



PARTNER
IN VENTILATION
2VV.CZ

TECHNICAL
CATALOGUE
2022

Energy saving

2VV AIR CURTAINS

...we have the courage to highlight green products in red.

EC motors today are the most efficient motors for equipment where extreme power is not required, such as fans used in ventilation systems. They have a soft start, low noise and energy consumption and heat up less, so they are an ideal replacement for classic DC and AC motors. They quickly were deployed into all 2VV heat recovery units and are gradually helping to expand our product portfolio of air curtains and heating units as well.





STANDESSE EC

Elegant Air Curtain



- Air flow up to 6,400 m³/h
- FACE 2in1 technology
- Recommended installation height up to 5 m
- Intelligent AirGENIO modular control*



See page 48



FINESSE EC

Discreet Air Curtain



- Air flow up to 6,600 m³/h
- Only 304 mm in-built height
- Recommended installation height up to 5 m
- Intelligent AirGENIO modular control*



See page 84



* More info about AirGENIO control & 2V smart app
see on page 22 and 24.



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DAPHNE FLAT

SMART AND SLEEK



350–770

m³/h
nominal airflow

281

mm
height



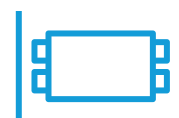
ceiling
installation

96%

heat recovery
efficiency

A+/A

energy
class



wall
installation

See page 333





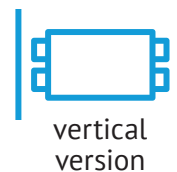
ALFA 85

ROTARY HEAT RECOVERY



700–14,000

m³/h
nominal airflow

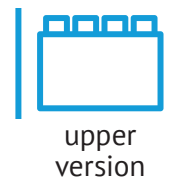


vertical
version



700–5,000

m³/h
nominal airflow



upper
version

See page 417



#breathesafely

Relative humidity, CO₂ level, temperature, airborne viruses and other air pollution in classroom.

Take care of your indoor air quality and let 2VV ventilation products automatically control the right level of all essential parameters. The combination of the **WHISPER AIR** ventilation unit and the **VIREX AIR** air purifier ensures fresh and clean air 24/7.

Classroom volume 150 m³

**VENTILATION
UNIT**

6× **30'**
Air change Recovery time

**AIR
PURIFIER**



WHISPER AIR

Quiet operation 35 dBA

Highly efficient heat
& humidity recovery

400, 700 and 1,000 m³/h

Integrated CO₂ sensor

Ductless installation

VIREX AIR

HEPA H14 filtration 99,995 %

UVC chamber

Quiet operation 37 dBA

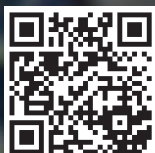
1,000 m³/h nominal airflow

Pre-filter ePM1 55 % (F7)

Easy maintenance



See page 348



See page 500



Virexair.com



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Dear Business friends,

Welcome to our journey, to our way of thinking. It is shaped by the values we hold dear and which form the foundation of our business success. One of our greatest values is our strong partnerships with you, which we have been building since 1995. They are based on mutual respect and trust, with our priority focused on a personal approach, high flexibility and fast and efficient solutions to customer requirements. We have our own technological know-how including control system development, educated engineers and skilled production people. We invest in innovation and have recently commissioned our new testing laboratory, equipped with state-of-the-art technology to measure the operating parameters of our equipment. We are committed to sustainable development and environmental protection and use quality materials.

In addition to developing and manufacturing products of high quality, we also place emphasis on superior **customer's technical support**. Our engineers are used to answering your technical questions quickly and accurately, and we provide complete technical documentation and supporting software for our products, including BIM models. We organize regular product and service training sessions for you and continuously share our experience of operating our products with you.

In line with global trends, we develop heating and ventilation products with heat recovery to be increasingly efficient, economical and quieter. They provide their users with a quality indoor environment with thermal comfort, optimal humidity and CO2 levels in a very wide range of applications from products for the residential market to large industrial units. We also offer various special solutions, for example providing healthy and quiet ventilation in schools. Our powerful and low-noise **WHISPER AIR** heat recovery unit combined with the **VIREX AIR** anti-viral air purifier is a unique comprehensive solution for healthy and clean indoor air fulfilling the high requirement for quiet operation.

In this catalogue you will find several new products that we have recently launched on the market. These include the **DAPHNE FLAT** domestic ceiling mounted heat recovery unit with its low profile and quiet operation, and alongside it we are introducing the new generation **ALFA 85** rotary regenerator unit, which meets the demanding requirements for operation in public buildings, shops or restaurants. We also offer upgraded versions of the powerful and highly successful air curtains **STANDESSE** and **FINESSE** with energy saving EC motors and reduced noise levels.

The world is getting faster and simpler, and so are we. Our **AirGENIO** control system in conjunction with the new design controller and mobile app ensure enhanced and fully automatic operation of our products, as well as the ability to monitor and adjust parameters in real time. It also enables the operation of the equipment in additional modes that provide comfort and utility functions without which we can no longer imagine ideal operation of the equipment.

We appreciate you following our path with us. A solid partnership is an important added value of our mutual cooperation and we look forward to new joint meetings and successes in the near future.



Filip Hazuka
2VV CEO



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459

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499

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ABOUT US



We are

...a leading European manufacturer in the HVAC industry. Customers around the world recognize us for premium quality products in the Heating and Ventilation sector. Our products are developed with maximum focus on energy-efficient solutions and emphases on improving indoor environment quality.

We employ the most resourceful and outstanding specialists and professionals in the industry who are focused on creating innovative and cutting edge equipment and controls. The result of which is a state of the art manufacturing facility and an extraordinary group of people.

Maximizing an individual approach to each and all our customers and partners is our greatest asset. Together with our customers we put into practice our company slogan – **PARTNER IN VENTILAITON.**



Our main goal

...is a happy customer – happy you! As a supplement to our world-class products we put maximum effort to provide the best possible service and support that you can always rely on. It is important for us that you get fast response to any requirements with due care, receive quick delivery of ordered goods and fast and efficient after-sales support.

An important objective that our company has adopted as its own is environmental and health protection. We constantly focus to reduce the energy demands of our products and with great emphases on the reduction of noise level. Not only are our products developed with this intention but we also deeply care about a sustainable and healthy working environment.

2VV Quality Policy

We rigorously follow the EN ISO standards and are a proud holder of the EN ISO certificates 9001:2016 (set of standardised requirements for a quality management system) and 14001:2016 (requirements of standards related to minimizing operations and processes with negative affect to environment). Bringing to the market supreme quality and reliable products with longevity is our utmost satisfaction.



Ivana Pavličková
2VV Quality Manager

2VV product means easy job for you

User-friendly operation, easy installation, maintenance and service, are common characteristics of our approach. But we don't just stop there, we know that continuous support and service is an important and integral part of each and every 2VV product. Therefore with a great care we have prepared all kinds of supplementary documents and supportive tools, which make our products easy to install and user friendly. Choose&Go selection software, products listed in BIM database, comprehensive manuals and technical sheets, product brochures and such, all can be easily found on our webpage. Further support is provided on demand, from simple queries to highly technical requests, such as a product simulation in a specific environment. At 2VV we are here for you when you needs us, either by phone or email we look forward to serving you.

We develop our employees and keep talented people in the company

2VV relies on the high professionalism, knowledge and experience of our employees and we take a great care about development of the talented people. Therefore our basic effort is to ensure that all our employees have an equal access and actively participate on professional education and professional development. Next to the professional growth we also organise training programmes focused on a general skills development, such as a communication and language skills, managerial and others. We believe that only with a professional and well-motivated employees we can succeed and keep a stabile company.



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www.2vv.cz/en/support



2VV PRODUCT ADVANCED TECHNOLOGIES

In each 2VV product are used particular advanced technologies, which secure the best functionality and comfort to the customer. The list below provides a quick overview of the advanced technologies across the 2VV product range.



The icon represents 2VV products primarily focused on low energy consumption thus protecting the environment and saving operational costs.



The icon represents 2VV products with exhaust outlet divided into non-heated and water heated airstream, thus reducing heating demand and minimizes heat losses.



The icon represents 2VV products with low noise level and therefore increased comfort in the environment where the product is located.



The icon represents 2VV products with a suction cover manufactured from 3D expanded metal to ensure a sufficient air supply while also functioning as an easy-to-clean filter



The icon represents 2VV products with special nozzle system ensuring laminar and compact airflow, steady and even airstream, all that with keeping low noise level.



The icon represents 2VV products fitted with a wire heater characterized by instant start-up / instant stop of heating and thus contributing energy savings.



The icon represents 2VV products with a heat recovery cell equipped with a special lamella system generating a turbulent airflow and thus maximizing the heat recovery.



The icon represents 2VV products with one universal interface for a control system of different technical levels, which could be arbitrarily changed.



The icon represents 2VV products with an integrated rotary wheel ensuring high heat recovery and humidity recovery.



This icon represents 2VV products with an easy installation with no need for additional knowledge or skills than expected in the product class.



The icon represents 2VV products with integrated antifreeze protection.



The icon represents 2VV products fitted with "V" adjustable lamellas on exhaust, which direct the airflow and secure mixing of hot and ambient air.



The icon represents 2VV products with integrated DX coil.



The icon represents 2VV products fitted with JET system technology on exhaust, which ensure a greater speed of airflow and faster mixing of hot and ambient air.



The icon represents 2VV products with integrated Change/Over water coil suitable for heating cooling.



The icon represents 2VV product made in an anti-corrosive treatment and fulfilling the parameters defined by class C4.



The icon represents 2VV products equipped with the AirGENIO control system allowing device control via a smart device.



The icon represents 2VV product with a prolonged warranty period up to 3 years.



The icon represents 2VV products that can be easily commissioned and serviced comfortably on your computer via 2VV Service software.



This icon represents 2VV products included in the selection software Choose&GO, which ensures the right product selection and provides all essential data.

2VV PRODUCT ADVANCED TECHNOLOGIES

HEATING product range

		ENERGY SAVING	LOW NOISE	STRAW SYSTEM	FACE 2in1	WIRE HEATER	ANTI FREEZE	DUAL AIRSTREAM	V-SHAPE LAMELLA	JET SYSTEM	MODULAR CONTROL	AirGENIO APP	Choose &GO	SERVICE SW	3 YEARS WARRANTY
ESSENSSE NEO EC	Page 30	✓	—	✓	—	✓	✓	—	—	—	✓	✓	✓	✓	✓
STANDESSE EC	48	✓	✓	—	✓	✓	✓	—	—	—	✓	✓	✓	✓	✓
STANDESSE XP	69	✓	✓	✓	—	—	✓	—	—	—	—	✓	✓	✓	✓
FINESSE EC	84	✓	✓	—	—	✓	✓	—	—	—	✓	✓	✓	✓	✓
INDESSE EC	106	✓	—	✓	—	✓	✓	—	—	—	—	✓	✓	✓	✓
INDESSE GP	126	✓	—	✓	—	—	✓	✓	—	—	—	✓	✓	✓	✓
BASIC	146	—	✓	—	✓	✓	—	—	—	—	—	—	—	—	✓
ENTRESSE	153	—	—	✓	—	✓	—	—	—	—	—	—	✓	—	✓
ESSENSSE NEO AC	163	—	—	✓	—	✓	✓	—	—	—	✓	✓	✓	✓	✓
STANDESSE AC	183	—	—	—	✓	✓	✓	—	—	—	✓	✓	✓	✓	✓
FINESSE AC	204	—	—	—	✓	✓	✓	—	—	—	✓	✓	✓	✓	✓
VENESSE	223	—	✓	—	—	✓	✓	—	—	—	—	✓	✓	✓	✓
INDESSE AC	235	—	—	✓	—	✓	✓	—	—	—	—	✓	✓	✓	✓
SAVANA	277	—	—	✓	—	—	✓	—	✓	✓	—	✓	✓	✓	✓
SAVANA EC	256	✓	—	✓	—	—	✓	—	✓	✓	—	✓	✓	✓	✓
SAVANA INOX	288	—	—	—	—	—	✓	—	—	—	—	✓	✓	✓	✓
SAVANA INOX EC	268	✓	—	—	—	—	✓	—	—	—	—	✓	✓	✓	✓

VENTILATION product range

		ENERGY SAVING	LOW NOISE	STRAW SYSTEM	ROTARY WHEEL	COUNTER FLOW	ANTI FREEZE	DX COIL	CHANGE OVER	AirGENIO APP	Choose &GO	SERVICE SW	3 YEARS WARRANTY
VENUS	Page 300	✓	✓	—	—	✓	✓	—	—	✓	✓	✓	✓
DAPHNE	315	✓	✓	—	—	✓	✓	—	—	✓	✓	✓	✓
DAPHNE FLAT	333	✓	✓	—	—	✓	✓	—	—	✓	✓	✓	✓
WHISPER AIR	348	✓	✓	✓	—	✓	✓	—	—	✓	✓	✓	✓
ALFA 95 FLAT	368	✓	✓	—	—	✓	✓	✓	✓	✓	✓	✓	✓
ALFA 95	387	✓	✓	—	—	✓	✓	✓	✓	✓	✓	✓	✓
ALFA 85	417	✓	✓	—	✓	—	✓	✓	✓	✓	✓	✓	✓



Building design with 2VV has never been easier

MagiCAD offers designers, engineers and architects access to over 1 million intelligent 3D product models including the 2VV's range of Air Curtains, Air Heaters and Heat Recovery units. MagiCAD can be used with either AutoCAD or Revit.

2VV BIM DATABASE

305 product families (534 unique variants)

BIM ready with

MagiCAD

magicad.com

Search results: 305 product families (534 unique variants)

Sort by: RELEVANCE PRODUCT CODE

VCES2B-E2AC-CR-OAO



2VV

Electric » Equipment

Air curtain ESSENSSE NEO, output series B, electric heating (E2), AirGenio control

●

MagiCAD Certified

SAV-1EC-O-O-SAV-FC-D-O-O



2VV

Piping » Fan coil unit
Ventilation » Fan coil unit

Savana EC fan heater with Exhaust jets face cover

●

MagiCAD Certified

VCIN2A250-P2EC vertical



2VV

Piping » Fan coil unit
Ventilation » Fan coil unit

Air curtain INDESSE, length 2,75m, water coil (warm water 110°C), antifreeze protection

●

MagiCAD Certified

VCIN2A200-SOEC vertical



2VV

Electric » Equipment

Air curtain INDESSE, length 2,2m, ambient

●

MagiCAD Certified

VCIN2A150-E1EC horizontal



2VV

Electric » Equipment

Air curtain INDESSE, length 1,65m, electric heater

●

MagiCAD Certified

VCIN2A200-E1EC vertical



2VV

Electric » Equipment

Air curtain INDESSE, length 2,2m, electric heater

●

MagiCAD Certified

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Essential product selecting tool for project design

Choose&GO is the 2VV selection program guiding you through the wide 2VV ventilation and heating product portfolio. According the specified parameters Choose&GO easily selects the right product you need, inclusive relevant accessories and controls.

The final result with precise and reliable data (parameters, calculations, graphs, etc.) is available on one-click into a PDF file. Also further supplementary documents, such as technical catalogue, 2D drawings and dimensional scheme are available for downloads.

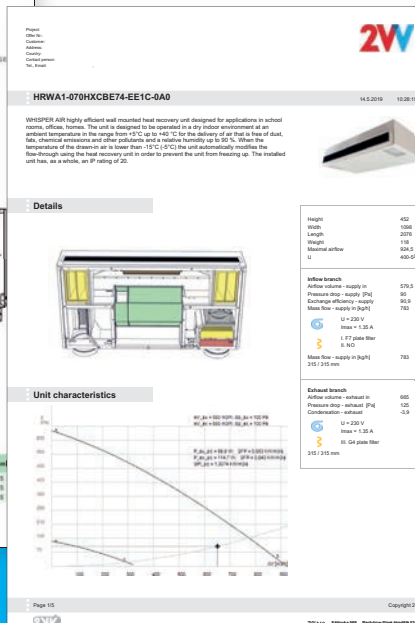
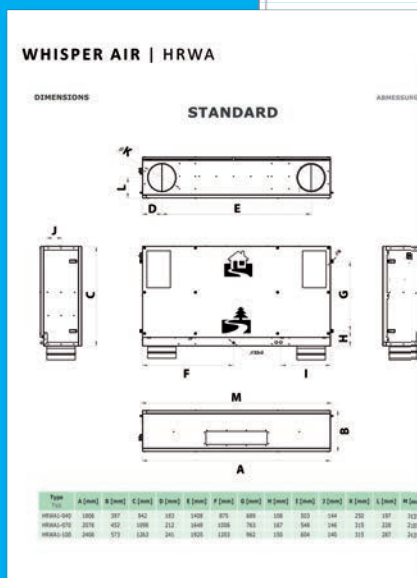
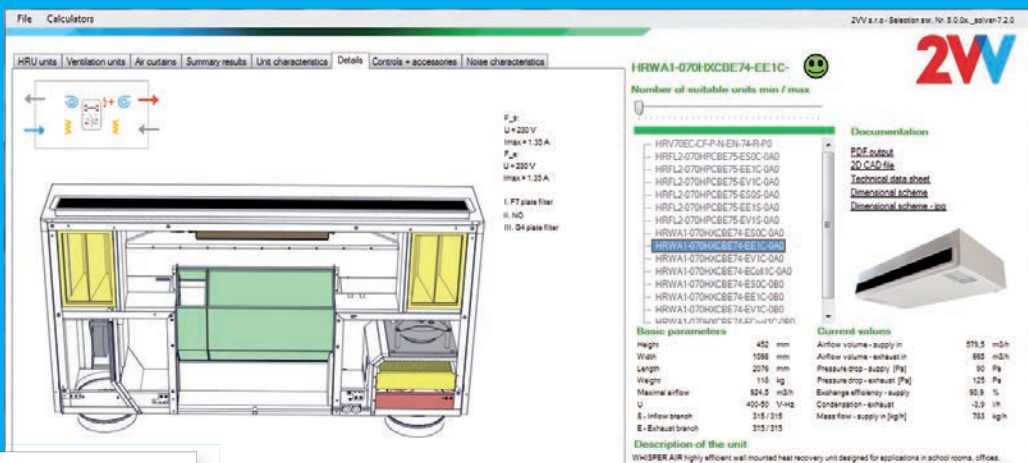
- Precise and reliable data
- Right product selection from 2VV wide range
- Final result and one-click into PDF
- Supplementary documents available





Easy selection of Ventilation / Heat Recovery Unit

Details of selected unit



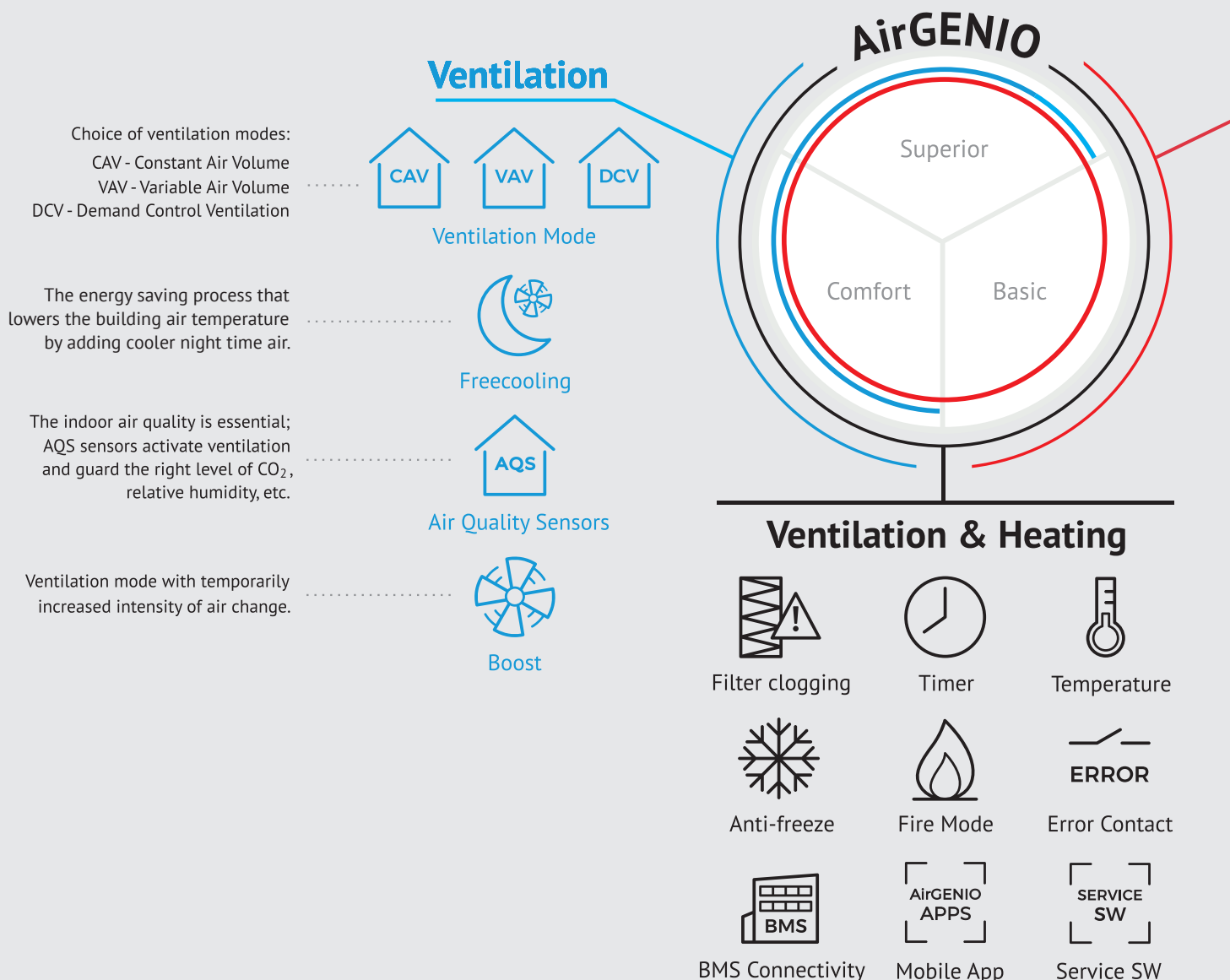
All important information on one-click



AirGENIO control system

2W AirGENIO control system ensures easy and smart operation of 2W devices. It is full of smart features, which operate the device with a clear focus on minimizing energy consumption and providing maximum comfort to the interior. Each client has a different demand for the technical level of control therefore AirGENIO control provides various solutions from high-tech to basic level, allowing the client to customize their controls to deliver the temperature and ventilation they desire. In addition, the control panel with its colour touch-screen display is an integral part of the system.

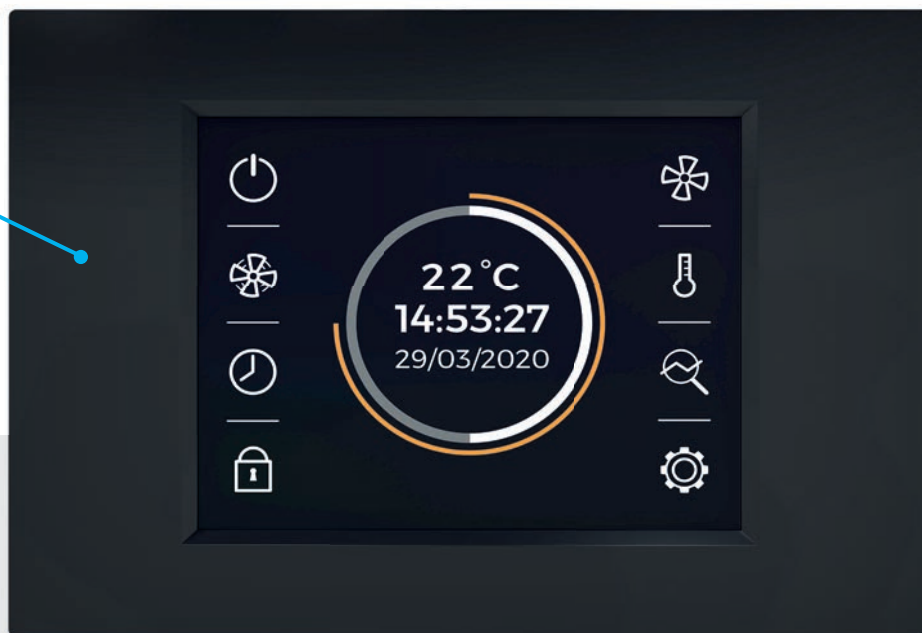
AirGENIO control system





Intelligent • Intuitive • Innovative

2V AirGENIO control system



Heating



Auto-speed

Control based on sophisticated algorithms and temperature data measurements, it operates the device to provide maximum comfort at minimal operating cost.



Self-learning

Eliminates useless start-ups at frequent door openings and thus saves operating cost and increases the device longevity.



Summer Heating

During summer time heating is allowed only if the outside/inside temperature difference exceeds the pre-set scale.



Night Mode

To pre-set time the device would be switched OFF or heat up for pre-set minimal requested room temperature.



Chaining

Possibility to chain 1 master device + 10 slave devices.

Three levels of AirGenio control

1 AirGENIO Superior for ventilation & heating

Designed for **sophisticated** technical solutions loaded with excellent functionalities that fulfil all types of ventilation and heating requirements including connectivity to BMS, service software or mobile application.

2 AirGENIO Comfort for ventilation & heating

Control system ideal for **standard** technical solutions where wide range of functionalities is insisted on but slight compromises accepted.

3 AirGENIO Basic for heating only

Mechanical control system with essential functionalities fully covering **basic** technical demands.

2VV product fully under your control and right at your fingertips

With **2VV AirGENIO Application** you can easily control the 2VV product with your own smart phone or other smart devices. Any 2VV product, no matter whether from Ventilation or Heating line, integrated with AirGENIO Superior provides you with outstanding control from your smart device. Plus you see the operation status, receive notifications – request for service, filter exchange, error status, etc.

Download the **2VV AirGENIO application**, connect the 2VV device and your smart phone to the local network and have it all under your control.



Commissioning has never been easier

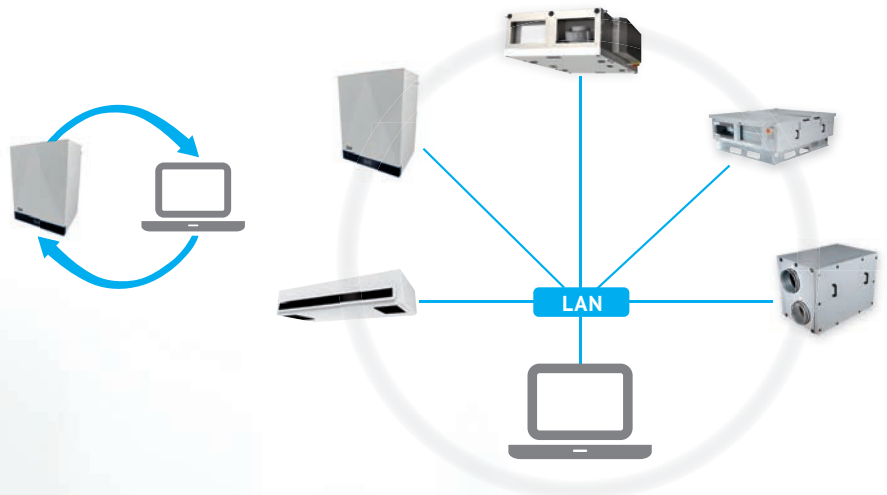
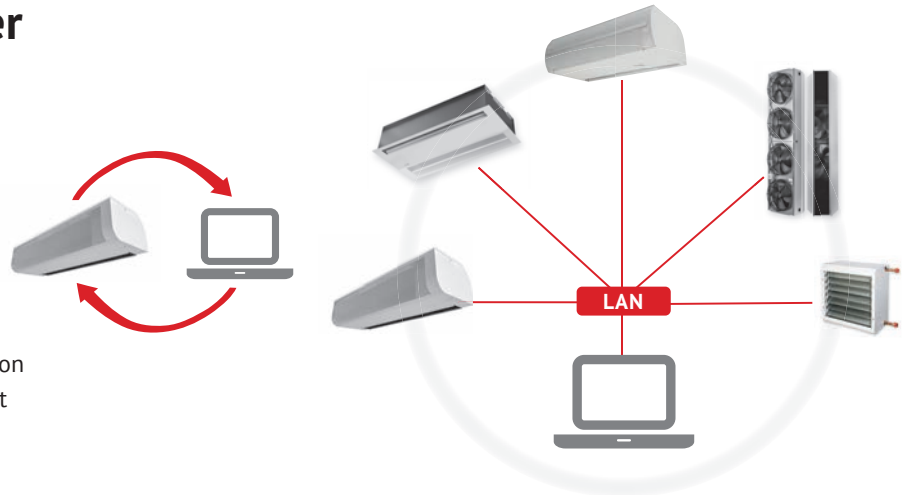
Do the 2VV device setting and testing comfortably on your computer. Connect your PC and the 2VV device open the 2VV service software and start-up the setting up process. It is that easy!

2VV service software means:

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

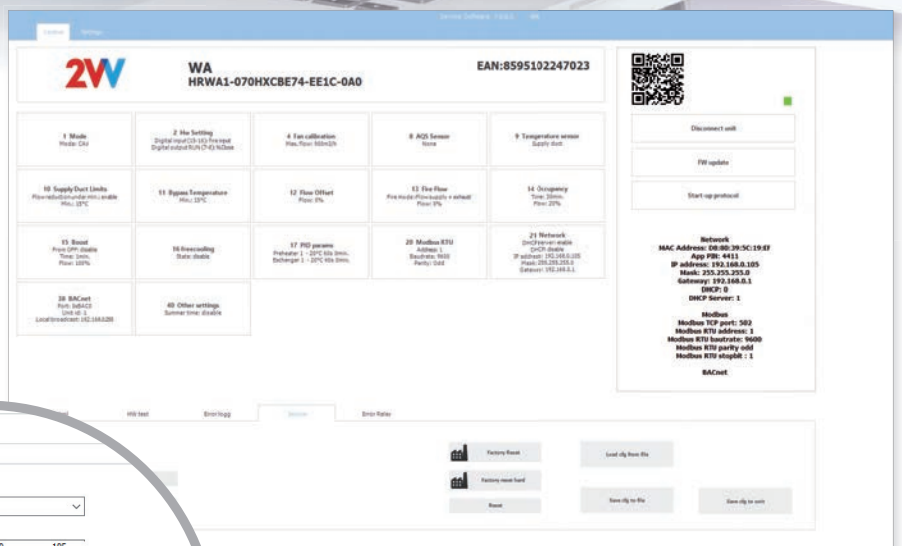
It is that easy

- Connect your PC and the 2VV device
- Open the 2VV Service software
- ...and start the setting up process

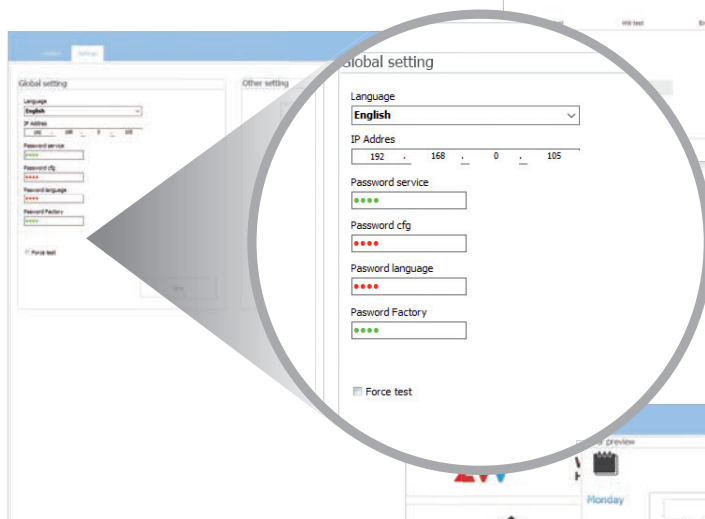




Main screen with overview of the connected unit



Complete setting in SERVICE menu



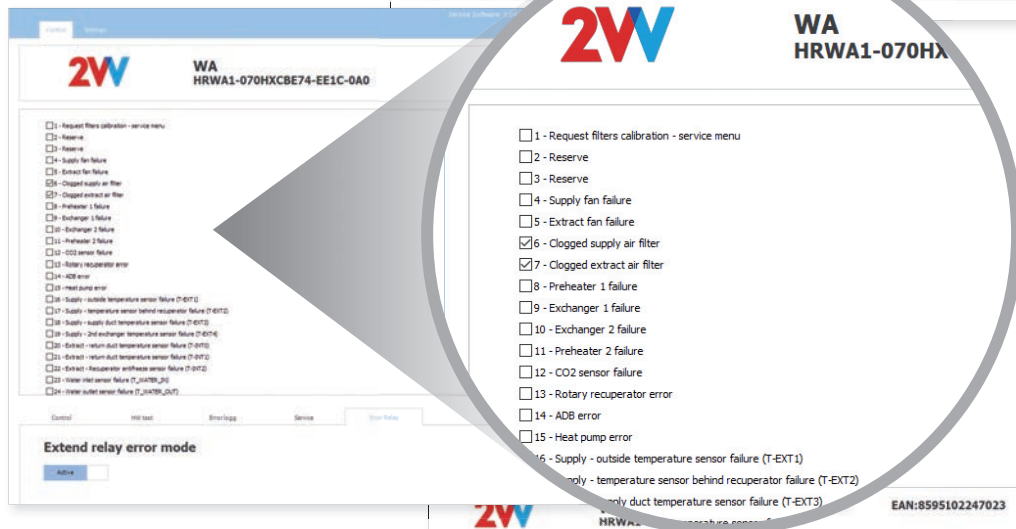
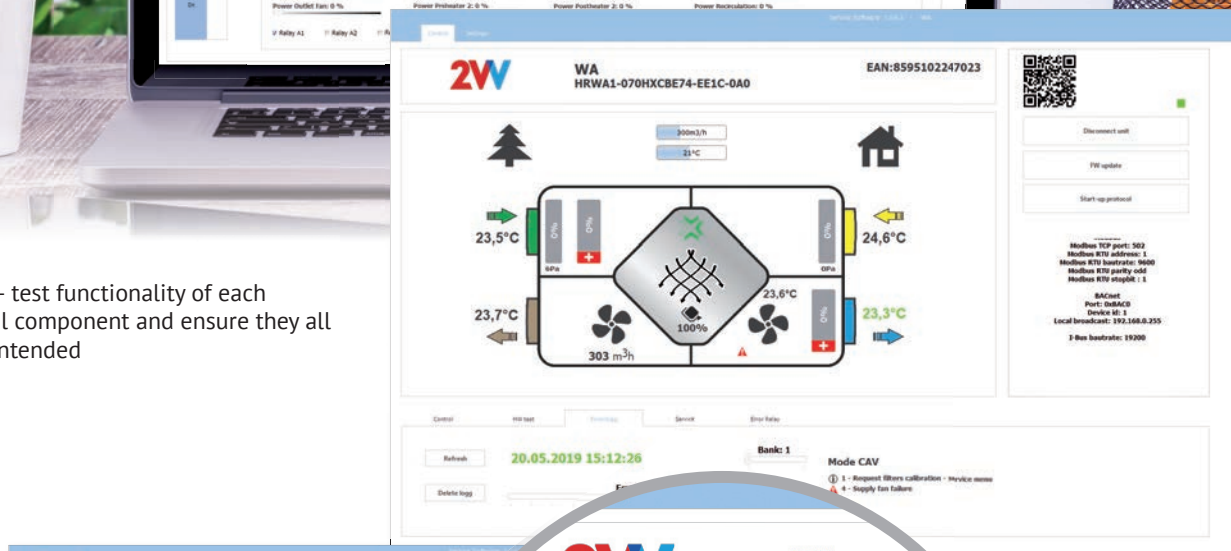
Language selection Service Software web update



Calendar setting (year/week/day)



HW test – test functionality of each individual component and ensure they all work as intended



Error log – Error/warning display

Error relay – identification of the cause for the error/warning



Easy FW updating



AIR CURTAINS

EC FANS





air-only



water heater



electric wire heater



BASIC FEATURES

- Lengths: 1.0; 1.5; 2.0; 2.5 m
- **Air flow up to 6150 m³/h** (ISO 27 327-1)
- **Straw System** – maximized screening effect
- Energy-efficient EC fans
- Low profile
- Universal interface for AirGENIO EC control module connection (BASIC, COMFORT, SUPERIOR)
- Standard colour RAL 9016 (any RAL – based colours may be provided on customer's request)

The ESSENSSE NEO is low profile design air curtain for use in **retail shops, shopping centres, restaurants, administrative buildings and manufacturing facilities** with a recommended installation height up to 4 m*.

* *Maximum recommended installation height – may vary according the particular conditions at the installation site.*

The air curtain shall be installed indoors in a dry environment with ambient temperatures ranging from 0 °C up to +40 °C and relative humidity of up to 80 %. It is designed for conveying air free of fine dust, grease, chemical fumes, and other impurities. IP rating of the air curtain is IP 20. It is recommended that air curtain projects always be developed by an HVAC designer or engineer.



PRIMARY PARAMETERS

Air curtains with electric heaters are equipped with an automatic heat thermostat and emergency thermostat with manual reset. Air curtains with LPHW coil are designed for a maximum operating water temperature of +130 °C and a maximum operating pressure of 1.6 MPa.

Type	Recommended installation height [m]	Airflow volume [m³/h] *1				
		100%	80%	60%	40%	20%
VCES2B100-E0EC	3,2	1850	1590	1220	850	510
VCES2B150-E0EC		2550	2270	1850	1320	810
VCES2B200-E0EC		3550	3150	2430	1760	1080
VCES2B250-E0EC		4450	3990	3060	2190	1140
VCES2B100-E1EC		1850	1590	1220	850	510
VCES2B150-E1EC		2550	2270	1850	1320	810
VCES2B200-E1EC		3550	3150	2430	1760	1080
VCES2B250-E1EC		4450	3990	3060	2190	1140
VCES2B100-E2EC		1890	1660	1290	930	590
VCES2B150-E2EC		2630	2330	1830	1280	830
VCES2B200-E2EC		3700	3300	2570	1860	1240
VCES2B250-E2EC		4340	3960	3030	2150	1390
VCES2B100-V2EC		1780	1560	1200	810	510
VCES2B150-V2EC		2540	2270	1690	1170	720
VCES2B200-V2EC		3600	3180	2440	1710	990
VCES2B250-V2EC		4280	3730	2860	1950	1090
VCES2B100-S0EC		1950	1730	1520	1090	640
VCES2B150-S0EC		2800	2540	2230	1580	800
VCES2B200-S0EC		3960	3650	3220	2300	1310
VCES2B250-S0EC		4710	4280	3760	2650	1460
VCES2C100-E1EC	4	2500	2230	1740	1260	920
VCES2C150-E1EC		3740	3460	2690	1970	1220
VCES2C200-E1EC		5030	4520	4010	2940	1540
VCES2C250-E1EC		5480	4750	4040	2860	1440
VCES2C100-V2EC		2560	2240	1820	1260	720
VCES2C150-V2EC		3640	3270	2500	1740	970
VCES2C200-V2EC		5120	4730	3650	2410	1460
VCES2C250-V2EC		5590	5310	3400	2640	1120
VCES2C100-S0EC		2820	2490	2170	1840	1140
VCES2C150-S0EC		4000	3600	3120	2630	1710
VCES2C200-S0EC		5630	4820	4080	3280	2490
VCES2C250-S0EC		6150	5870	5010	4150	2420

*1 Airflow volume according ISO27327-1

Type	Sound power [dB(A)] ²					Acoustic pressure at 3 m [dB(A)] ¹				
	Fan speed									
	100%	80%	60%	40%	20%	100%	80%	60%	40%	20%
VCES2B100-E0EC	75	73	65	57	51	54	51	43	36	29
VCES2B150-E0EC	75	74	67	59	53	54	53	46	38	31
VCES2B200-E0EC	77	75	68	60	51	55	53	46	38	30
VCES2B250-E0EC	78	75	67	58	44	56	53	45	37	23
VCES2B100-E1EC	75	73	65	57	51	54	51	43	36	29
VCES2B150-E1EC	75	74	67	59	53	54	53	46	38	31
VCES2B200-E1EC	77	75	68	60	51	55	53	46	38	30
VCES2B250-E1EC	78	75	67	58	44	56	53	45	37	23
VCES2B100-E2EC	75	72	64	57	51	53	51	43	36	29
VCES2B150-E2EC	75	74	67	59	53	54	53	46	38	31
VCES2B200-E2EC	78	76	69	61	51	56	55	48	39	30
VCES2B250-E2EC	78	75	67	58	44	56	53	45	37	23
VCES2B100-V2EC	73	70	63	55	53	51	49	41	34	32
VCES2B150-V2EC	73	72	65	57	51	52	51	44	36	30
VCES2B200-V2EC	76	74	69	60	51	54	52	47	39	29
VCES2B250-V2EC	76	74	67	58	47	54	53	45	36	25
VCES2B100-S0EC	73	70	66	57	50	52	49	45	36	29
VCES2B150-S0EC	73	72	69	60	55	52	50	47	38	34
VCES2B200-S0EC	75	73	70	61	41	53	52	48	40	20
VCES2B250-S0EC	78	72	69	59	47	56	50	47	37	25
VCES2C100-E1EC	82	79	72	63	52	60	58	51	42	31
VCES2C150-E1EC	82	81	75	67	56	60	60	53	46	34
VCES2C200-E1EC	81	78	74	65	53	59	57	53	43	31
VCES2C250-E1EC	79	78	76	67	53	57	57	54	45	31
VCES2C100-V2EC	77	76	68	59	51	55	54	47	38	30
VCES2C150-V2EC	79	78	71	64	54	57	56	50	43	33
VCES2C200-V2EC	79	77	70	60	54	58	55	48	38	33
VCES2C250-V2EC	78	76	72	63	53	55	54	50	41	31
VCES2C100-S0EC	77	73	69	64	53	56	52	48	42	32
VCES2C150-S0EC	78	75	72	67	54	56	54	50	46	32
VCES2C200-S0EC	80	70	65	59	53	58	49	44	37	31
VCES2C250-S0EC	78	76	71	67	53	56	54	50	45	31

^{*1} Acoustic pressure values at 3m distance for maximum speed. Directional factor: Q=2.

^{*2} Sound power (LWA) measurements according to ISO 27327-2.

Type	Heater power output [kW]	Total power input [kW]	Total voltage/ current [V/A]	Motor voltage/ current [V/A]	Temperature increase Δt [°C] ⁴	Frequency [Hz]	Weight [kg]
VCES2B100-E0EC	5	5,1	400/12,6	230/0,56	7,8	50/60	24
VCES2B150-E0EC	8	8,2	400/11,7	230/0,72	8,9		31
VCES2B200-E0EC	10	10,2	400/14,8	230/0,94	8,1		38
VCES2B250-E0EC	12	12,3	400/19,8	230/1,24	8,3		50
VCES2B100-E1EC	6	6,1	400/11,0	230/0,56	9,8		24
VCES2B150-E1EC	9	9,2	400/17,1	230/0,72	11,1		31
VCES2B200-E1EC	12	12,2	400/21,7	230/0,94	10,1		38
VCES2B250-E1EC	16	16,3	400/25,5	230/1,24	11,1		50
VCES2B100-E2EC	10	10,1	400/14,1	230/0,23	15,2		24
VCES2B150-E2EC	15	15,2	400/22,6	230/0,73	17,3		31
VCES2B200-E2EC	19	19,2	400/28,6	230/0,97	15,5		38
VCES2B250-E2EC	25	25,3	400/36,8	230/1,13	17,1		50
VCES2B100-V2EC	19 ^{*4}	0,1	230/0,5	230/0,50	35,2		25
VCES2B150-V2EC	27 ^{*4}	0,2	230/0,7	230/0,68	35		32
VCES2B200-V2EC	38 ^{*4}	0,2	230/0,9	230/0,90	34,9		38
VCES2B250-V2EC	46 ^{*4}	0,3	230/1,2	230/1,20	35,8		46
VCES2B100-S0EC	-	0,1	230/0,6	230/0,52	-		22
VCES2B150-S0EC	-	0,2	230/0,7	230/0,69	-		28
VCES2B200-S0EC	-	0,2	230/1,0	230/0,93	-		33
VCES2B250-S0EC	-	0,3	230/1,2	230/1,15	-		40
VCES2C100-E1EC	10	10,3	400/14,9	230/1,0	11,5		26
VCES2C150-E1EC	15	15,4	400/23,4	230/1,5	12,1		34
VCES2C200-E1EC	19	19,5	400/29,5	230/1,9	11,4		38
VCES2C250-E1EC	25	25,5	400/37,5	230/1,8	13,5		49
VCES2C100-V2EC	24 ^{*4}	0,3	230/1,0	230/1,0	35,2		27
VCES2C150-V2EC	34 ^{*4}	0,4	230/1,4	230/1,4	35		35
VCES2C200-V2EC	48 ^{*4}	0,5	230/1,8	230/1,8	34,9		38
VCES2C250-V2EC	55 ^{*4}	0,5	230/1,9	230/1,9	35,8		50
VCES2C100-S0EC	-	0,3	230/1,0	230/1,0	-		24
VCES2C150-S0EC	-	0,4	230/1,4	230/1,4	-		31
VCES2C200-S0EC	-	0,5	230/1,8	230/1,8	-		33
VCES2C250-S0EC	-	0,5	230/1,7	230/1,7	-		44

*1 Airflow volume according ISO27327-1

*2 Acoustic pressure values at 3m distance for maximum speed. Directional factor: Q=2.

*3 Sound power (LWA) measurements according to ISO 27327-2.

*4 Intake air temperature +18°C, C, water temperature gradient of 90/70 °C and highest fan speed.

LPWH coil parameters for water temperature gradient of 90/70 °C

Type	Air output	Heating output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCES2B100-V2EC	1780	19	53,2	17,17	0,23
VCES2B150-V2EC	2540	27	53	11,67	0,33
VCES2B200-V2EC	3600	38	52,9	16,19	0,46
VCES2B250-V2EC	4280	46	53,8	25,51	0,56
VCES2C100-V2EC	2560	24	48,5	26,29	0,29
VCES2C150-V2EC	3640	34	48,4	17,85	0,41
VCES2C200-V2EC	5120	48	48,4	24,72	0,58
VCES2C250-V2EC	5590	55	50,4	35,41	0,67

* Temperature of intake air: +18 °C

LPWH coil parameters for water temperature gradient of 80/60 °C

Type	Air output	Heating output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCES2 B 100 V2	1780	15,78	46,8	12,65	0,19
VCES2 B 150 V2	2540	22,31	46,5	8,44	0,27
VCES2 B 200 V2	3600	31,57	46,5	11,77	0,39
VCES2 B 250 V2	4280	38,58	47,4	18,74	0,47
VCES2 C 100 V2	2560	19,87	42,9	19,23	0,24
VCES2 C 150 V2	3640	28,01	42,7	12,85	0,34
VCES2 C 200 V2	5120	39,38	42,8	17,76	0,48
VCES2 C 250 V2	5590	45,79	44,5	25,7	0,59

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient of 70/50 °C

Type	Air output [m³/h]	Heating output [kW]	Temperature at exhaust [°C]	Pressure loss [kPa]	Water flow [l/s]
VCES2B100-V2EC	1780	13	40,5	8,53	0,15
VCES2B150-V2EC	2540	18	40,1	5,59	0,21
VCES2B200-V2EC	3600	25	40,1	7,75	0,30
VCES2B250-V2EC	4280	31	40,9	12,56	0,38
VCES2C100-V2EC	2560	16	37,3	12,85	0,19
VCES2C150-V2EC	3640	22	37,1	8,44	0,27
VCES2C200-V2EC	5120	31	37,2	11,58	0,38
VCES2C250-V2EC	5590	36	38,6	17,07	0,44

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient of 60/40 °C

Type	Air output [m³/h]	Heating output [kW]	Temperature at exhaust [°C]	Pressure loss [kPa]	Water flow [l/s]
VCES2B100-V2EC	1780	9	34,1	5	0,11
VCES2B150-V2EC	2540	13	33,7	3,14	0,16
VCES2B200-V2EC	3600	18	33,8	4,41	0,22
VCES2B250-V2EC	4280	23	34,5	7,26	0,28
VCES2C100-V2EC	2560	11	31,8	7,36	0,14
VCES2C150-V2EC	3640	16	31,5	4,71	0,19
VCES2C200-V2EC	5120	22	31,6	6,47	0,27
VCES2C250-V2EC	5590	27	32,8	9,71	0,32

* Temperature of intake air: +18 °C

Recommended mixing points for LPHW coil 2-way valve

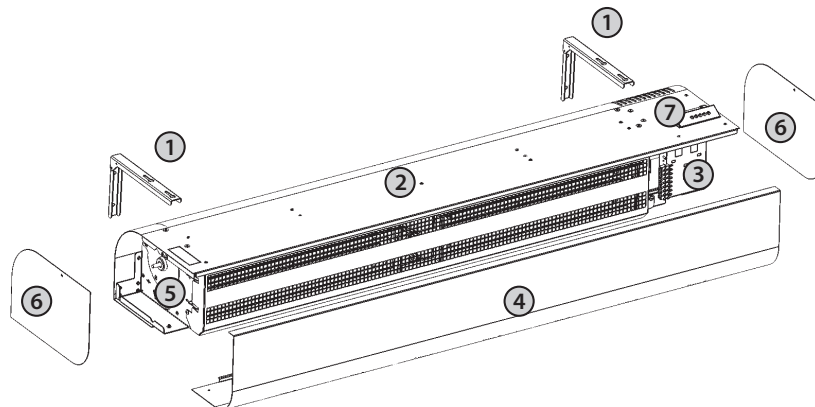
Type	Control module	90/70 °C	80/60 °C	70/50 °C	60/40 °C
VCES2B100-V2EC	RGJ3-VCES2-SU	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCES2B150-V2EC	RGJ3-VCES2-SU	ZV2-024-08,0-20	ZV2-024-08,0-20		
VCES2B200-V2EC	RGJ3-VCES2-SU	ZV2-024-08,0-20	ZV2-024-08,0-20		
VCES2B250-V2EC	RGJ3-VCES2-SU	ZV2-024-16,0-25 *	ZV2-024-08,0-20		
VCES2C100-V2EC	RGJ3-VCES2-SU	ZV2-024-08,0-20	ZV2-024-08,0-20		
VCES2C150-V2EC	RGJ3-VCES2-SU	ZV2-024-08,0-20	ZV2-024-08,0-20		
VCES2C200-V2EC	RGJ3-VCES2-SU	ZV2-024-16,0-25 *	ZV2-024-08,0-20		
VCES2C250-V2EC	RGJ3-VCES2-SU	ZV2-024-16,0-25 *	ZV2-024-16,0-25 *		

* Additional reduction needed from DN25 to DN20

Recommended mixing points for LPHW coil 3-way valve

Type	Control module	90/70 °C	80/60 °C	70/50 °C	60/40 °C
VCES2B100-V2EC	RGJ3-VCES2-SU	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
VCES2B150-V2EC	RGJ3-VCES2-SU	ZV3-024-06,3-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
VCES2B200-V2EC	RGJ3-VCES2-SU	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20
VCES2B250-V2EC	RGJ3-VCES2-SU	ZV3-024-10,0-25 *	ZV3-024-10,0-25 *	ZV3-024-10,0-25 *	ZV3-024-10,0-25 *
VCES2C100-V2EC	RGJ3-VCES2-SU	ZV3-024-06,3-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
VCES2C150-V2EC	RGJ3-VCES2-SU	ZV3-024-06,3-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
VCES2C200-V2EC	RGJ3-VCES2-SU	ZV3-024-10,0-25 *	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20
VCES2C250-V2EC	RGJ3-VCES2-SU	ZV3-024-10,0-25 *	ZV3-024-10,0-25 *	ZV3-024-06,3-20	ZV3-024-06,3-20

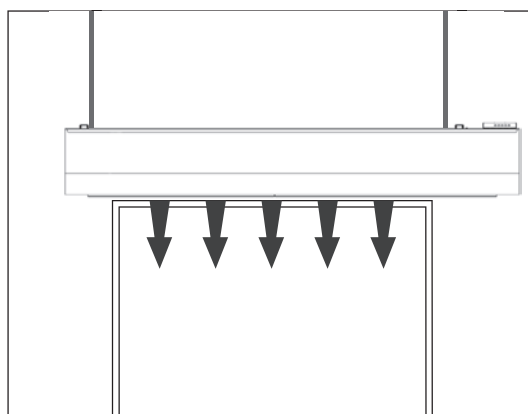
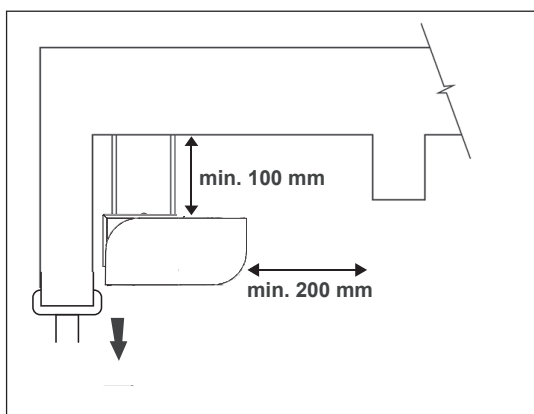
* Additional reduction needed from DN25 to DN20

**MAIN PARTS**

- ① Mounting brackets (included with delivery)
- ② Top cover
- ③ Connection dock for controls module
- ④ Intake grill
- ⑤ Connection dock for LPHW (only on water versions)
- ⑥ Side cover
- ⑦ Main power supply connection

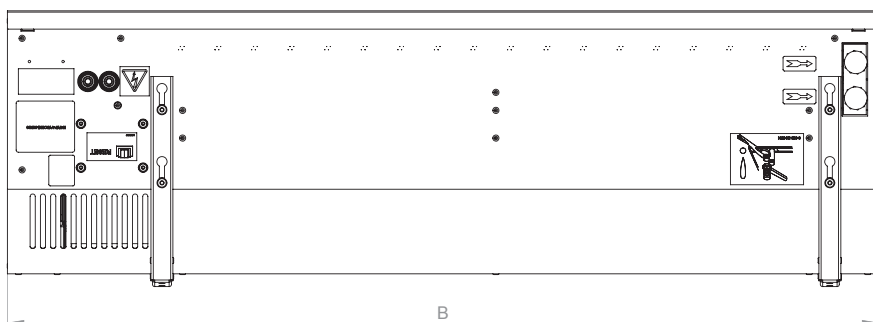
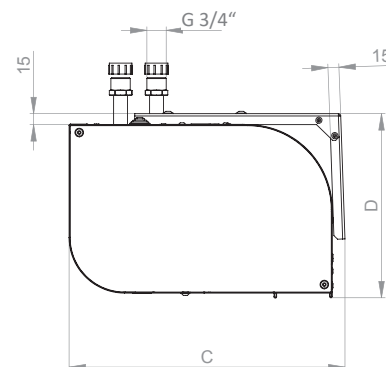
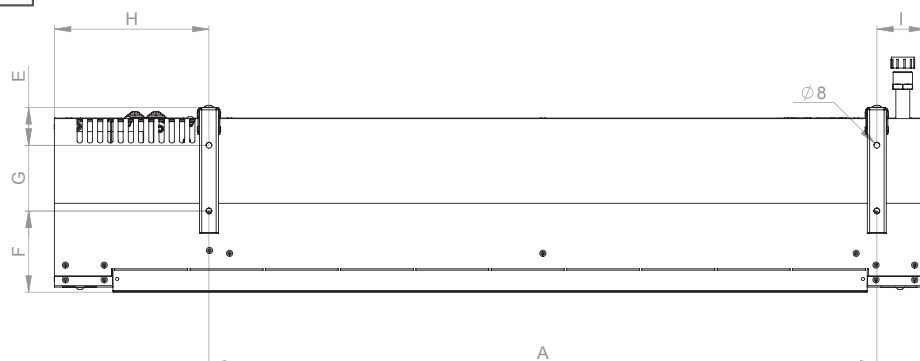
**INSTALLATION AND ASSEMBLY**

- The air curtain must be installed in a horizontal position only.
- The air curtain shall be located as close as possible to the top edge of the doorway, and a distance from walls that is in accordance with fire safety and building codes of the country where unit is installed. For manufacturer recommended distance see figures below.
- To ensure proper function it is recommended that the air curtain overlaps the doorway by 100 mm on both sides.
- Correct operation of the air curtain requires that specified distances from the surrounding objects are observed, see figure.
- Please take note of water and power supply connections when installing air curtain.
- The air curtain shall be installed using supplied brackets.





AIR CURTAIN DIMENSIONS



Type	A	B	C	D	E	F	G	H	I
VCES2B100-...EC	913	1190	377	252	51	111	90	211	67
VCES2C100-...EC	913	1190	377	252	51	111	90	211	67
VCES2B150-...EC	1321	1600	377	252	51	111	90	211	67
VCES2C150-...EC	1321	1600	377	252	51	111	90	211	67
VCES2B200-...EC	1822	2100	377	252	51	111	90	211	67
VCES2C200-...EC	1822	2100	377	252	51	111	90	211	67
VCES2B250-...EC	2232	2510	377	252	51	111	90	211	67
VCES2C250-...EC	2232	2510	377	252	51	111	90	211	67

**CONTROL****Overview of functions and sensor connections**

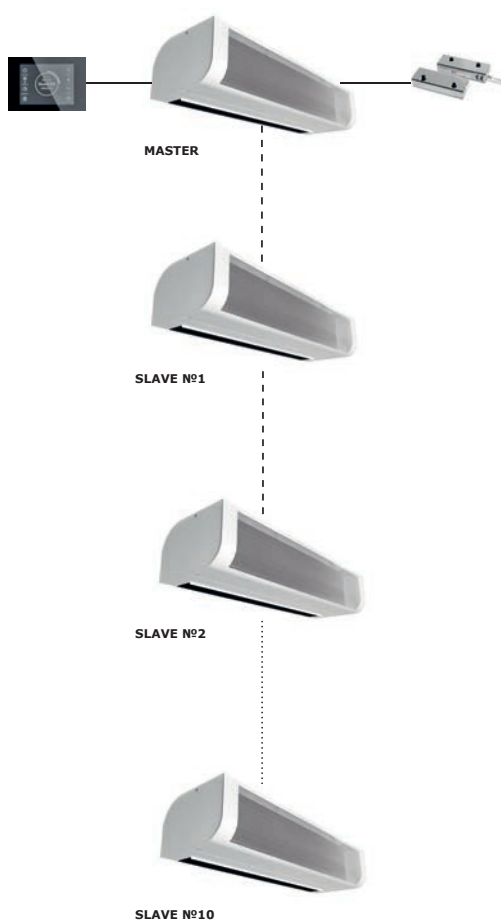
AirGENIO control		BASIC VCES2-AGBA1-M-EC	COMFORT VCES2-AGCO1-M-EC	SUPERIOR VCES2-AGSU1-M-EC
	Type of controller	Manual	Touch screen	Touch screen
	Mode	Manual	Manual / Auto	Manual / Auto
	Control of air output	PWM	PWM	PWM
	Control of electric heater	OFF / Level1 / Level2	OFF / Level1 / Level2	PWM
	Control of water heater	ON/OFF	ON-OFF / 0-10V	0-10V
	Antifreeze protection of LPHW	NO	YES	YES
	Possibility of connecting a door contact	YES	YES	YES
	External control	NO	YES	YES
	Temperature measurement	NO	YES (NTC)*	YES (NTC)*
	Chaining air curtains	NO	YES – max 10+1 pcs	YES – max 10+1 pcs
	Indication of selected function	NO	YES (Display)	YES (Display)
	Controller connection to air curtain	Power wire + Communication cable (UTP)	Communication cable (UTP)	Communication cable (UTP)
	Self learning mode	NO	YES	YES
	BMS connection	NO	Modbus RTU	Modbus RTU, Modbus TCP, BACnet
	Error contact	NO	YES	YES
	2 nd control panel ready	NO	YES	YES

*) Temperature sensor included in standard. Temperature shown on display.

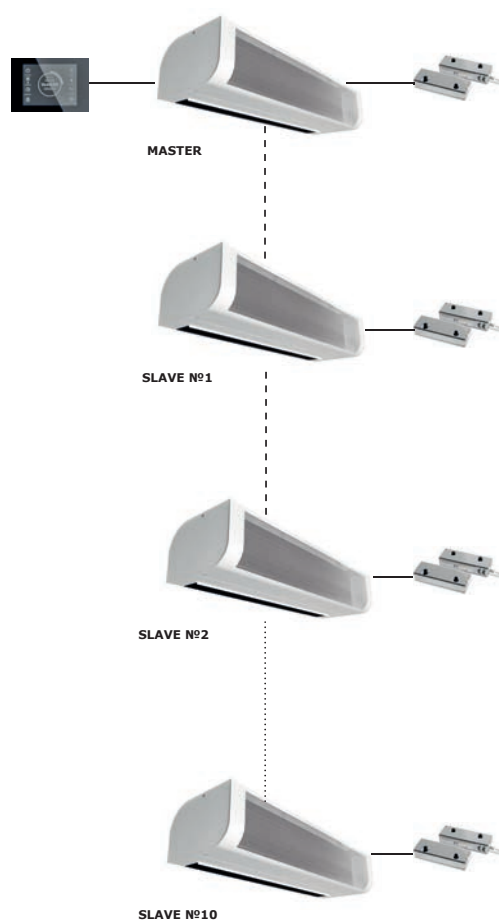


CHAINING EXAMPLE

Global Door contact function active



Global Door contact function not active



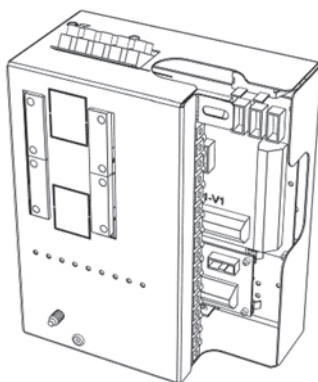
**ACCESSORIES****REQUIRED ACCESSORIES**

These accessories shall be ordered to make the air curtain functional.

AirGENIO control module

A control module is a required accessory for air curtain and shall be ordered for each air curtain. Control panel is included in delivery of control module. The ordering key for control modules is provided below.

Communication cable has to be ordered separately as an optional accessory.

**VCES2 - AGCO1 - M- EC - S0 - 0A0**

0A0 – 2VV version

S0 – Without heating

E2 – Electric heater 2-STEP control (BASIC, COMFORT)

EF – Electric heater FLUENT control for VCES2 size 100 and 150 (SUPERIOR)

EH – Electric heater FLUENT control for VCES2 size 200 and 250 (SUPERIOR)

V1 – Water heater ON/OFF control (BASIC)

VF – Water heater FLUENT control (SUPERIOR)

VC – Water heater control with choice of ON/OFF or 0-10V (COMFORT)

EC – For EC fans

S – SLAVE controls (only for COMFORT, SUPERIOR)

M – MASTER controls (only for COMFORT, SUPERIOR)

AGBA1 – AirGENIO BASIC 1st generation (mechanical)

AGCO1 – AirGENIO COMFORT 1st generation (touch screen)

AGSU1 – AirGENIO SUPERIOR 1st generation (touch screen)

VCES2 – Air curtain ESSENSSE NEO



OPTIONAL ACCESSORIES

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

2way or 3-way valve with servo drive (0-10V)

ZV2-024-xx,x-xx

ZV3-024-xx,x-xx

(only for COMFORT, SUPERIOR)



2-way or 3-way valve with servo drive (230V)

ZV2-230-xx,x-xx

ZV3-230-xx,x-xx

(for control BASIC, COMFORT)



3-way valve with servo drive RT

RT-3-07 (K_{vs} 7)

(for control BASIC, COMFORT)



Room thermostat

TER-P



Room temperature sensor

CT-ROOM



Mechanical door switch

DS



**Magnetic door contact in a metal housing
with higher protection against mechanical damage**

DK-B-3



2nd Control panel

ND-REMOTE-CONTROL





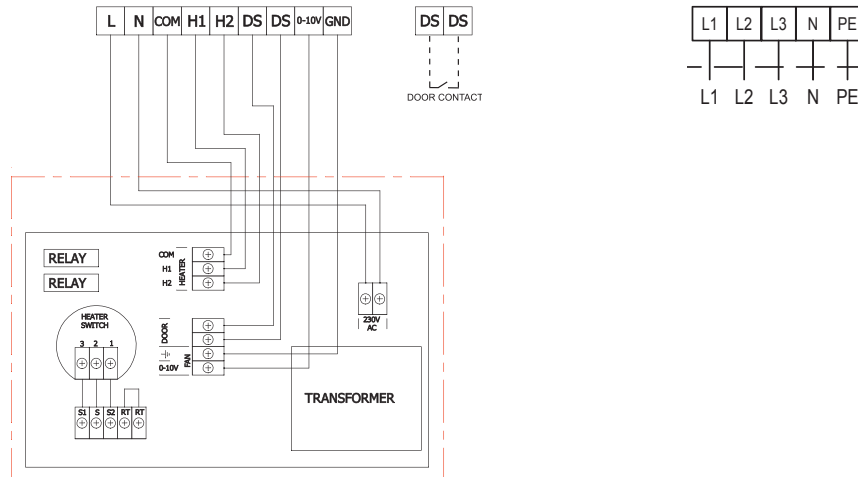
WIRING DIAGRAMS

The recommended cross-section of the main power supply cables is stated in the Instruction Manual.

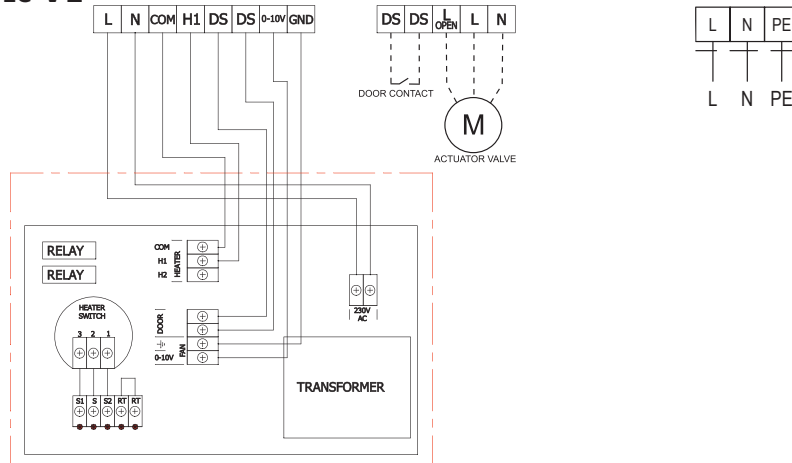
All wiring diagrams provided in the technical catalog are indicative only. When assembling the product, carefully observe the nameplate ratings as well as directions and diagrams affixed directly to the product or enclosed with the product.

AirGENIO BASIC

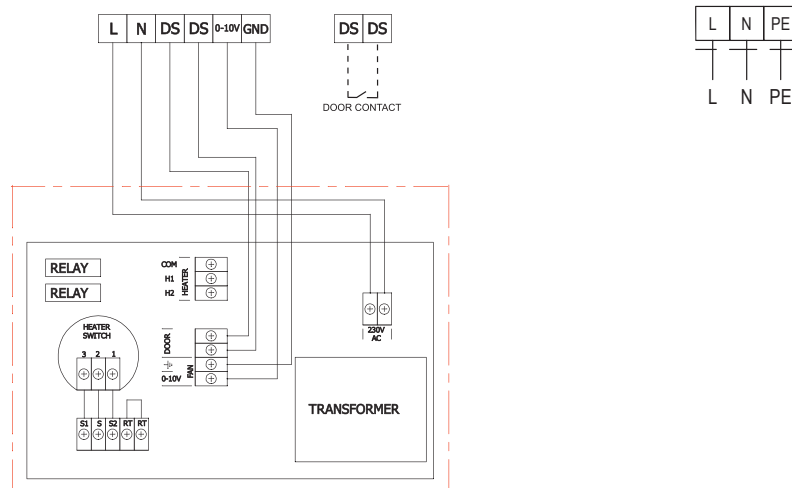
VCES2-AGBA1-M-EC-E2



VCES2-AGBA1-M-EC-V1



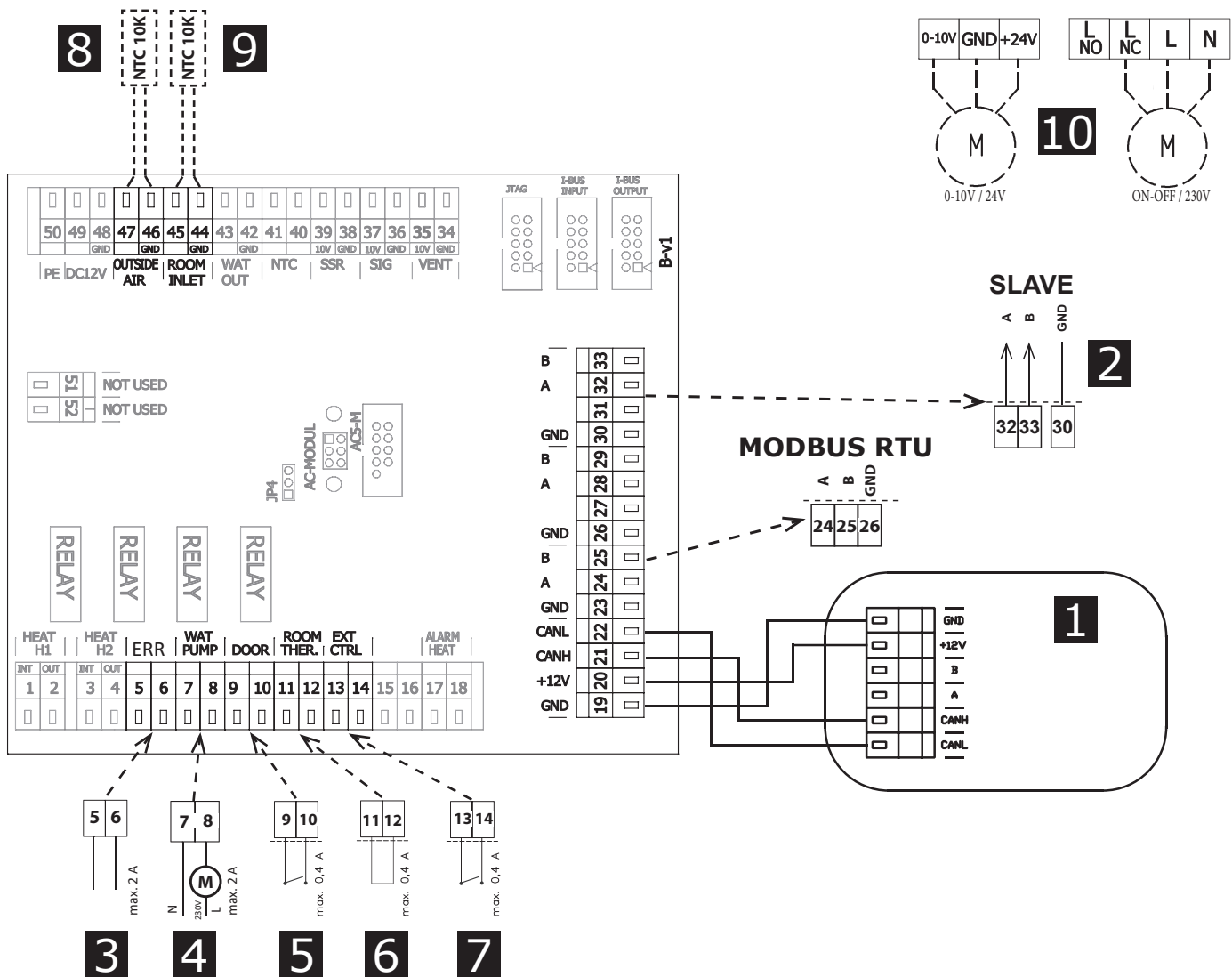
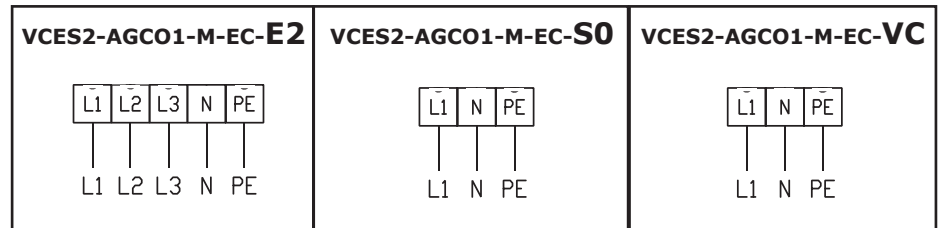
VCES2-AGBA1-M-EC-S0





WIRING DIAGRAMS

AirGENIO COMFORT MASTER



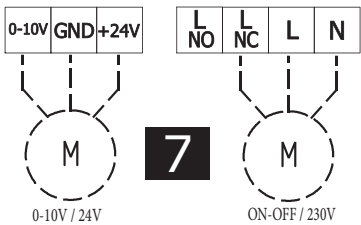
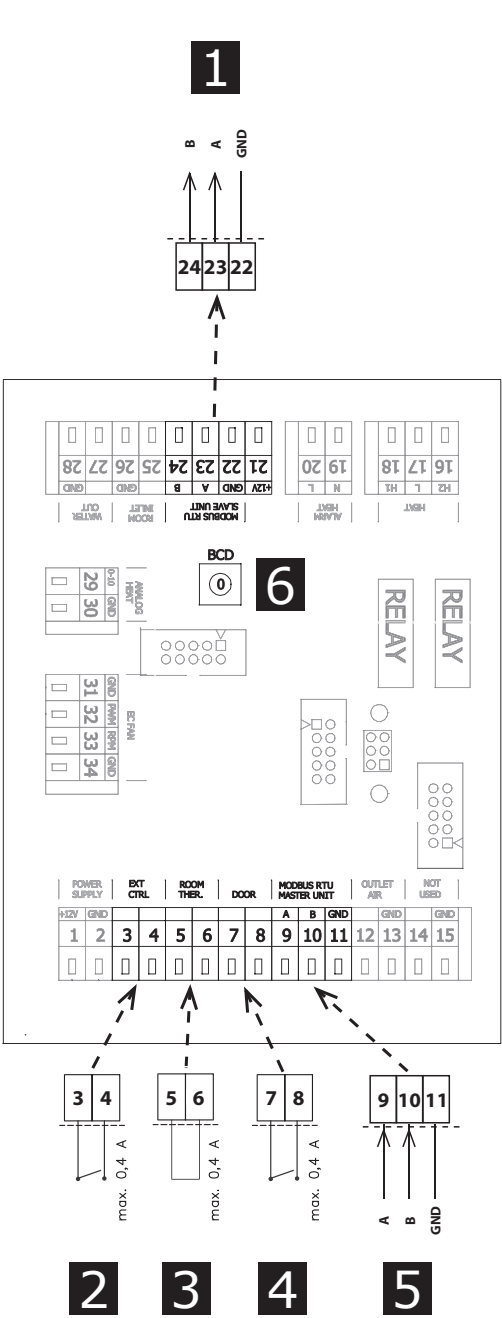
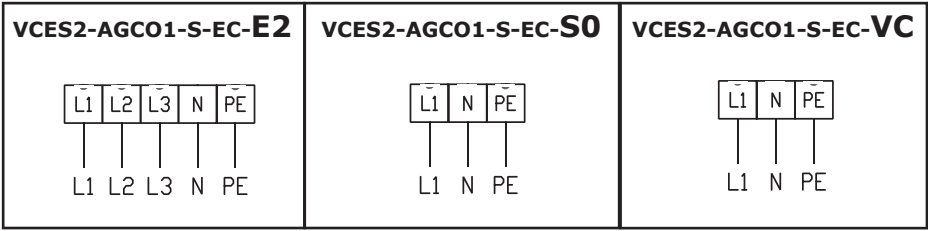
1	Control panel
2	Signal to SLAVE unit
3	ERROR contact (relay contact, NO/NC)
4	Water pump (relay contact)*
5	DOOR contact (input, NO/NC)
6	Room thermostat (input, NO/NC)
7	External control (input, NO/NC)
8	Outside air temp. sensor (include delivery)
9	Room temp. sensor (include delivery)
10	Water valve control connection (option 1 = ON-OFF, option 2 = 0-10V)*

* Available for VCES2-AGCO1-M-EC-VC only



WIRING DIAGRAMS

AirGENIO COMFORT
SLAVE



1	Signal to SLAVE unit
2	External control - ON/OFF
3	Room thermostat (input)
4	DOOR contact (input)
5	Signal from MASTER unit
6	Address of the slave air curtain
7	Water valve control connection (option 1 = ON-OFF, option 2 = 0-10V)*

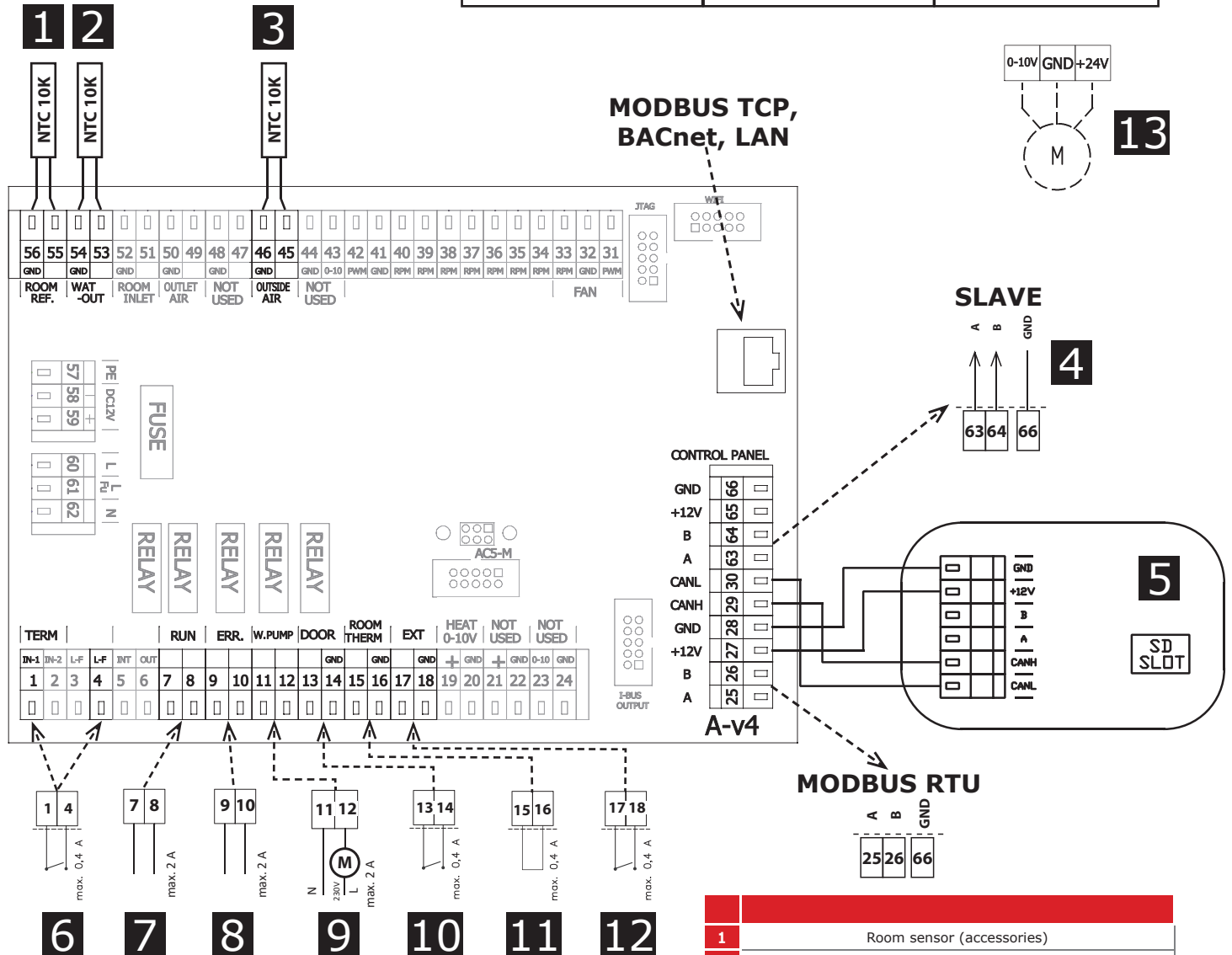
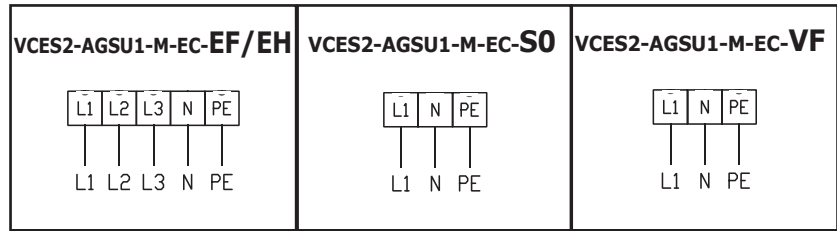
* Available for VCES2-AGCO1-S-EC-VC only

6	
SLAVE	BCD
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	A



WIRING DIAGRAMS

AirGENIO SUPERIOR MASTER



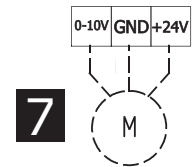
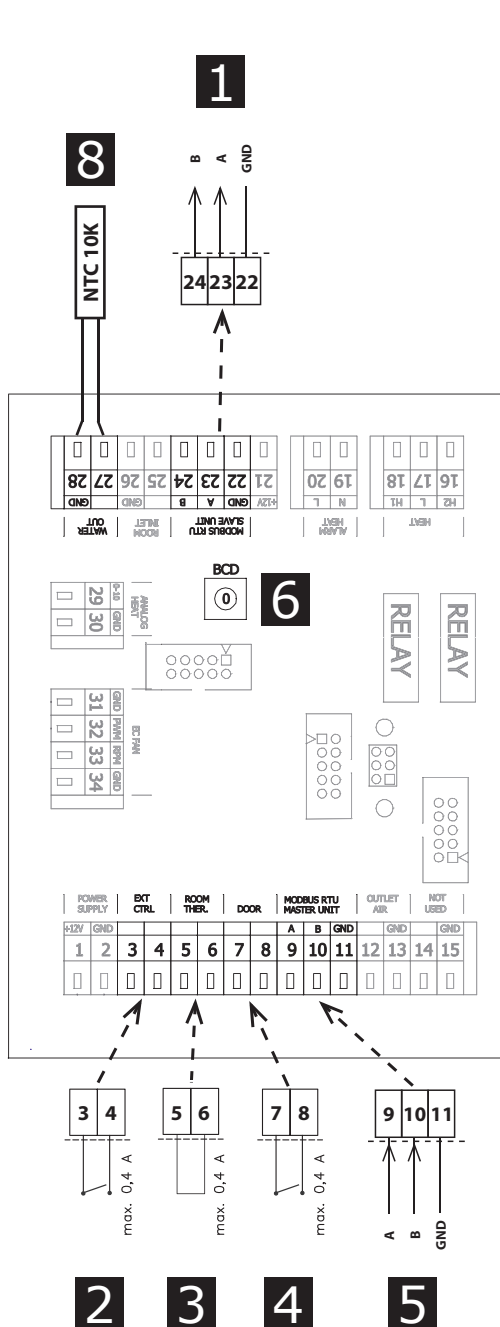
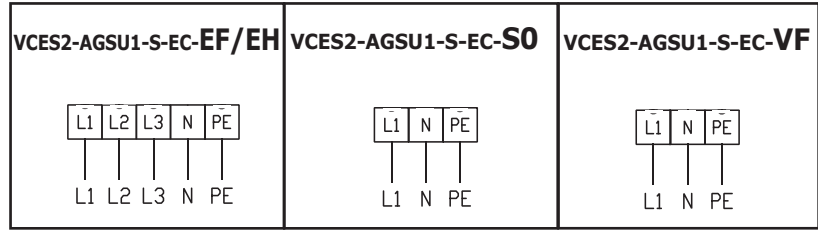
1	Room sensor (accessories)
2	Water return sensor (included in delivery)
3	Outside air sensor (included in delivery)
4	Signal to SLAVE unit
5	Control panel
6	Antifreeze thermostat (NC)
7	RUN contact (relay contact, NO/NC)
8	ERROR contact (relay contact, NO/NC)
9	Water pump (relay contact)
10	DOOR contact (input, NO/NC)
11	Room thermostat (input, NO/NC)
12	External control (input, NO/NC)
13	Water valve control (0-10V, 24V)*

* Available for VCES2-AGSU1-M-EC-VF only



WIRING DIAGRAMS

AirGENIO SUPERIOR
SLAVE



1	Signal to SLAVE unit
2	External control - ON/OFF
3	Room thermostat (input)
4	DOOR contact (input)
5	Signal from MASTER unit
6	Address of the slave air curtain
7	Water valve control (0-10V, 24V)*
8	Water return sensor (included in delivery)

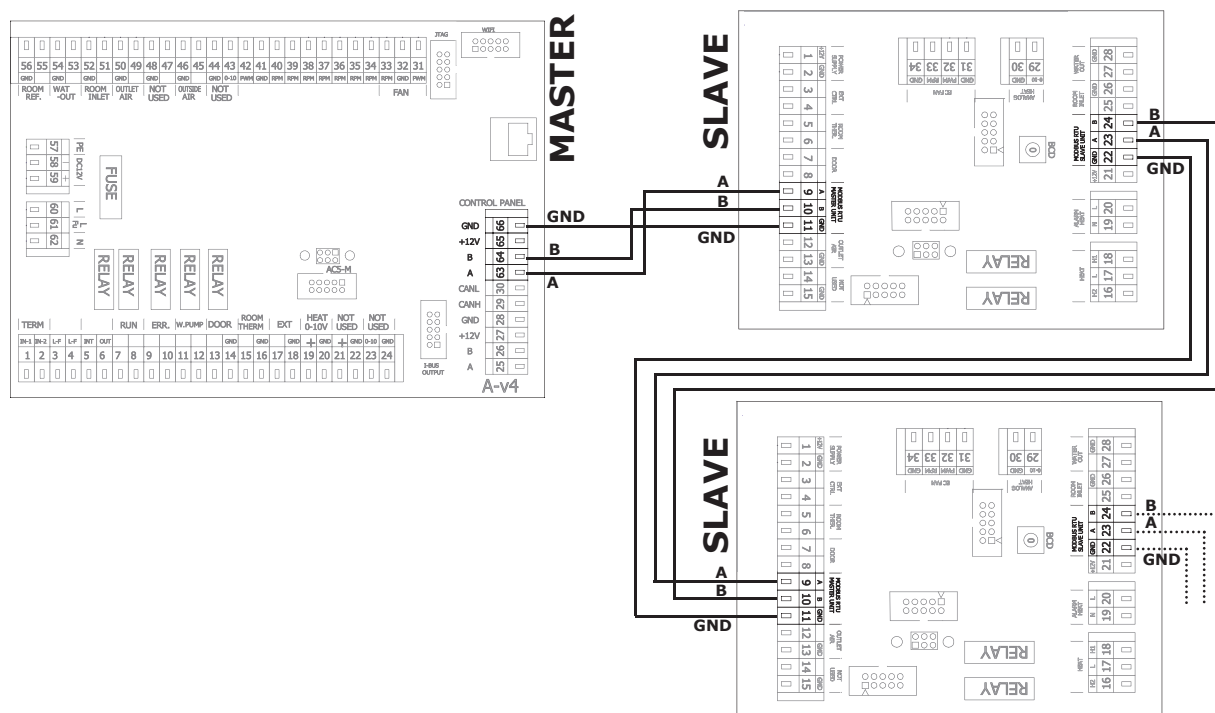
* Available for VCES2-AGSU1-S-EC-VF only

SLAVE	BCD
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	A

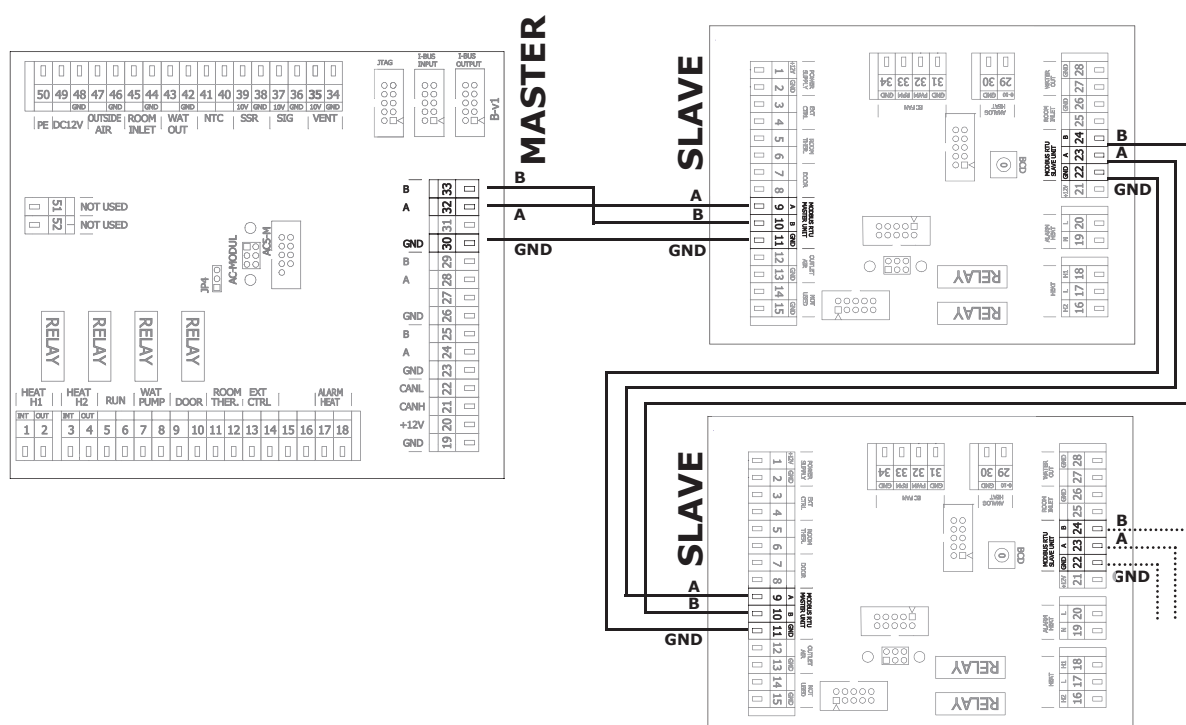


WIRING DIAGRAMS

AirGENIO SUPERIOR



AirGENIO COMFORT





KEY TO CODING

VCES2 B 100-E0 EC-CR-0 A0

- A0** – 2V version
- 9** – Atyp RAL
- 0** – Standard RAL
- CR** – Control ready
- EC** – EC motor
- E0** – Electric heater with reduced power (*only for B range*)
- E1** – Electric heater (*standard*)
- E2** – Electric heater with increased power (*only for B range*)
- V2** – Water heater
- S0** – Air-only (*ambient*)
- 100** – Nominal width 1000 mm
- 150** – Nominal width 1500 mm
- 200** – Nominal width 2000 mm
- 250** – Nominal width 2500 mm
- B** – Output series
- C** – Output series
- VCES2** – Air Curtain ESSENSSE NEO



air-only



water heater



electric wire heater



BASIC FEATURES

STANDESSE EC is an extraordinary high-performance air curtain powered by energy-efficient EC fans. With its fine and attractive design it is a perfect fit for representative premises, such as **banks, luxury shops, shopping centres, airports and administrative buildings** with a recommended installation height up to 5 m*.

**Maximum recommended installation height – may vary according the particular conditions at the installation site.*

- Length: 1,0; 1,5; 2,0 and 2,5 m
- **Airflow up to 6.400 m³/h** (ISO 27 327-1)
- **Energy-efficient** and cost saving **EC fans**
- Very low noise level
- FACE2-in-1 Suction grille & Filter in one part
- **AirGENIO** modular control (BASIC, COMFORT and SUPERIOR)
- Easy installation and service
- Standard colour RAL 9016 and any RAL on request

The air curtain shall be installed indoors in a dry environment with ambient temperature ranging from 0°C up to +35 °C and relative humidity not exceeding 80 %. It is designed for conveying air free of rough dust, grease, chemical fumes and other impurities. IP rating of the air curtain is IP20. **The air curtain project shall always be designed by a HVAC engineer designer.**



PRIMARY PARAMETERS

Air curtains with electric heater are fitted with automatic heat thermostat and emergency thermostat with manual reset. Air curtains with LPHW coil are designed for the maximum operating water temperature of +100 °C and maximum operating pressure of 1.6 MPa.

Type	Recommended installation height [m]	Air output [m³/h] *1				
		100%	80%	60%	40%	20%
VCST4B100-S0EC	4,0	1900	1750	1600	1350	950
VCST4B150-S0EC		2800	2650	2380	2000	1450
VCST4B200-S0EC		3800	3570	3200	2750	1950
VCST4B250-S0EC		4700	4470	4000	3400	2400
VCST4B100-E1EC		1900	1750	1600	1350	950
VCST4B150-E1EC		2800	2650	2380	2000	1450
VCST4B200-E1EC		3800	3570	3200	2750	1950
VCST4B250-E1EC		4700	4470	4000	3400	2400
VCST4B100-V2EC		1850	1700	1550	1300	900
VCST4B150-V2EC		2700	2500	2270	1920	1400
VCST4B200-V2EC		3700	3470	3140	2650	1900
VCST4B250-V2EC		4500	4200	3800	3200	2330
VCST4C100-S0EC	5,0	2550	2400	2150	1800	1270
VCST4C150-S0EC		3650	3400	3100	2600	1850
VCST4C200-S0EC		4650	4350	3900	3300	2400
VCST4C250-S0EC		6400	6000	5350	4500	3150
VCST4C100-E1EC		2550	2400	2150	1800	1270
VCST4C150-E1EC		3650	3400	3100	2600	1850
VCST4C200-E1EC		4650	4350	3900	3300	2400
VCST4C250-E1EC		6400	6000	5350	4500	3150
VCST4C100-V2EC		2450	2300	2050	1750	1200
VCST4C150-V2EC		3500	3250	2900	2400	1800
VCST4C200-V2EC		4550	4150	3700	3150	2250
VCST4C250-V2EC		5900	5500	4950	4200	2850
VCST4C150-V3EC		3450	3200	2900	2400	1750
VCST4C200-V3EC		4450	4100	3650	3100	2200
VCST4C250-V3EC		5850	5450	4900	4150	2800

*1 Airflow volume according ISO27327-1

*2 Acoustic pressure values at 3 m distance for maximum speed. Directional factor: Q=2.

*3 Sound power (LWA) measurements according to ISO 27327-2.

Type	Sound power [dB(A)] ^{*1}					Acoustic pressure at 3 m [dB(A)] ^{*2}				
	Fan speed									
	100%	80%	60%	40%	20%	100%	80%	60%	40%	20%
VCST4B100-S0EC	75	73	71	68	64	53	52	50	47	42
VCST4B150-S0EC	76	74	72	69	60	54	53	50	47	38
VCST4B200-S0EC	78	76	74	70	62	56	55	52	48	40
VCST4B250-S0EC	80	78	75	72	63	58	56	53	50	41
VCST4B100-E1EC	75	73	71	68	64	53	52	50	47	42
VCST4B150-E1EC	76	74	72	69	60	54	53	50	47	38
VCST4B200-E1EC	78	76	74	70	62	56	55	52	48	40
VCST4B250-E1EC	80	78	75	72	63	58	56	53	50	41
VCST4B100-V2EC	74	73	71	68	63	53	51	50	47	42
VCST4B150-V2EC	76	74	73	69	60	55	53	51	47	38
VCST4B200-V2EC	77	76	73	70	61	56	54	52	48	40
VCST4B250-V2EC	79	77	75	71	62	57	55	53	49	40
VCST4C100-S0EC	77	75	73	69	61	56	54	51	47	39
VCST4C150-S0EC	78	77	76	71	65	57	55	54	50	43
VCST4C200-S0EC	80	78	76	73	68	58	57	54	51	46
VCST4C250-S0EC	81	79	77	73	64	59	57	55	51	42
VCST4C100-E1EC	77	75	73	69	61	56	54	51	47	39
VCST4C150-E1EC	78	77	76	71	65	57	55	54	50	43
VCST4C200-E1EC	80	78	76	73	68	58	57	54	51	46
VCST4C250-E1EC	81	79	77	73	64	59	57	55	51	42
VCST4C100-V2EC	78	77	76	75	63	57	56	55	53	42
VCST4C150-V2EC	78	77	75	72	65	57	56	54	51	43
VCST4C200-V2EC	79	77	76	73	67	58	56	54	51	46
VCST4C250-V2EC	80	78	76	72	64	58	56	54	50	42
VCST4C150-V3EC	78	77	75	72	65	57	56	54	51	43
VCST4C200-V3EC	79	77	76	73	67	58	56	54	51	46
VCST4C250-V3EC	80	78	76	72	64	58	56	54	50	42

^{*1} Sound power (LWA) measurements according to ISO 27327-2.

^{*2} Acoustic pressure values at 3 m distance for maximum speed. Directional factor: Q=2.

Type	Heater power output [kW]		Total power input [kW]	Total voltage/ current [V/A]	Motors voltage/ current [V/A]	Temperature increase Δt [°C]	Frequency [Hz]	Weight [kg] ⁴
	1st level	2st level						
VCST4B100-S0EC	-	-	0,34	230/2,4	230/2,4	-	50/60	38
VCST4B150-S0EC	-	-	0,5	230/3,4	230/3,4	-	50/60	53
VCST4B200-S0EC	-	-	0,68	230/4,4	230/4,4	-	50/60	68
VCST4B250-S0EC	-	-	0,85	230/5,4	230/5,4	-	50/60	83
VCST4B100-E1EC	4,6	9,4	9,74	400/16	230/2,4	14,7	50/60	42
VCST4B150-E1EC	7,6	15	15,5	400/25,1	230/3,4	16	50/60	57
VCST4B200-E1EC	9,8	19	19,68	400/31,9	230/4,4	14,9	50/60	73
VCST4B250-E1EC	12,5	24,5	25,35	400/40,8	230/5,4	15,5	50/60	89
VCST4B100-V2EC	-	-	0,34	230/2,4	230/2,4	6,1 ²	50/60	44
VCST4B150-V2EC	-	-	0,5	230/3,4	230/3,4	17,1 ²	50/60	59
VCST4B200-V2EC	-	-	0,68	230/4,4	230/4,4	31,4 ²	50/60	75
VCST4B250-V2EC	-	-	0,85	230/5,4	230/5,4	43 ²	50/60	87
VCST4C100-S0EC	-	-	0,50	230/3,3	230/3,3	-	50/60	42
VCST4C150-S0EC	-	-	0,68	230/4,5	230/4,5	-	50/60	57
VCST4C200-S0EC	-	-	0,84	230/5,3	230/5,3	-	50/60	71
VCST4C250-S0EC	-	-	1,20	230/7,2	230/7,2	-	50/60	89
VCST4C100-E1EC	4,6	9,4	9,9	400/16,9	230/3,3	11,6	50/60	47
VCST4C150-E1EC	7,6	15	15,68	400/21,2	230/4,5	12,3	50/60	61
VCST4C200-E1EC	9,8	19	19,84	400/32,8	230/5,3	10	50/60	77
VCST4C250-E1EC	12,5	24,5	25,7	400/42,6	230/7,2	11,4	50/60	101
VCST4C100-V2EC	-	-	0,50	230/3,3	230/3,3	34,5	50/60	49
VCST4C150-V2EC	-	-	0,68	230/4,5	230/4,5	34,7	50/60	63
VCST4C200-V2EC	-	-	0,84	230/5,3	230/5,3	36,7	50/60	79
VCST4C250-V2EC	-	-	1,20	230/7,2	230/7,2	36,1	50/60	99
VCST4C150-V3EC	-	-	0,68	230/4,5	230/4,5	13,1 ³	50/60	67
VCST4C200-V3EC	-	-	0,84	230/5,3	230/5,3	13,1 ³	50/60	83
VCST4C250-V3EC	-	-	1,20	230/7,2	230/8,7	13 ³	50/60	103

* At the maximum air flow and maximum heater power

² Intake air temperature +18°C, water temperature gradient of 90/70 °C and highest fan speed.

³ Intake air temperature +18°C, water temperature gradient of 40/30 °C and highest fan speed.

⁴ Weight without controls.

LPHW coil parameters for water temperature gradient 90/70 °C

Type	Air output	Heat output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCST4B100-V2EC	1850	24,1	56,6	8,2	0,30
VCST4B150-V2EC	2700	35,1	56,5	5,5	0,43
VCST4B200-V2EC	3700	49,4	57,6	11,6	0,61
VCST4B250-V2EC	4500	61	58,1	18,4	0,75
VCST4C100-V2EC	2450	28,5	52,5	11,3	0,35
VCST4C150-V2EC	3500	41,0	52,7	7,5	0,51
VCST4C200-V2EC	4450	55,8	54,7	14,6	0,69
VCST4C250-V2EC	5900	72,0	54,1	25,3	0,89

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient 80/60 °C

Type	Air output	Heat output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCST4B100-V2EC	1850	19,7	49,5	5,7	0,24
VCST4B150-V2EC	2700	28,5	49,2	3,8	0,35
VCST4B200-V2EC	3700	40,5	50,4	8,1	0,50
VCST4B250-V2EC	4500	50,2	51,0	12,9	0,62
VCST4C100-V2EC	2450	23,3	46,1	7,8	0,29
VCST4C150-V2EC	3500	33,2	46,1	5,0	0,41
VCST4C200-V2EC	4450	45,6	48,0	10,1	0,56
VCST4C250-V2EC	5900	59,1	47,7	17,6	0,73

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient 70/50 °C

Type	Air output	Heat output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCST4B100-V2EC	1850	15,3	42,4	3,6	0,19
VCST4B150-V2EC	2700	21,8	41,9	2,3	0,27
VCST4B200-V2EC	3700	31,5	43,2	5,1	0,38
VCST4B250-V2EC	4500	39,3	43,9	8,2	0,48
VCST4C100-V2EC	2450	18,0	39,7	4,9	0,22
VCST4C150-V2EC	3500	25,4	39,5	3,1	0,31
VCST4C200-V2EC	4450	35,3	41,3	6,3	0,43
VCST4C250-V2EC	5900	46,1	41,2	11,1	0,56

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient 60/40 °C

Type	Air output	Heat output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCST4B100-V2EC	1850	10,8	35,2	1,9	0,13
VCST4B150-V2EC	2700	15,1	34,5	1,2	0,18
VCST4B200-V2EC	3700	22,3	35,9	2,7	0,27
VCST4B250-V2EC	4500	28,2	36,6	4,5	0,34
VCST4C100-V2EC	2450	12,6	33,2	2,6	0,15
VCST4C150-V2EC	3500	17,4	32,7	1,5	0,21
VCST4C200-V2EC	4450	25,0	34,4	3,3	0,30
VCST4C250-V2EC	5900	32,9	34,5	6,0	0,40

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient 50/30 °C

Type	Air output	Heat output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCST4C150-V3EC	3450	17,7	33,1	7,5	0,21
VCST4C200-V3EC	4450	23,1	33,3	6,8	0,28
VCST4C250-V3EC	5850	30,6	33,4	12,8	0,40

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient 40/30 °C

Type	Air output	Heat output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCST4C150-V3EC	3450	14,7	30,6	18,9	0,35
VCST4C200-V3EC	4450	19,2	30,7	17,2	0,46
VCST4C250-V3EC	5850	25,2	30,7	31,7	0,61

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient 35/25 °C

Type	Air output	Heat output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCST4C150-V3EC	3450	9,6	26,2	9,1	0,23
VCST4C200-V3EC	4450	12,6	26,3	8,2	0,30
VCST4C250-V3EC	5850	16,7	26,4	15,5	0,40

* Temperature of intake air: +18 °C

Recommended mixing points for LPHW coil 3-way valve

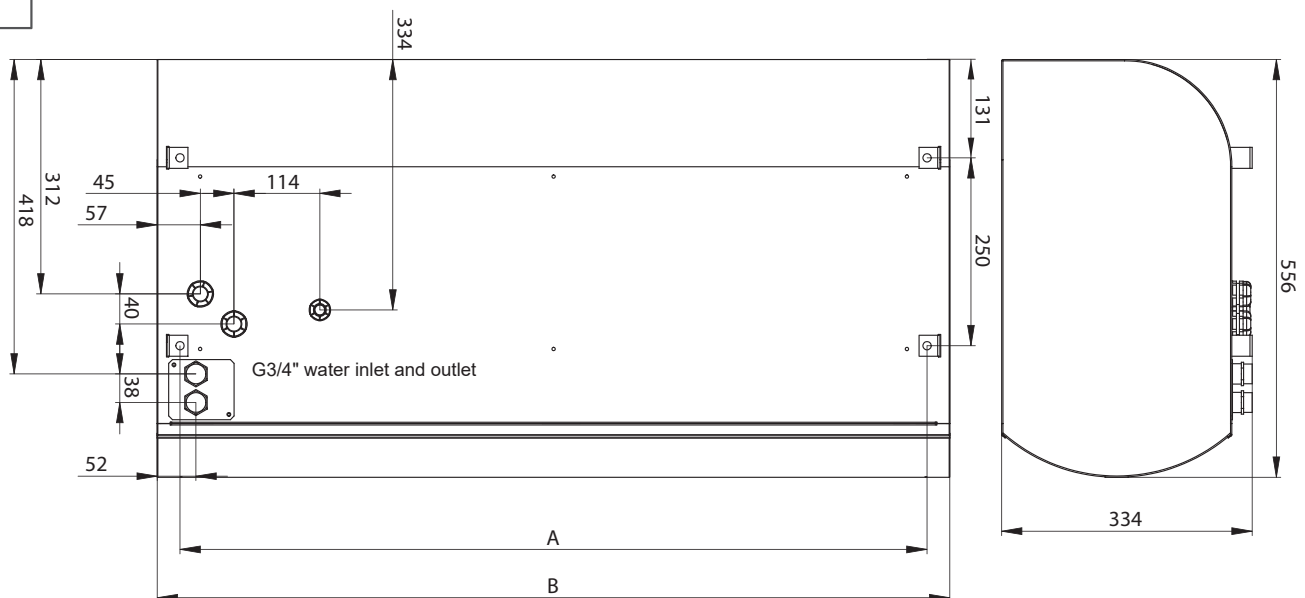
Type	Control module	90/70 °C	80/60 °C	70/50 °C	60/40 °C
		3-way valve			
VCST4B100-V2	BASIC	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	COMFORT	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
	SUPERIOR	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
VCST4B150-V2	BASIC	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	COMFORT	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
	SUPERIOR	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
VCST4B200-V2	BASIC	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	COMFORT	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20
	SUPERIOR	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20
VCST4B250-V2	BASIC	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	COMFORT	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20
	SUPERIOR	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20
VCST4C100-V2	BASIC	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	COMFORT	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
	SUPERIOR	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
VCST4C150-V2	BASIC	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	COMFORT	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
	SUPERIOR	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
VCST4C200-V2	BASIC	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	COMFORT	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20
	SUPERIOR	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20
VCST4C250-V2	BASIC	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	COMFORT	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20
	SUPERIOR	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20

Recommended mixing points for LPHW coil 2-way valve

Type	Control module	90/70 °C	80/60 °C	70/50 °C	60/40 °C
		2-way valve			
VCST4B100-V2	BASIC	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	COMFORT	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
	SUPERIOR	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCST4B150-V2	BASIC	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	COMFORT	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
	SUPERIOR	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCST4B200-V2	BASIC	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	COMFORT	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
	SUPERIOR	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCST4B250-V2	BASIC	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	COMFORT	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
	SUPERIOR	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCST4C100-V2	BASIC	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	COMFORT	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
	SUPERIOR	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCST4C150-V2	BASIC	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	COMFORT	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
	SUPERIOR	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCST4C200-V2	BASIC	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	COMFORT	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
	SUPERIOR	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCST4C250-V2	BASIC	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	COMFORT	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
	SUPERIOR	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20



DIMENSIONS

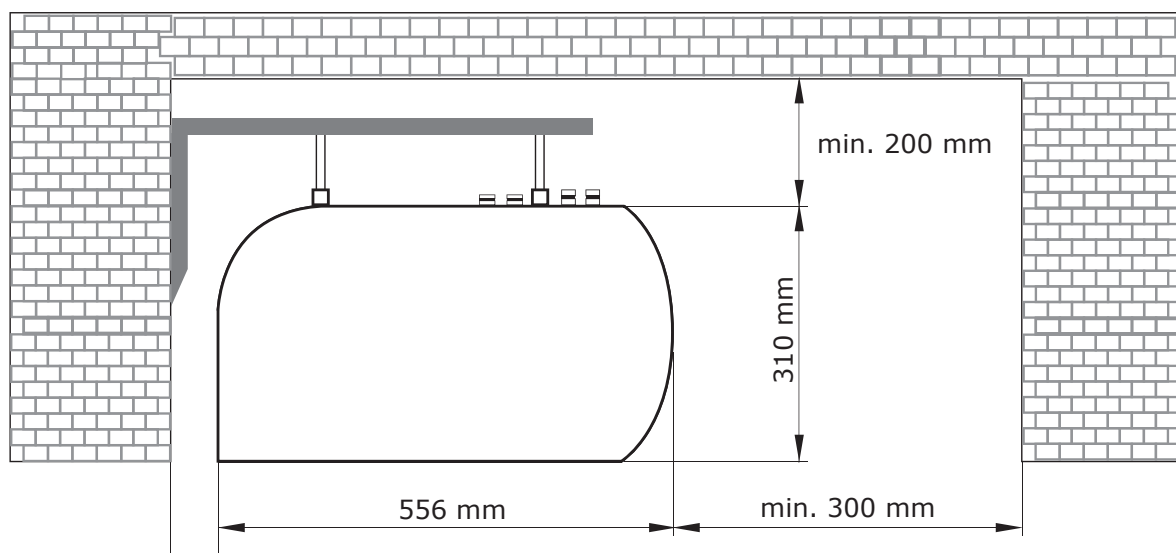


Type	Spacing of installation holes A [mm]	Width B [mm]
VCST4x100...	994	1054
VCST4x150...	1494	1554
VCST4x-200...	1994	2054
VCST4x-250...	2394	2454



INSTALLATION AND ASSEMBLY

- The air curtain shall be installed in a horizontal position only.
- The air curtain shall be located as close to the top edge of the doorway as possible, see figure.
- To ensure a correct function it is recommended that the air curtain overlaps the doorway by 100 mm on both sides.
- Correct operation of the air curtain requires that specified distances from the surrounding objects are observed, see figure.
- Position of the heating water and power supply connections shall be taken into consideration during installation.
- Suspension holders are used for installing the air curtains see ACCESSORIES.



CONTROL

The **STANDESSE** air curtains are produced with universal interface for control module connection. There are three types of control modules available (BASIC, COMFORT and SUPERIOR). Control module is a required accessory for each air curtain. Additional change of control system is available. Control module is connected with air curtain by quick connection sockets. The basic differences among individual control module types are given in table underneath.

**CONTROL****Overview of functions and sensor connections**

AirGENIO control		BASIC VCST4-AGBA1-M-EC	COMFORT VCST4-AGCO1-M-EC	SUPERIOR VCST4-AGSU1-M-EC
	Type of controller	Manual	Touch screen	Touch screen
	Mode	Manual	Manual / Auto	Manual / Auto
	Control of air output	PWM	PWM	PWM
	Control of electric heater	OFF / Level1 / Level2	OFF / Level1 / Level2	PWM
	Control of water heater	ON/OFF	ON-OFF / 0-10V	0-10V
	Antifreeze protection of LPHW	NO	YES	YES
	Possibility of connecting a door contact	YES	YES	YES
	External control	NO	YES	YES
	Temperature measurement	NO	YES (NTC)*	YES (NTC)*
	Chaining air curtains	NO	YES – max 10+1 pcs	YES – max 10+1 pcs
	Indication of selected function	NO	YES (Display)	YES (Display)
	Controller connection to air curtain	Power wire + Communication cable (UTP)	Communication cable (UTP)	Communication cable (UTP)
	Self learning mode	NO	YES	YES
	BMS connection	NO	Modbus RTU	Modbus RTU, Modbus TCP, BACnet
	Error contact	NO	YES	YES
	2 nd control panel ready	NO	YES	YES

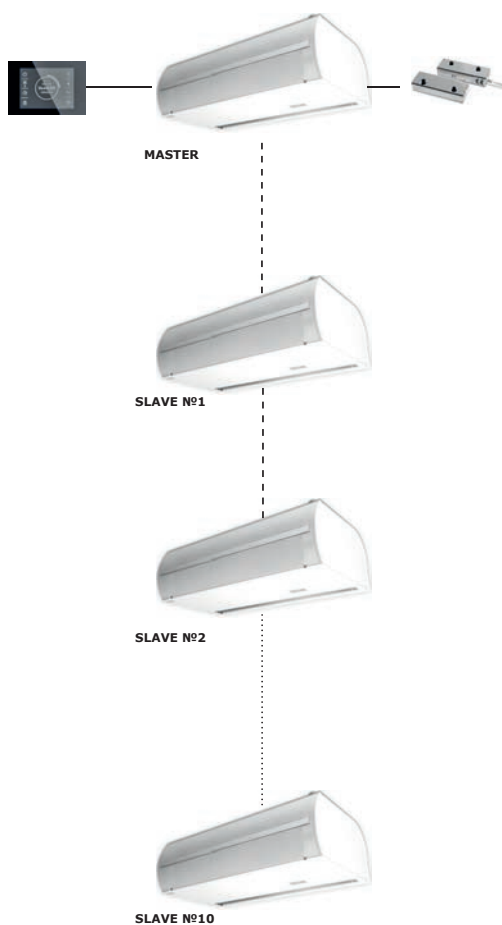
* Temperature sensor included in standard. Temperature shown on display.



CHAINING EXAMPLE

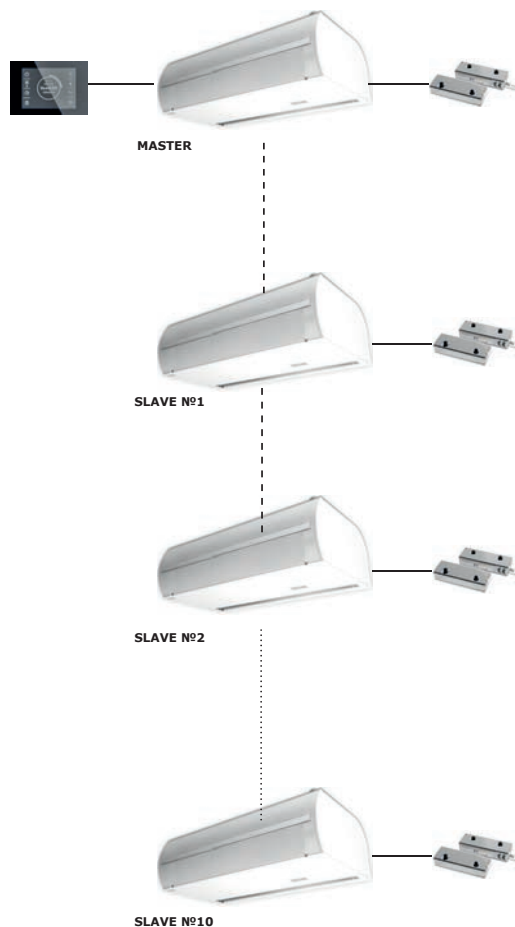
COMFORT / SUPERIOR

Global Door contact function active
(Single door with multiple air curtains)



COMFORT / SUPERIOR

Global Door contact function not active
(Multiple doors with own door contact)



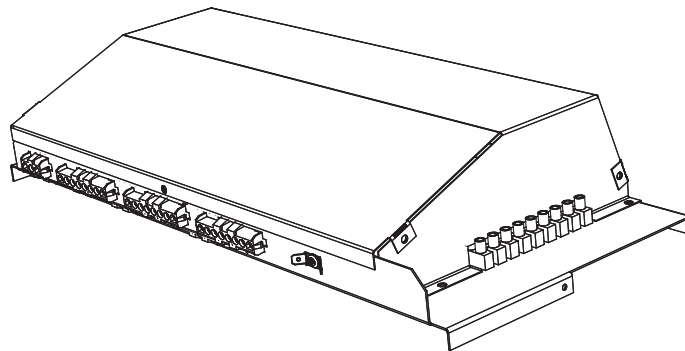
**ACCESSORIES****REQUIRED ACCESSORIES**

These accessories shall be ordered to make the air curtain functional.

AirGENIO control module

A control module is a required accessory for air curtain and shall be ordered for each air curtain. Control panel is included in delivery of control module. The ordering key for control modules is provided below.

Communication cable has to be ordered separately as an optional accessory.

**VCST4 - AGCO1 - M- EC - S0 - 0A0**

0A0 – 2VW version

S0 – Without heating

E2 – Electric heater 2-STEP control (BASIC, COMFORT)

EF – Electric heater FLUENT control (SUPERIOR)

V1 – Water heater ON/OFF control (BASIC)

VF – Water heater FLUENT control (SUPERIOR)

VC – Water heater control with choice of ON/OFF or 0-10V (COMFORT)

EC – For EC fans

S – SLAVE controls (only for COMFORT, SUPERIOR)

M – MASTER controls (only for COMFORT, SUPERIOR)

AGBA1 - AirGENIO BASIC 1st generation (mechanical)

AGCO1 - AirGENIO COMFORT 1st generation (touch screen)

AGSU1 - AirGENIO SUPERIOR 1st generation (touch screen)

VCST4 – Air curtain STANDESSE / FINESSE



OPTIONAL ACCESSORIES

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

Thermostatic valve TV-1-1/1
TV-1-1/1



2-way or 3-way valve with servo drive (230V)
ZV2-230-xx,x-xx
ZV3-230-xx,x-xx
(for BASIC and COMFORT control)



3-way valve with servo drive RT
RT-3-07 (K_{vs} 07)
(for BASIC and COMFORT control)



2-way or 3-way valve with servo drive (0-10V)
ZV2-024-xx,x-xx
ZV3-024-xx,x-xx
(for COMFORT and SUPERIOR control)



Room thermostat
TER-P
(for BASIC control)



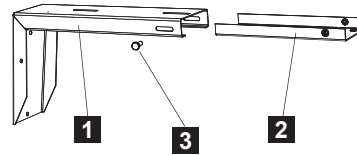
Room temperature sensor for wall installation
CT-ROOM
(for COMFORT and SUPERIOR control)



Wall mounting bracket

Bracket designed for mounting the air curtain to the wall.

- 1 Bracket
- 2 Hanging strip
- 3 Securing screw



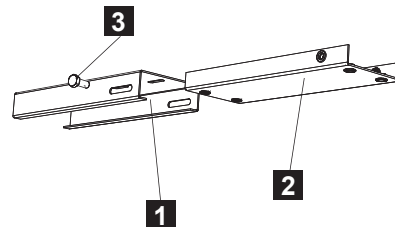
VCS4-KONZ-STE

- for B and C air curtains (2 pcs. in package)
- wall mounting bracket

Ceiling holder

The holder is designed for attaching the air curtain to a ceiling.

- 1 Ceiling bracket
- 2 Hanging strip
- 3 Securing screw



VCS4-KONZ-STR

- for B and C air curtains (2 pcs. in package)
- ceiling holder

Exit sign for marking of emergency exits.

Suitable for all types of air curtains.

VCS4-EXIT



Mechanical industry door switch

DS

Heavy-duty door contact for industry use



Magnetic door contact

Magnetic door contact in metal housing with higher protection against mechanical damage

DK-B-3



2nd Control panel

ND-REMOTE-CONTROL (for control CO, SU)





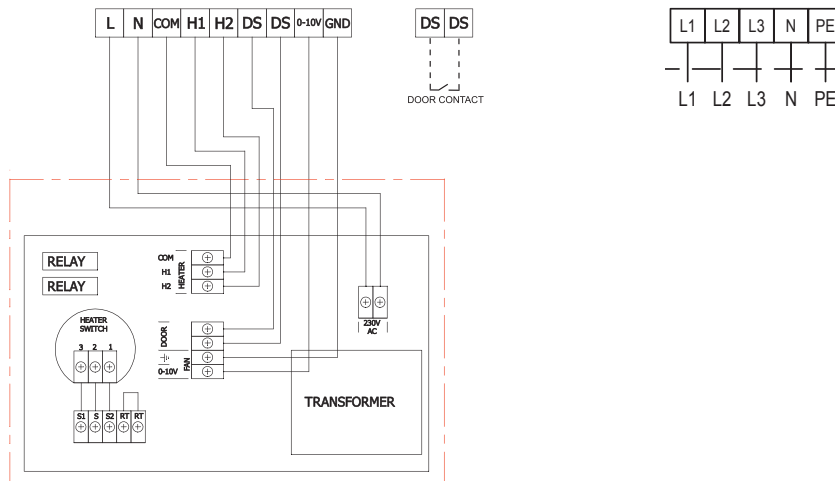
WIRING DIAGRAMS

The recommended cross-section of the main power supply cables is stated in the Instruction Manual.

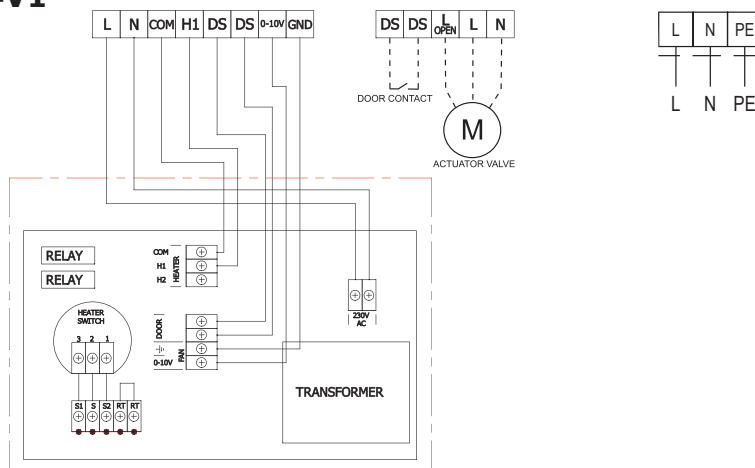
All wiring diagrams provided in the technical catalog are indicative only. When assembling the product, carefully observe the nameplate ratings as well as directions and diagrams affixed directly to the product or enclosed with the product.

AirGENIO BASIC

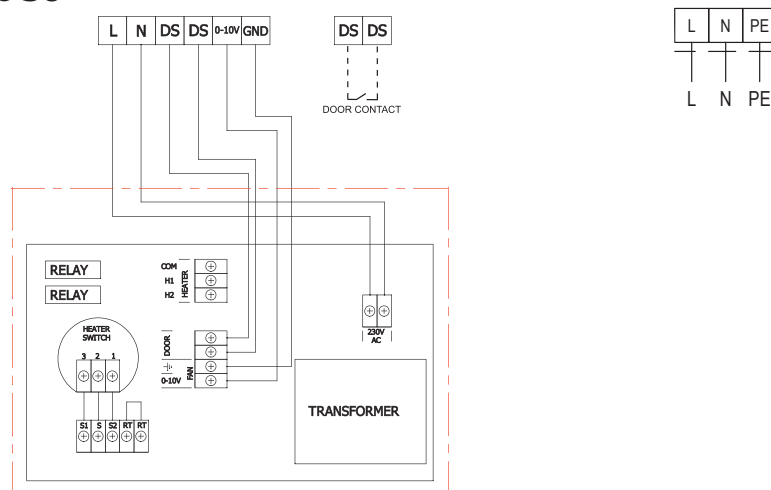
VCST4-AGBA1-M-EC-E2



VCST4-AGBA1-M-EC-V1



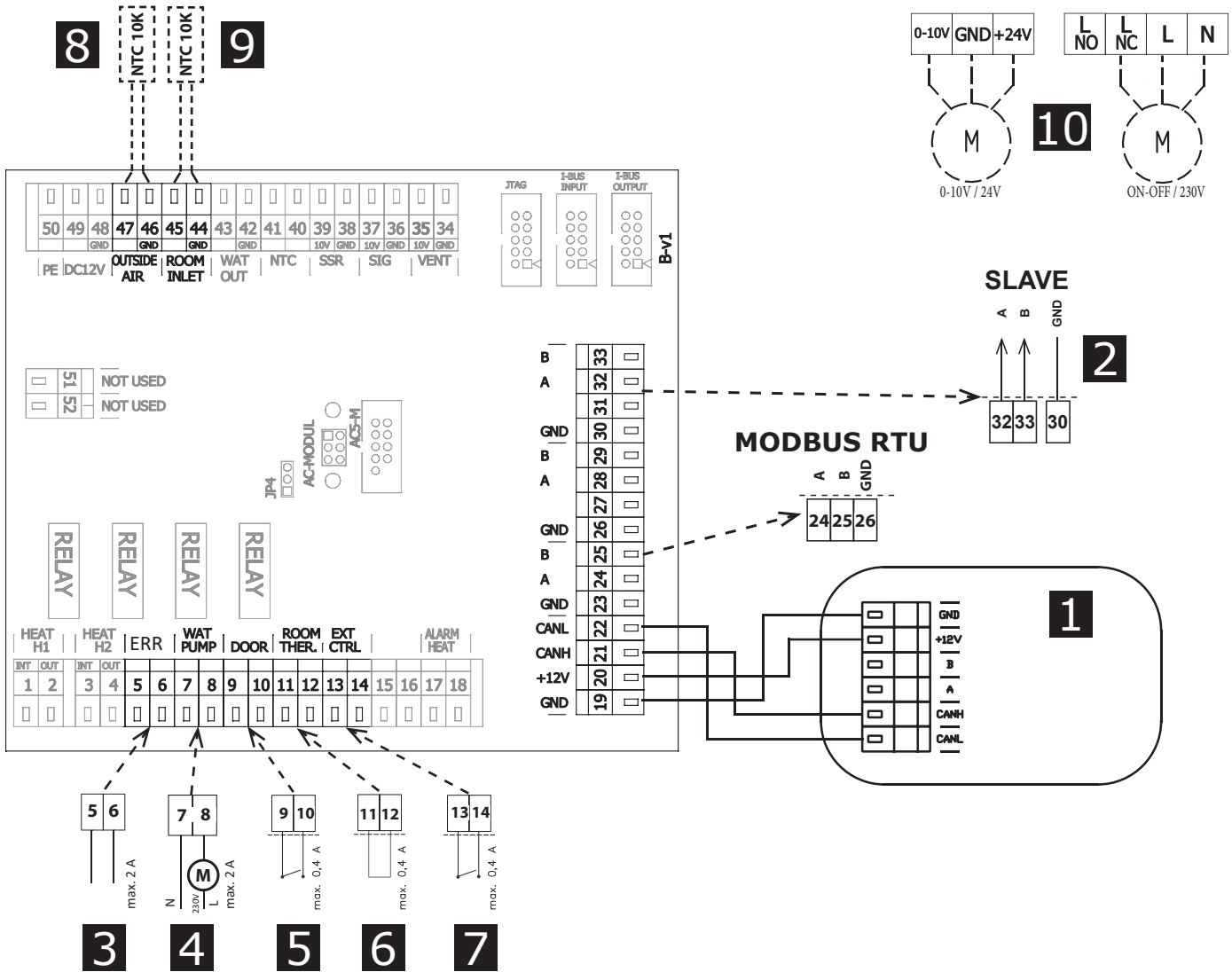
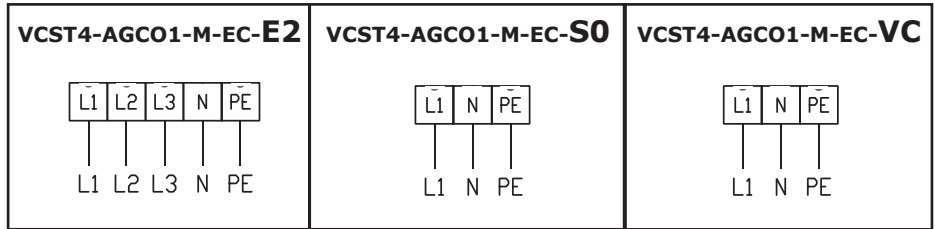
VCST4-AGBA1-M-EC-S0





WIRING DIAGRAMS

AirGENIO COMFORT
MASTER



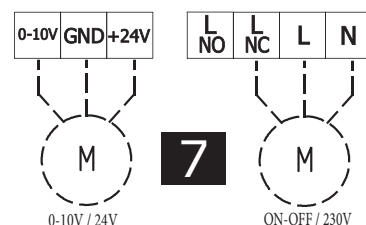
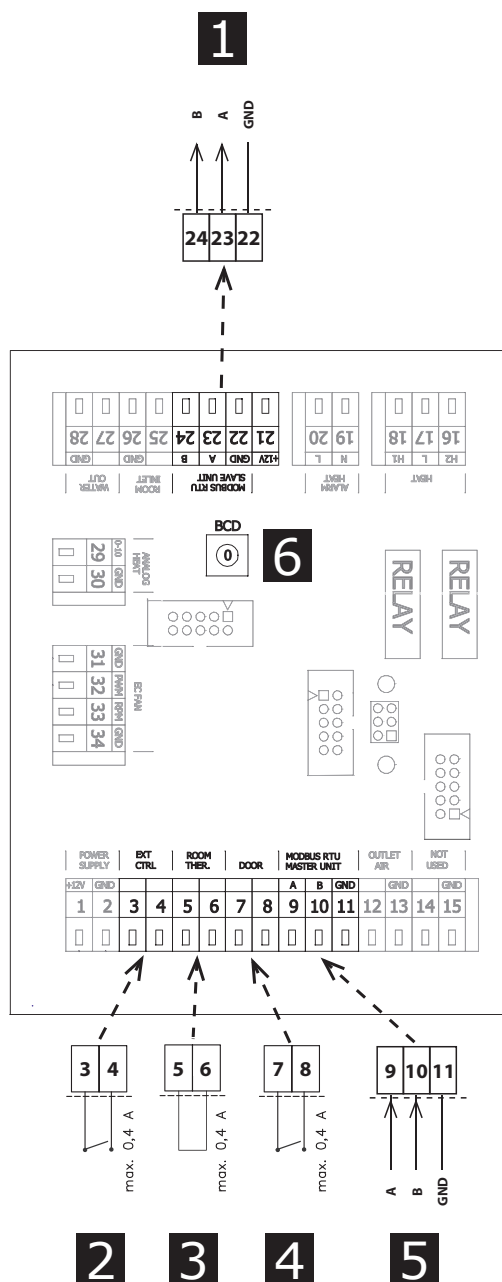
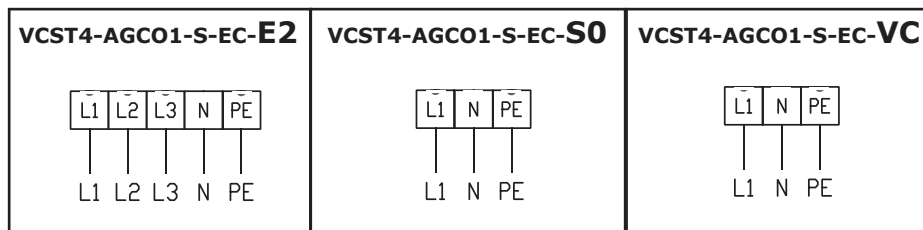
EN	
1	Control panel
2	Signal to SLAVE unit
3	ERROR contact (relay contact, NO/NC)
4	Water pump (relay contact)*
5	DOOR contact (input, NO/NC)
6	Room thermostat (input, NO/NC)
7	External control (input, NO/NC)
8	Outside air temp. sensor (include delivery)
9	Room temp. sensor (include delivery)
10	Water valve control connection (option 1 = ON-OFF, option 2 = 0-10V)*

* Available for VCST4-AGCO1-M-EC-VC only



WIRING DIAGRAMS

AirGENIO COMFORT SLAVE



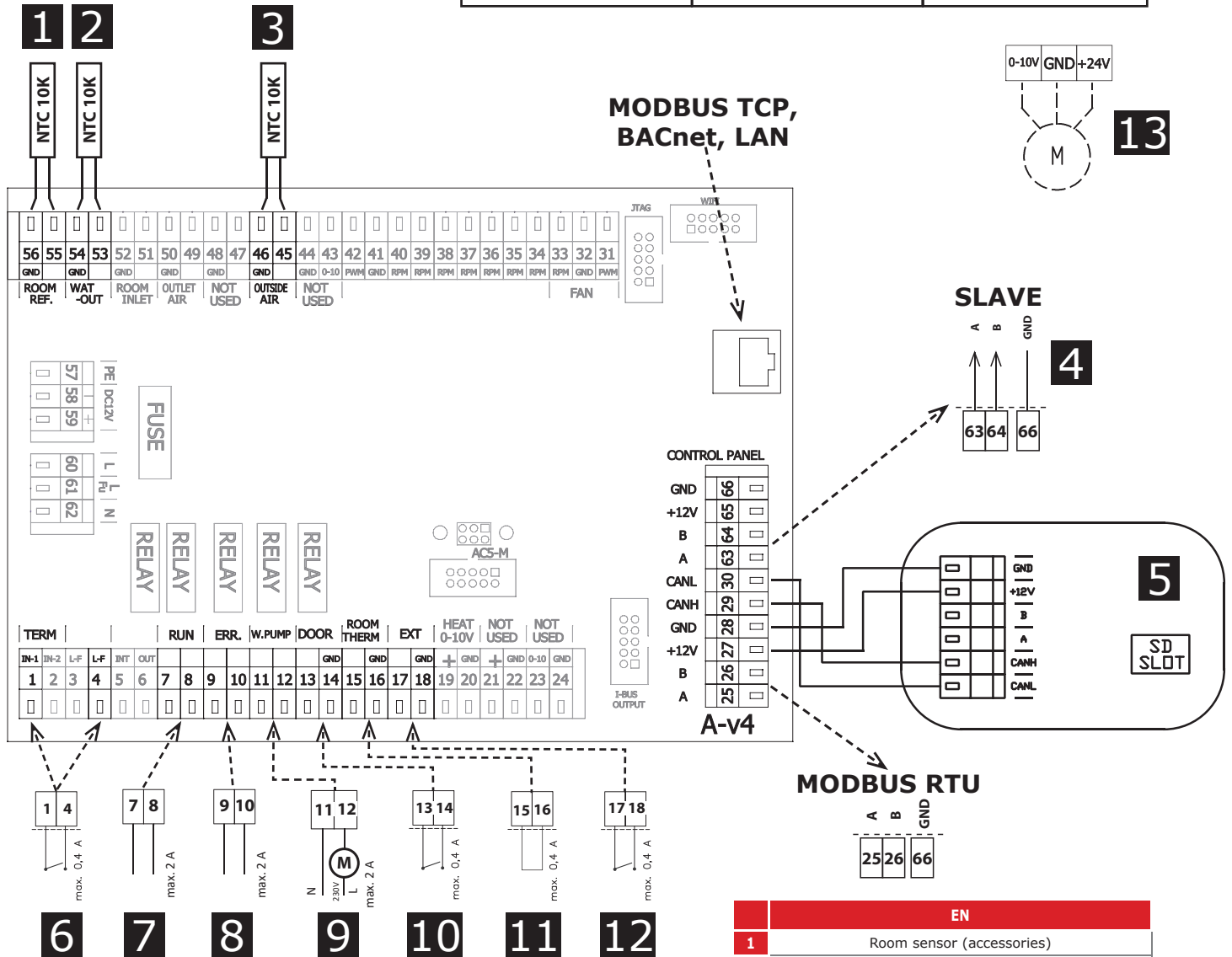
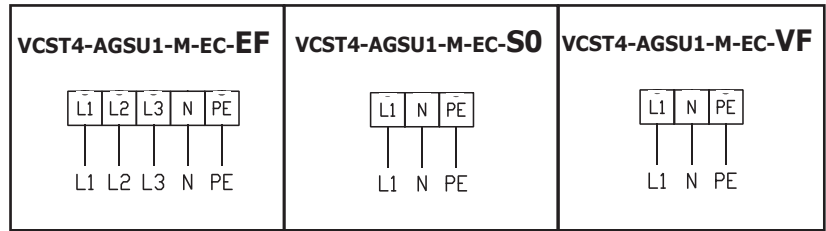
EN	
1	Signal to SLAVE unit
2	External control - ON/OFF
3	Room thermostat (input)
4	DOOR contact (input)
5	Signal from MASTER unit
6	Address of the slave air curtain
7	Water valve control connection (option 1 = ON-OFF, option 2 = 0-10V)*

* Available for VCST4-AGCO1-S-EC-VC only

SLAVE	BCD
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	A

WIRING DIAGRAMS

AirGENIO SUPERIOR MASTER



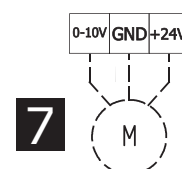
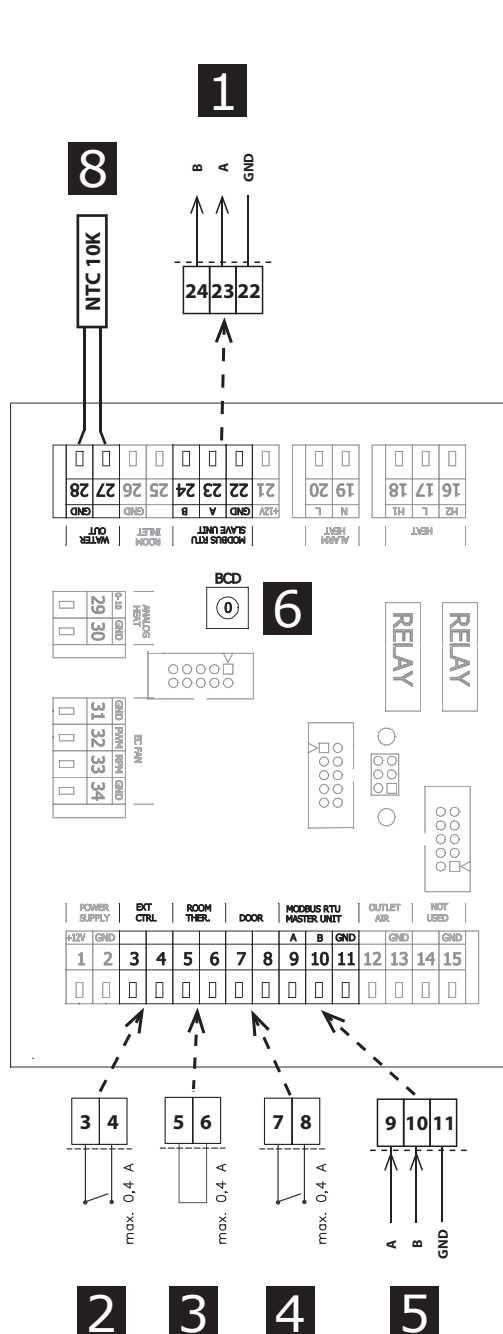
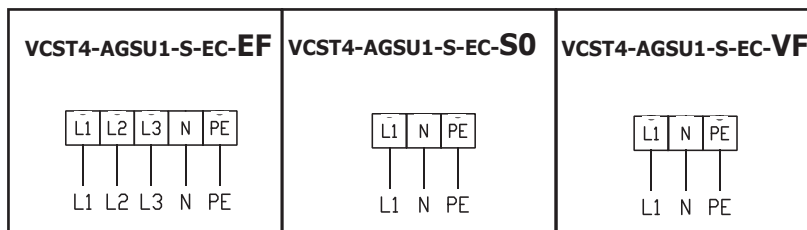
EN	
1	Room sensor (accessories)
2	Water return sensor (included in delivery)
3	Outside air sensor (included in delivery)
4	Signal to SLAVE unit
5	Control panel
6	Antifreeze thermostat (NC)
7	RUN contact (relay contact, NO/NC)
8	ERROR contact (relay contact, NO/NC)
9	Water pump (relay contact)
10	DOOR contact (input, NO/NC)
11	Room thermosat (input, NO/NC)
12	External control (input, NO/NC)
13	Water valve control (0-10V, 24V)*

* Available for VCST4-AGSU1-M-EC-VF only



WIRING DIAGRAMS

AirGENIO SUPERIOR SLAVE



	EN
1	Signal to SLAVE unit
2	External control - ON/OFF
3	Room thermostat (input)
4	DOOR contact (input)
5	Signal from MASTER unit
6	Address of the slave air curtain
7	Water valve control (0-10 V, 24 V)*
8	Water return sensor (included in delivery)

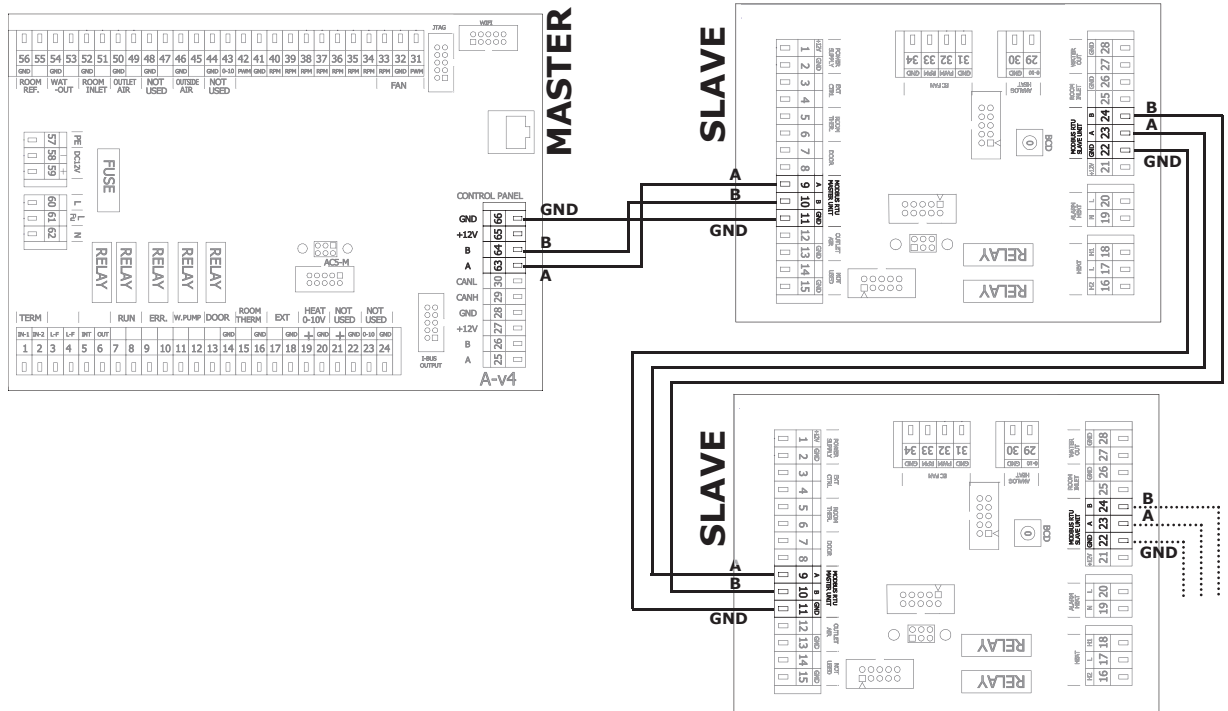
* Available for VCST4-AGSU1-S-EC-VF only

SLAVE	BCD
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	A

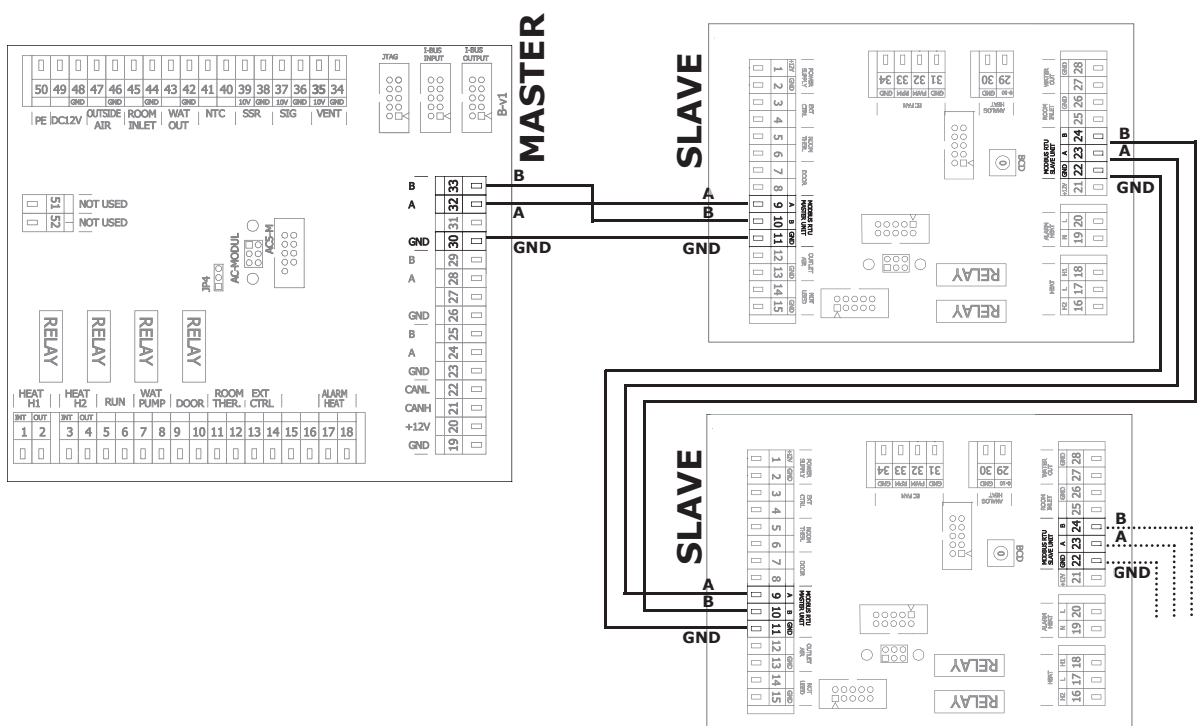


WIRING DIAGRAMS

Chaining



AirGENIO COMFORT





KEY TO CODING

VCST4	B	100	S0	EC	CR	0	A0	
							A0	2VV version
						0		White colour casing RAL 9016 (Standard)
						9		Atyp RAL casing
					CR			Control ready
				EC				EC fans
			S0					Air-only (ambient)
			E1					Electric heater
			V2					2-row water heater
			V3					3-row water heater (available only for VCST4C)
		100						Nominal width 1000 mm
		150						Nominal width 1500 mm
		200						Nominal width 2000 mm
		250						Nominal width 2500 mm
	B							B Output series
	C							C Output series
VCST4								STANDESSE air curtain (4th generation)



air-only



water heater

**BASIC FEATURES**

- Supreme airflow – up to **12.000m³/h** (ISO 27 327-1)
- Highly energy-efficient EC fans
- Excellent low sound parameters
- Adjustable outlet with STRAW-SYSTEM Technology
- Smart control system **AirGENIO SUPERIOR** integrated
- Lengths: 1,5; 2,0; 2,5 and 3,0m

STANDESSE XP is an air curtain of supreme power and excellent efficiency crafted into a timeless design casing. This superb performance is accompanied by outstandingly low sound parameters and exceptionally low energy consumption. The integrated AirGENIO control system allows the air curtain to be automated for advanced and sophisticated installations, and is perfect for **airports, shopping malls, office buildings or other public places**, with a recommended installation height up to 6m. Maximum recommended installation height – may vary according the particular conditions at the installation site.

The air curtain shall be installed indoor in a dry area with ambient temperatures ranging from 0 °C up to +40 °C and relative humidity of up to 80 %. It is designed for conveying air free of coarse dust, grease, chemical fumes, and other impurities. IP rating of the air curtain is IP 20. 2VW recommends that all air curtain projects be designed by an HVAC designer or Engineer.



PRIMARY PARAMETERS

Air curtains with LPHW coil are designed for the maximum operating water temperature of +100 °C and maximum operating pressure of 1.6 MPa.

Type	Recommended installation height [m]	Airflow volume [m³/h] ^{*1}	Acoustic pressure at 3m [dB(A)] ^{*2}	Acoustic pressure at 5m [dB(A)] ^{*2}	Sound power [dB(A)] ^{*3}
		Maximum speed	Maximum speed	Maximum speed	
VCST5D150-V3EC	6	6000	62	58	83,9
VCST5D150-V5EC		6000	61	58	83,3
VCST5D150-S0EC		6000	61	57	83,0
VCST5D200-V3EC		8000	64	60	86,0
VCST5D200-V5EC		8000	64	60	85,8
VCST5D200-S0EC		8000	62	59	84,5
VCST5D250-V3EC		10000	64	61	86,5
VCST5D250-V5EC		10000	64	60	86,4
VCST5D250-S0EC		10000	64	60	86,0
VCST5D300-V3EC		12000	65	61	87,4
VCST5D300-V5EC		12000	64	61	86,8
VCST5D300-S0EC		12000	64	60	86,5

^{*1} Airflow volume according ISO27327-1

^{*2} Acoustic pressure values at 3 m / 5 m distance for maximum speed. Directional factor: Q=2.

^{*3} Sound power (LWA) measurements according to ISO 27327-2.

