fresh air
TE - temperature sensor for exhaust air
M1 - actuator of by-pass damper
M6 - optionally supplied mixing valve and motor
M4 - optionally supplied water heater circulation pump
TJ - temperature sensor for supply air
TV - antifrost sensor
T1 - antifrost thermostat
DTJ100.1 - humidity + temperature sensor
PS1 - supply air differential pressure switch
PS2 - extract air differential pressure switch
PS3 - heat exchanger antifrost pressure switch
EKA NV PH - optional fresh air pre-heater

FUNCTIONS		
Description of the functions	PRV V2	
	RIS EKO 3.0	
	E	W
Functions		
Date and time settings	✓	✓
4 speeds for easy and user-friendly control ("Stop" – the unit is stopped; "Low", medium", and "High". Service menu allows adjusting each speed individually)	✓	✓
BOOST function (Fans operate at highest speed)	✓	✓
Comfortable air temperature function	✓	✓
Cold/heat recovery	✓	✓
Fire place function	✓	✓
Dryness protection	✓	✓
Weekly schedule	✓	✓
Holiday schedule	✓	✓
User and service control levels	✓	✓
Manual air flow balancing	✓	✓
CO_2 level indication and reduction function	✓	✓
Night cooling function	✓	✓
Relative humidity (RH) level indication and reduction function	✓	✓
Software and configuration update possibility	✓	✓
Supply air temperature control according to the extract air sensor	✓	✓
Monitoring function (all sensors and I/O)	✓2	✓2
Mode switch (start/stop)	✓	✓
Extracted air relative humidity converter	✓	✓
Manual components control	✓1	✓1
Functional units		
Fans		
Soft start and stop	✓	✓
Fan failure protection	✓	✓
Speed synchronous/asynchronous 0-10V control	✓	✓
Electric heater		
On/Off / PWM control	✓	
Manual protection	✓	
Overheat protection (additional protection software)	✓	✓
Water heater		
Pulse-width modulation (PWM) valve actuator control		✓
Protection using temperature sensor		✓
Protection using termostat (NC)		✓
Circulation pump control		✓
Return water temperature sensor	✓	✓
DX cooler		
Control On/Off	✓	✓
Water cooler		
Pulse-width modulation (PWM) valve actuator control		✓
Control with three-positional valve actuator	✓	✓
Bypass damper		
3-position actuator control	✓	✓
Filter pollution monitoring		
By pressure switch (NC)	✓	✓
By filter timer	✓	✓
Sensors		
Supply air temperature sensor	✓	✓
Fresh air temperature sensor	✓	✓
Exhaust air temperature sensor	✓	✓
Extract air temperature sensor	✓	✓
Emergency signals and inputs/outputs		
Fire protection input	✓	✓
Working indication output	✓	✓
Alarm indication output	✓	✓
Remote controllers		
Stouch	✓	✓
Flex	✓	✓
Ptouch	✓	✓
MB-Gateway	✓	✓

1	**With FLEX TEST remote controler**	**2**	**Only sensors**

RIS H EKO



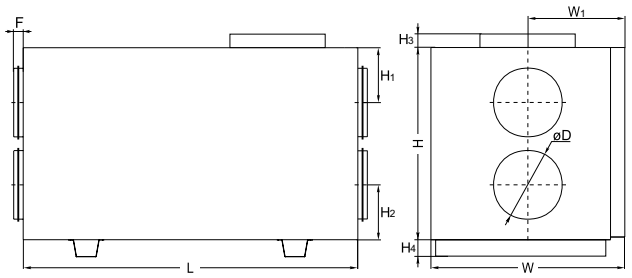


Application	Ventilation of houses, offices or other heated premises (classrooms, apartments, conference rooms, etc.)
Description	RIS H EKO 3.0 is a range of heat recovery units with high-efficiency counter-flow heat exchangers and horizontal duct connections. Units are designed for placement on the floor. Due to the horizontal ducting, there is a wide range of applications for outdoor placement. There are 7 sizes (airflow interval 700-5500 m³/h). RIS H EKO 3.0 units have high overall energy savings due to the highly efficient heat recovery (up to 90%), quiet and economical EC fans, effective low-pressure-drop filters and top-level of air tightness. Energy efficiency ensures full thermal comfort for passive houses, without an additional pre-heater at temperatures above -5°C. All the RIS H EKO 3.0 units are fully equipped with automatic controls. Optional external sensors for CO_2 and humidity and the event planning feature will help to control automatically your climate (demand-level control). RIS 1200-5500 H EKO 3.0 units have outdoor versions with roofing and outlet cover. RIS H EKO 3.0 units are service-friendly and are easy to mount. Filter pollution may be identified by timers or contamination controls (RIS 1200-5500 H EKO 3.0). All units are supplied tested and ready to install.
Remote control	Three* remote control options are available: 1. Flex, Stouch or Ptouch remote controllers. 2. Building management system connections. 3. Remote control via PC MB-Gateway. *RIS 1900-5500 H EKO 3.0 units can be optionally provided with SIEMENS Climatix controllers.
Features	› Outdoor versions. › Ready for Passive House technology: high efficiency. › Easy and quick mounting. › Water/electrical heating options. › Fully integrated plug-and-play control system.
Construction	› Construction from double-skinned steel, with powder coated paint, panels. › Acoustic and thermal wall insulation: RIS 700 H EKO 3.0 – 30 mm, RIS 1200-5500 H EKO 3.0 – 50 mm. › RIS 700 H EKO 3.0 powder-coated white housing RAL 9016; RIS 1200 – 5500 powder-coated grey housing RAL7040. › RIS 1900-5500 H EKO 3.0 optional roof and outlet covers for outdoor placement. › RIS 3500 H EKO 3.0 delivered in three sections and RIS 5500 H EKO 3.0 - in two sections. › Integrated electrical heater or optional duct-based water heater/cooler. › Low-pressure-drop filters: F7/M5. › Hinged door with locks grants easy access to internal components. › Separate compartment on the top of the unit grants quick access to the control board (plug-and-play). › Stainless steel condensate tray. › Fitted with mounting brackets (optional for RIS 700-1900 H EKO 3.0, RIS 2500-5500 H EKO 3.0 - included). › Integrated anti-frost pressure switch (RIS H 1200-5500 H EKO 3.0).

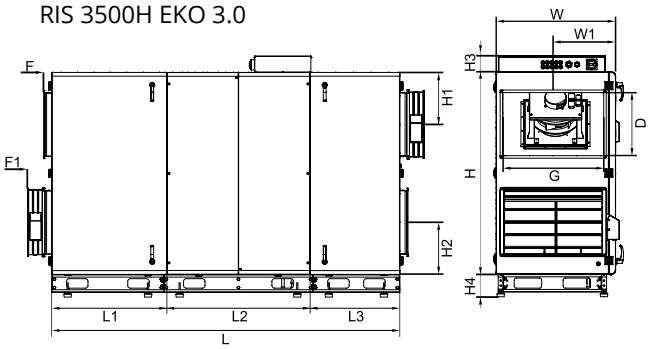
RIS 1200 H W EKO 3.0

RIS	AHU with plate heat exchanger
1200	AHU size according to maximum airflow range m³/h
H	Housing type (V - vertical, H - horizontal, P - ceiling)
W	Heater type (E - integrated electrical heater; W - optional water heater)
EKO	AHU with EC motors and efficient heat exchanger
3.0	Equipped with new PRV V2 control board

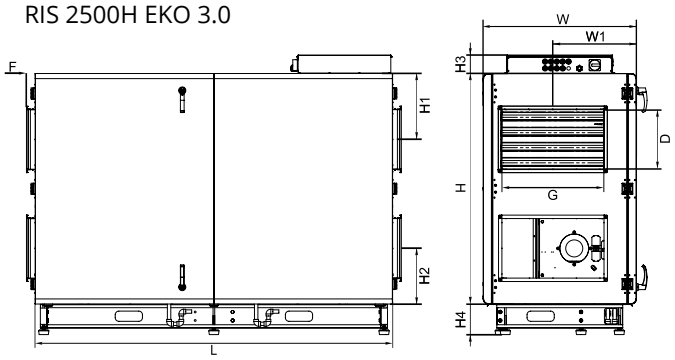
RIS 700H EKO 3.0 - RIS 2200H EKO 3.0



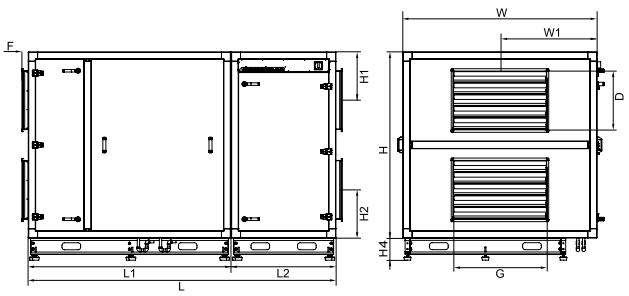
RIS 3500H EKO 3.0



RIS 2500H EKO 3.0



RIS 5500H EKO 3.0



	Dimensions [mm]															
Unit	**L**	**L_1**	**L_2**	**L_3**	**W**	**W_1**	**øD**	**G**	**D**	**H**	**H_1**	**H_2**	**H_3**	**H_4**	**F**	**F_1**
RIS 700HE/HW EKO 3.0	1200	-	-	-	670	335	250	-	-	780	210	210	65	126	40	-
RIS 1200HE/HW EKO 3.0	1500	-	-	-	760	380	315	-	-	1000	269	269	70	141	40	-
RIS 1900HE/HW EKO 3.0	1800	-	-	-	800	400	400	-	-	1245	331	331	106	141	70	-
RIS 2200HE/HW EKO 3.0	1800	-	-	-	800	400	400	-	-	1245	331	331	106	141	70	-
RIS 2500HE/HW EKO 3.0	2100	-	-	-	900	490	-	600	350	1355	387	327	108	180	50	-
RIS 3500HE/HW EKO 3.0	2756	909	1132	709	946	494	-	800	500	1600	413	413	129	180	65	192
RIS 5500HE/HW EKO 3.0	2644	1740	900	-	1670	835	-	800	500	1600	415	415	-	180	55	-

Accessories

Remote controller

Ptouch p. 175

Control panel

FLEX p. 177

Remote controller

Stouch p. 176

Net module

MB-Gateway p. 178

Shut-off damper

SKG p. 212

Pressure transmitter

S-1141 p. 179

CO2 sensor

S-RC02-F2 p. 180

Humidity sensor

S-KFF-U p. 181

Thermic water valve actuator

SSB p. 195

Actuator for dampers

SP p. 210

Circular duct silencer

AKS p. 216

Mounting clamp

AP p. 219

Heating coil

AVS p. 185

Electrical duct pre-heater

EKS NV PH p. 203

Electrical duct pre-heater

EKA NV PH p. 201

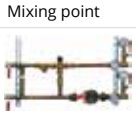
Circular duct water cooler

AVA p. 193

Water heater coil

SVS p. 190

Mixing point



RMG p. 196

2 and 3 way valves

VVP/VXP p. 197

Comfort Box

CB p. 183

Rectangular duct silencer

SKS p. 215

Outlet cover

Roof

RIS H EKO

Unit	Optional accessories								
	Ptouch Stouch Flex MB-Gateway	**S-1141 S-RC02-F2 S-KFF-U**	**AKS SKG AP**	**SKS SVS**	**EKS NV PH**	**AVA AVS**	**EKA NV PH**	**SP** *Supply*	**SP** *Exhaust*
RIS 700HE EKO 3.0	+	+	250	-	-	250	250	CM230-1-F-L	
RIS 700HW EKO 3.0	+	+	250	-	-	250	250	TF230	CM230-1-F-L
RIS 1200HE EKO 3.0	+	+	315	-	-	315	315	LM230A-TP	
RIS 1200HW EKO 3.0	+	+	315	-	-	315	315	LF230	LM230A-TP
RIS 1900HE EKO 3.0	+	+	400	-	-	400	400	SM230A-TP	
RIS 1900HW EKO 3.0	+	+	400	-	-	400	400	NF230	SM230A-TP
RIS 2200HW EKO 3.0	+	+	400	-	-	400	400	SM230A-TP	
RIS 2200HE EKO 3.0	+	+	400	-	-	400	400	NF230	SM230A-TP
RIS 2500HE EKO 3.0	+	+	-	600x350	600x350	-	-	int	
RIS 2500HW EKO 3.0	+	+	-	600x350	600x350	-	-	int	
RIS 3500HE EKO 3.0	+	+	-	800x500	800x500	-	-	int	
RIS 3500HW EKO 3.0	+	+	-	800x500	800x500	-	-	int	
RIS 5500HE EKO 3.0	+	+	-	800x500	800x500	-	-	int	
RIS 5500HW EKO 3.0	+	+	-	800x500	800x500	-	-	int	

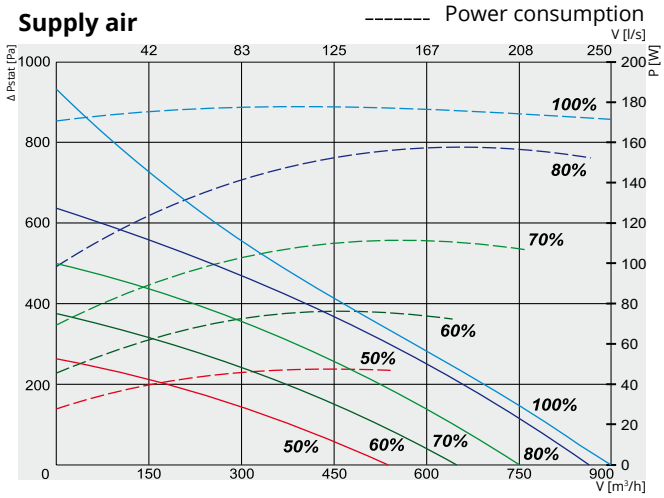
Unit	Optional accessories							
	SSB *Heating*	**SSB** *Cooling*	**RMG 80/60°C**	**RMG 60/40°C**	**VVP/VXP 80/60°C**	**VVP/VXP 60/40°C**	**Comfort Box**	**Roof Outlet cover**
RIS 700HE EKO 3.0	-	81	-	-	-	-	-	-
RIS 700HW EKO 3.0	61	81	3-1,0-4	3-0,63-4	45.10-1,1	45.10-0,63	-	-
RIS 1200HE EKO 3.0	-	81	-	-	-	-	-	-
RIS 1200HW EKO 3.0	61	81	3-0,63-4	3-0,63-4	45.10-0,63	45.10-0,63	-	-
RIS 1900HE EKO 3.0	-	81					400	+
RIS 1900HW EKO 3.0	61	81					400	+
RIS 2200HE EKO 3.0	-	81					400	+
RIS 2200HW EKO 3.0	61	81					400	+
RIS 2500HE EKO 3.0	-	-					600x350	+
RIS 2500HW EKO 3.0	61	-					600x350	+
RIS 3500HE EKO 3.0	-	-					800x500	+
RIS 3500HW EKO 3.0	61	-					800x500	+
RIS 5500HE EKO 3.0	-	-					800x500	+
RIS 5500HW EKO 3.0	61	-					800x500	+

Heaters, coolers and RMG/VVP/VXP data online selection program: ***www.salda.lt***

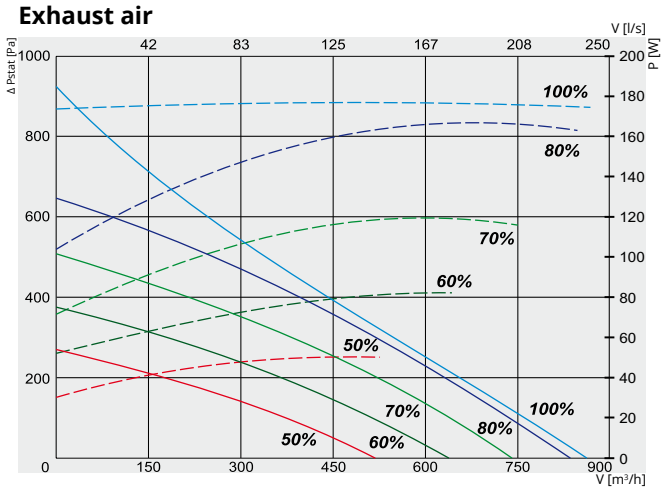
RIS 700H EKO 3.0

Performance
Power consumption

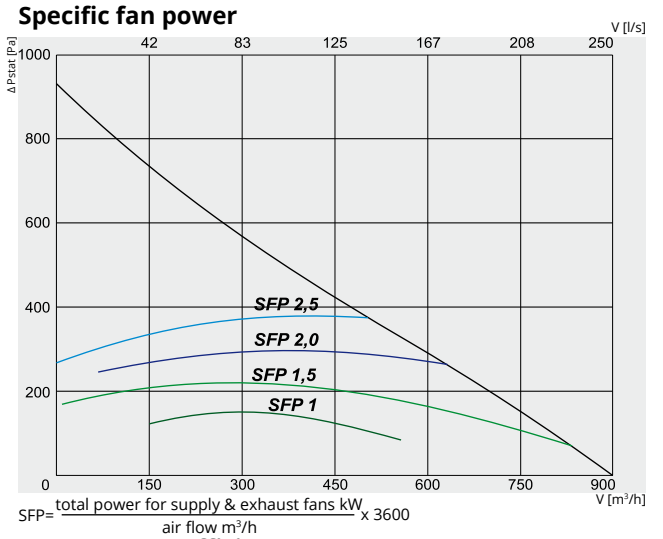
Supply air



Exhaust air

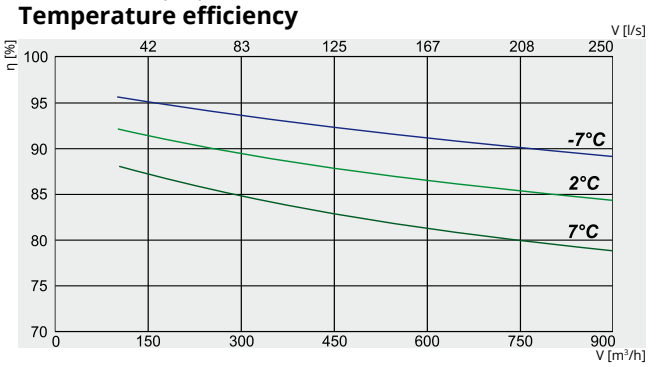


Specific fan power

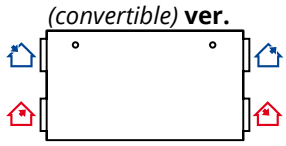


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency



RIS 700H EKO 3.0
(convertible) **ver.**



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.	Version	
GAGRIS1791_0036A	700HE EKO 3.0	Integrated electrical heater
GAGRIS1972_0037A	700HW EKO 3.0	Optional water heater

			700HE / HW EKO 3.0	
Water heater (optional) HW ver.				AVS 250
Electrical heater HE ver.	phase/voltage	[50Hz/VAC]		~1, 230
		[kW]		1,2
EC fans	phase/voltage	[50Hz/VAC]		~1, 230
exhaust	power/current	[kW/A]		0,168/1,4
	fan speed	[min⁻¹]		3230
supply	power/current	[kW/A]		0,168/1,4
	fan speed	[min⁻¹]		3230
Thermal efficiency up to*				90%
Motorized by-pass				+
Max power consumption HE/HW		[kW/A]	1,54/8,02	0,34/2,80
Control board				PRV V2
Filter class	exhaust/supply			M5/M5
Housing insulation, mineral wool		[mm]		30
Colour	RAL	white		9016
Weight (net, without packing)		[kg]	111	110
Comply with ERP				2016; 2018
Operation				indoors
Fresh air temperature limits**		°C		-5 - +40
Housing protection class	IP			34

* Calculated according EN 13141-7.
**For temperatures lower than recommended, use electrical pre-heater to ensure balanced operation.

Temperature efficiency (balanced mass flow) EN 13141-7:
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

700HE EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	73	65	67	65	64	66	63	54
Extract	61	54	55	57	49	46	41	40
Surrounding	56	45	49	54	45	43	40	37
Measured at 760 m³/h, 101 Pa								

Certifications

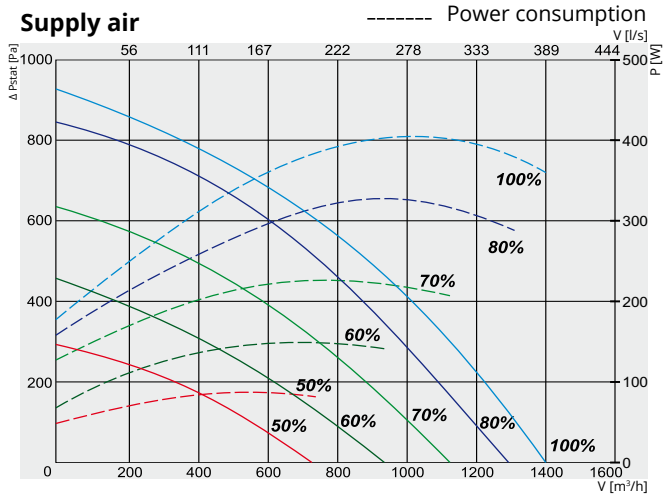
EUROVENT certified
heat exchanger performance

EUROVENT CERTIFIED PERFORMANCE
AHU N° 05.05.298
Range: SmartAir
www.eurovent-certification.com

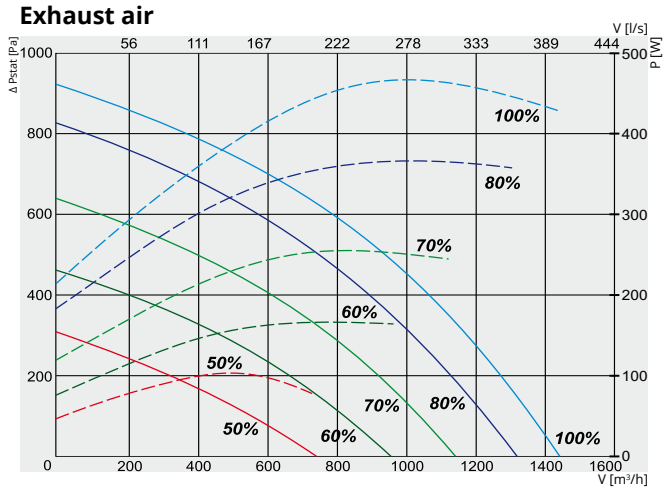
RIS 1200H EKO 3.0

Performance
Power consumption

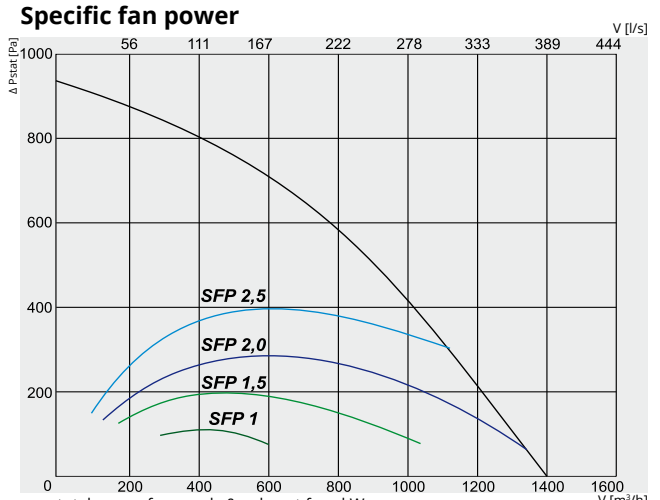
Supply air



Exhaust air



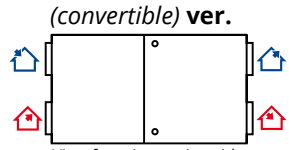
Specific fan power



$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency

RIS 1200H EKO 3.0
(convertible) **ver.**



View from inspection side

Exhaust air Extract air outdoor air Supply air

Article No.		Version
GAGRIS1740_0006A	1200HE EKO 3.0	Integrated electrical heater
GAGRIS1767_0030A	1200HW EKO 3.0	Optional water heater

1200HE / HW EKO 3.0

Water heater (optional) HW ver.				AVS 315
Electrical heater HE ver.	phase/voltage	[50Hz/VAC]		~1, 230
		[kW]		2,0
EC fans	phase/voltage	[50Hz/VAC]		~1, 230
exhaust	power/current	[kW/A]		0,4/2,61
	fan speed	[min^{-1}]		3400
supply	power/current	[kW/A]		0,42/2,72
	fan speed	[min^{-1}]		3400
Thermal efficiency up to*				90%
Motorized by-pass				+
Max power consumption HE/HW		[kW/A]	2,82/14,07	0,82 /5,37
Control board				PRV V2
Filter class	exhaust/supply			M5/F7
Housing insulation, mineral wool		[mm]		50
Colour	RAL	grey		7040
Weight (net, without packing) HE/HW		[kg]	171	173
Comply with ERP				2016; 2018
Operation				indoors/outdoors***
Fresh air temperature limits**		°C		-5 - +40
Housing protection class	IP			34

* Calculated wet efficiency.
**For temperatures lower than recommended, use electrical pre-heater to ensure balanced operation.
***With proper roof mounted.

Temperature efficiency (balanced mass flow) :
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

1200H EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	75	62	65	71	70	65	63	53
Extract	57	51	49	52	51	45	40	32
Surrounding	53	44	43	48	47	43	40	33
Measured at 1271 m³/h, 119 Pa								

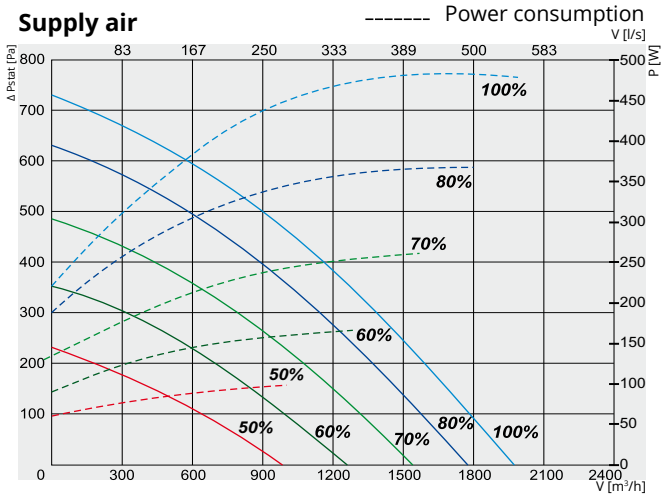
Certifications

EUROVENT certified
heat exchanger performance

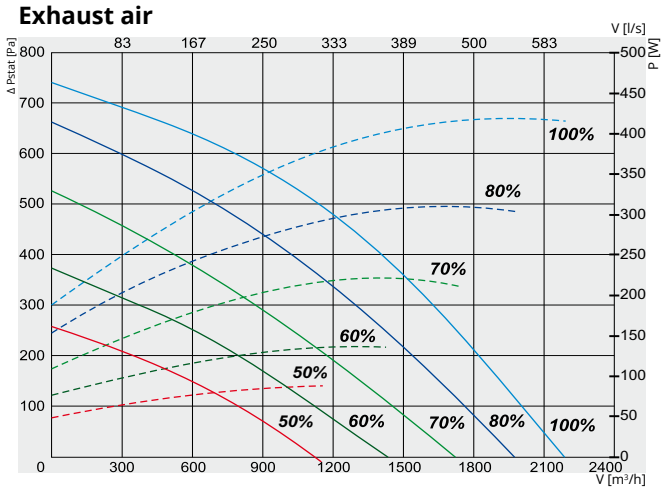
RIS 1900H EKO 3.0

Performance
Power consumption

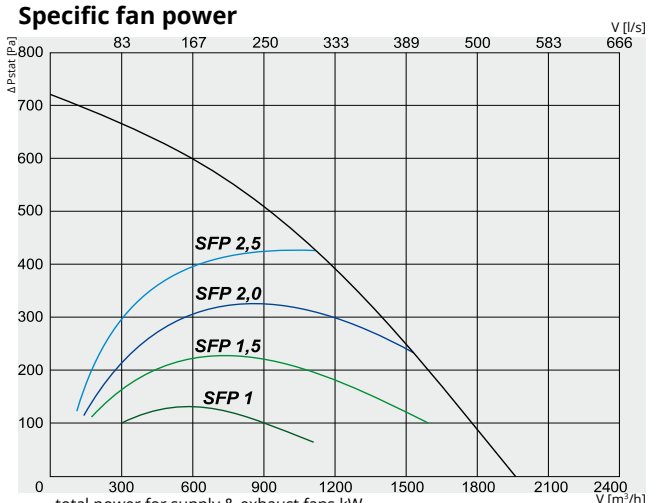
Supply air



Exhaust air



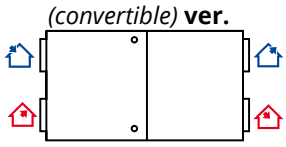
Specific fan power



$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency

RIS 1900HE EKO 3.0 *(convertible)* ver.



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.		Version
GAGRIS1789_0046A	1900HE EKO 3.0	Integrated electrical heater
GAGRIS1790_0047A	1900HW EKO 3.0	Optional water heater

1900HE / HW EKO 3.0				
Water heater (optional) HW ver.			AVS / Comfort Box 400	
Electrical heater HE ver.	phase/voltage	[50Hz/VAC]	~1, 230	
		[kW]	3,0	
EC fans	phase/voltage	[50Hz/VAC]	~1, 230	
exhaust	power/current	[kW/A]	0,48/3,1	
	fan speed	[min^{-1}]	2540	
supply	power/current	[kW/A]	0,505/3,2	
	fan speed	[min^{-1}]	2540	
Thermal efficiency up to*			90%	
Motorized by-pass			+	
Max power consumption HE/HW		[kW/A]	3,99 /19,32	0,99/6,32
Control board			PRV V2	
Filter class	exhaust/supply		M5/F7	
Housing insulation, mineral wool		[mm]	50	
Colour	RAL	grey	7040	
Weight (net, without packing)		[kg]	252	251
Comply with ERP			2016; 2018	
Operation			indoors/outdoors***	
Fresh air temperature limits**		°C	-5 - +40	
Housing protection class	IP		34	

* Calculated wet efficiency.
**For temperatures lower than recommended, use electrical pre-heater to ensure balanced operation.
***With proper roof mounted.

Temperature efficiency (balanced mass flow) :
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

1900H EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	78	58	71	72	73	71	65	62
Extract	67	49	58	60	59	58	57	44
Surrounding	60	41	51	55	53	52	49	42
Measured at 2016 m³/h, 100 Pa								

Certifications

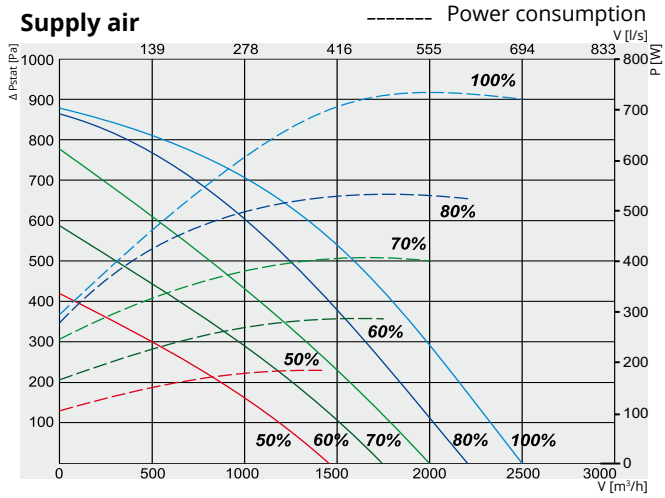
EUROVENT certified
heat exchanger performance

EUROVENT CERTIFIED PERFORMANCE
AHU N°: 05.05.298
Range: SmartAir
www.eurovent-certification.com

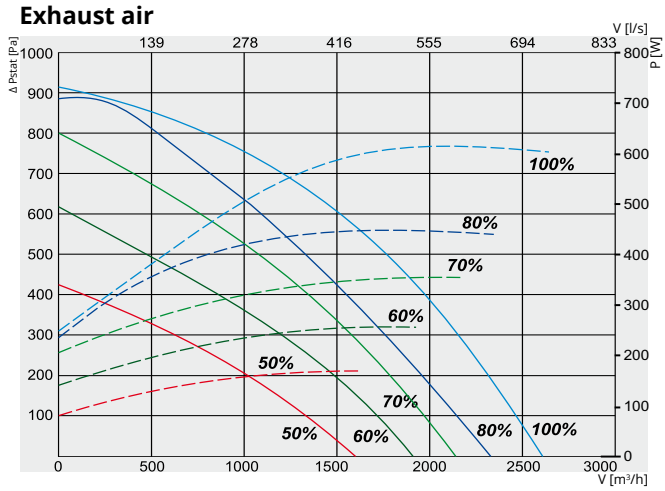
RIS 2200H EKO 3.0

Performance
Power consumption

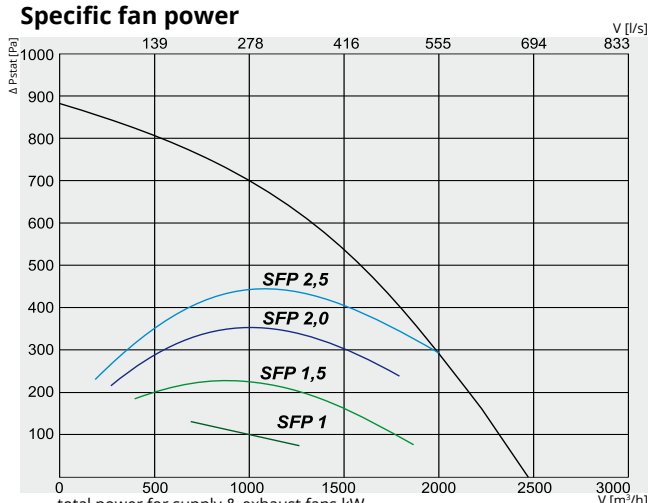
Supply air



Exhaust air

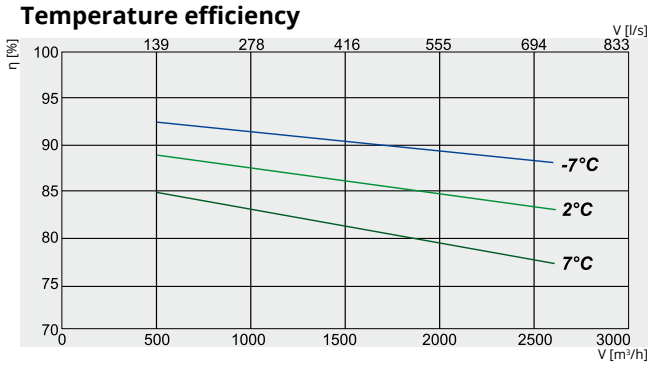


Specific fan power



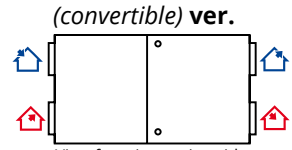
$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency



NEW!

RIS 2200H EKO 3.0
(convertible) **ver.**



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.		Version
GAGRIS1970_0151A	2200HE EKO 3.0	Integrated electrical heater
GAGRIS1971_0153A	2200HW EKO 3.0	Optional water heater

2200HE / HW EKO 3.0

Water heater (optional) HW ver.				AVS / Comfort Box 400
Electrical heater HE ver.	phase/voltage	[50Hz/VAC]		~1, 230
		[kW]		3,0
EC fans	phase/voltage	[50Hz/VAC]		~1, 230
exhaust	power/current	[kW/A]		0,72/3,1
	fan speed	[min⁻¹]		2800
supply	power/current	[kW/A]		0,72/3,1
	fan speed	[min⁻¹]		2800
Thermal efficiency up to*				90%
Motorized by-pass				+
Max power consumption HE/HW		[kW/A]	4,44/19,20	1,44/6,22
Control board				PRV V2
Filter class	exhaust/supply			M5/F7
Housing insulation, mineral wool		[mm]		50
Colour	RAL	grey		7040
Weight (net, without packing) HE/HW		[kg]	252	250
Comply with ERP				2016; 2018
Operation				indoors/outdoors***
Fresh air temperature limits**		°C		-5 - +40
Housing protection class	IP			34

* Calculated wet efficiency.
**For temperatures lower than recommended, use electrical pre-heater to ensure balanced operation.
***With proper roof mounted

Temperature efficiency (balanced mass flow) :
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

2200H EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	79	63	64	68	70	73	74	68	63
Extract	70	60	58	62	65	63	61	59	51
Surrounding	62	43	48	57	56	54	52	48	44
Measured at 2070 m³/h, 250 Pa									

Certifications

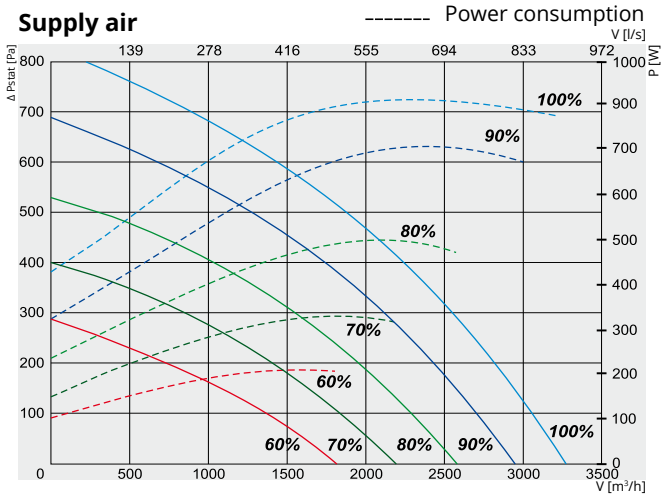
EUROVENT certified
heat exchanger performance

EUROVENT CERTIFIED PERFORMANCE
AHU N° 05.05.298
Range: SmartAir
www.eurovent-certification.com

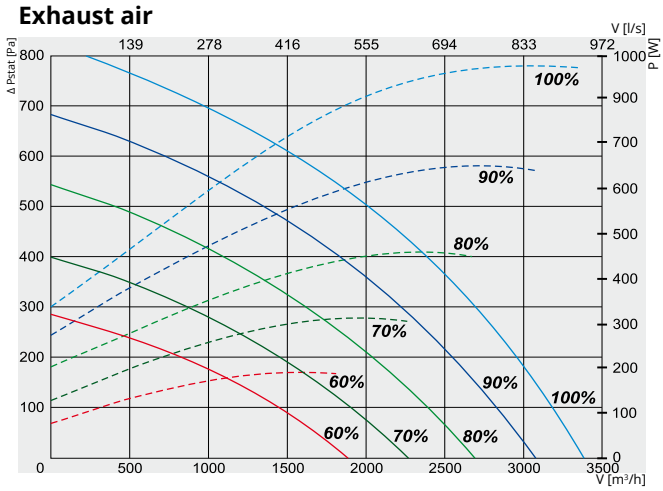
RIS 2500H EKO 3.0

Performance
Power consumption

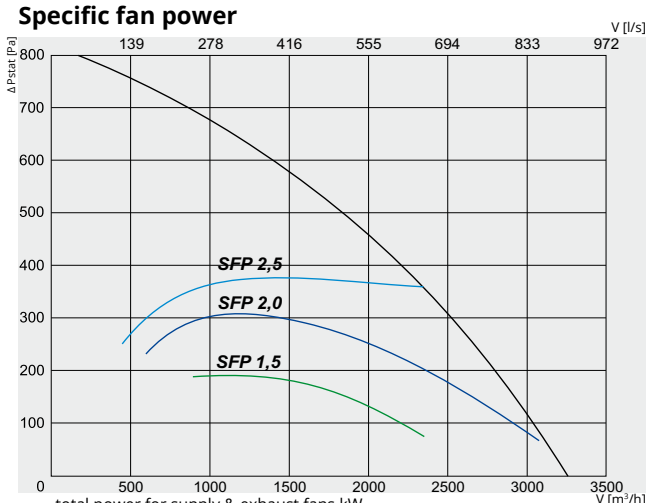
Supply air



Exhaust air

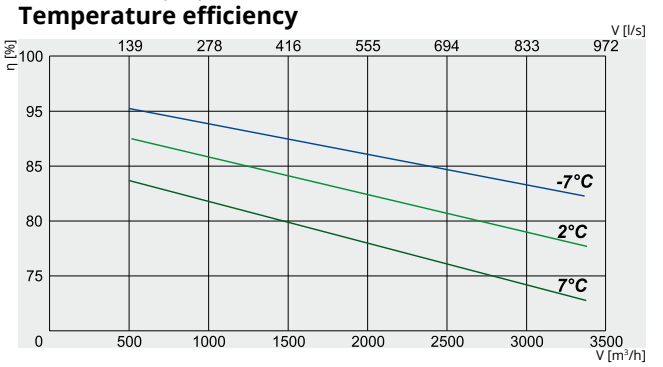


Specific fan power



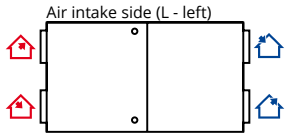
$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency



RIS 2500HL EKO 3.0

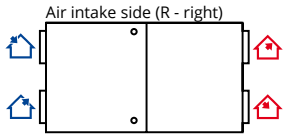
Air intake side (L - left)



View from inspection side

RIS 2500HR EKO 3.0

Air intake side (R - right)



View from inspection side

Exhaust air · Extract air · outdoor air · Supply air

Article No.		Version
GAGRIS1793_0031B	2500HE EKO 3.0	Right-hand maintenace version with integrated electrical heater
GAGRIS1794_0032A	2500HW EKO 3.0	Right-hand maintenace version prepared for optional water heater

			2500HE / HW EKO 3.0	
Water heater (optional) HW ver.			SVS /	Comfort Box 600x350
Electrical heater HE ver.	phase/voltage	[50Hz/VAC]		~3, 400
		[kW]		3,6
EC fans	phase/voltage	[50Hz/VAC]		~1, 230
exhaust	power/current	[kW/A]		0,88/3,92
	fan speed	[min⁻¹]		2200
supply	power/current	[kW/A]		1,0/4,47
	fan speed	[min⁻¹]		2200
Thermal efficiency up to*				90%
Motorized by-pass				+
Max power consumption HE/HW		[kW/A]	5,49/13,69	1,89/8,49
Control board				PRV V2
Filter class	exhaust/supply			M5/F7
Housing insulation, mineral wool		[mm]		50
Colour	RAL	grey		7040
Weight (net, without packing)		[kg]	390	360
Comply with ERP				2016; 2018
Operation				indoors/outdoors***
Fresh air temperature limits**		°C		-5 - +40
Housing protection class	IP			34

* Calculated wet efficiency.
**For temperatures lower than recommended, use electrical pre-heater to ensure balanced operation.
***With proper roof mounted.

Temperature efficiency (balanced mass flow) :
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

2500H EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	83	65	73	75	78	79	71	61
Extract	65	57	61	59	56	54	49	39
Surrounding	62	45	57	58	55	52	44	36
Measured at 2976 m³/h, 121 Pa								

Certifications

EUROVENT certified
heat exchanger performance

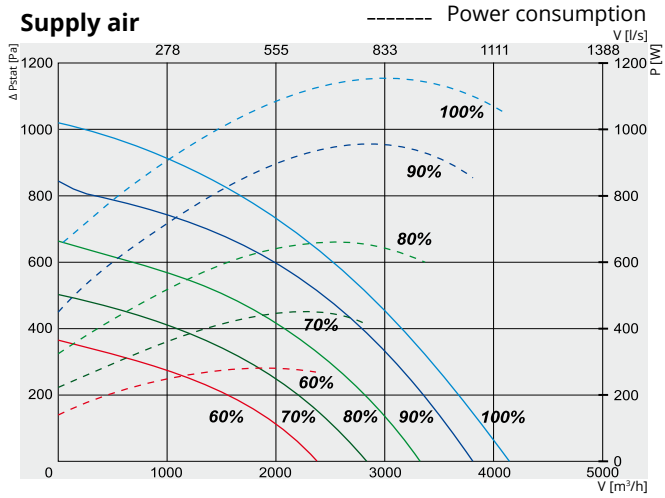
EUROVENT CERTIFIED PERFORMANCE
AHU N°: 05.05.298
Range: SmartAir
www.eurovent-certification.com

RIS H EKO

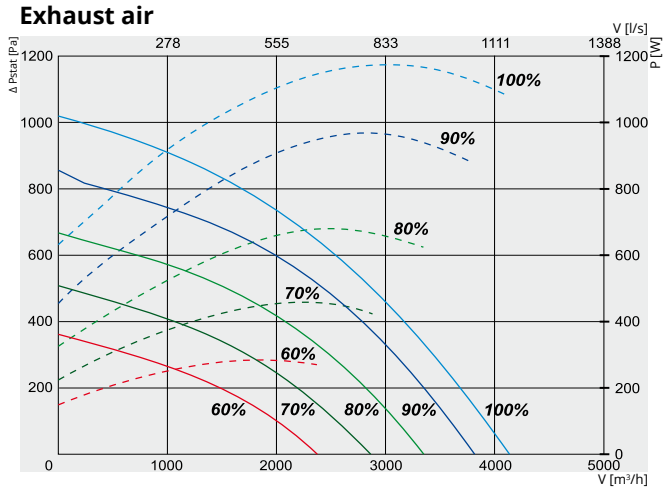
RIS 3500H EKO 3.0

Performance
Power consumption

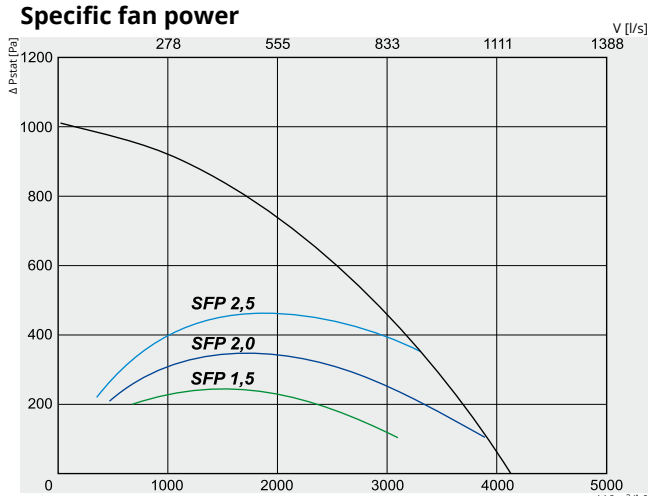
Supply air



Exhaust air

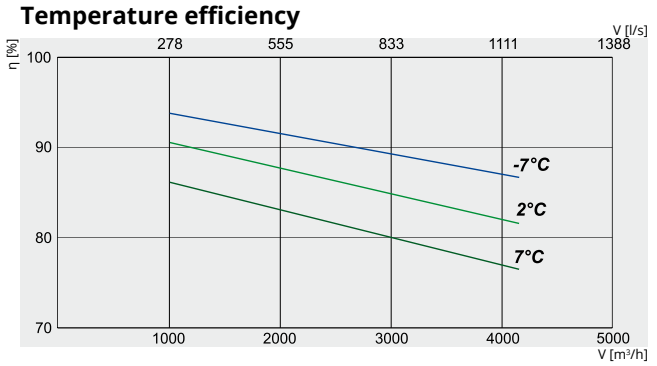


Specific fan power



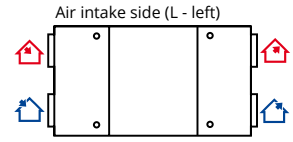
SFP= $\frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3\text{/h}} \times 3600$

Temperature efficiency



RIS 3500HL EKO 3.0

Air intake side (L - left)



View from inspection side

Exhaust air Extract air outdoor air Supply air

Article No.		Version
GAGRIS1781_0052B	3500HEL EKO 3.0	Left-hand maintenace version with integrated electrical heater
GAGRIS1782_0053A	3500HWL EKO 3.0	Left-hand maintenace version prepared for optional water heater

			3500HE / HW EKO 3.0
Water heater (optional) HW ver.			SVS / Comfort Box 800x500
Electrical heater HE ver.	phase/voltage	[50Hz/VAC]	~3, 400
		[kW]	6,0
EC fans	phase/voltage	[50Hz/VAC]	~1, 230
exhaust	power/current	[kW/A]	1,16/5,4
	fan speed	[min^{-1}]	2390
supply	power/current	[kW/A]	1,173/5,43
	fan speed	[min^{-1}]	2390
Thermal efficiency up to*			90%
Motorized by-pass			+
Max power consumption HE / HW		[kW/A]	8,34 /19,59 2,34 /10,95
Control board			PRV V2
Filter class	exhaust/supply		M5/F7
Housing insulation, mineral wool		[mm]	50
Colour	RAL	grey	7040
Weight (net, without packing)		[kg]	627 622
Comply with ERP			2016; 2018
Operation			indoors/outdoors***
Fresh air temperature limits**		°C	-5 - +40
Housing protection class	IP		34

* Calculated wet efficiency.
**For temperatures lower than recommended, use electrical pre-heater to ensure balanced operation.
***With proper roof mounted.

Temperature efficiency (balanced mass flow) :
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

3500H EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	86	68	82	78	80	77	70	68
Extract	72	66	66	65	64	58	49	45
Surrounding	69	59	65	62	62	59	52	58
Measured at 3746 m³/h, 181 Pa								

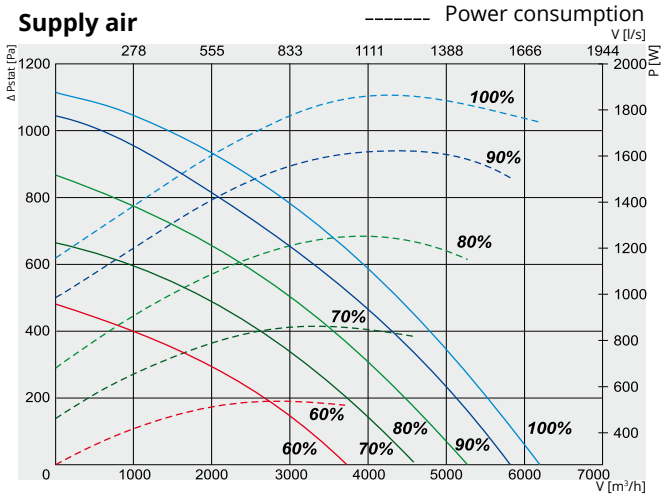
Certifications

EUROVENT certified
heat exchanger performance

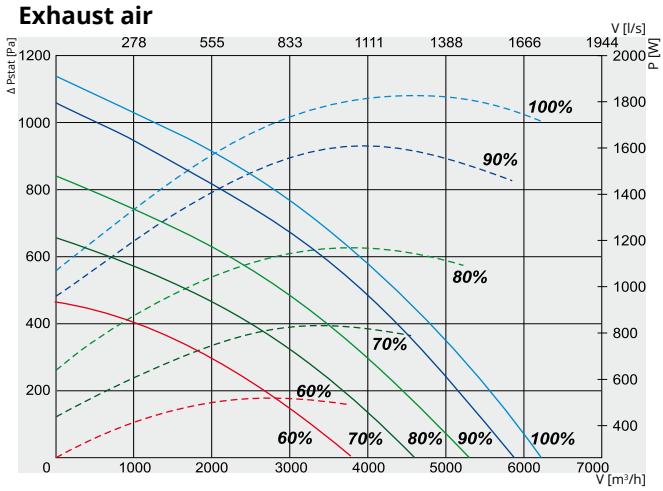
RIS 5500H EKO 3.0

Performance
Power consumption

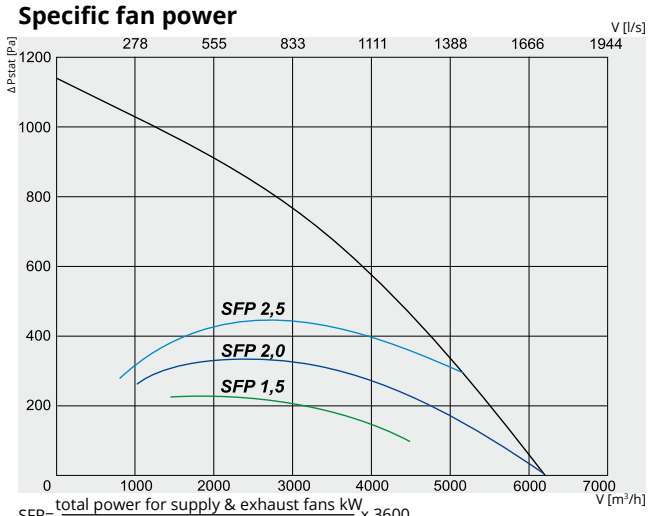
Supply air



Exhaust air

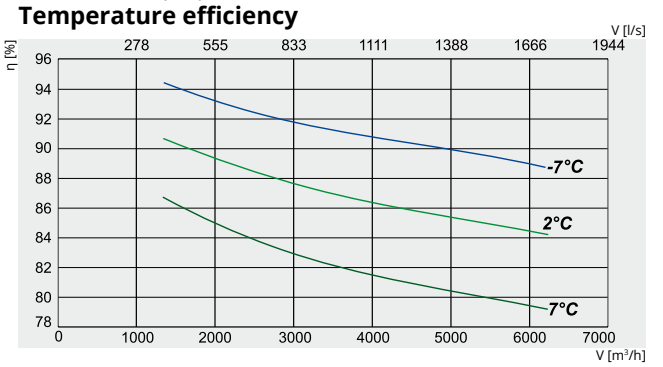


Specific fan power



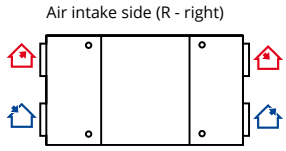
$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency



RIS 5500HR EKO 3.0

Air intake side (R - right)



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.		Version
GAGRIS1773_0054B	5500HER EKO 3.0	Right-hand maintenace version with integrated electrical heater
GAGRIS1774_0055B	5500HWR EKO 3.0	Right-hand maintenace version prepared for optional water heater

5500HE / HW EKO 3.0

Water heater (optional) HW ver.			SVS / Comfort Box 800x500
Electrical heater HE ver.	phase/voltage	[50Hz/VAC]	~3, 400
		[kW]	12
EC fans	phase/voltage	[50Hz/VAC]	~3, 400
exhaust	power/current	[kW/A]	1,87/3,06
	fan speed	[min^{-1}]	2180
supply	power/current	[kW/A]	1,84/2,88
	fan speed	[min^{-1}]	2180
Thermal efficiency up to*			90%
Motorized by-pass			+
Max power consumption HE/HW		[kW/A]	15,71/23,38 3,72/6,04
Control board			PRV V2
Filter class	exhaust/supply		M5/F7
Housing insulation, mineral wool		[mm]	60
Colour	RAL	grey	7040
Weight (net, without packing) HE / HW		[kg]	788
Comply with ERP			2016; 2018
Operation			indoors/outdoors***
Fresh air temperature limits**		°C	-5 - +40
Housing protection class	IP		34

* Calculated wet efficiency.
**For temperatures lower than recommended, use electrical pre-heater to ensure balanced operation.
***With proper roof mounted.