Type	Heater power output [kW] ^{*1}	Total power input [kW]	Total voltage/ current [V/A]	Motor voltage/ current [V/A]	Temperature increase Δt [°C] ^{*3}	Frequency [Hz]	Weight [kg]
VCST5D150-V3EC	36	0,9	230/4,2	230/4,2	35,7	50/60	126
VCST5D150-V5EC	48	1,1	230/4,7	230/4,7	41,4		132
VCST5D150-S0EC	-	0,8	230/3,5	230/3,5	-		116
VCST5D200-V3EC	45	1,2	230/5,6	230/5,6	34,6		160
VCST5D200-V5EC	66	1,4	230/6,0	230/6,0	24,1		168
VCST5D200-S0EC	-	1,0	230/4,5	230/4,5	-		147
VCST5D250-V3EC	60	1,6	230/7,0	230/7,0	35,6		195
VCST5D250-V5EC	85	1,8	230/7,7	230/7,7	42,9		204
VCST5D250-S0EC	-	1,3	230/5,7	230/5,7	-		179
VCST5D300-V3EC	72	1,9	230/8,4	230/8,4	35,7* ²		2x126
VCST5D300-V5EC	96	2,2	230/9,4	230/9,4	41,4* ²		2x132
VCST5D300-S0EC	-	1,6	230/7,0	230/7,0	-		2x116

^{*1} Inlet air temp. 18°C, water temp.gradient 60/40°C

^{*2} VCST5D300 consists of two pieces of VCST5D150

^{*3} At the maximum air flow and maximum heater power

LPHW 3-row coil parameters for water temperature gradient of 90/70 °C

Type	Air output	Heating output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCST5D150-V3EC	6000	79,1	56,8	17,2	0,97
VCST5D200-V3EC	8000	103,8	56,2	13,1	1,27
VCST5D250-V3EC	10000	132,8	57,1	22,2	1,63
VCST5D300-V3EC	12000	158,1	56,8	17,2	1,94

* Temperature of intake air: +18 °C

LPHW 3-row coil parameters for water temperature gradient of 70/50 °C

Type	Air output	Heating output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCST5D150-V3EC	6000	50,5	42,8	7,9	0,73
VCST5D200-V3EC	8000	65,1	42,0	5,6	0,79
VCST5D250-V3EC	10000	84,5	42,9	9,8	1,03
VCST5D300-V3EC	12000	101,0	42,8	7,9	1,46

* Temperature of intake air: +18 °C

LPHW 5-row coil parameters for water temperature gradient of 60/40 °C

Type	Air output	Heating output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCST5D150-V5EC	6000	47,8	41,4	4,2	0,58
VCST5D200-V5EC	8000	65,5	42,1	6,6	0,79
VCST5D250-V5EC	10000	84,7	42,9	11,7	1,03
VCST5D300-V5EC	12000	95,5	41,4	4,2	1,16

* Temperature of intake air: +18 °C

LPHW 5-row coil parameters for water temperature gradient of 40/30 °C

Type	Air output	Heating output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCST5D150-V5EC	6000	24,7	30,1	4,6	0,59
VCST5D200-V5EC	8000	34,1	30,5	7,4	0,82
VCST5D250-V5EC	10000	44,3	31,0	13,2	1,07
VCST5D300-V5EC	12000	49,4	30,1	4,6	1,18

* Temperature of intake air: +18 °C

LPHW 3-row coil parameters for water temperature gradient of 80/60 °C

Type	Air output	Heating output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCST5D150-V3EC	6000	64,8	49,8	12,2	0,79
VCST5D200-V3EC	8000	84,6	49,1	9,0	1,03
VCST5D250-V3EC	10000	108,7	50,0	15,4	1,33
VCST5D300-V3EC	12000	129,6	49,8	12,2	1,58

* Temperature of intake air: +18 °C

LPHW 3-row coil parameters for water temperature gradient of 60/40 °C

Type	Air output	Heating output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCST5D150-V3EC	6000	36	35,7	4,4	0,44
VCST5D200-V3EC	8000	45	34,6	2,9	0,55
VCST5D250-V3EC	10000	59,8	35,6	5,2	0,72
VCST5D300-V3EC	12000	71,9	35,7	4,4	0,88

* Temperature of intake air: +18 °C

LPHW 5-row coil parameters for water temperature gradient of 50/30 °C

Type	Air output	Heating output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCST5D150-V5EC	6000	27,90	31,7	1,6	0,34
VCST5D200-V5EC	8000	39,60	32,5	2,7	0,48
VCST5D250-V5EC	10000	53,10	33,6	5,1	0,64
VCST5D300-V5EC	12000	55,80	31,7	1,6	0,68

* Temperature of intake air: +18 °C

LPHW 5-row coil parameters for water temperature gradient of 35/25 °C

Type	Air output	Heating output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCST5D150-V5EC	6000	14,8	25,3	1,9	0,36
VCST5D200-V5EC	8000	21,2	25,8	3,2	0,51
VCST5D250-V5EC	10000	28,8	26,5	6,1	0,69
VCST5D300-V5EC	12000	29,6	25,3	1,9	0,72

* Temperature of intake air: +18 °C

Recommended mixing points for LPHW coil

2-way valve (3-row)

Type	90/70 °C	80/60 °C	70/50 °C	60/40 °C
	2-way valve			
VCST5D150-V3...	ZV2-024-10,0-25	ZV2-024-10,0-25	ZV2-024-10,0-25	ZV2-024-06,3-25
VCST5D200-V3...	ZV2-024-16,0-25	ZV2-024-10,0-25	ZV2-024-10,0-25	ZV2-024-06,3-25
VCST5D250-V3...	ZV2-024-16,0-25	ZV2-024-10,0-25	ZV2-024-10,0-25	ZV2-024-06,3-25
VCST5D300-V3...	2x ZV2-024-10,0-25	2x ZV2-024-10,0-25	2x ZV2-024-10,0-25	2x ZV2-024-06,3-25

Recommended mixing points for LPHW coil

2-way valve (5-row)

Type	60/40 °C	50/30 °C	40/30 °C	35/25 °C
	2-way valve			
VCST5D150-V5...	ZV2-024-06,3-25	ZV2-024-10,0-25	ZV2-024-10,0-25	ZV2-024-06,3-25
VCST5D200-V5...	ZV2-024-10,0-25	ZV2-024-10,0-25	ZV2-024-10,0-25	ZV2-024-06,3-25
VCST5D250-V5...	ZV2-024-10,0-25	ZV2-024-10,0-25	ZV2-024-10,0-25	ZV2-024-10,0-25
VCST5D300-V5...	2 x ZV2-024-06,3-25	2 x ZV2-024-10,0-25	2 x ZV2-024-10,0-25	2 x ZV2-024-06,3-25

Recommended mixing points for LPHW coil

3-way valve (3-row)

Type	90/70 °C	80/60 °C	70/50 °C	60/40 °C
	3-way valve			
VCST5D150-V3...	ZV3-024-10,0-25	ZV3-024-10,0-25	ZV3-024-06,3-20	ZV3-024-04,0-20
VCST5D200-V3...	ZV3-024-16,0-32	ZV3-024-10,0-25	ZV3-024-10,0-25	ZV3-024-06,3-20
VCST5D250-V3...	ZV3-024-16,0-32	ZV3-024-16,0-32	ZV3-024-10,0-25	ZV3-024-06,3-20
VCST5D300-V3...	2 x ZV3-024-10,0-25	2 x ZV3-024-10,0-25	2 x ZV3-024-06,3-20	2 x ZV3-024-04,0-20

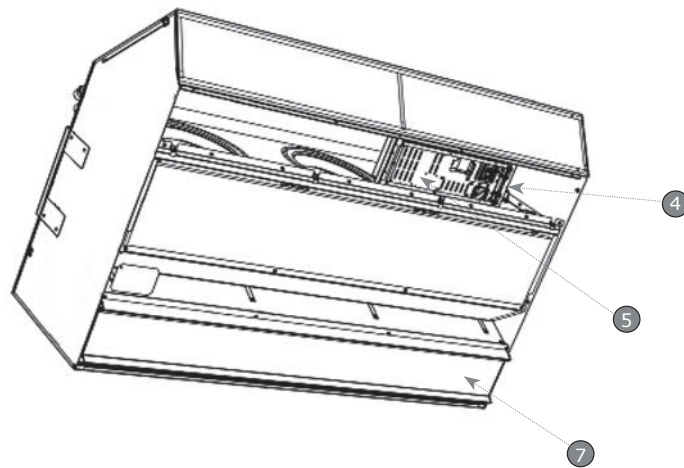
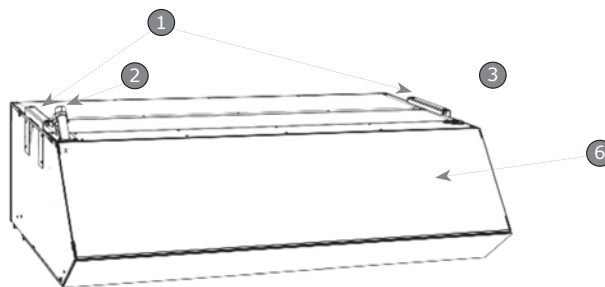
Recommended mixing points for LPHW coil

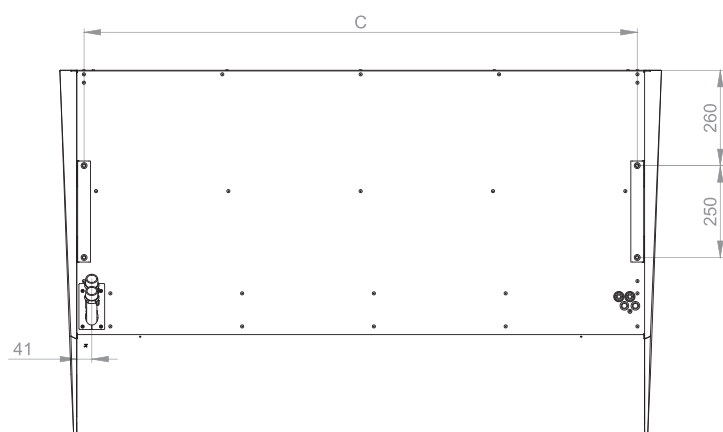
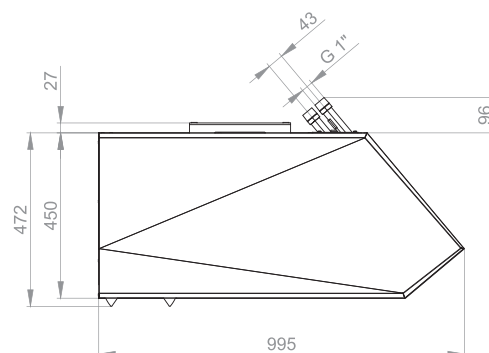
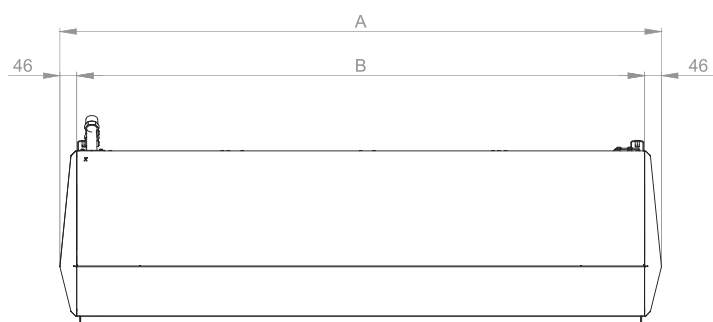
3-way valve (5-row)

Type	60/40 °C	50/30 °C	40/30 °C	35/25 °C
	3-way valve			
VCST5D150-V5...	ZV3-024-10,0-25	ZV3-024-10,0-25	ZV3-024-10,0-25	ZV3-024-06,3-25
VCST5D200-V5...	ZV3-024-16,0-25	ZV3-024-10,0-25	ZV3-024-10,0-25	ZV3-024-06,3-25
VCST5D250-V5...	ZV3-024-16,0-25	ZV3-024-10,0-25	ZV3-024-10,0-25	ZV3-024-10,0-25
VCST5D300-V5...	2 x ZV3-024-10,0-25	2 x ZV3-024-10,0-25	2 x ZV3-024-10,0-25	2 x ZV3-024-06,3-25

MAIN PARTS

- ① Suspension holders
- ② LPHW coil connection 1"
- ③ Power supply cable plug
- ④ Power supply connectors and fuse location
- ⑤ Control module socket
- ⑥ Inlet face cover
- ⑦ Outlet grid



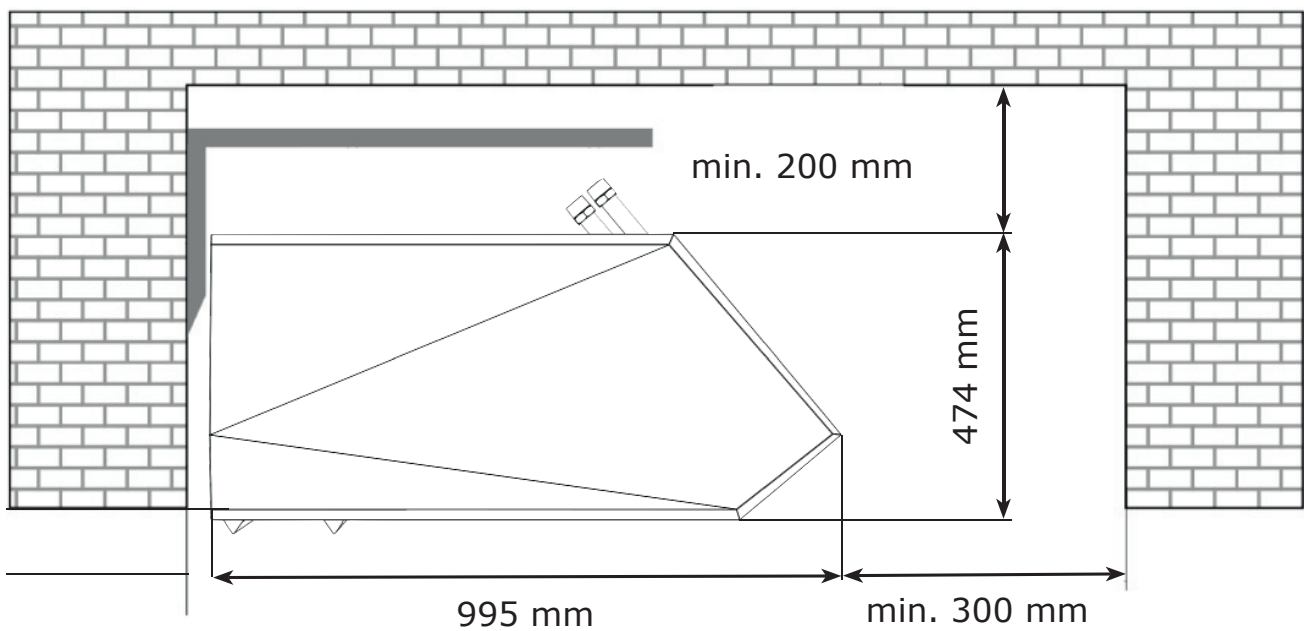


Type Typ	A	B	C
VCST5D150-V....	1637mm	1545mm	1505mm
VCST5D200-V....	2147mm	2055mm	2015mm
VCST5D250-V....	2657mm	2565mm	2525mm
VCST5D300-V.... *1	3182mm	1545+1545mm	1505+1505mm

*1 The 3-meter long air curtain requires two separate inlets to connect the LPHW coils.

**INSTALLATION AND ASSEMBLY**

- The air curtain shall be installed in a horizontal position only.
- The air curtain shall be located as close to the top edge of the doorway as possible, see figure.
- To ensure a correct function it is recommended that the air curtain overlaps the doorway by 100 mm on both sides.
- Correct operation of the air curtain requires that specified distances from the surrounding objects are observed, see figure.
- Position of the heating water and power supply connections shall be taken into consideration during installation.
- Suspension holders are used for installing the air curtains see ACCESSORIES.





CONTROL

Overview of AirGENIO functions and sensor connections



Touch screen display



Integrated timer



Manual / Auto control mode



Temperature measurement (All temperature NTC sensors included, temperature shown on display)



Control of airflow in 5 steps



Chaining air curtains 1+10 (Master-Slave air curtains)



0-10V control of valve actuator for LPHW coil



Self learning mode



Integrated antifreeze protection of LPHW



BMS connection - Modbus RTU,TCP, BACnet



Possibility of connecting a door contact and external control switch



Error contact



2nd control panel ready

Overview of the AirGENIO smart functions

Regimes

Heating boost

- instant start of heating at max output when doors are open to keep comfortable heat inside



Self-Learning function

- self learning regime ensuring smooth air curtain running without useless start-ups at frequent door openings. Saves energy and prolongs the air curtain 's working life.



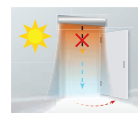
Night mode

- during the pre-set night period air curtain can be switched off completely, or used to heat up the room. Possibility to set lower requested temperature for the night regime.



Summer mode

- to avoid waste of energy for heating, within a pre-set „summer season“, the heating is allowed only if the difference between the outside and inner temperature is higher than pre-set scale.



Auto-Stop control

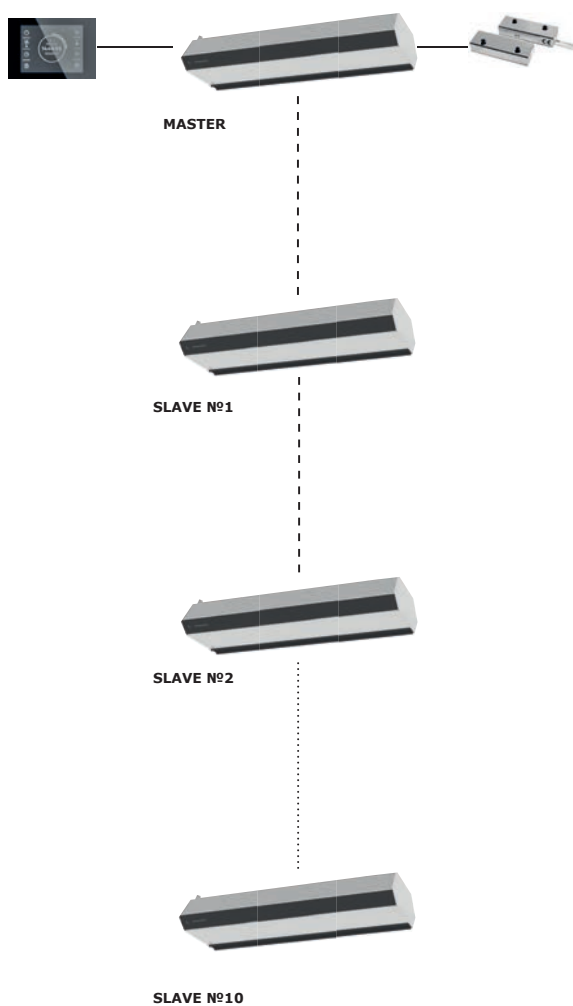
- air curtain evaluates its own temperature on outlet and the temperature outside and inside the room. The air speed and heating output is modified according to the required temperature, time programme and open/closed door. All parameters are evaluated in order to get the maximal output at the lowest possible operating costs.



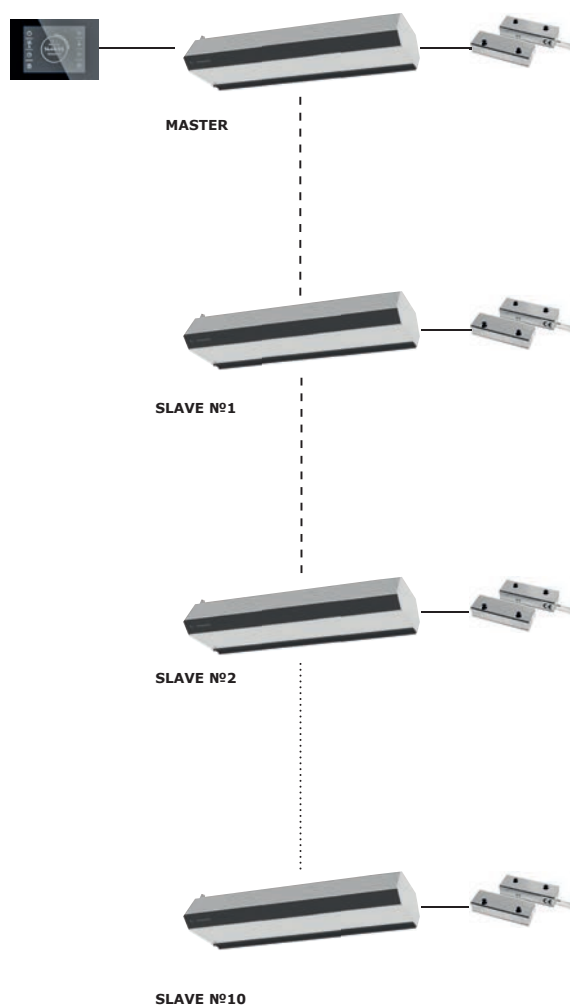


CHAINING EXAMPLE

Global Door contact function active



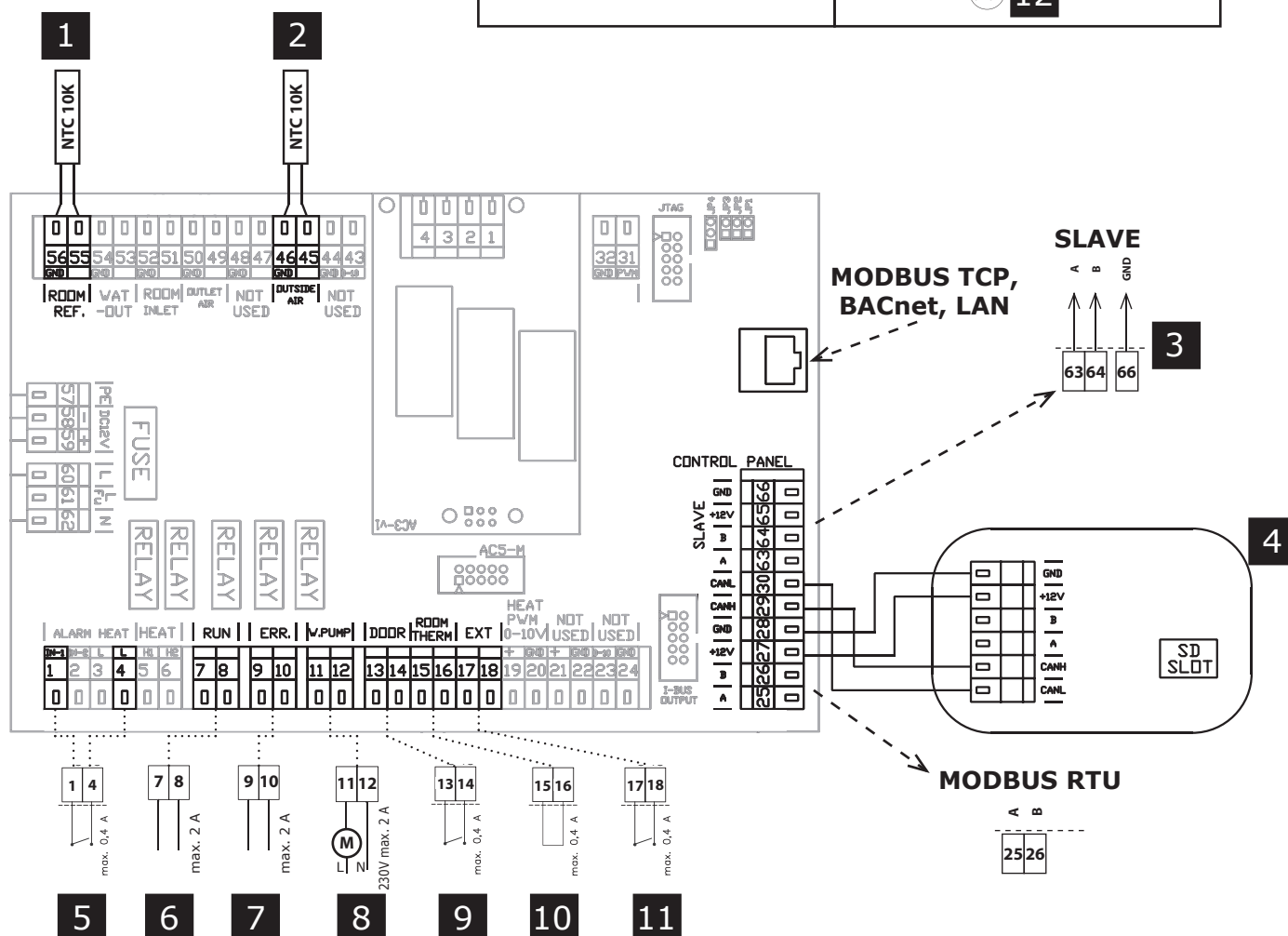
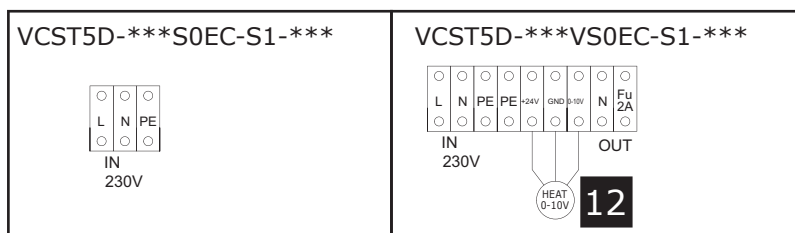
Global Door contact function not active



WIRING DIAGRAMS



AirGENIO SUPERIOR MASTER

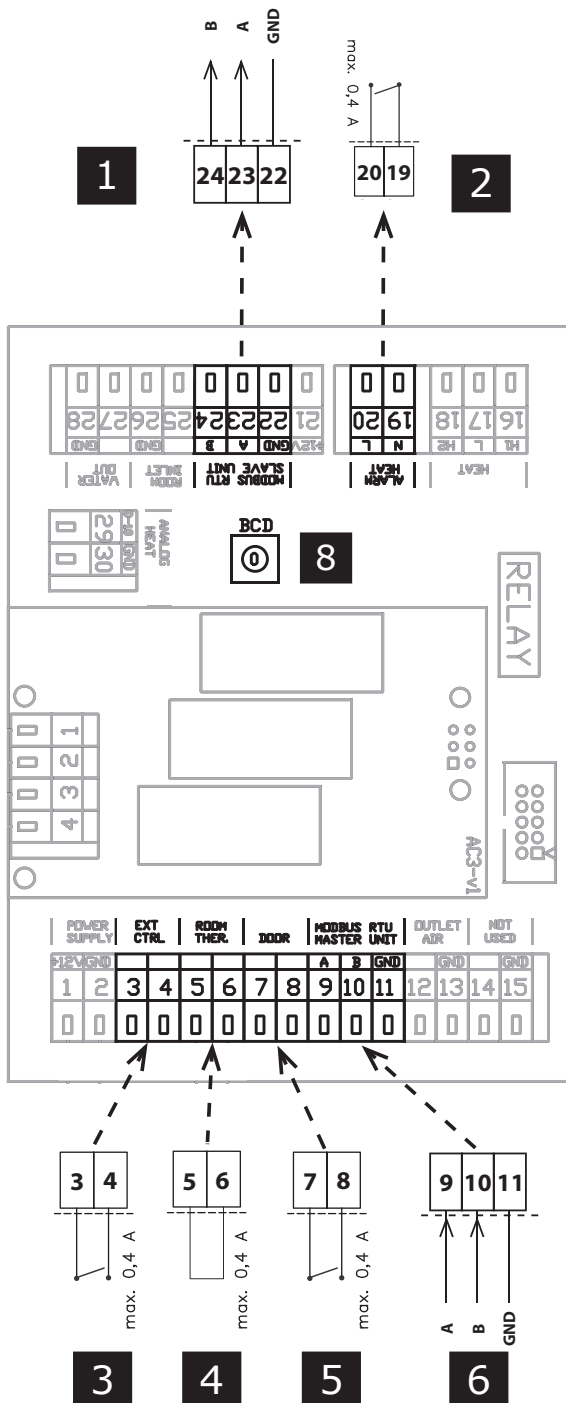
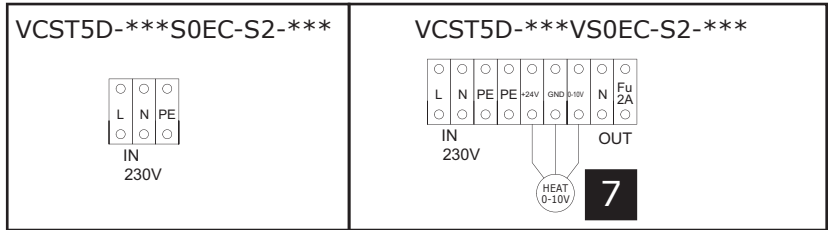


	EN
1	Room sensor (accessories)
2	Outside air sensor (included in delivery)
3	Signal to SLAVE unit
4	Control panel
5	Antifreeze thermostat (NC)
6	RUN contact (relay contact, NO/NC)
7	ERROR contact (relay contact, NO/NC)
8	Water pump (relay contact)
9	DOOR contact (input, NO/NC)
10	Room thermostat (input, NO/NC)
11	External control (input, NO/NC)
12	Water valve control (0-10V)



WIRING DIAGRAMS

AirGENIO SUPERIOR
SLAVE



EN	
1	Signal to SLAVE unit
2	Antifreeze thermostat (NC)
3	External control - ON/OFF
4	Room thermostat (input)
5	DOOR contact (input)
6	Signal from MASTER unit
7	Water valve control (0-10V)

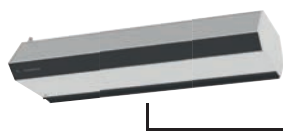
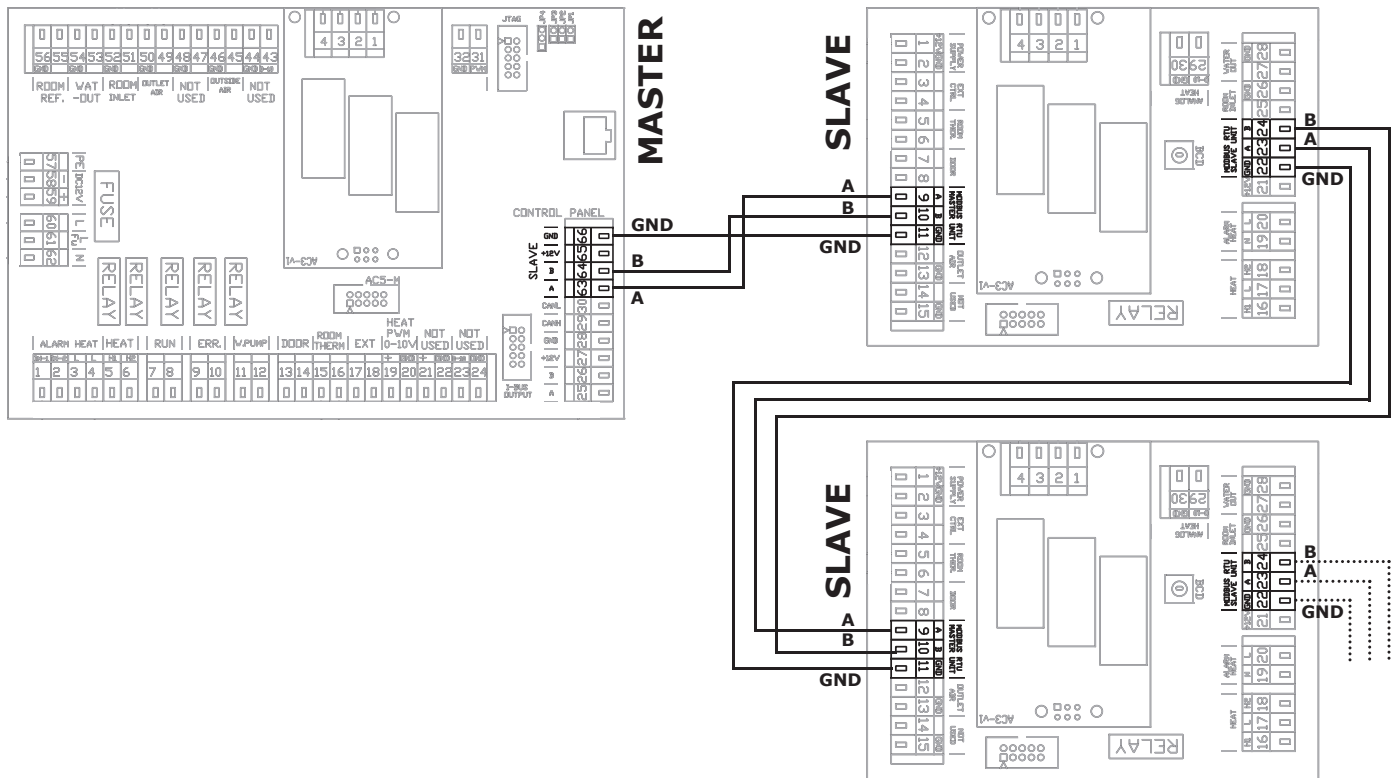
8	
SLAVE	BCD
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	A



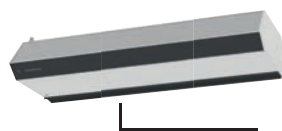
WIRING DIAGRAMS

Chaining

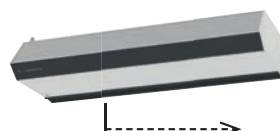
AirGENIO SUPERIOR



MASTER

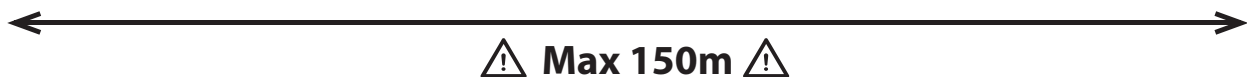


SLAVE 1



SLAVE 2

SLAVE 10





ACCESSORIES

OPTIONAL ACCESSORIES

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

2-way or 3-way valve with servo drive (0-10V)

ZV2-024-xx,x-xx

ZV3-024-xx,x-xx



Mixing node

SMU2-024-xx



Room thermostat

TER-P



Room temperature sensor

CT-ROOM



2nd Control panel

ND-REMOTE-CONTROL



Mechanical door switch (230V)

DS



Magnetic door contact in a metal housing
with higher protection against mechanical damage

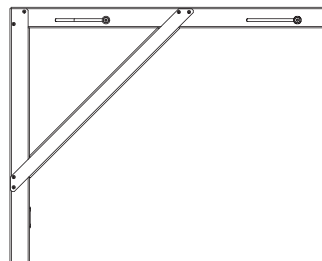
DK-B-3



WALL MOUNTING BRACKET

The bracket is designed for mounting the air curtain to a wall.

- 1 Wall mounting bracket
- 2 Hanging strip
- 3 Securing screw



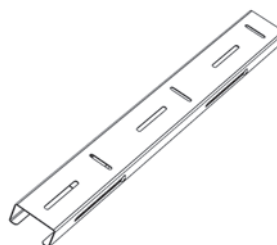
VCST5-KOT-H-STENA

- wall mounting bracket - 2 pcs in set

CEILING MOUNTING BRACKET

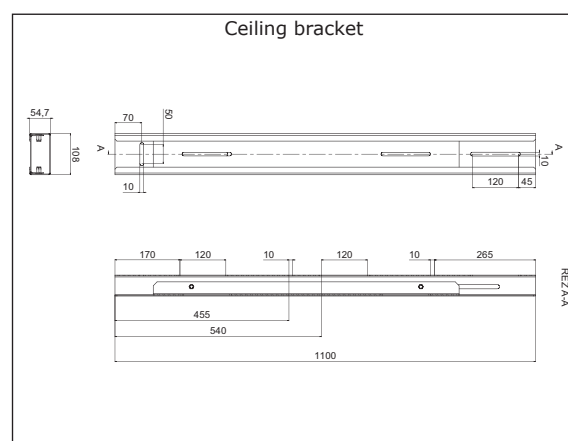
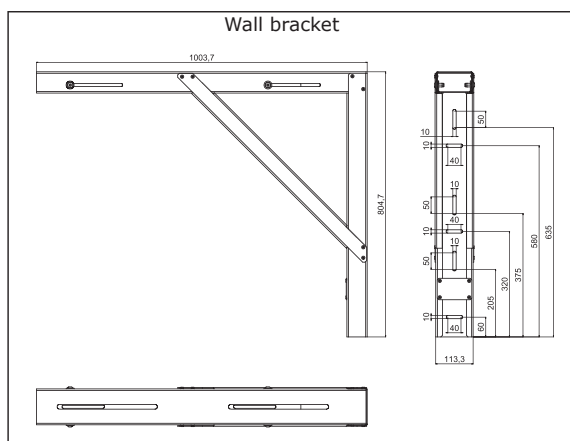
The bracket is designed for mounting the air curtain to a ceiling.

- 1 Ceiling mounting bracket
- 2 Hanging strip
- 3 Securing screw



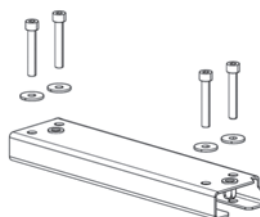
VCST5-KOT-H-STROP

- ceiling mounting bracket - 2pcs in set



VCST5-KOT-SPOJ-CLON-0

- Connecting bracket including screws



*Must be ordered when installing multiple air curtains for one door (chaining)

VCST5-KOT-SPOJ-CLON-0

- **Color**

- 0** Standard (RAL9016)
- 9** Atyp RAL

FILTR-VCST5D-150-G1

150-G1(COARSE 30%)

200-G1(COARSE 30%)

250-G1(COARSE 30%)

* The 3-meter long air curtain = 2x FILTR-VCST5D-150-G1



KEY TO CODING

VCST5 D 150-S0 EC-S1-0 A0

A0 – 2VV version

0 – Standart RAL 9016

9 – Atyp RAL

S1– SUPERIOR Master

S2– SUPERIOR Slave

EC– Motor type

S0EC – Ambient

V3EC – LPHW coil 3-row

V5EC – LPHW coil 5-row

150 – Nominal width 1500 mm

200 – Nominal width 2000 mm

250 – Nominal width 2500 mm

300 – Nominal width 3000 mm

D – D Output series

VCST5 – STANDESSE air curtain (5th generation)



air-only



water heater



electric wire heater



BASIC FEATURES

FINESSE EC is a discrete and high-performance recessed air curtain powered by energy-efficient EC fans. The recessed construction makes it unobtrusive and fits perfectly in entrance areas of **banks, administrative centres, luxury boutiques, shopping centres** and **airport halls** with a recommended installation height up to 5 m*.

**Maximum recommended installation height – may vary according the particular conditions at the installation site.*

- Length: 1,0; 1,5; 2,0 and 2,5 m
- **Airflow up to 6.600 m³/h** (ISO 27 327-1)
- **Energy-efficient** and cost saving **EC fans**
- Very low noise level
- **AirGENIO** modular control (Basic, Comfort, Superior)
- Easy installation and service
- Standard colour RAL 9016 and any RAL on request

The air curtain shall be installed indoors in a dry environment with ambient temperature ranging from 0°C up to +35 °C and relative humidity not exceeding 80 %. It is designed for conveying air free of rough dust, grease, chemical fumes and other impurities. IP rating of the air curtain is IP20. **The air curtain project shall always be designed by a HVAC engineer designer.**



PRIMARY PARAMETERS

Air curtains with electric heater are fitted with automatic heat thermostat and emergency thermostat with manual reset. Air curtains with LPHW coil are designed for the maximum operating water temperature of +100 °C and maximum operating pressure of 1.6 MPa.

Type	Recommended installation height [m]	Air output [m³/h] *1				
		100%	80%	60%	40%	20%
VCFI4B100-S0EC	4,0	1950	1850	1650	1400	1000
VCFI4B150-S0EC		3000	2800	2500	2150	1550
VCFI4B200-S0EC		4000	3750	3350	2850	2100
VCFI4B250-S0EC		4900	4550	4150	3500	2450
VCFI4B100-E1EC		1950	1850	1650	1400	1000
VCFI4B150-E1EC		3000	2800	2500	2150	1550
VCFI4B200-E1EC		4000	3750	3350	2850	2100
VCFI4B250-E1EC		4900	4550	4150	3500	2450
VCFI4B100-V2EC		1900	1750	1550	1300	950
VCFI4B150-V2EC		2900	2700	2400	2050	1450
VCFI4B200-V2EC		3900	3650	3250	2750	2000
VCFI4B250-V2EC		4750	4400	3950	3250	2400
VCFI4C100-S0EC	5,0	2800	2600	2400	2150	1750
VCFI4C150-S0EC		3850	3550	3200	2700	1950
VCFI4C200-S0EC		4900	4600	4050	3450	2500
VCFI4C250-S0EC		6600	6300	5200	4400	3250
VCFI4C100-E1EC		2800	2600	2400	2150	1750
VCFI4C150-E1EC		3850	3550	3200	2700	1950
VCFI4C200-E1EC		4900	4600	4050	3450	2500
VCFI4C250-E1EC		6600	6300	5200	4400	3250
VCFI4C100-V2EC		2650	2500	2300	2050	1650
VCFI4C150-V2EC		3750	3500	3100	2600	1900
VCFI4C200-V2EC		4650	4400	3800	3250	2300
VCFI4C250-V2EC		6400	6100	5150	4300	3050
VCFI4C100-V6EC		2450	2300	2100	1900	1500
VCFI4C150-V6EC		3300	3200	2850	2400	1650
VCFI4C200-V6EC		4450	4150	3600	3050	2200
VCFI4C250-V6EC		5900	5600	4750	4000	2800

*1 Airflow volume according ISO27327-1

*2 Acoustic pressure values at 3 m distance for maximum speed. Directional factor: Q=2.

*3 Sound power (LWA) measurements according to ISO 27327-2.


PRIMARY PARAMETERS

Air curtains with electric heater are fitted with automatic heat thermostat and emergency thermostat with manual reset. Air curtains with LPHW coil are designed for the maximum operating water temperature of +100 °C and maximum operating pressure of 1.6 MPa.

Type	Sound power [dB(A)] ¹					Acoustic pressure at 3 m [dB(A)] ²				
	Fan speed									
	100%	80%	60%	40%	20%	100%	80%	60%	40%	20%
VCFI4B100-S0EC	75	74	71	67	59	54	52	49	46	38
VCFI4B150-S0EC	77	76	73	69	62	55	54	51	47	40
VCFI4B200-S0EC	78	76	74	70	62	56	54	52	48	40
VCFI4B250-S0EC	80	79	76	72	64	58	57	54	50	42
VCFI4B100-E1EC	75	74	71	67	59	54	52	49	46	38
VCFI4B150-E1EC	77	76	73	69	62	55	54	51	47	40
VCFI4B200-E1EC	78	76	74	70	62	56	54	52	48	40
VCFI4B250-E1EC	80	79	76	72	64	58	57	54	50	42
VCFI4B100-V2EC	75	73	71	67	59	54	52	50	46	37
VCFI4B150-V2EC	76	75	72	68	61	55	53	50	47	39
VCFI4B200-V2EC	78	76	73	69	61	56	54	52	48	40
VCFI4B250-V2EC	80	78	75	71	63	58	56	53	49	41
VCFI4C100-S0EC	79	77	75	73	66	58	56	54	51	45
VCFI4C150-S0EC	80	79	76	71	63	58	57	54	49	42
VCFI4C200-S0EC	81	79	77	73	65	59	57	55	51	43
VCFI4C250-S0EC	83	81	78	74	65	61	59	56	52	43
VCFI4C100-E1EC	79	77	75	73	66	58	56	54	51	45
VCFI4C150-E1EC	80	79	76	71	63	58	57	54	49	42
VCFI4C200-E1EC	81	79	77	73	65	59B	57	55	51	43
VCFI4C250-E1EC	83	81	78	74	65	61	59	56	52	43
VCFI4C100-V2EC	78	76	74	71	67	57	55	53	50	45
VCFI4C150-V2EC	80	80	76	71	63	58	58	55	49	42
VCFI4C200-V2EC	80	78	76	72	64	58	56	54	50	42
VCFI4C250-V2EC	82	81	78	74	65	60	59	56	52	43
VCFI4C100-V6EC	78	77	75	71	68	56	56	53	50	47
VCFI4C150-V6EC	80	77	75	73	65	58	56	53	52	43
VCFI4C200-V6EC	80	79	75	72	63	58	57	54	51	42
VCFI4C250-V6EC	81	81	77	72	65	59	59	56	50	43

^{*1} Sound power (LWA) measurements according to ISO 27327-2.

^{*2} Acoustic pressure values at 3 m distance for maximum speed. Directional factor: Q=2.

Type	Heater power output [kW]		Total power input [kW]	Total voltage/ current [V/A]	Motors voltage/ current [V/A]	Temperature increase Δt [°C]	Frequency [Hz]	Weight [kg] ⁴
	1st level	2st level						
VCFI4B100-S0EC	-	-	0,36	230/2,4	230/2,4	-	50/60	30
VCFI4B150-S0EC	-	-	0,54	230/3,5	230/3,5	-	50/60	41
VCFI4B200-S0EC	-	-	0,71	230/4,4	230/4,4	-	50/60	54
VCFI4B250-S0EC	-	-	0,85	230/5,4	230/5,4	-	50/60	63
VCFI4B100-E1EC	4,6	9,4	9,77	400/16	230/2,4	14,7*	50/60	34
VCFI4B150-E1EC	7,6	15	15,54	400/25,2	230/3,5	16*	50/60	45
VCFI4B200-E1EC	9,8	19	19,71	400/31,9	230/4,4	14,9*	50/60	61
VCFI4B250-E1EC	12,5	24,5	25,35	400/40,8	230/5,4	15,5*	50/60	73
VCFI4B100-V2EC	-	-	0,35	230/2,4	230/2,4	6,1 ²	50/60	34
VCFI4B150-V2EC	-	-	0,52	230/3,3	230/3,3	17,1 ²	50/60	45
VCFI4B200-V2EC	-	-	0,73	230/4,3	230/4,3	31,4 ²	50/60	61
VCFI4B250-V2EC	-	-	0,84	230/5,3	230/5,3	43 ²	50/60	74
VCFI4C100-S0EC	-	-	0,55	230/3,5	230/3,5	-	50/60	33
VCFI4C150-S0EC	-	-	0,72	230/4,4	230/4,4	-	50/60	43
VCFI4C200-S0EC	-	-	0,90	230/5,3	230/5,3	-	50/60	58
VCFI4C250-S0EC	-	-	1,20	230/7,3	230/7,3	-	50/60	67
VCFI4C100-E1EC	4,6	9,4	9,96	400/17	230/3,5	11,6*	50/60	36
VCFI4C150-E1EC	7,6	15	15,72	400/26	230/4,4	12,3*	50/60	48
VCFI4C200-E1EC	9,8	19	19,90	400/32	230/5,3	10*	50/60	65
VCFI4C250-E1EC	12,5	24,5	25,7	400/42	230/7,3	11,4*	50/60	77
VCFI4C100-V2EC	-	-	0,53	230/3,5	230/3,5	34,5 ²	50/60	36
VCFI4C150-V2EC	-	-	0,71	230/4,2	230/4,2	34,7 ²	50/60	48
VCFI4C200-V2EC	-	-	0,90	230/5,4	230/5,4	36,7 ²	50/60	65
VCFI4C250-V2EC	-	-	1,20	230/7,3	230/7,3	36,1 ²	50/60	78
VCFI4C100-V6EC	-	-	0,53	230/3,4	230/3,4	16 ³	50/60	41
VCFI4C150-V6EC	-	-	0,71	230/4,4	230/4,4	17 ³	50/60	58
VCFI4C200-V6EC	-	-	0,85	230/5,3	230/5,3	17 ³	50/60	77
VCFI4C250-V6EC	-	-	1,18	230/7,3	230/7,3	17 ³	50/60	95

* At the maximum air flow and maximum heater power.

² Intake air temperature +18°C, water temperature gradient of 90/70 °C and highest fan speed.

³ Intake air temperature +18°C, water temperature gradient of 40/30 °C and highest fan speed.

⁴ Weight without controls.

LPHW coil parameters for water temperature gradient 90/70 °C

Type	Air output	Heat output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCFI4B100-V2EC	1900	22,8	53,5	11,6	1,01
VCFI4B150-V2EC	2900	35,0	53,7	12,1	1,55
VCFI4B200-V2EC	3900	47,2	53,8	14,0	2,09
VCFI4B250-V2EC	4750	58,0	54,1	22,0	2,57
VCFI4C100-V2EC	2650	27,6	48,8	16,5	1,22
VCFI4C150-V2EC	3750	40,6	50,0	16,0	1,80
VCFI4C200-V2EC	4650	52,3	51,3	17,0	2,32
VCFI4C250-V2EC	6400	68,8	49,8	30,5	3,06

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient 80/60 °C

Type	Air output	Heat output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCFI4B100-V2EC	1900	18,6	47,0	8,1	0,82
VCFI4B150-V2EC	2900	28,6	47,2	8,4	1,26
VCFI4B200-V2EC	3900	38,6	47,3	9,7	1,70
VCFI4B250-V2EC	4750	47,6	47,7	15,4	2,10
VCFI4C100-V2EC	2650	22,4	43,1	11,4	0,99
VCFI4C150-V2EC	3750	33,1	44,1	11,1	1,46
VCFI4C200-V2EC	4650	42,7	45,2	11,7	1,89
VCFI4C250-V2EC	6400	56,3	44,1	21,1	2,49

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient 70/50 °C

Type	Air output	Heat output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCFI4B100-V2EC	1900	14,4	40,4	5,1	0,63
VCFI4B150-V2EC	2900	22,2	40,6	5,3	0,97
VCFI4B200-V2EC	3900	29,9	40,7	6,1	1,31
VCFI4B250-V2EC	4750	37,1	41,2	9,8	1,63
VCFI4C100-V2EC	2650	17,3	37,3	7,1	0,76
VCFI4C150-V2EC	3750	25,5	38,2	6,9	1,12
VCFI4C200-V2EC	4650	33,0	39,0	7,3	1,45
VCFI4C250-V2EC	6400	43,8	38,3	13,4	1,93

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient 60/40 °C

Type	Air output	Heat output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCFI4B100-V2EC	1900	10,1	33,8	2,7	0,44
VCFI4B150-V2EC	2900	15,6	33,9	2,8	0,68
VCFI4B200-V2EC	3900	21,1	34,0	3,2	0,92
VCFI4B250-V2EC	4750	26,5	34,5	5,3	1,16
VCFI4C100-V2EC	2650	12,1	31,5	3,7	0,53
VCFI4C150-V2EC	3750	17,9	32,1	3,6	0,78
VCFI4C200-V2EC	4650	23,2	32,8	3,8	1,02
VCFI4C250-V2EC	6400	31,1	32,4	7,2	1,36

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient 40/30 °C

Type	Air output	Heat output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCFI4C100-V6EC	2450	13,2	34,0	13,9	1,15
VCFI4C150-V6EC	3300	18,7	34,8	15,9	1,62
VCFI4C200-V6EC	4450	24,9	34,6	14,1	2,16
VCFI4C250-V6EC	5900	32,9	34,5	25,7	2,85

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient 35/25 °C

Type	Air output	Heat output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCFI4C100-V6EC	2450	8,9	28,8	6,9	0,77
VCFI4C150-V6EC	3300	12,8	29,5	8,1	1,11
VCFI4C200-V6EC	4450	16,9	29,3	7,0	1,47
VCFI4C250-V6EC	5900	22,5	29,3	12,9	1,95

* Temperature of intake air: +18 °C

Recommended mixing points for LPHW coil 3-way valve

Type	Control module	90/70 °C	80/60 °C	70/50 °C	60/40 °C
		3-way valve			
VCFI4B100-V2EC	BASIC	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	COMFORT	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
	SUPERIOR	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
VCFI4B150-V2EC	BASIC	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	COMFORT	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
	SUPERIOR	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
VCFI4B200-V2EC	BASIC	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	COMFORT	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20
	SUPERIOR	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20
VCFI4B250-V2EC	BASIC	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	COMFORT	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20
	SUPERIOR	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20
VCFI4C100-V2EC	BASIC	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	COMFORT	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
	SUPERIOR	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
VCFI4C150-V2EC	BASIC	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	COMFORT	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
	SUPERIOR	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
VCFI4C200-V2EC	BASIC	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	COMFORT	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20
	SUPERIOR	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20
VCFI4C250-V2EC	BASIC	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	COMFORT	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20
	SUPERIOR	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20

Type	Control module	40/30 °C	35/25 °C
		3-way valve	
VCFI4C100-V6EC	BASIC	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07
	COMFORT	ZV3-024-04,0-20	ZV3-024-04,0-20
	SUPERIOR	ZV3-024-04,0-20	ZV3-024-04,0-20
VCFI4C150-V6EC	BASIC	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07
	COMFORT	ZV3-024-04,0-20	ZV3-024-04,0-20
	SUPERIOR	ZV3-024-04,0-20	ZV3-024-04,0-20
VCFI4C200-V6EC	BASIC	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07
	COMFORT	ZV3-024-06,3-20	ZV3-024-06,3-20
	SUPERIOR	ZV3-024-06,3-20	ZV3-024-06,3-20
VCFI4C250-V6EC	BASIC	ZV3-230-21,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07
	COMFORT	ZV3-024-06,3-20	ZV3-024-06,3-20
	SUPERIOR	ZV3-024-06,3-20	ZV3-024-06,3-20

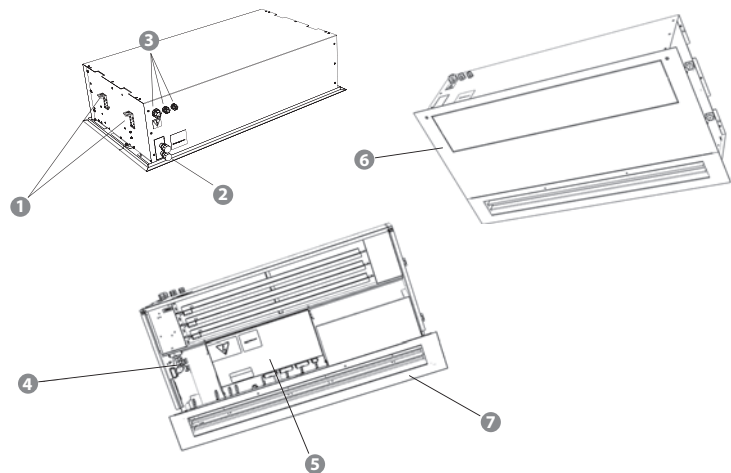
Recommended mixing points for LPHW coil 2-way valve

Type	Control module	90/70 °C	80/60 °C	70/50 °C	60/40 °C
		2-way valve			
VCFI4B100-V2	BASIC	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	COMFORT	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
	SUPERIOR	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCFI4B150-V2	BASIC	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	COMFORT	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
	SUPERIOR	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCFI4B200-V2	BASIC	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	COMFORT	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
	SUPERIOR	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCFI4B250-V2	BASIC	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	COMFORT	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
	SUPERIOR	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCFI4C100-V2	BASIC	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	COMFORT	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
	SUPERIOR	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCFI4C150-V2	BASIC	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	COMFORT	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
	SUPERIOR	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCFI4C200-V2	BASIC	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	COMFORT	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
	SUPERIOR	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCFI4C250-V2	BASIC	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	COMFORT	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
	SUPERIOR	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20

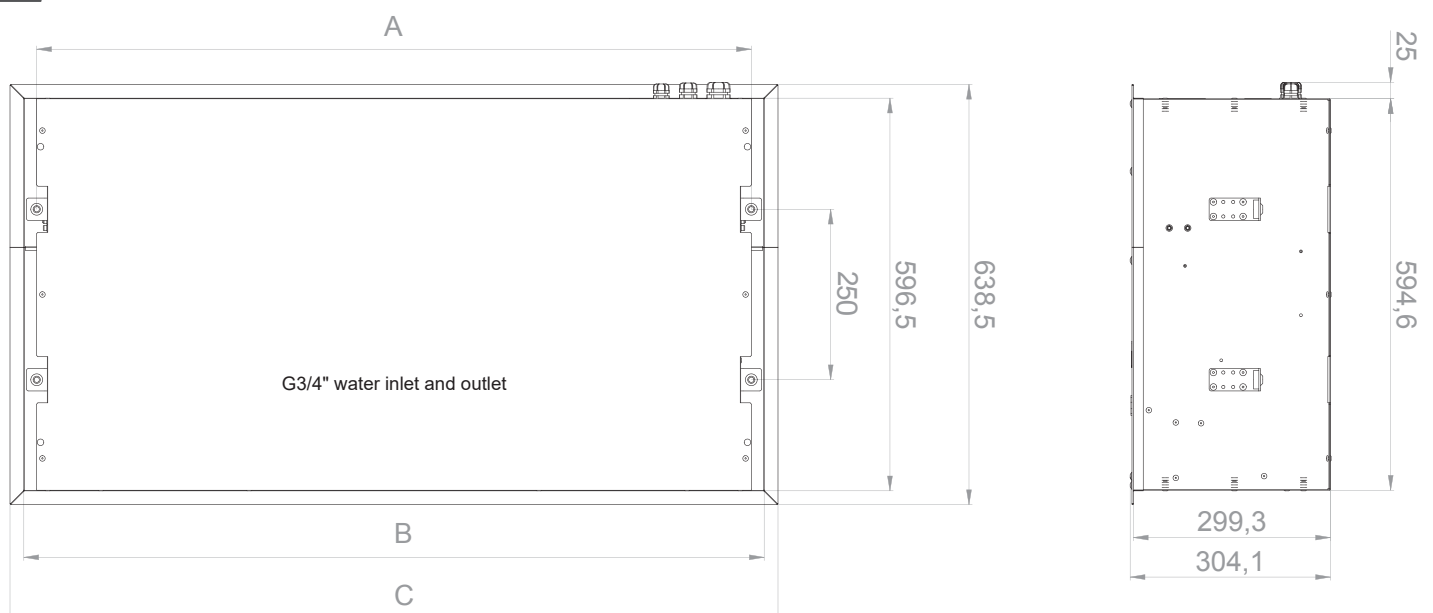
Type	Control module	40/30 °C	35/25 °C
		2-way valve	
VCFI4C100-V6	BASIC	ZV2-230-08,0-20	ZV2-230-08,0-20
	COMFORT	ZV2-024-08,0-20	ZV2-024-08,0-20
	SUPERIOR	ZV2-024-08,0-20	ZV2-024-08,0-20
VCFI4C150-V6	BASIC	ZV2-230-08,0-20	ZV2-230-08,0-20
	COMFORT	ZV2-024-08,0-20	ZV2-024-08,0-20
	SUPERIOR	ZV2-024-08,0-20	ZV2-024-08,0-20
VCFI4C200-V6	BASIC	ZV2-230-08,0-20	ZV2-230-08,0-20
	COMFORT	ZV2-024-08,0-20	ZV2-024-08,0-20
	SUPERIOR	ZV2-024-08,0-20	ZV2-024-08,0-20
VCFI4C250-V6	BASIC	ZV2-230-08,0-20	ZV2-230-08,0-20
	COMFORT	ZV2-024-08,0-20	ZV2-024-08,0-20
	SUPERIOR	ZV2-024-08,0-20	ZV2-024-08,0-20

MAIN PARTS

- ① Suspension holders
- ② Water coil connection $\frac{3}{4}$ "
- ③ Power supply cable plug
- ④ Power supply connectors and fuse location
- ⑤ Control modul socket
- ⑥ Inlet face cover
- ⑦ Outlet grid



DIMENSIONS

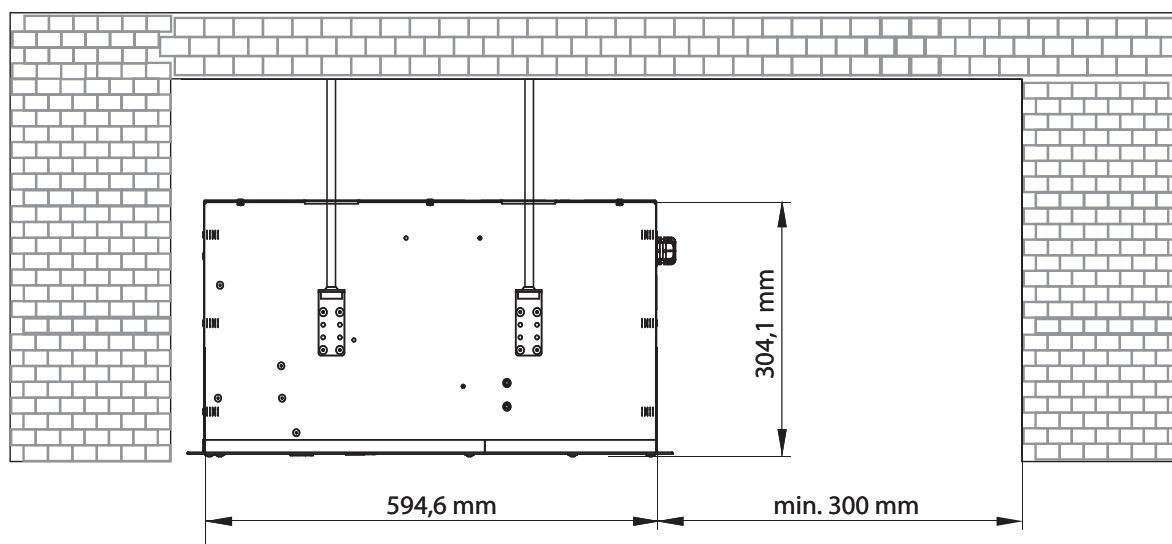


Type	A [mm]	B [mm]	C [mm]
VCFI-x-100-x...	1085	1124	1166
VCFI-x-150-x...	1585	1624	1666
VCFI-x-200-x...	2085	2124	2166
VCFI-x-250-x...	2465	2504	2546



INSTALLATION AND ASSEMBLY

- The air curtain shall be installed in a horizontal position only.
- The air curtain shall be located as close to the top edge of the doorway as possible, see figure.
- To ensure a correct function it is recommended that the air curtain overlaps the doorway by 100 mm on both sides.
- Correct operation of the air curtain requires that specified distances from the surrounding objects are observed, see figure.
- Position of the heating water and power supply connections and service access shall be taken into consideration during installation.
- Suspension holders are used for installing the air curtains see ACCESSORIES.
- The air curtain shall be installed separated from flammable materials and safe operation has to be kept.



CONTROL

The **FINESSE** air curtains are produced with universal interface for control module connection. There are three types of control modules available (BASIC, COMFORT and SUPERIOR). Control module is a mandatory accessory for each air curtain. Additional change of control system is available. Control module is connected with air curtain by quick connection sockets. The basic differences among individual control module types are given in table underneath.


CONTROL
Overview of functions and sensor connections


AirGENIO control		BASIC VCST4-AGBA1-M-EC	COMFORT VCST4-AGCO1-M-EC	SUPERIOR VCST4-AGSU1-M-EC
	Type of controller	Manual	Touch screen	Touch screen
	Mode	Manual	Manual / Auto	Manual / Auto
	Control of air output	PWM	PWM	PWM
	Control of electric heater	OFF / Level1 / Level2	OFF / Level1 / Level2	PWM
	Control of water heater	ON/OFF	ON-OFF / 0-10V	0-10V
	Antifreeze protection of LPHW	NO	YES	YES
	Possibility of connecting a door contact	YES	YES	YES
	External control	NO	YES	YES
	Temperature measurement	NO	YES (NTC)*	YES (NTC)*
	Chaining air curtains	NO	YES – max 10+1 pcs	YES – max 10+1 pcs
	Indication of selected function	NO	YES (Display)	YES (Display)
	Controller connection to air curtain	Power wire + Communication cable (UTP)	Communication cable (UTP)	Communication cable (UTP)
	Self learning mode	NO	YES	YES
	BMS connection	NO	Modbus RTU	Modbus RTU, Modbus TCP, BACnet
	Error contact	NO	YES	YES
	2 nd control panel ready	NO	YES	YES

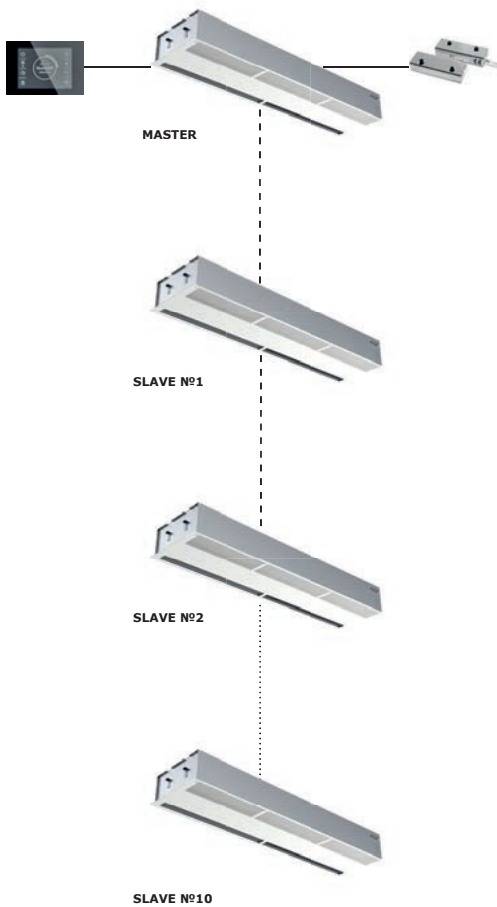
*) Temperature sensor included in standard. Temperature shown on display.



CHAINING EXAMPLE

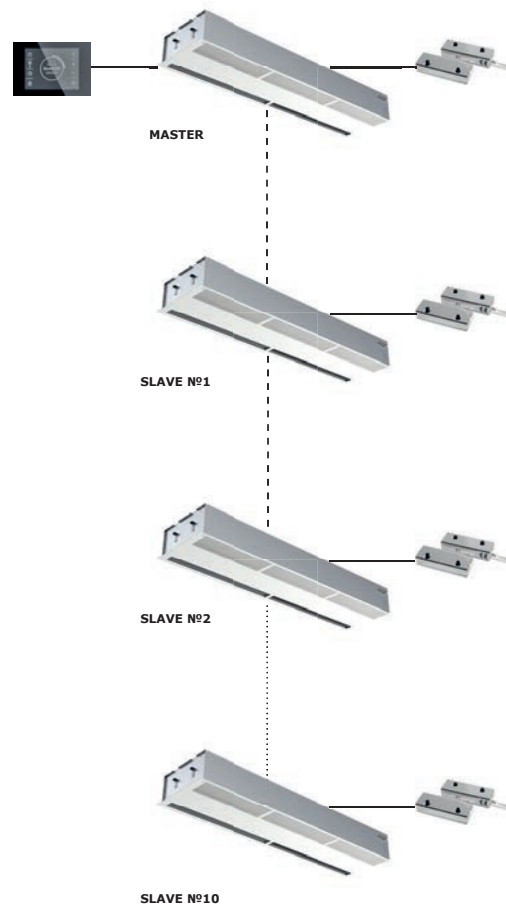
COMFORT / SUPERIOR

Global Door contact function active
(Single door with multiple air curtains)



COMFORT / SUPERIOR

Global Door contact function not active
(Multiple doors with own door contact)





ACCESSORIES

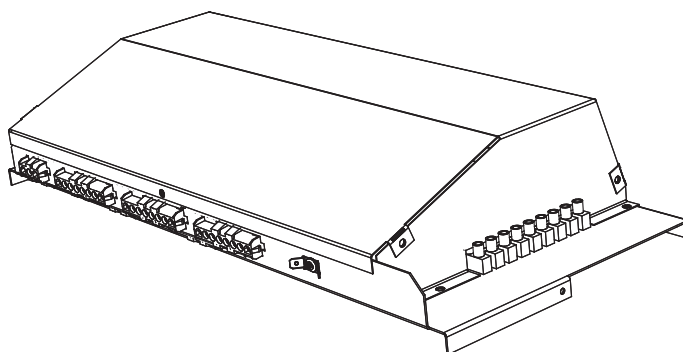
REQUIRED ACCESSORIES

These accessories shall be ordered to make the air curtain functional.

AirGENIO control module

A control module is a required accessory for air curtain and shall be ordered for each air curtain. Control panel is included in delivery of control module. The ordering key for control modules is provided below.

Communication cable has to be ordered separately as an optional accessorie.



VCST4 - AGCO1 - M- EC - S0 - 0A0

0A0 – 2VV version

S0 – Without heating

E2 – Electric heater 2-STEP control (BASIC, COMFORT)

EF – Electric heater FLUENT control (SUPERIOR)

V1 – Water heater ON/OFF control (BASIC)

VF – Water heater FLUENT control (SUPERIOR)

VC – Water heater control with choice of ON/OFF or 0-10V (COMFORT)

EC – For EC fans

S – SLAVE controls (only for COMFORT, SUPERIOR)

M – MASTER controls (only for COMFORT, SUPERIOR)

AGBA1 - AirGENIO BASIC 1st generation (mechanical)

AGCO1 - AirGENIO COMFORT 1st generation (touch screen)

AGSU1 - AirGENIO SUPERIOR 1st generation (touch screen)

VCST4 – Air curtain STANDESSE / FINESSE



OPTIONAL ACCESSORIES

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

Thermostatic valve TV-1-1/1
TV-1-1/1



2-way or 3-way valve with servo drive (230V)
ZV2-230-xx,x-xx
ZV3-230-xx,x-xx
(for BASIC and COMFORT control)



3-way valve with servo drive RT
RT-3-07 (K_{vs} 07)
(for BASIC and COMFORT control)



2-way or 3-way valve with servo drive (0-10V)
ZV2-024-xx,x-xx
ZV3-024-xx,x-xx
(for COMFORT and SUPERIOR control)



Room thermostat
TER-P
(for BASIC control)



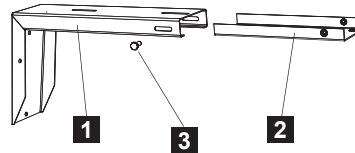
Room temperature sensor for wall installation
CT-ROOM
(for COMFORT and SUPERIOR control)



Wall mounting bracket

Bracket designed for mounting the air curtain to the wall.

- 1 Bracket
- 2 Hanging strip
- 3 Securing screw



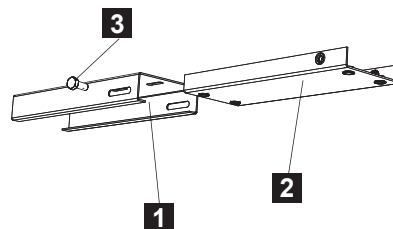
VCS4-KONZ-STE

- for B and C air curtains (2 pcs. in package)
- wall mounting bracket

Ceiling holder

The holder is designed for attaching the air curtain to a ceiling.

- 1 Ceiling bracket
- 2 Hanging strip
- 3 Securing screw



VCS4-KONZ-STR

- for B and C air curtains (2 pcs. in package)
- ceiling holder

Exit sign for marking of emergency exits.

Suitable for all types of air curtains.

VCS4-EXIT



Mechanical industry door switch

DS

Heavy-duty door contact for industry use



Magnetic door contact

Magnetic door contact in metal housing with higher protection against mechanical damage

DK-B-3



2nd Control panel

ND-REMOTE-CONTROL (for control COMFORT, SUPERIOR)



VCFI4-100-FI-G1

G1 - Coarse 30%

FI - Spare air filters

100 - Nominal length 1000mm

150 - Nominal length 1500mm

200 - Nominal length 2000mm

250 - Nominal length 2500mm

VCFI4 - Accessory for FINESSE air curtain



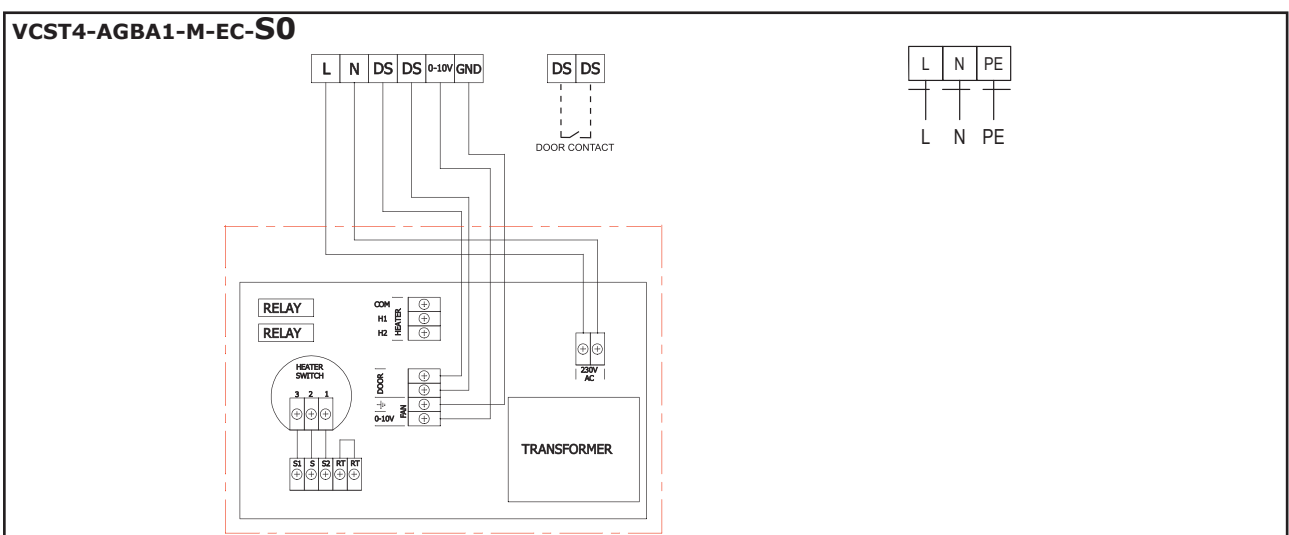
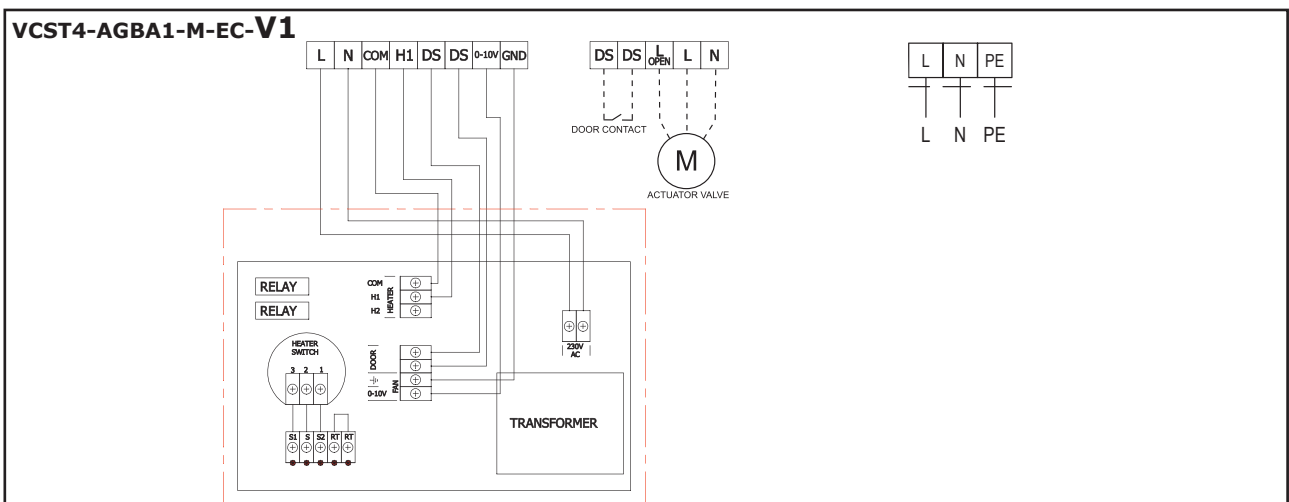
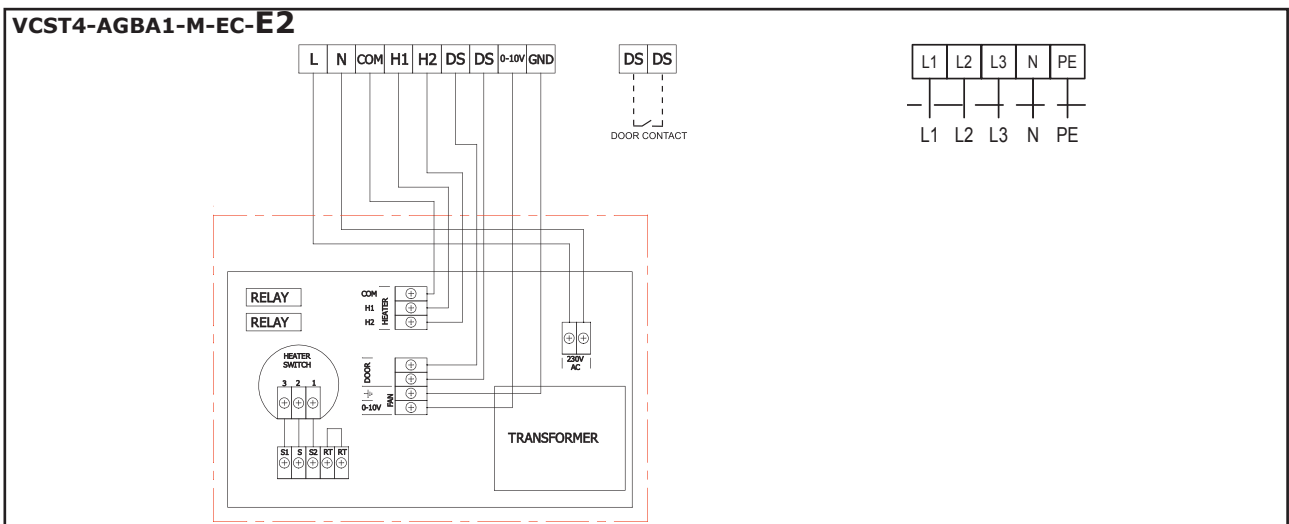


WIRING DIAGRAMS

The recommended cross-section of the main power supply cables is stated in the Instruction Manual.

All wiring diagrams provided in the technical catalog are indicative only. When assembling the product, carefully observe the nameplate ratings as well as directions and diagrams affixed directly to the product or enclosed with the product.

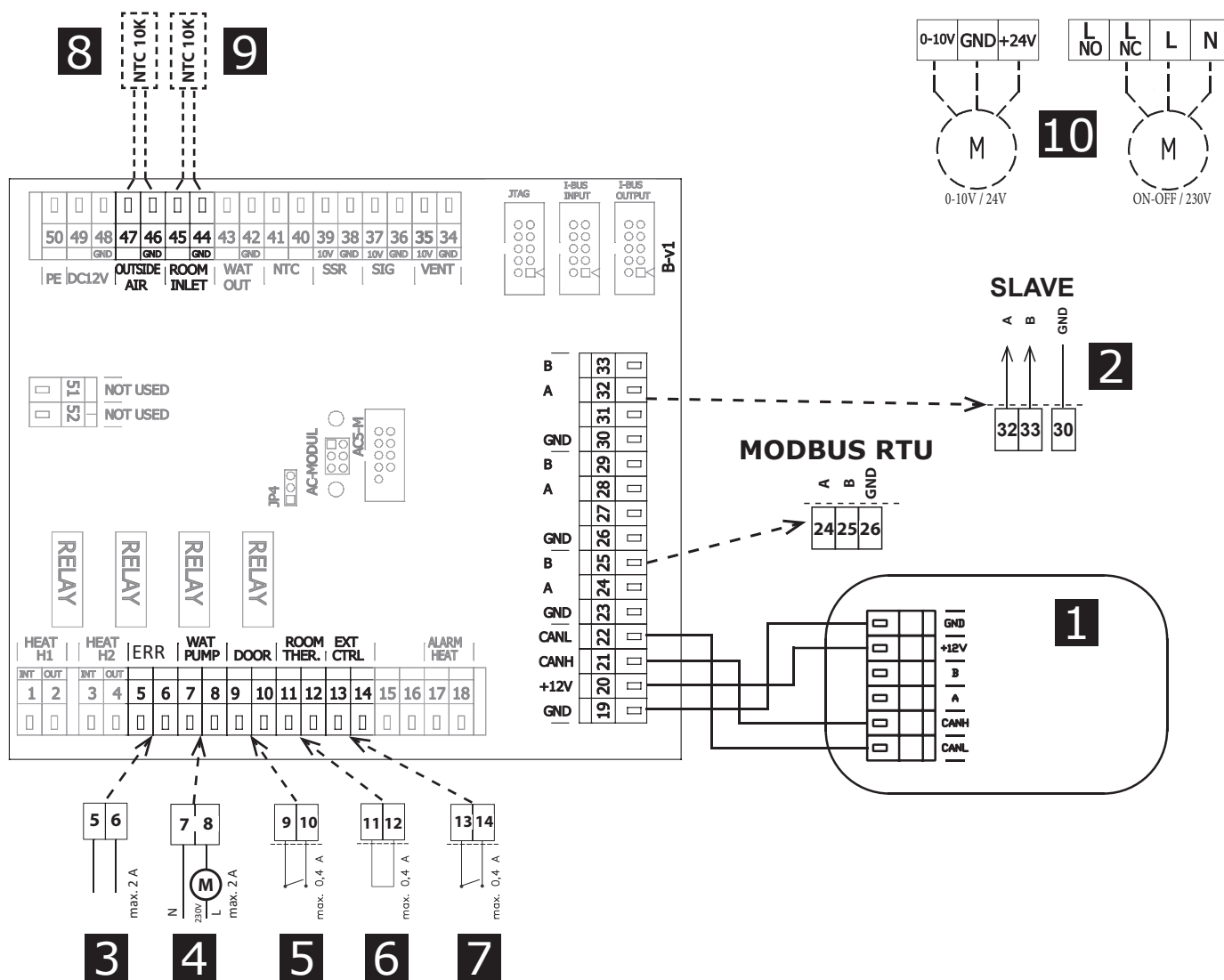
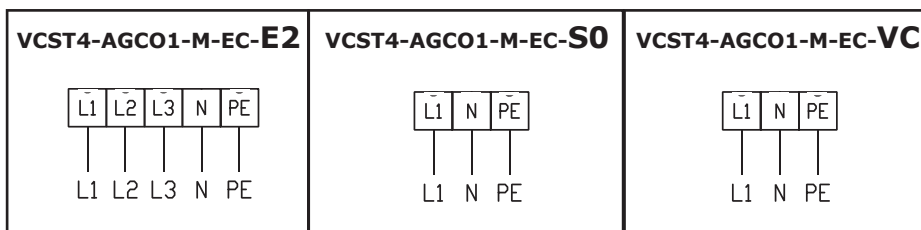
AirGENIO BASIC





WIRING DIAGRAMS

AirGENIO COMFORT MASTER



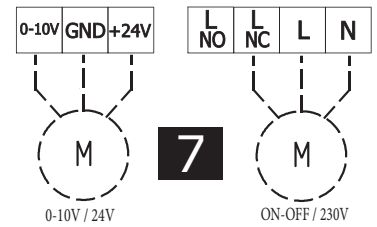
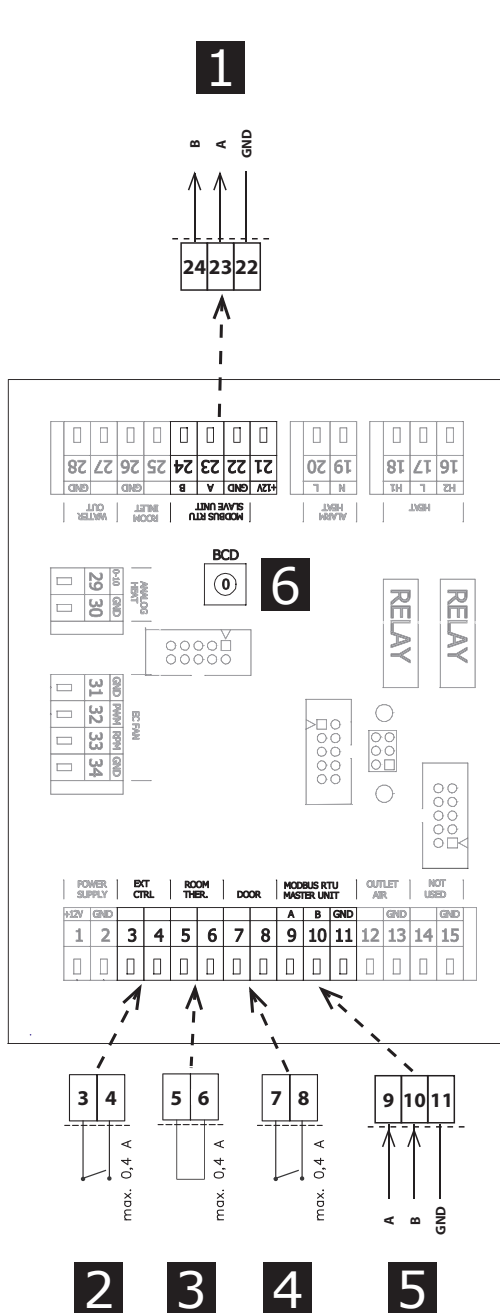
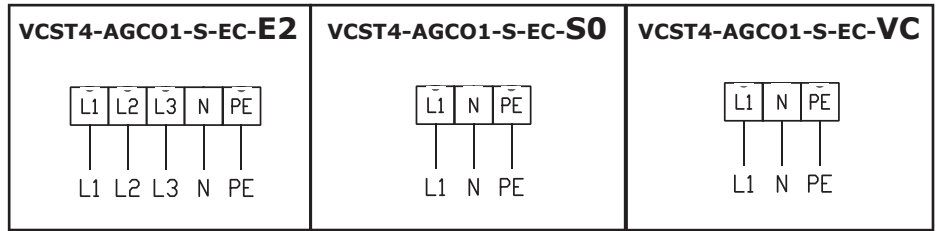
EN	
1	Control panel
2	Signal to SLAVE unit
3	ERROR contact (relay contact, NO/NC)
4	Water pump (relay contact)*
5	DOOR contact (input, NO/NC)
6	Room thermosat (input, NO/NC)
7	External control (input, NO/NC)
8	Outside air temp. sensor (include delivery)
9	Room temp. sensor (include delivery)
10	Water valve control connection (option 1 = ON-OFF, option 2 = 0-10V)*

* Available for VCST4-AGCO1-M-EC-VC only



WIRING DIAGRAMS

AirGENIO COMFORT
SLAVE



EN	
1	Signal to SLAVE unit
2	External control - ON/OFF
3	Room thermostat (input)
4	DOOR contact (input)
5	Signal from MASTER unit
6	Address of the slave air curtain
7	Water valve control connection (option 1 = ON-OFF, option 2 = 0-10V)*

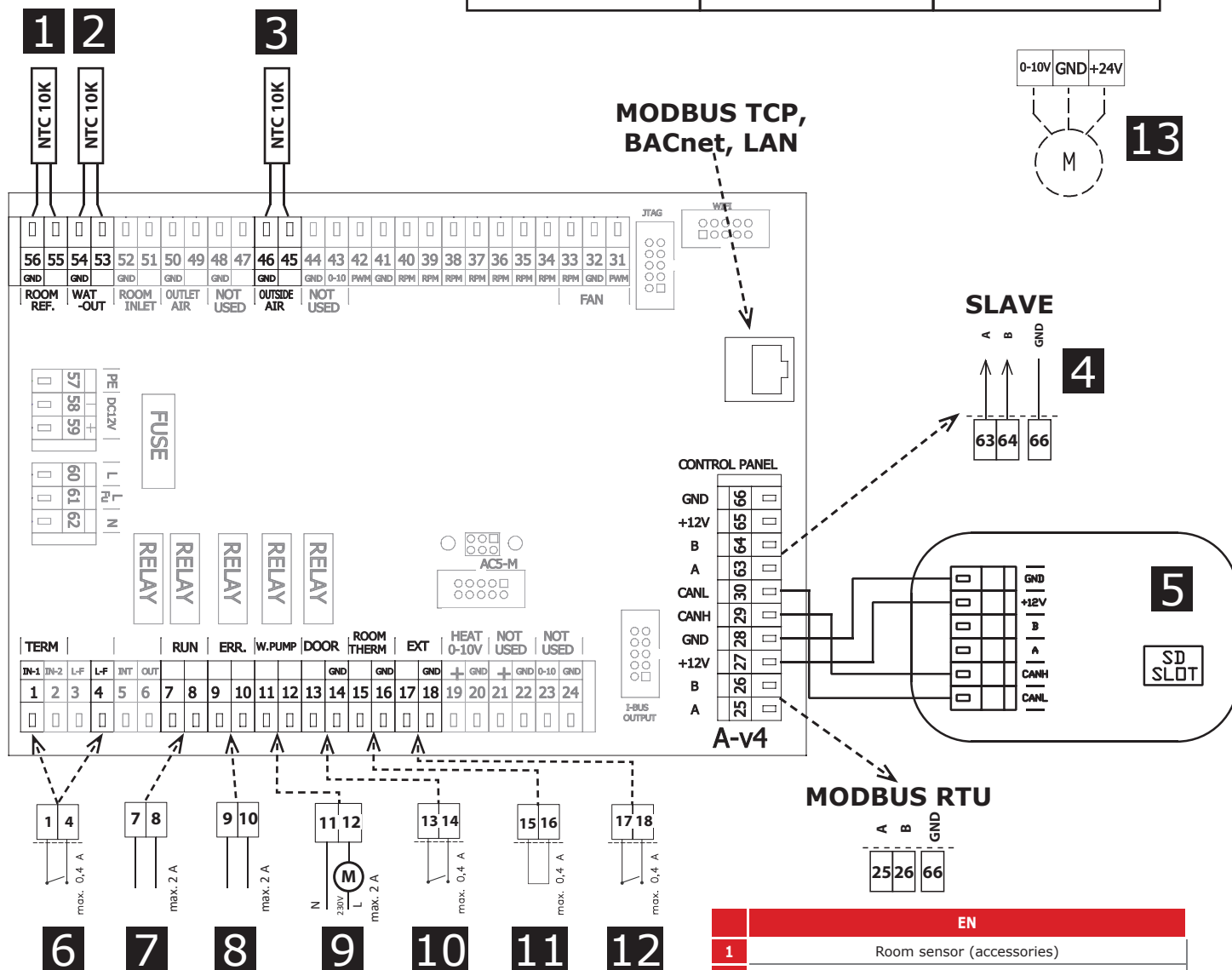
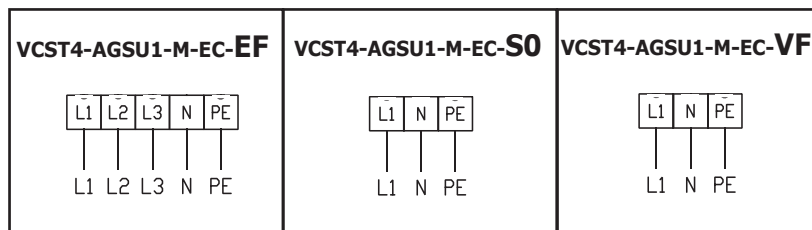
* Available for VCST4-AGCO1-S-EC-VC only

SLAVE	BCD
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	A



WIRING DIAGRAMS

AirGENIO SUPERIOR MASTER



EN	
1	Room sensor (accessories)
2	Water return sensor (included in delivery)
3	Outside air sensor (included in delivery)
4	Signal to SLAVE unit
5	Control panel
6	Antifreeze thermostat (NC)
7	RUN contact (relay contact, NO/NC)
8	ERROR contact (relay contact, NO/NC)
9	Water pump (relay contact)
10	DOOR contact (input, NO/NC)
11	Room thermostat (input, NO/NC)
12	External control (input, NO/NC)
13	Water valve control (0-10V, 24V)*

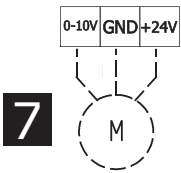
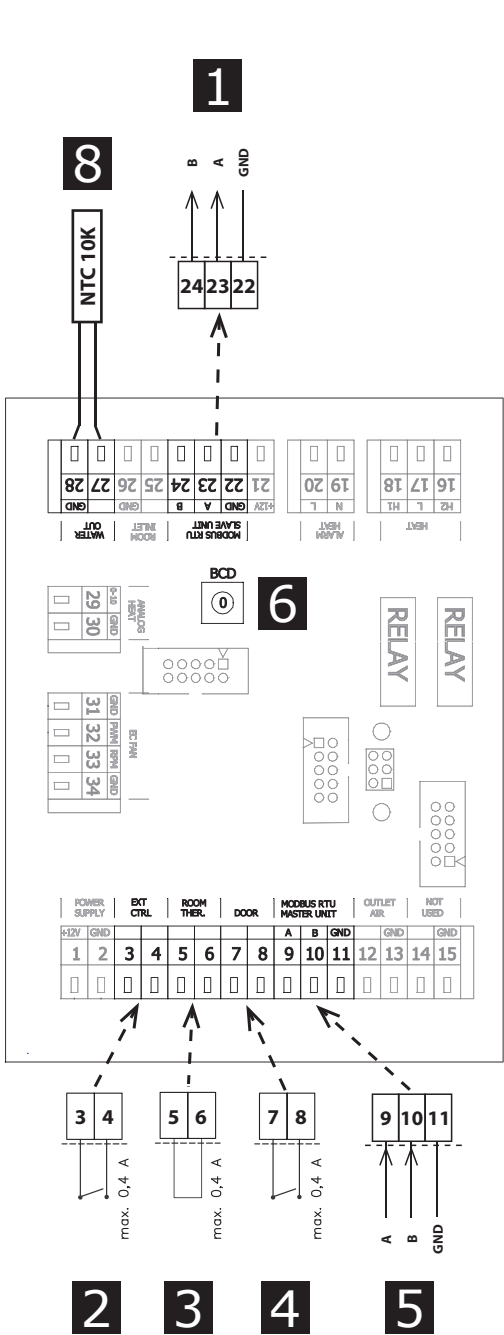
* Available for VCST4-AGSU1-M-EC-VF only



WIRING DIAGRAMS

AirGENIO SUPERIOR
SLAVE

VCST4-AGSU1-S-EC-EF	VCST4-AGSU1-S-EC-S0	VCST4-AGSU1-S-EC-VF
L1L2L3NPE L1L2L3NPE	L1NPE L1NPE	L1NPE L1NPE



	EN
1	Signal to SLAVE unit
2	External control - ON/OFF
3	Room thermostat (input)
4	DOOR contact (input)
5	Signal from MASTER unit
6	Address of the slave air curtain
7	Water valve control (0-10V, 24V)*
8	Water return sensor (included in delivery)

* Available for VCST4-AGSU1-S-EC-VF only

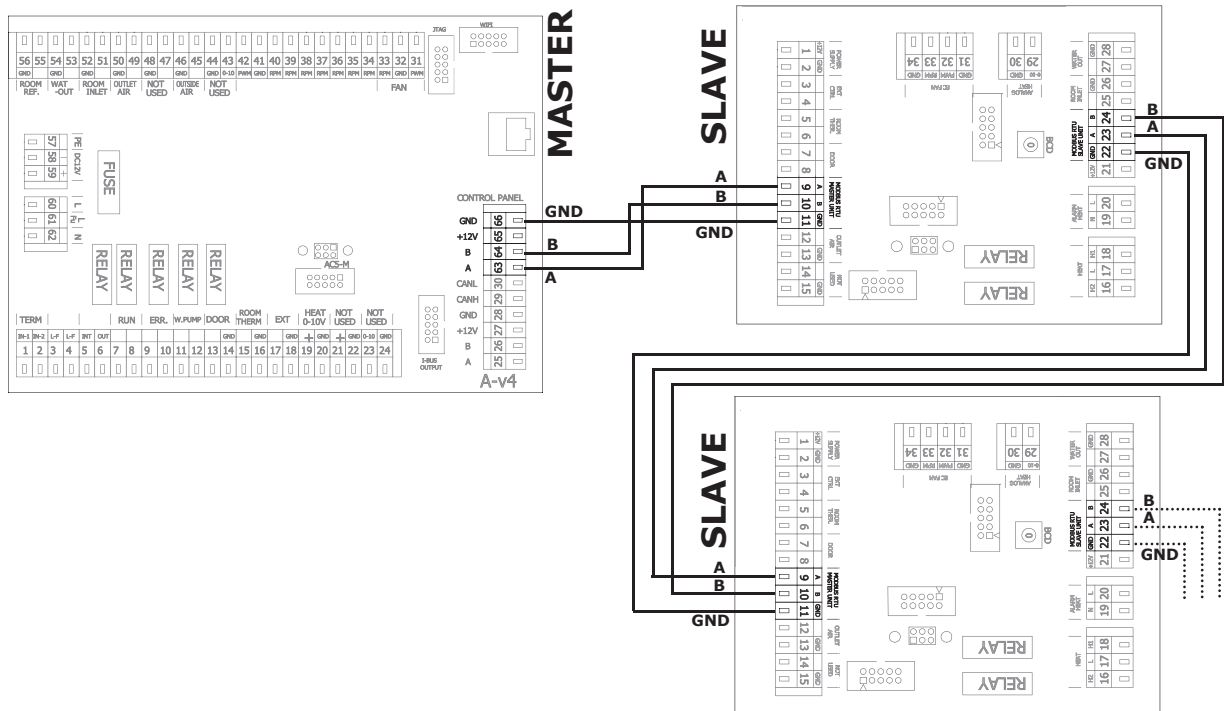
SLAVE	BCD
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	A



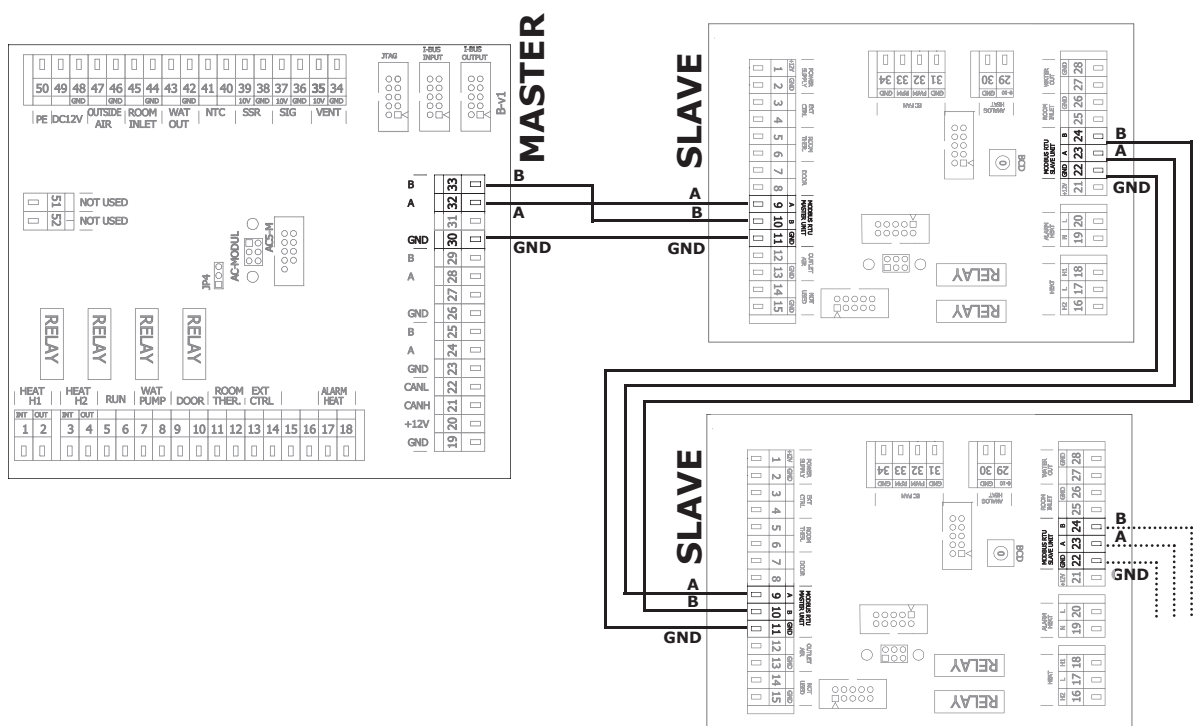
WIRING DIAGRAMS

Chaining

AirGENIO SUPERIOR



AirGENIO COMFORT





KEY TO CODING

VCFI4 B 100 - S0 EC - CR - 0 A0

A0	2VV version
0	White colour casing RAL 9016 (Standard)
9	Atyp RAL casing
CR	Control ready
EC	EC fans
S0	Air-only (ambient)
E1	Electric heater
V2	Water heating 2row coil
V6	Water heating 6row coil (available only for VCFI4C)
100	Nominal width 1000 mm
150	Nominal width 1500 mm
200	Nominal width 2000 mm
250	Nominal width 2500 mm
B	B Output series
C	C Output series
VCFI4	FINESSE air curtain (4th generation)



air-only



water heater



electric wire heater



BASIC FEATURES

- Lengths: **1.65; 2.20** and **2.75** m
- **EC Version:** Air flow up to **19000 m³/h** (ISO 27 327-1)
- **Straw System exhaust** with maximized screening effect thanks to the compact and laminar airflow
- **Horizontal and vertical** installation; exhaust direction to be adjusted by air curtain holders
- Fast and easy connection of individual modules
- Maintenance-free air curtain with a long service life
- In standard available in: **colour RAL 9016**, galvanised casing or **stainless steel C4-resistant casing**; further available in any RAL colour based upon customers

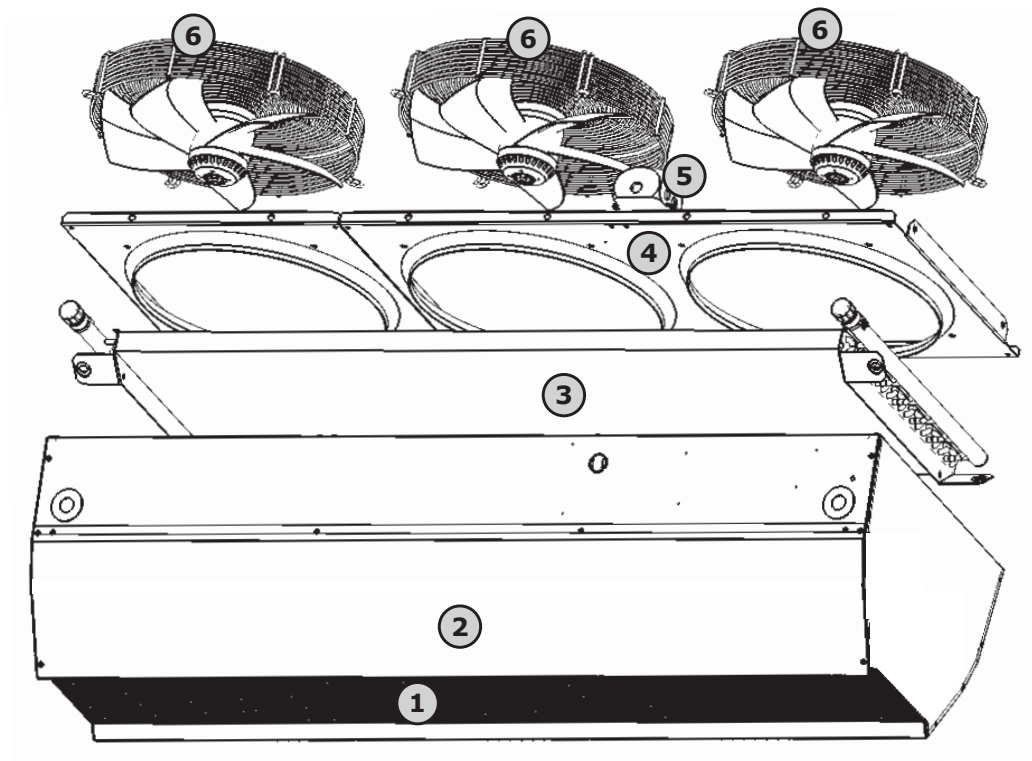
The INDESSE is a high-performance industrial air curtain for vertical and horizontal installation for use in **manufacturing halls, warehouses and other industrial buildings** with a recommended installation height / width up to **8 m**. The air curtain with electric or LPHW coil shall be installed indoors in a dry area with ambient temperatures ranging from +5 °C up to +40 °C and relative humidity of up to 80 %. Ambient air curtains (with no LPHW or electric coil) are able to be installed indoors with an ambient temperatures ranging from -10 °C up to +40 °C but only with dry cold air. It is designed for conveying air free of rough dust, grease, chemical fumes, and other impurities. The IP rating of air curtains without a heater and with water heating is IP44. The IP rating of the air curtain with the electric heating is IP 20. The fans comply with requirements of IP 54. **The air curtain project shall always be developed by the HVAC designer.**

**PRIMARY PARAMETERS**

Air curtains with an electric heater are fitted with safety thermostats. Fan motors are equipped with thermal contacts, which can be used to turn off the air curtain in case of the overheating of the motor. The LPHW coils are designed for maximum operating water temperature of **+110 °C** and a maximum operation pressure of 1.6 MPa. Stainless steel C4 air curtains are equipped with LPHW coils specially treated with LCE hydrophobic coating.

MAIN PARTS

- ① Exhaust (Straw system)
- ② Main body
- ③ LPHW
- ④ Back side
- ⑤ Motor connection box
- ⑥ Motor




PRIMARY PARAMETERS

Type	Recommended installation height [m]	Air output [m³/h] *1					Acoustic pressure at 3m[dB(A)] *2	Sound power [dB(A)]*3
		100%	80%	60%	40%	20%		
VCIN2A150-S0EC	7,5	11400	9840	8300	6265	4515	68	84
VCIN2A150-V2EC		10500	9055	7640	5760	4150	68	84
VCIN2A150-E1EC		11400	9840	8300	6265	4515	68	84
VCIN2A200-S0EC	8,0	15200	13120	11070	8350	6020	69	86
VCIN2A200-V2EC		14000	12070	10180	7685	5540	68	85
VCIN2A200-E1EC		15200	13120	11070	8350	6020	69	86
VCIN2A250-S0EC	7,5	19000	16400	13830	10440	7520	71	87
VCIN2A250-V2EC		17500	15090	12730	9610	6920	70	87
VCIN2A250-E1EC		19000	16400	13830	10440	7520	71	87

*1 Airflow volume according ISO27327-1

*2 Acoustic pressure values at 3 m distance for maximum speed. Directional factor: Q=2.

*3 Sound power (LWA) measurements according to ISO 27327-2.

Type	Heater power output [kW]		Total power input [kW]	Total voltage/ current [V/A]	Motor voltage/ current [V/A]	Temperature increase Δt [°C]	Frequency [Hz]	Weight [kg]
	1st level 1 St.	2st level 2 St.						
VCIN2A150-S0EC	-	-	1	230/ 4,1	230/4,1		50/60	51 / 54*3
VCIN2A150-V2EC	76		1	230/ 4,1	230/4,1	22*2	50/60	60 / 63*3
VCIN2A150-E1EC	12,1	24,3	25,3	400/ 39,1	230/4,1	6,4*	50/60	55
VCIN2A200-S0EC	-	-	1,3	230/5,4	230/5,4		50/60	69 / 72*3
VCIN2A200-V2EC	102		1,3	230/5,4	230/5,4	23*2	50/60	78 / 81*3
VCIN2A200-E1EC	16,2	32,4	33,5	400/ 52,3	230/1,3	6,4*	50/60	74
VCIN2A250-S0EC	-	-	1,6	230/6,8	230/6,8		50/60	83 / 86*3
VCIN2A250-V2EC	129		1,6	230/6,8	230/6,8	23*2	50/60	98 / 101*3
VCIN2A250-E1EC	20,2	40,5	42,1	400/65,3	230/6,8	6,4*	50/60	89

* At the maximum air flow and maximum heater power

*2 Intake air temperature +15°C, water temperature gradient of 90/70 °C and highest fan speed.

*3 Standard / Stainless steel C4 version

LPHW coil parameters for water temperature gradient of 60/40 °C

Type	Air flow [m³/h]	Heat output [kW]	Outlet temperature [°C]	Pressure loss [kPa]	Water flow [l/s]
VCIN2A150-V2EC	10500	37,9	26,0	8	0,45
VCIN2A200-V2EC	14000	50,8	26,1	7	0,61
VCIN2A250-V2EC	17500	63,6	26,1	5	0,76

* Temperature of intake air: +15 °C

LPHW coil parameters for water temperature gradient of 70/50 °C

Type	Air flow [m³/h]	Heat output [kW]	Outlet temperature [°C]	Pressure loss [kPa]	Water flow [l/s]
VCIN2A150-V2EC	10500	50,9	29,9	13	0,61
VCIN2A200-V2EC	14000	68,4	30,1	9	0,82
VCIN2A250-V2EC	17500	85,8	30,1	9	1,03

* Temperature of intake air: +15 °C

LPHW coil parameters for water temperature gradient of 80/60 °C

Type	Air flow [m³/h]	Heat output [kW]	Outlet temperature [°C]	Pressure loss [kPa]	Water flow [l/s]
VCIN2A150-V2EC	10500	63,6	33,9	18	0,76
VCIN2A200-V2EC	14000	85,5	34,1	14	1,03
VCIN2A250-V2EC	17500	108	34,2	11	1,29

* Temperature of intake air: +15 °C

LPHW coil parameters for water temperature gradient of 90/70 °C

Type	Air flow [m³/h]	Heat output [kW]	Outlet temperature [°C]	Pressure loss [kPa]	Water flow [l/s]
VCIN2A150-V2EC	10500	76,0	37,9	24	0,92
VCIN2A200-V2EC	14000	102	38,2	17	1,24
VCIN2A250-V2EC	17500	129	38,3	15	1,55

* Temperature of intake air: +15 °C

LPHW coil parameters for water temperature gradient of 110/80 °C

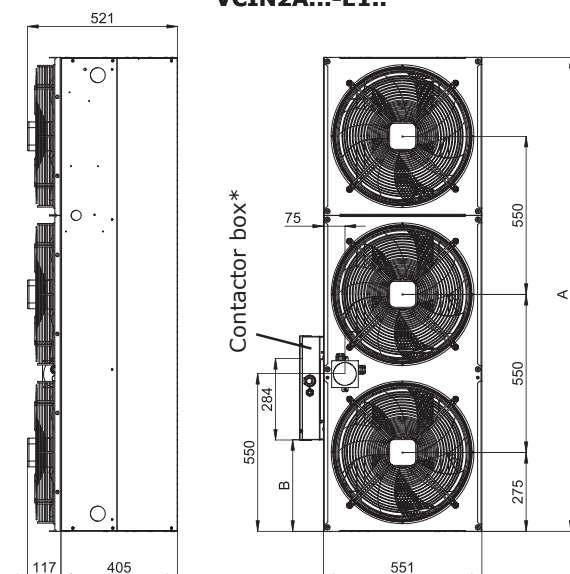
Type	Air flow [m³/h]	Heat output [kW]	Outlet temperature [°C]	Pressure loss [kPa]	Water flow [l/s]
VCIN2A150-V2EC	10500	92,2	43,3	16	0,75
VCIN2A200-V2EC	14000	124	43,6	12	1
VCIN2A250-V2EC	17500	156	43,8	10	1,26

* Temperature of intake air: +15 °C



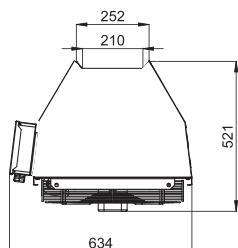
AIR CURTAIN DIMENSIONS

VCIN2A...-E1..

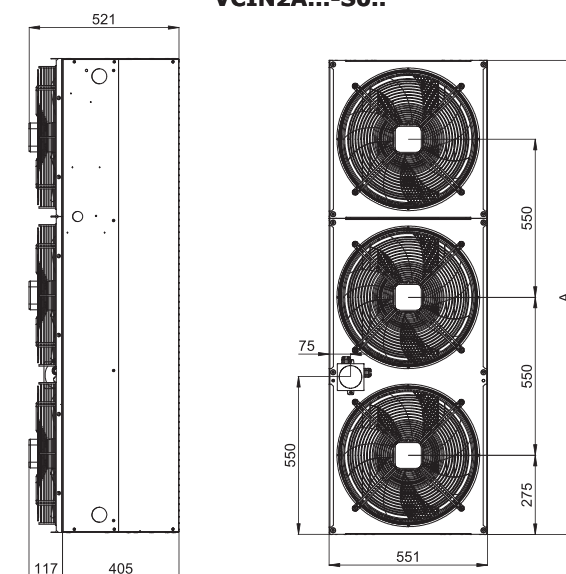


* - Accessories

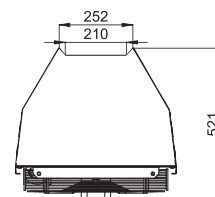
VCIN	A [mm]	B [mm]
150	1650	320
200	2200	870
250	2750	870



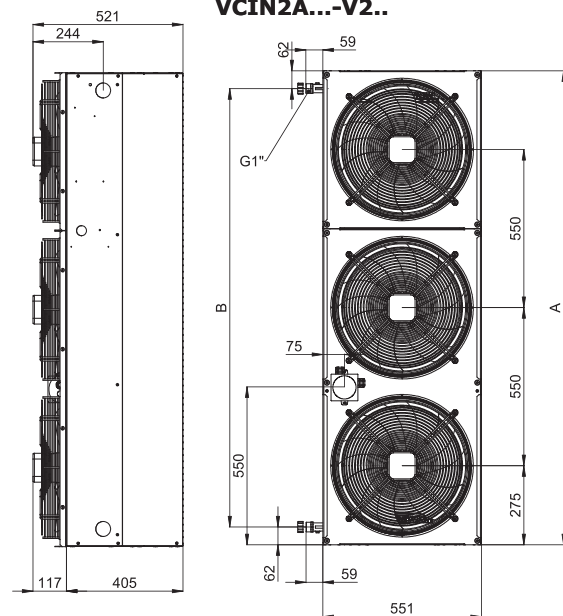
VCIN2A...-S0..



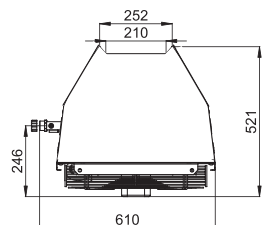
VCIN	A [mm]
150	1650
200	2200
250	2750



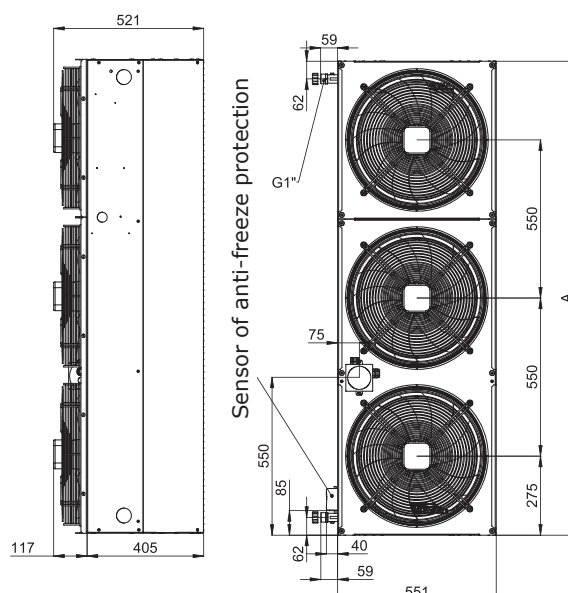
VCIN2A...-V2..



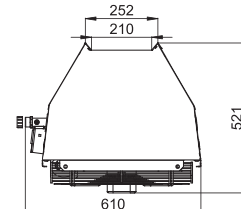
VCIN	A [mm]	B [mm]
150	1650	1526
200	2200	2076
250	2750	2626



VCIN2A...-P2..



VCIN	A [mm]
150	1650
200	2200
250	2750

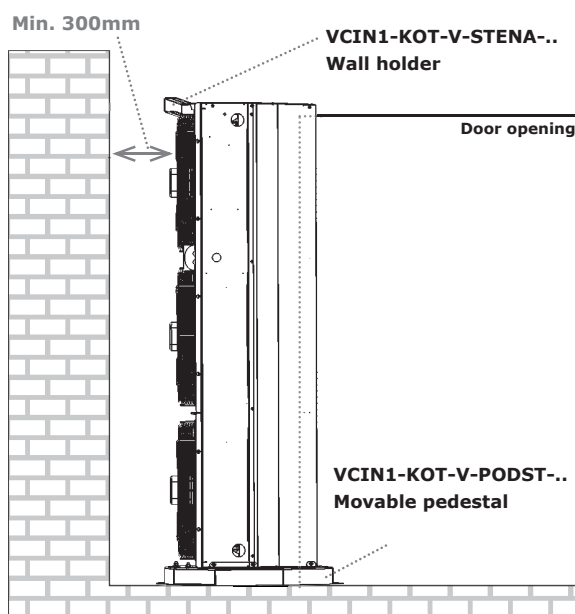




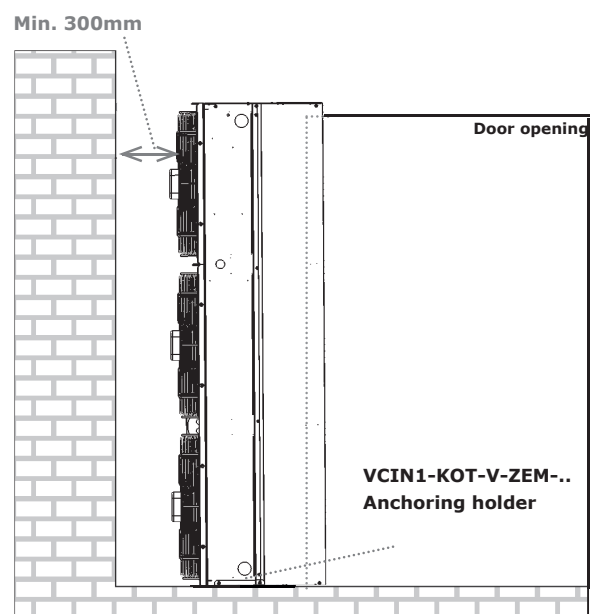
INSTALLATION AND ASSEMBLY

- The air curtain can be installed both in vertical and horizontal positions.
- The air curtain shall be located as close to the top (side) edge of the doorway as possible.
- To ensure correct function it is recommended that the air curtain is located 100 mm above the doorway or overlaps the doorway by 100 mm on both sides.
- Correct operation of the air curtain requires that specified distances from the surrounding objects are observed, see figure.
- Suspension holders are used for installing (hanging) the air curtain see ACCESSORIES.

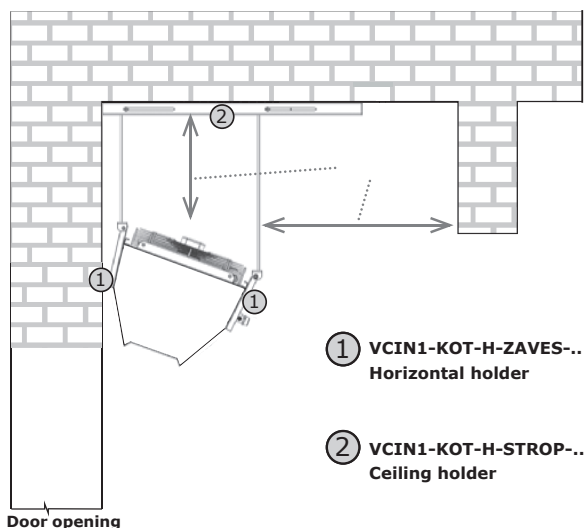
Vertical installation, side view, movable pedestal



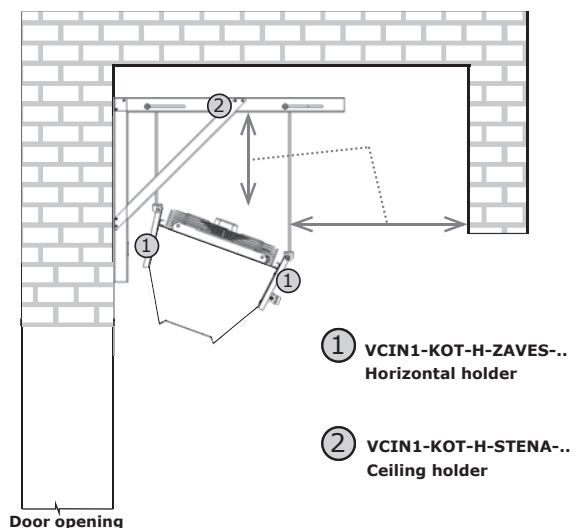
Vertical installation, side view, fixed



Horizontal installation, side view



Horizontal installation, side view





CONTROL

The **INDESSE** air curtains are shipped without an integrated control system. The following accessory is recommended to allow their control.

AirGENIO BASIC EC control

AGBA1-M-ECX-XX-xx-0A0



AirGENIO BASIC EC control is designed primarily for manual control of industrial air curtains and air heaters with water or electric heating.

Description of AirGENIO BASIC EC control



Manual control



2 steps control of electric heater



Stepless control of airflow



Possibility of connecting a door contact and external switch



ON/OFF control of valve actuator for LPHW coil



Possibility of connecting a room thermostat (turn OFF the heater after contact opening)

AirGENIO IC-C control unit



The AirGENIO IC-CONTROL unit is designed primarily for controlling industrial air curtains. In addition, the unit may also be used for controlling devices comprising a voltage controlled EC fan and heating units.

Description of AirGENIO IC-C control unit



Touch screen display



Temperature measurement (All temperature NTC sensors included, temperature shown on display)



Manual / Auto control mode



Chaining air curtains 1+10 (Master-Slave air curtains)



Stepless control of airflow



Self learning mode



0-10V or ON/OFF control of valve actuator for LPHW coil



BMS connection - Modbus RTU,TCP, BACnet



Integrated antifreeze protection of LPHW coil



Error contact



Possibility of connecting a door contact and external switch



2nd control panel ready



Integrated timer



Overview of the AirGENIO IC3-C smart functions

Modes:

Heating boost

- immediate start of heating at max output when doors are open to keep comfortable heat inside

Self-Learning function

- self learning mode ensuring smooth air curtain running without useless start-ups at frequent door openings. Saves energy and prolongs the air curtain's working life.

Night mode

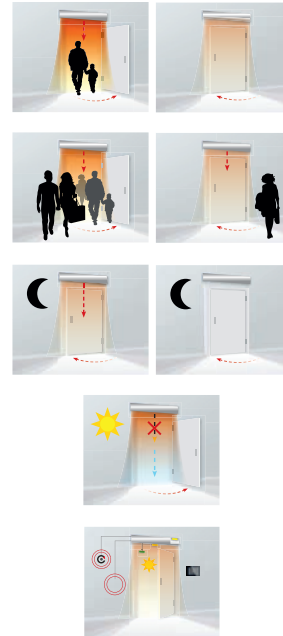
- during the pre-set night period air curtain can be switched off completely, or used to heat up the room. Possibility to set lower requested temperature for the night regime.

Summer mode

- to avoid waste of energy for heating, within a pre-set „summer season“, the heating is allowed only if the difference between the outside and inner temperature is higher than pre-set scale.

Auto-stop control

- air curtain evaluates its own temperature on outlet and the temperature outside and inside the room. The air speed and heating output is modified according to the required temperature, time programme and open/closed door. All parameters are evaluated in order to get the maximal output at the lowest possible operating costs.



KEY TO CODING

AGBA1-M-ECx-xx-V1-0A0

S0 - Without heating
V1 - Water heating (ON/OFF)
E2 - Electric heating (2steps)

EC - For EC fans

AGBA1-M - BASIC EC control unit

IC3-C-AC5-16

04 - max load 4A
07 - max load 7A
16 - max load 16A

AC5 - For AC fans with 5-speed
EC - For EC fans

C - Master
S - Slave

IC3-C - Control unit

The following table states the number of fans in the individual modules of the **INDESSE** air curtain.

Module type	VCIN2A150	VCIN2A200	VCIN2A250
Number of fans in module	3	4	5

The following table indicates the maximum number of fans for the **INDESSE** air curtains that can be connected to the individual types of the AirGENIO IC-EC-C controllers.

Controller type	AGBA1-M	IC3-C-EC	IC3-S-EC
Maximum number of fans connected	10	10	5

Water heater output control

Precise by mixing

The following table indicates the number of modules of the **INDESSE** air curtains that should be connected to the individual types of the mixing point.

Type	Number of modules of VCIN					
	1			2		
	K _{vs}	Water flow (m³/h)	Min. pump pressure (kPa)	K _{vs}	Water flow (m³/h)	Min. pump pressure (kPa)
VCIN2A150-V2EC	11	2,8	28,5	22	5,5	28,5
VCIN2A200-V2EC	11	3,7	29,0	22	7,4	29,0
VCIN2A250-V2EC	11	4,7	34,7	22	9,3	34,7

Suitable combinations of the **INDESSE** modules and the mixing nodes apply at a water temperature gradient of 80/60, and an inlet air temperature of 15 °C and pressure difference at connection point 5 kPa.

Recommended mixing points for LPHW coil 2-way valve



Type	Control module	90/70 °C	80/60 °C	70/50 °C	60/40 °C
VCIN2A150-V2EC	AGBA1-M (ON-OFF)	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	IC3-C-EC (ON-OFF)	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	IC3-C-EC (0-10V)	ZV2-024-10,0-25	ZV2-024-10,0-25	ZV2-024-10,0-25	ZV2-024-10,0-25
VCIN2A200-V2EC	AGBA1-M (ON-OFF)	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20
	IC3-C-EC (ON-OFF)	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20
	IC3-C-EC (0-10V)	ZV2-024-16,0-25	ZZV2-024-16,0-25	ZV2-024-16,0-25	ZV2-024-16,0-25
VCIN2A250-V2EC	AGBA1-M (ON-OFF)	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20
	IC3-C-EC (ON-OFF)	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20
	IC3-C-EC (0-10V)	ZV2-024-16,0-25	ZV2-024-16,0-25	ZV2-024-16,0-25	ZV2-024-16,0-25

Recommended mixing points for LPHW coil 3-way valve



Type	Control module	90/70 °C	80/60 °C	70/50 °C	60/40 °C
VCIN2A150-V2EC	AGBA1-M (ON-OFF)	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	IC3-C-EC (ON-OFF)	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	IC3-C-EC (0-10V)	ZV3-024-10,0-25	ZV3-024-10,0-25	ZV3-024-10,0-25	ZV3-024-10,0-25
VCIN2A200-V2EC	AGBA1-M (ON-OFF)	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	IC3-C-EC (ON-OFF)	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	IC3-C-EC (0-10V)	ZV3-024-16,0-32	ZV3-024-16,0-32	ZV3-024-16,0-32	ZV3-024-16,0-32
VCIN2A250-V2EC	AGBA1-M (ON-OFF)	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	IC3-C-EC (ON-OFF)	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	IC3-C-EC (0-10V)	ZV3-024-16,0-32	ZV3-024-16,0-32	ZV3-024-16,0-32	ZV3-024-16,0-32



ACCESSORIES

REQUIRED ACCESSORIES

No special accessories are needed to ensure a proper function of the stand-alone air curtain. If the air curtain is fitted with the control system, the control system is connected using common wiring cables, see the "Wiring diagrams" chapter. A suitable cross-section of the cables, protection of the unit, and utilization of other wiring materials shall be determined based on the particular installation conditions.

These components shall be delivered by a company performing the air curtain electrical wiring.

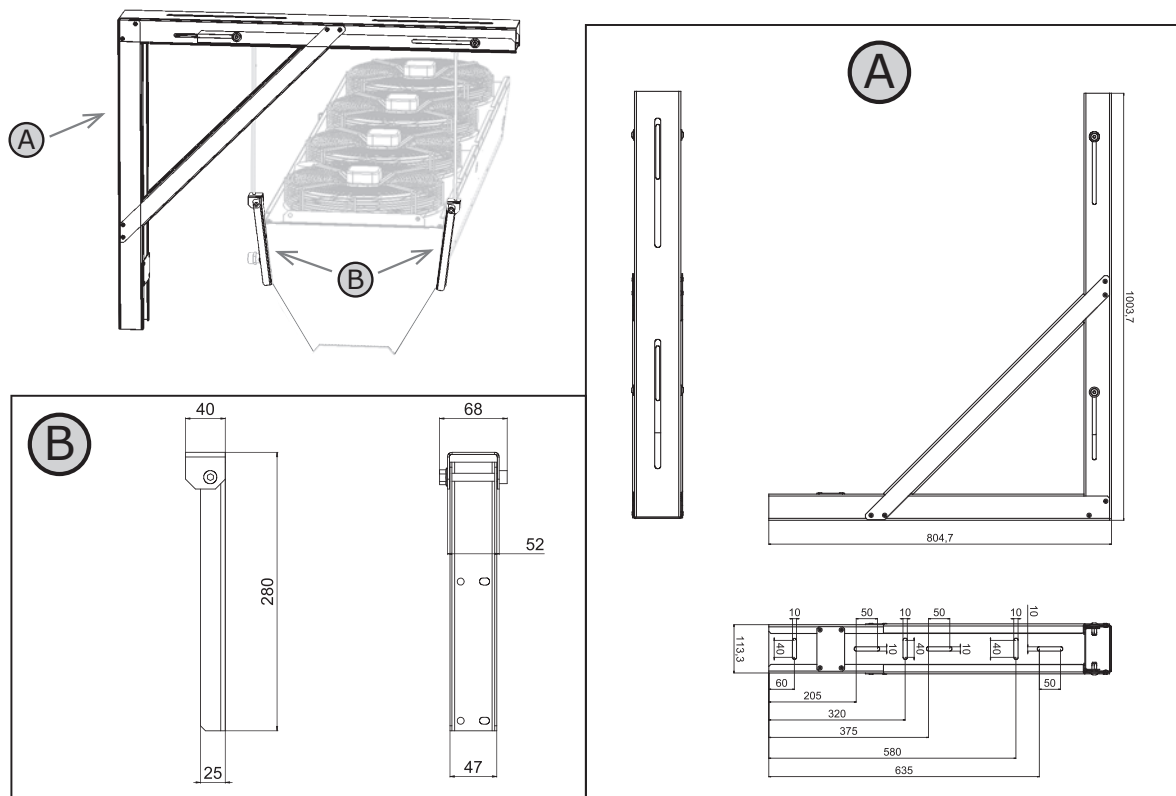
Optional accessories

WALL holder set - HORIZONTAL

This set includes:

A part - Wall holder (1 pcs)

B part - Air curtain holder (2 pcs)



VCIN1-KOT-H-STENA-0

Color

0 Standard (RAL9016)

1 Galvanized steel

9 Atyp RAL

N Stainless steel version (C4)

Wall holder set (1 set)

	Number of INDESSE air curtain modules connected								
	1	2	3	4	5	6	7	...	n
No. of holders	2	3	4	5	6	7	8	...	n + 1

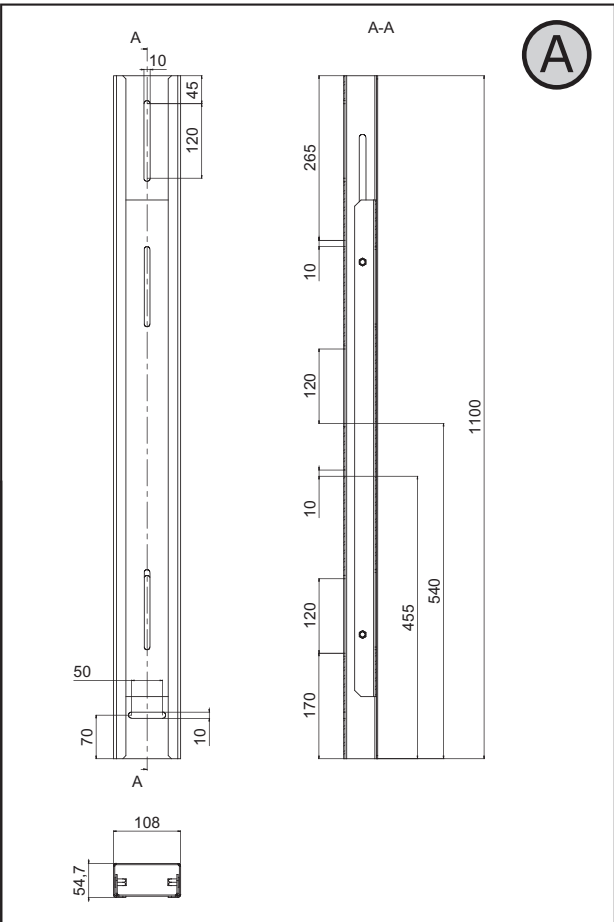
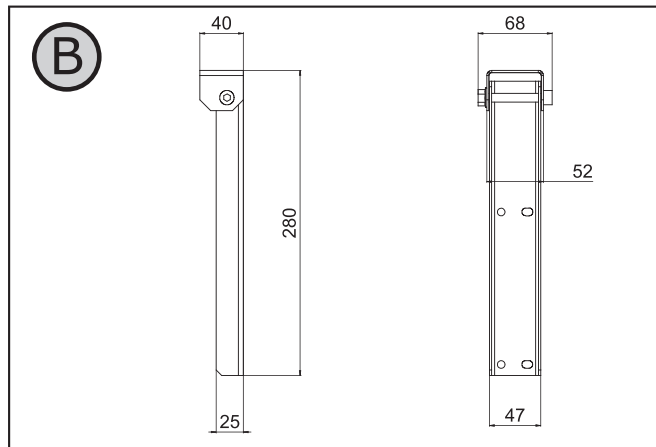
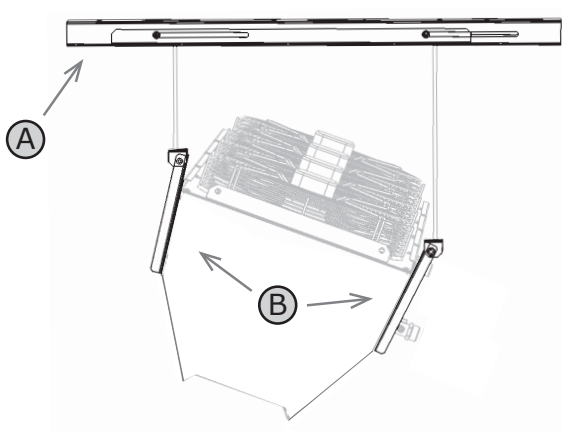


Optional accessories

CEILING holder set - HORIZONTAL

This set includes:

- A part - Ceiling holder (1 pcs)
- B part - Air curtain holder (2 pcs)



VCIN1-KOT-H-STROP-0

- Color**
- 0 Standard (RAL9016)
 - 1 Galvanized steel
 - 9 Atyp RAL
 - N Stainless steel version (C4)
- Ceiling holder set (1 set (A+2xB))**

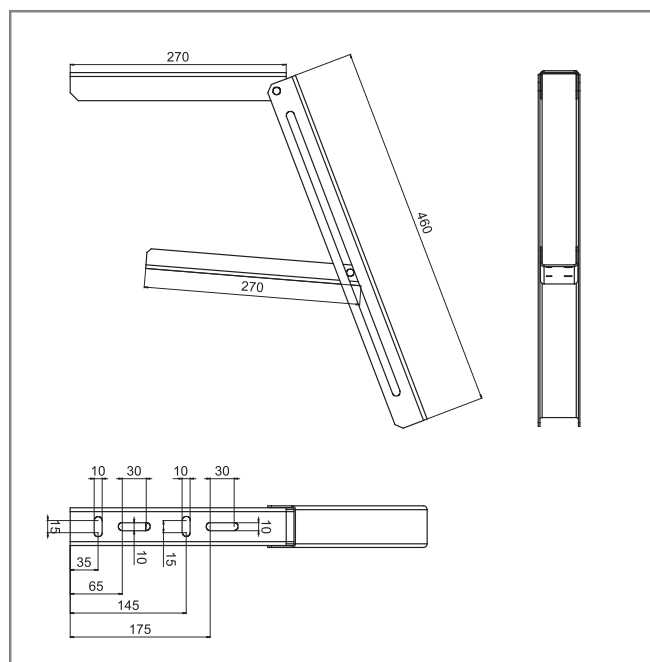
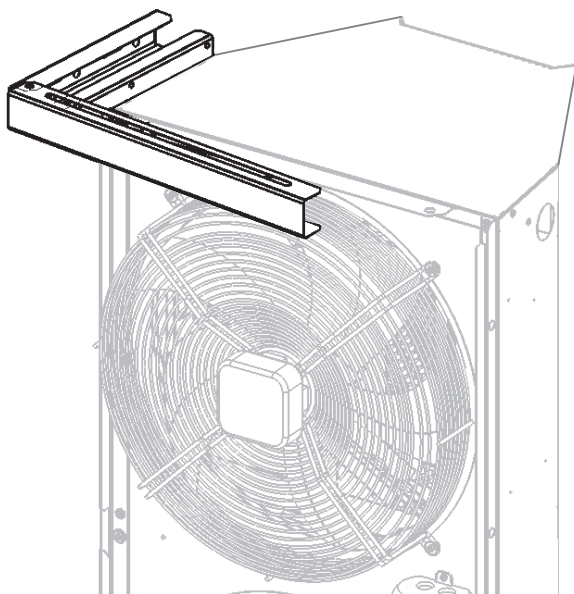
	Number of INDESSE air curtain modules connected								
	1	2	3	4	5	6	7	...	n
No. of holders	2	3	4	5	6	7	8	...	n + 1



Optional accessories

Wall holder - VERTICAL

For anchoring the air curtain to the wall



VCIN1-KOT-V-STENA-0

Color

- 0** Standard (RAL9016)
- 1** Galvanized steel
- 9** Atyp RAL
- N** Stainless steel version (C4)

Wall holder (1 pcs)

	Number of INDESSE air curtain modules connected			
	1	2	3**	4**
No. of holders	1*	1*	2	3

* - This holder is not needed up to a height of 4 m, but we recommend to using it.

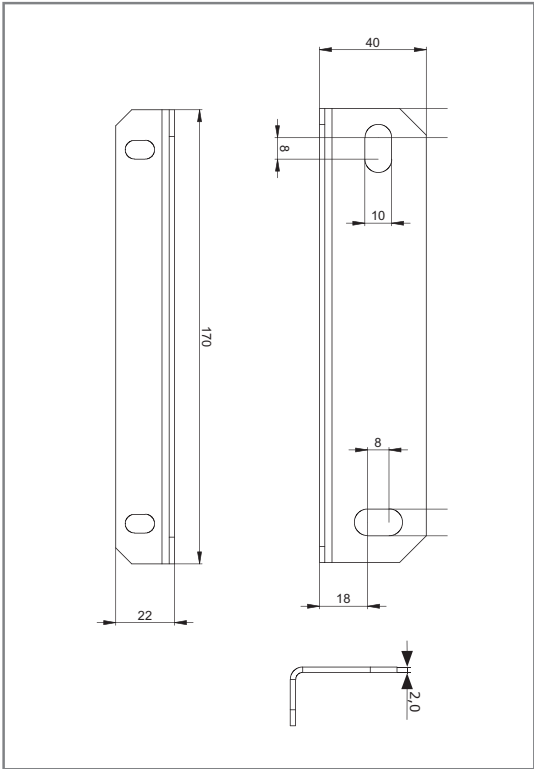
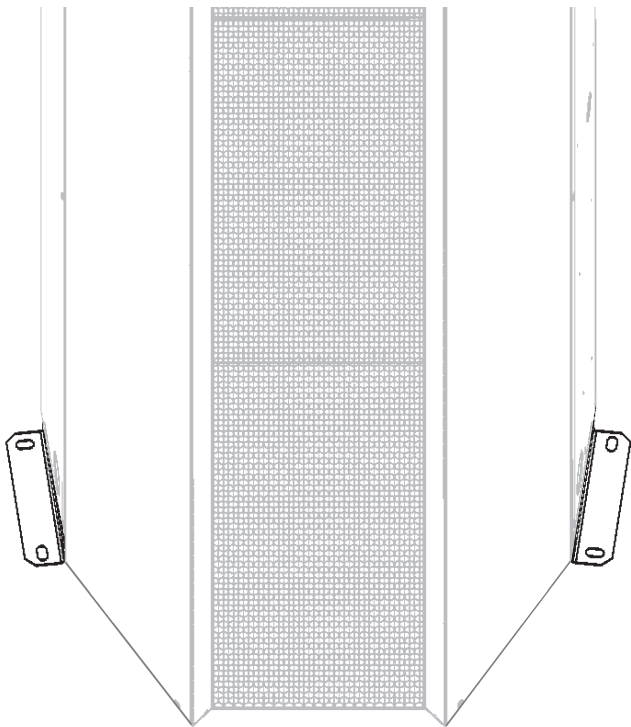
** - The maximum height of air curtains, which can be installed in the vertical position (air curtain on air curtain) is 6,6 m.
If you need a higher distance, then an additional supporting system must be made (not available in 2VV accessories).



Optional accessories

Anchoring holder - VERTICAL

For anchoring the air curtain to the floor



VCIN1-KOT-V-ZEM-0

- Color**
- 0** Standard (RAL9016)
 - 1** Galvanized only
 - 9** Atyp RAL
 - N** Stainless steel version (C4)

Floor holder set (2 pcs)

	Number of INDESSE air curtain modules connected			
	1	2	3*	4*
No. of sets of holders	1	1	1	1

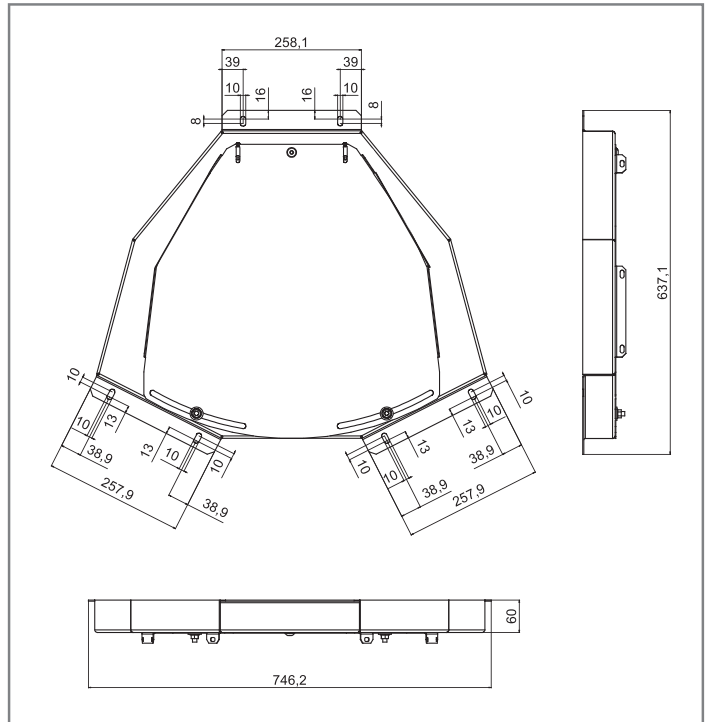
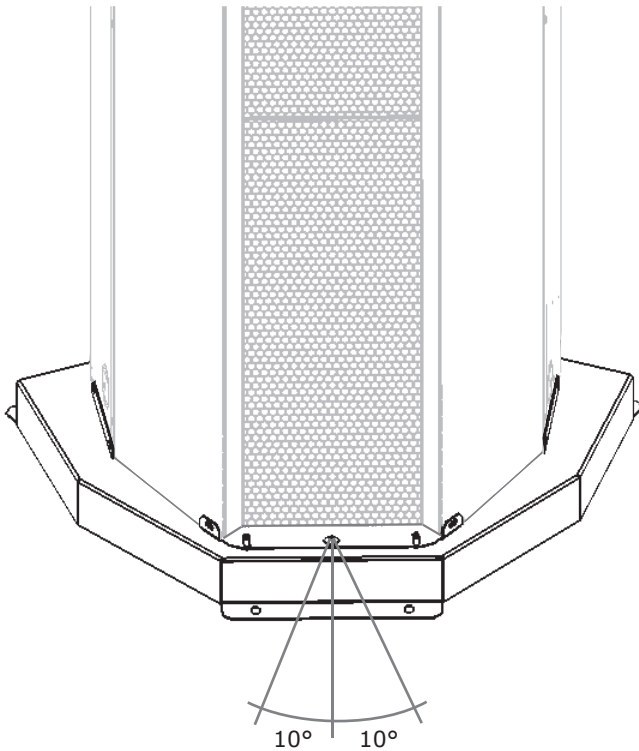
* - The maximum height of air curtains, which can be installed in the vertical position (air curtain on air curtain) is 6,6 m.
If you need a higher distance, then an additional supporting system must be made (not available in 2VV accessories).



Optional accessories

Adjustable anchoring holder - VERTICAL

For anchoring the air curtain to the floor with the possibility of moving (20° max)



VCIN1-KOT-V-PODST-0

Color

- 0** Standard (RAL9016)
- 1** Grey colour (RAL9006) (optimal for Galvanized air curtain)
- 9** Atyp RAL
- N** Stainless steel version (C4)

Movable pedestal (1 pcs)

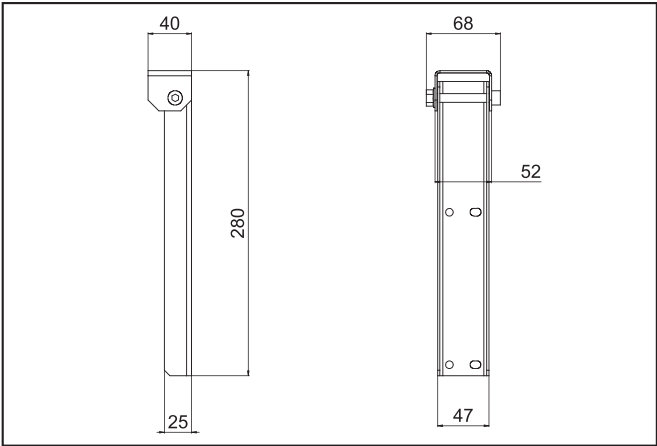
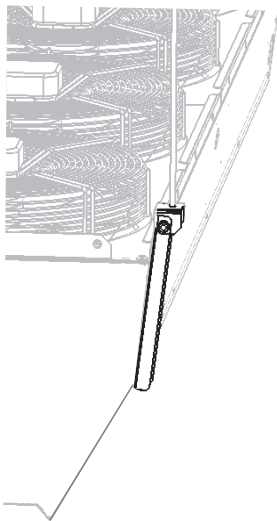
	Number of INDESSE air curtain modules connected			
	1	2	3*	4*
No. of holders	1	1	1	1

* - The maximum height of air curtains, which can be installed in the vertical position (air curtain on air curtain) is 6,6 m.
If you need a higher distance, then an additional supporting system must be made (not available in 2VV accessories).



Optional accessories

Threaded bar holder - HORIZONTAL



VCIN1-KOT-H-ZAVES-0

- Color**
- 0** Standard (RAL9016)
 - 1** Galvanized steel
 - 9** Atyp RAL
 - N** Stainless steel version (C4)

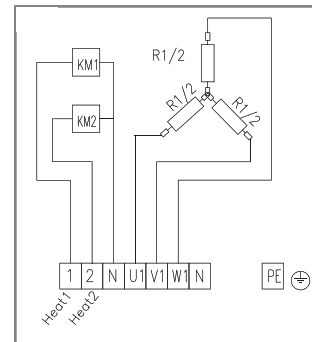
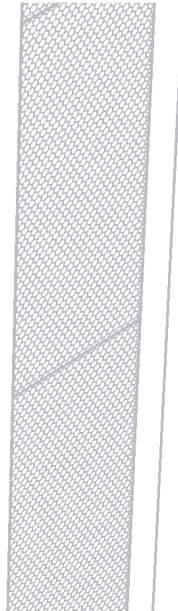
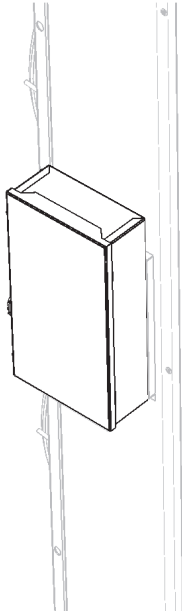
Air curtain holder (1pcs only)

	Number of INDESSE air curtain modules connected				
	1	2	3	...	n
No. of holders	4	6	8	...	$n*2 + 2$



Optional accessories

Contactors box



VCIN1-KRAB-EL-STYKAC-25-0

Color

- 0** Standard (RAL9016)
- 1** Galvanized steel
- 9** Atyp RAL

Max current load

- 25** 25A - suitable for: *VCIN1A150* or *VCIN1A200*
- 40** 40A - suitable for: *VCIN1A250*

Contactors box (IP20)



AirGENIO BASIC EC controller

AGBA1-M-ECX-XX-V1-0A0

AirGENIO BASIC EC controller is designed primarily for manual control of industrial air curtains and air heaters with water or electric heating. In addition, the unit may be used for manual control of devices comprising a voltage controlled EC fans.



Control unit

AirGENIO IC3-C-EC

The IC - CONTROL unit is designed primarily for controlling industrial air curtains. In addition, the unit may also be used for controlling devices comprising a voltage controlled EC fan and heating units.



2-way or 3-way valve with servo drive

ZV2-230-xx,x-xx (230V, ON/OFF)

ZV3-230-xx,x-xx (230V, ON/OFF)

ZV2-24V-xx,x-xx (24V, 0-10V)

ZV3-24V-xx,x-xx (24V, 0-10V)



3-way valve with servo drive RT

RT-3-11



Mixing node

SMU2-xx-xx

Mixing node without pump for continuous regulation of the heat power of exchanger.





Room thermostat

TER-P

Spatial thermostat



Room temperature sensor

CT-ROOM



Flexible connection hoses

OH-01-1/1-300

OH-01-1/1-500



Door switch – industrial

DS



Magnetic door contact in a metal housing with higher protection against mechanical damage

DK-B-3



Motor filter (1 pcs) - class Coarse 40% (G2)

FI-PYTEL-KRUH-G2-SAV-4

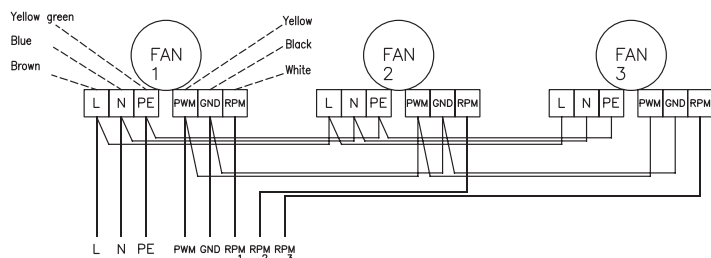




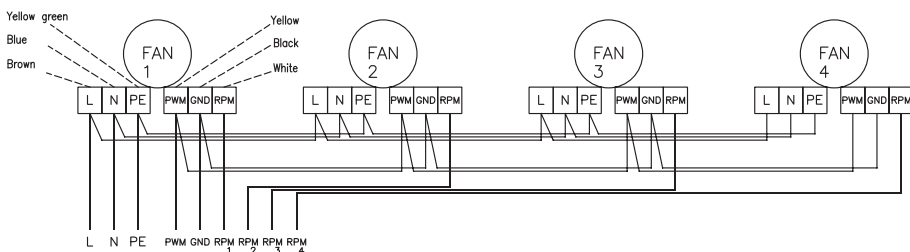
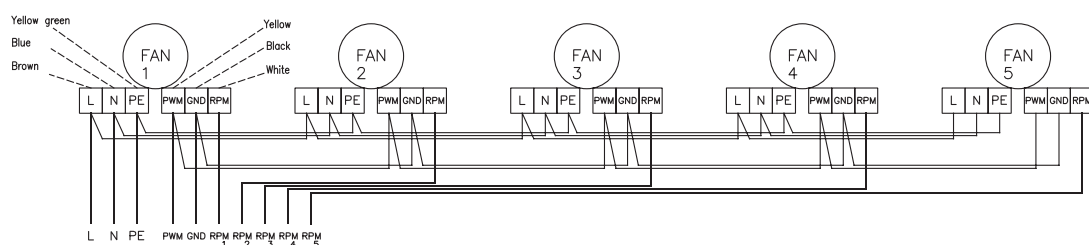
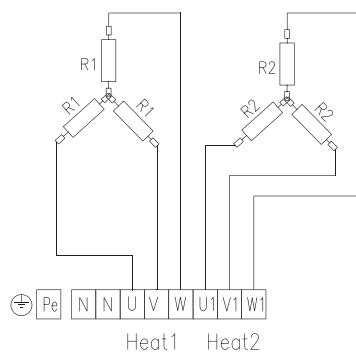
WIRING DIAGRAMS

The recommended cross-section of the main power supply cables is stated in the Instruction Manual.

All wiring diagrams provided in the technical catalog are indicative only. When assembling the product, strictly observe the nameplate ratings as well as the directions and diagrams affixed directly to the product or enclosed with the product.

VCIN2A150-xx-EC

VCIN2A200-xx-EC

**VCIN2A250-xx-EC****VCIN2Axxx-E1-EC**



KEY TO CODING

VCIN2A 150-E1 EC-XX-0 B 0

0 – Reserve

A – Packed horizontally (standard for VCIN2A250)
(non standard for VCIN2A150,200)

B – Packed vertically (standard for VCIN2A150,200)

0 – Standard (RAL9016)

1 – Galvanized steel

9 – Atyp RAL

N – Stainless steel version C4 with hydrophobic coating on water coil (available only for S0, V2, P2)

XX – No control

EC – EC motors

S0 – Air-only (ambient)

E1 – Electric heater

V2 – 2-row LPHW coil

P2 – 2-row LPHW coil with antifreeze protection

150 – length **1650mm**

200 – length **2200mm**

250 – length **2750mm**

VCIN2A – Industrial air curtain **INDESSE**



water heater



BASIC FEATURES

- Lengths: **1.65; 2.20** and **2.75** m
- **EC Version:** Air flow up to **17500 m³/h** (ISO 27 327-1)
- **Dual Airstream system** prevents heat losses from the airflow stream and significantly reduces demand for air curtain heating
- Horizontal and vertical installation with the adjustable exhaust available by air curtain holders
- Maintenance-free air curtain with a long service life
- Fast and easy connection of individual modules
- Standard version in RAL 9016 (any RAL – based colours may be upon the customer's request)

The INDESSE is a high-performance industrial curtain for vertical and horizontal installation for use in **manufacturing halls, warehouses and other industrial buildings** with a recommended installation height / width up to **8 m**. The air curtain with LPHW coil shall be installed indoors in a dry area with ambient temperatures ranging from +5 °C up to +40 °C and relative humidity of up to 80 %. It is designed for conveying air free of rough dust, grease, chemical fumes, and other impurities. The IP rating of air curtains with LPHW coil is IP44. The fans comply with requirements of IP 44. **The air curtain project shall always be developed by the HVAC designer.**

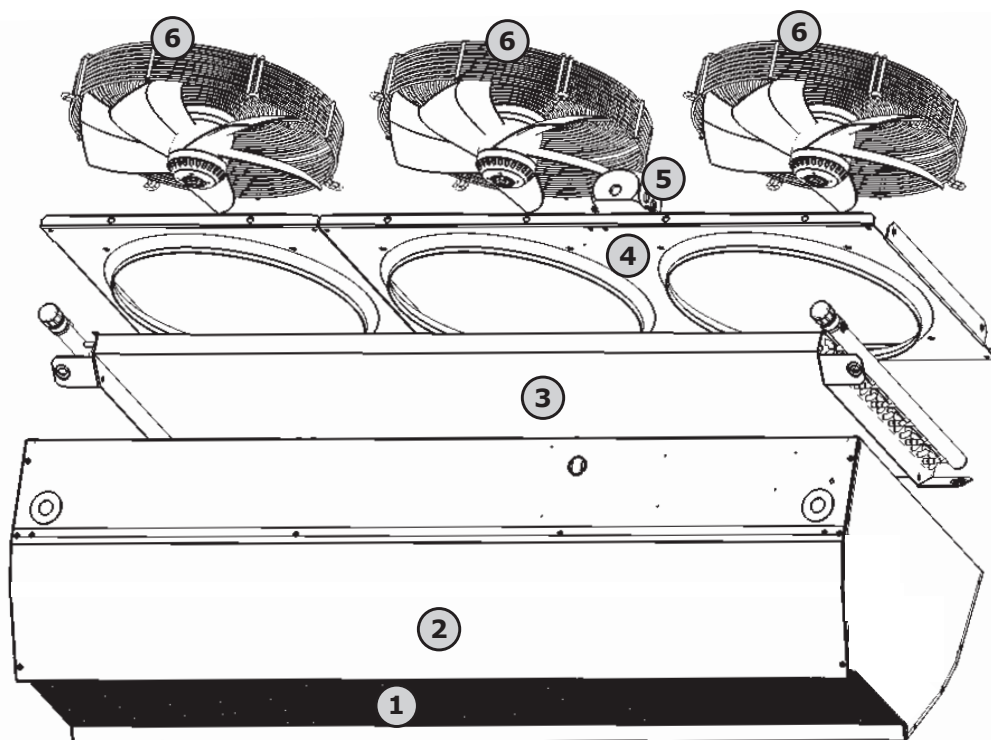


PRIMARY PARAMETERS

Air curtain with LPHW coils are designed for maximum operating water temperature of +110°C and a maximum operation pressure of 1.6 MPa. Fan motors are equipped with thermal contacts, which can be used to turn off the air curtain in case of the overheating of the motor.

MAIN PARTS

- ① Exhaust (Straw system)
- ② Main body
- ③ LPHW
- ④ Back side
- ⑤ Motor connection box
- ⑥ Motor



PRIMARY PARAMETERS

Type	Recommended installation height [m]	Air output [m³/h] *1	Air output warm air [m³/h] *2	Air output ambient air [m³/h] *3	Acoustic pressure at 3m[dB(A)] *4	Sound power [dB(A)] *5
VCIN2G150-V2EC	7,5	10500	5775	4725	67	84
VCIN2G200-V2EC	7,5	14000	7700	6300	68	85
VCIN2G250-V2EC	7,5	17500	9625	7875	70	87

Type	Heater power *6 [kW]	Motors consumption		Weight [kg]
		[V]	[A]	
VCIN2G150-V2EC	46,6	230	4	60
VCIN2G200-V2EC	62,7		5,4	78
VCIN2G250-V2EC	80,3		6,8	98

*1 Airflow volume according ISO27327-1

*2 The flow of warm air output from the air curtain

*3 The flow of ambient air output from the air curtain

*4 Acoustic pressure values at 3 distance for maximum speed. Directional factor: Q=2.

*5 Sound power (LWA) measurements according to ISO 27327-2.

*6 Intake air temperature +15°C, water temperature gradient of 90/70°C and highest fan speed.

LPHW coil parameters for water temperature gradient of 60/40 °C

Type	Air flow [m³/h]	Air capacity warm air [m3/h]	Air capacity ambient air [m3/h] ^{1,3}	Heat output* [kW]	Warm air outlet temperature [°C]	Pressure loss [kPa]	Water flow [m3/h]
VCIN2G150-V2EC	10500	5775	4725	23,5	27,5	6	1,04
VCIN2G200-V2EC	14000	7700	6300	31,4	27,5	5	1,37
VCIN2G250-V2EC	17500	9625	7875	40,9	28	9	1,76

* Temperature of intake air: +15 °C

LPHW coil parameters for water temperature gradient of 70/50 °C

Type	Air flow [m³/h]	Air capacity warm air [m3/h]	Air capacity ambient air [m3/h] ^{1,3}	Heat output* [kW]	Warm air outlet temperature [°C]	Pressure loss [kPa]	Water flow [m3/h]
VCIN2G150-V2EC	10500	5775	4725	31,4	31,9	10	1,37
VCIN2G200-V2EC	14000	7700	6300	42,1	32	8	1,84
VCIN2G250-V2EC	17500	9625	7875	54,4	32,6	14	2,38

* Temperature of intake air: +15 °C

LPHW coil parameters for water temperature gradient of 80/60 °C

Type	Air flow [m³/h]	Air capacity warm air [m3/h]	Air capacity ambient air [m3/h] ^{1,3}	Heat output* [kW]	Warm air outlet temperature [°C]	Pressure loss [kPa]	Water flow [m3/h]
VCIN2G150-V2EC	10500	5775	4725	39,1	36,3	15	1,73
VCIN2G200-V2EC	14000	7700	6300	52,6	36,5	11	2,30
VCIN2G250-V2EC	17500	9625	7875	67,5	37,1	21	2,99

* Temperature of intake air: +15 °C

LPHW coil parameters for water temperature gradient of 90/70 °C

Type	Air flow [m³/h]	Air capacity warm air [m3/h]	Air capacity ambient air [m3/h] ^{1,3}	Heat output* [kW]	Warm air outlet temperature [°C]	Pressure loss [kPa]	Water flow [m3/h]
VCIN2G150-V2EC	10500	5775	4725	46,6	40,8	20	2,05
VCIN2G200-V2EC	14000	7700	6300	62,7	41	15	2,77
VCIN2G250-V2EC	17500	9625	7875	80,3	41,7	27	3,52

* Temperature of intake air: +15 °C

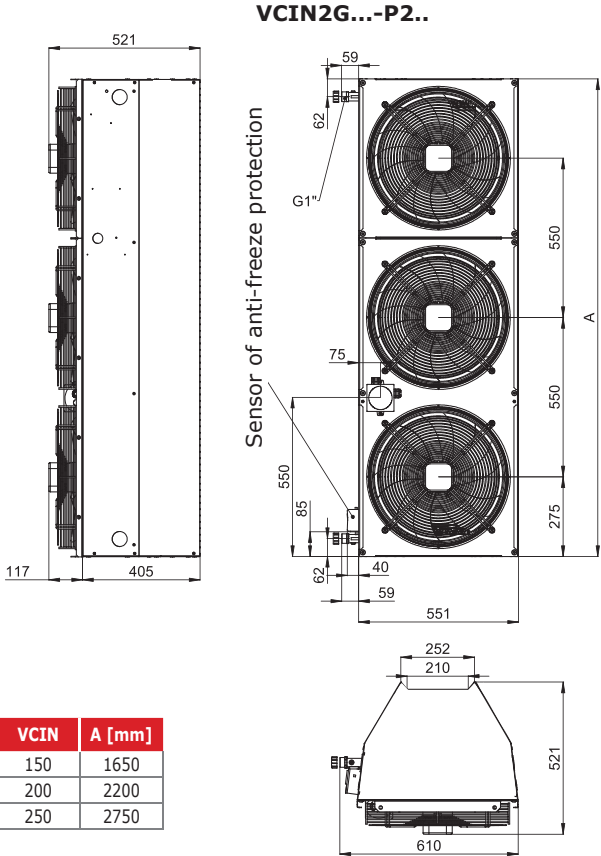
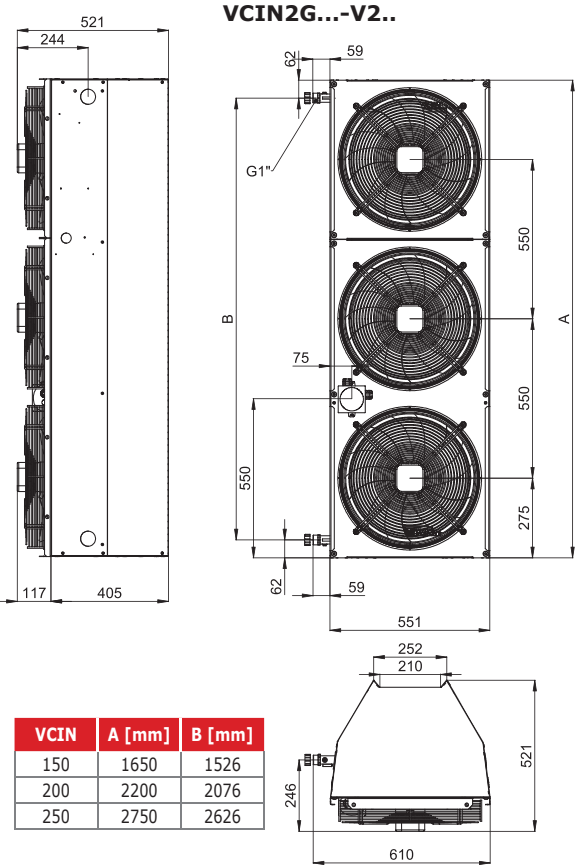
LPHW coil parameters for water temperature gradient of 110/80 °C

Type	Air flow [m³/h]	Air capacity warm air [m3/h]	Air capacity ambient air [m3/h] ^{1,3}	Heat output* [kW]	Warm air outlet temperature [°C]	Pressure loss [kPa]	Water flow [m3/h]
VCIN2G150-V2EC	10500	5775	4725	56,6	46,9	13	1,66
VCIN2G200-V2EC	14000	7700	6300	76,1	47,2	10	2,23
VCIN2G250-V2EC	17500	9625	7875	97,4	48,1	18	2,89

* Temperature of intake air: +15 °C



AIR CURTAIN DIMENSIONS

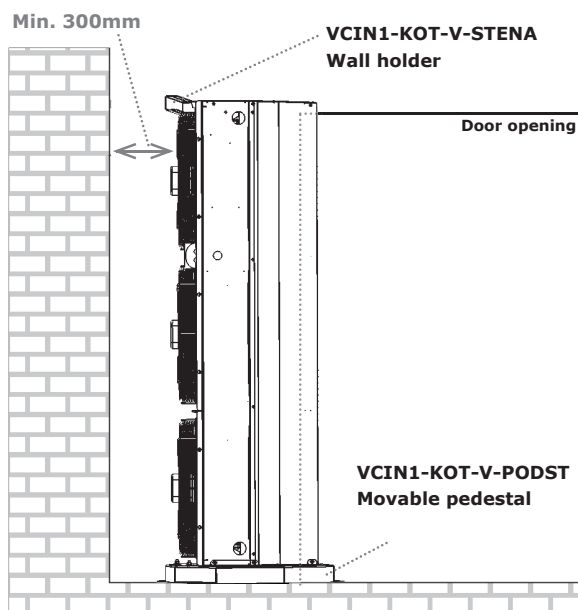




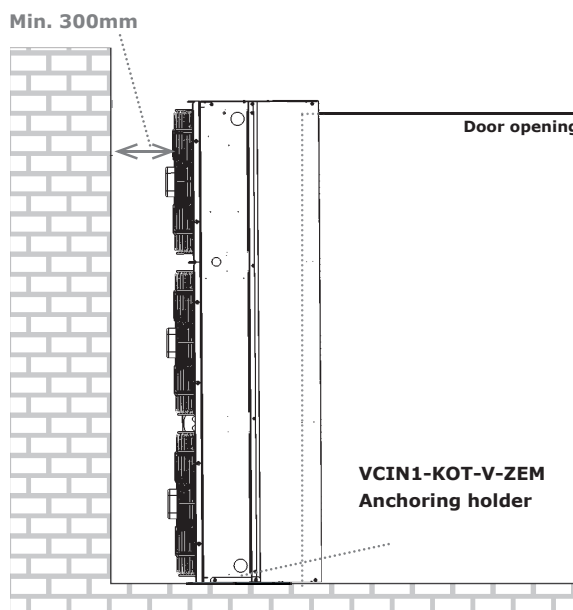
INSTALLATION AND ASSEMBLY

- The air curtain can be installed both in vertical and horizontal positions.
- The air curtain shall be located as close to the top (side) edge of the doorway as possible.
- To ensure correct function it is recommended that the air curtain is located 100 mm above the doorway or overlaps the doorway by 100 mm on both sides.
- Correct operation of the air curtain requires that specified distances from the surrounding objects are observed, see figure.
- Suspension holders are used for installing (hanging) the air curtain see ACCESSORIES.

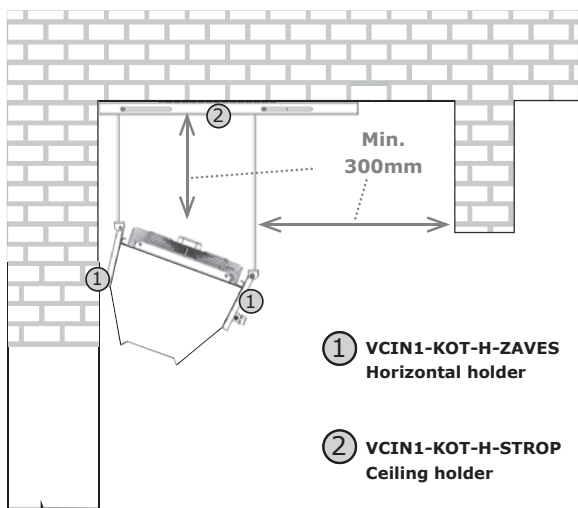
Vertical installation, side view, movable pedestal



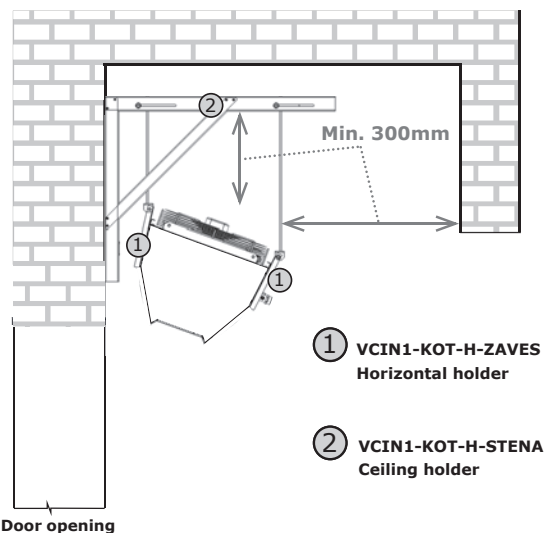
Vertical installation, side view, fixed



Horizontal installation, side view



Horizontal installation, side view



**CONTROL**

The **INDESSE** air curtains are shipped without an integrated control system. The following accessory is recommended to allow their control.

AirGENIO BASIC EC control

AGBA1-M-ECX-XX-xx-0A0



AirGENIO BASIC EC control is designed primarily for manual control of industrial air curtains and air heaters with water or electric heating.

Description of AirGENIO BASIC EC control

Manual control



Possibility of connecting a door contact and external switch



Stepless control of airflow



Possibility of connecting a room thermostat (turn OFF the heater after contact opening)



ON/OFF control of valve actuator for LPHW coil

**AirGENIO IC-C control unit**

The AirGENIO IC-CONTROL unit is designed primarily for controlling industrial air curtains. In addition, the unit may also be used for controlling devices comprising a voltage controlled EC fan and heating units.

Description of AirGENIO IC-C control unit

Touch screen display



Temperature measurement (All temperature NTC sensors included, temperature shown on display)



Manual / Auto control mode



Chaining air curtains 1+10 (Master-Slave air curtains)



Stepless control of airflow



Self learning mode



0-10V or ON/OFF control of valve actuator for LPHW coil



BMS connection - Modbus RTU,TCP, BACnet



Integrated antifreeze protection of LPHW coil



Error contact



Possibility of connecting a door contact and external switch



2nd control panel ready



Integrated timer



Overview of the AirGENIO IC3-C smart functions

Modes:

Heating boost

- immediate start of heating at max output when doors are open to keep comfortable heat inside

Self-Learning function

- self learning mode ensuring smooth air curtain running without useless start-ups at frequent door openings.
Saves energy and prolongs the air curtain's working life.

Night mode

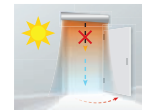
- during the pre-set night period air curtain can be switched off completely, or used to heat up the room. Possibility to set lower requested temperature for the night regime.

Summer mode

- to avoid waste of energy for heating, within a pre-set „summer season“, the heating is allowed only if the difference between the outside and inner temperature is higher than pre-set scale.

Auto-stop control

- air curtain evaluates its own temperature on outlet and the temperature outside and inside the room. The air speed and heating output is modified according to the required temperature, time programme and open/closed door. All parameters are evaluated in order to get the maximal output at the lowest possible operating costs.



KEY TO CODING

AGBA1-M-ECx-xx-V1-0A0

S0 - Without heating
V1 - Water heating (ON/OFF)
E2 - Electric heating (2steps)

EC - For EC fans

AGBA1-M - BASIC EC control unit

IC3-C-AC5-16

04 - max load 4A
07 - max load 7A
16 - max load 16A

AC5 - For AC fans with 5-speed
EC - For EC fans

C - Master
S - Slave

IC3-C - Control unit

The following table states the number of fans in the individual modules of the **INDESSE** air curtain.

Module type	VCIN2G150	VCIN2G200	VCIN2AG250
Number of fans in module	3	4	5

The following table indicates the maximum number of fans for the **INDESSE** air curtains that can be connected to the individual types of the AirGENIO control.

Control type	AGBA1-M	IC3-C-EC	IC3-S-EC
Maximum number of fans connected	10	10	5

Water heater output control

Precise by mixing

The following table indicates the number of modules of the **INDESSE** air curtains that should be connected to the individual types of the mixing point.

Type	Number of modules of VCIN					
	1			2		
	K _{vs}	Water flow (l/s)	Min. pump pressure (kPa)	K _{vs}	Water flow (m ³ /h)	Min. pump pressure (kPa)
VCIN2G150-V2EC	10	0,48	15	22	0,96	15
VCIN2G200-V2EC	10	0,64	11	22	1,28	11
VCIN2G250-V2EC	10	0,83	21	22	1,66	21

Suitable combinations of the **INDESSE** modules and the mixing nodes apply at a water temperature gradient of 80/60, and an inlet air temperature of 15 °C and pressure difference at connection point 5 kPa.

Recommended 3-way valve with actuator for LPHW coil



Type	Control type	90/70 °C	80/60 °C	70/50 °C	60/40 °C
VCIN2G150-V2EC	AGBA1-M (ON-OFF)	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	IC3-C (ON-OFF)	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	IC3-C (0-10V)	ZV3-024-10,0-25	ZV3-024-10,0-25	ZV3-024-10,0-25	ZV3-024-10,0-25
VCIN2G200-V2EC	AGBA1-M (ON-OFF)	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	IC3-C (ON-OFF)	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	IC3-C (0-10V)	ZV3-024-10,0-25	ZV3-024-10,0-25	ZV3-024-10,0-25	ZV3-024-10,0-25
VCIN2G250-V2EC	AGBA1-M (ON-OFF)	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	IC3-C (ON-OFF)	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	IC3-C (0-10V)	ZV3-024-10,0-25	ZV3-024-10,0-25	ZV3-024-10,0-25	ZV3-024-10,0-25

Recommended 2-way valve with actuator for LPHW coil



Type	Control type	90/70 °C	80/60 °C	70/50 °C	60/40 °C
VCIN2G150-V2EC	AGBA1-M (ON-OFF)	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	IC3-C (ON-OFF)	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	IC3-C (0-10V)	ZV2-024-10,0-25	ZV2-024-10,0-25	ZV2-024-10,0-25	ZV2-024-10,0-25
VCIN2G200-V2EC	AGBA1-M (ON-OFF)	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20
	IC3-C (ON-OFF)	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20
	IC3-C (0-10V)	ZV2-024-10,0-25	ZV2-024-10,0-25	ZV2-024-10,0-25	ZV2-024-10,0-25
VCIN2G250-V2EC	AGBA1-M (ON-OFF)	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20
	IC3-C (ON-OFF)	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20
	IC3-C (0-10V)	ZV2-024-10,0-25	ZV2-024-10,0-25	ZV2-024-10,0-25	ZV2-024-10,0-25



ACCESSORIES

REQUIRED ACCESSORIES

No special accessories are needed to ensure a proper function of the stand-alone air curtain. If the air curtain is fitted with the control system, the control system is connected using common wiring cables, see the “Wiring diagrams” chapter. A suitable cross-section of the cables, protection of the unit, and utilization of other wiring materials shall be determined based on the particular installation conditions. **These components shall be delivered by a company performing the air curtain electrical wiring.**

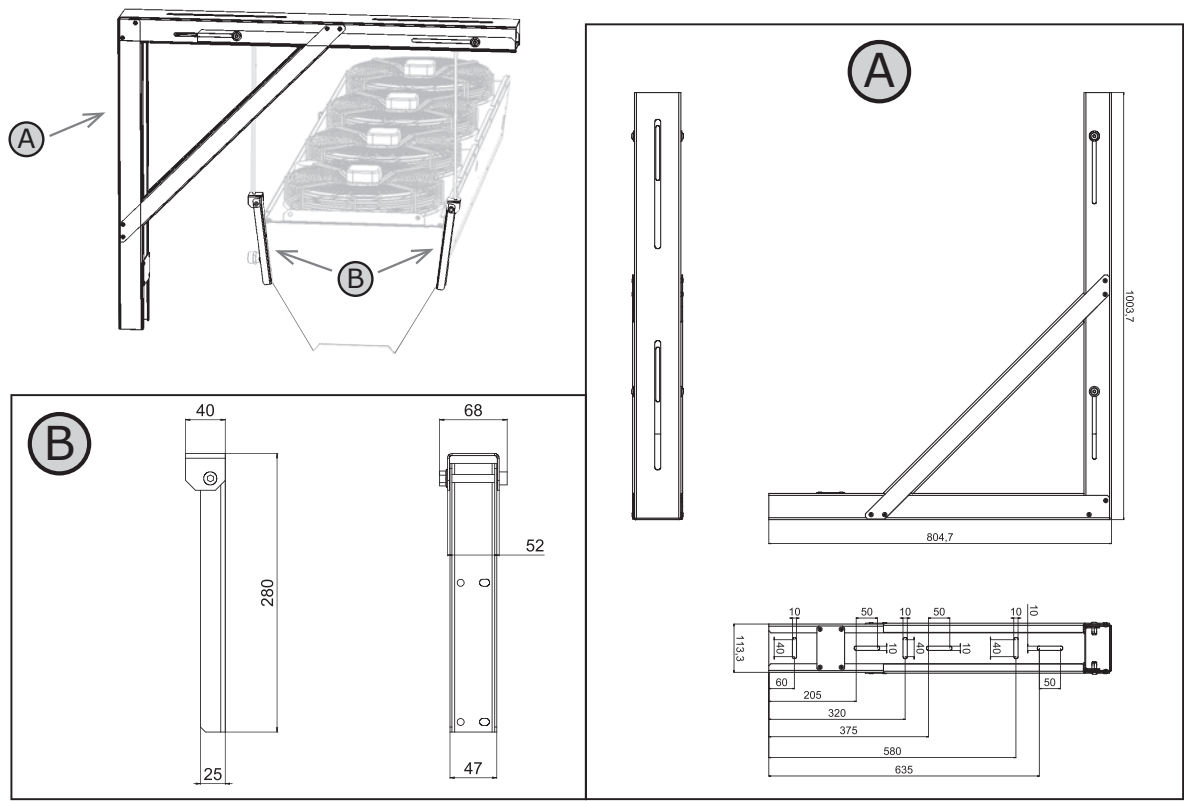
Optional accessories

WALL holder set - HORIZONTAL

This set includes:

A part - Wall holder (1 pcs)

B part - Air curtain holder (2 pcs)



VCIN1-KOT-H-STENA-0

Color

0 Standard (RAL9016)

1 Galvanized steel

9 Atyp RAL

Wall holder set (1 set)

	Number of INDESSE air curtain modules connected								
	1	2	3	4	5	6	7	...	n
No. of holders	2	3	4	5	6	7	8	...	n + 1



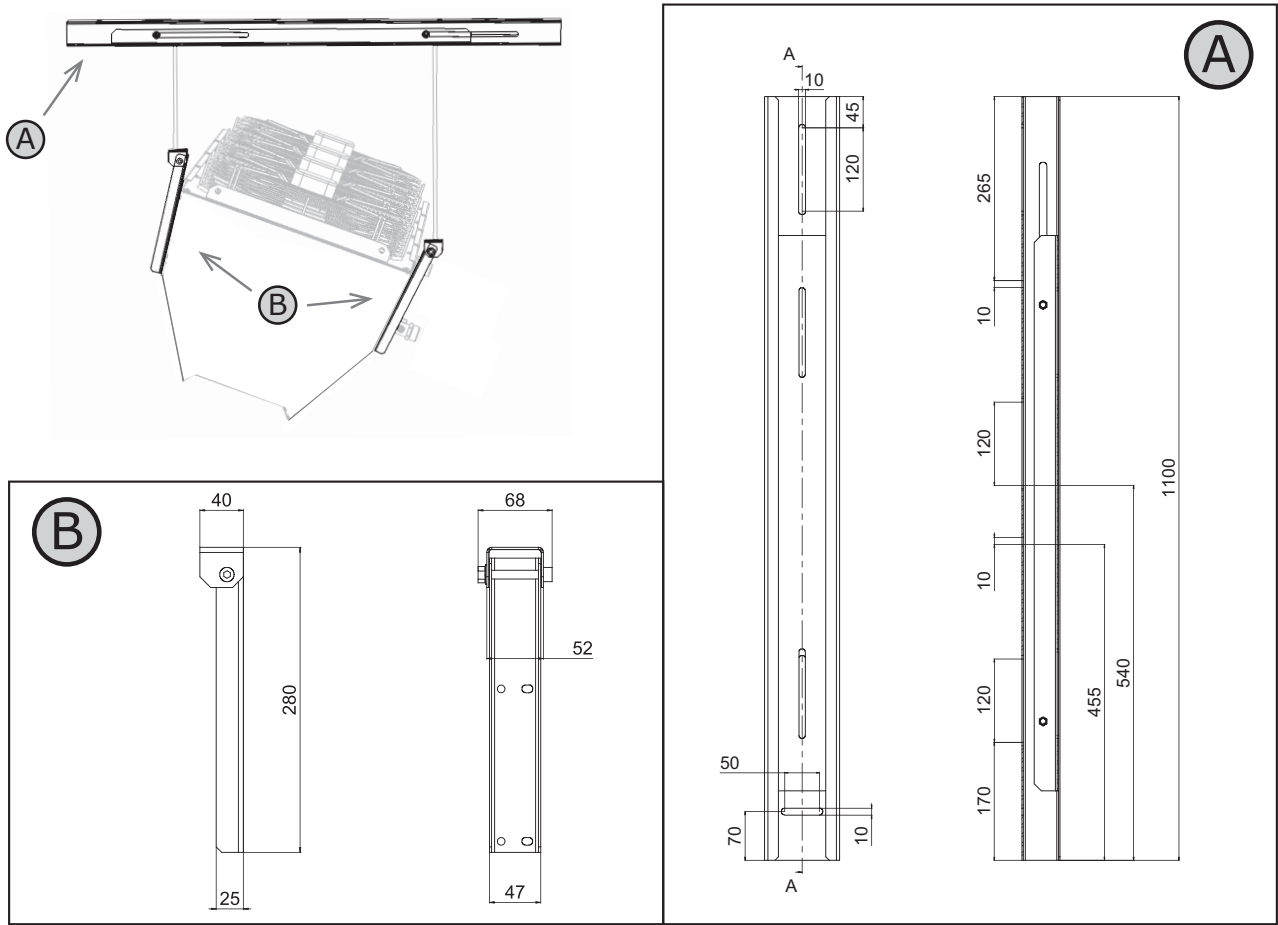
Optional accessories

CEILING holder set - HORIZONTAL

This set includes:

A part - Ceiling holder (1 pcs)

B part - Air curtain holder (2 pcs)



VCIN1-KOT-H-STROP-0

Color

0 Standard (RAL9016)

1 Galvanized steel

9 Atyp RAL

Ceiling holder set (1 set (A+2xB))

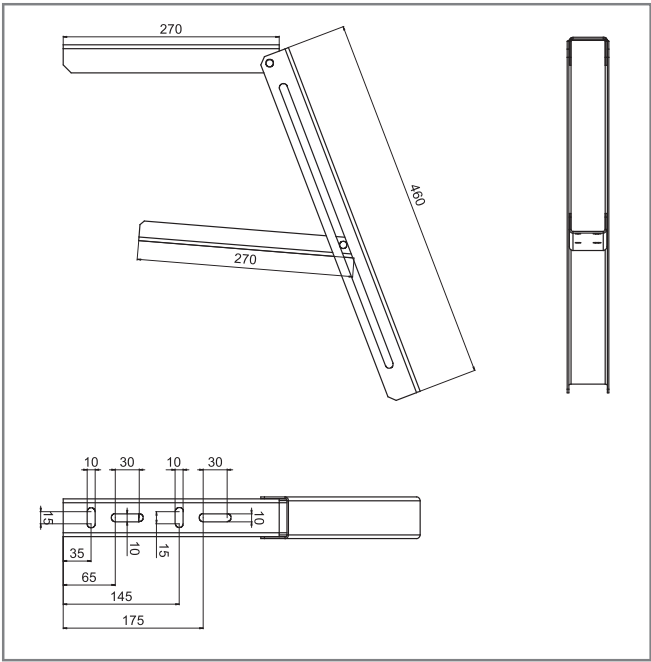
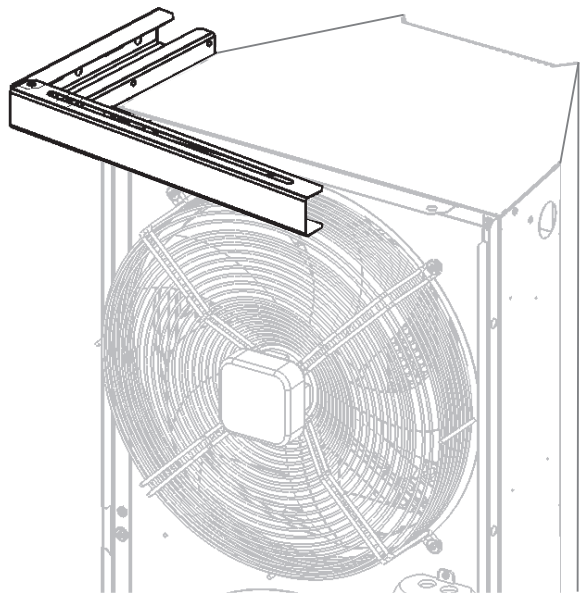
	Number of INDESSE air curtain modules connected								
	1	2	3	4	5	6	7	...	n
No. of holders	2	3	4	5	6	7	8	...	n + 1



Optional accessories

Wall holder - VERTICAL

For anchoring the air curtain to the wall



VCIN1-KOT-V-STENA-0

- Color**
- 0 Standard (RAL9016)
 - 1 Galvanized steel
 - 9 Atyp RAL

Wall holder (1 pcs)

	Number of INDESSE air curtain modules connected			
	1	2	3**	4**
No. of holders	1*	1*	2	3

* - This holder is not needed up to a height of 4 m, but we recommend to using it.

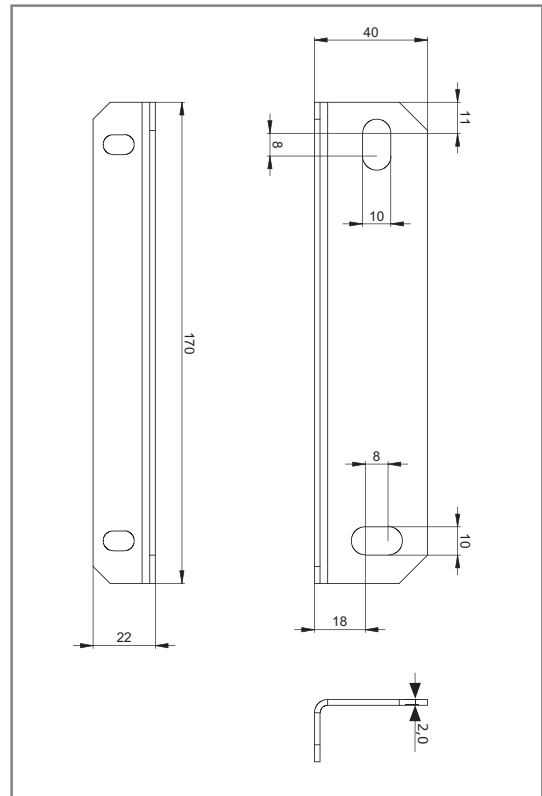
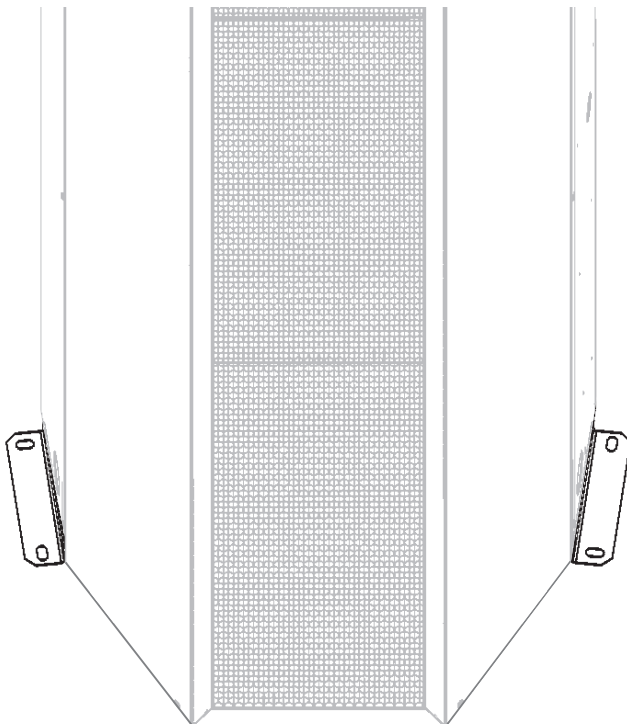
** - The maximum height of air curtains, which can be installed in the vertical position (air curtain on air curtain) is 6,6 m.
If you need a higher distance, then an additional supporting system must be made (not available in 2VV accessories).



Optional accessories

Anchoring holder - VERTICAL

For anchoring the air curtain to the floor



VCIN1-KOT-V-ZEM-0

Color

- 0** Standard (RAL9016)
- 1** Galvanized only
- 9** Atyp RAL

Floor holder set (2 pcs)

	Number of INDESSE air curtain modules connected			
	1	2	3*	4*
No. of sets of holders	1	1	1	1

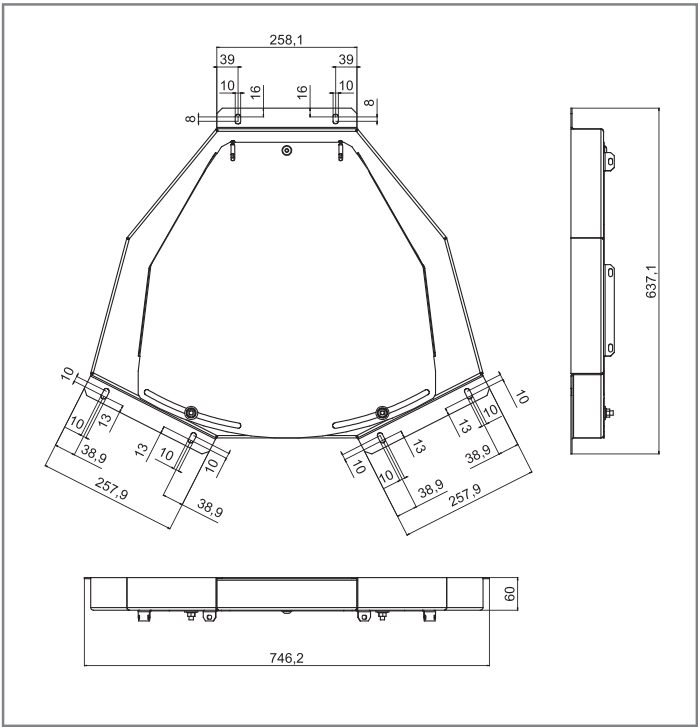
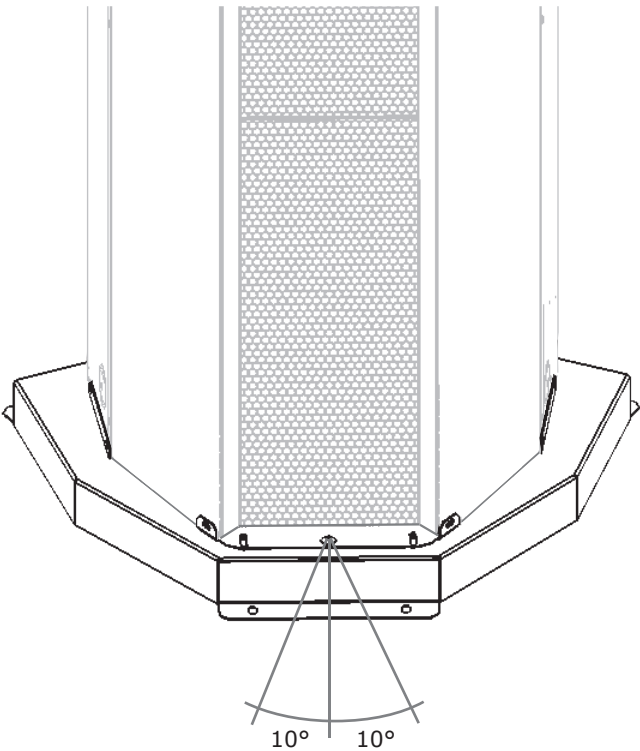
* - The maximum height of air curtains, which can be installed in the vertical position (air curtain on air curtain) is 6,6 m.
If you need a higher distance, then an additional supporting system must be made (not available in 2VV accessories).



Optional accessories

Adjustable anchoring holder - VERTICAL

For anchoring the air curtain to the floor with the possibility of moving (20° max)



VCIN1-KOT-V-PODST-0

- Color**
- 0** Standard (RAL9016)
 - 1** Grey colour (RAL9006)
(optimal for Galvanized air curtain)
 - 9** Atyp RAL

Movable pedestal (1 pcs)

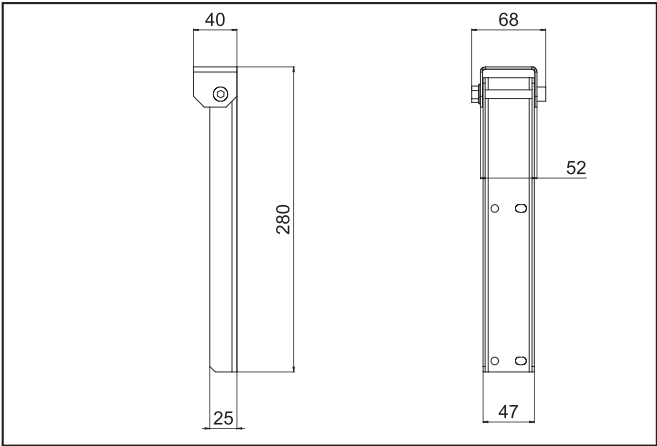
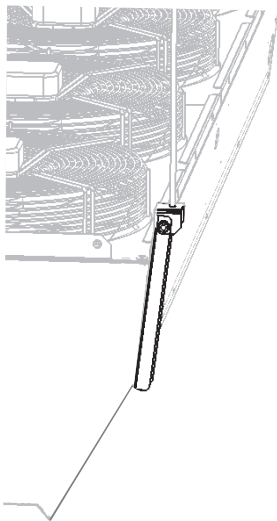
	Number of INDESSE air curtain modules connected			
	1	2	3*	4*
No. of holders	1	1	1	1

* - The maximum height of air curtains, which can be installed in the vertical position (air curtain on air curtain) is 6,6 m.
If you need a higher distance, then an additional supporting system must be made (not available in 2VV accessories).



Optional accessories

Threaded bar holder - HORIZONTAL



VCIN1-KOT-H-ZAVES-0

- Color**
- 0 Standard (RAL9016)
 - 1 Galvanized steel
 - 9 Atyp RAL
- Air curtain holder (1 pc only)**

	Number of INDESSE air curtain modules connected				
	1	2	3	...	n
No. of holders	4	6	8	...	$n*2 + 2$



AirGENIO BASIC EC controller

AGBA1-M-ECX-XX-V1-0A0

AirGENIO BASIC EC controller is designed primarily for manual control of industrial air curtains and air heaters with water or electric heating. In addition, the unit may be used for manual control of devices comprising a voltage controlled EC fans.



Control unit

IC3-C-EC

The AirGENIO IC-CONTROL unit is designed primarily for controlling industrial air curtains. In addition, the unit may also be used for controlling devices comprising a voltage controlled EC fan and heating units.



2-way or 3-way valve with servo drive

ZV2-230-xx,x-xx (230V, ON/OFF)

ZV3-230-xx,x-xx (230V, ON/OFF)

ZV2-24V-xx,x-xx (24V, 0-10V)

ZV3-24V-xx,x-xx (24V, 0-10V)



Zone valve

RT-3-11

Three-way zone valve powered by servo drive to control the flow of hot and cold water.



Mixing node

SMU2-xx-xx

Mixing node without pump for continuous regulation of the heat power of exchanger.





Room thermostat
TER-P
Spatial thermostat



Room temperature sensor
CT-ROOM



Flexible connection hoses
OH-01-1/1-300
OH-01-1/1-500



Door switch – industrial
DS



Magnetic door contact in a metal housing with higher protection against mechanical damage
DK-B-3



Motor filter (1 pcs) - class Coarse 40% (G2)
FI-PYTEL-KRUH-G2-SAV-4



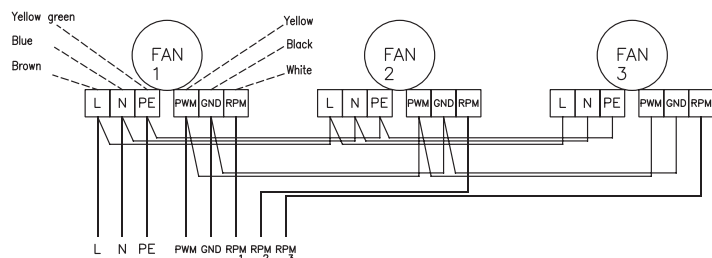


WIRING DIAGRAMS

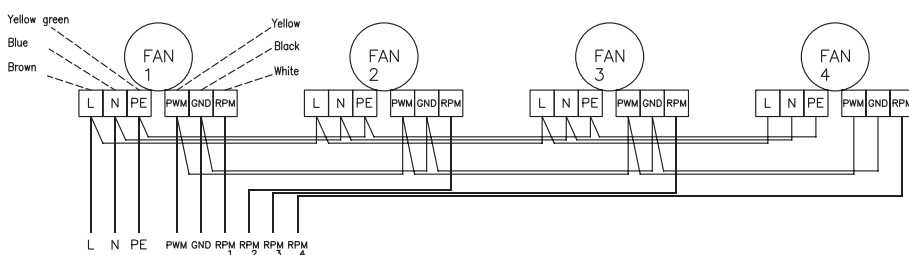
The recommended cross-section of the main power supply cables is stated in the Instruction Manual.

All wiring diagrams provided in the technical catalog are indicative only. When assembling the product, strictly observe the nameplate ratings as well as the directions and diagrams affixed directly to the product or enclosed with the product.

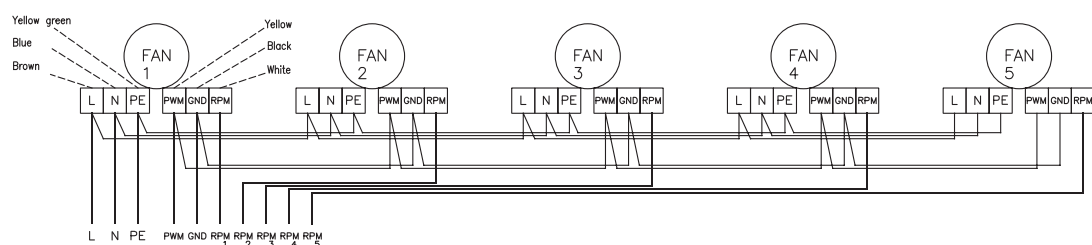
VCIN2G150-xx-EC



VCIN2G200-xx-EC



VCIN2G250-xx-EC





KEY TO CODING

VCIN2G 150-V2 EC-XX-0 B 0**0** – Reserve**A** – Packed horizontally (*standard for VCIN2A250*)
(*non standard for VCIN2A150,200*)**B** – Packed vertically (*standard for VCIN2A150,200*)**0** – Standard (RAL9016)**9** – Atyp RAL**XX** – No control**EC** – EC motors**V2** – water heat coil (2row; 110°C)**P2** – water heat coil with antifreeze protection**150** – length **1650mm****200** – length **2200mm****250** – length **2750mm****VCIN2G** – Industrial air curtain **INDESSE GP**



AIR CURTAINS

AC FANS





electric wire heater

**LOW
NOISE**

**WIRE
HEATER**

**PLUG
PLAY**

**FACE
2in1**



BASIC FEATURES

- Lengths 60 and 90 cm available
- **Air flow up to 345 m³/h** (ISO 27 327-1)
- *FACE 2 in 1* – suction grille + filter = 2 in 1
- Silent operation
- Instant start of heating output
- Simple and intuitive control
- Easy installation
- Standard colour RAL 9016 (any RAL – based colours may be provided on customer's request)

The air curtain for small openings where a narrow hot stream is required for use in premises such as **fast-food facilities, drive-in restaurants, petrol stations and receptions** with a recommended height up to 1.5 m*.

** Maximum recommended installation height suitable for the most application (may differ based on the existing conditions at the installation location).*

**PRIMARY PARAMETERS**

Air curtain is designed for performance in an inner dry environment with the outside temperature between +5 °C to +40 °C and relative humidity up to 80 %, for transferring air without gross dust, greasiness, chemical vapours and other kinds of pollution. Electrical protection of this product is IP 20.

BASIC air curtains are equipped with electric wire heater with automatic thermostat on each element. Whole product is secured by emergency thermostat with manual reset.

Air curtain type	Recommended installation height [m]	Airflow volume [m³/h] ^{*1}		Acoustic pressure [dB(A)] ^{*2}		Sound power [dB(A)] ^{*3}
		max speed	min speed	3 m	5 m	
VCB-A-060-E-RF-0-0	1,5	229	207	46,5	42,1	64,0
VCB-A-090-E-RF-0-0		345	298	48,5	44,0	66,0

Air curtain type	Heater power output [kW]	Total power input [kW]	Total voltage/ current [V/A]	Motor voltage/ current [V/A]	Temperature increase Δt [°C] ^{*4}	Frequency [Hz]	Weight [kg]
VCB-A-060-E-RF-0-0	2,4	2,5	230 / 11	230 / 0,4	22,0	50/60	6
VCB-A-090-E-RF-0-0	3,1	3,2	230 / 14	230 / 0,7	19,0	50/60	8

^{*1} Airflow volume according ISO27327-1

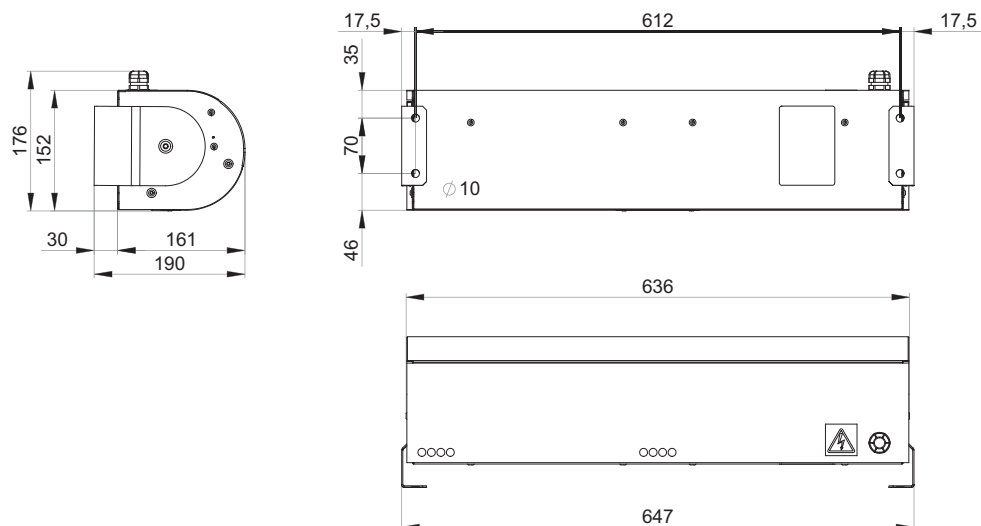
^{*2} Acoustic pressure values at 3 and 5 m distance for maximum speed. Directional factor: Q=2.

^{*3} Sound power (LWA) measurements according to ISO 27327-2.

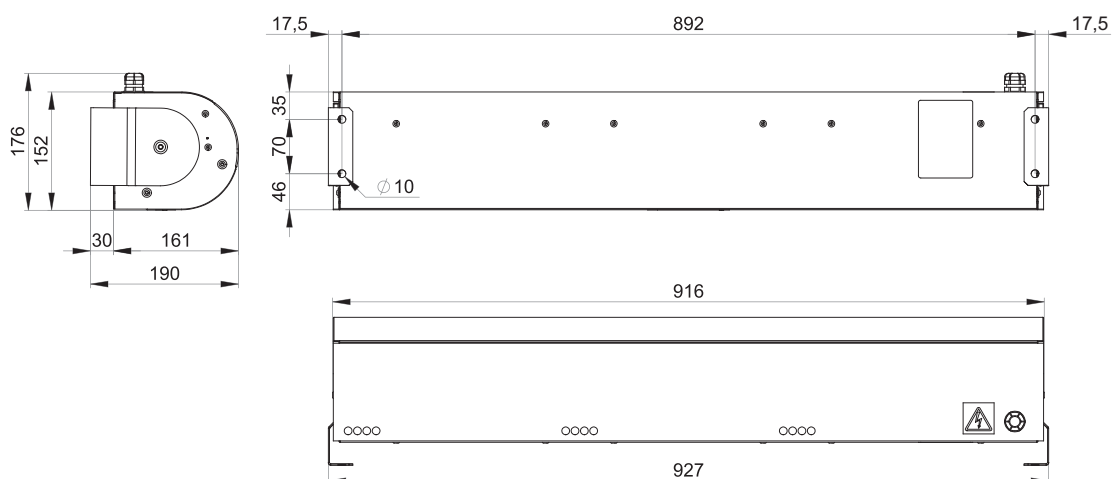


DIMENSIONS

BASIC 600



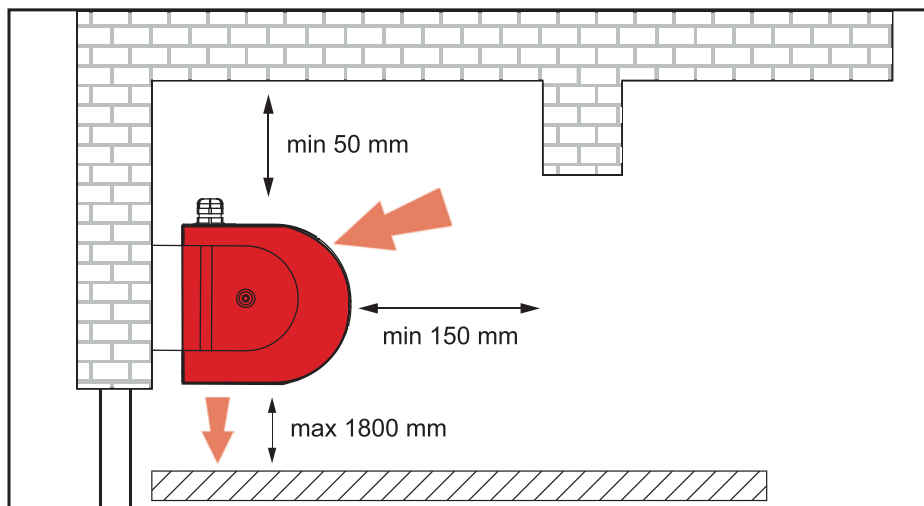
BASIC 900



**INSTALLATION AND ASSEMBLY**

- Air curtain can be installed only in a horizontal position
- Air curtain must be placed as near the upper edge of a door opening as possible, see the picture
- To achieve a best function of BASIC air curtain is recommended to use model which is slightly wider than opening which should be covered
- Correct operation of the air curtain requires that specified distances from the surrounding objects are kept, see picture.
- When installing, it is necessary to consider the connection of air curtain to an electrical lead
- To hang curtains, holders included in the delivery are used

Project shall always be developed by the HVAC designer.





CONTROL

BASIC air curtains are controlled by a wireless remote control, which is included in the delivery. Basic characteristic of control is described below.

Overview of functions



	Type of controller	Manual
	Control of air output	2 speeds
	Control of electric heater	ON/OFF
	Possibility of connecting a door contact	NO
	Temperature measurement	NO
	External control	NO
	Aftercooling electric air curtain	YES
	Pairing controller with more curtains	YES*
	Indication of selected function	YES

* One control panel can be paired (via radio frequency) with up to 60 curtains.

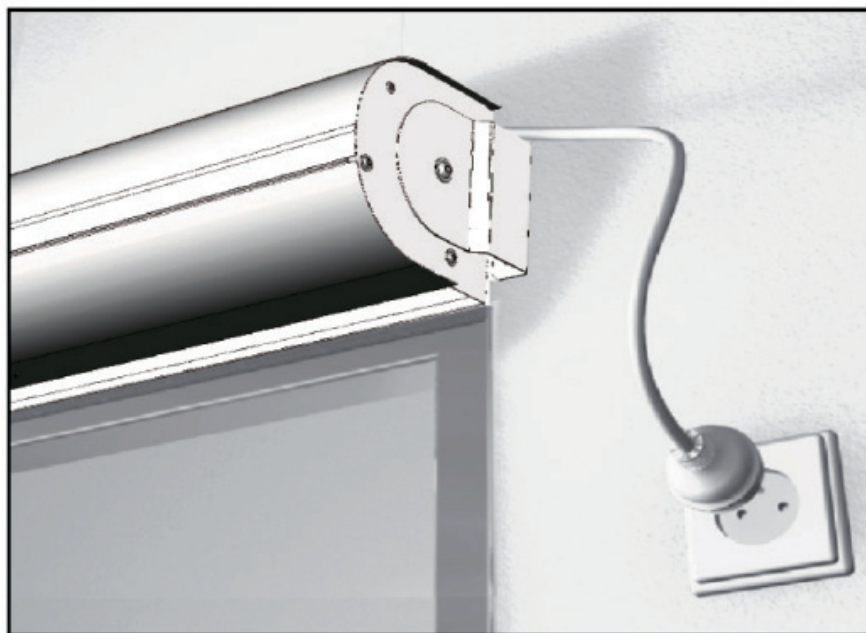
After turning air curtain off an automatic function for safe cooling of the air curtain is set on and ventilators run for another 30 seconds. This function is signaled by a blinking LED placed on the cover of the curtain.

**ACCESSORIES**

No special accessories is required to ensure a proper operation of the BASIC air curtains.

WIRING DIAGRAMS

BASIC air curtain is supplied with a power cord including a plug (3 m long).





KEY TO CODING

VCB-A-060-E-RF-0-0

- 0** – additional coding
- 0** – standard white (RAL9016)
- 9** – atyp RAL
- RF** – Radio frequency remote control
- E** – electric air curtain
- 060** – 060 – nominal width 600 mm
– 090 – nominal width 900 mm
- A** – economic series
- VCB** – air curtain BASIC



air-only



water heater



electric wire heater

**BASIC FEATURES**

- **Airflow up to 2.600m³/h** (ISO 27 327-1)
- Efficient **Straw-System** outlet – maximizing screening effect
- Recommended installation height up to 2,5m
- Length: 1,0; 1,5; 2,0m
- Electric, water and ambient version
- Simple and intuitive **infra-red control**
- Standard colour RAL 9016 (any RAL – based colours may be provided on customer's request)

ENTRESSE is a compact and practical air curtain combining the benefits of good quality, excellent performance and economical solution. Clear and neat design together with effective technologies such as Straw-System outlet for maximizing the screening effect or wire-heating elements for instant start-up of heating, make the air curtain a perfect fit for installations in **small shops, restaurants, cafes and such premises**, with recommended installation height up to 2,5m*.

**Maximum recommended installation height – may vary according the particular conditions at the installation site.*

The air curtain shall be installed indoor in a dry area with ambient temperatures ranging from 0 °C up to +35 °C and relative humidity of up to 80 %. It is designed for conveying air free of rough dust, grease, chemical fumes, and other impurities. IP rating of the air curtain is IP 20. The air curtain project shall **always be designed by the HVAC engineer**.


PRIMARY PARAMETERS

Air curtains with electric heater are fitted with automatic heat thermostat and emergency thermostat with manual reset. Air curtains with LPHW coil are designed for the maximum operating water temperature of +100 °C and maximum operating pressure of 1.6 MPa.

VCEN1A 50Hz

Type	Recommended installation height [m]	Air output [m³/h] *1			Acoustic pressure at 3m[dB(A)] *2			Sound power [dB(A)]*3
		Speed 3	Speed 2	Speed 1	Speed 3	Speed 2	Speed 1	
VCEN1A-100-E1	2,5	1330	1220	1050	49	48	45	71
VCEN1A-100-V		1250	1180	1040	50	48	45	71
VCEN1A-100-S		1330	1220	1050	51	48	44	72
VCEN1A-150-E1		2100	1550	1150	54	49	39	76
VCEN1A-150-E0		2100	1550	1150	54	49	39	76
VCEN1A-150-V		2000	1660	1210	53	49	41	75
VCEN1A-150-S		2100	1550	1150	55	47	38	76
VCEN1A-200-E1		2420	1950	1450	54	49	40	76
VCEN1A-200-E0		2420	1950	1450	54	49	40	76
VCEN1A-200-V		2640	1940	1420	54	47	39	75
VCEN1A-200-S		2450	1850	1360	54	44	36	75

Type	Heater power output [kW]		Total power input [kW]	Total voltage/ current [V/A]	Motor voltage/ current [V/A]	Temperature increase Δt [°C]*5	Frequency [Hz]	Weight [kg]
	1st level	2nd level						
VCEN1A-100-E	3,4	6,6	6,75	400/14,8	230/0,6	14,6	50	16
VCEN1A-100-V	10,03*4		0,15	230/0,6	230/0,6	23,6		17
VCEN1A-100-S	-		0,16	230/0,7	230/0,7	-		15
VCEN1A-150-E1	5,1	9,8	10,00	400/22,5	230/0,9	13,7		22
VCEN1A-150-E0	2,3	7,7	9	400/11,6	230/0,9	10,4		22
VCEN1A-150-V	16,93*4		0,18	230/0,7	230/0,9	24,9		23
VCEN1A-150-S	-		0,20	230/0,9	230/0,9	-		21
VCEN1A-200-E1	6,6	12,9	13,10	400/28,7	230/0,8	15,7		27
VCEN1A-200-E0	3,1	9,7	10,6	400/14,6	230/0,8	13		27
VCEN1A-200-V	23,24*4		0,20	230/0,9	230/0,8	25,9		28
VCEN1A-200-S	-		0,18	230/0,8	230/0,8	-		26

*1 Airflow volume according ISO27327-1

*2 Acoustic pressure values at 3 distance for maximum speed. Directional factor: Q=2.

*3 Sound power (LWA) measurements according to ISO 27327-2.

*4 Applicable for water temperature 90/70°C, inlet air temperature +18°C

*5 Intake air temperature +18°C, at maximum heating level and highest fan speed.



PRIMARY PARAMETERS

Air curtains with electric heater are fitted with automatic heat thermostat and emergency thermostat with manual reset. Air curtains with LPHW coil are designed for the maximum operating water temperature of +100 °C and maximum operating pressure of 1.6 MPa.

VCEN1A 60Hz

Type	Recommended installation height [m]	Air output [m³/h] ^{*1}			Acoustic pressure at 3m[dB(A)] ^{*2}			Sound power [dB(A)] ^{*3}
		Speed 3	Speed 2	Speed 1	Speed 3	Speed 2	Speed 1	
VCEN1A-100-E1	2,5	1550	1300	920	48	46	43	69
VCEN1A-100-E0		1550	1300	920	48	46	43	69
VCEN1A-100-V		1500	1280	1000	48	46	43	69
VCEN1A-100-S		1550	1240	920	51	47	43	72
VCEN1A-150-E1		2100	1400	1050	55	45	37	73
VCEN1A-150-E0		2100	1400	1050	55	45	37	73
VCEN1A-150-V		2100	1450	1060	55	46	39	77
VCEN1A-150-S		2100	1400	1050	54	43	35	75
VCEN1A-200-E1		2420	1650	1250	54	67	36	76
VCEN1A-200-E0		2580	1750	1250	53	43	35	75
VCEN1A-200-V		2580	1750	1250	53	43	35	75
VCEN1A-200-S		2450	1600	1170	54	44	36	75

Type	Heater power output [kW]		Total power input [kW]	Total voltage/current [V/A]	Motor voltage/current [V/A]	Temperature increase Δt [°C] ^{*5}	Frequency [Hz]	Weight [kg]
	1st level	2nd level						
VCEN1A-100-E1	3,4	6,6	6,81	400/15,1	230/0,9	12,5	60	16
VCEN1A-100-V	10,03*4		0,20	230/0,9	230/0,9	23,6		17
VCEN1A-100-S	-		0,22	230/0,9	230/0,9	-		15
VCEN1A-150-E1	5,1	9,8	10,06	400/22,7	230/1,1	13,7		22
VCEN1A-150-E0	2,3	7,7	9	400/11,6	230/0,9	10,4		22
VCEN1A-150-V	16,93*4		0,23	230/1,0	230/1,0	24,9		23
VCEN1A-150-S	-		0,27	230/1,1	230/1,1	-		21
VCEN1A-200-E1	6,6	12,9	13,14	400/28,9	230/1,0	15,7		27
VCEN1A-200-E0	3,1	9,7	10,6	400/14,6	230/0,8	13		27
VCEN1A-200-V	23,24*4		0,26	230/1,1	230/1,1	25,9		28
VCEN1A-200-S	-		0,24	230/1,0	230/1,0	-		26

^{*1} Airflow volume according ISO27327-1

^{*2} Acoustic pressure values at 3 m distance for maximum speed. Directional factor: Q=2.

^{*3} Sound power (LWA) measurements according to ISO 27327-2.

^{*4} Applicable for water temperature 90/70°C, inlet air temperature +18°C

^{*5} Intake air temperature +18°C, at maximum heating level and highest fan speed.

LPHW coil parameters for water temperature gradient of 90/70 °C

Type	Air output [m³/h]	Heating output [kW]	Temperature at exhaust [°C]	Pressure loss [kPa]	Water flow [l/s]
VCEN1A-100-V2	1250	10,03	41,63	3,37	0,12
VCEN1A-150-V2	2000	16,93	42,92	11,64	0,21
VCEN1A-200-V2	2640	23,24	43,92	25,85	0,28

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient of 80/60 °C

Type	Air output [m³/h]	Heating output [kW]	Temperature at exhaust [°C]	Pressure loss [kPa]	Water flow [l/s]
VCEN1A-100-V2	1250	8,15	37,2	2,37	0,09
VCEN1A-150-V2	2000	13,9	38,46	8,33	0,17
VCEN1A-200-V2	2640	19,17	39,38	18,63	0,23

LPHW coil parameters for water temperature gradient of 70/50 °C

Type	Air output [m³/h]	Heating output [kW]	Temperature at exhaust [°C]	Pressure loss [kPa]	Water flow [l/s]
VCEN1A-100-V2	1250	6,23	32,69	1,51	0,076
VCEN1A-150-V2	2000	10,85	33,98	5,49	0,13
VCEN1A-200-V2	2640	15,07	34,81	12,41	0,18

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient of 60/40 °C

Type	Air output [m³/h]	Heating output [kW]	Temperature at exhaust [°C]	Pressure loss [kPa]	Water flow [l/s]
VCEN1A-100-V2	1250	4,23	27,97	0,79	0,05
VCEN1A-150-V2	2000	7,75	29,41	3,12	0,09
VCEN1A-200-V2	2640	10,93	30,2	7,22	0,13

Recommended mixing points for LPHW coil 2-way valve (ZV2)

Type	90/70 °C	80/60 °C	70/50 °C	60/40 °C
	2-way valve			
VCEN1A-100-V2...	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
VCEN1A-150-V2...	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
VCEN1A-200-V2...	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20

Recommended mixing points for LPHW coil 3-way valve (ZV3)

Type	90/70 °C	80/60 °C	70/50 °C	60/40 °C
	3-way valve			
VCEN1A-100-V2...	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
VCEN1A-150-V2...	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
VCEN1A-200-V2...	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20

Recommended mixing points for LPHW coil 3-way valve (RT-3)

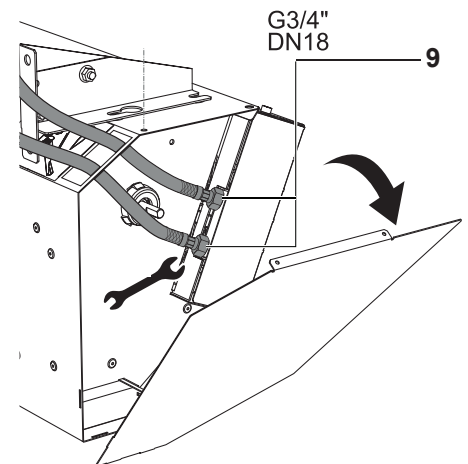
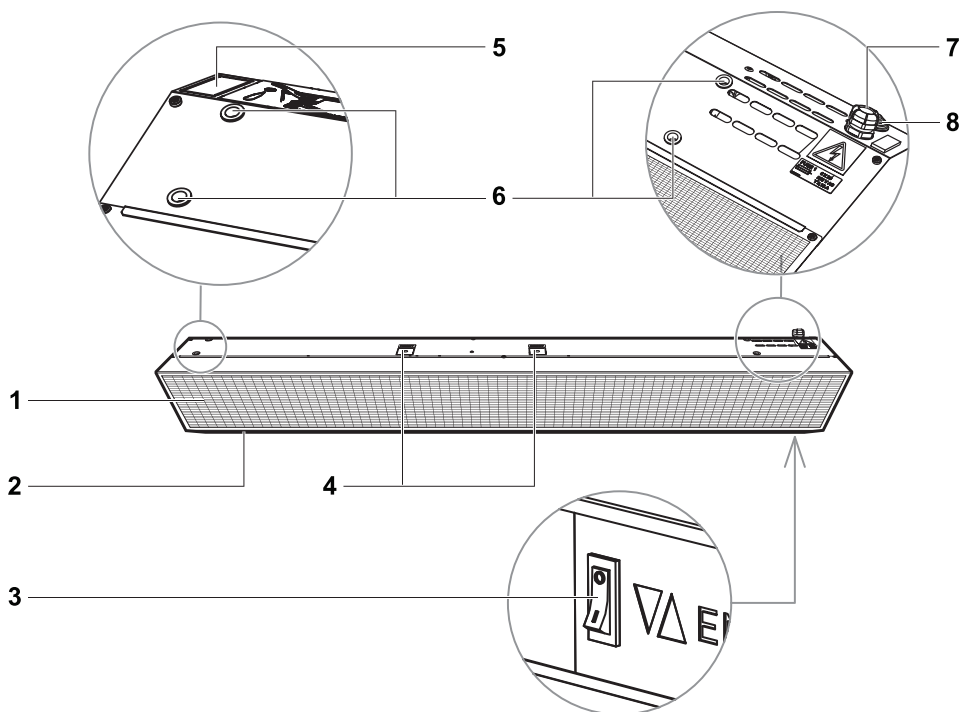
Type	90/70 °C	80/60 °C	70/50 °C	60/40 °C
	3-way valve			
VCEN1A-100-V2...	RT-3-07	RT-3-07	RT-3-07	RT-3-07
VCEN1A-150-V2...	RT-3-07	RT-3-07	RT-3-07	RT-3-07
VCEN1A-200-V2...	RT-3-07	RT-3-07	RT-3-07	RT-3-07



PRIMARY PARAMETERS

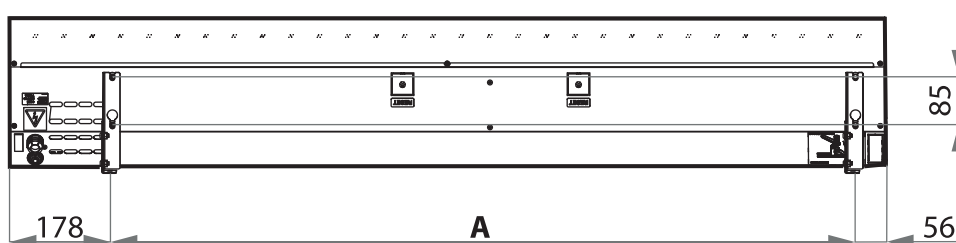
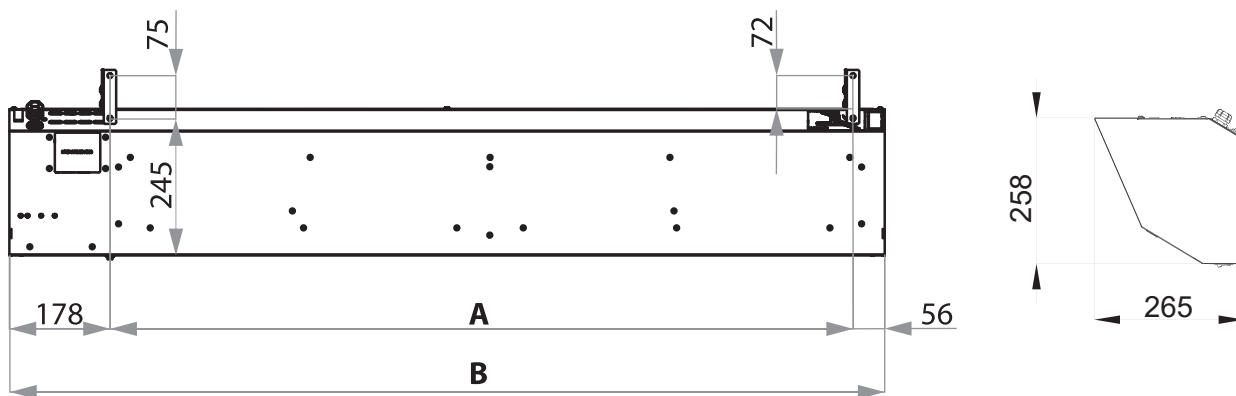
MAIN PARTS

- ① Front cover with inlet grill
- ② Air outlet grill (underside)
- ③ Main switch (underside)
- ④ Electric heat exchanger reset
- ⑤ Opening for connecting water hoses
- ⑥ Openings for mounting brackets
- ⑦ Grommet for power cable
- ⑧ Grommet for accessories
- ⑨ Water heater connection G 3/4"

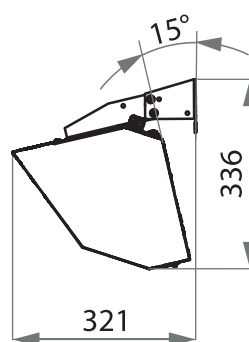
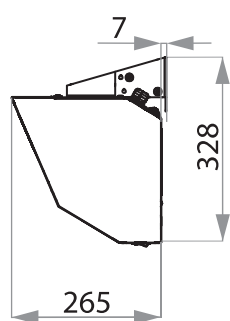




DIMENSIONS



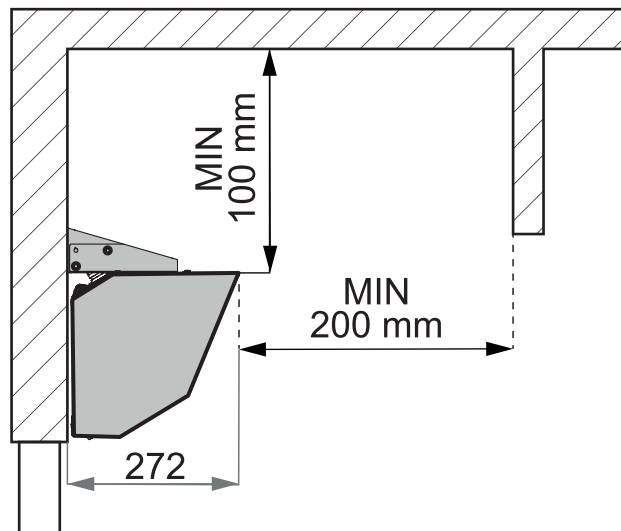
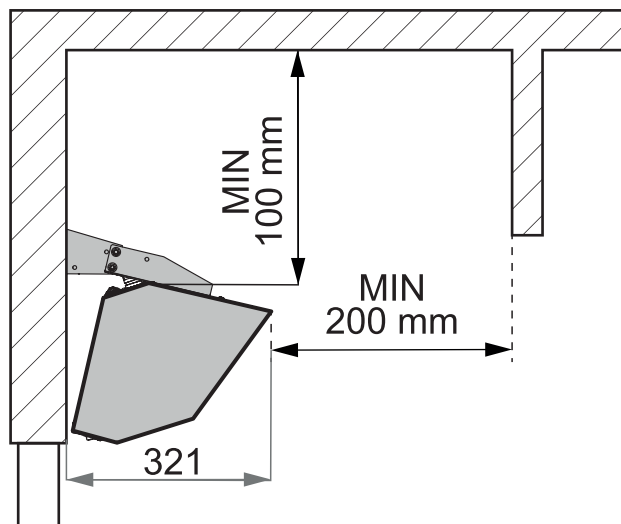
Type	A	B
VCEN1A-100...	809 mm	1042 mm
VCEN1A-150...	1309 mm	1542 mm
VCEN1A-200...	1809 mm	2042 mm



Mounting brackets are included in delivery enabling air curtain installation with blowing angle 0° or blowing angle 15°.

**INSTALLATION AND ASSEMBLY**

- The air curtain shall be installed in a horizontal position only.
- The air curtain shall be located as close to the top edge of the doorway as possible and a distance from walls that is in accordance with fire safety and building codes of the country where unit is installed. For manufacturer recommended distance see figures below.
- To ensure a correct function it is recommended that the air curtain overlaps the doorway by 100 mm on both sides.
- Correct operation of the air curtain requires that specified distances from the surrounding objects are observed, see figure.
- Position of the heating water and power supply connections shall be taken into consideration during installation.

Standard air curtain installation**Installation of curtain with 15° blowing angle**



CONTROL

Overview of functions and sensor connections



Manual IR



Control of airflow in 3 steps



Control of electric heater OFF / Level1 / Level2



On/Off control of valve actuator for LPHW coil



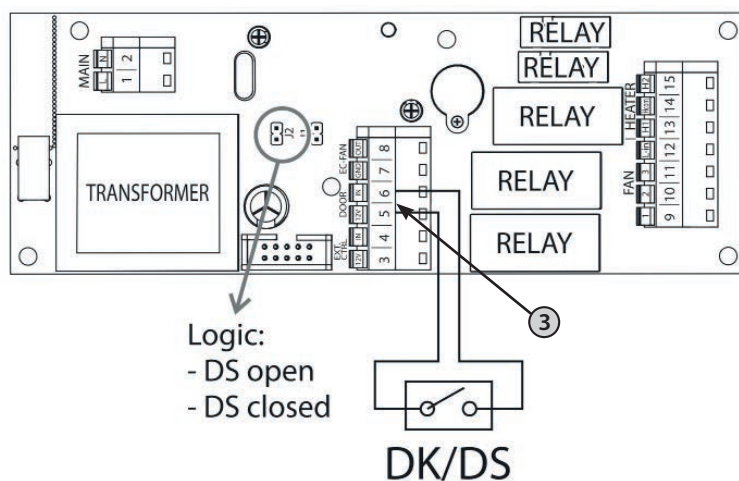
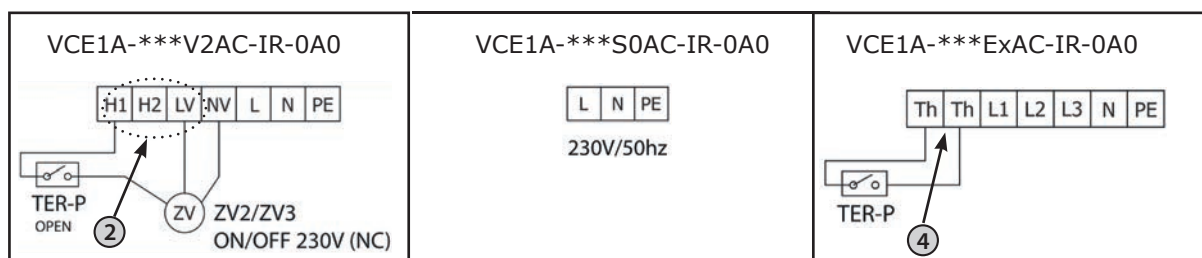
Possibility of connecting a door contact and external control switch



Possibility of connecting a room thermostat



WIRING DIAGRAMS



	EN
1	Control panel
2	Water heater (relay contact)
3	DOOR contact (input, NO/NC)
4	Room thermostat (input, NC)



ACCESSORIES

OPTIONAL ACCESSORIES

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

2-way or 3-way valve with servo drive

ZV2-230-xx,x-xx

ZV3-230-xx,x-xx

RT-3-07



Room thermostat

TER-P



**Magnetic door contact (12V) in a metal housing
with higher protection against mechanical damage**

DK-B-3



Flexible connection hoses

OH-02-3-4-500





KEY TO CODING

VCEN1 A-100 E1 AC-IR-0 A0

A0 – 2VV version

0 – Standard RAL 9016

9 – Atyp RAL

IR – IR control

AC – Motor type

S0 – Ambient

E0 – Elektric heater with reduced power

E1 – Elektric heater standard

V2 – LPHW coil 2-row

100 – Nominal width 1000 mm

150 – Nominal width 1500 mm

200 – Nominal width 2000 mm

A – A Output series

VCEN1 – ENTRESSE air curtain



air-only



water heater



electric wire heater

WIRE
HEATERSTRAW
SYSTEMMODULAR
CONTROL3 YEARS
WARRANTY**BASIC FEATURES**

- Lengths: 1.0; 1.5; 2.0; 2.5 m
- **Air flow up to 5700 m³/h** (ISO 27 327-1)
- **Straw System** – maximized screening effect
- Low profile
- Universal interface for AirGENIO AC control module connection (BASIC, COMFORT, SUPERIOR)
- Standard colour RAL 9016 (any RAL – based colours may be provided on customer's request)

The ESSENSSE NEO is low profile design air curtain for use in **retail shops, shopping centres, restaurants, administrative buildings and manufacturing facilities** with a recommended installation height up to 4 m*.

* Maximum recommended installation height – may vary according the particular conditions at the installation site.

The air curtain shall be installed indoors in a dry environment with ambient temperatures ranging from 0 °C up to +40 °C and relative humidity of up to 80 %. It is designed for conveying air free of fine dust, grease, chemical fumes, and other impurities. IP rating of the air curtain is IP 20. It is recommended that air curtain projects always be developed by an HVAC designer or engineer.



PRIMARY PARAMETERS

Air curtains with electric heaters are equipped with an automatic heat thermostat and emergency thermostat with manual reset. Air curtains with LPHW coil are designed for a maximum operating water temperature of +130 °C and a maximum operating pressure of 1.6 MPa.

VCES2-B 50Hz

Type	Recommended installation height [m]	Air output [m³/h] *1			Acoustic pressure at 3m [dB(A)]*2			Sound power
		Speed 3	Speed 2	Speed 1	Speed 3	Speed 2	Speed 1	
VCES2 B 100-E0	3,2	1500	1000	650	53	48	43	71
VCES2 B 150-E0		2250	1650	1200	55	50	44	72
VCES2 B 200-E0		3300	2500	1900	56	48	41	74
VCES2 B 250-E0		3800	3000	2200	58	51	46	76
VCES2 B 100-E1		1500	1000	650	53	48	43	71
VCES2 B 150-E1		2250	1650	1200	55	50	44	72
VCES2 B 200-E1		3300	2500	1900	56	48	41	74
VCES2 B 250-E1		3800	3000	2200	58	51	46	76
VCES2 B 100-E2		1500	1000	650	53	48	43	71
VCES2 B 150-E2		2250	1650	1200	55	50	44	72
VCES2 B 200-E2		3300	2500	1900	56	48	41	74
VCES2 B 250-E2		3800	3000	2200	58	51	46	76
VCES2 B 100-V2		1500	1000	650	53	48	43	71
VCES2 B 150-V2		2250	1650	1200	55	50	44	72
VCES2 B 200-V2		3300	2500	1900	56	48	41	74
VCES2 B 250-V2		3800	3000	2200	58	51	46	76
VCES2 B 100-S0		1500	1000	650	53	48	43	71
VCES2 B 150-S0		2250	1650	1200	55	50	44	72
VCES2 B 200-S0		3300	2500	1900	56	48	41	74
VCES2 B 250-S0		3800	3000	2200	58	51	46	76

Type	Heater power output [kW] (*LPHW 90/70°C)		Total power input [kW]	Total voltage/ current [V/A]	Motor voltage/ current [V/A]	Temperature increase Δt [°C]*4	Frequency [Hz]	Weight [kg]*5
	1st level	2nd level						
VCES2 B 100-E0	3,2	4,7	4,9	400 / 13,8	230/ 0,7	9,3	50	25,5
VCES2 B 150-E0	3,8	7,5	7,7	400 / 11,9	230 / 1,0	9,9		32,6
VCES2 B 200-E0	4,8	9,5	9,8	400 / 15,4	230 / 1,3	8,6		39,8
VCES2 B 250-E0	6,9	12,2	12,6	400 / 19,4	230 / 1,6	9,6		46,9
VCES2 B 100-E1	3,2	6,3	6,5	400 / 13,8	230 / 0,7	13,2		25,5
VCES2 B 150-E1	5,0	10,0	10,2	400 / 21,8	230 / 1,0	13,3		32,6
VCES2 B 200-E1	6,3	12,6	12,9	400 / 27,5	230 / 1,3	12,0		39,8
VCES2 B 250-E1	8,2	16,3	16,6	400 / 26,2	230 / 1,6	13,1		46,9
VCES2 B 100-E2	4,7	9,5	9,7	400 / 14,5	230 / 0,7	19,0		25,7
VCES2 B 150-E2	7,5	15,0	15,2	400 / 22,8	230 / 1,0	20,0		32,9
VCES2 B 200-E2	9,5	19,0	19,3	400 / 29,1	230 / 1,3	17,2		40,3
VCES2 B 250-E2	12,2	24,5	25,0	400 / 37,1	230 / 1,6	19,3		47,5
VCES2 B 100-V2	16,9 *4	-	0,2	230 / 0,7	230 / 0,7	33,7		26,1
VCES2 B 150-V2	24,7 *4	-	0,2	230 / 1,0	230 / 1,0	32,9		32,9
VCES2 B 200-V2	35,7 *4	-	0,3	230 / 1,3	230 / 1,3	32,5		40,1
VCES2 B 250-V2	43,3 *4	-	0,4	230 / 1,6	230 / 1,6	34,2		47,4
VCES2 B 100-S0	-	-	0,2	230 / 0,7	230 / 0,7	-		24,8
VCES2 B 150-S0	-	-	0,2	230 / 1,0	230 / 1,0	-		31,3
VCES2 B 200-S0	-	-	0,3	230 / 1,3	230 / 1,3	-		38,3
VCES2 B 250-S0	-	-	0,4	230 / 1,6	230 / 1,6	-		45,1

*1 Airflow volume according ISO27327-1

*2 Acoustic pressure values at 3 distance for maximum speed. Directional factor: Q=2.

*3 Sound power (LWA) measurements according to ISO 27327-2.

*4 Intake air temperature +18 °C, at maximum heating level and highest fan speed.

*5 Weight without controls.



PRIMARY PARAMETERS

Air curtains with electric heaters are equipped with an automatic heat thermostat and emergency thermostat with manual reset. Air curtains with LPHW coil are designed for a maximum operating water temperature of +130 °C and a maximum operating pressure of 1.6 MPa.

VCES2-B 60Hz

Type	Recommended installation height [m]	Air output [m³/h] *1			Acoustic pressure at 3m [dB(A)]*2			Sound power
		Speed 3	Speed 2	Speed 1	Speed 3	Speed 2	Speed 1	
VCES2 B 100-E0	3,2	1451	1021	828	60	53	52	77
VCES2 B 150-E0		2550	1899	1447	59	55	53	77
VCES2 B 200-E0		3811	2707	2149	64	57	55	81
VCES2 B 250-E0		4187	2679	2079	61	54	52	79
VCES2 B 100-E1		1451	1021	828	60	53	52	77
VCES2 B 150-E1		2550	1899	1447	59	55	53	77
VCES2 B 200-E1		3811	2707	2149	64	57	55	81
VCES2 B 250-E1		4187	2679	2079	61	54	52	79
VCES2 B 100-E2		1451	1021	828	60	53	52	77
VCES2 B 150-E2		2550	1899	1447	59	55	53	77
VCES2 B 200-E2		3811	2707	2149	64	57	55	81
VCES2 B 250-E2		4187	2679	2079	61	54	52	79
VCES2 B 100-V2		1457	1026	831	60	53	52	77
VCES2 B 150-V2		2562	1908	1453	60	55	53	77
VCES2 B 200-V2		3829	2719	2159	64	57	55	81
VCES2 B 250-V2		4206	2694	2088	61	54	53	79
VCES2 B 100-S0		1451	1021	828	60	63	61	77
VCES2 B 150-S0		2550	1899	1447	59	64	62	77
VCES2 B 200-S0		3811	2707	2149	64	66	65	81
VCES2 B 250-S0		4187	2679	2079	61	63	62	79

Type	Heater power output [kW] (*90/70°C)		Total power input [kW]	Total voltage/current [V/A]	Motor voltage/current [V/A]	Temperature increase Δt [°C]*4	Frequency [Hz]	Weight [kg]*5
	1st level	2nd level						
VCES2 B 100-E0	3,2	4,7	4,9	400 / 13,8	230 / 0,8	9,3	60	25,5
VCES2 B 150-E0	3,8	7,5	7,8	400 / 11,9	230 / 1,3	9,9		32,6
VCES2 B 200-E0	4,8	9,5	10,0	400 / 15,4	230 / 2,2	8,6		39,8
VCES2 B 250-E0	6,9	12,2	12,8	400 / 19,4	230 / 2,6	9,6		46,9
VCES2 B 100-E1	3,2	6,3	6,5	400 / 13,8	230 / 0,8	13,2		25,5
VCES2 B 150-E1	5,0	10,0	10,3	400 / 21,8	230 / 1,3	13,3		32,6
VCES2 B 200-E1	6,3	12,6	13,1	400 / 27,5	230 / 2,2	12,0		39,8
VCES2 B 250-E1	8,2	16,3	16,9	400 / 26,2	230 / 2,6	13,1		46,9
VCES2 B 100-E2	4,7	9,5	9,7	400 / 14,5	230 / 0,8	19,0		25,7
VCES2 B 150-E2	7,5	15,0	15,3	400 / 22,8	230 / 1,3	20,0		32,9
VCES2 B 200-E2	9,5	19,0	19,5	400 / 29,1	230 / 2,2	17,2		40,3
VCES2 B 250-E2	12,2	24,5	25,1	400 / 37,1	230 / 2,6	19,3		47,5
VCES2 B 100-V2	16,9*	-	0,2	230 / 0,8	230 / 0,8	33,7		26,1
VCES2 B 150-V2	24,7*	-	0,3	230 / 1,3	230 / 1,3	32,9		32,9
VCES2 B 200-V2	35,7*	-	0,5	230 / 2,2	230 / 2,2	32,5		40,1
VCES2 B 250-V2	43,3*	-	0,6	230 / 2,6	230 / 2,6	34,2		47,4
VCES2 B 100-S0	-	-	0,2	230 / 0,8	230 / 0,8	-		24,8
VCES2 B 150-S0	-	-	0,3	230 / 1,3	230 / 1,3	-		31,3
VCES2 B 200-S0	-	-	0,5	230 / 2,2	230 / 2,2	-		38,3
VCES2 B 250-S0	-	-	0,6	230 / 2,6	230 / 2,6	-		45,1

*1 Airflow volume according ISO27327-1

*2 Acoustic pressure values at 3 m distance for maximum speed. Directional factor: Q=2.

*3 Sound power (LWA) measurements according to ISO 27327-2.

*4 Intake air temperature +18 °C, at maximum heating level and highest fan speed.

*5 Weight without controls.

VCES2-C

Type	Recommended installation height [m]	Air output [m³/h] *1			Acoustic pressure at 3 m [dB(A)]*2			Sound power
		Speed 3	Speed 2	Speed 1	Speed 3	Speed 2	Speed 1	
VCES2 C 100-E1	4,0	2300	1750	1300	64	59	53	82
VCES2 C 150-E1		3200	2400	1600	65	60	54	82
VCES2 C 200-E1		4500	3500	2500	64	59	53	81
VCES2 C 250-E1		5700	4600	3500	64	59	53	81
VCES2 C 100-V2		2300	1750	1300	64	59	53	82
VCES2 C 150-V2		3200	2400	1600	65	60	54	82
VCES2 C 200-V2		4500	3500	2500	64	59	53	81
VCES2 C 250-V2		5700	4600	3500	64	59	53	81
VCES2 C 100-S0		2300	1750	1300	64	59	53	82
VCES2 C 150-S0		3200	2400	1600	65	60	54	82
VCES2 C 200-S0		4500	3500	2500	64	59	53	81
VCES2 C 250-S0		5700	4600	3500	64	59	53	81

Type	Heater power output [kW] (*90/70°C)		Total power input [kW]	Total voltage/current [V/A]	Motor voltage/current [V/A]	Temperature increase Δt [°C]*4	Frequency [Hz]	Weight [kg]*5
	1st level	2nd level						
VCES2 C 100-E1	4,7	9,5	9,9	400 / 15,4	230 / 1,6	12,3	50	27,3
VCES2 C 150-E1	7,5	15,0	15,5	400 / 23,8	230 / 2,0	14,0		37,4
VCES2 C 200-E1	9,5	19,0	19,7	400 / 30,7	230 / 3,0	12,6		47,7
VCES2 C 250-E1	12,2	24,5	25,2	400 / 38,7	230 / 3,2	12,8		55,8
VCES2 C 100-V2	22,4*		0,37	230 / 1,6	230 / 1,6	29,2		27,6
VCES2 C 150-V2	31,8*		0,46	230 / 2,0	230 / 2,0	29,8		39,3
VCES2 C 200-V2	44,4*		0,69	230 / 3,0	230 / 3,0	29,6		47,6
VCES2 C 250-V2	53,7*		0,74	230 / 3,2	230 / 3,2	28,3		55,3
VCES2 C 100-S0	-	-	0,37	230 / 1,6	230 / 1,6	-		26,3
VCES2 C 150-S0	-	-	0,46	230 / 2,0	230 / 2,0	-		35,7
VCES2 C 200-S0	-	-	0,69	230 / 3,0	230 / 3,0	-		45,8
VCES2 C 250-S0	-	-	0,74	230 / 3,2	230 / 3,2	-		53,1

*1 Airflow volume according ISO27327-1

*2 Acoustic pressure values at 3 m distance for maximum speed. Directional factor: Q=2.

*3 Sound power (LWA) measurements according to ISO 27327-2.

*4 Intake air temperature +18°C, at maximum heating level and highest fan speed.

*5 Weight without controls.

LPHW coil parameters for water temperature gradient of 90/70 °C

Type	Air output	Heating output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCES2 B 100 V2	1500	16,85	51,7	13,93	0,20
VCES2 B 150 V2	2250	24,70	50,9	10,01	0,30
VCES2 B 200 V2	3300	35,74	50,5	14,52	0,43
VCES2 B 250 V2	3800	43,26	52,2	22,76	0,53
VCES2 C 100 V2	2300	22,35	47,2	23,25	0,27
VCES2 C 150 V2	3200	31,81	47,8	15,99	0,38
VCES2 C 200 V2	4500	44,41	47,6	21,78	0,54
VCES2 C 250 V2	5700	53,73	46,3	33,94	0,66

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient of 80/60 °C

Type	Air output	Heating output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCES2 B 100 V2	1500	14,10	46,2	10,30	0,17
VCES2 B 150 V2	2250	20,58	45,4	7,26	0,25
VCES2 B 200 V2	3300	29,79	45,1	10,59	0,36
VCES2 B 250 V2	3800	36,22	46,6	16,68	0,44
VCES2 C 100 V2	2300	18,59	42,2	16,97	0,23
VCES2 C 150 V2	3200	26,36	42,7	11,48	0,32
VCES2 C 200 V2	4500	36,93	42,6	15,79	0,45
VCES2 C 250 V2	5700	44,80	41,6	24,72	0,55

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient of 70/50 °C

Type	Air output [m³/h]	Heating output [kW]	Temperature at exhaust [°C]	Pressure loss [kPa]	Water flow [l/s]
VCES2 B 100 V2	1500	11,23	40,5	6,97	0,14
VCES2 B 150 V2	2250	16,34	39,8	4,91	0,19
VCES2 B 200 V2	3300	23,65	39,5	6,97	0,28
VCES2 B 250 V2	3800	28,93	40,8	11,18	0,35
VCES2 C 100 V2	2300	14,74	37,2	11,38	0,18
VCES2 C 150 V2	3200	20,75	37,5	7,55	0,25
VCES2 C 200 V2	4500	29,14	37,4	10,30	0,35
VCES2 C 250 V2	5700	35,62	36,7	16,38	0,43

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient of 60/40 °C

Type	Air output [m³/h]	Heating output [kW]	Temperature at exhaust [°C]	Pressure loss [kPa]	Water flow [l/s]
VCES2 B 100 V2	1500	8,27	34,5	4,12	0,10
VCES2 B 150 V2	2250	11,86	33,8	2,75	0,14
VCES2 B 200 V2	3300	17,26	33,7	4,02	0,20
VCES2 B 250 V2	3800	21,33	34,8	6,47	0,26
VCES2 C 100 V2	2300	10,71	32,0	6,57	0,13
VCES2 C 150 V2	3200	14,97	32,0	4,22	0,18
VCES2 C 200 V2	4500	21,06	32,0	5,79	0,25
VCES2 C 250 V2	5700	26,03	31,7	9,42	0,31

* Temperature of intake air: +18 °C

Recommended mixing points for LPHW coil 2-way valve

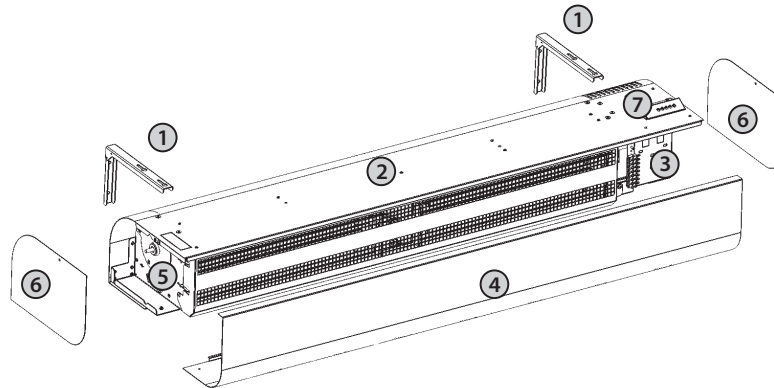
Type	Control module	90/70 °C	80/60 °C	70/50 °C	60/40 °C
		2-way valve			
VCES2 B 100 V2	RGJ-VCES2-BA	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	RGJ3-VCES2-CO	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	RGJ3-VCES2-SU	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCES2 B 150 V2	RGJ-VCES2-BA	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	RGJ3-VCES2-CO	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	RGJ3-VCES2-SU	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCES2 B 200 V2	RGJ-VCES2-BA	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	RGJ3-VCES2-CO	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	RGJ3-VCES2-SU	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCES2 B 250 V2	RGJ-VCES2-BA	ZV2-230-21,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	RGJ3-VCES2-CO	ZV2-230-21,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	RGJ3-VCES2-SU	ZV2-024-16,0-25	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCES2 C 100 V2	RGJ-VCES2-BA	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	RGJ3-VCES2-CO	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	RGJ3-VCES2-SU	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCES2 C 150 V2	RGJ-VCES2-BA	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	RGJ3-VCES2-CO	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	RGJ3-VCES2-SU	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCES2 C 200 V2	RGJ-VCES2-BA	ZV2-230-21,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	RGJ3-VCES2-CO	ZV2-230-21,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	RGJ3-VCES2-SU	ZV2-024-16,0-25	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCES2 C 250 V2	RGJ-VCES2-BA	ZV2-230-21,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	RGJ3-VCES2-CO	ZV2-230-21,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	RGJ3-VCES2-SU	ZV2-024-16,0-25	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20

Recommended mixing points for LPHW coil 3-way valve

Type	Control module	90/70 °C	80/60 °C	70/50 °C	60/40 °C
		3-way valve			
VCES2 B 100 V2	RGJ-VCES2-BA	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	RGJ3-VCES2-CO	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	RGJ3-VCES2-SU	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
VCES2 B 150 V2	RGJ-VCES2-BA	ZV3-230-21,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	RGJ3-VCES2-CO	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	RGJ3-VCES2-SU	ZV3-024-06,3-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
VCES2 B 200 V2	RGJ-VCES2-BA	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	RGJ3-VCES2-CO	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	RGJ3-VCES2-SU	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-04,0-20
VCES2 B 250 V2	RGJ-VCES2-BA	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-04,0-20
			RT-3-07	RT-3-07	RT-3-07
	RGJ3-VCES2-CO	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-04,0-20
			RT-3-07	RT-3-07	RT-3-07
	RGJ3-VCES2-SU	ZV3-024-10,0-25	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-04,0-20
VCES2 C 100 V2	RGJ-VCES2-BA	ZV3-230-21,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	RGJ3-VCES2-CO	ZV3-230-21,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	RGJ3-VCES2-SU	ZV3-024-06,3-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
VCES2 C 150 V2	RGJ-VCES2-BA	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	RGJ3-VCES2-CO	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	RGJ3-VCES2-SU	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-04,0-20	ZV3-024-04,0-20
VCES2 C 200 V2	RGJ-VCES2-BA	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-04,0-20
			RT-3-07	RT-3-07	RT-3-07
	RGJ3-VCES2-CO	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-04,0-20
			RT-3-07	RT-3-07	RT-3-07
	RGJ3-VCES2-SU	ZV3-024-10,0-25	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-04,0-20
VCES2 C 250 V2	RGJ-VCES2-BA	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20
				RT-3-07	RT-3-07
	RGJ3-VCES2-CO	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20
				RT-3-07	RT-3-07
	RGJ3-VCES2-SU	ZV3-024-10,0-25	ZV3-024-10,0-25	ZV3-024-06,3-20	ZV3-024-06,3-20



MAIN PARTS

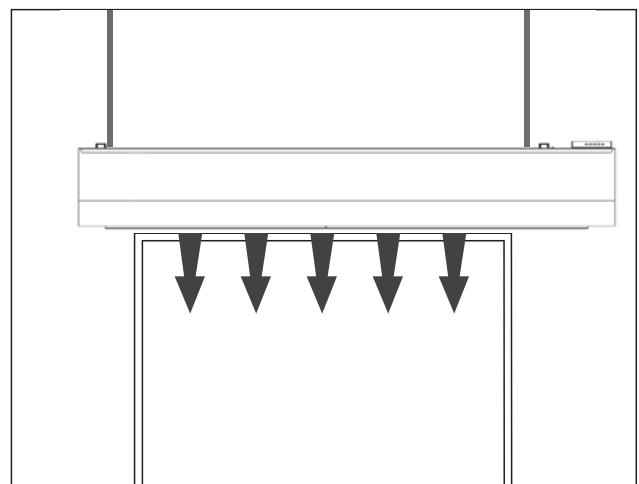
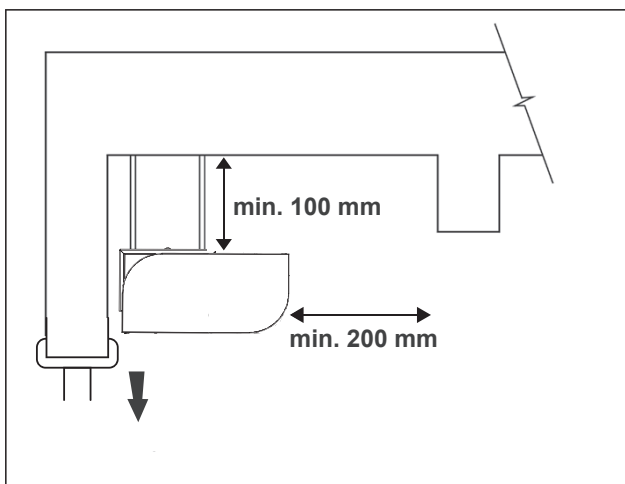


- ① Mounting brackets (included with delivery)
- ② Top cover
- ③ Connection dock for controls module
- ④ Intake grill
- ⑤ Connection dock for LPHW (only on water versions)
- ⑥ Side cover
- ⑦ Main power supply connection



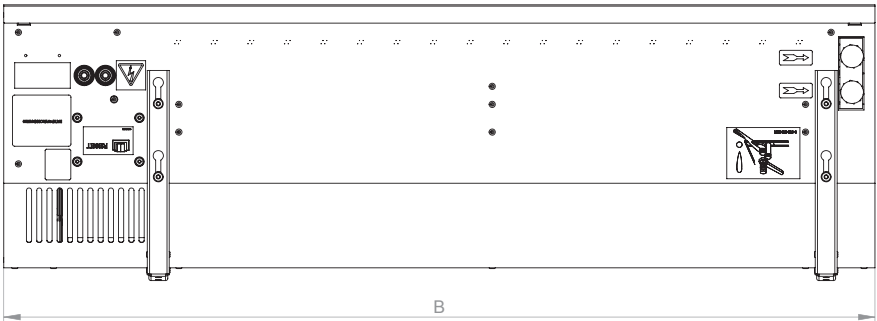
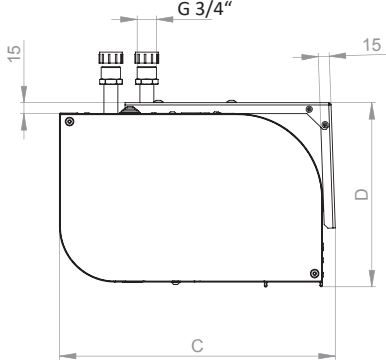
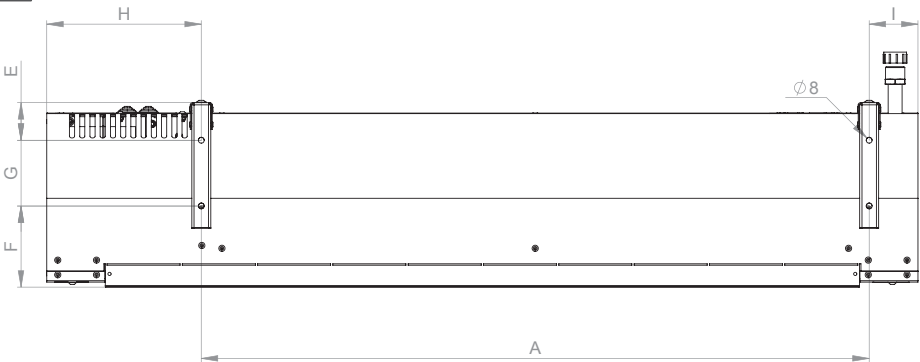
INSTALLATION AND ASSEMBLY

- The air curtain must be installed in a horizontal position only.
- The air curtain shall be located as close as possible to the top edge of the doorway, and a distance from walls that is in accordance with fire safety and building codes of the country where unit is installed. For manufacturer recommended distance see figures below.
- To ensure proper function it is recommended that the air curtain overlaps the doorway by 100 mm on both sides.
- Correct operation of the air curtain requires that specified distances from the surrounding objects are observed, see figure.
- Please take note of water and power supply connections when installing air curtain.
- The air curtain shall be installed using supplied brackets.





AIR CURTAIN DIMENSIONS



Type	A	B	C	D	E	F	G	H	I
VCES2 B 100	913	1190	377	252	51	111	90	211	67
VCES2 C 100	913	1190	377	252	51	111	90	211	67
VCES2 B 150	1321	1600	377	252	51	111	90	211	67
VCES2 C 150	1321	1600	377	252	51	111	90	211	67
VCES2 B 200	1822	2100	377	252	51	111	90	211	67
VCES2 C 200	1822	2100	377	252	51	111	90	211	67
VCES2 B 250	2232	2510	377	252	51	111	90	211	67
VCES2 C 250	2232	2510	377	252	51	111	90	211	67

**CONTROL****Overview of functions and sensor connections**

AirGENIO control system		BASIC RGJ-VCES2-BA	COMFORT RGJ3-VCES2-CO	SUPERIOR RGJ3-VCES2-SU
	Type of controller	Manual	Touch screen	Touch screen
	Mode	Manual	Manual / Auto	Manual / Auto
	Control of air output	3 speeds	3 speeds	3 speeds
	Control of electric heater	OFF / Level1 / Level2	OFF / Level1 / Level2	YES (PWM)
	Control of water heater	ON/OFF	ON/OFF	0-10V
	Antifreeze protection of LPHW	NO	YES	YES
	Possibility of connecting a door contact	YES (230V)	YES (12V)	YES (12V)
	External control	NO	YES	YES
	Temperature measurement	NO	YES (NTC)*	YES (NTC)*
	Chaining air curtains	NO	YES – max 10+1 pcs	YES – max 10+1 pcs
	Indication of selected function	NO	YES (Display)	YES (Display)
	Controller connection to air curtain	Power wire	Communication cable (UTP)	Communication cable (UTP)
	Self learning mode	NO	YES	YES
	BMS connection	NO	Modbus RTU	Modbus RTU, Modbus TCP, BACnet
	Error contact	NO	YES	YES
	2 nd control panel ready	NO	YES	YES

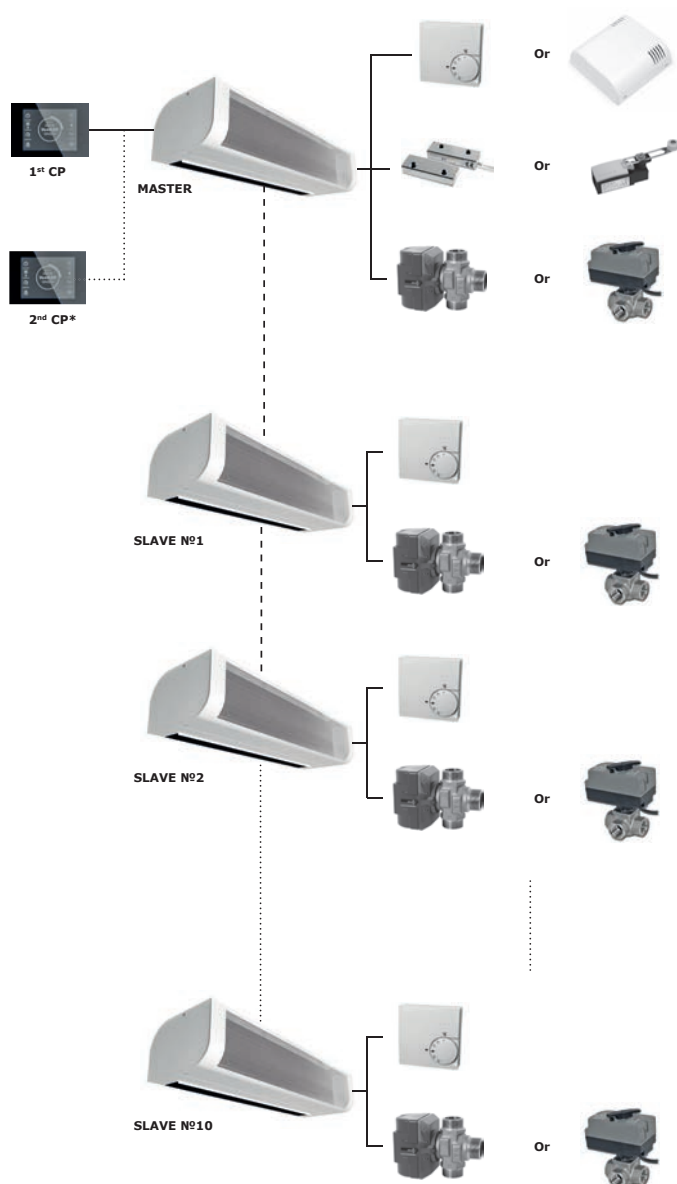
*^y) Temperature sensor included in standard. Temperature shown on display.



CHAINING EXAMPLE

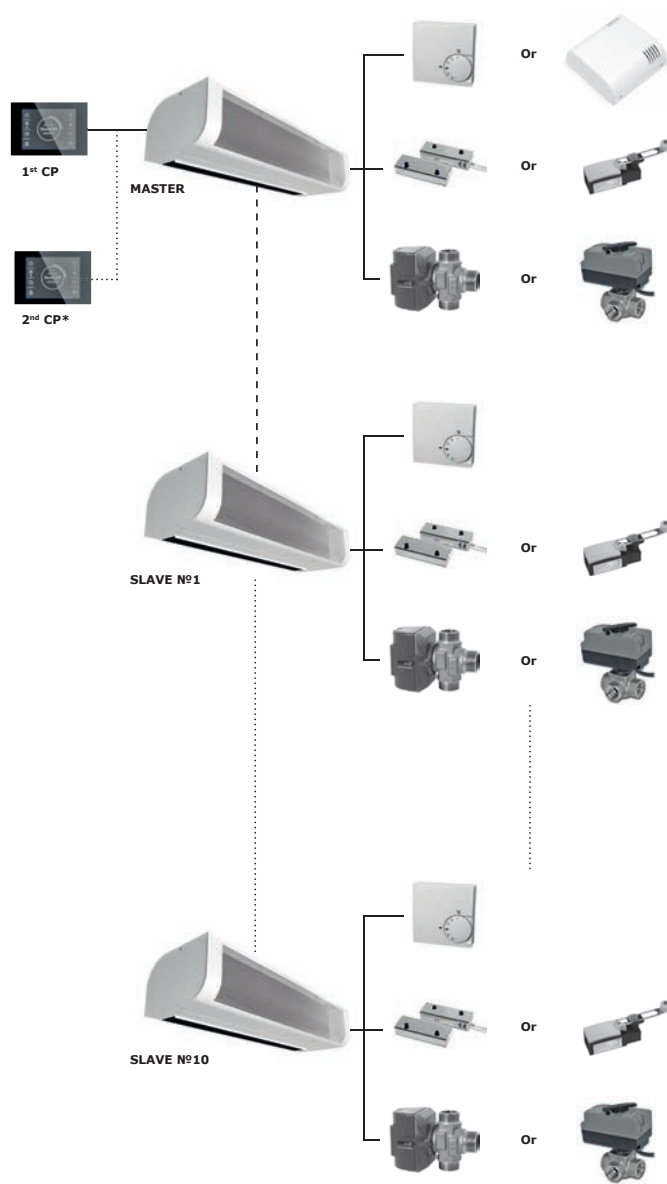
COMFORT / SUPERIOR

Global Door contact function active



COMFORT / SUPERIOR

Global Door contact function not active



*) Optional accessories



ACCESSORIES

REQUIRED ACCESSORIES

These accessories are required to make the curtain functional.

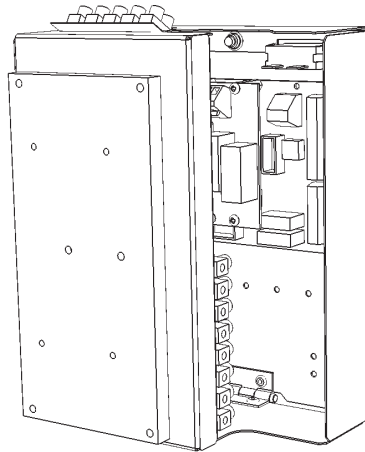
AirGENIO Control module

A control module is a required accessory for *ESSENSSE NEO* air curtain and are required for each air curtain.

A control panel is included in the delivery with the control module. The ordering key for control modules is provided below.

The control panel of Basic control module is connected using common wiring cable (230 V control voltage). A suitable cross-section of the cable shall be determined based on the particular installation conditions. This cable should be provided by a company performing the air curtain electrical wiring.

The control panel of Comfort/Superior module is connected using UTP communication cable (not included).



RGJ3-VCES2-SU-E-MA-1-AC

AC – AC motor

1 – only for E versions,
air curtain lenght 100, 150

2 – only for E versions,
air curtain lenght 200, 250

SL – SLAVE (only for CO, SU)

MA – MASTER (only for CO, SU)

S – without heating regulation

E – with electric heater regulation

V – with water heater regulation

BA – Basic control (mechanical)

CO – Comfort control (touch screen)

SU – Superior control (touch screen)

VCES2 – air curtain Essensse NEO

RGJ – Controls (BA)

RGJ3 – Controls (CO, SU)

OPTIONAL ACCESSORIES

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

2-way Thermostatic valve TV-1-1/1
TV-1-1/1



2-way or 3-way valve with servo drive (230V)
ZV2-230-xx,x-xx
ZV3-230-xx,x-xx
(for control BASIC, COMFORT)



3-way valve with servo drive RT
RT-3-07 (K_{vs} 7)
(for control BASIC, COMFORT)



2way or 3-way valve with servo drive (0-10V)
ZV2-024-xx,x-xx
ZV3-024-xx,x-xx
(for control SUPERIOR)



Mixing node
SMU2-230-xx (for control BASIC, COMFORT)
SMU2-024-xx (for control SUPERIOR)



Room thermostat
TER-P



Room temperature sensor
CT-ROOM



Mechanical door switch (230V)
DS



Magnetic door contact (12V) in a metal housing
with higher protection against mechanical damage
DK-B-3



		BASIC RGJ-VCES2-BA	COMFORT RGJ3-VCES2-CO	SUPERIOR RGJ3-VCES2-SU
 	DS	✓	✓*	✓*
	DK-B-3	✗	✓	✓

* Recommended for industry use

2nd Control panel
ND-REMOTE-CONTROL (for control CO, SU)





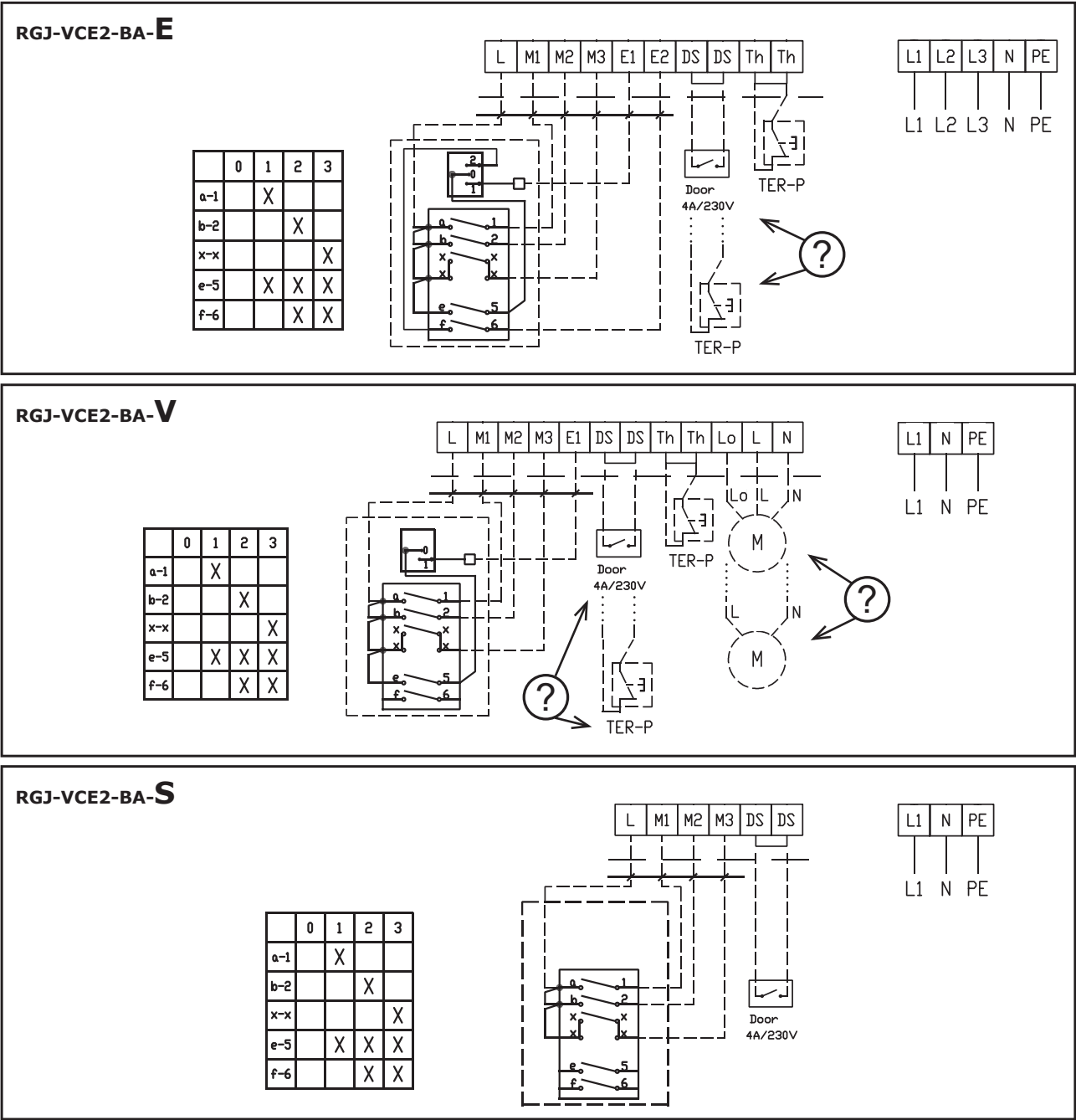
WIRING DIAGRAMS

The recommended cross-section of the main power supply cables is stated in the Instruction Manual.

All wiring diagrams provided in the technical catalog are indicative only. When assembling the product, carefully observe the nameplate ratings as well as directions and diagrams affixed directly to the product or enclosed with the product.



AirGENIO BASIC

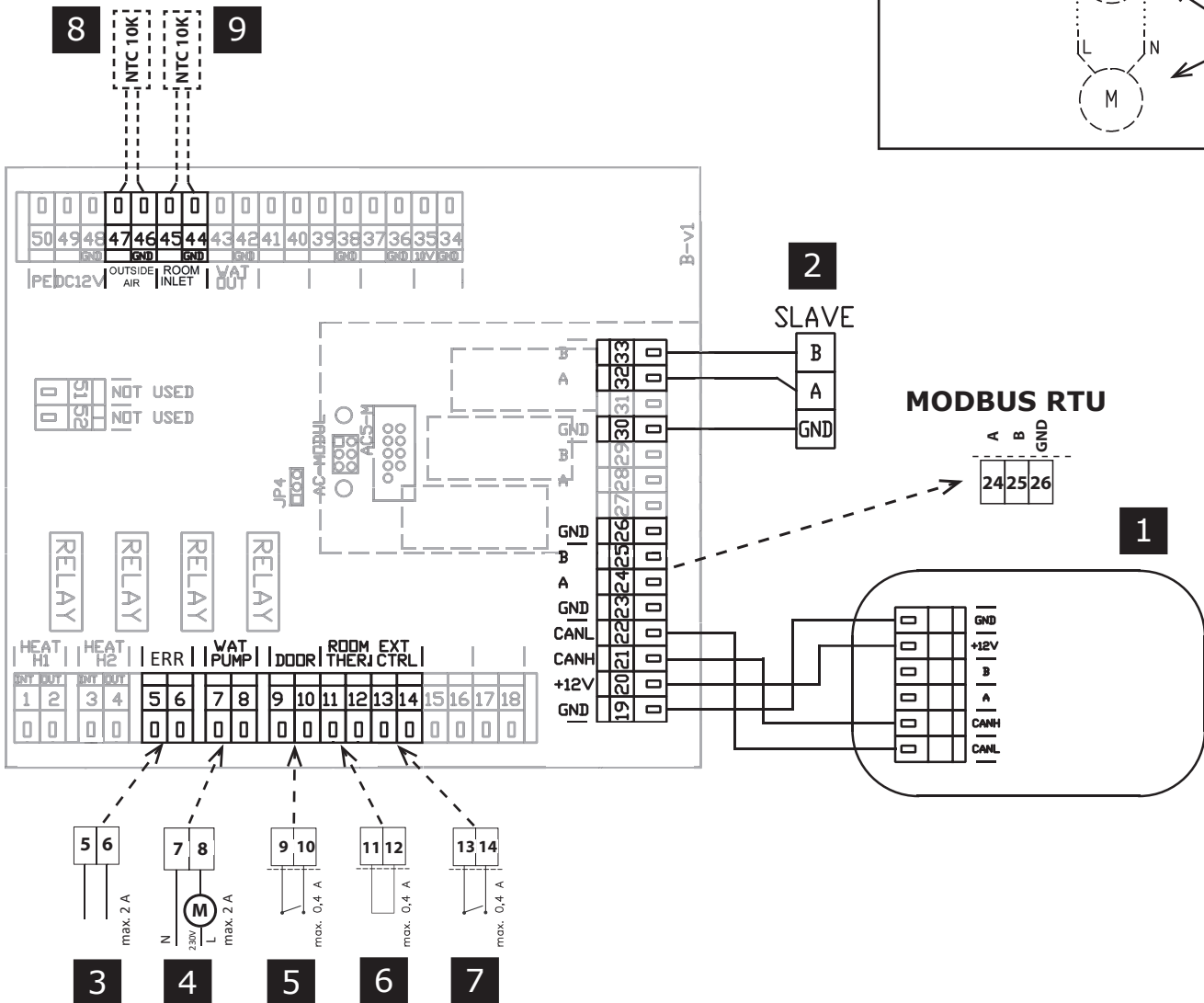
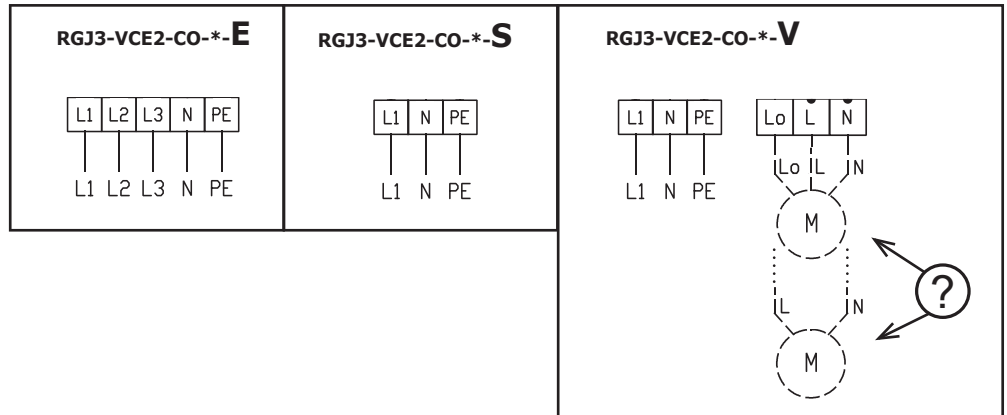




WIRING DIAGRAMS



AirGENIO COMFORT MASTER

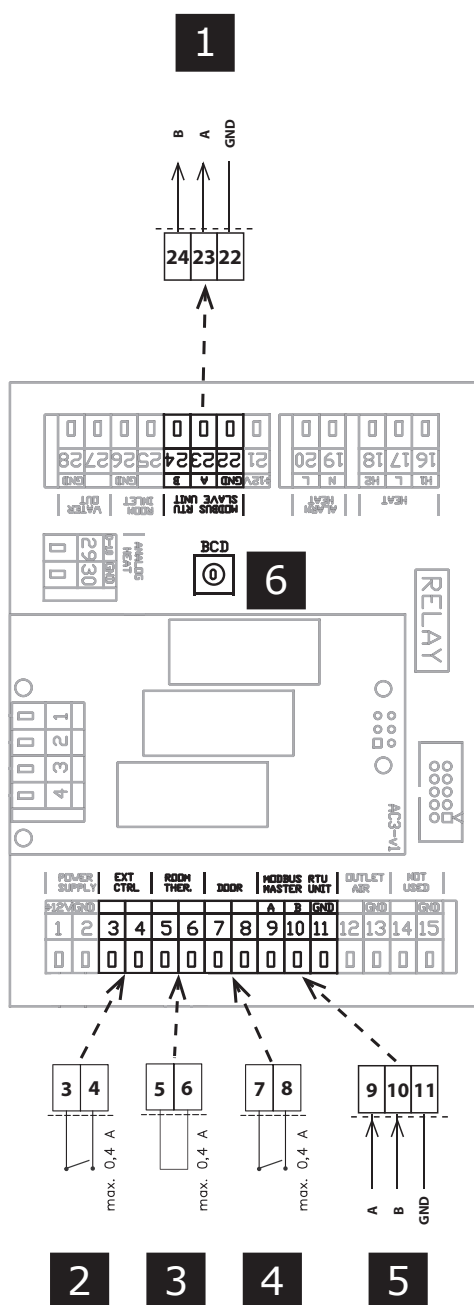
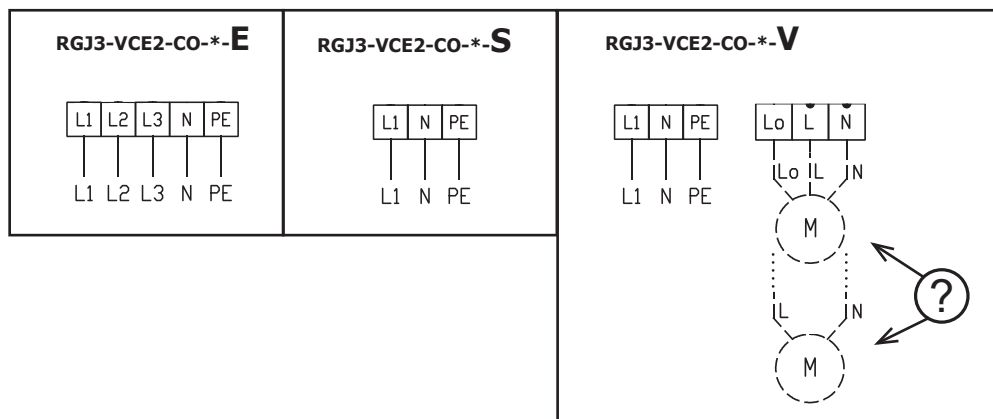


	EN
1	Control panel
2	Signal to SLAVE unit
3	ERROR contact (relay contact, NO/NC)
4	Water pump (relay contact)
5	DOOR contact (input, NO/NC)
6	Room thermostat (input, NO/NC)
7	External control (input, NO/NC)
8	Outside air temp. sensor (include delivery)
9	Room temp. sensor (include delivery)

WIRING DIAGRAMS



AirGENIO COMFORT SLAVE



	EN
1	Signal to SLAVE unit
2	External control - ON/OFF
3	Room thermostat (input)
4	DOOR contact (input)
5	Signal from MASTER unit

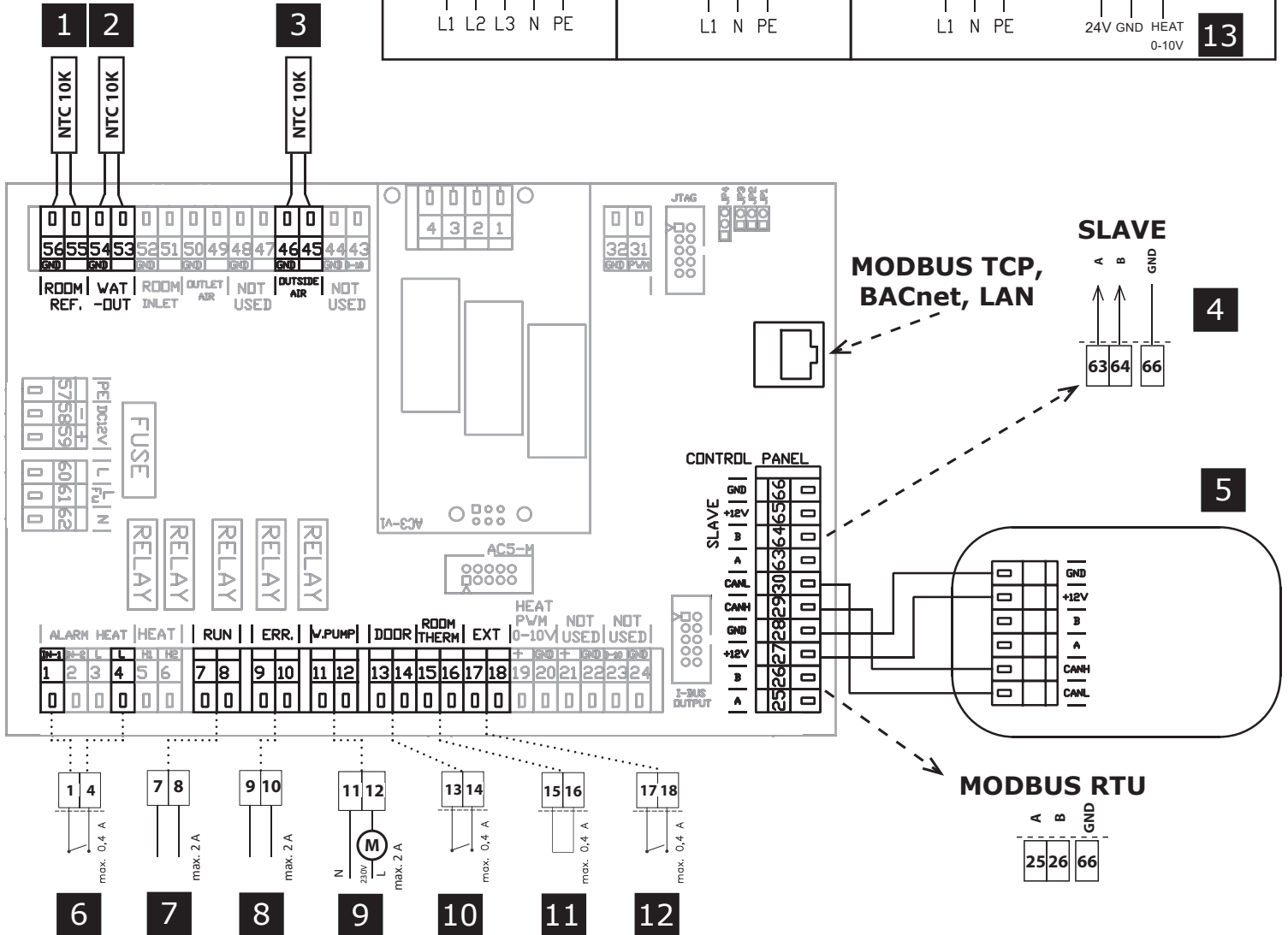
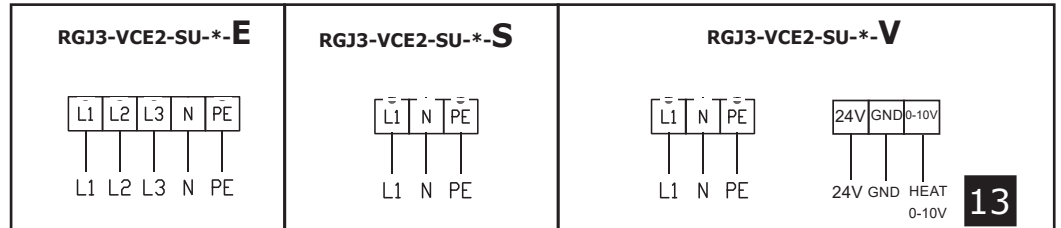
6	
SLAVE	BCD 
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	A



WIRING DIAGRAMS



AirGENIO SUPERIOR
MASTER

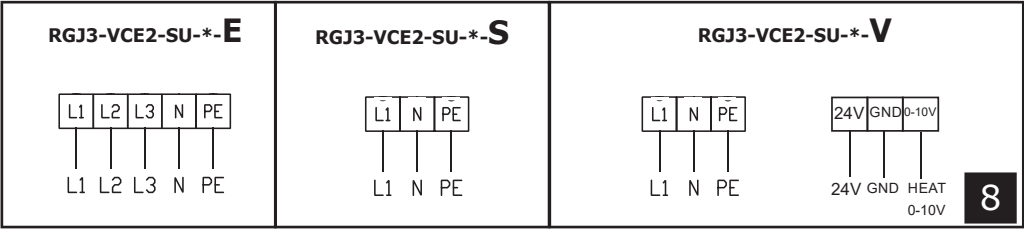


EN	
1	Room sensor (accessories)
2	LPHW out sensor (included in delivery)
3	Outside air sensor (included in delivery)
4	Signal to SLAVE unit
5	Control panel
6	Antifreeze thermostat (NC)
7	RUN contact (relay contact, NO/NC)
8	ERROR contact (relay contact, NO/NC)
9	Water pump (relay contact)
10	DOOR contact (input, NO/NC)
11	Room thermostat (input, NO/NC)
12	External control (input, NO/NC)
13	Water valve control (0-10V)

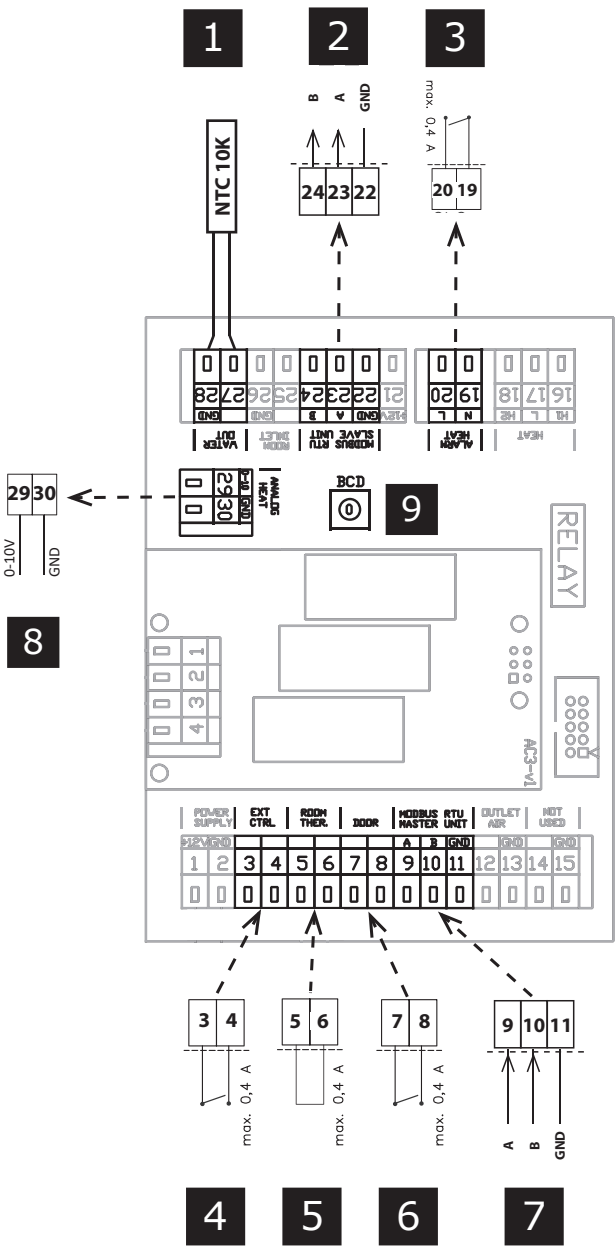


WIRING DIAGRAMS

AirGENIO SUPERIOR
SLAVE



8



	EN
1	LPHW out sensor (included in delivery)
2	Signal to SLAVE unit
3	Antifreeze thermostat (NC)
4	External control - ON/OFF
5	Room thermostat (input)
6	DOOR contact (input)
7	Signal from MASTER unit
8	Water valve control (0-10V)

9

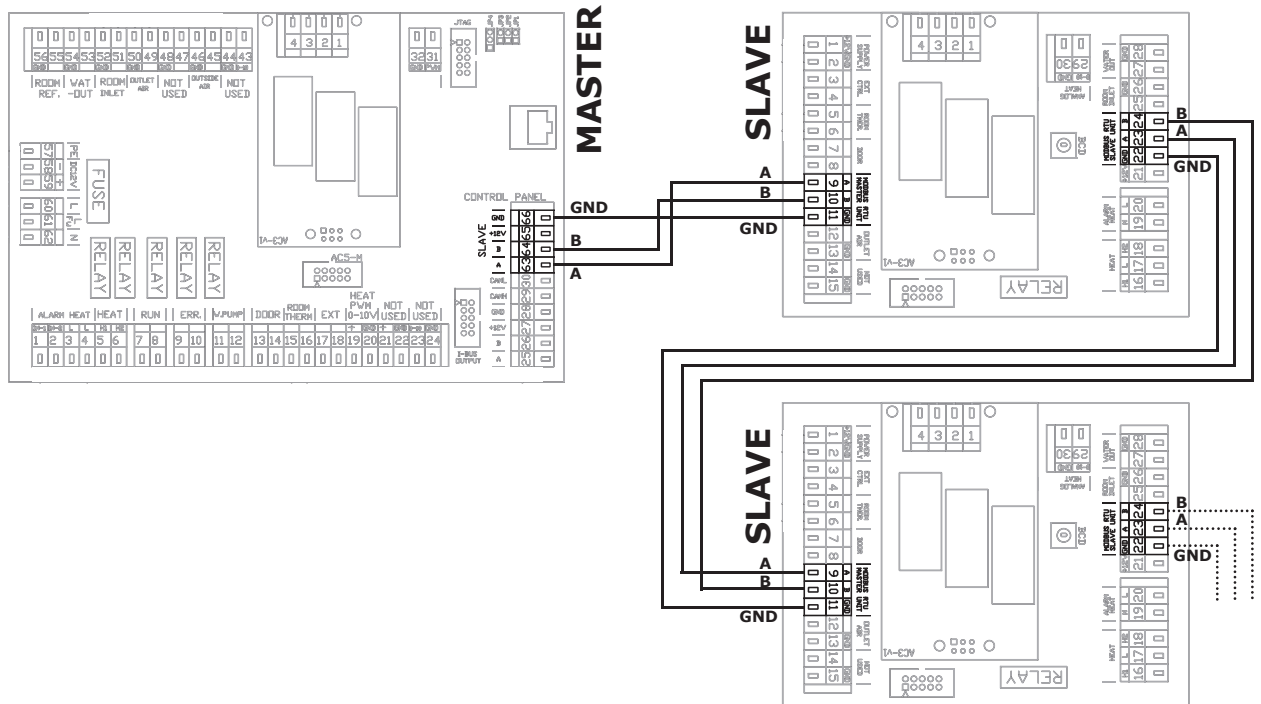
SLAVE	BCD
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	A



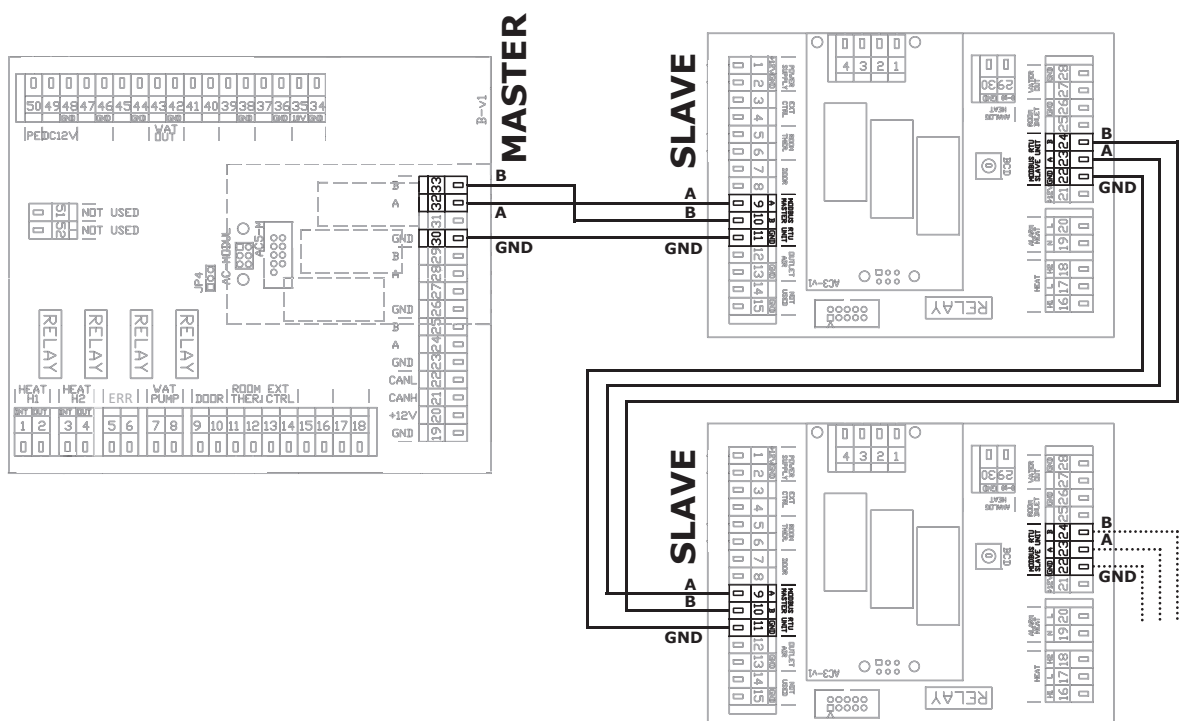
WIRING DIAGRAMS

Chaining

AirGENIO SUPERIOR

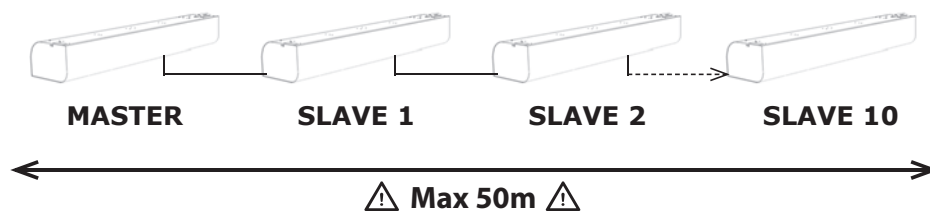


AirGENIO COMFORT





CHAINING



KEY TO CODING

VCES2 B 100-E0 AC-CR-0 A0

- A0** – 2VV version
- 9** – Atyp RAL
- 0** – Standard RAL
- CR** – Control ready
- AC** – AC motor
- E0** – Electric heater with reduced power (*only for B range*)
- E1** – Electric heater (*standard*)
- E2** – Electric heater with increased power (*only for B range*)
- V2** – Water heater
- S0** – Air-only (*ambient*)
- 100** – Nominal width 1000 mm
- 150** – Nominal width 1500 mm
- 200** – Nominal width 2000 mm
- 250** – Nominal width 2500 mm
- B** – Output series
- C** – Output series
- VCES2** – Air Curtain ESSENSSE NEO



air-only



water heater



electric wire heater

**BASIC FEATURES**

- Lengths: 1; 1.5; 2 and 2.5 m
- **Air flow up to 5090 m³/h** (ISO 27 327-1)
- Very low noise level
- *FACE 2 in 1* – suction grille + filter = 2 in 1
- Universal interface for AirGENIO control module connection (BASIC, COMFORT and SUPERIOR)
- Easy installation and service
- Standard colour RAL 9016 (any RAL – based colours may be provided on customer's request)

The **STANDESSE** is an extraordinary high-performance and visually attractive comfortable air curtain for use in representative premises, such as **banks, luxury shops, shopping centres, airports and administrative buildings** with a recommended installation height up to 5 m*.