Temperature efficiency (balanced mass flow) :
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

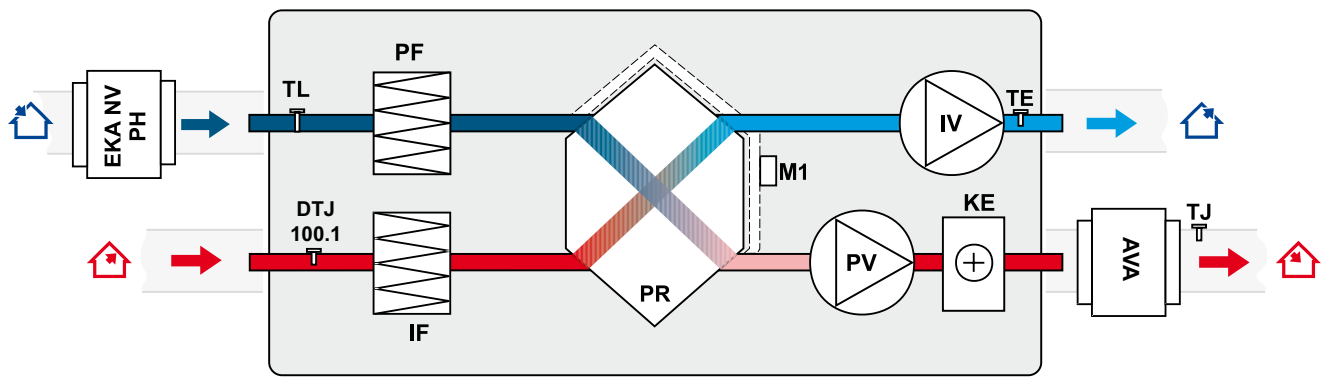
5500HW EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	88	65	82	81	83	81	78	69
Extract	75	64	72	70	66	60	55	50
Surrounding	77	54	71	72	71	68	65	58
Measured at 5819 m³/h, 120 Pa								

Certifications

EUROVENT certified
heat exchanger performance

EUROVENT CERTIFIED PERFORMANCE
AHU N° 05.05.298
Range: SmartAir
www.eurovent-certification.com

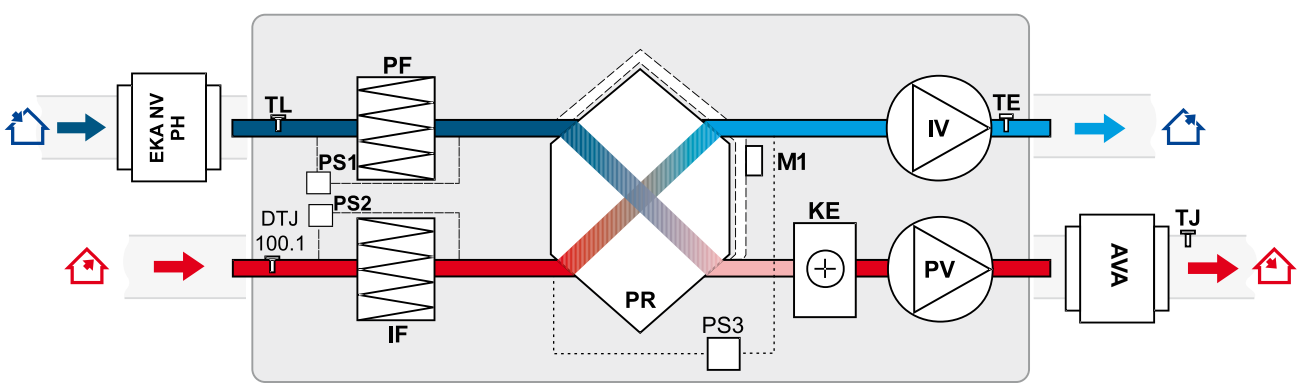
RIS 700HE EKO 3.0 (horizontal) **version with electrical heater**



IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
KE - electrical heater
PF - filter for supply air (class M5)
IF - filter for extract air (class M5)

TJ - temperature sensor for supply air
TL - temperature sensor for fresh air
TE - temperature sensor for exhaust air
M1 - actuator of by-pass damper
DTJ 100.1 - humidity + temperature sensor
EKA NV PH - optional fresh air pre-heater
AVA - optionally supplied water cooler

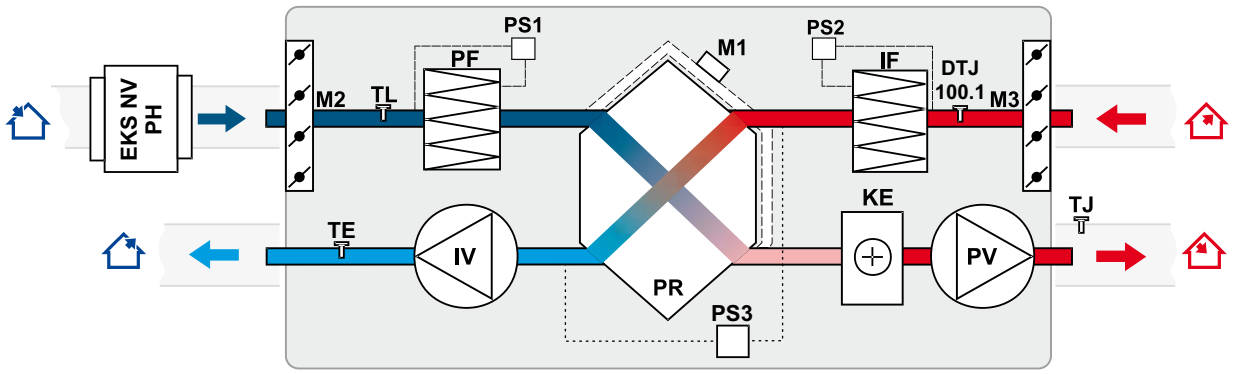
RIS 1200HE EKO 3.0 / RIS 1900HE EKO 3.0 / RIS 2200HE EKO 3.0 (horizontal) **versions with electrical heater**



EKA NV PH - optional fresh air pre-heater
IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
KE - electrical heater
PF - filter for supply air (class F7)
IF - filter for extract air (class M5)
TE - temperature sensor for extract air

AVA - optionally supplied water cooler
TL - temperature sensor for fresh air
TJ - temperature sensor for supply air
M1 - actuator of by-pass damper
PS1 - supply air differential pressure switch
PS2 - extract air differential pressure switch
PS3 - heat exchanger antifrost pressure switch
DTJ 100.1 - humidity + temperature sensor

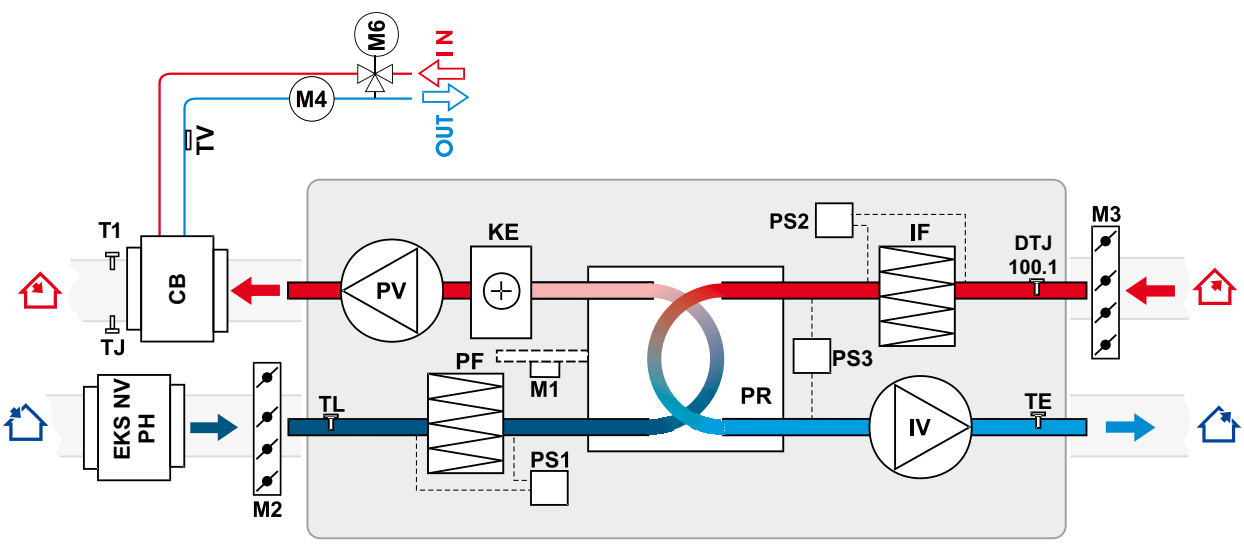
RIS 2500HE EKO 3.0 (horizontal) **version with electrical heater**



IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
KE - electrical heater
PF - filter for supply air (class F7)
IF - filter for extract air (class M5)
DTJ 100.1 - humidity + temperature sensor
TE - temperature sensor for extract air
EKS NV PH - optional outdoor air heater

TL - temperature sensor for fresh air
TJ - temperature sensor for supply air
M1 - actuator of by-pass damper
M2 - actuator of fresh air damper
M3 - actuator of extract air damper
PS1 - supply air differential pressure switch
PS2 - extract air differential pressure switch
PS3 - heat exchanger antifrost pressure switch

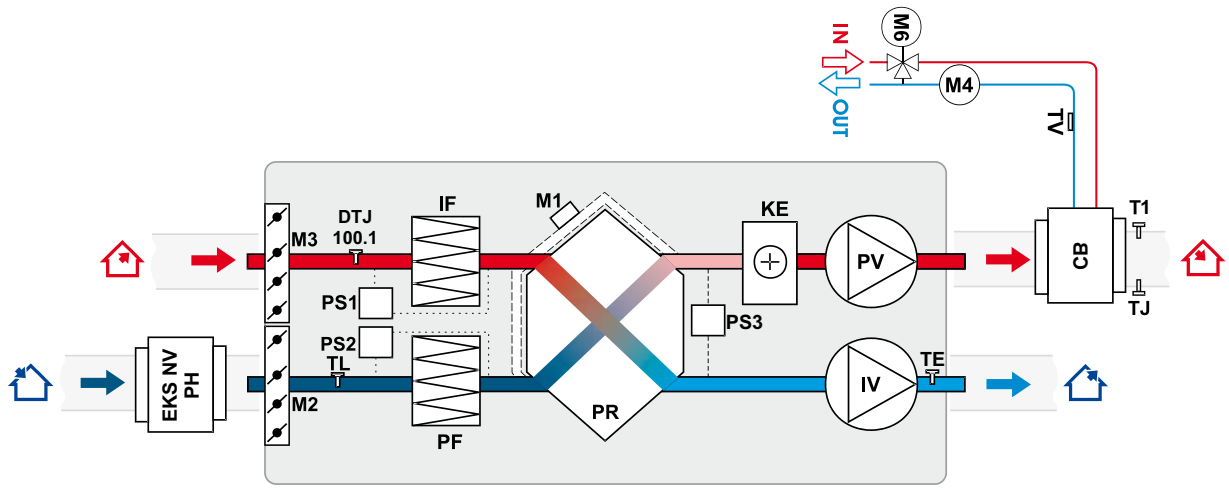
RIS 3500HE EKO 3.0 (horizontal) **version with electrical heater**



IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
KE - electrical heater
PF - filter for fresh air (class F7)
IF - filter for extract air (class M5)
DTJ 100.1 - humidity + temperature sensor
TL - temperature sensor for fresh air
CB - water heater/cooler
M6 - optionally supplied mixing valve and motor
M4 - water heater circulation pump

TE - temperature sensor for exhaust air
TV - antifrost sensor
T1 - antifrost thermostat
EKS NV PH - optional outdoor air heater
TJ - temperature sensor for supply air
M1 - actuator of by-pass damper
M2 - actuator of fresh air damper
M3 - actuator of extract air damper
PS1 - supply air differential pressure switch
PS2 - extract air differential pressure switch
PS3 - heat exchanger antifrost pressure switch

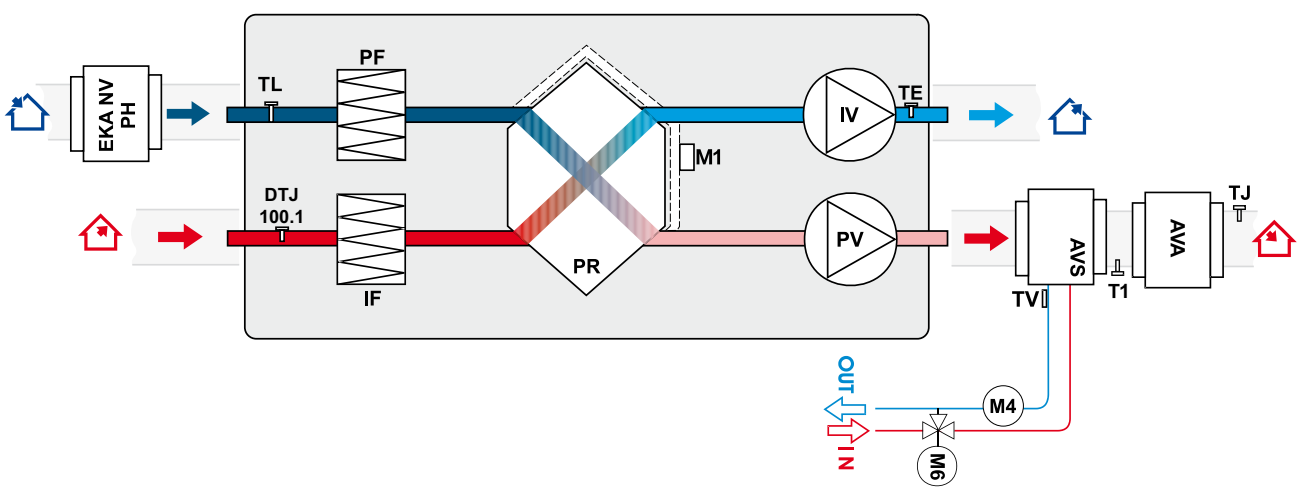
RIS 5500HE EKO 3.0 (horizontal) version with electrical heater



IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
KE - electrical heater
PF - filter for supply air (class F7)
IF - filter for extract air (class M5)
DTJ 100.1 - humidity + temperature sensor
TL - temperature sensor for fresh air
TE - temperature sensor for exhaust air
TV - antifrost sensor
T1 - antifrost thermostat

CB - water heater/cooler
EKS NV PH - optional outdoor air heater
TJ - temperature sensor for supply air
M1 - actuator of by-pass damper
M2 - actuator of fresh air damper
M3 - actuator of extract air damper
M6 - optionally supplied mixing valve and motor
M4 - water heater circulation pump
PS1 - supply air differential pressure switch
PS2 - extract air differential pressure switch
PS3 - heat exchanger antifrost pressure switch

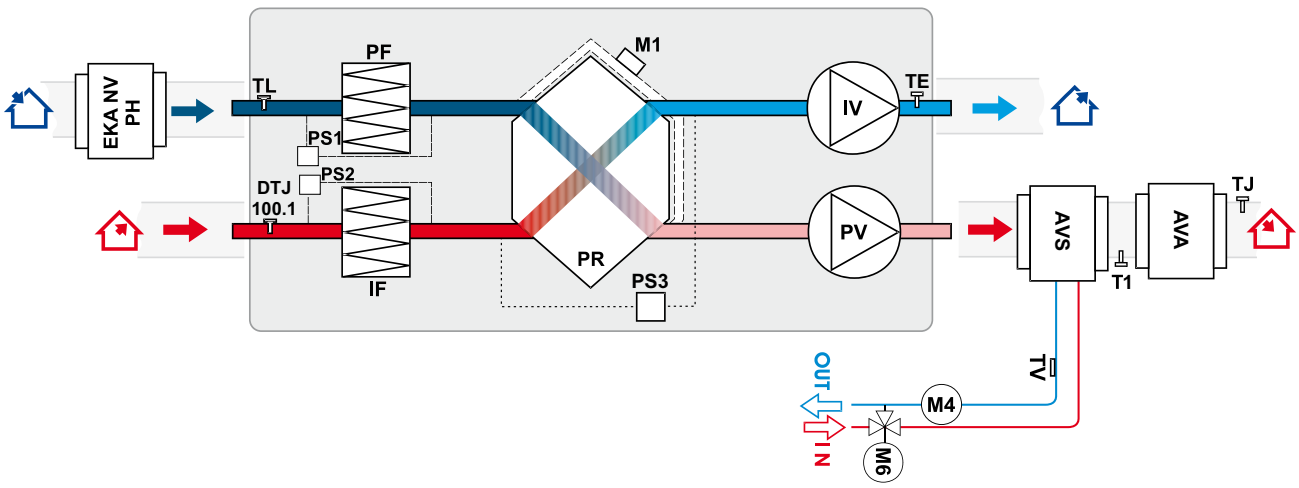
RIS 700HW EKO 3.0 version with optional water heater



AVS - optionally supplied water heater
AVA - optionally supplied water cooler
IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
PF - filter for supply air (class M5)
IF - filter for extract air (class M5)
TJ - temperature sensor for supply air
TL - temperature sensor for fresh air

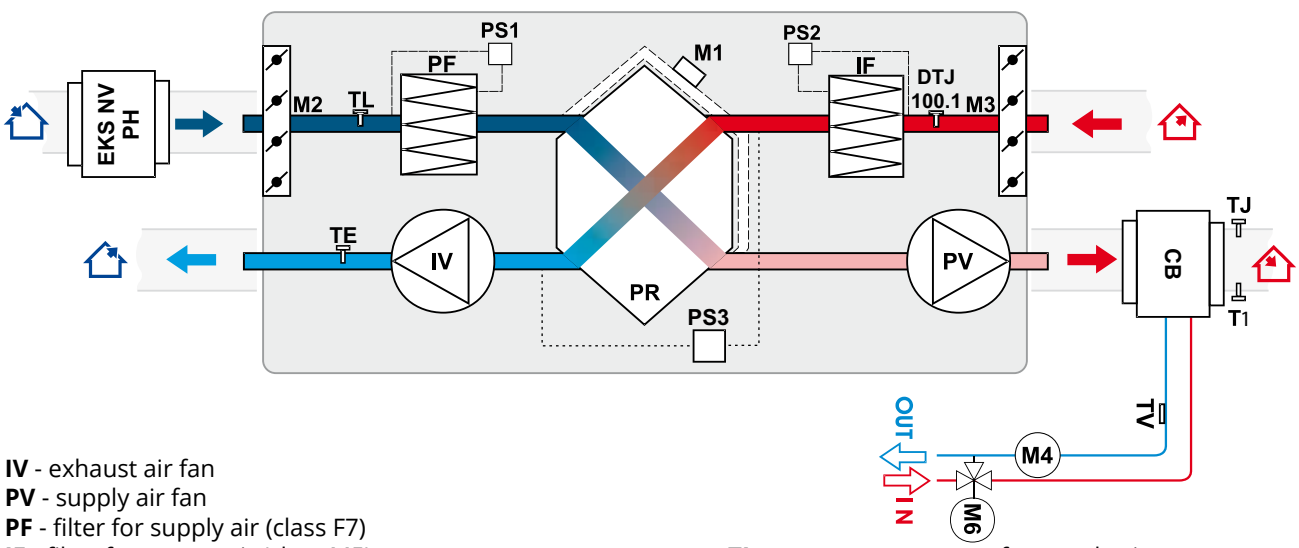
TE - temperature sensor for exhaust air
TV - antifrost sensor
T1 - antifrost thermostat
DTJ 100.1 - humidity + temperature sensor
M1 - actuator of by-pass damper
M4 - water heater circulation pump
M6 - optionally supplied mixing valve and motor
EKA NV PH - optional fresh air pre-heater

RIS 1200HW EKO 3.0 / RIS 1900HW EKO 3.0 / RIS 2200HW EKO 3.0 (horizontal) **version with optional water heater**



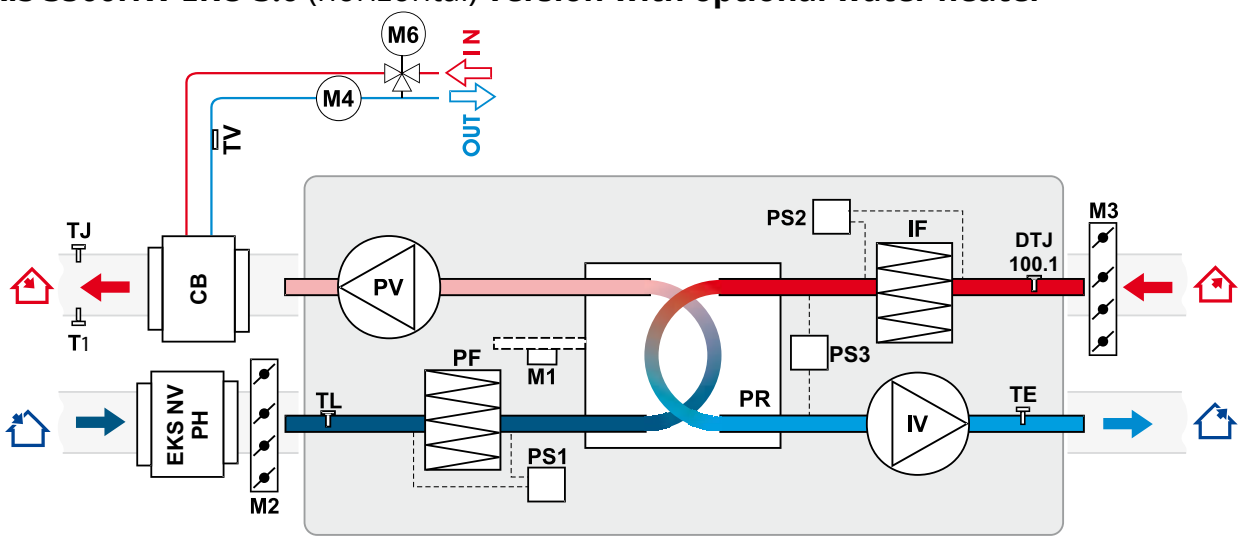
EKA NV PH - optional fresh air pre-heater
IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
PF - filter for supply air (class F7)
IF - filter for extract air (class M5)
TL - temperature sensor for fresh air
TJ - temperature sensor for supply air
TV - antifrost sensor
T1 - antifrost thermostat
AVA - optionally supplied water cooler
AVS - water heater
M1 - actuator of by-pass damper
M6 - optionally supplied mixing valve and motor
M4 - water heater circulation pump
PS1 - supply air differential pressure switch
PS2 - extract air differential pressure switch
PS3 - heat exchanger antifrost pressure switch
DTJ 100.1 - humidity + temperature sensor
TE - temperature sensor for extract air

RIS 2500HW EKO 3.0 (horizontal) **version with optional water heater**



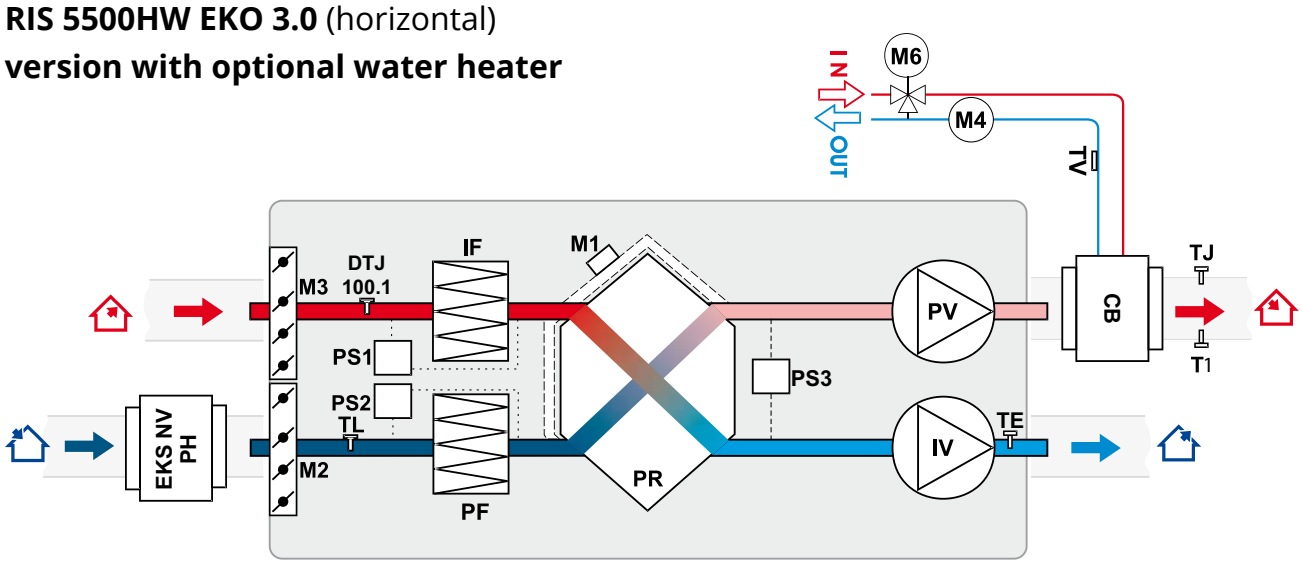
IV - exhaust air fan
PV - supply air fan
PF - filter for supply air (class F7)
IF - filter for extract air (class M5)
PR - plate heat exchanger
DTJ 100.1 - humidity + temperature sensor
TL - temperature sensor for fresh air
TV - antifrost sensor
T1 - antifrost thermostat
TE - temperature sensor for extract air
EKS NV PH - optional outdoor air heater
CB - water heater/cooler
TJ - temperature sensor for supply air
M - actuator of by-pass damper
M2 - actuator of fresh air damper
M3 - actuator of extract air damper
M6 - optionally supplied mixing valve and motor
M4 - water heater circulation pump
PS1 - supply air differential pressure switch
PS2 - extract air differential pressure switch
PS3 - heat exchanger antifrost pressure switch

RIS 3500HW EKO 3.0 (horizontal) version with optional water heater



CB - water heater/cooler
IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
PF - filter for supply air (class F7)
IF - filter for extract air (class M5)
DTJ 100.1 - humidity + temperature sensor
TL - temperature sensor for fresh air
TV - antifrost sensor
T1 - antifrost thermostat
TE - temperature sensor for exhaust air
EKS NV PH - optional outdoor air heater
TJ - temperature sensor for supply air
M1 - actuator of by-pass damper
M2 - actuator of fresh air damper
M3 - actuator of extract air damper
M6 - optionally supplied mixing valve and motor
M4 - water heater circulation pump
PS1 - supply air differential pressure switch
PS2 - extract air differential pressure switch
PS3 - heat exchanger antifrost pressure switch

RIS 5500HW EKO 3.0 (horizontal) version with optional water heater



CB - water heater/cooler
IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
PF - filter for supply air (class F7)
IF - filter for extract air (class M5)
DTJ 100.1 - humidity + temperature sensor
TL - temperature sensor for fresh air
TV - antifrost sensor
T1 - antifrost thermostat
TJ - temperature sensor for supply air
M1 - actuator of by-pass damper
M2 - actuator of fresh air damper
M3 - actuator of extract air damper
M6 - optionally supplied mixing valve and motor
M4 - water heater circulation pump
PS1 - supply air differential pressure switch
PS2 - extract air differential pressure switch
PS3 - heat exchanger antifrost pressure switch
EKS NV PH - optional outdoor air heater

FUNCTIONS		
Description of the functions	PRV V2	
	RIS EKO 3.0	
	E	**W**
Functions		
Date and time settings	✓	✓
4 speeds for easy and user-friendly control ("Stop" – the unit is stopped; "Low", medium", and "High". Service menu allows adjusting each speed individually)	✓	✓
BOOST function (Fans operate at highest speed)	✓	✓
Comfortable air temperature function	✓	✓
Cold/heat recovery	✓	✓
Fire place function	✓	✓
Dryness protection	✓	✓
Weekly schedule	✓	✓
Holiday schedule	✓	✓
User and service control levels	✓	✓
Manual air flow balancing	✓	✓
CO_2 level indication and reduction function	✓	✓
Night cooling function	✓	✓
Relative humidity (RH) level indication and reduction function	✓	✓
Software and configuration update possibility	✓	✓
Supply air temperature control according to the extract air sensor	✓	✓
Monitoring function (all sensors and I/O)	✓**2**	✓**2**
Mode switch (start/stop)	✓	✓
Extracted air relative humidity converter	✓	✓
Manual components control	✓**1**	✓**1**
Functional units		
Fans		
Soft start and stop	✓	✓
Fan failure protection	✓	✓
Speed synchronous/asynchronous 0-10V control	✓	✓
Electric heater		
On/Off / PWM control	✓	
Manual protection	✓	
Overheat protection (additional protection software)	✓	✓
Water heater		
Pulse-width modulation (PWM) valve actuator control		✓
Protection using temperature sensor		✓
Protection using termostat (NC)		✓
Circulation pump control		✓
Return water temperature sensor	✓	✓
DX cooler		
Control On/Off	✓	✓
Water cooler		
Pulse-width modulation (PWM) valve actuator control		✓
Control with three-positional valve actuator	✓	✓
Bypass damper		
3-position actuator control	✓	✓
Filter pollution monitoring		
By pressure switch (NC)	✓	✓
By filter timer	✓	✓
Sensors		
Supply air temperature sensor	✓	✓
Fresh air temperature sensor	✓	✓
Exhaust air temperature sensor	✓	✓
Extract air temperature sensor	✓	✓
Emergency signals and inputs/outputs		
Fire protection input	✓	✓
Working indication output	✓	✓
Alarm indication output	✓	✓
Remote controllers		
Stouch	✓	✓
Flex	✓	✓
Ptouch	✓	✓
MB-Gateway	✓	✓

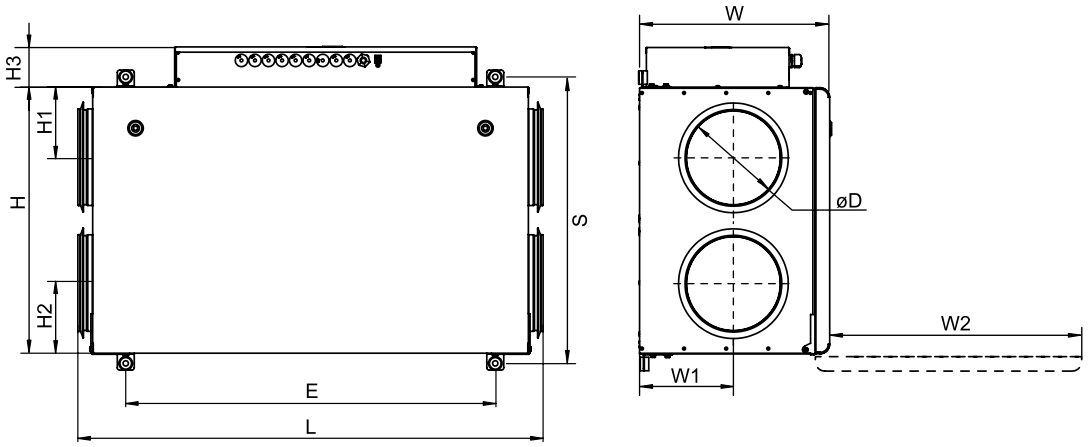
1	**With FLEX TEST remote controler**	**2**	**Only sensors**

RIRS P EKO

Application	Ventilation of houses, small public buildings, offices or other heated premises (classrooms, apartments, conference rooms, etc.).
Description	RIRS P EKO 3.0 is a heat recovery unit with high-efficiency rotor heat exchanger and low height. The unit is designed for mounting under ceiling in order to save space. RIRS 350 P unit can come with an optional duct-based water heater or an integrated electrical heater. RIRS P EKO unit has high overall energy savings due to the highly efficient heat recovery (up to 85%), quiet and economical EC fans, effective low pressure drop filters and top-level of air tightness. All RIRS P EKO unit is fully equipped with automatic controls. Optional external sensors for CO_2 and humidity and so the summer mode feature will guarantee the highest comfort (demand-level control). RIRS P EKO unit is service-friendly and easy to mount. Rotor fault indicator is included in every AHU. All units are supplied tested and ready to install.
Controls	Three remote control options are available: 1. Flex, Stouch or Ptouch remote controllers. 2. Building management system connections. 3. Remote control via PC MB-Gateway.
The main features	› Efficient rotor heat exchanger with up to 85% heat recovery. › Water/electrical heating options. › Easy and quick mounting. › Controlled airflow. › Fully integrated plug-and-play control system. › Extremely low height: ideal for ceiling installations.
Rotor	› Eurovent certified. › Plate gap 1,5 mm. › Rotor fault indicator. › Minimal airflow mixing.
Construction	› Frameless construction from double-skinned steel, with powder coated paint, panels. › Acoustic and thermal wall insulation – 50 mm. › Hinged door with locks grants easy access to internal components. › Separate compartment on the side of the unit grants quick access to the control board (plug-and-play). › Three sensors for fresh, supply and extract air temperatures. › Integrated electrical heater or optional water heater/cooler (on duct). › Water heater with frost protection kit available. › Low pressure drop filters: F7/M5.

RIRS 350 P E EKO 3.0

EKO	Equipped with new PRV V2 control board
E	AHU with EC motors
P	Heater type (E - integrated electrical heater; W - optional water heater)
350	Housing type (V - vertical, H - horizontal, P - ceiling)
RIRS	AHU size according to maximum airflow range m³/h
	AHU range with rotor heat exchanger



	Dimensions [mm]										
Unit	**W**	**W1**	**W2**	**H**	**H1**	**H2**	**H3**	**E**	**L**	**S**	**øD**
RIRS 350PE EKO 3.0	398	196	550	610	160	160	83	764	961	652	200
RIRS 350PW EKO 3.0	398	196	550	610	160	160	83	764	961	652	200

	Optional accessories					
Unit	**Flex Stouch Ptouch MB-Gateway**	**S-1141 S-RC02-F2 S-KFF-U**	**SP** *Supply*	**SP** *Exhaust*	**AP SKG**	**TJP10K C04C*****
RIRS 350PE EKO 3.0	+	+	CM230-1-F-L	CM230-1-F-L	200	-
RIRS 350PW EKO 3.0	+	+	TF230	CM230-1-F-L	200	incl

*** - anti-frost thermostat

	Optional accessories							
Unit	**SSB** *Heating*	**SSB** *Cooling*	**RMG 80/60°C**	**RMG 80/40°C**	**VVP/VXP 80/60°C**	**VVP/VXP 80/60°C**	**AVA**	**EKA NV PH**
RIRS 350PE EKO 3.0	-	81	-	-	-	-	200	200
RIRS 350PW EKO 3.0	61	81	3-0,63-4	3-0,63-4	45.10-0,63	45.10-0,63	200	200

Accessories

Remote controller

Ptouch p. 175

Control panel

FLEX p. 177

Remote controller

Stouch p. 176

Net module

MB-Gateway p. 178

Electrical duct pre-heater

EKA NV PH p. 201

Circular duct water cooler

AVA p. 193

Pressure transmitter

S-1141 p. 179

CO2 sensor

S-RC02-F2 p. 180

Humidity sensor

S-KFF-U p. 181

Thermic water valve actuator

SSB p. 195

Actuator for dampers

SP p. 210

Duct sensor

TJK-10K p. 182

Mixing point

RMG p. 196

2 and 3 way valves

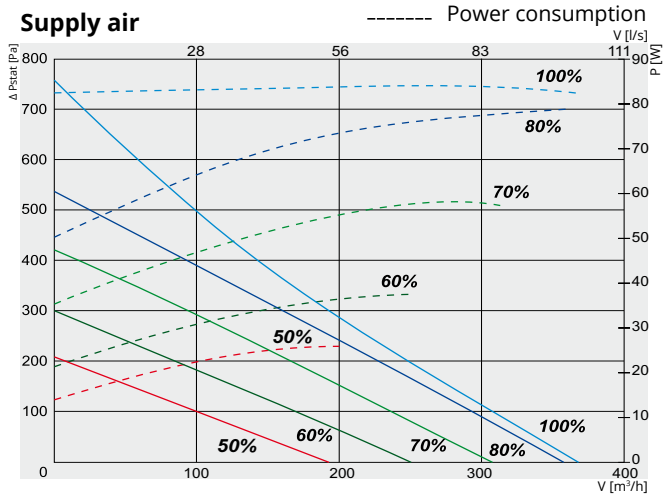
VVP/VXP p. 197

RIRS P EKO

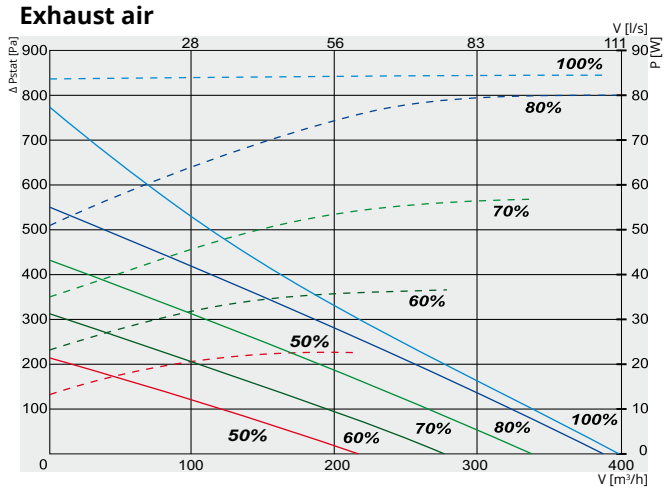
RIRS 350P EKO 3.0

Performance
Power consumption

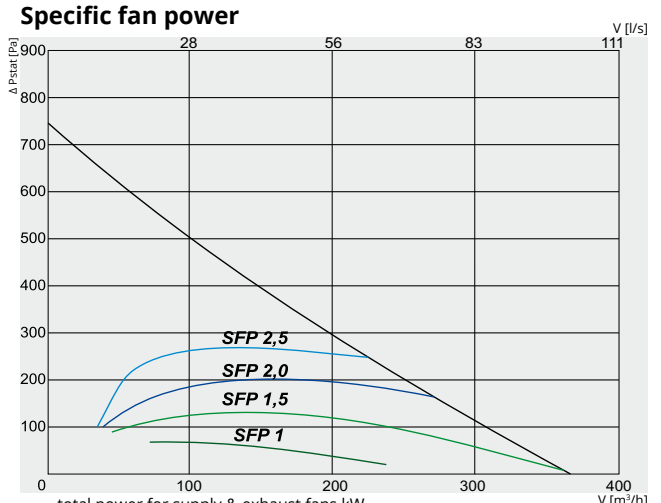
Supply air



Exhaust air

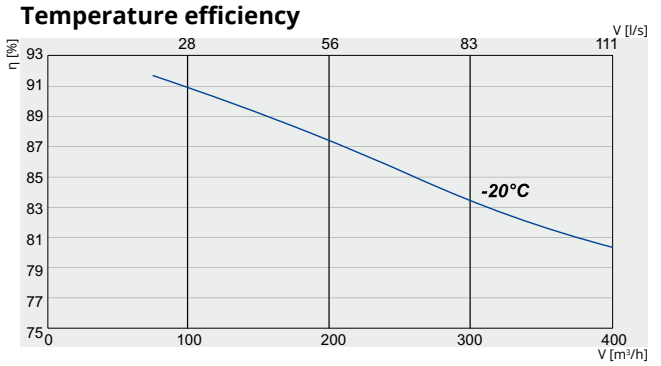


Specific fan power

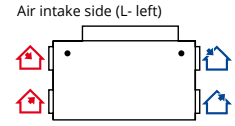


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency



RIRS 350P EKO 3.0
Air intake side (L- left)



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.		Version
GAGRIRS1762_0028A	350PE EKO 3.0	Integrated electrical heater.
GAGRIRS1763_0029A	350PW EKO 3.0	Optional water heater.

350PE / PW EKO 3.0				
Water heater (optional) PW ver.				AVS 200
Electrical heater PE ver.	phase/voltage	[50Hz/VAC]		~1, 230
		[kW]		0,6
EC fans	phase/voltage	[50Hz/VAC]		~1, 230
exhaust	power/current	[kW/A]		0,083/0,75
	fan speed	[min^{-1}]		3200
supply	power/current	[kW/A]		0,083/0,75
	fan speed	[min^{-1}]		3200
Thermal efficiency up to*				85%
Max power consumption PE / PW		[kW/A]	0,77/4,20	0,18/1,60
Control board				PRV V2
Filter class	exhaust/supply			M5/F7
Housing insulation, mineral wool		[mm]		30
Colour	RAL	white		9016
Weight (net, without packing) PE / PW		[kg]	54	53
Comply with ERP				2016; 2018
Operation				indoors
Housing protection class	IP			34

* Calculated wet efficiency.
**For temperatures lower than recommended use electrical pre-heater to ensure balanced operation.

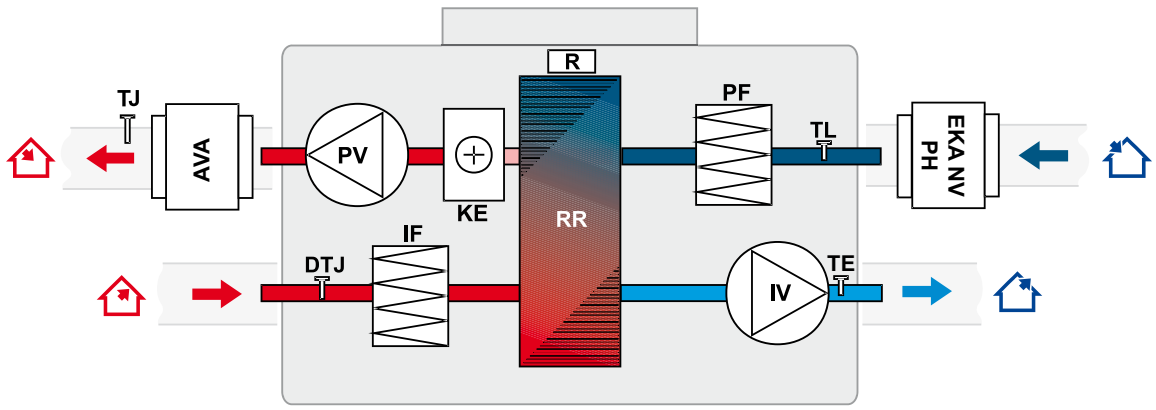
Temperature efficiency (balanced mass flow):
Extract air = 20°C/60%RH
Outdoor air = -20°C

350P EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	69	54	53	66	64	60	58	55
Extract	64	52	54	59	58	57	54	49
Surrounding	54	40	39	48	41	47	44	46
Measured at 356 m³/h, 120 Pa								

Certifications

EUROVENT certified
rotor heat exchanger performance

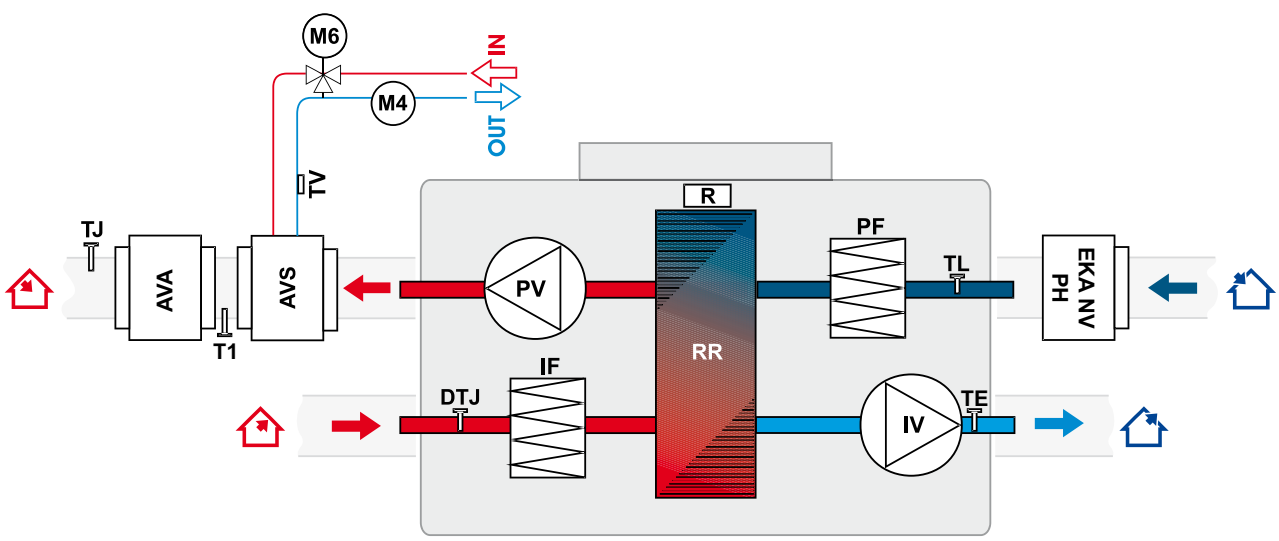
RIRS 350PE EKO 3.0 (ceiling mounted) **versions with electrical heater**



IV - exhaust air fan
PV - supply air fan
RR - rotary heat exchanger
R - rotor motor
KE - electrical heater
TJ - temperature sensor for supply air
TE - temperature sensor for exhaust air

AVA - optionally supplied water cooler
EKA NV PH - optional fresh air pre-heater
PF - fresh air filter (class F7)
IF - extract air filter (class M5)
TL - temperature sensor for fresh air
DTJ - humidity + temperature sensor

RIRS 350PW EKO 3.0 (ceiling mounted) **versions with water heater**



IV - exhaust air fan
PV - supply air fan
RR - rotary heat exchanger
R - rotor motor
PF - fresh air filter (class F7)
IF - extract air filter (class M5)
TE - temperature sensor for exhaust air
T1 - antifrost thermostat
TV - antifrost sensor

AVA - optionally supplied water cooler
EKA NV PH - optional fresh air pre-heater
AVS - optionally supplied water heater
TJ - air temperature sensor for supply air
TL - temperature sensor for fresh air
DTJ - humidity + temperature sensor
M6 - optionally supply mixing valve and motor
M4 - water heater circulatory pump

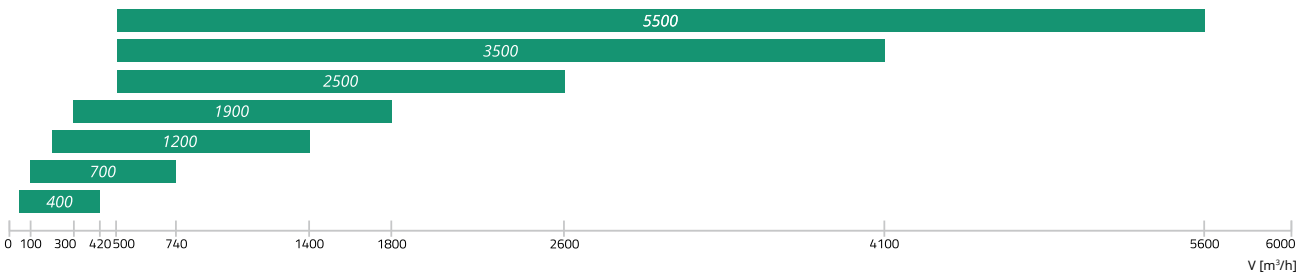
RIRS P EKO

FUNCTIONS		
Descriptions of the functions	PRV V2	
	RIRS EKO 3.0	
	E	**W**
Functions		
Date and time settings	✓	✓
4 speeds for easy and-user friendly control ("Stop" – the unit is stopped; "Low", medium", and "High". Service menu allows adjusting each speed individually)	✓	✓
BOOST function (Fans operate at highest speed)	✓	✓
Comfortable air temperature function	✓	✓
Cold/heat recovery	✓	✓
Fire place function	✓	✓
Dryness protection	✓	✓
Weekly schedule	✓	✓
Holiday schedule	✓	✓
User and service control levels	✓	✓
Manual air flow balancing	✓	✓
CO_2 level indication and reduction function	✓	✓
Night cooling function	✓	✓
Relative humidity (RH) level indication and reduction function	✓	✓
Software and configuration update possibility	✓	✓
Supply air temperature control according to the extract air sensor	✓	✓
Monitoring function (all sensors and I/O)	✓2	✓2
Mode switch (start/stop)	✓	✓
Extracted air relative humidity converter	✓	✓
Manual components control	✓1	✓1
Functional units		
Fans		
Soft start and stop	✓	✓
Fan failure protection	✓	✓
Speed synchronous/asynchronous 0-10V control	✓	✓
Electric heater		
On/Off / PWM control	✓	
Manual protection	✓	
Overheat protection (additional protection software)	✓	✓
Water heater		
Pulse-width modulation (PWM) valve actuator control		✓
Protection using temperature sensor		✓
Protection using termostat (NC)		✓
Circulation pump control		✓
Return water temperature sensor	✓	✓
DX cooler		
Control On/Off	✓	✓
Water cooler		
Pulse-width modulation (PWM) valve actuator control		✓
Control with three-positional valve actuator	✓	✓
Filter pollution monitoring		
By pressure switch (NC)	✓	✓
By filter timer	✓	✓
Rotor		
Pulse-width modulation (PWM) (0-10VDC) motor control	✓	✓
On/Off motor control	✓	✓
Motor belt levers protection	✓	✓
Sensors		
Supply air temperature sensor	✓	✓
Fresh air temperature sensor	✓	✓
Exhaust air temperature sensor	✓	✓
Extract air temperature sensor	✓	✓
Emergency signals and inputs/outputs		
Fire protection input	✓	✓
Working indication output	✓	✓
Alarm indication output	✓	✓
Remote controllers		
Stouch	✓	✓
Flex	✓	✓
Ptouch	✓	✓
MB Gateway	✓	✓

1	**With FLEX TEST remote controler**	**2**	**Only sensors**

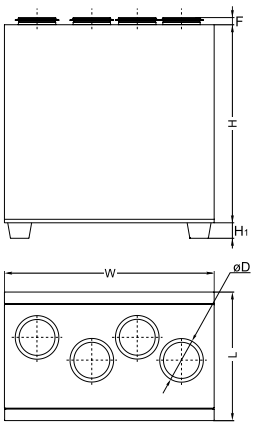
Notes

RIRS V EKO

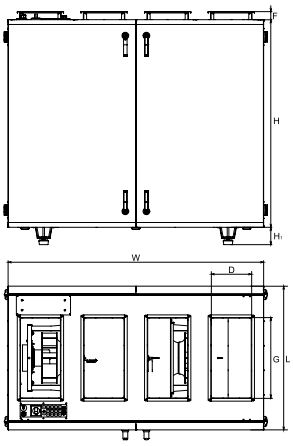


Application	Ventilation of houses, small public buildings, offices or other heated premises (classrooms, apartments, conference rooms, etc.).
Description	RIRS V EKO 3.0 is a range of heat recovery units with high-efficiency rotor heat exchangers. Units are designed for vertical placement in auxiliary non-heated premises (basements, boiler rooms, etc.). There are 7 sizes (airflow interval 420-5600 m^3/h) with separate heaters available for different climate zones. RIRS V EKO 3.0 units have high overall energy savings due to the highly efficient heat recovery (up to 85%), quiet and economical EC fans, effective low pressure drop filters and top-level of air tightness. All RIRS V EKO 3.0 units are fully equipped with automatic controls. Optional external sensors for CO_2 and humidity and so the summer mode feature will guarantee the highest comfort (demand-level control). RIRS V EKO 3.0 units are service-friendly and easy to mount. Filter pollution may be identified by timers or contamination controls (RIRS 1200-5500 V EKO 3.0). Rotor fault indicator is included in every AHU. All units are supplied tested and ready to install.
Controls	Three remote control options are available: 1. Flex, Stouch or Ptouch remote controllers. 2. Building management system connections. 3. Remote control via PC MB-Gateway.
The main Features	› Efficient rotor heat exchanger with up to 85% heat recovery. › Water/electrical heating options. › Easy and quick mounting. › Controlled airflow. › Fully integrated plug-and-play control system. › Outdoor versions and convertible inspection side.
Rotor	› Eurovent certified. › Plate gap 1,4-1,9 mm. › Rotor fault indicator. › Minimal airflow mixing. › Appropriate “Purge sector” size (for RIRS 2500, 3500 and 5500 V EKO 3.0).
Construction	› Frameless construction from double-skinned steel, with powder coated paint, panels. › Acoustic and thermal wall insulation – 50 mm. › Hinged door with locks grants easy access to internal components. › Separate compartment on the side of the unit grants quick access to the control board (plug-and-play). › Three sensors for fresh, supply and extract air temperatures. › Anti-vibration pads (optional for RIRS 400-1900 V EKO 3.0; standard for RIRS 2500-5500 V EKO 3.0). › Water heater with frost protection kit available. › Low pressure drop filters: F7/M5. › Integrated electrical heater or optional water heater/cooler (on duct). › Outdoor versions (RIRS 2500, 3500, 5500 V EKO 3.0). › RHX versions (rotor speed control, using stepper motor and driver). › Integrated pressure switch for filter pollution alarm (RIRS 1200 - 5500 V EKO 3.0).

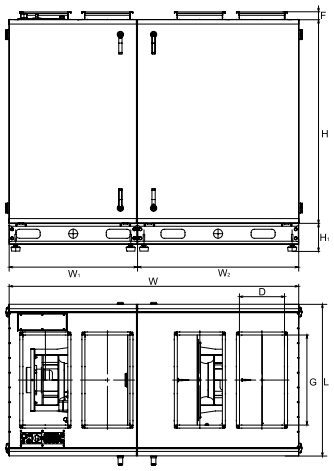
RIRS 400-700V EKO 3.0



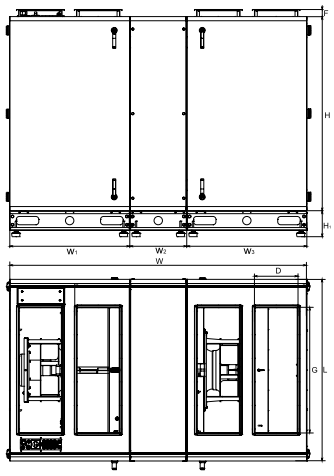
RIRS 1200-2500V EKO 3.0



RIRS 3500V EKO 3.0



RIRS 5500V EKO 3.0



	Dimensions [mm]										
Unit	**W**	**W_1**	**W_2**	**W_3**	**L**	**H**	**H_1**	**øD**	**D**	**G**	**F**
RIRS 400VE/VW EKO 3.0	900	-	-	-	560	850	40	160	-	-	30
RIRS 700VE/VW EKO 3.0	1100	-	-	-	655	980	40	250	-	-	40
RIRS 1200VE/VW EKO 3.0	1500	-	-	-	855	1150	70	315	-	-	40
RIRS 1900VE/VW EKO 3.0	1500	-	-	-	855	1150	70	315	-	-	40
RIRS 2500VE/VW EKO 3.0	1600	-	-	-	900	1300	110	-	250	500	50
RIRS 3500VE/VW EKO 3.0	1930	850	1075	-	1010	1355	190	-	300	600	50
RIRS 5500VE/VW EKO 3.0	2120	855	400	855	1310	1400	190	-	300	900	50

RIRS 400 V E L EKO 3.0

- Equipped with new PRV V2 control board
- AHU with EC motors
- Air intake side (L - left; R - right)
- Heater type (E - integrated electrical heater; W - optional water heater)
- Housing type (V - vertical, H - horizontal, P - ceiling)
- AHU size according to maximum airflow range m³/h
- AHU range with rotor heat exchanger

Accessories

Remote controller

Ptouch p. 175

Control panel

FLEX p. 177

Remote controller

Stouch p. 176

Net module

MB-Gateway p. 178

Pressure transmitter

S-1141 p. 179

CO2 sensor

S-RC02-F2 p. 180

Duct humidity sensor

S-KFF-U p. 181

Thermic water valve actuator

SSB p. 195

Circular duct silencer

AKS p. 216

Mounting clamp

AP p. 219

Shut-off damper

SKG p. 212

Damper for rectangular duct

SSK p. 213

Flexible connection

LJ/PG p. 221

Flange adapter

STP p. 220

Water heating coil

SVS p. 190

Comfort Box

CB p. 183

Actuator for dampers

SP p. 210

Temperature sensor

TJP-10K p. 182

Mixing point

RMG p. 196

2 and 3 way valves

VVP/VXP p. 197

Rectangular duct silencer

SKS p. 215

Electrical duct pre-heater

EKA NV PH p. 201

Electrical duct pre-heater

EKS NV PH p. 203

RIRS V EKO

Unit	Optional accessories									
	Flex Stouch Ptouch MB-Gateway	**S-1141 S-RC02-F2 S-KFF-U**	**AKS AP SKG**	**SSK SKS LJ/PG**	**STP**	**SVS CB**	**SP** *Supply*	**SP** *Exhaust*	**EKA NV PH**	**EKS NV PH**
RIRS 400VE EKO 3.0	+	+	160	-	-	-	CM230-1-F-L	CM230-1-F-L	160	160
RIRS 400VW EKO 3.0	+	+	160	-	-	160	TF230	CM230-1-F-L	160	160
RIRS 700VE EKO 3.0	+	+	250	-	-	-	CM230-1-F-L	CM230-1-F-L	250	250
RIRS 700VW EKO 3.0	+	+	250	-	-	250	TF230	CM230-1-F-L	250	250
RIRS 1200VE EKO 3.0	+	+	315	-	-	-	LM230A-TP	LM230A-TP	315	315
RIRS 1200VW EKO 3.0	+	+	315	-	-	315	LF230	LM230A-TP	315	315
RIRS 1900VE EKO 3.0	+	+	315	-	-	-	LM230A-TP	LM230A-TP	315	315
RIRS 1900VW EKO 3.0	+	+	315	-	-	315	LF230	LM230A-TP	315	315
RIRS 2500VE EKO 3.0	+	+	-	500x250	500x250-400	500x250	LM230A-TP	LM230A-TP	500x250	500x250
RIRS 2500VW EKO 3.0	+	+	-	500x250	500x250-400	500x250	LF230	LM230A-TP	500x250	500x250
RIRS 3500VE EKO 3.0	+	+	-	600x300	600x300-500	600x300	LM230A-TP	LM230A-TP	600x300	600x300
RIRS 3500VW EKO 3.0	+	+	-	600x300	600x300-500	600x300	LF230	LM230A-TP	600x300	600x300
RIRS 5500VE EKO 3.0	+	+	-	800x500*	900x300-800x500	800x500*	LM230A-TP	LM230A-TP	800x500*	800x500*
RIRS 5500VW EKO 3.0	+	+	-	800x500*	900x300-800x500	800x500*	LF230	LM230A-TP	800x500*	800x500*

** flange adapter STP is required.

Unit	Optional accessories								
	AVS	**AVA**	**TJP 10K CO4C*** **	**SSB** *Heating*	**SSB** *Cooling*	**RMG 80/60°C**	**RMG 60/40°C**	**VVP/VXP 80/60°C**	**VVP/VXP 60/40°C**
RIRS 400VE EKO 3.0	-	160	-	-	81	-	-	-	-
RIRS 400VW EKO 3.0	160	160	int	61	81	3-0,63-4	3-0,63-4	45.10-0,63	45.10-0,63
RIRS 700VE EKO 3.0	-	250	-	-	81	-	-	-	-
RIRS 700VW EKO 3.0	250	250	int	61	81	3-1,0-4	3-1,0-4	45.10-1,0	45.10-1,0
RIRS 1200VE EKO 3.0	-	315	-	-	81	-	-	-	-
RIRS 1200VW EKO 3.0	315	315	int	61	81	3-1,0-4	3-1,0-4	45.10-1,0	45.10-1,0
RIRS 1900VE EKO 3.0	-	315	-	-	81	-	-	-	-
RIRS 1900VW EKO 3.0	315	315	int	61	81	3-1,0-4	3-1,0-4	45.10-1,0	45.10-1,0
RIRS 2500VE EKO 3.0	-	-	-	-	81				
RIRS 2500VW EKO 3.0	-	-	int	61	81				
RIRS 3500VE EKO 3.0	-	-	-	-	81				
RIRS 3500VW EKO 3.0	-	-	int	61	81				
RIRS 5500VE EKO 3.0	-	-	-	-	81				
RIRS 5500VW EKO 3.0	-	-	int	61	81				

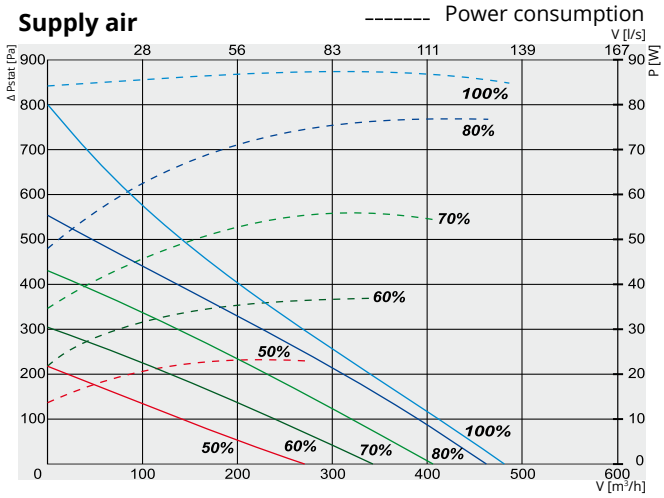
Heaters, coolers and RMG/VVP/VXP data online selection program: ***www.salda.lt***

*** anti-frost thermostat

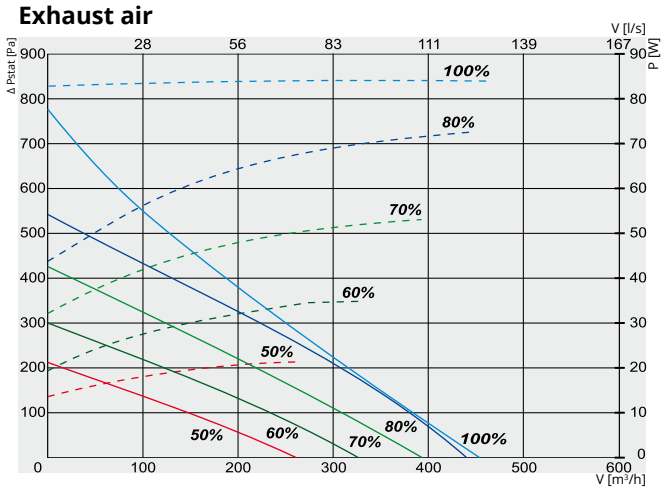
RIRS 400V EKO 3.0

Performance
Power consumption

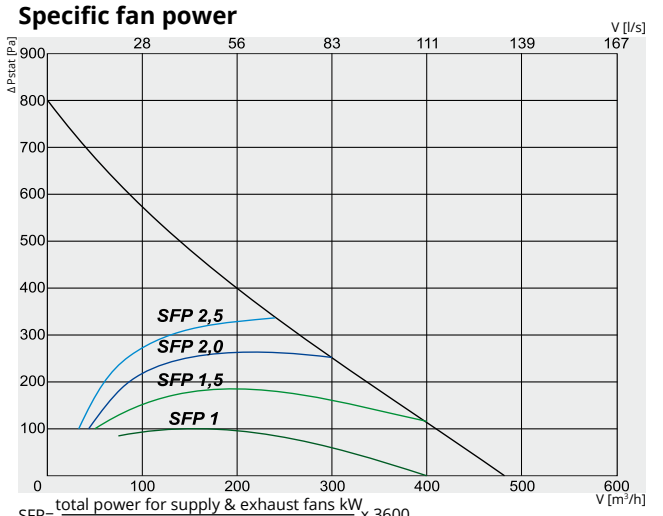
Supply air



Exhaust air

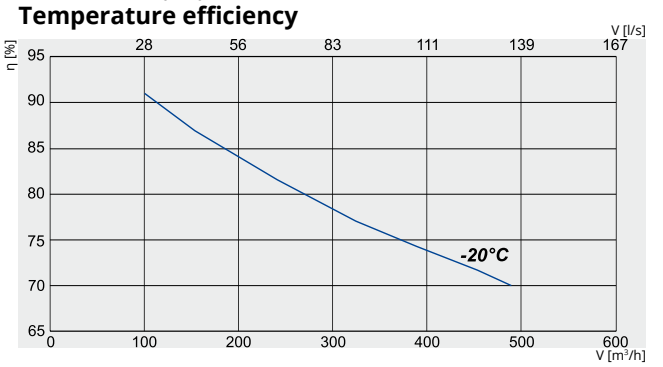


Specific fan power

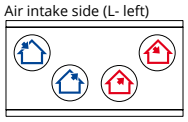


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency

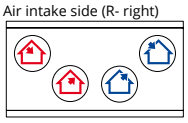


RIRS 400VL EKO 3.0
Air intake side (L- left)



View from inspection side

RIRS 400VR EKO 3.0
Air intake side (R- right)



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.		Version
GAGRIRS1759_0037A	400VEL EKO 3.0	Left-hand maintenace version with integrated electrical heater
GAGRIRS1760_0039A	400VWL EKO 3.0	Left-hand maintenace version prepared for optional water heater
GAGRIRS1757_0036A	400VER EKO 3.0	Right-hand maintenace version with integrated electrical heater
GAGRIRS1758_0038A	400VWR EKO 3.0	Right-hand maintenace version prepared for optional water heater

			400VE / VW EKO 3.0
Water heater (optional) VW ver.			AVS 160
Electrical heater VE ver.	phase/voltage	[50Hz/VAC]	~1, 230
		[kW]	1,2
EC fans	phase/voltage	[50Hz/VAC]	~1, 230
exhaust	power/current	[kW/A]	0,085/0,75
	fan speed	[min^{-1}]	3200
supply	power/current	[kW/A]	0,085/0,75
	fan speed	[min^{-1}]	3200
Thermal efficiency up to*			75%
Max power consumption VE / VW		[kW/A]	1,38/5,94 | 0,18/1,60
Control board			PRV V2
Filter class	exhaust/supply		M5/F7
Housing insulation, mineral wool		[mm]	50
Colour	RAL	white	9016
Weight (net, without packing)		[kg]	79,5
Comply with ERP			2016; 2018
Operation			indoors
Housing protection class	IP		34

* Calculated wet efficiency.

400V EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	70	64	59	61	66	63	54	52
Extract	61	55	57	57	49	43	34	30
Surrounding	54	51	48	41	42	43	33	28
Measured at 375 m³/h, 120 Pa								

Temperature efficiency (balanced mass flow):
Extract air = 20°C/60%RH
Outdoor air = -20°C

Certifications

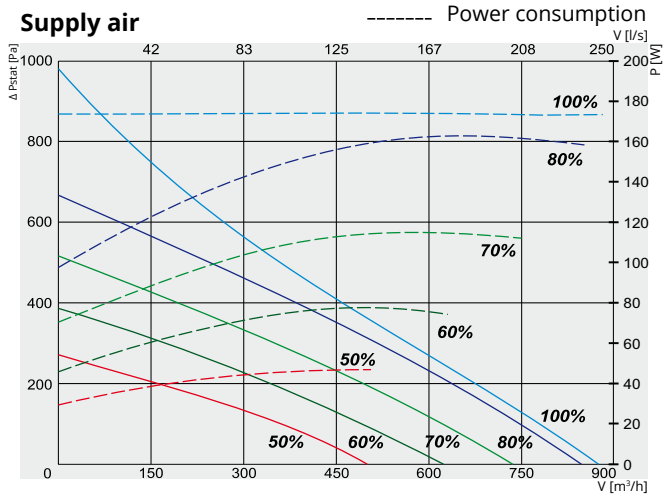
EUROVENT certified
rotor heat exchanger performance

RIRS V EKO

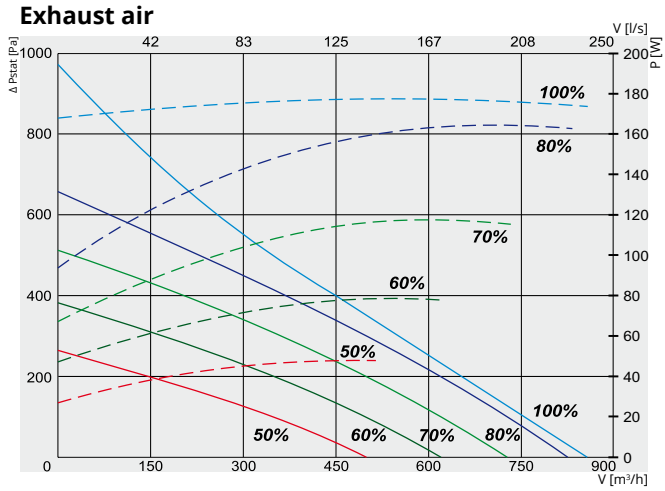
RIRS 700V EKO 3.0

Performance
Power consumption

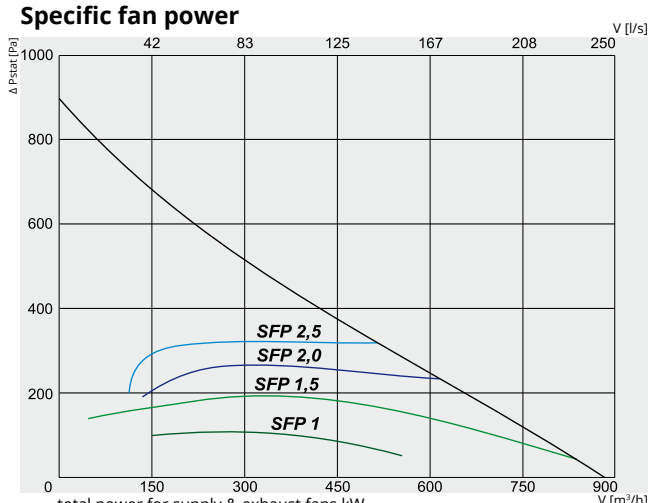
Supply air



Exhaust air

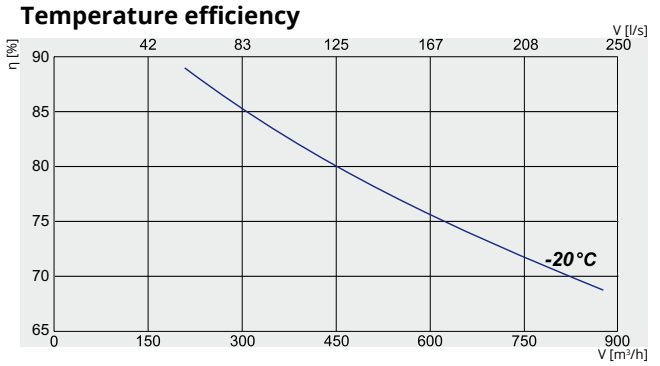


Specific fan power



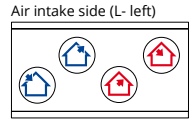
$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency



RIRS 700VL EKO 3.0

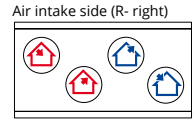
Air intake side (L- left)



View from inspection side

RIRS 700VR EKO 3.0

Air intake side (R- right)



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.		Version
GAGRIRS1770_0033A	700VEL EKO 3.0	Left-hand maintenace version with integrated electrical heater
GAGRIRS1771_0035A	700VWL EKO 3.0	Left-hand maintenace version prepared for optional water heater
GAGRIRS1766_0032A	700VER EKO 3.0	Right-hand maintenace version with integrated electrical heater
GAGRIRS1768_0034A	700VWR EKO 3.0	Right-hand maintenace version prepared for optional water heater

700VE / VW EKO 3.0				
Water heater (optional) VW ver.				AVS 250
Electrical heater VE ver.	phase/voltage	[50Hz/VAC]		~1, 230
		[kW]		2,0
EC fans	phase/voltage	[50Hz/VAC]		~1, 230
exhaust	power/current	[kW/A]		0,168/1,4
	fan speed	[min⁻¹]		3230
supply	power/current	[kW/A]		0,168/1,4
	fan speed	[min⁻¹]		3230
Thermal efficiency up to*				75%
Max power consumption VE / VW		[kW/A]	2,34/11,60	0,34/2,90
Control board				PRV V2
Filter class	exhaust/supply			M5/F7
Housing insulation, mineral wool		[mm]		50
Colour	RAL	white		9016
Weight (net, without packing)		[kg]	108	104
Comply with ERP				2016; 2018
Operation				indoors
Housing protection class	IP			34

* Calculated wet efficiency.