The air curtain shall be installed indoor in a dry area with ambient temperatures ranging from 0 °C up to +35 °C and relative humidity of up to 80 %. It is designed for conveying air free of rough dust, grease, chemical fumes, and other impurities. IP rating of the air curtain is IP 20. **The air curtain project shall always be developed by the HVAC designer.**

**Maximum recommended installation height - may vary according the particular conditions of the installation site.*


PRIMARY PARAMETERS

Air curtains with electric heater are fitted with automatic heat thermostat and emergency thermostat with manual reset. Air curtains with LPHW coil are designed for the maximum operating water temperature of +100 °C and maximum operating pressure of 1.6 MPa.

Type	Recommended installation height [m]	Air output [m³/h] *1			Acoustic pressure at 3m[dB(A)] *2			Sound power [dB(A)]*3
		Speed 3	Speed 2	Speed 1	Speed 3	Speed 2	Speed 1	
VCS4B-10S-	4,0	1626	1182	813	56	48	40	74
VCS4B-15S-		2513	1774	1256	59	51	43	76
VCS4B-20S-		3362	2328	1626	60	52	44	77
VCS4B-25S-		4065	2956	2106	61	53	45	78
VCS4B-10E-		1589	1145	813	56	48	40	74
VCS4B-15E-		2476	1700	1219	59	51	43	76
VCS4B-20E-		3362	2291	1589	60	52	44	77
VCS4B-25E-		3991	2919	2069	61	53	45	78
VCS4B-10V-		1552	1109	776	56	48	40	73
VCS4B-15V-		2439	1663	1182	58	49	42	75
VCS4B-20V-		3252	2180	1552	59	51	43	77
VCS4B-25V-		3880	2734	1884	61	53	45	78
VCS4C-10S-	5,0	2303	1656	1172	60	52	44	77
VCS4C-15S-		3353	2424	1737	60	52	44	78
VCS4C-20S-		4161	2990	2101	60	53	45	78
VCS4C-25S-		5090	3636	2666	61	53	46	79
VCS4C-10E-		2262	1616	1131	60	52	44	77
VCS4C-15E-		3272	2384	1697	60	52	44	78
VCS4C-20E-		4080	2949	2060	60	53	45	78
VCS4C-25E-		4888	3555	2586	61	53	46	79
VCS4C-10V-		2222	1576	1115	59	51	43	77
VCS4C-15V-		3151	2182	1616	60	52	44	77
VCS4C-20V-		3878	2788	1939	60	53	45	78
VCS4C-25V-		4808	3434	2424	61	53	46	78
VCS4C-15W		2838	1983	1469	60	52	44	77
VCS4C-20W		3493	2534	1763	60	53	45	78
VCS4C-25W		4331	3121	2203	61	53	46	78

*1 Airflow volume according ISO27327-1

*2 Acoustic pressure values at 3 m distance for maximum speed. Directional factor: Q=2.

*3 Sound power (LWA) measurements according to ISO 27327-2.

Type	Heater power output [kW]		Total power input [kW]	Total voltage/ current [V/A]	Motor voltage/ current [V/A]	Temperature increase Δt [°C]	Frequency [Hz]	Weight [kg] ¹⁴
	1st level	2st level						
VCS4B-10S-	-	-	0,65	230/2,85	230/2,85	-	50	42
VCS4B-15S-	-	-	1	230/4,4	230/4,4	-	50	59
VCS4B-20S-	-	-	1,3	230/5,7	230/5,7	-	50	76
VCS4B-25S-	-	-	1,6	230/7,0	230/7,0	-	50	93
VCS4B-10E-	4,6	9,4	10,3	400/16,6	230/2,85	17,8*	50	46
VCS4B-15E-	7,6	15	16	400/26,1	230/4,4	18,05*	50	63
VCS4B-20E-	9,8	19	20,3	400/33,2	230/5,7	16,84*	50	81
VCS4B-25E-	12,5	24,5	26,1	400/42	230/7,0	18,3*	50	99
VCS4B-10V-	-	-	0,65	230/2,85	230/2,85	39,5 * ²	50	48
VCS4B-15V-	-	-	1	230/4,4	230/4,4	40,6 * ²	50	65
VCS4B-20V-	-	-	1,3	230/5,7	230/5,7	41,5 * ²	50	83
VCS4B-25V-	-	-	1,6	230/7,0	230/7,0	42 * ²	50	97
VCS4C-10S-	-	-	0,95	230/4,0	230/4,0	-	50	48
VCS4C-15S-	-	-	1,35	230/5,6	230/5,6	-	50	64
VCS4C-20S-	-	-	1,7	230/7,0	230/7,0	-	50	80
VCS4C-25S-	-	-	2	230/8,7	230/8,7	-	50	98
VCS4C-10E-	4,6	9,	10,6	400/17,6	230/4,0	12,5 *	50	53
VCS4C-15E-	7,6	15	17	400/27,5	230/7,0	13,66 *	50	68
VCS4C-20E-	9,8	19	20,8	400/34,2	230/8,7	13,88 *	50	86
VCS4C-25E-	12,5	24,5	26,5	400/44	230/6,9	14,94 *	50	110
VCS4C-10V-	-	-	0,95	230/4,0	230/4,0	35,1 * ²	50	55
VCS4C-15V-	-	-	1,35	230/5,6	230/5,6	37,3 * ²	50	70
VCS4C-20V-	-	-	1,7	230/7,0	230/7,0	39,3 * ²	50	88
VCS4C-25V-	-	-	2	230/8,7	230/8,7	40,8 * ²	50	108
VCS4C-15W	-	-	1,35	230/5,6	230/5,6	13,9 * ³	50	74
VCS4C-20W	-	-	1,7	230/7,0	230/7,0	14,0 * ³	50	92
VCS4C-25W	-	-	2	230/8,7	230/8,7	13,9 * ³	50	112

* At the maximum air flow and maximum heater power

² Intake air temperature +18°C, water temperature gradient of 90/70 °C and highest fan speed.

³ Intake air temperature +18°C, water temperature gradient of 40/30 °C and highest fan speed.

¹⁴ Weight without controls.

LPHW coil parameters for water temperature gradient 90/70 °C

Type	Air output	Heat output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCS4B-10V-	1552	21,6	59,2	6,7	0,27
VCS4B-15V-	2439	32,9	57,9	4,9	0,41
VCS4B-20V-	3252	45,5	59,5	10,0	0,56
VCS4B-25V-	3880	55,5	60,3	15,4	0,68
VCS4C-10V-	2222	26,9	53,9	10,1	0,33
VCS4C-15V-	3151	38,5	54,2	6,6	0,47
VCS4C-20V-	3878	50,9	56,9	12,3	0,63
VCS4C-25V-	4808	63,6	57,2	19,9	0,78

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient 80/60 °C

Type	Air output	Heat output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCS4B-10V-	1552	17,7	51,7	4,7	0,22
VCS4B-15V-	2439	26,7	50,5	3,3	0,33
VCS4B-20V-	3252	37,4	52,0	6,9	0,46
VCS4B-25V-	3880	45,7	52,9	10,8	0,56
VCS4C-10V-	2222	22,0	47,3	7,0	0,27
VCS4C-15V-	3151	31,2	47,4	4,5	0,38
VCS4C-20V-	3878	41,7	49,8	8,5	0,51
VCS4C-25V-	4808	52,3	50,2	13,9	0,64

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient 70/50 °C

Type	Air output	Heat output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCS4B-10V-	1552	13,7	44,2	3,0	0,17
VCS4B-15V-	2439	20,5	42,9	2,0	0,50
VCS4B-20V-	3252	29,1	44,5	4,4	0,36
VCS4B-25V-	3880	35,9	45,4	6,9	0,44
VCS4C-10V-	2222	17,0	40,6	4,4	0,21
VCS4C-15V-	3151	23,9	40,4	2,7	0,33
VCS4C-20V-	3878	32,4	42,7	5,3	0,39
VCS4C-25V-	4808	40,9	43,2	8,9	0,50

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient 60/40 °C

Type	Air output	Heat output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCS4B-10V-	1552	9,7	36,6	1,6	0,12
VCS4B-15V-	2439	14,1	35,1	1,0	0,17
VCS4B-20V-	3252	20,7	36,9	2,3	0,25
VCS4B-25V-	3880	25,9	37,7	3,8	0,31
VCS4C-10V-	2222	12,0	33,9	2,3	0,14
VCS4C-15V-	3151	16,4	33,4	1,4	0,20
VCS4C-20V-	3878	23,0	35,5	2,8	0,28
VCS4C-25V-	4808	29,3	36,1	4,8	0,36

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient 50/30 °C

Type	Air output	Heat output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCS4C-15W	2838	15,5	34,0	5,9	0,19
VCS4C-20W	3493	19,4	34,4	5,0	0,23
VCS4C-25W	4331	24,8	34,8	8,8	0,30

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient 40/30 °C

Type	Air output	Heat output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCS4C-15W	2838	12,8	31,3	14,7	0,31
VCS4C-20W	3493	16,1	31,6	12,5	0,39
VCS4C-25W	4331	20,2	31,7	21,4	0,49

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient 35/25 °C

Type	Air output	Heat output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCS4C-15W	2838	8,4	26,7	7,2	0,20
VCS4C-20W	3493	10,5	26,9	6,0	0,25
VCS4C-25W	4331	13,5	27,2	10,6	0,32

* Temperature of intake air: +18 °C

Recommended mixing points for LPHW coil 3-way valve

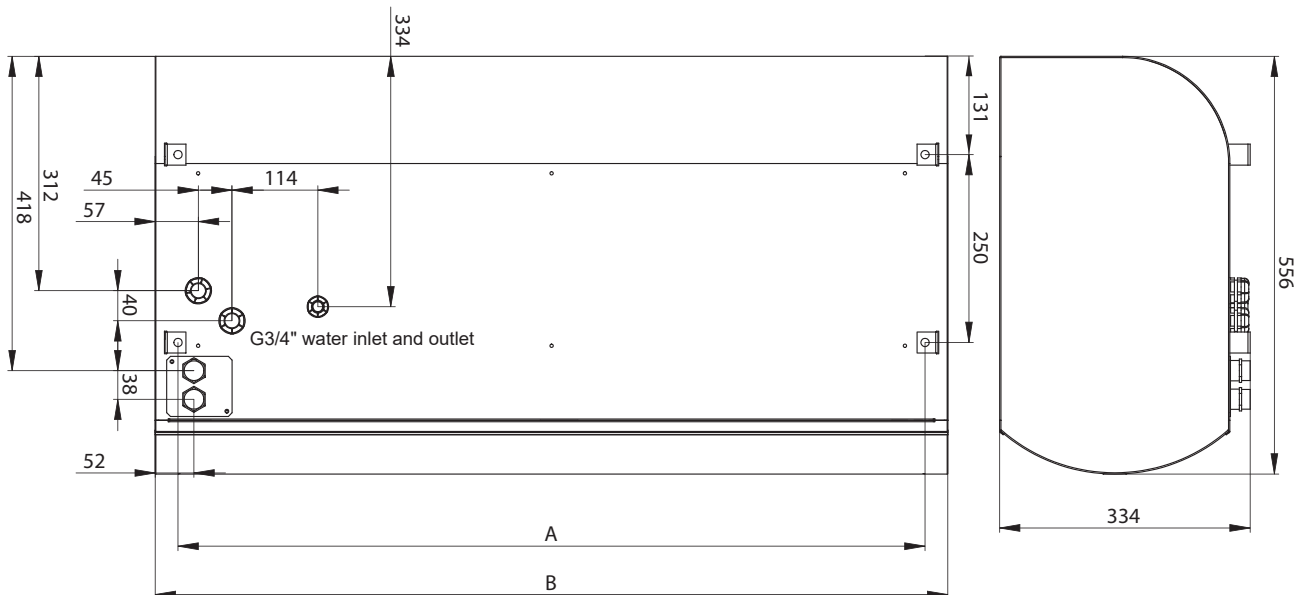
Type	Control module	90/70 °C	80/60 °C	70/50 °C	60/40 °C
		3-way valve			
VCS4B-100-V	VCS-R2-BA	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	VCS-R4-CO	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	VCS-R4-SU	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
VCS4B-150-V	VCS-R2-BA	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	VCS-R4-CO	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	VCS-R4-SU	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
VCS4B-200-V	VCS-R2-BA	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	VCS-R4-CO	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	VCS-R4-SU	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20
VCS4B-250-V	VCS-R2-BA	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	VCS-R4-CO	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	VCS-R4-SU	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20
VCS4C-100-V	VCS-R2-BA	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	VCS-R4-CO	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	VCS-R4-SU	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
VCS4C-150-V	VCS-R2-BA	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	VCS-R4-CO	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	VCS-R4-SU	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
VCS4C-200-V	VCS-R2-BA	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	VCS-R4-CO	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	VCS-R4-SU	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20
VCS4C-250-V	VCS-R2-BA	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	VCS-R4-CO	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	VCS-R4-SU	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20

Recommended mixing points for LPHW coil 2-way valve

Type	Control module	90/70 °C	80/60 °C	70/50 °C	60/40 °C
		2-way valve			
VCS4B-100-V	VCS-R2-BA	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	VCS-R4-CO	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	VCS-R4-SU	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCS4B-150-V	VCS-R2-BA	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	VCS-R4-CO	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	VCS-R4-SU	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCS4B-200-V	VCS-R2-BA	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	VCS-R4-CO	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	VCS-R4-SU	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCS4B-250-V	VCS-R2-BA	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	VCS-R4-CO	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	VCS-R4-SU	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCS4C-100-V	VCS-R2-BA	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	VCS-R4-CO	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	VCS-R4-SU	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCS4C-150-V	VCS-R2-BA	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	VCS-R4-CO	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	VCS-R4-SU	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCS4C-200-V	VCS-R2-BA	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	VCS-R4-CO	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	VCS-R4-SU	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCS4C-250-V	VCS-R2-BA	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	VCS-R4-CO	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	VCS-R4-SU	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20



DIMENSIONS

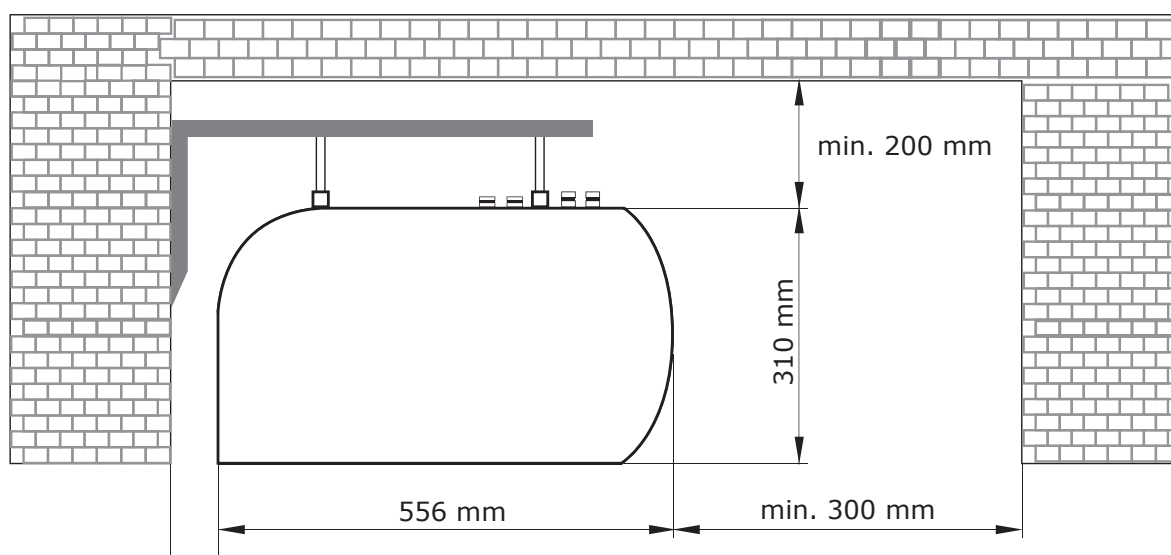


Type	Spacing of installation holes A [mm]	Width B [mm]
VCS4x-10x-x..	994	1054
VCS4x-15x-x..	1494	1554
VCS4x-20x-x..	1994	2054
VCS4x-25x-x..	2394	2454



INSTALLATION AND ASSEMBLY

- The air curtain shall be installed in a horizontal position only.
- The air curtain shall be located as close to the top edge of the doorway as possible, see figure.
- To ensure a correct function it is recommended that the air curtain overlaps the doorway by 100 mm on both sides.
- Correct operation of the air curtain requires that specified distances from the surrounding objects are observed, see figure.
- Position of the heating water and power supply connections shall be taken into consideration during installation.
- Suspension holders are used for installing the air curtains see ACCESSORIES.



CONTROL

The **STANDESSE** air curtains are produced with universal interface for control module connection. There are three types of control modules available (BASIC, COMFORT and SUPERIOR). Control module is a required accessory for each air curtain.

Additional change of control system is available. Control module is connected with air curtain by quick connection sockets. The basic differences among individual control module types are given in table underneath.

**CONTROL****Overview of functions and sensor connections**

AirGENIO control		BASIC VCS-R2-BA	COMFORT VCS-R4-CO	SUPERIOR VCS-R4-SU
	Type of controller	Manual	Touch screen	Touch screen
	Mode	Manual	Manual / Auto	Manual / Auto
	Control of air output	3 speeds	3 speeds	3 speeds (AC)
	Control of electric heater	OFF / Level1 / Level2	OFF / Level1 / Level2	YES (PWM)
	Control of water heater	ON/OFF	ON/OFF	0-10V
	Antifreeze protection of LPHW	NO	YES	YES
	Possibility of connecting a door contact	YES (230V)	YES (12V)	YES (12V)
	External control	NO	YES	YES
	Temperature measurement	NO	YES (NTC)*	YES (NTC)*
	Chaining air curtains	NO	YES – max 10+1 pcs	YES – max 10+1 pcs
	Indication of selected function	NO	YES (Display)	YES (Display)
	Controller connection to air curtain	Power wire	Communication cable (UTP)	Communication cable (UTP)
	Self learning mode	NO	YES	YES
	BMS connection	NO	Modbus RTU	Modbus RTU, Modbus TCP, BACnet
	Error contact	NO	YES	YES
	2 nd control panel ready	NO	YES	YES

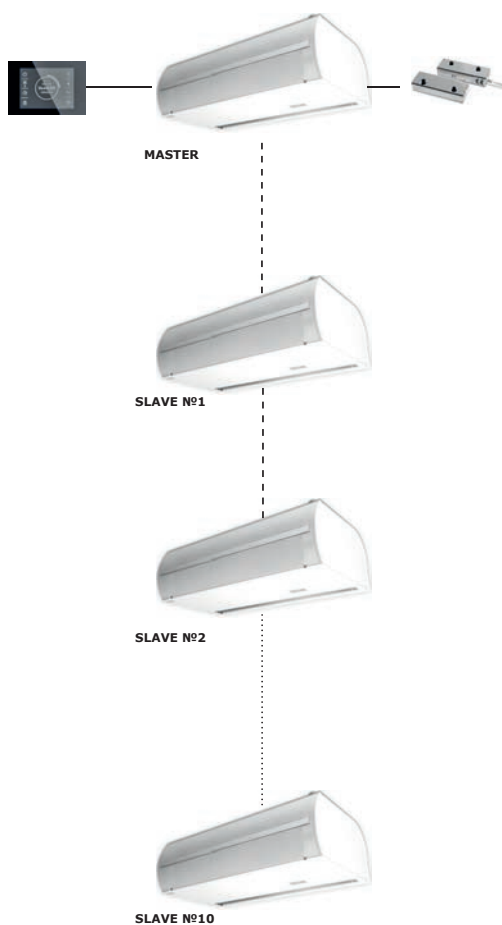
*) Temperature sensor included in standard. Temperature shown on display.



CHAINING EXAMPLE

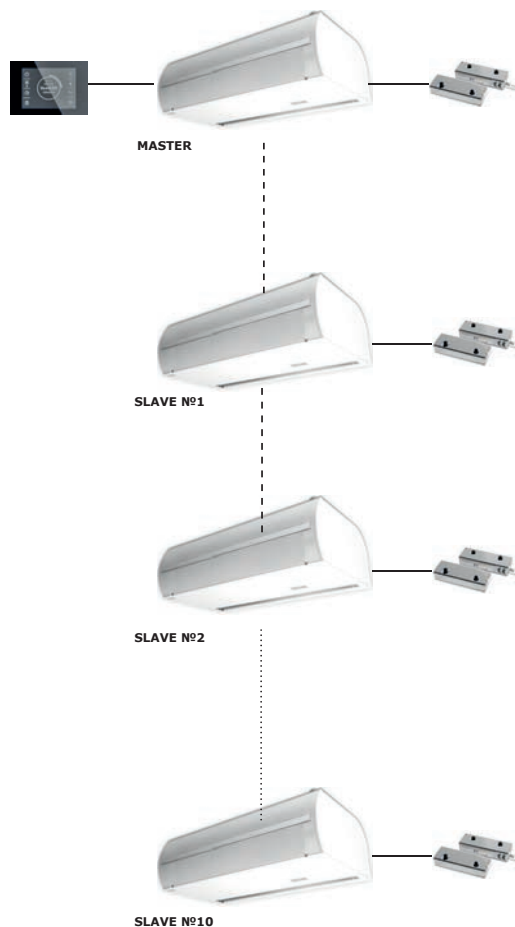
COMFORT / SUPERIOR

Global Door contact function active
(Single door with multiple air curtains)



COMFORT / SUPERIOR

Global Door contact function not active
(Multiple doors with own door contact)



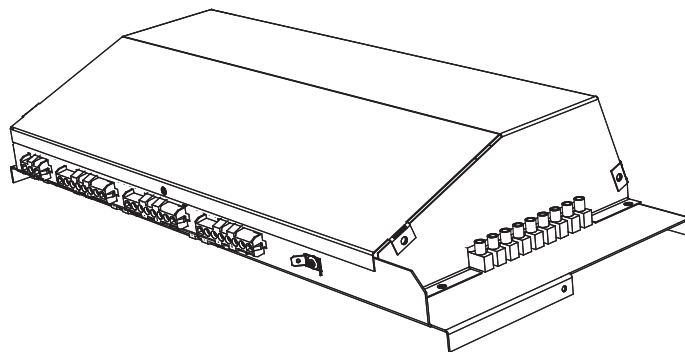
**ACCESSORIES****REQUIRED ACCESSORIES**

These accessories shall be ordered to make the air curtain functional.

AirGENIO control module

A control module is a required accessory for air curtain and shall be ordered for each air curtain. Control panel is included in delivery of control module. The ordering key for control modules is provided below.

Communication cable has to be ordered separately as an optional accessory.

**VCS-R4-SU-E-SL-AC**

AC – AC motor

SL – SLAVE (only for CO, SU)

MA – MASTER (only for CO, SU)

S – without heating regulation

E – with electric heater regulation

V – with water heater regulation

BA – Basic control (mechanical)

CO – Comfort control (touch screen)

SU – Superior control (touch screen)

R2 – control system (BA)

R4 – control system (CO, SU)

VCS – air curtain Standesse

OPTIONAL ACCESSORIES

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

Thermostatic valve TV-1-1/1
TV-1-1/1



2-way or 3-way valve with servo drive (230V)
ZV2-230-xx,x-xx
ZV3-230-xx,x-xx
(for control BASIC and COMFORT)



3-way valve with servo drive RT
RT-3-07 (K_{vs} 07)
(for control BASIC and COMFORT)



2way or 3-way valve with servo drive (0-10V)
ZV2-024-xx,x-xx
ZV3-024-xx,x-xx
(for control SUPERIOR)



Mixing node
SMU2-230-xx (for control BASIC and COMFORT)
SMU2-024-xx (for control SUPERIOR)



Room thermostat
TER-P



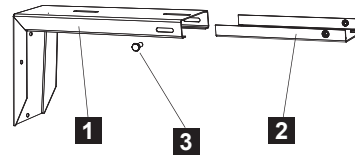
Room temperature sensor
CT-ROOM



Wall mounting bracket

Bracket designed for mounting the air curtain to the wall.

- 1 Bracket
- 2 Hanging strip
- 3 Securing screw



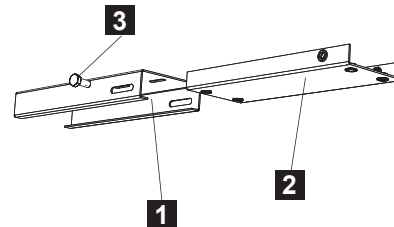
VCS4-KONZ-STE

- for B and C air curtains (2 pcs. in package)
- wall mounting bracket

Ceiling holder

The holder is designed for attaching the air curtain to a ceiling.

- 1 Ceiling bracket
- 2 Hanging strip
- 3 Securing screw



VCS4-KONZ-STR

- for B and C air curtains (2 pcs. in package)
- ceiling holder

Exit sign for marking of emergency exits.

Suitable for all types of air curtains.

VCS4-EXIT



2nd Control panel

ND-REMOTE-CONTROL (for control CONTROL, SUPERIOR)



Mechanical door switch (230V)
DS



Magnetic door contact (12V) in a metal housing with higher protection against mechanical damage
DK-B-3



	BASIC VCS-R2-BA	COMFORT VCS-R4-CO	SUPERIOR VCS-R4-SU
DS	✓	✓*	✓*
DK-B-3	✗	✓	✓

* Recommended for industry use



WIRING DIAGRAMS

The recommended cross-section of the main power supply cables is stated in the Instruction Manual.
All wiring diagrams provided in the technical catalog are indicative only. When assembling the product, carefully observe the nameplate ratings as well as directions and diagrams affixed directly to the product or enclosed with the product.

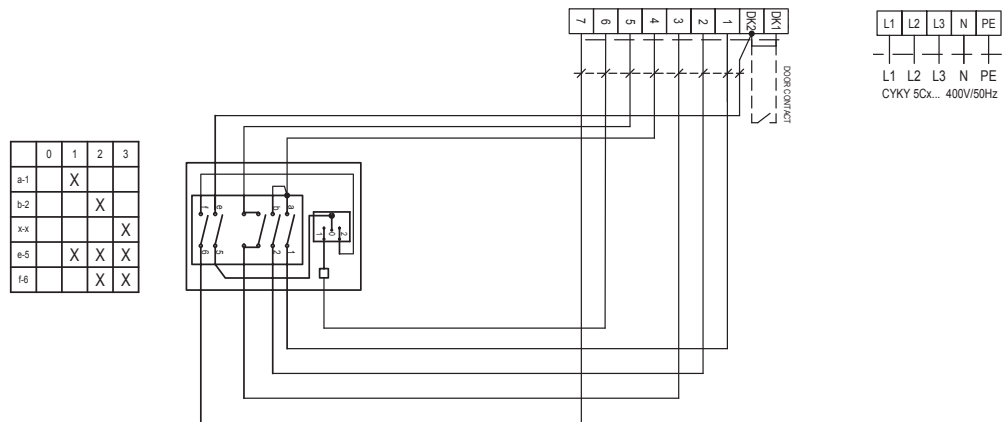


WIRING DIAGRAMS

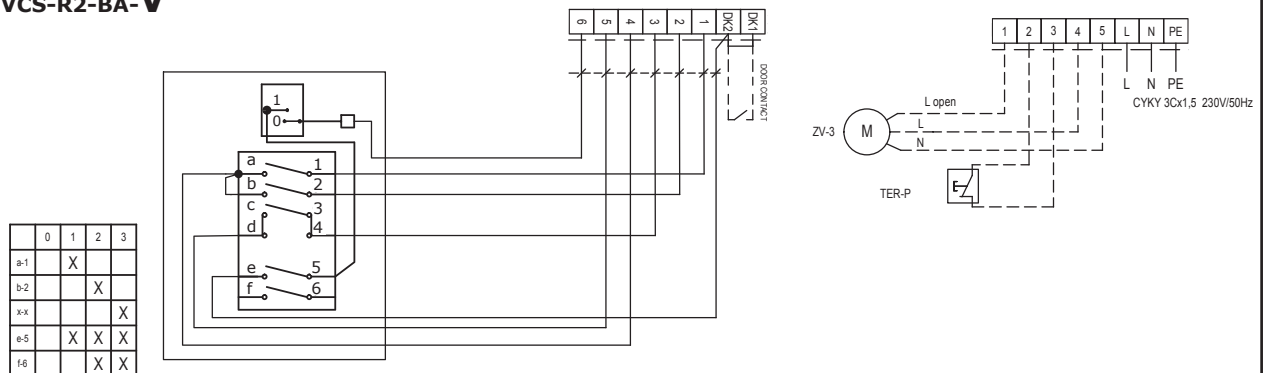


AirGENIO BASIC

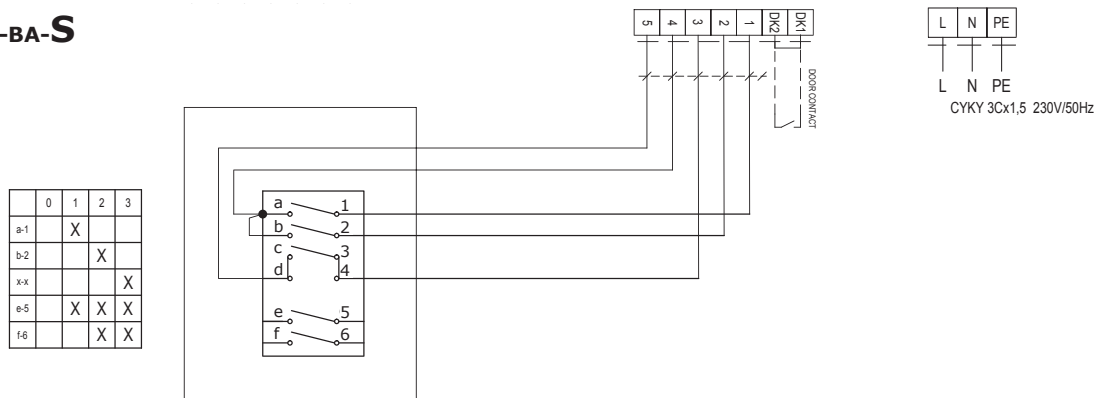
VCS-R2-BA-E



VCS-R2-BA-V



VCS-R2-BA-S

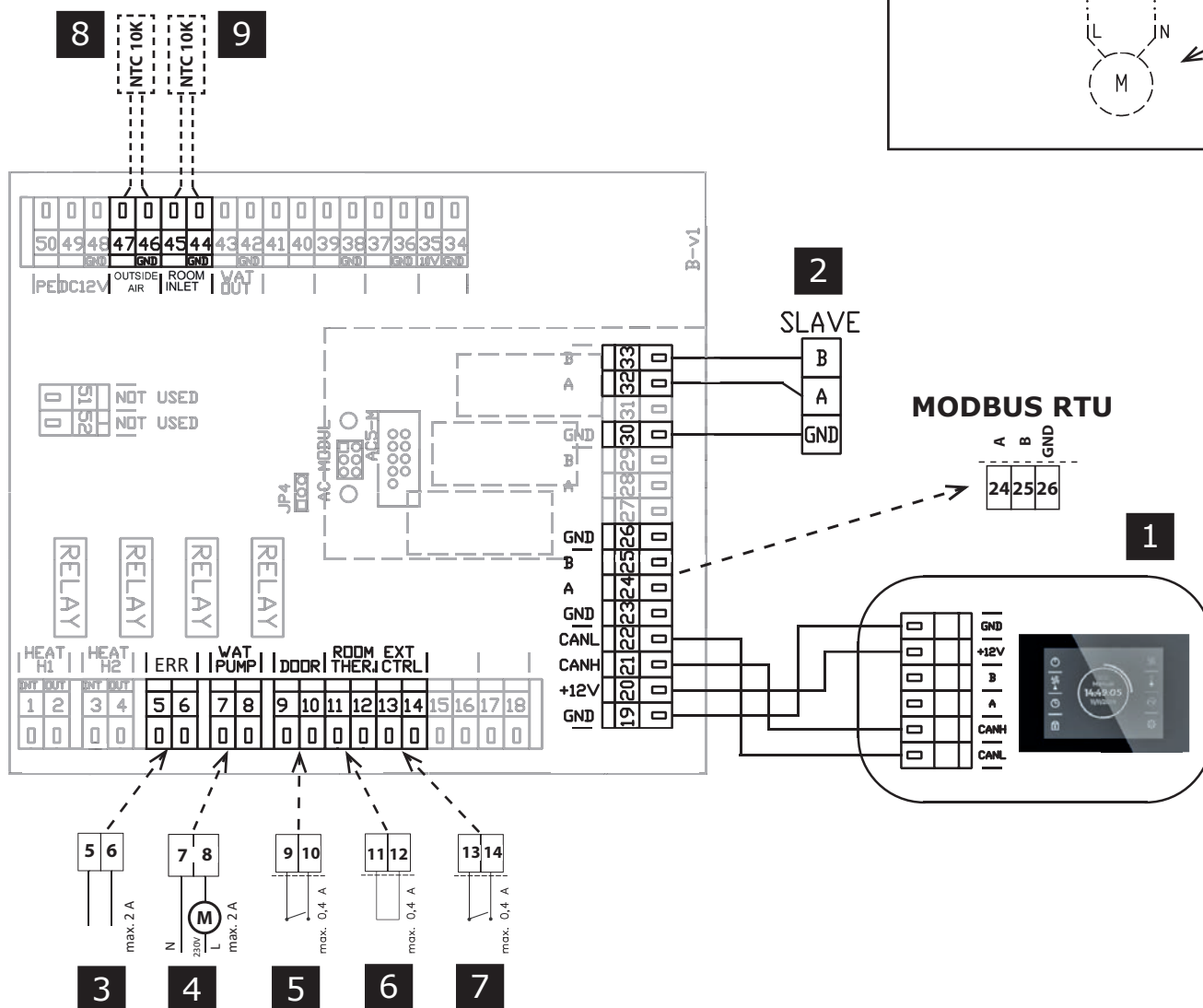
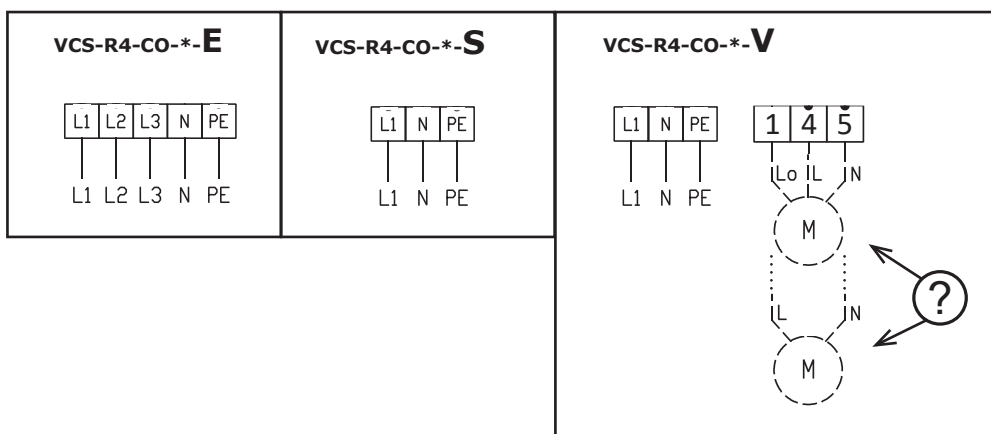




WIRING DIAGRAMS



AirGENIO COMFORT MASTER

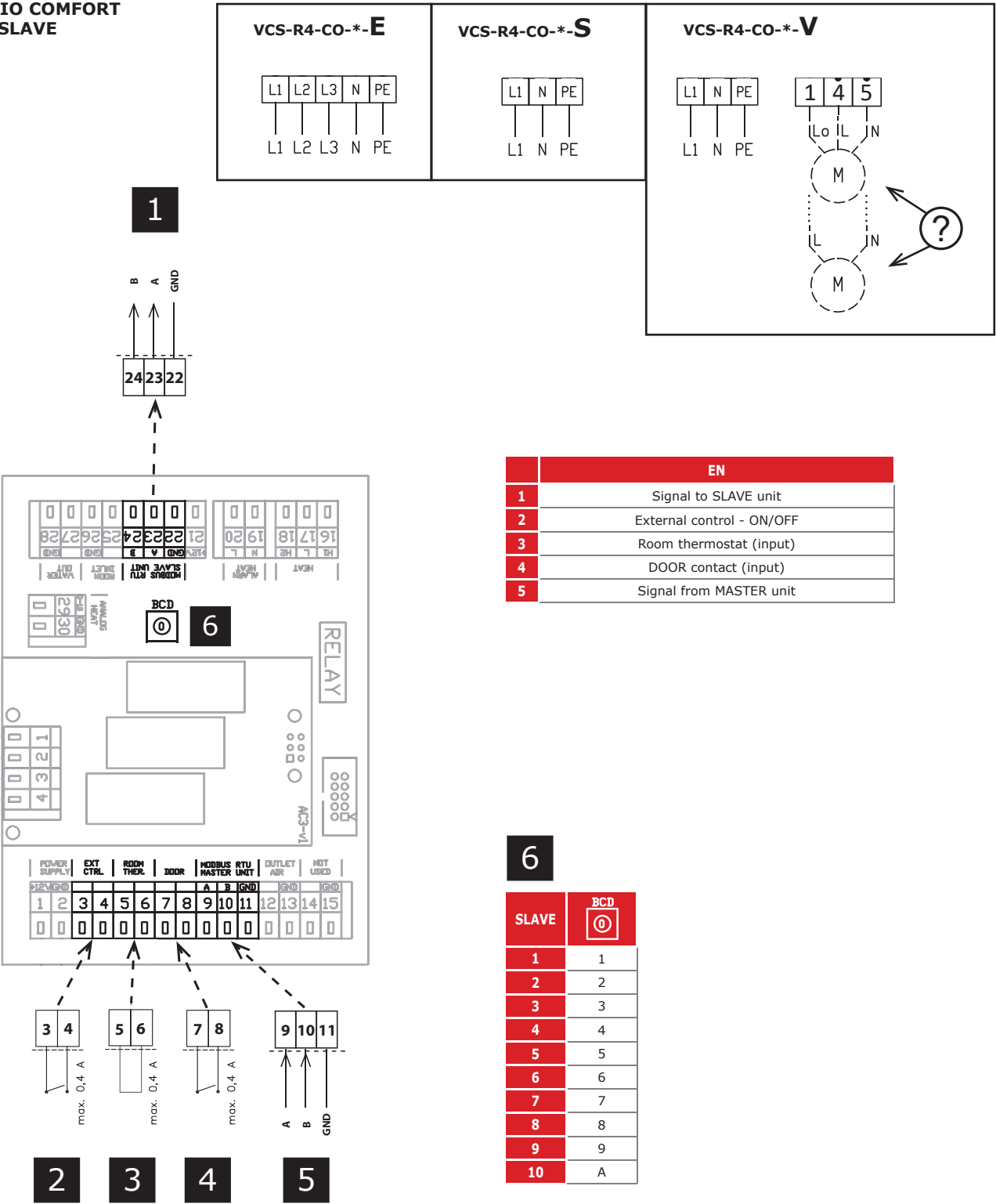


	EN
1	Control panel
2	Signal to SLAVE unit
3	ERROR contact (relay contact, NO/NC)
4	Water pump (relay contact)
5	DOOR contact (input, NO/NC)
6	Room thermosat (input, NO/NC)
7	External control (input, NO/NC)
8	Outside air temp. sensor (include delivery)
9	Room temp. sensor (include delivery)



WIRING DIAGRAMS

AirGENIO COMFORT
SLAVE

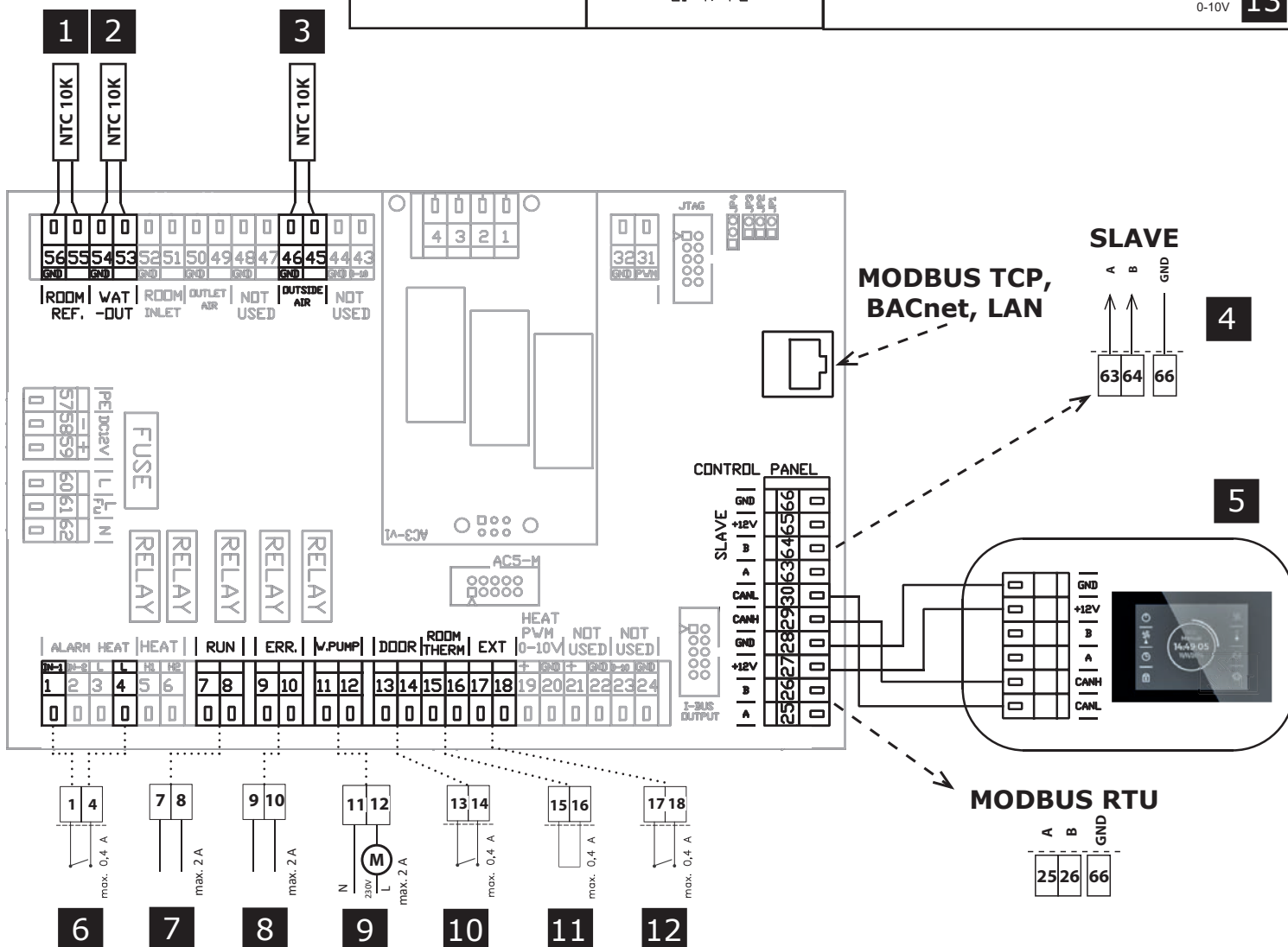
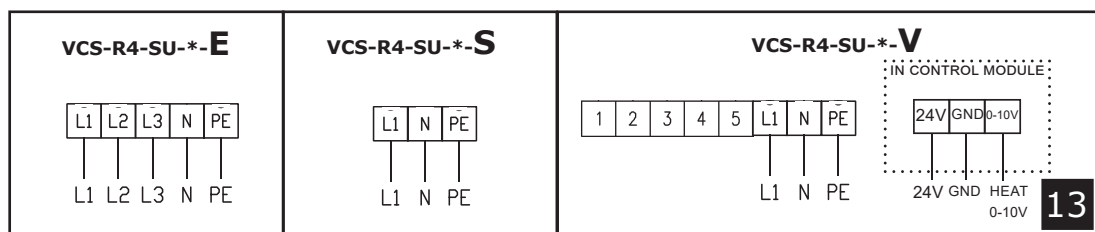




WIRING DIAGRAMS



AirGENIO SUPERIOR MASTER

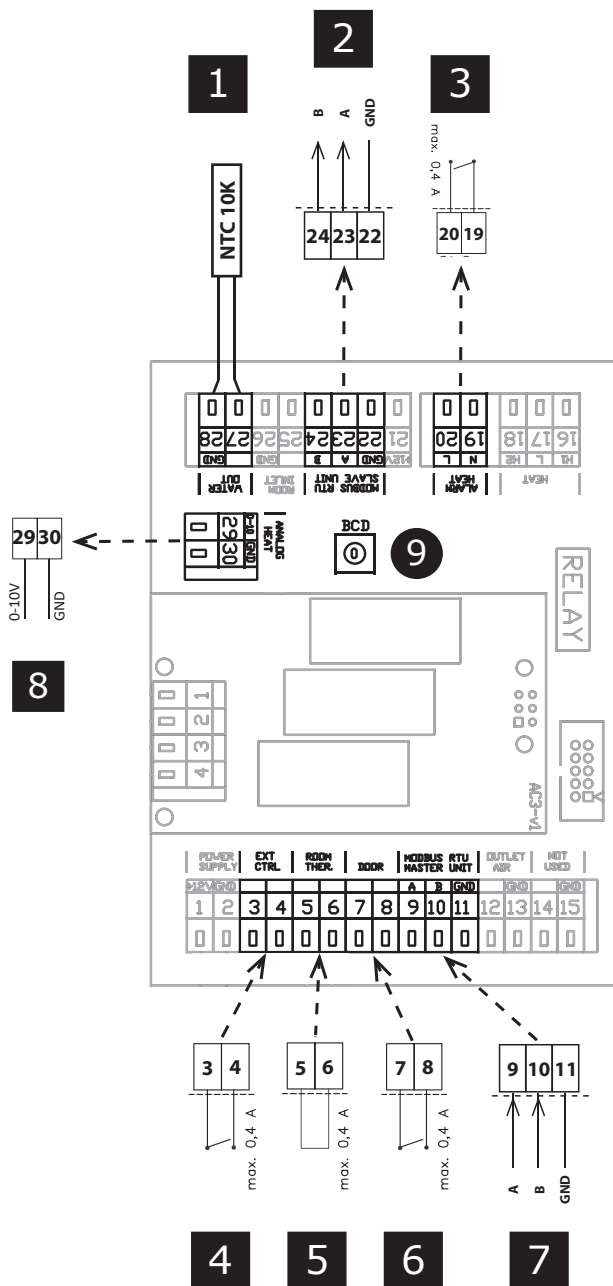
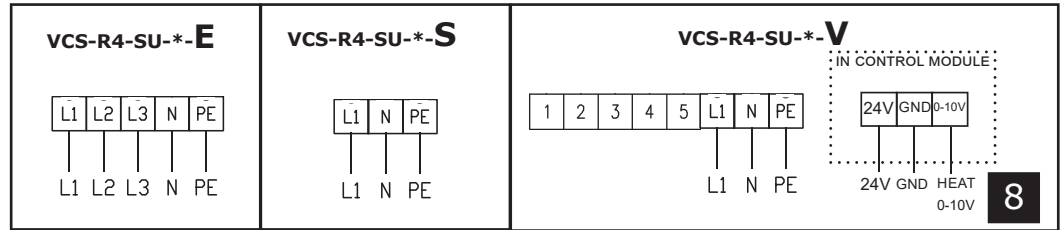


EN	
1	Room sensor (accessories)
2	LPHW out sensor (included in delivery)
3	Outside air sensor (included in delivery)
4	Signal to SLAVE unit
5	Control panel
6	Antifreeze thermostat (NC)
7	RUN contact (relay contact, NO/NC)
8	ERROR contact (relay contact, NO/NC)
9	Water pump (relay contact)
10	DOOR contact (input, NO/NC)
11	Room thermosat (input, NO/NC)
12	External control (input, NO/NC)
13	Water valve control (0-10V)



WIRING DIAGRAMS

AirGENIO SUPERIOR
SLAVE



	EN
1	LPHW out sensor (included in delivery)
2	Signal to SLAVE unit
3	Antifreeze thermostat (NC)
4	External control - ON/OFF
5	Room thermostat (input)
6	DOOR contact (input)
7	Signal from MASTER unit
8	Water valve control (0-10V)

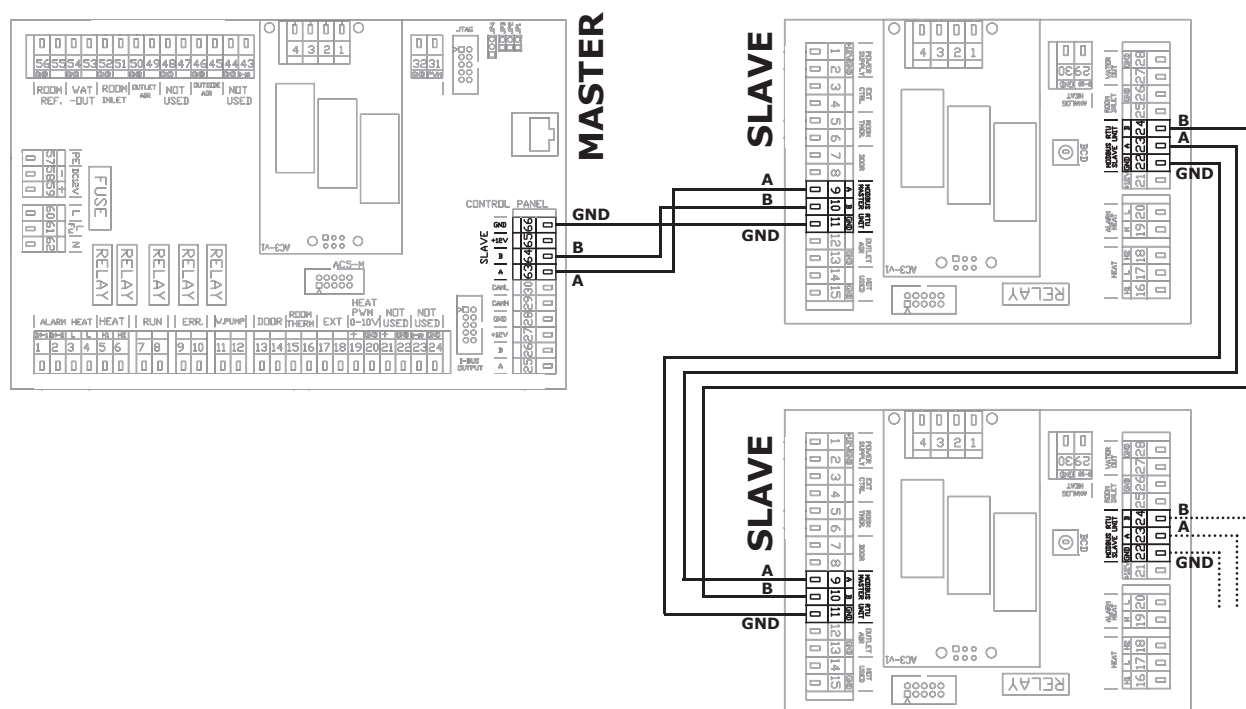
SLAVE	BCD
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	A



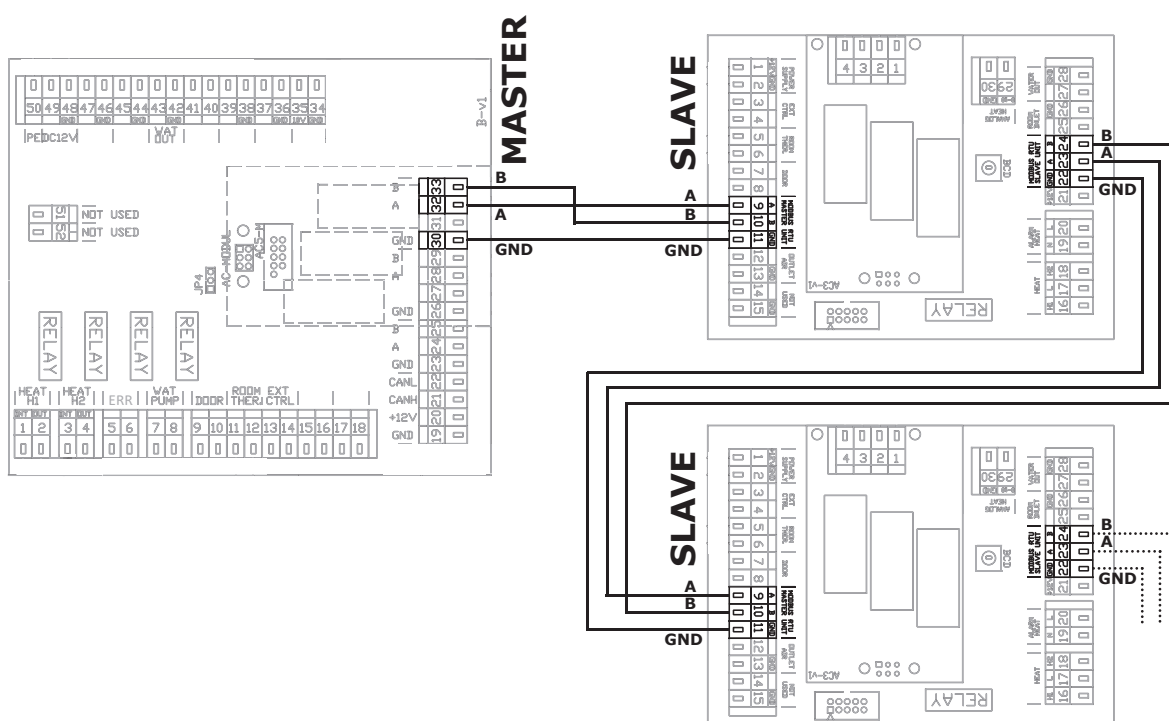
WIRING DIAGRAMS

Chaining

AirGENIO SUPERIOR



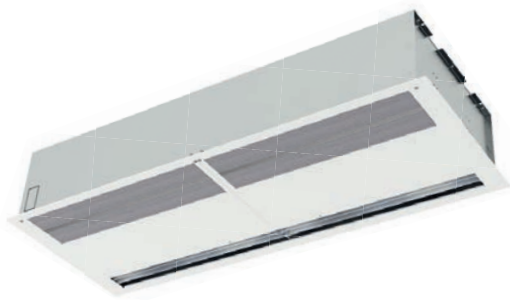
AirGENIO COMFORT





KEY TO CODING

VCS4	B	10	V	1	0	0	2	
								2 – 2VV version
								0 – Reserve
								0 – White colour casing RAL 9016 (Standard)
								9 – Atyp RAL casing
								1 – Universal interface for control modules
								S – Air-only
								E – Electrical 3-phase 400 V
								V – Water heater
								W – 3-row water heater
								10 – Nominal width 1000 mm
								15 – Nominal width 1500 mm
								20 – Nominal width 2000 mm
								25 – Nominal width 2500 mm
								B – B Output series
								C – C Output series
								VCS4 – STANDESSE air curtain (4th generation)



air-only



water heater



electric wire heater



BASIC FEATURES

- Lengths: 1; 1.5; 2; 2.5 m
- **Air flow up to 4313 m³/h** (ISO 27 327-1)
- Universal interface for AirGENIO control module connection (BASIC, COMFORT, SUPERIOR)
- *FACE 2 in 1* – suction grille + filter = 2 in 1
- Low noise
- Easy installation and service
- Standard colour RAL 9016 (any RAL – based colours may be provided on customer's request)

FINESSE

Discrete and high-performance recessed air curtain for use in **entrance areas of banks, administrative centres, luxury boutiques, shopping centres and airport halls** with a recommended installation height up to 4 m*.

* *Maximum recommended installation height – may vary according the particular conditions at the installation site.*

The air curtain shall be installed indoor in a dry area with ambient temperatures ranging from +5 °C up to +40 °C and relative humidity of up to 80 %. It is designed for conveying air free of fine dust, grease, chemical fumes, and other impurities. IP rating of the air curtain is IP 20. The air curtain project shall always be developed by the HVAC designer.



PRIMARY PARAMETERS

Air curtains with electric heater are fitted with automatic heat thermostat and emergency thermostat with manual reset. The air curtains with LPHW coil are designed for the maximum operating water temperature of +100 °C and maximum operating pressure of 1.6 MPa.

Type	Recommended installation height [m]	Air output [m³/h] *1			Acoustic pressure at 3m[dB(A)] *2			Sound power [dB(A)]*3
		Speed 3	Speed 2	Speed 1	Speed 3	Speed 2	Speed 1	
VCF-B-100-E-...	4,0	1778	1217	814	58	50	42	76
VCF-B-150-E-...		2552	1738	1130	60	52	43	78
VCF-B-200-E-...		3444	2307	1485	61	53	44	79
VCF-B-250-E-...		4187	2844	1880	63	55	45	80
VCF-B-100-V-...		1691	1146	758	58	50	41	75
VCF-B-150-V-...		2449	1643	1082	60	52	42	77
VCF-B-200-V-...		3381	2267	1422	61	53	44	79
VCF-B-250-V-...		4061	2765	1825	63	54	45	80
VCF-B-100-S-...		1793	1225	822	58	50	42	76
VCF-B-150-S-...		2591	1770	1193	60	52	43	78
VCF-B-200-S-...		3476	2402	1659	62	54	45	79
VCF-B-250-S-...		4313	2899	1959	63	54	45	80

*1 Airflow volume according ISO27327-1

*2 Acoustic pressure values at 3m distance for maximum speed. Directional factor: Q=2.

*3 Sound power (LWA) measurements according to ISO 27327-2.

Type	Heater power output [kW]		Total power input [kW]*1	Total voltage/ current [V/A]	Motor voltage/ current [V/A]	Temperature increase Δt [°C]	Frequency [Hz]	Weight [kg]*3
	1st level	2nd level						
VCF-B-100-E-...	4,6	9,4	10,1	400/16,3	230/2,75	15,7*1	50	39,5
VCF-B-150-E-...	7,6	15	16	400/26,1	230/4,0	17,5*1	50	54,5
VCF-B-200-E-...	9,8	19	20,5	400/32,4	230/5,3	16,4*1	50	71,0
VCF-B-250-E-...	12,5	24,5	26,1	400/42,2	230/6,5	17,4*1	50	85,0
VCF-B-100-V-...	24,8*2		0,63	230/2,75	230/2,75	36,2*2	50	41,0
VCF-B-150-V-...	38,8*2		0,9	230/4,0	230/4,0	38,1*2	50	56,0
VCF-B-200-V-...	52,6*2		1,2	230/5,3	230/5,3	37,6*2	50	73,0
VCF-B-250-V-...	62,3*2		1,5	230/6,5	230/6,5	37,3*2	50	87,0
VCF-B-100-S-...	-	-	0,63	230/2,75	230/2,75	-	50	37,5
VCF-B-150-S-...	-	-	0,9	230/4,0	230/4,0	-	50	51,0
VCF-B-200-S-...	-	-	1,2	230/5,3	230/5,3	-	50	66,0
VCF-B-250-S-...	-	-	1,5	230/6,5	230/6,5	-	50	80,0

*1 At the maximum air flow and maximum heater power

*2 Intake air temperature +18°C, water temperature gradient of 90/70 °C and highest fan speed.

*3 Weight without controls.

LPHW coil parameters for water temperature gradient of 90/70 °C

Type	Air output	Heat output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCF-B-100-V-...	1691	20,5	54,2	9	0,25
VCF-B-150-V-...	2449	31,3	56,1	22	0,38
VCF-B-200-V-...	3381	42,6	55,6	16	0,52
VCF-B-250-V-...	4061	50,7	55,3	13	0,62

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient of 80/60 °C

Type	Air output	Heat output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCF-B-100-V-...	1691	16,8	47,7	8	0,2
VCF-B-150-V-...	2449	25,9	49,5	16	0,32
VCF-B-200-V-...	3381	35,1	49	13	0,43
VCF-B-250-V-...	4061	41,8	48,7	10	0,51

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient of 70/50 °C

Type	Air output	Heat output	Temperature at exhaust ^g	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCF-B-100-V-...	1691	13,1	41,1	5	0,16
VCF-B-150-V-...	2449	20,4	42,9	11	0,25
VCF-B-200-V-...	3381	27,6	42,4	9	0,33
VCF-B-250-V-...	4061	32,8	42,1	8	0,4

* Temperature of intake air: +18 °C

LPHW coil parameters for water temperature gradient of 60/40 °C

Type	Air output	Heat output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
VCF-B-100-V-...	1691	9,3	34,4	4	0,11
VCF-B-150-V-...	2449	14,9	36,1	8	0,66
VCF-B-200-V-...	3381	20	35,7	6	0,24
VCF-B-250-V-...	4061	23,7	35,4	5	0,28

* Temperature of intake air: +18 °C

Recommended mixing points for LPHW coil

Type	Control module	90/70 °C	80/60 °C	70/50 °C	60/40 °C
		2-way valve			
VCF-B-100-V	VCS-R2-BA	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	VCS-R4-CO	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	VCS-R4-SU	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCF-B-150-V	VCS-R2-BA	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	VCS-R4-CO	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	VCS-R4-SU	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCF-B-200-V	VCS-R2-BA	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	VCS-R4-CO	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	VCS-R4-SU	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20
VCF-B-250-V	VCS-R2-BA	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	VCS-R4-CO	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	VCS-R4-SU	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20

Recommended mixing points for LPHW coil 3-way valve

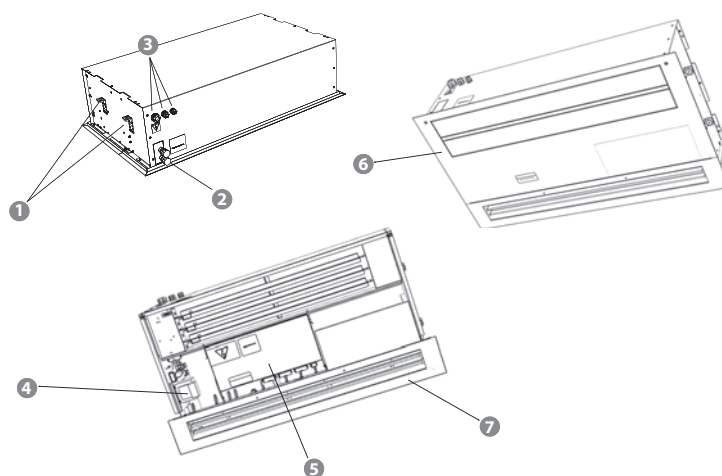
Type	Control module	90/70 °C	80/60 °C	70/50 °C	60/40 °C
		3-way valve			
VCF-B-100-V	VCS-R2-BA	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	VCS-R4-CO	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	VCS-R4-SU	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
VCF-B-150-V	VCS-R2-BA	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	VCS-R4-CO	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20	ZV3-230-04,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	VCS-R4-SU	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20	ZV3-024-04,0-20
VCF-B-200-V	VCS-R2-BA	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	VCS-R4-CO	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	VCS-R4-SU	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20
VCF-B-250-V	VCS-R2-BA	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	VCS-R4-CO	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	VCS-R4-SU	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20	ZV3-024-06,3-20



PRIMARY PARAMETERS

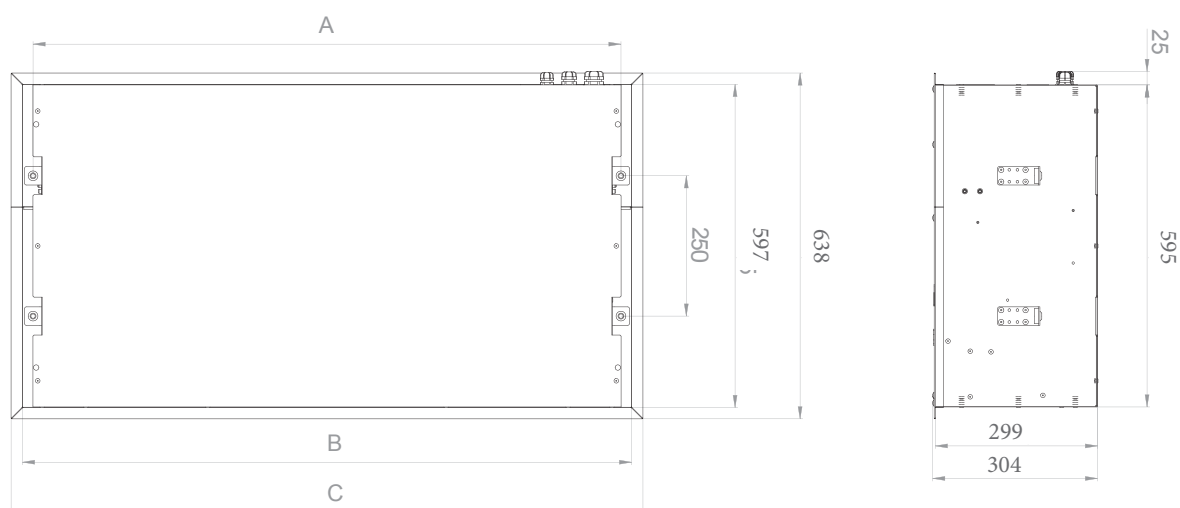
MAIN PARTS

- ① Suspension holders
- ② Water coil connection $\frac{3}{4}$ "
- ③ Power supply cable plug
- ④ Power supply connectors and fuse location
- ⑤ Control modul socket
- ⑥ Inlet face cover
- ⑦ Outlet grid



PRIMARY PARAMETERS

Air curtain dimensions



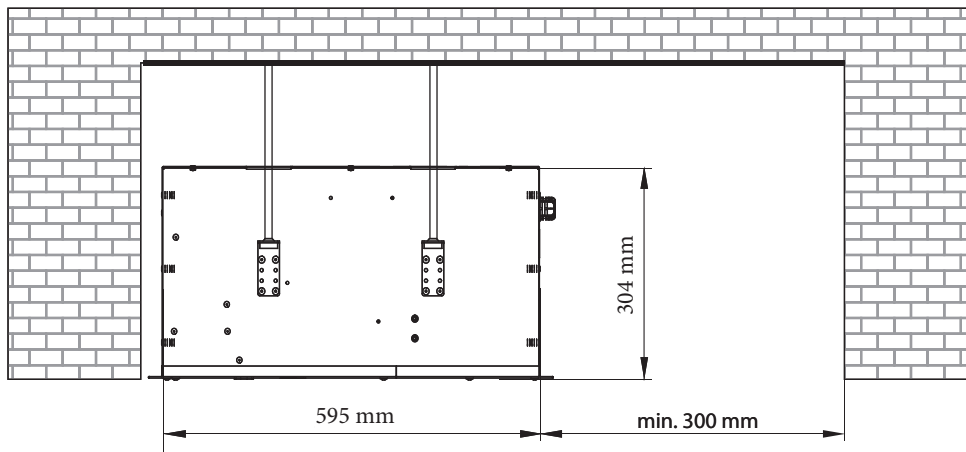
Type	A	B	C
VCF-x-100-x-...	1085	1124	1166
VCF-x-150-x-...	1585	1624	1666
VCF-x-200-x-...	2085	2124	2166
VCF-x-250-x-...	2465	2504	2546

The tube diameters for connecting the LPHW coil are G3/4".



INSTALLATION AND ASSEMBLY

- The air curtain shall be installed in a horizontal position only.
- The air curtain shall be located as close to the top edge of the doorway as possible, see figure.
- To ensure a correct function it is recommended that the air curtain overlaps the doorway by 100 mm on both sides.
- Correct operation of the air curtain requires that specified distances from the surrounding objects are observed, see figure.
- Position of the heating water and power supply connections and service access shall be taken into consideration during installation.
- Suspension holders are used for installing the air curtains see ACCESSORIES.
- The air curtain shall be installed separated from flammable materials and safe operation has to be kept.



CONTROL

The **FINESSE** air curtains are produced with universal interface for AirGENIO control module connection. There are three types of control modules available (BASIC, COMFORT and SUPERIOR). Control module is a required accessory for each air curtain. Additional change of control system is available. Control module is connected with air curtain by quick connection sockets. The basic differences among individual control module types are given in table underneath.


CONTROL
Overview of functions and sensor connections


AirGENIO control		BASIC VCS-R2-BA	COMFORT VCS-R4-CO	SUPERIOR VCS-R4-SU
	Type of controller	Manual	Touch screen	Touch screen
	Mode	Manual	Manual / Auto	Manual / Auto
	Control of air output	3 speeds	3 speeds	3 speeds
	Control of electric heater	OFF / Level1 / Level2	OFF / Level1 / Level2	YES (PWM)
	Control of water heater	ON/OFF	ON/OFF	0-10V
	Antifreeze protection of LPHW	NO	YES	YES
	Possibility of connecting a door contact	YES (230V)	YES (12V)	YES (12V)
	External control	NO	YES	YES
	Temperature measurement	NO	YES (NTC)*	YES (NTC)*
	Chaining air curtains	NO	YES – max 10+1 pcs	YES – max 10+1 pcs
	Indication of selected function	NO	YES (Display)	YES (Display)
	Controller connection to air curtain	Power wire	Communication cable (UTP)	Communication cable (UTP)
	Self learning mode	NO	YES	YES
	BMS connection	NO	Modbus RTU	Modbus RTU, Modbus TCP, BACnet
	Error contact	NO	YES	YES
	2 nd control panel ready	NO	YES	YES

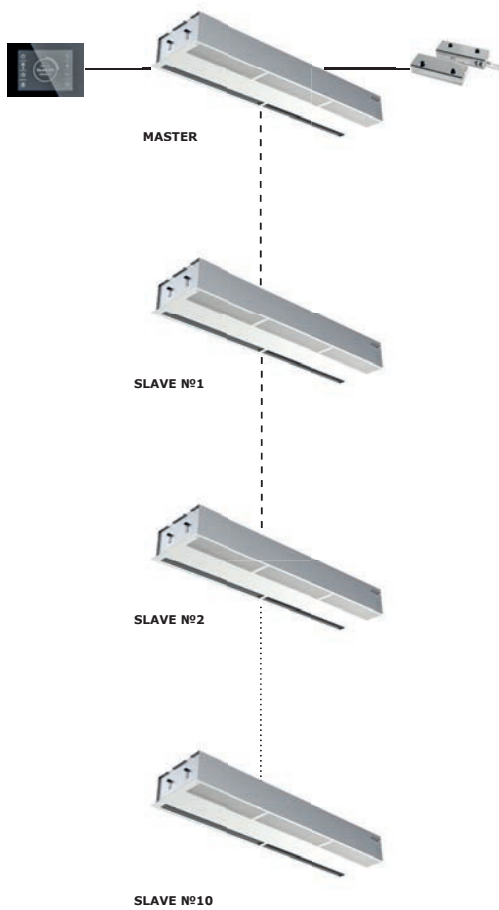
* Temperature sensor included in standard. Temperature shown on display.



Chaining example

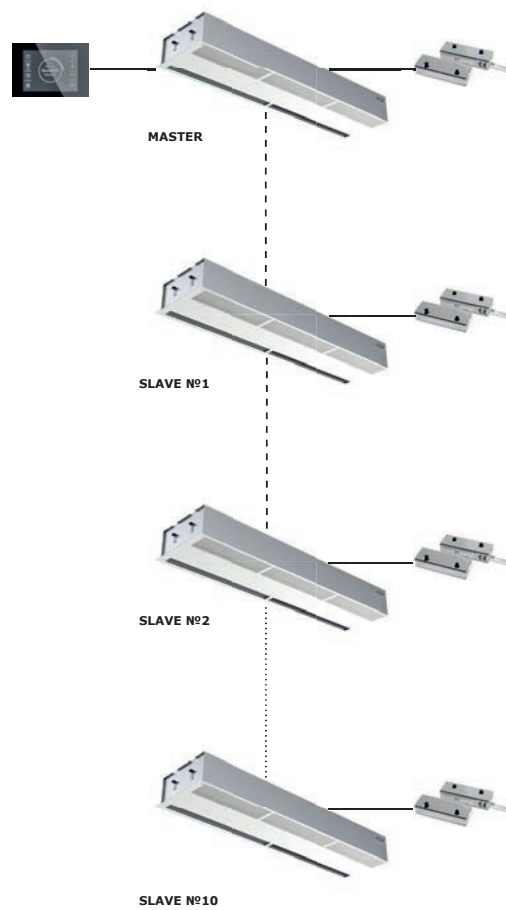
COMFORT / SUPERIOR

Global Door contact function active
(Single door with multiple air curtains)



COMFORT / SUPERIOR

Global Door contact function not active
(Multiple doors with own door contact)





ACCESSORIES

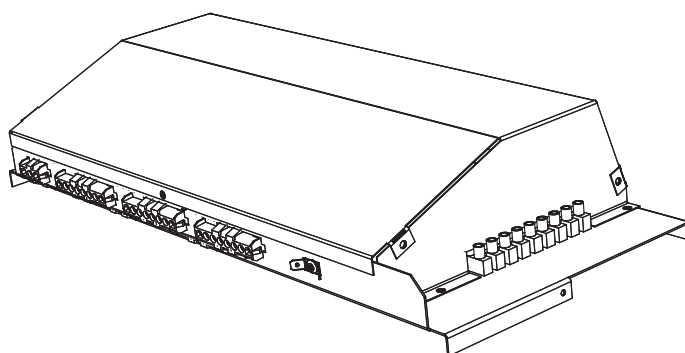
REQUIRED ACCESSORIES

These accessories shall be ordered to make the air curtain functional.

AirGENIO Control module

A control module is a required accessory for air curtain and shall be ordered for each air curtain. Control panel is included in delivery of control module. The ordering key for control modules is provided below.

Communication cable has to be ordered separately as an optional accessory.



VCS-R4-SU-E-SL-AC

- AC** – AC motor
- SL** – SLAVE (only for CO, SU)
- MA** – MASTER (only for CO, SU)
- S** – without heating regulation
- E** – with electric heater regulation
- V** – with water heater regulation
- BA** – Basic control (mechanical)
- CO** – Comfort control (touch screen)
- SU** – Superior control (touch screen)
- R2** – control system (BA)
- R4** – control system (CO, SU)
- VCS** – air curtain Standesse

OPTIONAL ACCESSORIES

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

Thermostatic valve TV-1-1/1
TV-1-1/1



2-way or 3-way valve with servo drive (230V)
ZV2-230-xx,x-xx
ZV3-230-xx,x-xx
(for BA, CO control)



3-way valve with servo drive RT
RT-3-07 (K_{vs} 07)
(for BA, CO control)



Water valve (0-10V)
ZV2-024-xx
ZV3-024-xx
(for control SU control)



Mixing node
SMU2-230-xx (for BA, CO control)
SMU2-024-xx (for SU control)



Room thermostat
TER-P



Room temperature sensor
CT-ROOM



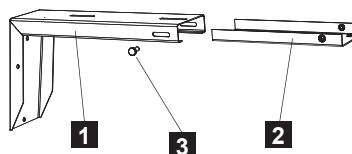
Wall mounting bracket

Bracket designed for mounting the air curtain to the wall.

- 1 Bracket
- 2 Hanging strip
- 3 Securing screw

VCS4-KONZ-STE

- for B and C air curtains (2 pcs. in package)
- wall mounting bracket



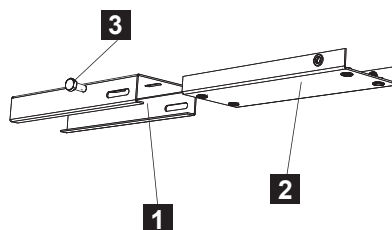
Ceiling holder

The holder is designed for attaching the air curtain to a ceiling.

- 1 Ceiling bracket
- 2 Hanging strip
- 3 Securing screw

VCS4-KONZ-STR

- for B and C air curtains (2 pcs. in package)
- ceiling holder



Exit sign for marking of emergency exits.

Suitable for all types of air curtains.

VCS4-EXIT



2nd Control panel

ND-REMOTE-CONTROL

(for control CO,SU)



Mechanical door switch (230V)
DS



Magnetic door contact (12V) in a metal housing
with higher protection against mechanical damage
DK-B-3



	BASIC VCS-R2-BA	COMFORT VCS-R4-CO	SUPERIOR VCS-R4-SU
DS	✓	✓*	✓*
DK-B-3	X	✓	✓



* Recommended for industry use



WIRING DIAGRAMS

The recommended cross-section of the main power supply cables is stated in the Instruction Manual.
All wiring diagrams provided in the technical catalog are indicative only. When assembling the product, carefully observe the nameplate ratings as well as directions and diagrams affixed directly to the product or enclosed with the product.



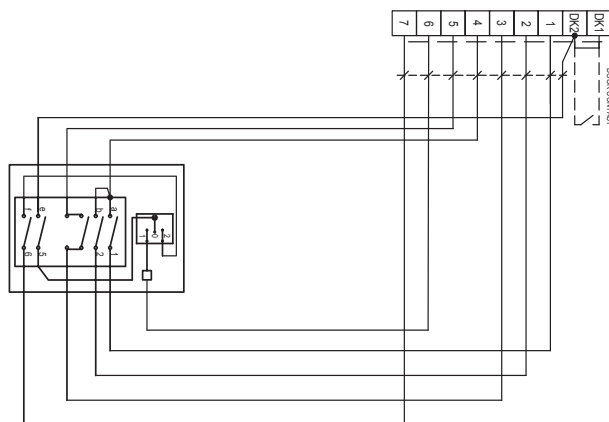
WIRING DIAGRAMS



AirGENIO BASIC

VCS-R2-BA-E

	0	1	2	3
a-1		X		
b-2			X	
x-x				X
e-5	X	X	X	X
f-6		X	X	X

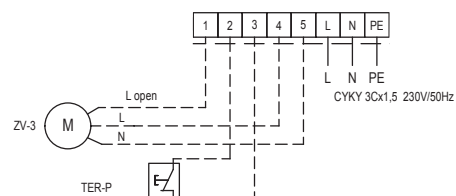
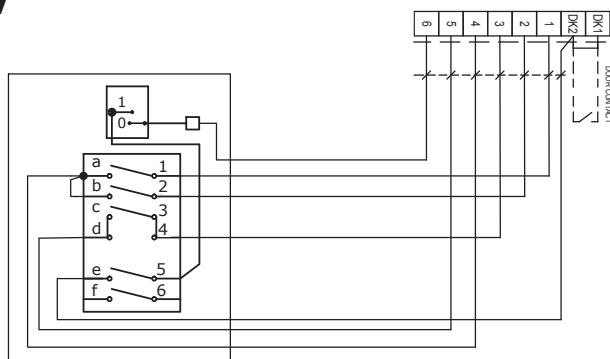


L1	L2	L3	N	PE
L1	L2	L3	N	PE

CYKY 50x... 400V/50Hz

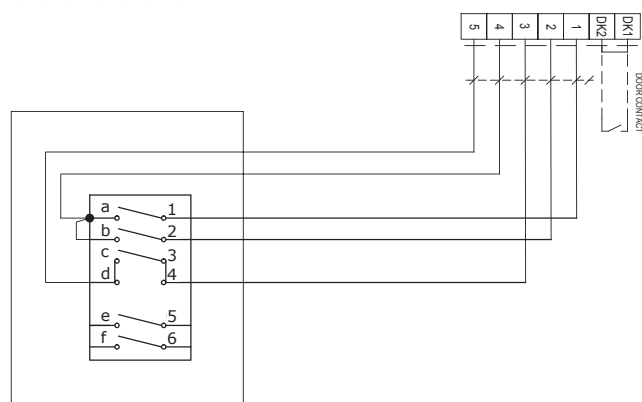
VCS-R2-BA-V

	0	1	2	3
a-1		X		
b-2			X	
x-x				X
e-5	X	X	X	X
f-6		X	X	X



VCS-R2-BA-S

	0	1	2	3
a-1		X		
b-2			X	
x-x				X
e-5	X	X	X	X
f-6		X	X	X



L	N	PE
L	N	PE

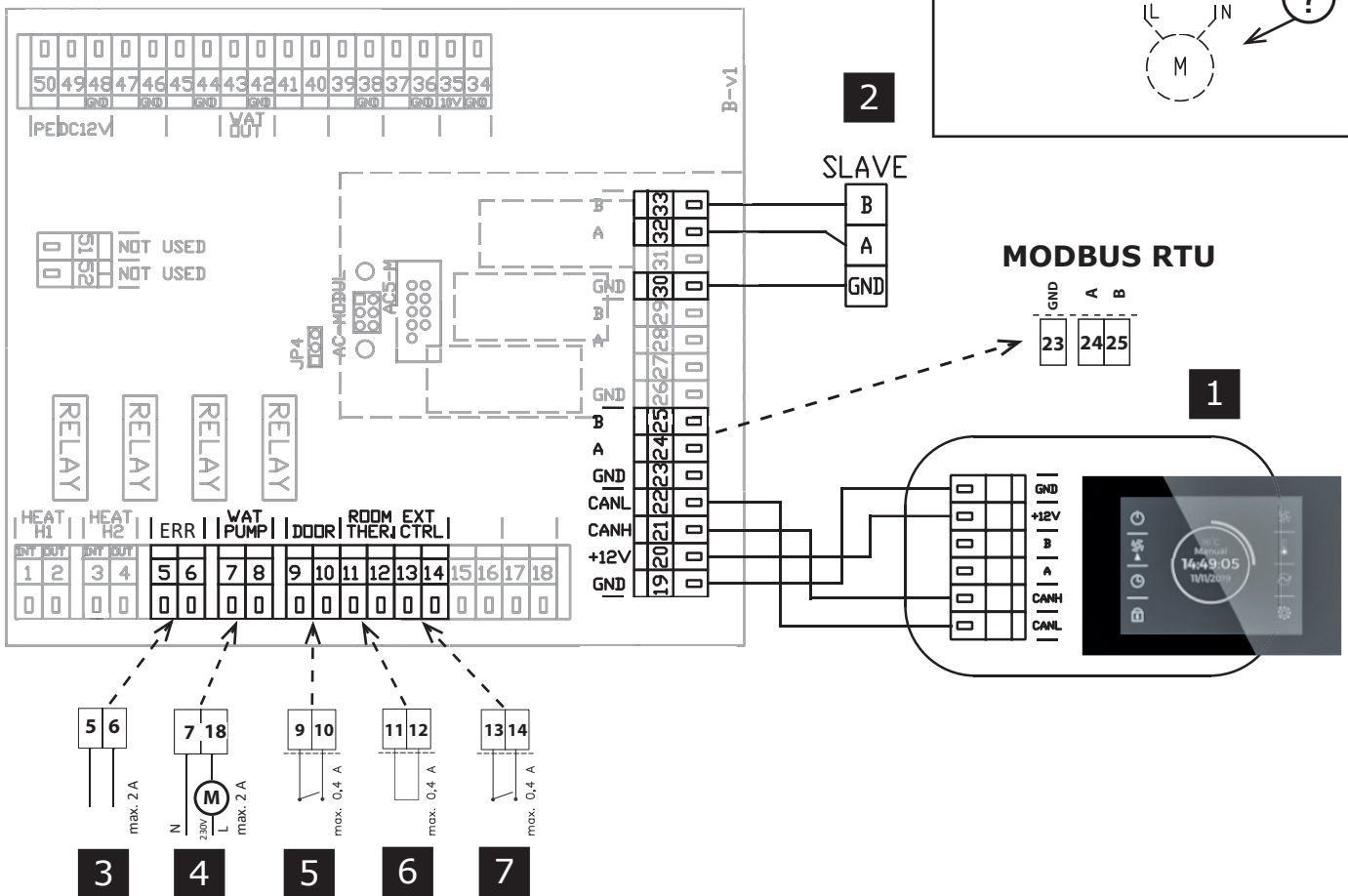
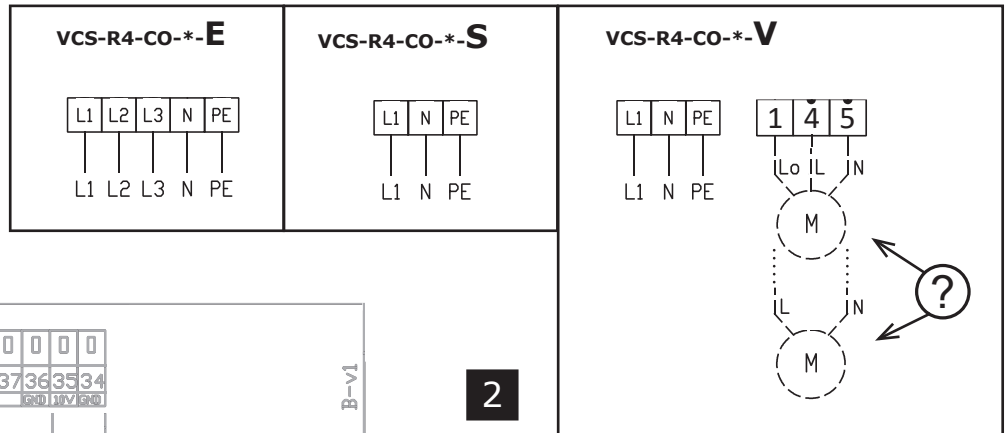
CYKY 3Cx1,5 230V/50Hz



WIRING DIAGRAMS



AirGENIO COMFORT
MASTER

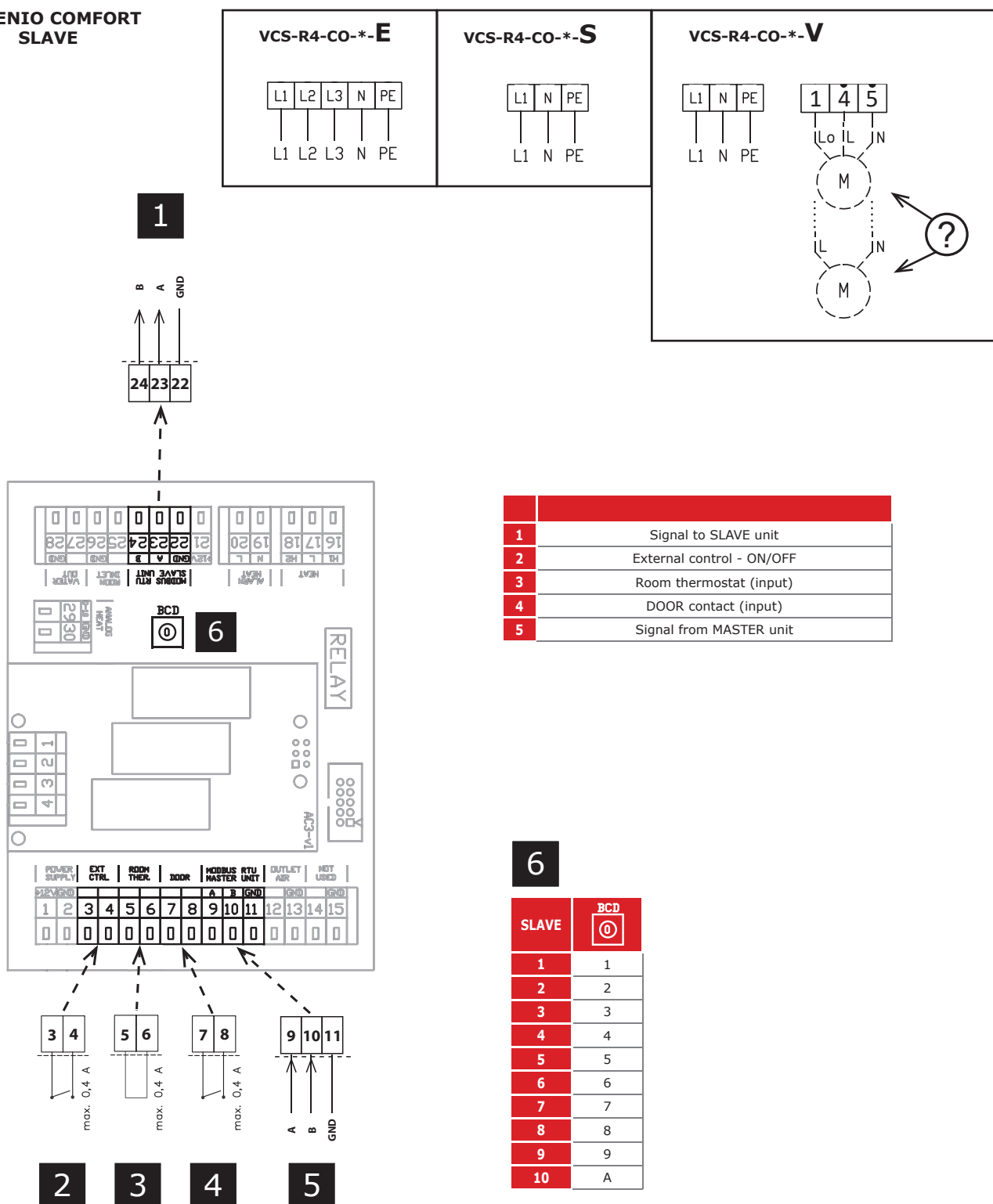


1	Control panel
2	Signal to SLAVE unit
3	ERROR contact (relay contact, NO/NC)
4	Water pump (relay contact)
5	DOOR contact (input, NO/NC)
6	Room thermosat (input, NO/NC)
7	External control (input, NO/NC)
8	Outside air temp. sensor (include delivery)
9	Room temp. sensor (include delivery)



WIRING DIAGRAMS

AirGENIO COMFORT SLAVE



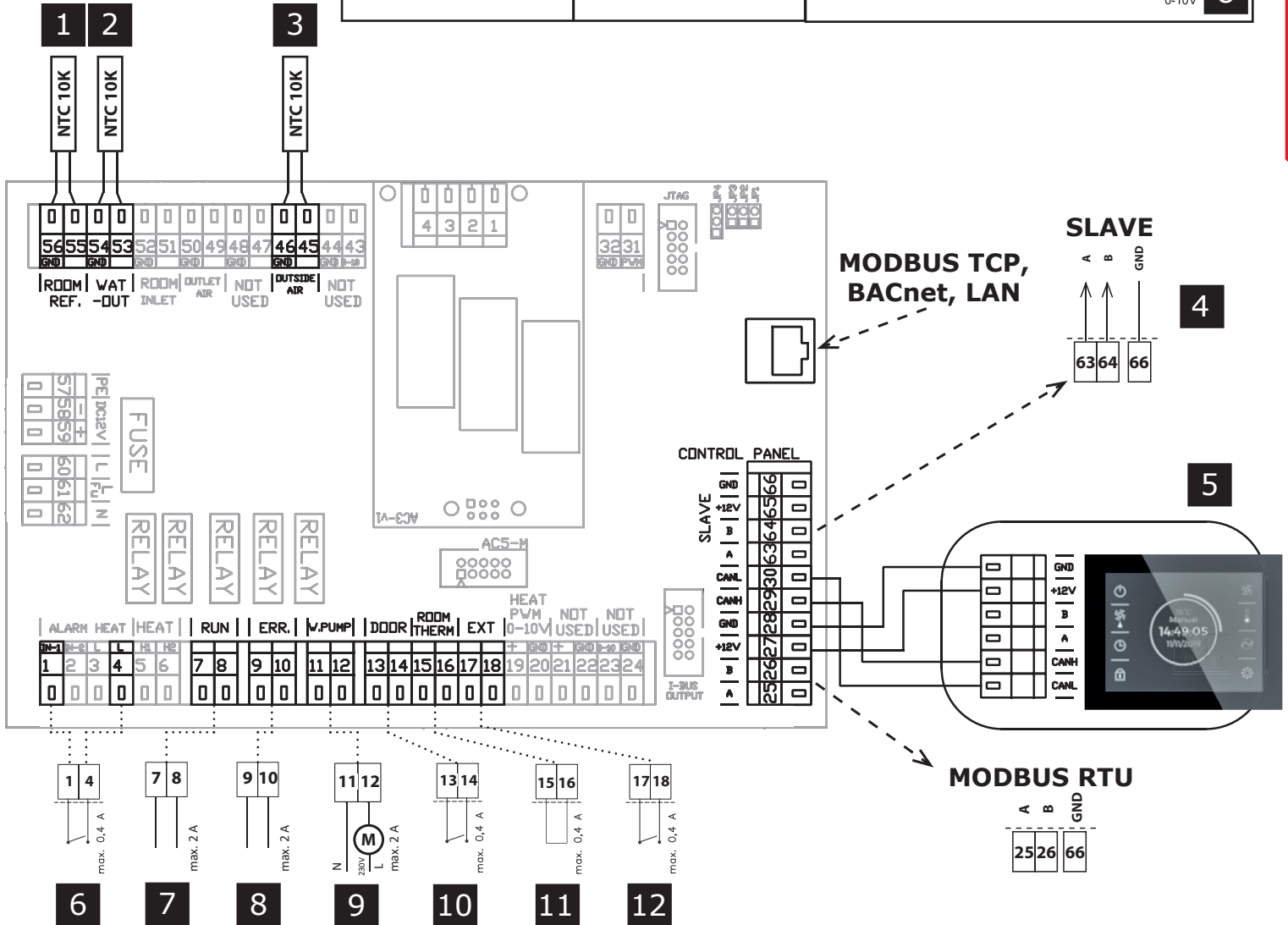
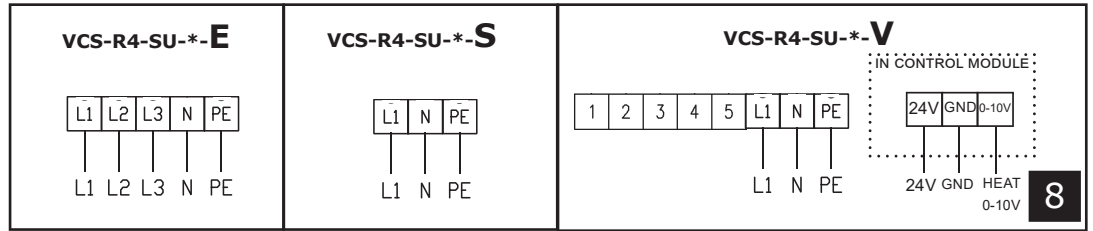
1	Signal to SLAVE unit
2	External control - ON/OFF
3	Room thermostat (input)
4	DOOR contact (input)
5	Signal from MASTER unit



WIRING DIAGRAMS



AirGENIO SUPERIOR
MASTER

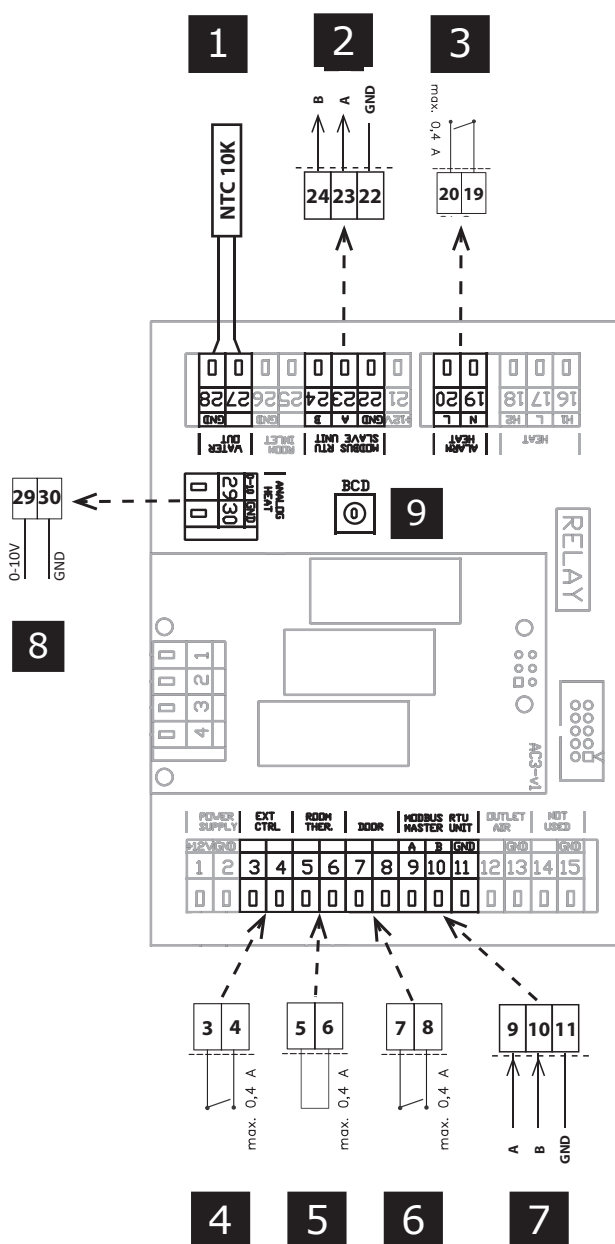
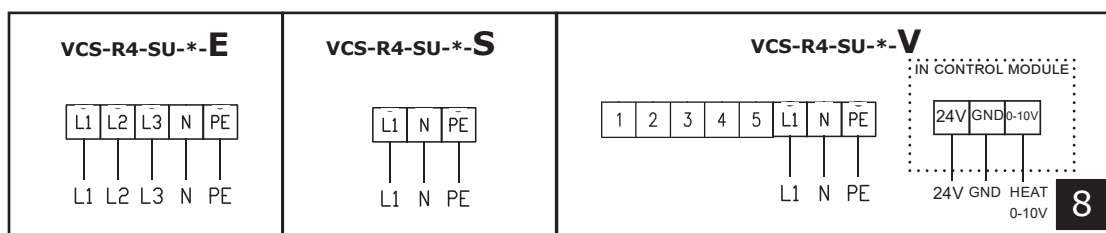


1	Room sensor (accessories)
2	LPHW out sensor (included in delivery)
3	Outside air sensor (included in delivery)
4	Signal to SLAVE unit
5	Control panel
6	Antifreeze thermostat (NC)
7	RUN contact (relay contact, NO/NC)
8	ERROR contact (relay contact, NO/NC)
9	Water pump (relay contact)
10	DOOR contact (input, NO/NC)
11	Room thermosat (input, NO/NC)
12	External control (input, NO/NC)
13	Water valve control (0-10V)



WIRING DIAGRAMS

AirGENIO SUPERIOR SLAVE



1	LPHW out sensor (included in delivery)
2	Signal to SLAVE unit
3	Antifreeze thermostat (NC)
4	External control - ON/OFF
5	Room thermostat (input)
6	DOOR contact (input)
7	Signal from MASTER unit
8	Water valve control (0-10V)

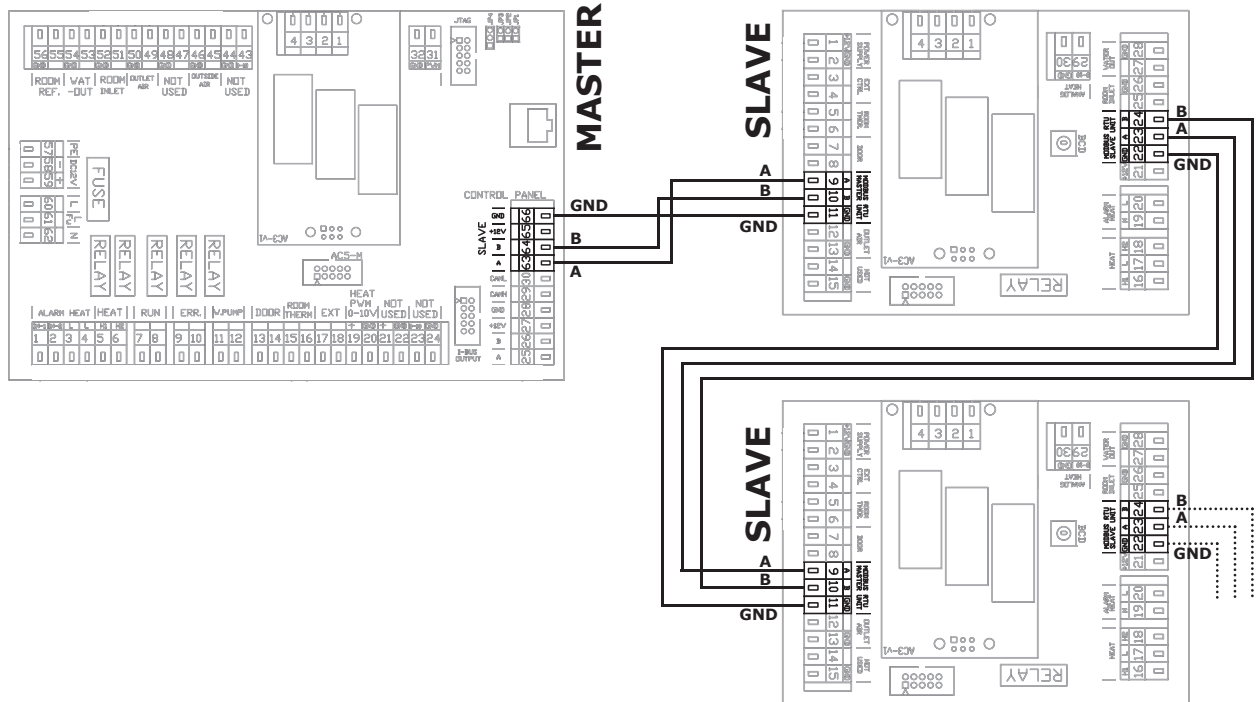
SLAVE	BCD
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	A



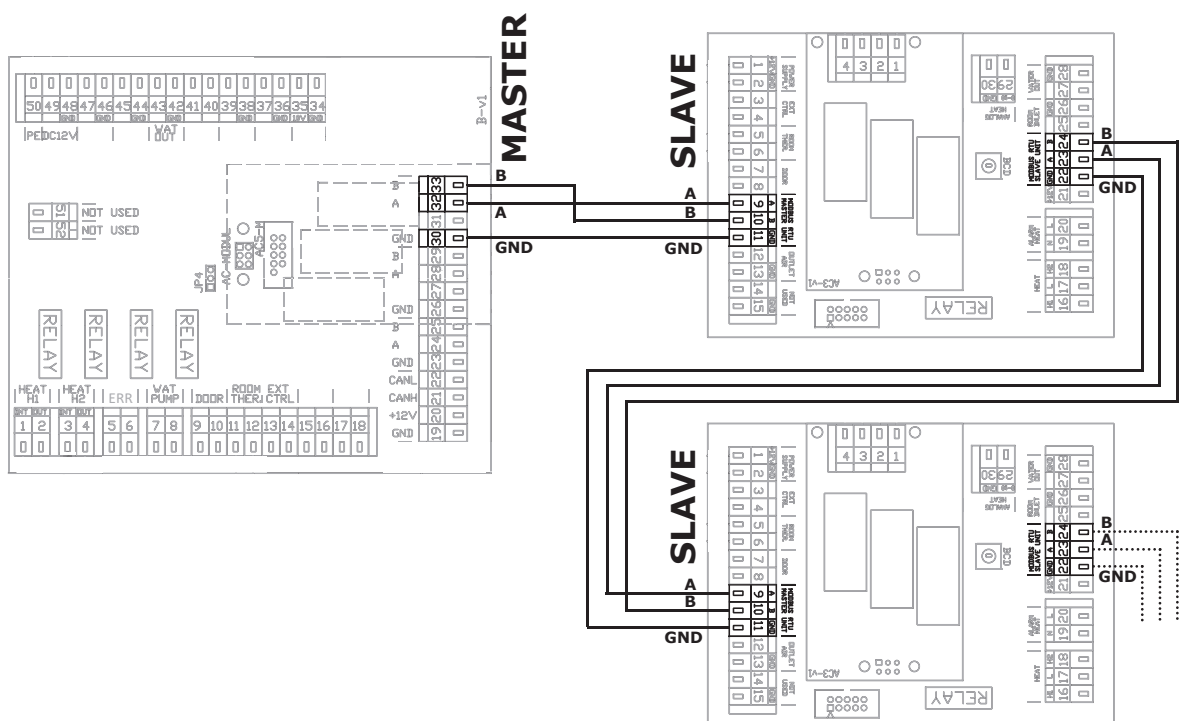
WIRING DIAGRAMS

Chaining

AirGENIO SUPERIOR



AirGENIO COMFORT





KEY TO CODING

VCF-B-100-E-ZP-0-0

0 – 2VV version

9 – Atyp RAL

0 – Standard RAL

ZP – Control ready

E – Electric heater

V – Water heater

S – Air-only

100 – Nominal width 1000 mm

150 – Nominal width 1500 mm

200 – Nominal width 2000 mm

250 – Nominal width 2500 mm

B – B Output series

VCF – Air Curtain FINESSE



air-only



water heater



electric wire heater

LOW
NOISEWIRE
HEATERANTI
FREEZE**BASIC FEATURES**

- Length 2.5 m
- **Air flow up to 4700 m³/h** (ISO 27 327-1)
- The construction of the adjustable exhaust lamellas ensures a high output
- The insulated shell means completely silent curtain operation, even at full output
- Easy installation
- AirGENIO control (COMFORT and SUPERIOR)
- Standard colour RAL 9016 (any RAL – based colours may be provided on customer's request)

The **VENESSE** is a vertical air curtain for right and left installation for use in representative premises, such as **banks, offices, restaurants and shopping centres** with a recommended width up to 4 m.

The **VENESSE** is for use in dry indoor environments with an ambient temperature of +5 °C to +35 °C, and relative humidity up to 80 %. It is suitable for moving air that is free of large dust particles, grease, chemical vapours and other impurities. The air curtain has IP 20 electrical protection. The air curtain's installation must always be planned by a HVAC engineer designer.


PRIMARY PARAMETERS

Air curtains with an electric heater unit are equipped with an operational thermometer with automatic reset for temperatures above 50°C and an emergency thermometer with manual reset, which turns the entire device off if the temperature inside the air curtain exceeds 115 °C. Air curtains with LPHW coil are designed for a maximum operational water temperature of +100 °C and maximum operational pressure of 1.6 MPa

Type	Recommended installation height [m]	Air output [m³/h] * ¹			Acoustic pressure at 3m[dB(A)] * ²			Sound power [dB(A)]* ³
		Speed 3	Speed 2	Speed 1	Speed 3	Speed 2	Speed 1	
VCV-B-25S	4,0	4700	3400	2450	55	49	41	76
VCV-B-25E		4600	3300	2400	55	48	40	76
VCV-B-25W		4350	3100	2200	54	48	40	76

*¹ Airflow volume according ISO27327-1

*² Acoustic pressure values at 3 m distance for maximum speed. Directional factor: Q=2.

*³ Sound power (LWA) measurements according to ISO 27327-2.

Type	Heater power output [kW]		Total power input [kW]	Total voltage/ current [V/A]	Motor voltage/ current [V/A]	Temperature increase Δt [°C]	Frequency [Hz]	Weight [kg]
	1st level	2st level						
VCV-B-25S	-	-	1,65	230/7	230/6,5	-	50	95
VCV-B-25E	13	24,0	25,65	400/42	230/6,5	15,5* ¹	50	103
VCV-B-25W	-	50,1* ²	1,65	230/7	230/6,5	34,4	50	104

*¹ At the maximum air flow and maximum heater power

*² Intake air temperature +18°C, water temperature gradient of 90/70 °C and highest fan speed.

LPHW coil parameters

Type	Air output	Heat output	Temperature at exhaust	Pressure loss	Water flow
	[m³/h]	[kW]	[°C]	[kPa]	[l/s]
LPHW coil parameters for water temperature gradient 60/40 °C					
VCV-B-25W	4350	24,2	34,6	19	0,3
LPHW coil parameters for water temperature gradient 70/50 °C					
VCV-B-25W	4350	32,9	40,6	34	0,4
LPHW coil parameters for water temperature gradient 80/60 °C					
VCV-B-25W	4350	41,5	46,5	52	0,5
LPHW coil parameters for water temperature gradient 90/70 °C					
VCV-B-25W	4350	50,1	52	73	0,6

* Temperature of intake air +18 °C



Recommended mixing points for LPHW 2-way valve

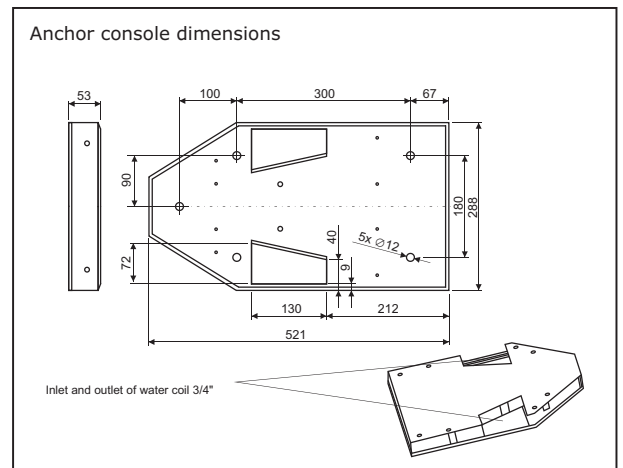
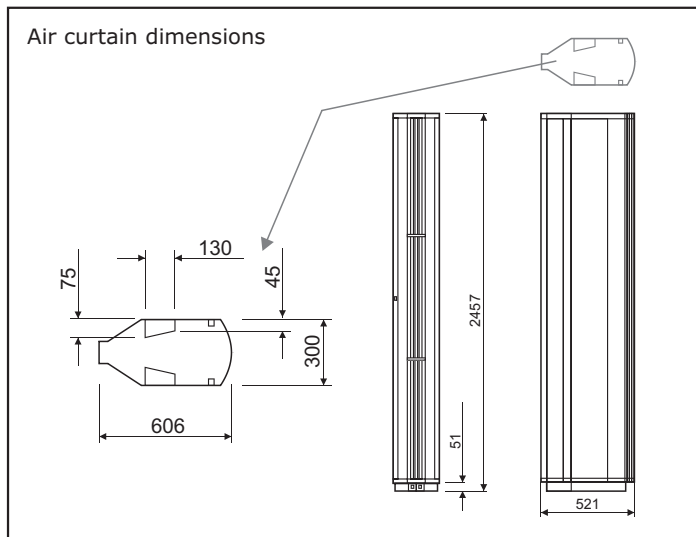
Type	Control	90/70 °C	80/60 °C	70/50 °C	60/40 °C
		2-way valve			
VCV-B-25W	COMFORT	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	SUPERIOR	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20	ZV2-024-08,0-20

Recommended mixing points for LPHW 3-way valve

Type	Control	90/70 °C	80/60 °C	70/50 °C	60/40 °C
		3-way valve			
VCV-B-25W	COMFORT	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20	ZV3-230-21,0-20
		RT-3-07	RT-3-07	RT-3-07	RT-3-07
	SUPERIOR	ZV3-024-10,0-25	ZV3-024-10,0-25	ZV3-024-10,0-25	ZV3-024-10,0-25

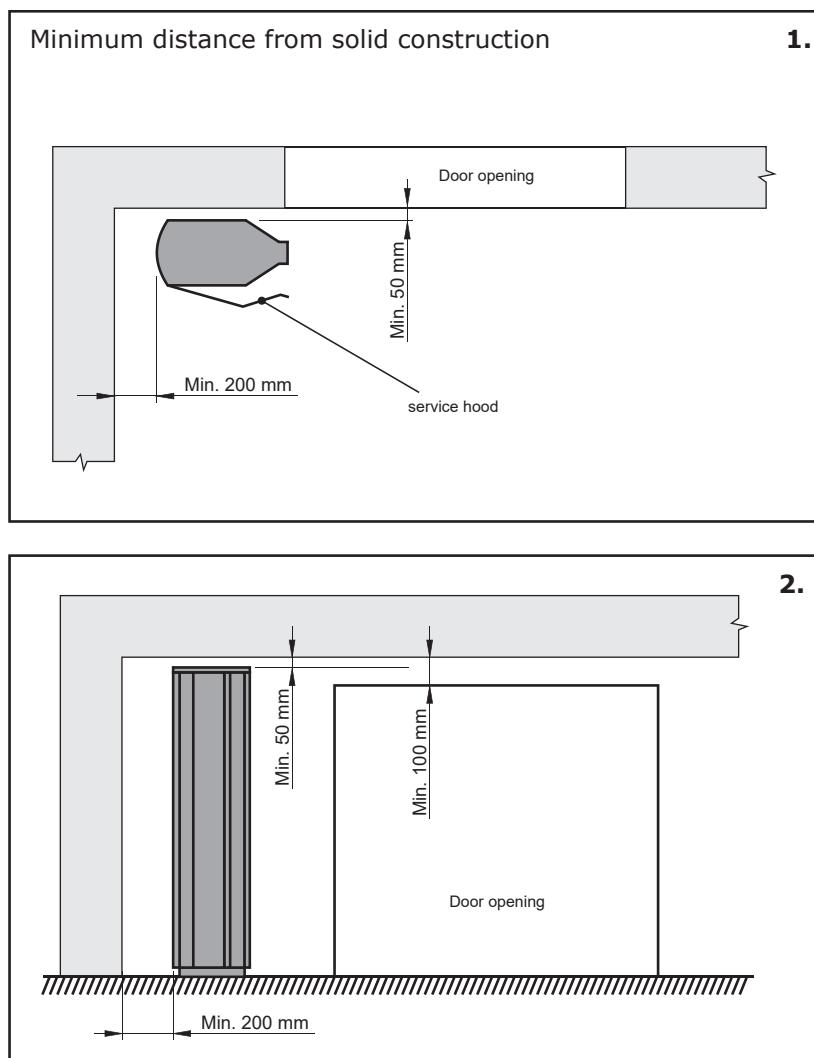


DIMENSIONS



INSTALLATION AND ASSEMBLY

- The **VENESSE** air curtain is intended for vertical installation.
- The air curtain must be placed as close as possible to the upper edge of the door opening (see illustration.1).
- For correct operation, we recommend that the air curtain is higher than the door opening (optimally by 100 mm) see illustration 2.
- The anchor stand and its cover are included. All necessary connections can be routed through the stand, e.g., electrical power, water, communication cable, etc.
- Connections can also be made from the top down, through a special opening in the air curtain's upper cover.
- For the air curtain to operate correctly, it must be installed at the correct distance (see illustrations 1 and 2).
- The air curtain is universally designed for two-sided operation. Thus, the direction of the service cover can be selected. It should always point into the room.



CONTROL

The **VENESSE** air curtains are produced with COMFORT or SUPERIOR controls (CO and SU).
The basic differences among individual control types are given in table underneath.

**CONTROL****Overview of functions and sensor connections**

AirGENIO control		COMFORT	SUPERIOR
	Type of controller	Touch screen	Touch screen
	Mode	Manual / Auto	Manual / Auto
	Control of air output	3 speeds	3 speeds
	Control of electric heater	OFF / Level1 / Level2	N/A
	Control of water heater	ON/OFF	0-10V
	Antifreeze protection of LPHW	YES	YES
	Possibility of connecting a door contact	YES (12V)	YES (12V)
	External control	YES	YES
	Temperature measurement	YES (NTC)*	YES (NTC)*
	Chaining air curtains	YES – max 10+1 pcs	YES – max 10+1 pcs
	Indication of selected function	YES (Display)	YES (Display)
	Controller connection to air curtain	Communication cable (UTP)	Communication cable (UTP)
	Self learning mode	YES	YES
	BMS connection	Modbus RTU	Modbus RTU, Modbus TCP, BACnet
	Error contact	YES	YES
	2 nd control panel ready	YES	YES

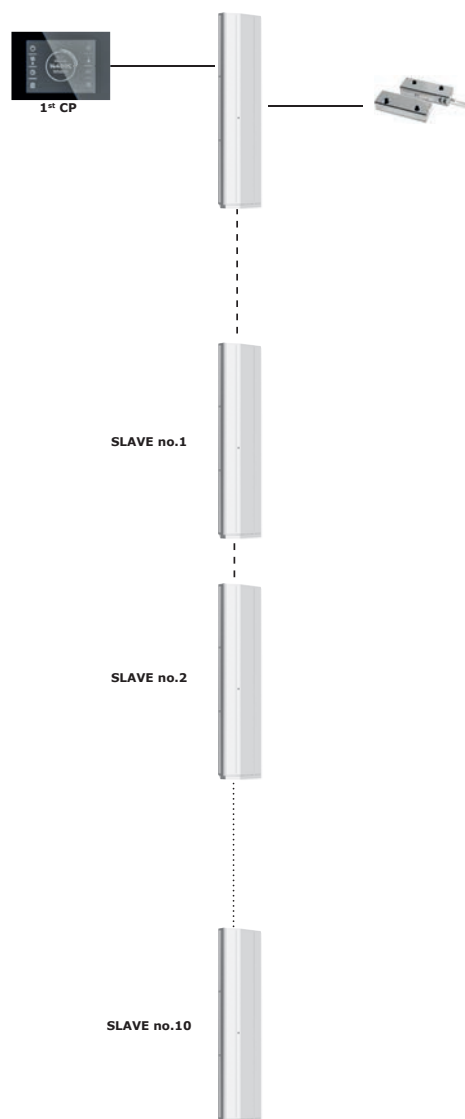
*^o) Temperature sensor included in standard. Temperature shown on display.



CHAINING EXAMPLE

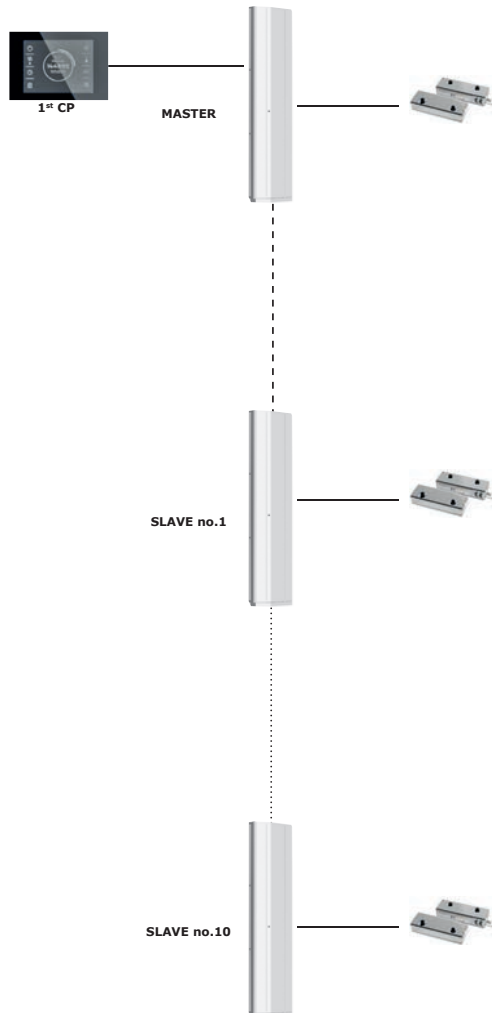
COMFORT / SUPERIOR

Global Door contact function active



COMFORT / SUPERIOR

Global Door contact function not active





ACCESSORIES

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

REQUIRED ACCESSORIES

For air curtain with water heater only.

2-way or 3-way valve with servo drive (230V)

ZV2-230-xx,x-xx

ZV3-230-xx,x-xx

(for control CO)



3-way valve with servo drive RT

RT-3-07 (K_{vs} 07)

(for control CO)



2-way or 3-way valve with servo drive (0-10V)

ZV2-24-xx,x-xx

ZV3-24-xx,x-xx

(for control SU)



Door contact in a metal housing

DK-B-3



Room thermostat

TER-P



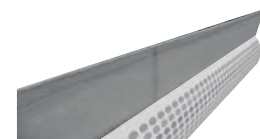
Flexible connection hoses

OH-xxx



Filter for VENESSE products (only VCV-B-25W and VCV-B-25S)

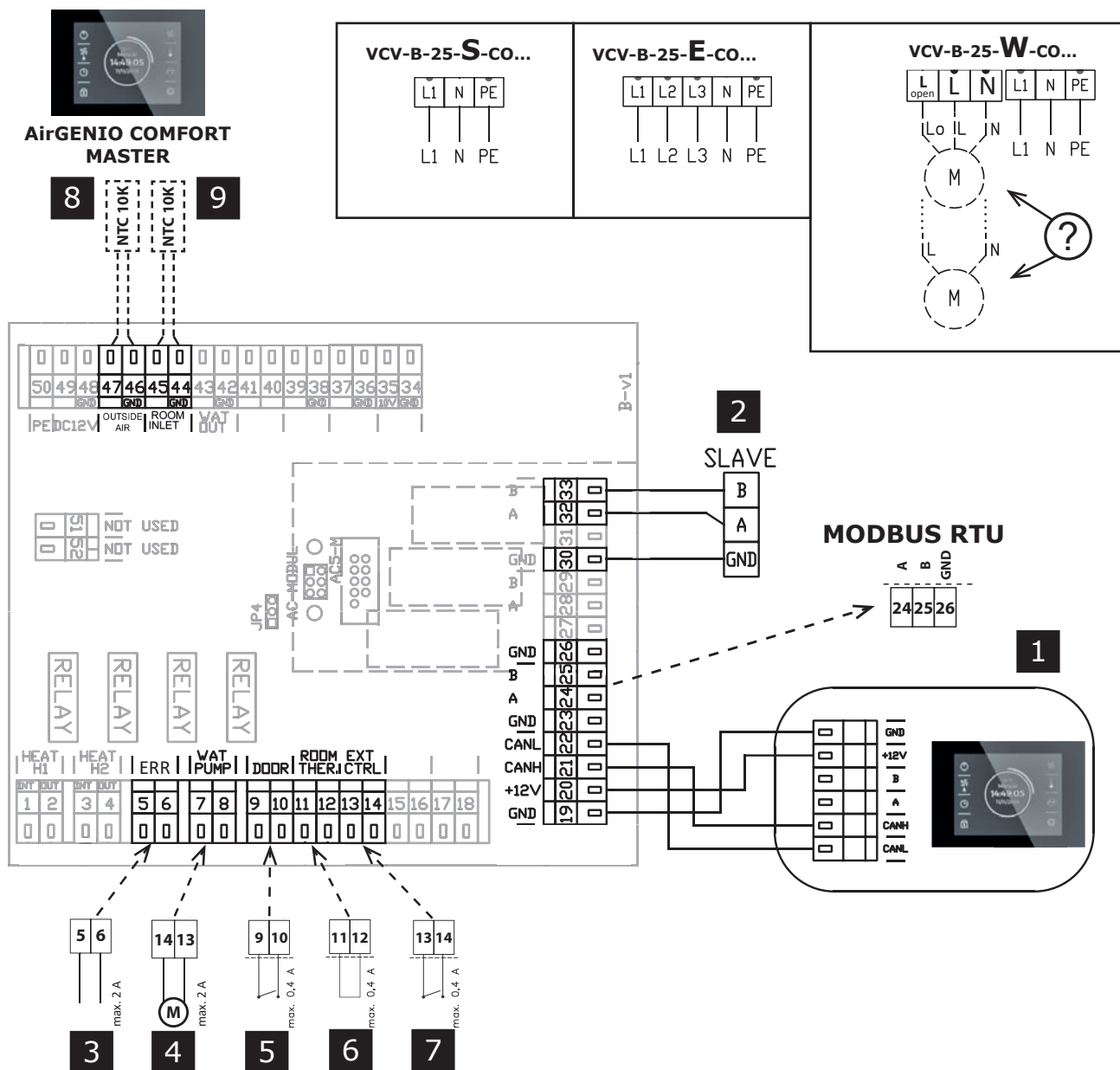
FI-VCV-2390X280X4





WIRING DIAGRAMS

All connection schematics shown in the catalogue are for information only. When assembling the product, follow only the values, instructions and schematics shown on the product itself or delivered with the product.

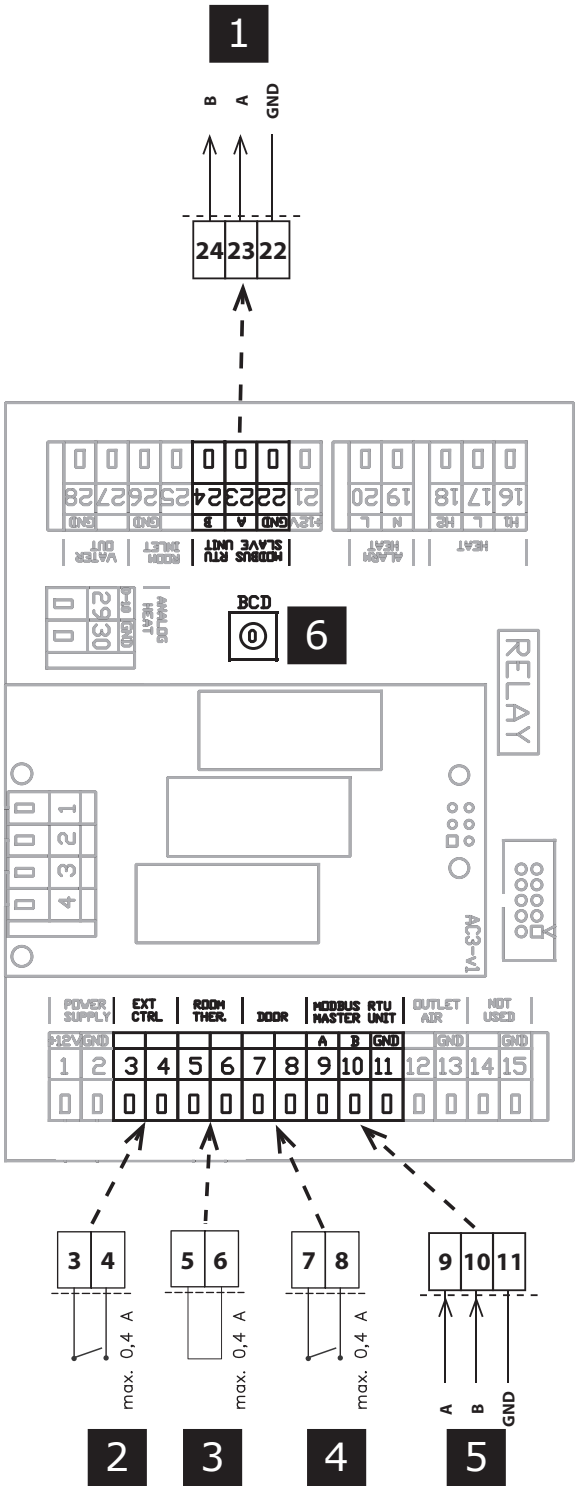
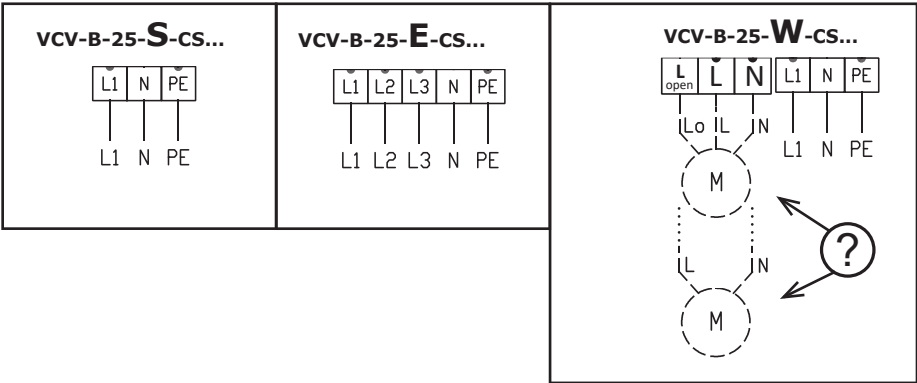


EN	
1	Control panel
2	Signal to SLAVE unit
3	ERROR contact (relay contact, NO/NC)
4	Water pump (relay contact)
5	DOOR contact (input, NO/NC)
6	Room thermosat (input, NO/NC)
7	External control (input, NO/NC)
8	Outside air temp. sensor (include delivery)
9	Room temp. sensor (include delivery)



WIRING DIAGRAMS

AirGENIO COMFORT
SLAVE



	EN
1	Signal to SLAVE unit
2	External control - ON/OFF
3	Room thermostat (input)
4	DOOR contact (input)
5	Signal from MASTER unit

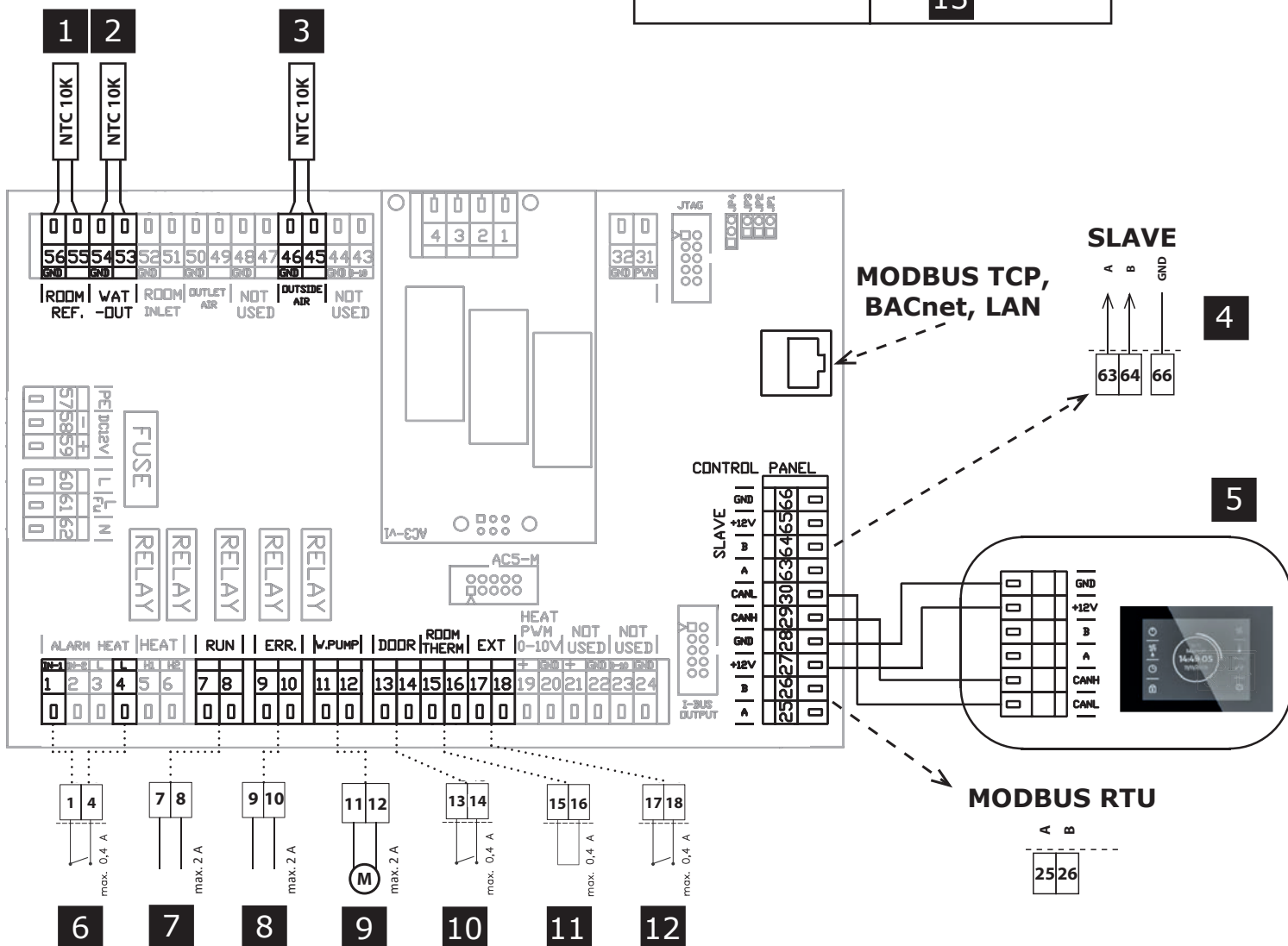
6	BCD
SLAVE	BCD
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	A



WIRING DIAGRAMS



**AirGENIO SUPERIOR
MASTER**

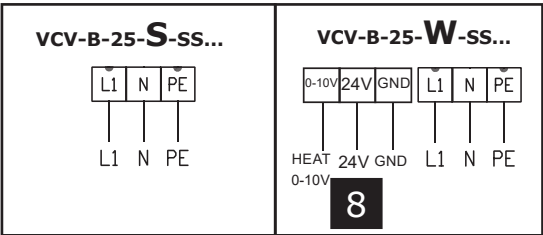
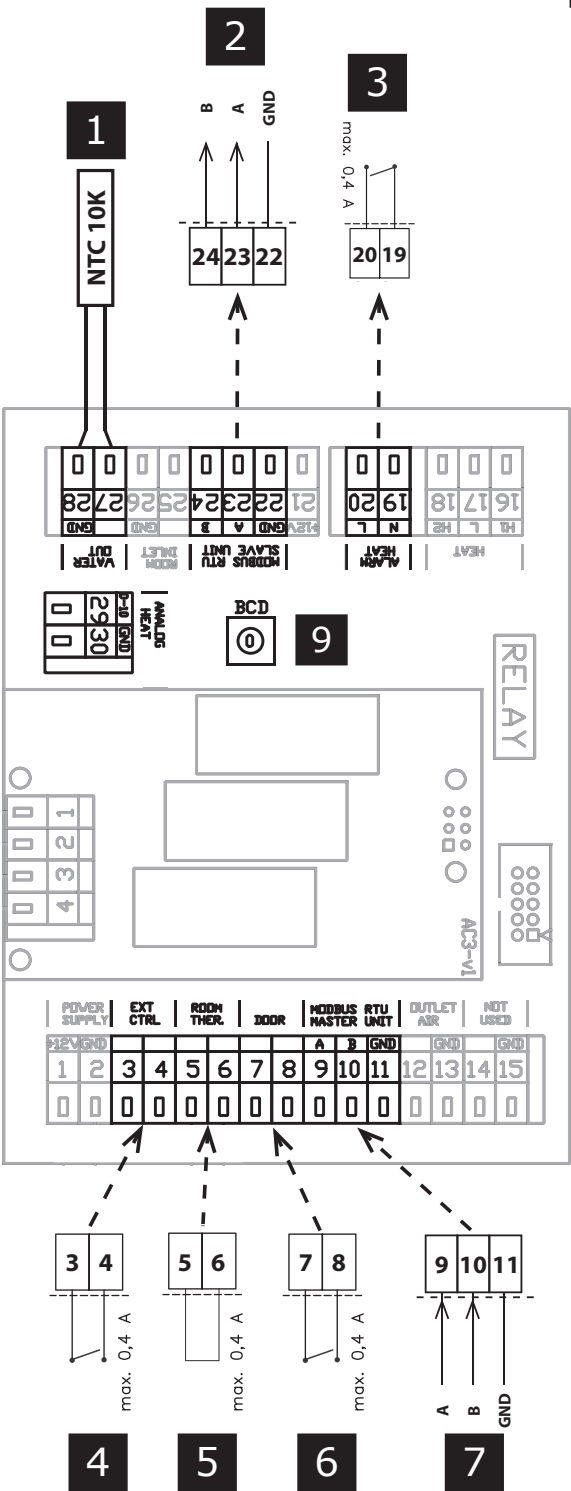


EN	
1	Room sensor (accessories)
2	LPHW out sensor (included in delivery)
3	Outside air sensor (included in delivery)
4	Signal to SLAVE unit
5	Control panel
6	Antifreeze thermostat (NC)
7	RUN contact (relay contact, NO/NC)
8	ERROR contact (relay contact, NO/NC)
9	Water pump (relay contact)
10	DOOR contact (input, NO/NC)
11	Room thermostat (input, NO/NC)
12	External control (input, NO/NC)
13	Water valve control (0-10V)



WIRING DIAGRAMS

AirGENIO SUPERIOR
SLAVE



	EN
1	LPHW out sensor (included in delivery)
2	Signal to SLAVE unit
3	Antifreeze thermostat (NC)
4	External control - ON/OFF
5	Room thermostat (input)
6	DOOR contact (input)
7	Signal from MASTER unit
8	Water valve control (0-10V)

	9
SLAVE	BCD
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	A



KEY TO CODING

VCV-B-25 E-CO-0-2

2 – 2VV version

0 – White colour RAL 9016 (standart)

9 – Other colours according to RAL

N – Stainless steel

CO – Comfort master control

CS – Comfort slave control

SU – Superior master control (available only for LPHW and ambient version)

SS – Superior slave control (available only for LPHW and ambient version)

E – Electric heater 3-phase 400V

W – LPHW coil

S – Air-only

25 – Nominal width 2500 mm

B – Output series

VCV – **VENESSE** air curtain



air-only



water heater



electric wire heater

**BASIC FEATURES**

- Lengths: **1.65**; **2.20** and **2.75** m
- **AC Version**: Air flow up to **18500 m³/h** (ISO 27 327-1)
- **Straw System exhaust** with maximized screening effect thanks to the compact and laminar airflow
- **Horizontal and vertical** installation; exhaust direction to be adjusted by air curtain holders
- Fast and easy connection of individual modules
- Maintenance-free air curtain with a long service life
- Possibility to choose from various control types
- In standard available in: **colour RAL 9016**, galvanised casing and **stainless steel C4-resistant casing**; further available in any RAL colour based upon customers

The INDESSE is a high-performance industrial air curtain for vertical and horizontal installation for use in **manufacturing halls, warehouses and other industrial buildings** with a recommended installation height / width up to **8 m**. The air curtain shall be installed indoors in a dry area with ambient temperatures ranging from (+5 °C)* up to +40 °C and relative humidity of up to 80 %. Ambient air curtains (with no LPHW or electric coil) are able to be installed indoors with an ambient temperatures ranging from -10 °C up to +40 °C but only with dry cold air. It is designed for conveying air free of rough dust, grease, chemical fumes, and other impurities. The IP rating of air curtains without a heater and with water heating is IP 44. The IP rating of the air curtain with the electric heating is IP 20. The fans comply with requirements of IP 44. **The air curtain project shall always be developed by the HVAC designer.**

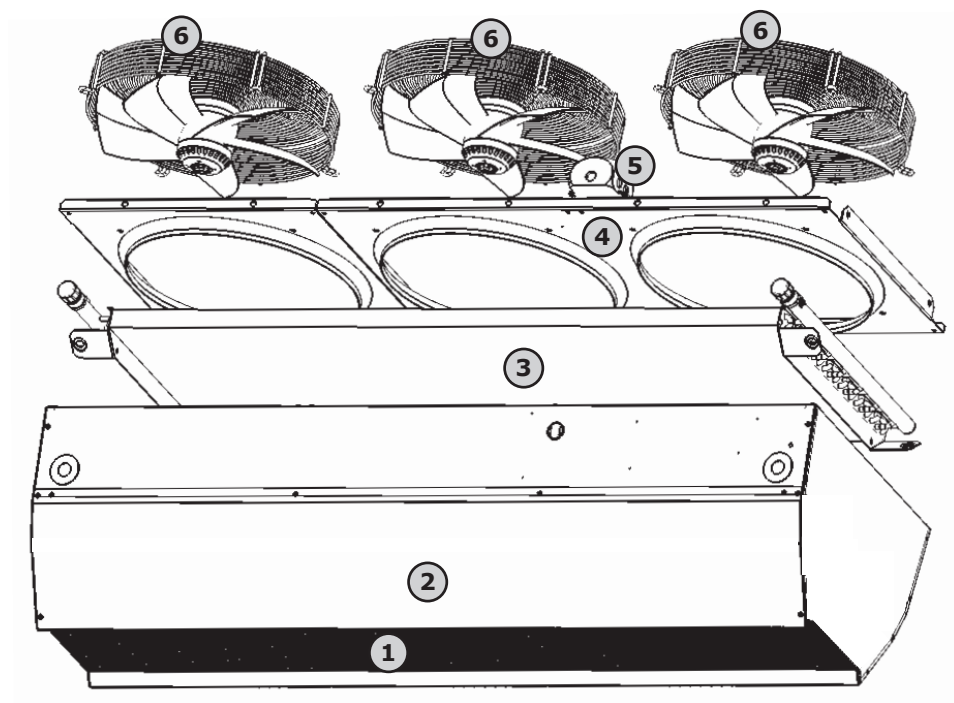


PRIMARY PARAMETERS

Air curtains with an electric heater are fitted with safety thermostats. Fan motors are equipped with thermal contacts, which can be used to turn off the air curtain in case of the overheating of the motor. Air curtains with LPHW coil are designed for maximum operating water temperature of **+110 °C** and a maximum operation pressure of 1.6 MPa. Stainless steel C4 air curtains are equipped with LPHW coils specially treated with LCE hydrophobic coating.

MAIN PARTS

- ① Exhaust (Straw system)
- ② Main body
- ③ LPHW
- ④ Back side
- ⑤ Motor connection box
- ⑥ Motor



PRIMARY PARAMETERS

Motor 50Hz

Type	Recommended installation height [m]	Air output [m³/h] *1			Acoustic pressure at 5m[dB(A)] *2			Sound power [dB(A)]*3
		Speed 3	Speed 2	Speed 1	Speed 3	Speed 2	Speed 1	
VCIN2A150-S0AC	7,5	11550	9170	5600	63	58	45	85
VCIN2A150-V2AC		10300	7900	4600	63	57	46	85
VCIN2A150-E1AC		11550	9170	5600	63	58	45	85
VCIN2A200-S0AC	8,0	15100	12600	7700	65	60	47	87
VCIN2A200-V2AC		13700	10350	6000	64	58	48	86
VCIN2A200-E1AC		15100	12600	7700	65	60	47	87
VCIN2A250-S0AC	7,5	18500	15600	9500	67	62	50	89
VCIN2A250-V2AC		17000	12900	7500	65	59	49	87
VCIN2A250-E1AC		18500	15600	9500	67	62	50	89

*1 Airflow volume according ISO27327-1

*2 Acoustic pressure values at 5 m distance for maximum speed. Directional factor: Q=2.

*3 Sound power (LWA) measurements according to ISO 27327-2.

Type	Heater power output [kW]		Total power input [kW]	Total voltage/current [V/A]	Motor voltage/current [V/A]	Frequency [Hz]	Weight [kg]
	1st level	2st level					
VCIN2A150-S0AC	-	-	0,9	230/3,9	230/3,9	50	51 / 54 ³
VCIN2A150-V2AC	75,2 ²		0,9	230/3,9	230/3,9		60 / 63 ³
VCIN2A150-E1AC	12,1*	24,3*	25,1	400/39,1	230/3,9		55
VCIN2A200-S0AC	-	-	1,2	230/5,1	230/5,1		69 / 72 ³
VCIN2A200-V2AC	101 ²		1,2	230/5,4	230/5,4		78 / 81 ³
VCIN2A200-E1AC	16,2*	32,4*	33,5	400/52,2	230/5,1		74
VCIN2A250-S0AC	-	-	1,4	230/6,5	230/6,5		83 / 86 ³
VCIN2A250-V2AC	127 ²		1,4	230/6,7	230/6,7		98 / 101 ³
VCIN2A250-E1AC	20,2*	40,5*	41,9	400/65,1	230/6,5		89

* At the maximum air flow and maximum heater power

² Intake air temperature +15°C, water temperature gradient of 90/70 °C and highest fan speed.

³ Standard / Stainless steel C4 version

Motor 60Hz

Type	Recommended installation height [m]	Air output [m³/h] ^{*1}			Acoustic pressure at 5m[dB(A)] ^{*2}			Sound power [dB(A)] ^{*3}
		Speed 3	Speed 2	Speed 1	Speed 3	Speed 2	Speed 1	
VCIN2A150-S0AC	7,5	11520	9140	5570	64	58	46	85
VCIN2A150-V2AC		10270	7870	4570	63	58	46	85
VCIN2A200-S0AC	8,0	15070	12570	7670	65	60	48	87
VCIN2A200-V2AC		13670	10320	5970	64	58	48	86
VCIN2A250-S0AC	7,5	18470	15570	9470	67	62	50	89
VCIN2A250-V2AC		16970	12870	7470	66	60	49	87

^{*1} Airflow volume according ISO27327-1

^{*2} Acoustic pressure values at 5 m distance for maximum speed. Directional factor: Q=2.

^{*3} Sound power (LWA) measurements according to ISO 27327-2.

Type	Heater power output [kW]		Total power input [kW]	Total voltage/current [V/A]	Motor voltage/current [V/A]	Frequency [Hz]	Weight [kg]
	1st level	2st level					
VCIN2A150-S0AC	-	-	0,9	230/4	230/3,9	60	51
VCIN2A150-V2AC	75,2*		0,9	230/4	230/3,9		60
VCIN2A200-S0AC	-	-	1,1	230/5,1	230/5,1		69
VCIN2A200-V2AC	101*		1,2	230/5,4	230/5,4		78
VCIN2A250-S0AC	-	-	1,4	230/6,5	230/6,5		83
VCIN2A250-V2AC	127*		1,5	230/6,7	230/6,7		98

* Intake air temperature +15°C, water temperature gradient of 90/70 °C and highest fan speed.

LPHW coil parameters for water temperature gradient of 60/40 °C

Type	Air flow [m³/h]	Heat output [kW]	Outlet temperature [°C]	Water flow [l/s]	Pressure loss [kPa]
VCIN2A150-V2AC	10300	37,6	26,1	0,45	8
VCIN2A200-V2AC	13700	50,2	26,2	0,61	7
VCIN2A250-V2AC	17000	62,7	26,2	0,76	5

* Temperature of intake air: +15 °C

LPHW coil parameters for water temperature gradient of 70/50 °C

Type	Air flow [m³/h]	Heat output [kW]	Outlet temperature [°C]	Water flow [l/s]	Pressure loss [kPa]
VCIN2A150-V2AC	10300	50,4	30,1	0,61	13
VCIN2A200-V2AC	13700	67,6	30,2	0,82	9
VCIN2A250-V2AC	17000	84,5	30,4	1,03	9

* Temperature of intake air: +15 °C

LPHW coil parameters for water temperature gradient of 80/60 °C

Type	Air flow [m³/h]	Heat output [kW]	Outlet temperature [°C]	Water flow [l/s]	Pressure loss [kPa]
VCIN2A150-V2AC	10300	62,9	34,1	0,76	18
VCIN2A200-V2AC	13700	84,6	34,3	1,03	14
VCIN2A250-V2AC	17000	106	34,5	1,29	11

* Temperature of intake air: +15 °C

LPHW coil parameters for water temperature gradient of 90/70 °C

Type	Air flow [m³/h]	Heat output [kW]	Outlet temperature [°C]	Water flow [l/s]	Pressure loss [kPa]
VCIN2A150-V2AC	10300	75,2	38,1	0,92	24
VCIN2A200-V2AC	13700	101	38,4	1,24	17
VCIN2A250-V2AC	17000	127	38,7	1,55	15

* Temperature of intake air: +15 °C

LPHW coil parameters for water temperature gradient of 110/80 °C

Type	Air flow [m³/h]	Heat output [kW]	Outlet temperature [°C]	Water flow [l/s]	Pressure loss [kPa]
VCIN2A150-V2AC	10300	91,3	43,6	0,75	16
VCIN2A200-V2AC	13700	123	43,9	1	12
VCIN2A250-V2AC	17000	154	44,3	1,26	10

* Temperature of intake air: +15 °C

Electric heater parameters

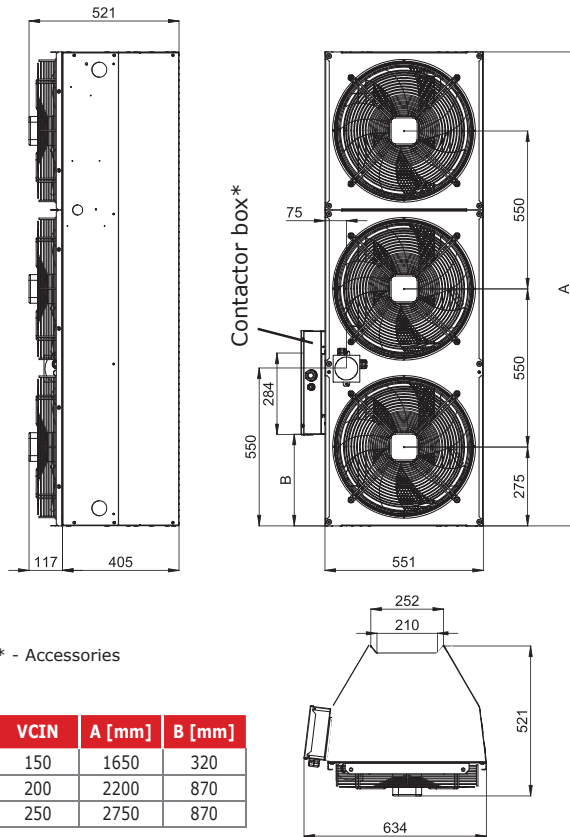
Air curtain type	Air flow volume [m³/h]	Heater power [kW]	Electric heater consumption [V/A]	Temperature increase* Δt [°C]
VCIN2A150-E1AC	11550	24,3	400 / 35,2	6,3
VCIN2A200-E1AC	15100	32,4	400 / 47,0	6,4
VCIN2A250-E1AC	18500	40,5	400 / 58,6	6,5

* At the maximum air flow and maximum heater power



DIMENSIONS

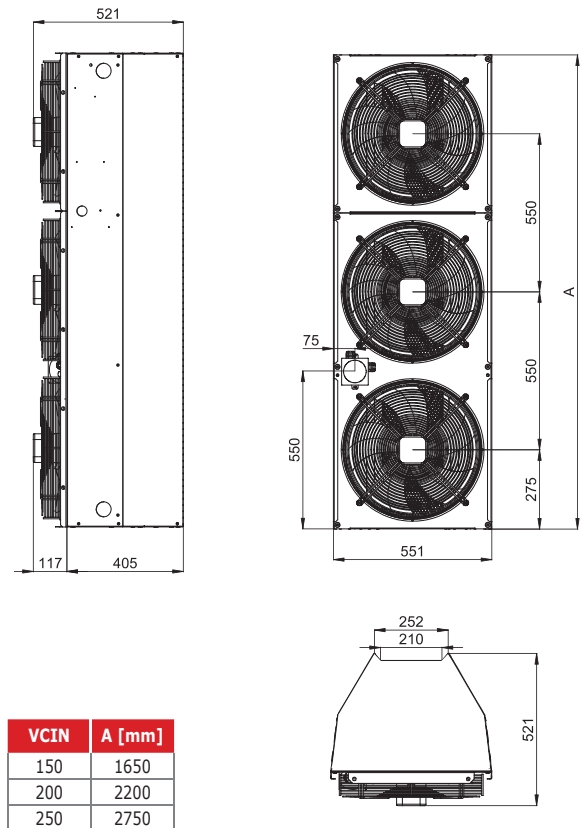
VCIN2A...-E1..



* - Accessories

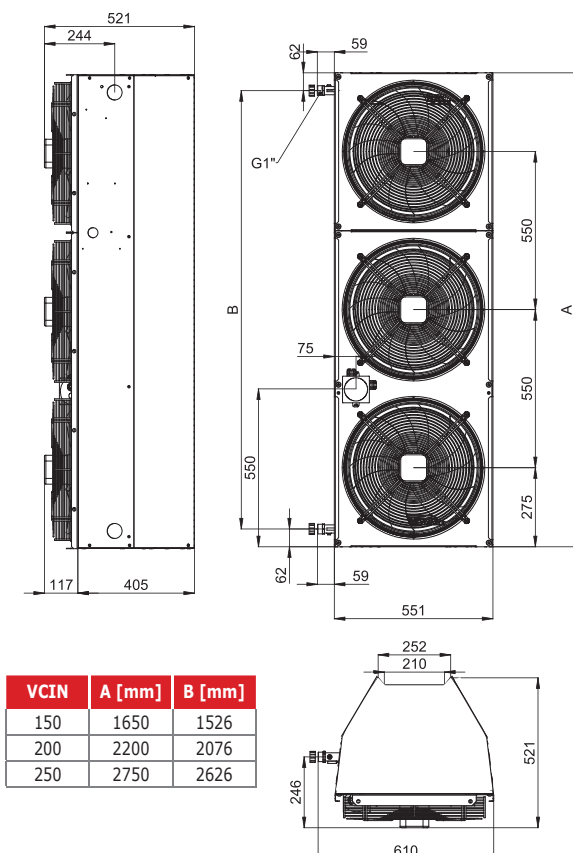
VCIN	A [mm]	B [mm]
150	1650	320
200	2200	870
250	2750	870

VCIN2A...-S0..



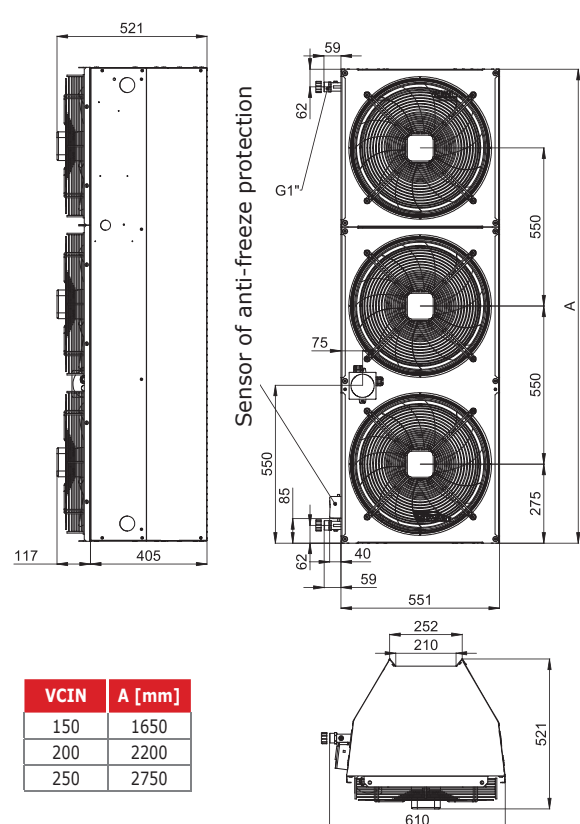
VCIN	A [mm]
150	1650
200	2200
250	2750

VCIN2A...-V2..



VCIN	A [mm]	B [mm]
150	1650	1526
200	2200	2076
250	2750	2626

VCIN2A...-P2..



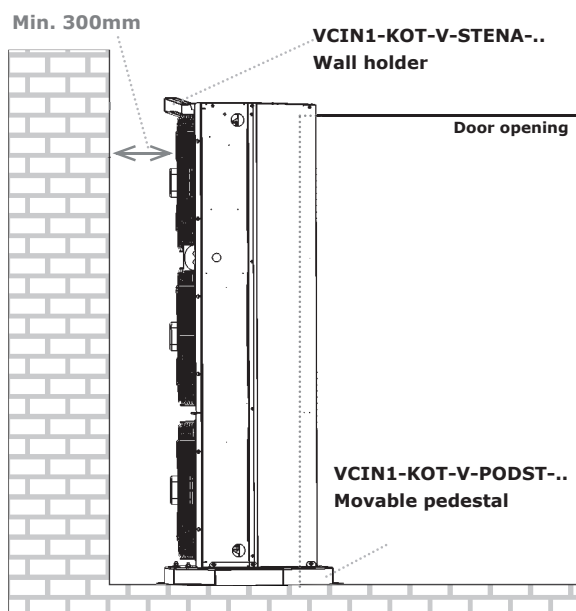
VCIN	A [mm]
150	1650
200	2200
250	2750



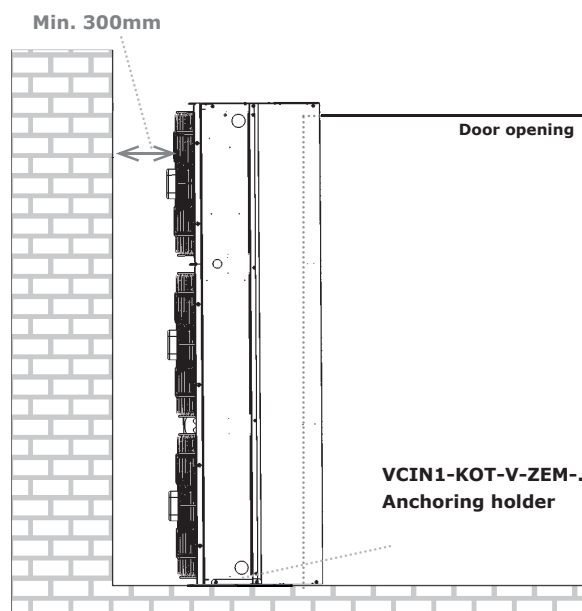
INSTALLATION AND ASSEMBLY

- The air curtain can be installed both in vertical and horizontal positions.
- The air curtain shall be located as close to the top (side) edge of the doorway as possible.
- To ensure correct function it is recommended that the air curtain is located 100 mm above the doorway or overlaps the doorway by 100 mm on both sides.
- Correct operation of the air curtain requires that specified distances from the surrounding objects are observed, see figure.
- Suspension holders are used for installing (hanging) the air curtain see ACCESSORIES.

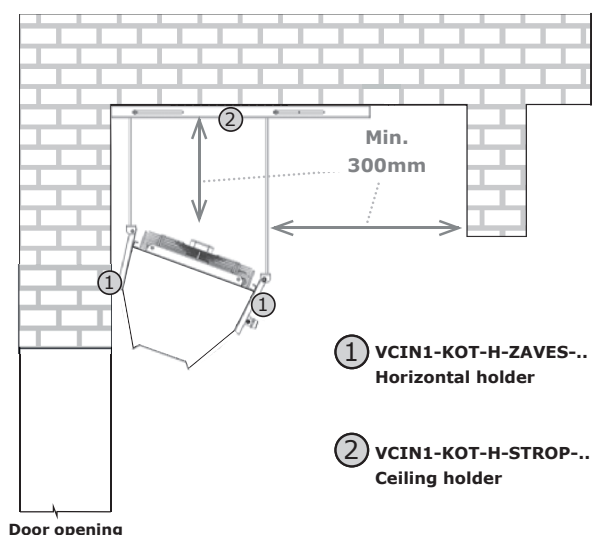
Vertical installation, side view, movable pedestal



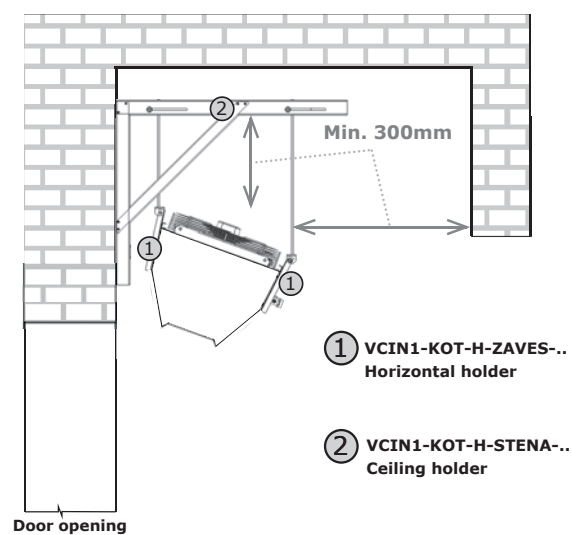
Vertical installation, side view, fixed



Horizontal installation, side view



Horizontal installation, side view



**CONTROL**

The **INDESSE** air curtains are shipped without an integrated control system. The following accessories are recommended to allow their control.

Possibilities of individual control types:

		STRA1	IC3-C
	Type of controller	Manual	Manual / Auto control
	Control of air output	5 speeds	5 speeds
	Control of electric heater	NO	YES
	Control of water heater	NO	Open / Closed / 0-10V
	Possibility of connecting a door contact	YES	YES
	Temperature measurement	NO	YES
	External control	YES	YES
	Integrated Timer	NO	YES
	Open door indication	NO	YES
	Electric heater aftercooling	NO	YES
	Antifreeze protection	NO	YES
	Chaining of controllers	NO	YES
	Run indication	YES	YES
	Control panel lock	NO	YES
	BMS capability	NO	YES ModBUS RTU, TCP, BACnet

The following table states the number of fans in the individual modules of the **INDESSE** air curtain.

Module type Modultyp	VCIN2A150	VCIN2A200	VCIN2A250
Number of fans in module	3	4	5

The following table indicates the maximum number of fans for the **INDESSE** air curtains that can be connected to the individual types of the **STRA1** controllers.

Controller type Regulatorotyp	STRA1-050L22	STRA1-075L22	STRA1-160L20
Maximum number of fans connected	3	5	12

The following table indicates the maximum number of fans for the **INDESSE** air curtains that can be connected to the individual types of the **AirGENIO IC-C** controllers.

Controller type Regulatorotyp	IC3-C AC5-4	IC3-C AC5-7	IC3-C AC5-16
Maximum number of fans connected	3	5	12

Water heater output control

Precise by mixing

The following table indicates the number of modules of the **INDESSE** air curtains that should be connected to the individual types of the mixing point.

Type	Number of modules of VCIN / Anzahl der Module von VCIN					
	1			2		
	K _{vs}	Water flow (m³/h)	Min. pump pressure (kPa)	K _{vs}	Water flow (m³/h)	Min. pump pressure (kPa)
VCIN2A150	11	2,8	28,5	22	5,5	28,5
VCIN2A200	11	3,7	29,0	22	7,4	29,0
VCIN2A250	11	4,7	34,7	22	9,3	34,7

Suitable combinations of the **INDESSE** modules and the mixing nodes apply at a water temperature gradient of 80/60, and an inlet air temperature of 15 °C and pressure difference at connection point 5 kPa.

Recommended mixing points for LPHW coil 2-way valve



Type	Control module	90/70 °C	80/60 °C	70/50 °C	60/40 °C
VCIN2A150-V2	STRA1	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	IC3-C (ON-OFF)	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20	ZV2-230-08,0-20
	IC3-C (0-10V)	ZV2-024-10,0-25	ZV2-024-10,0-25	ZV2-024-10,0-25	ZV2-024-10,0-25
VCIN2A200-V2	STRA1	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20
	IC3-C (ON-OFF)	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20
	IC3-C (0-10V)	ZV2-024-16,0-25	ZV2-024-16,0-25	ZV2-024-16,0-25	ZV2-024-16,0-25
VCIN2A250-V2	STRA1	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20
	IC3-C (ON-OFF)	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20	ZV2-230-21,0-20
	IC3-C (0-10V)	ZV2-024-16,0-25	ZV2-024-16,0-25	ZV2-024-16,0-25	ZV2-024-16,0-25

Recommended mixing points for LPHW coil 3-way valve



Type	Control module	90/70 °C	80/60 °C	70/50 °C	60/40 °C
VCIN2A150-V2	STRA1	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	IC3-C (ON-OFF)	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	IC3-C (0-10V)	ZV3-024-10,0-25	ZV3-024-10,0-25	ZV3-024-10,0-25	ZV3-024-10,0-25
VCIN2A200-V2	STRA1	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	IC3-C (ON-OFF)	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	IC3-C (0-10V)	ZV3-024-16,0-32	ZV3-024-16,0-32	ZV3-024-16,0-32	ZV3-024-16,0-32
VCIN2A250-V2	STRA1	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	IC3-C (ON-OFF)	RT-3-11	RT-3-11	RT-3-11	RT-3-11
	IC3-C (0-10V)	ZV3-024-16,0-32	ZV3-024-16,0-32	ZV3-024-16,0-32	ZV3-024-16,0-32



ACCESSORIES

REQUIRED ACCESSORIES

No special accessories are needed to ensure a proper function of the stand-alone air curtain. If the air curtain is fitted with the control system, the control system is connected using common wiring cables, see the "Wiring diagrams" chapter. A suitable cross-section of the cables, protection of the unit, and utilization of other wiring materials shall be determined based on the particular installation conditions.

These components shall be delivered by a company performing the air curtain electrical wiring.



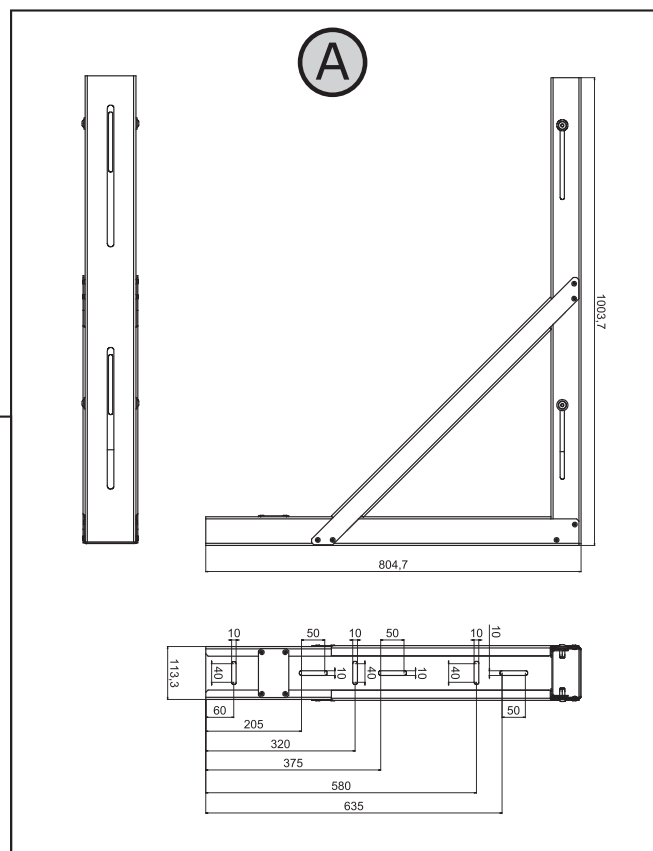
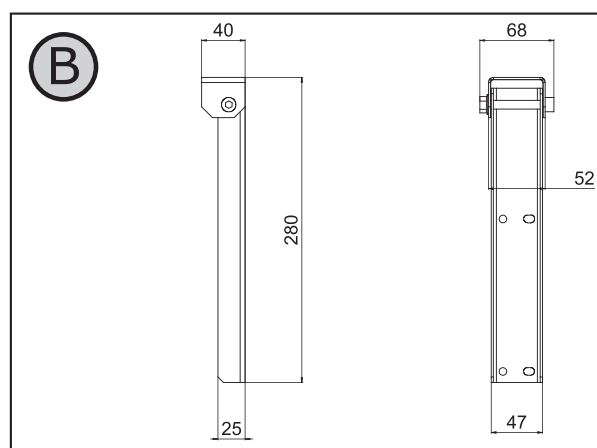
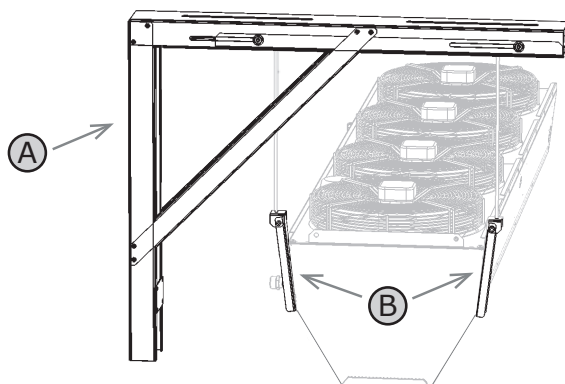
OPTIONAL ACCESSORIES

WALL holder set - HORIZONTAL

This set includes:

A part - Wall holder (1 pcs)

B part - Air curtain holder (2 pcs)



VCIN1-KOT-H-STENA-0

Color

- 0** Standard (RAL9016)
- 1** Galvanized steel
- 9** Atyp RAL
- N** Stainless steel version (C4)

Wall holder set (1 set)

	Number of INDESSE air curtain modules connected								
	1	2	3	4	5	6	7	...	n
No. of holders	2	3	4	5	6	7	8	...	n + 1

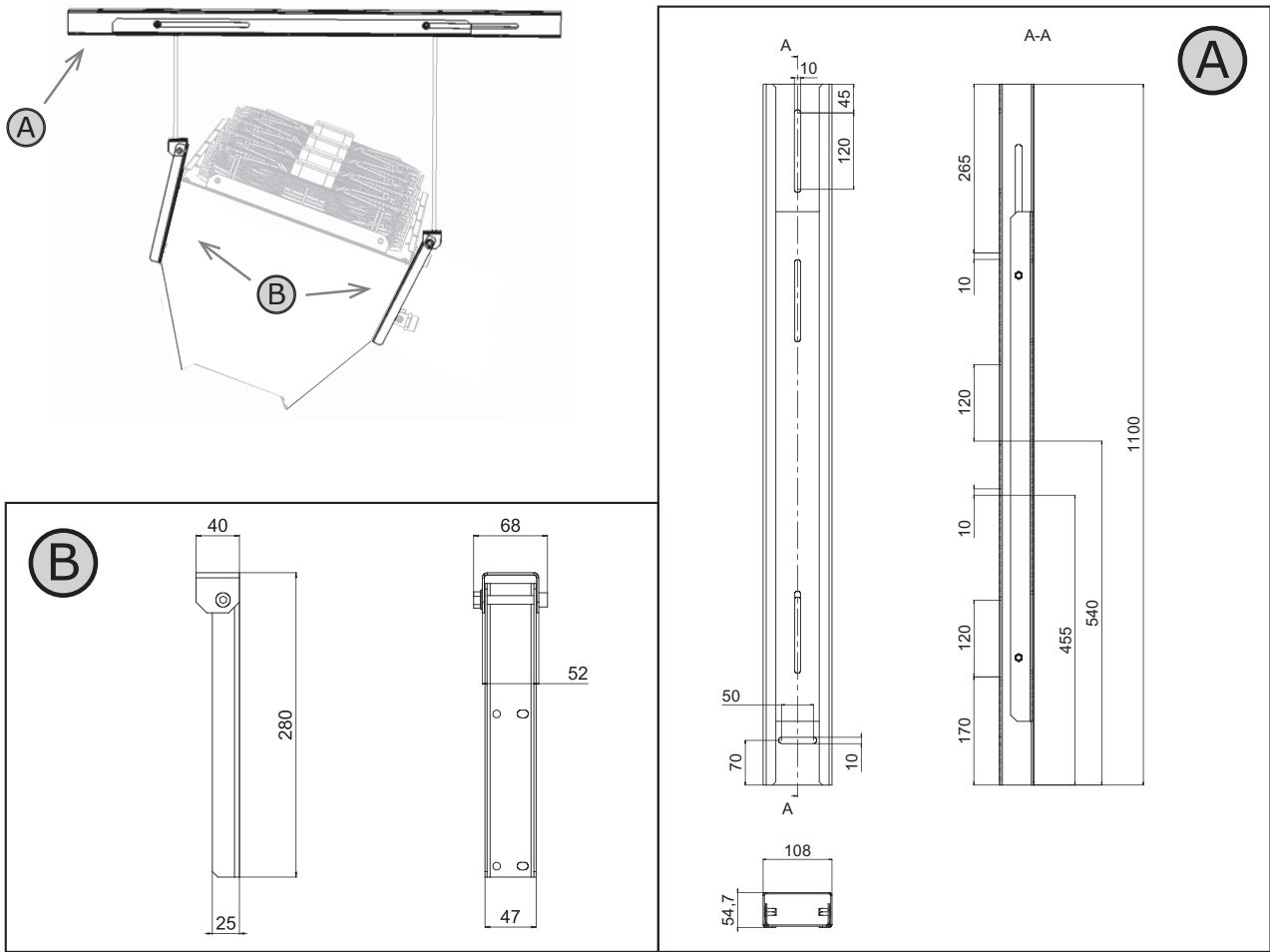


OPTIONAL ACCESSORIES

CEILING holder set - HORIZONTAL

This set includes:

- A part - Ceiling holder (1 pcs)
- B part - Air curtain holder (2 pcs)



VCIN1-KOT-H-STROP-0

- Color
- 0 Standard (RAL9016)
 - 1 Galvanized steel
 - 9 Atyp RAL
 - N Stainless steel version (C4)

Ceiling holder set (1 set (A+2xB))

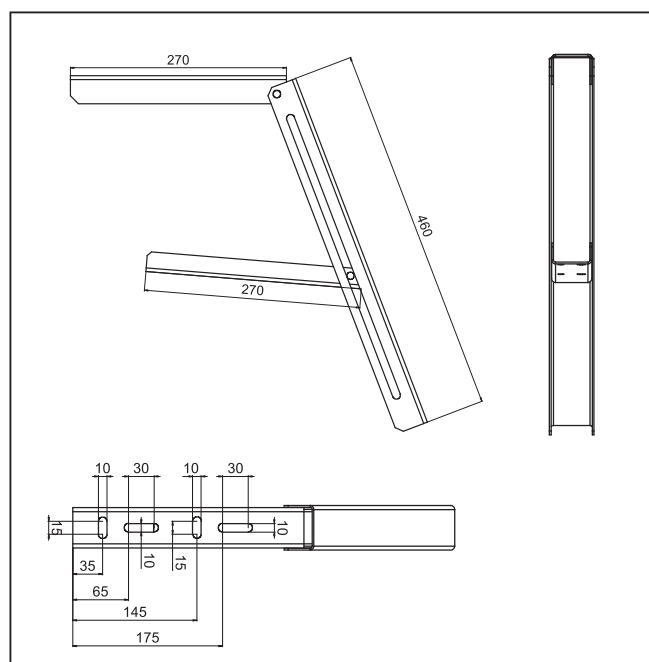
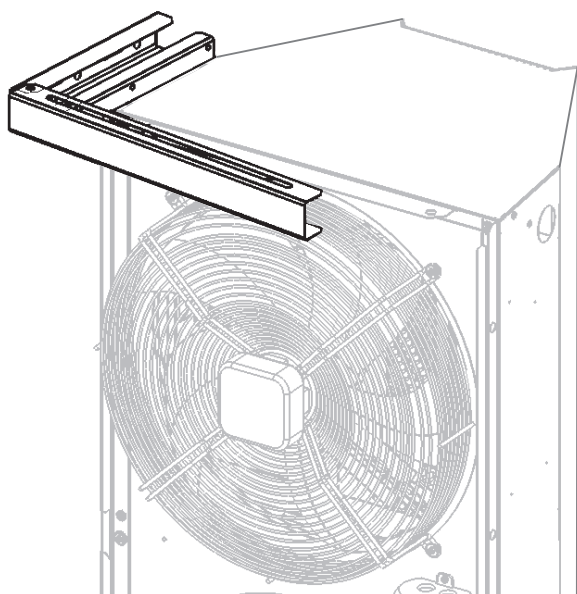
	Number of INDESSE air curtain modules connected								
	1	2	3	4	5	6	7	...	n
No. of holders	2	3	4	5	6	7	8	...	n + 1



OPTIONAL ACCESSORIES

Wall holder - VERTICAL

For anchoring the air curtain to the wall



VCIN1-KOT-V-STENA-0

Color

- 0** Standard (RAL9016)
- 1** Galvanized steel
- 9** Atyp RAL
- N** Stainless steel version (C4)

Wall holder (1 pcs)

	Number of INDESSE air curtain modules connected			
	1	2	3**	4**
No. of holders	1*	1*	2	3

* - This holder is not needed up to a height of 4 m, but we recommend to using it.

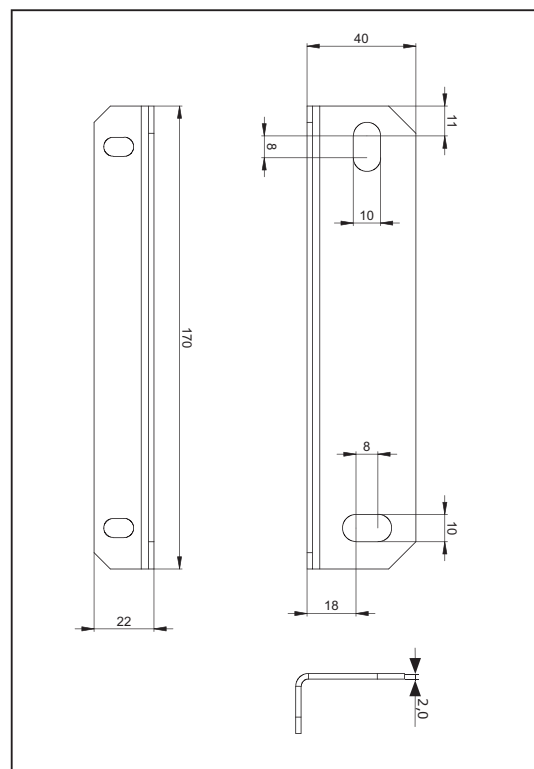
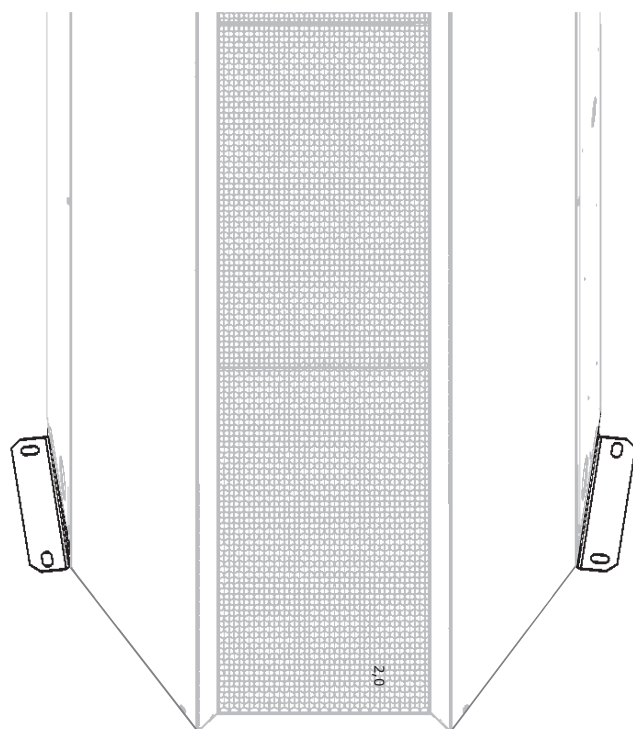
** - The maximum height of air curtains, which can be installed in the vertical position (air curtain on air curtain) is 6,6 m.
If you need a higher distance, then an additional supporting system must be made (not supplied by 2VV).



OPTIONAL ACCESSORIES

Anchoring holder - VERTICAL

For anchoring the air curtain to the floor

**VCIN1-KOT-V-ZEM-0****Color**

- 0** Standard (RAL9016)
- 1** Galvanized only
- 9** Atyp RAL
- N** Stainless steel version (C4)

Floor holder set (2 pcs)

	Number of INDESSE air curtain modules connected			
	1	2	3*	4*
No. of sets of holders	1	1	1	1

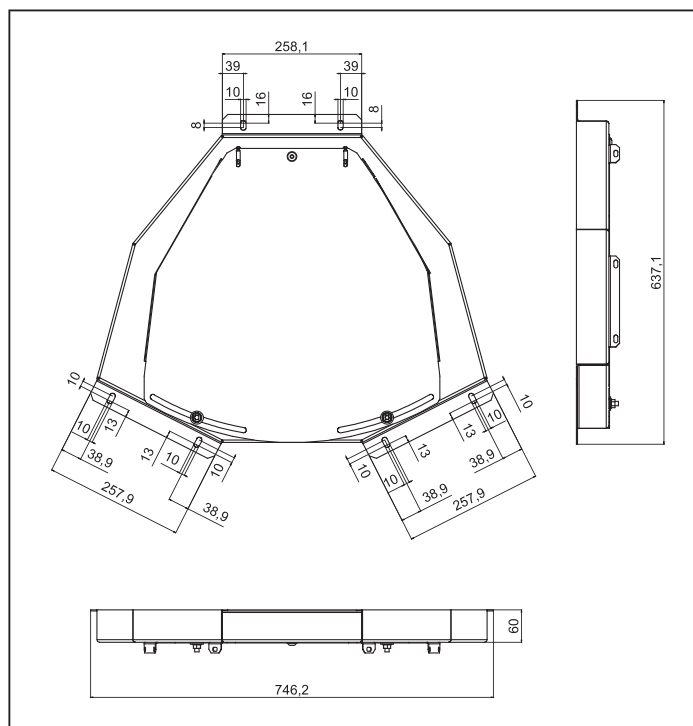
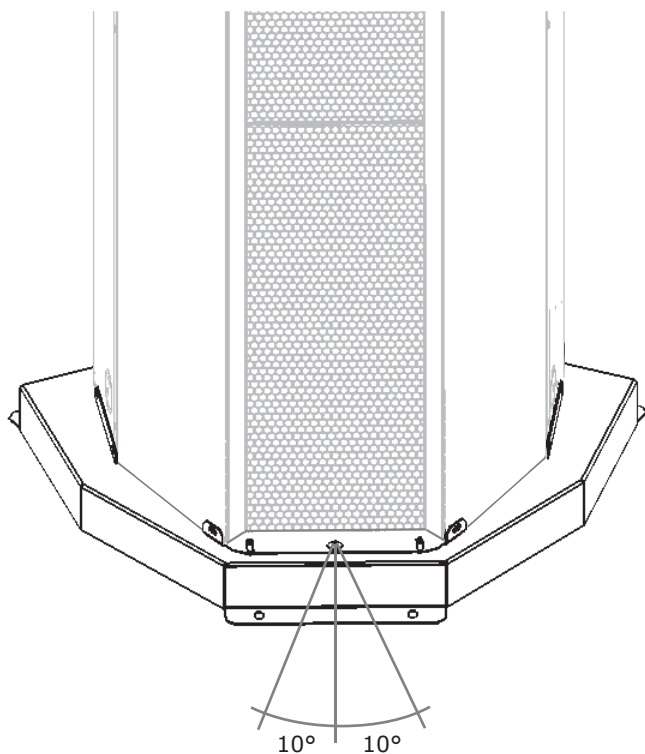
* - The maximum height of air curtains, which can be installed in the vertical position (air curtain on air curtain) is 6,6 m. If you need a higher distance, then an additional supporting system must be made (not supplied by 2VV).



OPTIONAL ACCESSORIES

Adjustable anchoring holder - VERTICAL

For anchoring the air curtain to the floor with the possibility of moving (20° max)

**VCIN1-KOT-V-PODST-0**

Color

- 0** Standard (RAL9016)
- 1** Grey colour (RAL9006) (optimal for Galvanized air curtain)
- 9** Atyp RAL
- N** Stainless steel version (C4)

Movable pedestal (1 pc)

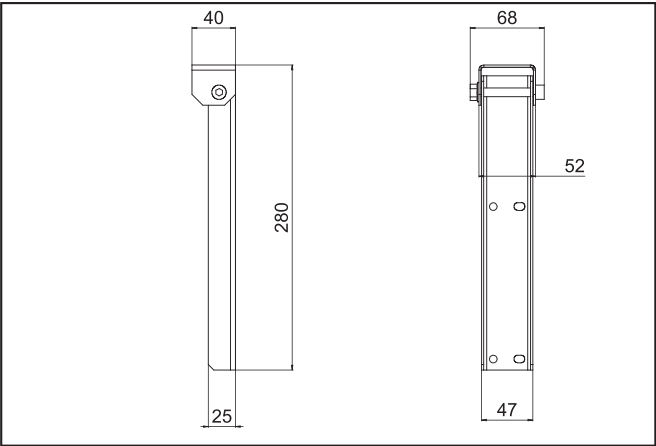
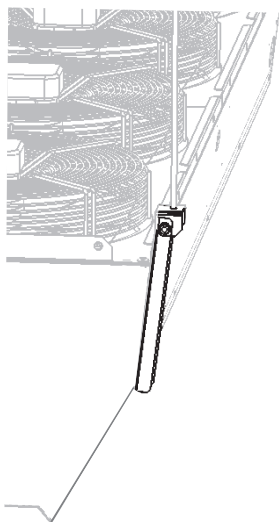
	Number of INDESSE air curtain modules connected			
	1	2	3*	4*
No. of holders	1	1	1	1

* - The maximum height of air curtains, which can be installed in the vertical position (air curtain on air curtain) is 6,6 m.
If you need a higher distance, then an additional supporting system must be made (not supplied by 2VV).



OPTIONAL ACCESSORIES

Threaded bar holder - HORIZONTAL



VCIN1-KOT-H-ZAVES-0

- Color**
- 0** Standard (RAL9016)
 - 1** Galvanized steel
 - 9** Atyp RAL
 - N** Stainless steel version (C4)

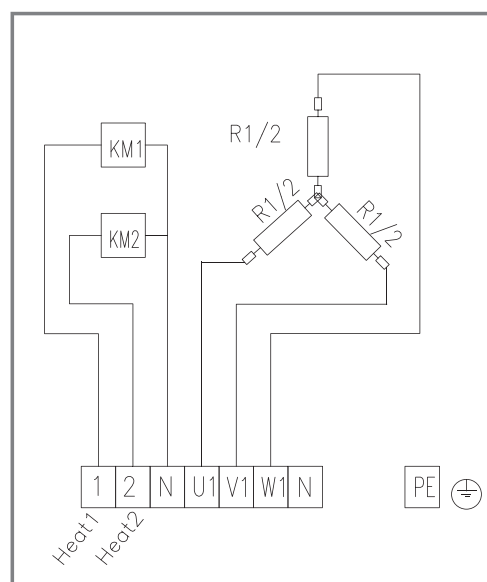
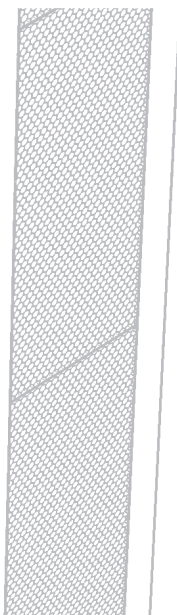
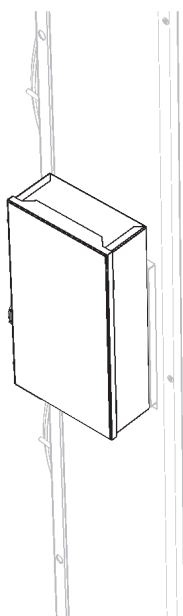
Air curtain holder (1 pc only)

	Number of INDESSE air curtain modules connected				
	1	2	3	...	n
No. of sets of holders	4	6	8	...	$n \cdot 2 + 2$



Optional accessories

Contactors box



VCIN1-KRAB-EL-STYKAC-25-0

Color

- 0** Standard (RAL9016)
- 1** Galvanized steel
- 9** Atyp RAL

Max current load

- 25** 25A - suitable for: VCIN1A150 or VCIN1A200
- 40** 40A- suitable for: VCIN1A250

Contactors box (IP20)

Motor filter (1 pcs) - class Coarse 40% (G2)

FI-PYTEL-KRUH-G2-SAV-4



Flexible connection hoses

OH-01-1/1-300

OH-01-1/1-500





Speed controller
STRA1



AirGENIO control unit
IC3-C



Door switch – industrial
DS



2-way or 3-way valve with servo drive
ZV2-230-xx,x-xx (230V, ON/OFF)
ZV3-230-xx,x-xx (230V, ON/OFF)

ZV2-24V-xx,x-xx (24V, 0-10V)
ZV3-24V-xx,x-xx (24V, 0-10V)



3-way valve with servo drive RT
RT-3-xx



Mixing node
SMU2-xx-xx



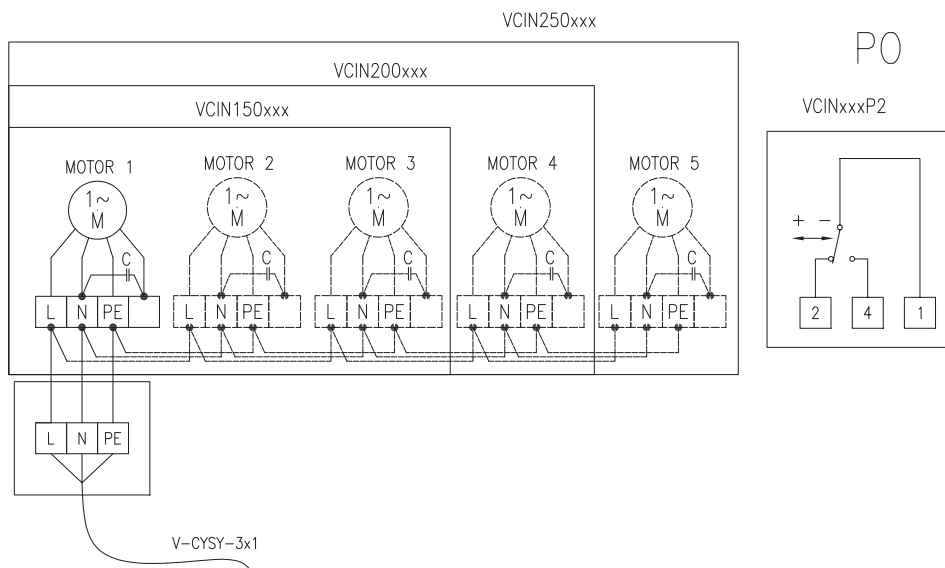


WIRING DIAGRAMS

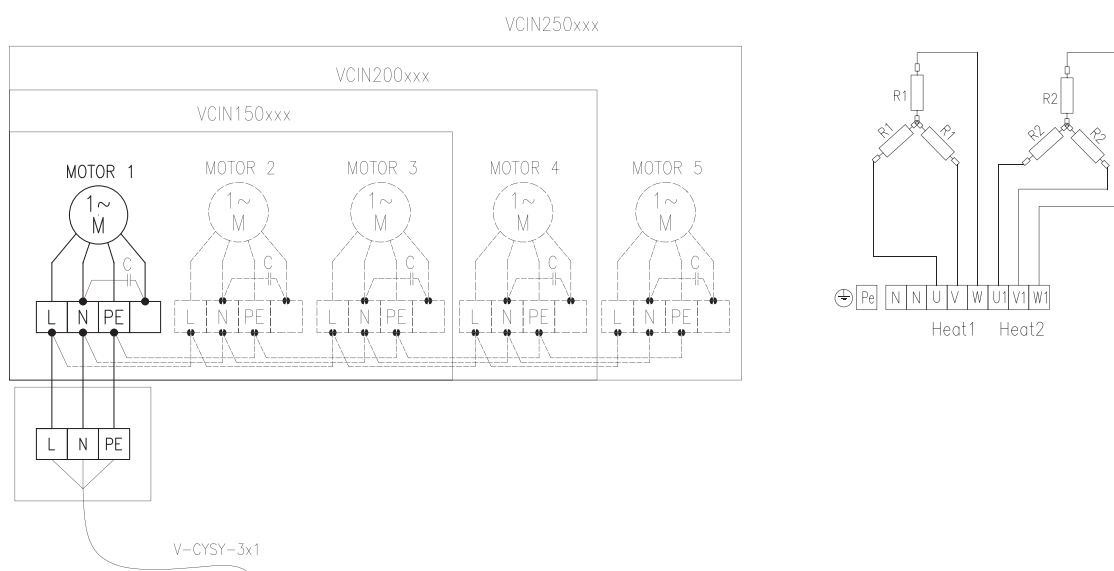
The recommended cross-section of the main power supply cables is stated in the Instruction Manual.

All wiring diagrams provided in the technical catalog are indicative only. When assembling the product, strictly observe the nameplate ratings as well as the directions and diagrams affixed directly to the product or enclosed with the product.

VCIN2Axxx-S0AC / VCIN2Axxx-V2AC



VCIN2Axxx-E1AC





KEY TO CODING

VCIN2A 150-E1 AC-XX-0 B 0

0 – Reserve

A – Packed horizontally (standard for VCIN2A250)
(non standard for VCIN2A150,200)

B – Packed vertically (standard for VCIN2A150,200)

0 – Standard (RAL9016)

1 – Galvanized steel

9 – Atyp RAL

N – Stainless steel version C4 with hydrophobic coating on water coil (available for S0, V2, P2)

XX – No control

AC – AC motors

A6 – 60Hz motors (available only for S0, V2, P2, not available for stainless steel C4 version)

S0 – Air-only (ambient)

E1 – Electric heater

V2 – 2-row LPHW (2row; 110°C)

P2 – 2-row LPHW with antifreeze protection

150 – length 1650mm

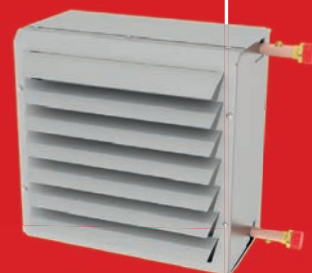
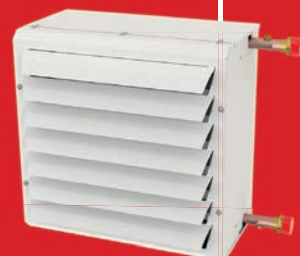
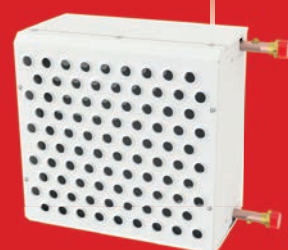
200 – length 2200mm

250 – length 2750mm

VCIN2A – Industrial air curtain **INDESSE**



HEATING UNITS





water heater



BASIC FEATURES

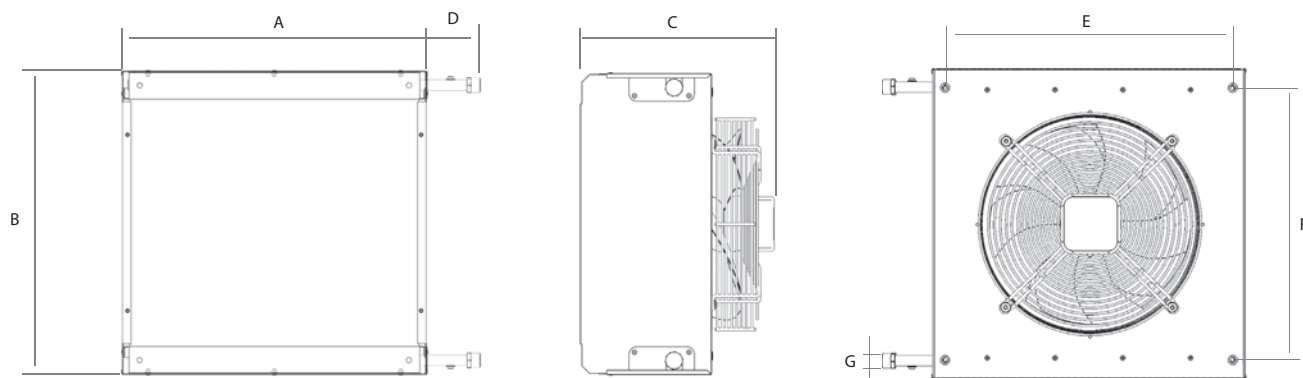
Wide and variable range of highly efficient heating units designed for both wall and ceiling installation. They are suitable for use in the industrial premises, manufacturing hall, warehouses, sport facilities and other such buildings.

- 3 sizes with airflows of **1500 – 4650 m³/h**
- **7 different front covers** offering the choice of the best-suited one for a particular installation (Cut-out lamellas, Exhaust jets, Diffusor, Aluminium lamellas, Extension lamellas, Vertical cut-out lamellas, Straw-System)
- Powerful heating performance ensured by **2row** or **3row** LPHW coils
- **EC** fans with IP44
- Compact metal sheet casing treated with a white powder coating **RAL9016**
- Easy installation and maintenance
- Air filter with a simple access (optional accessory)

The heating unit shall be installed indoor in a dry area with ambient temperatures ranging from +5 °C up to +35 °C and relative humidity of up to 80%. It is designed for blowing air free of rough dust, grease, chemical fumes, and other impurities. The IP rating of the electric system of the complete heating unit is IP 44. The heating unit is produced in standard colour RAL 9016.

**PRIMARY PARAMETERS**

The LPHW coil are designed for the maximum operating water temperature of +110 °C and maximum operating pressure of 1.6 MPa.

Dimensions of the SAVANA unit

Type	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G(″)	Pressure
SAV-1-2R-EC	455	455	325	100	408	383	3/4	PN16
SAV-2-2R-EC	555	555	335	100	508	483	3/4	PN16
SAV-4-2R-EC	755	755	340	100	708	683	3/4	PN16

Type	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G(″)	Pressure
SAV-1-3R-EC	455	455	325	100	408	383	1	PN16
SAV-2-3R-EC	555	555	335	100	508	483	1	PN16
SAV-4-3R-EC	755	755	340	100	708	683	1	PN16

Primary parameters

Type	Air flow [m ³ /h]	Air reach* [m]	Voltage [V/Hz]	Current [A]	Power consumption [W]	Noise** [dB(A)]	Weight*** [kg]
SAV-1-2R-EC	1600	12	230/50-60	0,82	101	50,2	16
SAV-2-2R-EC	2550	12		1,43	183	52,9	22
SAV-4-2R-EC	4650	13		1,52	343	58,2	34
SAV-1-3R-EC	1500	10	230/50-60	0,82	101	50,4	18
SAV-2-3R-EC	2400	10		1,43	183	52,4	24
SAV-4-3R-EC	4450	12		1,52	343	57,9	36

* The airflow reach is equal to the distance where the air speed is 0,5m/s

** Sound pressure measured 5m from the heating unit outlet (Q=2)

*** Weight without cover and without water in LPHW coil.

Characteristics for different voltage of EC fans

Type	Control voltage	Airflow		Voltage	Current	Power consumption	R.P.M.
		[%]	[m³/h]				
SAV-1-2R-EC	4 V	32	524	230V	0,10 A	8 W	606
	5 V	45	748		0,19 A	18 W	893
	6 V	62	1018		0,31 A	34 W	1161
	7 V	78	1285		0,47 A	55 W	1394
	8 V	90	1488		0,65 A	79 W	1577
	9 V	100	1600		0,82 A	103 W	1723
	10 V	100	1600		0,82 A	103 W	1729

Type	Control voltage	Airflow		Voltage	Current	Power consumption	R.P.M.
		[%]	[m³/h]				
SAV-2-2R-EC	3 V	22	570	230V	0,08 A	5 W	444
	4 V	41	1066		0,17 A	17 W	747
	5 V	61	1563		0,38 A	44 W	1022
	6 V	75	1936		0,62 A	75 W	1251
	7 V	86	2215		0,90 A	112 W	1413
	8 V	95	2439		1,20 A	150 W	1570
	9 V	99	2557		1,43 A	183 W	1671
	10 V	100	2570		1,43 A	183 W	1673

Type	Control voltage	Airflow		Voltage	Current	Power consumption	R.P.M.
		[%]	[m³/h]				
SAV-4-2R-EC	3 V	33	1536	230V	0,13 A	20 W	477
	4 V	42	1938		0,18 A	35 W	591
	5 V	52	2418		0,28 A	57 W	731
	6 V	65	3052		0,52 A	113 W	984
	7 V	82	3823		0,87 A	194 W	1093
	8 V	99	4635		1,50 A	342 W	1312
	9 V	99	4635		1,50 A	340 W	1314
	10 V	100	4650		1,52 A	343 W	1315

Basic technical parameters of LPHW coils

2-row LPHW coil

Air flow [m³/h]		SAV-1-2R-EC 1600				SAV-2-2R-EC 2550				SAV-4-2R-EC 4650			
Water exchanger temperature gradient [°C]	Inlet air temperature [°C]	Heating output [kW]	Output air temp. [°C]	Water flow rate [m³/h]	Water pressure loss [kPa]	Heating output [kW]	Output air temp. [°C]	Water flow rate [m³/h]	Water pressure loss [kPa]	Heating output [kW]	Output air temp. [°C]	Water flow rate [m³/h]	Water pressure loss [kPa]
90/70	0	21,8	40,8	0,96	20	34,2	40,0	1,51	14	66,2	42,5	2,92	41
	10	19,0	45,4	0,84	16	29,6	44,7	1,30	11	57,6	47,0	2,54	32
	15	17,5	47,7	0,77	14	27,3	47,0	1,20	9	53,3	49,2	2,35	27
80/60	0	18,8	35,1	0,93	16	29,4	34,4	1,29	11	57,2	36,8	2,51	32
	10	16,0	39,8	0,70	12	24,8	39,0	1,09	8	48,6	41,2	2,14	23
	15	14,5	42,1	0,64	10	22,5	41,1	0,99	7	44,3	43,4	1,94	20
70/50	0	15,8	29,5	0,69	12	24,5	28,7	1,07	8	48,2	31,0	2,11	23
	10	12,9	34,1	0,57	8	20,0	33,4	0,87	5	39,6	35,4	1,73	16
	15	11,5	36,4	0,50	7	17,7	35,7	0,77	4	35,3	37,6	1,54	13
60/40	0	12,8	23,8	0,56	8	19,6	23,0	0,86	5	39,1	25,1	1,71	16
	10	9,9	28,4	0,43	5	15,1	27,6	0,66	3	30,5	29,6	1,33	10
	15	8,4	30,7	0,37	4	12,8	30,0	0,56	2	26,1	31,8	1,14	8
45/35	0	10,6	19,7	0,92	21	16,4	19,2	1,43	14	32,2	20,7	2,80	41
	10	7,7	24,4	0,67	12	11,9	23,9	1,03	8	23,6	25,1	2,05	23
	15	6,3	26,7	0,55	8	9,6	26,3	0,84	5	19,3	27,4	1,68	16

3-row LPHW coil

Air flow [m³/h]		SAV-1-3R-EC 1500				SAV-2-3R-EC 2400				SAV-4-3R-EC 4450			
Water exchanger temperature gradient [°C]	Inlet air temperature [°C]	Heating output [kW]	Output air temp. [°C]	Water flow rate [m³/h]	Water pressure loss [kPa]	Heating output [kW]	Output air temp. [°C]	Water flow rate [m³/h]	Water pressure loss [kPa]	Heating output [kW]	Output air temp. [°C]	Water flow rate [m³/h]	Water pressure loss [kPa]
90/70	0	27,7	55,2	1,22	41	43,8	54,4	1,93	23	82,9	55,6	3,65	21
	10	24,2	58,2	1,07	32	38,1	57,4	1,68	18	72,3	58,5	3,19	16
	15	22,4	59,6	0,99	28	35,3	59,0	1,56	16	66,9	59,9	2,95	14
80/60	0	24,1	47,9	1,06	32	37,9	47,2	1,66	18	71,9	48,2	3,16	16
	10	20,6	50,9	0,90	24	32,3	50,2	1,42	14	61,2	51,1	2,69	12
	15	18,8	52,4	0,82	21	29,5	51,7	1,30	12	55,9	52,5	2,45	10
70/50	0	20,4	40,7	0,89	25	32,0	39,9	1,40	14	60,8	40,8	2,66	12
	10	16,9	43,6	0,74	18	26,4	42,9	1,16	10	50,1	43,6	2,19	9
	15	15,1	45,1	0,66	14	23,6	44,3	1,03	8	44,8	45,0	1,96	7
60/40	0	16,7	33,3	0,73	18	26,1	32,5	1,14	10	49,6	33,3	2,16	9
	10	13,2	36,2	0,57	12	20,5	35,5	0,89	6	38,8	36,1	1,69	5
	15	11,4	37,6	0,50	9	17,6	36,9	0,77	5	33,5	37,7	1,46	4
45/35	0	13,6	27,0	1,18	43	21,3	26,5	1,85	24	40,4	27,1	3,51	21
	10	10,0	30,0	0,87	25	15,7	29,5	1,36	14	29,8	30,0	2,59	12
	15	8,3	31,5	0,72	18	12,9	31,0	1,12	10	24,5	31,4	2,13	9

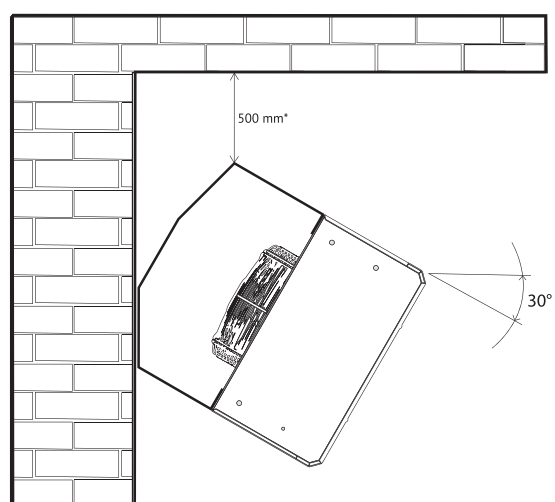
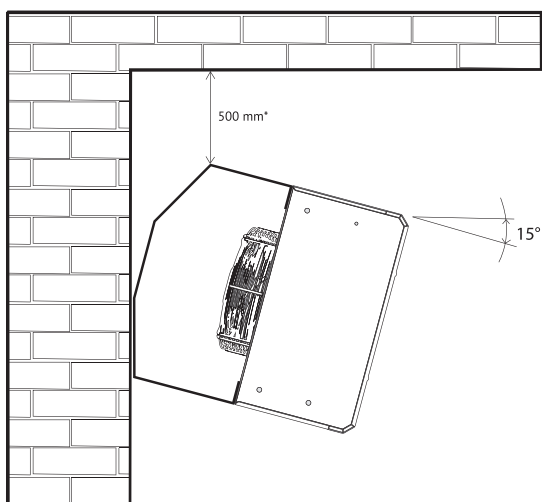


INSTALLATION AND ASSEMBLY

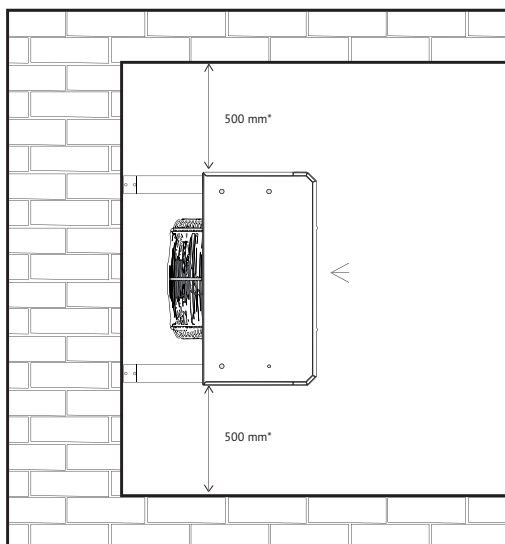
The heating unit can be wall-mounted and ceiling-mounted.

An installation bracket is possible to order as accessories. For ceiling installation can be also used threaded bars.

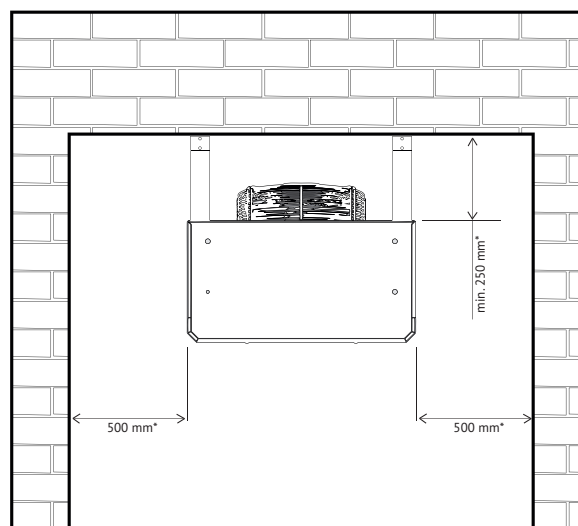
Wall-mounting (side view)



Wall-mounting (top view)



Ceiling- mounting (side view)



* Recommended distance for easy access and installation.

**CONTROL**

The **SAVANA** air heaters are delivered without an integrated control system. Below see recommended control options:

AirGENIO BASIC EC control unit

AirGENIO BASIC EC control is designed primarily for manual control of industrial air curtains and air heaters with water or electric heating.

Control features overview:

Manual control



Possibility of connecting a door contact and external switch



Stepless control of airflow



Possibility of connecting a room thermostat (turn OFF the heater after contact opening)



ON/OFF control of valve actuator for LPHW coil

**KEY TO CODING**

AGBA1-M-ECx-xx-V1-0A0

S0 Without heating
V1 Water heating (ON/OFF)
E2 Electric heating (2steps)

EC For EC fans

AGBA1-M BASIC EC control unit



AirGENIO SC-C-EC control unit

The AirGENIO SC-CONTROL unit is designed primarily for controlling industrial air heaters. In addition, the unit may also be used for controlling devices comprising a voltage controlled EC fan and heating units.

Control features overview:



Touch screen display



Manual / Auto control mode



Stepless control of airflow



0-10V control of valve actuator for LPHW coil



Integrated antifreeze protection of LPHW coil



Day / Night mode



Possibility of connecting a RUN contact and external control switch



Integrated timer



Temperature measurement (all temperature NTC sensors included, temperature shown on display)



Chaining 1+10 (Master-Slave)



Mixing chamber control



BMS connection - Modbus RTU, TCP, BACnet



Error contact



2nd control panel ready



SC-C-EC

EC For EC fans

C Master

S Slave

SC-C - Control unit



OPTIONAL ACCESSORIES

Face cover



SAV-FC-x-**G**-x-x



SAV-FC-x-**D**-x-x



SAV-FC-x-**F**-x-x



SAV-FC-x-**A**-x-x



SAV-FC-x-**A**-x-x + SAV-FC-x-**N**-x-x



SAV-FC-x-**V**-x-x



SAV-FC-2-G-0 A0

A0 2VV version

0 White colour casing RAL 9016 (Standard)

9 Colour Atyp RAL

G Cut-out lamellas (Horizontal)

A Alluminium lamellas (Horizontal)

V Cut-out lamellas (Vertical)

F Diffusor

D Exhaust jets

N Extension (Addition to aluminum lamellas - Vertical)

S Straw system

1 Output series (SAV-1)

2 Output series (SAV-2)

4 Output series (SAV-4)

FC Face cover

SAV Heating unit **SAVANA**



SAV-FC-x-**S**-x-x

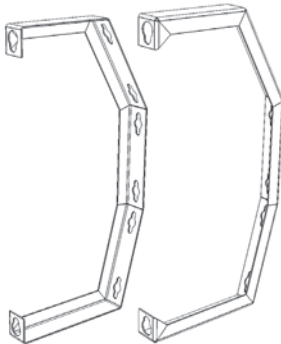


OPTIONAL ACCESSORIES

Mounting Bracket

SAV-HOL-x-x-x

Allow to mount unit on the wall at 3 different angles: 0°, 15°, 30°



SAV-HOL-2-0 A0

- A0** 2VV version
- 0** White colour RAL 9016 (Standard)
- 9** Atyp RAL casing
- 1** Output series (SAV-1)
- 2** Output series (SAV-2)
- 4** Output series (SAV-4)
- HOL** Holder (set; 2pcs)
- SAV** Heating unit **SAVANA**

Spare filter for SAVANA products



FI-PYTEL-KRUH-G2-SAV-1

- SAV-1** Output series (SAV-1)
- SAV-2** Output series (SAV-2)
- SAV-4** Output series (SAV-4)
- G2** Filter type Coarse 40% (only G2)
- FI-PYTEL-KRUH** Filter

Mixing chamber for SAVANA



SAV-MIX-2-0

- 0** Colour standard (galvanized steel)
- 9** Colour Atyp RAL
- 2** Output series (SAV-2)
- 4** Output series (SAV-4)
- SAV-MIX** Mixing chamber

**OPTIONAL ACCESSORIES**

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

AirGENIO BASIC EC controller**AGBA1-M-ECX-XX-V1-0A0**

AirGENIO BASIC EC controller is designed primarily for manual control of industrial air curtains and air heaters with water or electric heating. In addition, the unit may be used for manual control of devices comprising a voltage controlled EC fans.



Speed controller type	SAV-1-EC	SAV-2-EC	SAV-4-EC
AGBA1-M	10	10	10

AirGENIO SC control unit**SC-C-EC (SC-S-EC)**

The SC-C-EC control unit is designed to control the SAVANA industrial heating units.



Speed controller type	SAV-1-EC	SAV-2-EC	SAV-4-EC
SC-C-EC	10	10	10
SC-S-EC	5	5	5

**ZV2-230-xx**

2-way O/C valve with 230V actuator, not to be used with SC-C-EC control.

**ZV3-230-xx**

3-way O/C valve with 230V actuator, not to be used with SC-C-EC control.

**ZV2-024-xx**

2-way valve with 24DCV actuator, 0-10V DC control signal, suitable for SC-C-EC control.

**ZV3-024-xx**

3-way valve with 24DCV actuator, 0-10V DC control signal, suitable for SC-C-EC control.





OPTIONAL ACCESSORIES

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



RT-3-xx

3-way O/C valve with 230V actuator, not to be used with SC-C-EC control



Thermostatic valve

TV-1-1/1



Mixing node

SMU2-xx-xx



Flexible connection hoses

OH-xxx



Room thermostat

TER-P



Threaded bar

The unit is suspended using four threaded bars.

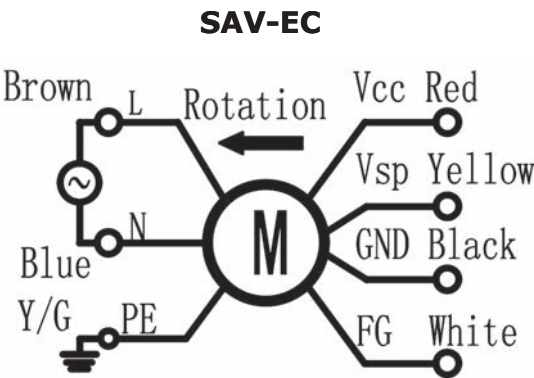
ZTZ-M8-1,0 – threaded bar, M8 thread, 1m length, suitable for all types of heating units.





WIRING DIAGRAMS

All wiring diagrams provided in the technical catalog are indicative only. When assembling the product, observe strictly the nameplate ratings as well as directions and diagrams affixed directly to the product or enclosed to the product.



Wiring diagrams for the control system are provided in the manual.



KEY TO CODING

SAV-2-2R-1EC-0 A0	
A0	2VV version
0	White colour casing RAL 9016 (Standard)
9	Casing color atyp RAL
1EC	EC fan, 1 phase
2R	2-row LPHW coil
3R	3-row LPHW coil
1	Output series (SAV-1)
2	Output series (SAV-2)
4	Output series (SAV-4)
SAV	Heating unit SAVANA



water heater



BASIC FEATURES

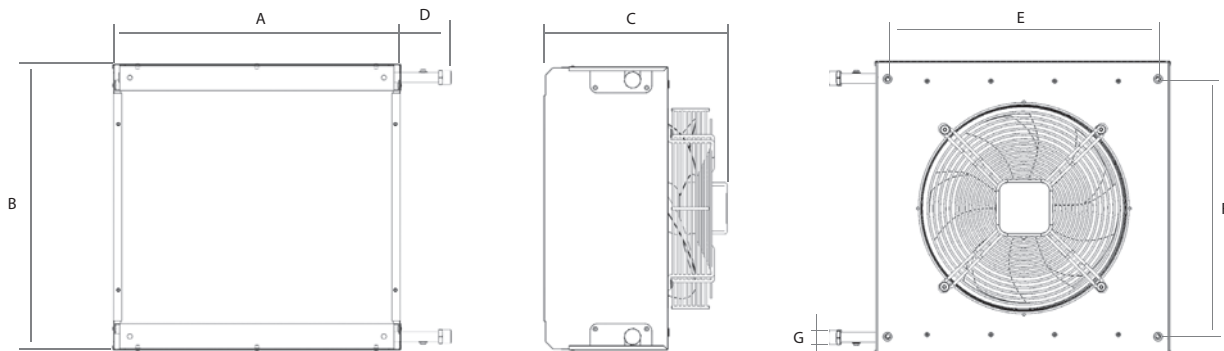
Anticorrosive highly efficient heating units with a casing made from stainless steel in protection class C5. They are designed for aggressive environment in buildings such as livestock farms, car washers, swimming pools, bakeries and similar facilities.

- 2 sizes with airflows of **2300 - 6000 m³/h**
- **Epoxy coated** 2row LPHW coils
- Stainless steel **casing C5**
- **EC** fans with IP44
- Adjustable cut-out lamellas
- Easy installation and maintenance
- Air filter with a simple access (optional accessory)

The heating unit is designed for indoor installation with ambient temperatures from +5 to 35 °C and relative humidity up to 90%. It is intended for transportation of the air without coarse particles of dust and grease. Unit's resistance against coarser dust particles may be increased by filter. The shell of the unit is made from stainless steel of the resistance class C5, also the connecting material used has the same resistance. The LPHW coil is protected by LCE epoxy coating. The IP rating of the electric system of the complete heating unit is **IP44**.

**PRIMARY PARAMETERS**

The LPHW coils are designed for the maximum operating water temperature of +110 °C and maximum operating pressure of 1.6 MPa.

Dimensions of the SAVANA unit

Type	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (")	Pressure
SAV-2-x-N	555	555	350	100	508	483	3/4	PN16
SAV-4-x-N	755	755	350	100	708	683	3/4	PN16

Primary parameters

Type Typ	Airflow [m³/h]	Voltage [V/Hz]	Current [A]	Power consumption [W]	Noise* [dB(A)]	Weight** [kg]
SAV-2-2R-1EC-N	2550	230/50-60	1,43	183	52,9	22
SAV-4-2R-1EC-N	4650		1,52	343	58,2	34

* sound pressure measured 5m from the heating unit outlet (Q=2)

** weight including cover and without water in the LPHW coil

Basic technical parameters of LPHW coils

Airflow [m³/h]		SAV-2-2R-1EC-N 2550				SAV-4-2R-1EC-N 4650			
LPHW coil	Inlet air temperature [°C]	Heating output [kW]	Output air temp. [°C]	Water flow rate [m³/h]	Water pressure loss [kPa]	Heating output [kW]	Output air temp. [°C]	Water flow rate [m³/h]	Water pressure loss [kPa]
90/70	0	34,2	40,0	1,51	14	66,2	42,5	2,92	41
	10	29,6	44,7	1,30	11	57,6	47,0	2,54	32
	15	27,3	47,0	1,20	9	53,3	49,2	2,35	27
80/60	0	29,4	34,4	1,29	11	57,2	36,8	2,51	32
	10	24,8	39,0	1,09	8	48,6	41,2	2,14	23
	15	22,5	41,1	0,99	7	44,3	43,4	1,94	20
70/50	0	24,5	28,7	1,07	8	48,2	31,0	2,11	23
	10	20,0	33,4	0,87	5	39,6	35,4	1,73	16
	15	17,7	35,7	0,77	4	35,3	37,6	1,54	13
60/40	0	19,6	23,0	0,86	5	39,1	25,1	1,71	16
	10	15,1	27,6	0,66	3	30,5	29,6	1,33	10
	15	12,8	30,0	0,56	2	26,1	31,8	1,14	8
45/35	0	16,4	19,2	1,43	14	32,2	20,7	2,80	41
	10	11,9	23,9	1,03	8	23,6	25,1	2,05	23
	15	9,6	26,3	0,84	5	19,3	27,4	1,68	16

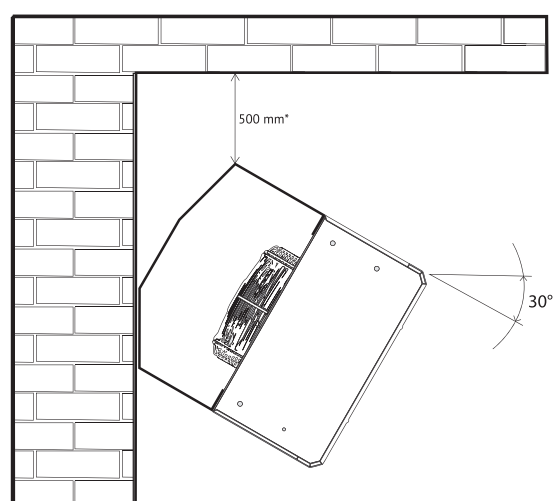
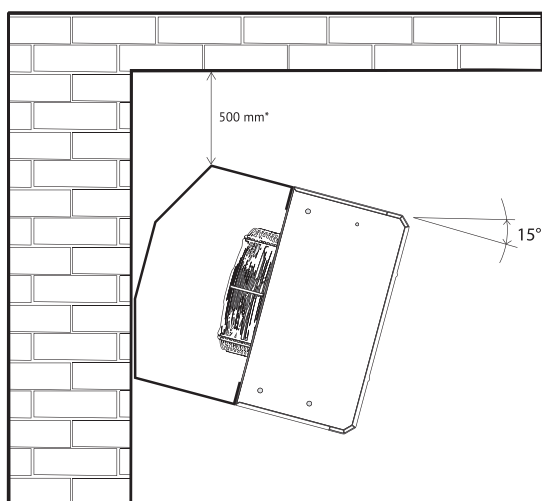


INSTALLATION AND ASSEMBLY

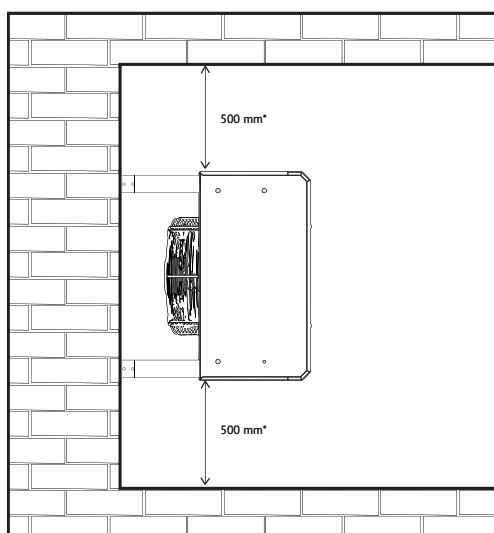
The heating unit can be wall-mounted and ceiling-mounted.

An installation bracket is possible to order as accessories. For ceiling installation can be also used threaded bars.

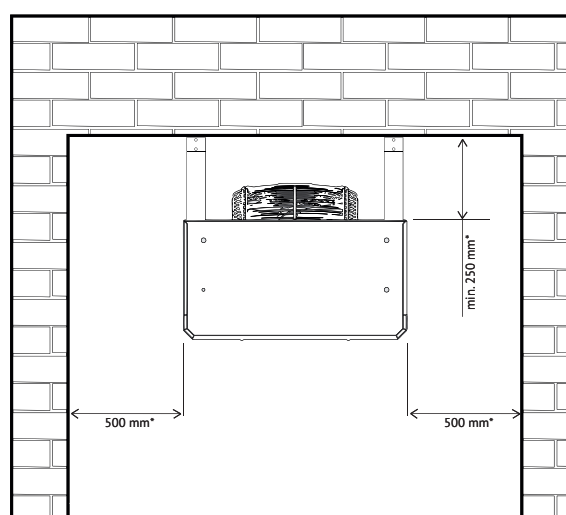
Wall-mounting (side view)



Wall-mounting (top view)



Ceiling-mounting (side view)



* Recommended distance for easy access and installation.

**CONTROL**

The **SAVANA** air heaters are delivered without an integrated control system. Below see recommended control options:

AirGENIO BASIC EC control unit

AirGENIO BASIC EC control is designed primarily for manual control of industrial air curtains and air heaters with water or electric heating.

Control features overview:

Manual control



Possibility of connecting a door contact and external switch



Stepless control of airflow



Possibility of connecting a room thermostat (turn OFF the heater after contact opening)



ON/OFF control of valve actuator for LPHW coil

**KEY TO CODING**

AGBA1-M-ECx-xx-V1-0A0

S0 Without heating
V1 Water heating (ON/OFF)
E2 Electric heating (2steps)

EC For EC fans

AGBA1-M BASIC EC control unit



AirGENIO SC-C-EC control unit



The AirGENIO SC-CONTROL unit is designed primarily for controlling industrial air heaters. In addition, the unit may also be used for controlling devices comprising a voltage controlled EC fan and heating units.

Control features overview:



Touch screen display



Integrated timer



Manual / Auto control mode



Temperature measurement (all temperature NTC sensors included, temperature shown on display)



Stepless control of airflow



Chaining 1+10 (Master-Slave)



0-10V control of valve actuator for LPHW coil



Mixing chamber control



Integrated antifreeze protection of LPHW coil



BMS connection - Modbus RTU, TCP, BACnet



Day / Night mode



Error contact



Possibility of connecting a RUN contact and external control switch



2nd control panel ready



SC-C-EC

EC For EC fans

C Master

S Slave

SC-C - Control unit

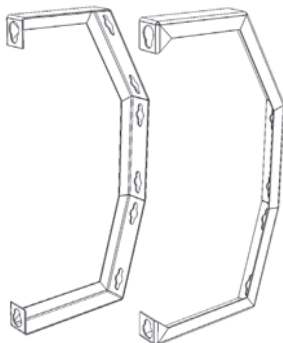


OPTIONAL ACCESSORIES

Mounting Bracket

SAV-HOL-x-x-x

Allows the unit to be mounted on a wall in 3 different angles: 0°, 15° and 30°.

**SAV-HOL-2-N-0-N**

N – Stainless steel version

2 – Output series (SAV-2)

4 – Output series (SAV-4)

HOL – Holder (set; 2pcs)

SAV – Heating unit **SAVANA**

Spare filter for SAVANA products

**FI-PYTEL-KRUH-G2-SAV-2**

SAV-2 – Output series (SAV-2)

SAV-4 – Output series (SAV-4)

G2 – Filter type Coarse 40%
(only G2)

FI-PYTEL-KRUH – Filter

Mixing chamber for SAVANA

**SAV-MIX-2-0**

0 – Colour standard (galvanized steel)

9 – Colour **Atyp RAL**

2 – Output series (SAV-2)

4 – Output series (SAV-4)

SAV-MIX – Mixing chamber



OPTIONAL ACCESSORIES

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

AirGENIO BASIC EC controller

AGBA1-M-ECX-XX-V1-0A0

AirGENIO BASIC EC controller is designed primarily for manual control of industrial air curtains and air heaters with water or electric heating. In addition, the unit may be used for manual control of devices comprising a voltage controlled EC fans.



Speed controller type Drehzahlreglertyp	SAV-1-EC	SAV-2-EC	SAV-4-EC
AGBA1-M	10	10	10

AirGENIO SC control unit

SC-C-EC (SC-S-EC)

The SC-EC-C control unit is designed to control the SAVANA industrial heating units



Speed controller type Typ des Regulators	SAV-1-EC	SAV-2-EC	SAV-4-EC
SC-C-EC	10	10	10
SC-C-EC	5	5	5



ZV2-230-xx

2-way O/C valve with **230V** actuator
(Not to be used with SC-C-EC control).



ZV3-230-xx

3-way O/C valve with **230V** actuator
(Not to be used with SC-C-EC control).



ZV2-024-xx

2-way valve with **24DCV** actuator, 0-10V DC control signal
(Suitable to be used with SC-C-EC control).



ZV3-024-xx

2-way valve with **24DCV** actuator, 0-10V DC control signal
(Suitable to be used with SC-C-EC control).





RT-3-xx

3-way O/C valve with 230V actuator
(Not to be used with SC-C-EC control).



Thermostatic valve

TV-1-1/1



Mixing node

SMU2-xx-xx



Flexible connection hoses

OH-xxx



Room thermostat

TER-P



Threaded bar

The unit is suspended using four threaded bars.

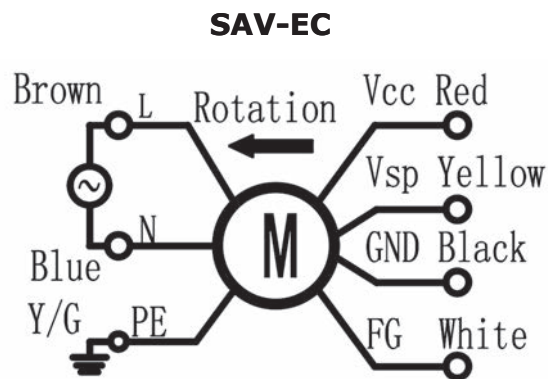
ZTZ-M8-1,0 – threaded bar, M8 thread, 1m length, suitable for all types of heating units.





WIRING DIAGRAMS

All wiring diagrams provided in the technical catalog are indicative only. When assembling the product, observe strictly the nameplate ratings as well as directions and diagrams affixed directly to the product or enclosed to the product.



Wiring diagrams for the control system are provided in the manual.



KEY TO CODING

SAV-2-2R-1EC-N-0

N – Stainless steel version

1EC – EC fan, 1 phase

2R – 2-row LPHW coil

2 – Output series (SAV-2)

4 – Output series (SAV-4)

SAV – Heating unit **SAVANA**



water heater

STRAW
SYSTEMJET
SYSTEMV-SHAPE
LAMELLA3 YEARS
WARRANTY**BASIC FEATURES**

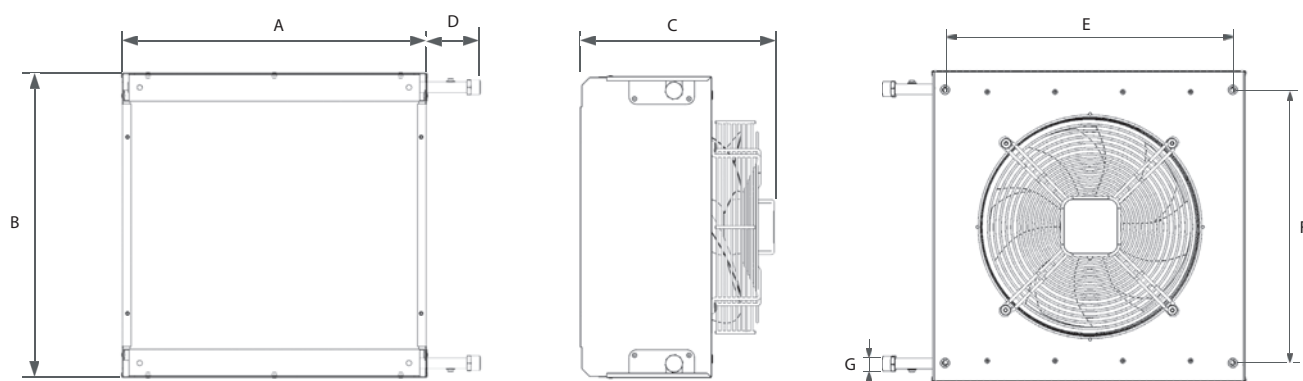
Wide and variable range of highly efficient heating units designed for both wall and ceiling installation. They are suitable for use in the industrial premises, manufacturing hall, warehouses, sport facilities and other such buildings.

- 4 sizes with airflows of **1000 - 5850 m³/h**
- **7 different front covers** offering the choice of the best-suited one for a particular installation (Cut-out lamellas, Exhaust jets, Diffusor, Aluminium lamellas, Extension lamellas, Vertical cut-out lamellas, Straw-System)
- Powerful heating performance ensured by **2row** or **3row** LPHW coils
- Compact metal sheet casing treated with a white powder coating **RAL9016**
- Easy installation and maintenance
- Air filter with a simple access (optional accessory)

The heating unit shall be installed indoor in a dry area with ambient temperatures ranging from +5 °C up to +35 °C and relative humidity of up to 80%. It is designed for blowing air free of rough dust, grease, chemical fumes, and other impurities. The IP rating of the electric system of the complete heating unit is IP 44. The heating unit is produced in standard colour RAL 9016.


PRIMARY PARAMETERS

The LPHW coil are designed for the maximum operating water temperature of +110 °C and maximum operating pressure of 1.6 MPa.

Dimensions of the SAVANA unit


Type	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G(″)
SAV-1-2R-AC	455	455	350	100	408	383	3/4
SAV-2-2R-AC	555	555	350	100	508	483	3/4
SAV-4-2R-AC	755	755	350	100	708	683	3/4
SAV-6-2R-AC	855	855	350	100	808	783	1

Type	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G(″)
SAV-1-3R-AC	455	455	350	100	408	383	1
SAV-2-3R-AC	555	555	350	100	508	483	1
SAV-4-3R-AC	755	755	350	100	708	683	1
SAV-6-3R-AC	855	855	350	100	808	783	1 1/4

Primary parameters

Type	Airflow [m ³ /h]	Airflow reach* [m]	Voltage [V/Hz]	Current [A]	Power consumption [W]	Noise** [dB(A)]	Weight*** [kg]
SAV-1-2R-AC	1300	11	230/50 (60)	0,34	77	44,3	16
SAV-2-2R-AC	2100	11		0,59	133	49,3	22
SAV-4-2R-AC	4350	12		1,16	267	55,0	34
SAV-6-2R-AC	5850	12		3	690	58,0	45
SAV-1-3R-AC	1200	9	230/50 (60)	0,35	79	45,3	18
SAV-2-3R-AC	2000	9		0,62	139	49,0	24
SAV-4-3R-AC	4050	11		1,22	280	54,8	36
SAV-6-3R-AC	5300	11		3,20	740	58,9	47

* The airflow reach is equal to the distance where the air speed is 0,5m/s

** Sound pressure measured 5m from the heating unit outlet (Q=2)

*** Weight without cover and without water in LPHW coil.

Basic technical parameters of LPHW coils

2-row heater

Airflow [m³/h]		SAV-1-2R-AC 1300				SAV-2-2R-AC 2100				SAV-4-2R-AC 4350				SAV-6-2R-AC 5850			
LPHW coil temperature gradient [°C]	Inlet air temperature [°C]	Heating output [kW]	Output air temp. [°C]	Water flow rate [m³/h]	Water pressure loss [kPa]	Heating output [kW]	Output air temp. [°C]	Water flow rate [m³/h]	Water pressure loss [kPa]	Heating output [kW]	Output air temp. [°C]	Water flow rate [m³/h]	Water pressure loss [kPa]	Heating output [kW]	Output air temp. [°C]	Water flow rate [m³/h]	Water pressure loss [kPa]
90/70	0	19,1	43,9	0,84	16	30,2	42,9	1,33	11	63,4	43,5	2,79	38	83,9	42,8	3,70	19
	10	16,6	48,2	0,73	12	26,2	47,2	1,15	9	55,2	47,9	2,43	29	72,9	47,2	3,21	15
	15	15,4	50,3	0,68	11	24,2	49,4	1,07	7	51,0	50,0	2,25	25	67,4	49,4	2,97	13
80/60	0	16,5	37,9	0,72	12	26,0	36,9	1,14	9	54,9	37,7	2,41	29	72,4	37,0	3,18	15
	10	14,0	42,1	0,61	9	21,9	41,2	0,96	6	46,6	42,0	2,05	22	61,4	41,4	2,70	11
	15	12,7	44,2	0,56	8	19,9	43,4	0,88	5	42,4	44,1	1,86	18	55,9	43,6	2,46	9
70/50	0	13,9	31,8	0,61	9	21,7	30,8	0,95	6	46,2	31,7	2,02	22	60,9	31,1	2,66	11
	10	11,4	36,1	0,50	6	17,7	35,2	0,77	4	38,0	36,1	1,66	15	49,8	35,4	2,18	8
	15	10,1	38,2	0,44	5	15,7	37,3	0,69	3	33,8	38,2	1,48	12	44,3	37,6	1,94	6
60/40	0	11,2	25,7	0,49	6	17,4	24,8	0,76	4	37,5	25,8	1,64	15	49,3	25,1	2,15	8
	10	8,7	30,0	0,38	4	13,4	29,1	0,58	3	29,2	30,1	1,27	9	38,2	29,5	1,67	5
	15	7,4	32,1	0,32	3	11,4	31,2	0,50	2	24,1	32,2	1,09	7	32,7	31,7	1,42	4
45/35	0	9,3	21,3	0,80	16	14,5	20,6	1,26	11	30,8	21,2	2,68	38	40,7	20,8	3,53	19
	10	6,8	25,6	0,59	9	10,5	25,0	0,91	6	22,6	25,5	1,96	22	29,7	25,2	2,58	11
	15	5,5	27,7	0,48	6	8,5	27,1	0,74	4	18,5	27,7	1,61	15	24,3	27,4	2,11	8

3-row heater

Airflow [m³/h]		SAV-1-3R-AC 1200				SAV-2-3R-AC 2000				SAV-4-3R-AC 4050				SAV-6-3R-AC 5300			
LPHW coil temperature gradient [°C]	Inlet air temperature [°C]	Heating output [kW]	Output air temp. [°C]	Water flow rate [m³/h]	Water pressure loss [kPa]	Heating output [kW]	Output air temp. [°C]	Water flow rate [m³/h]	Water pressure loss [kPa]	Heating output [kW]	Output air temp. [°C]	Water flow rate [m³/h]	Water pressure loss [kPa]	Heating output [kW]	Output air temp. [°C]	Water flow rate [m³/h]	Water pressure loss [kPa]
90/70	0	23,6	58,8	1,04	31	38,4	57,4	1,69	18	77,5	57,1	3,41	18	102,0	57,5	4,50	22
	10	20,6	61,4	0,91	24	33,5	60,1	1,48	14	67,6	59,8	2,98	14	89,1	60,2	3,93	17
	15	19,1	62,6	0,84	21	31,1	61,4	1,37	13	62,6	61,2	2,76	12	82,6	61,5	3,64	15
80/60	0	20,6	51,1	0,90	24	33,3	49,8	1,46	15	67,2	49,6	2,95	14	88,7	50,0	3,90	17
	10	17,6	53,7	0,77	18	28,4	52,4	1,25	11	57,3	52,3	5,52	11	75,7	52,6	3,33	13
	15	16,1	55,0	0,71	16	26,0	53,8	1,14	9	52,3	53,6	2,30	9	69,1	54,0	3,04	11
70/50	0	17,5	43,4	0,76	19	28,2	42,1	1,24	11	56,9	42,0	2,49	11	75,2	42,4	3,29	13
	10	14,5	46,0	0,63	13	23,3	44,8	1,02	8	46,9	44,6	2,05	8	62,1	45,0	2,72	9
	15	13,0	47,2	0,57	11	20,8	46,1	0,91	6	42,0	45,9	1,84	6	55,6	46,3	2,43	7
60/40	0	14,3	35,7	0,63	13	23,0	34,4	1,00	8	46,5	34,3	2,03	8	61,5	34,7	2,68	9
	10	11,3	38,2	0,49	9	18,1	37,0	0,79	5	36,4	36,9	1,59	5	48,4	37,3	2,11	6
	15	9,8	39,3	0,43	7	15,6	38,3	0,68	4	31,4	38,2	1,37	4	41,8	38,6	1,82	5
45/35	0	11,6	28,8	1,00	33	18,7	28,0	1,63	19	37,8	27,9	3,28	19	49,9	28,1	4,33	22
	10	8,6	31,4	0,75	19	13,9	30,7	1,20	11	27,9	30,6	2,42	11	36,9	30,8	3,21	13
	15	7,1	32,6	0,62	14	11,4	32,0	0,99	14	23,0	31,9	1,99	8	30,5	32,2	2,64	9

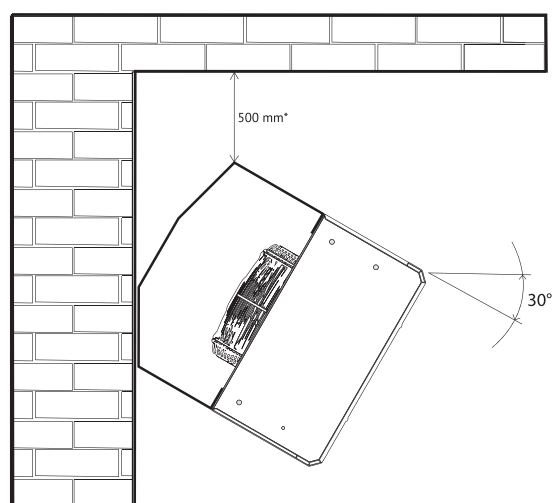
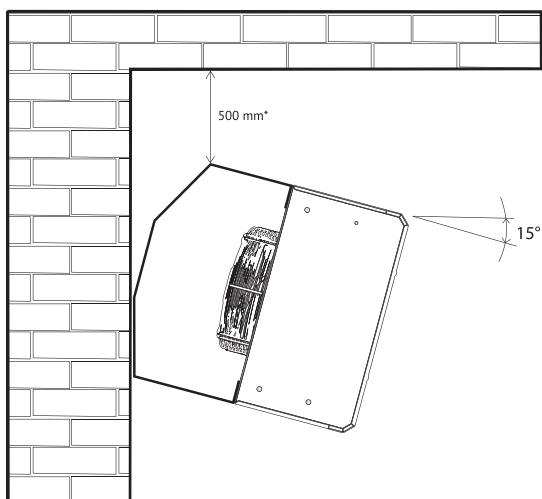


INSTALLATION AND ASSEMBLY

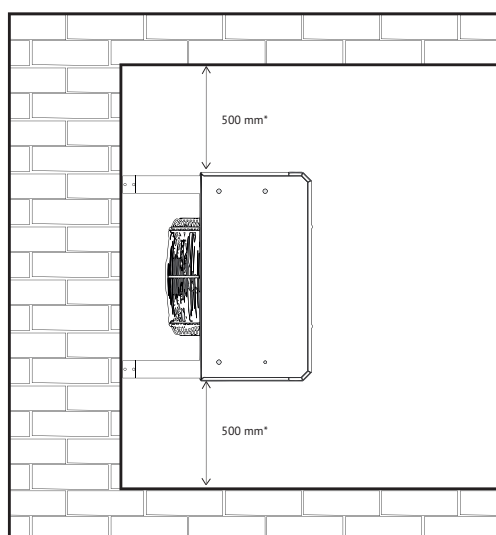
The heating unit can be wall-mounted and ceiling-mounted.

An installation bracket is possible to order as accessories. For ceiling installation can be also used threaded bars.

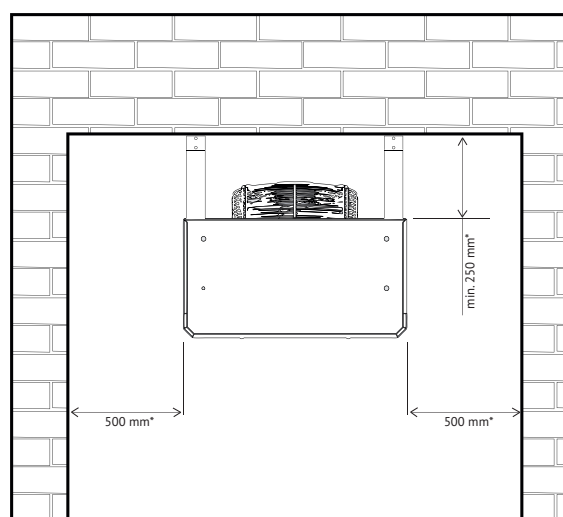
Wall-mounting (side view)



Wall-mounting (top view)



Ceiling- mounting (side view)



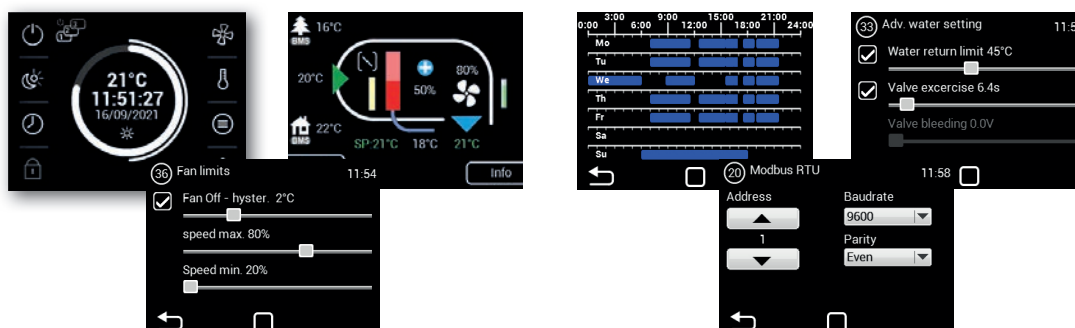
* Recommended distance for easy access and installation.

**CONTROL**

The **SAVANA** heating units are delivered without integrated control system. Below see recommended control options:

AirGENIO SC-C-AC control unit
Control features overview:


- | | |
|--|--|
|  Touch screen display |  Integrated timer |
|  Manual/Auto control mode |  Temperature measurement (All temperature NTC sensors included, temperature shown on display) |
|  Control of airflow in 5 steps |  Chaining 1+10 (Master-Slave) |
|  0-10V control of valve actuator for LPHW coil |  Mixing chamber control |
|  Integrated antifreeze protection of LPHW coil |  BMS connection - Modbus RTU, TCP, BACnet |
|  Day / Night mode |  Error contact |
|  Possibility of connecting a RUN contact and external control switch |  2 nd control panel ready |



The maximum numbers of **SAVANA** units that can be connected to the respective individual types of the **SC-C-AC** control unit are given in the following table:

Controller type	SAV-1-AC	SAV-2-AC	SAV-4-AC	SAV-6-AC
SC-C-AC-04	11	6	3	1
SC-C-AC-07	20	11	5	2
SC-C-AC-16	36	20	10	5



CONTROL

The **SAVANA** heating units are delivered without integrated control system. Below see recommended control options:

STRA1 fan speed control (AC)



The **STRA1** five-speed controller should be used for controlling the fan speed. Required speed is selected manually by a switch located on the controller housing. This controller may also be complemented with the **TER-P** room thermostat for activating the fan depending on the room temperature. Multiple heating units can be connected to a single **STRA1** controller at the same time; however, the sum of motor currents shall not exceed the maximum admissible loading of the **STRA1** controller.

The maximum numbers of **SAVANA** units that can be connected to the respective individual types of the **STRA1** speed controller are given in the following table:

Speed controller type	SAV-1-AC	SAV-2-AC	SAV-4-AC	SAV-6-AC
STRA1-5	14	8	4	1
STRA1-7,5	21	12	6	2
STRA1-16	45	25	13	5

LPHW coil output control options

1) Basic by throttling

TV-1-1/1 thermostatic valve. The valve controls smoothly the warm water supply into the heating unit depending on the temperature of air leaving the heating unit. One valve is required for each heating unit.

2) Economical by splitting (open/closed)

ZV water valve with a servo drive and **TER-P** room thermostat. The valve switches the warm water supply into the heating unit and back towards the heat source depending on the temperature of air leaving the heating unit or depending on the room temperature. One valve is required for each heating unit.

3) Precise by mixing

SMU2 mixing node. The mixing system controls smoothly the ratio of supply and return heating water flowing into the heating unit depending on the temperature of air leaving the heating unit and/or depending on the room temperature. One mixing mode may be used for multiple heating units provided that they have identical size and that they are connected in a parallel arrangement.



OPTIONAL ACCESSORIES

Face cover



SAV-FC-x-G-x-x



SAV-FC-x-D-x-x



SAV-FC-x-F-x-x



SAV-FC-x-A-x-x



SAV-FC-x-A-x-x + SAV-FC-x-N-x-x



SAV-FC-x-V-x-x

SAV-FC-2-G-0 A0

- A0 2VV version
- 0 White colour casing RAL 9016 (**Standard**)
- 9 Atyp RAL casing
- G Cut-out lamellas (Horizontal)
- A Alluminium lamellas (Horizontal)
- V Cut-out lamellas (Vertical)
- F Diffusor
- D Exhaust jets
- N Extension (Addition to aluminum lamellas - Vertical)
- S Straw system
- 1 Output series (SAV-1)
- 2 Output series (SAV-2)
- 4 Output series (SAV-4)
- 6 Output series (SAV-6)
- FC Face cover
- SAV Heating unit **SAVANA**



SAV-FC-x-S-x-x

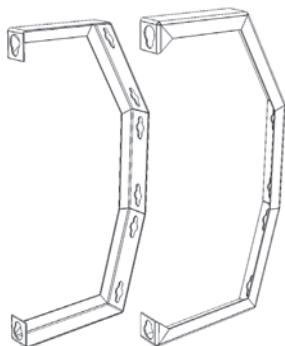


OPTIONAL ACCESSORIES

Mounting Bracket

SAV-HOL-x-x-x

Allow to mount unit on the wall at 3 different angles: 0°, 15°, 30°



SAV-HOL-2-0 A0

- A0** 2VV version
- 0** White colour casing RAL 9016 (**Standard**)
- 9** Atyp RAL casing
- 1** Output series (SAV-1)
- 2** Output series (SAV-2)
- 4** Output series (SAV-4)
- 6** Output series (SAV-6)
- HOL** Holder (set; 2pcs)
- SAV** Heating unit **SAVANA**

Spare filter for SAVANA products



FI-PYTEL-KRUH-G2-SAV-1

- SAV-1** Output series (SAV-1)
- SAV-2** Output series (SAV-2)
- SAV-4** Output series (SAV-4)
- SAV-6** Output series (SAV-6)
- G2** Filter type Coarse 40% (only G2)
- FI-PYTEL-KRUH** Filter

Mixing chamber for SAVANA



SAV-MIX-2-0

- 0** Colour **standard** (galvanized steel)
- 9** Colour Atyp RAL
- 2** Output series (SAV-2)
- 4** Output series (SAV-4)
- 6** Output series (SAV-6)
- SAV-MIX** Mixing chamber



OPTIONAL ACCESSORIES

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

Control unit

AirGENIO SC-C-AC (SC-S-AC)

4A / 7A / 16A



Speed controller

STRA1-x

5A / 7,5A / 16A



ZV2-230-xx

2-way O/C valve with 230V actuator

(Suitable to be used with STRA1-x control, not to be used with SC-C control).



ZV3-230-xx

3-way O/C valve with 230V actuator

(Suitable to be used with STRA1-x control, not to be used with SC-C control).



ZV2-024-xx

2-way valve with 24DCV actuator, 0-10V DC control signal

(Suitable to be used with SC-C control).



ZV3-024-xx

3-way valve with 24DCV actuator, 0-10V DC control signal

(Suitable to be used with SC-C control).



RT-3-xx

3-way O/C valve with 230V actuator (Suitable to be used with STRA1-x control, not to be used with SC-C control).





OPTIONAL ACCESSORIES

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

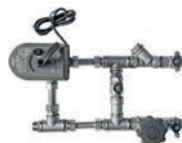
Thermostatic valve

TV-1-1/1



Mixing node

SMU2-xx-xx



Flexible connection hoses

OH-xxx



Room thermostat

TER-P



Threaded bar

The unit can be suspended using four threaded bars.

ZTZ-M8-1,0 – threaded bar, M8 thread, 1m length, suitable for all types of heating units.

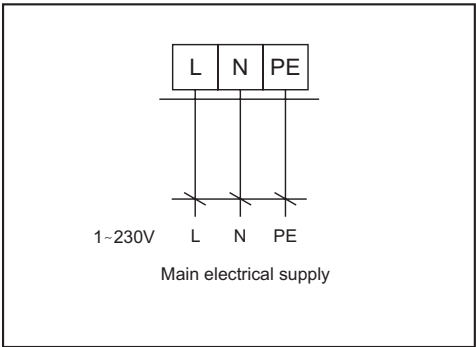




WIRING DIAGRAMS

All wiring diagrams provided in the technical catalog are indicative only. When assembling the product, observe strictly the nameplate ratings as well as directions and diagrams affixed directly to the product or enclosed to the product.

SAV-AC



Wiring diagrams for the control system are provided in the manual.



KEY TO CODING

SAV-2-2R-1AC-0 A0

- A0** 2V version
- 0** White colour casing RAL 9016 (Standard)
- 9** Casing color atyp RAL
- 1AC** AC fan, 1 phase
- 2R** 2-row LPHW coil
- 3R** 3-row LPHW coil
- 1** Output series (SAV-1)
- 2** Output series (SAV-2)
- 4** Output series (SAV-4)
- 6** Output series (SAV-6)
- SAV** Heating unit **SAVANA**



water heater



BASIC FEATURES

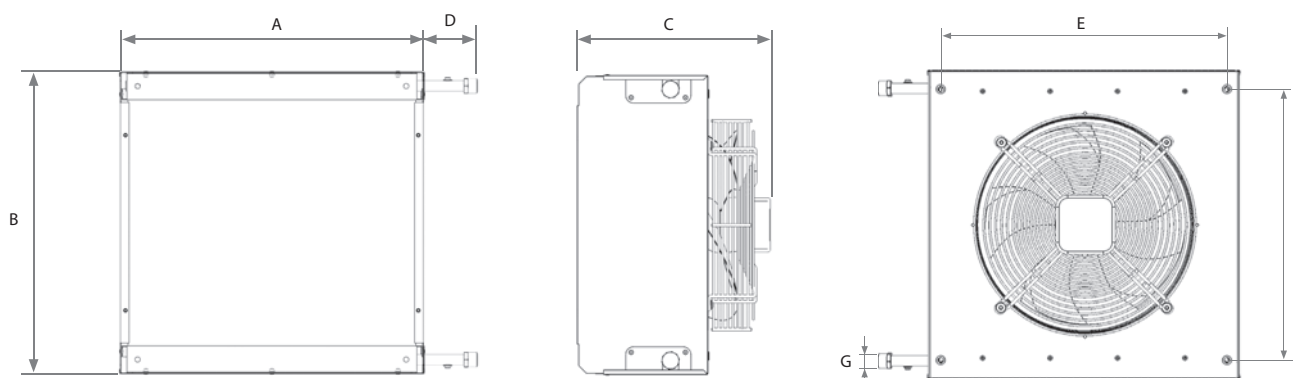
Anticorrosive highly efficient heating units with a casing made from stainless steel in protection class C5. They are designed for aggressive environment in buildings such as livestock farms, car washers, swimming pools, bakeries and similar facilities.

- 3 sizes with airflows of **2300 - 6000 m³/h**
- **Epoxy coated** 2row LPHW coils
- Stainless steel **casing C5**
- AC fans with IP54
- Adjustable cut-out lamellas
- Easy installation and maintenance
- Air filter with a simple access (optional accessory)

The heating unit is designed for indoor installation with ambient temperatures from +5 to 35 °C and relative humidity up to 90%. It is intended for transportation of the air without coarse particles of dust and grease. Unit's resistance against coarser dust particles may be increased by filter. The shell of the unit is made from stainless steel of the resistance class C5, also the jointing material used shows the same resistance. The LPHW coil is protected by LCE epoxy coating. The IP rating of the electric system of the complete heating unit is for AC motors **IP54**.

**PRIMARY PARAMETERS**

The LPHW coils are designed for the maximum operating water temperature of +110 °C and maximum operating pressure of 1.6 MPa.

Dimensions of the SAVANA unit

Type	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (")	Pressure
SAV-2-x-N	555	555	350	100	508	483	3/4	PN16
SAV-4-x-N	755	755	350	100	708	683	3/4	PN16
SAV-6-x-N	855	855	350	100	808	783	1	PN16

Primary parameters

Type	Air flow [m³/h]	Voltage [V/Hz]	Current [A]	Power consumption [W]	Noise* [dB(A)]	Weight** [kg]
SAV-2-2R-1AC-N	2300	230/50	0,60	131	48,9	16
SAV-4-2R-1AC-N	4600		1,13	258	55,1	22
SAV-6-2R-1AC-N	6000		2,8	644	58,9	34

* sound pressure measured 5m from the heating unit outlet (Q=2)

** weight including cover and without water in LPHW coil

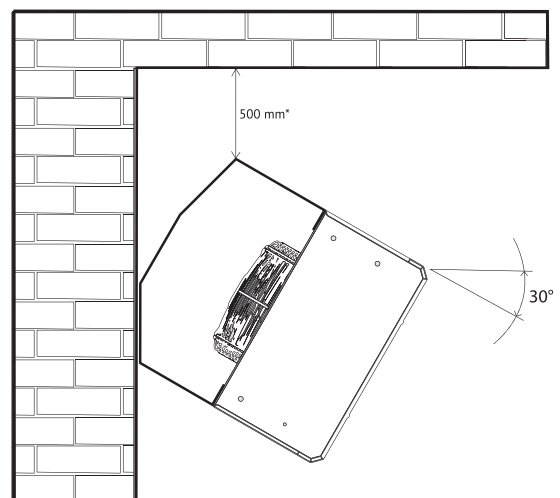
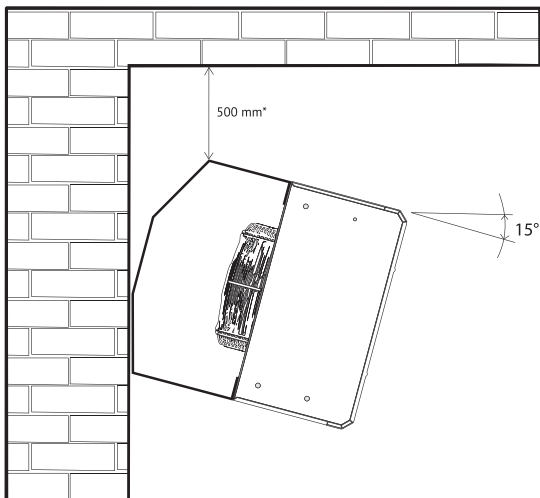
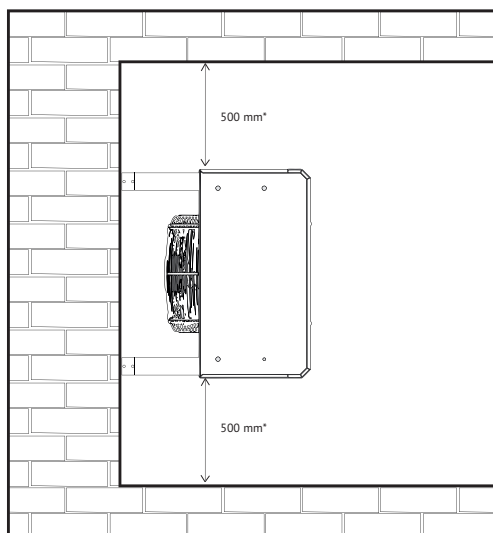
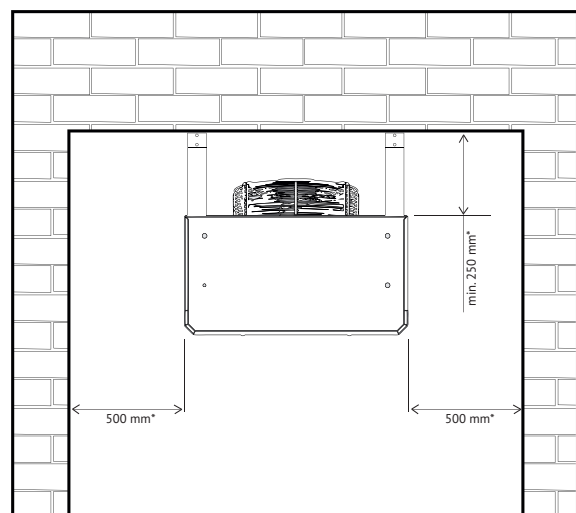
Basic technical parameters of LPHW coils

Air flow [m³/h]		SAV-2-2R-1AC-N 2300				SAV-4-2R-1AC-N 4600				SAV-6-2R-1AC-N 6000			
Water exchanger temperature gradient [°C]	Inlet air temperature [°C]	Heating output [kW]	Output air temp. [°C]	Water flow rate [m³/h]	Water pressure loss [kPa]	Heating output [kW]	Output air temp. [°C]	Water flow rate [m³/h]	Water pressure loss [kPa]	Heating output [kW]	Output air temp. [°C]	Water flow rate [m³/h]	Water pressure loss [kPa]
90/70	0	25,5	33,1	1,13	8	52,4	34,0	2,31	26	68,0	33,8	2,99	13
	10	22,1	38,7	0,97	6	45,5	39,6	2,01	20	59,0	39,4	2,60	10
	15	20,4	41,5	0,90	5	42,1	42,3	1,86	18	54,5	42,1	2,40	9
80/60	0	21,9	28,5	0,96	6	30,9	20,1	1,35	11	58,6	29,2	2,58	10
	10	18,5	34,0	0,81	5	24,0	25,6	1,05	7	49,7	34,7	2,18	7
	15	16,8	36,8	0,74	4	20,6	28,4	0,90	5	45,2	37,5	1,99	6
70/50	0	18,3	23,8	0,80	5	38,1	24,7	1,67	15	49,3	24,5	2,16	7
	10	14,9	29,4	0,65	3	31,3	30,3	1,37	11	40,3	30,1	1,76	5
	15	13,2	32,1	0,58	3	27,8	33,1	1,22	8	35,8	32,8	1,57	4
60/40	0	14,7	19,1	0,64	3	30,9	20,1	1,35	11	39,8	19,8	1,74	5
	10	11,3	24,7	0,49	2	24,0	25,6	1,05	7	30,8	25,3	1,34	3
	15	9,6	27,4	0,42	1	20,6	28,4	0,90	5	26,4	28,1	1,15	2
45/35	0	12,3	16,0	1,07	8	25,5	16,5	2,21	27	33,0	16,4	2,86	13
	10	8,9	21,6	0,77	5	18,7	22,1	18,70	15	24,1	22,0	2,09	7
	15	7,2	24,4	0,63	3	15,2	24,9	15,20	10	19,6	24,8	1,70	5

**INSTALLATION AND ASSEMBLY**

The heating unit can be wall-mounted and ceiling-mounted.

An installation bracket is possible to order as accessories. For ceiling installation can be also used threaded bars.

Wall-mounting (side view)**Wall-mounting (top view)****Ceiling- mounting (side view)**

* Recommended distance for easy access and installation.



CONTROL

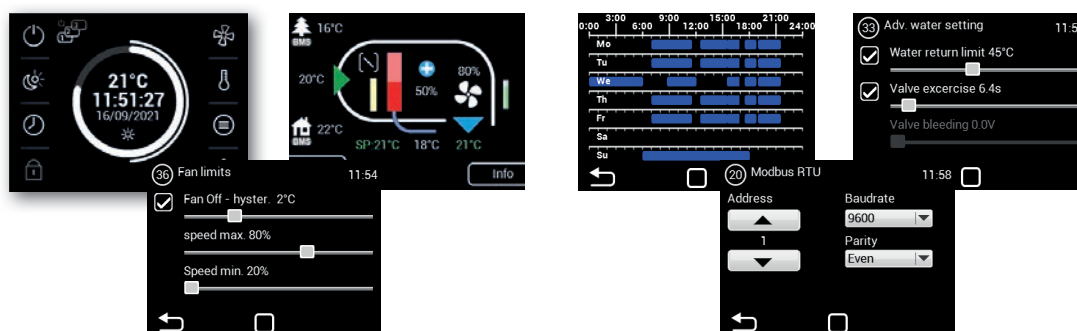
The **SAVANA** heating units are delivered without integrated control system. Below see recommended control options:

AirGENIO SC-C-AC

Control features overview:



- Touch screen display
- Manual/Auto control mode
- Control of airflow in 5 steps
- 0-10V control of valve actuator for LPHW coil
- Integrated antifreeze protection of LPHW coil
- Day / Night mode
- Possibility of connecting a RUN contact and external control switch
- Integrated timer
- Temperature measurement (All temperature NTC sensors included, temperature shown on display)
- Chaining 1+10 (Master-Slave)
- Mixing chamber control
- BMS connection - Modbus RTU,TCP, BACnet
- Error contact
- 2nd control panel ready



The maximum numbers of **SAVANA** units that can be connected to the respective individual types of the **SC-C-AC** control unit are given in the following table:

Controller type	SAV-1-AC	SAV-2-AC	SAV-4-AC	SAV-6-AC
SC-C-AC-04	11	6	3	1
SC-C-AC-07	20	11	5	2
SC-C-AC-16	36	20	10	5



CONTROL

The **SAVANA** heating units are delivered without integrated control system. Below see recommended control options:

Fan speed control

The **STRA1** five-speed controller should be used for controlling the fan speed. Required speed is selected manually by a switch located on the controller housing. This controller may also be complemented with the **TER-P** room thermostat for activating the fan depending on the room temperature. Multiple heating units can be connected to a single **STRA1** controller at the same time; however, the sum of motor currents shall not exceed the maximum admissible loading of the **STRA1** controller.

The maximum numbers of **SAVANA** units that can be connected to the respective individual types of the **STRA1** control unit are given in the following table:

Speed controller type Drehzahlreglertyp	SAV-2	SAV-4	SAV-6
STRA1-5	8	4	1
STRA1-7,5	12	6	2
STRA1-16	26	14	5

LPHW coil output control options

1) Basic by throttling

TV-1-1/1 thermostatic valve. The valve controls smoothly the warm water supply into the heating unit depending on the temperature of air leaving the heating unit. One valve is required for each heating unit.

2) Economical by splitting (open/closed)

ZV water valve with a servo drive and **TER-P** room thermostat. The valve switches the warm water supply into the heating unit and back towards the heat source depending on the temperature of air leaving the heating unit or depending on the room temperature. One valve is required for each heating unit.

3) Precise by mixing

SMU2 mixing node. The mixing system controls smoothly the ratio of supply and return heating water flowing into the heating unit depending on the temperature of air leaving the heating unit and/or depending on the room temperature. One mixing mode may be used for multiple heating units provided that they have identical size and that they are connected in a parallel arrangement.



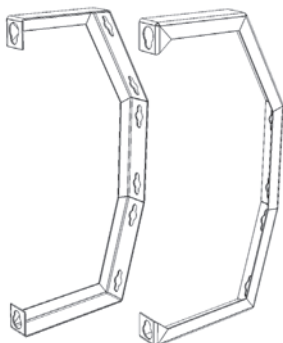
OPTIONAL ACCESSORIES

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

Mounting Bracket

SAV-HOL-x-x-x

Allow to mount unit on the wall at 3 different angles: 0°, 15°, 30°



SAV-HOL-2-N-0-N

- N** – Stainless steel version
- 2** – Output series (SAV-2)
- 4** – Output series (SAV-4)
- 6** – Output series (SAV-6)
- HOL** – Holder (set; 2pcs)
- SAV** – Heating unit **SAVANA**

Spare filter for SAVANA products



FI-PYTEL-KRUH-G2-SAV-2

- SAV-2** – Output series (SAV-2)
- SAV-4** – Output series (SAV-4)
- SAV-6** – Output series (SAV-6)
- G2** – Filter type Coarse 40% (only G2)
- FI-PYTEL-KRUH** – Filter

Mixing chamber for SAVANA



SAV-MIX-2-0

- 0** – Colour standard (galvanized steel)
- 9** – Colour Atyp RAL
- 2** – Output series (SAV-2)
- 4** – Output series (SAV-4)
- 6** – Output series (SAV-6)
- SAV-MIX** – Mixing chamber

**OPTIONAL ACCESSORIES**

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

Control unit***AirGENIO SC-C-AC (SC-S-AC)***

4A / 7A / 16A

**Speed controller*****STRA1-x***

5A / 7,5A / 16A

***ZV2-230-xx***

2-way O/C valve with 230V actuator. (Suitable to be used with STRA1-x control, not to be used with SC-C control).

***ZV3-230-xx***

3-way O/C valve with 230V actuator. (Suitable to be used with STRA1-x control, not to be used with SC-C control).

***ZV2-024-xx***

2-way valve with 24DCV actuator, 0-10V DC control signal (Suitable to be used with SC-C control).

***ZV3-024-xx***

3-Wege-Ventil mit 24DCV-Stellglied, 0-10V DC-Steuersignal (Suitable to be used with SC-C control).





OPTIONAL ACCESSORIES



RT-3-xx

3-way O/C valve with 230V actuator (Suitable to be used with STRA1-x control, not to be used with SC-C control).



Thermostatic valve

TV-1-1/1



Mixing node

SMU2-xx-xx



Flexible connection hoses

OH-xxx



Room thermostat

TER-P



Threaded bar

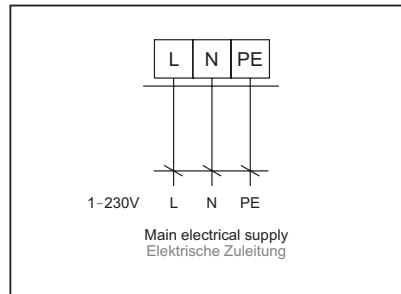
The unit is suspended using four threaded bars.

ZTZ-M8-1,0 – threaded bar, M8 thread, 1 m length, suitable for all types of heating units



**WIRING DIAGRAMS**

All wiring diagrams provided in the technical catalog are indicative only. When assembling the product, observe strictly the nameplate ratings as well as directions and diagrams affixed directly to the product or enclosed to the product.

SAV-AC

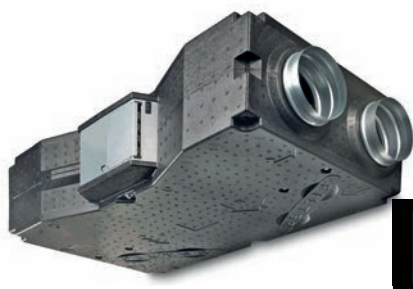
Wiring diagrams for the control system are provided in the manual.

**KEY TO CODING****SAV-2-2R-1AC-N-0****N** – Stainless steel version**1AC** – AC fan, 1 phase**2R** – 2-row LPHW coil**2** – Output series (SAV-2)**4** – Output series (SAV-4)**6** – Output series (SAV-6)**SAV** – Heating unit **SAVANA**



HEAT RECOVERY




ErP **A+**


Counterflow plate heat recovery exchanger



BASIC FEATURES

VENUS is a series of a compact and high-performance residential heat recovery units designed for under-ceiling installations in **flats, residential houses, family houses and low-energy and passive houses**. VENUS heat recovery units are available with two different control types – VENUS Comfort and VENUS AirGENIO (available for EC version only).

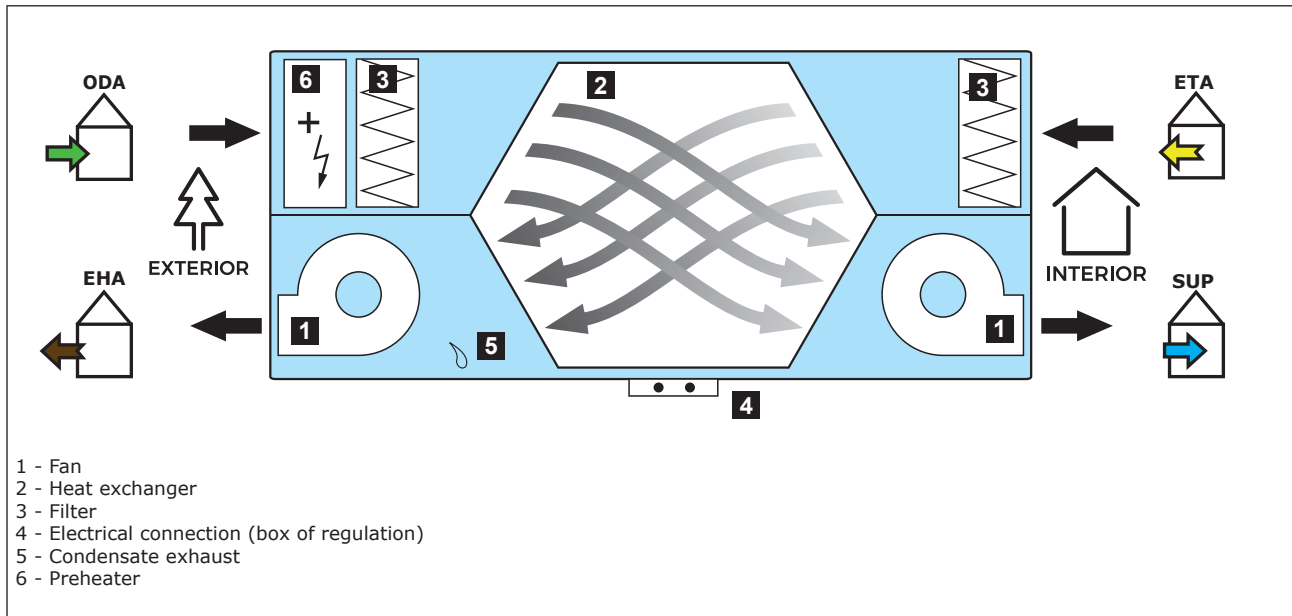
- **Nominal air flows: 140, 150, 300, 500 and 700 m³/h**
- Energy class **A / A+**; compliant with Ecodesign directive 1253/2014
- High heat recovery efficiency up to 93% (EN13141-7)
- Low noise level
- Available in two different designs – with EC or AC fans
- Low installation height from 270 mm
- Shell made from EPP ensuring high tightness and low weight of the unit (Passivhaus ready)
- High filtration class up to ePM 2,5 50% (F7)
- VENUS **Comfort** providing manual or DCV control based on air quality sensors.
- VENUS **AirGENIO** (EC version only) with advanced automatic control, additional modes, control via ModBUS RTU, TCP or BACnet and control via smart device.

VENUS heat recovery unit is designed to be operated in a dry indoor environment (relative humidity not exceeding 80 %) and at an ambient temperature in the range from +5 °C up to +40 °C.

The unit is designed for transporting standard atmospheric air that is free of dust, grease, chemical emissions and other impurities. Housing of the unit is made of expanded polypropylene. The unit has an IP rating of IP 20 when installed in the duct system.

It is recommended that the heat recovery project **always be designed by a qualified HVAC designer, engineer or architect**.

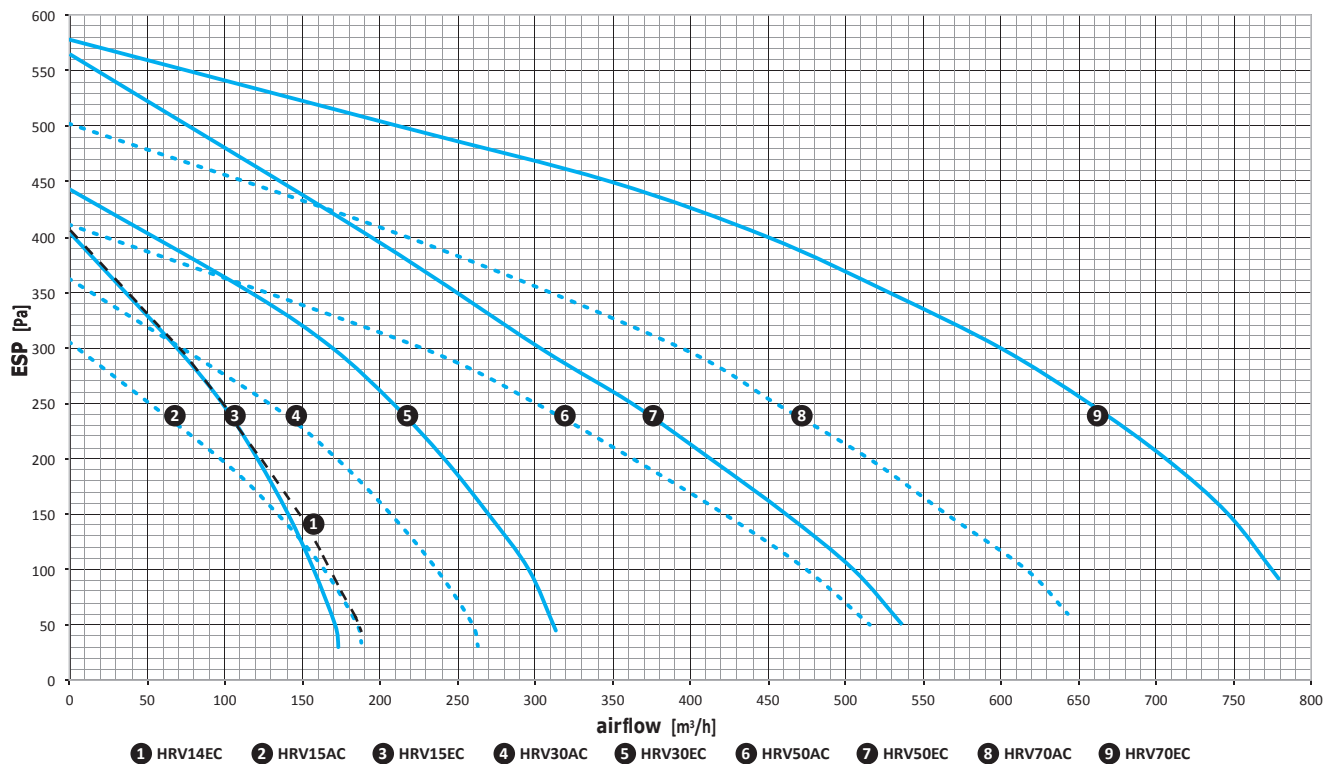
Operational diagram



PRIMARY PARAMETERS

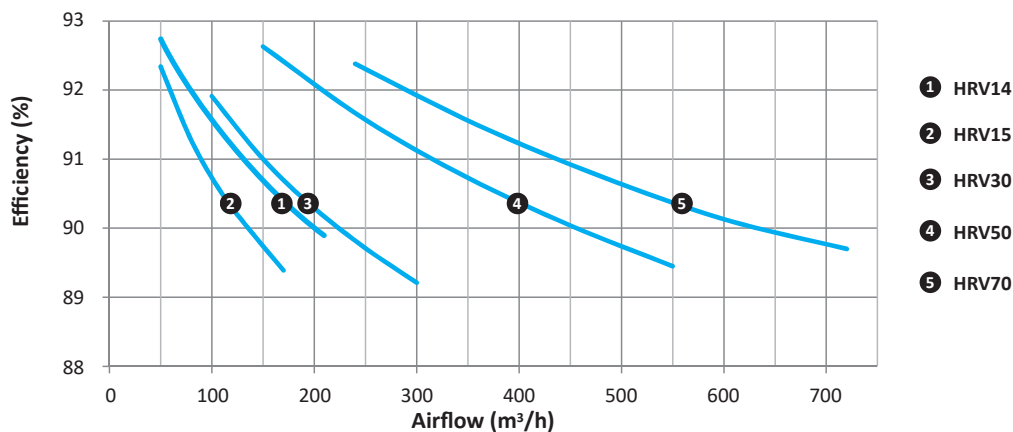
Output power characteristic

HRV14,15,30,50,70 EC - ePM 2,5 50% (F7)/AC - ePM 10 50% (M5)





Heat recovery efficiency



The data is measured under these conditions: the outdoor air temperature is -5°C, relative humidity is 90% the indoor air temperature is 20°C, relative humidity is 65%

Type	Into the environment	Into the environment	Inlet duct (supply branch)	Outlet duct branches
	L _{pa} 3m (dB)	L _{wa} (dB)	L _{wa} (dB)	L _{wa} (dB)
HRV14EC	38	59	58	66
HRV15AC	37	59	55	65
HRV15EC	38	59	58	66
HRV30AC	39	60	59	66
HRV30EC	44	69	65	72
HRV50AC	47	69	59	70
HRV50EC	46	67	56	69
HRV70AC	43	65	59	67
HRV70EC	54	75	67	75

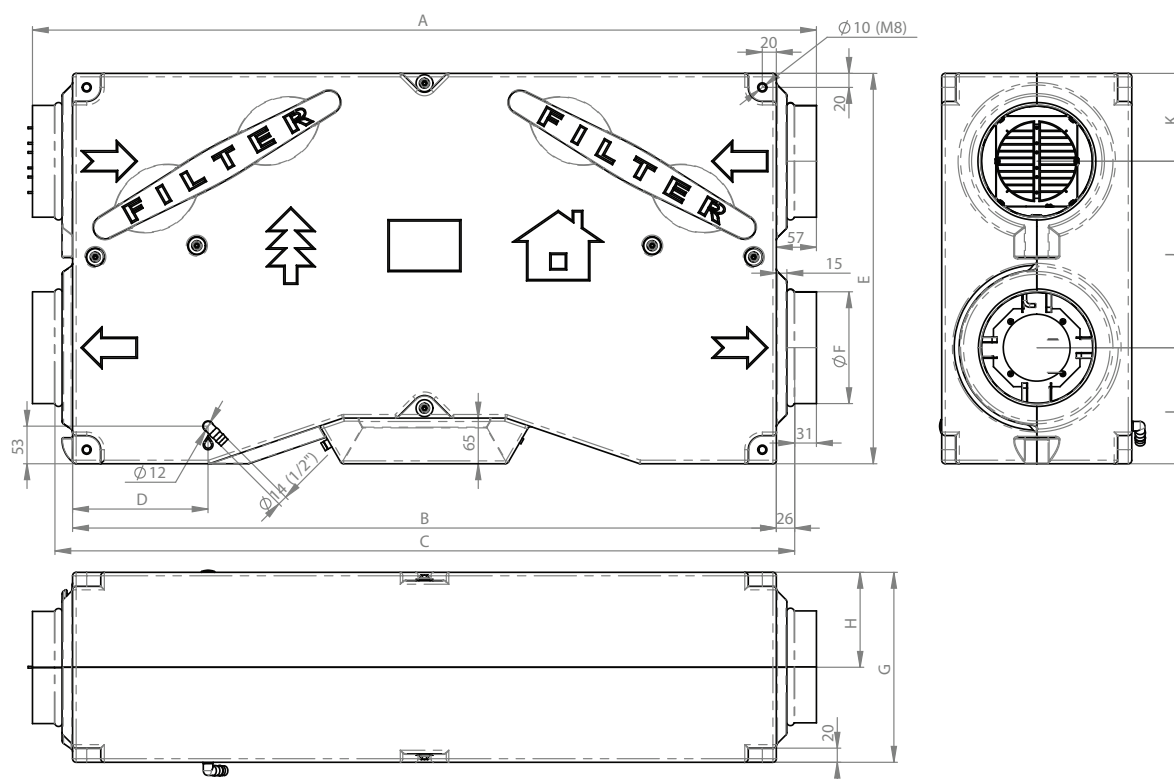
Table of the main parameters

Type	Maximal air flow [m³/h]	Supply filter class	Exhaust filter class	Phase [pcs]	Voltage [V]	Frequency [Hz]	Fans power [W]	Pre-heater Input [kW]	Weight [kg]	Duct diameter [mm]	Unit height [mm]	Unit width [mm]	Unit length [mm]
HRV14EC	185	ePM 2,5 50%	Coarse 60%	1	230	50/60	53	0,6	19,5	160	270	555	1000
HRV15AC	185	ePM 10 50%		1	230	50	105	1	17,4	160	270	555	1000
HRV15EC	175	ePM 2,5 50%		1	230	50/60	65	1	17,2	160	270	555	1000
HRV30AC	265	ePM 10 50%		1	230	50	145	1,3	19,5	160	270	555	1000
HRV30EC	315	ePM 2,5 50%		1	230	50/60	170	1,3	19,3	160	270	555	1000
HRV50AC	515	ePM 10 50%		1	230	50	230	2,5	35	250	360	846	1391
HRV50EC	535	ePM 2,5 50%		1	230	50/60	220	2,5	35,5	250	360	846	1391
HRV70AC	650	ePM 10 50%		1	230	50	270	2,5	40	250	360	846	1391
HRV70EC	785	ePM 2,5 50%		1	230	50/60	430	2,5	40,7	250	360	846	1391

COMMISSION DELEGATED REGULATION (EU) No 1254/2014

Type	Regulation	
	VENUS AirGENIO	VENUS Comfort
HRV14EC	A+	A+
HRV15AC	A	A
HRV15EC	A	A
HRV30AC	A	A
HRV30EC	A	A
HRV50AC	A	A
HRV50EC	A+	A+
HRV70AC	A	A
HRV70EC	A	A

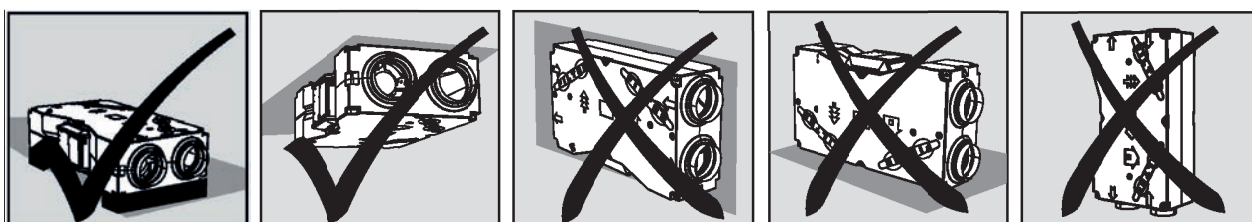
Dimensions



Type	A	B	C	D	E	F	G	H	I	J	K
HRV14, HRV15, HRV30	1114	1000	1051	193	555	159	270	135	165	265	125
HRV50, HRV70	1505	1391	1441	248	846	249	360	180	235	420	190



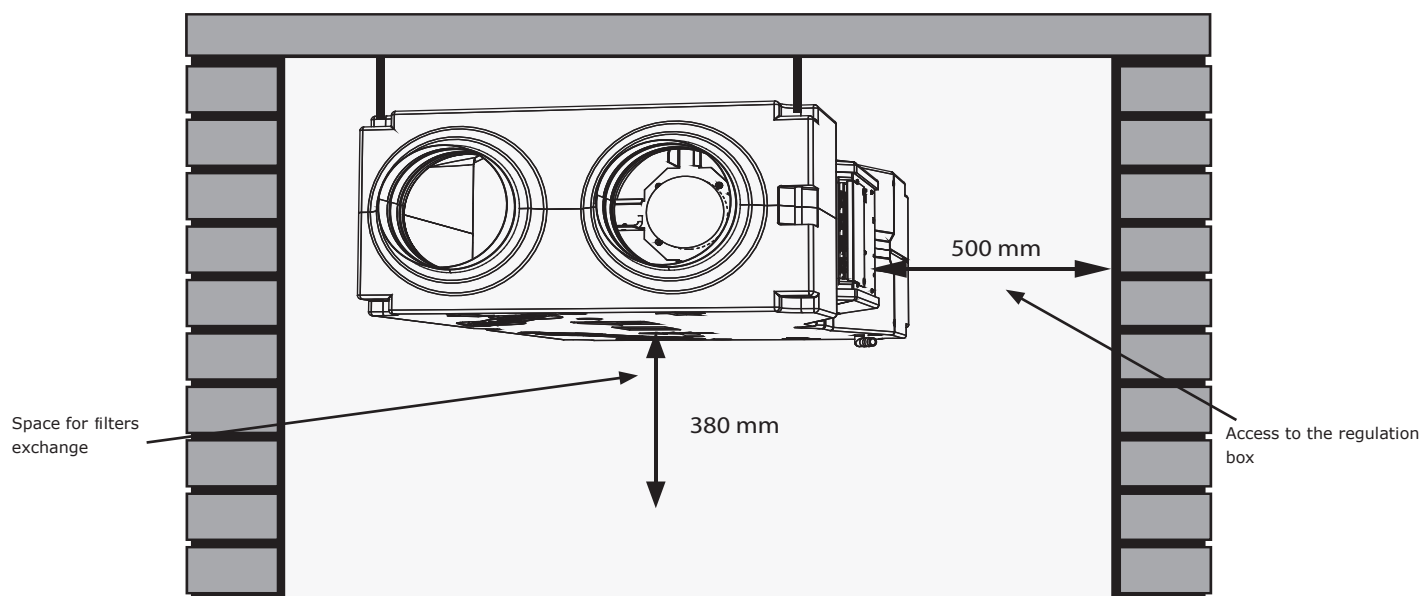
INSTALLATION AND ASSEMBLY



The unit can be suspended using threaded rods (M8) from the ceiling. The unit must be installed with a view to correct position of condensate exhaust. Other installation position is not possible.

Installation of the unit shall allow a sufficient access for performing maintenance, servicing, and dismantling operations.

Necessary space for service



- The unit shall be fixed safely to avoid its dropping.
- The air duct is connected by slipping it over the circular neck.



CONTROL

VENUS heat recovery units are available with two different control types – VENUS Comfort and VENUS AirGENIO (available for EC version only).

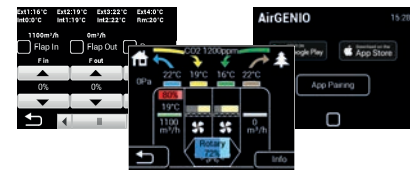
VENUS Comfort is a control system providing manual and automatic DCV control with possible use of up to 3 CO₂ sensor, 1 RH sensor and 1 PIR sensor. It is equipped with compact control panel (85x85x12mm) and 10 m long connection cable.

VENUS AirGENIO is a control system providing manual and advanced automatic DCV control, fluent by-pass control ensuring efficient temperature control (free-cooling, anti-freeze protection), BMS control via ModBUS RTU, TCP or BACnet, control via smart device. It is equipped with touch-screen control panel and 10m long UTP cable.



WIRING DIAGRAMS

All wiring diagrams provided in the technical catalog are indicative only. When assembling the product, observe strictly the nameplate ratings as well as directions and diagrams affixed directly to the product or enclosed to the product.

**CONTROLS****VENUS AirGENIO - Main control functions:**

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

2VW AirGENIO Application:

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

**2VW Service software:**

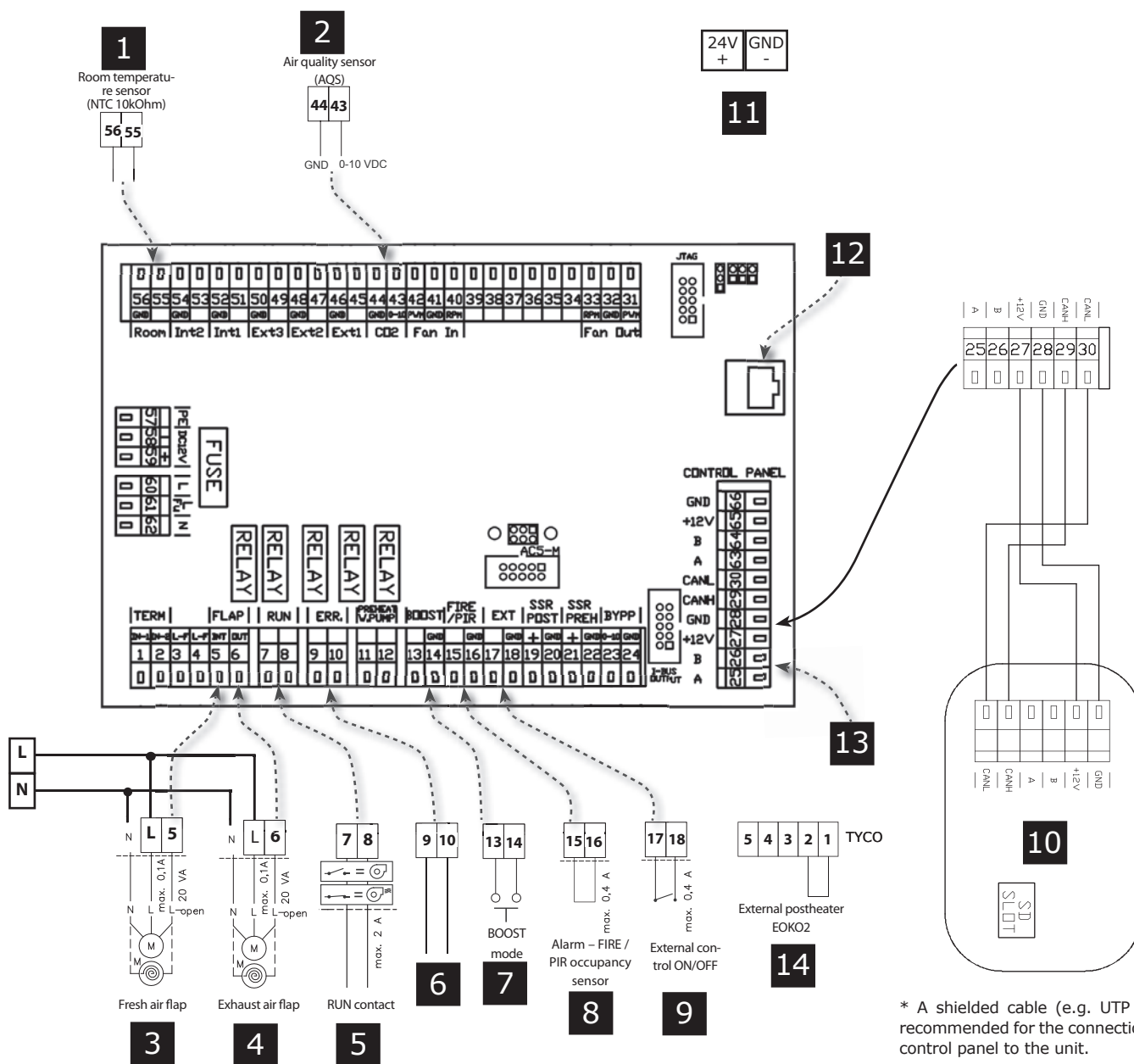
- Easy and quick commissioning from your computer
- Error log – error display and identification
- Easy service (device status loading/reset to backup setting)
- Fast FW update
- OFFLINE version





WIRING DIAGRAMS

VENUS AirGENIO control

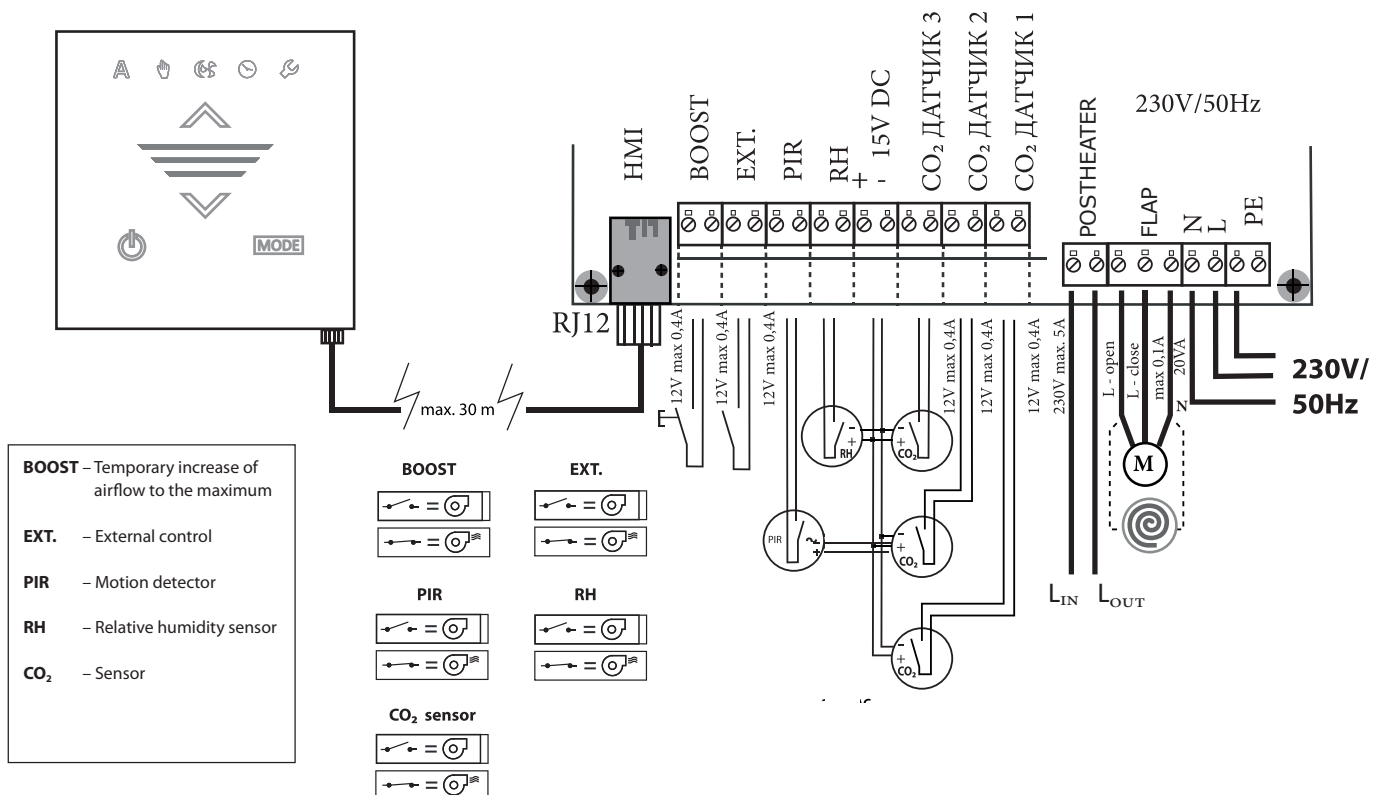


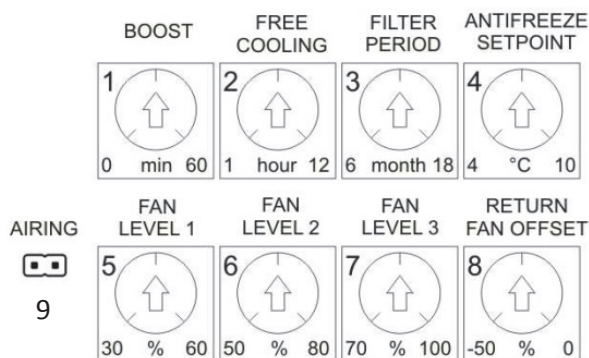
* A shielded cable (e.g. UTP type) is recommended for the connection of the control panel to the unit.

1	Room temperature sensor (input)
2	The air quality sensor - control signal (input)
3	Inlet air damper (L-in, L-out)
4	Exhaust air damper (L-in, L-out)
5	RUN contact (relay contact)
6	ERROR contact (relay contact)
7	BOOST regime (input)
8	Alarm - FIRE (input) or PIR (input)
9	External control - ON/OFF
10	Control panel
11	24V power supply (accessories)
12	RJ45 plug - Ethernet, Modbus TCP, BACnet
13	Modbus RTU (A-25, B-26, 28 or 66-GND)
14	Duct postheater - EOKO (output)

**CONTROLS****VENUS Comfort - main control functions:**

- Control using a remote control (optional accessories)
- Control based on CO₂ concentration (relative humidity or presence of persons)
- 3 steps of fan speed
- Manual adjustment of each fan speed (EC only)
- Stepless regulation of el. heater power (Only for units with preheating)
- El. heater overheating protection (Only for units with preheating)
- Control of shutting flaps
- Diagnostics of malfunctions and their reporting
- Boost – Time adjustable ventilation on maximum airflow
- Freecooling
- Possibility of time period setting for filter replacement
- Antifreeze protection setpoint adjustment
- Adjustable offset of exhaust fan (EC only)

**WIRING DIAGRAMS****VENUS Comfort control**

VENUS Comfort - Functions settings


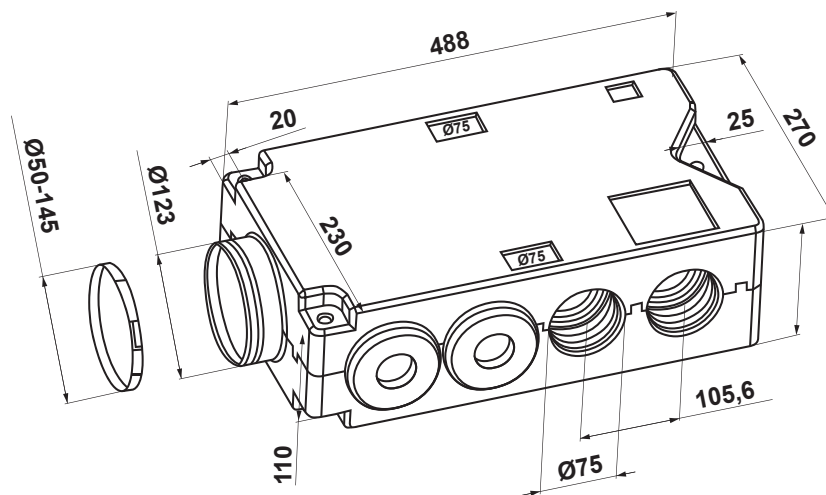
- 1 – Boost function adjustment. 0–60 min (30 min default)
- 2 – Freecooling function adjustment. 1–12 hour (6 hours default)
- 3 – Filter cleaning period adjustment. 6–18months (12 months default)
- 4 – Antifreeze set point adjustment. 4–10°C (7°C default)
- 5 – 1st fan speed adjustment. 30–60 % (30 % default) – only EC motors version
- 6 – 2nd fan speed adjustment. 50–80 % (65 % default) – only EC motors version
- 7 – 3rd fan speed adjustment. 70–100 % (100 % default) – only EC motors version
- 8 – Return fan speed adjustment. -50–0 % (0 % default) – only EC motors version
- 9 – Airing – possibility of regular ventilation once per hour for 8 min.