Temperature efficiency (balanced mass flow):
Extract air = 20°C/60%RH
Outdoor air = -20°C

700V EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	76	67	69	70	69	68	63	62
Extract	63	52	60	58	47	44	38	35
Surrounding	55	47	50	49	44	43	39	39
Measured at 700 m³/h, 152 Pa								

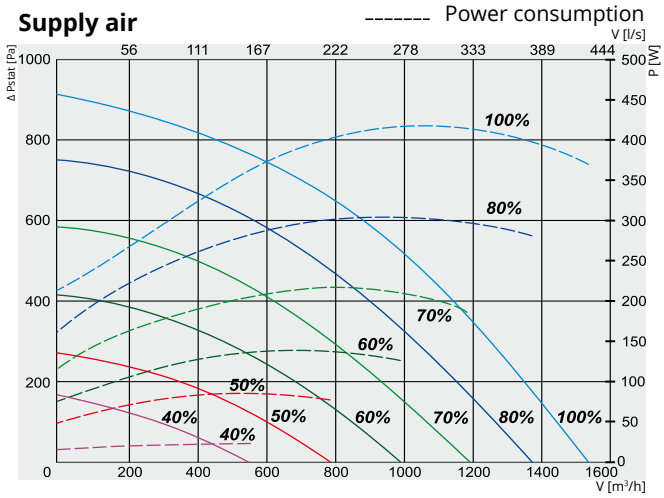
Certifications

EUROVENT certified
rotor heat exchanger performance

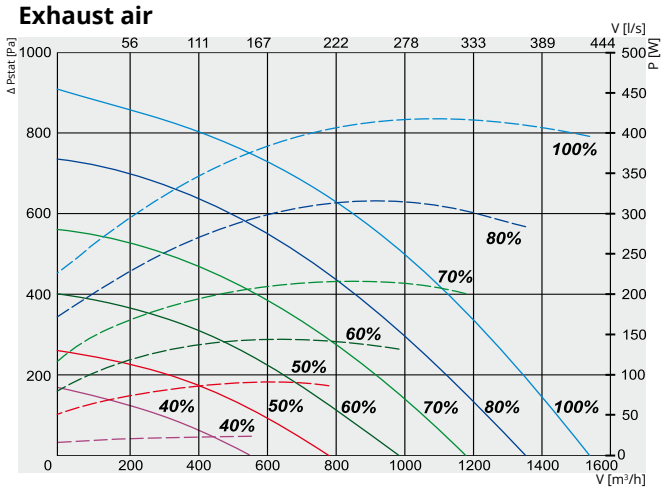
RIRS 1200V EKO 3.0

Performance
Power consumption

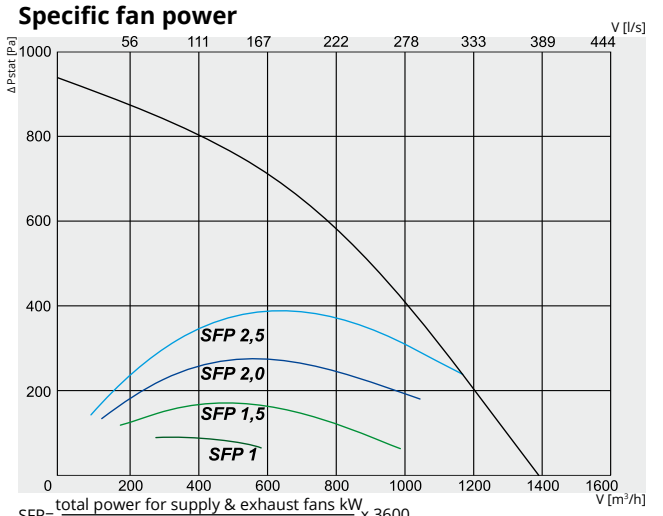
Supply air



Exhaust air

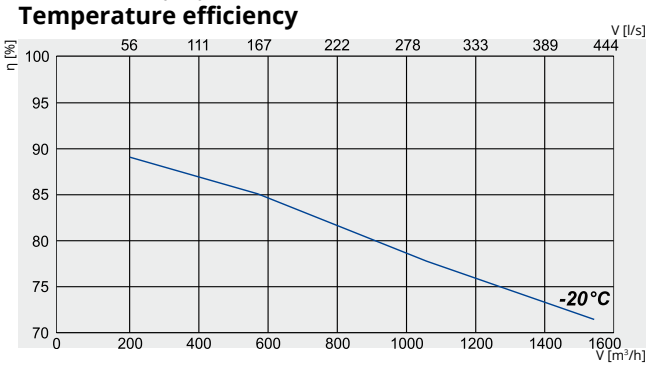


Specific fan power

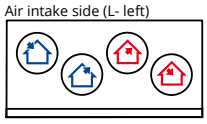


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency

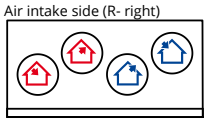


RIRS 1200VL EKO 3.0
Air intake side (L- left)



View from inspection side

RIRS 1200VR EKO 3.0
Air intake side (R- right)



View from inspection side

Exhaust air · Extract air · outdoor air · Supply air

Article No.		Version
GAGRIRS1678_0003C	1200VEL EKO 3.0	Left-hand maintenace version with integrated electrical heater
GAGRIRS1679_0004A	1200VWL EKO 3.0	Left-hand maintenace version prepared for optional water heater
GAGRIRS1675_0001C	1200VER EKO 3.0	Right-hand maintenace version with integrated electrical heater
GAGRIRS1677_0002A	1200VWR EKO 3.0	Right-hand maintenace version prepared for optional water heater

			1200VE / VW EKO 3.0	
Water heater (optional) VW ver.				AVS 315
Electrical heater VE ver.	phase/voltage	[50Hz/VAC]		~2, 400
		[kW]		4,0
EC fans	phase/voltage	[50Hz/VAC]		~1, 230
exhaust	power/current	[kW/A]		0,408/2,71
	fan speed	[min^{-1}]		3400
supply	power/current	[kW/A]		0,415/2,81
	fan speed	[min^{-1}]		3400
Thermal efficiency up to*				75%
Max power consumption VE/VW		[kW/A]	4,84/15,69	0,84 /5,69
Control board				PRV V2
Filter class	exhaust/supply			M5/F7
Housing insulation, mineral wool		[mm]		50
Colour	RAL	grey		7040
Weight (net, without packing)		[kg]		192
Comply with ERP				2016; 2018
Operation				indoors
Housing protection class	IP			34

* Calculated wet efficiency.

Temperature efficiency (balanced mass flow):
Extract air = 20°C/60%RH
Outdoor air = -20°C

1200V EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	78	63	74	71	70	69	64	55
Extract	67	57	63	56	52	53	51	37
Surrounding	57	47	54	49	47	49	46	36
Measured at 1351 m³/h, 181 Pa								

Certifications

EUROVENT certified
rotor heat exchanger performance

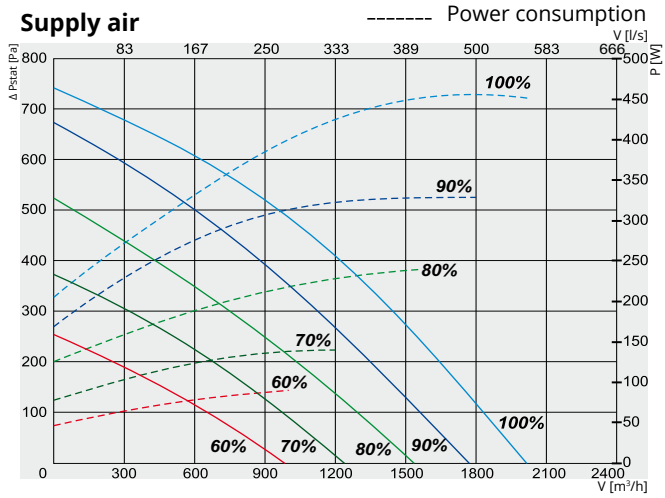
EUROVENT CERTIFIED PERFORMANCE
AHU N°: 05.05.298
Range: SmartAir
www.eurovent-certification.com

RIRS V EKO

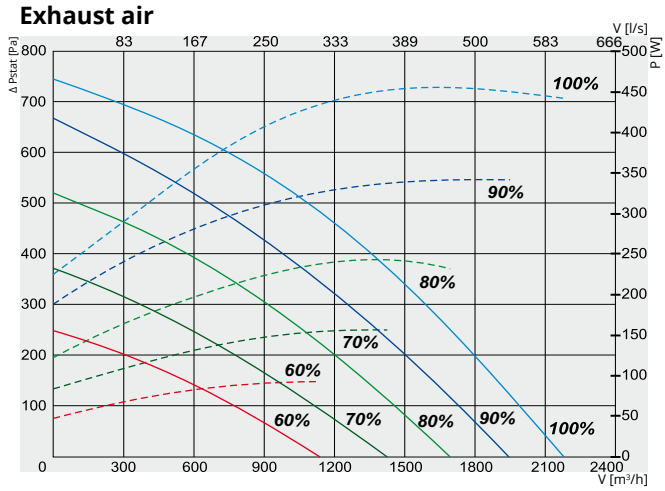
RIRS 1900V EKO 3.0

——— Performance
------- Power consumption

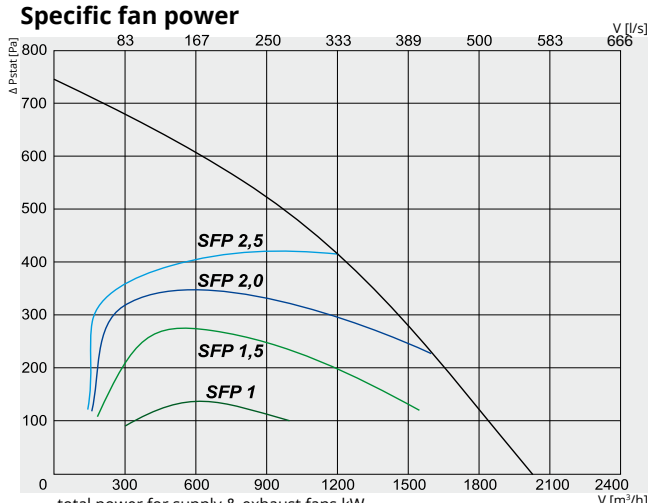
Supply air



Exhaust air

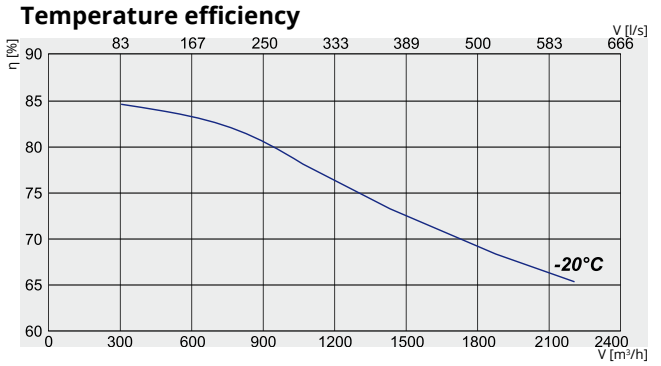


Specific fan power



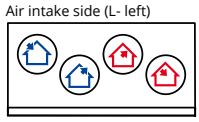
$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency



RIRS 1900VL EKO 3.0

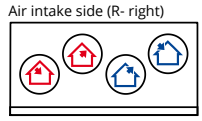
Air intake side (L- left)



View from inspection side

RIRS 1900VR EKO 3.0

Air intake side (R- right)



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.		Version
GAGRIRS1712_0011B	1900VEL EKO 3.0	Left-hand maintenace version with integrated electrical heater
GAGRIRS1713_0012A	1900VWL EKO 3.0	Left-hand maintenace version prepared for optional water heater
GAGRIRS1708_0009B	1900VER EKO 3.0	Right-hand maintenace version with integrated electrical heater
GAGRIRS1711_0010A	1900VWR EKO 3.0	Right-hand maintenace version prepared for optional water heater

			1900VE / VW EKO 3.0	
Water heater (optional) VW ver.				AVS 315
Electrical heater VE ver.	phase/voltage	[50Hz/VAC]		~3, 400
		[kW]		9,0
EC fans	phase/voltage	[50Hz/VAC]		~1, 230
exhaust	power/current	[kW/A]		0,47/3,1
	fan speed	[min^{-1}]		2540
supply	power/current	[kW/A]		0,47/3,1
	fan speed	[min^{-1}]		2540
Thermal efficiency up to*				75%
Max power consumption VE / VW		[kW/A]	9,96/19,37	0,96/6,37
Control board				PRV V2
Filter class	exhaust/supply			M5/F7
Housing insulation, mineral wool		[mm]		50
Colour	RAL	grey		7040
Weight (net, without packing)		[kg]	180	178
Comply with ERP				2016; 2018
Operation				indoors
Housing protection class	IP			34

* Calculated wet efficiency.

Temperature efficiency (balanced mass flow):
Extract air = 20°C/60%RH
Outdoor air = -20°C

1900V EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	80	58	76	71	72	71	70	62
Extract	69	56	67	60	54	58	57	48
Surrounding	60	44	57	51	49	53	52	45
Measured at 1830 m³/h, 101 Pa								

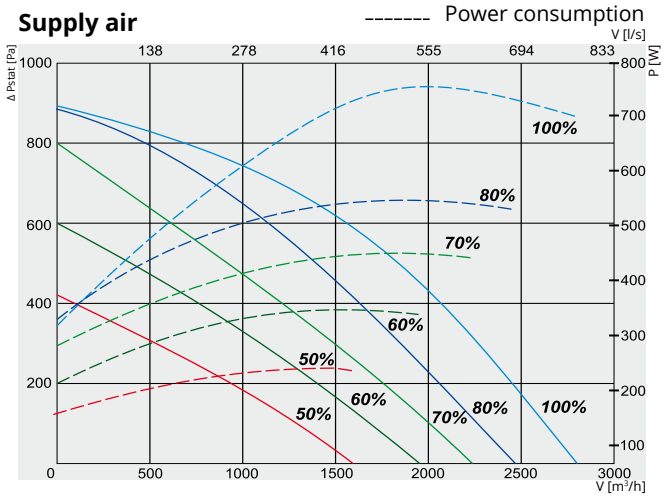
Certifications

EUROVENT certified
rotor heat exchanger performance

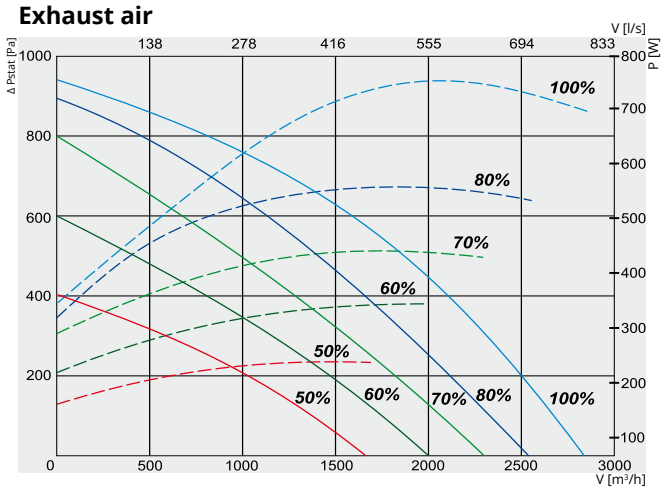
RIRS 2500V EKO 3.0

Performance
Power consumption

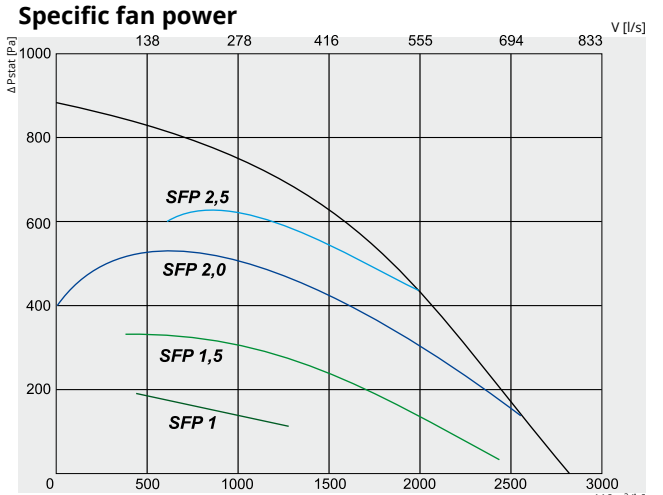
Supply air



Exhaust air

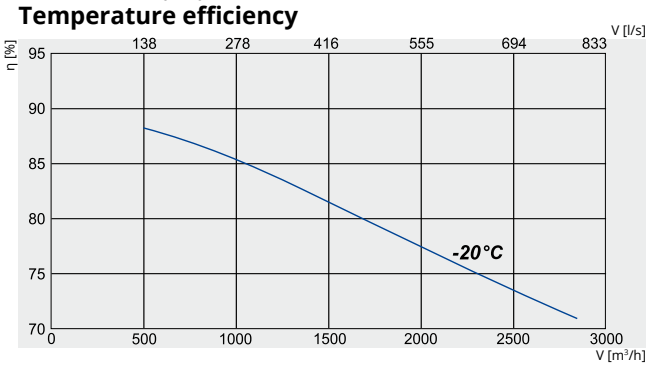


Specific fan power

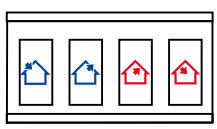


SFP= $\frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3\text{/h}} \times 3600$

Temperature efficiency

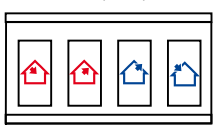


RIRS 2500VL EKO 3.0
Air intake side (L- left)



View from inspection side

RIRS 2500VR EKO 3.0
Air intake side (L- left)



View from inspection side

Exhaust air Extract air outdoor air Supply air

Article No.		Version
GAGRIRS1883_0066B	2500VE EKO 3.0	Integrated electrical heater
GAGRIRS1887_0069A	2500VW EKO 3.0	Optional water heater
GAGRIRS1901_0074B	2500VE EKO 3.0-RHX	Integrated electrical heater and 0-10 rotor
GAGRIRS1902_0075A	2500VW EKO 3.0-RHX	Optional water heater and 0-10 rotor control

2500VE / VW EKO 3.0				
Water heater (optional) VW ver.				SVS
Electrical heater VE ver.	phase/voltage	[50Hz/VAC]		~3, 400
		[kW]		9
EC fans	phase/voltage	[50Hz/VAC]		~1, 230
exhaust	power/current	[kW/A]		0,75/3,3
	fan speed	[min^{-1}]		2800
supply	power/current	[kW/A]		0,76/3,32
	fan speed	[min^{-1}]		2800
Thermal efficiency up to*				75%
Max power consumption VE / VW		[kW/A]	10,55/19,97	1,55/6,97
Control board				PRV V2
Filter class	exhaust/supply			M5/F7
Housing insulation, mineral wool		[mm]		50
Colour	RAL	grey		7040
Weight (net, without packing)		[kg]	280,0	270,0
Comply with ERP				2016; 2018
Operation				indoors/outdoors**
Housing protection class	IP			34

* Calculated wet efficiency.
**Under covered area.

Temperature efficiency (balanced mass flow):
Extract air = 20°C/60%RH
Outdoor air = -20°C

2500V EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	78	61	68	72	73	70	64	62
Extract	67	59	62	63	57	52	48	43
Surrounding	62	45	54	59	52	52	49	46
Measured at 2355 m³/h, 214 Pa								

Certifications

EUROVENT certified
rotor heat exchanger performance

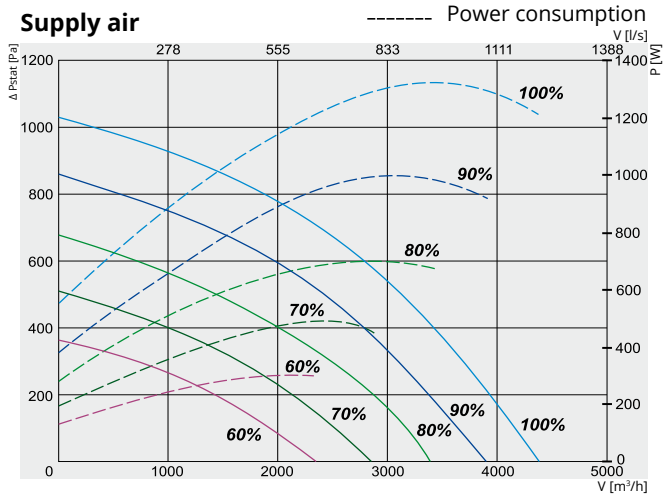
EUROVENT CERTIFIED PERFORMANCE
AHU N°: 05.05.298
Range: SmartAir
www.eurovent-certification.com

RIRS V EKO

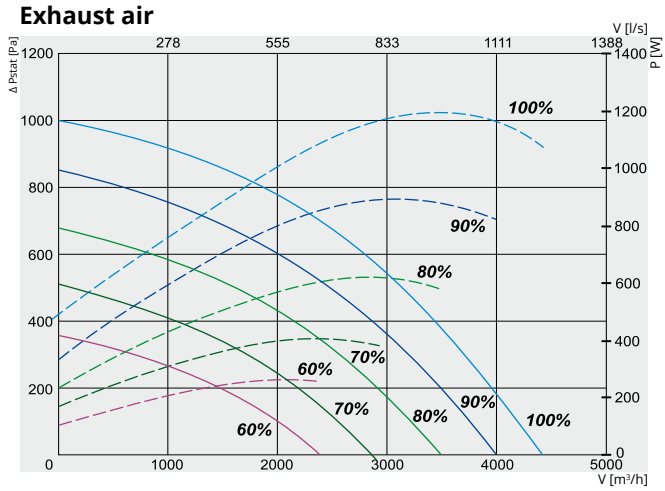
RIRS 3500V EKO 3.0

Performance
Power consumption

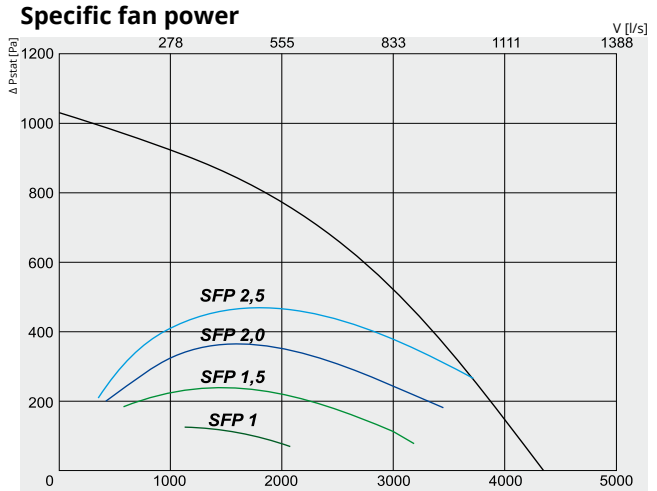
Supply air



Exhaust air

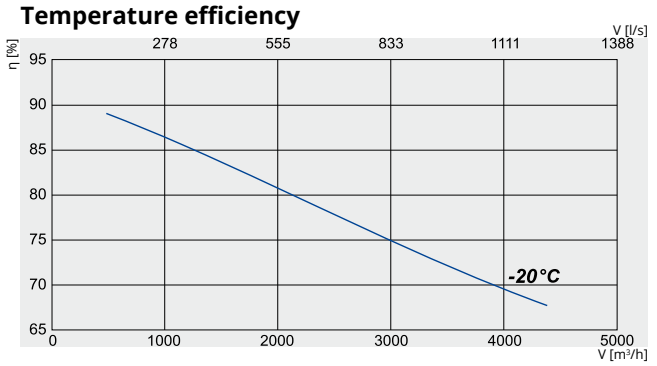


Specific fan power



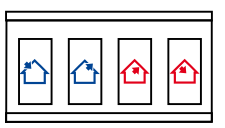
$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency



RIRS 3500VL EKO 3.0

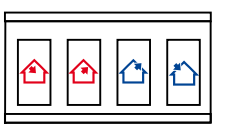
Air intake side (L- left)



View from inspection side

RIRS 3500VR EKO 3.0

Air intake side (L- left)



View from inspection side

Exhaust air Extract air outdoor air Supply air

Article No.		Version
GAGRIRS1884_0067B	3500VE EKO 3.0	Integrated electrical heater
GAGRIRS1886_0070A	3500VW EKO 3.0	Optional water heater
GAGRIRS1897_0076B	3500VE EKO 3.0-RHX	Integrated electrical heater and 0-10 rotor
GAGRIRS1898_0077A	3500VW EKO 3.0-RHX	Optional water heater and 0-10 rotor control

3500VE / VW EKO 3.0				
Water heater (optional) VW ver.				SVS
Electrical heater VE ver.	phase/voltage	[50Hz/VAC]		~3, 400
		[kW]		12
EC fans	phase/voltage	[50Hz/VAC]		~1, 230
exhaust	power/current	[kW/A]		1,35/6
	fan speed	[min^{-1}]		2390
supply	power/current	[kW/A]		1,33/5,7
	fan speed	[min^{-1}]		2390
Thermal efficiency up to*				75%
Max power consumption VE / VW		[kW/A]	14,72/29,35	2,72/12,05
Control board				PRV V2
Filter class	exhaust/supply			M5/F7
Housing insulation, mineral wool		[mm]		50
Colour	RAL	grey		7040
Weight (net, without packing)		[kg]	380,0	370,0
Comply with ERP				2016; 2018
Operation				indoors/outdoors**
Housing protection class	IP			34

* Calculated wet efficiency.
**Under covered area.

Temperature efficiency (balanced mass flow):
Extract air = 20°C/60%RH
Outdoor air = -20°C

3500V EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	82	60	74	75	76	75	73	68
Extract	72	58	70	66	60	57	51	43
Surrounding	64	55	58	59	57	53	49	45
Measured at 3728 m³/h, 242 Pa								

Certifications

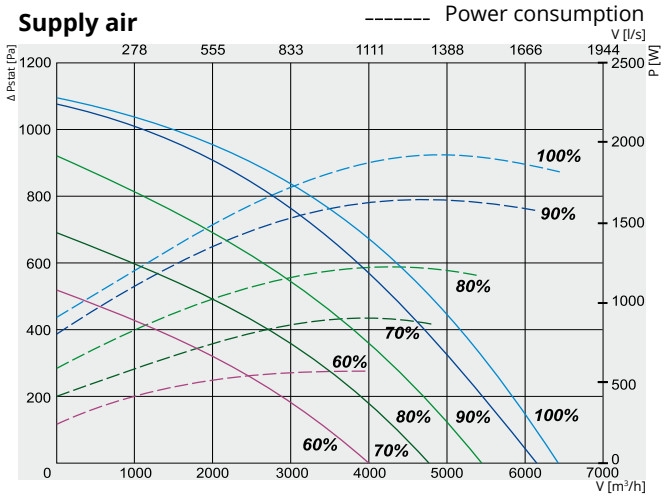
EUROVENT certified
rotor heat exchanger performance

EUROVENT CERTIFIED PERFORMANCE
AHU N° 05.05.298
Range: SmartAir
www.eurovent-certification.com

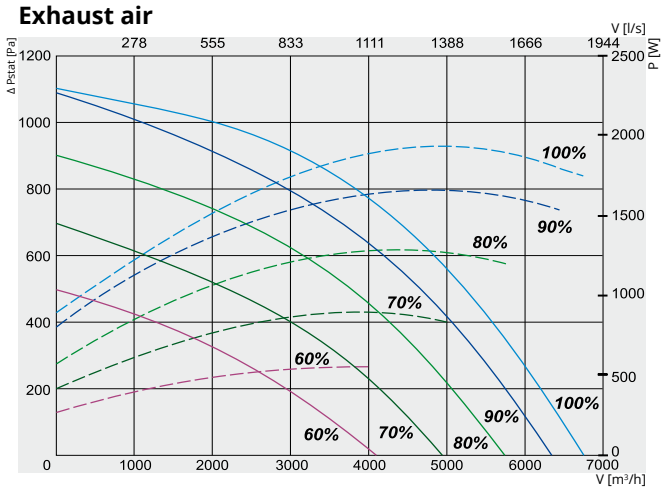
RIRS 5500V EKO 3.0

Performance
Power consumption

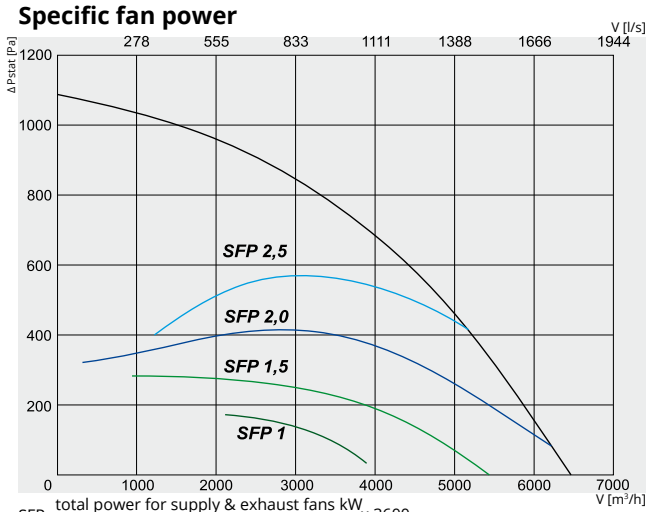
Supply air



Exhaust air

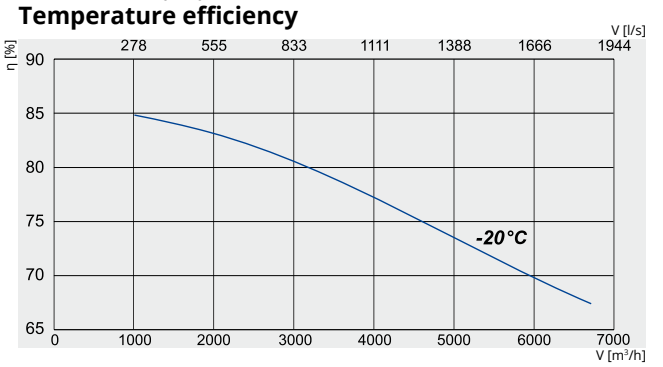


Specific fan power

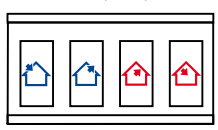


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency

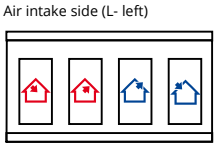


RIRS 5500VL EKO 3.0
Air intake side (L- left)



View from inspection side

RIRS 5500VR EKO 3.0
Air intake side (L- left)



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.		Version
GAGRIRS1885_0068B	5500VE EKO 3.0	Integrated electrical heater
GAGRIRS1890_0071A	5500VW EKO 3.0	Optional water heater
GAGRIRS1895_0078B	5500VE EKO 3.0-RHX	Integrated electrical heater and 0-10 rotor
GAGRIRS1896_0079B	5500VW EKO 3.0-RHX	Optional water heater and 0-10 rotor control

5500VE / VW EKO 3.0				
Water heater (optional) VW ver.				SVS
Electrical heater VE ver.	phase/voltage	[50Hz/VAC]		~3, 400
		[kW]		18
EC fans	phase/voltage	[50Hz/VAC]		~3, 400
exhaust	power/current	[kW/A]		1,9/3,1
	fan speed	[min⁻¹]		2180
supply	power/current	[kW/A]		1,9/3,1
	fan speed	[min⁻¹]		2180
Thermal efficiency up to*				75%
Max power consumption VE / VW		[kW/A]	21,84/32,55	3,84/6,55
Control board				PRV V2
Filter class	exhaust/supply			M5/F7
Housing insulation, mineral wool		[mm]		50
Colour	RAL	grey		7040
Weight (net, without packing)		[kg]	580,0	565,0
Comply with ERP				2016; 2018
Operation				indoors/outdoors**
Housing protection class	IP			34

* Calculated wet efficiency.
**Under covered area.

Temperature efficiency (balanced mass flow):
Extract air = 20°C/60%RH
Outdoor air = -20°C

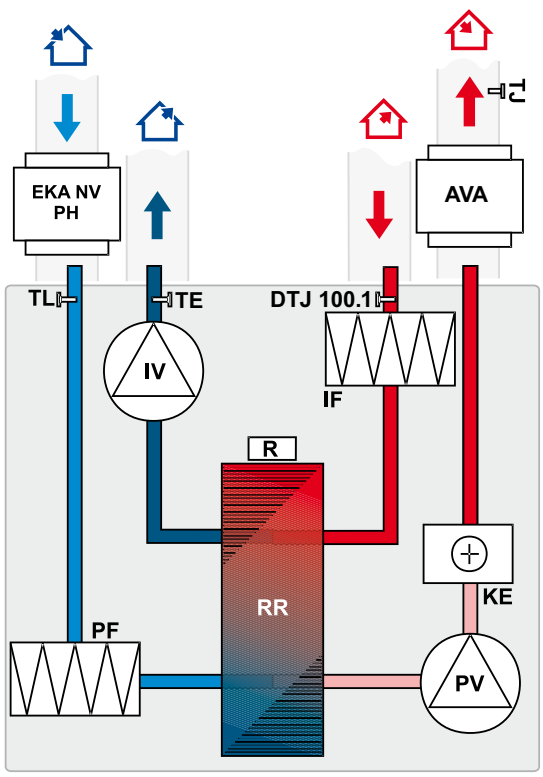
5500V EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	87	68	80	81	82	78	77	74
Extract	75	63	69	72	66	63	58	55
Surrounding	74	58	66	69	68	65	51	54
Measured at 5652 m³/h, 246Pa								

Certifications

EUROVENT certified
rotor heat exchanger performance

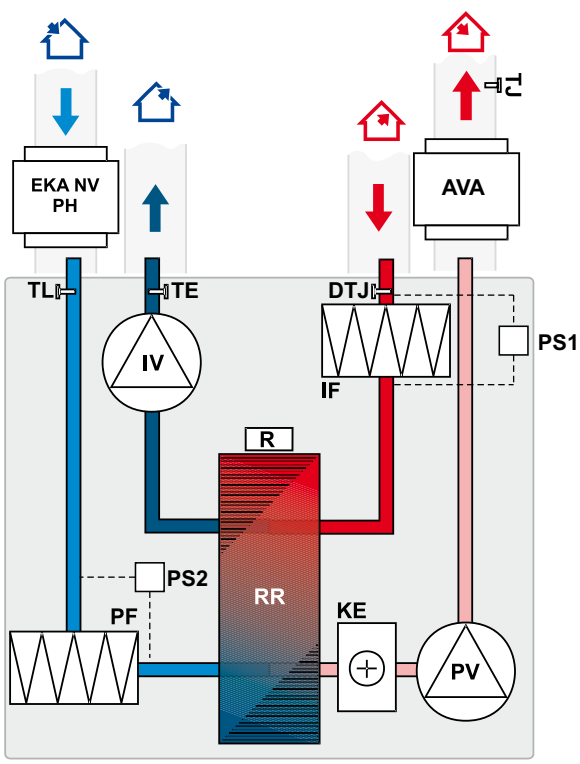
EUROVENT CERTIFIED PERFORMANCE
AHU N°: 05.05.298
Range: SmartAir
www.eurovent-certification.com

RIRS 400VE EKO 3.0 / RIRS 700VE EKO 3.0 (vertical) versions with electrical heater



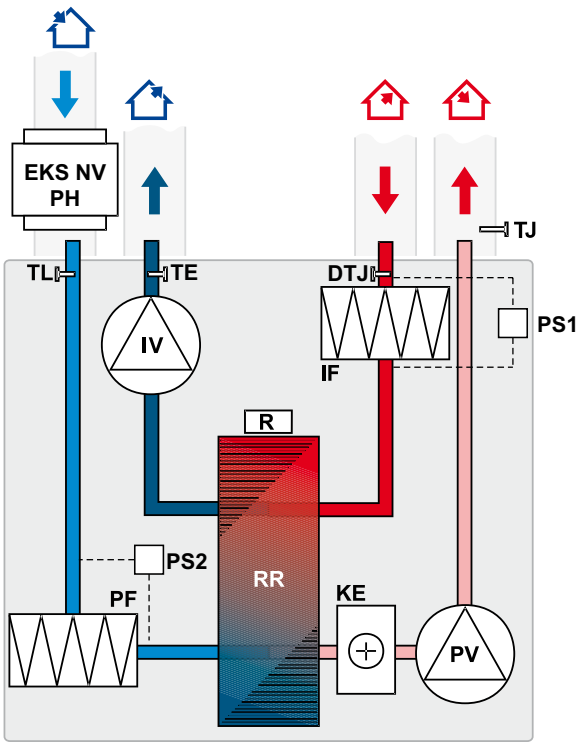
IV - exhaust air fan
PV - supply air fan
RR - rotary heat exchanger
R - rotor motor
KE - electrical heater
PF - fresh air filter (class F7)
IF - extract air filter (class M5)
TJ - temperature sensor for supply air
TL - temperature sensor for fresh air
TE - temperature sensor for exhaust air
DTJ - humidity + temperature sensor for extract air
EKA NV PH - optional fresh air pre-heater
AVA - optionally supplied water cooler

RIRS 1200VE EKO 3.0 / RIRS 1900VE EKO 3.0 (vertical) versions with electrical heater



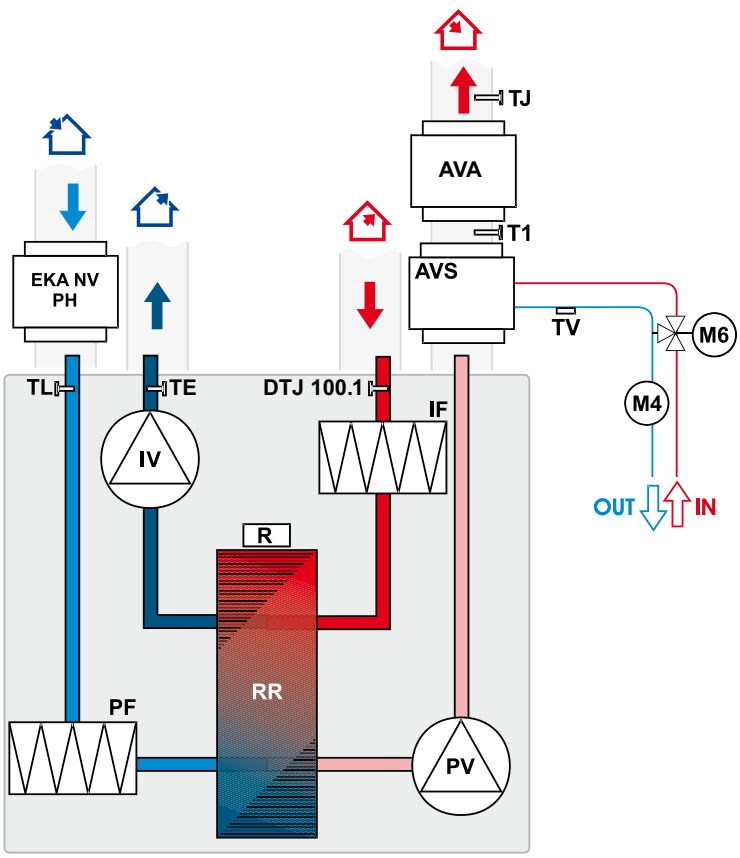
PS1 - supply air differential pressure switch
PS2 - extract air differential pressure switch
DTJ - humidity + temperature sensor
IV - exhaust air fan
PV - supplied air fan
RR - rotary heat exchanger
R - rotor motor
KE - electrical heater
PF - fresh air filter (class F7)
IF - extract air filter (class M5)
TJ - temperature sensor for supply air
TL - temperature sensor for fresh air
TE - temperature sensor for exhaust air
EKA NV PH - optional fresh air pre-heater
AVA - optionally supplied water cooler

RIRS 2500VE EKO 3.0 / RIRS 3500VE EKO 3.0 / RIRS 5500VE EKO 3.0 (vertical) versions with electrical heater



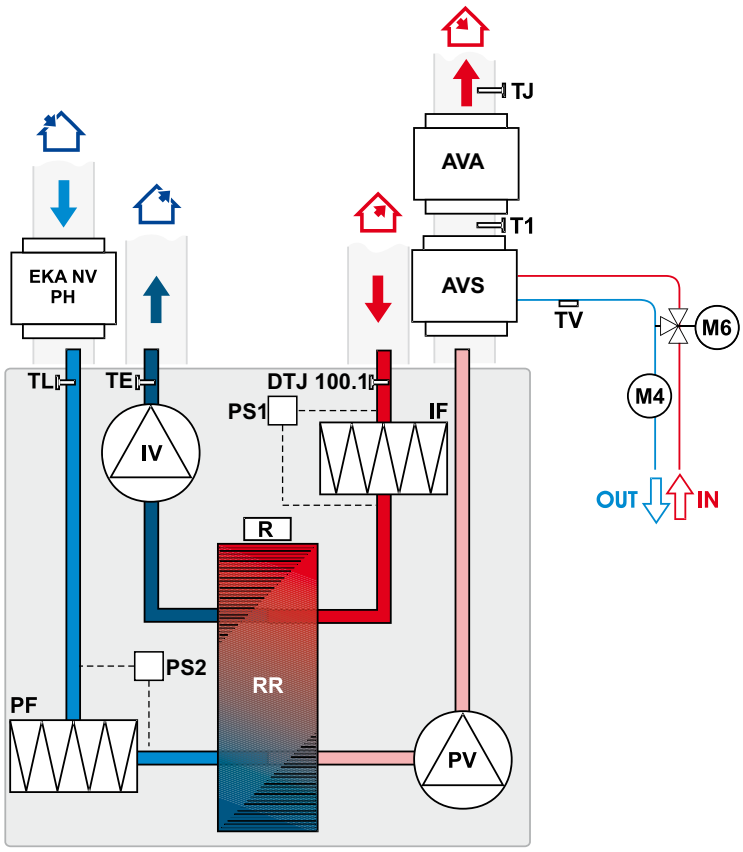
PS1 - supply air differential pressure switch
PS2 - extract air differential pressure switch
DTJ - humidity + temperature sensor for extract air
IV - exhaust air fan
PV - supply air fan
RR - rotary heat exchanger
R - rotor motor
KE - electrical heater
PF - fresh air filter (class F7)
I F - extract air filter (class M5)
TJ - temperature sensor for supply air
TL - temperature sensor for fresh air
TE - temperature sensor for exhaust air
EKS NV PH - optional fresh air pre-heater

RIRS 400VW EKO 3.0 / RIRS 700VW EKO 3.0 (vertical) versions with water heater



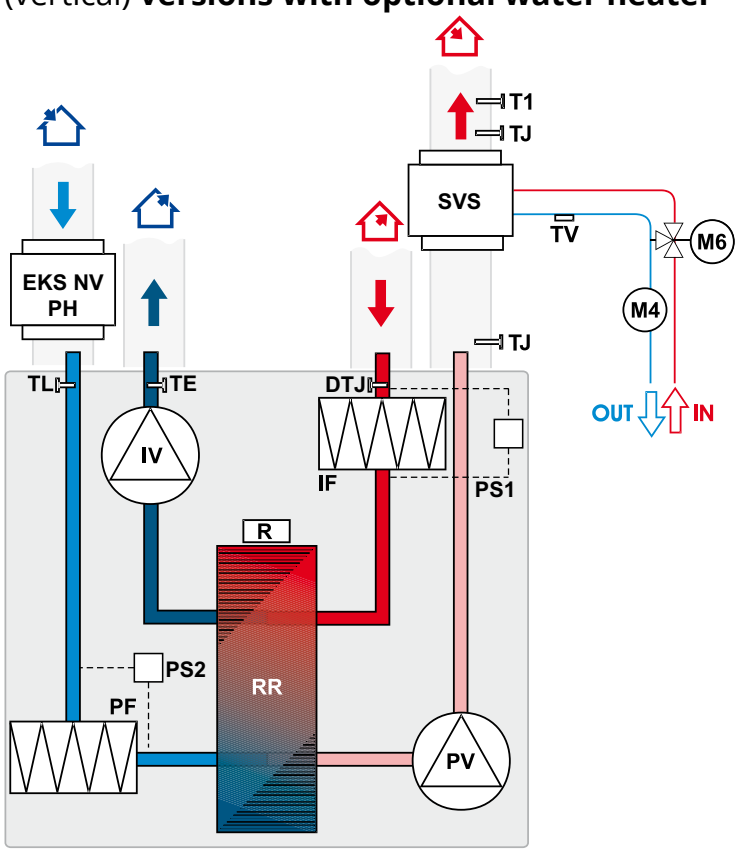
AVS - optionally supplied water heater
AVA - optionally supplied water cooler
EKA NV PH - optional fresh air pre-heater
IV - exhaust air fan
PV - supplied air fan
RR - rotary heat exchanger
R - rotor motor
PF - fresh air filter (class F7)
IF - extract air filter (class M5)
TJ - supply air temperature sensor
TL - fresh air temperature sensor
M1 - optionally supplied mixing valve and motor
T1 - antifrost thermostat
TV - antifrost sensor
TE - temperature sensor for exhaust air
DTJ - humidity + temperature sensor for extract air
M6 - optionally supplied mixing valve and motor
M4 - water heater circulation pump

RIRS 1200VW EKO 3.0 / RIRS 1900VW EKO 3.0 (vertical) **versions with water heater**



PS1 - supply air differential pressure switch
PS2 - extract air differential pressure switch
AVS - optionally supplied water heater
AVA - optionally supplied water cooler
EKA NV PH - optional fresh air pre-heater
DTJ - humidity + temperature sensor
IV - exhaust air fan
PV - supplied air fan
RR - rotary heat exchanger
R - rotor motor
PF - fresh air filter (class F7)
IF - extract air filter (class M5)
TJ - air temperature sensor
TL - air temperature sensor
M6 - optionally supplied mixing valve and motor
M4 - water heater circulation pump
T1 - antifrost thermostat
TV - supplied antifrost sensor
TE - temperature sensor for exhaust air

RIRS 2500VW EKO 3.0 / RIRS 3500VW EKO 3.0 / RIRS 5500VW EKO 3.0 (vertical) **versions with optional water heater**

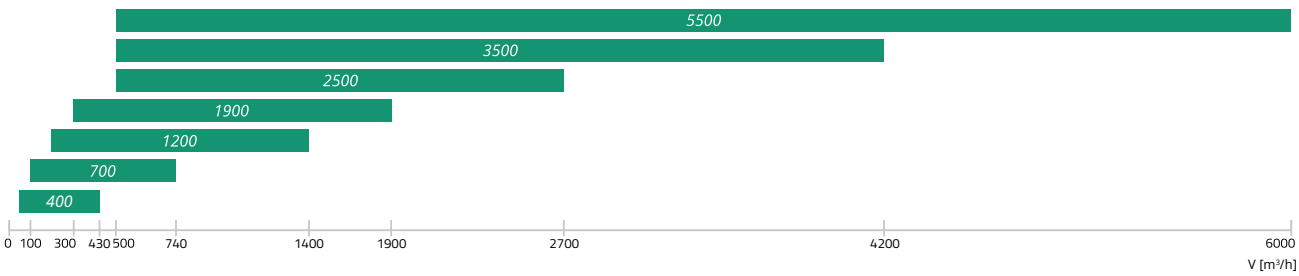


SVS - optionally supplied water heater
PS1 - supply air differential pressure switch
PS2 - extract air differential pressure switch
DTJ - humidity + temperature sensor
IV - exhaust air fan
PV - supplied air fan
RR - rotary heat exchanger
R - rotor motor
PF - fresh air filter (class F7)
IF - extract air filter (class M5)
TJ - air temperature sensor
TL - air temperature sensor
TE - temperature sensor for exhaust air
M6 - optionally supplied mixing valve and motor
M4 - water heater circulation pump
T1 - antifrost thermostat
TV - supplied antifrost sensor
EKS NV PH - optional fresh air pre-heater

FUNCTIONS		
Description of the functions	PRV V2	
	RIRS EKO 3.0	
	E	**W**
Functions		
Date and time settings	✓	✓
4 speeds for easy and user-friendly control ("Stop" – the unit is stopped; "Low", medium", and "High". Service menu allows adjusting each speed individually)	✓	✓
BOOST function (Fans operate at highest speed)	✓	✓
Comfortable air temperature function	✓	✓
Cold/heat recovery	✓	✓
Fire place function	✓	✓
Dryness protection	✓	✓
Weekly schedule	✓	✓
Holiday schedule	✓	✓
User and service control levels	✓	✓
Manual air flow balancing	✓	✓
CO_2 level indication and reduction function	✓	✓
Night cooling function	✓	✓
Relative humidity (RH) level indication and reduction function	✓	✓
Software and configuration update possibility	✓	✓
Supply air temperature control according to the extract air sensor	✓	✓
Monitoring function (all sensors and I/O)	✓**2**	✓**2**
Mode switch (start/stop)	✓	✓
Extracted air relative humidity converter	✓	✓
Manual components control	✓**1**	✓**1**
Functional units		
Fans		
Soft start and stop	✓	✓
Fan failure protection	✓	✓
Speed synchronous/asynchronous 0-10V control	✓	✓
Electric heater		
On/Off / PWM control	✓	
Manual protection	✓	
Overheat protection (additional protection software)	✓	✓
Water heater		
Pulse-width modulation (PWM) valve actuator control		✓
Protection using temperature sensor		✓
Protection using termostat (NC)		✓
Circulation pump control		✓
Return water temperature sensor		✓
DX cooler		
Control On/Off		✓
Water cooler		
Pulse-width modulation (PWM) valve actuator control		✓
Control with three-positional valve actuator	✓	✓
Filter pollution monitoring		
By pressure switch (NC)	✓	✓
By filter timer	✓	✓
Rotor		
Pulse-width modulation (PWM) (0-10VDC) motor control	✓	✓
On/Off motor control	✓	✓
Motor belt levers protection	✓	✓
Sensors		
Supply air temperature sensor	✓	✓
Fresh air temperature sensor	✓	✓
Exhaust air temperature sensor	✓	✓
Extract air temperature sensor	✓	✓
Emergency signals and inputs/outputs		
Fire protection input	✓	✓
Working indication output	✓	✓
Alarm indication output	✓	✓
Remote controllers		
Stouch	✓	✓
Flex	✓	✓
Ptouch	✓	✓
MB-Gateway	✓	✓

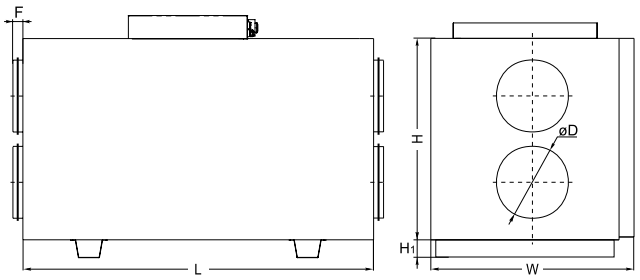
1	**With FLEX TEST remote controler**	**2**	**Only sensors**

RIRS H EKO

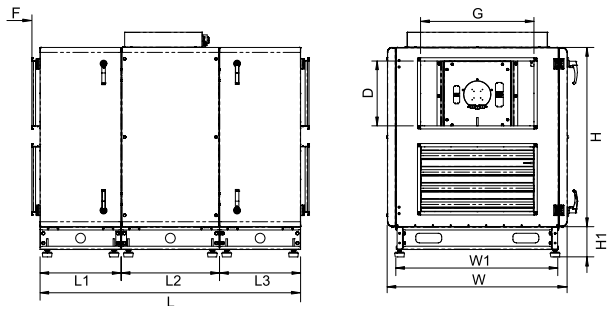


Application	Ventilation of houses, small public buildings, offices or other heated premises (classrooms, apartments, conference rooms, etc.).
Description	RIRS H EKO 3.0 is a range of heat recovery units with high-efficiency rotor heat exchangers. The units are designed for horizontal placement in auxiliary heated or non-heated premises (basements, boiler rooms, etc.) or outdoors (with roofing). There are 7 sizes (airflow interval 430-6000 m^3/h) with separate heaters available for different climate zones. RIRS H EKO 3.0 units have high overall energy savings due to the highly efficient heat recovery (up to 85%), quiet and economical EC fans, effective low pressure drop filters and top-level of air tightness. All RIRS H EKO 3.0 units are fully equipped with automatic controls. Optional external sensors for CO_2 and humidity and the summer mode feature will guarantee the highest comfort (demand-level control). RIRS H EKO 3.0 units are service-friendly and easy to mount. Filter pollution may be identified by timers or contamination controls (RIRS 1200-5500 H EKO 3.0). Rotor fault indicator is included in every AHU. All units are supplied tested and ready to install.
Controls	Three remote control options are available: 1. Flex, Stouch or Ptouch remote controllers. 2. Building management system connections. 3. Remote control via PC MB-Gateway.
The main Features	› Efficient rotor heat exchanger with up to 85% heat recovery. › Water/electrical heating options. › Easy and quick mounting. › Controlled airflow. › Fully integrated plug-and-play control system. › Outdoor versions and convertible inspection side.
Rotor	› Eurovent certified. › Plate gap 1,4-1,9 mm. › Rotor fault indicator. › Minimal airflow mixing. › Appropriate “Purge sector” size (for RIRS 2500, 3500 and 5500 H EKO 3.0).
Construction	› Frameless construction from double-skinned steel, with powder coated paint, panels. › Acoustic and thermal wall insulation – 50 mm. › Hinged door with locks grants easy access to internal components. › Separate compartment on the side of the unit grants quick access to the control board (plug-and-play). › Three sensors for fresh, supply and extract air temperatures. › Anti-vibration pads (optional for RIRS 400-1900 H EKO 3.0; standard for RIRS 2500-5500 H EKO 3.0). › Integrated electrical heater or optional water heater/cooler (on duct). › Water heater with frost protection kit available. › Low pressure drop filters: F7/M5. › RIRS 1200-5500 H EKO 3.0 optional roof and outlet covers for outdoor placement. › RIRS 2500-5500 H EKO 3.0 delivered in three sections › RIRS 2500-5500 H EKO 3.0 integrated motorized dampers for fresh and exhaust air. › Integrated pressure switch for filter pollution alarm (RIRS 1200-5500 H EKO 3.0). › RHX versions (rotor speed control, using stepper motor and driver).

RIRS 400 - 1900H EKO 3.0



RIRS 2500 - 5500H EKO 3.0



	Dimensions [mm]											
Unit	**L**	**L1**	**L2**	**L3**	**W**	**W1**	**H**	**H_1**	**øD**	**G**	**D**	**F**
RIRS 400HE/HW EKO 3.0	1000	-	-	-	560	560	610	40	200	-	-	30
RIRS 700HE/HW EKO 3.0	1100	-	-	-	654	653	700	40	250	-	-	40
RIRS 1200HE/HW EKO 3.0	1350	-	-	-	855	853	900	70	315	-	-	40
RIRS 1900HE/HW EKO 3.0	1350	-	-	-	855	853	900	70	315	-	-	40
RIRS 2500HE/HW EKO 3.0	1608	500	606	500	1110	1000	1105	190	-	700	400	50
RIRS 3500HE/HW EKO 3.0	1900	630	628	630	1040	1205	1300	190	-	700	400	50
RIRS 5500HE/HW EKO 3.0	1908	600	700	600	1404	1394	1485	190	-	800	500	50

RIRS 400 H E L EKO 3.0

EKO 3.0	Equipped with new PRV V2 control board
L	AHU with EC motors
E	Air intake side (L - left; R - right)
H	Heater type (E - integrated electrical heater; W - optional water heater)
400	Housing type (V - vertical, H - horizontal, P - ceiling)
RIRS	AHU size according to maximum airflow range m³/h
	AHU range with rotor heat exchanger

Accessories

Remote controller

Ptouch p. 175

Control panel

FLEX p. 177

Remote controller

Stouch p. 176

Net module

MB-Gateway p. 178

Pressure transmitter

S-1141 p. 179

CO2 sensor

S-RC02-F2 p. 180

Humidity sensor

S-KFF-U p. 181

Thermic water valve actuator

SSB p. 195

Circular duct silencer

AKS p. 216

Mounting clamp

AP p. 219

Shut-off damper

SKG p. 212

Heating coil

AVS p. 185

Circular duct water cooler

AVA p. 193

Rectangular duct silenser

SKS p. 215

Water heating coil

SVS p. 190

Comfort Box

CB p. 183

Actuator for dampers

SP p. 210

Temperature sensor

TJP-10K p. 182

Mixing point

RMG p. 196

2 and 3 way valves

VVP/VXP p. 197

Electrical duct pre-heater

EKA NV PH p. 201

Electrical duct pre-heater

EKS NV PH p. 203

RIRS H EKO

Unit	Optional accessories									
	Flex Stouch Ptouch MB-Gateway	**S-1141 S-RC02-F2 S-KFF-U**	**AKS SKG AP**	**AVS AVA**	**SKS**	**SVS**	**Comfort Box**	**SP** *Supply*	**SP** *Exhaust*	**TJP 10P CO4C*** **
RIRS 400HE EKO 3.0	+	+	160	160	-	-	-	CM230-1-F-L	CM230-1-F-L	-
RIRS 400HW EKO 3.0	+	+	160	160	-	-	-	TF230	CM230-1-F-L	incl
RIRS 700HE EKO 3.0	+	+	250	250	-	-	-	CM230-1-F-L	CM230-1-F-L	-
RIRS 700HW EKO 3.0	+	+	250	250	-	-	-	TF230	CM230-1-F-L	incl
RIRS 1200HE EKO 3.0	+	+	315	315	-	-	-	LM230A-TP	LM230A-TP	-
RIRS 1200HW EKO 3.0	+	+	315	315	-	-	-	LF230	LM230A-TP	incl
RIRS 1900HE EKO 3.0	+	+	315	315	-	-	-	LM230A-TP	LM230A-TP	-
RIRS 1900HW EKO 3.0	+	+	315	315	-	-	-	LF230	LM230A-TP	incl
RIRS 2500HE EKO 3.0	+	+	-	-	700x400	-	600x350	int		-
RIRS 2500HW EKO 3.0	+	+	-	-	700x400	700x400	600x350	int		incl
RIRS 3500HE EKO 3.0	+	+	-	-	700x400	-	800x500	int		-
RIRS 3500HW EKO 3.0	+	+	-	-	700x400	700x400	800x500	int		incl
RIRS 5500HE EKO 3.0	+	+	-	-	800x500	-	800x500	int		-
RIRS 5500HW EKO 3.0	+	+	-	-	800x500	800x500	800x500	int		incl

*** - anti-frost thermostat
incl - included

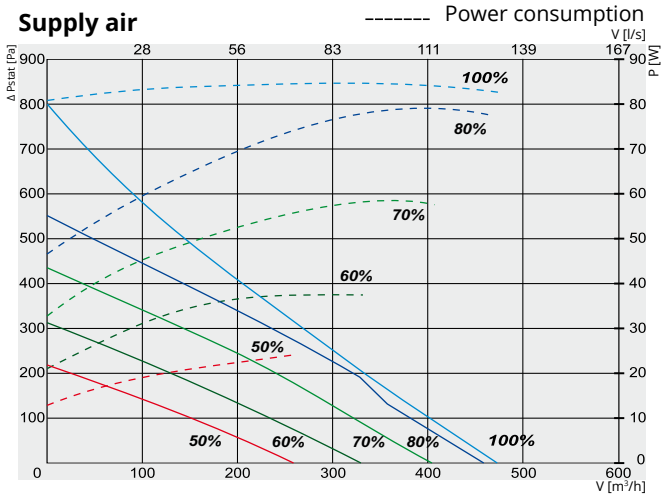
Unit	Optional accessories							
	EKA NV PH	**EKS NV PH**	**SSB** *Heating*	**SSB** *Cooling*	**RMG 80/60°C**	**RMG 60/40°C**	**VVP/VXP 80/60°C**	**VVP/VXP 60/40°C**
RIRS 400HE EKO 3.0	160	-	-	81	-	-	-	-
RIRS 400HW EKO 3.0	160	-	61	81	3-0,63-4	3-0,63-4	45.10-0,63	45.10-0,63
RIRS 700HE EKO 3.0	250	-	-	81	-	-	-	-
RIRS 700HW EKO 3.0	250	-	61	81	3-1,0-4	3-0,63-4	45.10-1,0	45.10-0,63
RIRS 1200HE EKO 3.0	315	-	-	81	-	-	-	-
RIRS 1200HW EKO 3.0	315	-	61	81	3-1,0-4	3-0,63-4	45.10-1,0	45.10-0,63
RIRS 1900HE EKO 3.0	315	-	-	81	-	-	-	-
RIRS 1900HW EKO 3.0	315	-	61	81	3-1,0-4	3-0,63-4	45.10-1,0	45.10-0,63
RIRS 2500HE EKO 3.0	-	-	-	-	-	-	-	-
RIRS 2500HW EKO 3.0	-	700x400	61	81	+	+	+	+
RIRS 3500HE EKO 3.0	-	700x400	-	-	-	-	-	-
RIRS 3500HW EKO 3.0	-	700x400	61	81	+	+	+	+
RIRS 5500HE EKO 3.0	-	800x500	-	-	-	-	-	-
RIRS 5500HW EKO 3.0	-	800x500	61	81	+	+	+	+

*** - anti-frost thermostat
incl - included

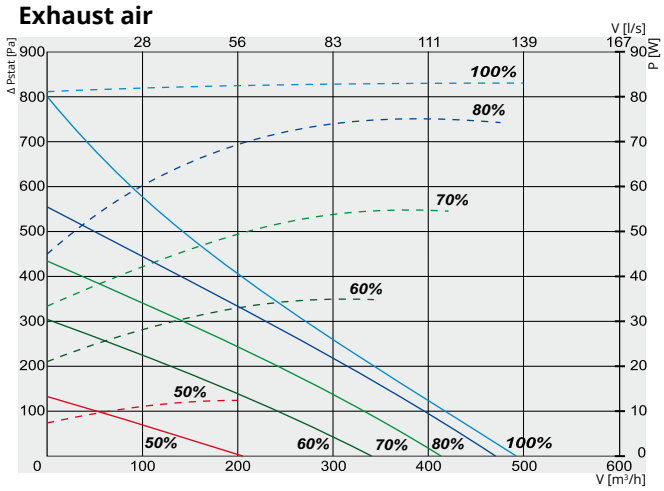
RIRS 400H EKO 3.0

Performance
Power consumption

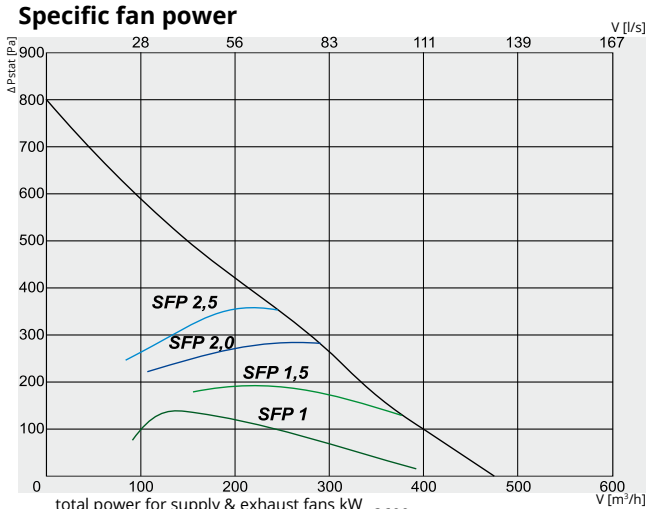
Supply air



Exhaust air

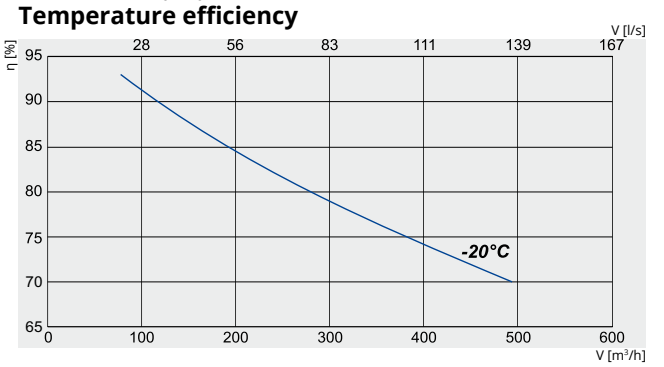


Specific fan power

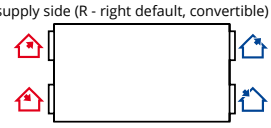


SFP= $\frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3\text{/h}} \times 3600$

Temperature efficiency



RIRS 400H EKO 3.0
Air supply side (R - right default, convertible)



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.	Version
GAGRIRS1749_0022A	400HE EKO 3.0 Integrated electrical heater.
GAGRIRS1750_0023A	400HW EKO 3.0 Optional water heater.

400HE / HW EKO 3.0

Water heater (optional) HW ver.			AVS 160
Electrical heater HE ver.	phase/voltage	[50Hz/VAC]	~1, 230
		[kW]	1,2
EC fans	phase/voltage	[50Hz/VAC]	~1, 230
exhaust	power/current	[kW/A]	0,085/0,75
	fan speed	[min⁻¹]	3200
supply	power/current	[kW/A]	0,085/0,75
	fan speed	[min⁻¹]	3200
Thermal efficiency up to*			75%
Max power consumption HE/HW		[kW/A]	1,38/6,80 0,18/1,60
Control board			PRV V2
Filter class	exhaust/supply		M5/F7
Housing insulation, mineral wool		[mm]	50
Colour	RAL	white	9016
Weight (net, without packing) HE / HW		[kg]	72
Comply with ERP			2016; 2018
Operation			indoors
Housing protection class	IP		34

* Calculated wet efficiency.

Temperature efficiency (balanced mass flow):
Extract air = 20°C/60%RH
Outdoor air = -20°C

400H EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	78	70	68	72	72	70	64	65
Extract	63	53	57	61	49	45	40	32
Surrounding	55	43	44	53	48	45	44	41
Measured at 380 m³/h, 124 Pa								

Certifications

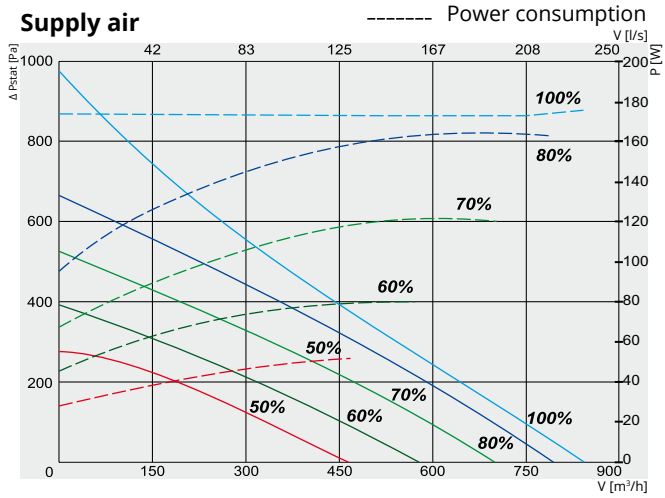
EUROVENT certified
rotor heat exchanger performance

EUROVENT CERTIFIED PERFORMANCE
AHU N°: 05.05.298
Range: SmartAir
www.eurovent-certification.com

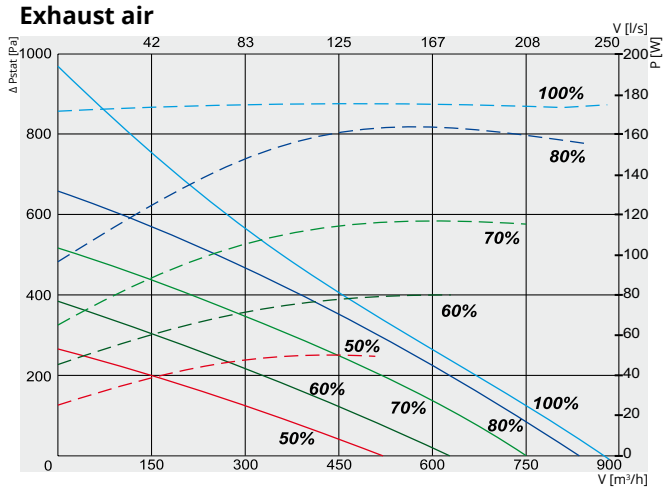
RIRS 700H EKO 3.0

Performance
Power consumption

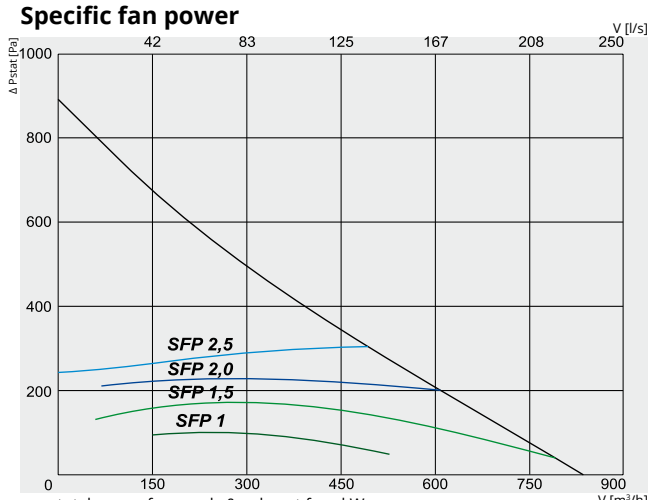
Supply air



Exhaust air

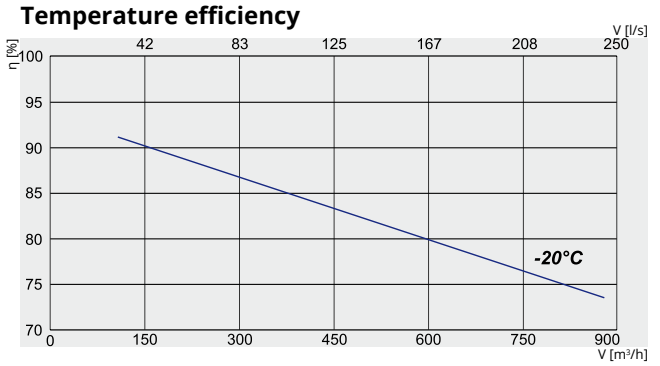


Specific fan power



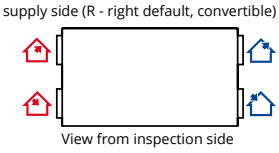
$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3\text{/h}} \times 3600$$

Temperature efficiency



RIRS 700H EKO 3.0

Air supply side (R - right default, convertible)



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.		Version
GAGRIRS1662_0013A	700HE EKO 3.0	Integrated electrical heater.
GAGRIRS1697_0014A	700HW EKO 3.0	Optional water heater.

700HE / HW EKO 3.0			
Water heater (optional) HW ver.			AVS 250
Electrical heater HE ver.	phase/voltage	[50Hz/VAC]	~1, 230
		[kW]	2,0
EC fans	phase/voltage	[50Hz/VAC]	~1, 230
exhaust	power/current	[kW/A]	0,168/1,4
	fan speed	[min^{-1}]	3230
supply	power/current	[kW/A]	0,168/1,4
	fan speed	[min^{-1}]	3230
Thermal efficiency up to*			75%
Max power consumption HE / HW		[kW/A]	2,34/11,60 0,34/2,90
Control board			PRV V2
Filter class	exhaust/supply		M5/F7
Housing insulation, mineral wool		[mm]	50
Colour	RAL	white	9016
Weight (net, without packing)		[kg]	96
Comply with ERP			2016; 2018
Operation			indoors
Housing protection class	IP		34

* Calculated wet efficiency.

Temperature efficiency (balanced mass flow):
Extract air = 20°C/60%RH
Outdoor air = -20°C

700H EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	78	67	68	74	72	71	65	63
Extract	65	54	62	63	53	52	48	36
Surrounding	55	48	49	51	49	46	44	43
Measured at 657 m³/h, 200 Pa								

Certifications

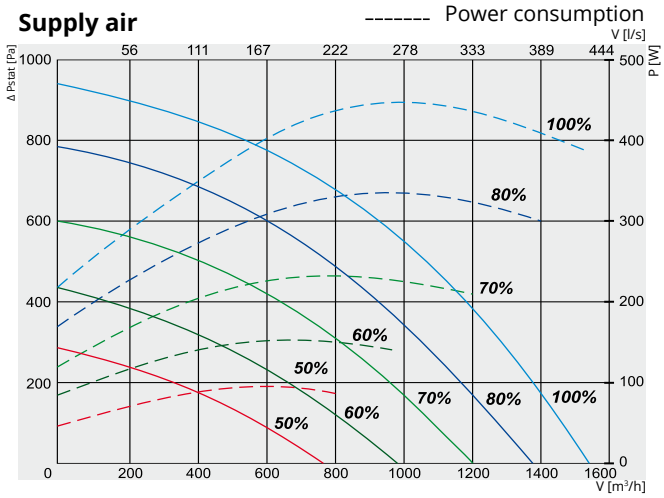
EUROVENT certified
rotor heat exchanger performance

EUROVENT CERTIFIED PERFORMANCE
AHU N° 05.05.298
Range: SmartAir
www.eurovent-certification.com

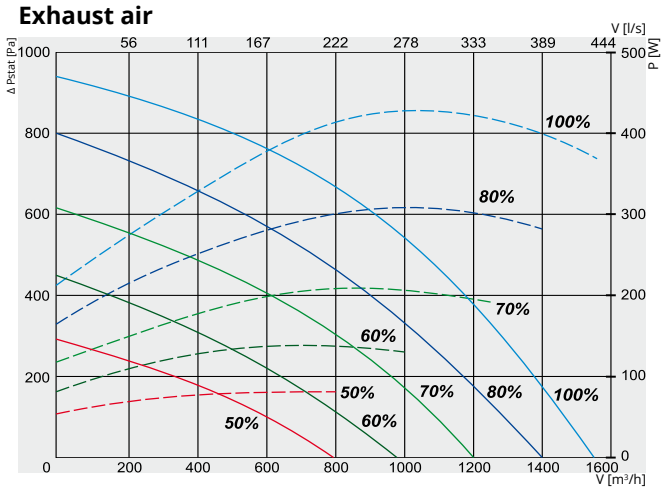
RIRS 1200H EKO 3.0

Performance
Power consumption

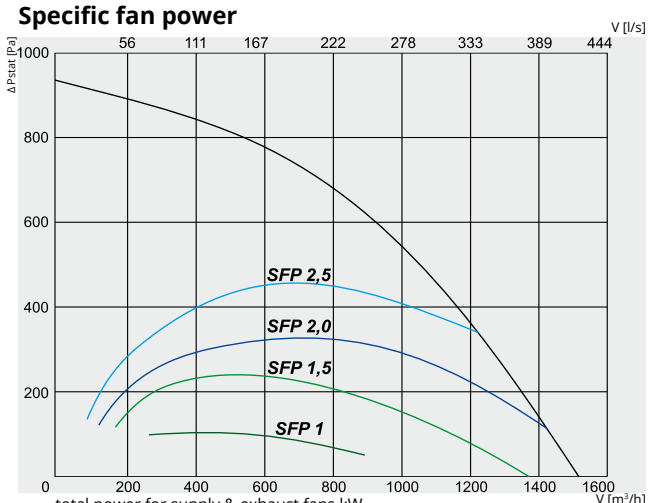
Supply air



Exhaust air

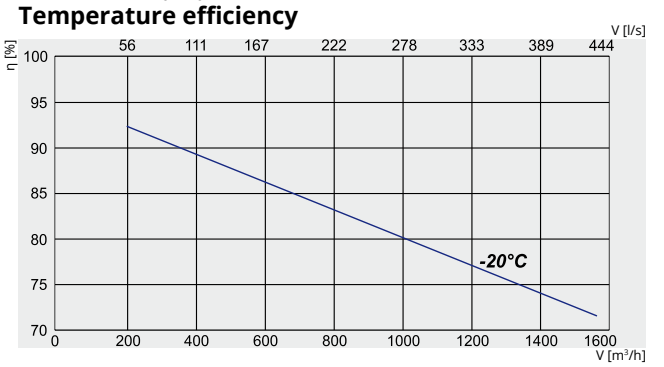


Specific fan power

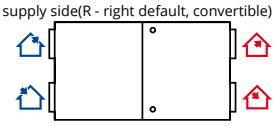


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency



RIRS 1200H EKO 3.0
Air supply side(R - right default, convertible)



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.		Version
GAGRIRS1671_0015C	1200HE EKO 3.0	Integrated electrical heater.
GAGRIRS1672_0016A	1200HW EKO 3.0	Optional water heater.

1200HE / HW EKO 3.0

Water heater (optional) HW ver.			AVS 315
Electrical heater HE ver.	phase/voltage	[50Hz/VAC]	~2, 400
		[kW]	4,0
EC fans	phase/voltage	[50Hz/VAC]	~1, 230
exhaust	power/current	[kW/A]	0,444/2,9
	fan speed	[min⁻¹]	3400
supply	power/current	[kW/A]	0,435/2,8
	fan speed	[min⁻¹]	3400
Thermal efficiency up to*			75%
Max power consumption HE / HW		[kW/A]	4,9/15,87 0,9/5,87
Control board			PRV V2
Filter class	exhaust/supply		M5/F7
Housing insulation, mineral wool		[mm]	50
Colour	RAL	grey	7040
Weight (net, without packing) HE / HW		[kg]	162
Comply with ERP			2016; 2018
Operation			indoors/outdoors**
Housing protection class	IP		34

* Calculated wet efficiency.
**Under covered area.

Temperature efficiency (balanced mass flow) :
Extract air = 20°C/60%RH
Outdoor air = -20°C

1200H EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	77	66	73	71	70	66	62	53
Extract	68	63	64	62	56	46	41	31
Surrounding	57	52	53	47	44	41	35	33
Measured at 1437 m³/h, 102 Pa								

Certifications

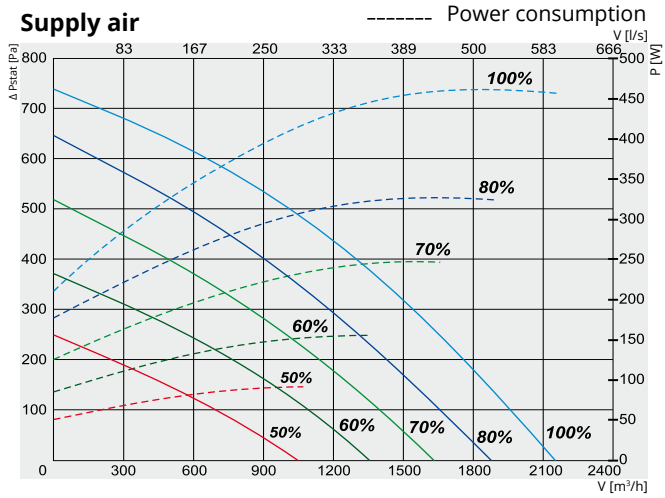
EUROVENT certified
rotor heat exchanger performance

RIRS H EKO

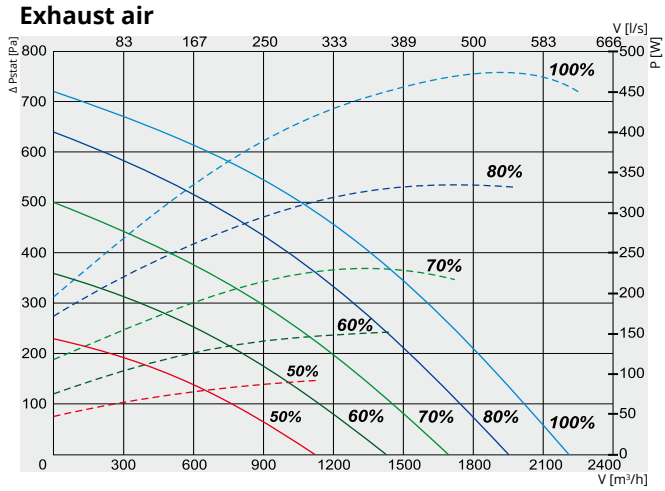
RIRS 1900H EKO 3.0

Performance
Power consumption

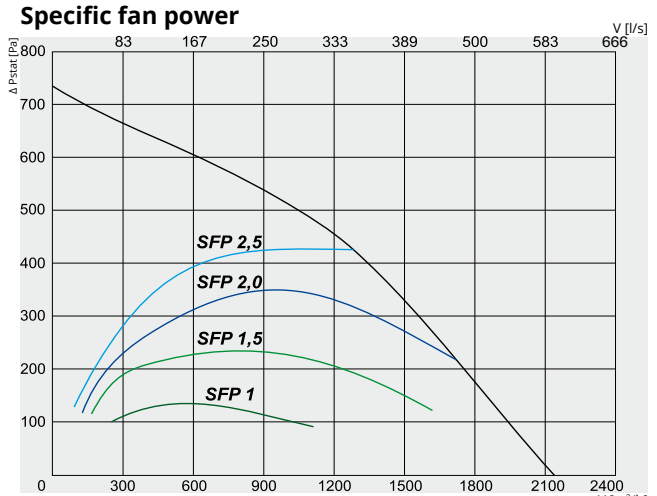
Supply air



Exhaust air

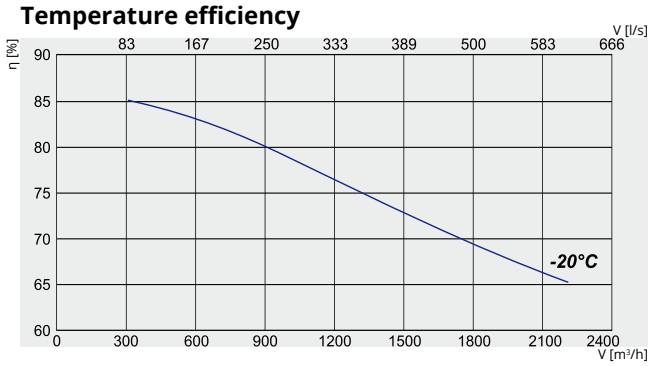


Specific fan power

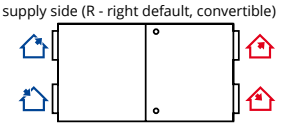


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency



RIRS 1900H EKO 3.0
Air supply side (R - right default, convertible)



View from inspection side

Exhaust air Extract air outdoor air Supply air

Article No.		Version
GAGRIRS1719_0017B	1900HE EKO 3.0	Integrated electrical heater.
GAGRIRS1720_0019A	1900HW EKO 3.0	Optional water heater.

1900HE / HW EKO 3.0				
Water heater (optional) HW ver.				AVS 315
Electrical heater HE ver.	phase/voltage	[50Hz/VAC]		~3, 400
		[kW]		9,0
EC fans	phase/voltage	[50Hz/VAC]		~1, 230
exhaust	power/current	[kW/A]		0,49/3,2
	fan speed	[min^{-1}]		2540
supply	power/current	[kW/A]		0,5/3,25
	fan speed	[min^{-1}]		2540
Thermal efficiency up to*				68,4%
Max power consumption HE / HW		[kW/A]	10/19,62	1/6,62
Control board				PRV V2
Filter class	exhaust/supply			M5/F7
Housing insulation, mineral wool		[mm]		50
Colour	RAL	grey		7040
Weight (net, without packing)		[kg]		162
Comply with ERP				2016; 2018
Operation				indoors/outdoors**
Housing protection class	IP			34

* Calculated wet efficiency.
**Under covered area.

Temperature efficiency (balanced mass flow) :
Extract air = 20°C/60%RH
Outdoor air = -20°C

1900H EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	79	55	70	70	71	75	72	63
Extract	67	53	65	60	53	54	50	36
Surrounding	61	44	58	53	51	53	50	48
Measured at 1906 m³/h, 100 Pa								

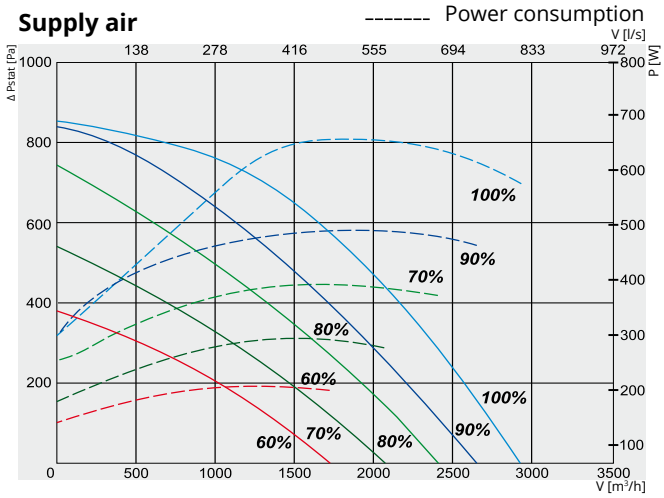
Certifications

EUROVENT certified
rotor heat exchanger performance

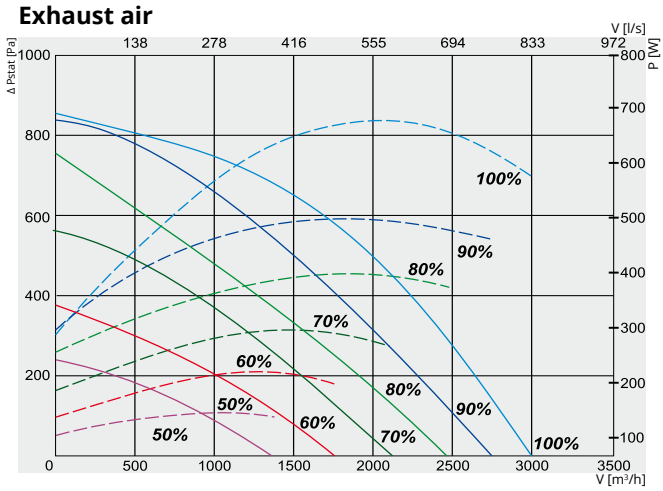
RIRS 2500H EKO 3.0

Performance
Power consumption

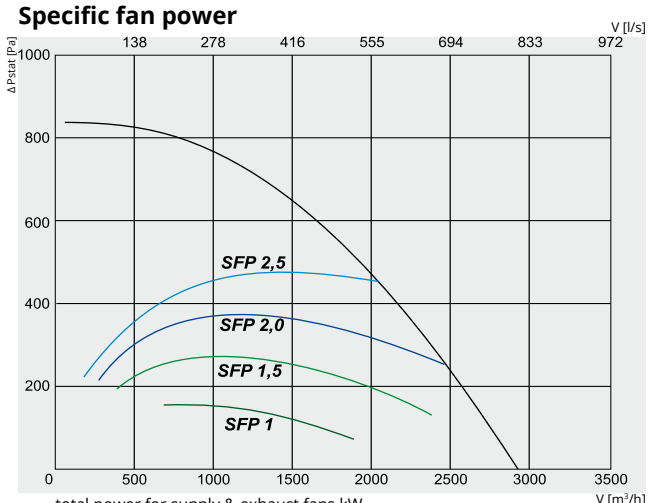
Supply air



Exhaust air

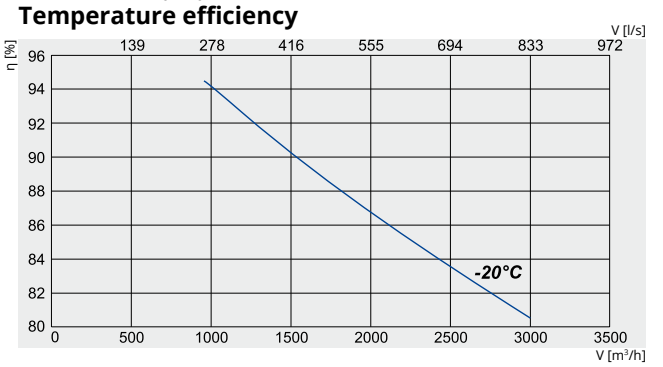


Specific fan power



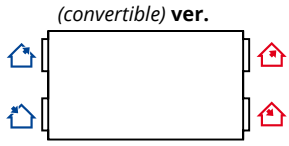
SFP= $\frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$

Temperature efficiency



RIRS 2500H EKO 3.0

(convertible) **ver.**



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.		Version
GAGRIRS1742_0026B	2500HE EKO 3.0	Integrated electrical heater.
GAGRIRS1772_0027A	2500HW EKO 3.0	Optional water heater.

2500HE / HW EKO 3.0

Water heater (optional) HW ver.				Comfort Box 600x350
Electrical heater HE ver.	phase/voltage	[50Hz/VAC]		~3, 400
		[kW]		9,0
EC fans	phase/voltage	[50Hz/VAC]		~1, 230
exhaust	power/current	[kW/A]		0,71/3,19
	fan speed	[min⁻¹]		2800
supply	power/current	[kW/A]		0,75/3,35
	fan speed	[min⁻¹]		2800
Thermal efficiency up to*				83,6%
Max power consumption HE / HW		[kW/A]	10,5/19,95	1,5/6,95
Control board				PRV V2
Filter class	exhaust/supply			M5/F7
Housing insulation, mineral wool		[mm]		50
Colour	RAL	grey		7040
Weight (net, without packing) HE / HW		[kg]		350
Comply with ERP				2016; 2018
Operation				indoors/outdoors**
Housing protection class	IP			34

* Calculated wet efficiency.
**Under covered area.

Temperature efficiency (balanced mass flow):
Extract air = 20°C/60%RH
Outdoor air = -20°C

2500H EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	79	61	69	71	75	71	65	64
Extract	68	60	61	65	56	51	46	41
Surrounding	62	45	52	60	54	52	48	43
Measured at 2599 m³/h, 180 Pa								

Certifications

EUROVENT certified
rotor heat exchanger performance

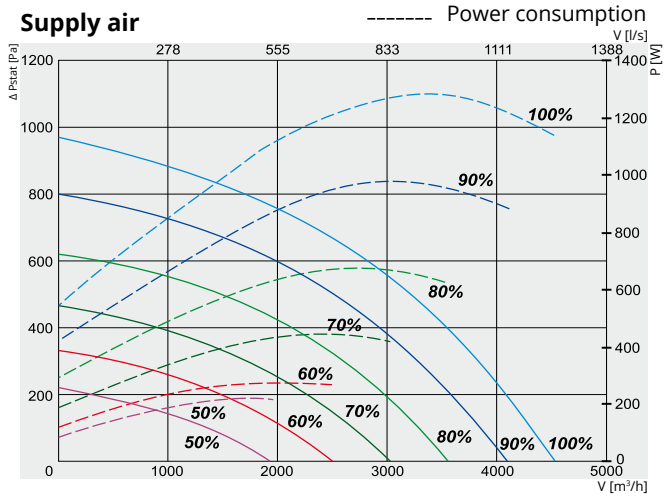
EUROVENT CERTIFIED PERFORMANCE
AHU N°: 05.05.298
Range: SmartAir
www.eurovent-certification.com

RIRS H EKO

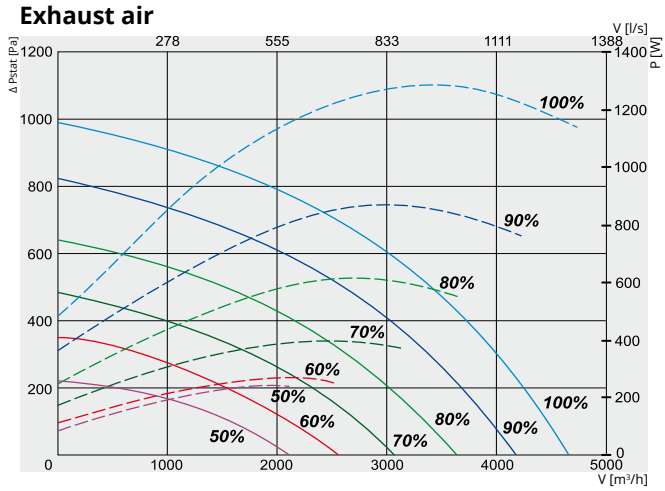
RIRS 3500H EKO 3.0

Performance
Power consumption

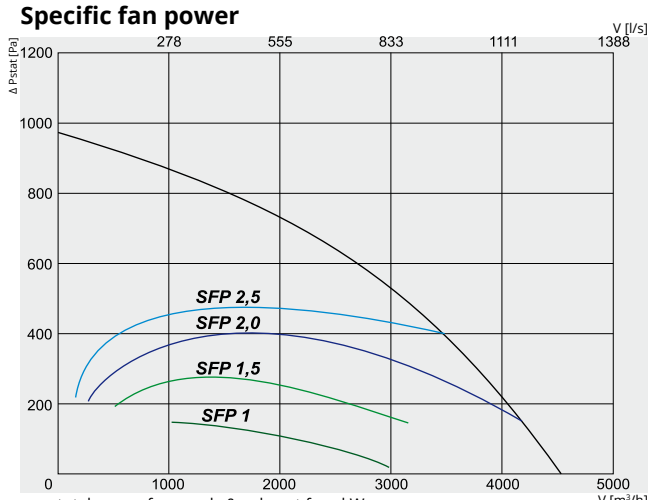
Supply air



Exhaust air

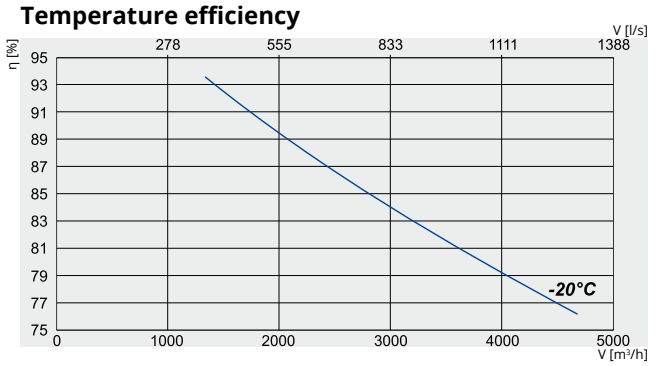


Specific fan power

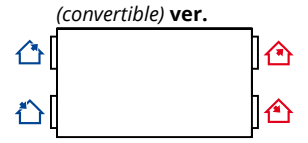


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency



RIRS 3500H EKO 3.0
(convertible) **ver.**



View from inspection side

Exhaust air Extract air outdoor air Supply air

Article No.		Version
GAGRIRS1764_0020B	3500HE EKO 3.0	Integrated electrical heater.
GAGRIRS1765_0021A	3500HW EKO 3.0	Optional water heater.

3500HE / HW EKO 3.0				
Water heater (optional) HW ver.			Comfort Box 800x500	
Electrical heater HE ver.	phase/voltage	[50Hz/VAC]	~3, 400	
		[kW]	12,0	
EC fans	phase/voltage	[50Hz/VAC]	~1, 230	
exhaust	power/current	[kW/A]	1,3/5,75	
	fan speed	[min^{-1}]	2390	
supply	power/current	[kW/A]	1,30/5,75	
	fan speed	[min^{-1}]	2390	
Thermal efficiency up to*			80%	
Max power consumption HE / HW		[kW/A]	14,64/29,18	2,64/11,88
Control board			PRV V2	
Filter class	exhaust/supply		M5/F7	
Housing insulation, mineral wool		[mm]	50	
Colour	RAL	grey	7040	
Weight (net, without packing) HE / HW		[kg]	492	
Comply with ERP			2016; 2018	
Operation			indoors/outdoors**	
Housing protection class	IP		34	

* Calculated wet efficiency.
**Under covered area.

Temperature efficiency (balanced mass flow):
Extract air = 20°C/60%RH
Outdoor air = -20°C

3500HW EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	84	59	73	79	78	77	75	70
Extract	74	60	72	68	62	59	53	42
Surrounding	66	55	60	61	58	56	50	48
Measured at 4055 m³/h, 225 Pa								

Certifications

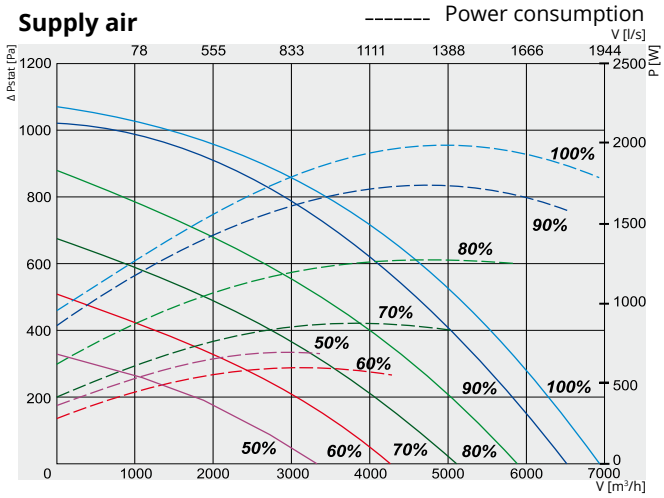
EUROVENT certified
rotor heat exchanger performance

EUROVENT CERTIFIED PERFORMANCE
AHU N° 05.05.298
Range: SmartAir
www.eurovent-certification.com

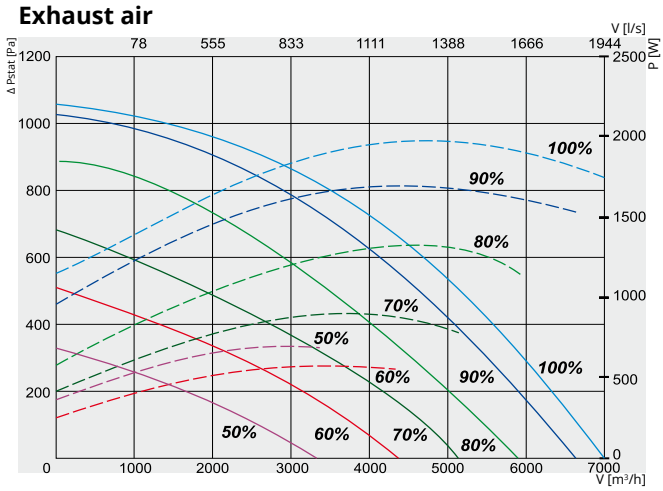
RIRS 5500H EKO 3.0

Performance
Power consumption

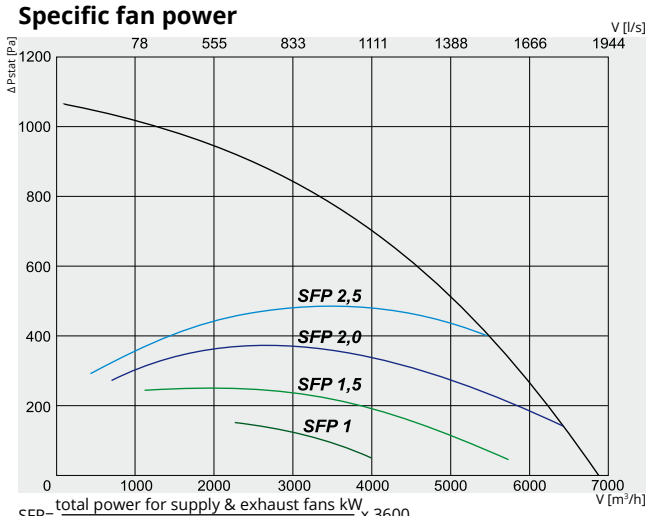
Supply air



Exhaust air

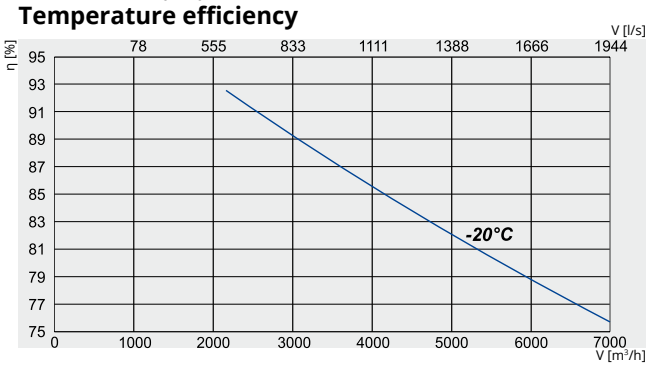


Specific fan power

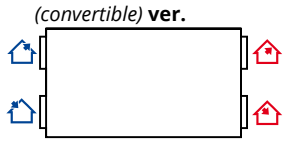


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency



RIRS 5500H EKO 3.0
(convertible) **ver.**



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.		Version
GAGRIRS1743_0030B	5500HE EKO 3.0	Integrated electrical heater.
GAGRIRS1761_0031B	5500HW EKO 3.0	Optional water heater.

5500HE / HW EKO 3.0			
Water heater (optional) HW ver.			Comfort Box 800x500
Electrical heater HE ver.	phase/voltage	[50Hz/VAC]	~3, 400
		[kW]	15,0
EC fans	phase/voltage	[50Hz/VAC]	~3, 400
exhaust	power/current	[kW/A]	2/3,17
	fan speed	[min⁻¹]	2180
supply	power/current	[kW/A]	1,98/3,06
	fan speed	[min⁻¹]	2180
Thermal efficiency up to*			80%
Max power consumption HE / HW		[kW/A]	19,02/28,35 4,02/6,65
Control board			PRV V2
Filter class	exhaust/supply		M5/F7
Housing insulation, mineral wool		[mm]	50
Colour	RAL	grey	7040
Weight (net, without packing) HE / HW		[kg]	625
Comply with ERP			2016; 2018
Operation			indoors/outdoor**
Housing protection class	IP		34

* Calculated wet efficiency.
**Under covered area.

Temperature efficiency (balanced mass flow):
Extract air = 20°C/60%RH
Outdoor air = -20°C

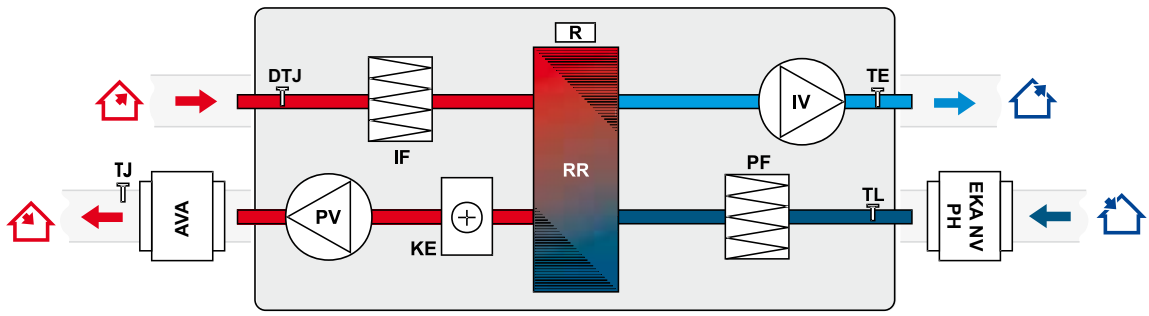
5500H EKO 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	90	69	82	83	85	81	80	76
Extract	76	62	70	73	67	61	58	53
Surrounding	78	60	71	73	72	69	64	57
Measured at 6219 m³/h, 210 Pa								

Certifications

EUROVENT certified
rotor heat exchanger performance

EUROVENT CERTIFIED PERFORMANCE
AHU N°: 05.05.298
Range: SmartAir
www.eurovent-certification.com

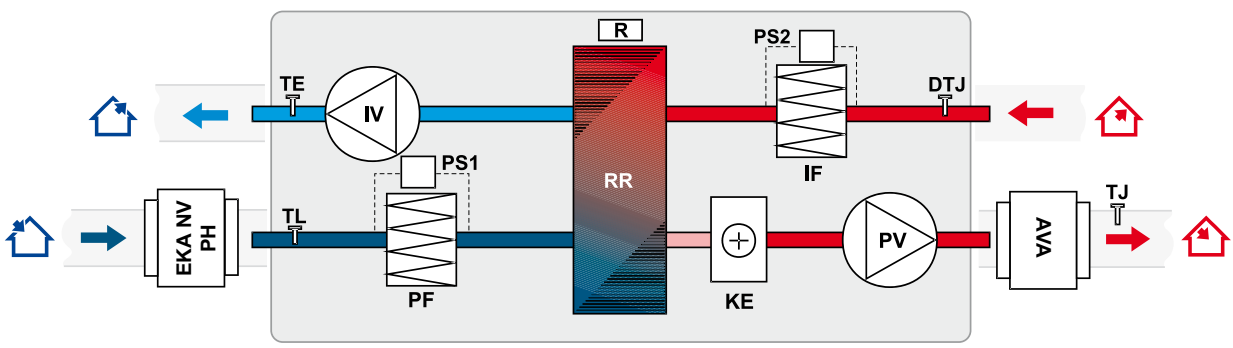
RIRS 400HE EKO 3.0 / 700HE EKO 3.0 (horizontal) **versions with electrical heater**



IV - exhaust air fan
PV - supply air fan
RR - rotary heat exchanger
R - rotor motor
KE - electrical heater
PF - fresh air filter (class F7)
IF - extract air filter (class M5)

TJ - temperature sensor for supply air
TL - temperature sensor for fresh air
TE - temperature sensor for exhaust air
DTJ - humidity + temperature sensor
AVA - optionally supplied water cooler
EKA NV PH - optional fresh air pre-heater

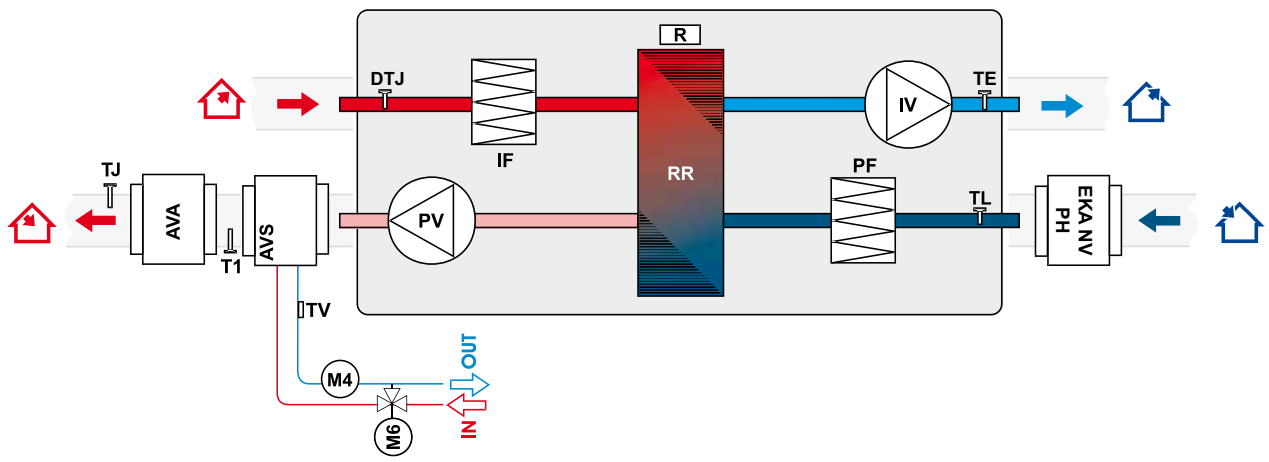
RIRS 1200HE EKO 3.0 / 1900HE EKO 3.0 (horizontal) **versions with electrical heater**



IV - exhaust air fan
PV - supply air fan
RR - rotary heat exchanger
R - rotor motor
KE - electrical heater
PF - fresh air filter (class F7)
IF - extract air filter (class M5)

PS2 - extract air differential pressure switch
PS1 - fresh air differential pressure switch
TJ - temperature sensor for supply air
TL - temperature sensor for fresh air
TE - temperature sensor for exhaust air
DTJ - humidity + temperature sensor
AVA - optionally supplied water cooler
EKA NV PH - optional fresh air pre-heater

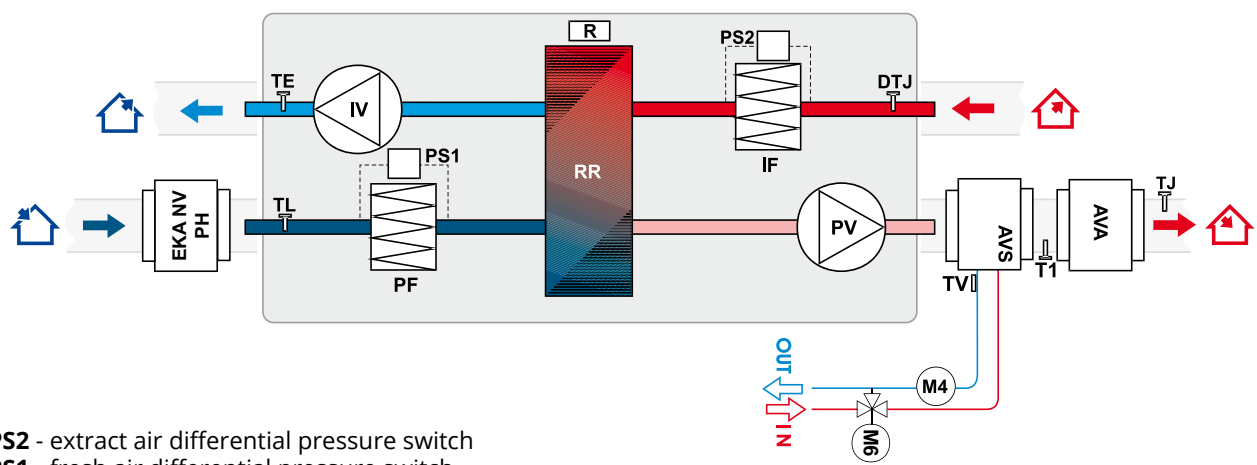
RIRS 400HW EKO 3.0 / 700HW EKO 3.0 (horizontal) **versions with water heater**



AVS - optionally supplied water heater
IV - exhaust air fan
PV - supply air fan
RR - rotary heat exchanger
R - rotor motor
PF - fresh air filter (class F7)
IF - extract air filter (class M5)
AVA - optionally supplied water cooler
EKA NV PH - optional fresh air pre-heater

TJ - air temperature sensor for supply air
TL - air temperature sensor for fresh air
DTJ - humidity + temperature sensor
M6 - optionally supply mixing valve and motor
M4 - water heater circulatory pump
T1 - antifrost thermostat
TV - antifrost sensor
TE - temperature sensor for exhaust air

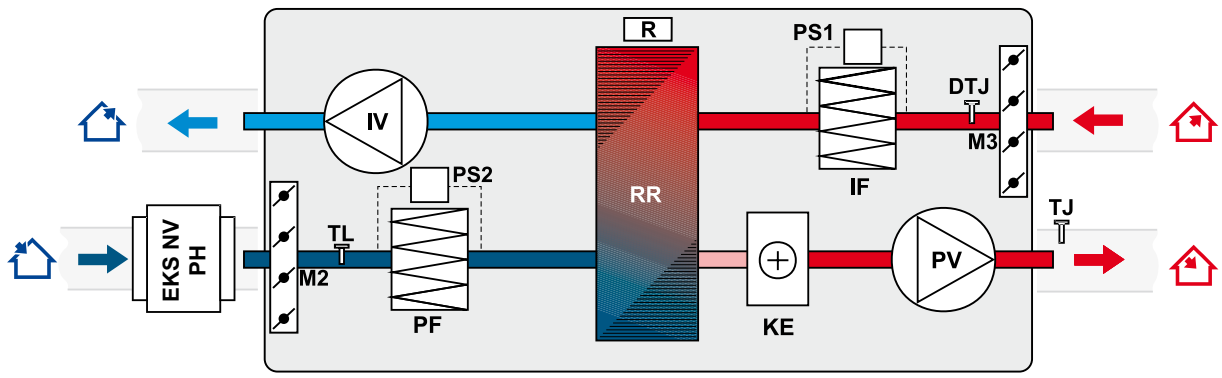
RIRS 1200HW EKO 3.0 / 1900HW EKO 3.0 (horizontal) **versions with water heater**



PS2 - extract air differential pressure switch
PS1 - fresh air differential pressure switch
AVS - optionally supplied water heater
AVA - optionally supplied water cooler
EKA NV PH - optional fresh air pre-heater
IV - exhaust air fan
PV - supply air fan
RR - rotary heat exchanger
R - rotor motor
PF - fresh air filter (class F7)
IF - extract air filter (class M5)

TJ - air temperature sensor for supply air
TL - air temperature sensor for fresh air
TE - temperature sensor for exhaust air
M6 - optionally supply mixing valve and motor
M4 - water heater circulatory pump
T1 - antifrost thermostat
TV - antifrost sensor
DTJ - humidity + temperature sensor

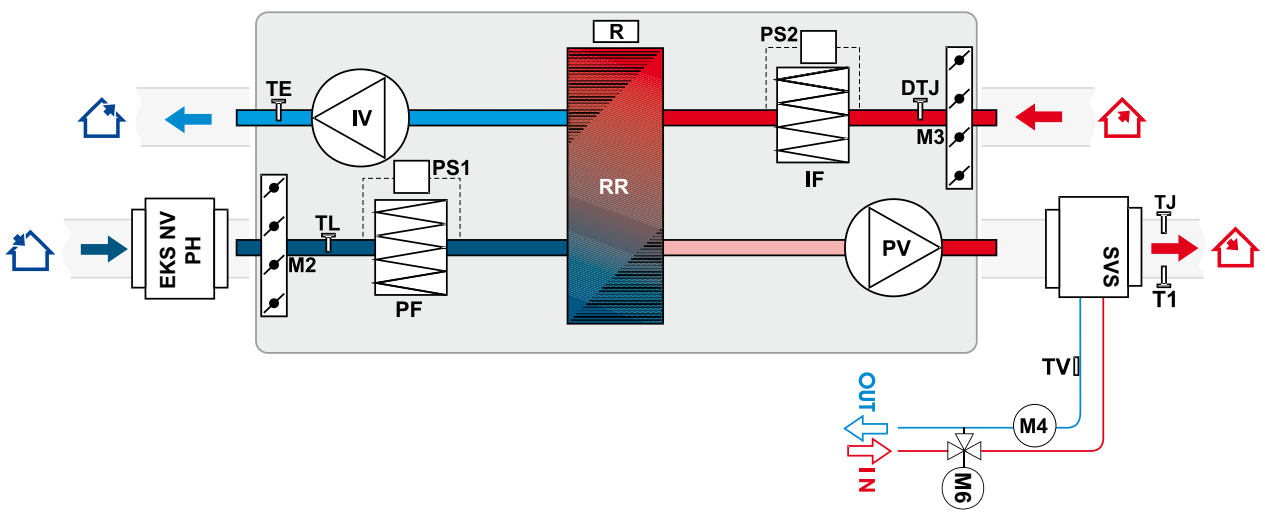
RIRS 2500HE EKO 3.0 / 3500HE EKO 3.0 / 5500HE EKO 3.0 (horizontal) **versions with electrical heater**



IV - exhaust air fan
PV - supply air fan
RR - rotary heat exchanger
R - rotor motor
KE - electrical heater
PF - fresh air filter (class F7)
IF - extract air filter (class M5)
EKS NV PH - optional fresh air pre-heater

PS2 - extract air differential pressure switch
PS1 - fresh air differential pressure switch
TJ - temperature sensor for supply air
TL - temperature sensor for fresh air
TE - temperature sensor for exhaust air
DTJ - humidity + temperature sensor
M2 - actuator for fresh air damper
M3 - actuator for extract air damper

RIRS 2500HW EKO 3.0 / 3500HW EKO 3.0 / 5500HW EKO 3.0 (horizontal) **versions with water heater**



EKS NV PH - optional fresh air pre-heater
IV - exhaust air fan
PV - supply air fan
RR - rotary heat exchanger
R - rotor motor
PF - fresh air filter (class F7)
IF - extract air filter (class M5)

PS2 - extract air differential pressure switch
PS1 - fresh air differential pressure switch
TJ - temperature sensor for supply air
TL - temperature sensor for fresh air
TE - temperature sensor for exhaust air
DTJ - humidity + temperature sensor
M3 - actuator for extract air damper
M2 - actuator for fresh air damper

FUNCTIONS		
Descriptions of the functions	PRV V2	
	RIRS EKO 3.0	
	E	**W**
Functions		
Date and time settings	✓	✓
4 speeds for easy and-user friendly control ("Stop" – the unit is stopped; "Low", medium", and "High". Service menu allows adjusting each speed individually)	✓	✓
BOOST function (Fans operate at highest speed)	✓	✓
Comfortable air temperature function	✓	✓
Cold/heat recovery	✓	✓
Fire place function	✓	✓
Dryness protection	✓	✓
Weekly schedule	✓	✓
Holiday schedule	✓	✓
User and service control levels	✓	✓
Manual air flow balancing	✓	✓
CO_2 level indication and reduction function	✓	✓
Night cooling function	✓	✓
Relative humidity (RH) level indication and reduction function	✓	✓
Software and configuration update possibility	✓	✓
Supply air temperature control according to the extract air sensor	✓	✓
Monitoring function (all sensors and I/O)	✓**2**	✓**2**
Mode switch (start/stop)	✓	✓
Extracted air relative humidity converter	✓	✓
Manual components control	✓**1**	✓**1**
Functional units		
Fans		
Soft start and stop	✓	✓
Fan failure protection	✓	✓
Speed synchronous/asynchronous 0-10V control	✓	✓
Electric heater		
On/Off / PWM control	✓	
Manual protection	✓	
Overheat protection (additional protection software)	✓	✓
Water heater		
Pulse-width modulation (PWM) valve actuator control		✓
Protection using temperature sensor		✓
Protection using termostat (NC)		✓
Circulation pump control		✓
Return water temperature sensor	✓	✓
DX cooler		
Control On/Off	✓	✓
Water cooler		
Pulse-width modulation (PWM) valve actuator control		✓
Control with three-positional valve actuator	✓	✓
Filter pollution monitoring		
By pressure switch (NC)	✓	✓
By filter timer	✓	✓
Rotor		
Pulse-width modulation (PWM) (0-10VDC) motor control	✓	✓
On/Off motor control	✓	✓
Motor belt levers protection	✓	✓
Sensors		
Supply air temperature sensor	✓	✓
Fresh air temperature sensor	✓	✓
Exhaust air temperature sensor	✓	✓
Extract air temperature sensor	✓	✓
Emergency signals and inputs/outputs		
Fire protection input	✓	✓
Working indication output	✓	✓
Alarm indication output	✓	✓
Remote controllers		
Stouch	✓	✓
Flex	✓	✓
Ptouch	✓	✓
MB Gateway	✓	✓

1	**With FLEX TEST remote controler**	**2**	**Only sensors**

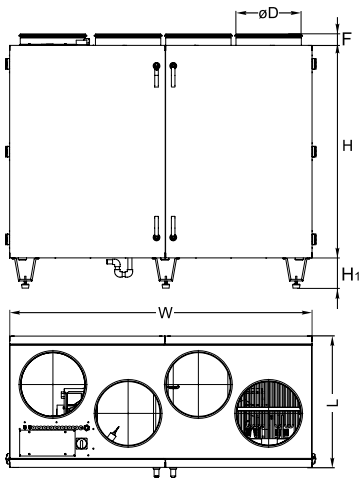
RIS V EC

EC
L2

Application	Ventilation of small public buildings, offices, other larger heated premises (sport facilities, conference rooms, shops, etc.)
Description	RIS V EC 3.0 units are designed for the ventilation of heated premises with efficient cross-flow heat exchangers. RIS 1900 EC units have left/right versions with integrated electrical heater or optional water heater on the duct. Energy savings are contributed by the cross-flow heat exchangers (with efficiency up to 60%), economical and silent EC fans, and high level of air tightness. Demand-level control options with CO_2 and humidity sensors. All units are supplied tested and ready to install.
Controls	Three* remote control options are available: 1. Flex, Stouch or Ptouch remote controllers. 2. Building management system connections. 3. Remote control via PC MB-Gateway. *Units can be optionally provided with SIEMENS Climatix controllers.
The main Features	› Energy-efficient and low-noise EC fans. › Efficient plate heat exchangers with up to 65% heat recovery. › Controlled airflow. › Supply air temperature control. › Water/electrical heating options and left/right maintenance side versions. › Easy and quick mounting.
Construction	› Acoustic and thermal wall insulation – 50 mm. › Powder coated housing – RAL 7040. › Integrated pressure switch for filter pollution. › Heat exchanger anti-frost protection. › Motorized bypass damper. › Integrated electrical heater and optional (duct-based) water/DX heater/cooler. › Optional motorized supply and exhaust air dampers. › Panel filters M5/F7. › Stainless steel condensate tray. › Optional CO_2, pressure or airflow transmitters.

RIS 1900 V E R EC 3.0

RIS	Equiped with new PRV V2 control board
1900	AHU with EC motors and cross-flow heat exchanger
V	Air intake side if not convertible (R - right; L- left)
E	Heater type (E - integrated electrical heater; W - optional water heater on the duct)
R	Housing type (V - vertical, H - horozontal, P - ceiling)
EC 3.0	AHU size according to maximum airflow range m³/h
	AHU range with plate heat exchanger



	Dimensions [mm]					
Unit	**L**	**W**	**H**	**øD**	**H_1**	**F**
RIS 1900VE/VW EC 3.0	802	1850	1300	400	185	70

	Optional accessories										
Unit	**Ptouch Stouch MB-Gateway Flex**	**S-1141 S-RC02-F2**	**AKS**	**AVS**	**AVA**	**EKA NV PH**	**AP SKG**	**SP** *Supply*	**SP** *Exhaust*	**SSB** *Heating*	**SSB** *Cooling*
RIS 1900VE EC 3.0	+	+	400	-	400	400	400	SM230A-TP		-	81
RIS 1900VW EC 3.0	+	+	400	400	400	400	400	NF230A	SM230A-TP	61	81

Heaters, coolers and RMG/VVP/VXP
data online selection program: ***www.salda.lt***

Accessories

Remote controller

Ptouch p. 175

Control panel

FLEX p. 177

Remote controller

Stouch p. 176

Net module

MB-Gateway p. 178

Pressure transmitter

S-1141 p. 179

CO2 sensor

S-RC02-F2 p. 180

Thermic water valve actuator

SSB p. 195

Shuft-off damper

SKG p. 212

Actuator for dampers

SP p. 210

Circular duct silencer

AKS p. 216

Mounting clamp

AP p. 219

Heating coil

AVS p. 185

Circular duct water cooler

AVA p. 193

Electrical duct pre-heater

EKA NV PH p. 201

Mixing point

RMG p. 196

2 and 3 way valves

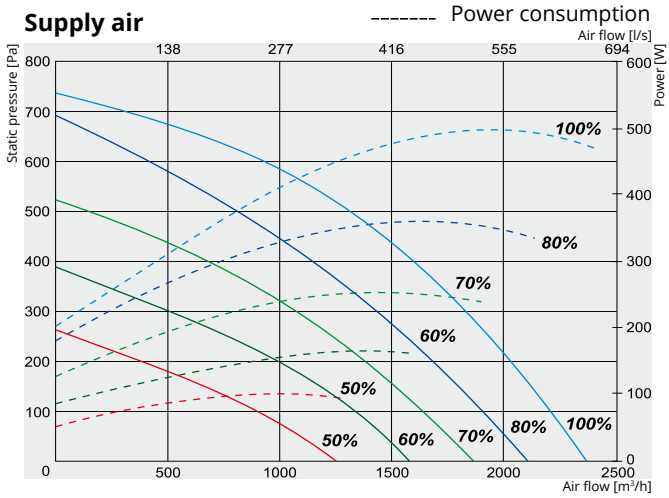
VVP/VXP p. 197

RIS V EC

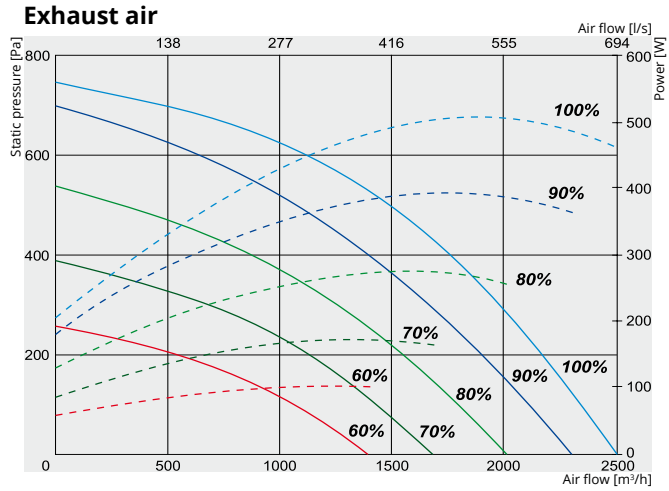
RIS 1900V EC 3.0

Performance
Power consumption

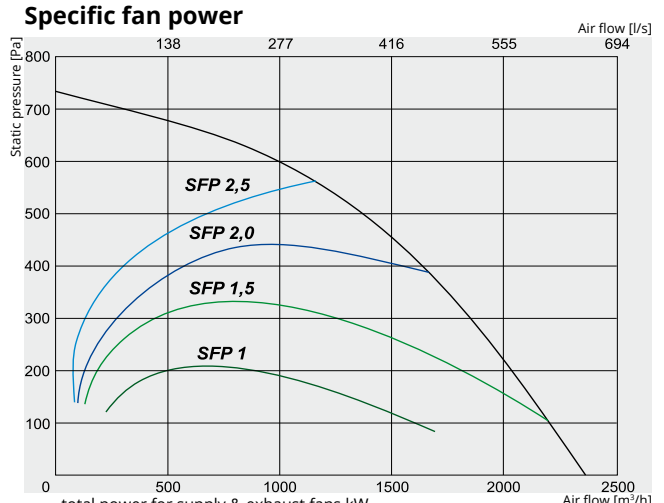
Supply air



Exhaust air

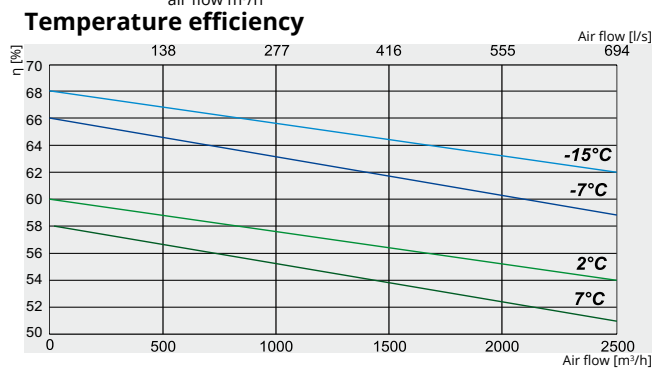


Specific fan power

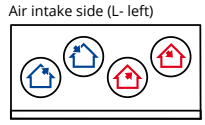


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency

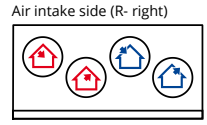


RIS 1900VL EC 3.0
Air intake side (L- left)



View from inspection side

RIS 1900VR EC 3.0
Air intake side (R- right)



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.		Version
GAGRIS1715_0108A	1900VEL EC 3.0	Left-hand maintenace version with integrated electrical heater
GAGRIS1699_0004B	1900VER EC 3.0	Right-hand maintenace version with integrated electrical heater
GAGRIS1716_0108A	1900VWL EC 3.0	Left-hand maintenace version prepa-rated for optional water heater
GAGRIS1715_0108A	1900VWR EC 3.0	Right-hand maintenace version prepa-rated for optional water heater

			1900VE /VW EC 3.0
Water heater (optional) HW ver.			AVS 400
EC Fans	-phase/voltage	[50Hz/VAC]	~1,230
Electrical heater HE ver.	-phase/voltage	[50Hz/VAC]	~3,400
	-power consumption	[kW]	12,0
EC Fans	-phase/voltage	[50Hz/VAC]	~1,230
exhaust	-power/current	[kW/A]	0,51/3,3
	-fan speed	[min^{-1}]	2540
supply	-power/current	[kW/A]	0,49/3,1
	-fan speed	[min^{-1}]	2540
Motor protection class			IP-54
Thermal efficiency			60%
Max power consumption		[kW/A]	13,00/23,72 1,00/6,42
Control board			PRV V2
Filter class	-exhaust		M5
	supply		F7
Thermal insulation		[mm]	50
Weight		[kg]	227
Operation			indoors/outdoors***

* Calculated wet efficiency.
**For temperatures lower than recommended, use electrical pre-heater to ensure balanced operation.
***With proper roof mounted.

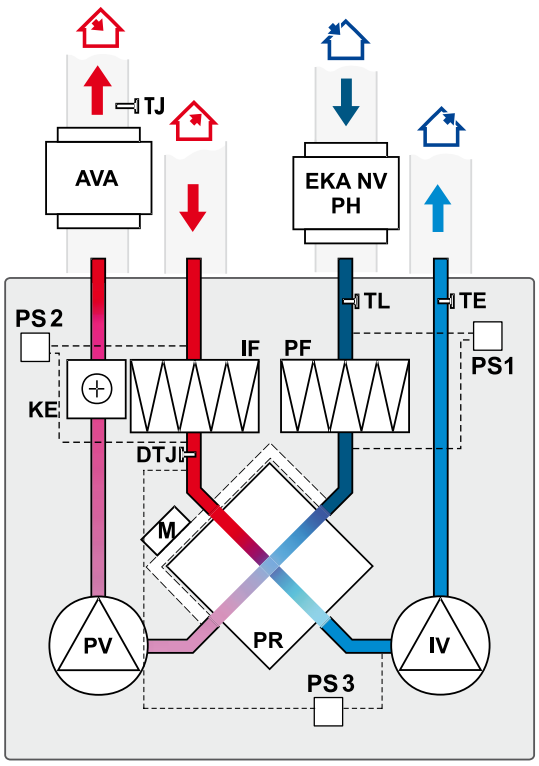
Temperature efficiency (balanced mass flow):
Extract air = 20°C/60%RH
Outdoor air = -15°C / -7°C / 2°C / 7°C

1900V EC 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	84	58	75	76	78	79	75	66
Extract	69	61	63	65	63	55	51	44
Surrounding	63	47	56	57	56	55	52	42
Measured at 1959 m³/h, 221 Pa								

Certifications

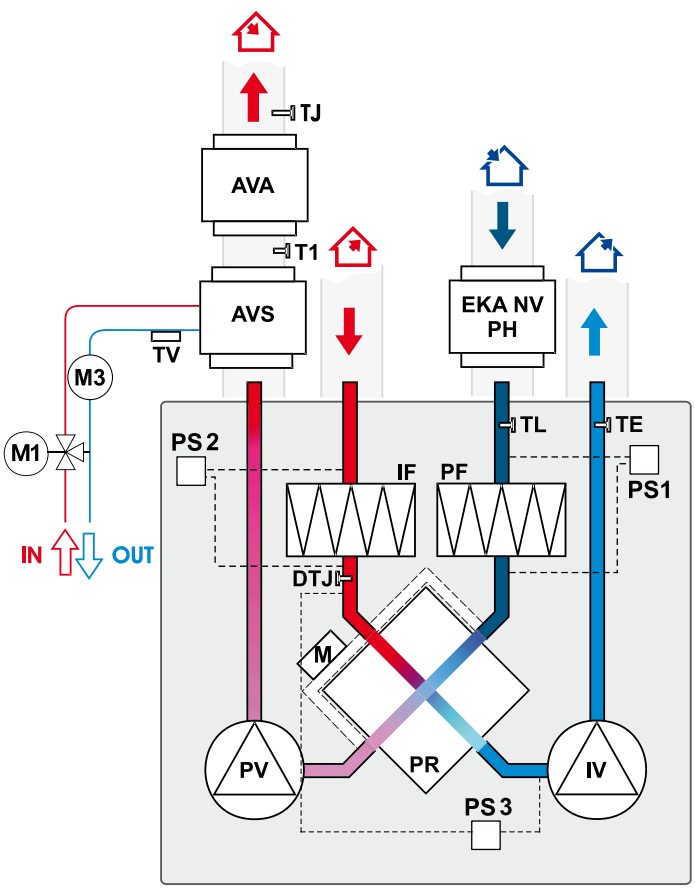
EUROVENT certified
heat exchanger performance

RIS 1900VE EC 3.0 (vertical) **versions with electrical heater**



IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
KE - electrical heater
PF - filter for supply air (class F7)
IF - filter for extract air (class M5)
TJ - temperature sensor for supply air
TL - temperature sensor for fresh air
TE - temperature sensor for extract air
DTJ - humidity + temperature sensor
M - by-pass damper
PS1 - supply air differential pressure switch
PS2 - extract air differential pressure switch
PS3 - heat exchanger antifrost pressure switch
AVA - optionally supplied water cooler
EKA NV PH - optional fresh air pre-heater

RIS 1900VW EC 3.0 (vertical) **versions with water heater**



This is principal mounting scheme.