**ACCESSORIES****RECOMMENDED ACCESSORIES****Distribution box****ROZ-EPP-125**

The distributor/collector is a distribution box designed for the distribution of air. It helps to divide air in to up to 8 distribution/collection ducts. It provides a solution for the connection between flexible air ducts (e.g. Isovac, Sonovac, Semivac and Aluv DN 125) and Duotec flexible hoses. The distributor/collector can be connected to up to 8 Duotec flexible hoses. The flexible hoses are attached by insertion. To ensure the correct position of the flexible hoses it is necessary to insert the hose into the box until it clicks in. The distributor /collector is intended for operation in standard indoor areas for the distribution/collector of clean air without coarse dust, fats, chemical vapours and other pollutants with a temperature of up to 40 °C.

Material: The distributor/collector is produced from black-coloured extruded polypropylene and is not load bearing.

The package includes: Box (inlet with a connection diameter of 125 mm), four removable plugs.

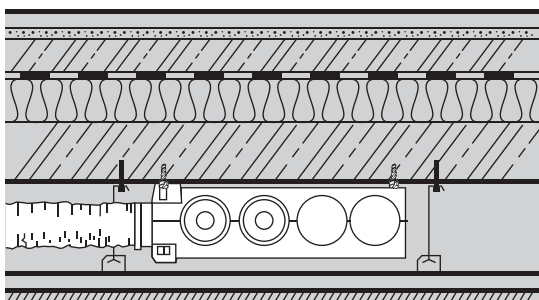




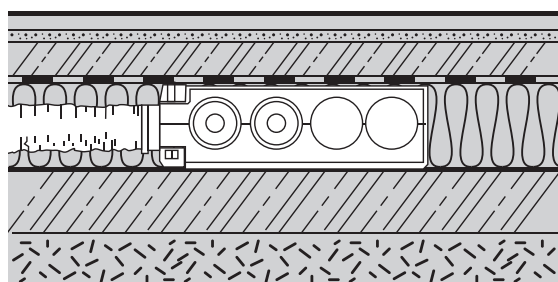
INSTALLATION AND ASSEMBLY

The box can be suspended under a ceiling using three threaded rods or installed into the floor (a layer for spreading the load is necessary).

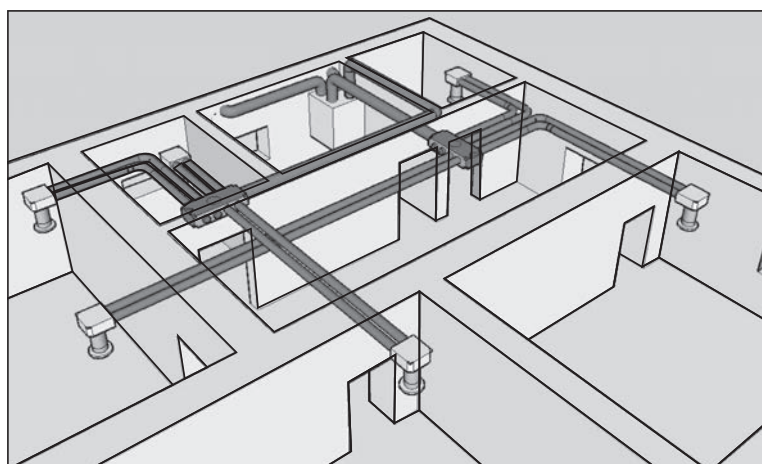
Ceiling installation



Floor installation



Example of installation



KEY TO CODING

ROZ-EPP-125

125 – Connection diameter 125 mm

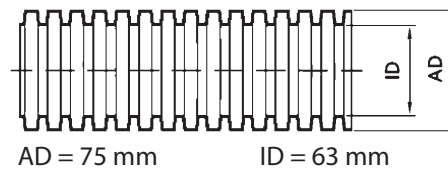
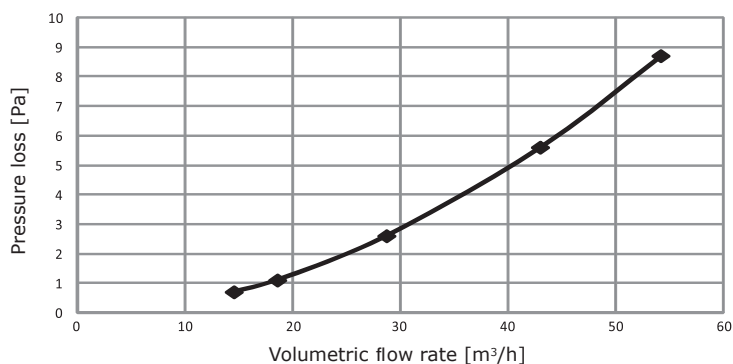
ROZ-EPP – Universal distribution, EPP, 8 outlets

**ACCESSORIES****RECOMMENDED ACCESSORIES****Flexible hose****ROZ-DUOTEC075/063**

The Duotec flexible hose is intended for the delivery and exhaust of air free of coarse dust, fats, chemical vapours and other pollutants. The hose is suitable for use in ventilation systems with a heat recovery unit. It is recommended that installation is performed at temperatures above 0°C! The recommended air flow rate through the hose is 15-30 m³/h.

Material: The material used is environmentally friendly. PE is resistant to practically all agents (alcohol, fats, mineral oils, fuels). Only highly concentrated oxidising acids can damage the PE. 450N pressure test. The duct dimensions correspond to the requirements of DIN EN 50086-24.

The package includes: 50 m roll with two plugs and one coupling.

**Pressure loss per 1m of hose length****KEY TO CODING****ROZ-DUOTEC075/063**

ROZ-DUOTEC 075/063 – Duotec PE flexible hose, diameter 075/063 mm, length 50 m



ACCESSORIES

RECOMMENDED ACCESSORIES

Spatial sensor CO₂ **CI-CO2-R**

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



Spatial sensor RH **CI-RH-R**

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



Signal combiner **CI-AQS-COMBI**

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



PIR sensor **CI-PS 1003**

Spatial infrared sensor for automatic ventilation based on presence of people in the ventilated area.



Shutting flap **KRTK-A**

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

Type of unit	Flap type
HRV14, HRV15, HRV30	KRTK-A160
HRV50, HRV70	KRTK-A250



Servodrive **SERVO-LM230-05**

Necessary accessory for automatic control of the closing flap.



**OPTIONAL ACCESSORIES**

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

Spare air filters

Filter replacements of different classes and configurations



Type of unit Gerätetyp	Supply air filter Zuluftfilter		Exhaust air filter Abluftfilter	
	Filter code Filtercode	Class of filtration Klasse der Filtrierung	Filter code Filtercode	Class of filtration Klasse der Filtrierung
HRV14EC	HRV-30-FI-F7	ePM 2,5 50% (F7)	HRV-30-FI-G4	Coarse 60% (G4)
HRV15AC	HRV-30-FI-M5	ePM 10 50% (M5)	HRV-30-FI-G4	Coarse 60% (G4)
HRV15EC	HRV-30-FI-F7	ePM 2,5 50% (F7)	HRV-30-FI-G4	Coarse 60% (G4)
HRV30AC	HRV-30-FI-M5	ePM 10 50% (M5)	HRV-30-FI-G4	Coarse 60% (G4)
HRV30EC	HRV-30-FI-F7	ePM 2,5 50% (F7)	HRV-30-FI-G4	Coarse 60% (G4)
HRV50AC	HRV-70-FI-M5	ePM 10 50% (M5)	HRV-70-FI-G4	Coarse 60% (G4)
HRV50EC	HRV-70-FI-F7	ePM 2,5 50% (F7)	HRV-70-FI-G4	Coarse 60% (G4)
HRV70AC	HRV-70-FI-M5	ePM 10 50% (M5)	HRV-70-FI-G4	Coarse 60% (G4)
HRV70EC	HRV-70-FI-F7	ePM 2,5 50% (F7)	HRV-70-FI-G4	Coarse 60% (G4)

Connection sleeve**MK**

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

**Electric postheater** - (versions **VENUS Comfort** only)**EOKO2** – The postheater

Type of unit	Postheater type
HRV14, HRV15, HRV30 (AirGENIO Comfort)	EOKO2-160-0,8-1-VE
HRV50, HRV70 (AirGENIO Comfort)	EOKO2-250-1,5-1-VE

**Communication cable PTPM-RJ11**

(version **VENUS Comfort** only)

Spare communication cable for control panel and regulation connection.

**KP-VK-XX**

10,20,30 – length of cable

Threaded rods

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





KEY TO CODING

HRV15AC-CF-P-N-NN-54-R-P0

0	Spare code 0 2VV version
P	Access type P Right side service access
R	Regulation R VENUS COMFORT C VENUS AirGENIO (EC only)
54	Filtration (Supply/Exhaust) 54 Filter class ePM 10 50% (M5) / Coarse 60% (G4) (version with AC fans only) 74 Filter class ePM 2,5 50% (F7) / Coarse 60% (G4) (version with EC fans only)
N	Afterheater N Without afterheater
N	Preheater N Without preheater E Electric preheater
N	By - pass N Without by - pass
P	Installation P Installation under the ceiling
CF	Heat exchanger CF Counter flow aluminium heat exchanger
AC	Type of fan AC fans EC fans
15	Unit size 14 Unit size 14 (EC version only) 15 Unit size 15 30 Unit size 30 50 Unit size 50 70 Unit size 70
HRV	HRV Type HRV Heat recovery unit VENUS



Counterflow plate heat recovery exchanger

**BASIC FEATURES**

DAPHNE is an energy efficient heat recovery unit designed for installation on a wall in residential applications such as **houses, apartment buildings and low-energy houses.**

- **Nominal air flows: 200, 300, 500, 700 and 900 m³/h**
- Energy class **A / A+**; compliant with Ecodesign directive 1253/2014
- Aluminium counterflow heat exchanger with heat recovery efficiency up to 93% (EN13141-7)
- Quiet operation and low consumption thanks to energy efficient EC fans with low SFP
- **AirGENIO** control system with stepless and fully automatic bypass-damper control (temperature control, free-cooling, anti-freeze protection).
- Manual or automatic control in DCV mode based on AQS sensors (CO₂, RH, VOC)
- Control via ModBUS RTU, TCP or BACnet
- Control via smart device
- Collars with insulated connections for trouble-free installation
- Easy commissioning and user-friendly maintenance

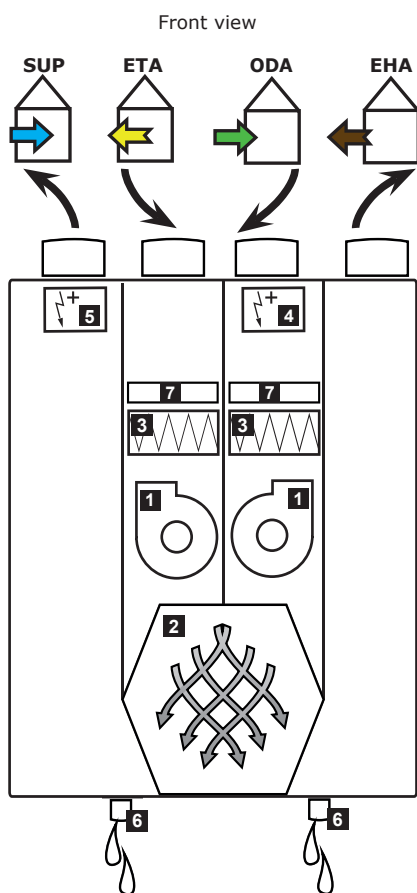
DAPHNE is designed to be operated in a dry indoor environment (relative humidity not exceeding 80%) and at an ambient temperature in the range from +5°C up to +40°C.

The unit is designed for transporting standard atmospheric air that is free of dust, grease, chemical emissions and other impurities.

The unit has an IP rating of IP 20.

It is recommended that the heat recovery project always be **designed by a qualified HVAC designer, engineer or architect.**

OPERATIONAL DIAGRAM

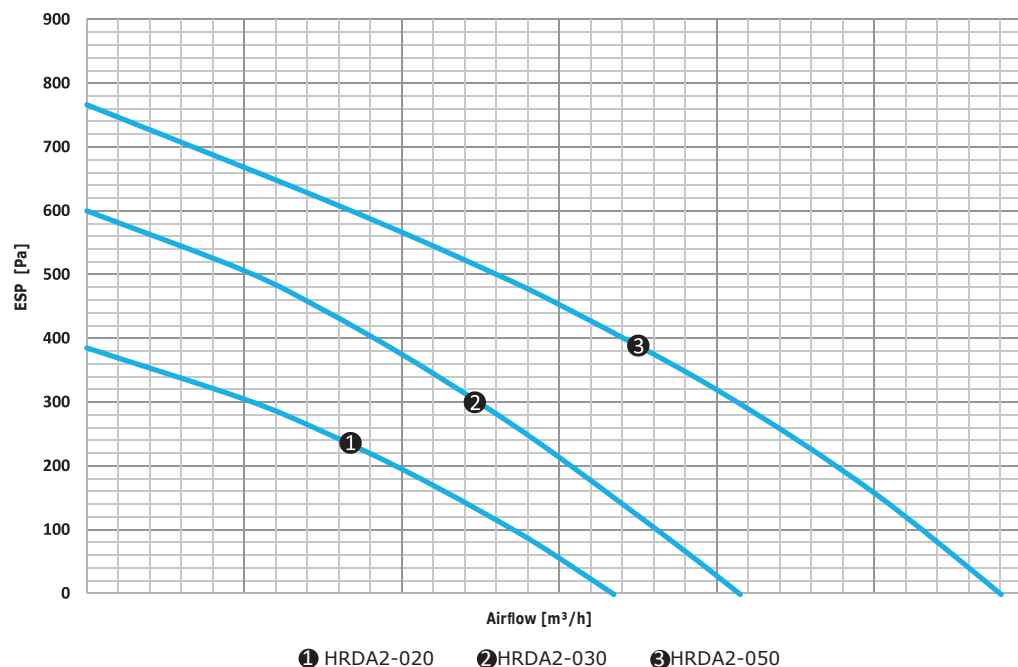


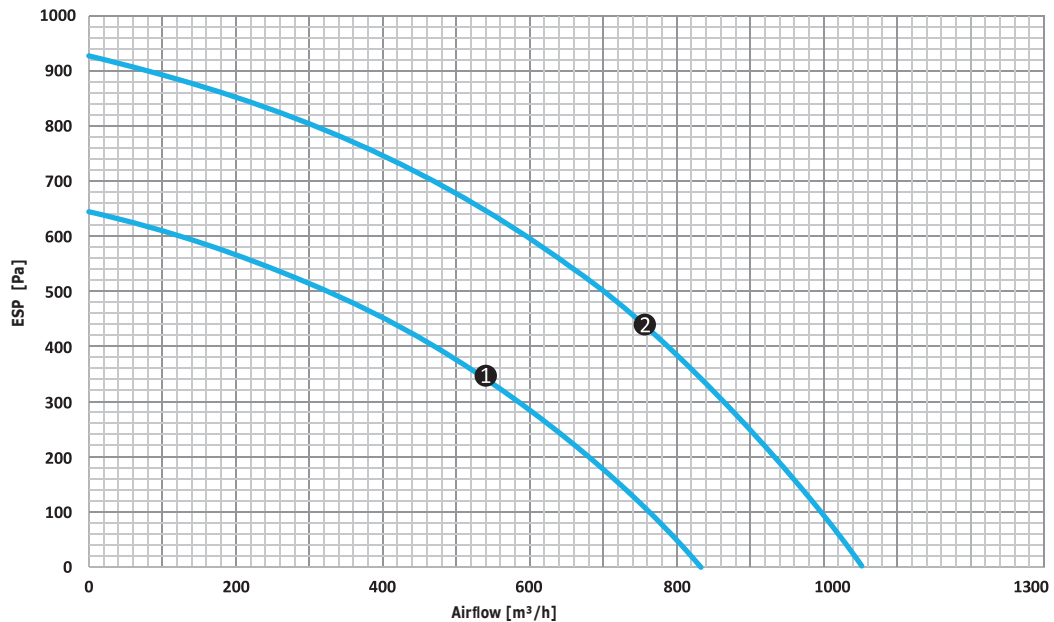
- 1. - Fan
- 2. - Heat exchanger
- 3. - Filter ISO COARSE 60% (G4)
- 4. - Electric preheater
- 5. - Electric post heater
- 6. - Condensate drain
- 7. - Pre-filter Coarse 40% (G2 option)



PRIMARY PARAMETERS

Performance characteristics





① HRDA2-070 ② HRDA2-090

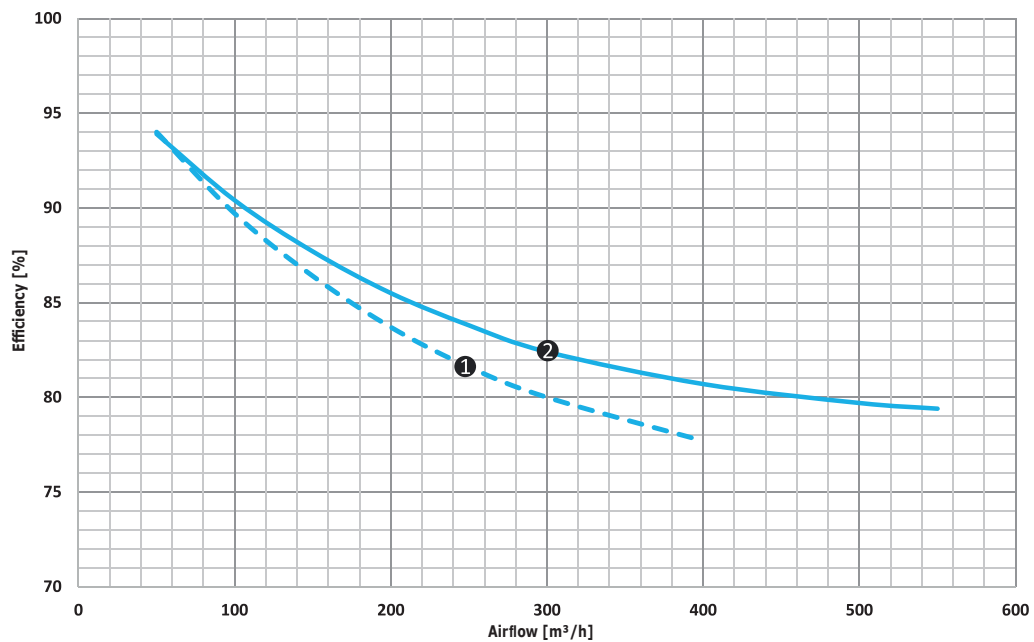


Heat recovery efficiency:

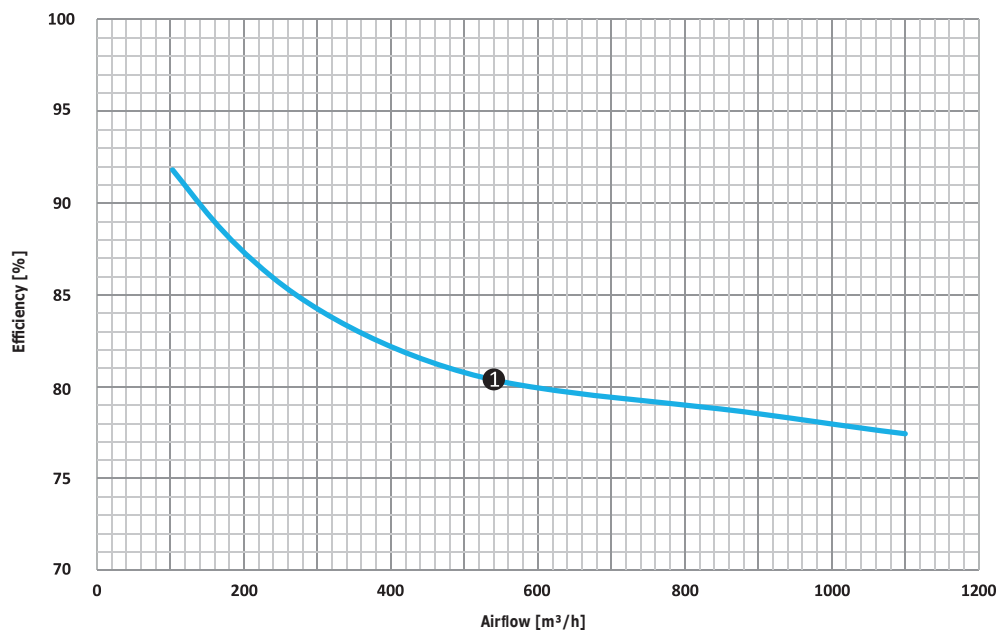
According to EN13141-7 (with a balanced mass flow)

Temperature - Supply in 7°C, Relative humidity - supply in 80 %

Temperature - Exhaust in 20°C, Relative humidity - exhaust in 38 %



① HRDA2-020 + HRDA2-030 ② HRDA2-050



① HRDA2-070 + HRDA2-090

COMMISSION DELEGATED REGULATION (EU) No 1254/2014

Type	Class
HRDA2-020	A+
HRDA2-030	A
HRDA2-050	A
HRDA2-070	A
HRDA2-090	A

Basic technical parameters:

Type	Air flow [m³/h]	Phase [No.]	Voltage [V]	Frequency [Hz]	Max. fan power [W]	Power input of preheater [kW]	Power input of afterheater [kW]	Total current [A]	Weight [kg]
HRDA2-020... ES0C	200	1	230	50	120	0,8	-	4,0	50
HRDA2-020... EE1C	200	1	230	50	120	0,8	0,8	7,5	51
HRDA2-030... ES0C	300	1	230	50	170	0,8	-	4,5	50
HRDA2-030... EE1C	300	1	230	50	170	0,8	0,8	8,0	51
HRDA2-050... ES0C	500	1	230	50	240	1,6	-	7,9	70
HRDA2-050... EE1C	500	1	230	50	240	1,6	0,8	11,3	71
HRDA2-070... ES0C	700	1	230	50	400	2,4	-	13,0	88
HRDA2-070... EE1C	700	3	400	50	400	2,4	1,2	10,3	89
HRDA2-090... ES0C	900	1	230	50	800	2,4	-	15,4	88
HRDA2-090... EE1C	900	3	400	50	800	2,4	1,2	10,3	89

Noise specifications:**HRDA2-020**

Type	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band L _{WA} (dB(A))								Overall	
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{PA} [dB] at 3m
HRDA2-020	200	150	25	40	51	44	39	37	28	22	52	31
	150		24	40	51	43	37	35	27	20	52	30
	100		24	37	49	39	34	32	25	19	49	27
	50		25	34	45	35	31	29	24	19	45	24

Ducts	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band L _{WA} (dB(A))								Overall	
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	
EHA	200	150	42	50	52	42	41	40	32	18	55	
SUP			43	51	53	43	43	41	33	19	55	
ETA			47	55	60	50	44	46	41	30	61	
ODA			48	56	61	51	45	48	43	32	62	

HRDA2-030

Type	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band L _{WA} (dB(A))								Overall	
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{PA} [dB] at 3m
HRDA2-030	300	150	33	41	50	58	50	47	38	32	59	38
	250		34	39	52	49	47	45	36	28	55	33
	200		33	38	51	45	44	43	33	26	53	31
	150		32	37	49	44	42	40	32	25	51	29

Ducts	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band L _{WA} (dB(A))								Overall	
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	
EHA	300	150	50	57	59	56	55	51	43	33	63	
SUP			51	59	59	58	56	52	44	36	64	
ETA			54	61	64	67	56	58	55	49	70	
ODA			55	62	64	71	57	59	55	50	72	

HRDA2-050

Type	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band L _{WA} (dB(A))								Overall	
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{PA} [dB] at 3m
HRDA2-050	500	150	28	44	50	51	48	49	37	28	55	33
	400		29	42	47	49	44	46	32	24	53	31
	300		26	40	46	44	41	43	31	22	50	28
	200		23	39	45	40	38	40	31	21	48	26

Ducts	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band L _{WA} (dB(A))								Overall	
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	
EHA	500	150	43	52	51	51	48	50	43	36	57	
SUP			44	52	52	50	48	51	44	35	57	
ETA			49	57	57	57	55	58	54	49	64	
ODA			49	57	58	57	56	59	55	49	65	

HRDA2-070

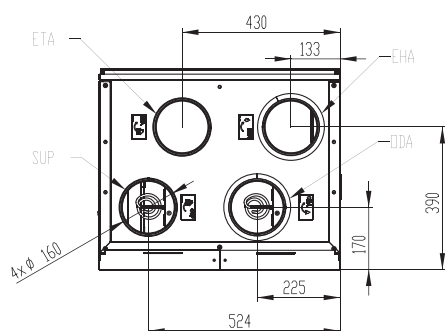
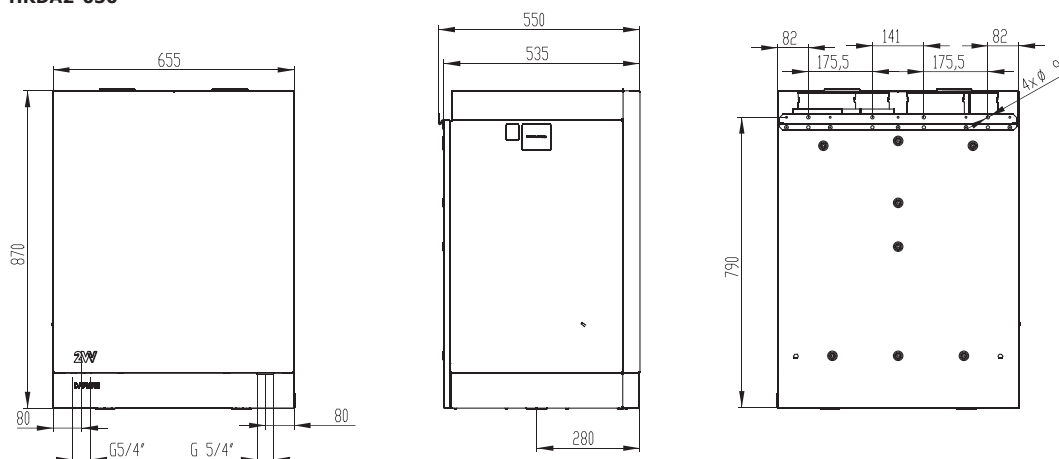
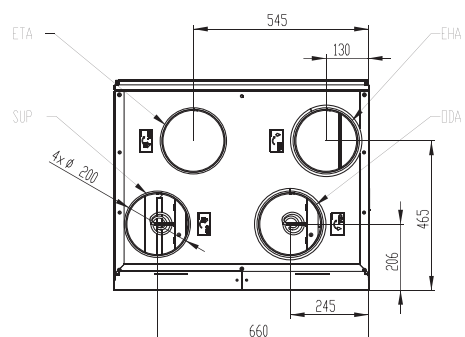
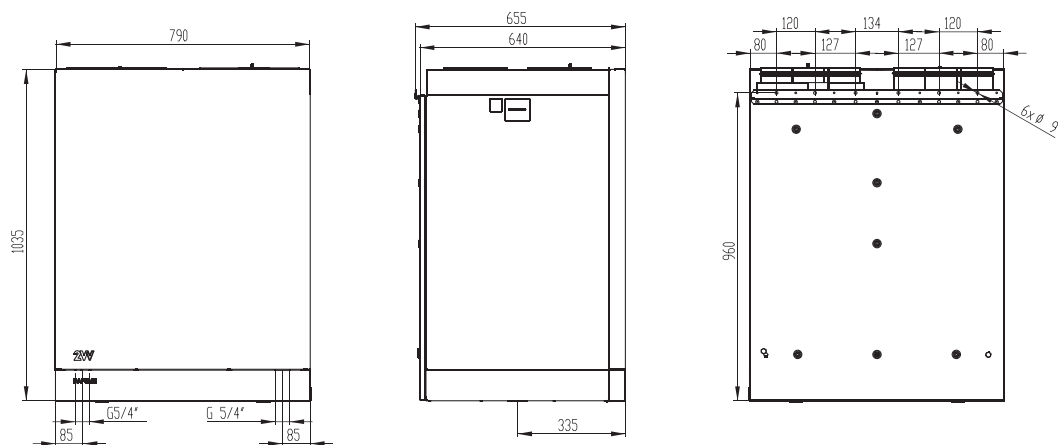
Type	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band L _{WA} (dB(A))								Overall	
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{PA} [dB] at 3m
HRDA2-070	700	150	39	48	58	53	52	52	42	36	61	39
	600		37	47	57	50	50	49	39	32	59	37
	500		36	46	55	47	48	47	37	29	57	35
	400		35	45	53	44	45	44	35	26	55	33
	300		34	46	51	41	43	41	34	26	53	31
	200		34	47	49	39	40	38	33	27	51	29
	100		34	49	47	36	38	36	33	32	51	29

Ducts	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band L _{WA} (dB(A))								Overall	
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	
EHA	700	150	47	55	58	55	52	51	42	35	62	
SUP			48	56	58	55	53	52	43	36	62	
ETA			54	62	65	62	60	57	54	49	69	
ODA			54	62	65	63	61	58	54	49	69	

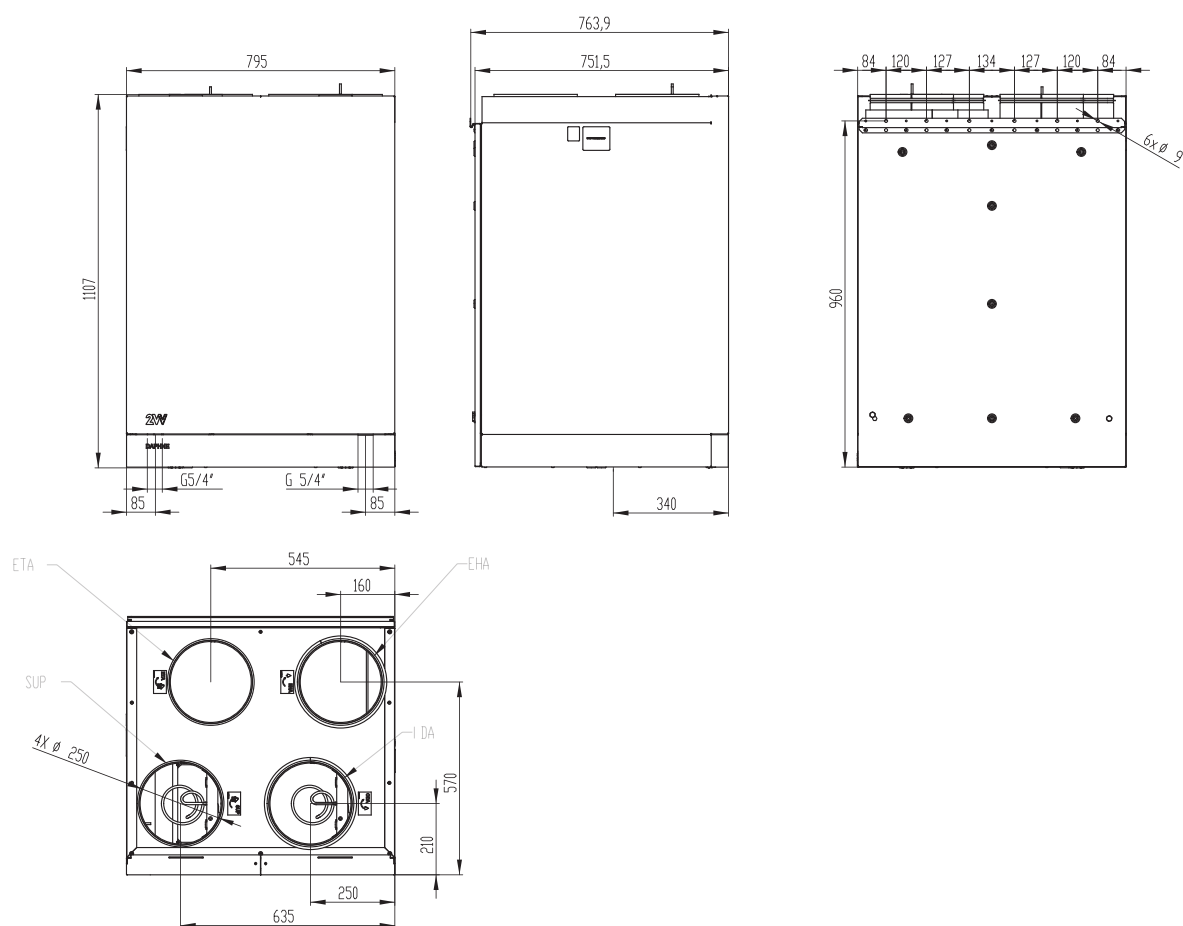
HRDA2-090

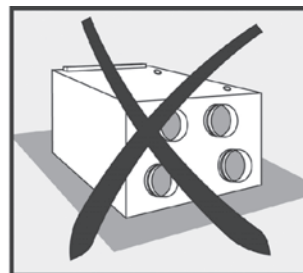
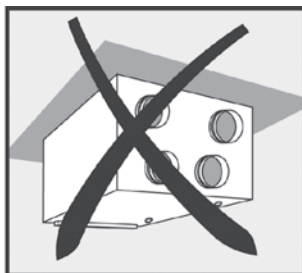
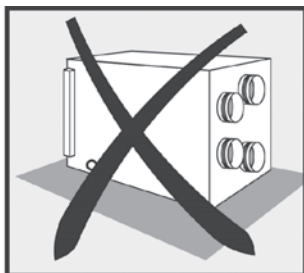
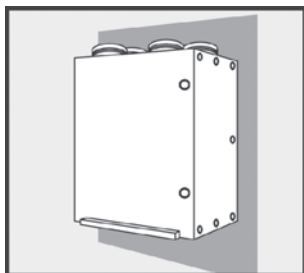
Type	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band L _{WA} (dB(A))								Overall	
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{PA} [dB] at 3m
HRDA2-090	900	150	46	53	58	59	58	56	49	45	64	42
	750		41	50	59	56	54	54	44	39	62	40
	600		38	48	58	52	51	50	40	33	60	38
	450		36	46	56	47	47	46	37	28	57	35
	300		34	46	52	42	44	42	35	26	54	32
	150		34	48	48	38	39	38	33	29	52	30

Ducts	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band L _{WA} (dB(A))								Overall	
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	
EHA	900	150	50	58	59	60	58	57	48	43	65	
SUP			50	59	59	60	58	57	48	43	65	
ETA			56	65	65	69	66	63	59	56	73	
ODA			57	65	65	69	66	63	59	55	73	

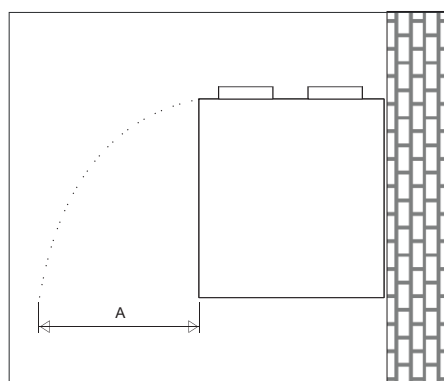
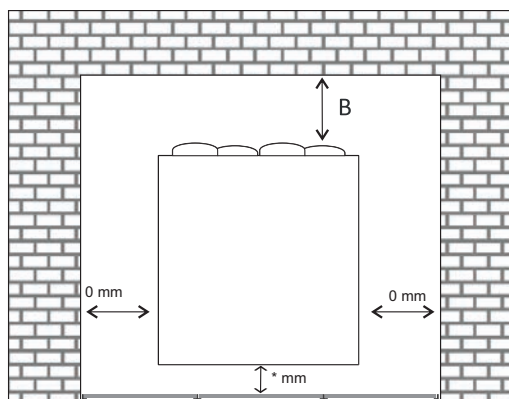
**DIMENSIONS****HRDA2-020 + HRDA2-030****HRDA2-050**

HRDA2-070 + HRDA2-090



**INSTALLATION AND ASSEMBLY**

- The unit must be installed so there is adequate access for maintenance, servicing or disassembly.

Necessary clearances for service access

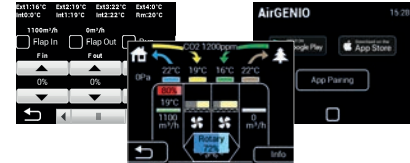
* It is necessary to provide enough space for siphon connection.

Type	Dimension A (mm)	Dimension B (mm)
HRDA2-020	500	350
HRDA2-030	500	350
HRDA2-050	600	500
HRDA2-070	1100	700
HRDA2-090	1100	700



CONTROLS

AirGENIO COMFORT - Main control functions



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

2VV AirGENIO Application:

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



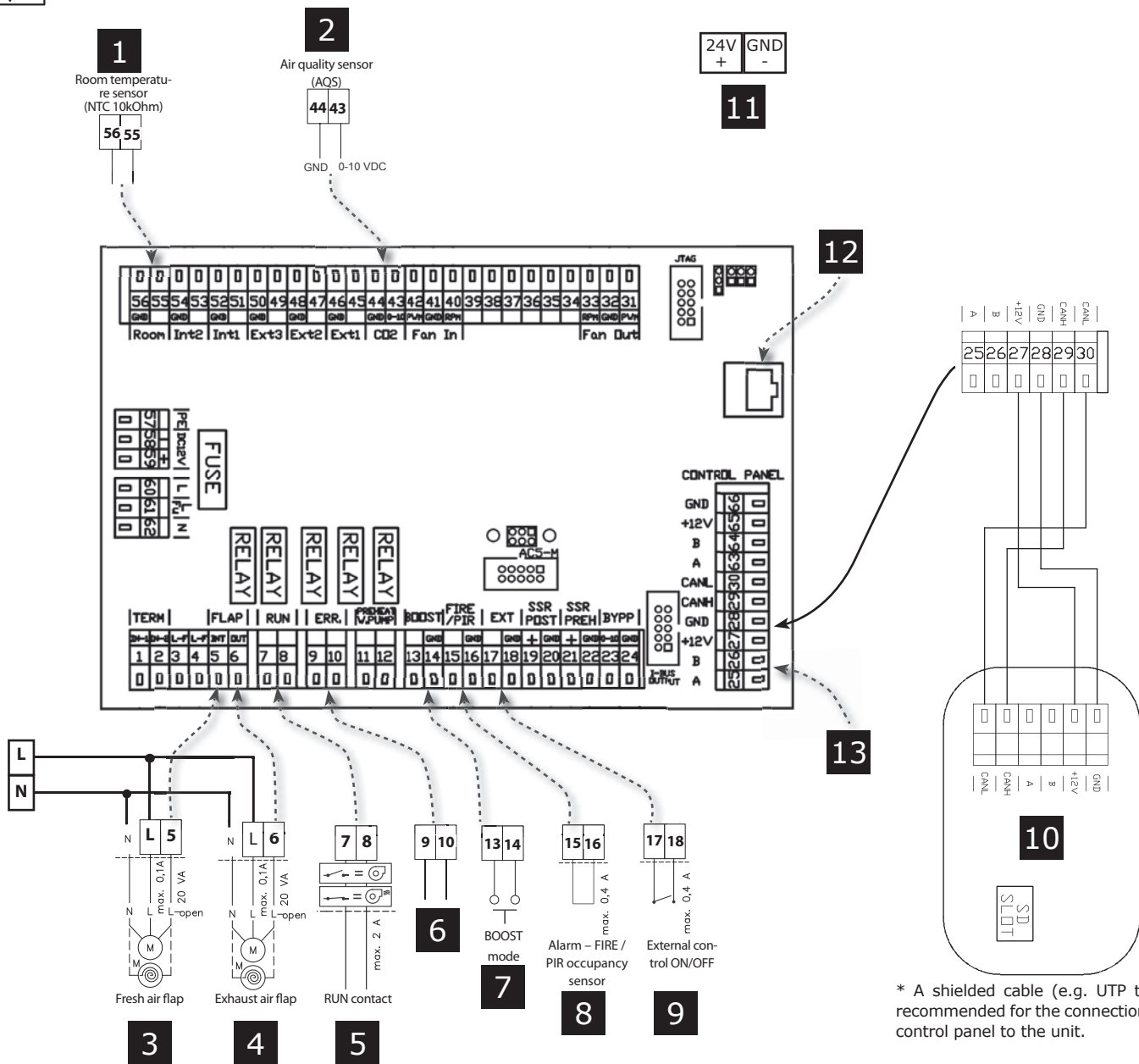
2VV Service software:

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





WIRING DIAGRAMS



1	Room temperature sensor (input)
2	The air quality sensor - control signal (input)
3	Inlet air damper (L-in, L-out)
4	Exhaust air damper (L-in, L-out)
5	RUN contact (relay contact)
6	ERROR contact (relay contact)
7	BOOST regime (input)
8	Alarm - FIRE (input) or PIR (input)
9	External control - ON/OFF
10	Control panel
11	24V power supply (accessories)
12	RJ45 plug - Ethernet, Modbus TCP, BACnet
13	Modbus RTU (A-25, B-26, 28 or 66-GND)



ACCESSORIES

REQUIRED ACCESSORIES

Condensate siphon

SK-AKS3

Ball Siphon for direct connection to the unit.



RECOMMENDED ACCESSORIES

Filtration inserts

Replacement filtration inserts of various filtration classes and configurations.



Unit type	COARSE 40% (class G2)	COARSE 60% (class G4 - standard)	COARSE 90% (class M5)	ePM ₁ 60% (class F7)
HRDA-020	HRDA2-20-30-FI-G2	HRDA2-20-30-FI-G4	HRDA2-20-30-FI-M5	HRDA2-20-30-FI-F7
HRDA-030				
HRDA-050	HRDA2-50-FI-G2	HRDA2-50-FI-G4	HRDA2-50-FI-M5	HRDA2-50-FI-F7
HRDA-070	HRDA2-70-90-FI-G2	HRDA2-70-90-FI-G4	HRDA2-70-90-FI-M5	HRDA2-70-90-FI-F7
HRDA-090				

Frame for pre-filter

Necessary for pre-filter COARSE 40% (class G2)

Unit type	Frame for pre-filter COARSE 40% (class G2)
HRDA-020	HRDA2-20-30-G2-RA
HRDA-030	
HRDA-050	HRDA2-50-G2-RA
HRDA-070	HRDA2-70-90-G2-RA
HRDA-090	

**ACCESSORIES****CO₂ duct sensor****CI-EE850-C3xx-FP**

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

**Relative humidity duct sensor****CI-LCN-FTK140VV**

Duct sensor for measuring relative humidity in air-conditioning systems

**Spatial sensor CO₂****CI-CO2-R**

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

**Spatial sensor RH****CI-RH-R**

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

**Signal combiner****CI-AQS-COMBI**

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

**Servodrive****SERVO-LM230-05**

Necessary accessory for automatic control of the closing flap.

**Shutting flap****KRTK-A**

Type	Shutting flap
HRDA2-020	KRTK-A160
HRDA2-030	KRTK-A160
HRDA2-050	KRTK-A200
HRDA2-070	KRTK-A250
HRDA2-090	KRTK-A250





ACCESSORIES

Shutting flap with servo drive

KRTK-A-SB



Type	Shutting flap
HRDA2-020	KRTK-A-160-SB
HRDA2-030	KRTK-A-160-SB
HRDA2-050	KRTK-A-200-SB
HRDA2-070	KRTK-A-250-SB
HRDA2-090	KRTK-A-250-SB

Back drought shutter

RSKR-Z



Type	shutter
HRDA2-020	RSKR-Z160
HRDA2-030	RSKR-Z160
HRDA2-050	RSKR-Z200
HRDA2-070	RSKR-Z250
HRDA2-090	RSKR-Z250

Connection sleeve

MK

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



Base

HRDA2-BASE-xxx

Type	Base
HRDA2-020	HRDA2-BASE-300
HRDA2-030	
HRDA2-050	HRDA2-BASE-500
HRDA2-070	HRDA2-BASE-900
HRDA2-090	

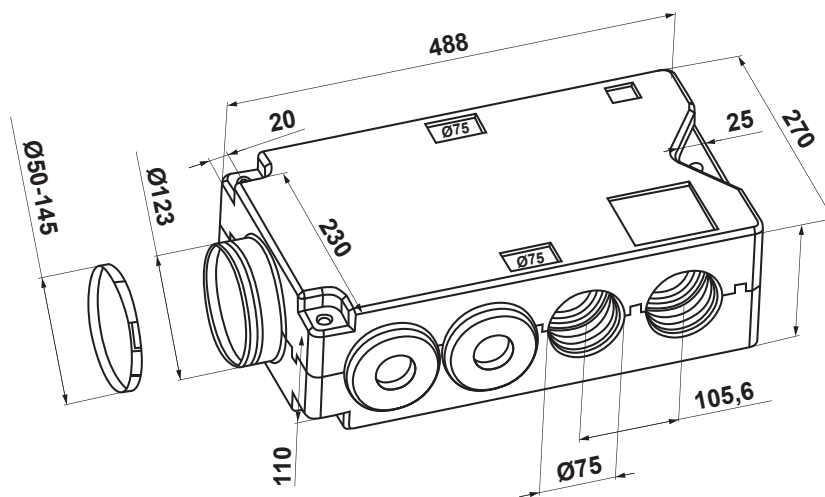


**ACCESSORIES****Distribution box
ROZ-EPP-125**

The distributor/collector is a distribution box designed for the distribution of air. It helps to divide air in to up to 8 distribution/collection ducts. It provides a solution for the connection between flexible air ducts (e.g. Isovac, Sonovac, Semivac and Aluv DN 125) and Duotec flexible hoses. The distributor/collector can be connected to up to 8 Duotec flexible hoses. The flexible hoses are attached by insertion. To ensure the correct position of the flexible hoses it is necessary to insert the hose into the box until it clicks in. The distributor /collector is intended for operation in standard indoor areas for the distribution/collector of clean air without coarse dust, fats, chemical vapours and other pollutants with a temperature of up to 40 °C.

Material: The distributor/collector is produced from black-coloured extruded polypropylene and is not load bearing.

The package includes: Box (inlet with a connection diameter of 125 mm), four removable plugs.

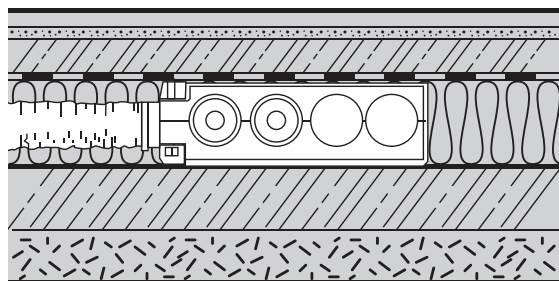
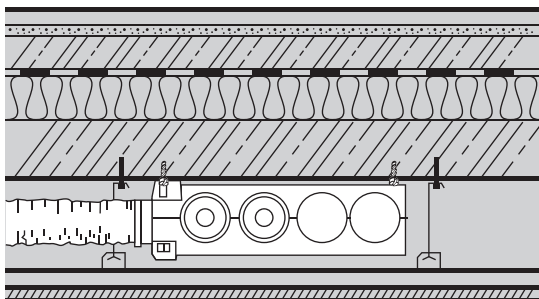




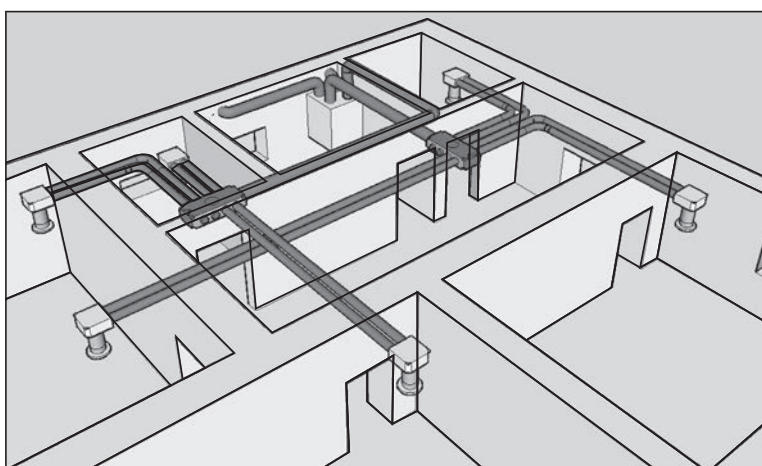
INSTALLATION AND ASSEMBLY

The box can be suspended under a ceiling using three threaded rods or installed into the floor (a layer for spreading the load is necessary).

Ceiling installation



Example of installation



KEY TO CODING

ROZ-EPP-125

125 – Connection diameter 125 mm

ROZ-EPP – Universal distribution, EPP, 8 outlets



ACCESSORIES

RECOMMENDED ACCESSORIES

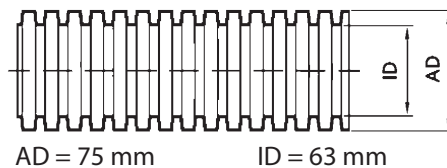
Flexible hose

ROZ-DUOTEC075/061

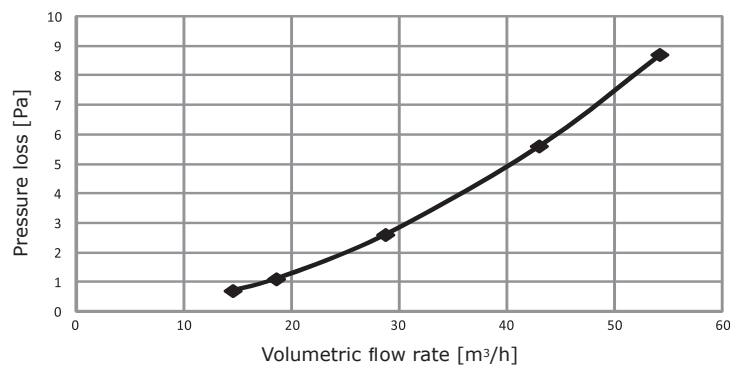
The Duotec flexible hose is intended for the delivery and exhaust of air free of coarse dust, fats, chemical vapours and other pollutants. The hose is suitable for use in ventilation systems with a heat recovery unit. It is recommended that installation is performed at temperatures above 0°C! The recommended air flow rate through the hose is 15-30 m³/h.

Material: The material used is environmentally friendly. PE is resistant to practically all agents (alcohol, fats, mineral oils, fuels). Only highly concentrated oxidising acids can damage the PE. 450N pressure test. The duct dimensions correspond to the requirements of DIN EN 50086-24.

The package includes: 50 m roll with two plugs and one coupling.



Pressure loss per 1m of hose length



KEY TO CODING

ROZ-DUOTEC075/061

ROZ-DUOTEC 075/061 – Duotec PE flexible hose, diameter 075/061 mm, length 50 m



KEY TO CODING

HRDA2-020	U	X	CB	E	44	E	E1	C-0	A	0
										0 Reserve code
										A Version
										A Standard
										0 Surface coating
										0 Standard RAL9016
										C Controls
										C AirGENIO Comfort control
										E1 After heater
										S0 Without after heater
										E1 Electric after heater
										E Preheater
										E Electric preheater
										44 Filtration (inlet / outlet)
										44 Inlet G4 ISO COARSE 60%
										Outlet G4 ISO COARSE 60%
										E Typ of fans
										E EC fans
										CB Heat exchanger
										CB Counter flow aluminium heat exchanger with bypass
										X Version of access
										X Universal
										U Installation
										U Upper outlets
										020 Nominal airflow
										020 Nominal flow rate 200 m³/h
										030 Nominal flow rate 300 m³/h
										050 Nominal flow rate 500 m³/h
										070 Nominal flow rate 700 m³/h
										090 Nominal flow rate 900 m³/h
										HRDA2 type
										HRDA2 Heat recovery unit unit DAPHNE


ErP **A+**


Counterflow plate heat recovery exchanger



BASIC FEATURES

DAPHNE FLAT is a highly energy-efficient heat recovery unit designed for either ceiling or wall mounting installation and thanks to its super-low profile the unit is highly convenient for interiors with limited space. DAPHNE FLAT is designed for installations in residential premises such as **family houses, apartment buildings, low-energy and passive houses.**

- Nominal airflow **350, 520, 770 m³/h** (at 100Pa)
- Energy class **A / A+**; compliant with Ecodesign directive 1253/2014
- **Super quiet** operation
- Ceiling and Wall installation
- Slim profile convenient for use in premises with limited space
- Energy-efficient EC fans with low SFP and quiet operation
- Aluminium counterflow heat exchanger with recovery efficiency up to 96% (EN13141-7)
- AirGENIO control system with stepless and fully automatic bypass-damper control (temperature control, free-cooling, anti-freeze protection)
- Manual or automatic control in DCV mode based on AQS sensors (CO₂, RH, VOC)
- BMS control via ModBUS RTU, ModBUS TCP or BACnet
- Control via Smart Device
- Easy installation and maintenance

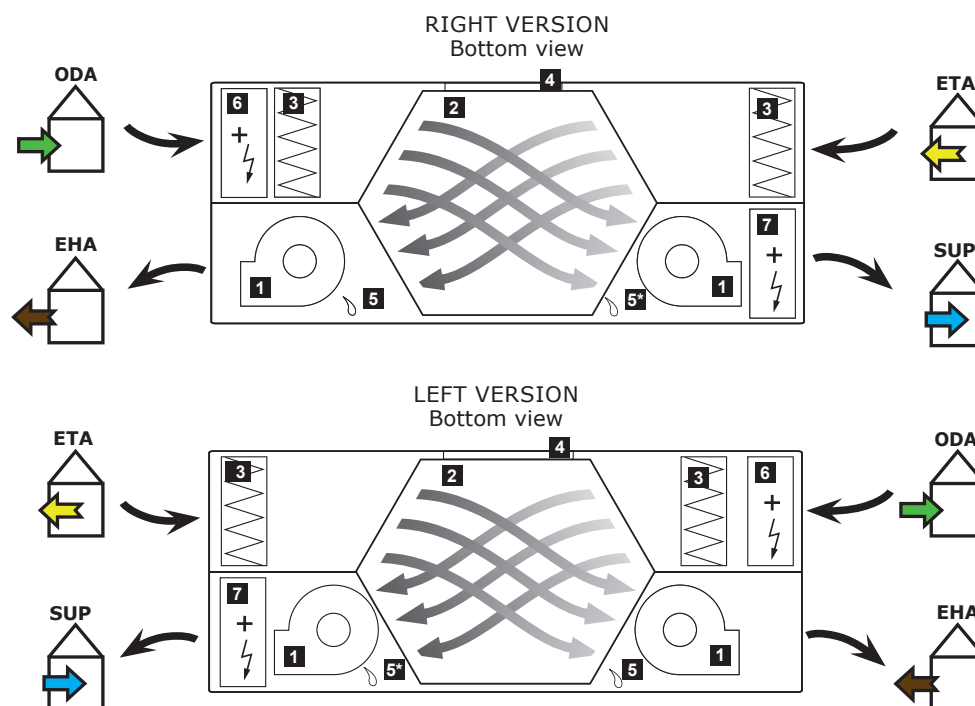
The unit is designed to be operated in a dry indoor environment (relative humidity not exceeding 80 %) and at an ambient temperature in the range from +5 °C up to +40 °C.

The unit is designed for transporting standard atmospheric air that is free of dust, grease, chemical emissions and other impurities.

The unit has an IP rating of IP 20.

It is recommended that the heat recovery project **always be designed by a qualified HVAC designer, engineer or architect.**

OPERATIONAL DIAGRAM



- 1 - Fan
- 2 - Heat exchanger with by-pass flap
- 3 - Air filter
- 4 - Electrical connection (control box)
- 5 - Condensate drain
- 5* - Second condensate drain in places where summer conditions require it
- 6 - Electric preheater
- 7 - Electric post heater



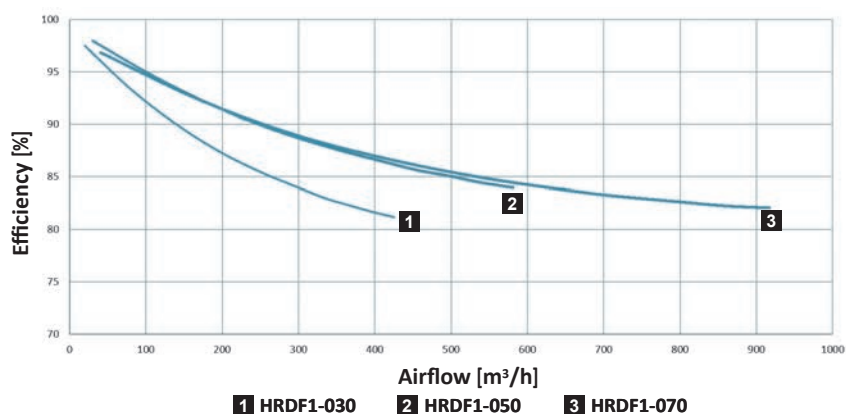
PRIMARY PARAMETERS

Heat recovery efficiency

According to EN13141-7 (with a balanced mass flow)

Temperature - Supply in 7°C, Relative humidity - supply in 80%

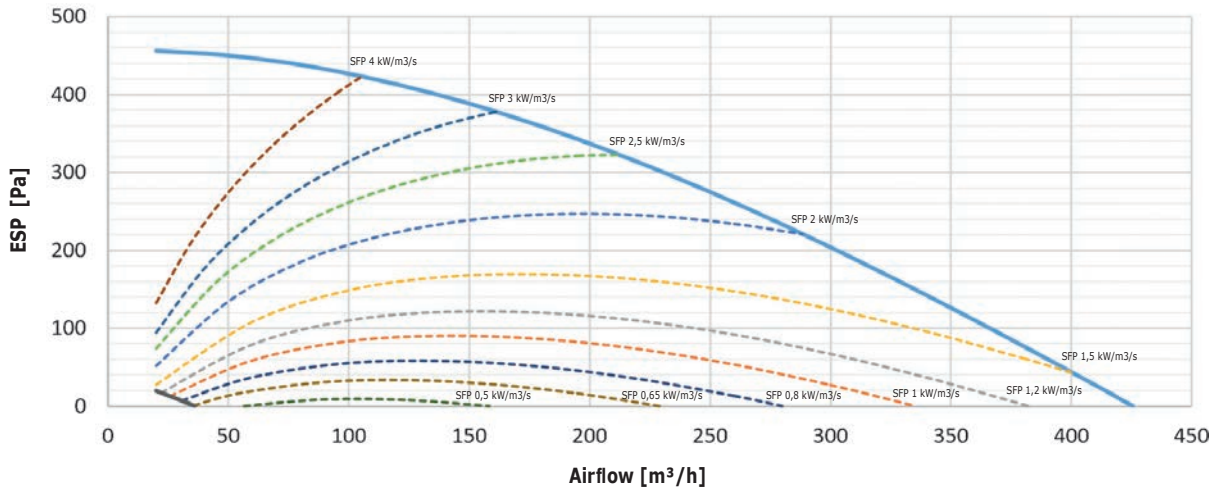
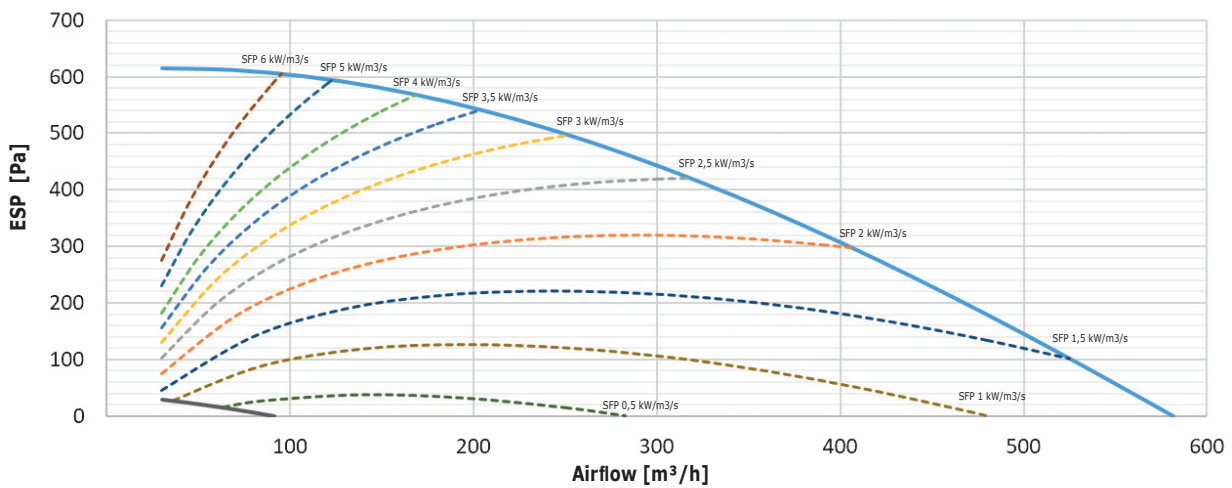
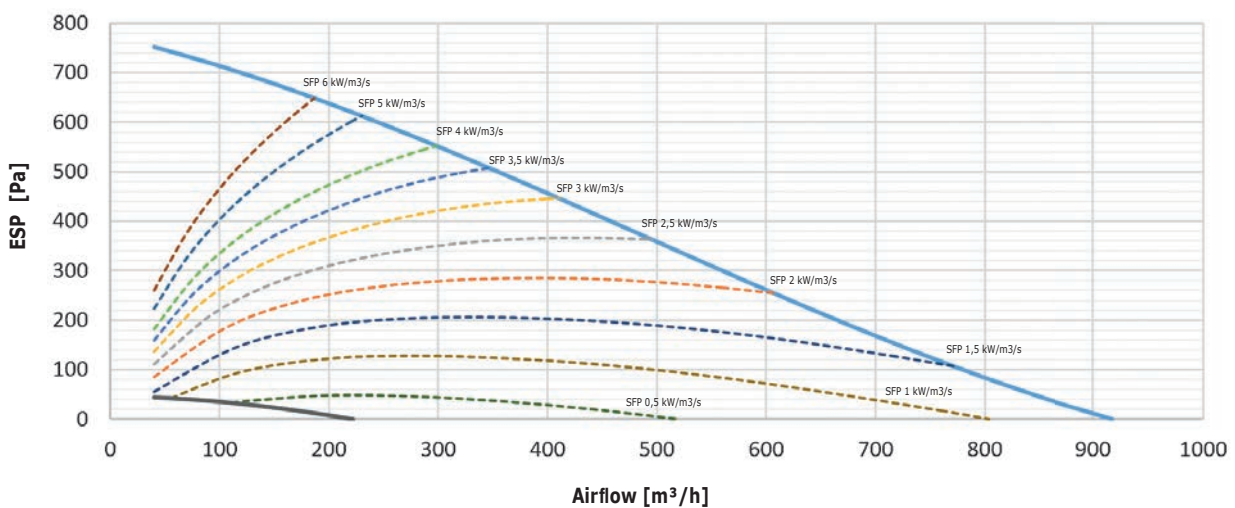
Temperature - Exhaust in 20°C, Relative humidity - exhaust in 38%



COMMISSION DELEGATED REGULATION (EU) No 1254/2014

Type	Class
HRDF1-030	A
HRDF1-050	A+
HRDF1-070	A+

SFP=Unit Power input (two fans) (kW/m³/s)

HRDF1-030**HRDF1-050****HRDF1-070**

Basic technical parameters:

Type	Air flow [m³/h]	Phase [No.]	Voltage [V]	Frequency [Hz]	Fan power [W]	Power input of preheater [kW]	Power input of afterheater [kW]	Total current [A]	Weight [kg]
HRDF1-030-...-XS	300	1	230	50/60	100	-	-	2,0	62
HRDF1-030-...-ES	300	1	230	50/60	100	1,2	-	7,2	64
HRDF1-030-...-EE	300	1	230	50/60	100	1,2	1,2	12,4	66
HRDF1-050-...-XS	500	1	230	50/60	100	-	-	2	70
HRDF1-050-...-ES	500	1	230	50/60	100	2	-	10,7	72
HRDF1-050-...-EE	500	1	230	50/60	100	2	0,8	14,2	74
HRDF1-070-...-XS	700	1	230	50/60	200	-	-	2,6	110
HRDF1-070-...-ES	700	1	230	50/60	200	2,4	-	13,0	112
HRDF1-070-...-EE	700	3	400	50/60	200	2,4	1,2	10,4	114

Noise specifications:

HRDF1-030

Type	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band L _{WA} (dB(A))								Overall	
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{PA} [dB] at 3m ¹⁾
HRDF1-030	100	100	50	53	48	48	39	36	29	26	48	26
	200		49	53	51	50	42	40	33	27	50	29
	300		52	54	55	53	46	44	35	28	54	32

Ducts	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band L _{WA} (dB(A))								Overall	
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	
EHA	200	100	75	69	66	60	56	56	48	37	64	
SUP			75	69	66	60	56	56	48	37	64	
ETA			69	61	56	45	35	29	20	15	51	
ODA			69	61	56	45	35	29	20	14	51	

1) Sound pressure levels calculated at 3 meters for Q=2

HRDF1-050

Type	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band L _{WA} (dB(A))								Overall	
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{PA} [dB] at 3m ¹⁾
HRDF1-050	200	150	48	52	52	49	41	40	34	29	50	28
	300		51	54	55	51	44	42	36	33	52	30
	400		55	58	58	53	47	46	40	38	55	33
	500		59	60	63	56	50	48	43	40	59	37

Ducts	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band L _{WA} (dB(A))								Overall	
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	
EHA	300	150	70	66	65	59	56	56	50	45	63	
SUP			70	66	65	59	56	56	49	44	63	
ETA			69	66	55	46	39	35	26	21	53	
ODA			69	66	55	45	39	35	26	21	53	

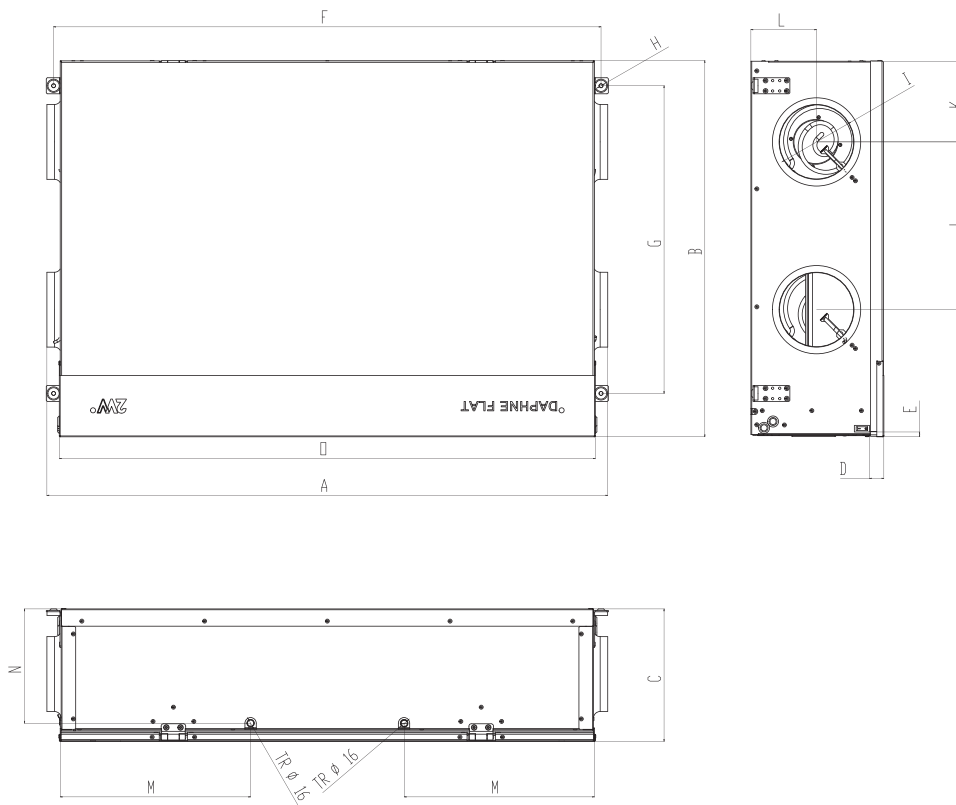
1) Sound pressure levels calculated at 3 meter for Q=2

HRDF1-070

Type	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band L _{WA} (dB(A))								Overall	
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{PA} [dB] at 3m ¹⁾
HRDF1-070	300	150	56	60	51	49	45	43	30	29	51	29
	400		56	60	53	50	46	44	31	33	52	31
	500		57	60	56	51	48	46	33	37	54	32
	600		58	61	58	54	49	47	36	40	56	34
	700		61	64	59	56	51	49	39	43	58	36

Ducts	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band L _{WA} (dB(A))								Overall	
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	
EHA	500	150	74	71	69	61	58	58	48	52	66	
SUP			74	72	69	61	58	59	49	52	66	
ETA			70	68	60	45	39	34	24	24	56	
ODA			70	69	60	45	40	34	24	24	56	

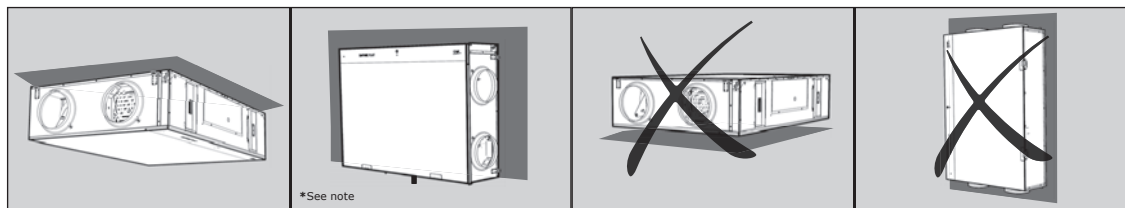
1) Sound pressure levels calculated at 3 meters for Q=2

**DIMENSIONS**

Type	[mm]														
	A	O	B	C	D	E	F	G	H	I	J	K	L	M	N
HRDF1-030	1188	1135	797	281	30	10	1160	652	Ø8	Ø160	355	171	139	403	242
HRDF1-050	1432	1347	885	322	30	10	1380	702	Ø8	Ø200	400	195	157	517	285
HRDF1-070	1646	1547	1065	364	30	10	1580	902	Ø8	Ø250	508	228	180	619	326



INSTALLATION AND ASSEMBLY



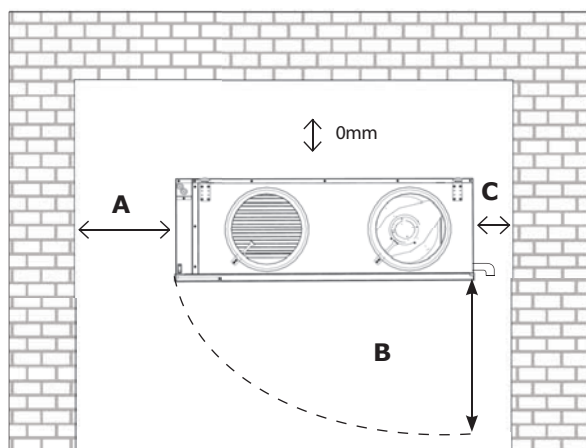
* Installation on the wall possible only for HRDF1-030

* Installing HRDF1-030 on the wall is possible only when the position of the condensate drain points downwards

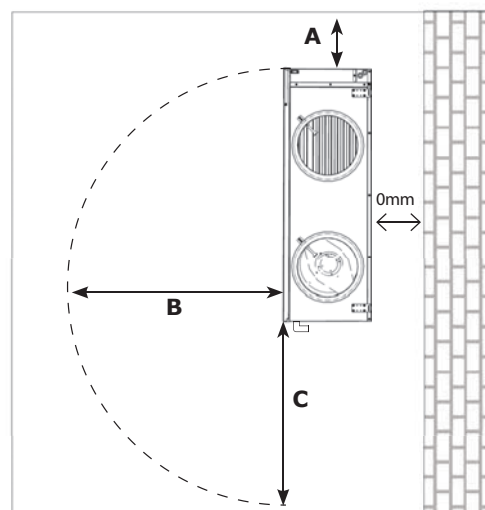
The unit can be suspended using threaded rods (M8) from the ceiling or wall. The unit must be installed with a respect to a correct position of the condensate drain.

The installation of the unit must allow sufficient access for maintenance, service and disassembling operations.

Necessary service access distances

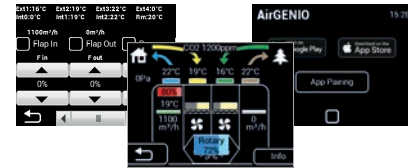


	A	B	C
HRDF1-030	min. 450mm	min. 850mm	min. 150mm
HRDF1-050	min. 500mm	min. 950mm	min. 150mm
HRDF1-070	min. 600mm	min. 1150mm	min. 150mm



	A	B	C
HRDF1-030	min. 450mm	min. 850mm	min. 850mm
HRDF1-050	not possible	not possible	not possible
HRDF1-070	not possible	not possible	not possible

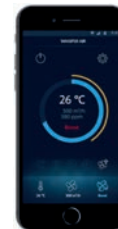
- The unit must be securely fastened to prevent it from falling.
- The air ducting is connected by sliding it over the circular air spigots.

**CONTROL****AirGENIO COMFORT - Main control functions**

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

2VV AirGENIO Application:

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

**2VV Service software:**

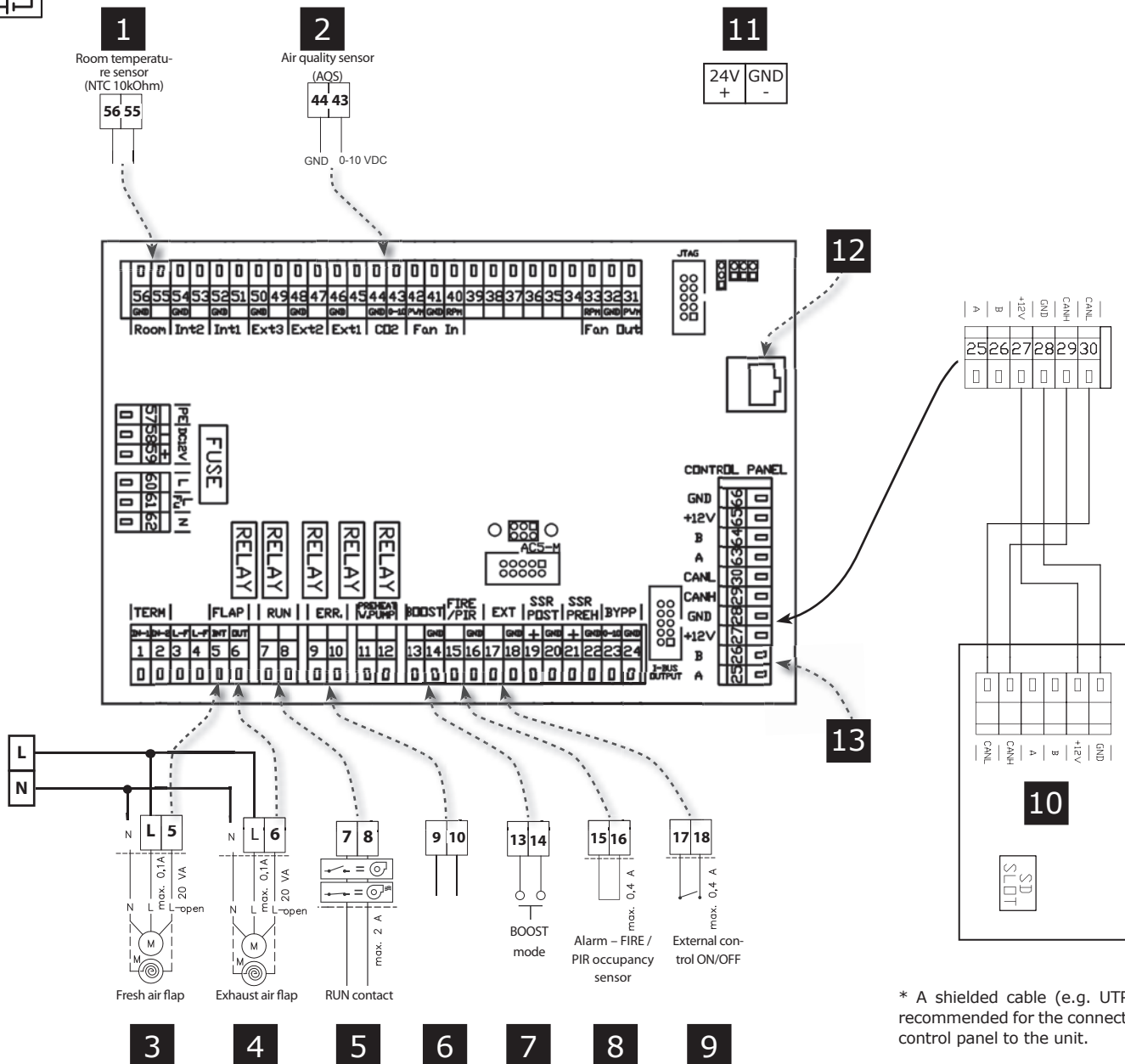
- Easy and quick commissioning from your computer
- Error log – error display and identification
- Easy service (device status loading/reset to backup setting)
- Fast FW update
- OFFLINE version





WIRING DIAGRAMS

AirGENIO Comfort



* A shielded cable (e.g. UTP type) is recommended for the connection of the control panel to the unit.

1	Room temperature sensor (input)
2	The air quality sensor - control signal (input)
3	Inlet air damper (L-in)
4	Exhaust air damper (L-out)
5	RUN contact (relay contact)
6	ERROR contact (relay contact)
7	BOOST regime (input)
8	Alarm - FIRE (input) or PIR (input)
9	External control - ON/OFF
10	Control panel
11	24V power supply
12	RJ45 plug - Ethernet, Modbus TCP, BACnet
13	Modbus RTU (A-25, B-26, 28 or 66-GND)



ACCESSORIES

RECOMMENDED ACCESSORIES



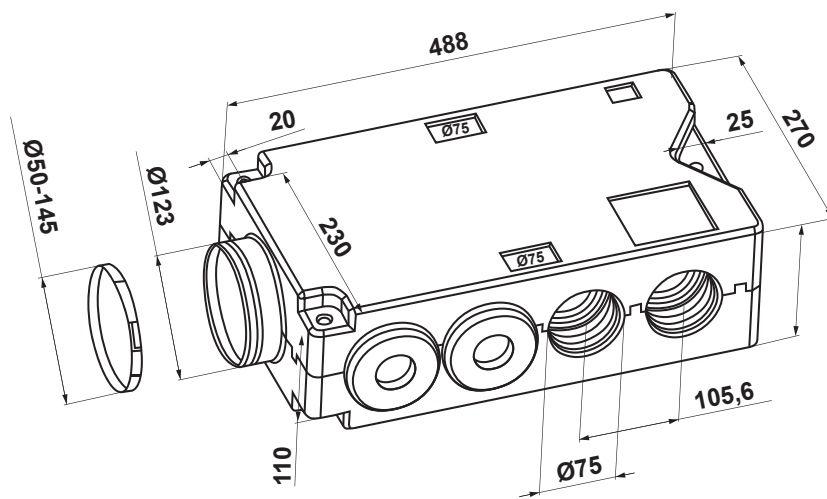
Distribution box

ROZ-EPP-125

The distributor/collector is a distribution box designed for the distribution of air. It helps to divide air in to up to 8 distribution/collection ducts. It provides a solution for the connection between flexible air ducts (e.g. Isovac, Sonovac, Semivac and Aluv DN 125) and Duotec flexible hoses. The distributor/collector can be connected to up to 8 Duotec flexible hoses. The flexible hoses are attached by insertion. To ensure the correct position of the flexible hoses it is necessary to insert the hose into the box until it clicks in. The distributor /collector is intended for operation in standard indoor areas for the distribution/collector of clean air without coarse dust, fats, chemical vapours and other pollutants with a temperature of up to 40°C.

Material: The distributor/collector is produced from black-coloured extruded polypropylene and is not load bearing.

The package includes: Box (inlet with a connection diameter of 125mm), four removable plugs.

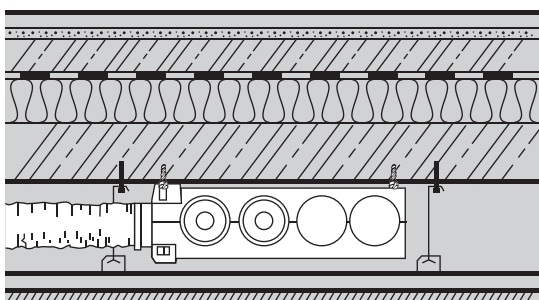




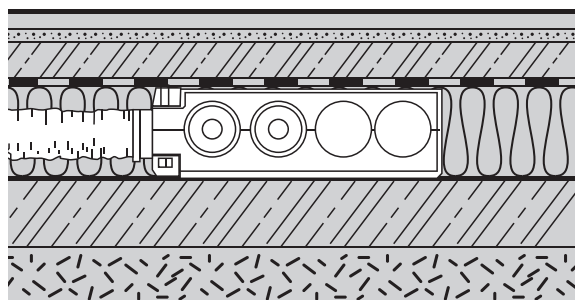
INSTALLATION AND ASSEMBLY

The box can be suspended under a ceiling using three threaded rods or installed into the floor (a layer for spreading the load is necessary).

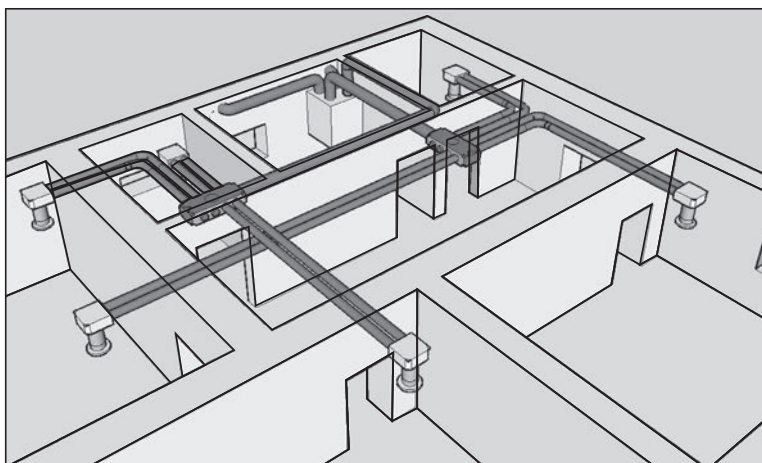
Ceiling installation



Floor installation



Example of installation



KEY TO CODING

ROZ-EPP-125

125 – Connection diameter 125mm

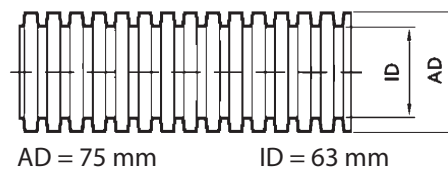
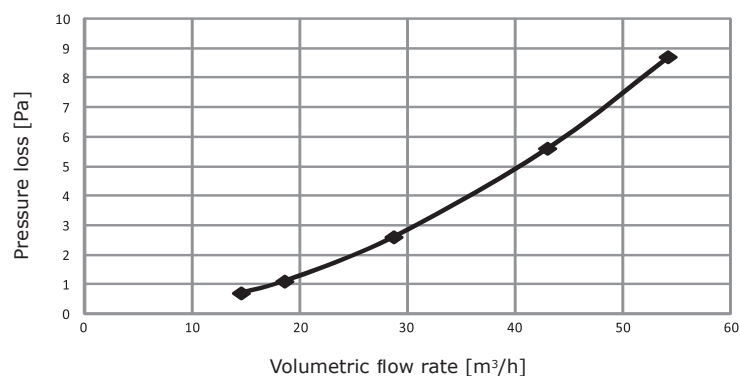
ROZ-EPP – Universal distribution, EPP, 8 outlets

**ACCESSORIES****RECOMMENDED ACCESSORIES****Flexible hose****ROZ-DUOTEC075/063**

The Duotec flexible hose is intended for the delivery and exhaust of air free of coarse dust, fats, chemical vapours and other pollutants. The hose is suitable for use in ventilation systems with a heat recovery unit. It is recommended that installation is performed at temperatures above 0°C! The recommended air flow rate through the hose is 15-30 m³/h.

Material: The material used is environmentally friendly. PE is resistant to practically all agents (alcohol, fats, mineral oils, fuels). Only highly concentrated oxidising acids can damage the PE. 450N pressure test. The duct dimensions correspond to the requirements of DIN EN 50086-24.

The package includes: 50 m roll with two plugs and one coupling.

**Pressure loss per 1m of hose length****KEY TO CODING****ROZ-DUOTEC075/063**

ROZ-DUOTEC 075/063 – Duotec PE flexible hose, diameter 075/063mm, length 50m



ACCESSORIES

RECOMMENDED ACCESSORIES

Spatial sensor CO₂: **CI-CO2-R**

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



Spatial sensor RH: **CI-RH-R**

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



CI-AQS-COMBI

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



CT-ROOM

Temperature sensor for air temperature measurement in a reference room.



Shutting flap

KRTK-A

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



Type of unit	Flap type
HRDF1-030	KRTK-A160
HRDF1-050	KRTK-A200
HRDF1-070	KRTK-A250

Shutting flap with servo drive

KRTK-A-SB

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



Type of unit	Flap type
HRDF1-030	KRTK-A-160-SB
HRDF1-050	KRTK-A-200-SB
HRDF1-070	KRTK-A-250-SB

Servodrive**SERVO-LM230-05**

Necessary accessory for automatic control of the closing flap.

**OPTIONAL ACCESSORIES**

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

Spare air filters

Filter replacements of different classes and configurations.



Type of unit	Supply air filter			Exhaust air filter
	COARSE 60% (G4)	COARSE 90% (M5)	ePM 1 60% (F7)	COARSE 60% (G4)
HRDF1-030	HRDF1-030-FI-G4	HRDF1-030-FI-M5	HRDF1-030-FI-F7	HRDF1-030-FI-G4
HRDF1-050	HRDF1-050-FI-G4	HRDF1-050-FI-M5	HRDF1-050-FI-F7	HRDF1-050-FI-G4
HRDF1-070	HRDF1-070-FI-G4	HRDF1-070-FI-M5	HRDF1-070-FI-F7	HRDF1-070-FI-G4

Connection sleeve**MK**

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

Type of unit	Connection sleeve
HRDF1-030	MK160
HRDF1-050	MK200
HRDF1-070	MK250

**Threaded rods**

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



Siphon for condensate

SK-HL138

Siphon with a ball for installation on the wall or flush mounting.



Back drought shutter

RSKR-Z

Type	Shutter
HRDF1-030	RSKR-Z160
HRDF1-050	RSKR-Z200
HRDF1-070	RSKR-Z250





KEY TO CODING

HRDF1-030 H P CB E 44 - E E1 C- 0 A0

A0	2V version
0	Standard RAL9016
C	AirGENO Comfort control
S0	Without post-heater
E1	With el.post-heater
X	Without pre-heater
E	With pre-heater
44	COARSE 60% (G4) supply filter COARSE 60% (G4) exhaust filter
E	EC fans
CB	Counteflow exchanger with by-pass
P	Right side version
L	Left side version
H	Horizontal
030	Size 300
050	Size 500
070	Size 700
HRDF1	Heat recovery unit DAPHNE FLAT 1st generation



Counterflow plate heat recovery exchanger



BASIC FEATURES

WHISPER AIR

Highly efficient wall mounted heat recovery unit designed for ductless installations and decentralised ventilation of **classrooms, offices, conference rooms, family houses.**

– 3 sizes with air flow: 400, 700 and 1000 m³/h

- Ecodesign directive 1253/2014 compliant
- Heat recovery efficiency up to 93% (EN308) with **sensible** counterflow aluminium exchanger
- Humidity recovery up to 85% (EN308) with **enthalpy** counterflow plastic exchanger
- Silent operation with only **35dB(A)** at nominal airflow
- Straw-System for optimised and laminar airflow
- Energy-efficient EC fans with low SFP
- Slim design with low installation height for efficient space usage
- Choice of **horizontal** version (horizontal connections for supply and exhaust) and **upper** versions (horizontal top connections for supply and exhaust)
- Sandwich panel casing with thermal insulation 40mm
- Boost function (+25% over nominal airflow)
- Integrated pre-heater (electric) / post-heater (electric, water or change/over)
- **AirGENIO Superior** control system with an option of CAV or DCV mode, supplementary modes (timer, anti-freeze protection, etc.), integrated CO₂ sensor, touch-screen control panel, BMS control via ModBUS RTU, Modbus TCP or BACnet.

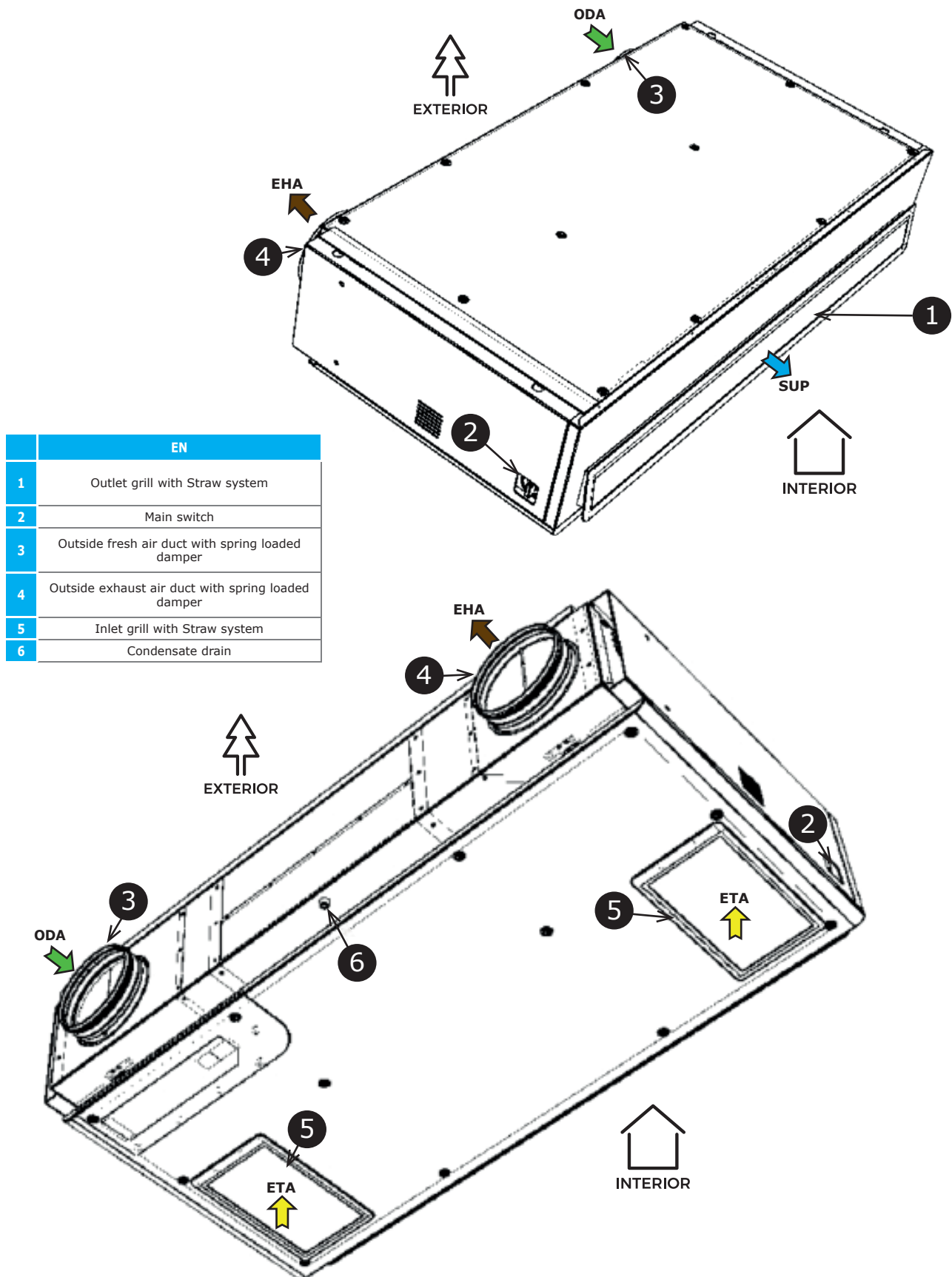
WHISPER AIR heat recovery unit is designed to be operated in a dry indoor environment (relative humidity not exceeding 80%) and at an ambient temperature in the range from +5°C up to +60°C.

The unit is designed for transporting standard atmospheric air that is free of dust, grease, chemical emissions and other impurities. The transported air relative humidity must not exceed 90%.

The casing of the unit is made from sandwich panels. When unit installed its IP rating is 20.

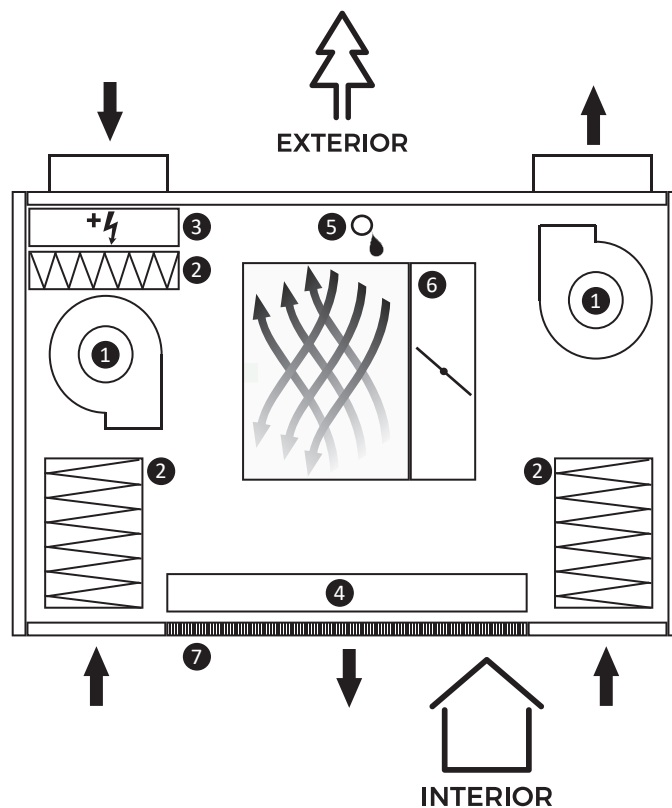
The design of the ventilation project must be **always designed by a qualified HVAC designer, engineer or architect.**

MAIN PARTS



Operational diagram

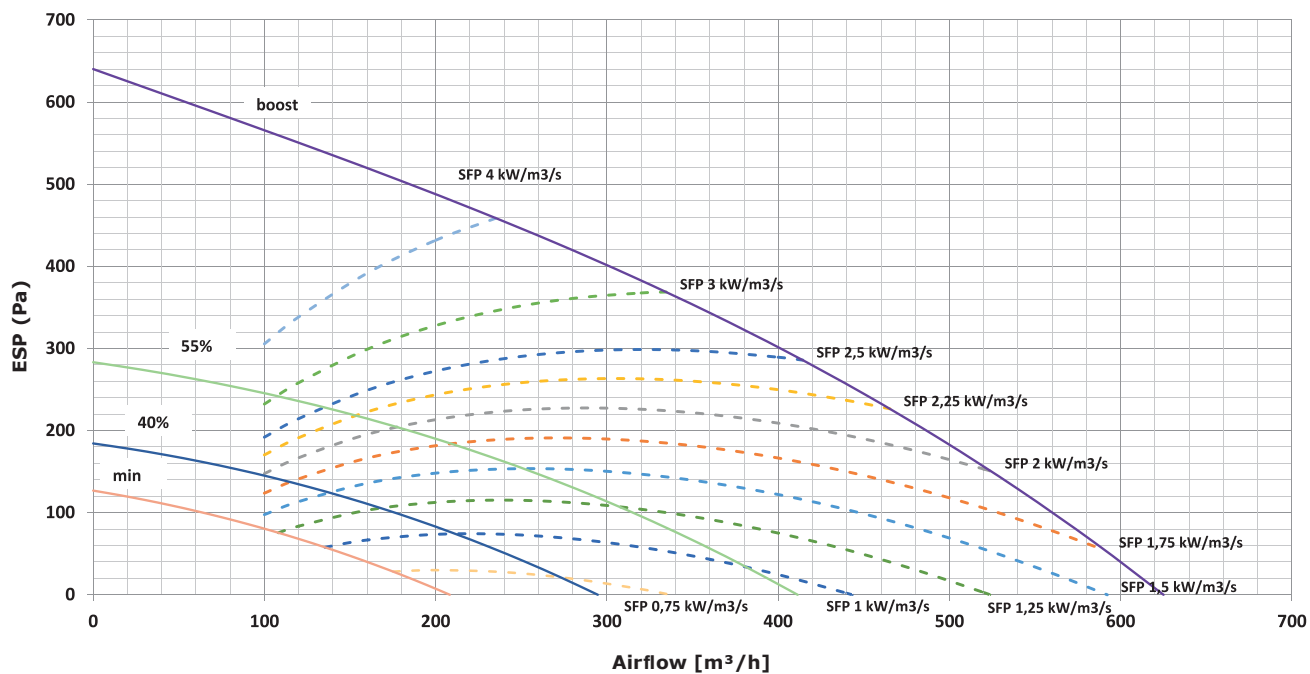
	EN
1	Fan
2	Filter
3	Preheater
4	Afterheater
5	Condensate drain
6	Heat exchanger with by-pass damper
7	Straw-System



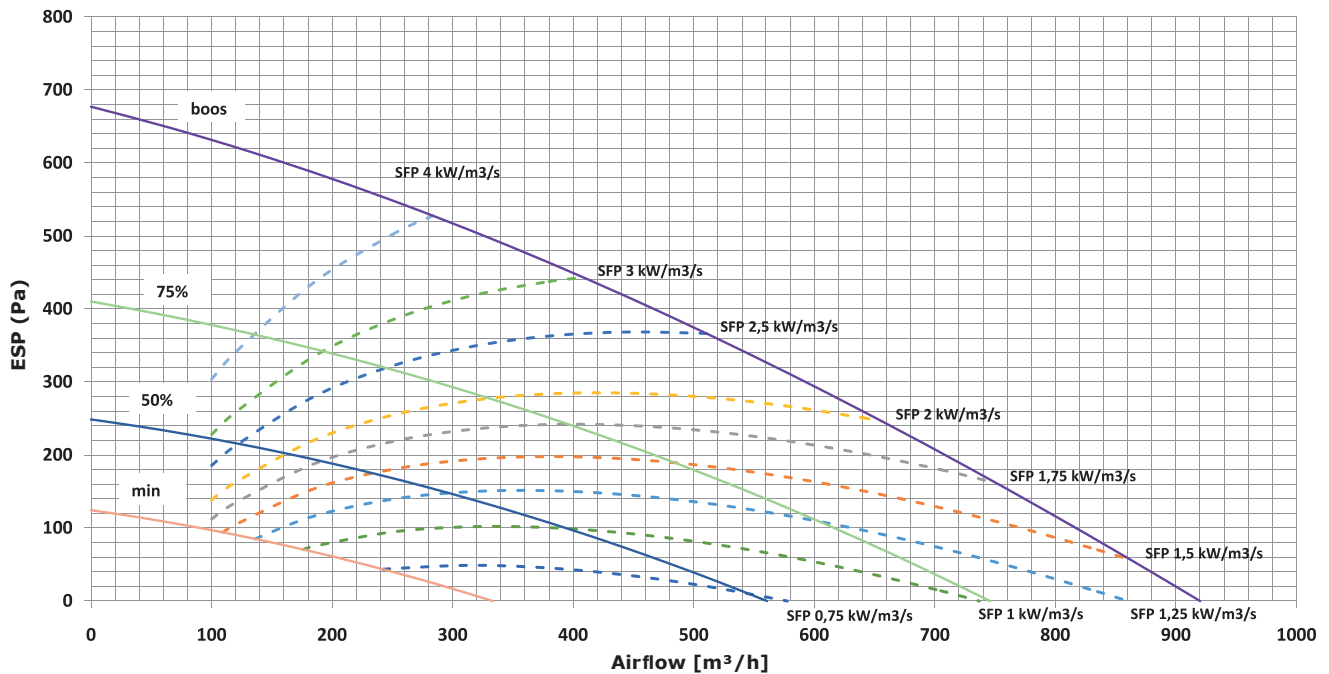
PRIMARY PARAMETERS

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

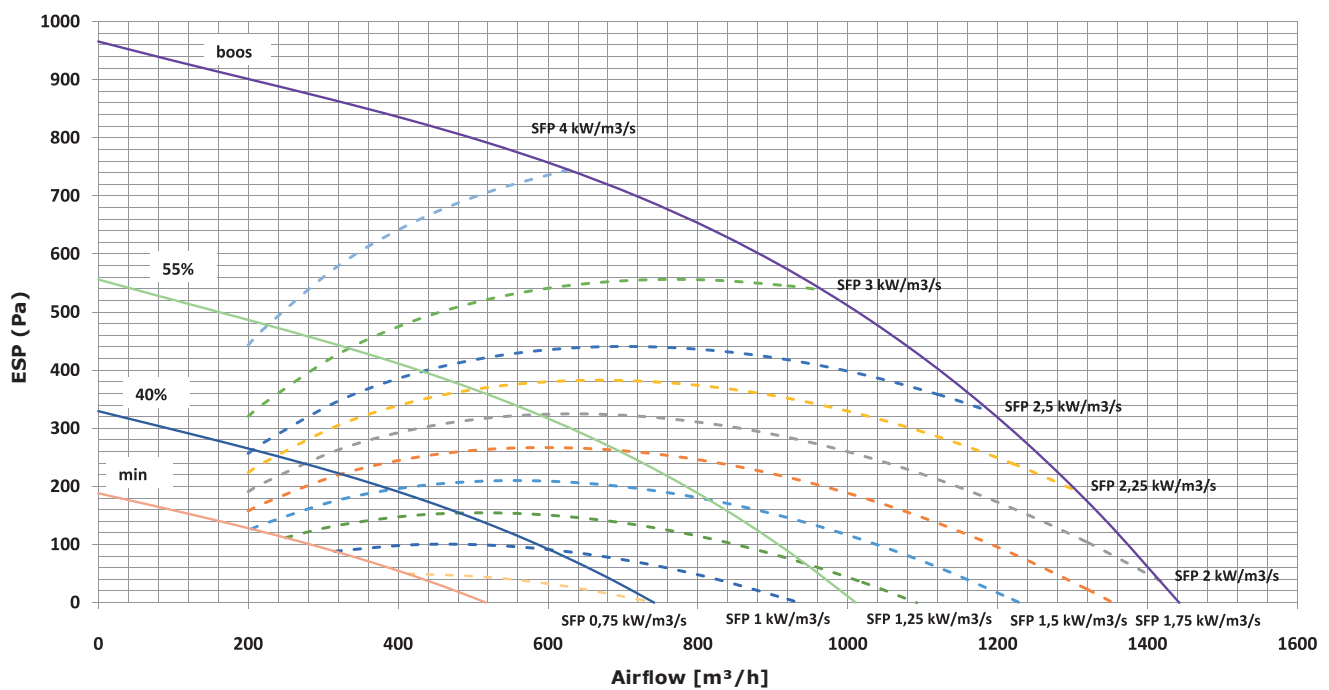
HRWA 400



HRWA 700



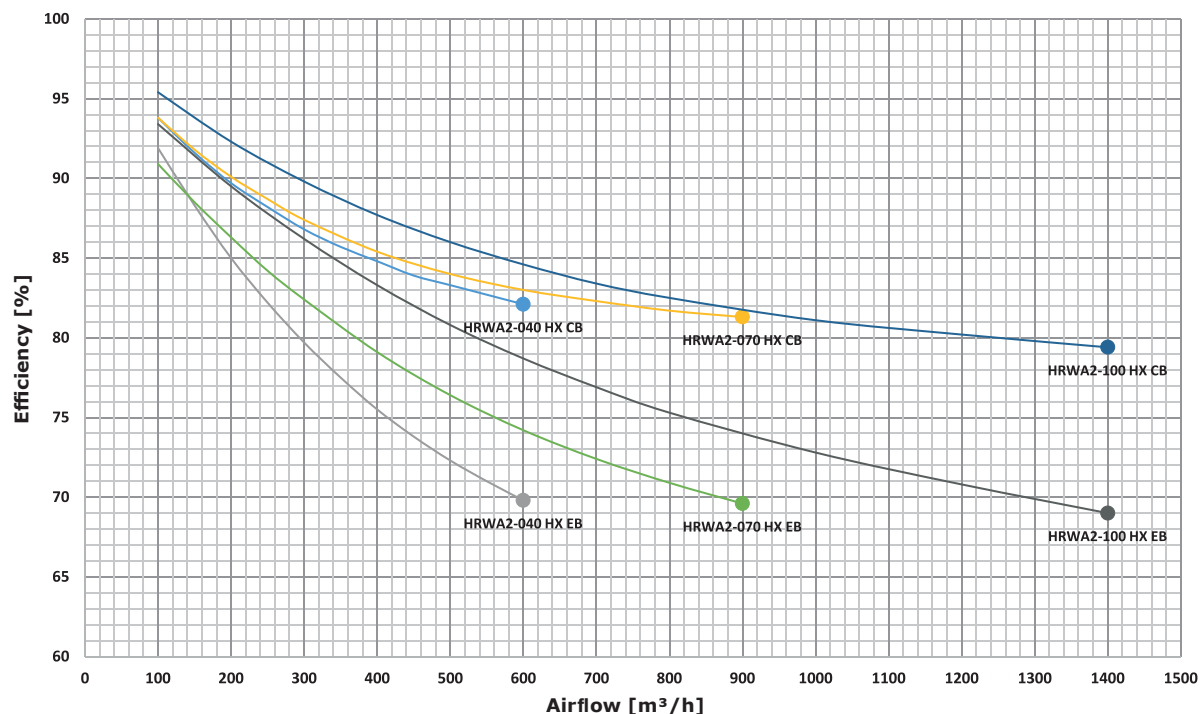
HRWA 1000





PRIMARY PARAMETERS

Heat recovery efficiency:

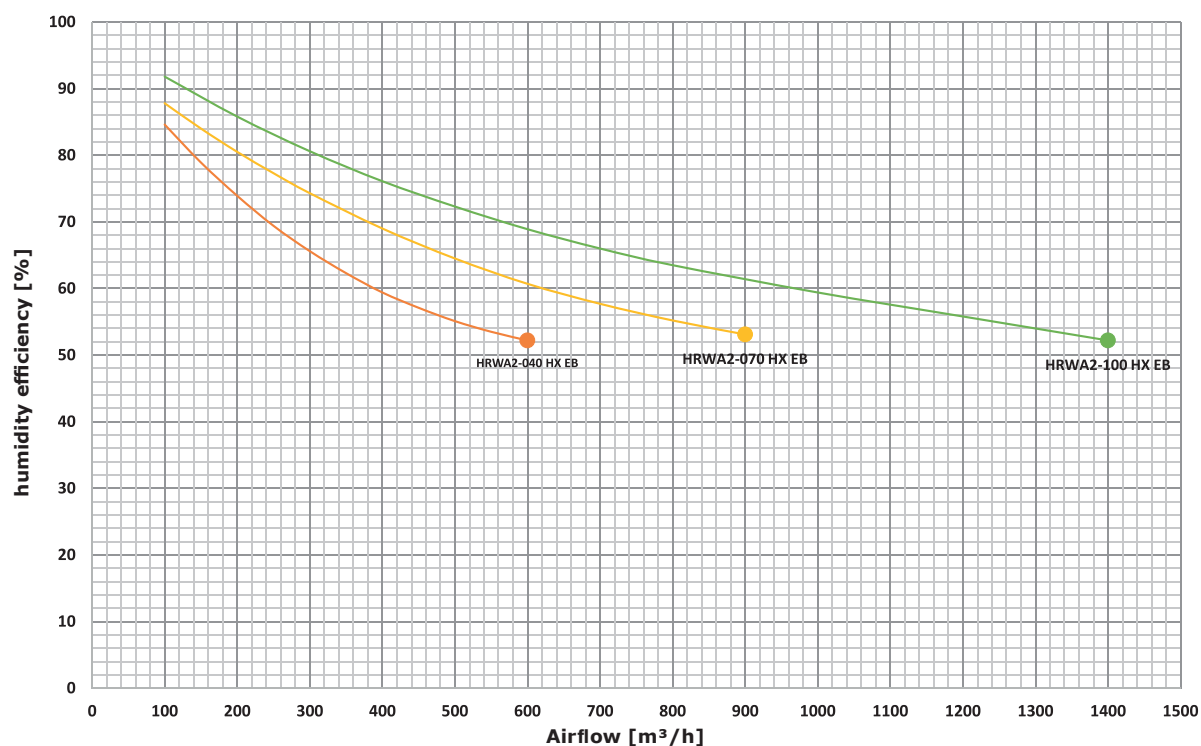


The data is measured under following conditions (EN308):

Outdoor air temperature is +5°C, relative humidity 72%

Indoor air temperature is +25°C, relative humidity 28%

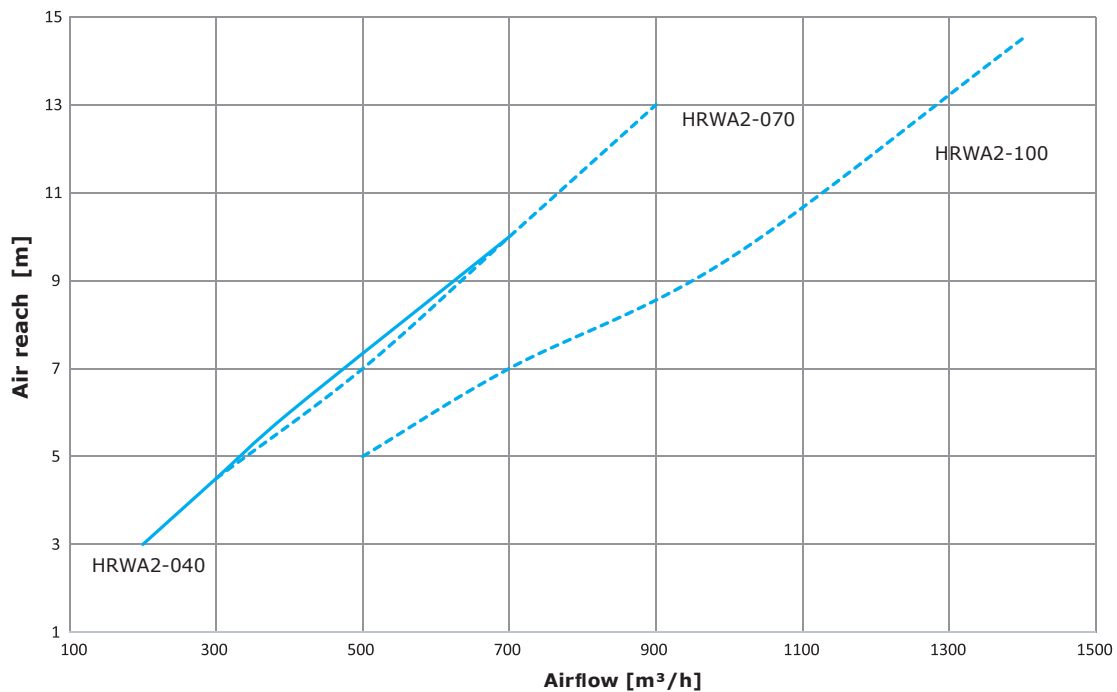
Humidity recovery efficiency:



The data is measured under following conditions (EN308):

Outdoor air temperature is +5°C, relative humidity 72%

Indoor air temperature is +25°C, relative humidity 28%

Air Reach:**PRIMARY PARAMETERS****Noise specifications:**

HRWA2-040 (casing radiated sound power level)

Fan speed	Pressure [Pa]	Airflow [m³/h]	Sound power level per frequency band								Overall		
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{PA} [dB] ¹⁾	L _{PA} [dB] ²⁾
min	0	169	28,8	38,4	31,3	27,4	26,9	25,5	26,5	25,0	40,5	27,8	21,2
mid (40%)	0	316	31,8	40,2	38,7	33,0	31,0	27,0	24,7	24,8	43,7	31,0	24,4
nominal (55%)	0	415	35,9	43,0	43,9	37,3	34,7	29,9	25,7	25,2	47,7	34,9	28,3
Boost (100%)	0	625	45,4	52,0	54,1	47,2	43,9	40,5	32,3	28,4	57,3	44,6	38,0

1) Sound pressure levels calculated at 1 meter for Q=4

2) Sound pressure levels calculated at 3 meters for Q=4

HRWA2-040 (sound power level in exhaust air duct)

Fan speed	Pressure [Pa]	Airflow [m³/h]	Sound power level per frequency band								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]
min	0	169	35,5	37,9	40,2	30,8	24,1	19,8	15,0	15,7	43,4
mid (40%)	0	316	40,5	46,0	50,6	41,7	37,8	38,0	29,8	26,3	52,9
nominal (55%)	0	415	43,9	49,8	56,5	48,4	44,9	46,7	37,7	33,8	58,6
Boost (100%)	0	625	53,8	57,3	64,0	57,6	54,7	57,8	53,5	52,5	67,1

HRWA2-040 (sound power level in fresh air duct)

Fan speed	Pressure [Pa]	Airflow [m³/h]	Sound power level per frequency band								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]
min	0	169	37,4	38,0	39,2	28,4	26,5	17,2	15,3	13,6	43,3
mid (40%)	0	316	42,9	46,4	50,4	39,5	40,2	34,4	30,2	21,3	52,9
nominal (55%)	0	415	45,7	49,6	55,3	44,9	45,9	41,8	37,7	27,1	57,5
Boost (100%)	0	625	54,2	54,8	60,0	50,7	53,6	51,5	51,7	43,9	63,5

HRWA2-070 (casing radiated sound power level)

Fan speed	Pressure [Pa]	Airflow [m³/h]	Sound power level per frequency band								Overall		
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{PA} [dB] ¹⁾	L _{PA} [dB] ²⁾
min	0	307	20,1	32,6	35,3	29,5	22,5	22,0	28,1	27,0	38,8	25,6	19,3
mid (40%)	0	561	33,3	37,1	36,1	32,1	31,5	29,2	27,4	25,8	42,1	28,8	22,5
nominal (55%)	0	747	39,0	41,8	43,6	39,2	38,7	35,8	29,2	26,5	48,3	35,0	28,7
Boost (100%)	0	916	44,0	48,8	51,1	46,2	44,7	42,3	33,6	27,6	55,1	41,8	35,5

1) Sound pressure levels calculated at 1 meter for Q=4

2) Sound pressure levels calculated at 3 meters for Q=4

HRWA2-070 (sound power level in exhaust air duct)

Fan speed	Pressure [Pa]	Airflow [m³/h]	Sound power level per frequency band								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]
min	0	307	32,4	39,7	39,9	33,0	28,2	27,0	24,1	22,9	43,9
mid (40%)	0	561	38,6	46,9	52,9	44,1	41,3	44,3	36,8	34,1	55,1
nominal (55%)	0	747	44,2	51,5	59,0	50,9	48,2	51,9	45,1	43,0	61,4
Boost (100%)	0	917	49,7	58,2	63,5	56,5	53,1	56,9	54,2	53,2	66,6

HRWA2-070 (sound power level in fresh air duct)

Fan speed	Pressure [Pa]	Airflow [m³/h]	Sound power level per frequency band								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]
min	0	307	34,7	39,9	37,4	34,6	33,0	26,1	23,2	20,7	43,8
mid (40%)	0	561	38,8	45,7	48,5	43,4	44,0	42,3	35,4	29,3	52,7
nominal (55%)	0	747	43,5	48,9	54,0	47,9	49,5	48,6	43,2	37,0	57,8
Boost (100%)	0	917	49,0	54,0	57,1	51,9	54,1	52,1	51,6	45,9	62,0

HRWA2-100 (casing radiated sound power level)

Fan speed	Pressure [Pa]	Airflow [m³/h]	Sound power level per frequency band								Overall		
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{PA} [dB] ¹⁾	L _{PA} [dB] ²⁾
min	0	499	24,1	37,5	30,0	26,7	25,5	20,3	13,5	11,5	38,9	25,0	19,0
mid (40%)	0	772	29,3	38,6	37,4	33,7	34,2	28,7	23,1	21,0	43,0	29,0	23,0
nominal (55%)	0	1018	39,2	42,6	43,8	39,9	40,3	35,8	30,7	27,0	48,8	34,9	28,9
Boost (100%)	0	1456	47,7	53,6	54,0	56,3	53,5	51,6	45,5	34,2	61,4	47,4	41,5

1) Sound pressure levels calculated at 1 meter for Q=4

2) Sound pressure levels calculated at 3 meters for Q=4

HRWA2-100 (sound power level in exhaust air duct)

Fan speed	Pressure [Pa]	Airflow [m³/h]	Sound power level per frequency band								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]
min	0	499	36,9	38,0	37,2	32,9	37,6	30,2	28,8	28,7	44,3
mid (40%)	0	772	40,7	43,8	46,8	40,5	45,8	42,2	39,5	37,2	52,1
nominal (55%)	0	1018	44,5	47,5	52,5	46,7	51,9	50,7	46,9	44,2	58,2
Boost (100%)	0	1456	52,4	52,3	54,4	59,2	62,6	62,2	57,1	57,7	67,8

HRWA2-100 (sound power level in fresh air duct)

Fan speed	Pressure [Pa]	Airflow [m³/h]	Sound power level per frequency band								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]
min	0	499	33,4	37,7	43,9	37,0	33,5	32,5	30,2	32,8	46,5
mid (40%)	0	772	39,5	44,6	51,6	44,3	44,2	46,1	42,8	44,2	55,1
nominal (55%)	0	1018	45,3	50,3	57,0	50,3	52,0	55,6	51,9	52,6	62,1
Boost (100%)	0	1456	56,1	59,2	62,5	63,7	62,6	67,5	64,2	62,9	72,4

Basic technical parameters of the heat recovery units:

Model without preheater and afterheater

Type	Phase [pcs]	Voltage [V]	Frequency [Hz]	Total consumption [W]	Total current [A]	Weight [kg]*	Weight [kg]* Top connection
HRWA2-040..-XS0...	1	230	50	350	2,45	92/82*	98/88*
HRWA2-070..-XS0...	1	230	50	350	2,45	126/116*	133/123*
HRWA2-100..-XS0...	1	230	50	800	4,85	149/139*	158/148*

* Weight of STANDARD cover

**Attention:**

Models without preheater are suitable for outside air not lower than -5°C. In situations lower than -5°C unit will work in antifreeze mode and could shut down to prevent damage of internal components. We recommend installation should be designed by an HVAC professional.

Model with electric preheater only

Type	Phase [pcs]	Voltage [V]	Frequency [Hz]	Total consumption [W]	Total current [A]	Weight [kg]	Weight [kg] Top connection
HRWA2-040..-ES0...	1	230	50	1850	8,98	93/83*	99/89*
HRWA2-070..-ES0...	1	230	50	2600	12,24	127/117*	134/124*
HRWA2-100..-ES0...	3	400	50	3800	7,5	150/140*	159/149*

* Weight of STANDARD cover

Model with electric afterheater only

Type	Phase [pcs]	Voltage [V]	Frequency [Hz]	Total consumption [W]	Total current [A]	Weight [kg]	Weight [kg] Top connection
HRWA2-040..-XE1...	1	230	50	1850	8,98	93/83*	99/89*
HRWA2-070..-XE1...	1	230	50	2350	11,15	127/117*	134/124*
HRWA2-100..-XE1...	3	400	50	3800	9,18	150/140*	159/149*
HRWA2-100..-XE0...	1	230	50	2800	13,7	150/140*	159/149*

* Weight of STANDARD cover

Model with water afterheater only

Type	Phase [pcs]	Voltage [V]	Frequency [Hz]	Total consumption [W]	Total current [A]	Weight [kg]	Weight [kg] Top connection
HRWA2-040..-XV1...	1	230	50	350	2,45	93/83*	99/89*
HRWA2-070..-XV1...	1	230	50	350	2,45	127/117*	134/124*
HRWA2-100..-XV1...	1	230	50	800	4,85	150/140*	159/149*

* Weight of STANDARD cover

Model with electric preheater and electric afterheater

Type	Phase [pcs]	Voltage [V]	Frequency [Hz]	Total consumption [W]	Total current [A]	Weight [kg]	Weight [kg] Top connection
HRWA2-040..-EE1...	1	230	50	3350	15,51	94/84*	100/90*
HRWA2-070..-EE1...	3	400	50	4600	9,79	128/118*	135/125*
HRWA2-100..-EE1...	3	400	50	6800	11,83	151/141*	160/150*

* Weight of STANDARD cover

Model with electric preheater and water afterheater

Type	Phase [pcs]	Voltage [V]	Frequency [Hz]	Total consumption [W]	Total current [A]	Weight [kg]	Weight [kg] Top connection
HRWA2-040..-EV1...	1	230	50	1850	8,98	96/86*	102/92*
HRWA2-070..-EV1...	1	230	50	2350	11,15	130/120*	137/127*
HRWA2-100..-EV1...	3	400	50	3800	7,5	153/143*	162/152*

* Weight of STANDARD cover

Characteristics of electric motor (1 fan only)

Type	Phase [pcs]	Voltage [V]	Frequency [Hz]	Total consumption [W]	Total current [A]	Speed [r/min]	Protection IP	Insulation class
HRWA2-040	1	230	50	170	1,20	2550	54	B
HRWA2-070	1	230	50	170	1,20	2550	54	B
HRWA2-100	1	230	50	385	2,40	2550	54	B

Characteristics of electric preheater

Type	Phase [pcs]	Voltage [V]	Frequency [Hz]	Total consumption [W]	Total current [A]
HRWA2-040	1	230	50	1500	6,53
HRWA2-070	1	230	50	2000	8,70
HRWA2-100	2	400	50	3000	7,50

Characteristics of electric afterheater

Type	Phase [pcs]	Voltage [V]	Frequency [Hz]	Total consumption [W]	Total current [A]
HRWA2-040...-XE1...	1	230	50	1500	6,53
HRWA2-070...-XE1...	1	230	50	2250	9,79
HRWA2-100...-XE1...	3	400	50	3000	4,33
HRWA2-100...-XE0...	1	230	50	2000	8,7

Characteristics of water heating coil

For water temperature gradient 90/70 and inlet air temperature 10°C

Type	Rated input [kW]	Water pressure loss [kPa]	Air pressure loss [Pa]	Water flow [m³/h]	Connection diameter
HRWA2-040	4,61	5,59	7,26	0,2	1/2"
HRWA2-070	6,56	10,3	19,13	0,29	1/2"
HRWA2-100	9,4	4,32	14,42	0,41	1/2"

Recommended K_{vs} for different temperature gradients

Correction coefficients of the powers of the hot water coil*						
Air inlet temperature [°C]	Water temperature gradient					
	90/70	85/65	80/60	75/55	70/50	65/45
0	1,18	1,1	1,01	0,93	0,85	0,76
5	1,09	1,01	0,93	0,84	0,76	0,68
10	1	0,92	0,84	0,76	0,68	0,6
15	0,91	0,83	1,18	0,67	0,59	0,51
20	0,83	0,75	0,67	0,59	0,51	0,43

* To apply to the rated power in the characteristics of the hot water coil.

Characteristics of change-over coil (C/O)

For water temperature gradient 60/40 and inlet air temperature 10°C

Type	Rated input [kW]	Water pressure loss [kPa]	Air pressure loss [Pa]	Water flow [m³/h]	Connection diameter
HRWA2-040	4,28	0,49	19	0,19	3/4
HRWA2-070	6,41	0,98	49	0,28	3/4
HRWA2-100	8,95	0,59	38	0,39	3/4

Correction coefficients of the powers of the hot water coil*				
Air inlet temperature [°C]	Water temperature gradient			
	60/40	55/50	45/40	35/30
0	1,32	1,51	1,21	0,90
5	1,16	1,34	1,05	0,75
10	1,00	1,18	0,89	0,60
15	0,84	1,02	0,74	0,45
20	0,69	0,87	0,59	0,30

* To apply to the rated power in the characteristics of the C/O coil.

For water temperature gradient 7/12 and inlet air temperature 25°C

Type	Rated input [kW]	Water pressure loss [kPa]	Air pressure loss [Pa]	Water flow [m ³ /h]	Connection diameter
HRWA2-040	2,84	3,34	20	0,49	3/4
HRWA2-070	4,21	6,77	55	0,72	3/4
HRWA2-100	5,66	3,73	42	0,97	3/4

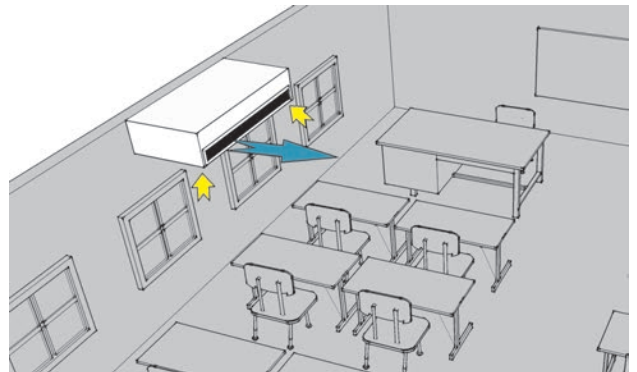
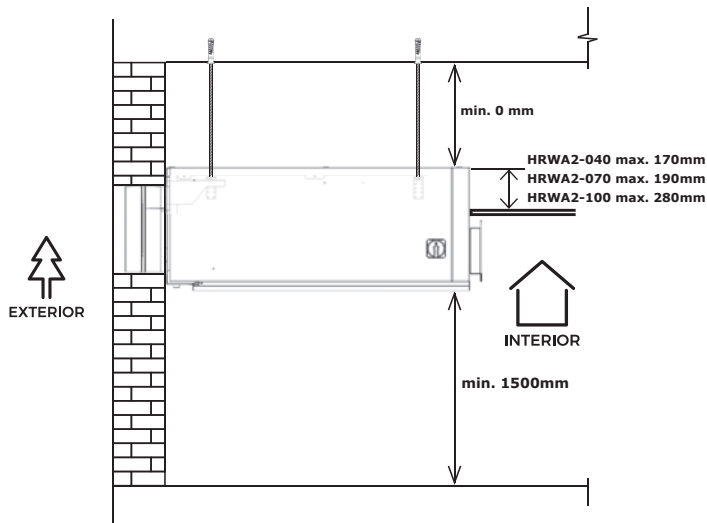
Correction coefficients of the powers of the hot water coil*			
Air inlet temperature [°C]	Water temperature gradient		
	7/12	6/11	5/10
20	0,42	0,52	0,61
25	1,00	1,10	1,19
30	1,69	1,78	1,88

* To apply to the rated power in the characteristics of the C/O coil.



INSTALLATION AND ASSEMBLY

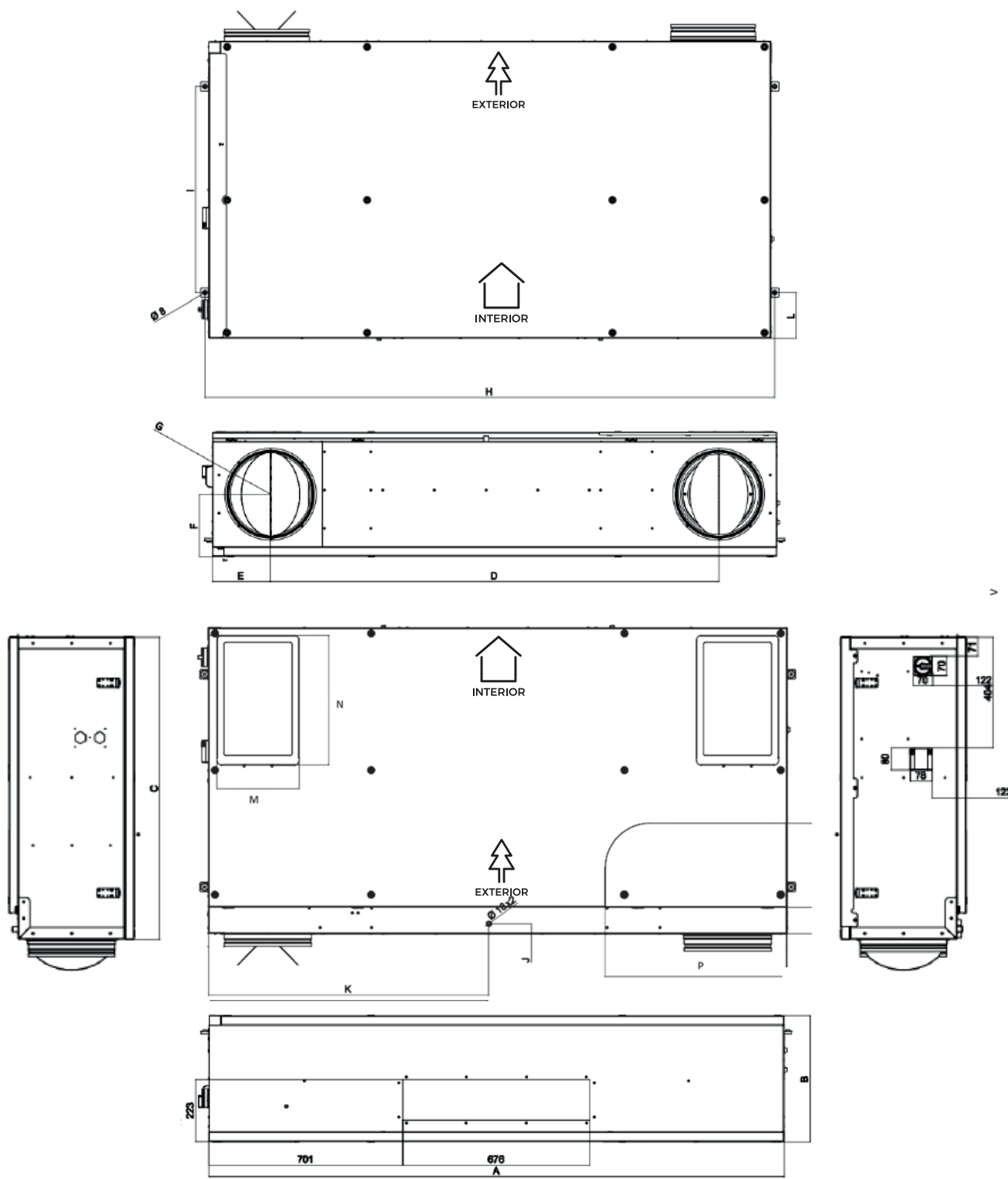
The unit must be installed in such a way that the direction of the air blown corresponds to the direction of air circulation. The unit must be installed so as to give free access for maintenance, service or dismantling. This is to allow access to service flaps and possibility to open them, access to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





DIMENSIONS

STANDARD

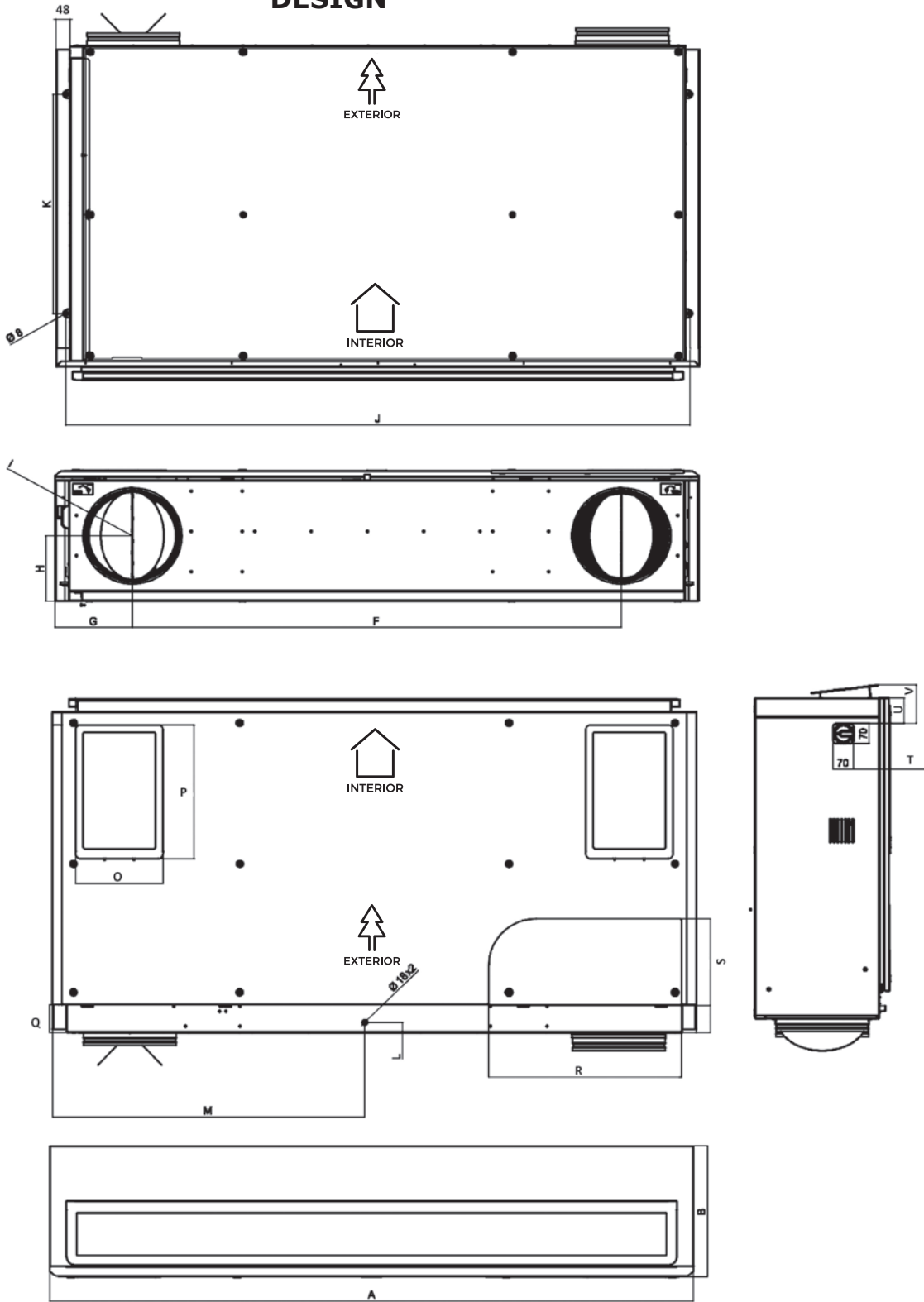


	[mm]																							
Type	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
HRWA2-040	1806	398	940	1408	182	198	250	1835	689	32	875	143	265	446	875	600	212	90	145	558	686	384	53	70
HRWA2-070	2078	455	1098	1649	213	228	315	2105	763	37	1006	167	295	465	1006	650	302	94	223	701	676	404	71	123
HRWA2-100	2406	573	1262	1920	243	288	315	2435	962	31	1203	150	420	550	1203	625	303	104	243	642	1122	500	169	243



DIMENSIONS

DESIGN

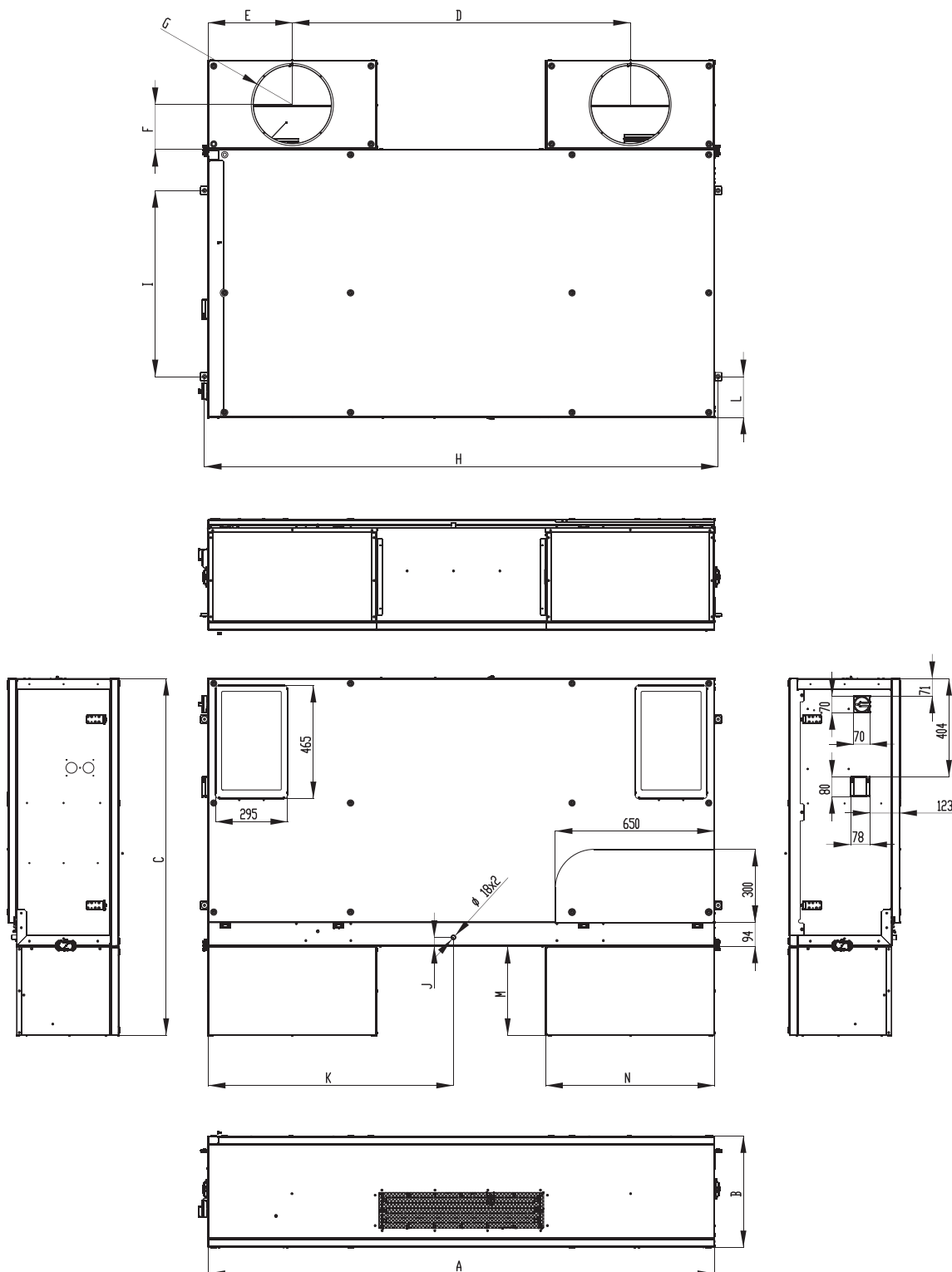


[mm]																								
Type	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
HRWA2-040	1901	397	963	195	165	1408	228	198	250	1835	689	32	922	45	265	446	88	600	212	70	74	120	179	46
HRWA2-070	2171	455	1116	172	102	1649	261	228	315	2105	763	37	1054	38	295	465	96	650	302	123	89	134	224	46
HRWA2-100	2501	575	1280	167	97	1920	291	288	315	2435	962	31	1251	64	420	550	104	625	303	244	184	230	224	46



DIMENSIONS

STANDARD UPPER

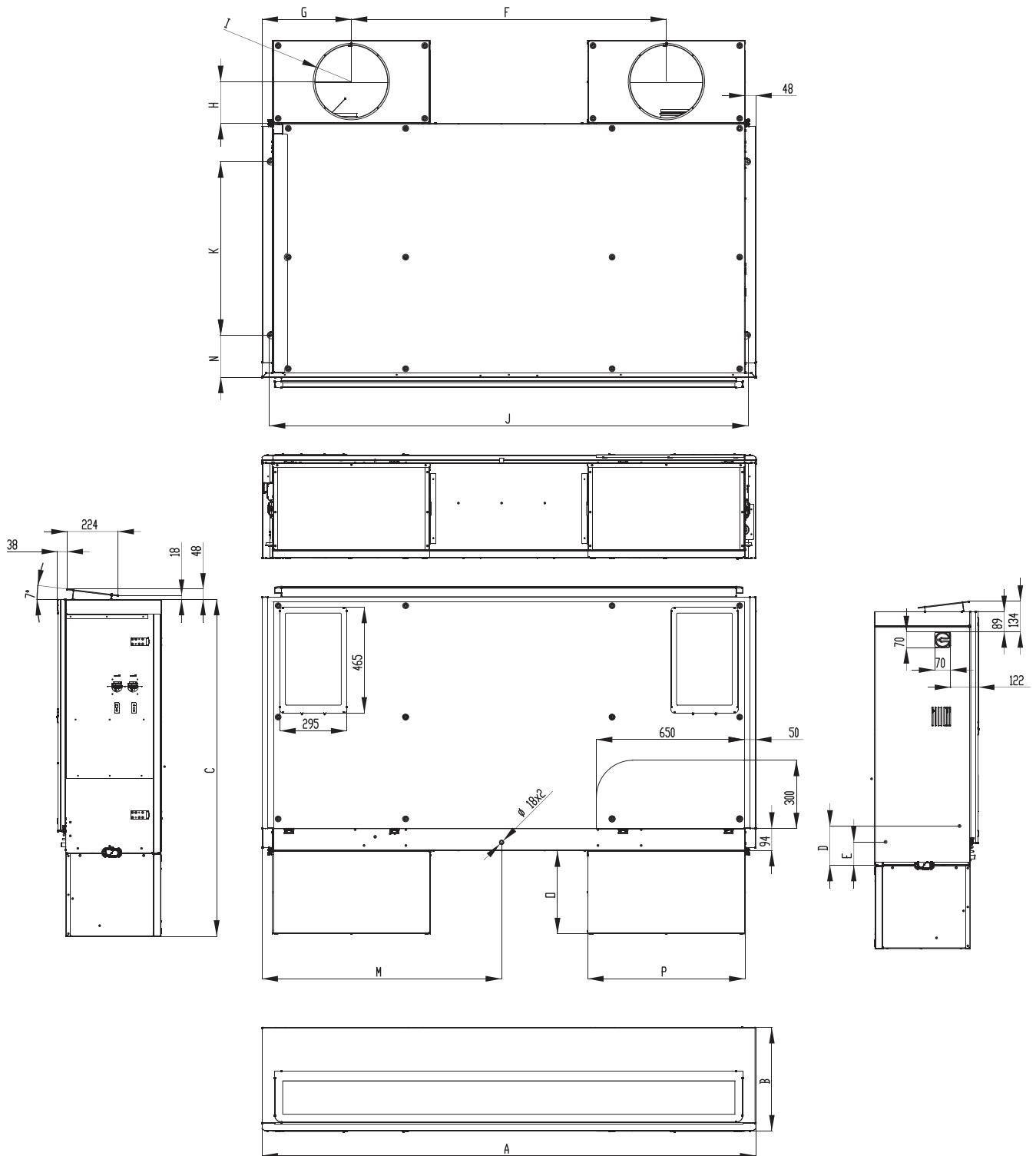


	[mm]													
Type	A	B	C	D	E	F	G	H	I	J	K	L	M	N
HRWA2-040	1806	398	1242	1206	300	154	250	1835	689	32	875	143	302	600
HRWA2-070	2078	455	1465	1385	393	185	315	2105	763	37	1006	167	365	695
HRWA2-100	2406	573	1630	1605	400	186	315	2435	962	31	1203	150	367	802



DIMENSIONS

DESIGN UPPER

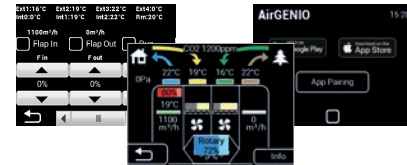


	[mm]															
Type	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
HRWA2-040	1901	397	1265	195	165	1206	338	154	250	1835	689	32	922	165.5	302	600
HRWA2-070	2171	455	1485	172	102	1385	393	188	315	2105	763	37	1054	185	365	695
HRWA2-100	2501	575	1647	167	97	1605	449	186	315	962	962	31	1251	169	367	802



CONTROL

AirGENIO SUPERIOR - Main control functions



- Touch control
- Stepless fans (0-10V)
- Stepless afterheating (internal Electrical: SSR)
- Stepless automatic control of preheating
- Integrated timer (daily, weekly)
- Optional connection of sensors: CO2, RH, VOC (0-10)
- Stepless Bypass (temperature control: freecooling, antifreeze protection)
- Offset fan adjustment (over-pressure and underpressure)
- Indication of filter clogging
- CAV or DCV ventilation mode
- BOOST function - intensive airflow (nominal airflow +25%) for a set period
- Freecooling functions - night ventilation (cooling)
- Occupancy functions - reducing ventilation according to the PIR sensor
- BMS - connection via Modbus RTU / TCP, BACnet

2VV AirGENIO Application:

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



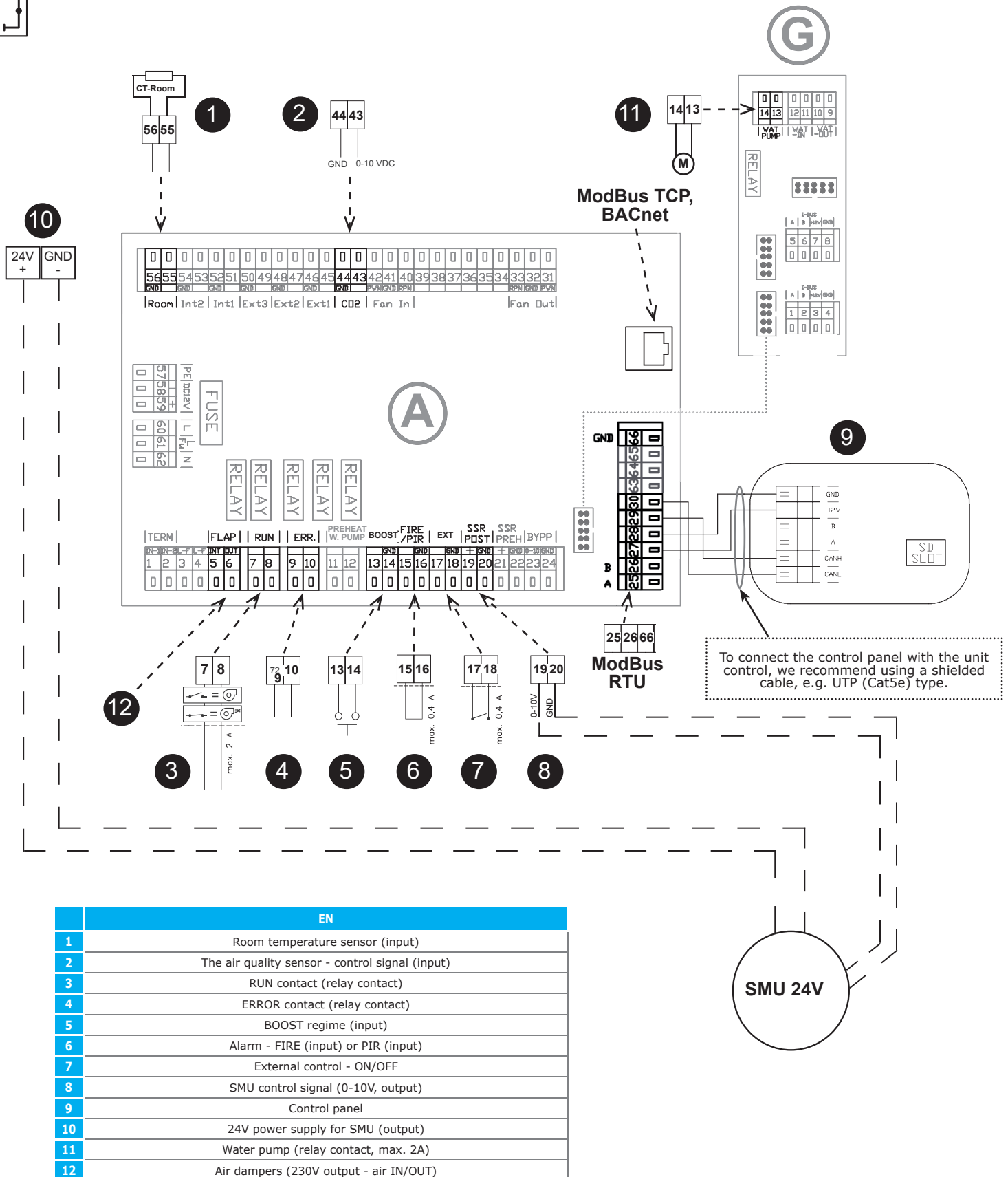
2VV Service software:

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





WIRING DIAGRAMS





ACCESSORIES

RECOMMENDED ACCESSORIES

Filter replacement

Spare filters classes and configurations.



Unit type	Filter Coarse 60% (class G4)	Filter ePM 10 60% (class M5)	Filter ePM 1 60% (class F7)
HRWA2-040	FILTR-HRWA1-040-G4	FILTR-HRWA1-040-M5	FILTR-HRWA1-040-F7
HRWA2-070	FILTR-HRWA1-070-G4	FILTR-HRWA1-070-M5	FILTR-HRWA1-070-F7
HRWA2-100	FILTR-HRWA1-100-G4	FILTR-HRWA1-100-M5	FILTR-HRWA1-100-F7

Condensate siphon

SK-HL138

Siphon with a ball for installation on the wall or flush mounting.