AVS - optionally supplied water heater
AVA - optionally supplied water cooler
EKA NV PH - optional fresh air pre-heater
IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
PF - filter for supply air (class F7)
IF - filter for extract air (class M5)
TJ - temperature sensor for supply air
TL - temperature sensor for fresh air
TE - temperature sensor for extract air
DTJ - humidity + temperature sensor
T1 - antifrost thermostat
TV - antifrost sensor
M - by-pass damper
M1 - optionally supplied mixing valve and motor
M3 - water heater circulatory pump
PS1 - supply air differential pressure switch
PS2 - extract air differential pressure switch
PS3 - heat exchanger antifrost pressure switch

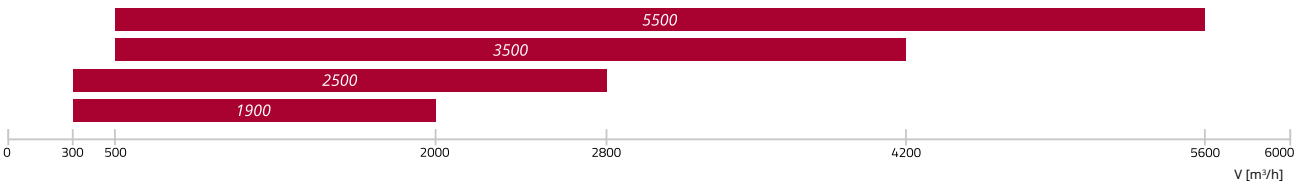
RIS V EC

FUNCTIONS		
Description of the functions	PRV V2	
	RIS EC 3.0	
	E	**W**
Functions		
Date and time settings	✓	✓
4 speeds for easy and user-friendly control ("Stop" – the unit is stopped; "Low", medium", and "High". Service menu allows adjusting each speed individually)	✓	✓
BOOST function (Fans operate at highest speed)	✓	✓
Comfortable air temperature function	✓	✓
Cold/heat recovery	✓	✓
Fire place function	✓	✓
Dryness protection	✓	✓
Weekly schedule	✓	✓
Holiday schedule	✓	✓
User and service control levels	✓	✓
Manual air flow balancing	✓	✓
CO_2 level indication and reduction function	✓	✓
Night cooling function	✓	✓
Relative humidity (RH) level indication and reduction function	✓	✓
Software and configuration update possibility	✓	✓
Supply air temperature control according to the extract air sensor	✓	✓
Monitoring function (all sensors and I/O)	✓2	✓2
Mode switch (start/stop)	✓	✓
Extracted air relative humidity converter	✓	✓
Manual components control	✓1	✓1
Functional units		
Fans		
Soft start and stop	✓	✓
Fan failure protection	✓	✓
Speed synchronous/asynchronous 0-10V control	✓	✓
Electric heater		
On/Off / PWM control	✓	
Manual protection	✓	
Overheat protection (additional protection software)	✓	✓
Water heater		
Pulse-width modulation (PWM) valve actuator control		✓
Protection using temperature sensor		✓
Protection using termostat (NC)		✓
Circulation pump control		✓
Return water temperature sensor	✓	✓
DX cooler		
Control On/Off	✓	✓
Water cooler		
Pulse-width modulation (PWM) valve actuator control		✓
Control with three-positional valve actuator	✓	✓
Bypass damper		
3-position actuator control	✓	✓
Filter pollution monitoring		
By pressure switch (NC)	✓	✓
By filter timer	✓	✓
Sensors		
Supply air temperature sensor	✓	✓
Fresh air temperature sensor	✓	✓
Exhaust air temperature sensor	✓	✓
Extract air temperature sensor	✓	✓
Emergency signals and inputs/outputs		
Fire protection input	✓	✓
Working indication output	✓	✓
Alarm indication output	✓	✓
Remote controllers		
Stouch	✓	✓
Flex	✓	✓
Ptouch	✓	✓
MB-Gateway	✓	✓

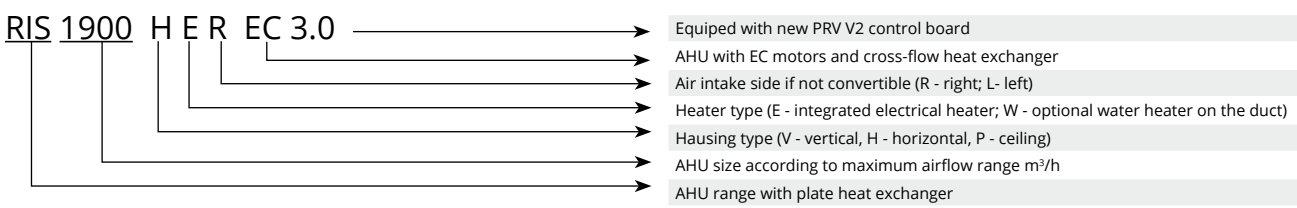
1	**With FLEX TEST remote controler**	**2**	**Only sensors**

Notes

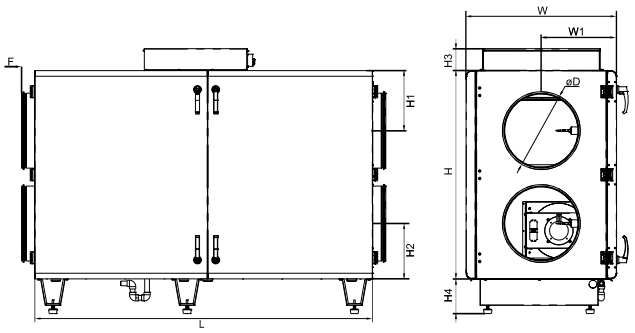
RIS H EC



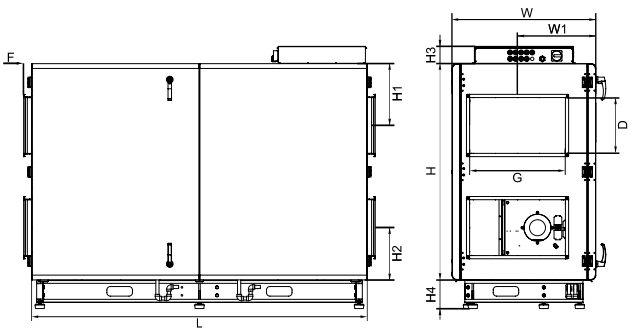
Application	Ventilation of small public buildings, offices, other larger heated premises (sport facilities, conference rooms, shops, etc.)
Description	RIS H EC 3.0 and RIS H EC 3.0 SSK are designed for the ventilation of heated premises with an efficient cross-flow heat exchanger. There are 4 sizes (airflow interval 2000-5600 m³/h) with integrated electrical heaters or optional water heaters on the duct. Energy savings are contributed to by the cross-flow heat exchangers (with efficiency up to 60%), economical and silent EC fans, and high level of air tightness. Demand-level control options with CO_2 and humidity sensors. All units are supplied tested and ready to install.
Controls	Three remote control options are available: 1. Flex, Stouch or Ptouch remote controllers. 2. Building management system connections. 3. Remote control via PC MB-Gateway.
Features	› Energy-efficient and low-noise EC fans. › Efficient plate heat exchangers with up to 65% heat recovery. › Controlled airflow. › Supply air temperature control. › Water/electrical heating options. › Easy and quick mounting.
Construction	› Acoustic and thermal wall insulation – 50 mm. › Powder coated housing – RAL 7040. › Integrated pressure switch for filter pollution. › Heat exchanger anti-frost protection. › Motorized bypass damper. › Integrated electrical heater and optional (duct-based) water/DX heater/cooler. › Optional roof and outlet cover for outdoor versions. › Optional motorized supply and exhaust air dampers. › Panel filters M5/F7. › Stainless steel condensate tray. › Optional CO_2, pressure or airflow transmitters. › RIS 5500 H EC 3.0/EC 3.0 SSK delivered in two sections.



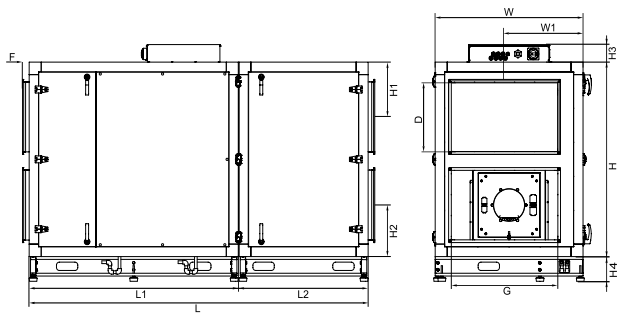
RIS 1900H EC 3.0



RIS 2500H EC 3.0, RIS 3500H EC 3.0



RIS 5500H EC 3.0



	Dimensions [mm]													
Unit	**L**	**L_1**	**L_2**	**W**	**W_1**	**D**	**G**	**øD**	**H**	**H_1**	**H_2**	**H_3**	**H_4**	**F**
RIS 1900 HE/HW EC 3.0	1800	-	-	802	401	-	-	400	1110	320	295	117	184	70
RIS 2500 HE/HW EC 3.0	2100	-	-	900	490	350	600	-	1355	387	327	108	180	51
RIS 3500 HE/HW EC 3.0	2100	-	-	900	490	350	600	-	1355	387	327	108	180	51
RIS 5500 HE/HW EC 3.0	2545	1570	975	1110	590	500	800	-	1400	395	370	127	180	51

	Optional accessories											
Unit	**Ptouch Stouch MB-Gateway Flex**	**S-1141 S-RC02-F2 S-KFF-U**	**AKS SKG AP**	**AVA AVS EKA NV PH**	**SP** *Supply*	**SP** *Exhaust*	**SKS**	**SVS**	**Comfort Box**	**SSB** *Heating*	**SSB** *Cooling*	**EKS NV PH**
RIS 1900HE EC 3.0	+	+	400	400	SM230A-TP		-	-	400	-	81	-
RIS 1900HW EC 3.0	+	+	400	400	NF230A	SM230A-TP	-	-	400	61	81	-
RIS 2500HE EC 3.0	+	-	-	-	-	-	600x350	-	+	-	-	600x350
RIS 2500HW EC 3.0	+	-	-	-	-	-	600x350	600x350	+	61	-	600x350
RIS 3500HE EC 3.0	+	-	-	-	-	-	600x350	-	+	-	-	600x350
RIS 3500HW EC 3.0	+	-	-	-	-	-	600x350	600x350	+	61	-	600x350
RIS 5500HE EC 3.0	+	-	-	-	-	-	800x500	-	+	-	-	800x500
RIS 5500HW EC 3.0	+	-	-	-	-	-	800x500	800x500	+	61	-	800x500

If ordering RIS 2500-5500HW EC 3.0 and SVS/AVS must be ordered water sensor (TJP 10K) and duct thermostat (C04C).

Heaters, coolers and RMG/VVP/VXP
data online selection program: ***www.salda.lt***

Accessories

Remote controller

Ptouch p. 175

Control panel

FLEX p. 177

Remote controller

Stouch p. 176

Net module

MB-Gateway p. 178

Actuator for dampers

SP p. 210

Electrical duct pre-heater

EKA NV PH p. 201

Electrical duct pre-heater

EKS NV PH p. 203

Thermic water valve actuator

SSB p. 195

Rectangular duct silenser

SKS p. 215

Comfort Box

CB p. 183

Water heater coil

SVS p. 190

Mixing point

RMG p. 196

2 and 3 way valves

VVP/VXP p. 197

Outlet cover

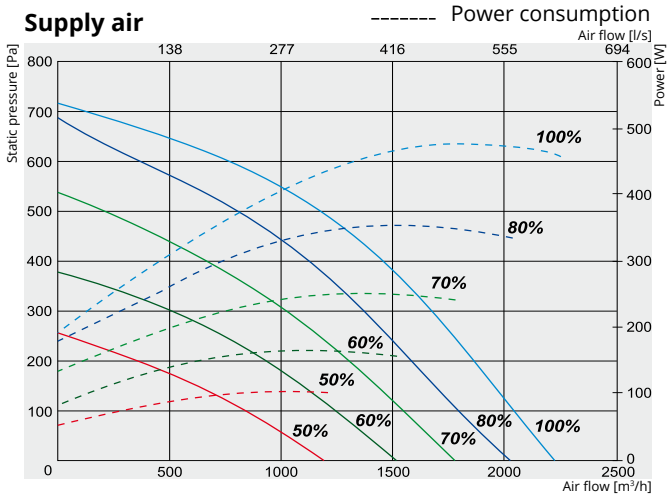

Roof


RIS H EC

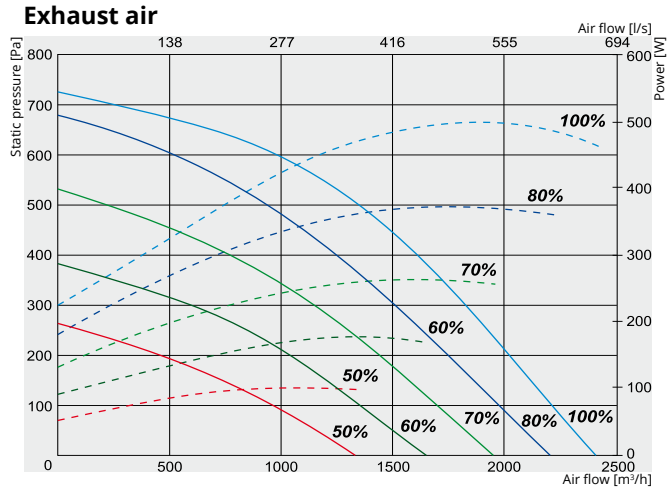
RIS 1900H EC 3.0

Performance
Power consumption

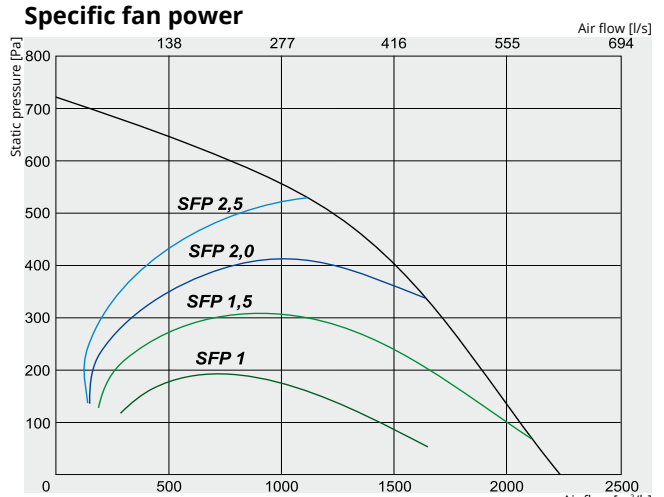
Supply air



Exhaust air

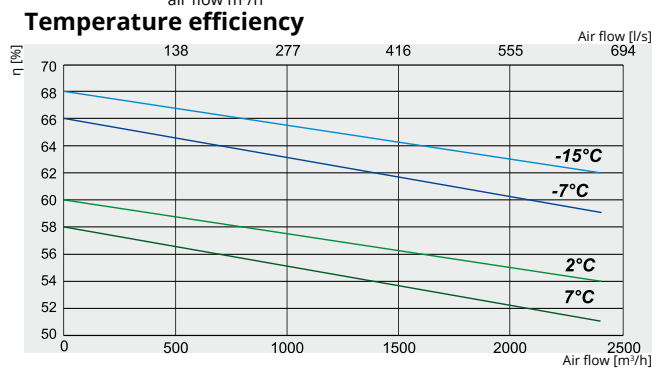


Specific fan power

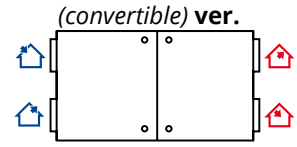


$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency



RIS 1900H EC 3.0
(convertible) **ver.**



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.		Version
GAGRIS1700_0106B	1900HE EC 3.0	Integrated electrical heater
GAGRIS1867_0107B	1900HW EC 3.0	Optional water heater

			1900HE/HW EC 3.0
Water heater (optional) HW ver.			AVS / Comfort box 400
Heater	-phase/voltage	[50Hz/VAC]	~3,400
	-power consumption	[kW]	12
EC Fans	-phase/voltage	[50Hz/VAC]	~1,230
exhaust	-power/current	[kW/A]	0,48/3,11
	-fan speed	[min^{-1}]	2540
supply	-power/current	[kW/A]	0,484/3,15
	-fan speed	[min^{-1}]	2540
Motor protection class			IP-54
Thermal efficiency			60%
Max power consumption		[kW/A]	13,93/29,82 0,97/6,26
Control board			PRV V2
Filter class	-exhaust		M5
	supply		F7
Thermal insulation		[mm]	50
Weight		[kg]	224
Operation			indoors/outdoors***

* Calculated wet efficiency.
**For temperatures lower than recommended, use electrical pre-heater to ensure balanced operation.
***With proper roof mounted.

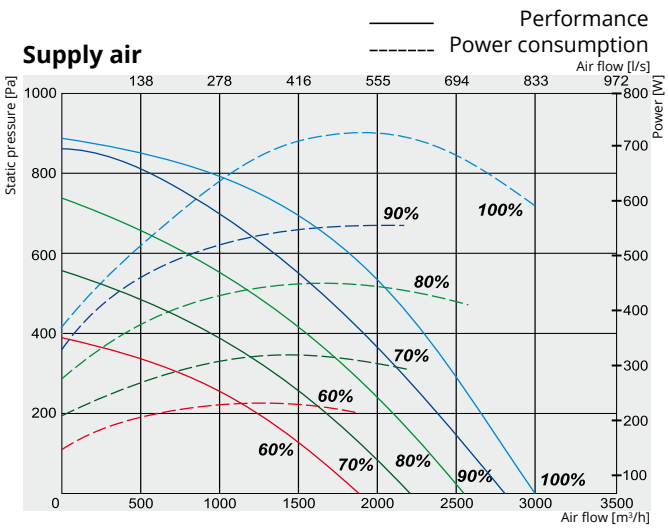
Temperature efficiency (balanced mass flow):
Extract air = 20°C/60%RH
Outdoor air = -15°C / -7°C / 2°C / 7°C

1900H EC 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	83	65	70	76	78	77	72	64
Extract	69	53	61	66	63	54	49	45
Surrounding	61	47	53	55	56	54	48	44
Measured at 1866 m³/h, 201 Pa								

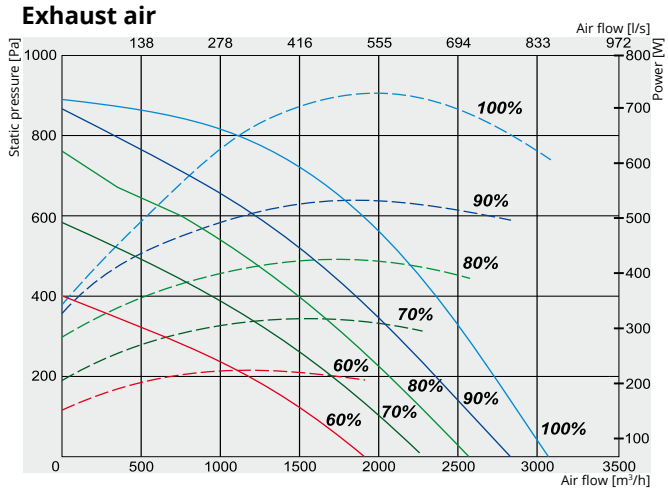
Certifications

EUROVENT certified
heat exchanger performance

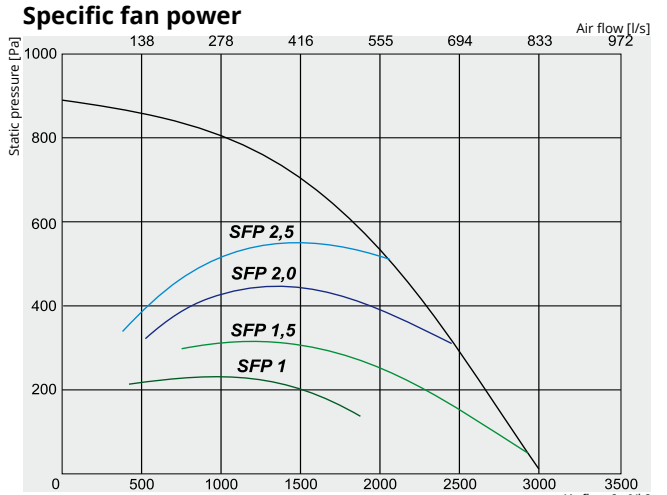
Supply air



Exhaust air

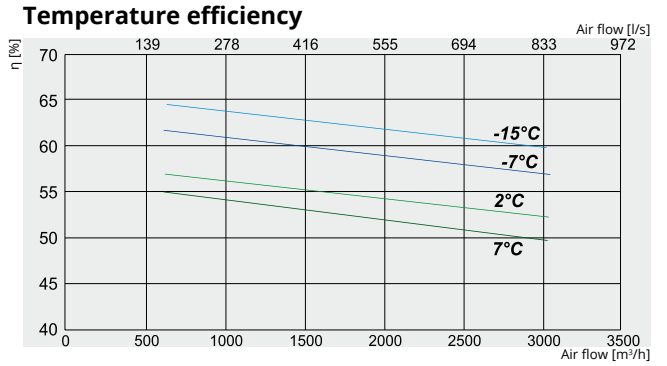


Specific fan power



$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

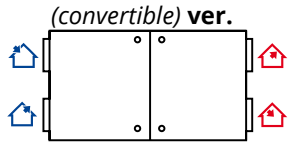
Temperature efficiency



RIS 2500H EC 3.0

Performance
Power consumption

RIS 2500H EC 3.0 *(convertible)* ver.



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.		Version
GAGRIS1804_0056B	2500HE EC 3.0	Integrated electrical heater
GAGRIS1857_0056B	2500HE EC 3.0 SSK	Integrated electrical heater and motorized supply and exhaust dampers
GAGRIS1805_0057A	2500HW EC 3.0	Optional water heater
GAGRIS1858_0057A	2500HW EC 3.0 SSK	Optional water heater and motorized supply and exhaust dampers

			2500HE/HW EC 3.0
Water heater (optional) HW ver.			SVS 600x350 or Comfort Box 600x350
Heater	-phase/voltage	[50Hz/VAC]	~3,400
	-power consumption	[kW]	18
EC Fans	-phase/voltage	[50Hz/VAC]	~1,230
exhaust	-power/current	[kW/A]	0,722/3,19
	-fan speed	[min⁻¹]	2800
supply	-power/current	[kW/A]	0,722/3,19
	-fan speed	[min⁻¹]	2800
Motor protection class			IP-54
Thermal efficiency			60%
Max power consumption		[kW/A]	19,45/32,48 1,45/6,48
Automatic control			PRV V2
Filter class	-exhaust		M5
	supply		F7
Thermal insulation		[mm]	50
Weight		[kg]	340
Operation			indoors/outdoors***

* Calculated wet efficiency.
**For temperatures lower than recommended, use electrical pre-heater to ensure balanced operation.
***With proper roof mounted.

Temperature efficiency (balanced mass flow) :
Extract air = 20°C/60%RH
Outdoor air = -15°C / -7°C / 2°C / 7°C

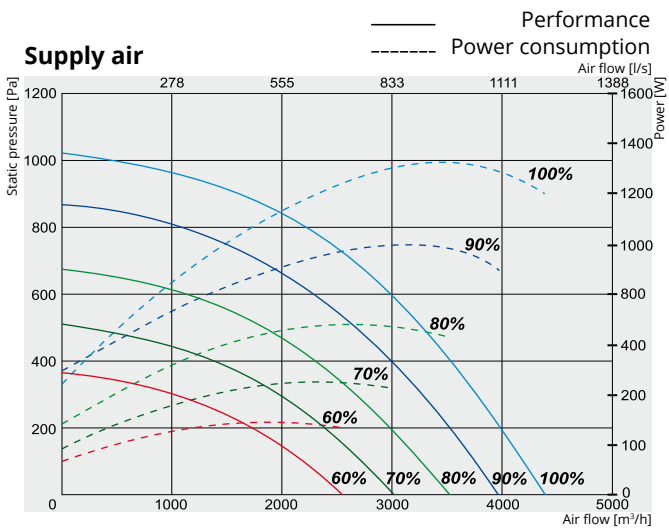
2500H EC 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	84	65	77	78	79	74	68	67
Extract	66	44	63	61	54	52	46	40
Surrounding	62	45	57	59	55	51	45	43
Measured at 2757 m³/h, 121 Pa								

Certifications

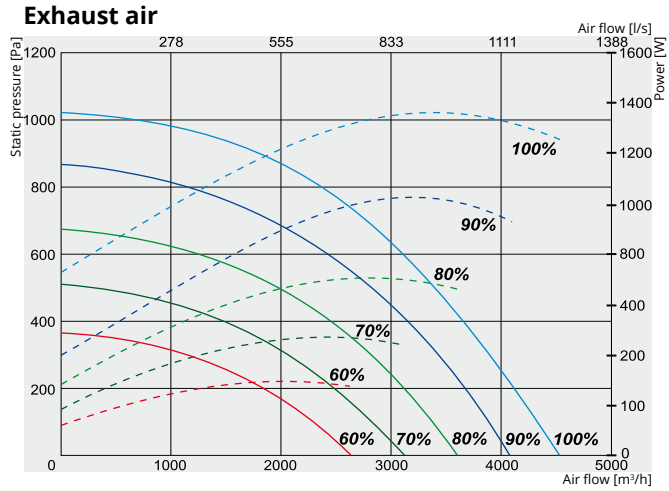
EUROVENT certified
heat exchanger performance

EUROVENT CERTIFIED PERFORMANCE
AHU N°: 05.05.298
Range: SmartAir
www.eurovent-certification.com

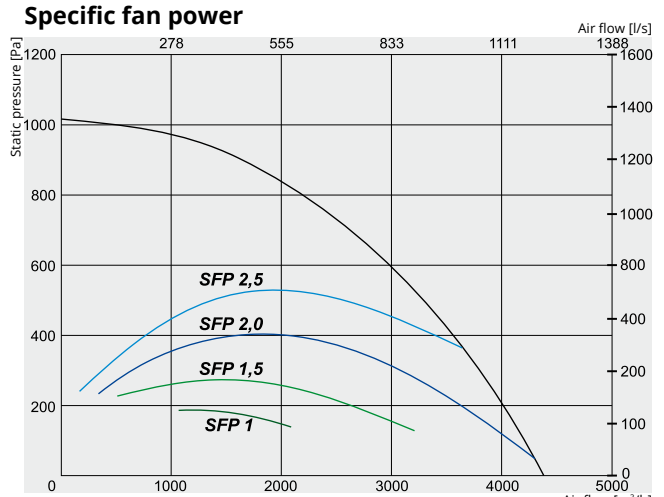
Supply air



Exhaust air

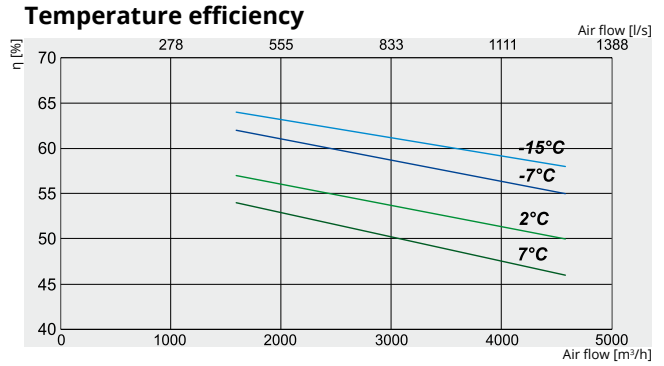


Specific fan power



$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

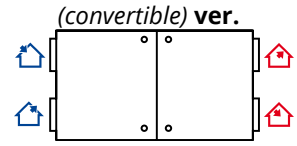
Temperature efficiency



RIS 3500H EC 3.0

Performance
Power consumption

RIS 3500H EC 3.0 *(convertible)* ver.



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.		Version
GAGRIS1806_0058B	3500HE EC 3.0	Integrated electrical heater
GAGRIS1859_0058B	3500HE EC 3.0 SSK	Integrated electrical heater and motorized supply and exhaust dampers
GAGRIS1807_0059A	3500HW EC 3.0	Optional water heater
GAGRIS1860_0059A	3500HW EC 3.0 SSK	Optional water heater and motorized supply and exhaust dampers

			3500HE/HW EC 3.0	
Water heater (optional) HW ver.			SVS 600x350 or Comfort Box 600x350	
Heater	-phase/voltage	[50Hz/VAC]		~3,400
	-power consumption	[kW]		24
EC Fans	-phase/voltage	[50Hz/VAC]		~1,230
exhaust	-power/current	[kW/A]		1,37/6,12
	-fan speed	[min⁻¹]		2390
supply	-power/current	[kW/A]		1,41/6,35
	-fan speed	[min⁻¹]		2390
Motor protection class				IP-54
Thermal efficiency				60%
Max power consumption		[kW/A]	26,79/47,55	2,79/12,57
Automatic control				PRV V2
Filter class	-exhaust			M5
	supply			F7
Thermal insulation		[mm]		50
Weight		[kg]	340	337
Operation			indoors/outdoors***	

* Calculated wet efficiency.
**For temperatures lower than recommended, use electrical pre-heater to ensure balanced operation.
***With proper roof mounted.

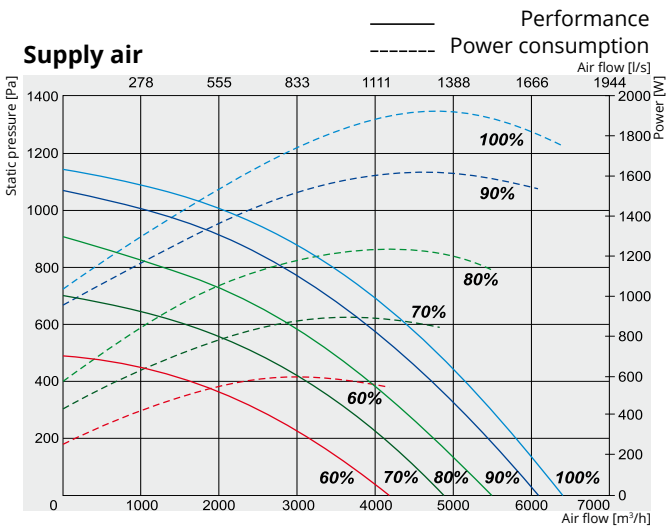
Temperature efficiency (balanced mass flow):
Extract air = 20°C/60%RH
Outdoor air = -15°C / -7°C / 2°C / 7°C

3500H EC 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	86	63	79	80	81	77	76	64
Extract	72	60	69	66	62	62	54	43
Surrounding	68	57	65	62	58	55	52	46
Measured at 4006 m³/h, 198 Pa								

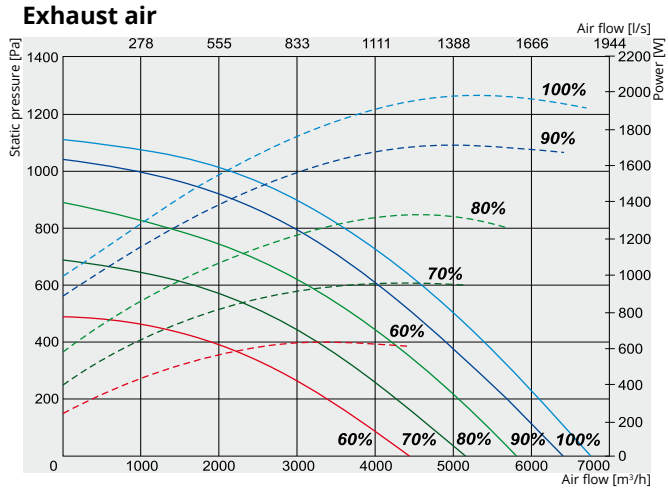
Certifications

EUROVENT certified
heat exchanger performance

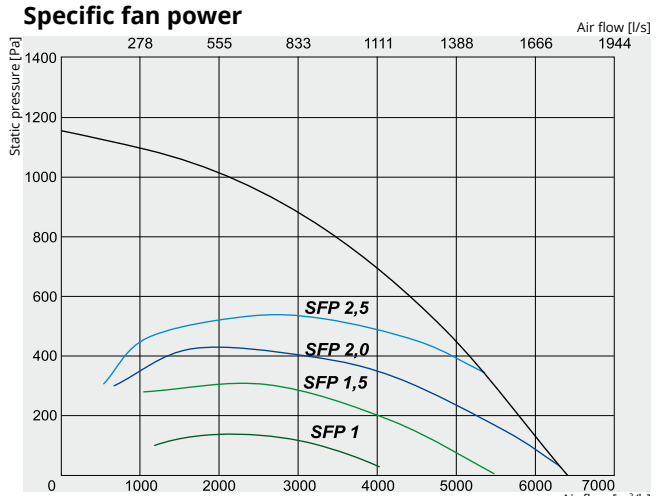
Supply air



Exhaust air

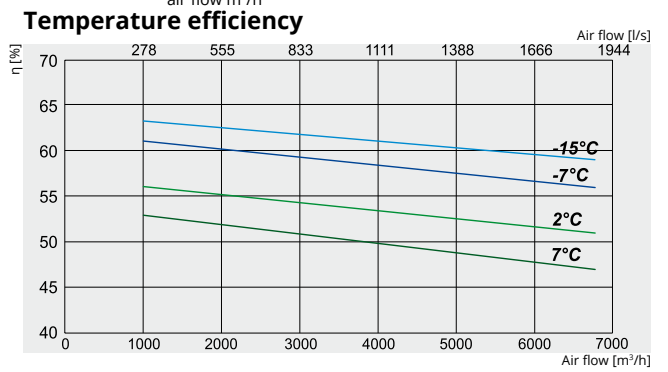


Specific fan power



$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$

Temperature efficiency

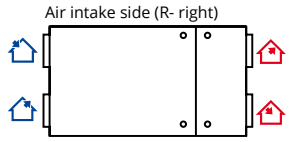


RIS 5500H EC 3.0

Performance
Power consumption

RIS 5500HR EC 3.0

Air intake side (R- right)



View from inspection side

Exhaust air | Extract air | outdoor air | Supply air

Article No.		Version
GAGRIS1808_0060B	5500HER EC 3.0	Right-hand maintenace version with integrated electrical heater
GAGRIS1861_0060B	5500HER EC 3.0 SSK	Integrated electrical heater and motorized supply and exhaust dampers
GAGRIS1809_0061B	5500HWR EC 3.0	Right-hand maintenace version prepared for optional water heater
GAGRIS1862_0061B	5500HWR EC 3.0 SSK	Optional water heater and motorized supply and exhaust dampers

			5500HE / HW EC 3.0	
Water heater (optional) HW ver.			SVS 800x500 or Comfort Box 800x500	
Heater	-phase/voltage	[50Hz/VAC]		~3,400
	-power consumption	[kW]		30
EC Fans	-phase/voltage	[50Hz/VAC]		~3,400
exhaust	-power/current	[kW/A]		2,031/3,24
	-fan speed	[min⁻¹]		2180
supply	-power/current	[kW/A]		2,05/3,3
	-fan speed	[min⁻¹]		2180
Motor protection class				IP-54
Thermal efficiency				60%
Max power consumption		[kW/A]	34,09/50,04	4,09 /6,64
Automatic control				PRV V2
Filter class	-exhaust			M5
	supply			M5
Thermal insulation		[mm]		50
Weight		[kg]	480	477
Operation				indoors/outdoors***

* Calculated wet efficiency.
**For temperatures lower than recommended, use electrical pre-heater to ensure balanced operation.
***With proper roof mounted.

Temperature efficiency (balanced mass flow) :
Extract air = 20°C/60%RH
Outdoor air = -15°C / -7°C / 2°C / 7°C

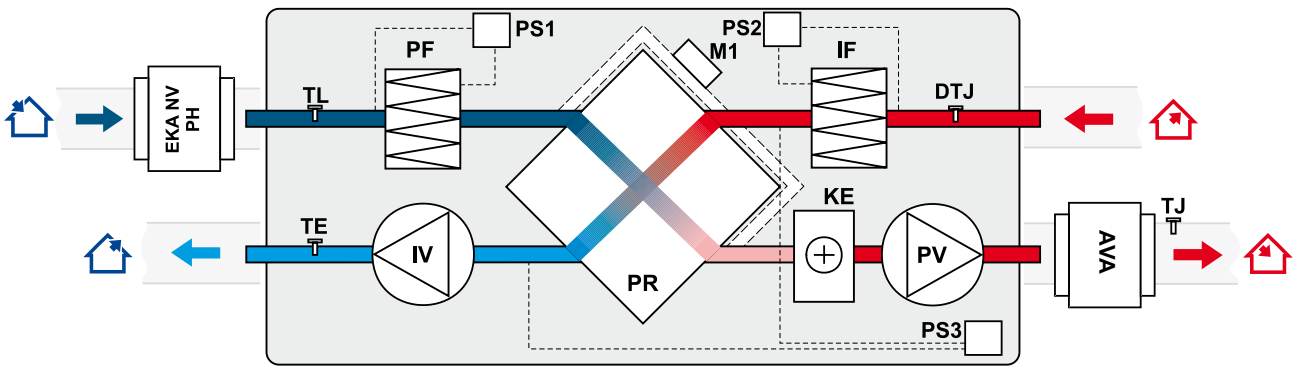
5500H EC 3.0	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	89	70	81	83	85	81	77	73
Extract	75	65	72	69	68	62	53	52
Surrounding	79	60	72	74	73	69	64	61
Measured at 5788 m³/h, 211 Pa								

Certifications

EUROVENT certified
heat exchanger performance

EUROVENT CERTIFIED PERFORMANCE
AHU N°: 05.05.298
Range: SmartAir
www.eurovent-certification.com

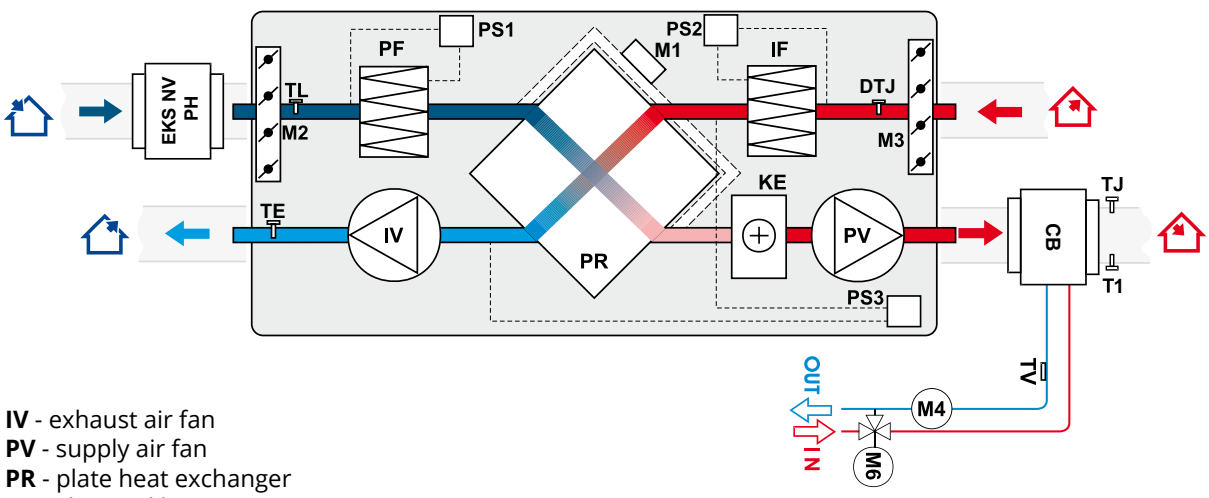
RIS 1900HE EC 3.0 (horizontal) **version with electrical heater**



IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
KE - electrical heater
PF - filter for supply air
IF - filter for extract air
DTJ - humidity + temperature sensor
AVA - optionally supplied water cooler

TE - temperature sensor for exhaust air
TL - temperature sensor for fresh air
TJ - temperature sensor for supply air
M1 - actuator of by-pass damper
PS1 - supply air differential pressure switch
PS2 - extract air differential pressure switch
PS3 - heat exchanger antifrost pressure switch
EKA NV PH - optional fresh air pre-heater

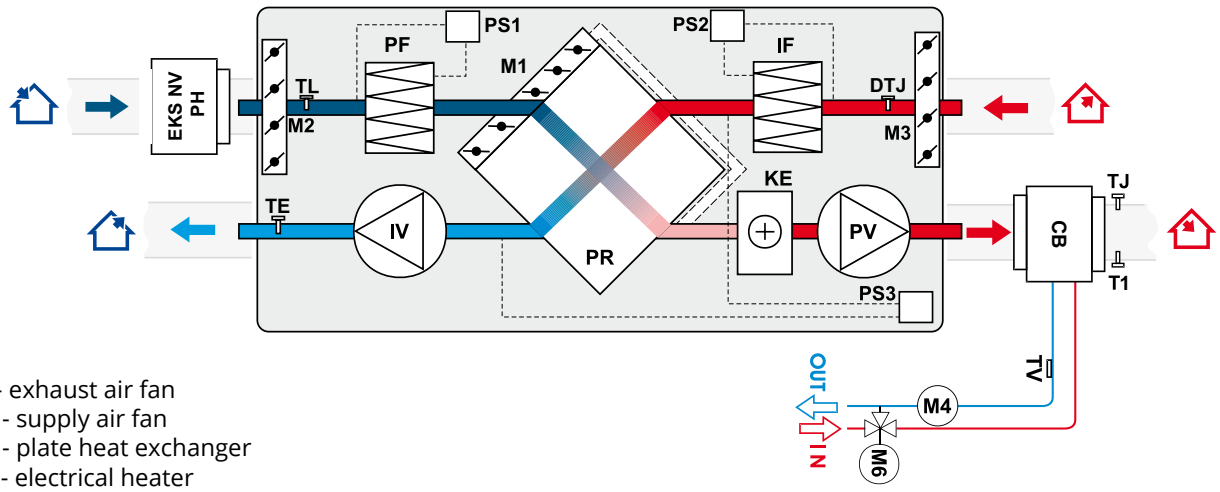
RIS 2500HE EC 3.0 / 3500HE EC 3.0 (horizontal) **versions with electrical heater**



IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
KE - electrical heater
PF - filter for supply air
IF - filter for extract air
M2 - supply air damper (GAGRIS1857_0056B)
M3 - extract air damper (GAGRIS1857_0056B)
TV - antifrost sensor
T1 - antifrost thermostat
M6 - optionally supplied mixing valve and motor
M4 - water heater circulation pump

DTJ - humidity + temperature sensor
TE - temperature sensor for exhaust air
TL - temperature sensor for fresh air
TJ - temperature sensor for supply air
M1 - actuator of by-pass damper
PS1 - supply air differential pressure switch
PS2 - extract air differential pressure switch
PS3 - heat exchanger antifrost pressure switch
EKS NV PH - optional fresh air pre-heater

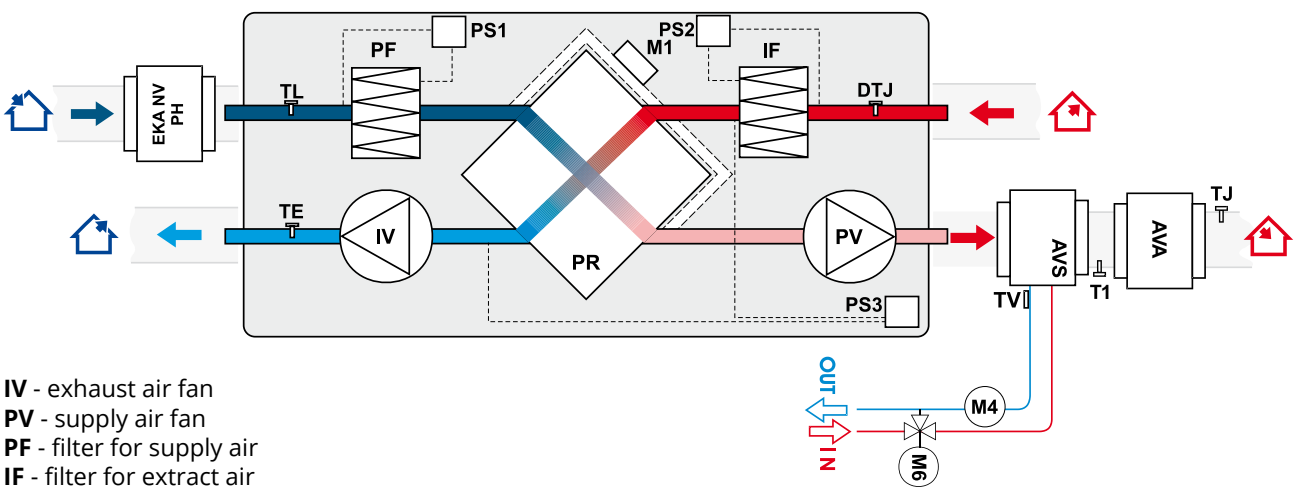
RIS 5500HE EC 3.0 (horizontal) **version with electrical heater**



IV - exhaust air fan
PV - supply air fan
PR - plate heat exchanger
KE - electrical heater
PF - filter for supply air
IF - filter for extract air
M2 - supply air damper (GAGRIS1861_0060B)
M3 - extract air damper (GAGRIS1861_0060B)
M6 - optionally supplied mixing valve and motor
M4 - water heater circulation pump
PS1 - supply air differential pressure switch
PS2 - extract air differential pressure switch
PS3 - heat exchanger antifrost pressure switch

EKS NV PH - optional fresh air pre-heater
DTJ - humidity + temperature sensor
TE - temperature sensor for exhaust air
TL - temperature sensor for fresh air
TJ - temperature sensor for supply air
TV - antifrost sensor
T1 - antifrost thermostat
M1 - actuator of by-pass damper

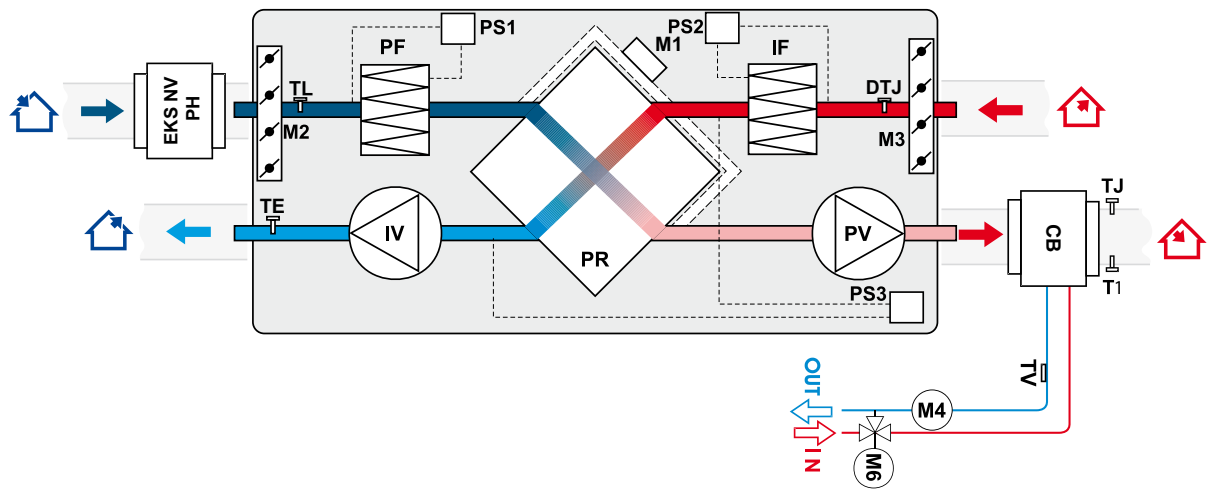
RIS 1900HW EC 3.0 (horizontal) **version with optional water heater**



IV - exhaust air fan
PV - supply air fan
PF - filter for supply air
IF - filter for extract air
PR - plate heat exchanger
DTJ - humidity + temperature sensor
AVS - optionally supplied water heater
AVA - optionally supplied water cooler
TV - antifrost sensor
T1 - antifrost thermostat
M4 - water heater circulation pump
M6 - optionally supplied mixing valve and motor

TE - temperature sensor for exhaust air
TJ - temperature sensor for supply air
TL - temperature sensor for fresh air
M1 - actuator of by-pass damper
PS1 - supply air differential pressure switch
PS2 - extract air differential pressure switch
PS3 - heat exchanger antifrost pressure switch
EKA NV PH - optional fresh air pre-heater

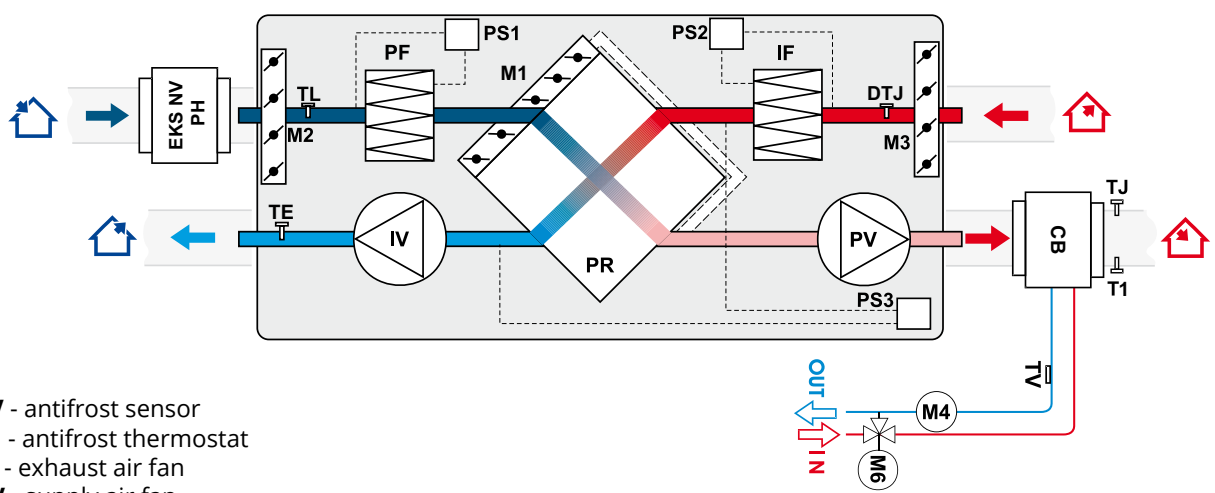
RIS 2500HW EC 3.0 / 3500HW EC 3.0 (horizontal) **versions with optional water heater**



IV - exhaust air fan
PV - supply air fan
PF - filter for supply air
IF - filter for extract air
PR - plate heat exchanger
DTJ - humidity + temperature sensor
M2 - supply air damper (GAGRIS1858_0057A)
M3 - extract air damper (GAGRIS1858_0057A)
M6 - optionally supplied mixing valve and motor
M4 - water heater circulation pump

TV - antifrost sensor
TE - temperature sensor for exhaust air
T1 - antifrost thermostat
TL - temperature sensor for fresh air
TJ - temperature sensor for supply air
M1 - actuator of by-pass damper
PS1 - supply air differential pressure switch
PS2 - extract air differential pressure switch
PS3 - heat exchanger antifrost pressure switch
EKS NV PH - optional fresh air pre-heater

RIS 5500HW EC 3.0 (horizontal) **version with optional water heater**



TV - antifrost sensor
T1 - antifrost thermostat
IV - exhaust air fan
PV - supply air fan
PF - filter for supply air
IF - filter for extract air
PR - plate heat exchanger
DTJ - humidity + temperature sensor
M2 - supply air damper (GAGRIS1862_0061B)
M3 - extract air damper (GAGRIS1862_0061B)
M6 - optionally supplied mixing valve and motor
M4 - water heater circulation pump

TE - temperature sensor for exhaust air
TL - temperature sensor for fresh air
TJ - temperature sensor for supply air
M1 - actuator of by-pass damper
PS1 - supply air differential pressure switch
PS2 - extract air differential pressure switch
PS3 - heat exchanger antifrost pressure switch
EKS NV PH - optional fresh air pre-heater

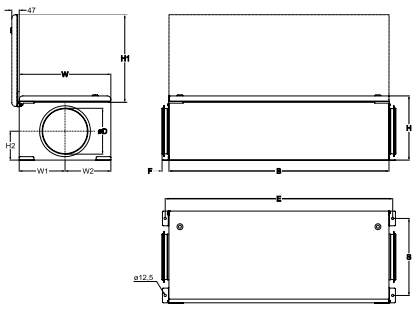
FUNCTIONS		
Description of the functions	PRV V2	
	RIS EC 3.0	
	E	**W**
Functions		
Date and time settings	✓	✓
4 speeds for easy and user-friendly control ("Stop" – the unit is stopped; "Low", medium", and "High". Service menu allows adjusting each speed individually)	✓	✓
BOOST function (Fans operate at highest speed)	✓	✓
Comfortable air temperature function	✓	✓
Cold/heat recovery	✓	✓
Fire place function	✓	✓
Dryness protection	✓	✓
Weekly schedule	✓	✓
Holiday schedule	✓	✓
User and service control levels	✓	✓
Manual air flow balancing	✓	✓
CO_2 level indication and reduction function	✓	✓
Night cooling function	✓	✓
Relative humidity (RH) level indication and reduction function	✓	✓
Software and configuration update possibility	✓	✓
Supply air temperature control according to the extract air sensor	✓	✓
Monitoring function (all sensors and I/O)	✓**2**	✓**2**
Mode switch (start/stop)	✓	✓
Extracted air relative humidity converter	✓	✓
Manual components control	✓**1**	✓**1**
Functional units		
Fans		
Soft start and stop	✓	✓
Fan failure protection	✓	✓
Speed synchronous/asynchronous 0-10V control	✓	✓
Electric heater		
On/Off / PWM control	✓	
Manual protection	✓	
Overheat protection (additional protection software)	✓	✓
Water heater		
Pulse-width modulation (PWM) valve actuator control		✓
Protection using temperature sensor		✓
Protection using termostat (NC)		✓
Circulation pump control		✓
Return water temperature sensor	✓	✓
DX cooler		
Control On/Off	✓	✓
Water cooler		
Pulse-width modulation (PWM) valve actuator control		✓
Control with three-positional valve actuator	✓	✓
Bypass damper		
3-position actuator control	✓	✓
Filter pollution monitoring		
By pressure switch (NC)	✓	✓
By filter timer	✓	✓
Sensors		
Supply air temperature sensor	✓	✓
Fresh air temperature sensor	✓	✓
Exhaust air temperature sensor	✓	✓
Extract air temperature sensor	✓	✓
Emergency signals and inputs/outputs		
Fire protection input	✓	✓
Working indication output	✓	✓
Alarm indication output	✓	✓
Remote controllers		
Stouch	✓	✓
Flex	✓	✓
Ptouch	✓	✓
MB-Gateway	✓	✓

1	**With FLEX TEST remote controler**	**2**	**Only sensors**

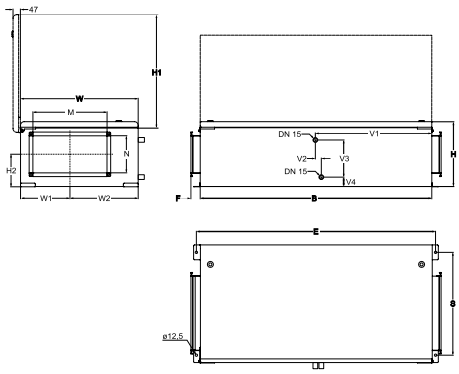
VEKA INT EKO

Application	Food production, Industrial premises, Warehouses, Sport facilities.
Description	VEKA INT EKO is a range of high-quality air supply units for premises with no need for recuperation. VEKA INT EKO units exceed ErP 2016 requirements and, together with other cost-saving solutions, provide the highest savings in their class. VEKA INT EKO units are light and can be mounted in all positions in the narrowest places. Units are suitable for various climate zones: each model has several electrical heater options and 1000+ models have water heater options. Air dampers are integrated to automatically shut down the air supply to the premises.
Controls	› Stouch › Flex
The main features	› 6 Models with different electrical heaters and water heaters. 25 options in total! › 6 mounting positions and service friendly. › Low height for installation under ceilings. › Modern automatic control. Integration with building management systems. › Cost-efficient solutions: high airtightness, efficient fans and filters.
Construction	› Powder-coated galvanized steel casing; › Acoustic and thermal insulation of external walls - 30 mm. › EC fan; › Integrated air damper with actuator. › Optional pressure switch for filter pollution. › Optional filters: G4, M5 or F7.

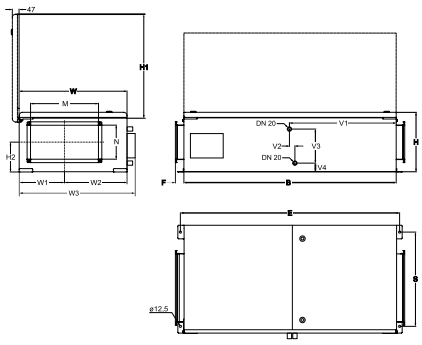
VEKA INT 400 EKO
VEKA INT 700 EKO



VEKA INT 1000 EKO
VEKA INT 2000 EKO
VEKA INT W 1000 EKO
VEKA INT W 2000 EKO



VEKA INT 3000 - 4000 EKO
VEKA INT W 3000 - 4000 EKO



	Dimensions [mm]																	
Unit	**W**	**W1**	**W2**	**W3**	**B**	**H**	**H1**	**H2**	**E**	**S**	**M**	**N**	**V1**	**V2**	**V3**	**V4**	**F**	**øD**
VEKA INT 400 EKO	450	225	225	-	1130	325	427	157	1171	370	-	-	-	-	-	-	30	200
VEKA INT 700 EKO	500	250	250	-	1200	350	477	157	1241	420	-	-	-	-	-	-	40	250
VEKA INT 1000 EKO	635	267	368	-	1250	350	612	174	1291	555	400	200	-	-	-	-	50	-
VEKA INT 2000 EKO	750	316	434	-	1550	460	727	249	1591	670	500	250	-	-	-	-	50	-
VEKA INT 3000 EKO	950	417	533	1065	1700	550	826	268	1526	992	700	400	-	-	-	-	50	-
VEKA INT 4000 EKO	950	417	533	1065	1700	550	826	268	1526	992	700	400		-	-	-	50	-
VEKA INT W 1000 EKO	635	267	368	-	1250	350	612	174	1291	555	400	200	618	43	190	71	50	-
VEKA INT W 2000 EKO	750	316	434	-	1550	460	727	249	1591	670	500	250	740	42	297	73	50	-
VEKA INT W 3000 EKO	950	417	533	1065	1700	550	826	268	1526	992	700	400	845	38	360	78	50	-
VEKA INT W 4000 EKO	950	417	533	1065	1700	550	826	268	1526	992	700	400	845	38	360	78	50	-

	Optional accessories									
Unit	**Stouch Flex**	**S-1141 S-RC02-F2 S-KFF-U**	**SKS**	**AKS AP**	**SSB** *Heating*	**SSB** *Cooling*	**RMG 80/60°C**	**RMG 60/40°C**	**VVP/VXP 80/60°C**	**VVP/VXP 60/40°C**
VEKA INT400 EKO	+	+	-	200	-	81	-	-	-	-
VEKA INT 700 EKO	+	+	-	250	-	81	-	-	-	-
VEKA INT 1000 EKO	+	+	400x200	-	-	81	-	-	-	-
VEKA INT 2000 EKO	+	+	500x250	-	-	81	-	-	-	-
VEKA INT 3000 EKO	+	+	700x400	-	-	81	-	-	-	-
VEKA INT 4000 EKO	+	+	700x400	-	-	81	-	-	-	-
VEKA INT W 1000 EKO	+	+	400x200	-	61	81	3-1,6-4	3-1,0-4	45.10-1,6	45.10-1,0
VEKA INT W 2000 EKO	+	+	500x250	-	61	81	3-2,5-4	3-2,5-4	45.10-2,5	45.10-2,5
VEKA INT W 3000 EKO	+	+	700x400	-	61	81	+	+	+	+
VEKA INT W 4000 EKO	+	+	700x400	-	61	81	+	+	+	+

SSB 61-control signal 0...10V DC

Accessories

Control panel

FLEX **p. 177**

Sensor controller

Stouch **p. 176**

Pressure transmitter

S-1141 **p. 179**

CO2 sensors

S-RC02-F2 **p. 180**

Duct humidity sensor

S-KFF-U **p. 181**

Rectangular duct silencer

SKS **p. 215**

Circular duct silencer

AKS **p. 216**

Mounting clamp

AP **p. 219**

Thermic water valve actuator

SSB **p. 195**

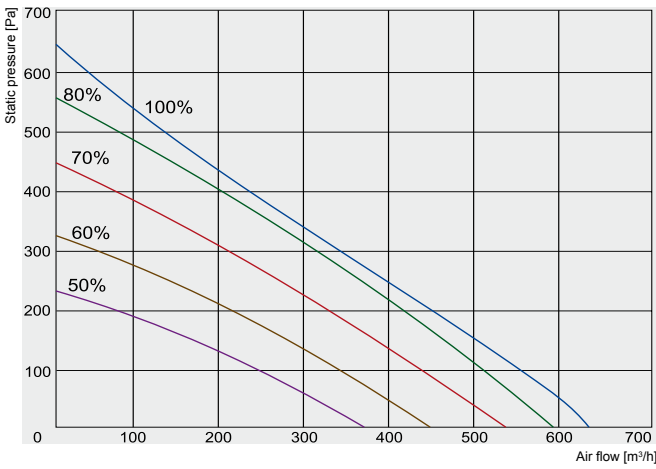
Mixing point

RMG **p. 196**

2 and 3 - way valves

VVP/VXP **p. 197**

VEKA INT EKO



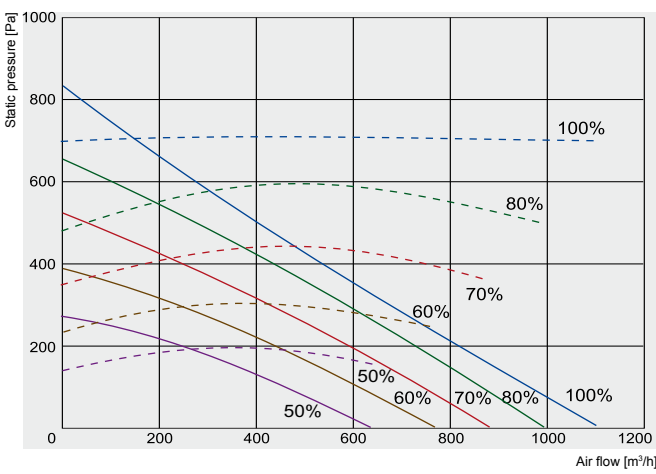
① **VEKA INT400/1,2-L1 EKO**

① **VEKA INT 400/2,0-L1 EKO**

① **VEKA INT 400/5,0-L1 EKO**

VEKA INT 400 EKO	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Inlet	67	50	56	65	61	43	47	34
Outlet	74	56	62	73	62	63	57	40
Surrounding	53	37	41	51	45	38	37	24
Measured at 560 m³/h, 122 Pa								

			400/1,2-L1 EKO	400/2,0-L1 EKO	400/5,0-L1 EKO
Heater	-phase/voltage	[50Hz/VAC]	~1, 230	~1, 230	~2, 400
	-power consumption	[kW]	1,2	2,0	5,0
Fan	-phase/voltage	[50Hz/VAC]	~1, 230	~1, 230	~1, 230
	-current	[KW/A]	0,082/0,75	0,082/0,75	0,082/0,75
	-speed	[min⁻¹]	3200	3200	3200
	-protection class		IP-54	IP-54	IP-54
	-power consumption	[kW/A]	1,28/5,95	2,08/9,44	5,08/13,32
Automatic control integrated			integrated	integrated	integrated
Filter class			M5	M5	M5
Insulation of walls		[mm]	30	30	30
Weight		[kg]	36,0	36,0	37,0
Comply with ERP 2016; 2018			+	+	+



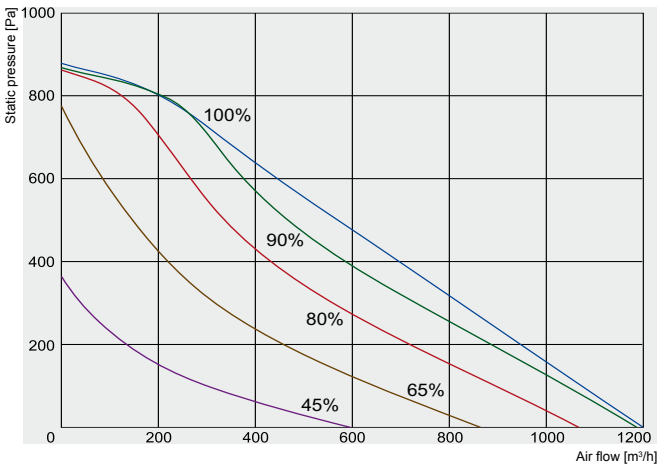
① **VEKA INT 700/2,4-L1 EKO**

① **VEKA INT 700/5,0-L1 EKO**

① **VEKA INT 700/9,0-L1 EKO**

VEKA INT 700 EKO	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Inlet	69	50	59	61	65	64	54	52
Outlet	75	62	68	73	63	53	46	40
Surrounding	55	40	47	51	50	45	40	37
Measured at 838 m³/h, 162 Pa								

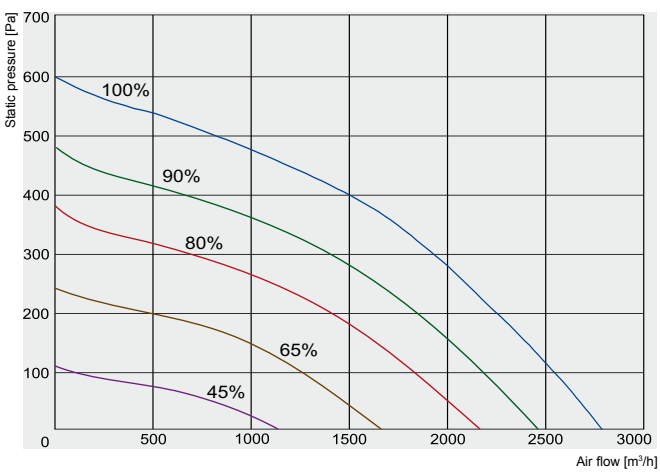
			700/2,4-L1 EKO	700/5,0-L1 EKO	700/9,0-L1 EKO
Heater	-phase/voltage	[50Hz/VAC]	~1, 230	~2, 400	~3, 400
	-power consumption	[kW]	2,4	5,0	9,0
Fan	-phase/voltage	[50Hz/VAC]	~1, 230	~1, 230	~1, 230
	-current	[KW/A]	0,358 /1,6	0,358 /1,6	0,358 /1,6
	-speed	[min⁻¹]	3380	3380	3380
	-protection class		IP-44	IP-44	IP-44
	-power consumption	[kW/A]	2,76 /12,03	5,36 /14,10	9,36 /14,60
Automatic control integrated			integrated	integrated	integrated
Filter class			M5	M5	M5
Insulation of walls		[mm]	30	30	30
Weight		[kg]	45,0	45,0	45,0
Comply with ERP 2016; 2018			+	+	+



① **VEKA INT 1000/2,4-L1 EKO**
① **VEKA INT 1000/5,0-L1 EKO**
① **VEKA INT 1000/9,0-L1 EKO**
① **VEKA INT 1000/12,0-L1 EKO**

VEKA INT 1000 EKO	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Inlet	69	53	56	65	63	61	59	53
Outlet	75	64	70	72	65	56	53	49
Surrounding	55	44	45	51	48	44	41	38
Measured at 1036 m³/h, 133 Pa								

			1000/2,4-L1 EKO	1000/5,0-L1 EKO	1000/9,0-L1 EKO	1000/12,0-L1 EKO
Heater	-phase/voltage	[50Hz/VAC]	~1, 230	~2, 400	~3, 400	~3, 400
	-power consumption	[kW]	2,4	5,0	9,0	12,0
Fan	-phase/voltage	[50Hz/VAC]	~1, 230	~1, 230	~1, 230	~1, 230
	-current	[KW/A]	0,233 /1,74	0,233 /1,74	0,358 /1,6	0,233/1,74
	-speed	[min⁻¹]	3220	3220	3220	3220
	-protection class		IP-44	IP-44	IP-44	IP-44
	-power consumption	[kW/A]	2,63 /12,17	5,23 /14,24	9,36 /14,60	12,23/19,06
Automatic control integrated			integrated	integrated	integrated	integrated
Filter class			M5	M5	M5	M5
Insulation of walls		[mm]	30	30	30	30
Weight		[kg]	56,0	56,0	57,0	57,0
Comply with ERP 2016; 2018			+	+	+	+

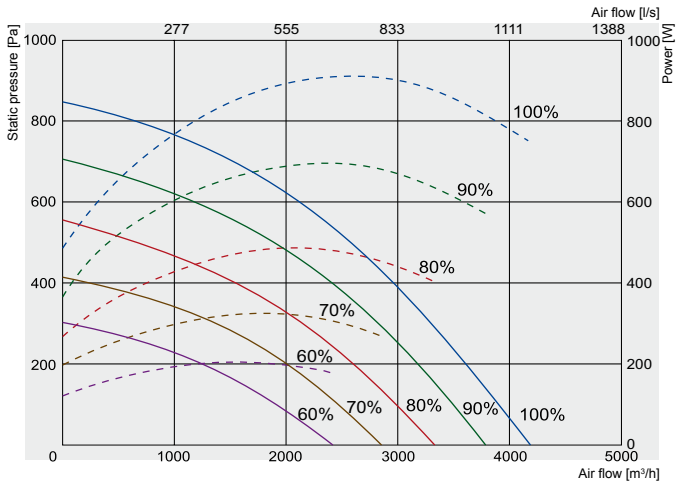


① **VEKA INT 2000/6,0-L1 EKO**
① **VEKA INT 2000/15,0-L1 EKO**
① **VEKA INT 2000/21,0-L1 EKO**

VEKA INT 2000 EKO	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Inlet	80	71	78	72	57	61	59	55
Outlet	84	75	80	79	74	73	70	67
Surrounding	65	58	62	57	49	52	51	48
Measured at 2493 m³/h, 120 Pa								

			2000/6,0-L1 EKO	2000/15,0-L1 EKO	2000/21,0-L1 EKO
Heater	-phase/voltage	[50Hz/VAC]	~2, 400	~3, 400	~3, 400
	-power consumption	[kW]	6,0	15,0	21,0(12+9)
Fan	-phase/voltage	[50Hz/VAC]	~1, 230	~1, 230	~1, 230
	-current	[KW/A]	0,438/1,97	0,438/1,97	0,438 /1,97
	-speed	[min⁻¹]	2010	2010	2010
	-protection class		IP-44	IP-44	IP-44
	-power consumption	[kW/A]	6,44/16,97	15,44/23,62	21,44 /32,28
Automatic control integrated			integrated	integrated	integrated
Filter class			M5	M5	M5
Insulation of walls		[mm]	30	30	30
Weight		[kg]	88,0	88,5	89,0
Comply with ERP 2016; 2018			+	+	+

VEKA INT EKO

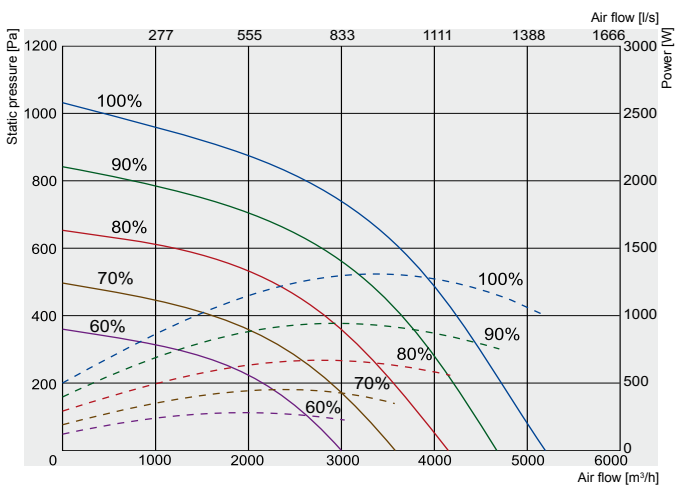


① **VEKA INT 3000/15,0-L1 EKO**
① **VEKA INT 3000/21,0-L1 EKO**
① **VEKA INT 3000/30,0-L1 EKO**
① **VEKA INT 3000/39,0-L1 EKO**

——— Performance
------- Power consumption

VEKA INT 3000 EKO	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Inlet	75	57	66	72	68	66	65	62
Outlet	82	60	70	75	78	75	71	63
Surrounding	68	50	59	63	61	61	58	51
Measured at 3805 m³/h, 122 Pa								

			3000/15,0-L1 EKO	3000/21,0-L1 EKO	3000/30,0-L1 EKO	3000/39,0-L1 EKO
Heater	-phase/voltage	[50Hz/VAC]	~3, 400	~3, 400	~3, 400	~3, 400
	-power consumption	[kW]	15	21,0 (9+12)	30,0 (15+15)	39,0 (12+9+18)
Fan	-phase/voltage	[50Hz/VAC]	~1, 230	~1, 230	~1, 230	~1, 230
	-current	[KW/A]	0,920/4,2	0,920/4,2	0,920/4,2	0,920/4,2
	-speed	[min⁻¹]	2200	2200	2200	2200
	-protection class		IP-54	IP-54	IP-54	IP-54
	-power consumption	[kW/A]	15,92/25,80	21,92/35,20	30,92/47,20	39,92/60,20
Automatic control integrated			integrated	integrated	integrated	integrated
Filter class			M5	M5	M5	M5
Insulation of walls		[mm]	30	30	30	30
Weight		[kg]	137,0	138,0	140,0	142,0
Comply with ERP 2016; 2018			+	+	+	+

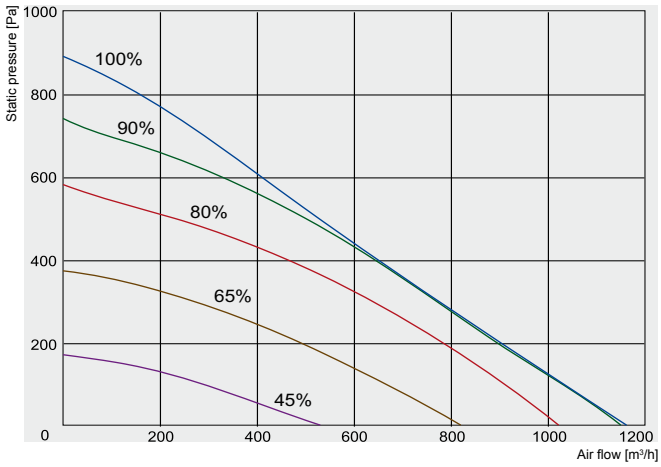


① **VEKA INT4000/21-L1 EKO**
① **VEKA INT 4000/27-L1 EKO**
① **VEKA INT 4000/39-L1 EKO**
① **VEKA INT 4000/54-L1 EKO**

——— Performance
------- Power consumption

VEKA INT 4000 EKO	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Inlet	79	59	69	76	73	70	69	64
Outlet	86	61	73	79	83	79	76	69
Surrounding	72	52	62	67	66	65	63	55
Measured at 4857 m³/h, 142 Pa								

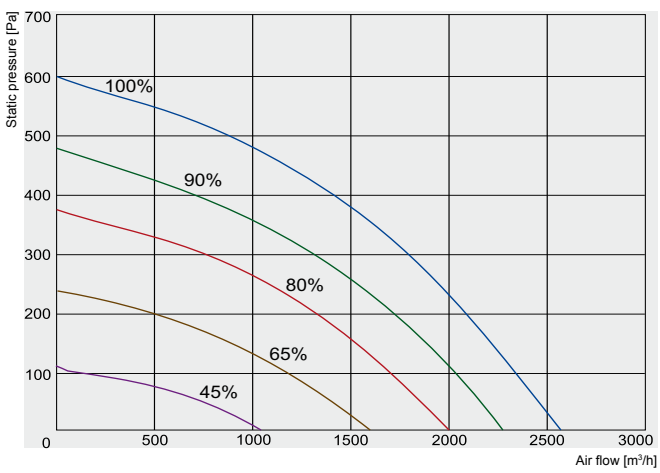
			4000/21-L1 EKO	4000/27-L1 EKO	4000/39-L1 EKO	4000/54-L1 EKO
Heater	-phase/voltage	[50Hz/VAC]	~3, 400	~3, 400	~3, 400	~3, 400
	-power consumption	[kW]	21,0	27,0	39,0	54,00
Fan	-phase/voltage	[50Hz/VAC]	~1, 230	~1, 230	~1, 230	~1, 230
	-current	[KW/A]	1,325 / 5,93	1,325 / 5,93	1,325 / 5,93	1,325 / 5,93
	-speed	[min⁻¹]	2390	2390	2390	2390
	-protection class		IP-54	IP-54	IP-54	IP-54
	-power consumption	[kW/A]	22,33/35,93	28,33/44,93	40,33/61,93	55,33/83,93
Automatic control integrated				integrated	integrated	integrated
Filter class			M5	M5	M5	M5
Insulation of walls		[mm]	30	30	30	30
Weight		[kg]	137,0	139,0	143,0	148,0
Comply with ERP 2016;2018			+	+	+	+



① VEKA INT W 1000/14,4-L1 EKO

VEKA INT W 1000 EKO	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Inlet	70	55	50	66	62	60	61	57
Outlet	75	63	70	72	64	56	53	47
Surrounding	54	43	42	51	48	43	42	39
Measured at 1010 m³/h, 121 Pa								

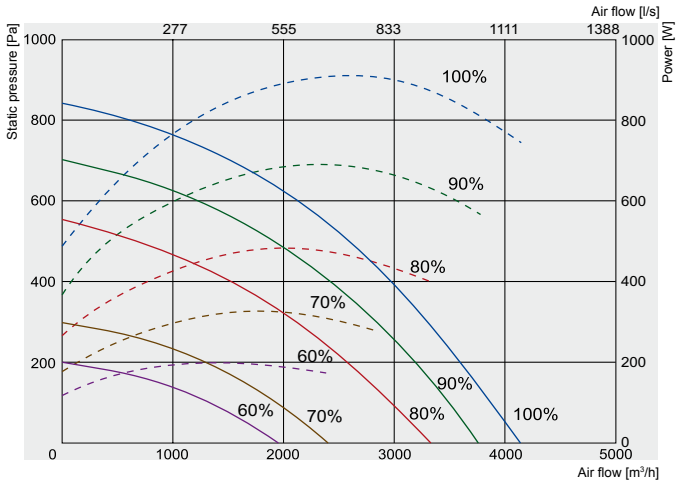
			W-1000/14,4-L1 EKO
Water heater	-power	[kW]	14,4
	-water temp. T_{in}/T_{out}	[°C]	+80/+60
	-water flow rate	[l/s]	0,18
	-water pressure drop	[kPa]	4
	-kvs value	[m³/h]	3,26
Fan	-phase/voltage	[50Hz/VAC]	~1, 230
	-current	[kW/A]	0,232/1,77
	-speed	[min⁻¹]	3220
	-power consumption	[kW/A]	0,232/1,77
	-motor protection class		IP-44
Automatic control integrated			integrated
Filter class			M5
Insulation of wall		[mm]	30
Weight		[kg]	56,0
Comply with ERP 2016; 2018			+



① VEKA INT W 2000/26,9-L1 EKO

VEKA INT W 2000 EKO	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Inlet	78	72	75	72	63	59	52	49
Outlet	82	76	77	76	75	68	63	58
Surrounding	64	58	61	56	49	40	38	32
Measured at 2304 m³/h, 113 Pa								

			W-2000/26,9-L1 EKO
Water heater	-power	[kW]	26,9
	-water temp. T_{in}/T_{out}	[°C]	+80/+60
	-water flow rate	[l/s]	0,33
	-water pressure drop	[kPa]	18,1
	-kvs value	[m³/h]	2,81
Fan	-phase/voltage	[50Hz/VAC]	~1, 230
	-current	[kW/A]	0,481/2,18
	-speed	[min⁻¹]	2010
	-power consumption	[kW/A]	0,481/2,18
	-motor protection class		IP-44
Automatic control integrated			integrated
Filter class			M5
Insulation of wall		[mm]	30
Weight		[kg]	88,0
Comply with ERP 2016; 2018			+



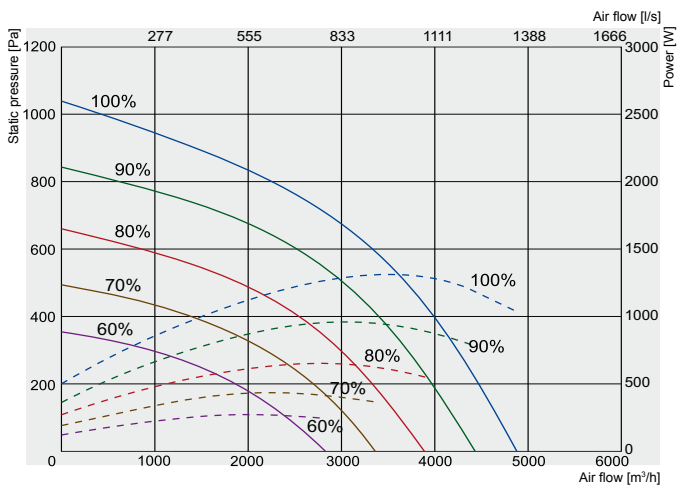
① VEKA INT W 3000/40,6-L1 EKO

——— Performance
------- Power consumption

VEKA INT W 3000 EKO	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Inlet	75	57	65	71	68	66	65	62
Outlet	81	60	69	74	78	74	70	63
Surrounding	67	50	58	62	61	60	57	51

Measured at 3720 m³/h, 120 Pa

			W-3000/40,6-L1 EKO
Water heater	-power	[kW]	40,6
	-water temp. T_{in}/T_{out}	[°C]	+80/+60
	-water flow rate	[l/s]	0,5
	-water pressure drop	[kPa]	9,6
	-kvs value	[m³/h]	5,86
Fan	-phase/voltage	[50Hz/VAC]	~1, 230
	-current	[kW/A]	0,93/4,15
	-speed	[min⁻¹]	2200
	-power consumption	[kW/A]	IP-54
	-motor protection class		0,93/4,15
Automatic control integrated			integrated
Filter class			M5
Insulation of wall		[mm]	30
Weight		[kg]	140,0
Comply with ERP 2016; 2018			+



① VEKA INT W 4000/54-L1 EKO

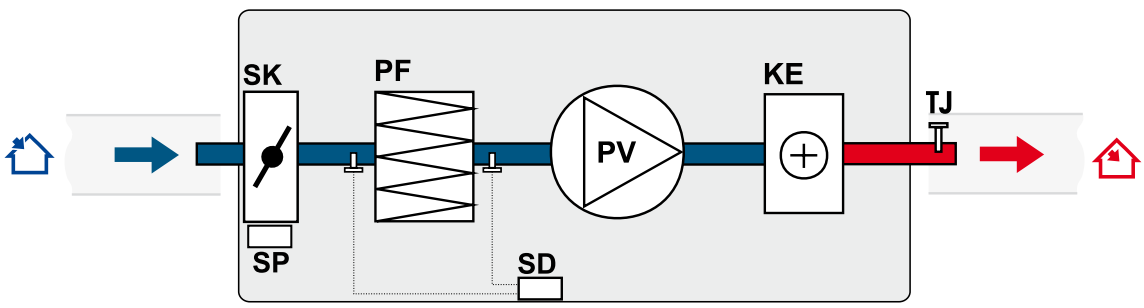
——— Performance
------- Power consumption

VEKA INT W 4000 EKO	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Inlet	78	59	69	74	72	70	69	62
Outlet	84	60	73	77	80	78	75	67
Surrounding	71	51	62	65	64	65	62	53

Measured at 4677 m³/h, 101 Pa

			W-4000/54-L1 EKO
Water heater	-power	[kW]	56,95
	-water temp. T_{in}/T_{out}	[°C]	+80/+60
	-water flow rate	[l/s]	0,7
	-water pressure drop	[kPa]	12
	-kvs value	[m³/h]	7,33
Fan	-phase/voltage	[50Hz/VAC]	~1, 230
	-current	[kW/A]	1,258/5,8
	-speed	[min⁻¹]	2390
	-power consumption	[kW/A]	1,29/5,80
	-motor protection class		IP-54
Automatic control integrated			integrated
Filter class			M5
Insulation of wall		[mm]	30
Weight		[kg]	128,0
Comply with ERP 2016; 2018			+

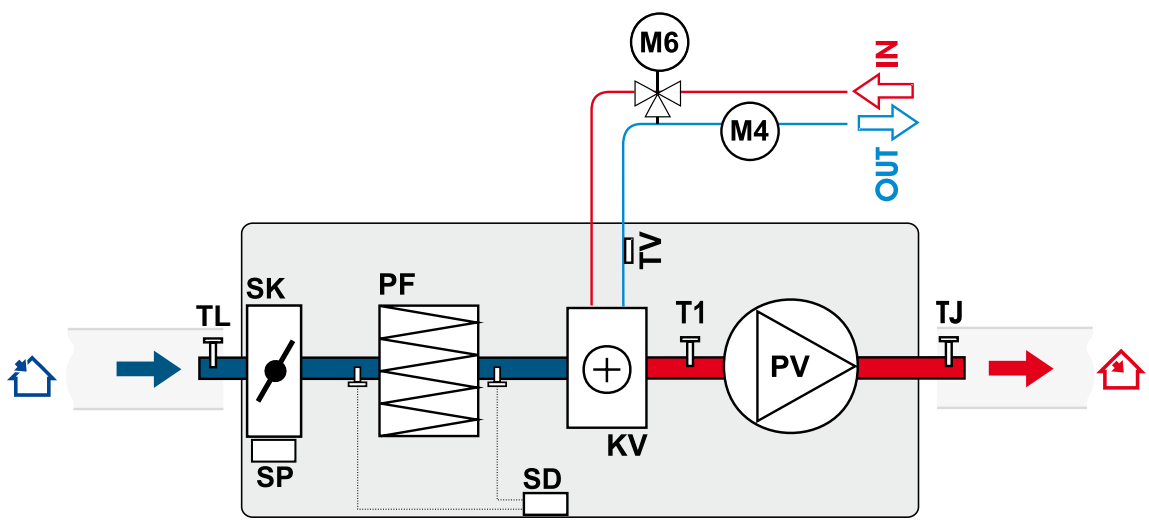
VEKA INT 400 EKO / 700 EKO / 1000 EKO / 2000 EKO / 3000 EKO / 4000 EKO versions with electrical heater (view from inspection side)



PV - supply air fan
PF - filter for supply air
KE - electrical heater
SK - air damper

SP - actuator
SD - differential pressure switch
TJ - supply air temperature sensor

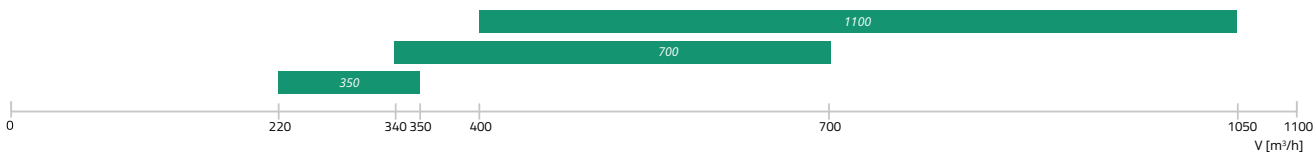
VEKA INT W 1000 EKO / W 2000 EKO / W 3000 EKO / W 4000 EKO versions with water heater (view from inspection side)

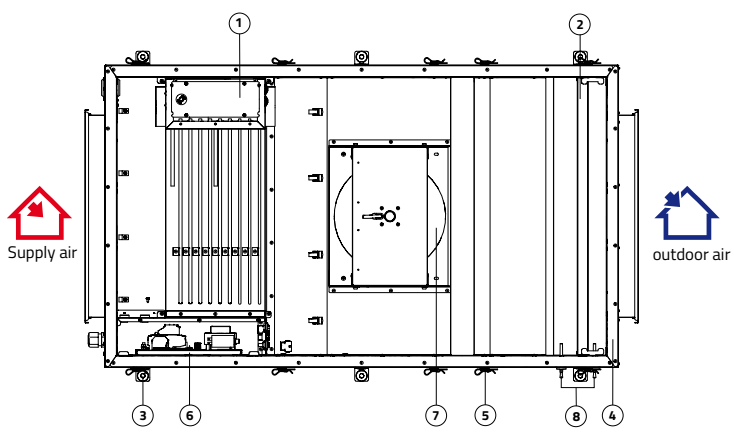


PV - supply air fan
PF - filter for supply air
KV - water heater
SK - air damper
SP - actuator
SD - differential pressure switch

TJ - supply air temperature sensor
TL - temperature sensor for fresh air
T1 - antifrost thermostat
TV - temperature sensor
M6 - optionally supply mixing valve and motor
M4 - water heater circulatory pump

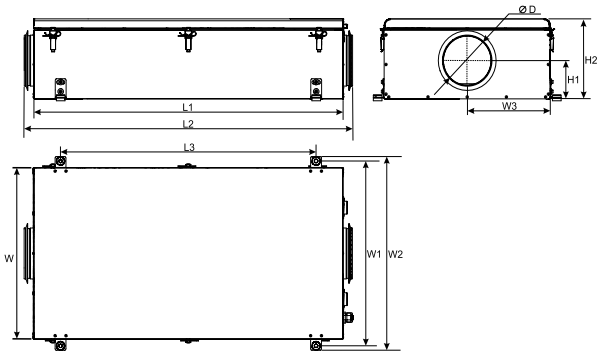
VEGA



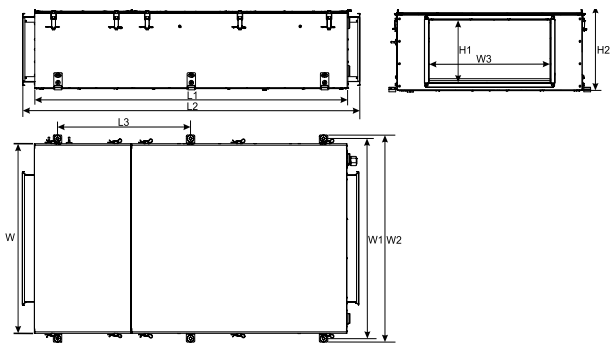
Application	Ventilation of food production and industrial premises, warehouses, sport facilities and similar.
Description	VEGA is designed as a high quality air supply unit for premises with no need of recuperation. VEGA reflects our experience with and knowledge in the implementation of reliable, user-friendly and energy-efficient solutions. VEGA units exceed ErP 2016 requirements and, together with other cost-saving solutions, provide the highest savings in their class. Due to its extremely low height and possibility to mount in all positions, VEGA can be a perfect solution for small premises. Our clients are located in various climate zones, which is the reason why this unit has a customizable heating system. The electrical heater is optional, easy to install, and there are three types for each climate.
Controls	› Stouch › Flex
Features	› Three sizes with 3 different electrical heaters and a model with a water heater. 10 options in total › 6 mounting positions and one-person service. › Lowest height in its class. › Modern automatic control, possible integration with building management systems. › Cost-efficient solution.
Construction	

1. Electric heater (ordered and installed by the user) or integrated water heater for Vega 1100W
2. MPL filter G4
3. Amortization pads with hanging brackets
4. Casing (insulation thickness – 30mm)
5. Cover fastening pins
6. Integrated control box
7. Silent high efficiency fan
8. Pressure switch - 2 pcs. (only VEGA 1100 E/W)

350 E/700 E



1100 E/W



	Dimensions [mm]									
Unit	**L1**	**L2**	**L3**	**W**	**W1**	**W2**	**W3**	**H1**	**H2**	**øD**
VEGA 350 E	1000	1060	825	536	578	606	268	120	250	160
VEGA 700 E	1200	1260	1025	536	578	606	268	145	300	200
VEGA 1100 E/W	1300	1400	554	765	807	835	382	158	340	-

	Optional accessories										
Unit	**Flex Stouch**	**AKS SKG AP**	**EH**	**SKS**	**SSK**	**RSK**	**SP**	**PS600B**	**SSB** *Heating*	**RMG 80/60°C**	**RMG 80/40°C**
VEGA 350 E	+	160	1.2 1f 2.4 1f 5.0 2f	-		160	CM230-1-F-L	-	-	-	-
VEGA 700 E	+	200	2.4 1f 5.0 2f 9.0 3f	-		200	CM230-1-F-L	-	-	-	-
VEGA 1100 E	+	-	6.0 2f 9.0 3f 15.0 3f	50-25	500-250	-	CM230-1-F-L	+	-	-	-
VEGA 1100 W	+	-	-	50-25	500-250	-	TF230	+	61	45,10-1,6	45,10-1,0

Accessories

Control panel

FLEX **p. 177**

Remote controller

Stouch **p. 176**

Actuator for damper

TF230 **p. 210**

Actuator for damper

CM230 **p. 210**

Thermic water valve actuator

SSB **p. 195**

Mounting clamp

AP **p. 219**

Shut-off damper

SKG **p. 212**

Circular duct silencer

AKS **p. 216**

Rectangular duct silenser

SKS **p. 215**

Damper

SSK **p. 213**

Back draft shutter

RSK **p. 214**

Pressure switch

PS600B

Electric heater

EH VEGA 350/700E

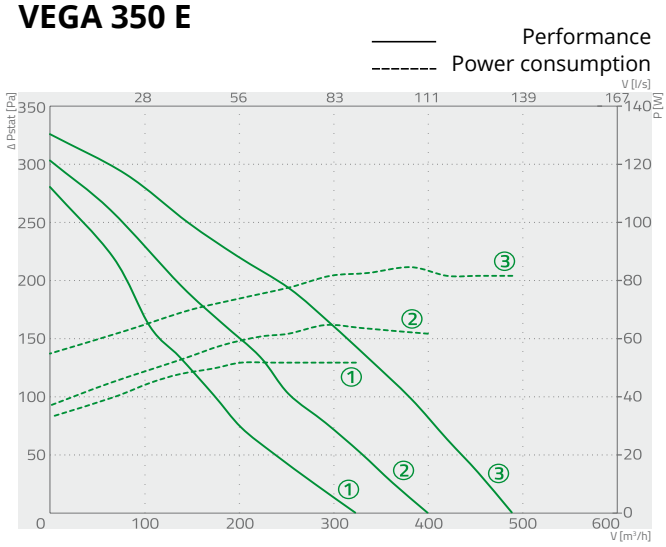
Electric heater

EH VEGA 1100E

Mixing point

RMG **p. 196**

VEGA 350 E



NEW!

① 1 speed
② 2 speed
③ 3 speed

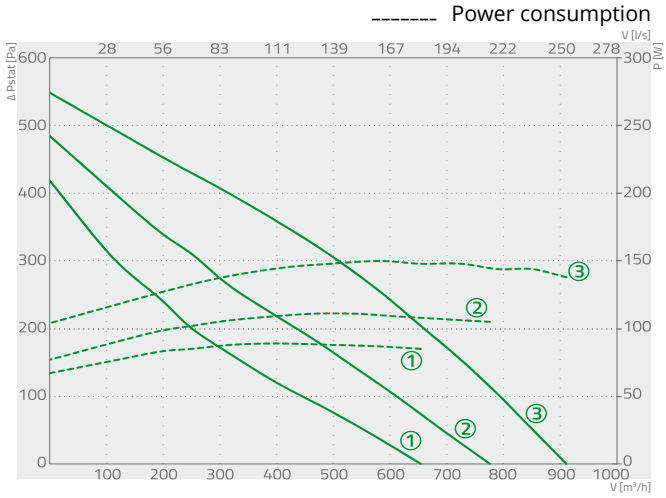
Title	Article No.
VEGA 350 E	GAGVEGA130_124

VEGA 350 E	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Inlet	58	48	54	52	48	41	37	28
Outlet	64	52	56	62	55	52	46	39
Surrounding	44	35	38	40	36	32	28	20

Measured at 380 m³/h, 100 Pa

			EH 1.2 1f	EH 2.4 1f	EH 5.0 2f
Optional heater	phase/voltage	[50Hz/VAC]	~1/230	~1/230	~2/400
	power consumption	[kW]	1,2	2,4	5,0
	weight	[kg]	1,5	2	3
Fan	phase/voltage	[50Hz/VAC]		~1/230	
	power/current	[kW/A]		0,074/0,30	
	speed	[min⁻¹]		2800	
Air flow temperature		[°C]		-20...+40	
	protection class	IP		44	
Total power consumption (power/current)		[kW/A]	1,27/5,54	2,47/10,76	5,07/12,69
Insulation of casing		[mm]		30	
Filter class				G4	
Color		RAL		white (9016)	
Weight (net, without packing)		[kg]		33	
Comply with ErP				2016	
Control board				EKR_KE	

VEGA 700 E



NEW!

① 1 speed
② 2 speed
③ 3 speed

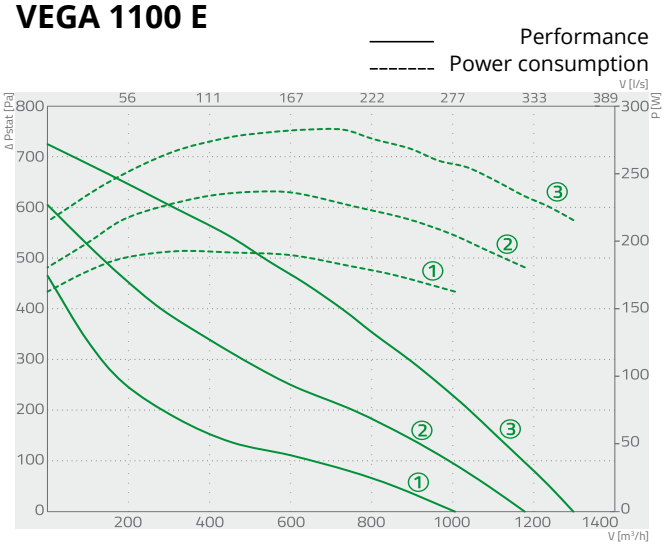
Title	Article No.
VEGA 700 E	GAGVEGA130_126

VEGA 700 E	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Inlet	68	57	62	63	60	59	48	41
Outlet	71	57	64	68	62	57	52	43
Surrounding	55	45	47	51	48	45	40	34

Measured at 790 m³/h, 100 Pa

			EH 2.4 1f	EH 5.0 2f	EH 9.0 3f
Optional heater	phase/voltage	[50Hz/VAC]	~1/230	~2/400	~3/400
	power consumption	[kW]	2,4	5,0	9,0
	weight	[kg]	3,5	4	9
Fan	phase/voltage	[50Hz/VAC]		~1/230	
	power/current	[kW/A]		0,14/0,60	
	speed	[min⁻¹]		2659	
Air flow temperature		[°C]		44	
	protection class	IP		-20...+40	
Total power consumption (power/current)		[kW/A]	2,54/11,04	5,14/12,85	9,14/13,19
Insulation of casing		[mm]		30	
Filter class				G4	
Color		RAL		white (9016)	
Weight (net, without packing)		[kg]		42	
Comply with ErP				2016	
Control board				EKR_KE	

VEGA 1100 E



NEW!

① 1 speed
② 2 speed
③ 3 speed

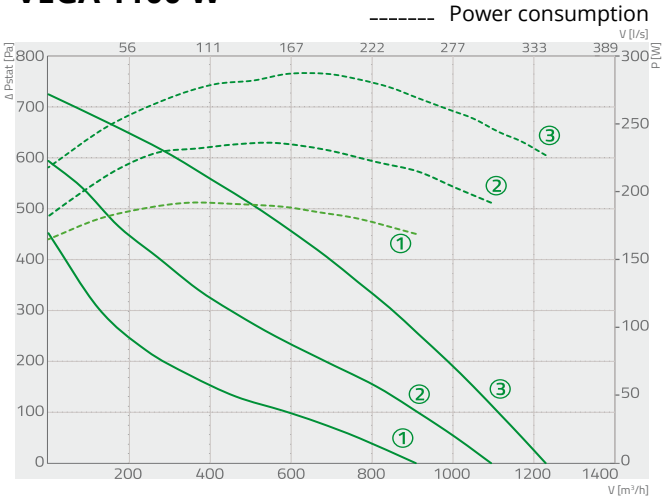
Title	Article No.
VEGA 1100 E	GAGVEGA130_125

VEGA 1100 E	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Inlet	67	57	61	63	58	55	50	43
Outlet	73	58	66	70	67	61	56	50
Surrounding	55	45	48	50	48	46	41	37

Measured at 1170 m³/h, 100 Pa

			EH 6.0 2f	EH 9.0 3f	EH 15.0 3f
Optional heater	phase/voltage	[50Hz/VAC]	~2/400	~3/400	~3/400
	power consumption	[kW]	6,0	9,0	15,0
	weight	[kg]	6,89	6,80	11,80
Fan	phase/voltage	[50Hz/VAC]		~1/230	
	power/current	[kW/A]		0,278/1,25	
	speed	[min^{-1}]		2760	
Air flow temperature		[°C]		44	
	protection class	IP		-20...+40	
Total power consumption (power/current)		[kW/A]	6,28/27,30	9,28/13,40	15,28/22,00
Insulation of casing		[mm]		30	
Filter class				G4	
Color		RAL		gray (7040)	
Weight (net, without packing)		[kg]		66	
Comply with ErP				2016	
Control board				EKR_KE	

VEGA 1100 W



NEW!

① 1 speed
② 2 speed
③ 3 speed

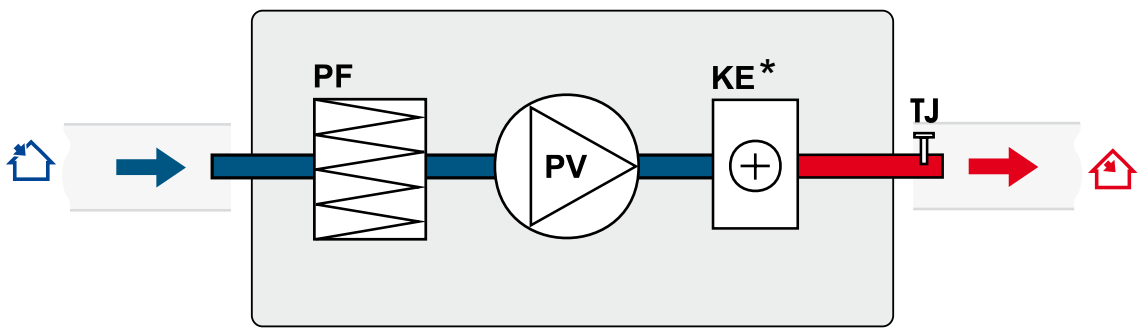
Title	Article No.
VEGA 1100 W	GAGVEGA130_128

VEGA 1100 W	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Inlet	66	57	61	62	58	55	49	43
Outlet	73	58	65	69	66	62	56	51
Surrounding	54	45	47	49	48	44	40	37

Measured at 1100 m³/h, 100 Pa

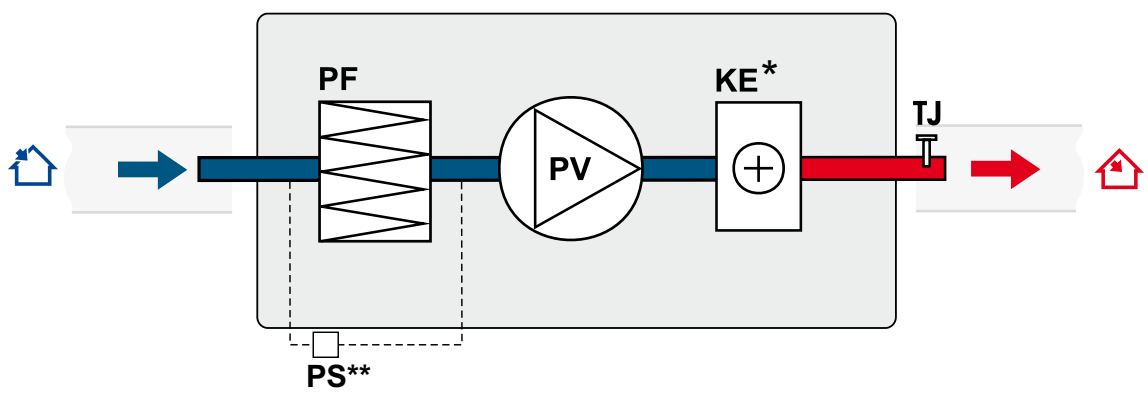
			VEGA 1100 W
Water heater	power	[kW]	16,11
	water temperature	[C°]	+80/+60
	water flow rate	[l/s]	0,2
	water pressure drop	[kPa]	9,5
	connection diameter	DN	1/2"
Fan	phase/voltage	[50Hz/VAC]	~1/230
	power/current	[kW/A]	0,287/1,26
	speed	[min^{-1}]	2762
	protection class	IP	44
Air flow temperature		[°C]	-20...+40
Total power consumption (power/current)		[kW/A]	0,29/1,26
Insulation of casing		[mm]	30
Filter class			G4
Color		RAL	gray (7040)
Weight (net, without packing)		[kg]	74
			2016
Automatic control			EKR_KW

VEGA 350E / VEGA 700E versions with electrical heater



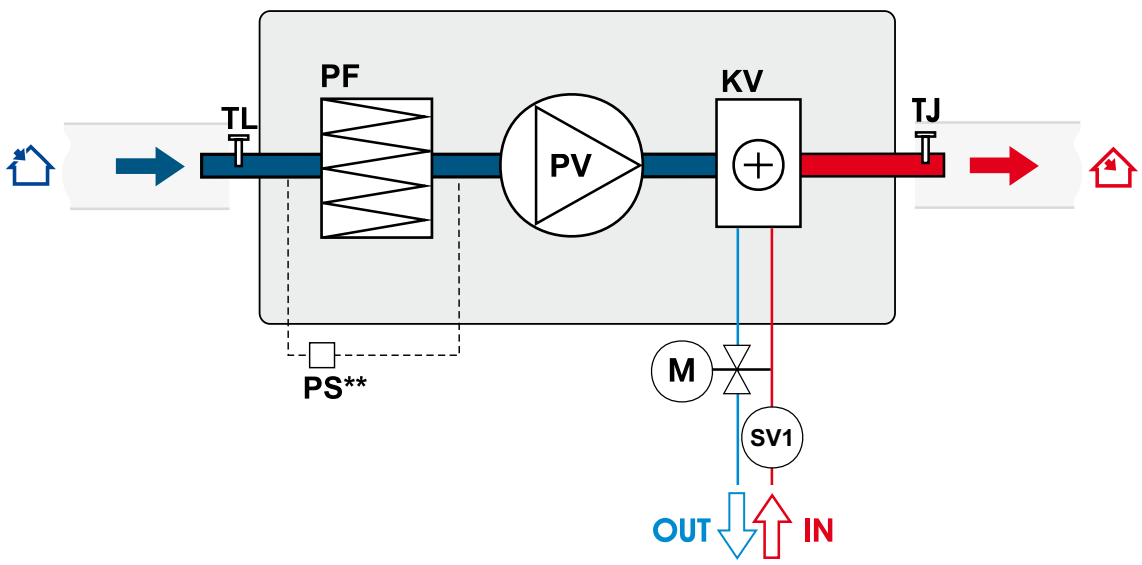
PF - filter for outdoor air
PV - supply air fan
KE* - electrical heater (supplied separately)
TJ - supply air temperature sensor

VEGA 1100E versions with electrical heater



PF - filter for outdoor air
PV - supply air fan
KE* - electrical heater (supplied separately)
PS** - external differential pressure switch (optional)
TJ - supply air temperature sensor

VEGA 1100W versions with water heater



PF - filter for outdoor air
PV - supply air fan
KV - water heater
PS** - external differential pressure switch (optional)
TJ - supply air temperature sensor
TL - outdoor air temperature sensor
M - circulation pump of the heater
SV1 - heater's valve actuator

Automatic control

› All Vega units have integrated modern control box for automatic handling.

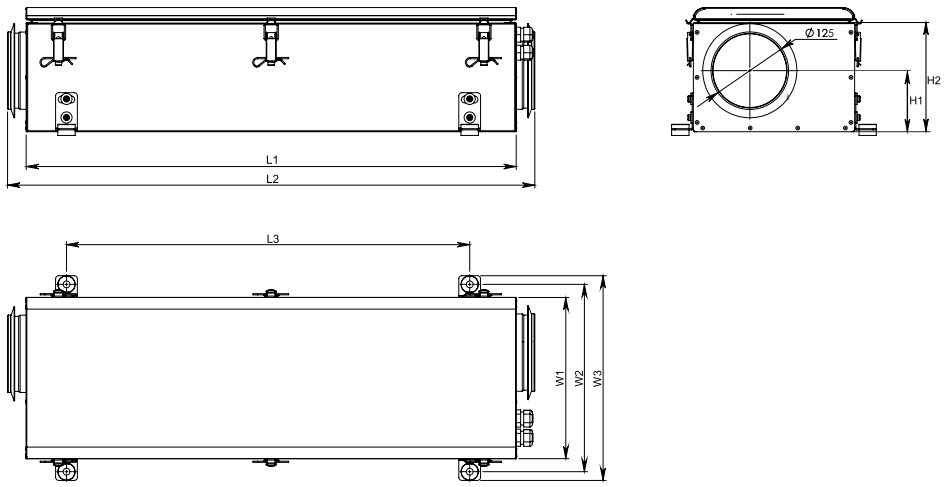
All VEGA air supply units are equipped with new integrated EKR_KE or EKR_KW controllers. The manufacturer offers modern Stouch and FLEX remote control panels for remote air supply unit control. The EKR controller can also be connected to a building management system via the RS 485 protocol.

EKR POSSIBILITIES:

› 3 fan speeds.
› Supply temperature control.
› Damper control.
› Weekly calendar (8 events a day).
› Consistent electrical heater control.
› User and service control level.
› Fault diagnostics and reporting.
› Fan motor protection.
› Electrical heater overheating protection.
› Electrical heater after cooling.
› Output for external alarm.
› Filter contamination control (VEGA 1100 E/W).
› Water heater frost protection (VEGA 1100 W).
› Water heater recirculation pump and three-way valve control (VEGA 1100 W).

VEKA EC

Application	Ventilation of food production and industrial premises, warehouses, sport facilities and similar.
Description	VEKA 350 EC units are a cost-efficient solution for supplying fresh air. Units exceed ErP 2016 requirements. The main benefits of the VEKA EC are efficient EC fans and their compact size. Two types of electrical heaters available for these units.
Controls	All components for fan and heater control should be connected by the user.
The main features	› Efficient EC fan (motor consumes less than 55W). › 4 heaters. › Highly compact size: 200x260x790.
Construction	› Powder-coated galvanized steel casing. › Acoustic and thermal insulation of external walls - 20 mm. › Efficient EC fan and G4 class filters. › Electric heaters: (1f 2.4/3.6 kW, 2f 3.0/4.5 kW).



	Dimensions [mm]								
Unit	**L1**	**L2**	**L3**	**W1**	**W2**	**W3**	**H1**	**H2**	**øD**
VEKA 350 EC	790	850	650	260	302	330	99	200	125

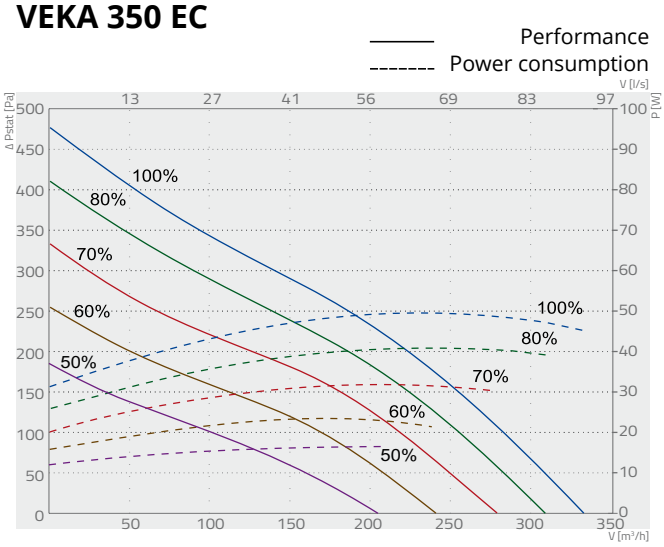
	Optional accessories						
Unit	**Stouch**	**MTP010**	**EKR 6.1**	**SKG**	**AKS**	**AP**	**RSK**
VEKA 350 EC	0-10VDC fan speed control	0-10VDC fan speed control	proportional controller for electric heater	125	125	125	125

Accessories

Remote controller	Speed controller	Controller of electrical heating	Shut-off damper	Circular duct silencer	Mounting clamp	Back draft shutter
						
Stouch p. 176	**MTP010 p. 209**	**EKR 6.1 p. 207**	**SKG p. 212**	**AKS p. 216**	**AP p. 219**	**RSK p. 214**

VEKA EC

VEKA 350 EC



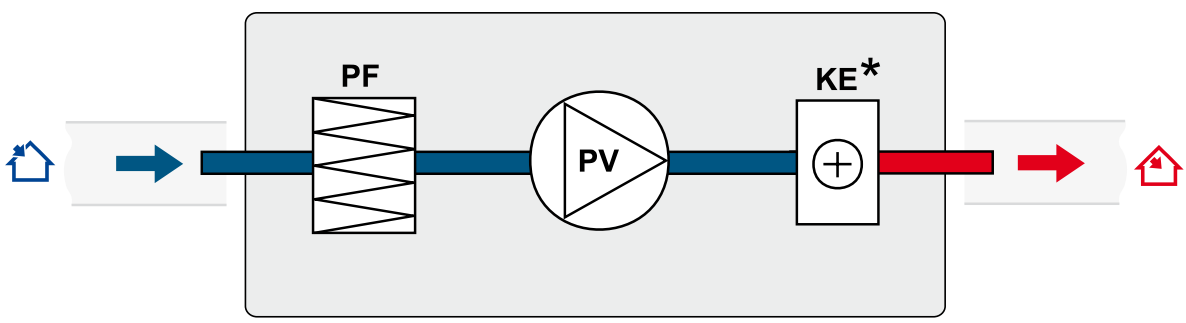
Title	Article No.
VEKA 350 EC	GAGVEKA130_123_0041C

VEKA 350 EC	Lwa total, dB(A)	LWA, dB(A) 125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Inlet	65	59	58	55	58	55	52	38
Outlet	70	61	64	63	62	61	55	42
Surrounding	46	40	42	37	34	31	28	25

Measured at 285 m³/h, 100 Pa

			EKA 1f		EKA 2f	
Optional heater	phase/voltage	[50Hz/VAC]	~1/230		~2/400	
	power consumption	[kW]	2,4/10,4	3,6/15,6	3,0/7,54	4,5/11,3
	min. airspeed	[m/s]	1,5			
Fan	phase/voltage	[50Hz/VAC]	~1/230			
	power/current	[kW/A]	0,056/0,46			
	speed	[min⁻¹]	4385			
min ambient temperature		[°C]	-25			
	protection class	IP	IP-44			
Total power consumption without heater (power/current)		[kW/A]	0,06 /0,46			
Insulation of casing		[mm]	20			
Filter class			G4			
Color		RAL	white (9016)			
Weight (net, without packing)		[kg]	12,91			
Comply with ErP			2016			

VEKA 350 EC version with electrical heater



PF - filter for supply air
PV - supply air fan
KE* - electrical heater (supplied separately)

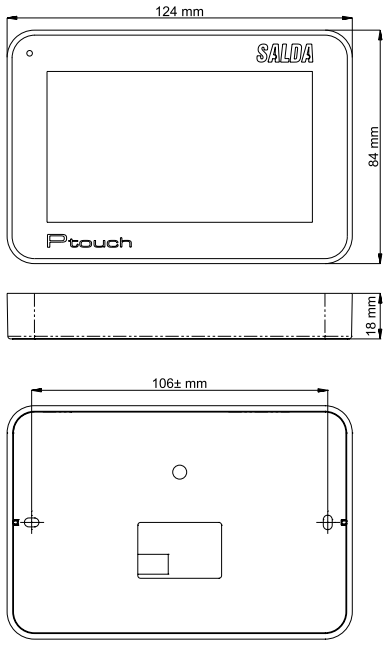
Notes

Remote controllers

No.	Control board	AHU	Ptouch	Stouch	FLEX	MB-Gateway
1	EKR-KE	VEGA E (Electrical)		✓	✓	
2	EKR-KW	VEGA W (Water)		✓	✓	
4	EKO_107: KSECEC	VEKA INT EKO E (Electrical)		✓	✓	
5	EKO_107: KSWCEC	VEKA INT EKO W (Water)		✓	✓	
6	PRV V1.1	RIS/RIRS 3.0		✓	✓	✓
7	PRV V2.3	SMARTY 3X VEL/VER	✓	✓	✓	✓
8	PRV V2.5	RIS/RIRS EKO 3.0 / EC 3.0	✓	✓	✓	✓
9	MCB	Smarty 2R VE	✓	✓		✓
10	MCB mini	Smarty 2XV, 2XP, 3XP, 3XV	✓	✓		✓

Controllers			
	Ptouch Smart control, professional adjusting	**Stouch** Easy control, optimal adjusting	**FLEX** Simple control, advanced adjusting
Display	LCD 65k colours	Segment	LCD Monochrome
One touch control		✓	
Child lock	✓	✓	
Touch sound feedback	✓	✓	
Modbus communication protocol	✓	✓	
Software updates via SD card	✓		
Sleep mode	✓	✓	✓
0-10 VDC output/input		✓	
Frame			
Dimensions H/L/W [mm]	84/124/16	84/84/22	86/86/19
Date and time	✓		✓
Language selection	✓		✓
Supply air temperature	✓	✓	✓
Set point temperature	✓	✓	✓
Fan speed	✓	✓	✓
Humidity level	✓		✓
CO2 level	✓		✓
Menu	✓		✓

Remote controller



Title	Article No.
Ptouch	PRGPU081

Ptouch is designed for modern expert handling of new generation SALDA AHUs.

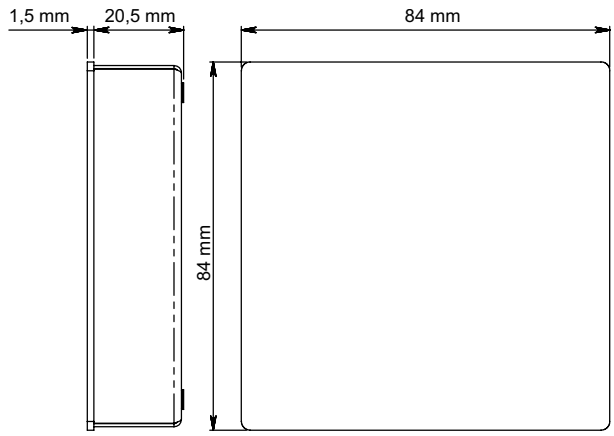
› Simple and user-friendly air handling units' control: capacitive 4.3" touchscreen with multilingual interface;
› Contemporary design integrates into the interior;
› Child lock;
› Power saving "standby" mode;
› Adjustment of screen brightness;
› Alarm indication by sound;
› Automatic recognition of control board;
› Modbus master mode;
› Possibility to keep the firmware always up-to-date: easy to upgrade with Micro SD card;
› Informative screen: temperature, operation modes, fan speed, date/time, extract/outdoor air temperature, humidity.
› Easy adjustment of control board settings: fan speed, temperature, boost, calendar event, humidity, CO2 level and etc.
› Expert level control possibilities: interface with full control of control board functions.

Technical data

Mounting		Surface
Voltage	[AC/DC]	24 (max 4W)
Communication line		ModBus RS485/RS422
Cable length	[m]	13
Dimension (WxHxD)	[mm]	124x84x18
Protection class		IP-20
Ambient temperature	[°C]	5 - 35 (50*)
Relative humidity	[%]	30-90(without condensation)

Stouch

Remote controller



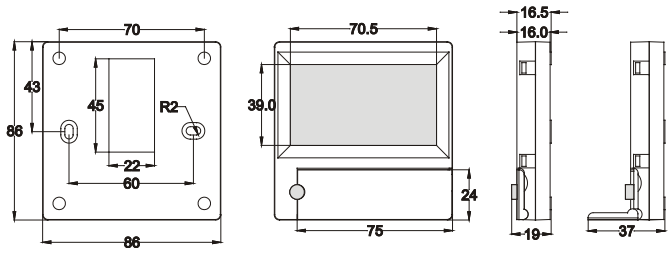
Title	Article No.
Stouch	PRGPU051

Stouch controllers specially designed for easy control of Salda Air handling units.

› No complex features: ideal for facilities with occasional or novice users (e.g. hotels, offices, schools and etc.);
› 4 configurable speeds (indicated pressure or velocity as a percentage);
› Boost function;
› On/Off function;
› Display of fan speed;
› Display of warnings;
› Constant pressure control with external pressure sensor;
› Carbon dioxide level control with external CO2 sensor;
› Modbus master/slave modes.
› One-touch sensory control, sound response;
› LED and digital indication;
› Sleep mode;
› Blocking of turn off;
› Child lock.

Technical data		
Supply voltage	[VDC]	24VDC ± 10% / 24VAC ± 10%
Communication line		RS-485
Dimensions (WxHxL)	[mm]	84x84x22
Protection class		IP30
Ambient temperature	[°C]	10 to 40
Ambient humidity	[%]	10-80 (non-condensing)

Control panel



Title	Article No.
FLEX	PRGPU015

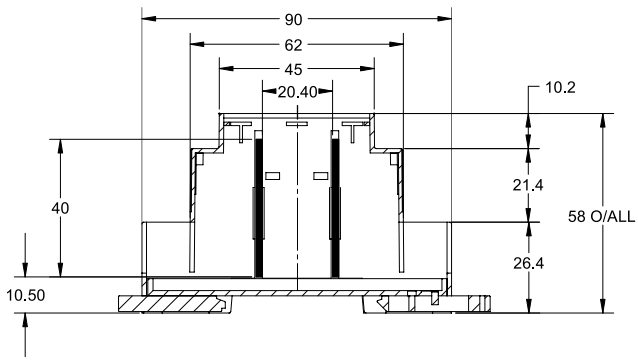
Flex was designed for expert SALDA AHUs.
› Controls wide range of Salda air handling units;
› Expert level control settings;
› Simple interface;
› Automatic recognition of the controlled unit.
› Display of supply/set air temperatures, date/time, fan speed, operation mode.
› Multilingual settings;
› Possibility to set calendar event, review alarms, sensors values, CO2 level, humidity level and etc.
› Fault and alarm indication.

ACCESSORIES

Technical data:		
Supply voltage	[VDC]	15..30
Communication line		RS 485
Dimensions (WxHxL)	[mm]	86x86x16
Protection class		IP20
Ambient temperature	[°C]	10-30(50*)
Ambient humidity	[%]	<90

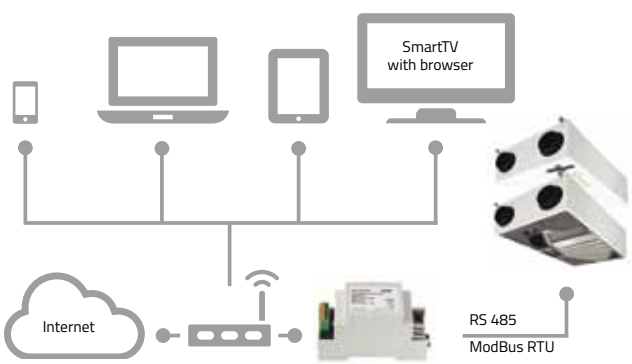
MB-Gateway

Network module



Title	Article No.
MB-Gateway	GAUMBGATEWAY001

MB-Gateway enables ventilation units, based on control technology produced by Salda, to connect via TCP/IP to the wide range of control devices.
› Remote air handling unit's control via PC through the home network or internet;
› A three-level menu: user/service/adjuster;
› User friendly, multilingual and up-to-date interface.
› Informative interface screen on your control unit: temperature, operation modes, fan speed, date/time, extract/outdoor air temperature, humidity.
› Easy adjustment of control board settings: fan speed, temperature, boost, calendar event, humidity, CO2 level and etc.



Technical data:

› TCP/IP Modbus gateway;
› IPV4 protocol;
› WEB server;
› FTP server;
› Building of Modbus commands using HTTP requests;
› Authorized connection;
› Automatic data communication between Modbus units;
› Updating of the module firmware using MicroSD memory card or FTP client;
› RT clock;
› Galvanically isolated RS485 communication line.

Technical data

Mounting		Surface, DIN Rail
Voltage	[AC/DC]	12V - 25V (2W) (supplied with AC/DC adapter)
Communication line		Ethernet RJ45 ModBus RS485
Cable length	[m]	UTP cable (0.5 m) RS485 communication cable with RJ11 plugs (2 m)
Dimensions (WxHxD)	[mm]	90x62x58
Protection class		IP-20
Ambient temperature	[°C]	-20 - 70
Ambient humidity	[%]	30-85 (without condensation)

Pressure sensor

Title	Article No.
S-1141	ZAKKT0047

The SPS is a multi-range differential pressure transmitter with an analog/digital output and Modbus RTU communication. This calibrated pressure transmitter has eight switchable measuring ranges and is equipped with a state-of-the-art monolithic silicon pressure sensor designed for a wide range of applications. The piezo-resistive transducer is temperature and pressure compensated and has a high degree of reliability and accuracy. The sensor can measure air or other non-aggressive, non-combustible gases.

Technical data:
› Analog (0-10 VDC/0-20 mA) or digital output (PWM, open collector)
› Measuring range: 0 to 2000 Pa, automatically switched according to set point
› Modbus RTU (RS485)
› Operating temperature: 10 to 60°C (temperature compensated)
› Accuracy: ±3 % of final value (analog voltage output)
› Long-term stability: ±1 % per year
› Response time: 0,5/1/2/5 sec

Power consumption:
› 18-34 VDC supply: 20-10 mA (no load)
› 15-24 VAC supply: 15-10 mA (no load)

CO_2 sensors

S-RCO2-F2

Title	Article No.
S-RCO2-F2	ZAKKT0048

S-KCO2

Title	Article No.
S-KCO2	ZAKKT0049

The self-calibrating microprocessor-controlled room and duct CO_2 sensors are used for the detection of the CO_2 content in air within a range of 0 to 10000 ppm CO_2. The measurement signals generated by the CO_2 transmitter are converted into standard signals of 0 – 10 V. The CO_2 content in the air is determined by a NDIR sensor (non-dispersive infrared technology sensor). The detection range of the CO_2 sensor is calibrated for standard applications such as monitoring of apartment rooms or meeting rooms. Room ventilation on an as-needed basis, improvement of well-being and customer benefit, increased comfort as well as a reduction of operating costs by saving energy.