Condensate siphon

SK-AKS3

Ball Siphon for direct connection to the unit.



Condensate pump

SET-ASPEN-MAXI-ORANGE

Pump is designed to be installed in false ceilings.

Note:

Use of pump is recommended where gravity assisted condensate collection is not achievable.

Accessory supplied loose for fitting on site.

Pipework from pump not included.



PIR sensor

CI-PS 1003

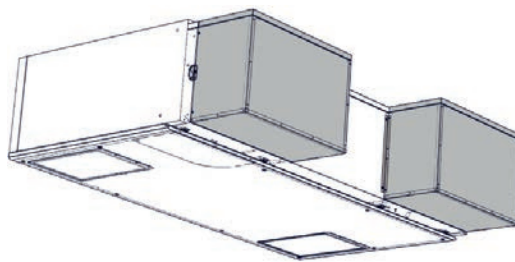
Infrared room sensor for automatic ventilation based on presence of people in the ventilated area.



Module for connection from the top

Additional module to connect the air duct from the top.

Unit type	Module type	Module weight [kg]
HRWA2-040	HRWA2-040-UP-250	5,5
HRWA2-070	HRWA2-070-UP-315	7,1
HRWA2-100	HRWA2-100-UP-315	9,2

**HRWA2 - 040 - UP - 250**

250 - Diameter 250mm

315 - Diameter 315mm

UP - Connection from the top

040 - For unit unit size 040

070 - For unit unit size 070

100 - For unit unit size 100

HRWA2 - Heat recovery unit *Whisper Air*

Threaded rods

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

**Wall holder**

HRWA2-WALL-HOLDER (set 2 pcs.)

Anchoring the unit to the wall.

**Air damper with actuator**

KRTK-A-SB

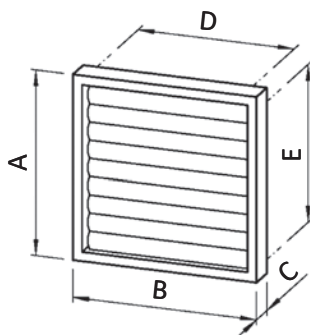
Unit type	Air damper type
HRWA2-040	KRTK-A-250-SB
HRWA2-070	KRTK-A-315-SB
HRWA2-100	KRTK-A-315-SB



Air stream operated shutter

VK

Non-corrosive, long life, weather and ultra-violet stable polymers. Colour light grey. Easy and quick installation. Can be used as outlet shutter only.

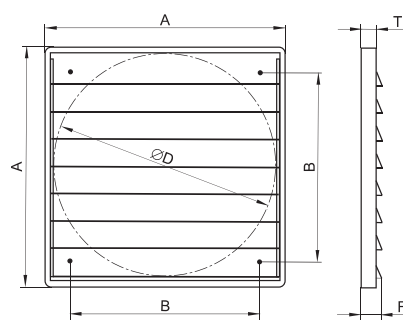


Unit type	Model	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]
HRWA2-040	VK250	290	290	28	243	217
HRWA2-070	VK315	340	340	28	293	267
HRWA2-100	VK315	340	340	28	293	267

Air shutter with fixed lamelas

WFK

Non-corrosive, long life, weather and ultra-violet stable polymers. Colour light grey. Easy and quick installation. Can be used as inlet or outlet shutter.



Unit type	Model	A [mm]	B [mm]	D [mm]	F [mm]	T [mm]
HRWA2-040	WFK-25-02	294	232	258	42	26
HRWA2-070	WFK-30-02	346	276	310	42	26
HRWA2-100	WFK-30-02	346	276	310	42	26



KEY TO CODING

HRWA2-070 HX CB E 74-E S0 C-0 A 0

0 - Reserve

A - Standard cover

B - Design cover

0 - Standard colour (RAL 9016)

9 - Atyp RAL

C - AirGENIO SUPERIOR control

S0 - Without afterheater

E0 - Electric afterheater with reduced power (only for HRWA2-100 type)

E1 - Electric afterheater

V1 - Water afterheater

C3 - Change-over water coil

X - Without preheater

E - Electric preheater

74 - Inlet filter ePM 1 60% (F7)

- Outlet filter Coarse 60% (G4)

E - EC fans

CB - Counterflow plate heat exchanger with bypass

EB - Full enthalpy heat exchanger with bypass (only Design version)

HX - Horizontal installation

UX - Upper - horizontal installation with top connection

040 - Nominal flow rate 400 m³/h

070 - Nominal flow rate 700 m³/h

100 - Nominal flow rate 1000 m³/h

HRWA2 - Heat recovery unit **WHISPER AIR**



Counterflow plate heat recovery exchanger



BASIC FEATURES



ALFA 95 FLAT

Highly efficient under-ceiling heat recovery unit designed for applications in commercial interiors, such as **shops, offices, coffee bars, restaurants and sport facilities.**

- **4 sizes with air flows: 400, 700, 1500 and 2000 m³/h**
- Ecodesign directive 1253/2014 compliant
- Complies to criteria for Passive House Component certification
- Aluminium counterflow exchanger with heat recovery efficiency of up to 93 % (EN308)
- Energy-efficient EC fans with low SFP and quiet operation
- Compact size with low installation height
- Integrated electric pre-heater (optional)
- Integrated electric/water after-heater, modular C/O or DX coils concept (optional)
- AirGENIO Superior control system with an option of CAV, VAV or DCV mode, other supplementary modes, antifreeze protection, BMS control via ModBUS RTU, TCP or BACnet.

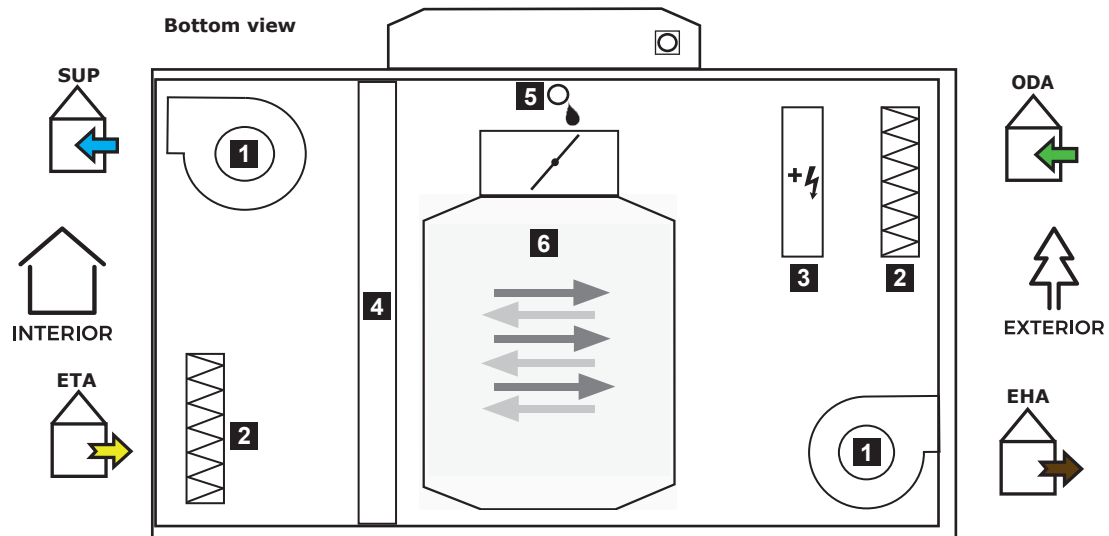
ALFA 95 FLAT heat recovery unit is designed to be operated in a dry indoor environment (relative humidity not exceeding 80 %) and at an ambient temperature in the range from +5 °C up to +60 °C.

The unit is designed for transporting standard atmospheric air that is free of dust, grease, chemical emissions and other impurities. The transported air relative humidity must not exceed 90 %.

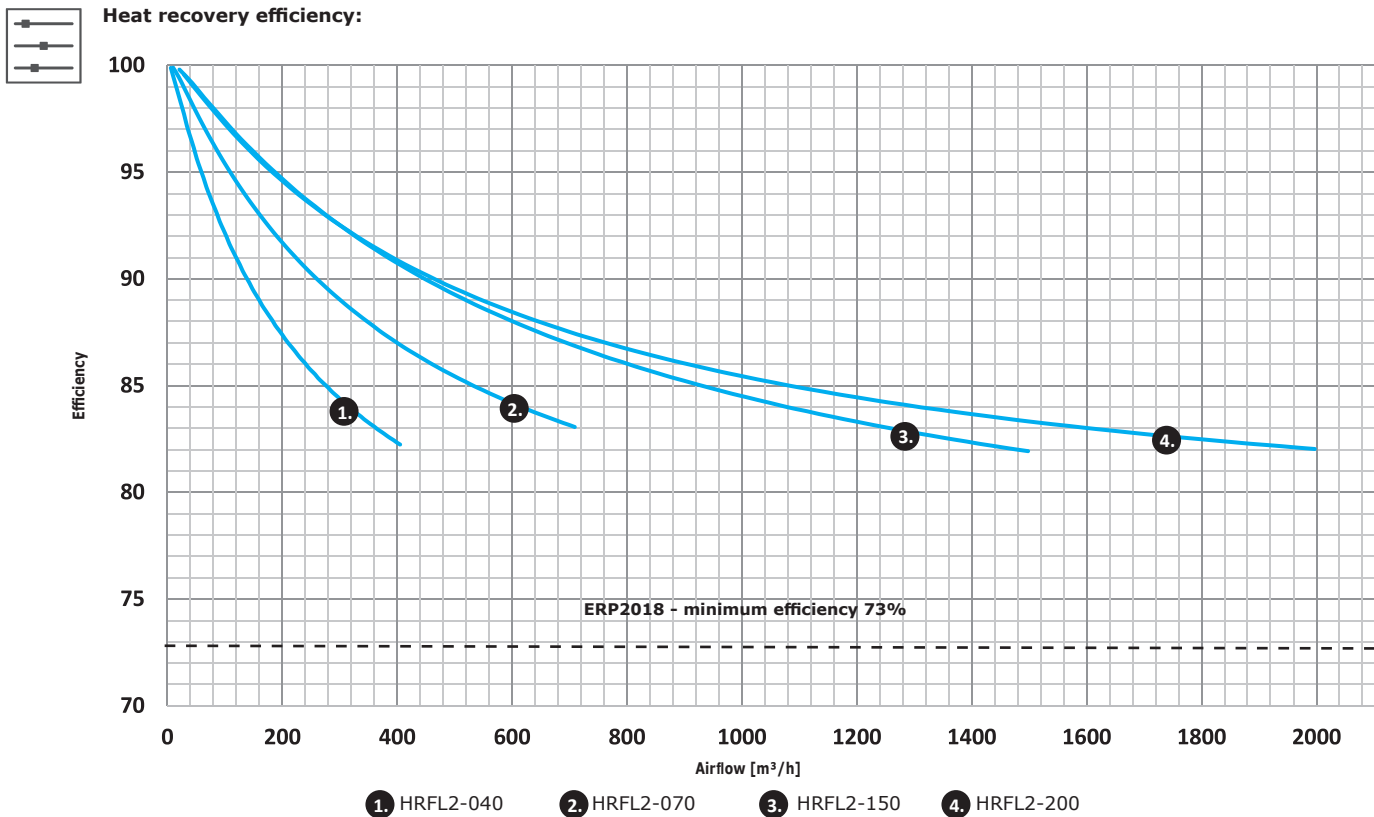
The casing of the unit is made from sandwich panels. When unit installed in the duct system its IP rating is 20.

The design of the ventilation project must be **always designed by a qualified HVAC designer, engineer or architect.**

Operational diagram



EN	
1	Fan
2	Filter
3	Preheater
4	Afterheater
5	Condensate drain
6	Heat exchanger with by-pass damper

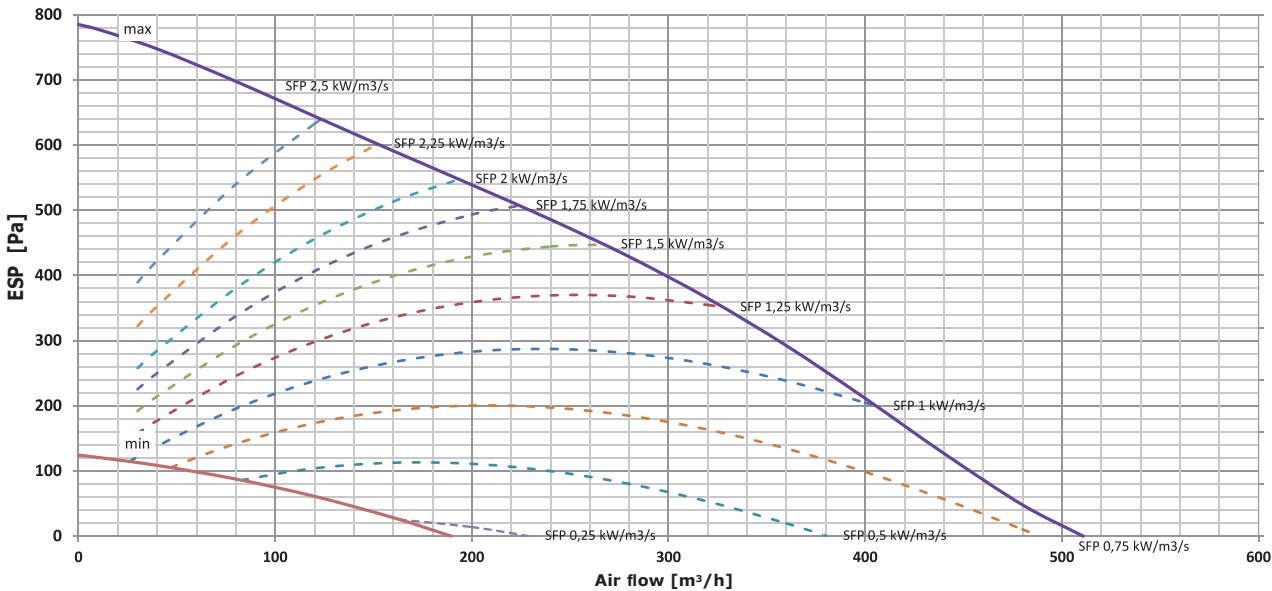




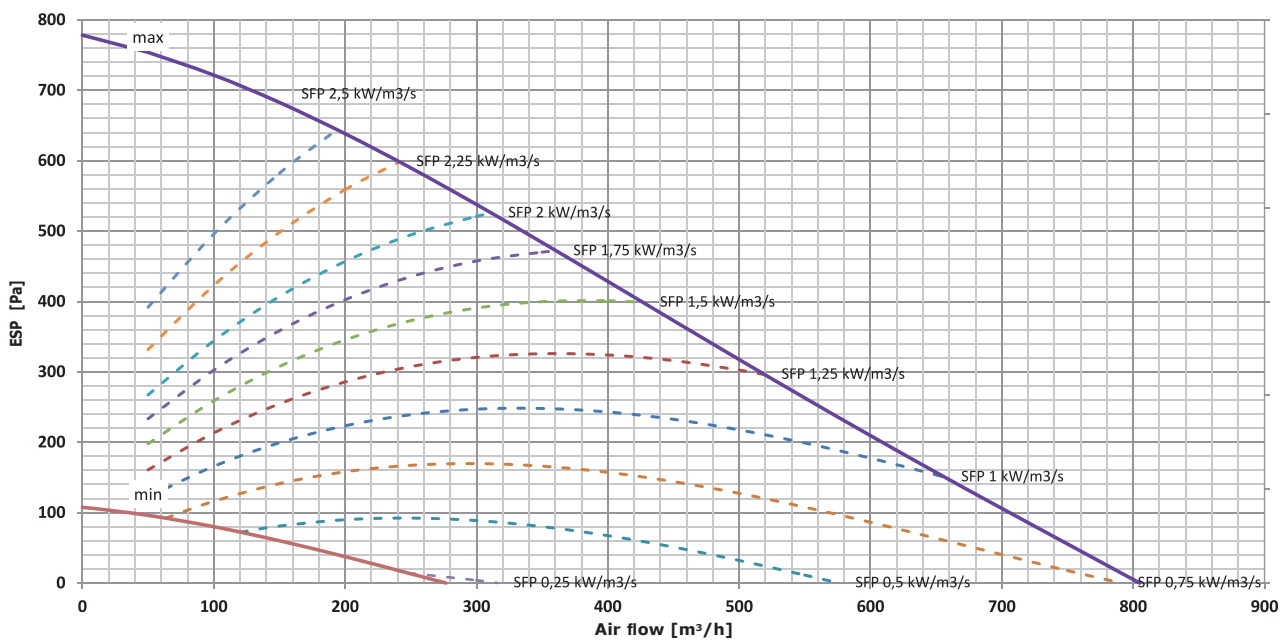
PRIMARY PARAMETERS

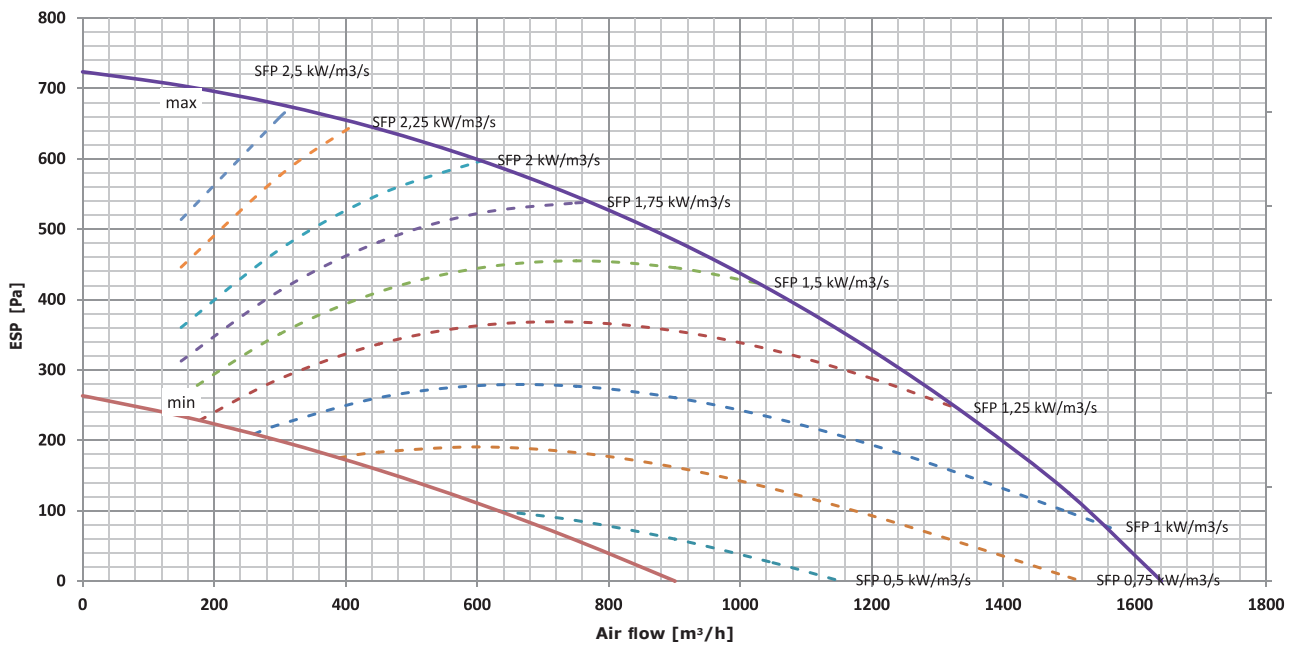
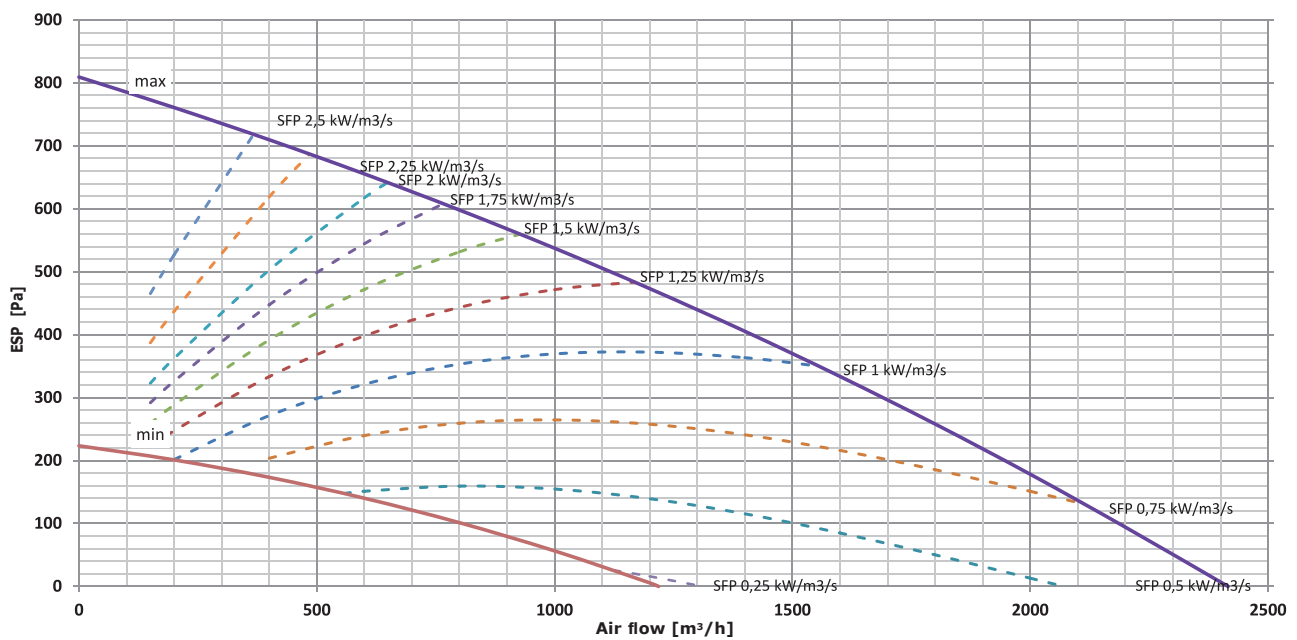
SFP=Unit Power input/supply airflow (kW/m3/s)

HRFL2-040



HRFL2-070



**PRIMARY PARAMETERS**SFP=Unit Power input/supply airflow (kW/m³/s)**HRFL2-150****HRFL2-200**



Noise specifications:

HRFL2-040

Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band								Overall	
		63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{PA} [dB] at 3m
400	150	36	43	53	56	47	44	38	34	59	37
300		33	40	52	50	42	40	33	31	55	33
200		31	38	47	44	38	36	31	30	50	29
150		30	38	45	42	36	34	30	29	48	27

Branch	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]
EHA	400	150	53	60	65	70	66	65	62	61	74
SUP			53	60	65	70	65	64	62	61	74
ETA			47	53	55	57	47	42	36	47	61
ODA			46	52	55	56	46	42	35	46	60

HRFL2-070

Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band								Overall	
		63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{PA} [dB] at 3m
700	200	39	47	56	54	50	50	47	38	60	38
500		38	47	52	51	46	45	39	29	57	35
300		38	48	55	48	42	41	35	26	57	35
200		37	48	55	46	41	40	34	26	57	35

Branch	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]
EHA	700	200	59	62	70	73	67	67	63	55	76
SUP			58	63	70	73	67	67	63	55	77
ETA			50	53	60	57	46	39	33	26	63
ODA			49	53	59	56	46	39	32	26	62

Noise specifications:

HRFL2-150

Airflow [m ³ /h]	Pressure [Pa]	Sound power level per frequency band								Overall	
		63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{PA} [dB] at 3m
1400	200	46	57,8	59	60	59	59	52	43	66	44
1000		41	53,5	56	54	54	53	47	37	61	39
700		38	50,6	52	49	50	47	41	32	57	35
300		36	46,8	46	44	44	40	34	26	52	30

Branch	Airflow [m ³ /h]	Pressure [Pa]	Sound power level per frequency band								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]
EHA	1400	200	63	66	74	80	75	76	69	65	84
SUP			63	65	74	81	75	76	69	65	84
ETA			54	58	61	62	58	50	47	33	66
ODA			54	58	60	62	58	51	47	33	66

HRFL2-200

Airflow [m ³ /h]	Pressure [Pa]	Sound power level per frequency band								Overall	
		63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{PA} [dB] at 3m
1800	200	45	58	60	56	55	53	47	34	64	42
1500		42	58	58	54	53	52	46	33	63	41
1000		44	57	56	52	52	50	43	31	61	39
500		47	54	53	51	51	47	37	29	59	37

Branch	Airflow [m ³ /h]	Pressure [Pa]	Sound power level per frequency band								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]
EHA	1800	200	60,8	68,9	76,3	73,0	74,6	68,6	63,2	57,0	80
SUP			59,5	68,8	75,2	72,5	74,2	68,5	62,8	56,8	80
ETA			48,6	60,8	61,5	57,6	51,4	47,8	38,6	28,3	65
ODA			47,5	60,5	60,7	56,1	50,8	47,3	38,0	27,6	65

Basic technical parameters of the heat recovery units:

Model without electric pre-heater:

Model without coil / with water heating coil / C-O coil / DX coil

Type	Voltage [V]	Frequency [Hz]	Rated input [kW]	Total current [A]
HRFL2-040	230 V	50 Hz	0,23	2,2
HRFL2-070	230 V	50 Hz	0,33	2,5
HRFL2-150	230 V	50 Hz	1,1	6,8
HRFL2-200	230 V	50 Hz	1,1	6,3

Model with electric coil (post-heater)

Type	Voltage [V]	Frequency [Hz]	Rated input [kW]	Total current [A]
HRFL2-040	230 V	50 Hz	1,1	5,7
HRFL2-070	230 V	50 Hz	1,8	8,6
HRFL2-150	230 V	50 Hz	3,8	18,5
HRFL2-200	400 V	50 Hz	5,9	12,3

Model with electric pre-heater:

Model without coil / with water heating coil / with change-over coil

Type	Voltage [V]	Frequency [Hz]	Rated input [kW]	Total current [A]
HRFL2-040	230 V	50 Hz	1,7	8,3
HRFL2-070	230 V	50 Hz	3,1	14,3
HRFL2-150	400 V	50 Hz	6,4	13,3
HRFL2-200	400 V	50 Hz	8,3	16,7

Model with electric preheater (post-heater)

Type	Voltage [V]	Frequency [Hz]	Rated input [kW]	Total current [A]
HRFL2-040	230 V	50 Hz	2,5	11,8
HRFL2-070	400 V	50 Hz	4,5	11,8
HRFL2-150	400 V	50 Hz	9,1	18,5
HRFL2-200	400 V	50 Hz	13,1	22,5

Type	Weight of unit [kg]			Weight of accessories [kg]	
	Without reheating	With electric reheating	With water reheating	C/O module	DX module
HRFL2-040	70	75	75	25.5	24
HRFL2-070	90	95	95	32	30
HRFL2-150	165	170	170	37	35
HRFL2-200	240	245	245	43	40

Characteristics of electric motors (1 fan only)

Type	Voltage [V]	Frequency [Hz]	Rated input [W]	Total current [A]	Speed [r/min]	Protection IP	Insulation class
HRFL2-040	230 V	50 Hz	115	1,1	3640	54	B
HRFL2-070	230 V	50 Hz	165	1,25	2530	44	B
HRFL2-150	230 V	50 Hz	455	2,8	2600	54	B
HRFL2-200	230 V	50 Hz	500	3,15	1890	54	B

Characteristics of electric coil

Type	Voltage [V]	Frequency [Hz]	Rated input [kW]	ΔT [°C]
HRFL2-040	230 V	50 Hz	0,8	6,3
HRFL2-070	230 V	50 Hz	1,4	6,3
HRFL2-150	230 V	50 Hz	2,7	5,3
HRFL2-200	400 V	50 Hz	4,8	6,3

Characteristics of electric preheater

Type	Voltage [V]	Frequency [Hz]	Rated input [kW]	ΔT [°C]
HRFL2-040	230 V	50 Hz	1,4	10
HRFL2-070	230 V	50 Hz	2,7	10
HRFL2-150	400 V	50 Hz	5,3	10
HRFL2-200	400 V	50 Hz	7,2	10

Characteristics of water heating coil

Type	Rated capacity [kW]	Water pressure loss [kPa]	Air pressure loss [Pa]	Connection diameter	Air flow [m³/h]
HRFL2-040	2,68	1	15	G3/4"	400
HRFL2-070	4,88	5	18	G3/4"	700
HRFL2-150	9,87	26	27	G3/4"	1400
HRFL2-200	14,4	7	16	G3/4"	2000

* For water temperature gradient 90/70 and inlet air temperature 15°C.

Correction coefficients of the powers of the hot water coil*						
Air inlet temperature [°C]	Water regime					
	90/70	85/65	80/60	75/55	70/50	65/45
0	1,29	1,20	1,10	1	0,91	0,82
5	1,19	1,10	1	0,91	0,82	0,73
10	1,10	1	0,91	0,82	0,73	0,63
15	1	0,91	0,82	0,73	0,63	0,53
20	0,91	0,82	0,73	0,63	0,54	0,45

* To apply to the rated power in the characteristics of the LPHW coil.

Characteristics of water cooling / heating coil (C/O)

Type	Rated capacity [kW]	Water pressure loss [kPa]	Air pressure loss [Pa]	Connection diameter	Air flow [m³/h]
HRFL2-040	2,51	0,29	80	3/4"	400
HRFL2-070	4,6	0,59	71	3/4"	700
HRFL2-150	9,41	0,69	99	3/4"	1400
HRFL2-200	15,7	1,67	83	3/4"	2000

* For water temperature gradient 60/40 and inlet air temperature 15°C.

Characteristics of water cooling / heating coil (C/O)

Type	Rated capacity [kW]	Water pressure loss [kPa]	Air pressure loss [Pa]	Connection diameter	Air flow [m³/h]
HRFL2-040	1,94	2,65	91	3/4"	400
HRFL2-070	3,68	5,4	80	3/4"	700
HRFL2-150	7,34	6,57	112	3/4"	1400
HRFL2-200	12,62	15,79	94	3/4"	2000

* For water temperature gradient 7/12 and inlet air temperature 25°C with 70% of relative humidity.

Correction coefficients of the powers of the hot water coil (C/O)*				
Air inlet temperature [°C]	Water regime			
	60/40	55/50	45/40	35/30
0	1,59	1,95	1,55	1,15
5	1,39	1,76	1,46	0,95
10	1,20	1,56	1,16	0,76
15	1,00	1,37	0,97	0,57
20	0,80	1,17	0,78	0,38

* To apply to the rated power in the characteristics of the water coil.

Correction coefficients of the powers of the cool water coil (C/O)*			
Air inlet temperature [°C]	Water regime / Wasserhaushalt		
	7/12	6/11	5/10
20	0,35	0,43	0,54
25	1,00	1,12	1,25
30	1,86	1,98	2,10

* To apply to the rated power in the characteristics of the water coil.

Characteristics of direct evaporator (DX)

Refrigerant R32

Type	Air flow [m³/h]	Rated capacity [kW]	Outlet air temperature [°C]	RH after coil [%]	Refrigerant pressure loss [kPa]	Air pressure loss [Pa]	Connection diameter of gas coil	Connection diameter of liquid coil
HRFL2-040	400	1.8	14.7	78	38.2	55	3/8"	3/8"
HRFL2-070	700	3.4	13.4	85	37.4	83	5/8"	1/2"
HRFL2-150	1400	7.0	13.2	86	32.6	90	5/8"	1/2"
HRFL2-200	2000	10.2	13	86	29.4	71	3/4"	1/2"

* For inlet air temperature 25°C with 47% of relative humidity and evaporation temperature 5°C, refrigerant R32.

Refrigerant R410a

Type	Air flow [m³/h]	Rated capacity [kW]	Outlet air temperature [°C]	RH after coil [%]	Refrigerant pressure loss [kPa]	Air pressure loss [Pa]	Connection diameter of gas coil	Connection diameter of liquid coil
HRFL2-040	400	1.7	15	78	60.0	54	3/8"	3/8"
HRFL2-070	700	3.3	13.7	85	58.3	81	5/8"	1/2"
HRFL2-150	1400	6.6	13.6	85	51.1	88	5/8"	1/2"
HRFL2-200	2000	9.8	13.4	86	46.4	70	3/4"	1/2"

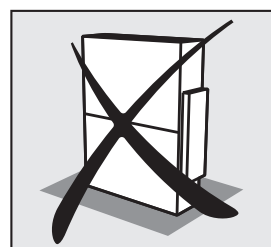
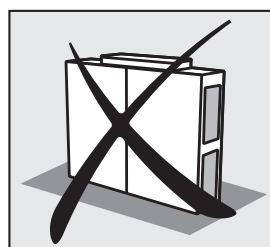
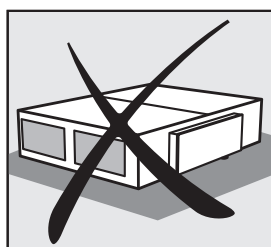
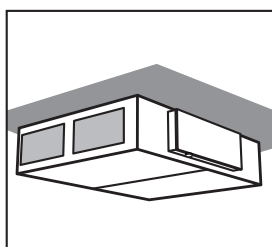
* For inlet air temperature 25°C with 47% of relative humidity and evaporation temperature 5°C, refrigerant R410A.



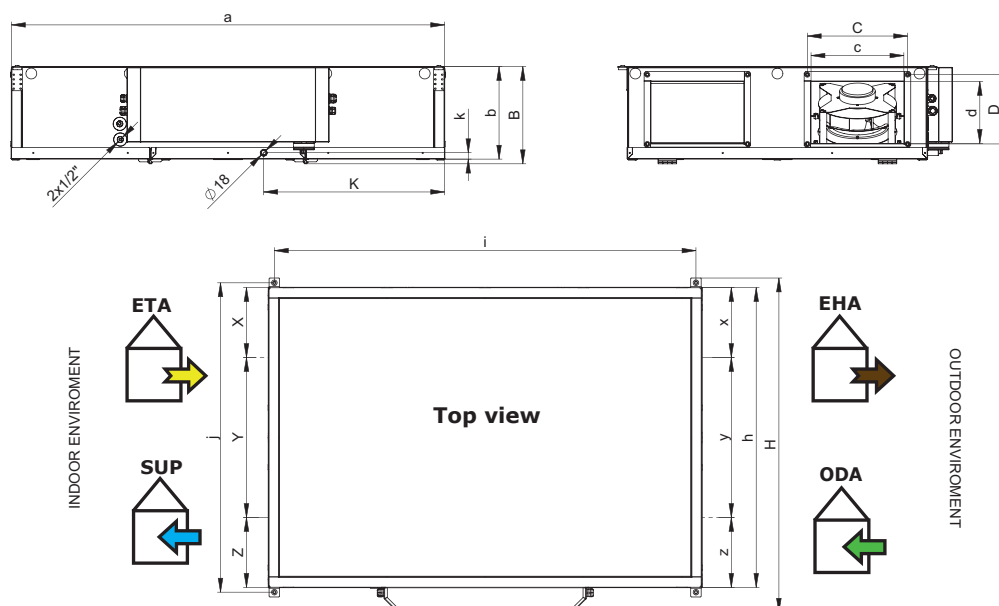
INSTALLATION AND ASSEMBLY

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

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

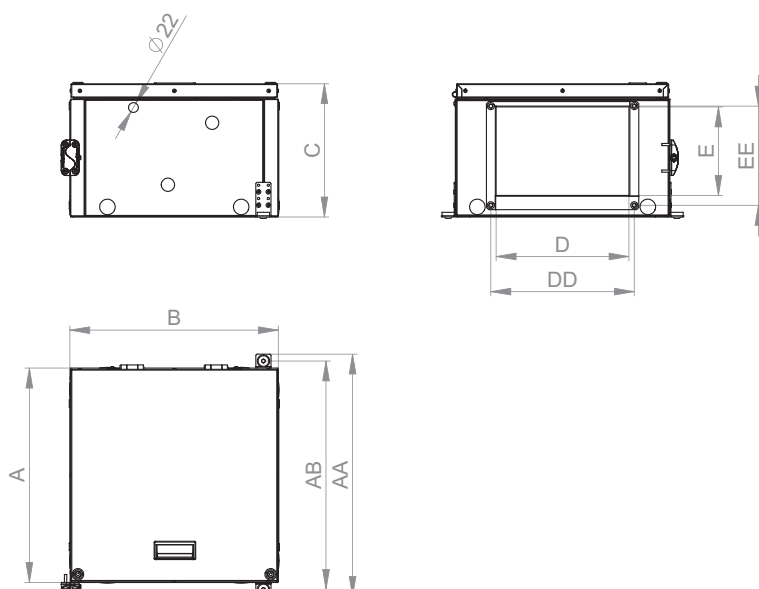


DIMENSIONS



Type	H	h	a	B	b	i	j	K	k	c	d	C	D	X	x	Y	y	Z	z	condensation ø	weight (kg)
400	780	670	1190	310	300	1120	700	485	21	250	150	274	174	166	166	332	332	166	166	18	75
700	1080	970	1400	310	300	1330	1000	590	21	300	200	324	224	242	242	517	517	242	242	18	95
1500	1385	1270	1700	390	380	1630	1305	720	21	500	250	524	274	323	323	625	625	323	323	18	170
2000	1710	1600	2000	470	460	1930	1630	902	21	600	300	624	324	433	433	735	735	433	433	18	245

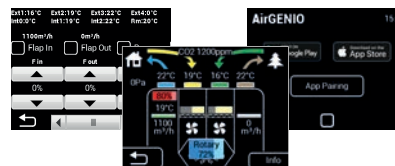
External module: C/O, DX



Type	A	B	C	D	E	DD	EE	AB	AA	ø condensation
HRFL2-040	334	470	295	250	150	274	174	366	397	22
HRFL2-070	484	470	300	300	200	324	224	516	547	22
HRFL2-150	636	470	380	500	250	524	274	668	699	22
HRFL2-200	800	470	460	600	300	624	324	832	863	22



CONTROL



AirGENIO SUPERIOR - Main control functions

- Touch-screen control panel for easy control and complete overview of device operational status (recommended connecting data cable to control panel is UTP cable and it should not exceed 50m length).
- Manual stepless fans control (PWM)
- CAV, VAV or DCV ventilation in automatic mode
- BOOST mode - intensive airflow for a pre-set time period
- Freecooling mode - night ventilation (cooling)
- Occupancy mode - reducing ventilation intensity according to the PIR sensor
- FIRE protection mode with settable logic
- Stepless by-pass control (temperature control: freecooling, antifreeze protection)
- Integrated timer (day, week, year)
- Optional connection of sensors: CO2, RH, VOC (0-10)
- Clogged filter indication by pressure sensors
- Stepless pre-heating control and post-heating control
- Electric coil control (PWM) and LPHW coil control (0-10V)
- Change-over control with automatic detection of the heating / cooling (0-10V)
- Wide choice of different ways for DX coil control*
- Possible control of external pre-heater and post-heater
- Offset fan adjustment (over-pressure / underpressure)
- BMS control via Modbus RTU / TCP or BACnet
- Remote control via smart device

2VV AirGENIO Application:

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

2VV Service software:

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

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

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

With reverse control cycle (heating - cooling mode)

- 10-0V + ON/OFF - ON/OFF switching + 0-10V signal control cooling, heating 10-0V
- 10-0V OFF/ON - OFF/ON switching + 0-10V signal control cooling, heating 10-0V





ACCESSORIES

External modul – Additional heating/cooling modul for HRFL2 unit



Type	HRFL2 + modul C/O	HRFL2 + DX module
HRFL2-040HPCBE75-EE1S-...	✓	✓
HRFL2-040HPCBE75-ES0S-...	✓	✓
HRFL2-040HPCBE75-EV1S-...	not possible	✓
HRFL2-040HPCBE75-XE1S-...	✓	✓
HRFL2-040HPCBE75-XS0S-...	✓	✓
HRFL2-040HPCBE75-XV1S-...	not possible	✓
HRFL2-070HPCBE75-EE1S-...	✓	✓
HRFL2-070HPCBE75-ES0S-...	✓	✓
HRFL2-070HPCBE75-EV1S-...	not possible	✓
HRFL2-070HPCBE75-XE1S-...	✓	✓
HRFL2-070HPCBE75-XS0S-...	✓	✓
HRFL2-070HPCBE75-XV1S-...	not possible	✓
HRFL2-150HPCBE75-EE1S-...	✓	✓
HRFL2-150HPCBE75-ES0S-...	✓	✓
HRFL2-150HPCBE75-EV1S-...	not possible	✓
HRFL2-150HPCBE75-XE1S-...	✓	✓
HRFL2-150HPCBE75-XS0S-...	✓	✓
HRFL2-150HPCBE75-XV1S-...	not possible	✓
HRFL2-200HPCBE75-EE1S-...	✓	✓
HRFL2-200HPCBE75-ES0S-...	✓	✓
HRFL2-250HPCBE75-EV1S-...	not possible	✓
HRFL2-200HPCBE75-XE1S-...	✓	✓
HRFL2-200HPCBE75-XS0S-...	✓	✓
HRFL2-200HPCBE75-XV1S-...	not possible	✓

MOFL1-040HX00000-XC3X-0A0

0 – Standard RAL

C3 – Change over coil

D3 – Direct evaporator

040 – Nominal air flow 400 m³/h

070 – Nominal air flow 700 m³/h

150 – Nominal air flow 1500 m³/h

200 – Nominal air flow 2000 m³/h

External modul

Four-sided closing flap without servo drive

The **MLKR/S** rectangular control flap is designed for controlling and closing the HVAC systems. The flap is designed for operation in the basic environment for conveying air free of rough dust, grease, chemical fumes, and other contaminants. The flanged damper frame is made of galvanized plate. The blades are made of aluminum.



Unit type	Four-sided closing flap without servo drive	Recommended Servo drive
HRFL2-040	MLKR/S-250150	SERVO-LM230-05
HRFL2-070	MLKR/S-300200	
HRFL2-150	MLKR/S-500250	
HRFL2-200	MLKR/S-600300	

Electric heater

EOKO – The heater output is controlled by the HRFL2 unit control system via 0-10V



Recommended combinations:

Unit type	Type of el. Pre-heater
HRFL2-040	EOKO2-200-3,6-3-D
HRFL2-070	EOKO2-250-4,5-3-D
HRFL2-150	EOKO2-315-6,0-3-D
HRFL2-200	EOKO2-400-9,0-3-D

Adapter four-sided to circular

PR-O – adapter from four-sided to circular pipes made from a galvanised metal sheet



Unit type	Circular adapter
HRFL2-040	HRB-PR-01
HRFL2-070	HRB-PR-02
HRFL2-150	HRB-PR-03
HRFL2-200	HRB-PR-04

Filtration inserts (VDI 6022, ISO16890)

replacement filtration inserts of various filtration classes and configurations.



Unit type	Filter ePM 10 70% (class M5)	Filter ePM 2,5 65% (class F7)	Filter ePM 2,5 80% (class F9)
HRFL2-040	FILTR-HRFL2-040 M5	FILTR-HRFL2-040 F7	FILTR-HRFL2-040 F9
HRFL2-070	FILTR-HRFL2-070 M5	FILTR-HRFL2-070 F7	FILTR-HRFL2-070 F9
HRFL2-150	FILTR-HRFL2-150 M5	FILTR-HRFL2-150 F7	FILTR-HRFL2-150 F9
HRFL2-200	FILTR-HRFL2-200 M5	FILTR-HRFL2-200 F7	FILTR-HRFL2-200 F9

Mixing valve

The **SMU** mixing unit is designed for controlling the heat-output of water-type heat exchangers. It is used especially for controlling standalone water-type air heaters, heaters inbuilt into the ventilation units.

Recommended values for individual types of the **ALFA 95 FLAT** units:

SMU2-024-06,3-SC

- SC** – with short circuit
- WO** – without short circuit
- 00,6** – mixing valve – k_{VS} 0,6
- 01,6** – mixing valve – k_{VS} 1,6
- 02,5** – mixing valve – k_{VS} 2,5
- 04,0** – mixing valve – k_{VS} 4,0
- 06,3** – mixing valve – k_{VS} 6,3
- 12,0** – mixing valve – k_{VS} 12,0
- 24,0** – mixing valve – k_{VS} 24,0

024 – 24V stepless control

SMU2 – mixing unit



Duct sensor CO₂
CI-EE850-C3XXFP-002

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



Duct sensor of relative humidity
CI-LCN-FTK140VV

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

Spatial sensor CO₂
CI-CO2-R

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



Spatial sensor RH
CI-RH-R

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



Signal combiner
CI-AQS-COMBI

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



PIR sensor**CI-PS 1003**

Spatial infrared sensor for automatic ventilation based on presence of people in the ventilated area.

Power supply of this sensor must be outsourced. Unit doesn't support this kind of power supply (15-24V DC).

**Condensate pump****SET-ASPEN-MAXI-ORANGE**

Pump is designed to be installed in false ceilings.

Note:

Use of pump is recommended where gravity assisted condensate collection is not achievable.

Accessory supplied loose for fitting on site.

Pipework from pump not included.

**Siphon for condensate****SK-HL138**

Siphon with a ball for installation on the wall or flush mounting.





KEY TO CODING

HRFL2-040 H P CB E 75-X S0 S-0A0

0A0 2V Version

S Control

S AirGENIO Superior controls

S0 After heater

S0 Without after heater

E1 Electric after heater

V1 Water after heater

X Preheater

X Without preheater

E Electric preheater

75 Filtration (inlet / outlet)

75 inlet ePM 2,5 65% (F7); outlet ePM 10 70% (M5)

E Type of fans

E EC fans

CB By-pass

CB Counterflow plate heat exchanger with bypass

P Version of access

P Right access

H Installation

Horizontal installation

040 Nominal airflow

040 Nominal flow rate 400 m³/h

070 Nominal flow rate 700 m³/h

150 Nominal flow rate 1500 m³/h

200 Nominal flow rate 2000 m³/h

HRFL2 Unit Type

Commercial recovery unit **ALFA 95 FLAT**



Counterflow plate heat recovery exchanger

**BASIC FEATURES****ALFA 95**

Highly efficient vertical and horizontal heat recovery unit range for indoor/outdoor installations designed for commercial application such as **offices, coffee bars, restaurants and sport facilities**.

- **4 series of horizontal version: 800 to 3500 m³/h**
- **6 series of vertical version: 800 to 5500 m³/h**
- Ecodesign directive 1253/2014 compliant
- Aluminium counterflow exchanger with heat recovery efficiency up to 93 % (EN308)
- Energy-efficient EC fans with low SFP and quiet operation
- Double skin mineral wool insulation 50 mm
- Heated compartment for condensate siphon
- Integrated electric pre-heater (optional)
- Integrated post-heater (option of electric, water, change/over or DX coil)
- Possible control of additional external post-heater and preheater
- **AirGENIO Superior** control system with an option of CAV, VAV or DCV mode, other supplementary modes, antifreeze protection, BMS control via ModBUS RTU, TCP or BACnet.

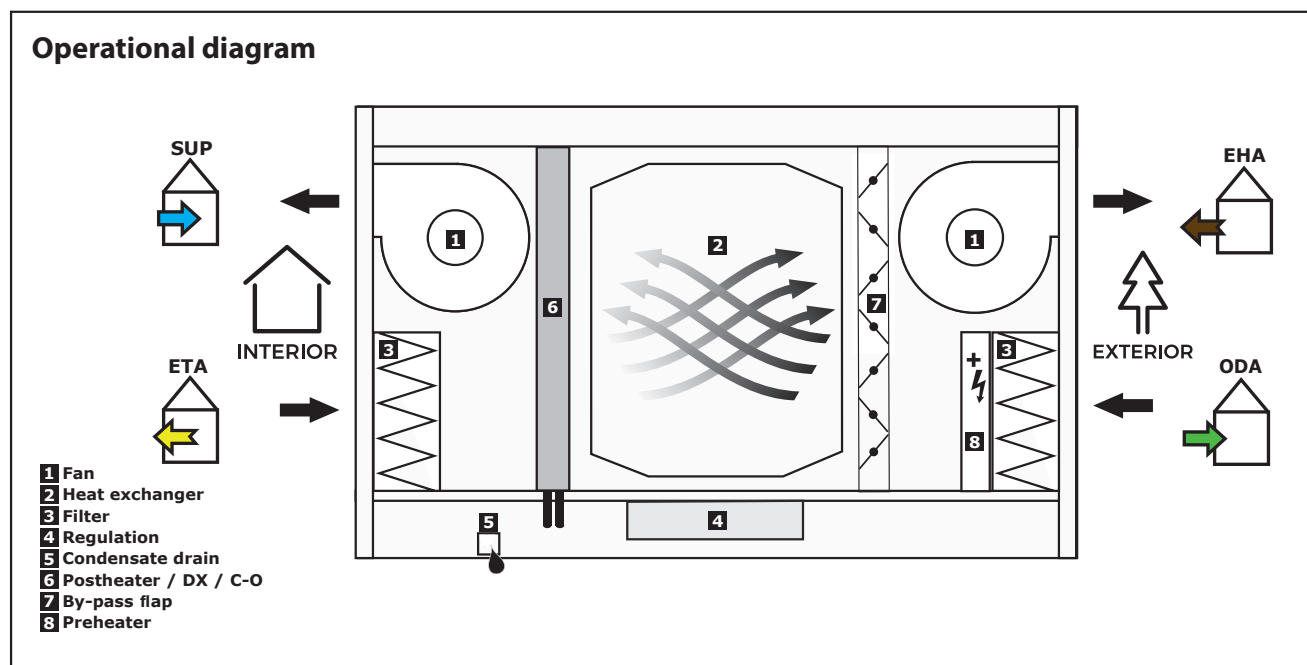
ALFA 95 heat recovery unit is designed to be operated at an indoor / outdoor environment and at an ambient temperature in the range from -20 °C up to +60 °C.

The unit is designed for transporting standard atmospheric air that is free of dust, grease, chemical emissions and other impurities. The transported air relative humidity must not exceed 90 %.

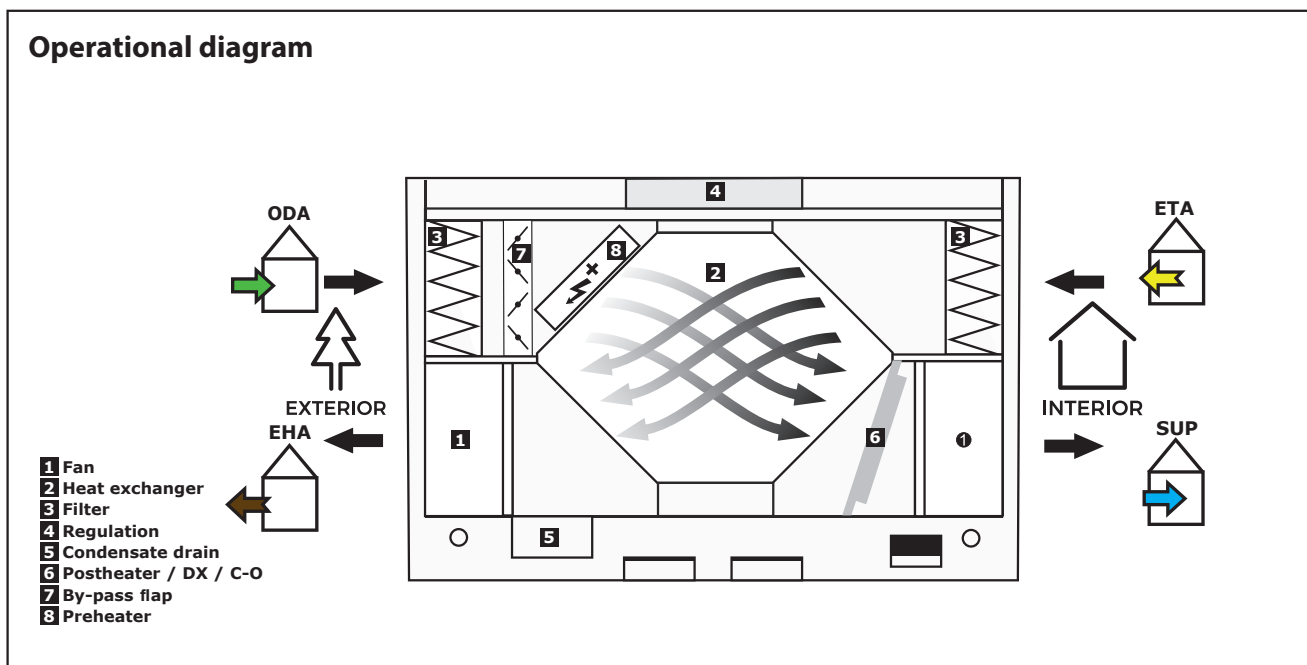
The unit casing is made from double skin mineral wool insulation panels of the thickness 50 mm. The unit, when installed in the ducting system has an IP rating of 54.

The design of the ventilation project must be **always designed by a qualified HVAC designer, engineer or architect**.

HORIZONTAL



VERTICAL



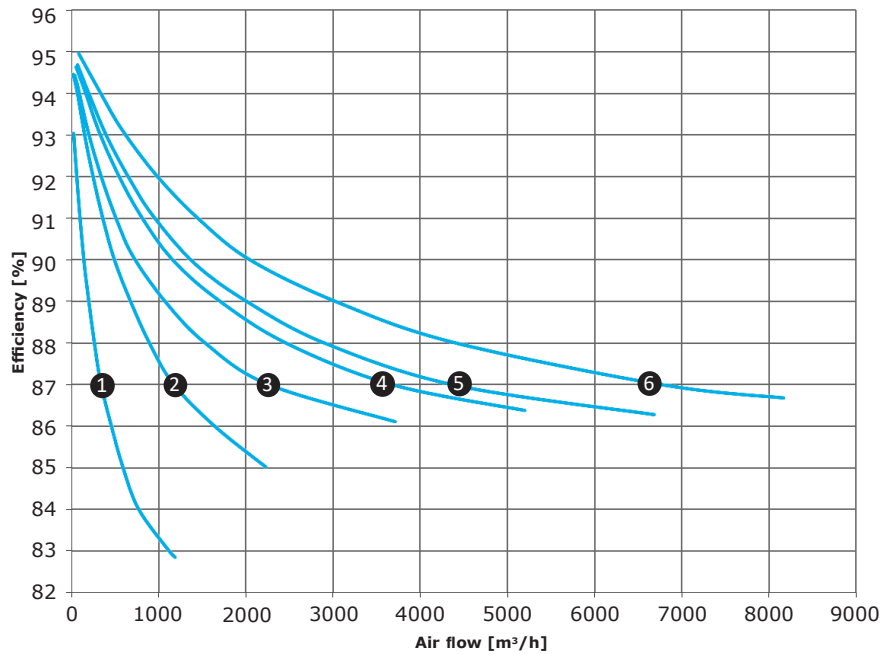
**PRIMARY PARAMETERS****Heat recovery efficiency:**

The data is measured under following conditions:

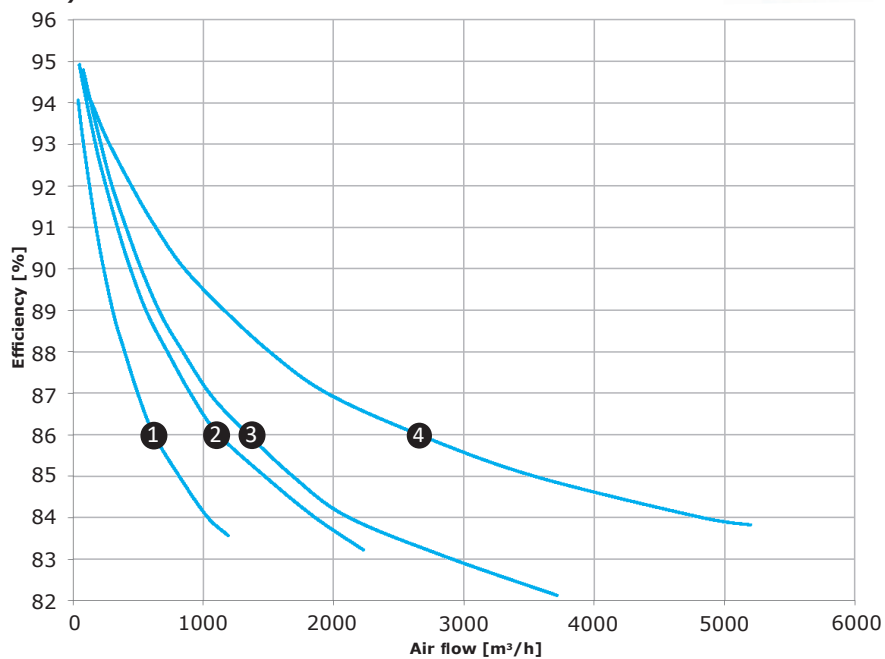
Outdoor air temperature is -5 °C, relative humidity 90 %

Indoor air temperature is 20 °C, relative humidity 65 %

The difference compared with the dry environment is approximately 5 %

**HR95 V (VERTICAL)**

① HR95-080 ② HR95-150 ③ HR95-250 ④ HR95-350 ⑤ HR95-450 ⑥ HR95-550

**HR95 H (HORIZONTAL)**

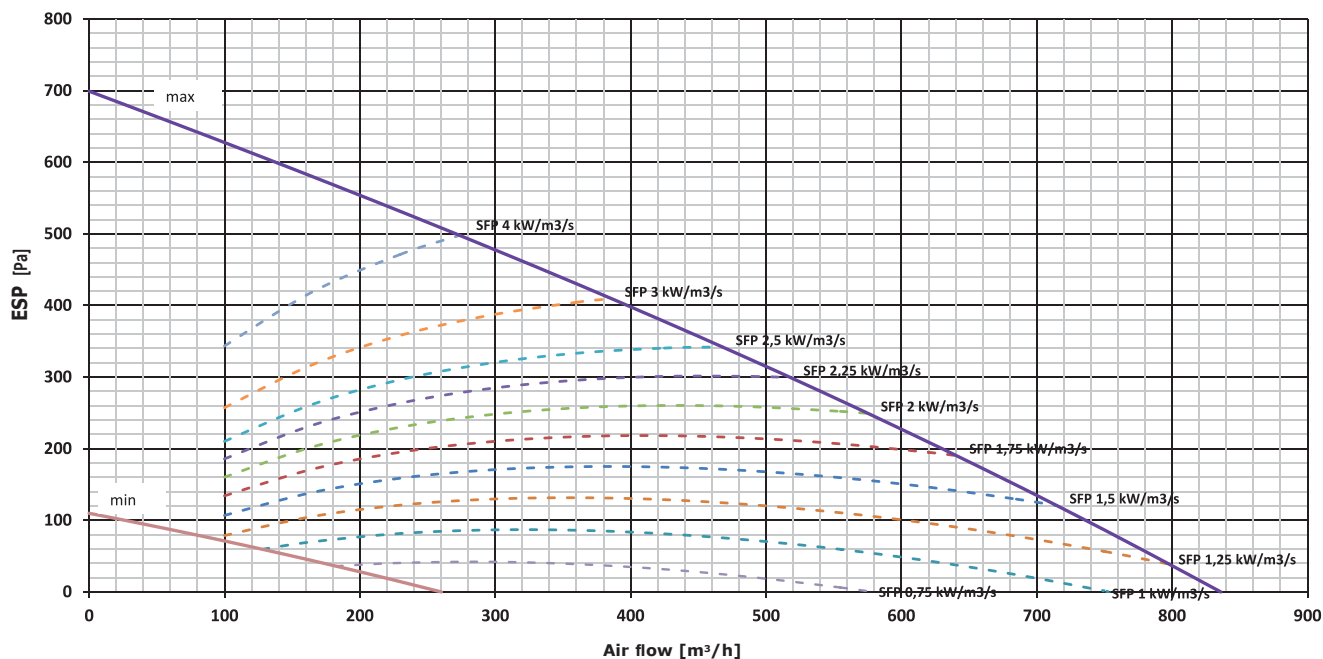
① HR95-080 ② HR95-150 ③ HR95-250 ④ HR95-350



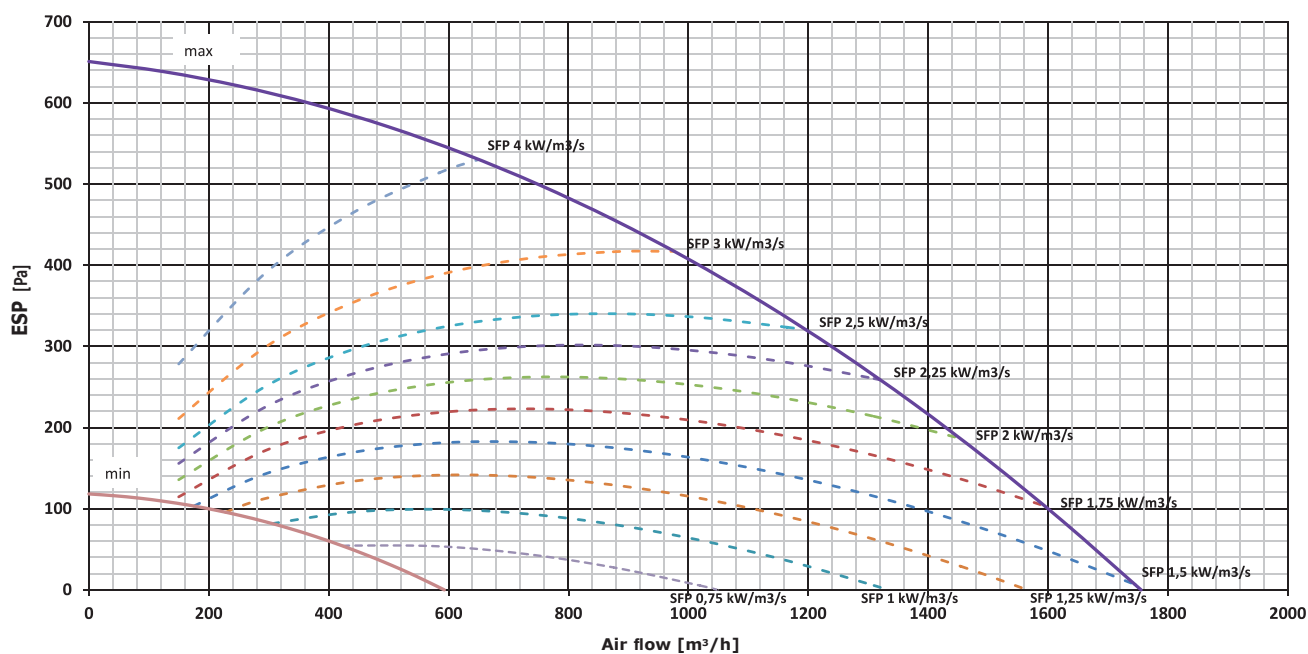
PRIMARY PARAMETERS

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

HR95-080 V



HR95-150 V

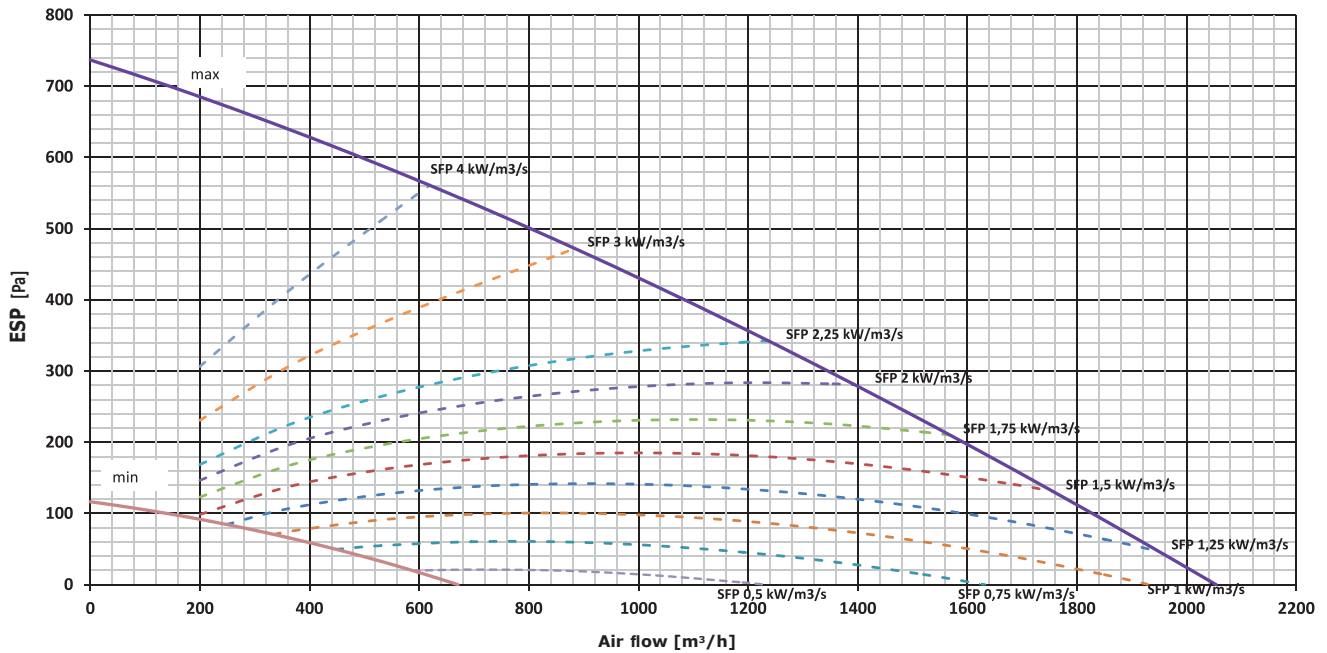




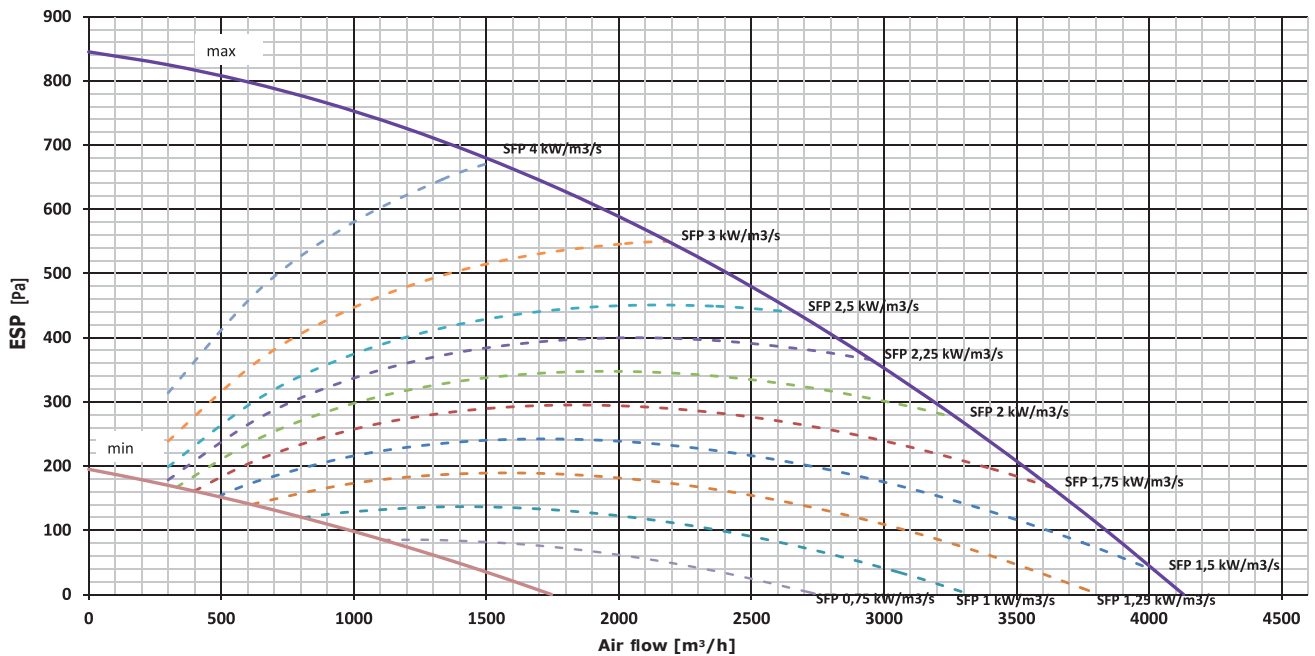
PRIMARY PARAMETERS

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

HR95-250 V



HR95-350 V

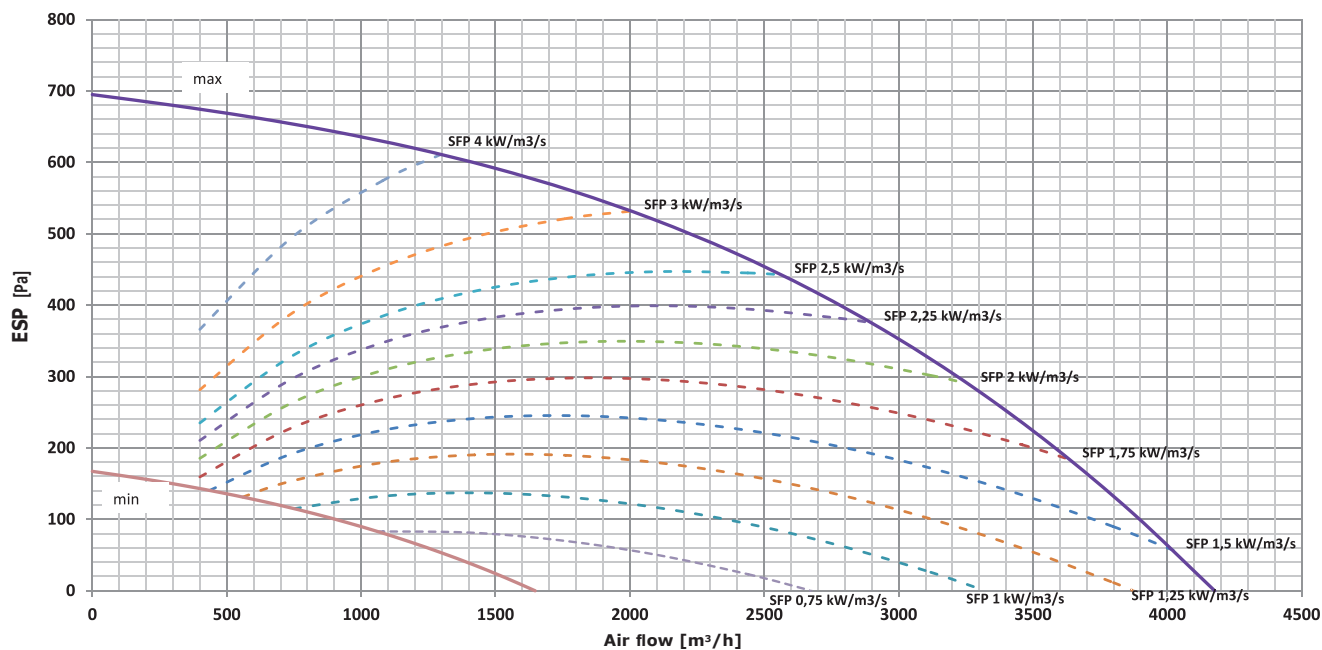




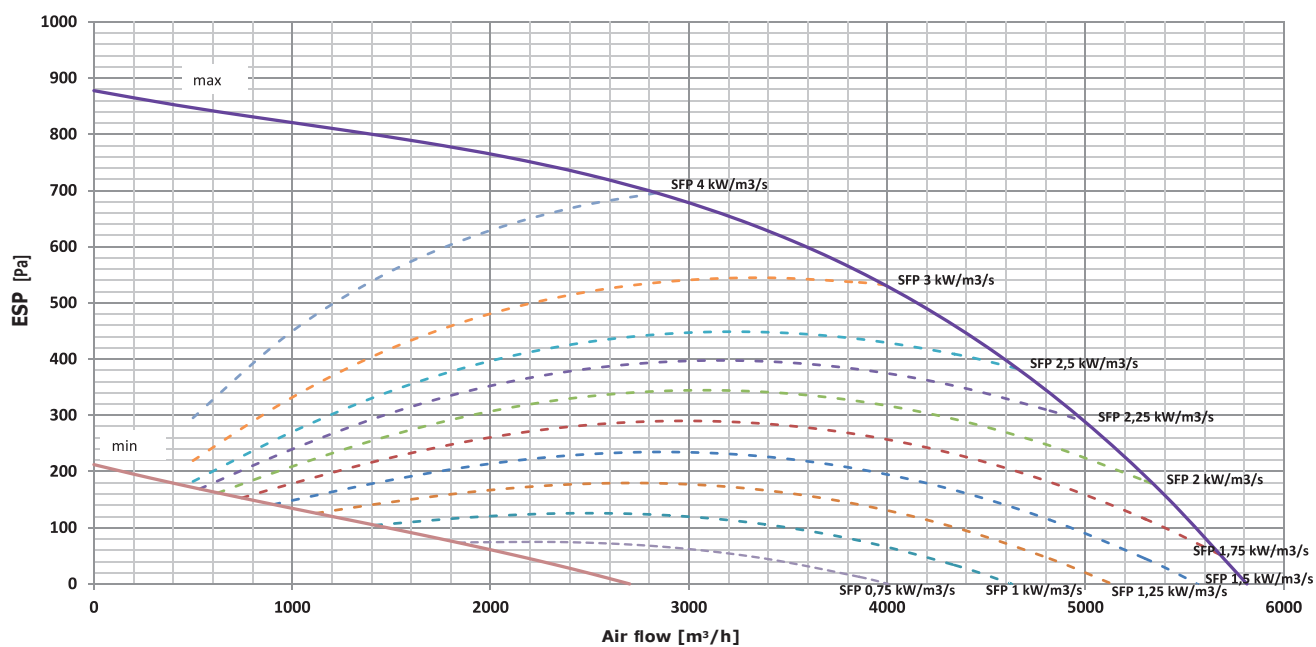
PRIMARY PARAMETERS

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

HR95-450 V



HR95-550 V

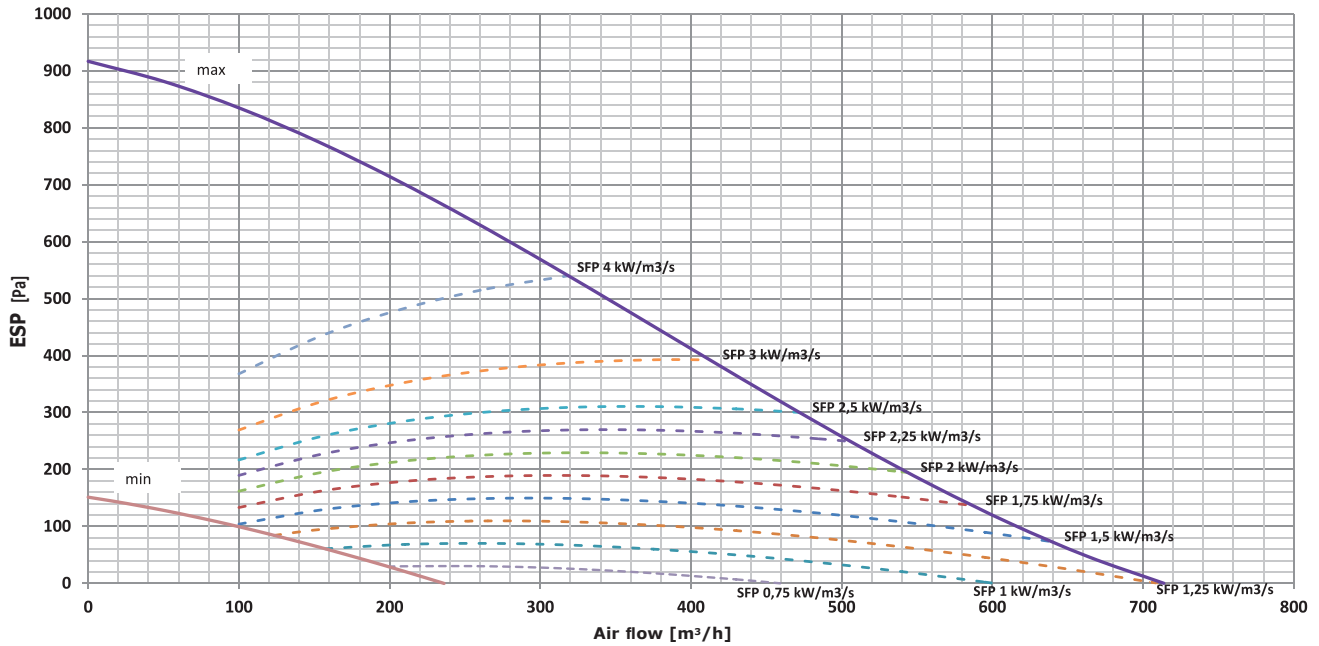




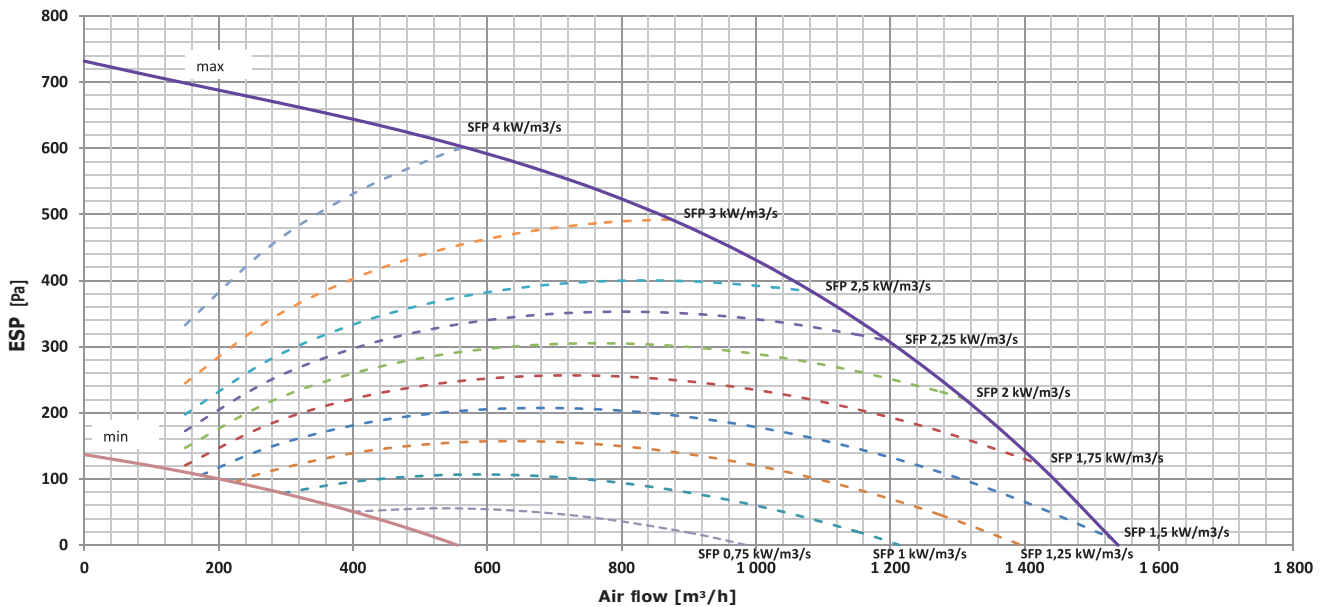
PRIMARY PARAMETERS

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

HR95-080 H



HR95-150 H

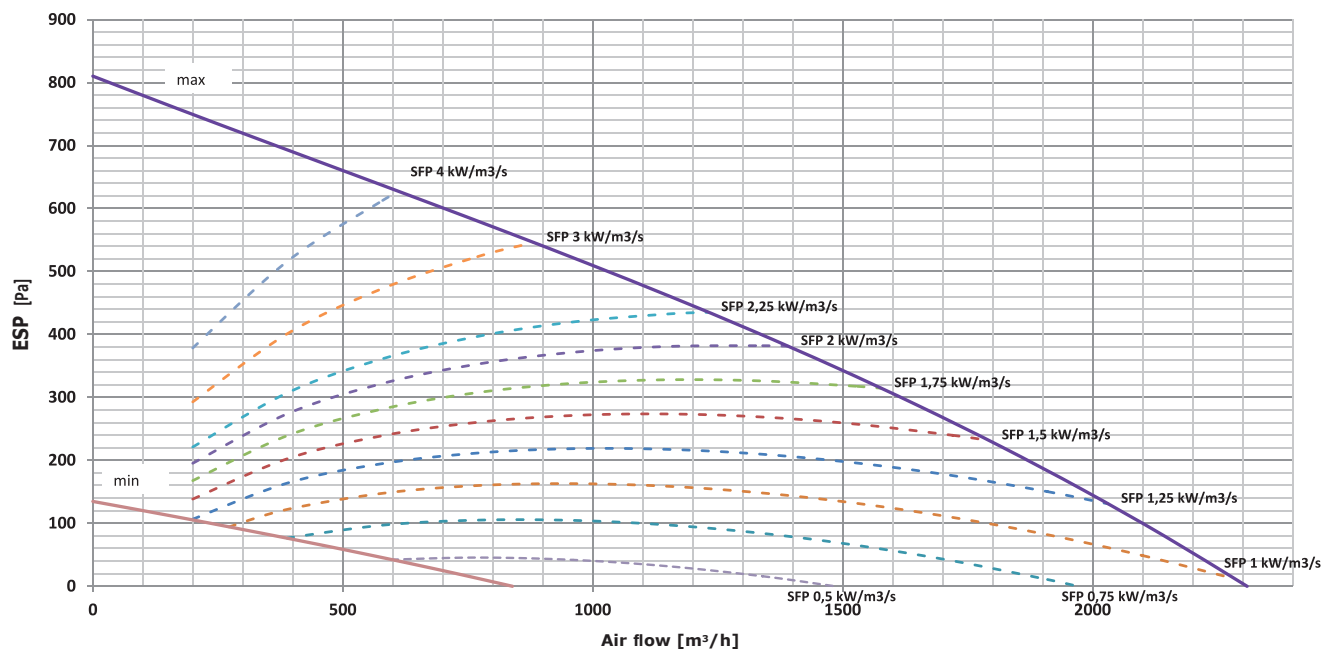




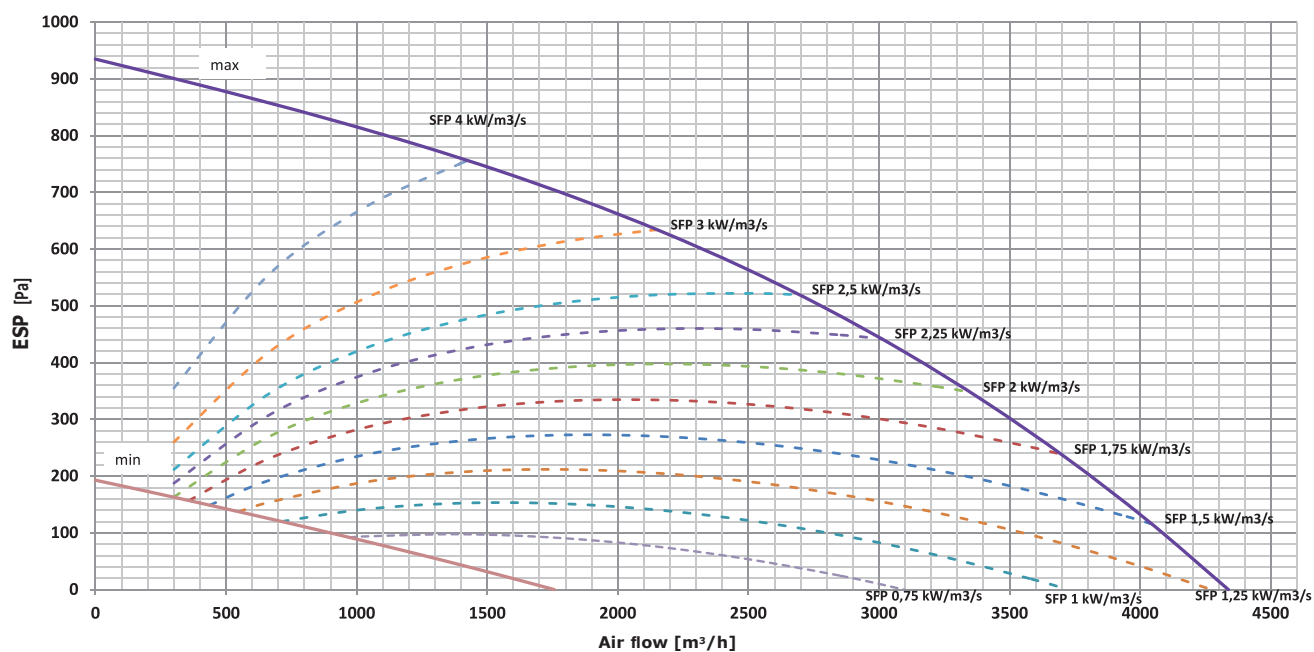
PRIMARY PARAMETERS

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

HR95-250 H



HR95-350 H



Noise specifications:

HR95-080 V

Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band								Overall	
		63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{PA} [dB] at 3m
700	100	33,4	42,7	47,6	52,1	51,0	46,5	39,3	28,7	56,2	34
500		30,9	41,0	44,6	47,8	46,9	43,7	36,5	26,3	52,6	30
400		29,0	39,1	42,2	45,1	44,2	41,0	33,1	22,4	50,0	27
300		26,7	36,6	39,2	42,0	41,1	37,5	28,5	16,9	46,8	24

Branch	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]
EHA	700	100	46,4	52,6	55,8	62,6	56,5	53,4	51,3	44,9	65
SUP			48,4	55,1	58,5	65,2	58,9	55,7	53,2	47,1	67
ETA			35,8	38,7	50,1	51,7	44,6	39,4	33,8	26,7	54
ODA			37,9	41,2	52,7	54,0	46,7	41,5	35,8	28,9	57

HR95-150 V

Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band								Overall	
		63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{PA} [dB] at 3m
1500	150	41,5	50,6	52,8	60,4	56,8	54,9	48,1	36,5	63	41
1200		36,5	47,5	47,8	53,5	51,2	49,8	43,0	31,0	57	35
900		34,8	46,6	46,7	51,6	49,5	47,5	39,9	26,2	56	33
500		32,0	42,9	43,1	47,5	45,2	42,1	33,3	17,0	51	29

Branch	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]
EHA	1500	150	47,3	54,1	56,2	62,7	56,9	54,2	51,6	46,0	65
SUP			50,8	57,7	60,8	67,4	61,1	58,1	55,5	49,7	69
ETA			37,1	40,2	49,9	51,6	44,8	40,1	34,5	27,8	54
ODA			40,4	43,5	54,2	55,7	48,7	43,7	38,2	31,4	58

Noise specifications:

HR95-250 V

Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band								Overall	
		63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{pA} [dB] at 3m
1700	150	37,9	49,4	54,8	55,4	57,5	53,2	46,3	33,2	61	47
1300		34,7	44,9	49,2	50,8	53,2	49,5	41,8	27,5	57	34
900		32,1	41,8	45,2	46,8	49,4	45,5	37,0	21,7	53	30
500		30,2	39,4	41,3	42,4	45,0	40,4	30,9	14,3	49	26

Branch	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]
EHA	1700	150	47,4	53,6	57,3	63,9	57,4	54,2	51,4	44,4	66
SUP			49,0	55,6	59,2	65,8	59,3	56,1	53,4	47,0	68
ETA			36,7	39,2	50,8	52,0	44,6	39,3	33,4	25,6	55
ODA			38,3	41,0	52,6	53,7	46,3	41,1	35,3	27,8	56

HR95-350 V

Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band								Overall	
		63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{pA} [dB] at 3m
3500	200	37,3	47,1	60,0	60,2	60,8	56,7	50,2	37,8	65	42
2800		34,0	46,1	52,7	56,1	56,8	52,3	46,0	33,6	61	38
2100		33,1	46,7	49,0	54,1	55,4	50,5	42,8	30,2	59	36
1400		32,7	46,1	46,1	51,8	53,5	47,7	38,4	26,1	57	34

Branch	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]
EHA	3500	200	52,0	61,8	65,9	66,8	68,1	64,2	57,5	52,2	73
SUP			53,2	62,4	67,9	68,0	69,5	65,6	58,8	53,1	74
ETA			34,7	43,6	41,1	41,5	40,4	33,4	30,3	23,0	48
ODA			35,1	43,7	41,8	41,9	40,8	34,0	30,6	22,9	48

Noise specifications:

HR95-450 V

Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band								Overall	
		63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{PA} [dB] at 3m
3600	200	51,0	57,8	63,5	63,9	63,3	58,8	54,0	44,0	69	46
2900		45,7	54,2	54,3	57,6	56,5	51,7	47,4	37,5	62	39
2200		44,7	55,2	51,0	55,3	54,7	49,8	44,3	34,1	61	38
1500		45,2	56,5	49,5	53,8	53,8	48,5	41,5	31,1	60	37

Branch	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]
EHA	3600	200	58,1	66,7	69,1	73,3	74,1	69,5	64,7	59,1	78
SUP			60,8	68,4	73,5	76,4	77,4	73,2	68,0	61,9	82
ETA			38,3	50,6	49,6	49,8	47,5	42,5	38,5	27,5	55
ODA			39,0	50,5	51,0	50,8	48,6	44,3	39,6	27,7	56

HR95-550 V

Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band								Overall	
		63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{PA} [dB] at 3m
5000	300	50,8	57,7	63,0	63,5	62,7	57,9	53,0	43,6	68	45
4000		41,0	51,6	52,8	54,5	56,1	49,3	45,4	37,0	60	37
3000		39,5	48,8	48,5	51,8	52,7	46,0	41,2	32,5	57	34
2000		41,8	47,5	47,0	51,3	50,4	44,1	37,9	28,8	56	32

Branch	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]
EHA	5000	300	55,1	65,0	67,4	70,5	72,6	66,9	62,1	56,9	76
SUP			59,5	67,2	72,0	74,2	74,9	70,7	65,1	59,0	79
ETA			34,5	48,9	49,3	48,1	46,2	40,8	35,5	26,3	54
ODA			37,5	49,8	51,2	49,4	47,4	42,8	36,8	26,7	56

Noise specifications:

HR95-080 H

Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band								Overall	
		63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{PA} [dB] at 3m
600	100	34,0	46,0	53,9	58,4	58,0	55,3	47,2	35,4	63	41
450		30,4	43,0	49,2	52,4	52,3	49,9	41,6	29,5	57	35
300		25,2	36,8	42,4	45,3	45,5	42,5	32,2	19,0	50	28
200		21,4	32,0	37,4	40,3	40,6	37,2	24,7	10,6	45	23

Branch	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]
EHA	600	100	51,6	58,9	64,0	67,2	63,3	59,5	56,7	51,0	70
SUP			53,3	61,4	66,5	69,6	65,5	61,7	58,6	53,3	73
ETA			43,1	52,8	50,2	50,5	46,0	38,6	34,6	27,9	56
ODA			44,8	55,3	52,7	52,5	47,8	40,5	36,5	30,0	59

HR95-150 H

Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band								Overall	
		63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{PA} [dB] at 3m
1300	200	42,9	51,6	58,2	66,4	61,5	59,7	52,9	41,3	68	46
1000		35,2	43,9	48,9	56,7	52,5	51,2	44,2	32,8	59	37
700		33,5	41,5	46,6	54,4	50,2	48,0	40,0	26,7	57	35
400		33,1	39,4	45,0	52,6	48,4	44,9	35,8	20,0	55	33

Branch	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]
EHA	1300	200	57,7	65,2	69,6	74,6	72,1	69,6	64,0	58,2	78
SUP			60,0	67,7	72,8	77,9	75,1	72,3	66,7	60,8	81
ETA			49,9	54,5	51,6	53,7	55,0	46,3	43,2	3,3	60
ODA			52,2	56,8	54,7	56,6	57,6	48,7	45,7	5,9	63

Noise specifications:

HR95-250 H

Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band								Overall	
		63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{PA} [dB] at 3m
1850	200	40,3	52,3	55,8	58,0	59,9	57,2	50,9	39,6	64	42
1500		36,2	47,5	50,4	53,4	55,8	53,7	46,7	34,2	60	37
1000		34,1	44,6	46,6	49,7	52,1	49,9	42,1	28,6	56	34
500		34,9	44,4	44,9	47,2	49,3	46,2	37,5	22,9	53	31

Branch	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]
EHA	1850	200	52,0	65,0	73,3	67,3	69,9	63,1	57,6	50,8	76
SUP			53,3	66,6	74,8	68,8	71,4	64,7	59,3	53,0	77
ETA			43,9	50,6	53,9	48,2	50,9	41,8	36,2	2,4	57
ODA			44,8	51,8	55,1	49,4	52,1	43,0	37,5	4,0	58

HR95-350 H

Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band								Overall	
		63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]	L _{PA} [dB] at 3m
3500	300	39,2	47,5	62,0	59,1	59,5	56,9	52,2	39,6	66	43
2500		35,9	47,0	52,9	53,1	53,5	51,2	46,5	34,0	59	36
1500		38,1	50,3	51,3	52,1	52,9	49,6	42,8	29,9	58	35
500		41,8	51,6	51,1	51,4	51,5	46,5	38,9	26,4	57	35

Branch	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band								Overall
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _{WA} [dB]
EHA	3500	300	49,9	64,6	69,4	64,8	65,9	61,0	54,4	49,1	73
SUP			50,0	64,7	69,6	65,0	66,1	61,2	54,6	49,2	73
ETA			37,4	49,8	49,0	43,8	43,2	39,2	31,3	18,2	53
ODA			37,5	49,9	49,2	43,9	43,3	39,4	31,4	18,3	53

Basic technical parameters of the heat recovery units:

Model without electric preheater or postheater / with water post heater

Vertical/horizontal	Phase [pcs]	Voltage [V]	Frequency [Hz]	Rated input [kW]	Total current [A]
HR95-080	1	230	50	0,4	2,8
HR95-150	1	230	50	1,0	6,5
HR95-250	1	230	50	1,0	6,5
HR95-350	3	400	50	1,9	3,7
HR95-450	3	400	50	1,9	3,7
HR95-550	3	400	50	3,6	5,5

Model with electric preheater (without electric postheater)

Model	Phase [pcs]	Voltage [V]	Frequency [Hz]	Rated input [kW]	Total current [A]
HR95-080 V	1	230	50	3,10	14,5
HR95-150 V	3	400	50	6,30	13,3
HR95-250 V	3	400	50	9,40	18,6
HR95-350 V	3	400	50	13,55	20,6
HR95-450 V	3	400	50	16,85	25,4
HR95-550 V	3	400	50	21,90	32,0
HR95-080 H	1	230	50	3,10	14,5
HR95-150 H	3	400	50	6,30	13,3
HR95-250 H	3	400	50	9,40	18,6
HR95-350 H	3	400	50	13,55	20,6

Model with electric postheater only

Model	Phase [pcs]	Voltage [V]	Frequency [Hz]	Rated input [kW]	Total current [A]
HR95-080 V	1	230	50	1,8	8,8
HR95-150 V	1	230	50	3,7	18,0
HR95-250 V	3	400	50	5,8	13,5
HR95-350 V	3	400	50	8,3	13,0
HR95-450 V	3	400	50	10,0	15,0
HR95-550 V	3	400	50	14,5	21,0
HR95-080 H	1	230	50	1,8	8,8
HR95-150 H	1	230	50	3,7	18,0
HR95-250 H	3	400	50	5,8	13,5
HR95-350 H	3	400	50	8,3	13,0

Model with electric preheater and postheater

Model	Phase [pcs]	Voltage [V]	Frequency [Hz]	Rated input [kW]	Total current [A]
HR95-080 V	3	400	50	4,5	11,9
HR95-150 V	3	400	50	9,0	18,0
HR95-250 V	3	400	50	14,2	25,3
HR95-350 V	3	400	50	20,0	29,4
HR95-450 V	3	400	50	24,5	36,7
HR95-550 V	3	400	50	32,8	47,3
HR95-080 H	3	400	50	4,5	11,9
HR95-150 H	3	400	50	9,0	18,0
HR95-250 H	3	400	50	14,2	25,3
HR95-350 H	3	400	50	20,0	29,4

Basic technical parameters of the heat recovery units:

Characteristics of electric motors (1 fan only)

Vertical/ Horizontal	Phase [pcs]	Voltage [V]	Frequency [Hz]	Rated input [W]	Total current [A]	Speed [r/min]	Maximum tempe- rature [°C]	Protection IP	Insulation class	Weight [kg]
HR95-080	1	230	50	175	1,3	2800	60	44	B	2,9
HR95-150	1	230	50	455	3,1	2600	60	54	B	5,0
HR95-250	1	230	50	500	3,15	1970	60	54	B	5,7
HR95-350	3	400	50	1000	1,75	2140	60	54	F	9,8
HR95-450	3	400	50	1000	1,75	2140	60	54	F	9,8
HR95-550	3	400	50	1615	2,5	1750	60	54	B	16,1

Characteristics of electric postheater

Model	Phase [pcs]	Voltage [V]	Frequency [Hz]	Rated input [kW]	Total current [A]	Δ T [°C]
HR95-080 V	1	230	50	1,4	6,1	5,2
HR95-150 V	1	230	50	2,7	11,7	5,3
HR95-250 V	3	400	50	4,8	7,0	5,7
HR95-350 V	3	400	50	6,4	9,3	5,5
HR95-450 V	3	400	50	7,6	11,1	5,0
HR95-550 V	3	400	50	10,6	15,4	5,7
HR95-080 H	1	230	50	1,4	6,1	6,7
HR95-150 H	1	230	50	2,7	11,7	7,4
HR95-250 H	3	400	50	4,8	7,0	6,9
HR95-350 H	3	400	50	6,4	9,3	7,1

Characteristics of water postheater

Vertical	Rated input [kW]	Outlet air tempe- rature [°C]	Water pressure loss [kPa]	Water flow [m³/h]	Air pressure loss [Pa]	Air flow [m³/h]	Connection diameter
HR95-080	6,4	40,3	10,0	0,28	20	800	1/2
HR95-150	11,4	39,1	8,5	0,50	25	1500	1/2
HR95-250	20,0	40,3	24,0	0,86	27	2250	1/2
HR95-350	30,1	42,3	19,0	1,29	22	3500	1/2
HR95-450	32,0	37,6	6,9	1,37	23	4500	1/2
HR95-550	48,0	42,6	2,6	1,71	19	5500	3/4

* For water temperature gradient 90/70 and inlet air temperature 15°C

Horizontal	Rated input [kW]	Outlet air temperature [°C]	Water pressure loss [kPa]	Water flow [m³/h]	Air pressure loss [Pa]	Air flow [m³/h]	Connection diameter
HR95-080	6,4	40,3	10	0,29	20	800	1/2
HR95-150	12,2	40,7	36	1,04	28	1500	1/2
HR95-250	20,5	40,9	23	0,86	27	2250	1/2
HR95-350	30,1	42,2	20	1,30	18	3500	1/2

* For water temperature gradient 90/70 and inlet air temperature 15°C

Basic technical parameters of the heat recovery units:

Correction coefficients of the powers of the hot water coil*						
Air inlet temperature [°C]	Water temperature gradient					
	90/70	85/65	80/60	75/55	70/50	65/45
0	1,3	1,22	1,13	1,04	0,95	0,86
5	1,2	1,11	1,02	0,94	0,85	0,76
10	1,1	1,01	0,92	0,84	0,76	0,67
15	1	0,91	0,83	0,74	0,66	0,58
20	0,9	0,82	0,74	0,66	0,58	0,50

* To apply to the rated power in the characteristics of the hot water coil.

Recommended K_{vs} for different temperature gradients

Model	K _{vs} [flow / kPa]						Recommended pump pressure [kPa]
	90/70 [°C]	85/65 [°C]	80/60 [°C]	75/55 [°C]	70/50 [°C]	65/45 [°C]	
HR95-080 V	1,6	1,6	1,6	0,6	0,6	0,6	60
HR95-150 V	2,5	2,5	1,6	1,6	1,6	1,6	60
HR95-250 V	4,0	4,0	4,0	2,5	2,5	2,5	60
HR95-350 V	6,3	6,3	4,0	4,0	4,0	4,0	60
HR95-450 V	6,3	6,3	6,3	6,3	4,0	4,0	60
HR95-550 V	12	6,3	6,3	6,3	6,3	6,3	70
HR95-080 H	1,6	1,6	0,6	0,6	0,6	0,6	60
HR95-150 H	2,5	2,5	1,6	1,6	1,6	1,6	60
HR95-250 H	4,0	4,0	2,5	2,5	2,5	2,5	60
HR95-350 H	6,3	6,3	4,0	4,0	4,0	4,0	60

Characteristics of heating coil (C/O) / water cooling

Type	Rated input [kW]*	Outlet air temperature [°C]	Water pressure loss [kPa]	Water flow [m³/h]	Air pressure loss [Pa]	Air flow [m³/h]	Connection diameter
HR95-080 H	6,60	39,2	2,0	0,29	75	800	3/4"
HR95-150 H	10,24	35,0	0,8	0,45	76	1500	3/4"
HR95-250 H	19,77	38,2	1,5	0,86	83	2250	1"
HR95-350 H	29,40	39,7	1,3	1,28	62	3500	1 1/2"
HR95-080 V	6,17	37,6	2,3	0,27	59	800	3/4"
HR95-150 V	10,74	36,0	1,6	0,47	73	1500	3/4"
HR95-250 V	17,56	35,6	2,2	0,77	91	2250	1"
HR95-350 V	27,02	37,7	2,3	1,18	62	3500	1 1/2"
HR95-450 V	31,98	35,9	1,4	1,39	75	4500	1 1/2"
HR95-550 V	43,78	38,4	2,6	1,91	57	5500	1 1/2"

* For water temperature gradient 60/40 and inlet air temperature 15°C.

Correction coefficients of the powers of the hot water coil (C/O)*				
Air inlet temperature [°C]	Water regime			
	60/40	55/50	45/40	35/30
0	1,55	1,73	1,39	1,05
5	1,36	1,54	1,21	0,87
10	1,18	1,35	1,03	0,69
15	1	1,18	0,85	0,52
20	0,82	1,00	0,68	0,36

* To apply to the rated power in the characteristics of the water coil.

Characteristics of water cooling / heating coil (C/O)

Type	Rated input [kW]	Outlet air temperature [°C]	Water pressure loss [kPa]	Water flow [m³/h]	Air pressure loss [Pa]	Air flow [m³/h]	Connection diameter
HR95-080 H	5,90	15,8	11,3	1,04	143	800	3/4"
HR95-150 H	8,70	17,8	4,2	1,55	167	1500	3/4"
HR95-250 H	16,10	17,2	7,2	2,81	164	2250	1"
HR95-350 H	23,12	14,8	12,0	3,97	69	3500	1 1/2"
HR95-080 V	5,90	15,8	11,3	1,04	143	800	3/4"
HR95-150 V	8,70	17,8	4,2	1,58	171	1500	3/4"
HR95-250 V	16,10	17,2	7,2	2,84	167	2250	1"
HR95-350 V	21,61	15,6	21,2	3,71	70	3500	1 1/2"
HR95-450 V	25,10	16,3	12,5	4,3	84	4500	1 1/2"
HR95-550 V	35,24	15,3	24,4	6,04	64	5500	1 1/2"

* For water temperature gradient 7/12 and inlet air temperature 25°C with 70% of relative humidity.

Correction coefficients of the powers of the cool water coil (C/O)*			
Air inlet temperature [°C]	Water regime		
	7/12	6/11	5/10
20	0,43	0,53	0,62
25	1	1,09	1,18
30	1,66	1,75	1,84

* To apply to the rated power in the characteristics of the water coil.

Characteristics of direct evaporator (DX)

Refrigerant R32

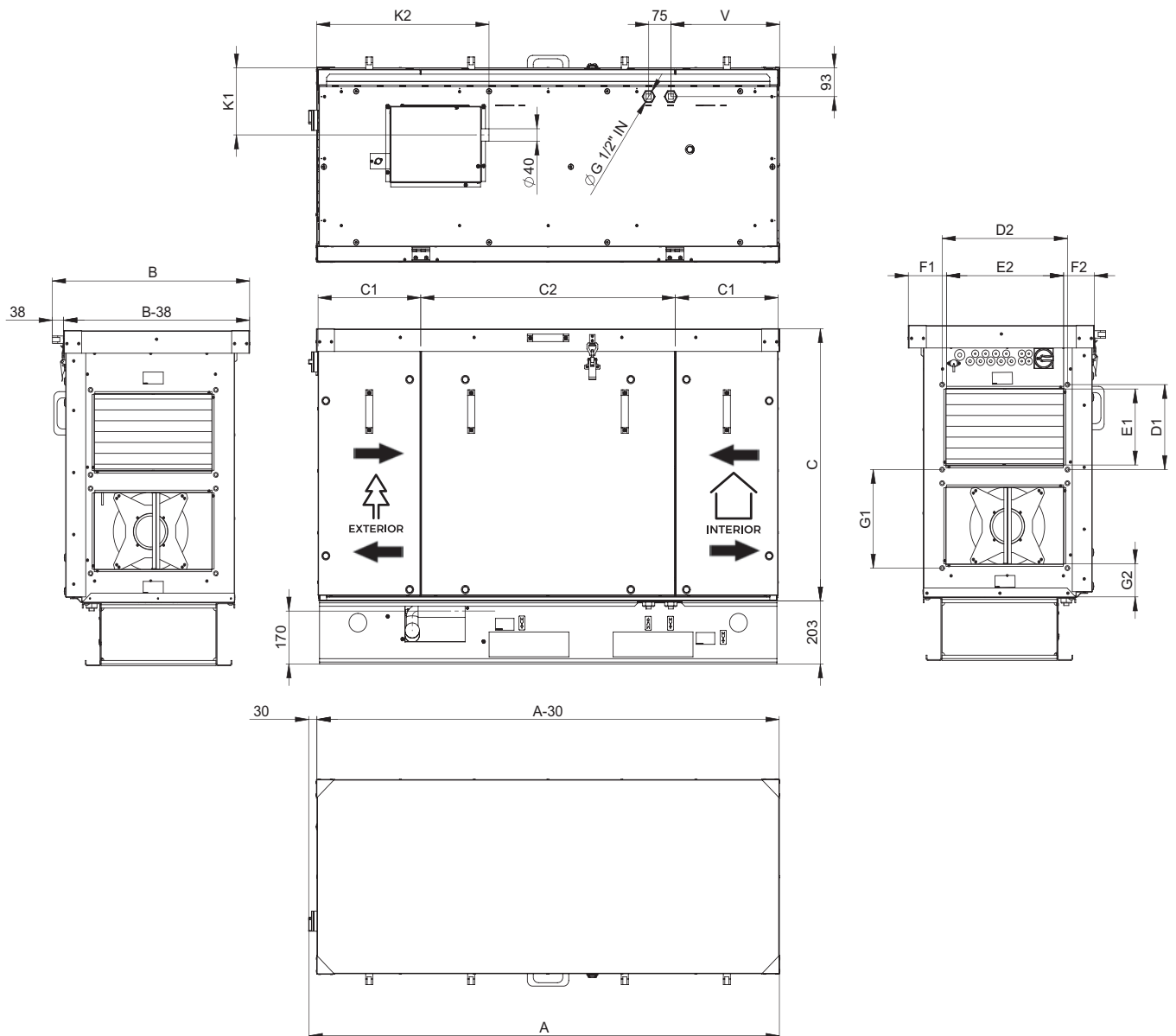
Type	Air flow [m³/h]	Rated input [kW]*	Outlet air temperature [°C]	RH after coil [%]	Refrigerant pressure loss [kPa]	Air pressure loss [Pa]	Connection diameter of gas coil	Connection diameter of liquid coil
HR95-080 H	800	3.6	14.3	81	39.7	63	5/8"	1/2"
HR95-150 H	1500	6.6	14.5	80	25.7	73	7/8"	5/8"
HR95-250 H	2500	11.1	14.4	81	33.8	68	1 1/8"	5/8"
HR95-350 H	3500	15.7	14.4	81	40.3	60	1 3/8"	1 1/8"
HR95-080 V	800	3.5	15	76	33.1	40	5/8"	5/8"
HR95-150 V	1500	6.5	14.6	80	34.6	72	7/8"	7/8"
HR95-250 V	2500	10.3	15	79	35.9	86	1 1/8"	7/8"
HR95-350 V	3500	15.9	14.3	81	27.1	61	1 3/8"	1 1/8"
HR95-450 V	4500	19.8	14.5	80	27.7	72	1 5/8"	1 1/8"
HR95-550 V	5500	26.4	13.9	82	19.6	56	1 5/8"	1 1/8"

* For inlet air temperature 25°C with 47% of relative humidity and evaporation temperature 5°C, refrigerant R32.

Refrigerant R410a

Type	Air flow [m³/h]	Rated input [kW]*	Outlet air temperature [°C]	RH after coil [%]	Refrigerant pressure loss [kPa]	Air pressure loss [Pa]	Connection diameter of gas coil	Connection diameter of liquid coil
HR95-080 H	800	3,4	14,6	81	61,7	62	5/8"	1/2"
HR95-150 H	1500	6,3	14,8	80	40,7	72	7/8"	5/8"
HR95-250 H	2500	10,6	14,7	81	53,3	67	1 1/8"	5/8"
HR95-350 H	3500	14,9	14,7	81	62,6	59	1 3/8"	1 1/8"
HR95-080 V	800	3,4	15,3	76	52,8	40	5/8"	5/8"
HR95-150 V	1500	6,2	14,9	80	53,9	71	7/8"	7/8"
HR95-250 V	2500	9,8	15,3	79	56,6	85	1 1/8"	7/8"
HR95-350 V	3500	15,2	14,6	81	42,6	61	1 3/8"	1 1/8"
HR95-450 V	4500	19,0	14,8	80	43,8	71	1 5/8"	1 1/8"
HR95-550 V	5500	25,5	14,1	82	31,0	56	1 5/8"	1 1/8"

* For inlet air temperature 25°C with 47% of relative humidity and evaporation temperature 5°C, refrigerant R410a.

**DIMENSIONS****Vertical version****HR95-080, HR95-150**

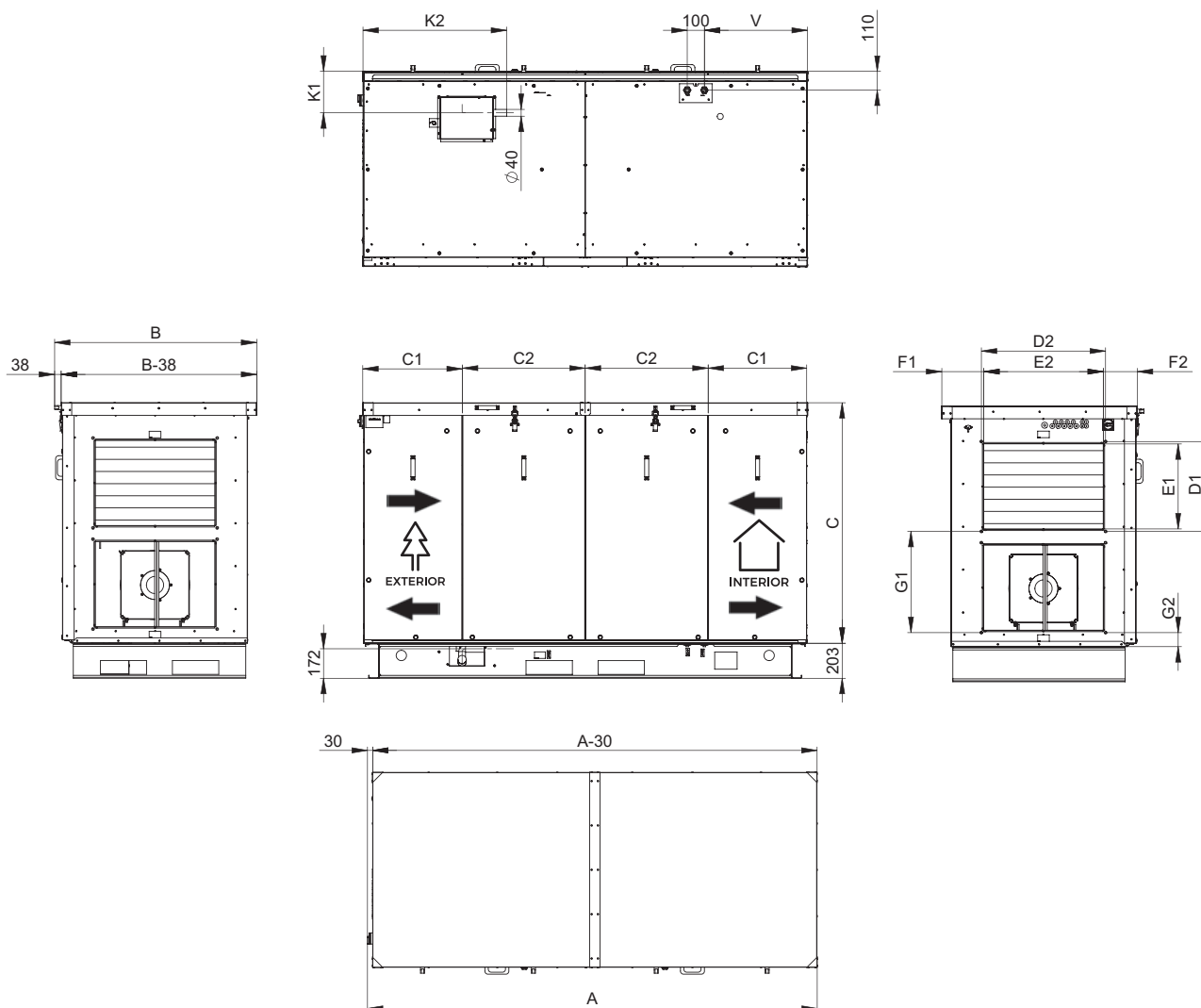
Type	A	B	C	C1	C2	D1	D2	E1	E2	F1	F2	G1	G2	K1	K2	V
HR95-080	1594	668	878	348	862	274	424	246	397	129	104	318	108	217	584	369
HR95-150	1894	749	1128	386	1095	424	474	398	447	153	111	454	60	220	655	398

Type	Weight [kg]		
	without coil	electric heater	hot water coil / DX / C-O
Without electric preheater			
HR95-080	250	253	255
HR95-150	290	293	295
With electric preheater			
HR95-080	252	255	257
HR95-150	293	296	298



Vertical version

HR95-250, HR95-350, HR95-450, HR95-550



Type	A	B	C	C1	C2	D1	D2	E1	E2	F1	F2	G1	G2	K1	K2	V
HR95-250	2164	789	1427	367	700	524	524	496	496	149	106	605	84	222	675	413
HR95-350	2622	1058	1402	580	716	524	724	496	697	186	137	590	82	242	839	602
HR95-450	2622	1178	1402	580	716	524	724	496	697	246	198	590	82	242	839	602
HR95-550	2622	1542	1402	580	716	524	1024	496	997	277	230	590	82	242	839	602

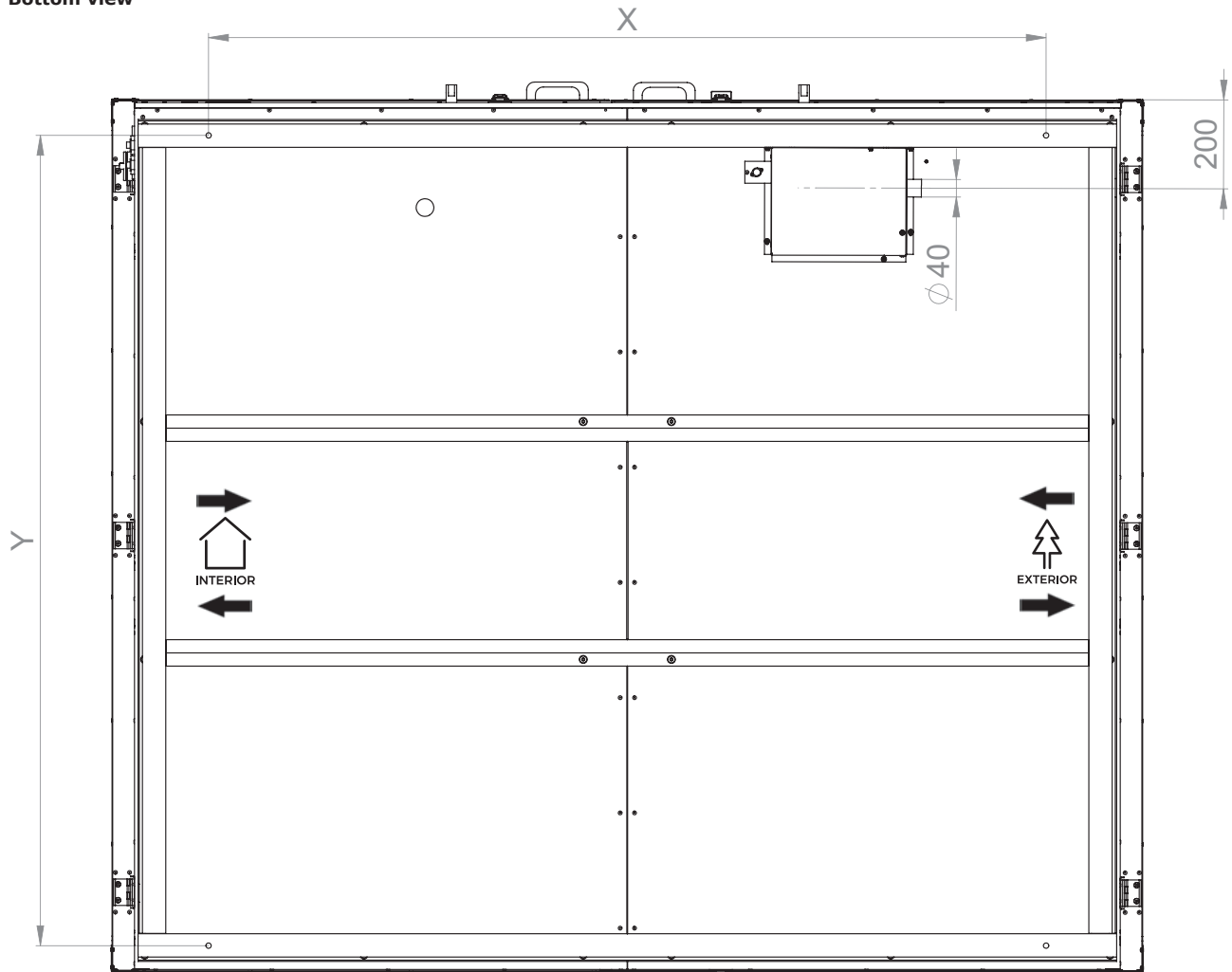
Type	Weight [kg]		
	without coil	electric heater	hot water coil / DX / C-O
Without electric preheater			
HR95-250	385	390	395
HR95-350	555	560	565
HR95-450	605	610	615
HR95-550	700	705	710
With electric preheater			
HR95-250	388	393	398
HR95-350	559	564	569
HR95-450	609	614	619
HR95-550	705	710	715



Horizontal version

HR95-080, HR95-150, HR95-250, HR95-350

Bottom view

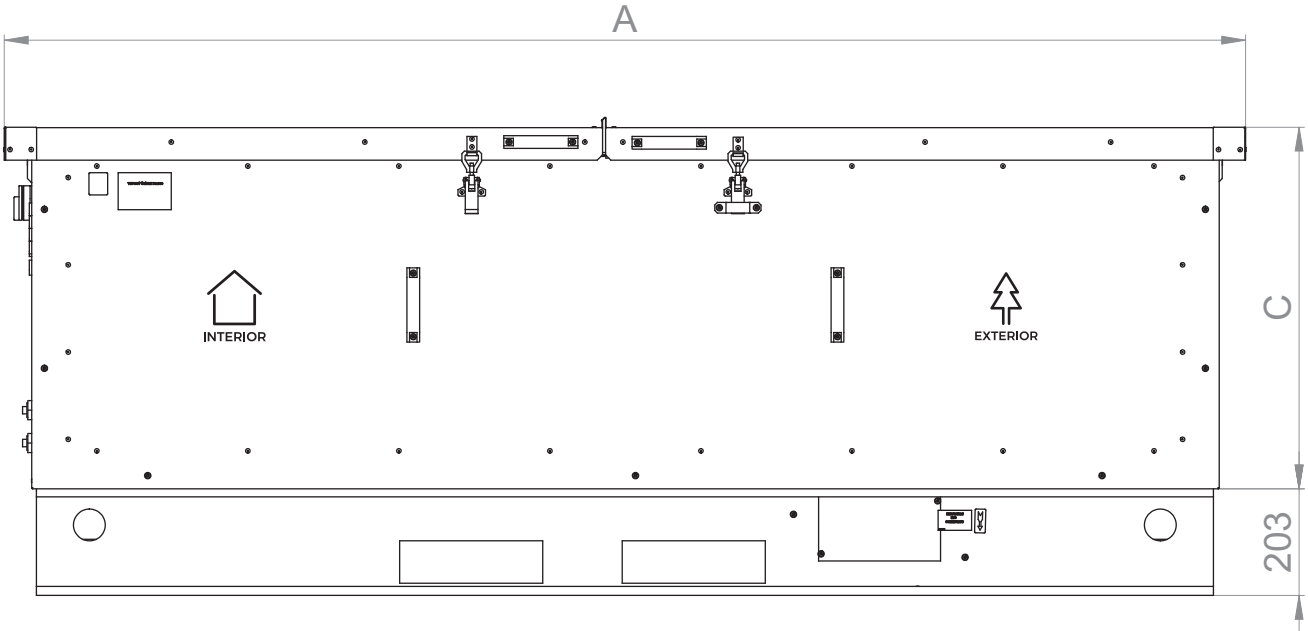


Type	A	B	B1	C	D1	D2	E1	E2	F1	F2	G1	G2	X	Y
HR95-080	1540	1100	1060	410	224	324	200	300	85	275	405	72	1300	890
HR95-150	1830	1540	1500	450	274	524	250	500	86	319	601	62	1600	1330
HR95-250	2140	1855	1815	540	324	624	300	600	82	368	770	62	1900	1650
HR95-350	2340	2020	1980	700	424	724	400	700	82	351	852	87	1900	1850

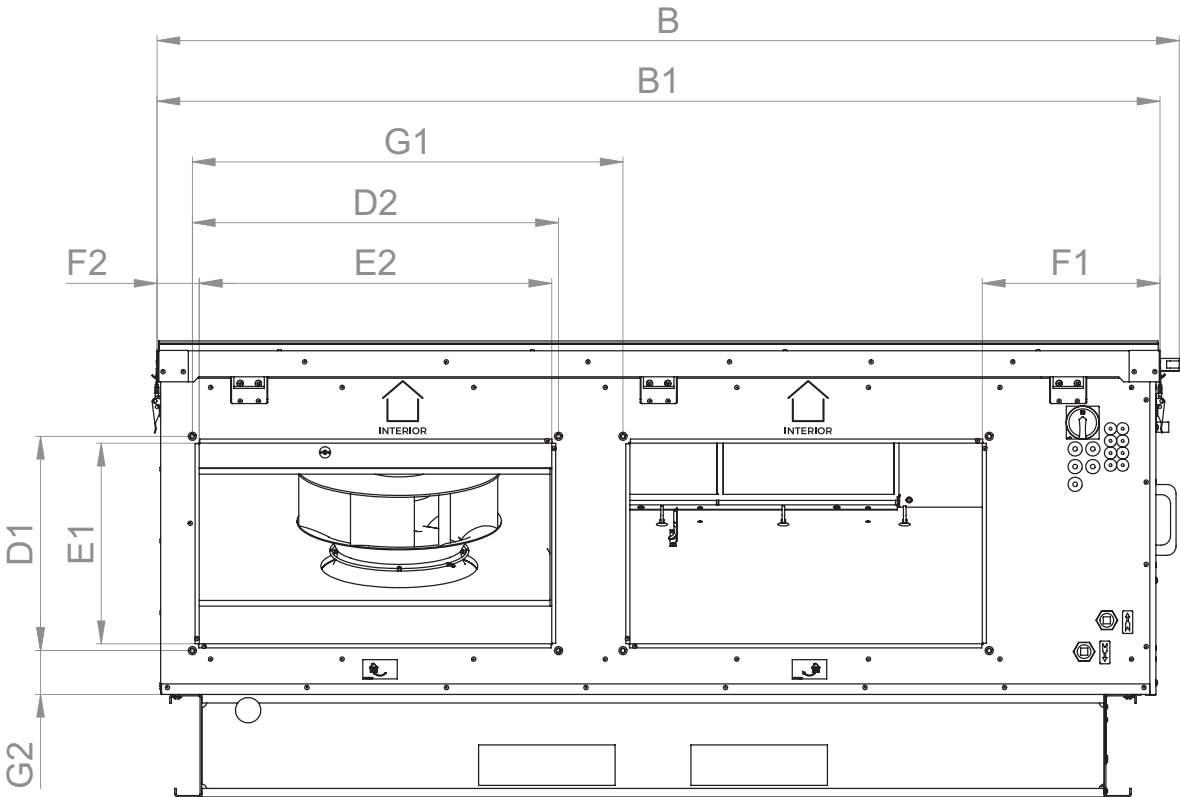
Type	Weight [kg]		
	without coil	electric heater	hot water coil / DX / C-O
Without electric preheater			
HR95-080	185	187	190
HR95-150	290	293	295
HR95-250	385	390	395
HR95-350	505	510	515
With electric preheater			
HR95-080	187	189	192
HR95-150	293	296	298
HR95-250	389	394	399
HR95-350	510	515	520



Side view (regulation)



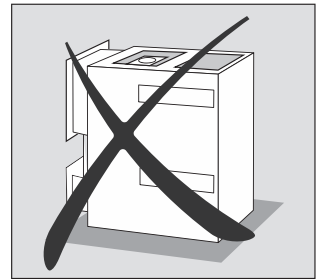
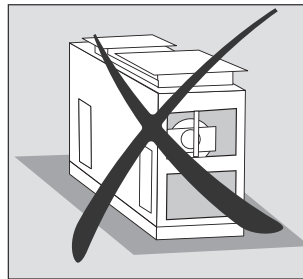
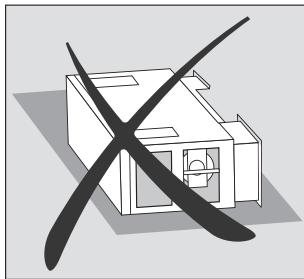
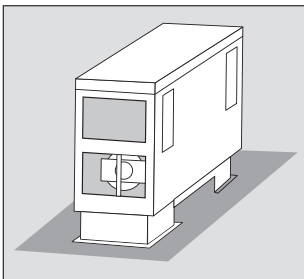
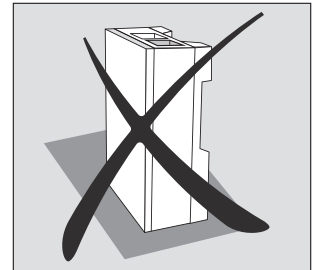
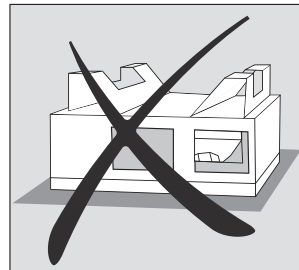
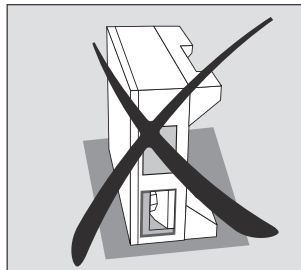
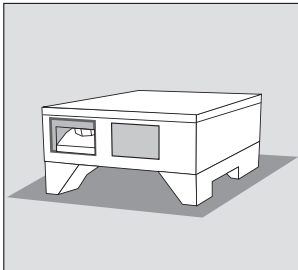
Side view (duct)



**INSTALLATION AND ASSEMBLY**

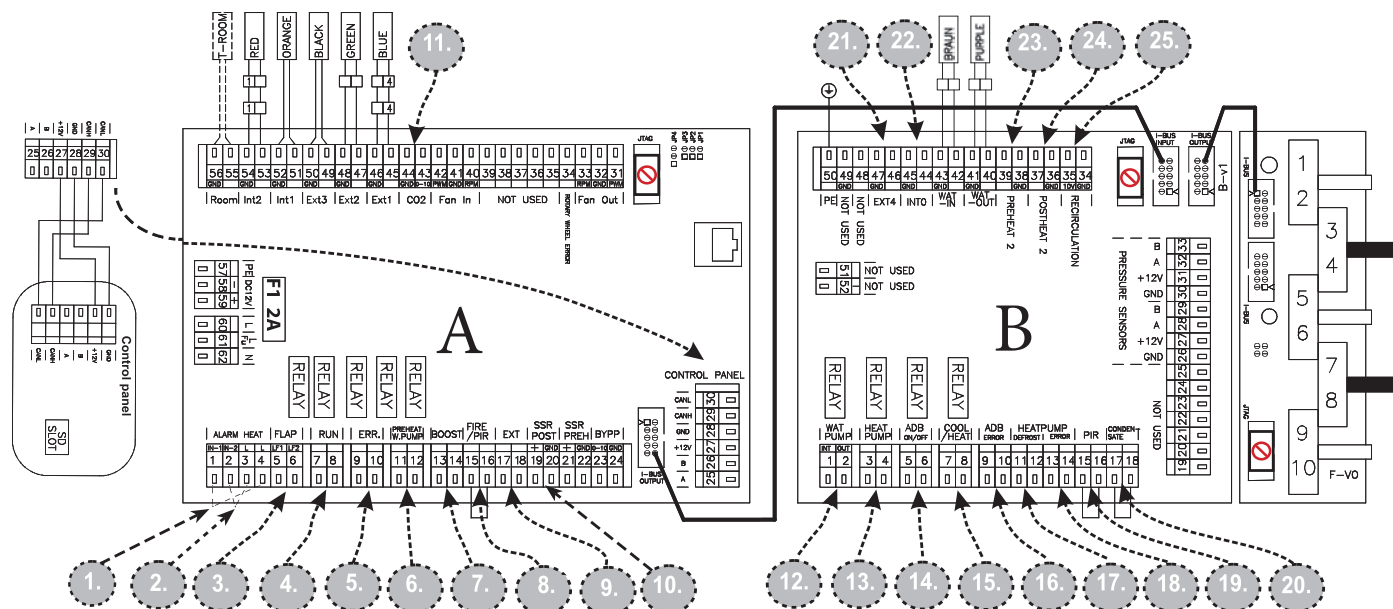
All types of ventilation units must be installed according to the pictures (see below).

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

ALFA95 Vertical**ALFA95 Horizontal**



WIRING DIAGRAMS



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

**CONTROL****AirGENIO SUPERIOR - Main control functions**

- Touch-screen control panel for easy control and complete overview of device operational status (recommended connecting data cable to control panel is UTP cable and it should not exceed 50m length).
- Manual stepless fans control (PWM)
- CAV, VAV or DCV ventilation in automatic mode
- BOOST mode - intensive airflow for a pre-set time period
- Freecooling mode - night ventilation (cooling)
- Occupancy mode - reducing ventilation intensity according to the PIR sensor
- FIRE protection mode with settable logic
- Stepless by-pass control (temperature control: freecooling, antifreeze protection)
- Integrated timer (day, week, year)
- Optional connection of sensors: CO₂, RH, VOC (0-10)
- Clogged filter indication by pressure sensors
- Stepless pre-heating control and post-heating control
- Electric coil control (PWM) and LPHW coil control (0-10V)
- Change-over control with automatic detection of the heating / cooling (0-10V)
- Wide choice of different ways for DX coil control*
- Possible control of external pre-heater and post-heater
- Offset fan adjustment (over-pressure / underpressure)
- BMS control via Modbus RTU / TCP or BACnet
- Remote control via smart device

2VW AirGENIO Application:

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

**2VW Service software:**

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

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

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

With reverse control cycle (heating - cooling mode)

- 10-0V + ON/OFF - ON/OFF switching + 0-10V signal control cooling, heating 10-0V
- 10-0V OFF/ON - OFF/ON switching + 0-10V signal control cooling, heating 10-0V



ACCESSORIES

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

Four-sided closing flap without servo drive

The **MLKR/S** rectangular control flap is designed for controlling and closing the HVAC systems. The flap is designed for operation in the basic environment for conveying air free of rough dust, grease, chemical fumes, and other contaminants. The flanged damper frame is made of galvanized plate. The shutters are made of aluminum.



Unit type	Four-sided closing flap without servo drive	Recommended Servo drive
Vertical		
HR95-080	MLKR/S-400250	SERVO-LM230-05
HR95-150	MLKR/S-450400	
HR95-250	MLKR/S-500500	
HR95-350	MLKR/S-700500	
HR95-450	MLKR/S-700500	
HR95-550	MLKR/S-1000500	

Unit type	Four-sided closing flap without servo drive	Recommended Servo drive
Horizontal		
HR95-080	MLKR/S-300200	SERVO-LM230-05
HR95-150	MLKR/S-500250	
HR95-250	MLKR/S-600300	
HR95-350	MLKR/S-700400	

Electric heater

EOKO – The heater output is controlled by the ALFA95 unit control system via 0-10V

Recommended combinations:

Unit type	Type of el. Pre-heater
HR95-080 V	EOKO2-250-3,0-1-D
HR95-150 V	EOKO2-355-9,0-3-D
HR95-250 V	EOKO2-400-9,0-3-D
HR95-350 V	EOKO2-560-12,0-3-D
HR95-450 V	EOKO2-560-18,0-3-D
HR95-550 V	EOKO2-630-18,0-3-D
HR95-080 H	EOKO2-250-3,0-1-D
HR95-150 H	EOKO2-315-9,0-3-D
HR95-250 H	EOKO2-400-9,0-3-D
HR95-350 H	EOKO2-500-18,0-3-D



**Adapter four-sided to circular****PR-O** – adapter from four-sided to circular pipes made from a galvanised metal sheet

Unit type	Circular adapter
Vertical	
HR95-080	PR-O-0400X250-D250-L100
HR95-150	PR-O-0450X400-D350-L150
HR95-250	PR-O-0500X500-D400-L400
HR95-350	PR-O-0700X500-D560-L250
HR95-450	PR-O-0700X500-D560-L250
HR95-550	PR-O-1000X500-D630-L600

Unit type	Circular adapter
Horizontal	
HR95-080	PR-O-0300X200-D250-L150
HR95-150	PR-O-0500X250-D315-L250
HR95-250	PR-O-0600X300-D400-L300
HR95-350	PR-O-0700X400-D500-L400

**Filtration inserts****FILTR-HR95** – replacement filtration inserts of various filtration classes and configurations.

Unit type	PreFilter Coarse 60% (class G4)	Filter Coarse 60% (class G4)	Filter ePM 10 50% (class F7)
Horizontal			
HR95-080	FILTR-HR95-2-H0800-G4-PRE	FILTR-HR95-2-H0800-G4	FILTR-HR95-2-H0800-F7-MPP
HR95-150	FILTR-HR95-2-H1500-G4-PRE	FILTR-HR95-2-H1500-G4	FILTR-HR95-2-H1500-F7-MPP
HR95-250	FILTR-HR95-2-H2500-G4-PRE	FILTR-HR95-2-H2500-G4	FILTR-HR95-2-H2500-F7-MPP
HR95-350	FILTR-HR95-2-H3500-G4-PRE	FILTR-HR95-2-H3500-G4	FILTR-HR95-2-H3500-F7-MPP

Unit type	PreFilter Coarse 60% (class G4)	Filter Coarse 60% (class G4)	Filter ePM 10 50% (class F7)
Vertical			
HR95-080	FILTR-HR95-2-V0800-G4-PRE	FILTR-HR95-2-V0800-G4	FILTR-HR95-2-V0800-F7-MPP
HR95-150	FILTR-HR95-2-V1500-G4-PRE	FILTR-HR95-2-V1500-G4	FILTR-HR95-2-V1500-F7-MPP
HR95-250	FILTR-HR95-2-V2500-G4-PRE	FILTR-HR95-2-V2500-G4	FILTR-HR95-2-V2500-F7-MPP
HR95-350	FILTR-HR95-2-V3500-G4-PRE	FILTR-HR95-2-V3500-G4	FILTR-HR95-2-V3500-F7-MPP
HR95-450	FILTR-HR95-2-V4500-G4-PRE	FILTR-HR95-2-V4500-G4	FILTR-HR95-2-V4500-F7-MPP
HR95-550	FILTR-HR95-2-V5500-G4-PRE	FILTR-HR95-2-V5500-G4	FILTR-HR95-2-V5500-F7-MPP



Mixing valve

The **SMU** mixing unit is designed for controlling the heat-output of water-type heat exchangers. It is used especially for controlling standalone water-type air heaters, heaters inbuilt into the ventilation units

Recommended values for individual types of the **ALFA 95** units:

SMU2-024-06,3-SC

- SC** – with short circuit
- WO** – without short circuit
- 00,6** – mixing valve – k_{VS} 0,6
- 01,6** – mixing valve – k_{VS} 1,6
- 02,5** – mixing valve – k_{VS} 2,5
- 04,0** – mixing valve – k_{VS} 4,0
- 06,3** – mixing valve – k_{VS} 6,3
- 12,0** – mixing valve – k_{VS} 12,0
- 24,0** – mixing valve – k_{VS} 24,0

024 – 24V stepless control

SMU2 – mixing unit



**Channel sensor CO₂**
CI-EE850-C3xx-FP

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

**Duct sensor of relative humidity**
CI-LCN-FTK140VV

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

**Spatial sensor CO₂**
CI-CO2-R

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

**Spatial sensor RH**
CI-RH-R

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

**Signal combiner**
CI-AQS-COMBI

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

**PIR sensor**
CI-PS 1003

Spatial infrared sensor for automatic ventilation based on presence of people in the ventilated area.

Power supply of this sensor must be outsourced. Unit doesn't support this kind of power supply (15-24V DC).





KEY TO CODING

HR95-080	EC	CF	H	B	X	X-74	R	P	1	
										1
										1
										P
										P
										R
										R
										74
										74
										X
										X
										E
										W
										C
										D
										X
										X
										E
										B
										B
										H
										H
										V
										CF
										CF
										EC
										EC
										080
										080
										150
										250
										350
										450
										550
										HR95
										HR95

Reserve code

Reserve

Version of access

Right side version

Control

AirGENIO Superior control

Filtration (inlet / outlet)

inlet Coarse 60%+ ePM 10 50%(G4+F7); outlet Coarse 60% (G4)

Postheater

Without postheater

Electric postheater

Water postheater

Heater/cooler

Direct evaporator

Preheater

Without preheater

Electric preheater

By-pass

With by-pass

Installation

Horizontal installation

Vertical installation

Heat exchanger

Counterflow plate heat exchanger

Type of fan

EC motors

Nominal airflow

Nominal flow rate 800 m³/h

Nominal flow rate 1500 m³/h

Nominal flow rate 2500 m³/h

Nominal flow rate 3500 m³/h

Nominal flow rate 4500 m³/h

Nominal flow rate 5500 m³/h

Unit Type

Commercial recovery unit **ALFA95**



Rotary wheel heat exchanger



Sorption rotary wheel heat exchanger

ENERGY
SAVINGLOW
NOISEANTI
FREEZEChoose
&GOSERVICE
SW**BASIC FEATURES****ALFA 85**

Wide and flexible range of heat recovery units with a rotary wheel with a purge sector suitable for both indoor and outdoor installations designed for commercial and retail constructions such as **offices, shops, coffee bars, restaurants, sport facilities and public premises.**

- **11 sizes of vertical version with air flows 700–14000 m³/h**
- **9 sizes of version with upper outlets with air flows 700–5000 m³/h**
- Ecodesign directive 1253/2014 compliant
- **Rotary wheel** with heat recovery efficiency up 85% (EN308) and moisture transfer ability
- **Sorption wheel** with heat recovery efficiency up 85% and (EN308) and increased moisture transfer ability up to 93%
- Energy-efficient EC fans with low SFP and quiet operation
- Double skin mineral wool insulation 50mm
- Modular construction for easy manipulation and installation (size 3200m³/h and bigger)
- Integrated electric or water post-heater, modular C/O or DX coil post-heater (all optional)
- **AirGENIO Superior** control system with an option of CAV, VAV or DCV mode, other supplementary modes, antifreeze protection, BMS control via ModBUS RTU, TCP or BACnet.

ALFA 85 heat recovery unit is designed to be operated at an indoor / outdoor environment and at an ambient temperature in the range from -20°C up to +60°C.

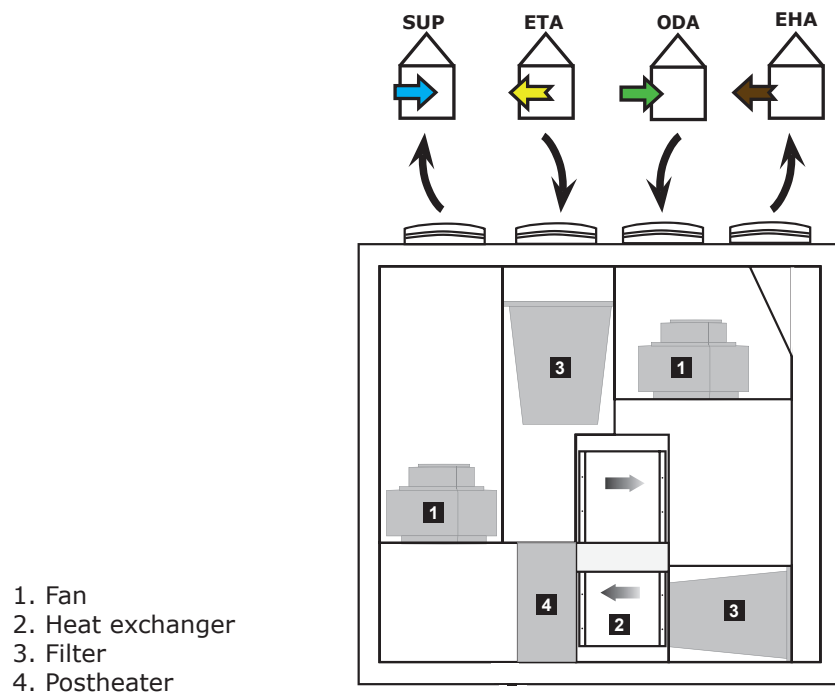
The unit is designed for transporting standard atmospheric air that is free of dust, grease, chemical emissions and other impurities. The transported air relative humidity must not exceed 90%.

The unit casing is made from double skin mineral wool insulation panels of the thickness 50mm. The unit, when installed in the ducting system has an IP rating of 43.