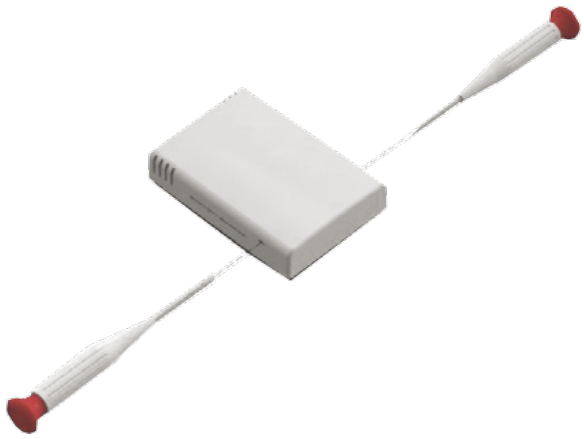
Technical data

Type	S-RCO2-F2	S-KCO2
Measuring range, CO2	Jumper selection: 450 to 1.850 ppm / 0 to 1.000 ppm / 0 to 1.500 ppm / 0 to 2.000 ppm	Jumper selection: 450 to 1.850 ppm / 0 to 1.000 ppm / 0 to 1.500 ppm / 0 to 2.000 ppm
Output, voltage	0-10 V	
Power supply	15-24 VAC ±10 %/18-34 VDC	
Ambient temperature	-10...+50 °C	0...+50 °C
Display	No	No
Dimensions	104.5x74.5x25.6	100x104x280
Protection class	IP30	IP20
Installation	Wall mounting or in wall flush box, 60mm	Duct

Humidity sensors

S-KFF-U

Title	Article No.
S-KFF-U	ZAKKT0051



S-RFF-U-D-F2

Title	Article No.
S-RFF-U-D-F2	ZAKKT0050

The calibrateable duct and room humidity sensors S-KFF-U, S-RFF-U-D-F2, accuracy class ± 3 % r.H., measures the relative humidity of air. The humidity transmitter converts the measurand humidity into standard signals of 0 – 10 V or 4...20 mA. This humidity sensor is applied in non-aggressive dust-free ambiences in refrigeration, air conditioning, ventilation and clean room technology. Relative humidity (in % r.H.) is the quotient of water vapour partial pressure divided by the saturation vapour pressure at the respective gas temperature. These measuring transducers are designed for exact detection of humidity. A digital long-term stable sensor is used as measuring element for humidity measurement. Fine adjustment by the user is possible.

Technical data

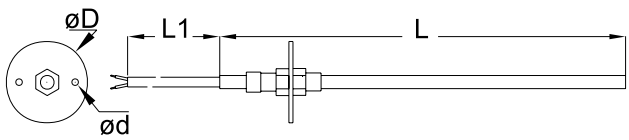
Type	S-KFF-U	S-RFF-U-D-F2
Measuring range, humidity	15-90 % RH	Jumper selection: 20-90 % RH/0-60 % RH/0-80 % RH/0-100 % RH
Output, voltage	0-10V	
Power supply	18-32 VDC ±10 %/15-24 VAC	
Electrical connection	0,14 - 1,5 mm²	
Cable gland	M16	-
Dimensions	100x80x285mm	105x75x26
Protection class	IP54	IP 30
Installation	duct	Wall mounting or in wall flush box, 55mm

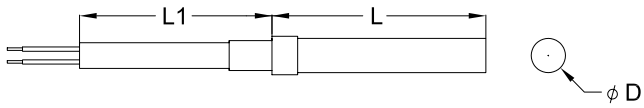
TJK-10K / TJP-10K

Temperature sensors

TJK-10K

TJP-10K





Title	Article No.
TJK-10K	PJUT0024

Duct sensors used in measuring air temperature in ventilation ducts. With adjustable insertion length.

Title	Article No.
TJP-10K	PJUT0028

TJP-10K temperature sensors used in measuring return water temperature.

Technical data

Type	Temperature range [°C]	Time constant [s]	Casing
TJK-10K	-30...+105	15	Plastic
TJP-10K	-30...+105	15	Stainless steel

Dimensions

Type	L, [mm]	L1, [mm]	øD, [mm]	ød, [mm]
TJK-10K	230	1500	40	3,2
TJP-10K	50	2000	8	-

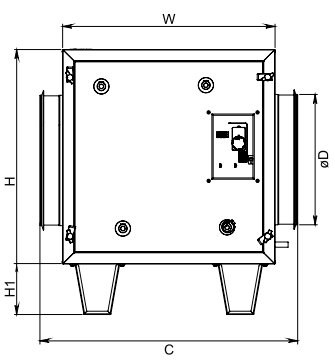
Water heaters/coolers

Heater Cooler

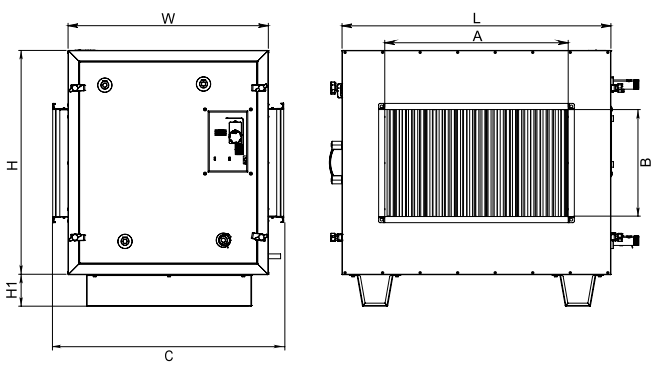
Title	Article No.
Comfort Box 400	GSIASD0001
Comfort Box 600x350	GSIASD0002
Comfort Box 800x500	GSIASD0004
Comfort Box 800x500 SF	GSIASD0006

Comfort Box - insulated unit designed for integration of heater and/or cooler, which can be DX or H_2O.
Suitable for RIS EC/RIS EKO/RIRS EKO 1900-5500 and can be easily connected to the air handling unit with standard C-profile flanges connectors (included in the set).
Comfort Box is made of galvanized steel. External coating – RAL 7040.
Insulation: 50 mm stone wool filling. Anti-frost thermostat, stainless steel condensate tray and drop trap are included.
Comfort Box is provided with adjustable rubber pads.
Inspection/connection side can be easily changed.
Connection flanges: Comfort Box 1900 m^3/h – round; Comfort Box 2500- 5500 m^3/h – rectangular.
Designed for indoor or outdoor installation.

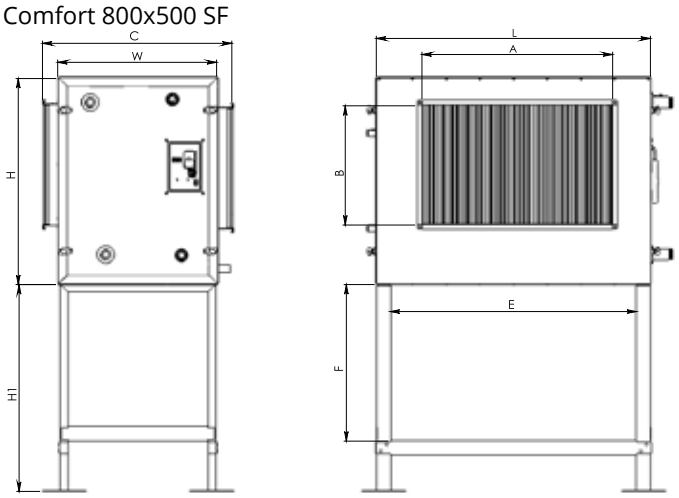
Comfort Box 400



Comfort Box 600x350; 800x500



Comfort 800x500 SF

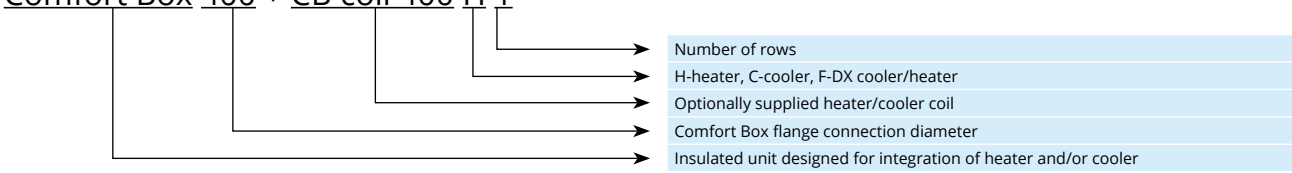


Accessories

CB coil

Comfort Box

Comfort Box 400 + CB coil 400 H 1



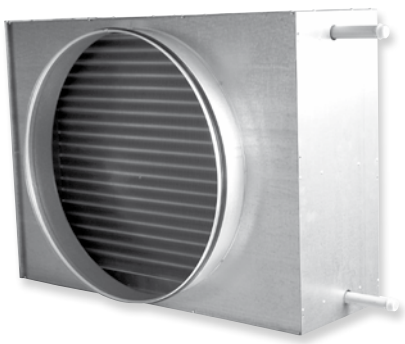
Type	**Dimensions** [mm]												
	L	**H**	**W**	**C**	**H1**	**A**	**B**	**D**	**E**	**F**	**Air flow [m³/h]**	**Max. heater [kw]**	**Max. cooler [kw]**
Comfort Box 400	679	658	652	791	155	-	-	400	-	-	1900	3,2	9,1
Comfort Box 600x350	880	734	656	756	104	600	350	-	-	-	2500	4,2	12,4
Comfort Box 800x500	1150	864	667	795	948	800	500	-	-	-	5500	9,2	27,3
Comfort Box 800x500 SF	1150	864	667	795	867	800	500	-	1034	657	5500	9,2	27,3

From 15 to +20; 40/20 and 90/70
From 27 to +17, 7/12

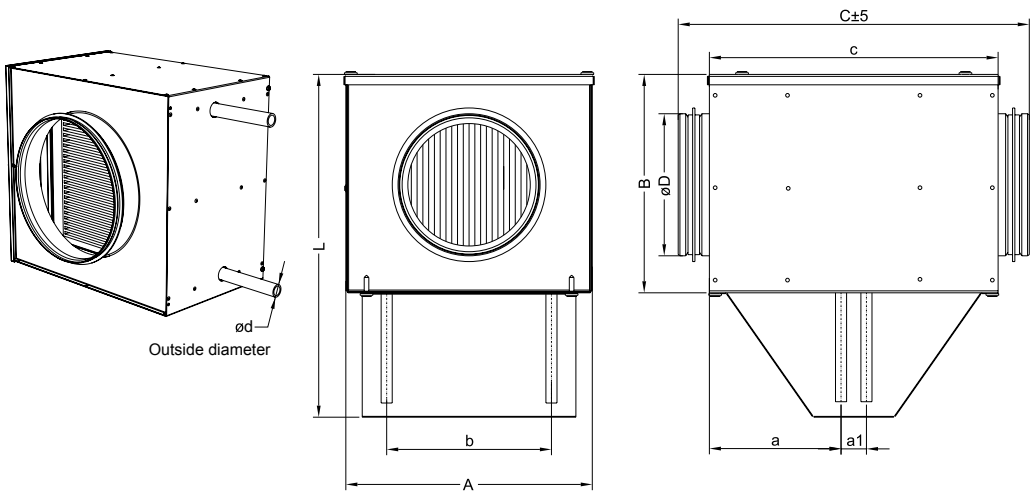
	Comfort Box 400		
Type	Coil type	Connection dim.	Tube rows
CB coil 400 H1	Water heater	1/2”	1
CB coil 400 H2	Water heater	1/2”	2
CB coil 400 C2	Water cooler	3/4”	2
CB coil 400 C4	Water cooler	3/4”	4
CB coil 400 F4	Freon cooler	16/22 mm	4
	Comfort Box 600x350		
Type	Coil type	Connection dim.	Tube rows
CB coil 600x350 H1	Water heater	1/2”	1
CB coil 600x350 H2	Water heater	1/2”	2
CB coil 600x350 C2	Water cooler	1”	2
CB coil 600x350 C4	Water cooler	1”	4
CB coil 600x350 F4	Freon cooler	22/28 mm	4
	Comfort Box 800x500/ Comfort Box 800x500 SF		
Type	Coil type	Connection dim.	Tube rows
CB coil 800x500 H1	Water heater	3/4”	1
CB coil 800x500 H2	Water heater	3/4”	2
CB coil 800x500 C2	Water cooler	1 ¼”	2
CB coil 800x500 C4	Water cooler	1 ¼”	4
CB coil 800x500 F4	Freon cooler	28/35 mm	4

Heaters, coolers and RMG/VVP/VXP data online selection program: ***www.salda.lt***

Heating coil for circular ducting



Title	Article No.
AVS 100	GSIAVS019
AVS 125	GSIAVS020
AVS 160	GSIAVS021
AVS 200	GSIAVS022
AVS 250	GSIAVS005
AVS 315	GSIAVS006
AVS 400	GSIAVS023
AVS 500	GSIAVS024



Used in ventilation systems. AVS heaters are made of copper tubes and aluminum plates. The housing is made of galvanized steel. The service panel is easily removed after unscrewing 4 bolts. With the cover removed, the heater can be cleaned and inspected. Heating and cooling units may be selected according to available parameters, with the help of selection program 'Heaters/coolers', which can be found in Internet page www.salda.lt

Dimensions

Type	A [mm]	B [mm]	C [mm]	a [mm]	a1 [mm]	b [mm]	ød [mm]	Thread size*	L [mm]	øD [mm]	[kg]
AVS 100	214	190	333	114	22	138	21,7	1/2''	287	100	5,2
AVS 125	214	190	333	114	22	138	21,7	1/2''	287	125	6,0
AVS 160	289	265	304	115	20	213	21,7	1/2''	361	160	8,2
AVS 200	289	265	304	115	20	213	21,7	1/2''	361	200	8,5
AVS 250	364	395	342	110	29	283	22	1/2''	531	250	12,5
AVS 315	439	460	342	110	29	350	22	1/2''	611	315	16,0
AVS 400	514	550	367	110	29	383	22	3/4''	691	400	20,0
AVS 500	599	730	367	109	32	463	26,7	3/4''	846	500	28,0

* Male thread size

Technical data — AVS 100

			Water temperature in/out 90°/70°C				Water temperature in/out 80°/60°C				Water temperature in/out 60°/40°C			
Air flow	Pressure drop	Inlet air temp.	Outlet air temp.	Power	Water flow	Pressure drop (water)	Outlet air temp.	Power	Water flow	Pressure drop (water)	Outlet air temp.	Power	Water flow	Pressure drop (water)
m³/h	Pa	°C	°C	kW	l/s	kPa	°C	kW	l/s	kPa	°C	kW	l/s	kPa
60	10,99	-25	51,62	1,54	0,02	0,75	42,45	1,36	0,02	0,62	21,92	0,94	0,01	0,35
60	11,37	-15	53,6	1,38	0,02	0,62	44,33	1,20	0,01	0,5	24,06	0,79	0,01	0,26
60	11,56	-10	54,55	1,30	0,02	0,56	45,22	1,11	0,01	0,44	25,76	0,72	0,01	0,22
60	11,95	0	56,39	1,14	0,01	0,44	46,85	0,95	0,01	0,33	29,16	0,59	0,01	0,16
60	12,37	10	58,09	0,98	0,01	0,34	48,15	0,77	0,01	0,23	32,59	0,46	0,01	0,10
110	23,14	-25	40,67	2,42	0,03	1,68	32,82	2,13	0,03	1,38	16,16	1,52	0,02	0,81
110	23,98	-15	43,81	2,17	0,03	1,38	35,92	1,88	0,02	1,10	18,84	1,25	0,02	0,58
110	24,41	-10	45,35	2,05	0,03	1,24	37,44	1,75	0,02	0,97	20,01	1,11	0,01	0,47
110	25,29	0	48,37	1,79	0,02	0,98	40,39	1,50	0,02	0,74	23,62	0,82	0,01	0,28
110	26,22	10	51,31	1,54	0,02	0,75	43,21	1,23	0,02	0,52	27,03	0,63	0,01	0,18
170	41,02	-25	32,31	3,27	0,04	2,87	25,45	2,88	0,04	2,34	11,08	2,06	0,02	1,38
170	42,57	-15	36,32	2,93	0,04	2,36	29,44	2,54	0,03	1,87	14,87	1,70	0,02	0,99
170	43,36	-10	38,3	2,76	0,03	2,12	31,40	2,36	0,03	1,65	16,68	1,52	0,02	0,81
170	45,00	0	42,2	2,42	0,03	1,67	35,27	2,02	0,03	1,25	19,95	1,14	0,01	0,49
170	46,73	10	46,04	2,07	0,03	1,27	39,04	1,67	0,02	0,89	23,4	0,77	0,01	0,25

Technical data — AVS 125

			Water temperature in/out 90°/70°C				Water temperature in/out 80°/60°C				Water temperature in/out 60°/40°C			
Air flow	Pressure drop	Inlet air temp.	Outlet air temp.	Power	Water flow	Pressure drop (water)	Outlet air temp.	Power	Water flow	Pressure drop (water)	Outlet air temp.	Power	Water flow	Pressure drop (water)
m³/h	Pa	°C	°C	kW	l/s	kPa	°C	kW	l/s	kPa	°C	kW	l/s	kPa
90	17,96	-25	44,43	2,10	0,03	1,30	36,14	1,85	0,02	1,07	18,32	1,31	0,02	0,62
90	18,60	-15	47,17	1,88	0,02	1,07	38,83	1,63	0,02	0,85	20,41	1,07	0,01	0,44
90	18,92	-10	48,51	1,77	0,02	0,96	40,14	1,52	0,02	0,75	21,15	0,94	0,01	0,35
90	19,59	0	51,14	1,55	0,02	0,76	42,66	1,29	0,02	0,57	24,44	0,74	0,01	0,23
90	20,30	10	53,67	1,33	0,02	0,58	45,01	1,06	0,01	0,41	28,82	0,57	0,01	0,15
180	44,31	-25	31,21	3,39	0,04	3,07	24,48	2,99	0,04	2,50	10,40	2,14	0,03	1,47
180	46,00	-15	35,33	3,04	0,04	2,52	28,58	2,63	0,03	2,00	14,32	1,77	0,02	1,06
180	46,86	-10	37,37	2,86	0,04	2,26	30,60	2,46	0,03	1,76	16,21	1,58	0,02	0,87
180	48,64	0	41,39	2,51	0,03	1,79	34,59	2,10	0,03	1,33	19,65	1,19	0,01	0,53
180	50,53	10	45,34	2,15	0,03	1,36	38,49	1,73	0,02	0,95	22,96	0,79	0,01	0,26
270	85,23	-25	23,51	4,39	0,05	4,88	17,67	3,86	0,05	3,97	5,57	2,77	0,03	2,33
270	87,92	-15	28,42	3,94	0,05	4,00	22,58	3,41	0,04	3,16	10,38	2,30	0,03	1,68
270	89,29	-10	30,86	3,71	0,05	3,59	25,00	3,17	0,04	2,79	12,74	2,06	0,02	1,38
270	92,16	0	35,68	3,24	0,04	2,83	29,81	2,71	0,03	2,10	17,29	1,57	0,02	0,86
270	95,23	10	40,45	2,78	0,03	2,14	34,55	2,24	0,03	1,50	21,17	1,02	0,01	0,40

Technical data — AVS 160

			Water temperature in/out 90°/70°C				Water temperature in/out 80°/60°C				Water temperature in/out 60°/40°C			
Air flow	Pressure drop	Inlet air temp.	Outlet air temp.	Power	Water flow	Pressure drop (water)	Outlet air temp.	Power	Water flow	Pressure drop (water)	Outlet air temp.	Power	Water flow	Pressure drop (water)
m³/h	Pa	°C	°C	kW	l/s	kPa	°C	kW	l/s	kPa	°C	kW	l/s	kPa
140	6,51	-25	48,37	3,45	0,04	5,13	40,62	3,08	0,04	4,32	24,9	2,34	0,03	2,85
140	6,74	-15	51,24	3,11	0,04	4,29	43,48	2,75	0,03	3,53	27,68	2,01	0,02	2,17
140	6,85	-10	52,65	2,95	0,04	3,89	44,88	2,58	0,03	3,16	29,03	1,84	0,02	1,86
140	7,10	0	55,41	2,61	0,03	3,14	47,62	2,25	0,03	2,47	31,61	1,49	0,02	1,30
140	7,35	10	58,10	2,28	0,03	2,46	50,28	1,91	0,02	1,85	33,94	1,13	0,01	0,81
290	17,51	-25	34,33	5,77	0,07	12,92	28,02	5,16	0,06	10,81	15,28	3,92	0,05	7,04
290	18,15	-15	38,58	5,22	0,06	10,77	32,27	4,60	0,06	8,81	19,48	3,36	0,04	5,36
290	18,45	-10	40,69	4,94	0,06	9,76	34,36	4,32	0,05	7,88	21,55	3,07	0,04	4,59
290	19,16	0	44,83	4,38	0,05	7,86	38,36	3,76	0,05	6,14	25,61	2,50	0,03	3,19
290	19,88	10	48,91	3,81	0,05	6,15	42,56	3,19	0,04	4,59	29,55	1,92	0,02	2,00
430	31,40	-25	26,74	7,46	0,09	20,54	21,23	6,67	0,08	17,14	10,10	5,06	0,06	11,10
430	32,38	-15	31,74	6,75	0,08	17,12	26,21	5,95	0,07	13,96	15,05	4,34	0,05	8,43
430	32,89	-10	34,21	6,39	0,08	15,50	28,68	5,59	0,07	12,47	17,49	3,97	0,05	7,21
430	34,15	0	39,1	5,66	0,07	12,47	33,56	4,86	0,06	9,71	22,32	3,23	0,04	5,01
430	35,47	10	43,93	4,93	0,06	9,73	38,37	4,12	0,05	7,24	27,06	2,48	0,03	3,14

Technical data — AVS 200

			Water temperature in/out 90°/70°C				Water temperature in/out 80°/60°C				Water temperature in/out 60°/40°C			
Air flow	Pressure drop	Inlet air temp.	Outlet air temp.	Power	Water flow	Pressure drop (water)	Outlet air temp.	Power	Water flow	Pressure drop (water)	Outlet air temp.	Power	Water flow	Pressure drop (water)
m³/h	Pa	°C	°C	kW	l/s	kPa	°C	kW	l/s	kPa	°C	kW	l/s	kPa
225	15,42	-25	44,79	5,27	0,06	10,97	37,40	4,71	0,06	9,19	22,47	3,58	0,04	6,01
225	15,97	-15	47,99	4,76	0,06	9,14	40,60	4,20	0,05	7,49	25,62	3,07	0,04	4,57
225	16,25	-10	49,57	4,50	0,06	8,28	42,17	3,94	0,05	6,69	27,16	2,81	0,03	3,91
225	16,83	0	52,67	3,99	0,05	6,67	45,26	3,43	0,04	5,22	30,16	2,28	0,03	2,73
225	17,44	10	55,70	3,48	0,04	5,21	48,27	2,91	0,04	3,90	33,02	1,75	0,02	1,71
455	40,29	-25	30,91	8,54	0,10	26,2	24,95	7,63	0,09	21,83	12,93	5,79	0,07	14,09
455	41,82	-15	35,48	7,71	0,09	21,79	29,51	6,80	0,08	17,75	17,45	4,96	0,06	10,69
455	42,60	-10	37,74	7,30	0,09	19,72	31,76	6,38	0,08	15,85	19,69	4,54	0,05	9,13
455	44,22	0	42,20	6,47	0,08	15,85	36,22	5,55	0,07	12,32	24,10	3,69	0,04	6,34
455	45,94	10	46,60	5,63	0,07	12,34	40,60	4,71	0,06	9,17	28,42	2,83	0,03	3,97
680	81,64	-25	23,16	10,99	0,13	41,47	18,02	9,81	0,12	34,46	7,63	7,44	0,09	22,09
680	84,28	-15	28,48	9,93	0,12	34,47	23,33	8,75	0,11	27,99	12,91	6,37	0,08	16,72
680	85,63	-10	31,12	9,39	0,12	31,17	25,96	8,21	0,10	24,97	15,53	5,83	0,07	14,27
680	88,44	0	36,35	8,32	0,10	25,01	31,17	7,14	0,09	19,37	20,72	4,74	0,06	9,88
680	91,44	10	41,51	7,24	0,09	19,45	36,33	6,05	0,07	14,39	25,82	3,64	0,04	6,17

Technical data — AVS 250

			Water temperature in/out 90°/70°C				Water temperature in/out 80°/60°C				Water temperature in/out 60°/40°C			
Air flow	Pressure drop	Inlet air temp.	Outlet air temp.	Power	Water flow	Pressure drop (water)	Outlet air temp.	Power	Water flow	Pressure drop (water)	Outlet air temp.	Power	Water flow	Pressure drop (water)
m³/h	Pa	°C	°C	kW	l/s	kPa	°C	kW	l/s	kPa	°C	kW	l/s	kPa
360	10,92	-25	43,35	8,26	0,10	5,82	36,06	7,38	0,09	4,87	21,28	5,59	0,07	3,17
360	11,31	-15	46,35	7,46	0,09	4,85	39,38	6,57	0,08	3,97	24,53	4,78	0,06	2,40
360	11,51	-10	48,32	7,06	0,09	4,39	41,01	6,17	0,08	3,54	26,12	4,37	0,05	2,05
360	11,93	0	51,55	6,25	0,08	3,53	44,22	5,36	0,07	2,76	29,21	3,54	0,04	1,42
360	12,36	10	54,70	5,44	0,07	2,76	47,35	4,55	0,06	2,06	32,08	2,69	0,03	0,88
710	28,15	-25	30,12	13,13	0,16	13,43	24,21	11,72	0,14	11,19	12,25	8,87	0,11	7,19
710	29,21	-15	34,76	11,86	0,15	11,18	28,83	10,45	0,13	9,09	16,84	7,59	0,09	5,44
710	29,75	-10	37,05	11,22	0,14	10,11	31,12	9,81	0,12	8,12	19,10	6,94	0,08	4,65
710	30,87	0	41,58	9,94	0,12	8,12	35,64	8,52	0,10	6,30	23,56	5,63	0,07	3,21
710	32,06	10	46,04	8,65	0,11	6,32	40,09	7,22	0,09	4,69	27,91	4,30	0,05	1,99
1050	54,80	-25	22,70	16,80	0,21	21,03	17,57	14,99	0,18	17,46	7,21	11,34	0,14	11,15
1050	56,57	-15	28,06	15,18	0,19	17,48	22,92	13,37	0,16	14,18	12,53	9,70	0,12	8,43
1050	57,48	-10	30,72	14,36	0,18	15,81	25,57	12,65	0,15	12,65	15,16	8,87	0,11	7,19
1050	59,37	0	35,98	12,72	0,16	12,68	30,82	10,90	0,13	9,81	20,37	7,20	0,09	4,96
1050	61,39	10	41,18	11,06	0,14	9,86	36,01	9,23	0,11	7,28	25,49	5,49	0,07	3,07

Technical data — AVS 315

			Water temperature in/out 90°/70°C				Water temperature in/out 80°/60°C				Water temperature in/out 60°/40°C			
Air flow	Pressure drop	Inlet air temp.	Outlet air temp.	Power	Water flow	Pressure drop (water)	Outlet air temp.	Power	Water flow	Pressure drop (water)	Outlet air temp.	Power	Water flow	Pressure drop (water)
m³/h	Pa	°C	°C	kW	l/s	kPa	°C	kW	l/s	kPa	°C	kW	l/s	kPa
560	10,69	-25	43,86	12,94	0,16	6,61	36,55	11,57	0,14	5,53	21,75	8,78	0,11	3,58
560	11,07	-15	47,16	11,69	0,14	5,50	39,84	10,31	0,13	4,50	24,98	7,52	0,09	7,52
560	11,26	-10	48,79	11,06	0,14	4,98	41,46	9,68	0,12	4,02	26,55	6,88	0,08	2,32
560	11,67	0	51,98	9,80	0,12	4,01	44,63	8,42	0,10	3,13	29,62	5,58	0,07	1,61
560	12,09	10	55,10	8,54	0,10	3,13	47,73	7,14	0,09	2,33	32,50	4,26	0,05	1,00
1120	28,05	-25	30,35	20,80	0,25	15,64	24,44	18,57	0,23	13,00	12,50	14,09	0,17	8,33
1120	29,10	-15	34,98	18,79	0,23	13,01	29,05	16,56	0,20	10,57	17,08	12,06	0,15	6,31
1120	29,64	-10	37,26	17,78	0,22	11,76	31,34	15,55	0,19	9,43	19,34	11,04	0,13	5,38
1120	30,76	0	41,79	15,76	0,19	9,45	35,85	13,52	0,16	7,32	23,80	8,97	0,11	3,72
1120	31,94	10	46,24	13,72	0,17	7,35	40,29	11,47	0,14	5,44	28,15	6,97	0,08	2,32
1680	55,96	-25	22,65	26,85	0,33	24,96	17,55	23,98	0,29	20,69	7,25	18,17	0,22	13,17
1680	57,78	-15	28,03	24,27	0,30	20,73	22,92	21,38	0,26	16,79	12,59	15,56	0,19	9,95
1680	58,70	-10	30,69	22,97	0,28	18,75	25,58	20,08	0,25	14,97	15,23	14,23	0,17	8,49
1680	60,64	0	35,97	20,35	0,25	15,03	30,85	17,44	0,21	11,60	20,46	11,57	0,14	5,85
1680	62,70	10	41,19	17,71	0,22	11,67	36,05	14,79	0,18	8,61	25,61	8,86	0,11	3,64

Technical data — AVS 400

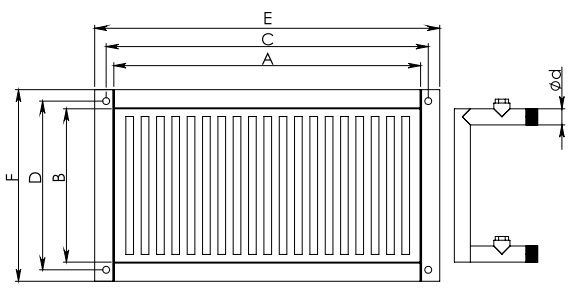
			Water temperature in/out 90°/70°C				Water temperature in/out 80°/60°C				Water temperature in/out 60°/40°C			
Air flow	Pressure drop	Inlet air temp.	Outlet air temp.	Power	Water flow	Pressure drop (water)	Outlet air temp.	Power	Water flow	Pressure drop (water)	Outlet air temp.	Power	Water flow	Pressure drop (water)
m³/h	Pa	°C	°C	kW	l/s	kPa	°C	kW	l/s	kPa	°C	kW	l/s	kPa
900	12,10	-25	42,40	20,35	0,25	10,18	35,29	18,21	0,22	8,49	20,93	13,87	0,17	5,49
900	12,54	-15	45,87	18,40	0,23	8,47	38,75	16,24	0,20	6,91	24,34	11,89	0,14	4,17
900	12,76	-10	47,58	17,41	0,21	7,67	40,45	15,26	0,19	6,17	26,02	10,89	0,13	3,56
900	13,22	0	50,94	15,44	0,19	6,17	43,80	13,27	0,16	4,80	29,28	8,87	0,11	2,47
900	13,70	10	54,24	13,46	0,17	4,81	47,08	11,28	0,14	3,58	32,41	6,81	0,08	1,55
1800	32,10	-25	28,85	32,52	0,40	23,99	23,14	29,07	0,35	19,91	11,62	22,11	0,27	12,72
1800	33,32	-15	33,65	29,40	0,36	19,94	27,93	25,94	0,32	16,17	16,38	18,96	0,23	9,63
1800	33,94	-10	36,02	27,83	0,34	18,03	30,30	24,37	0,30	14,43	18,73	17,37	0,21	8,23
1800	35,22	0	40,72	24,68	0,30	14,47	34,98	21,20	0,26	11,20	23,36	14,16	0,17	5,70
1800	36,59	10	45,34	21,50	0,26	11,26	39,59	18,00	0,22	8,32	27,91	10,89	0,13	3,56
2700	66,16	-25	21,21	41,85	0,51	38,17	16,30	37,40	0,46	31,60	6,40	28,44	0,34	20,07
2700	68,33	-15	26,75	37,84	0,46	31,71	21,83	33,38	0,41	25,64	11,90	24,37	0,30	15,17
2700	69,44	-10	29,50	35,82	0,44	28,66	24,57	31,35	0,38	22,86	14,62	22,33	0,27	12,94
2700	71,76	0	34,94	31,76	0,39	22,97	30,00	27,27	0,33	17,71	20,02	18,19	0,22	8,94
2700	74,22	10	40,32	27,67	0,34	17,84	35,37	23,15	0,28	13,14	25,34	13,99	0,17	5,58

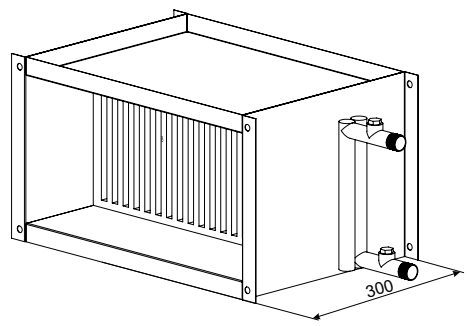
Technical data — AVS 500

			Water temperature in/out 90°/70°C				Water temperature in/out 80°/60°C				Water temperature in/out 60°/40°C			
Air flow	Pressure drop	Inlet air temp.	Outlet air temp.	Power	Water flow	Pressure drop (water)	Outlet air temp.	Power	Water flow	Pressure drop (water)	Outlet air temp.	Power	Water flow	Pressure drop (water)
m³/h	Pa	°C	°C	kW	l/s	kPa	°C	kW	l/s	kPa	°C	kW	l/s	kPa
1400	13,58	-25	40,57	30,80	0,38	8,34	33,62	27,54	0,34	6,94	19,58	20,94	0,25	4,48
1400	14,07	-15	44,21	27,84	0,34	6,93	37,25	24,56	0,30	5,65	23,16	17,93	0,22	3,39
1400	14,32	-10	46,00	26,34	0,32	6,27	39,04	23,06	0,28	5,04	24,91	16,42	0,20	2,90
1400	14,84	0	49,53	23,35	0,29	5,04	42,55	20,06	0,24	3,92	28,35	13,36	0,16	2,01
1400	15,39	10	52,99	20,35	0,25	3,93	45,99	17,03	0,21	2,92	31,63	10,23	0,12	1,25
2500	30,81	-25	29,24	45,49	0,56	17,00	23,47	40,65	0,50	14,11	11,82	30,87	0,37	9,00
2500	31,97	-15	33,99	41,12	0,50	14,13	28,21	36,26	0,44	11,45	16,52	26,45	0,32	6,81
2500	32,57	-10	36,34	38,92	0,48	12,77	30,55	34,05	0,42	10,21	18,84	24,22	0,29	5,81
2500	33,80	0	40,98	34,50	0,42	10,25	35,18	29,61	0,36	7,92	23,43	19,71	0,24	4,02
2500	35,11	10	45,56	30,05	0,37	7,97	39,75	25,13	0,31	5,89	27,91	15,13	0,18	2,50
3500	55,51	-25	22,86	56,20	0,69	25,07	17,76	50,20	0,61	20,75	7,46	38,11	0,46	13,17
3500	57,31	-15	28,23	50,80	0,62	20,82	23,12	44,78	0,55	16,84	12,79	32,64	0,40	9,95
3500	58,23	-10	30,89	48,08	0,59	18,82	25,77	42,05	0,51	15,01	15,43	29,89	0,36	8,49
3500	60,15	0	36,16	42,61	0,52	15,08	31,03	36,56	0,45	11,63	20,65	24,32	0,29	5,86
3500	62,19	10	41,37	37,10	0,45	11,70	36,23	31,02	0,38	8,62	25,79	18,66	0,23	3,64

Heating coil for rectangular ducting

Title	Article No.
SVS 400x200-2	ZESSVS003
SVS 400x200-4	ZESSVS004
SVS 500x250-2	ZESSVS005
SVS 500x250-4	ZESSVS006
SVS 500x300-2	ZESSVS007
SVS 500x300-4	ZESSVS008
SVS 600x300-2	ZESSVS009
SVS 600x300-4	ZESSVS010
SVS 600x350-2	ZESSVS011
SVS 600x350-4	ZESSVS012
SVS 700x400-2	ZESSVS013
SVS 700x400-4	ZESSVS014
SVS 800x500-2	ZESSVS015
SVS 800x500-4	ZESSVS016
SVS 1000x500-2	ZESSVS017
SVS 1000x500-4	ZESSVS018
SVS V 500x250-2	ZESSVS016
SVS V 600x300-2	ZESSVS017
SVS V 900x300-2	ZESSVS018





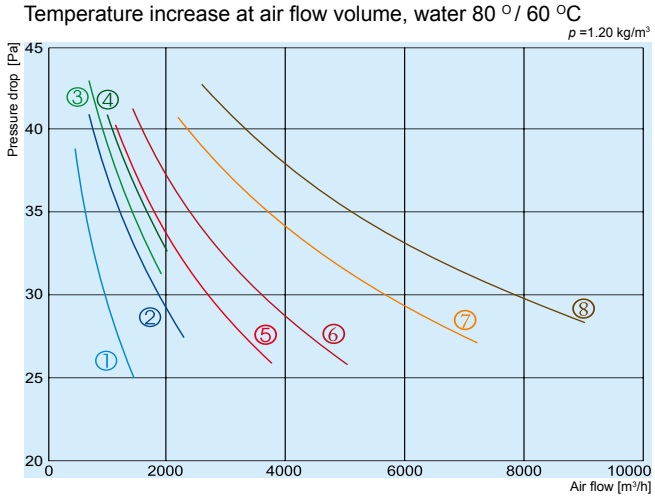
Used in ventilation systems. SVS heaters are made of copper tubes and aluminium plates. The housing is made of galvanized steel. Heating and cooling units may be selected according to available parameters, with the help of selection programme 'Heaters/coolers', which can be found in Internet page www.salda.lt

Dimensions

Type	Heat output		ΔT air		V	Pressure drop	Flow rate	A	B	C	D	E	F	d
	KW (1)	KW (2)	T (1)	T(2)	m^3/h	kPA	l/s	mm	mm	mm	mm	mm	mm	ø
SVS 400x200-2	11,8	7,8	26,9	17,8	1300	9/4,5	0,14/0,09	400	200	420	220	440	240	¾
SVS 400x200-4	19,3	12,9	44,1	29,4	1300	6,7/3,5	0,24/0,16	400	200	420	220	440	240	¾
SVS 500x250-2	19,5	12,6	29	18,64	2000	5,8/2,6	0,24/0,15	500	250	520	270	540	290	¾
SVS V 500x250-2								500	250	520	270	540	290	1/2
SVS 500x250-4	30	20,1	44,5	29,8	2000	7,7/3,9	0,37/0,24	500	250	520	270	540	290	¾
SVS 500x300-2	23,3	15,3	30,1	19,7	2300	8,5/4,2	0,28/0,18	500	300	520	320	540	340	¾
SVS 500x300-4	35,6	22,3	44,6	29,7	2300	6,3/3,1	0,42/0,28	500	300	520	320	540	340	¾
SVS 600x300-2	26,7	17,5	29,4	19,2	2700	7,1/3,5	0,33/0,21	600	300	620	320	640	340	¾
SVS V 600x300-2								600	300	620	320	640	340	1/2
SVS 600x300-4	45,3	30,4	49,9	33,5	2700	9/4,5	0,55/0,37	600	300	620	320	640	340	¾
SVS 600x350-2	29,4	19,4	28,2	18,6	3100	9,5/4,7	0,36/0,24	600	350	620	370	640	390	¾
SVS 600x350-4	50,4	34,1	48,3	32,7	3100	9,6/4,9	0,62/0,41	600	350	620	370	640	390	¾
SVS 700x400-2	41,5	27,4	26,8	17,7	4600	8,7/4,3	0,51/0,33	700	400	720	420	740	440	1
SVS 700x400-4	69	46,6	44,5	30,1	4600	15,5/5,6	0,84/0,56	700	400	720	420	740	440	1
SVS 800x500-2	69	44,7	26,3	17	7800	9/4,2	0,84/0,54	800	500	820	520	840	540	1
SVS 800x500-4	113,1	76	43	28,9	7800	16,5/8,2	1,38/0,92	800	500	820	520	840	540	1
SVS V 900x300-2								900	300	920	320	940	340	1/2
SVS 1000x500-2	89	58,4	27,8	18,3	9500	13,4/6,6	1,09/0,71	1000	500	1020	520	1040	540	1
SVS 1000x500-4	135,8	91,7	42,5	28,7	9500	20,3/10,1	1,66/1,11	1000	500	1020	520	1040	540	1

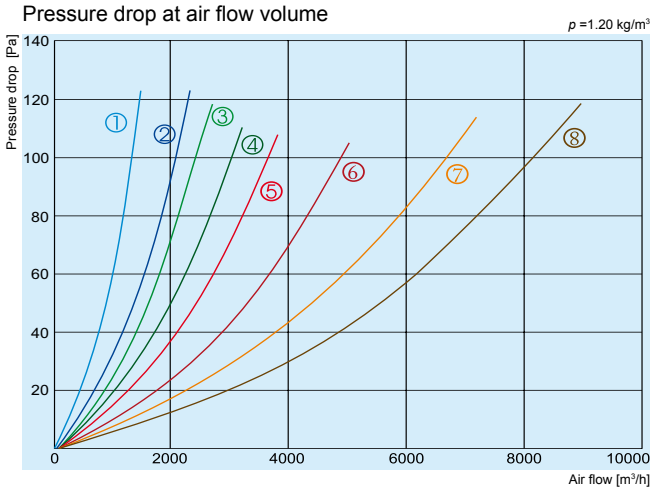
The above values apply for an intake air temperature of 0 °C and flow/return water temperatures 1) 80/60 °C 2) 60/40 °C

Temperature increase at air flow volume, water 80 °/ 60 °C



① SVS 400x200-2
② SVS 500x250-2
③ SVS 500x300-2
④ SVS 600x300-2
⑤ SVS 600x350-2
⑥ SVS 700x400-2
⑦ SVS 800x500-2
⑧ SVS 1000x500-2

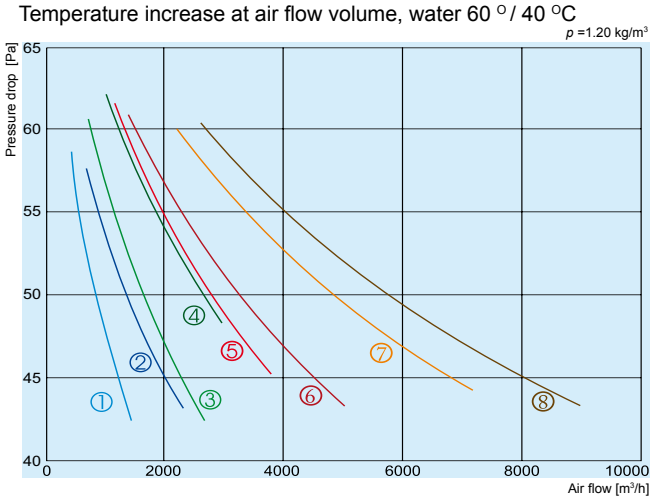
Pressure drop at air flow volume



① SVS 400x200-2
② SVS 500x250-2
③ SVS 500x300-2
④ SVS 600x300-2
⑤ SVS 600x350-2
⑥ SVS 700x400-2
⑦ SVS 800x500-2
⑧ SVS 1000x500-2

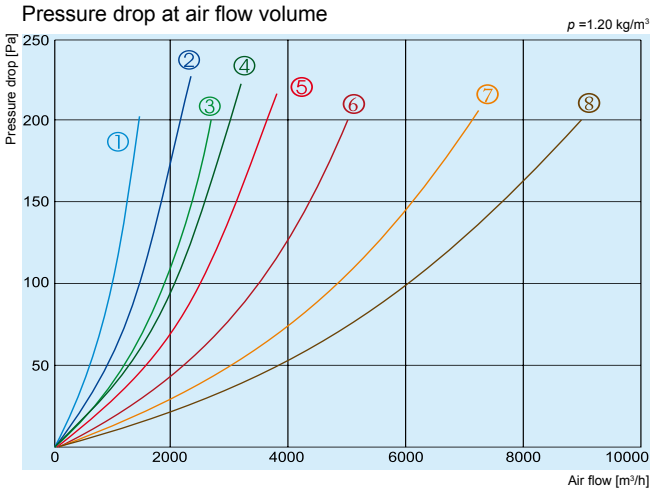
SVS

Temperature increase at air flow volume, water 60 °C / 40 °C



① SVS 400x200-4
② SVS 500x250-4
③ SVS 500x300-4
④ SVS 600x300-4
⑤ SVS 600x350-4
⑥ SVS 700x400-4
⑦ SVS 800x500-4
⑧ SVS 1000x500-4

Pressure drop at air flow volume

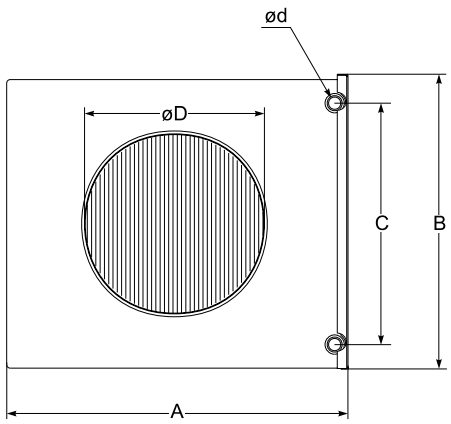


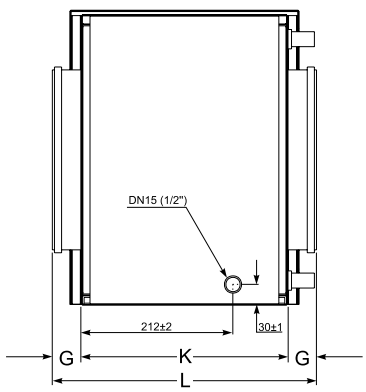
① SVS 400x200-4
② SVS 500x250-4
③ SVS 500x300-4
④ SVS 600x300-4
⑤ SVS 600x350-4
⑥ SVS 700x400-4
⑦ SVS 800x500-4
⑧ SVS 1000x500-4

ACCESSORIES

Circular duct water coolers

Title	Article No.
AVA 100	GSIAVA001
AVA 125	GSIAVA002
AVA 160	GSIAVA003
AVA 200	GSIAVA004
AVA 250	GSIAVA005
AVA 315	GSIAVA006
AVA 400	GSIAVA007





Duct coolers are used in ventilation systems, which require a supply of cooled air. AVA coolers are made of copper tubes and aluminium plates. The housing is made of galvanized steel. Contains a system for condensate drainage.

Heating and cooling units may be selected according to available parameters, with the help of selection programme “Heaters/coolers”, which can be found on web page www.salda.lt

Type	**Dimensions** [mm]								
	øD	**ød**	**Thread size***	**C**	**B**	**A**	**K**	**G**	**L**
AVA 100	100	10	1/2”	98	236	170	265	48	365
AVA 125	125	22	1/2”	188	330	257	286	48	388
AVA 160	160	22	1/2”	188	330	255	286	40	360
AVA 200	200	22	1/2”	263	396	328	286	40	365
AVA 250	250	22	1/2”	338	475	415	286	55	396
AVA 315	315	22	1/2”	413	555	480	286	55	396
AVA 400	400	22	1/2”	438	720	505	316	65	445

* Male thread size

Technical data

q - air flow
Δp - pressure drop on air side
t_{in} - inlet air temperature
t_{out} - outlet air temperature

P - output
qr - water flow
Δpr - pressure drop on water side

With water temperature**:** 6/12°C and relative humidity: 50%

Type	q [m³/h]	Δp [Pa]	t_{in} [C°]	t_{out} [C°]	P [kW]	qr [l/s]	Δpr [kPa]
AVA 100	60	9,99	25	15,23	0,24	0,01	0,51
		11,25	28	16,92	0,31	0,01	0,77
	110	23,19	25	17,09	0,33	0,01	0,84
		26,06	28	19,07	0,43	0,02	1,30
	165	43,01	25	18,28	0,40	0,02	1,16
		47,41	28	20,41	0,52	0,02	1,78
AVA 125	90	5,40	25	13,91	0,43	0,02	0,41
		6,07	28	15,34	0,56	0,02	0,58
	180	13,22	25	16,08	0,63	0,03	0,71
		14,87	28	17,90	0,82	0,03	1,11
	270	23,40	25	17,32	0,77	0,03	1,00
		26,52	28	19,32	1,00	0,04	1,56
AVA 160	140	9,44	25	15,29	0,55	0,02	0,57
		10,62	28	16,99	0,72	0,03	0,88
	290	25,95	25	17,53	0,80	0,03	1,06
		29,55	28	19,66	1,04	0,04	1,66
	400	42,85	25	18,50	0,93	0,04	1,36
		50,51	28	20,34	1,34	0,05	2,55
AVA 200	230	9,75	25	15,46	0,88	0,03	0,65
		10,97	28	17,18	1,15	0,05	1,02
	450	24,76	25	17,52	1,23	0,05	1,15
		28,66	28	19,57	1,66	0,07	1,91
	700	50,99	25	18,92	1,52	0,06	1,64
		61,37	28	20,28	2,43	0,10	3,72
AVA 250	360	7,91	25	15,00	1,47	0,06	1,15
		8,99	28	16,71	1,93	0,08	1,84
	700	20,44	25	16,69	2,32	0,09	2,53
		24,11	28	17,93	3,45	0,14	5,04
	1060	39,32	25	17,35	3,28	0,13	4,61
		45,92	28	19,07	4,63	0,18	8,44
AVA 315	570	8,85	25	15,34	2,24	0,09	1,89
		10,47	28	16,04	3,42	0,14	3,94
	1130	24,78	25	16,34	4,11	0,16	5,44
		28,71	28	17,91	5,73	0,23	9,78
	1700	47,81	25	17,25	5,51	0,22	9,13
		55,30	28	19,12	7,55	0,30	15,97
AVA 400	900	9,86	25	15,92	3,19	0,13	1,20
		11,83	28	16,66	4,99	0,20	2,62
	1800	28,69	25	16,85	5,99	0,24	3,60
		33,48	28	18,41	8,51	0,34	6,58
	2500	49,50	25	17,51	7,65	0,30	5,53
		57,57	28	19,36	10,64	0,42	9,91

Electromotoric actuators

SSB/SSC

Electromotoric actuator for modulating or 3-position control of valves V...P45... for water-side control of hot water and cooling water in heating, ventilation and air conditioning systems.

Title	Article No.
SSB 31 200 NM	PRGP004
SSB 61 200 NM	PRGP005
SSB 81 200 NM	PRGP006

Title	Article No.
SSC 31 200 NM	PRGP007
SSC 61 300 NM	PRGP008
SSC 81 200 NM	PRGP009

STA

Electromotoric actuator for 2-position control valves for water-side control of hot water and cooling water ventilation systems.

Title	Article No.
STA	PRGP001

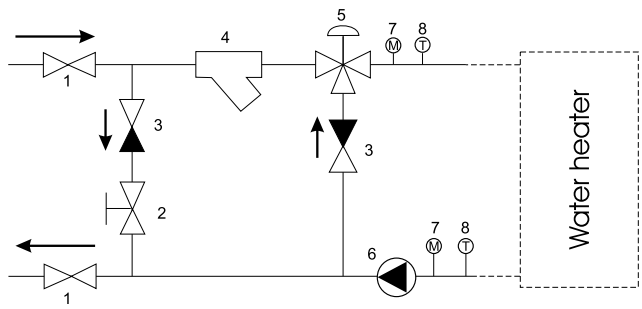
Technical data

Type	SSB31	SSB81	SSB61	SSC31	SSC81	SSC61
Power supply	AC230V (±15%)	AC24V (±20%)	AC24V (±20%) or DC24V (±25%)	AC230V (±15%)	AC24V (±20%)	AC24V (±20%)
Control signal	3-position		DC 0...10 V	3-position		DC 0...10 V
Input impedance for DC 0...10 V	-		> 100 kOhm	-		> 100 kOhm
Run time for 5.5 mm stroke at 50 Hz	150 s		75 s	150 s ± 2%		30 s ± 10%
Nominal stroke	5,5 mm					
Nominal force	200 N			300N		
Housing protection	IP40					
Operation temperature	+1...+50 °C			+5 ... +50°C		
Operation humidity	5...85 % r.h.			5 ... 95% r.h.		
Connecting cable, length	1.5 m				terminal connections	

Technical data

Type	STA
Power supply	AC 230 V, 50...60 Hz (±15 %)
Control signal	2-position control signal
Run time for 2,5 mm stroke	3 min
Nominal stroke	2,5 mm
Nominal force	105N
Housing protection	IP41(3)
Operation temperature	+5...+50°C
Operation humidity	5...85 % r.h.
Connecting cable, length	1,2 m

Mixing point



The main function of the mixing point is to control, jointly with the control system, the temperature of supplied water in water heaters. Used for water temperature control in heaters, air curtains, etc. The mixing point is used alongside other devices (shut-off damper, temperature sensor, control system) in order to protect the heaters from freezing.

Title	Article No.
RMG3-0,63-4	PRMG0001
RMG3-1,0-4	PRMG0002
RMG3-1,6-4	PRMG0003
RMG3-1,6-6	PRMG0010
RMG3-2,5-4	PRMG0004
RMG3-2,5-6	PRMG0011
RMG3-4,0-4	PRMG0005
RMG3-4,0-6	PRMG0012

Title	Article No.
RMG3-4,0-8	PRMG0013
RMG3-6,3-4	PRMG0006
RMG3-6,3-6	PRMG0014
RMG3-6,3-8	PRMG0007
RMG3-10,0-6	PRMG0009
RMG3-10,0-8	PRMG0016
RMG3-16,0	PRMG0017
RMG3-25,0	PRMG0008

Components

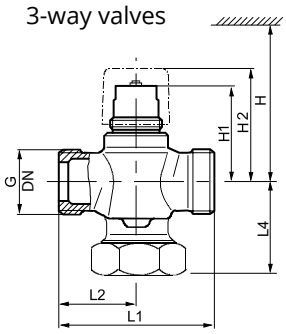
1 - in, out valves
2 - pressure reducing valve
3 - backflow preventing valve
4 - filter
5 - 3-way valve
6 - rotary pump
7 - pressure gauge
8 - thermometer

Technical data

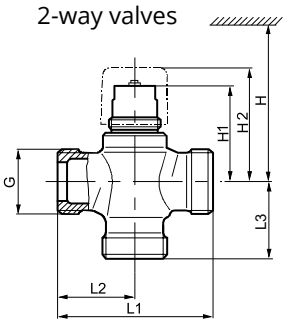
Type	Type of 3-way valve	Recomended actuator for water valve	Type of rotary pump	DN [mm]
RMG3-0,63-4E	VXP45.10-0,6	SSB	UPBAS 25-4	15
RMG3-1,0-4E	VXP45.10-1,0	SSB	UPBAS 25-4	15
RMG3-1,6-4E	VXP45.10-1,6	SSB	UPBAS 25-4	15
RMG3-1,6-6E	VXP45.10-1,6	SSB	UPBAS 25-6	15
RMG3-2,5-4E	VXP45.15-2,5	SSB	UPBAS 25-4	15
RMG3-2,5-6E	VXP45.15-2,5	SSB	UPBAS 25-6	15
RMG3-4,0-4E	VXP45.20-4,0	SSB	UPBAS 25-4	20
RMG3-4,0-6E	VXP45.20-4,0	SSB	UPBAS 25-6	20
RMG3-4,0-8E	VXP45.20-4,0	SSB	UPS 25-8	20
RMG3-6,3-4E	VXP45.25-6,3	SSB	UPBAS 25-6	20
RMG3-6,3-6E	VXP45. 25-6,3	SSB	UPBAS 25-6	20
RMG3-6,3-8E	VXP45.25-6,3	SSB	UPS 25-8	20
RMG3-10-6E	VXP45.25-10	SSC	UPBAS 25-6	25
RMG3-10-8E	VXP45.25-10	SSC	UPS 25-8	25

2 and 3 way valves

3-way valves



2-way valves



Used in ventilation systems to control the temperature of supplied water in water heaters. For fan coil units, small re-heaters and small re-coolers.

Title	Article No.
VXP45.10-0.63	PRMV019
VXP45.10-1,0	PRMV020
VXP45.10-1.6	PRMV021
VXP45.15-2.5	PRMV018
VXP45.25-4,0	PRMV023
VXP45.25-6.3	PRMV025
VXP45.25-10	PRMV024
VXP45.32-16	PRMV026
VXP45.40-25	PRMV027

Title	Article No.
VVP45.25-6.3	PRMV013
VVP45.25-10	PRMV012
VVP45.32-16	PRMV010
VVP45.40-25	PRMV014
VVP45.10-0.25	PRMV003
VVP45.10-0.4	PRMV004
VVP45.10-0.63	PRMV005
VVP45.10-1	PRMV006
VVP45.10-1.6	PRMV007
VVP45.15-2.5	PRMV010
VVP45.20-4	PRMV011

2-way valves

Type	DN	G [inch]	H [mm]	H1 [mm]	H2 [mm]	L1 [mm]	L2 [mm]	L4 [mm]	Weight [kg]
VVP45.10-0.25...1.6	10	G½B	> 200	44,9	≈ 54	60	30	20	0,26
VVP45.15-2.5	15	G¾B		44,9	≈ 54	65	32,5	20	0,30
VVP45.20-4	20	G1B		48,9	≈ 58	80	40	24	0,42
VVP45.25-6.3	25	G1¼B		51	≈ 60	80	40	49	0,76
VVP45.25-10		G1½B	> 280	62,5	≈ 71	105	52,5	62,5	1,40
VVP45.32-16	32	G2B		69	≈ 78	105	52,5	63,5	1,95
VVP45.40-25	40	G2¼B		72	≈ 81	130	65	76	2,75

3-way valves

Type	DN	G [inch]	H [mm]	H1 [mm]	H2 [mm]	L1 [mm]	L2 [mm]	L4 [mm]	Weight [kg]
VXP45.10-0.25...1.6	10	G½B	> 200	44,9	≈ 54	60	30	30	0,28
VXP45.15-2.5	15	G¾B		44,9	≈ 54	65	32,5	32,5	0,34
VXP45.20-4	20	G1B		48,9	≈ 58	80	40	40	0,48
VXP45.25-6.3	25	G1¼B		51	≈ 60	80	40	40	0,64
VXP45.25-10	25	G1½B	> 280	62,5	≈ 81	105	52,5	52,5	1,20
VXP45.32-16	32	G2B		69	≈ 88	105	52,5	52,5	1,60
VXP45.40-25	40	G2¼B		72	≈ 91	130	65	65	2,30

VVP45... 2-way	VXP45... 3-way	DN	Connection	kvs A→AB [m³/h]	kvs 1) B→AB [m³/h]	Sv
VVP45.10-0.25	VXP45.10-0.25	10	G½B	0,25	0,18	> 50
VVP45.10-0.4	VXP45.10-0.4			0,4	0,28	
VVP45.10-0.63	VXP45.10-0.63			0,63	0,44	
VVP45.10-1	VXP45.10-1			1,0	0,70	
VVP45.10-1.6	VXP45.10-1.6			1,6	1,12	
VVP45.15-2.5	VXP45.15-2.5	15	G¾B	2,5	1,75	
VVP45.20-4	VXP45.20-4	20	G1B	4,0	2,80	
VVP45.25-6.3	VXP45.25-6.3	25	G1¼B	6,3	4,40	
VVP45.25-10	VXP45.25-10		G1½B	10		> 100
VVP45.32-16	VXP45.32-16	32	G2B	16		
VVP45.40-25	VXP45.40-25	40	G2¼B	25		

1) - Valid for 3-way version only

DN = Nominal size
k_{vs} = Nominal flow rate of cold water (5...30 °C) through the fully open valve (H_{100})
by a differential pressure of 100 kPa (1 bar)
S_v = Range ability k_{vs} / k_{vr}
k_{vr} = Smallest k_v value, at which the flow characteristic tolerances can still be maintained, by a differential pressure of 100 kPa (1 bar)

Functionl data	
Medium temperature	1...110 °C, short-term max. 120 °C
Nominal stroke	5.5 mm
Permissible media	low temperature hot water, chilled water, water with anti-freeze recommendation: water treatment to VDI 2035

EKA / EKA NV / EKA NI / EKA NIS

Electric duct heater

EKA duct heaters are designed to heat clean air in ventilation systems and to preheat air handling units. Corrosion resistant casing with excellent thermal reflectivity is made from AluZinc. Duct connection is with rolled rubber seals, duct heater elements are made from stainless steel. To ensure safety in duct heaters are installed 2 protection thermostats and screw terminals for easy connection.
To ensure long service time of heaters, heaters casing is manufactured from AluZinc coated steel and heating elements from stainless steel AISI 304. AluZinc for heaters casing was selected for it's properties:
› Good corrosion resistance at high temperatures (up to 315°C).
› Excellent thermal reflectivity.
› Good abrasion resistance because of its surface hardness.
› Durability: under normal conditions the AZ 150 coating grade will protect the steel substrate from corrosion for a minimum period of 15 years.

Double overheat protection.
To ensure security in case of fire in all electric air heaters are installed 2 heat protection thermostats:
› First overheat protection automatically activates if temperature reaches 50°C, then protection disconnects heating elements, until it has cooled. When the temperature falls to the working temperature, heater automatically switches on.
› Second overheat protection automatically activates if temperature reaches 100°C, then protection disconnects heating elements, until it has cooled. In this case need to figure the cause of the overheating of the heater. Heater needs to be reset manually with the pushbutton on the heaters casing.

Duct connection.
For easy duct connection heaters casing is with rolled rubber seals.

Heaters with built-in control.
Electric duct heaters with built-in control has installed internal controller EKR-KN which works by algorithm impulse/pause that enables fine temperature control. Regulator controls load by triacs without moving parts, which causes no-noise commutation.

MARKING

EKA	-	NV	-	400	-	15.0	-	3f	-	PTC	PS
1		*2*		*3*		*4*		*5*		*6*	*7*

1. EKA – circular duct heater
2. NV – heater type.
*Type **NV** - you can set temperature of heater with potentiometer installed on heaters casing.*
*Type **NI** - you can set temperature from distance with wired remote potentiometer **TR5K.***
*Type **NIS** – heater control from distance with 0 – 10V signal.*
*3. **400** – heater diameter.*
*4. **15.0** – power of heater kW.*
*5. **3f** – number of phases.*
*6. **PTC** – heater with installed air flow sensor.*
*7. **PS** – heater with installed pressure sensor.*
8. PTC/PS type can be marked also as NV PH if temperature setpoint of the heater -20°C to -5°C.

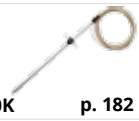
CIRCULAR DUCT HEATER TYPES

Model	Control	Control type
EKA	External controller EKR	External control
EKA NV	Built-in controller EKR KN NV	Control on heaters casing, default temperature setpoint 0°C ... +30°C
EKA NV PTC/PS, NV PH	Built-in controller EKR KN NV PTC/PS EKR KN PH	Control on heaters casing, default temperature setpoint -10°C ... +50°C. Air flow sensor and pressure sensor are installed inside the heater. Difference between heaters is EKA NV PTC/PS and EKA NV PH, that EKA NV PH temperature setpoint is -20°C iki -5°C.
EKA NI	Built-in controller EKR KN NI	Remote control with wired potentiometer, default temperature setpoint 0°C ... +30°C
EKA NIS	Built-in controller EKR KN NIS	0-10V control

In heaters type NV PTC/PS are installed controllers with default temperature setpoint -10°C ... +50°C, on your needs we can install controllers with different temperature setpoints:

-40°C till -10°C	0°C till +30°C	-5°C till 0°C
-20°C till -5°C	-10°C till 0°C	-20°C till +30°C
-10°C till +40°C	-	-

ACCESSORIES

Controller for electrical heater	Controller for electrical heater	Controller for electrical heater	Controller for electrical heater	Controller for electrical heater	Temperature sensor
					
EKR 6.1 **p. 207**	**EKR 15.1** **p. 205**	**EKR 15.1P** **p. 205**	**EKR 30** **p. 206**	**EKR 30P** **p. 206**	**TJK-10K** **p. 182**

CONTROL

Model	Controlled load [kW]	Extra load control*	Full load	Relay output	Voltage output**
EKR15.1	15 kW	Up to 12 kW	27 kW	1x5A/230V	3x230/3x400
EKR15.1P	15 kW	Up to 225 kW	240 kW	4x5A/230V	3x230/3x400
EKR30	30 kW	Up to 42 kW	42 kW	1x5A/230V	3x230/3x400
EKR30P	30 kW	Up to 420 kW	450 kW	4x5A/230V	3x230/3x400

** Extra load control with contactor.*
*** Available voltage 3x230V, according to the current selected controlled power.*

Model	Controlled load [kW]	Maximum controlled current [A]	Voltage output
EKR 6.1	6,4 kW/400V	16 A	2x400V
	3.2 kW/230V		1x230V

CIRCULAR DUCT HEATERS POWER & DIMENSIONS

All circular duct heaters EKA regardless of the type can be produced in following dimensions and power:

Type	Diameter	Min. airflow [m³/h]	Voltage [V/50Hz]	Power [kW]
EKA (NV, NV PTC/PS, NV PH, NI, NIS)	100	40	1x230	0.3, 0.6, 0.9, 1.2
EKA (NV, NV PTC/PS, NV PH, NI, NIS)	125	70	1x230	0.3, 0.6, 0.9, 1.2, 1.8, 2.4
EKA (NV, NV PTC/PS, NV PH, NI, NIS)	160	110	1x230	0.3, 0.6, 0.9, 1.2, 1.8, 2.4
			2x400	3.0, 5.0, 6.0
			3x400	6.0
EKA (NV, NV PTC/PS, NV PH, NI, NIS)	200	170	1x230	0.9, 1.2, 1.8, 2.4, 3.0
			2x400	3.0, 5.0, 6.0
			3x400	6.0
EKA (NV, NV PTC/PS, NV PH, NI, NIS)	250	270	1x230	1.2, 2.0, 2.4, 3.0
			2x400	3.0, 5.0, 6.0
			3x400	6.0, 9.0, 12.0
EKA (NV, NV PTC/PS, NV PH, NI, NIS)	315 315	415 550	1x230	1.2, 2.0, 2.4, 3.0
			2x400	3.0, 5.0, 6.0
			3x400	6.0, 9.0, 12.0
EKA (NV, NV PTC/PS, NV PH, NI, NIS)	400	690	1x230	3.0, 5.0, 6.0
			2x400	3.0, 5.0, 6.0
			3x400	6.0, 9.0, 12.0, 15.0, 18.0
EKA (NV, NV PTC/PS, NV PH, NI, NIS)	500	1060	2x400	3.0, 5.0, 6.0
			3x400	6.0, 9.0, 12.0, 15.0, 18.0, 24.0

18.0 and 24.0 kW heaters are produced on customers request.

Production time can be longer as usually.

270 mm – dimension for heaters up to 12kW

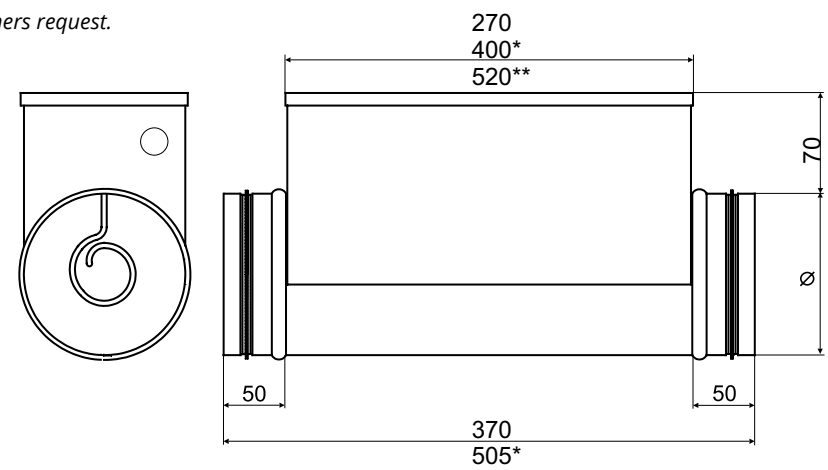
400 mm – dimension for 12 kW heaters

520 mm – dimension for 15 kW heaters

370 mm – dimension for heaters up to 12kW

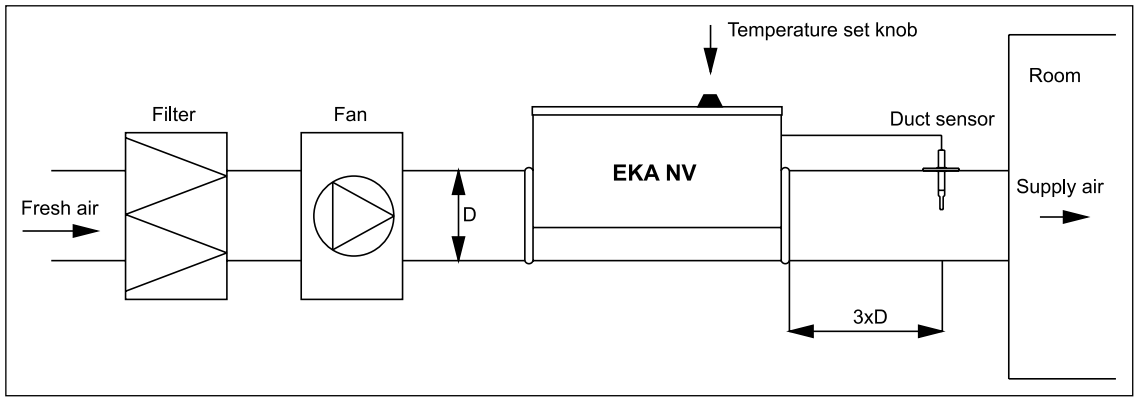
505 mm – dimension for 12 kW heaters

630 mm – dimension for 15 kW heaters

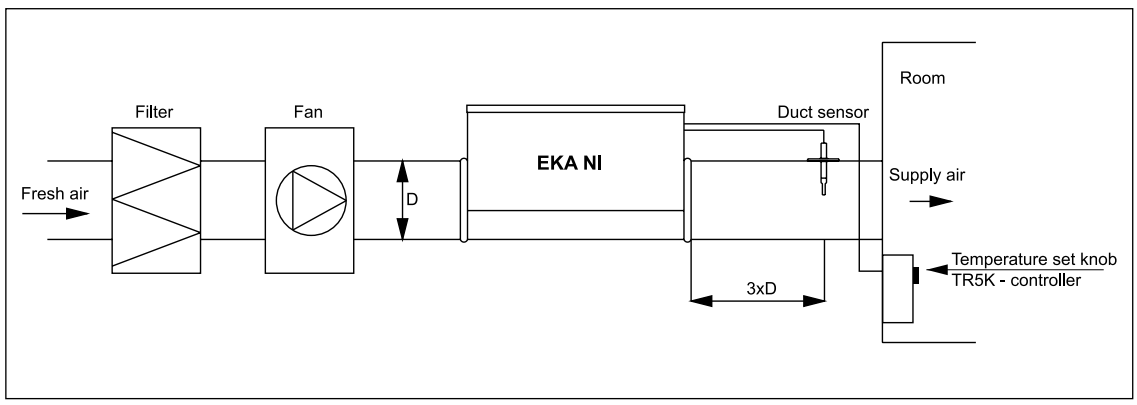


ACCESSORIES

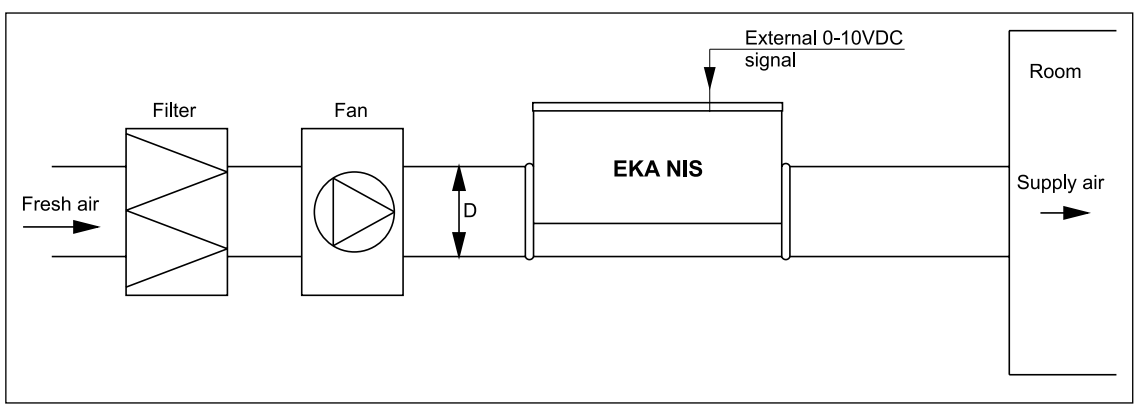
EKA NV connection diagram



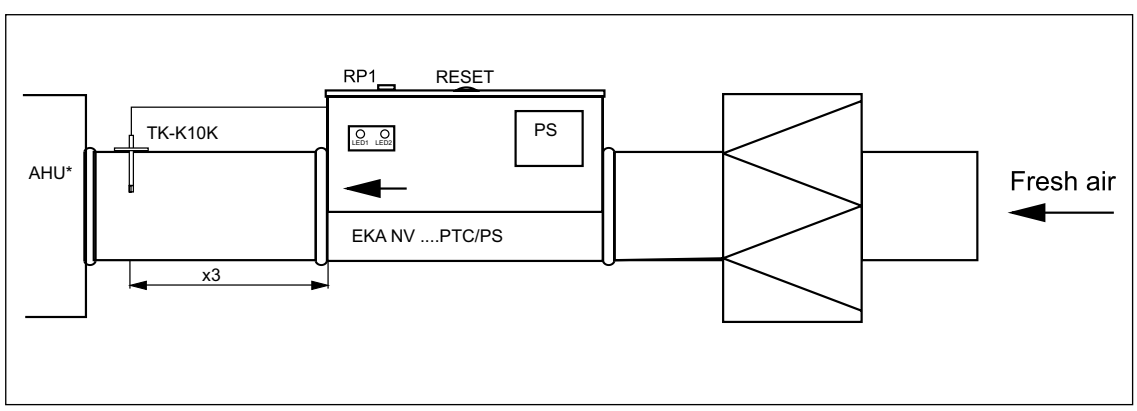
EKA NI connection diagram



EKA NIS connection diagram



Installation example EKA NV PTC/PS



Electric duct heater

Electric heaters are designed to heat clean air in ventilation systems. Casing is made from aluzinc coated steel which is high temperature proof. Heating elements tube is made from stainless steel AISI 304. Heaters are equipped with 2 protection thermostats, pressure switch, supply air sensor, air flow sensor, screw terminals for easy connection. Casing is with rubber seals for duct connection. Heaters can be installed vertically or horizontally. Maximum output air temperature 50°C.

Type	Type of preheater	Number of phases	[kW]*	Air flow based on the outside temperature, [m³/h]		
				-10°C	-15°C	-23°C
RIS 200VE/VW 3.0	EKA NV 125-0,3-1/PH	1	0,3	167	83	46
	EKA NV 125-0,6-1/PH	1	0,6	333	167	93
	EKA NV 125-0,9-1/PH	1	0,9	500	250	139
	EKA NV 125-1,2-1/PH	1	1,2	667	333	185
RIS 400VE/VW 3.0	EKA NIS 160-0,3-1/PH	1	0,3	167	83	46
	EKA NIS 160-0,6-1/PH	1	0,6	333	167	93
	EKA NIS 160-0,9-1/PH	1	0,9	500	250	139
	EKA NIS 160-1,2-1/PH	1	1,2	667	333	185
RIS 400PE/PW EKO 3.0	EKA NIS 200-0,9-1/PH	1	0,9	333	167	139
	EKA NV 200-1,5-1f/PH	1	1,5	-	410	225
	EKA NV 200-3,0-1f/PH	1	3,0	-	-	450
RIS 700HE/HW 3.0 RIS 700VE/VW 3.0 RIS 700PE/PW EKO 3.0	EKA NV 250-0,6-1/PH	1	0,6	333	167	93
	EKA NV 250-0,9-1/PH	1	0,9	500	250	139
	EKA NV 250-1,2-1/PH	1	1,2	667	333	185
	EKA NV 250-2,0-1/PH	1	2,0	-	556	309
	EKA NV 250-5,0-2/PH	1	5,0	-	-	772
RIS 1200HE/HW 3.0 RIS 1200VE/VW 3.0	EKA NV 315-1,0-1/PH	1	1,0	556	278	154
	EKA NV 315-1,2-1/PH	1	1,2	667	333	185
	EKA NV 315-2,0-1/PH	1	2,0	1111	556	309
	EKA NV 315-3,0-1/PH	1	3,0	-	833	463
	EKA NV 315-5,0-2/PH	1	5,0	-	1389	772
	EKA NV 315-6,0-3/PH	1	6,0	-	-	926
RIS 1900HE/HW 3.0 RIS 1900VE/VW 3.0	EKA NV 400-1,0-1/PH	1	1,0	556	278	154
	EKA NV 400-1,2-1/PH	1	1,2	667	333	185
	EKA NV 400-2,0-1/PH	1	2,0	1111	556	309
	EKA NV 400-5,0-2/PH	2	5,0	-	1389	772
	EKA NV 400-6,0-3/PH	3	6,0	-	1667	926
	EKA NV 400-9,0-3/PH	3	9,0	-	-	1389
	EKA NV 400-12,0-3/PH	3	12,0	-	-	1852
RIS 1200PE/PW EKO 3.0	EKS NV 500x250x370/3/PH	1	3,0	-	833	463
	EKS NV 500x250x370/5/PH	2	5,0	-	1389	772
	EKS NV 500x250x370/9/PH	3	9,0	-	-	1230

EKA NV PH

Type	Type of preheater	Number of phases	[kW]*	Air flow based on the outside temperature, [m³/h]		
				-10°C	-15°C	-23°C
RIS 2500HE/HW 3.0	EKS NV 600x350x370/3/PH	1	3,0	1667	833	463
	EKS NV 600x350x370/6/PH	3	6,0	-	1667	926
	EKS NV 600x350x370/9/PH	3	9,0	-	2500	1389
	EKS NV 600x350x370/12/PH	3	12,0	-	-	1852
	EKS NV 600x350x370/15/PH	3	15,0	-	-	2315
RIS 1900PE/PW EKO 3.0	EKS NV 700x300x370/5/PH	2	5,0	-	1389	772
	EKS NV 700x300x370/9/PH	3	9,0	-	-	1389
	EKS NV 700x300x370/12/PH	3	12,0	-	-	1852
RIS 2500PE/PW EKO 3.0	EKS NV 700x400x370/5/PH	2	5,0	2750	1389	680
	EKS NV 700x400x370/9/PH	3	9,0	-	2500	1389
	EKS NV 700x400x370/18/PH	3	18,0	-	-	2450
RIS 3500HE/HW 3.0	EKS NV 800x500x370/6/PH	3	6,0	3333	1667	926
	EKS NV 800x500x370/9/PH	3	9,0	-	2500	1389
	EKS NV 800x500x370/12/PH	3	12,0	-	3333	1852
RIS 5500HE/HW 3.0	EKS NV 800x500x370/15/PH	3	15,0	-	4167	2315
	EKS NV 800x500x370/18/PH	3	18,0	-	5000	2778
	EKS NV 800x500x370/24/PH	3	24,0	-	-	3704
	EKS NV 800x500x370/30/PH	3	30,0	-	-	4630

* pre-heating power calculated up to -5°C

Electric duct heater

Duct heaters are designed to heat clean air in ventilation systems and to preheat air handling units. Corrosion resistant casing with excellent thermal reflectivity is made from AluZinc. Duct connection is with rolled rubber seals, duct heater elements are made from stainless steel. To ensure safety in duct heaters are installed 2 protection thermostats and screw terminals for easy connection.
To ensure long service time of heaters, heaters casing is manufactured from AluZinc coated steel and heating elements from stainless steel AISI 304. AluZinc for heaters casing was selected for it's properties:
› Good corrosion resistance at high temperatures (up to 315°C).
› Excellent thermal reflectivity.
› Good abrasion resistance because of its surface hardness.
› Durability: under normal conditions the AZ 150 coating grade will protect the steel substrate from corrosion for a minimum period of 15 years.

Double overheat protection.
To ensure security in case of fire in all electric air heaters are installed 2 heat protection thermostats:
› First overheat protection automatically activates if temperature reaches 50°C, then protection disconnects heating elements, until it has cooled. When the temperature falls to the working temperature, heater automatically switches on.
› Second overheat protection automatically activates if temperature reaches 100°C, then protection disconnects heating elements, until it has cooled. In this case need to figure the cause of the overheating of the heater. Heater needs to be reset manually with the pushbutton on the heaters casing.

Duct connection
For easy duct connection heaters casing is with rolled rubber seals.

MARKING

EKS NV 40 x 20/21 PTC/PS

1 2 3 4 5 6 7

1. EKA – circular duct heater.
2. NV – heater type.
*Type **NV** - you can set temperature of heater with potentiometer installed on heaters casing.*
*Type **NI** - you can set temperature from distance with wired remote potentiometer TR5K.*
*Type **NIS** – heater control from distance with 0 – 10V signal.*
*3. **40** – heater height cm.*
*4. **20** – heaters width.*
*5. **21** – power of heater kW.*
*6. **PTC** – heater with installed air flow sensor.*
*7. **PS** – heater with installed pressure sensor.*
PTC/PS type can be marked also as NV PH if temperature setpoint of the heater -20°C to -5°C.

RECTANGULAR DUCT HEATER TYPES

Model	Control	Control type
EKS	External controller EKR	External control
EKS NV	Built-in controller EKR-KN NV	Control on heaters casing, default temperature setpoint 0°C ... +30°C
EKS NV PTC/PS, NV PH	Built-in controller EKR-KN NV PTC/PS EKR-KN NV PH	Control on heaters casing, default temperature setpoint -10°C ... +50°C. Air flow sensor and pressure sensor are installed inside the heater. Difference between heaters is EKS NV PTC/PS and EKS NV PH, that EKS NV PH temperature setpoint is -20°C iki -5°C.
EKS NI	Built-in controller EKR-KN NI	Remote control with wired potentiometer, default temperature setpoint 0°C ... +30°C
EKS NIS	Built-in controller EKR-KN NIS	0-10V control

In heaters type NV PTC/PS are installed controllers with default temperature setpoint -10°C ... +50°C, on your needs we can install controllers with different temperature setpoints:

-40°C till -10°C	0°C till +30°C	-5°C till 0°C
-20°C till -5°C	-10°C till 0°C	-20°C till +30°C
-10°C till +40°C	-	-

ACCESSORIES

Controller for electrical heater

EKR 6.1 **p. 207**

Controller for electrical heater

EKR 15.1 **p. 205**

Controller for electrical heater

EKR 15.1P **p. 205**

Controller for electrical heater

EKR 30 **p. 206**

Controller for electrical heater

EKR 30P **p. 206**

Temperature sensor

TJK-10K **p. 182**

CONTROL

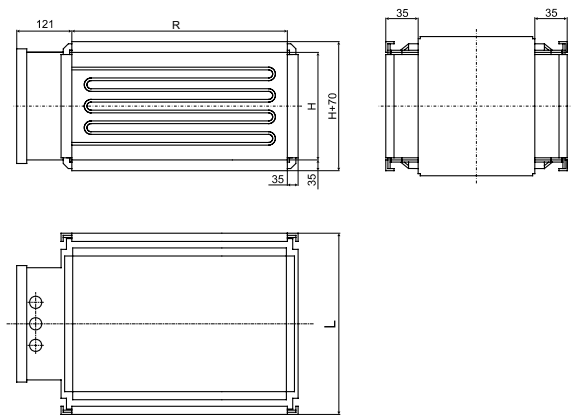
Model	Controlled load [kW]	Extra load control*	Full load	Relay output	Voltage output**
EKR15.1	15 kW	Up to 12 kW	27 kW	1x5A/230V	3x230/3x400
EKR15.1P	15 kW	Up to 225 kW	240 kW	4x5A/230V	3x230/3x400
EKR30	30 kW	Up to 42 kW	42 kW	1x5A/230V	3x230/3x400
EKR30P	30 kW	Up to 420 kW	450 kW	4x5A/230V	3x230/3x400

** Extra load control with contactor.*
*** Available voltage 3x230V, according to the current selected controlled power.*

Model	Controlled load [kW]	Maximum controlled current [A]	Voltage output
EKR 6.1	6,4 kW/400V	16 A	2x400V
	3.2 kW/230V		1x230V

DUCT HEATERS POWER & DIMENSIONS

*All, regardless of the type of electric duct heaters ECS dimensions and power (voltage 3x400V)**



EKS NV/NI/NIS/PTC/PS/PH 400x200						
Length L	[mm]	370			420	520
Total rated power	[kW]	6	9	12	15	21

EKS NV/NI/NIS/PTC/PS/PH 500x250								
Length L	[mm]	370		420	520	600	820	970
Total rated power	[kW]	9	12	15	21	24	36	45

EKS NV/NI/NIS/PTC/PS/PH 500x300													
Length L	[mm]	370						440			520	600	
Total rated power	[kW]	9	12	15	18	21	24	27	30	33	36	42	45

EKS NV/NI/NIS/PTC/PS/PH 600x300													
Length L	[mm]	370						440			520	600	
Total rated power	[kW]	9	12	15	18	21	24	27	30	33	36	42	45

EKS NV/NI/NIS/PTC/PS/PH 600x350														
Length L	[mm]	370								420			500	
Total rated power	[kW]	9	12	15	18	21	24	27	30	33	36	39	42	45

EKS NV/NI/NIS/PTC/PS/PH 700x400																
Length L	[mm]	370											440		520	
Total rated power	[kW]	9	12	15	18	21	24	27	30	33	36	42	45	51	60	66

EKS NV/NI/NIS/PTC/PS/PH 800x500																		
Length L	[mm]	370												420		440	500	
Total rated power	[kW]	9	12	15	18	21	24	27	30	33	36	39	42	45	51	54	60	66

EKS NV/NI/NIS/PTC/PS/PH 1000x500																		
Length L	[mm]	370												420		440	500	
Total rated power	[kW]	9	12	15	18	21	24	27	30	33	36	39	42	45	51	54	60	66

*According to the technical inquiries can be made non-standard power, voltage, and dimensions heaters.

Controller of electrical heating

Title	Article No.
EKR 15.1	PRGR0018

EKR15.1 is a proportional controller for electric heaters with automatic voltage adaptation. EKR15.1 controls the whole load On-Off. The ratio between On-time and Off-time is varied 0-100% to suit the prevailing heat demand.
EKR15.1 is designed only for electric heating control. The control principle makes it unsuitable for motor or lighting control.
EKR15.1 can control 15kW heater and has relay output for extra load control with contactor, on which can be connected load up to 12kW. Full load can be 27kW.

Control principle

EKR15.1 has zero phase-angle detection to prevent RFI (radio frequency interference).
EKR15.1 automatically adapts its control mode to suit the dynamics of the controlled object. For rapid temperature changes i. e. supply air control EKR15.1 will act as a PID controller. For slow temperature changes i.e. room control EKR15.1 will act as a PID* controller.

*PID- proportional–integral–derivative.

Night set-back
Potential-free closure will give a night set-back of 0-10°C. Settable with a potentiometer (Contacts 10, 11) in the EKR15.1.

Technical data

Controlled load [kW]	15
Extra controlled load (recommended) * [kW]	12
Total controlled load [kW]	27
Max. conrolled current [A]	25
Voltage [V]	3x230/3x400
Frequency [Hz]	50-60
Phases	3~
Dimensions (WxHxL) [mm]	270x145x130
Fuse [A]	2 x 0,315
Protection class	IP20
Ambient temperature without condensation [°C]	0-40
Heat dissipation [W]	50
Ambient humidity	90%RH max.
* Extra load should be connected via contactor to the relay output.	

Controllers conform to requirements of standards EN 61010-1+A2: 2000, EN 50081-1: 1995, EN 55022: 2000 and carry the CE mark.

Title	Article No.
EKR 15.1P	PRGR0008

EKR15.1P is a proportional controller for multistep(up to 5 steps) electric heaters with automatic voltage adaptation. EKR15.1P controls the whole load On-Off. The ratio between On-time and Off-time is varied 0-100% to suit the prevailing heat demand.
EKR15.1P is designed only for electric heating control. The control principle makes it unsuitable for motor or lighting control.
EKR15.1P can control with triac output 15kW heater and has four relay outputs for 4 extra load steps control with contactors, on which can be connected load up to 225kW. Full load can be 240kW.

Control principle

Triac output of EKR15.1P has zero phase-angle detection to prevent RFI (radio frequency interference).
If triac output is ON more then 5 min controller will increase output by one step. Second step will be switch on after 2 min if previous is switched on for this time. All steps are switching in such order to increasing output. In case then output decreasing is needed, step will be switch off after 5min. Other steps will be switch off after 2 min to decrease output.
Extra load steps can be switched in binary or serial mode. Number of connected extra load steps can be selected with rotating switch. In binary mode switching steps can be 0-15, in serial mode 0-4.

Night set-back
Potential-free closure will give a night set-back of 0-10°C. Settable with a potentiometer (Contacts 10, 11) in the EKR15.1P.

Technical data

Controlled load [kW]	15
Extra load control output	4x5A/230V
Max. triac conrolled current [A]	25
Voltage [V]	3x230/3x400
Frequency [Hz]	50-60
Phases	3~
Dimensions (WxHxL) [mm]	105 x 260 x 120
Fuse [A]	2x 0,315
Protection class	IP20
Ambient temperature without condensation [°C]	0-40
Heat dissipation [W]	50
Ambient humidity	90%RH max.
* Extra load should be connected via contactor to the relay output.	

Controllers conform to requirements of standards EN 61010-1+A2: 2000, EN 50081-1: 1995, EN 55022: 2000 and carry the CE mark.

EKR 30 / EKR 30P

Controller of electrical heating

Title	Article No.
EKR 30	PRGR0009

EKR30 is a proportional controller for electric heaters with automatic voltage adaptation. EKR 30 controls the whole load On-Off. The ratio between On-time and Off-time is varied 0-100% to suit the prevailing heat demand. EKR 30 is designed only for electric heating control. The control principle makes it unsuitable for motor or lighting control. EKR30 can control 30kW heater and has relay output for extra load control with contactor, on which can be connected load up to 12kW. Full load can be 42kW.

Control principle

EKR30 has zero phase-angle detection to prevent Radio Frequency Interference. EKR 30 automatically adapts its control mode to suit the dynamics of the controlled object . For rapid temperature changes i. e. supply air control EKR 30 will act as a PI controller. For slow temperature changes i.e. room control EKR 30 will act as a P controller.
Night set-back: potential-free closure will give a night set-back of 1-10°C. Settable with a potentiometer (Contacts Timer-GND) in the EKR 30.

Technical data

Controlled load [kW]	30
Extra controlled load [kW] (recommended) *	12
Total controlled load [kW]	42
Max. conrolled current [A]	45
Voltage [V]	3 x 230/3 x 400
Frequency [Hz]	50-60
Phases	3~
Dimensions (LxWxH) [mm]	240x260x175
Fuse [A]	2 x 0,315
Protection class	IP20
Ambient temperature without condensation [°C]	0-40
Heat dissipation [W]	120
Ambient humidity	90% RH max.

* Extra load should be connected via contactor to the relay output.
Controllers conform to requirements of standards EN 61010-1+A2:2000, EN 50081-1:1995, EN 55022:2000 and carry the CE mark.

Title	Article No.
EKR 30P	PRGR0084

EHC-30-P is a proportional controller for multistep(up to 5 steps) electric heaters with automatic voltage adaptation. EHC-30-P controls the whole load On-Off. The ratio between On-time and Off-time is varied 0-100% to suit the prevailing heat demand.
EHC-30-P is designed only for electric heating control. The control principle makes it unsuitable for motor or lighting control. EHC-30-P can control with triac output 15kW heater and has four relay outputs for 4 extra load steps control with contactors, on which can be connected load up to 225kW. Full load can be 255kW.

Control principle

Control principle:
Triac output of EHC-30-P has zero phase-angle detection to prevent Radio Frequency Interference.
If triac output is ON more then 5 min controller will increase output by one step. Second step will be switch on after 2 min if previous is switched on for this time. All steps are switching in such order to increasing output. In case then output decreasing is needed, step will be switch off after 5min. Other steps will be switch off after 2 min to decrease output. Extra load steps can switching in binary or serial mode (switch 4). Number of connected extra load steps can be selected with micro switch 5, 6.
Night set-back: potential-free closure will give a night set-back of 0-10°C. Settable with a potentiometer (Contacts Timer-GND) in the EHC-30-P.

Technical data

Controlled load [kW]	30
Extra load control output	4 x 5A/230V
Max. conrolled current [A]	45
Voltage [V]	3 x 230/3 x 400
Frequency [Hz]	50-60
Phases	3~
Dimensions (LxWxH) [mm]	240x260x175
Fuse [A]	2 x 0,315
Protection class	IP20
Ambient temperature without condensation [°C]	0-40
Heat dissipation [W]	120
Ambient humidity	90% RH max.

* Extra load should be connected via contactor to the relay output.
Controllers conform to requirements of standards EN 61010-1+A2:2000, EN 50081-1:1995, EN 55022:2000 and carry the CE mark.

Controller of electrical heating

Title	Article No.
EKR 6.1	PRGR0011

EKR6.1 is a proportional controller of electrical heating with automatic adaptation of voltage. An internal or an external sensor is used with the device. EKR6.1 controls the heating intensity by switching electrical power on or off. The ratio between the off-time and on-time depends on the need for heating and can vary in the range between 0% and 100%. EKR6.1 is suitable for the control of electrical heating only. Its principle of operation preclude its being used for the control of motors or lighting systems. EKR6.1 is not suitable for the control of three-phase electrical current, it is used to control monophasic and biphasic heaters only.

Technical data

Max. controlled load [kW]	6,4/400V, 3,2/230V
Max. conrolled current [A]	16
Voltage [V]	230-415
Frequency [Hz]	50-60
Phases	1~230V, 2~400V
Dimensions (WxHxL) [mm]	150 x 80 x 55
Protection class	IP20
Ambient temperature [°C]	30 max.
Ambient humidity	90% RH max.

Controllers conform to requirements of standards LST EN 61010-1:2002, LST EN 55022:2000, LST EN 60730-1+A11: 2002/A16 2007 and carry the CE mark.

Control principle

EKR6.1 controls the full load On-Off. EKR6.1 adjusts the mean power output to the prevailing power demand by proportionally adjusting the ratio between On-time and Off-time.

EKR6.1 has zero phase-angle detection for preventing RFI (radio frequency interference).

EKR6.1 automatically adjusts it's control mode to suit the controlled object's dynamics.

For rapid temperature changes i.e. supply air control EKR6.1 will act as a PID controller.

For slow temperature changes i.e. room control EKR6.1 will act as a PID controller.

Night temperature set-back

Potential-free closure will give a night set-back of 1 - 10°C. Settable with a potentiometer which is in the EKR6.1.

TGRV / TGRT

Phase speed controllers

Title	Article No.
TGRT 1	PRGR0029
TGRT 2	PRGR0032
TGRT 3	PRGR0034
TGRT 4	PRGR0035
TGRT 5	PRGR0036
TGRT 7	PRGR0037
TGRT 11	PRGR0030
TGRT 14	PRGR0031

Title	Article No.
TGRV 1.5	PRGR0045
TGRV 2	PRGR0041
TGRV 3	PRGR0042
TGRV 4	PRGR0043
TGRV 5	PRGR0039
TGRV 7	PRGR0044
TGRV 11	PRGR0038
TGRV 14	PRGR0040

Title	Article No.
TGRT 1Ex	PRGR0067
TGRT 2Ex	PRGR0033
TGRT 3Ex	PRGR0068
TGRT 4Ex	PRGR0069
TGRT 5Ex	PRGR0070
TGRT 7Ex	PRGR0071
TGRT 11Ex	PRGR0072
TGRT 14Ex	PRGR0073

Transformer controllers are designed to change motor rotating speed by changing voltage. All controllers are with motors and transformers thermo protection function. 3 phase controllers are with power supply fault protection. Once power supply is recovered, controller does not switch on previous step, until it is switched OFF and On to required step. Steps have fixed voltage and are switched by rotary knob. Controllers also have power indication led. All controllers have 230 VAC output for connection servo motors, actuators, heaters relays and etc. To one controller more than one motor can be connected, if total current of all controllers is less than maximum controller current. In this case all motors thermo protections must be connected in series.

Marking TGR a b c

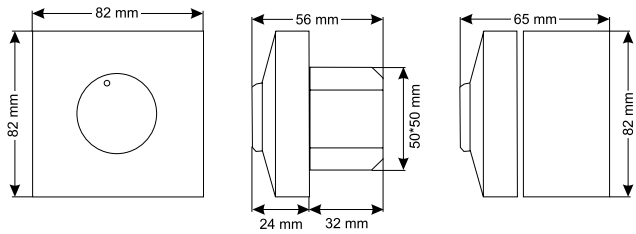
a	V – 1x230 VAC, T – 3x400 VAC.
b	Max. current [A]
c	ex – for explosion proof motors
	Controllers conform with LST EN 600335-1:2003+A11:2004+A1:2005+A12:2006+A2:2007 standards and are CE marked.

Technical data

Type	Max. current (A)	Dimensions	Weight (kg)	Enclosure (P -plastic, M – metal)	Type	Max. current (A)	Dimensions	Weight (kg)	Enclosure (P -plastic, M – metal)
TGRV 1,5	1,5	178x155x99	2,6	P	TGRT 1/1ex	1	335x245x133	6,3	P
TGRV 2	2	178x155x99	3,0	P	TGRT 2/2ex	2	335x245x133	8,1	P
TGRV 3	3	178x155x99	3,5	P	TGRT 3/3ex	3	335x245x133	10,7	P
TGRV 4	4	178x155x150	4,4	P	TGRT 4/4ex	4	335x245x133	14,6	P
TGRV 5	5	178x155x150	4,9	P	TGRT 5/5ex	5	300x290x160	18,7	M
TGRV 7	7	244x184x178	7,3	P	TGRT 7/7ex	7	365x320x190	24,7	M
TGRV 11	11	244x184x178	9,5	P	TGRT 11/11ex	11	365x320x190	34,1	M
TGRV 14	14	244x184x178	10,4	P	TGRT 14/14ex	14	365x320x190	37,2	M

Technical data 1. 5 steps motor rotation speed controller. 2. Power supply: 1x230 VAC – TGRV.., 3x400 VAC – TGRT ..(ex). 3.Frequency [Hz]: 50-60Hz. 4. Steps voltage: TGRV.. - 80V Imax*0.6, 120V Imax*0.9, 140V Imax*1, 170V Imax*1, 230V Imax*1. TGRT.. - 130V Imax*0.9, 170V Imax*1, 220V Imax*1, 270V Imax*1, 400V Imax*1. 5. Protection class IP44. 6. Max. ambient temperature 40°C. 7. Max. controller temperature 70°C is limited by transformer thermo protection. Max. possible transformers temperature T=130°C-ambient temperature.

Single phase speed controller



Title	Article No.
ETY-1,5	PRGR0020
ETY-2,5	PRGR0021
MTY-4	PRGR0024
MTP010	PRGR0025

ETY/MTY-4
Manual regulation of speed or airflow of voltage controllable (230 Vac, 50 Hz) motors and fans. Several motors can be connected as long as the current limit is not exceeded. These speed-controllers offer an excellent and accurate regulation. The moisture resistant casing (with the possibility to be mounted internally or externally) allows the regulator to be used in humid conditions.

MTP010
Regulator is intended for the devices with the input voltage of 0–10V and the output voltage of +10V. Desired output voltage can be set from 0V up to 10V using the rotating knob. The regulator can be switched on and off using the existing additional function. The moisture resistant casing (with the possibility to be mounted internally or externally) allows the regulator to be used in humid conditions.

Technical data

Model	ETY1,5	ETY2,5	MTY4
Supply	**~1, 230, 50 Hz**		
Current rating (A)	0,1 - 1,5 A	0,2 - 2,5 A	0,4 - 4 A
Current fuse (A) (5*20 mm)	F2,0A-H	F3,15A-H	M5,00A-H
IP	44/54	44/54	54
Control	full	full	full
Weight	200g	235g	325g
Mounting	inset/surface		surface

All models have an extra (not regulated) 230 V output. The models 0,5 till 2,0 A are suitable for inset and for surface mounting. Model 4,0 A ccan be used only for surface mounting.
Directive 2006/95/EC on low voltage.
Household and similar electrical appliances — Safety — Part 1: General requirements (IEC 60335-1:2001 (Modified))
Amendment A11:2004 to EN 60335-1:2002
Amendment A1:2004 to EN 60335-1:2002 (IEC 60335-1:2001/A1:2004)
Amendment A12:2006 to EN 60335-1:2002
EN 60669-1:1999
Switches for household and similar fixed-electrical installations — Part 1: General requirements (IEC 60669-1:1998 (Modified))
Amendment A1:2002 to EN 60669-1:1999 (IEC 60669-1:1998/A1:1999 (Modified))
EN 60669-2-1:2004
Switches for household and similar fixed electrical installations — Part 2- 1: Particular requirements — Electronic switches (IEC 60669-2-1:2002 (Modified))
EMC:
Directive 2004/108/EC relating to electromagnetic compatibility

Technical data

Model	MTP010
Supply (VDC)	+10 V
Resistance value	10 kΩ
Output	0-10 VDC
Switch rating	4 A/250VAC, 10A/12VDC
IP	44
Control	full
Dimensions (WxHxL)	82x82x65
Weight	145g

Controllers coply with requirements of standards LVD 2006/95/EC, EMC 2004/108/EC, EN61000-6-3, EN 61000-6-2.

Actuator for dampers

Title	Article No.
CM230-1-F-L	ZAKP0027
LF 230	ZAKP0039
TF 230	ZAKP0063
LM230A-TP	ZAKP0045
LM24A-TP	ZAKP0049
LM230A-SR-TP	ZAKP0043
NM24A-TP	ZAKP0058
NM230A-TP	ZAKP0055
NM24A-SR-TP	ZAKP0057
NF230A	ZAKP0051
NF24A	ZAKP0053
SF24A	ZAKP0072
SF230A	ZAKP0059
SF24A-SR	ZAKP0060
SM230A-TP	ZAKP0062
SM24A-TP	ZAKP0067
SM24A-SR-TP	ZAKP0068

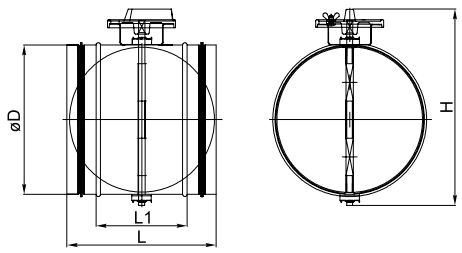
Actuators for air dampers control in ventilation and air-conditioning systems.

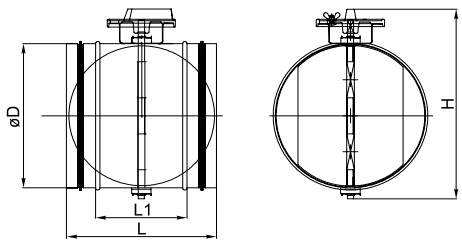
Type	**Area, m²**	**Torque power**, Nm	**Power supply**, VAC	**Control signals**
Actuator LM230A-TP	1	5	AC 100 ... 240 V, 50/60 Hz	2 point (ON/OFF)
Actuator LM24A-TP	1	5	AC 24 V, 50/60 HZ / DC 24 V	2/3 point
Actuator LM24A-SR-TP	1	5	AC 24 V, 50/60 HZ / DC 24 V	Modulating 0-10VDC
Actuator NM24A-TP	2	10	AC 24 V, 50/60 HZ / DC 24 V	2/3 point
Actuator NM230A-TP	2	10	AC 100 ... 240 V, 50/60 Hz	2 point (ON/OFF)
Actuator NM24A-SR-TP	1	10	AC 24 V, 50/60 HZ / DC 24 V	Modulating 0-10VDC
Actuator NF230A	2	10	AC 100 ... 240 V, 50/60 Hz	2 point (ON/OFF) Spring return
Actuator NF24A	2	10	AC 24 V, 50/60 HZ / DC 24 V	2 point (ON/OFF)
Actuator SF24A	4	20	AC 24 V, 50/60 HZ / DC 24 V	2 point (ON/OFF) Spring return
Actuator SF230A	4	20	AC 230 V, 50/60 Hz	2 point (ON/OFF) Spring return
Actuator SF24A-SR	4	20	AC 24 V, 50/60 HZ / DC 24 V	Modulating 0-10VDC Spring return
Actuator SM230A-TP	4	20	AC 100 ... 240 V, 50/60 Hz	2/3 point (ON/OFF)
Actuator SM24A-TP	4	20	AC 24 V, 50/60 HZ / DC 24 V	2/3 point
Actuator SM24A-SR-TP	4	20	AC 24 V, 50/60 HZ / DC 24 V	Modulating 0-10VDC
Actuator CM230-1-F-L	0,4	2	AC 100 ... 240 V, 50/60 Hz	3 point (ON/OFF)
Actuator LF230	0,8	4	AC 230 V, 50/60 Hz	2/3 point Spring return
Actuator TF230	0,5	2,5	AC 230 V, 50/60 Hz	On/OFF

Shut-off dampers

SK

SKR





Title	Article No.
SK 100	GSKSK001
SK 125	GSKSK002
SK 160	GSKSK003
SK 200	GSKSK004
SK 250	GSKSK005
SK 315	GSKSK006
SK 355	GSKSK011
SK 400	GSKSK007
SK 450	GSKSK008
SK 500	GSKSK009
SK 630	GSKSK010

Title	Article No.
SKR 100	GSKSKR001
SKR 125	GSKSKR002
SKR 160	GSKSKR003
SKR 200	GSKSKR004
SKR 250	GSKSKR005
SKR 315	GSKSKR006
SKR 355	GSKSKR011
SKR 400	GSKSKR007
SKR 450	GSKSKR008
SKR 500	GSKSKR009
SKR 630	GSKSKR010

Shut-off dampers SK/ SKR are used for shutting off and controlling airflow. They are easily installed in a circular air duct system. Can be mounted in any position. The casing is made of galvanized steel.
Have a rotating, cut-off blade. The blade can be continually adjusted in a 0-90° angle by the handle (a handle is attached using one screw) on the top of damper.
The blade angle of SK/ SKR damper can be read from an embossed scale on the edge of the plate.

Dimensions

Type	øD, [mm]	L1, [mm]	L, [mm]	H, [mm]
SK 100	100	100	200	165
SK 125	125	100	200	190
SK 160	160	100	200	225
SK 200	200	100	200	265
SK 250	250	100	200	315
SK 315	315	140	240	380
SK 355	355	140	240	420
SK 400	400	140	240	470
SK 450	450	140	240	515
SK 500	500	140	240	565
SK 630	630	140	240	695

Dimensions

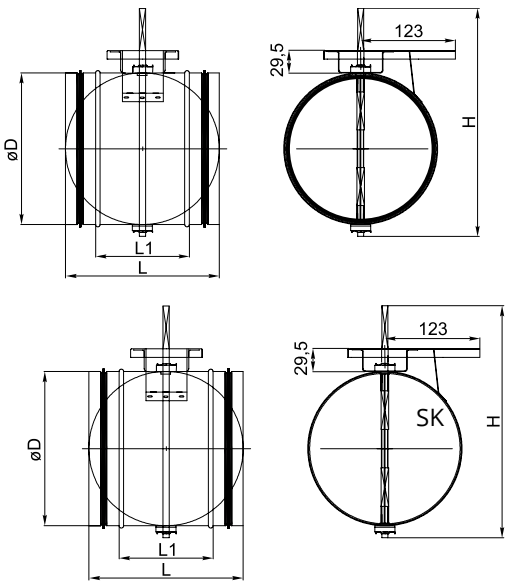
Type	øD, [mm]	L1, [mm]	L, [mm]	H, [mm]
SKR 100	100	100	200	165
SKR 125	125	100	200	190
SKR 160	160	100	200	225
SKR 200	200	100	200	265
SKR 250	250	100	200	315
SKR 315	315	140	240	380
SKR 355	355	140	240	420
SKR 400	400	140	240	470
SKR 450	450	140	240	515
SKR 500	500	140	240	565
SKR 630	630	140	240	695

SKG / SKM

Shut-off dampers

SKG

SKM



Title	Article No.
SKG 100	GSKSKG001
SKG 125	GSKSKG002
SKG 160	GSKSKG003
SKG 200	GSKSKG004
SKG 250	GSKSKG005
SKG 315	GSKSKG006
SKG 355	GSKSKG007
SKG 400	GSKSKG008
SKG 450	GSKSKG009
SKG 500	GSKSKG010
SKG 630	GSKSKG011

Title	Article No.
SKM 100	GSKSKM001
SKM 125	GSKSKM002
SKM 160	GSKSKM003
SKM 200	GSKSKM004
SKM 250	GSKSKM005
SKM 315	GSKSKM006
SKM 355	GSKSKM022
SKM 400	GSKSKM007
SKM 450	GSKSKM008
SKM 500	GSKSKM009
SKM 630	GSKSKM010

Shut-off dampers SKG/SKM are used for shutting off and controlling airflow. They are easily installed in a circular air duct system. Can be mounted in any position. The casing is made of galvanized steel.
Have a rotating, cut-off blade. The blade can be continually adjusted in a 0-90° angle by a motor on the top of damper. The blade of SKG dampers has rubber seal that tightens the inside of the damper when it's in closed position.
SKG/SKM shut-off damper is controlled by a motor which is supplied separately.

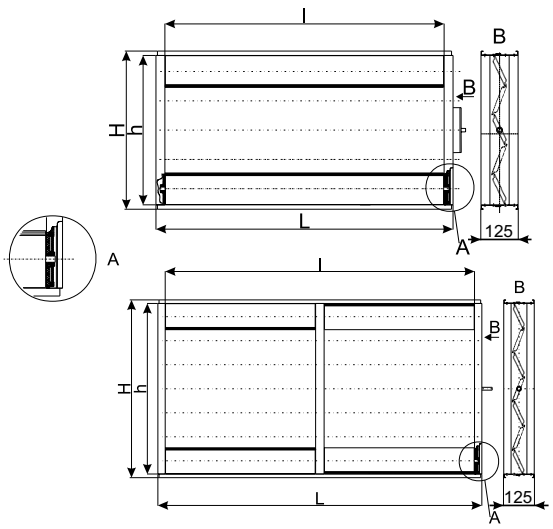
Dimensions

Type	øD, [mm]	L1, [mm]	L, [mm]	H, [mm]
SK 100	100	100	200	165
SK 125	125	100	200	190
SK 160	160	100	200	225
SK 200	200	100	200	265
SK 250	250	100	200	315
SK 315	315	140	240	380
SK 355	355	140	240	420
SK 400	400	140	240	470
SK 450	450	140	240	515
SK 500	500	140	240	565
SK 630	630	140	240	695

Type	øD, [mm]	L1, [mm]	L, [mm]	H, [mm]
SKM 100	99	100	200	230
SKM 125	125	100	200	255
SKM 160	160	100	200	290
SKM 200	200	100	200	330
SKM 250	250	100	200	380
SKM 315	315	140	240	445
SKM 355	355	140	240	485
SKM 400	400	140	240	535
SKM 450	450	140	240	580
SKM 500	500	140	240	630
SKM 630	630	140	240	760

Dampers for rectangular ducts

SSK - damper without separating profile



SSK dampers are used for closing airflow. The dampers are made of aluminium profile with sealing rubber gaskets. Palm driving gear is made of glass-fibre material. Silicon sealing strip provides proper tightness.
Dampers are suitable to be used in the temperature ranges from -40º to +80ºC.
The flange system of these dampers is the same as in the rectangular air ducts and fans, therefore mounting operations are simple.

Dimensions

Size range of manufactured SSK dampers varies from 100mm (H_{min}-100mm, L_{min}-100mm) to 3000mm (H_{max}-3000mm, L_{max}-3000mm).
If dimension L bigger than 1000mm, dampers SSK are produced with separating plate.

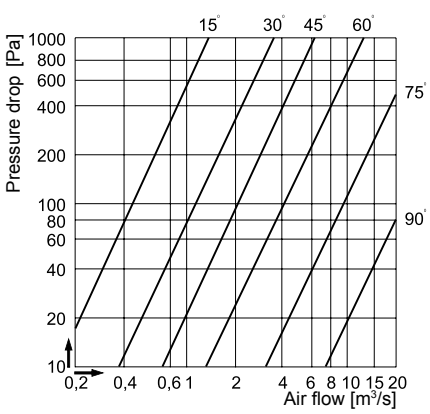
Calculation of required size:
$H=H_n+40$
$L=L_n+40$

h=H-30
l=L-60

H - height of damper
L - width of damper
h - inner height of damper
l - inner width of damper
H_n - nominal height of damper
L_n - nominal width of damper

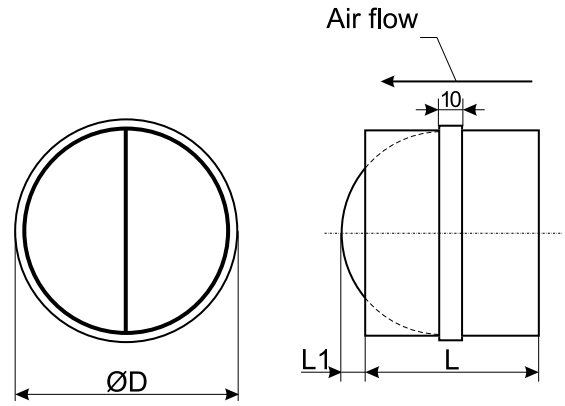
Specification	SSK L-H
Damper for rectangular ducts	**SSK**
Width [mm]	**L**
Height [mm]	**H**

Pressure drop



RSK

Back draft shutter



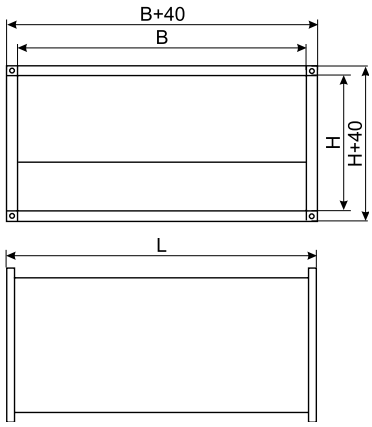
Title	Article No.
RSK 100	GSKRSK001
RSK 125	GSKRSK002
RSK 150	GSKRSK008
RSK 160	GSKRSK003
RSK 200	GSKRSK004
RSK 250	GSKRSK005
RSK 315	GSKRSK006
RSK 355	GSKRSK009
RSK 400	GSKRSK007
RSK 450	GSKRSK011
RSK 500	GSKRSK012

Back draft dampers RSK are used in circular ducting. They allow circulation of air in one direction only. They are mounted into a system of round air ducts.
The damper casing is made of galvanized steel. Blades are made of aluminium, they are spring-loaded. Shutter RSK has to be installed as it is shown in the picture: shaft stands vertically rubber ring is fitted inside.

Dimensions

Type	ØD, [mm]	L, [mm]	L1, [mm]	Weight
RSK 100	100	88	26	0,13 kg
RSK 125	125	88	19	0,17 kg
RSK 150	150	88	31	0,22 kg
RSK 160	160	88	36	0,24 kg
RSK 200	200	88	56	0,29 kg
RSK 250	250	128	61	0,68 kg
RSK 315	315	128	94	0,81 kg
RSK 400	400	198	94	1,68 kg

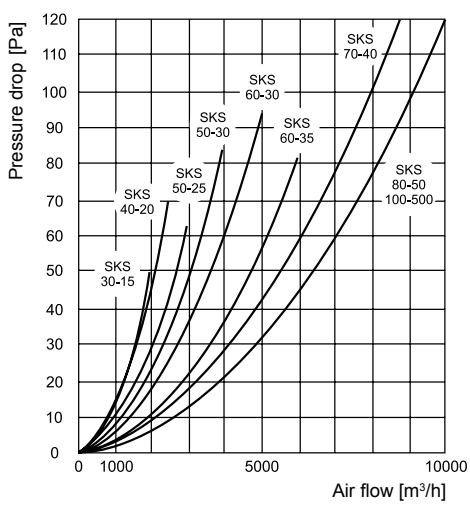
Rectangular duct silencer



Title	Article No.
SKS 30-15	GSOSKS001
SKS 40-20	GSOSKS002
SKS 50-25	GSOSKS003
SKS 50-30	GSOSKS004
SKS 60-30	GSOSKS005
SKS 60-35	GSOSKS006
SKS 70-40	GSOSKS007
SKS 80-50	GSOSKS008
SKS 100-50	GSOSKS009

Rectangular duct silencers SKS are designed for rectangular duct fans VKS/VKSA and can be mounted into a system of rectangular air ducts. SKS silencers have good sound attenuation characteristics. Several silencers can be mounted into a rectangular air duct system if there is requirement for bigger noise reduction. The casing is made of galvanized steel and inner casing is made of perforated sheet steel. Mineral wool is used for sound insulation.

Pressure drop



Dimensions

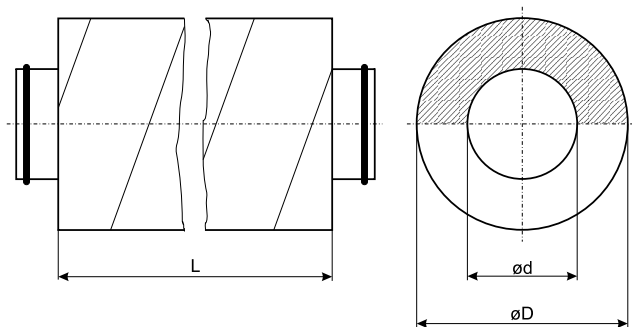
Type	B, [mm]	H, [mm]	L, [mm]	Weight, [kg]
SKS 30-15	300	150	950	10,0
SKS 40-20	400	200	950	13,0
SKS 50-25	500	250	950	17,0
SKS 50-30	500	300	950	19,0
SKS 60-30	600	300	950	21,0
SKS 60-35	600	350	950	23,0
SKS 70-40	700	400	950	27,0
SKS 80-50	800	500	950	29,0
SKS 100-50	1000	500	950	32,0

Attenuation values in frequency bands [dB]

Type	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
SKS 30-15	7	15	18	25	25	19	19
SKS 40-20	5	9	15	23	16	12	10
SKS 50-25	10	15	25	25	20	15	12
SKS 50-30	8	15	20	31	17	14	11
SKS 60-30	8	15	20	31	17	14	11
SKS 60-35	7	13	17	18	13	10	8
SKS 70-40	7	11	14	14	10	8	6
SKS 80-50	6	10	15	12	10	8	7
SKS 100-500	6	9	15	13	11	8	6

AKS / SAKS

Circular duct silencers



Round duct silencers AKS/SAKS can be mounted into a system of round air ducts. These silencers have good sound attenuation characteristics. Several silencers can be mounted into a circular air duct system if there is requirement for bigger noise reduction. The housing is made of external SPIRO System duct and inner casing is made of perforated sheet steel. Mineral wool is used for sound insulation.
The insulating part in SAKS silencers is thicker than in AKS silencers.

ACCESSORIES

Dimensions

Type	L, [mm]	ød, [mm]	øD, [mm]
AKS 100	300; 600; 900	100	200
AKS 125	300; 600; 900; 1000; 1200	125	200
AKS 160	600; 900; 1000; 1200	160	250
AKS 200	600; 900; 1000; 1200	200	315
AKS 250	600; 900; 1000; 1200	250	400
AKS 315	600; 900; 1000; 1200	315	500
AKS 400	900; 1000; 1200	400	630
AKS 500	900; 1000; 1200	500	630
AKS 630	900; 1000; 1200	630	800
AKS 800	900; 1000; 1200	800	1000
SAKS 100	300; 600; 900; 1000; 1200	100	315
SAKS 125	300; 600; 900; 1000; 1200	125	315
SAKS 160	300; 600; 900; 1000; 1200	160	400
SAKS 200	300; 600; 900; 1000; 1200	200	400
SAKS 250	300; 600; 900; 1000; 1200	250	500
SAKS 500	900; 1000; 1200	500	800

Weight

Type	Weight [kg]				
	300 mm	600 mm	900 mm	1000 mm	1200 mm
AKS 100	3,0	4,1	4,7	-	-
AKS 125	3,2	4,5	5,0	5,2	7,7
AKS 160	-	5,8	6,4	7,0	10,0
AKS 200	-	7,0	10,0	11,5	12,0
AKS 250	-	10,3	13,0	14,1	15,0
AKS 315	-	13,10	17,2	21,0	24,0
AKS 400	-	-	22,8	23,0	32,0
AKS 500	-	-	25,64	28,0	29,0
AKS 630	-	-	31,6	33,4	35,0
AKS 800	-	-	41,00	46,1	58,5
SAKS 100	2,1	4,2	6,3	7,0	8,4
SAKS 125	2,2	4,4	6,6	7,3	8,8
SAKS 160	3,3	5,6	9,2	10,2	12,2
SAKS 200	3,6	6,8	10,0	11,0	13,2
SAKS 250	4,1	8,2	12,4	13,8	16,6
SAKS 500	-	-	23,6	26,2	31,4

Attenuation values in frequency bands [dB]

Type	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
AKS 100/6	8	14	26	34	41	45	25
AKS 100/9	8	15	27	36	42	47	24
AKS 125/6	6	12	22	28	37	38	22
AKS 125/9	9	18	30	40	48	43	24
AKS 160/6	5	10	18	23	33	30	19
AKS 160/9	8	16	27	36	47	37	21
AKS 200/6	4	9	17	22	29	25	18
AKS 200/9	7	13	24	31	44	31	20
AKS 250/6	6	11	21	27	39	25	19
AKS 250/9	8	15	29	34	47	33	17
AKS 315/6	5	9	18	23	32	20	18
AKS 315/9	6	12	22	24	36	26	19
AKS 400/9	5	8	11	23	19	17	15
AKS 500/9	6	8	12	23	18	19	15
AKS 630/9	6	8	10	22	17	15	14
AKS 800/9	4	6	7	16	12	10	11

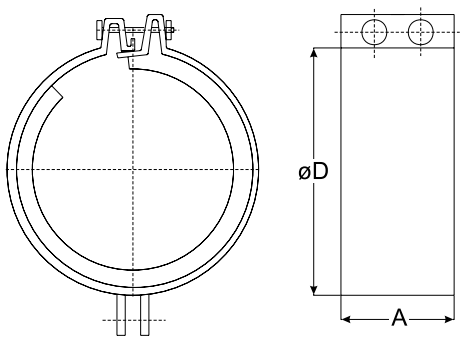
WSG

Grilles

Title	Article No.
WSG 150	GGRWSG0126_508
WSG 160	GGRWSG0126_509
WSG 200	GGRWSG0126_510

Grilles WSG are used for air supply and extraction of air handling units. Made of steel with powder coating.

Mounting clamps for circular ducts



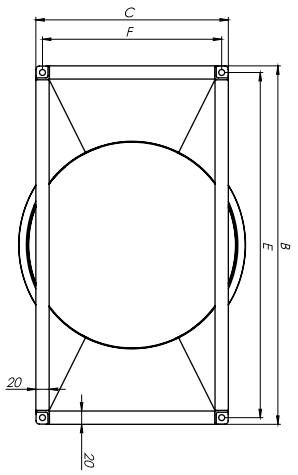
Title	Article No.
AP 100	GAPAP001
AP 125	GAPAP002
AP 150	GAPAP003
AP 160	GAPAP004
AP 200	GAPAP005
AP 250	GAPAP006
AP 315	GAPAP007
AP 355	GAPAP008
AP 400	GAPAP009
AP 450	GAPAP010
AP 500	GAPAP011
AP 560	GAPAP015
AP 630	GAPAP012
AP 710	GAPAP016
AP 800	GAPAP013

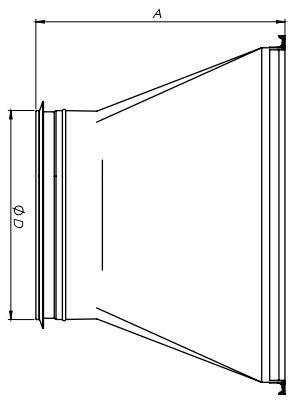
Clamps AP are used for the mounting of various elements of ventilation and air conditioning systems. They minimize vibrations and ensure tight fit of various parts of a system. Made of galvanized steel.

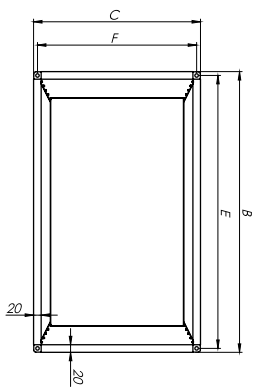
Dimensions

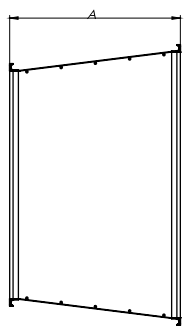
Type	øD, [mm]	A, [mm]	Weight, [kg]
AP 100	100	60	0,12
AP 125	125	60	0,15
AP 150	150	60	0,18
AP 160	160	60	0,20
AP 200	200	60	0,22
AP 250	250	60	0,25
AP 315	315	60	0,28
AP 355	355	60	0,30
AP 400	400	60	0,32
AP 450	450	60	0,35
AP 500	500	60	0,37
AP 560	560	60	0,4
AP 630	630	60	0,44
AP 710	710	60	0,48
AP 800	800	60	0,52

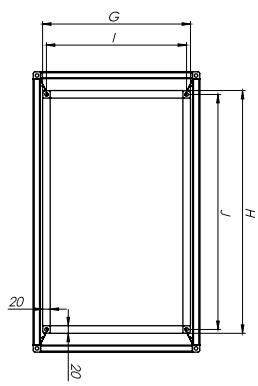
Flange adapter







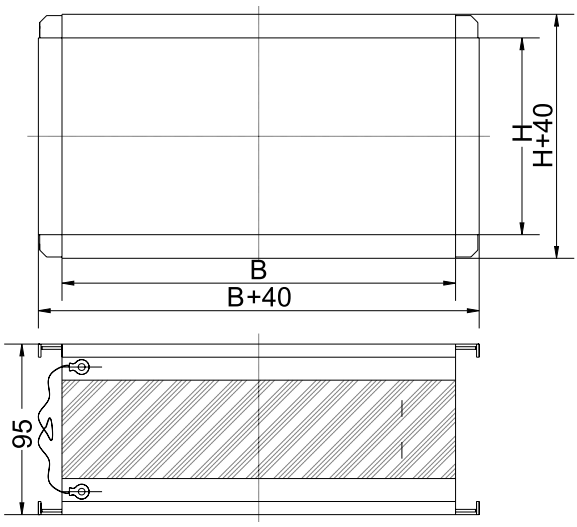




Flange adapters are used to connect AHU with standard ventilation ducts. Adapters are made of galvanized steel.

Dimensions [mm]	A	B	C	øD	E	F	G	H	I	J
STP-C 400x200-250	305	440	240	250	420	220	-	-	-	
STP-C 500x250-315	375	540	290	315	520	270	-	-	-	-
STP-C 700x300-400	445	740	340	400	720	320	-	-	-	-
STP-C 700x400-500	475	740	440	500	720	420	-	-	-	-
STP-C 800x500-500	555	840	540	500	820	520	-	-	-	-
STP 700x400-600x350	450	740	440	-	720	420	390	640	370	620
STP 700x400-700x300	300	740	440	-	720	420	340	740	320	720
STP 800x500-700x400	450	840	540	-	820	520	440	740	420	720
STP 900x300-800x500	450	940	340	-	920	320	540	840	520	820

Flexible connection



Title	Article No.
LJ/PG 30-15	GLJLJ/PG001
LJ/PG 40-20	GLJLJ/PG002
LJ/PG 50-25	GLJLJ/PG004
LJ/PG 50-30	GLJLJ/PG005
LJ/PG 60-30	GLJLJ/PG007
LJ/PG 60-35	GLJLJ/PG008
LJ/PG-70-40	GLJLJ/PG009
LJ/PG 80-50	GLJLJ/PG010
LJ/PG 100-50	GLJLJ/PG011

Flexible connection LJ/PG is made from galvanised steel sheet and neoprene fabric.

Dimensions

Type	B, [mm]	H, [mm]	Weight, [kg]
LJ/PG 30x15	300	150	0,3
LJ/PG 40x20	400	200	0,4
LJ/PG 50x25	500	250	0,5
LJ/PG 50x30	500	300	0,7
LJ/PG 60x30	600	300	1,0
LJ/PG 60x35	600	350	1,2
LJ/PG 70x40	700	400	1,4
LJ/PG 80x50	800	500	1,7
LJ/PG 100x50	1000	500	2,0

Notes