The design of the ventilation project must be **always designed by a qualified HVAC designer, engineer or architect.**

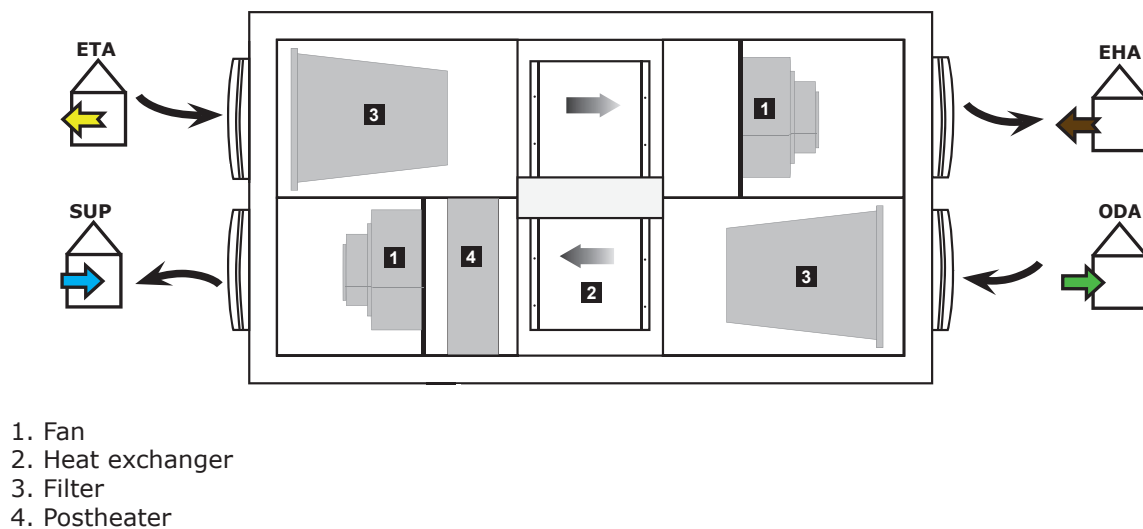
Version with upper outlets

Operational diagram



Vertical version

Operational diagram

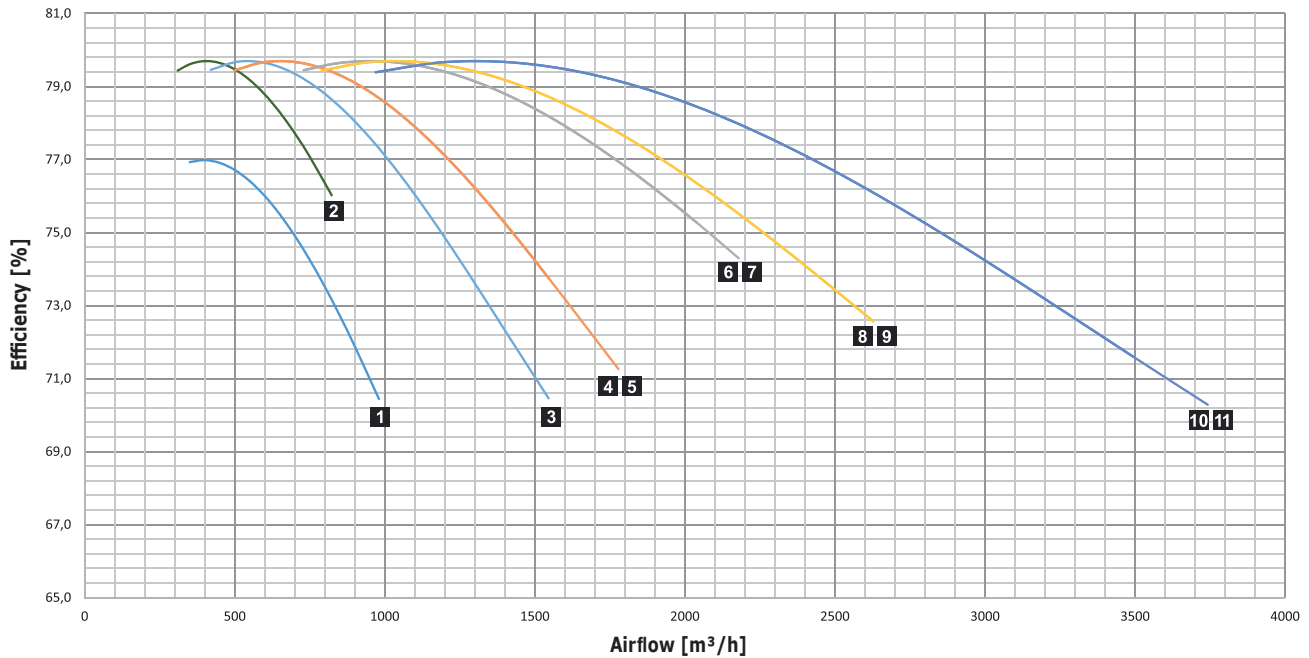




PRIMARY PARAMETERS

Heat recovery efficiency:

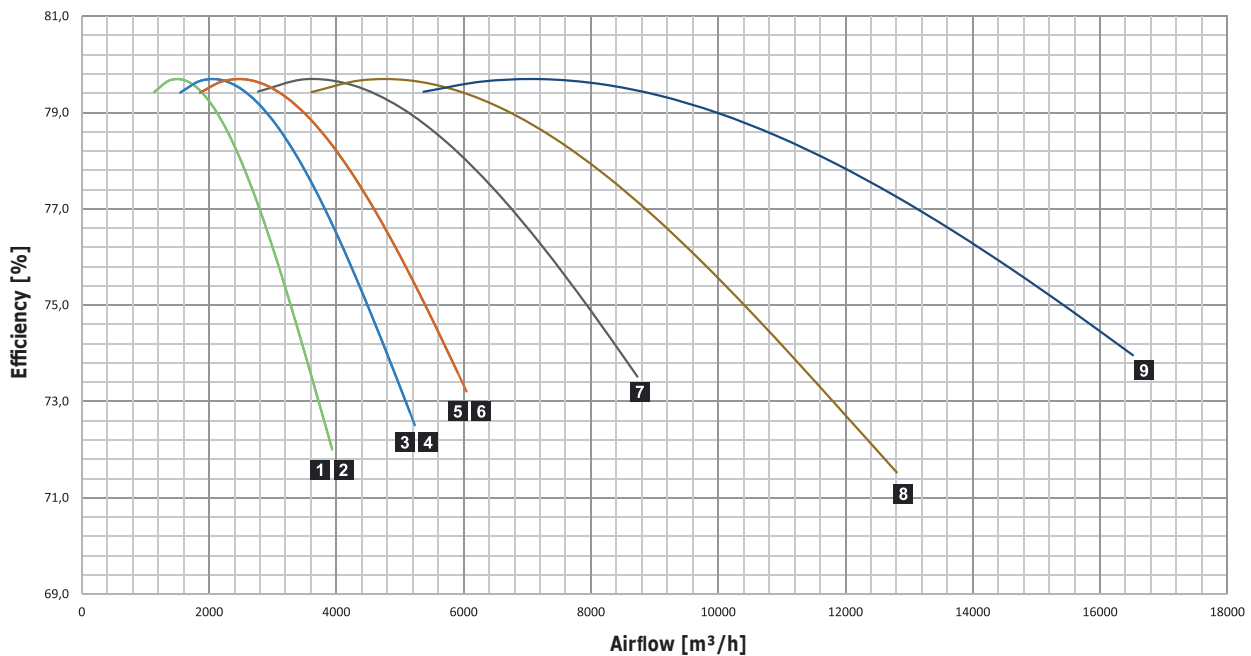
Standard rotary exchanger - summer conditions EN308 (35°C/50%RH, 25°C/50%RH)



- | | | | | | |
|--------------|--------------|--------------|---------------|---------------|--------------|
| 1 HR852-070V | 2 HR852-070U | 3 HR852-090U | 4 HR852-100V | 5 HR852-120U | 6 HR852-150V |
| 7 HR852-160U | 8 HR852-200V | 9 HR852-200U | 10 HR852-250V | 11 HR852-250U | |

Heat recovery efficiency:

Standard rotary exchanger - summer conditions EN308 (35°C/50%RH, 25°C/50%RH)



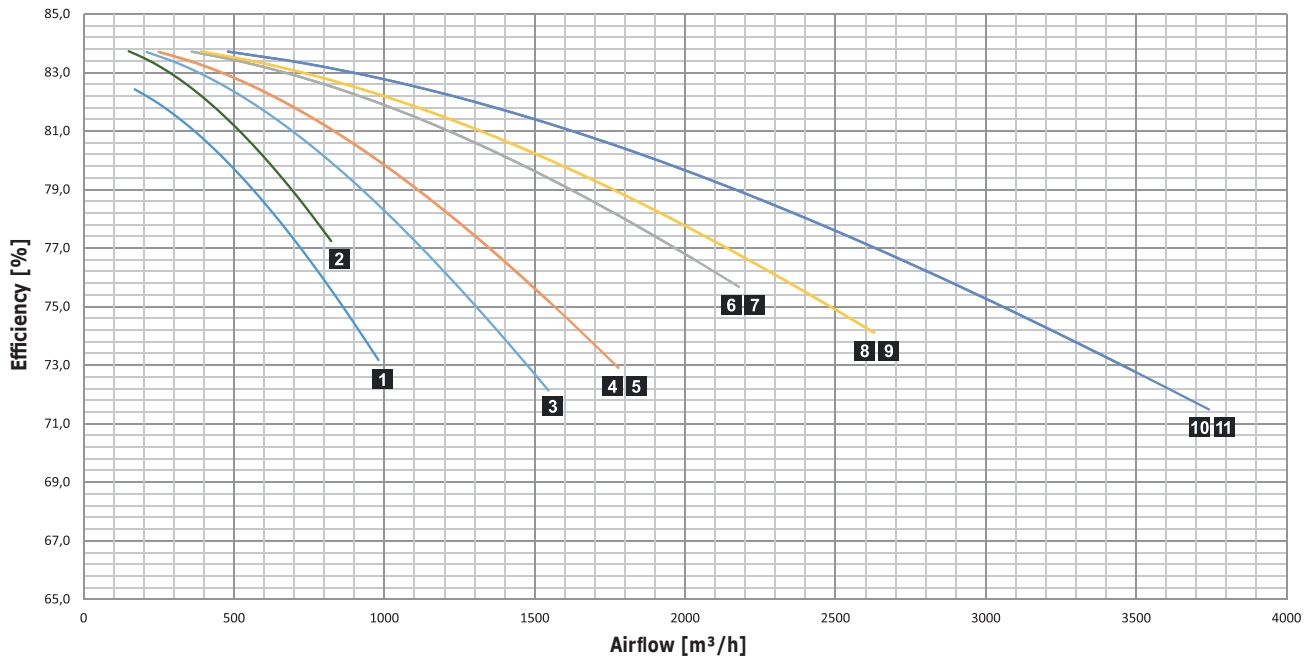
- | | | | | |
|--------------|--------------|--------------|--------------|--------------|
| 1 HR852-320V | 2 HR852-320U | 3 HR852-400V | 4 HR852-400U | 5 HR852-500V |
| 6 HR852-500U | 7 HR852-700V | 8 HR852-10KV | 9 HR852-14KV | |



PRIMARY PARAMETERS

Heat recovery efficiency:

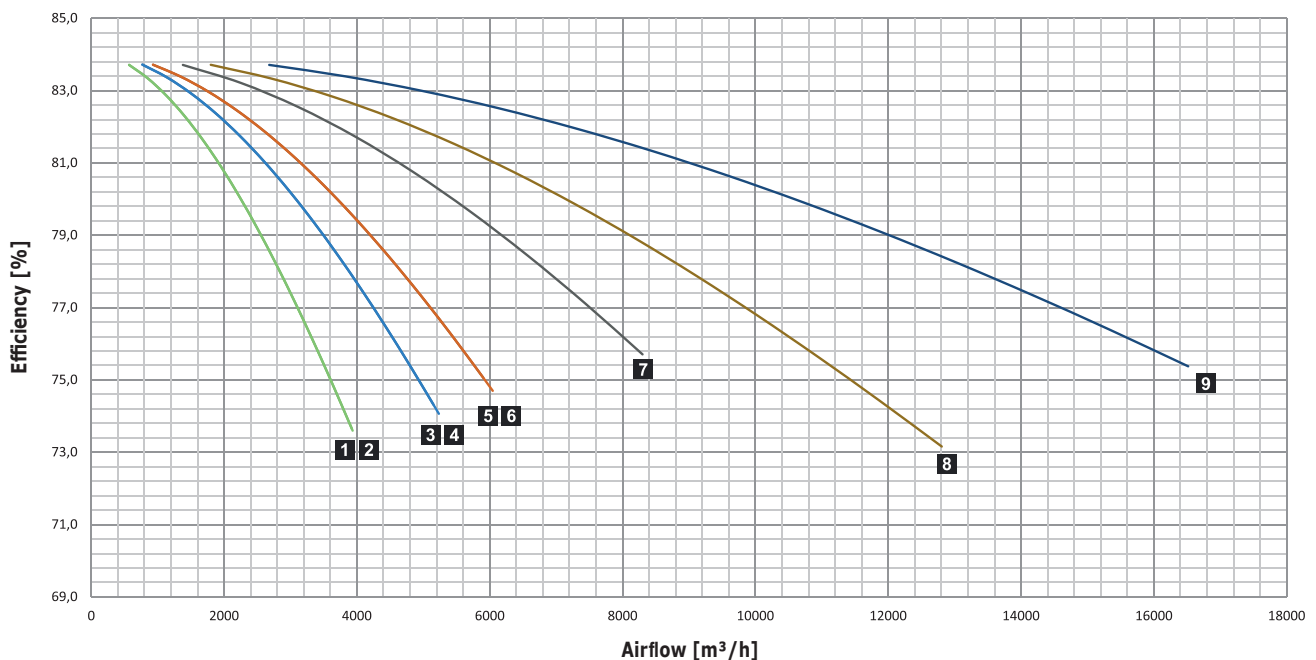
Standard rotary exchanger - winter conditions EN308 (5°C/72%RH, 25°C/28%RH)



- | | | | | | |
|--------------|--------------|--------------|---------------|---------------|--------------|
| 1 HR852-070V | 2 HR852-070U | 3 HR852-090U | 4 HR852-100V | 5 HR852-120U | 6 HR852-150V |
| 7 HR852-160U | 8 HR852-200V | 9 HR852-200U | 10 HR852-250V | 11 HR852-250U | |

Heat recovery efficiency:

Standard rotary exchanger - winter conditions EN308 (5°C/72%RH, 25°C/28%RH)



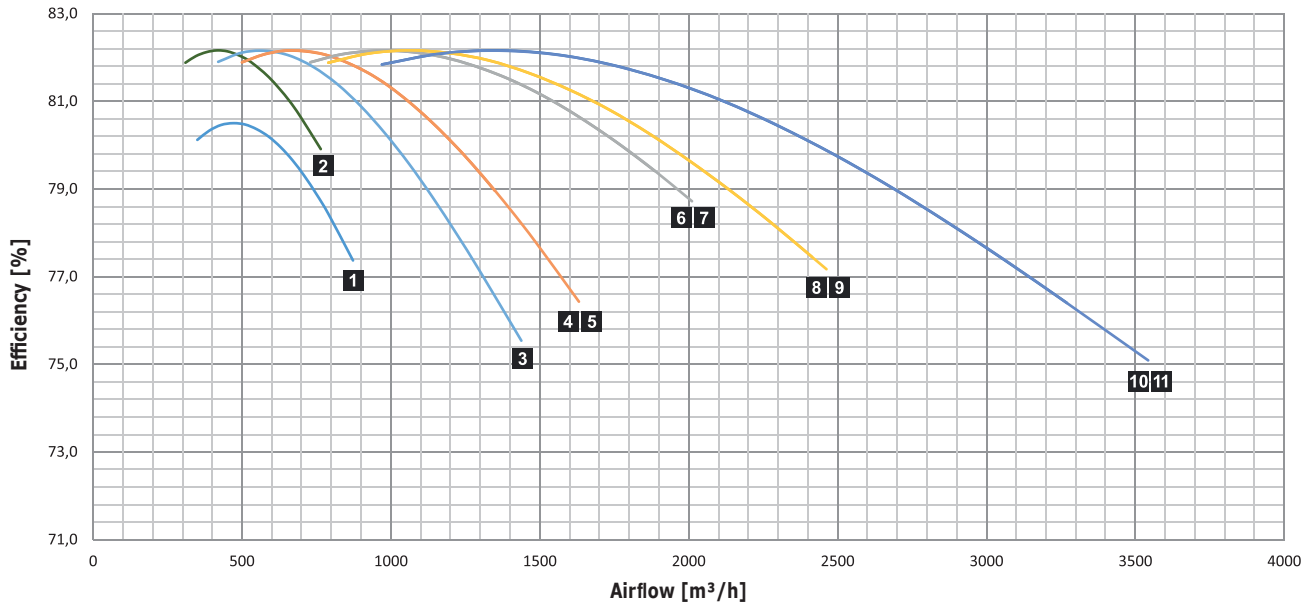
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|--------------|--------------|--------------|--------------|--------------|
| 1 HR852-320V | 2 HR852-320U | 3 HR852-400V | 4 HR852-400U | 5 HR852-500V |
| 6 HR852-500U | 7 HR852-700V | 8 HR852-10KV | 9 HR852-14KV | |



PRIMARY PARAMETERS

Heat recovery efficiency:

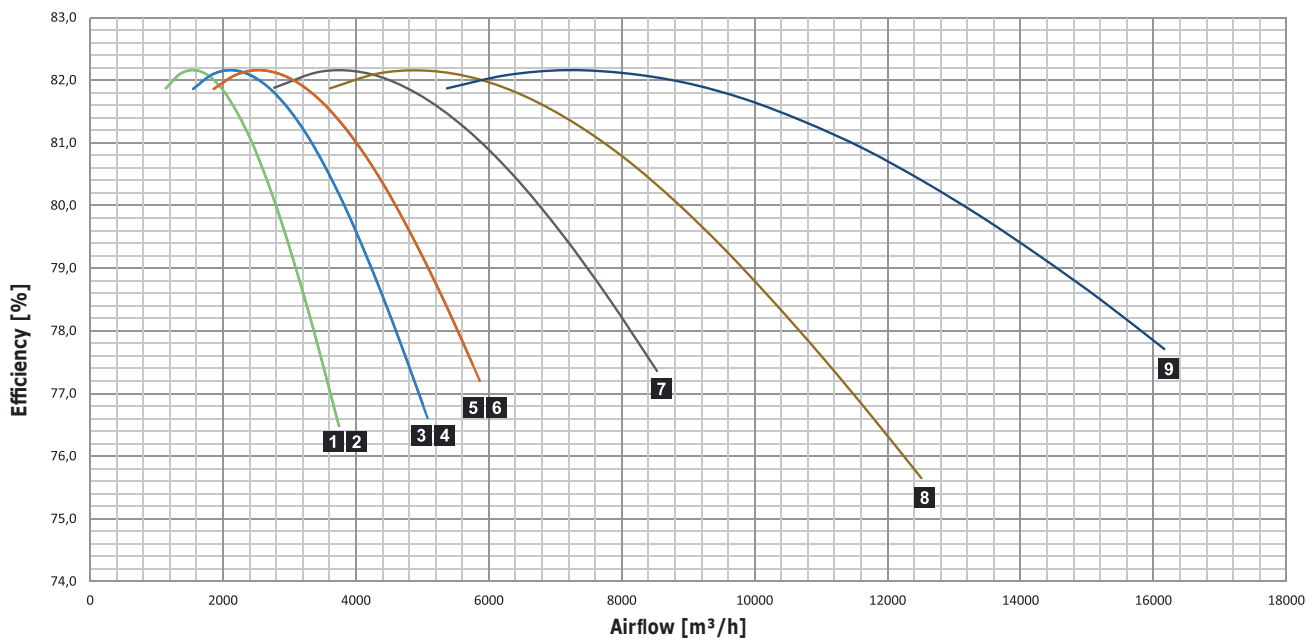
Sorption rotary exchanger - summer conditions EN308 (35°C/50%RH, 25°C/50%RH)



- | | | | | | |
|--------------|--------------|--------------|---------------|---------------|--------------|
| 1 HR852-070V | 2 HR852-070U | 3 HR852-090U | 4 HR852-100V | 5 HR852-120U | 6 HR852-150V |
| 7 HR852-160U | 8 HR852-200V | 9 HR852-200U | 10 HR852-250V | 11 HR852-250U | |

Heat recovery efficiency:

Sorption rotary exchanger - summer conditions EN308 (35°C/50%RH, 25°C/50%RH)



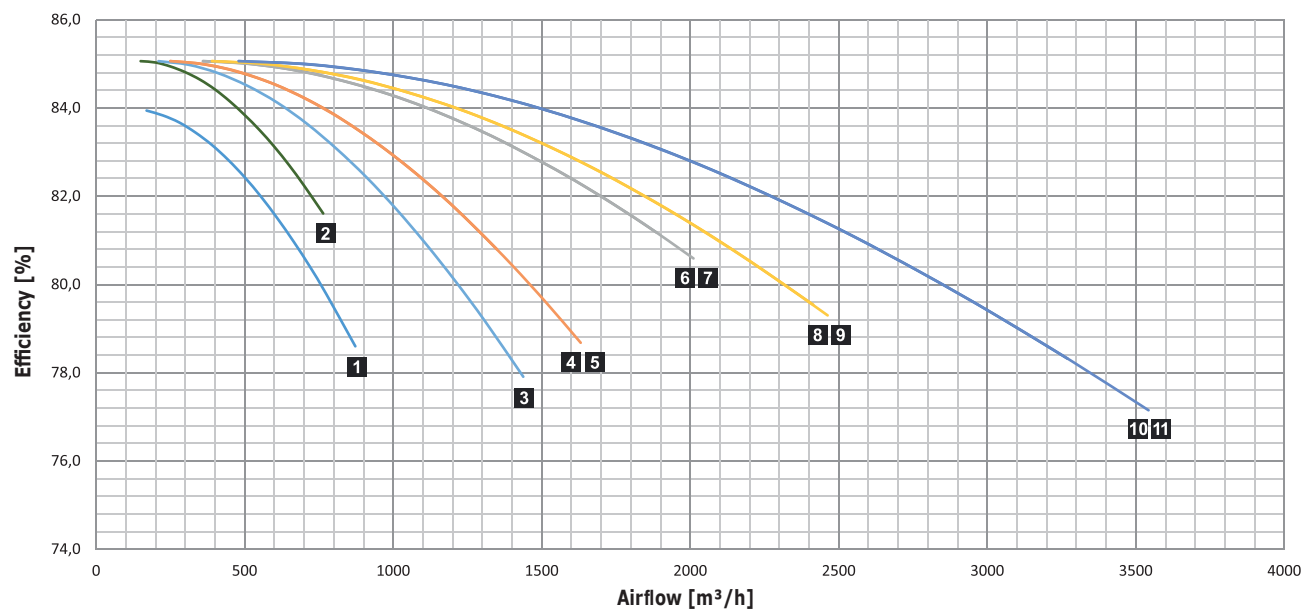
- | | | | | |
|--------------|--------------|--------------|--------------|--------------|
| 1 HR852-320V | 2 HR852-320U | 3 HR852-400V | 4 HR852-400U | 5 HR852-500V |
| 6 HR852-500U | 7 HR852-700V | 8 HR852-10KV | 9 HR852-14KV | |



PRIMARY PARAMETERS

Heat recovery efficiency:

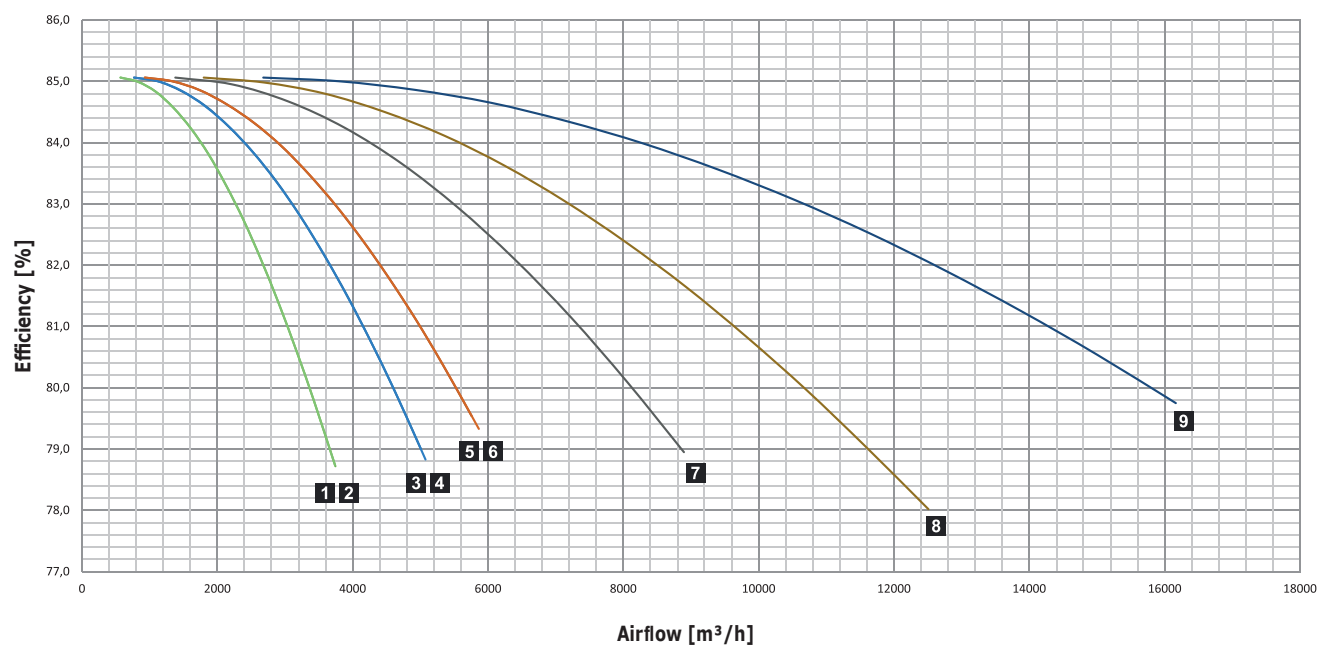
Sorption rotary exchanger - winter conditions EN308 (5°C/72%RH, 25°C/28%RH)



- | | | | | | |
|---------------------|---------------------|---------------------|----------------------|----------------------|---------------------|
| 1 HR852-070V | 2 HR852-070U | 3 HR852-090U | 4 HR852-100V | 5 HR852-120U | 6 HR852-150V |
| 7 HR852-160U | 8 HR852-200V | 9 HR852-200U | 10 HR852-250V | 11 HR852-250U | |

Heat recovery efficiency:

Sorption rotary exchanger - winter conditions EN308 (5°C/72%RH, 25°C/28%RH)



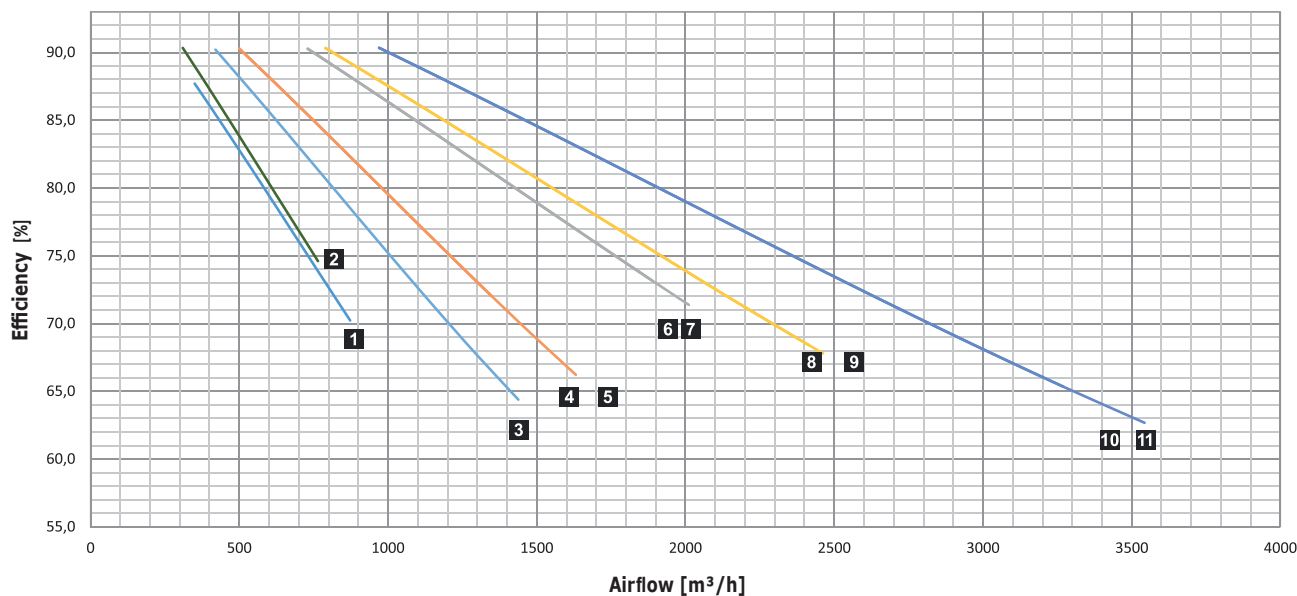
- | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|
| 1 HR852-320V | 2 HR852-320U | 3 HR852-400V | 4 HR852-400U | 5 HR852-500V |
| 6 HR852-500U | 7 HR852-700V | 8 HR852-10KV | 9 HR852-14KV | |



PRIMARY PARAMETERS

Moisture transfer efficiency:

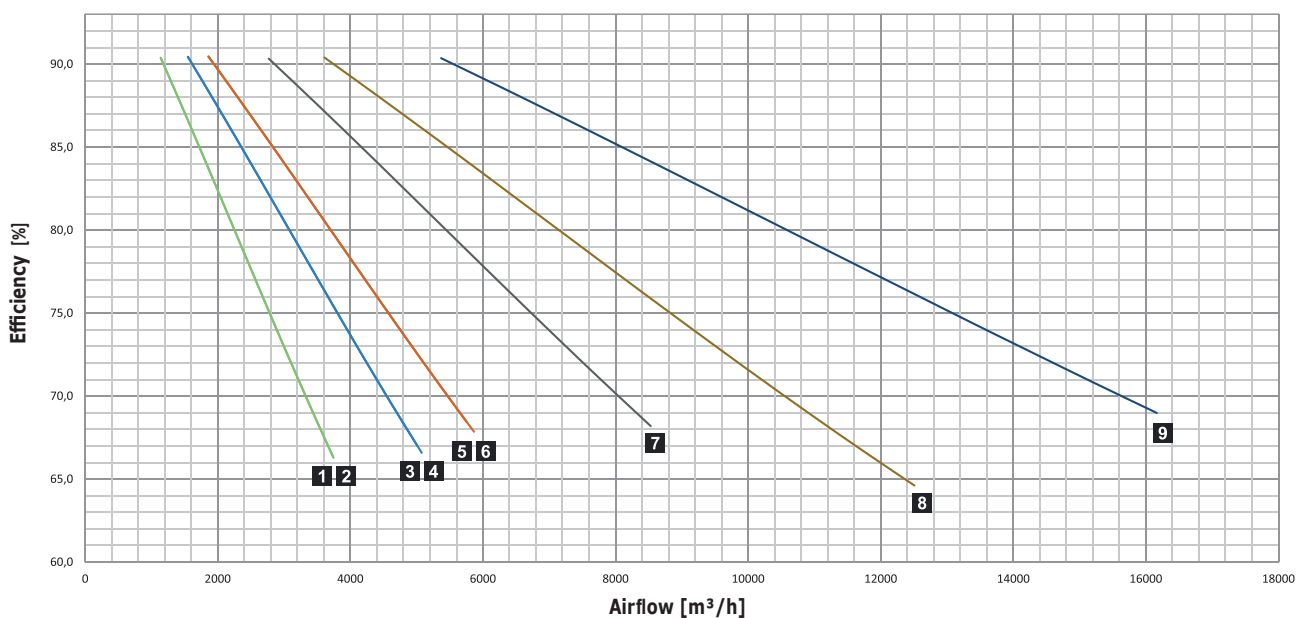
Sorption rotary exchanger - summer conditions EN308 (35°C/50%RH, 25°C/50%RH)



- 1 HR852-070V 2 HR852-070U 3 HR852-090U 4 HR852-100V 5 HR852-120U 6 HR852-150V
 7 HR852-160U 8 HR852-200V 9 HR852-200U 10 HR852-250V 11 HR852-250U

Moisture transfer efficiency:

Sorption rotary exchanger - summer conditions EN308 (35°C/50%RH, 25°C/50%RH)



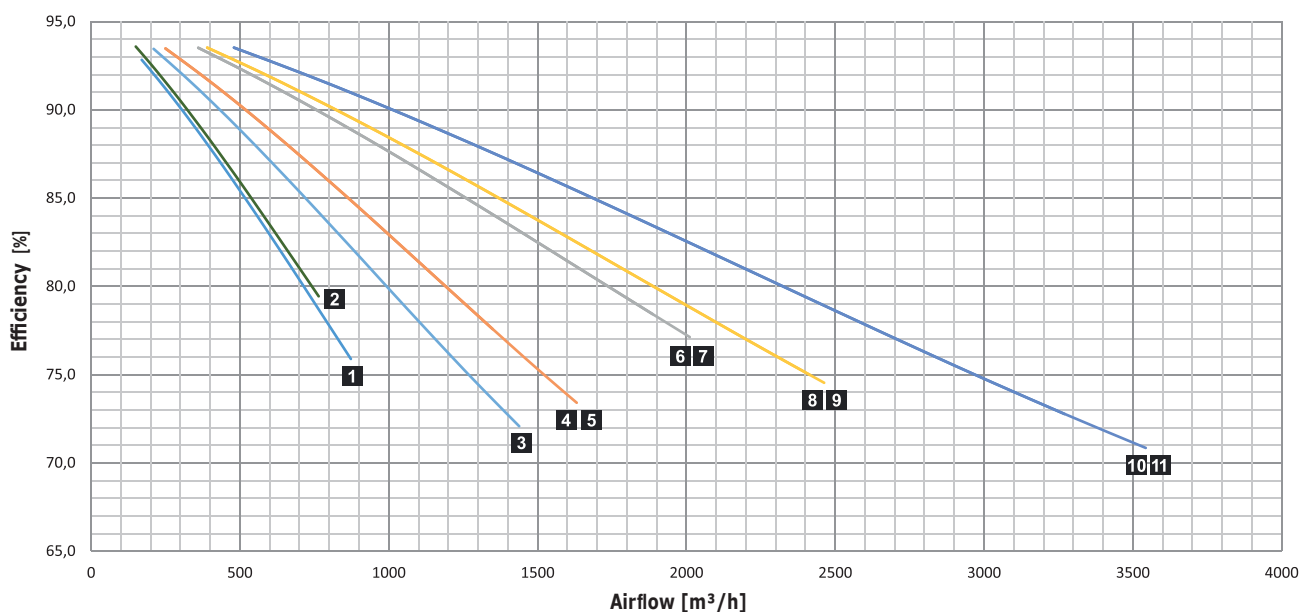
- 1 HR852-320V 2 HR852-320U 3 HR852-400V 4 HR852-400U 5 HR852-500V
 6 HR852-500U 7 HR852-700V 8 HR852-10KV 9 HR852-14KV



PRIMARY PARAMETERS

Moisture transfer efficiency:

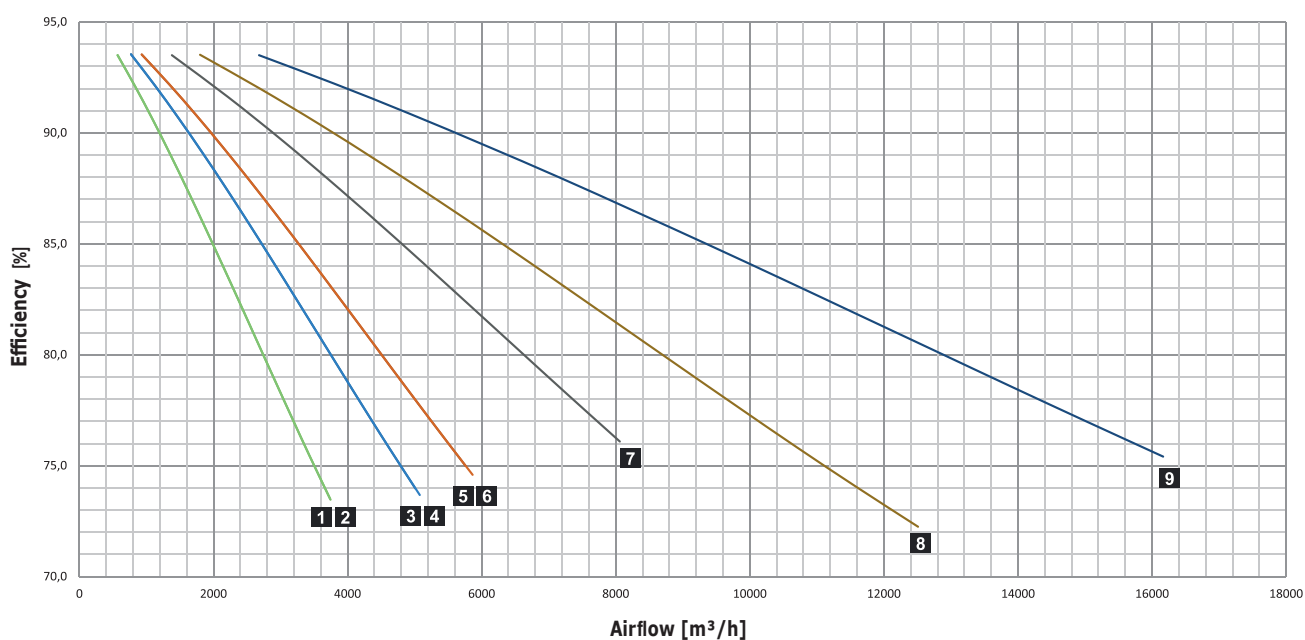
Sorption rotary exchanger - winter conditions EN308 (5°C/72%RH, 25°C/28%RH)



- | | | | | | |
|--------------|--------------|--------------|---------------|---------------|--------------|
| 1 HR852-070V | 2 HR852-070U | 3 HR852-090U | 4 HR852-100V | 5 HR852-120U | 6 HR852-150V |
| 7 HR852-160U | 8 HR852-200V | 9 HR852-200U | 10 HR852-250V | 11 HR852-250U | |

Moisture transfer efficiency:

Sorption rotary exchanger - winter conditions EN308 (5°C/72%RH, 25°C/28%RH)



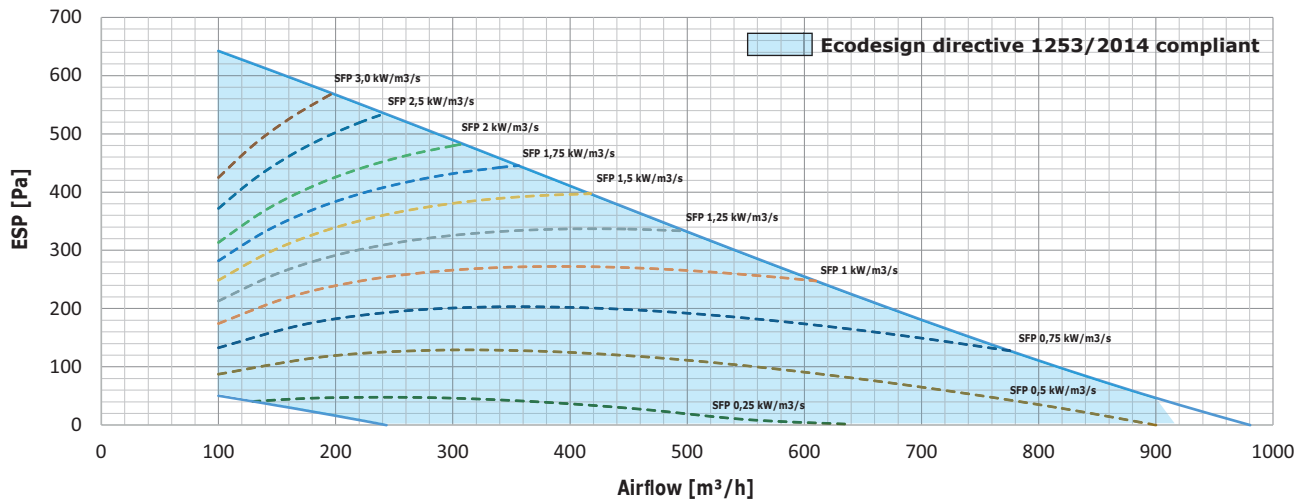
- | | | | | |
|--------------|--------------|--------------|--------------|--------------|
| 1 HR852-320V | 2 HR852-320U | 3 HR852-400V | 4 HR852-400U | 5 HR852-500V |
| 6 HR852-500U | 7 HR852-700V | 8 HR852-10KV | 9 HR852-14KV | |



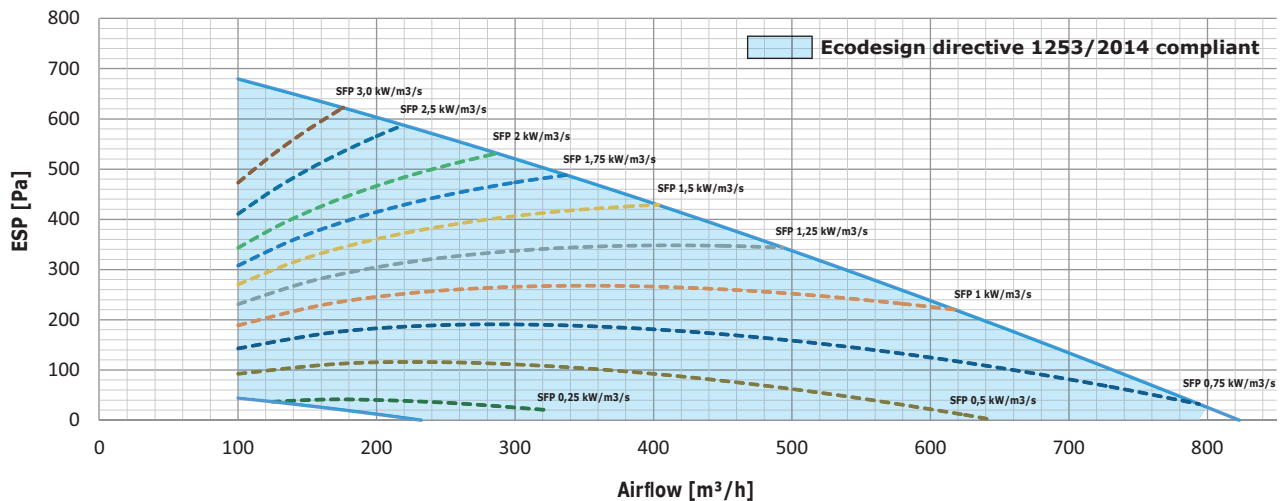
PRIMARY PARAMETERS

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

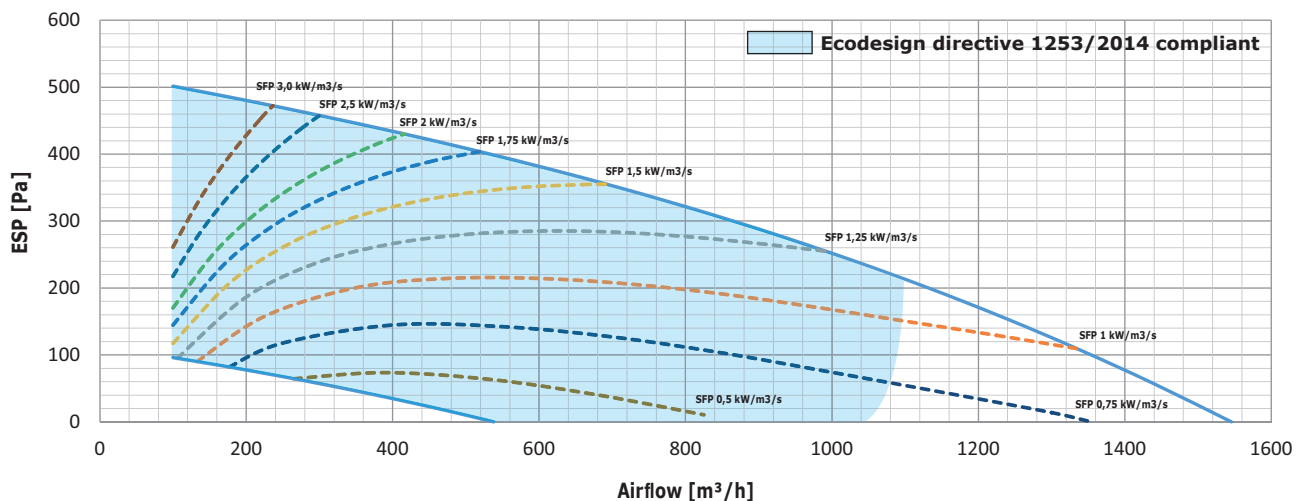
HR852-070 V



HR852-070 U



HR852-090 U

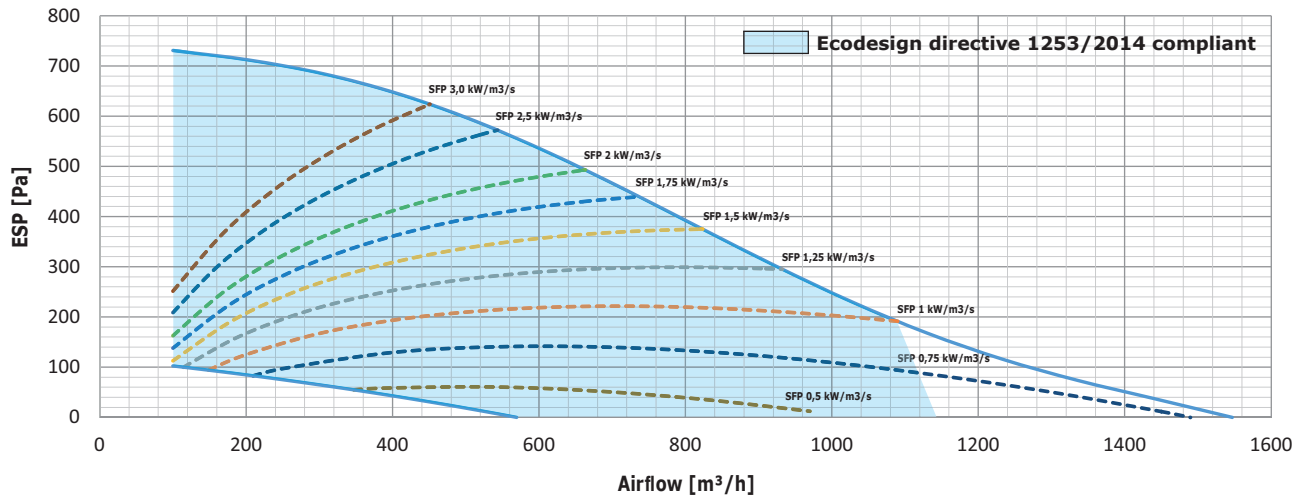




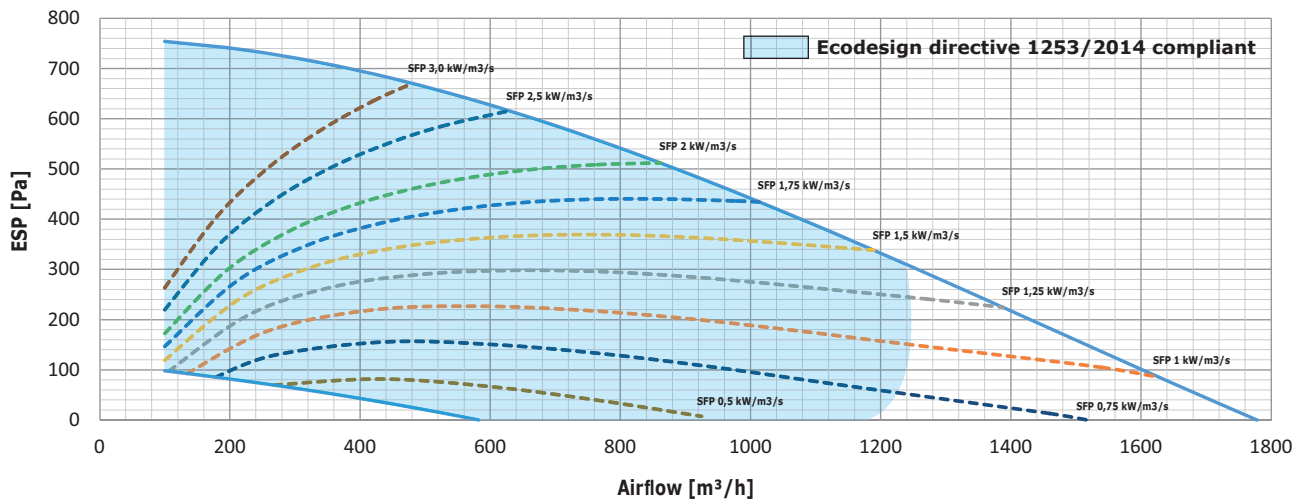
PRIMARY PARAMETERS

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

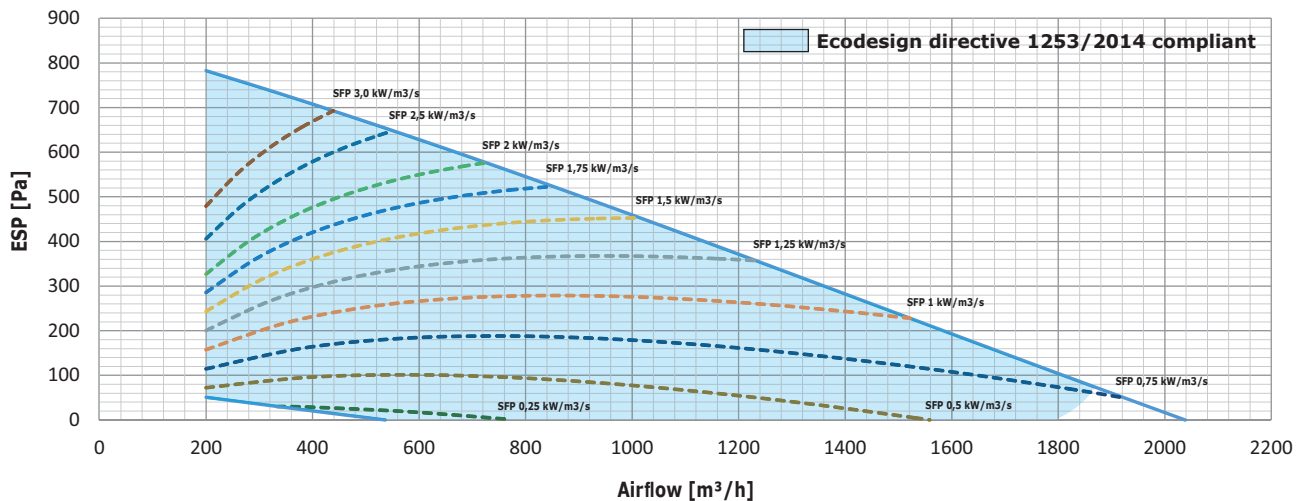
HR852-100 V



HR852-120 U



HR852-150 V

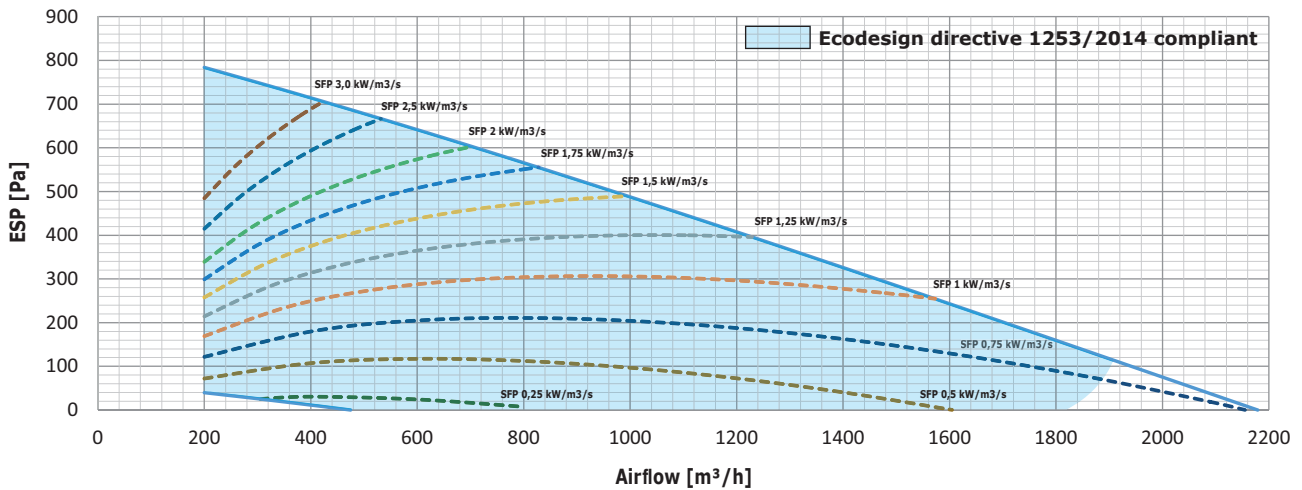




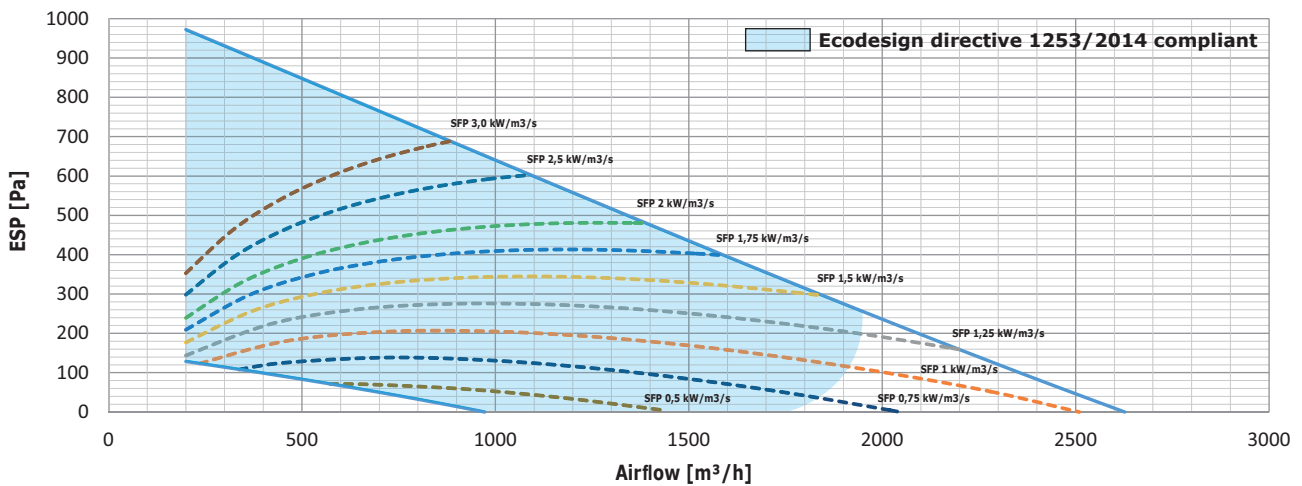
PRIMARY PARAMETERS

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

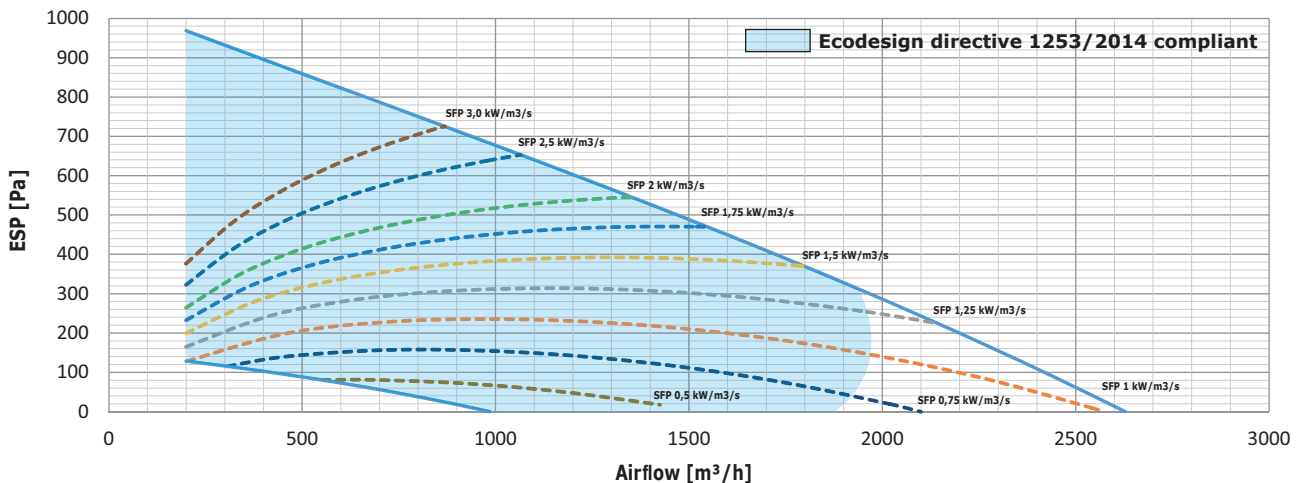
HR852-160 U



HR852-200 V



HR852-200 U

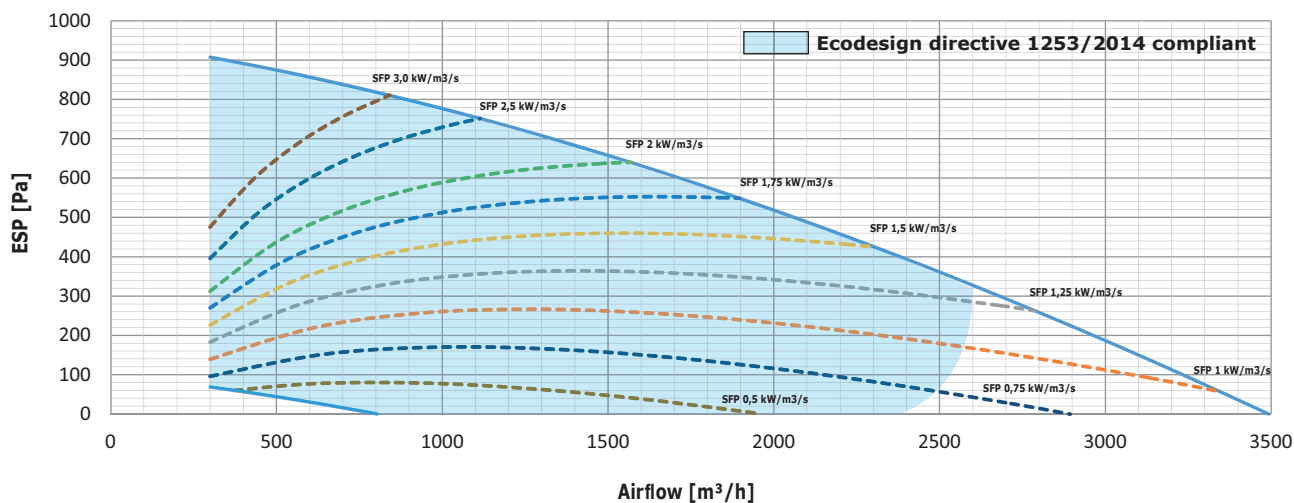




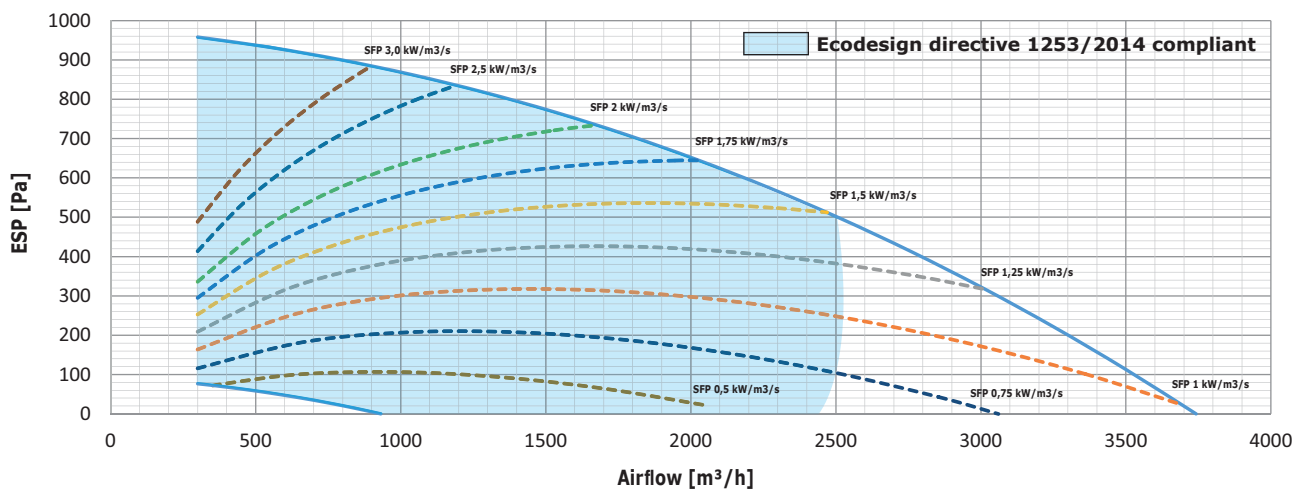
PRIMARY PARAMETERS

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

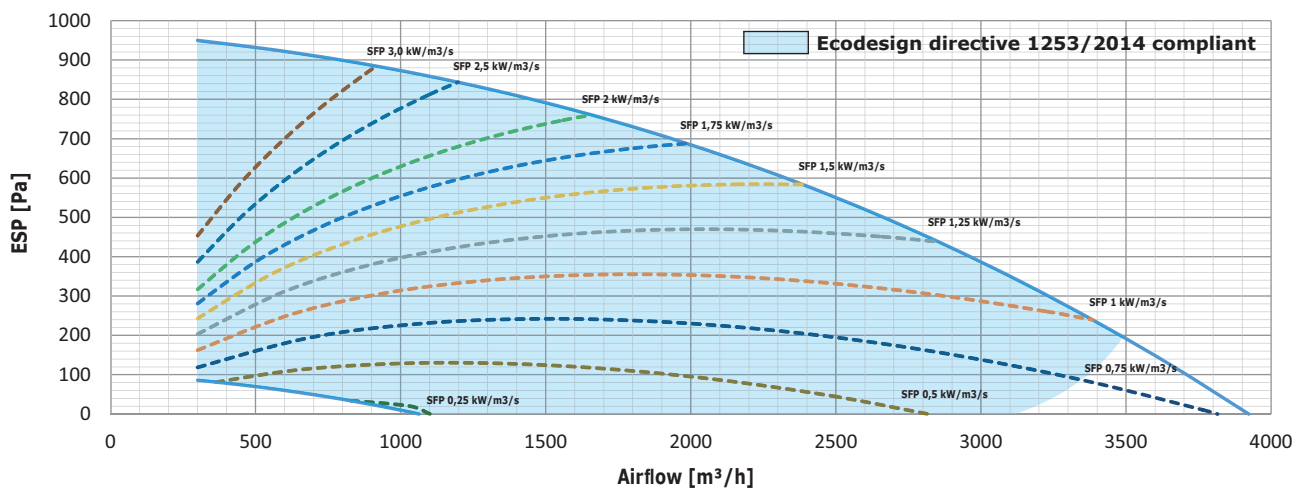
HR852-250 V



HR852-250 U



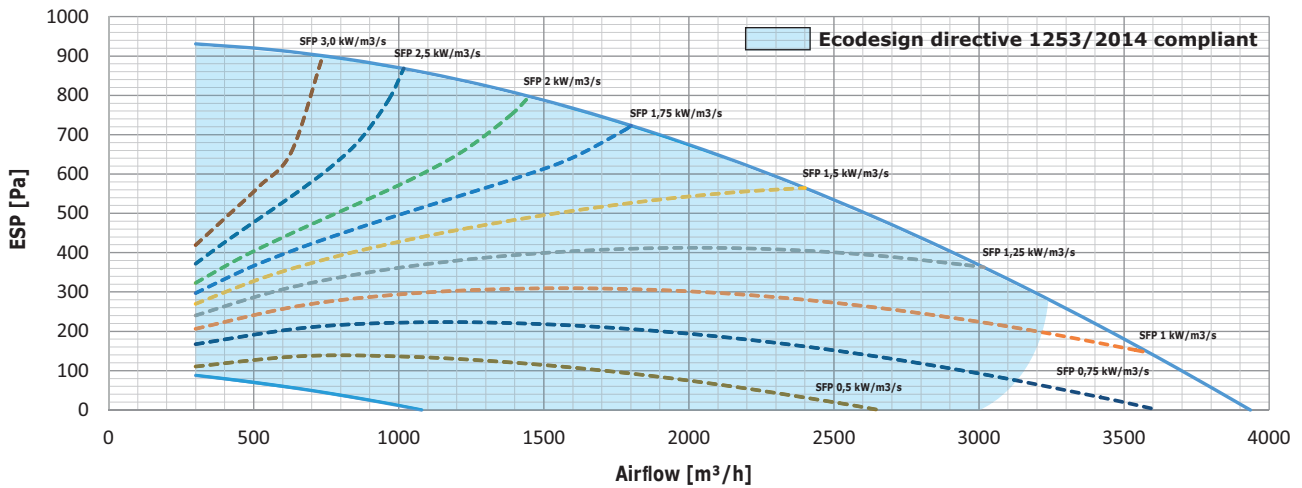
HR852-320 V



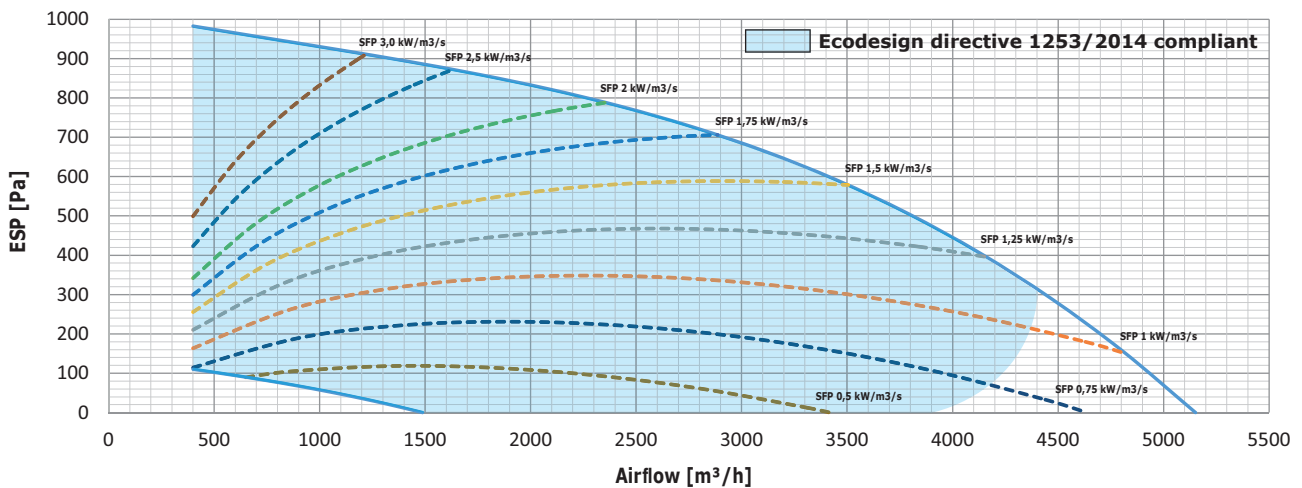


PRIMARY PARAMETERS

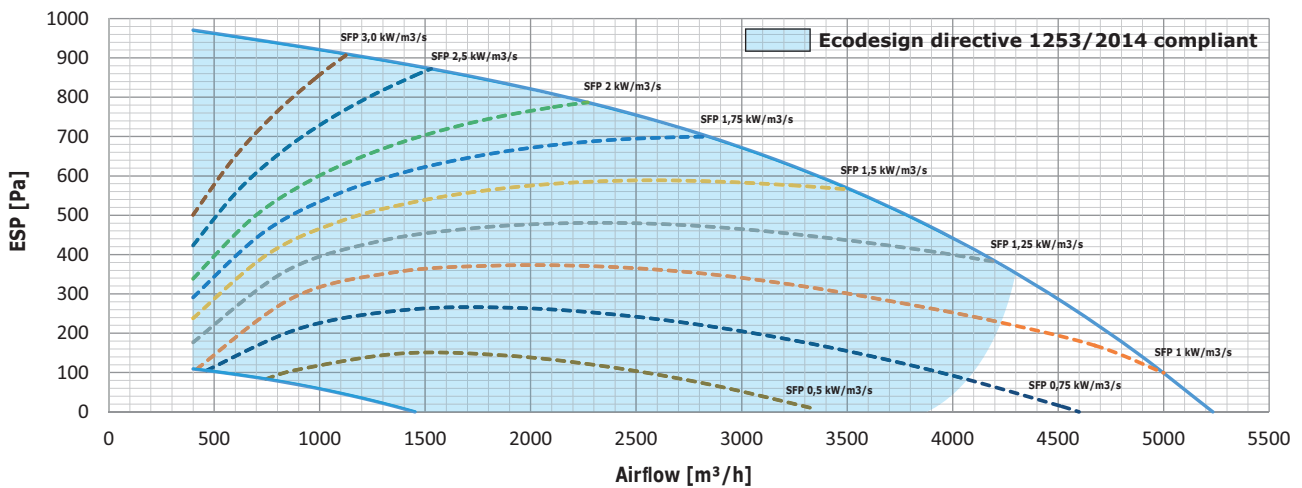
HR852-320 U



HR852-400 V



HR852-400 U

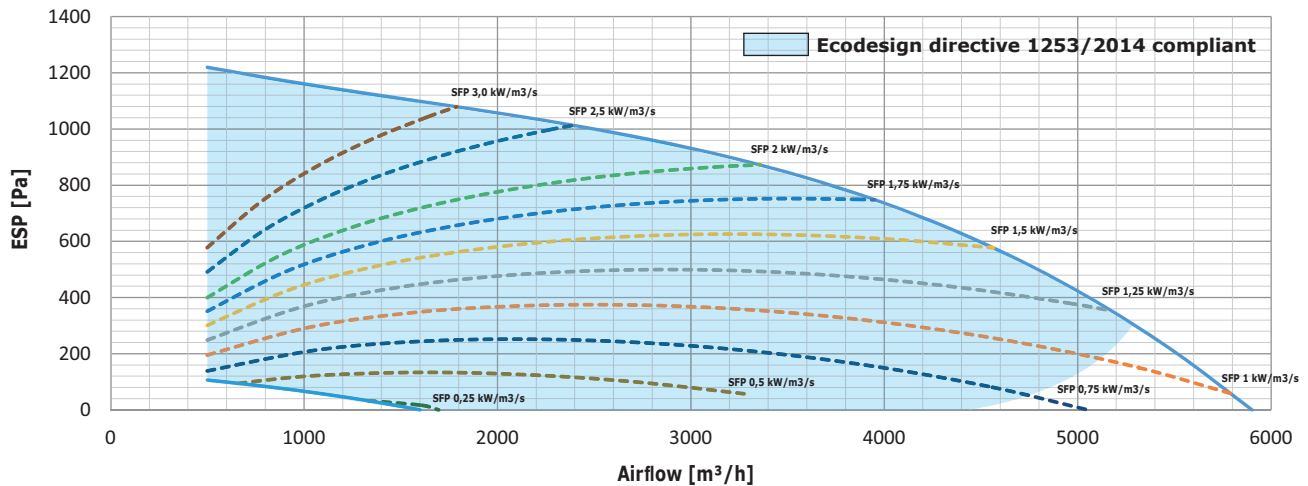




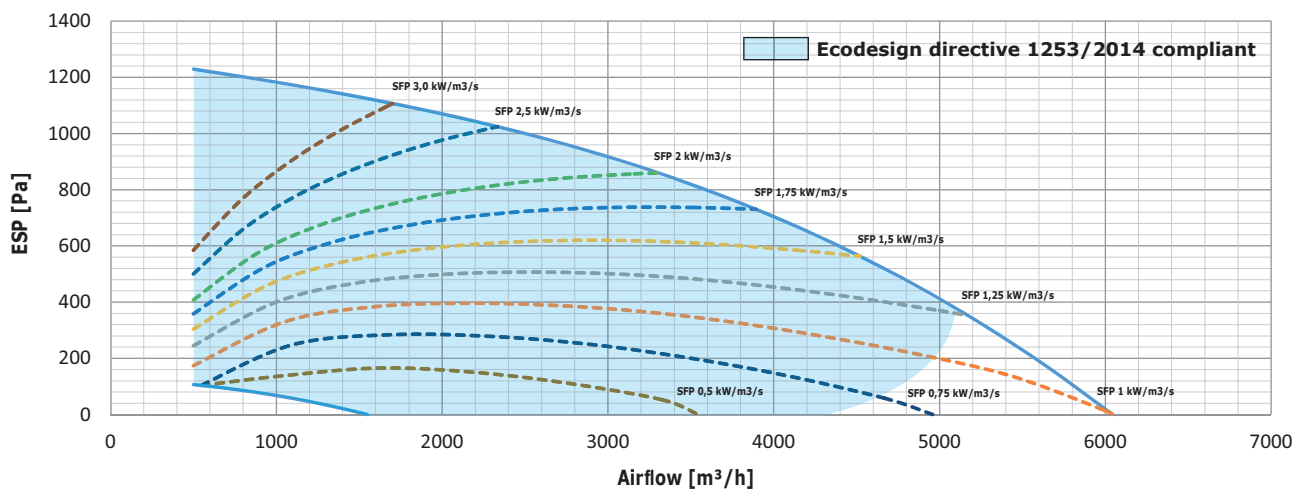
PRIMARY PARAMETERS

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

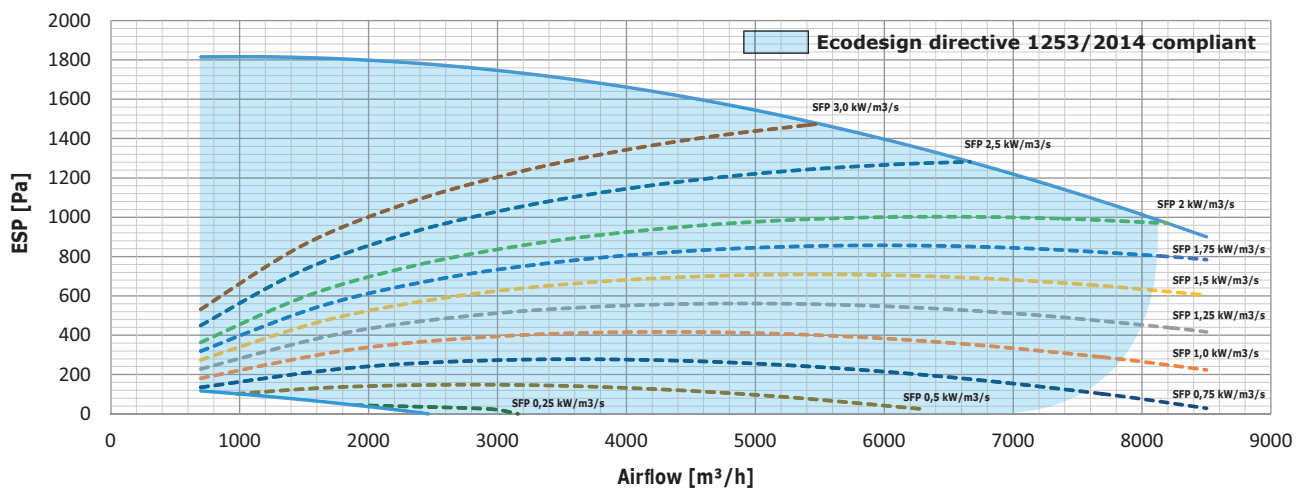
HR852-500 V



HR852-500 U



HR852-700 V

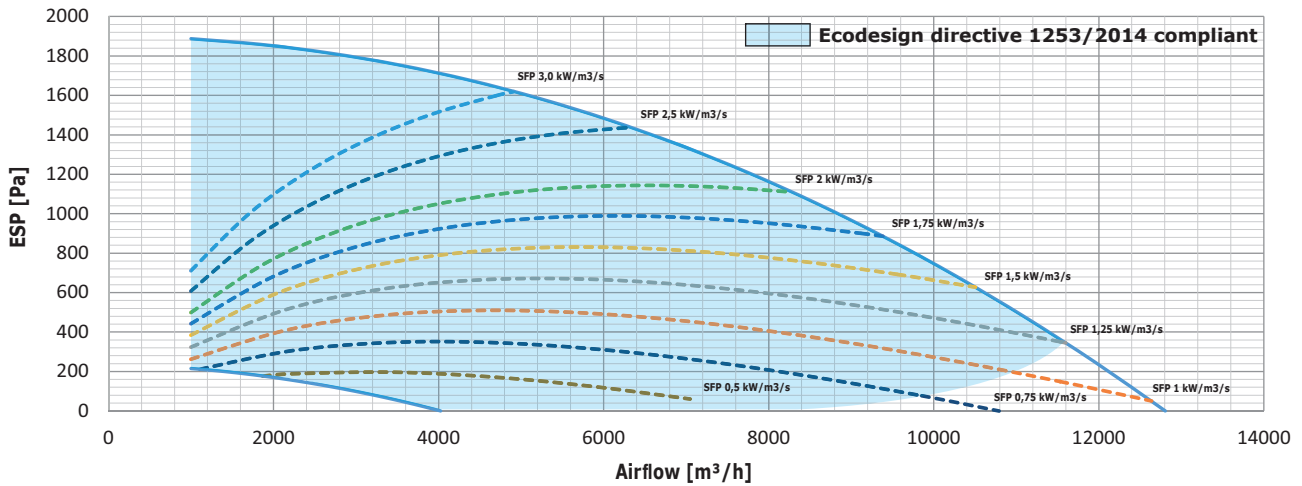




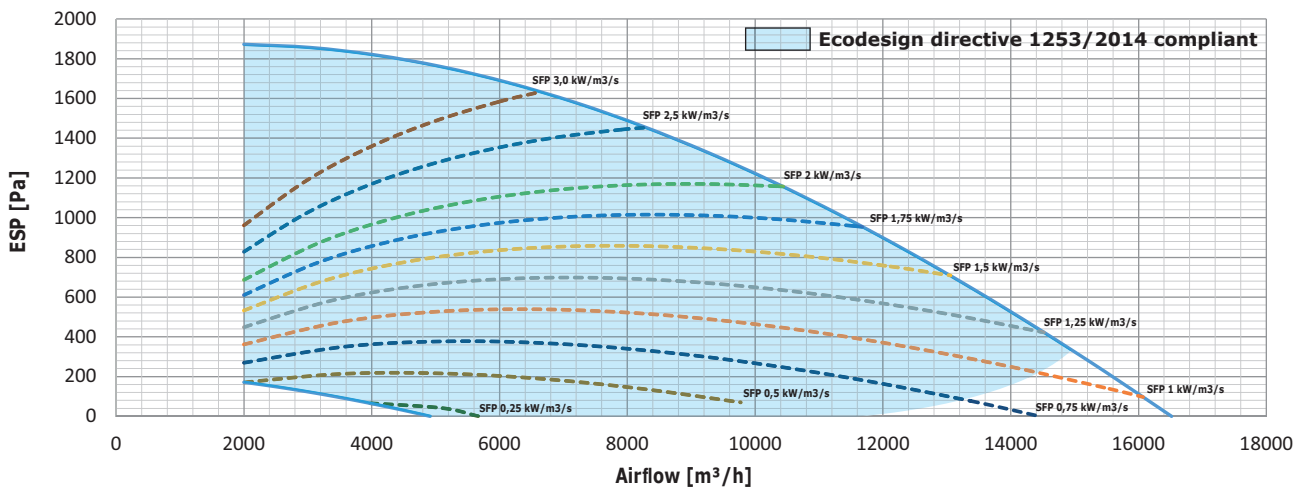
PRIMARY PARAMETERS

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

HR852-10K



HR852-14K



Noise specifications (casing radiated):

Type	Airflow [m³/h]	Pressure [Pa]	Sound power level per frequency band L _w (dB(A))								Overall	
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	L _w [dB]	L _{pA} [dB] at 3m
HR852-070V	700	150	34	38	48	44	47	46	45	28	63	31
	500	150	30	36	44	43	44	42	39	23	59	28
	300	150	24	37	41	41	41	39	33	21	57	25
HR852-070U	700	150	32	41	44	44	45	45	40	29	62	29
	500	150	30	41	45	42	42	42	36	26	61	28
	300	150	30	43	40	39	38	38	30	23	62	25
HR852-090U	900	150	39	47	53	50	46	46	40	23	68	34
	600	150	37	46	49	48	43	44	36	21	66	32
	300	150	38	45	43	48	43	43	34	21	66	30
HR852-100V	1000	200	41	47	53	46	51	52	46	31	70	36
	650	200	40	47	53	44	48	48	42	27	69	34
	300	200	32	41	45	38	41	40	34	21	62	27
HR852-120U	1200	250	44	49	56	54	52	52	46	29	72	38
	800	250	42	48	54	51	47	48	42	25	70	35
	400	250	41	48	50	49	44	45	38	22	70	33
HR852-150V	1500	250	44	50	60	49	54	54	51	30	73	40
	1000	250	39	51	55	47	52	53	46	27	70	37
	500	250	39	53	48	44	50	48	40	22	71	34
HR852-160U	1600	250	43	49	60	49	53	54	50	30	73	40
	1200	250	39	49	56	46	51	52	46	26	70	37
	800	250	36	51	49	44	50	49	42	22	69	34
HR852-200V	2000	250	50	54	60	56	57	59	53	34	78	43
	1500	250	49	51	59	52	54	56	50	31	77	40
	1000	250	46	50	58	50	52	53	47	27	74	39
HR852-200U	2000	250	49	52	59	54	56	57	52	33	77	41
	1500	250	47	50	58	51	53	54	49	29	75	39
	1000	250	44	49	57	48	50	51	44	25	72	37
HR852-250V	2500	250	45	53	63	57	58	59	56	40	76	44
	2000	250	43	52	64	54	55	57	53	37	75	44
	1500	250	43	52	63	50	53	54	49	33	75	42
HR852-250U	2500	250	42	49	65	54	55	57	53	37	76	44
	2000	250	39	48	63	50	52	53	49	33	73	41
	1500	250	38	49	58	46	49	50	44	29	70	37
HR852-320V	3000	300	41	47	59	57	60	58	52	40	72	43
	2000	300	37	47	55	54	58	55	49	36	69	39
	1000	300	40	53	51	50	54	51	43	32	71	36
HR852-320U	3000	300	43	51	62	56	59	58	54	43	75	43
	2000	300	41	52	62	51	54	54	49	38	74	41
	1000	300	43	56	54	46	49	51	42	34	74	37
HR852-400V	4000	300	46	51	61	60	60	58	52	40	75	43
	3000	300	42	51	59	57	58	56	49	38	73	41
	2000	300	41	54	57	55	56	54	46	36	73	40
HR852-400U	4000	300	46	51	63	61	60	57	51	48	76	44
	3000	300	44	52	61	58	59	57	50	47	74	42
	2000	300	43	56	58	55	57	56	49	46	75	41
HR852-500V	5000	300	52	55	64	63	63	59	55	44	80	46
	3500	300	43	51	60	58	58	56	49	37	73	41
	2000	300	41	54	57	54	55	53	45	35	73	39
HR852-500U	5000	300	52	55	67	65	63	59	55	47	81	48
	3500	300	44	51	61	59	59	56	50	47	74	43
	2000	300	43	56	58	54	57	56	49	46	75	41
HR852-700V	7000	300	54	67	65	62	59	56	58	42	85	48
	5000	300	50	61	58	56	55	51	51	34	80	42
	3000	300	46	54	52	50	51	46	42	27	75	36
HR852-10K	10000	400	55	67	70	67	63	61	63	53	86	51
	8000	400	51	66	65	62	60	57	60	45	84	47
	6000	400	48	62	60	57	58	54	55	39	80	43
HR852-14K	14000	400	53	67	72	68	69	63	75	55	87	55
	11000	400	47	66	65	63	66	59	70	47	84	50
	8000	400	44	61	59	58	62	57	60	40	79	44

Basic technical parameters of the heat recovery units

Model without post-heater / with water post heater

Type	Voltage [V]	Phase [pcs]	Frequency [Hz]	Rated input [kW]	Total current [A]
HR852-070	230	1	50/60	0,4	3,2
HR852-090	230	1	50/60	0,9	4,1
HR852-100	230	1	50/60	0,9	4,1
HR852-120	230	1	50/60	0,9	4,1
HR852-150	230	1	50/60	1,0	6,5
HR852-160	230	1	50/60	1,0	6,5
HR852-200	230	1	50/60	1,6	9,7
HR852-250	400	3	50/60	2,1	3,8
HR852-320	400	3	50/60	2,1	3,8
HR852-400	400	3	50/60	3,5	5,7
HR852-500	400	3	50/60	3,5	5,7
HR852-700	400	3	50/60	9,1	14,1
HR852-10K	400	3	50/60	9,1	14,1
HR852-14K	400	3	50/60	11,5	18,5

Model with electrical post-heater

Type	Voltage [V]	Phase [pcs]	Frequency [Hz]	Rated input [kW]	Total current [A]
HR852-070	230	1	50/60	3,1	14,7
HR852-090	400	3	50/60	4,9	10,0
HR852-100	400	3	50/60	4,9	10,0
HR852-120	400	3	50/60	4,9	10,0
HR852-150	400	3	50/60	8,0	16,6
HR852-160	400	3	50/60	8,0	16,6
HR852-200	400	3	50/60	8,6	19,8
HR852-250	400	3	50/60	10,5	15,9
HR852-320	400	3	50/60	12,9	19,4
HR852-400	400	3	50/60	17,0	25,2
HR852-500	400	3	50/60	20,3	29,9
HR852-700	400	3	50/60	32,7	48,2
HR852-10K	400	3	50/60	42,7	62,6
HR852-14K	400	3	50/60	58,9	87,0

Characteristics of electric motor (1 pc)

Type	Voltage [V]	Phases [pcs]	Frequency [Hz]	Rated input [W]	Total current [A]	Maximum rotation speed [rpm]	Protection IP
HR852-070	230	1	50/60	180	1,4	2930	IP 44
HR852-090	230	1	50	395	1,8	2650	IP 54
HR852-100	230	1	50	395	1,8	2650	IP 54
HR852-120	230	1	50	395	1,8	2650	IP 54
HR852-150	230	1	50/60	470	3,0	2435	IP 54
HR852-160	230	1	50/60	470	3,0	2435	IP 54
HR852-200	230	1	50	750	4,6	2480	IP 54
HR852-250	400	3	50/60	1000	1,6	2580	IP 54
HR852-320	400	3	50/60	1000	1,6	2580	IP 54
HR852-400	400	3	50/60	1700	2,6	2600	IP 54
HR852-500	400	3	50/60	1700	2,6	2600	IP 54
HR852-700	400	3	50/60	4500	6,8	2480	IP 55
HR852-10K	400	3	50/60	4500	6,8	2480	IP 55
HR852-14K	400	3	50/60	5700	9,0	2250	IP 55

Characteristics of electric battery

Type	Phase [pcs]	Voltage [V]	Frequency [Hz]	Rated input [kW]	Total current [A]
HR852-070	1	230	50/60	2,7	11,5
HR852-090	3	400	50/60	4,0	10,0
HR852-100	3	400	50/60	4,0	10,0
HR852-120	3	400	50/60	4,0	10,0
HR852-150	3	400	50/60	7,0	10,1
HR852-160	3	400	50/60	7,0	10,1
HR852-200	3	400	50/60	7,0	10,1
HR852-250	3	400	50/60	8,40	12,1
HR852-320	3	400	50/60	10,80	15,6
HR852-400	3	400	50/60	13,50	19,5
HR852-500	3	400	50/60	16,80	24,2
HR852-700	3	400	50/60	23,60	34,1
HR852-10K	3	400	50/60	33,60	48,5
HR852-14K	3	400	50/60	47,40	68,5

Characteristics of LPHW coil

Type	Rated input [kW]	Outlet air temperature [°C]	Water pressure loss [kPa]	Water flow [m³/h]	Air pressure loss [Pa]	Air flow [m³/h]	Connection diameter
**HR852-070	6,9	43,9	16,2	0,31	10,8	700	1/2
HR852-090	9,5	45,8	16,7	0,42	10,7	900	1/2
HR852-100	8,8	40,6	14,1	0,39	13,8	1000	1/2
HR852-120	10,8	41,3	12,5	0,48	17,1	1200	1/2
HR852-150	15,3	44,9	5,0	0,68	13,4	1500	3/4
HR852-160	15,8	43,9	5,3	0,70	14,9	1600	3/4
HR852-200	17,5	40,5	6,4	0,78	21,3	2000	3/4
HR852-250	23,0	41,9	12,3	1,02	19,9	2500	3/4
HR852-320	30,6	42,9	15,2	1,36	18,2	3200	3/4
HR852-400	35,9	41,2	21,2	1,90	22,4	4000	3/4
HR852-500	43,6	40,5	23,5	1,94	24,2	5000	3/4
HR852-700	61,0	40,5	24,3	2,71	23,3	7000	1
HR852-10K	82,2	39,0	23,4	3,65	26,9	10000	1
HR852-14K	123,9	40,9	50,4	5,50	23,5	14000	1

* For water temperature gradient 90/70 °C and inlet air temperature 15°C.

** External coil.

Correction coefficients LPHW coil

Correction coefficients of the powers of the hot water coil*						
Air inlet temperature [°C]	Water regime					
	90/70	85/65	80/60	75/55	70/50	65/45
0	1,23	1,15	1,06	0,97	0,89	0,80
5	1,16	1,07	0,98	0,89	0,81	0,72
10	1,08	0,99	0,90	0,82	0,73	0,64
15	1,00	0,91	0,83	0,74	0,65	0,56
20	0,92	0,83	0,75	0,66	0,57	0,48

* Coefficients to correct the power at different water temperature ranges from 90°C/70°C water temperature range and 15°C for the inlet air temperature.

Characteristics of C/O water coil for heating - external coil

Type	Rated input [kW]	Outlet air temperature [°C]	Water pressure loss [kPa]	Water flow [m³/h]	Air pressure loss [Pa]	Air flow [m³/h]	Connection diameter
HR852-070	8,32	44,4	2,2	0,31	29,6	700	3/4"
HR852-090	9,87	47,0	1,5	0,43	23,5	900	3/4"
HR852-100	9,91	44,0	1,8	0,43	41,3	1000	3/4"
HR852-120	12,26	44,9	2,2	0,54	37,2	1200	3/4"
HR852-150	16,30	46,8	2,4	0,71	34,7	1500	3/4"
HR852-160	17,11	46,3	2,6	0,75	38,5	1600	3/4"
HR852-200	20,17	44,5	3,5	0,88	55,1	2000	3/4"
HR852-250	24,59	43,7	3,7	1,08	56,8	2500	3/4"
HR852-320	32,09	44,3	4,6	1,40	60,4	3200	1"
HR852-400	39,72	44,0	5,8	1,74	63,7	4000	1"
HR852-500	49,97	44,2	7,0	2,19	74,5	5000	1"
HR852-700	71,23	44,7	5,4	3,12	71,5	7000	1 1/4"
HR852-10K	99,09	44,0	4,8	4,34	78,7	10000	1 1/2"
HR852-14K	139,91	44,2	3,9	6,12	85,7	14000	2"

* For water temperature gradient 60/40 °C and inlet air temperature 15°C.

Characteristics of C/O water coil for cooling - external coil

Type	Rated input [kW]	Outlet air temperature [°C]	Water pressure loss [kPa]	Water flow [m³/h]	Air pressure loss [Pa]	Air flow [m³/h]	Connection diameter
HR852-070	5,29	13,4	19,2	0,91	40,1	700	3/4"
HR852-090	7,47	12,4	13,2	1,28	33,5	900	3/4"
HR852-100	7,26	13,7	14,9	1,25	58,4	1000	3/4"
HR852-120	9,08	13,3	18,9	1,56	52,8	1200	3/4"
HR852-150	12,13	12,6	20,4	2,08	52,0	1500	3/4"
HR852-160	12,68	12,8	22,1	2,18	57,6	1600	3/4"
HR852-200	14,68	13,6	29,1	2,52	82,0	2000	3/4"
HR852-250	17,69	13,9	29,7	3,07	84,3	2500	3/4"
HR852-320	23,38	13,6	38,7	4,01	89,9	3200	1"
HR852-400	39,96	15,7	48,1	4,95	94,7	4000	1"
HR852-500	35,68	13,8	55,8	6,12	116,7	5000	1"
HR852-700	51,28	13,6	44,0	8,80	112,3	7000	1 1/4"
HR852-10K	70,62	13,9	38,1	12,12	123,1	10000	1 1/2"
HR852-14K	100,49	13,8	31,3	17,24	134,4	14000	2"

* For water temperature gradient 7/12 and inlet air temperature 25°C with 70% of relative humidity.

Correction coefficients of the powers of the hot water coil (C/O)*				
Air inlet temperature [°C]	Water regime			
	60/40	55/50	45/40	35/30
0	1,44	1,53	1,24	0,94
5	1,30	1,39	1,09	0,80
10	1,15	1,25	0,95	0,65
15	1,00	1,11	0,81	0,51
20	0,85	0,96	0,66	0,36

* To apply to the rated power in the characteristics of the water coil.

Correction coefficients of the powers of the cool water coil (C/O)*			
Air inlet temperature [°C]	Water regime		
	7/12	6/11	5/10
25	1,00	1,11	1,23
24	0,89	0,99	1,10
28	1,37	1,53	1,59
32	1,93	2,06	2,18

* To apply to the rated power in the characteristics of the water coil.

Characteristics of direct evaporator (DX)

Type	Rated input [kW]	Outlet air temperature [°C]	RH after coil [%]	Refrigerant pressure loss [kPa]	Air pressure loss [Pa]	Air flow [m³/h]	Connection diameter of liquid coil	Connection diameter of gas coil
HR852-070	4,2	14,1	83,5	33,9	20	700	3/8"	1/2"
HR852-090	6,0	13,1	85,8	28,3	14	900	1/2"	5/8"
HR852-100	5,5	15,0	81,9	60,4	25	1000	1/2"	5/8"
HR852-120	7,0	14,5	82,6	37,8	22	1200	1/2"	5/8"
HR852-150	8,8	14,5	82,3	31,8	19	1500	5/8"	3/4"
HR852-160	9,1	14,8	81,6	33,9	21	1600	5/8"	3/4"
HR852-200	10,2	15,9	79,1	41,2	30	2000	5/8"	3/4"
HR852-250	13,2	15,5	80,4	45,2	31	2500	5/8"	7/8"
HR852-320	18,5	14,5	83,5	36,1	49	3200	3/4"	7/8"
HR852-400	21,1	15,4	81,1	48,7	51	4000	3/4"	7/8"
HR852-500	27,3	15,1	82,0	37,6	56	5000	7/8"	1 1/8"
HR852-700	37,0	15,3	81,8	59,4	53	7000	2x 3/4"	2x 7/8"
HR852-10K	52,8	15,3	81,5	48,9	59	10000	3x 16,00 mm	3x 22,00 mm
HR852-14K	74,7	15,3	81,7	39,5	64	14000	3x 22,00 mm	3x 22,00 mm

* For inlet air temperature 25°C with 70% of relative humidity and evaporation temperature 5°C, refrigerant R32.

** External coil.

Weight of units

Type	without heater [kg]	with electric heater [kg]	with water coil [kg]
HR852-070 U	135	137	-
HR852-070 V	127	129	-
HR852-090 U	197	200	202
HR852-100 V	188	191	193
HR852-120 U	198	201	203
HR852-150 V	231	235	238
HR852-160 U	243	247	250
HR852-200 U	257	262	264
HR852-200 V	245	250	252
HR852-250 U	304	308	311
HR852-250 V	290	296	297
HR852-320 U	368	376	378
HR852-320 V	348	355	358
HR852-400 U	435	443	445
HR852-400 V	414	422	424
HR852-500 U	481	489	493
HR852-500 V	449	457	461
HR852-700 V	600	610	616
HR852-10K V	830	846	861
HR852-14K V	1155	1175	1210

Recommended K_{vs} for different temperature gradients

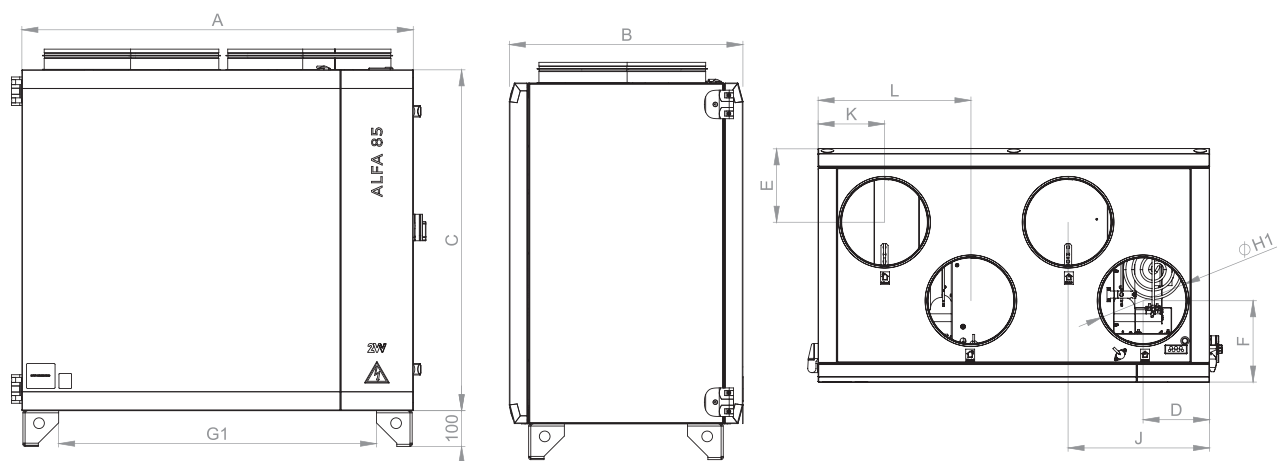
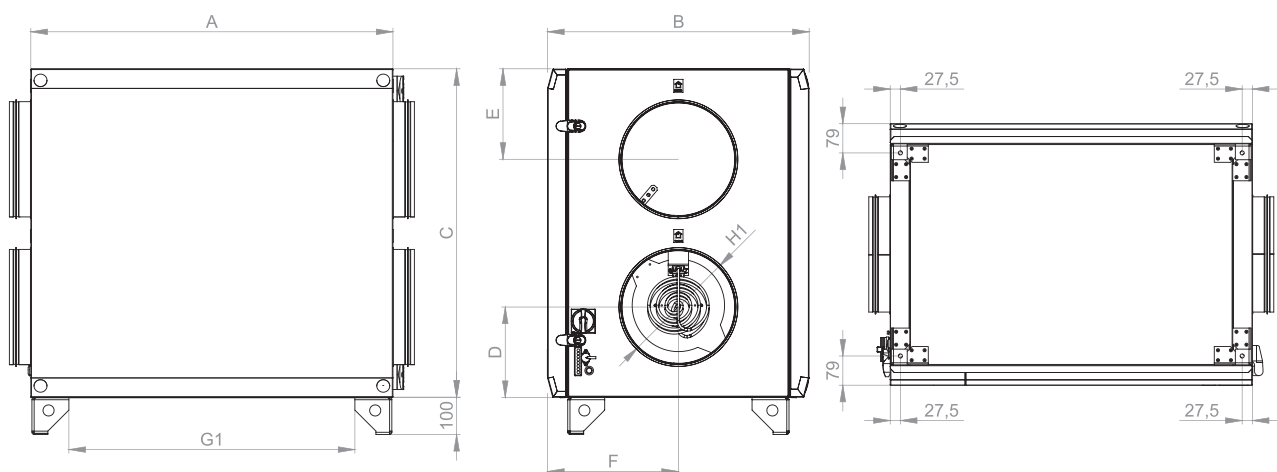
Water heating coil

Type	Inlet/outlet temperature of water [°C]"	K_{vs} [flow / kPa]	Water flow [m³/h]	Recommended pump head [m]
HR852-070	90/70	1,00	0,31	3,9
	80/60	1,00	0,25	2,7
	70/50	0,63	0,20	2,4
	60/40	0,63	0,15	1,4
HR852-090	90/70	1,60	0,42	2,8
	80/60	1,00	0,34	2,7
	70/50	1,00	0,27	1,7
	60/40	0,63	0,19	1,4
HR852-100	90/70	1,60	0,39	2,4
	80/60	1,00	0,32	2,3
	70/50	1,00	0,25	1,4
	60/40	0,63	0,18	1,3
HR852-120	90/70	1,60	0,47	3,6
	80/60	1,60	0,39	2,5
	70/50	1,00	0,30	2,1
	60/40	0,63	0,22	1,9
HR852-150	90/70	2,50	0,68	1,5
	80/60	1,60	0,55	1,7
	70/50	1,60	0,43	1,1
	60/40	1,00	0,30	1,1
HR852-160	90/70	2,50	0,70	1,6
	80/60	2,50	0,57	1,1
	70/50	1,60	0,44	1,1
	60/40	1,00	0,31	1,2
HR852-200	90/70	2,50	0,77	1,9
	80/60	2,50	0,63	1,3
	70/50	1,60	0,48	1,3
	60/40	1,00	0,34	1,4
HR852-250	90/70	4,00	1,02	2,0
	80/60	2,50	0,83	2,1
	70/50	2,50	0,65	1,3
	60/40	1,60	0,47	1,2
HR852-320	90/70	4,00	1,35	2,9
	80/60	4,00	1,11	2,0
	70/50	2,50	0,87	2,0
	60/40	2,50	0,63	1,1
HR852-400	90/70	6,30	1,59	2,7
	80/60	4,00	1,31	2,6
	70/50	4,00	1,03	1,6
	60/40	2,50	0,75	1,5
HE852-500	90/70	6,30	1,93	3,3
	80/60	6,30	1,59	2,3
	70/50	4,00	1,24	2,0
	60/40	4,00	0,90	1,1
HR852-700	90/70	12,0	2,70	2,0
	80/60	6,30	2,21	2,3
	70/50	6,30	1,73	1,4
	60/40	4,00	1,24	1,3
HR852-10K	90/70	12,0	3,64	2,2
	80/60	12,0	2,98	1,5
	70/50	6,30	2,31	1,9
	60/40	6,30	1,65	1,0
HR852-14K	90/70	24,0	5,49	2,7
	80/60	12,0	4,52	3,0
	70/50	12,0	3,55	1,9
	60/40	6,30	2,59	2,3

Recommended K_{vs} for different temperature gradients

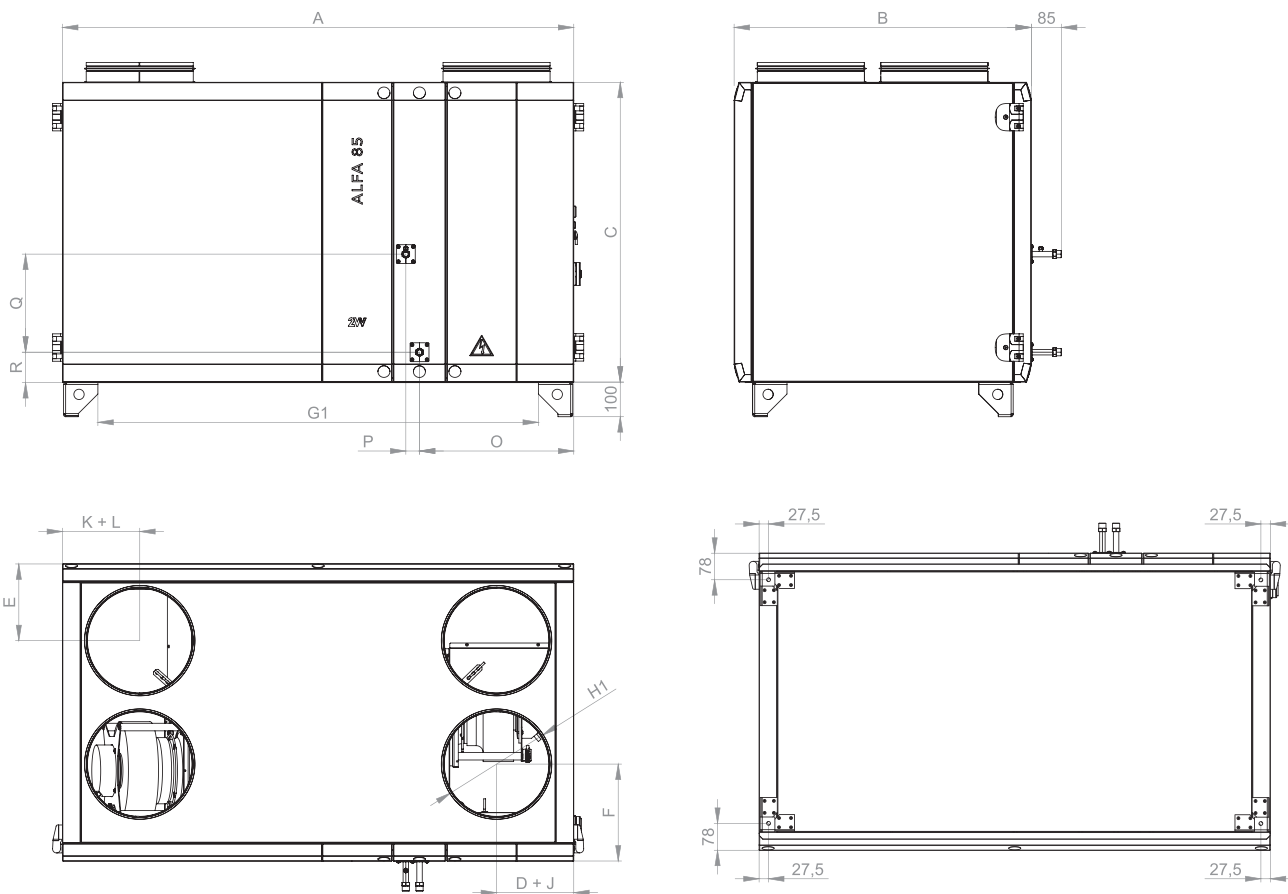
C/O water coil for heating / cooling

Type	"heating - inlet/outlet temperature of water [°C]"	K_{vs} [flow / kPa]	"cooling - inlet/outlet temperature of water" [°C]		
			7/12	6/11	5/10
			Recommended pump head [m]		
HR852-070	60/40	1,0	4,2	5,00	6,03
	55/50	2,5	7,0	6,98	6,98
	45/40	2,5	3,9	3,87	3,87
	35/30	2,5	1,7	1,80	1,99
HR852-090	60/40	2,5	1,6	1,95	2,42
	55/50	4,0	6,2	6,19	6,19
	45/40	4,0	3,4	3,40	3,40
	35/30	4,0	1,4	1,61	1,84
HR852-100	60/40	2,5	1,6	1,91	2,33
	55/50	4,0	7,1	7,10	7,10
	45/40	4,0	3,9	3,88	3,88
	35/30	4,0	1,6	1,71	1,91
HR852-120	60/40	2,5	2,5	3,04	3,46
	55/50	4,0	9,8	9,81	9,81
	45/40	4,0	5,3	5,34	5,34
	35/30	4,0	2,2	2,48	2,69
HR852-150	60/40	2,5	3,5	4,32	5,26
	55/50	6,3	5,9	5,92	5,92
	45/40	6,3	3,3	3,26	3,26
	35/30	6,3	1,4	1,52	1,70
HR852-160	60/40	2,5	3,8	4,71	5,76
	55/50	6,3	6,6	6,57	6,57
	45/40	6,3	3,6	3,61	3,61
	35/30	6,3	1,5	1,66	1,86
HR852-200	60/40	4,0	2,4	2,89	3,48
	55/50	6,3	9,4	9,37	9,37
	45/40	6,3	5,1	5,11	5,11
	35/30	6,3	2,1	2,30	2,58
HR852-250	60/40	4,0	3,2	3,93	4,81
	55/50	12,0	7,8	7,80	7,80
	45/40	6,3	6,4	6,43	6,43
	35/30	6,3	2,6	2,75	3,16
HR852-320	60/40	6,3	2,4	2,89	3,49
	55/50	12,0	8,5	8,49	8,49
	45/40	12,0	4,7	4,68	4,68
	35/30	12,0	1,9	2,09	2,30
HR852-400	60/40	6,3	3,6	4,31	5,21
	55/50	12,0	11,2	11,15	11,15
	45/40	12,0	6,1	6,09	6,09
	35/30	12,0	2,5	2,72	3,03
HE852-500	60/40	6,3	5,2	6,38	7,80
	55/50	24,0	9,8	9,83	9,83
	45/40	24,0	5,3	5,33	5,33
	35/30	12,0	3,1	3,40	3,89
HR852-700	60/40	12,0	3,3	3,95	4,78
	55/50	24,0	11,4	11,36	11,36
	45/40	24,0	6,2	6,17	6,17
	35/30	24,0	2,5	2,67	2,97
HR852-10K	60/40	12,0	5,5	6,77	8,29
	55/50	40,0	10,0	10,03	10,03
	45/40	24,0	7,6	7,59	7,59
	35/30	24,0	3,0	3,26	3,73
HR852-14K	60/40	24,0	2,8	3,41	4,12
	55/50	40,0	10,2	10,23	10,23
	45/40	40,0	5,6	5,60	5,60
	35/30	40,0	2,3	2,46	2,74

Technical specifications:**ALFA 85 070 U - compact monoblock****- Right version with duct system connection from the top****ALFA 85 070 V - compact monoblock****- Right version with duct system connection from the side**

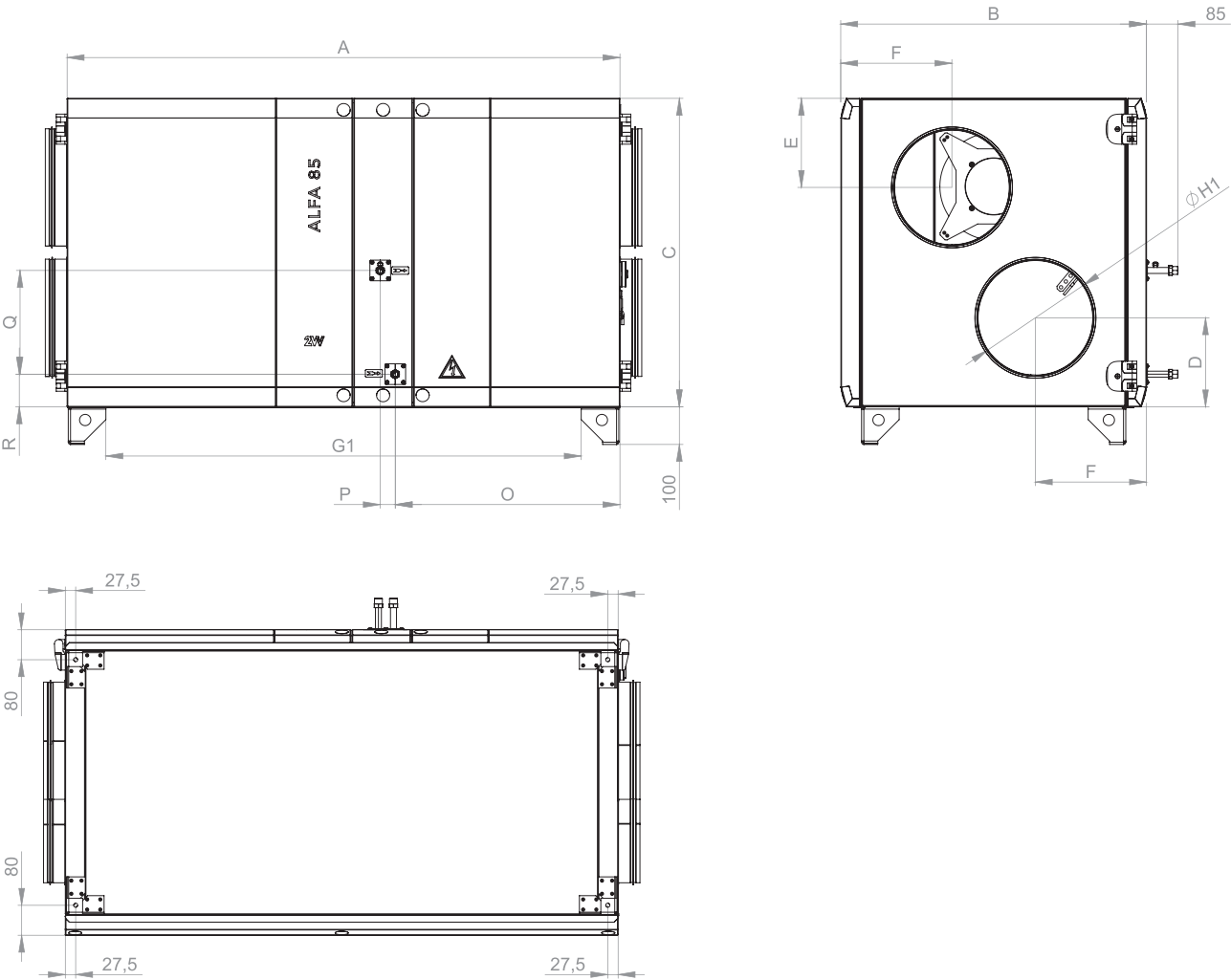
Type	Dimensions										
	A	B	C	D	E	F	G1	H1	J	K	L
HR852-070 U	1095	655	955	186	205	225	890	250	395	185	430
HR852-070 V	980	708	890	245	245	355	775	315			

ALFA 85 090 - 250 U - compact monoblock
- Right version with duct system connection from the top



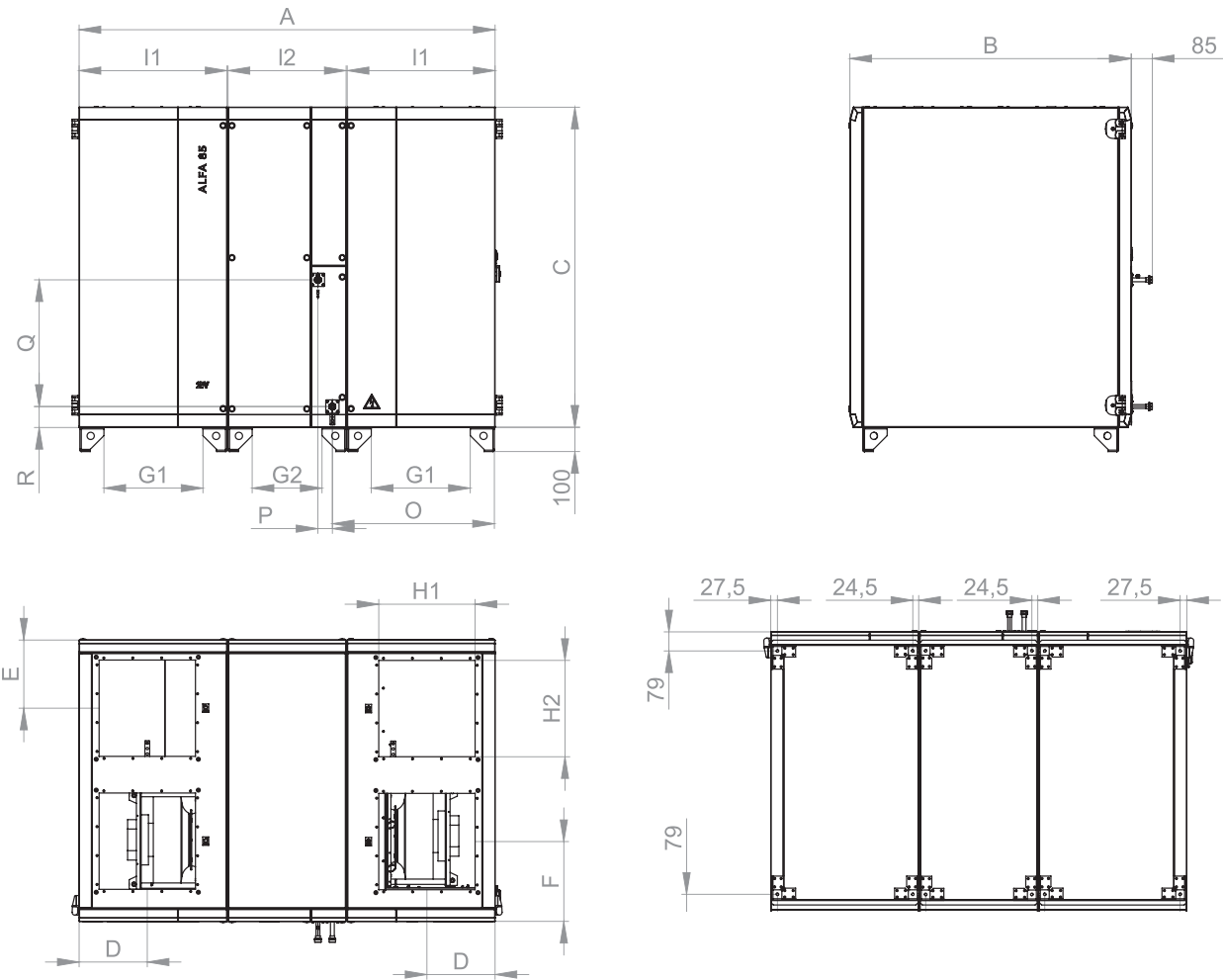
Type	Dimensions														
	A	B	C	D	E	F	G1	H1	J	K	L	O	P	Q	R
HR852-090 U	1490	867	874	225	225	283	1284	315	225	225	225	450	40	87	286
HR852-120 U	1490	867	874	225	225	283	1284	315	225	225	225	450	40	87	286
HR852-160 U	1550	957	1085	255	238	285	1341	355	255	255	255	478	50	87	390
HR852-200 U	1550	957	1085	255	238	250	1341	355	255	255	255	478	50	87	390
HR852-250 U	1672	986	1225	250	254	302	1464	355	250	250	250	496	50	87	454

ALFA 85 100 - 250 V - compact monoblock
- Right version with duct system connection from the side

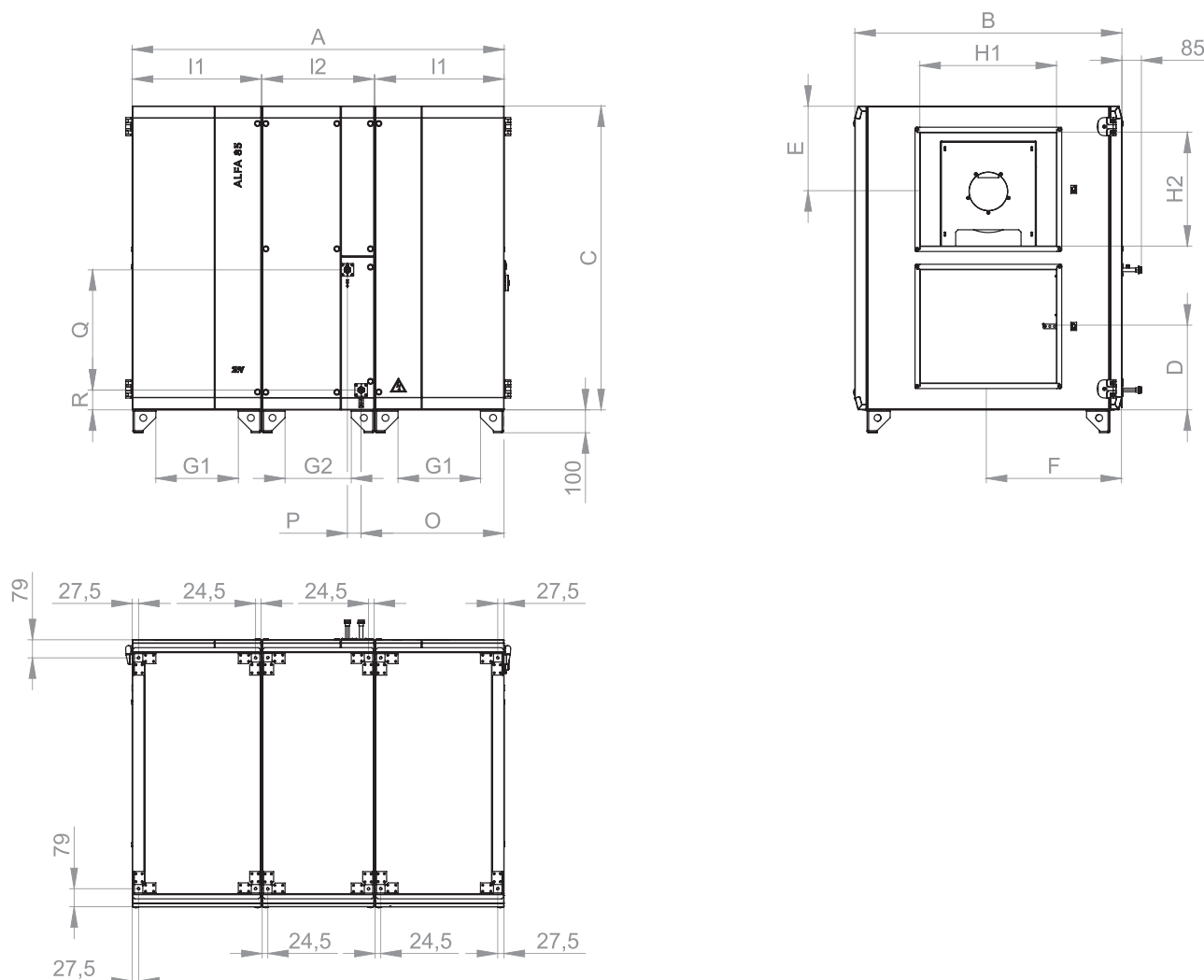


Type	Dimensions											
	A	B	C	D	E	F	G1	H1	O	P	Q	R
HR852-100 V	1470	813	824	239	239	294	1264	315	600	40	87	276
HR852-150 V	1500	958	1085	298	298	480	1294	400	618	50	87	390
HR852-200 V	1500	958	1085	298	298	480	1294	400	618	50	87	390
HR852-250 V	1645	988	1232	340	340	492	1439	400	652	50	87	454

ALFA 85 320 - 500 U - modular design
- Right version with duct system connection from the top

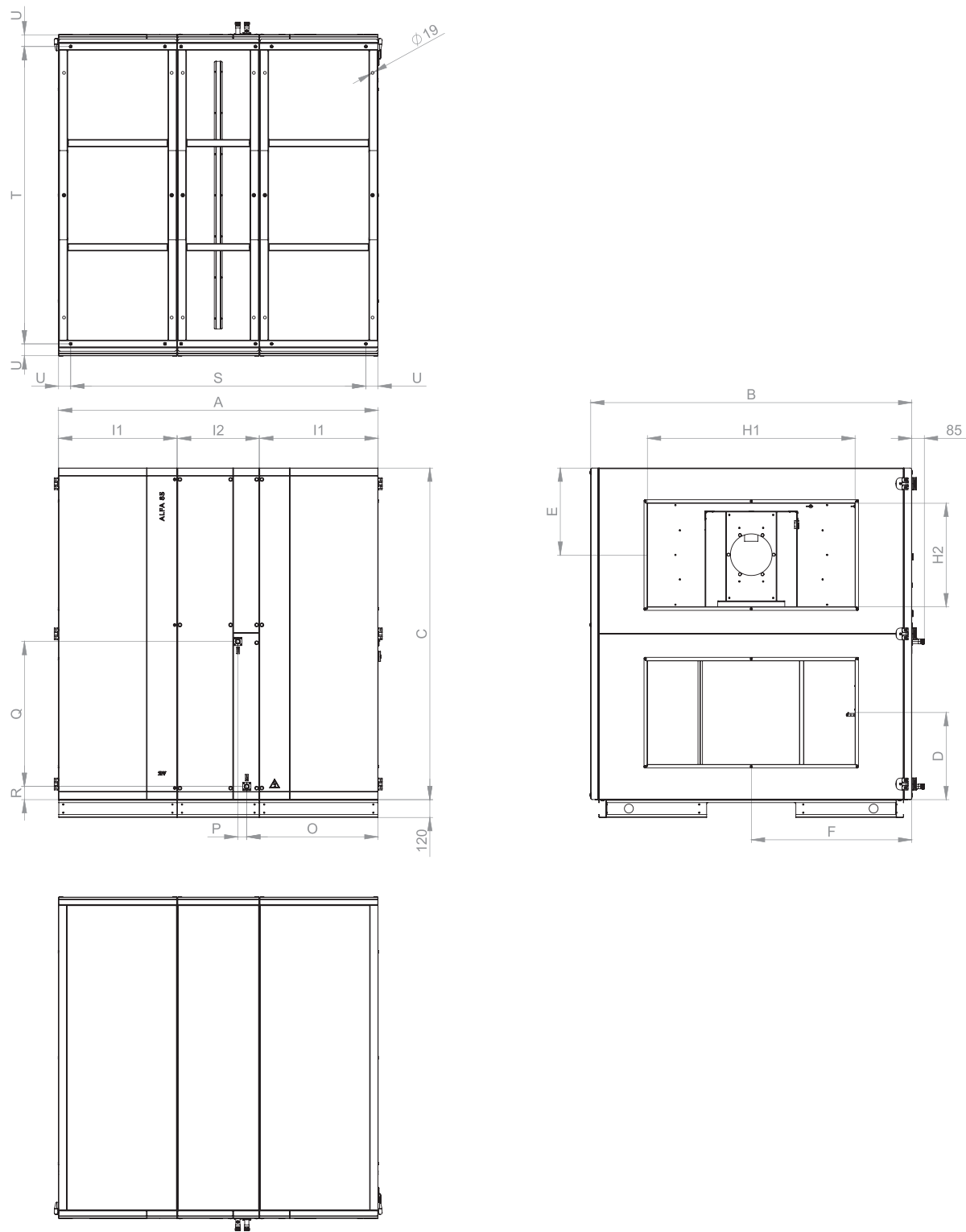


Type	Dimensions															
	A	B	C	D	E	F	G1	G2	H1	H2	I1	I2	O	P	Q	R
HR852-320 U	1720	1170	1330	283	283	330	411	290	400	400	614	490	676	60	87	526
HR852-400 U	1825	1258	1380	283	318	356	445	316	400	400	650	520	735	60	87	552
HR852-500 U	1935	1358	1430	283	333	383	500	316	400	500	705	520	790	60	87	576

ALFA 85 320 - 700 V - modular design**- Right version with duct system connection from the side**

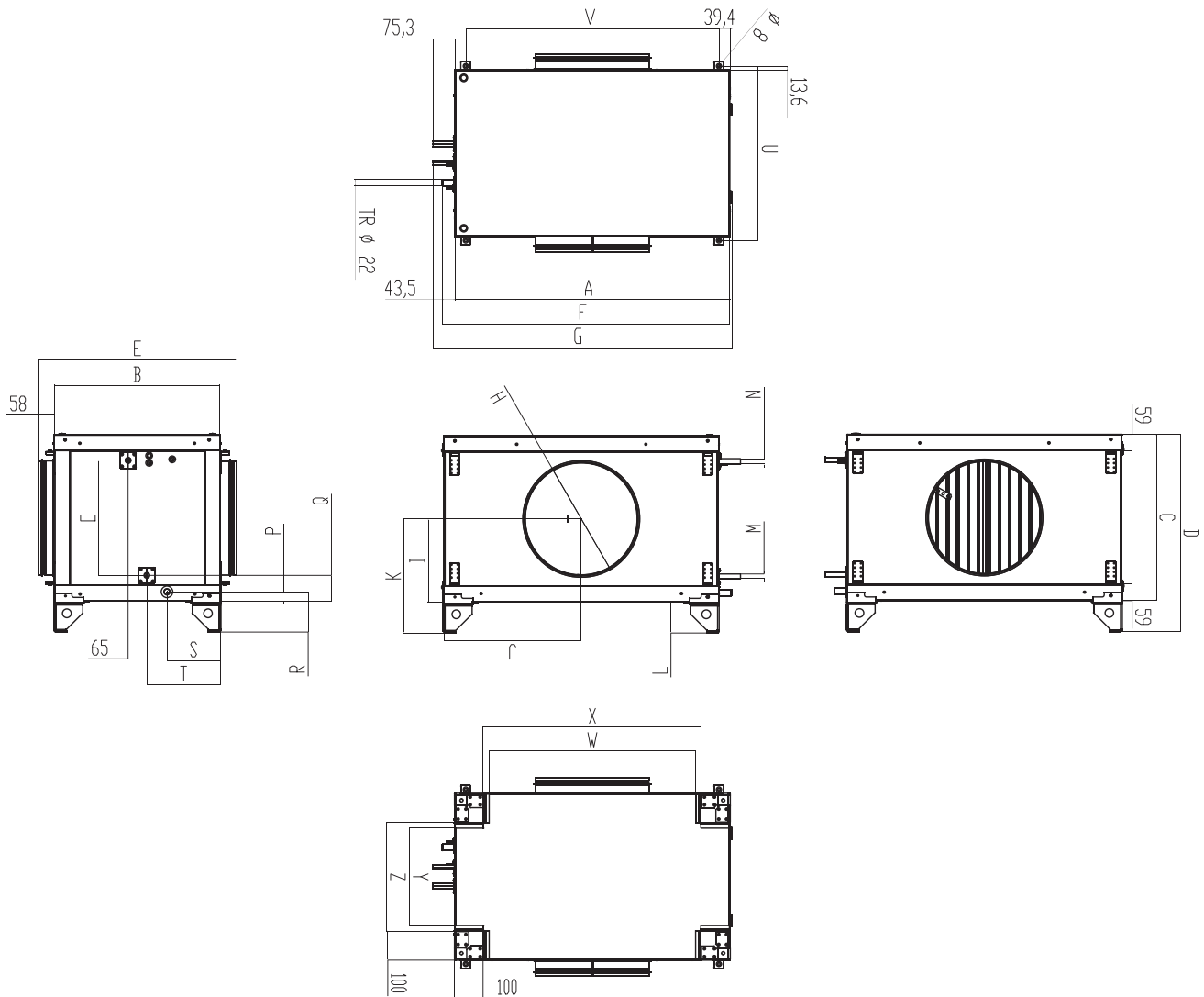
Type	Dimensions															
	A	B	C	D	E	F	G1	G2	H1	H2	I1	I2	O	P	Q	R
HR852-320 V	1625	1170	1330	370	365	585	361	290	600	500	564	490	626	60	87	526
HR852-400 V	1725	1258	1380	375	375	630	395	316	600	500	600	520	685	60	87	552
HR852-500 V	1835	1358	1430	390	390	680	450	316	800	500	655	520	740	60	87	576
HR852-700 V	1935	1608	1670	435	435	804	500	316	1200	600	705	520	790	60	87	696

ALFA 85 10K - 14K V - modular design
- Right version with duct system connection from the side



Type	Dimensions																
	A	B	C	D	E	F	H1	H2	I1	I2	O	P	Q	R	S	T	U
HR852-10K V	2000	1810	1880	500	500	905	1400	700	735	520	822	60	800	87	1837	1651	80
HR852-14K V	2150	2160	2230	585	585	1080	1400	700	795	550	882	60	975	87	1985	2000	80

ALFA 85 070 - 250 external modules



Type	Dimensions																							
	A	B	C	D	E	F	G	H	I	J	K	L	O	P	Q	R	S	T	U	V	W	X	Y	Z
HR852-070 U/V	710	578	458	575	692	753,5	797	315	236,5	354	346	117	276	32,5	91	150	185	255,5	608	634	482	513	351	382
HR852-100	813	578	458	565	692	857,5	890	315	517,5	230	337	107,5	276	32,5	91	140	185	255,5	608	739	576	618	340	382
HR852-090/120	868	578	508	615	692	882,5	945	315	542,5	434	362	107,5	326	32,5	91	140	185	255,5	608	789	626	668	390	432
HR852-150/160/200	958	578	580	687,6	692	1002	1033	400	296	478	397,6	107,5	400,5	32,5	89,5	140	185	255,5	608	882	720	761	340	382
HR852-250	988	578	654,5	762,1	692	1032	1063	400	333,3	493	397,6	107,5	476	32,5	89,5	140	185	255,5	608	912	750	791	340	382

ALFA 85 070	M	N
water heater	G 1/2"	G 1/2"
heater/cooler (C/O)	G 3/4"	G 3/4"
direct evaporator (DX)	3/8"	1/2"

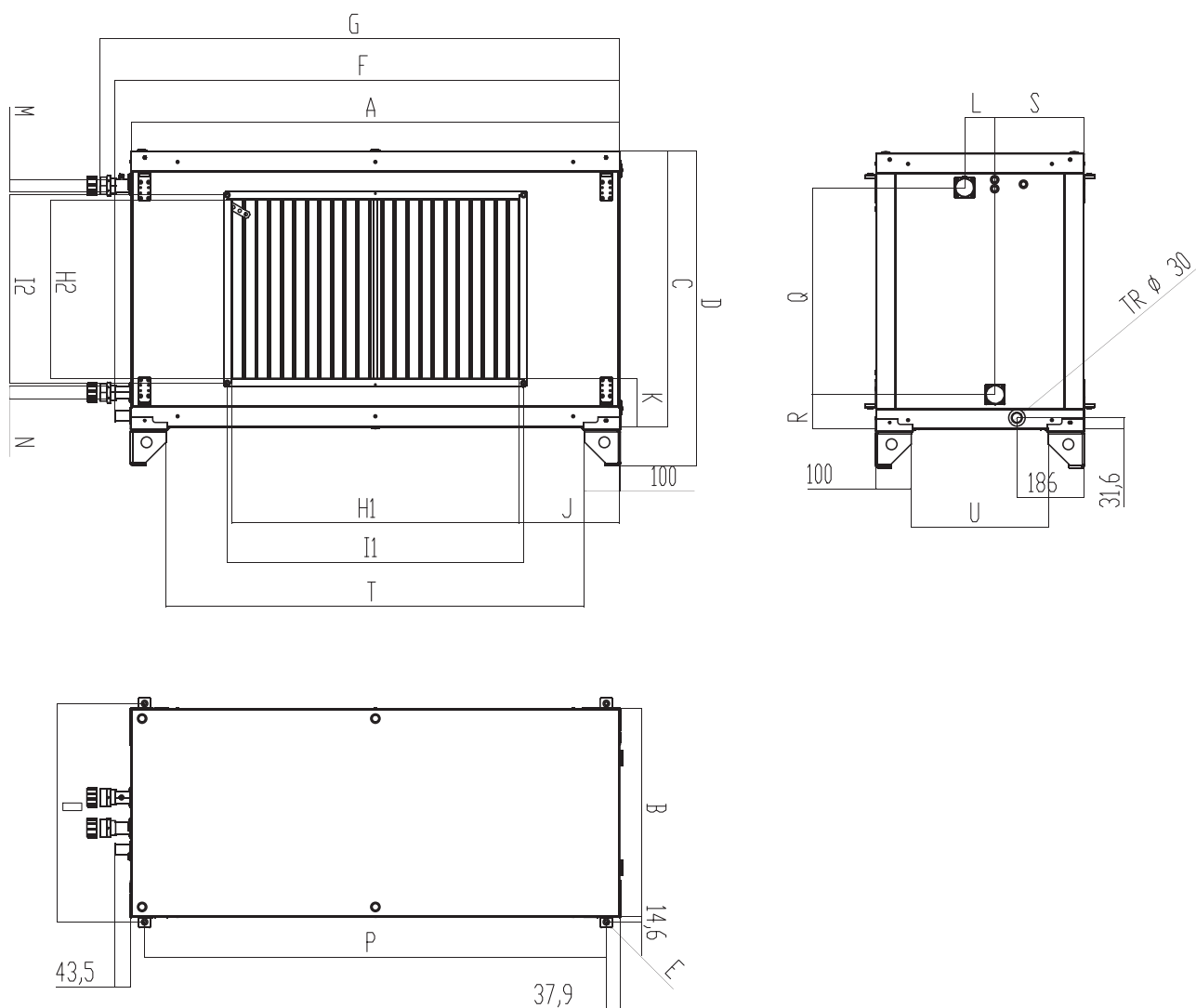
ALFA 85 100	M	N
heater/cooler (C/O)	G 3/4"	G 3/4"
direct evaporator (DX)	1/2"	5/8"

ALFA 85 090/120	M	N
heater/cooler (C/O)	G 3/4"	G 3/4"
direct evaporator (DX)	1/2"	5/8"

ALFA 85 150/160/200	M	N
heater/cooler (C/O)	G 1"	G 1"
direct evaporator (DX)	5/8"	3/4"

ALFA 85 250	M	N
heater/cooler (C/O)	G 1"	G 1"
direct evaporator (DX)	5/8"	7/8"

ALFA 85 320 - 500 external modules



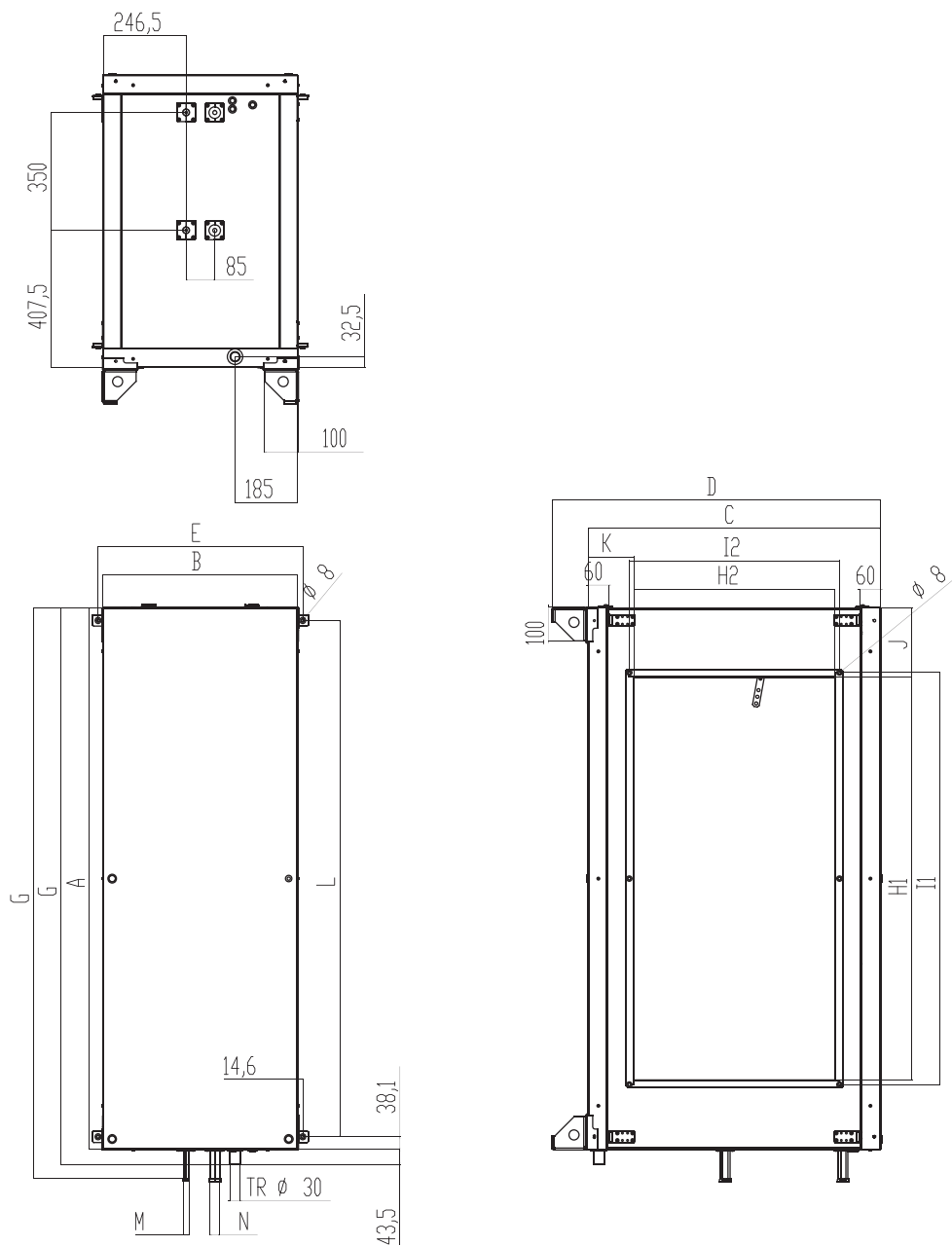
Type	Dimensions																				
	A	B	C	D	E	F	G	H1	H2	I1	I2	J	K	L	O	P	Q	R	S	T	U
HR852-320 U / V	1166	578	696	803,5	Ø8	1210,5	1255	600	500	624	524	285	100	65	608	1092	476	110,5	255,5	971	382
HR852-400 U / V	1258	578	718	825,5	Ø8	1302,5	1345	600	500	624	524	330	111	65	608	1184	526	96,0	255,5	1063	382
HR852-500 U / V	1358	578	768	875,5	Ø8	1402,5	1445	800	500	824	524	280	136	85	608	1284	576	96,0	246,5	1163	382

ALFA 85 320	M	N
heater/cooler (C/O)	G 1"	G 1"
direct evaporator (DX)	3/4"	7/8"

ALFA 85 500	M	N
heater/cooler (C/O)	G 1 1/2"	G 1 1/2"
direct evaporator (DX)	7/8"	1 1/8"

ALFA 85 400	M	N
heater/cooler (C/O)	G 1"	G 1"
direct evaporator (DX)	3/4"	7/8"

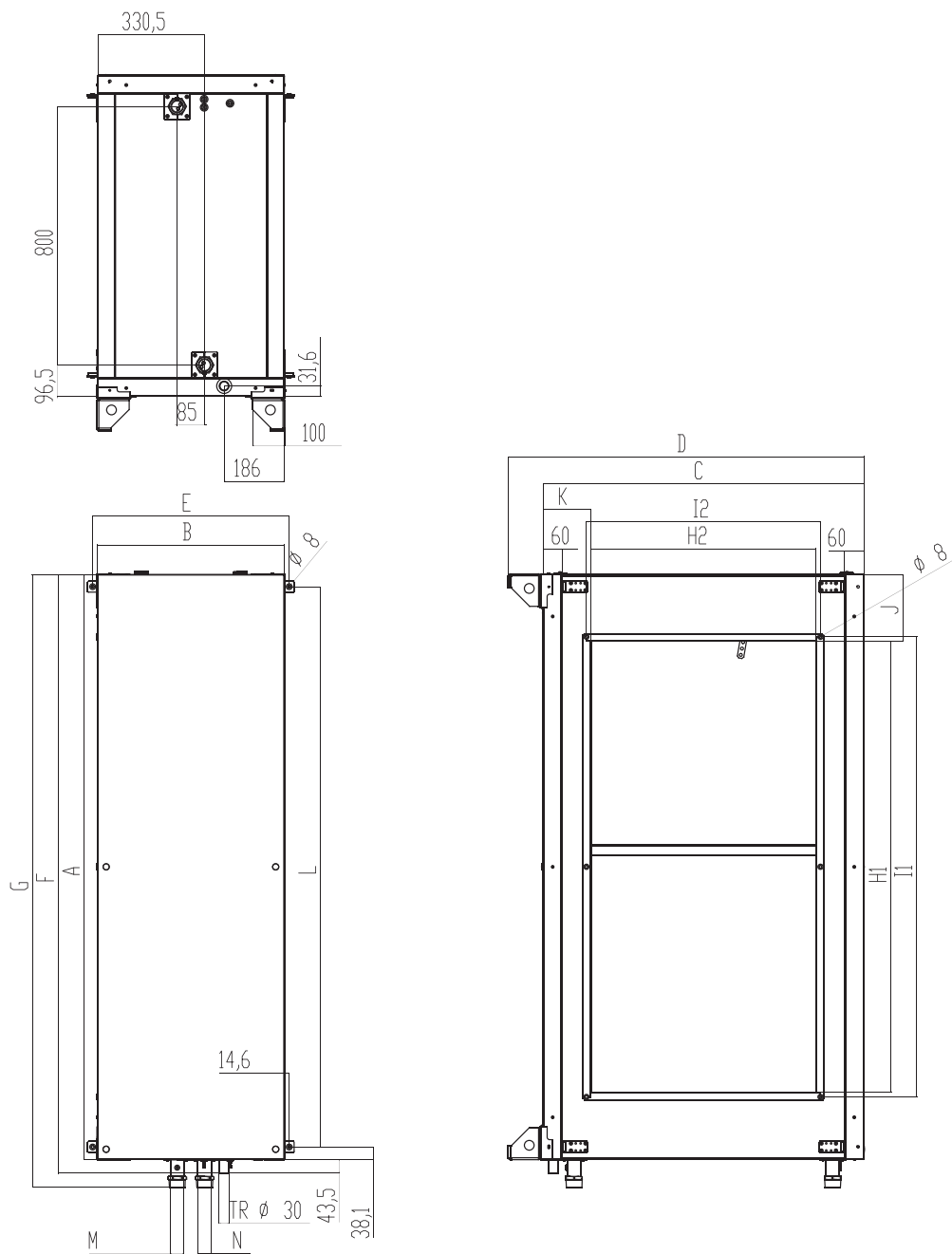
ALFA 85 700 external modules



Type	Dimensions													
	A	B	C	D	E	F	G	H1	H2	I1	I2	J	K	L
HR852-700	1610	578	868	975,5	608	1653,5	1700	1200	600	1224	624	206	136	1534

ALFA 85 700	M	N
heater/cooler (C/O)	G 1 1/2"	G 1 1/2"
direct evaporator (DX)	2 x 3/4"	2 x 7/8"

ALFA 85 10K external modules



Type	Dimensions													
	A	B	C	D	E	F	G	H1	H2	I1	I2	J	K	L
HR852-10K	1810	578	993	1114	608	1853,5	1896	1400	700	1424	724	206	148	1734

ALFA 85 10K	M	N
heater/cooler (C/O)	G 1 1/2"	G 1 1/2"
direct evaporator (DX)	22	16

Technical drawing of the THERMO 1000 cabinet, showing front and top views with dimensions in millimeters.

Front View Dimensions:

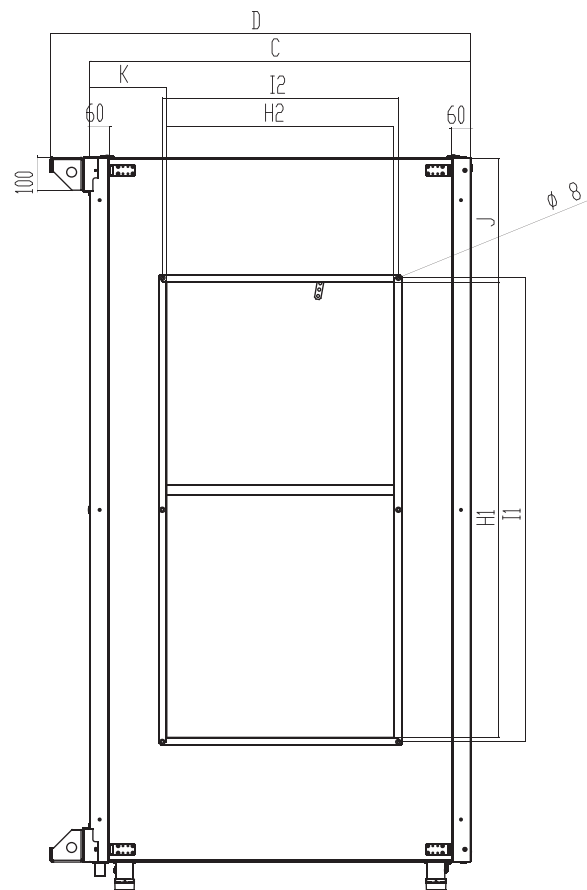
- Overall width: 1065
- Overall height: 1850
- Top panel width: 245,5
- Top panel height: 31,6
- Bottom panel width: 185
- Bottom panel height: 100
- Internal width: 85
- Internal height: 14,6

Top View Dimensions:

- Overall width: 1065
- Overall height: 1850
- Top panel width: 245,5
- Top panel height: 31,6
- Bottom panel width: 185
- Bottom panel height: 100
- Internal width: 85
- Internal height: 14,6

Other Dimensions:

- Top panel depth: 106,5
- Bottom panel depth: 106,5
- Internal width: 85
- Internal height: 14,6
- Top panel width: 245,5
- Top panel height: 31,6
- Bottom panel width: 185
- Bottom panel height: 100
- Internal width: 85
- Internal height: 14,6



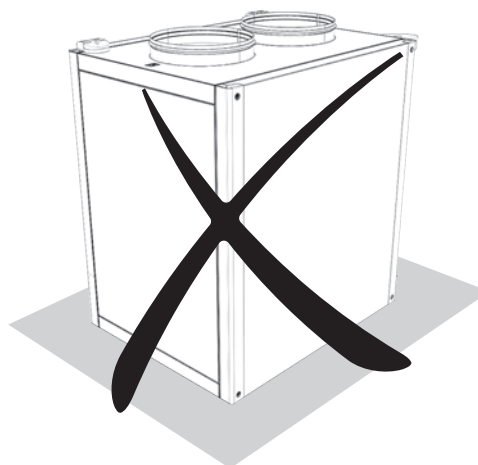
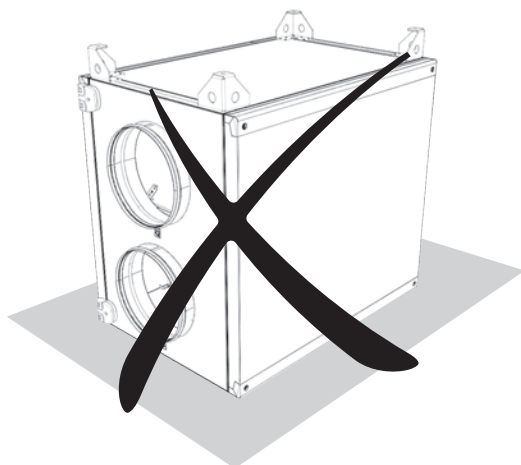
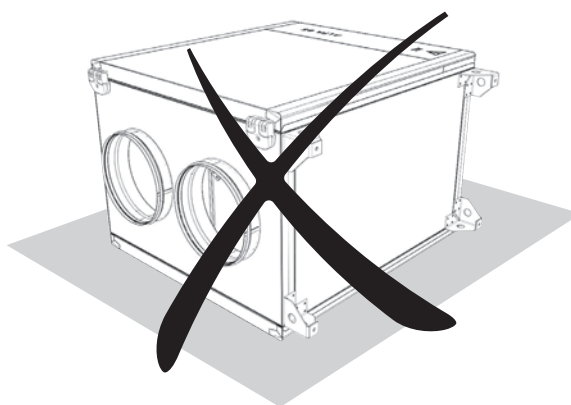
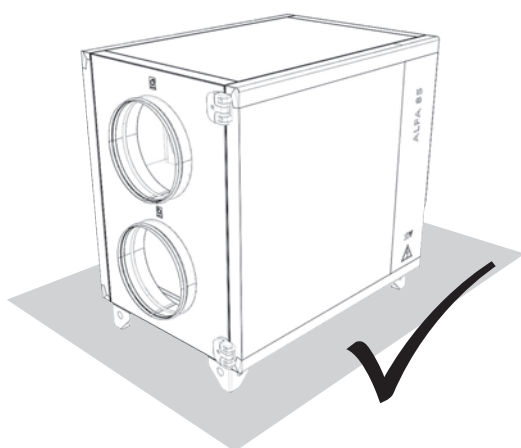
ALFA 85 14K	M	N
heater/cooler (C/O)	G 2"	G 2"
direct evaporator (DX)	22	22



INSTALLATION AND ASSEMBLY

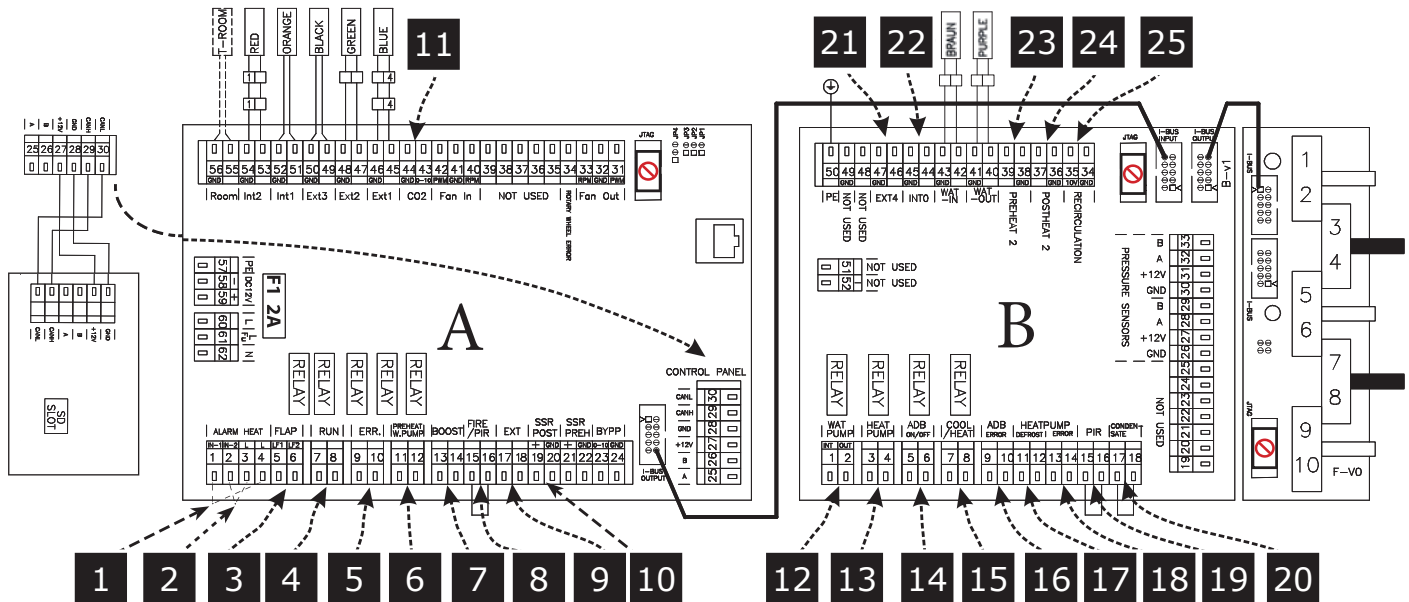
All vertical types of ventilation units must be installed according to the pictures (see below).

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





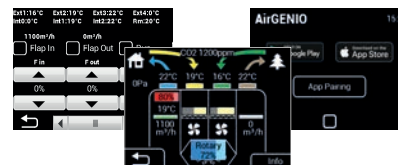
WIRING DIAGRAMS



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



CONTROL



AirGENIO SUPERIOR - Main control functions

- Touch-screen control panel for easy control and complete overview of device operational status (recommended connecting data cable to control panel is UTP cable and it should not exceed 50m length).
- Manual stepless fans control (PWM)
- CAV, VAV or DCV ventilation in automatic mode
- BOOST mode - intensive airflow for a pre-set time period
- Freecooling mode - night ventilation (cooling)
- Occupancy mode - reducing ventilation intensity according to the PIR sensor
- FIRE protection mode with settable logic
- Thermal wheel control (temperature control: freecooling, antifreeze protection)
- Integrated timer (day, week, year)
- Optional connection of sensors: CO₂, RH, VOC (0-10)
- Clogged filter indication by pressure sensors
- Stepless post-heating control
- Electric coil control (PWM) and LPHW coil control (0-10 V)
- Change-over control with automatic detection of the heating / cooling (0-10 V)
- Wide choice of different ways for DX coil control*
- Possible control of external pre-heater and post-heater
- Offset fan adjustment (over-pressure / underpressure)
- BMS control via Modbus RTU / TCP or BACnet
- Remote control via smart device

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

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

With reverse control cycle (heating - cooling mode)

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

2V AirGENIO Application:

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



2V Service software:

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





ACCESSORIES

Rain protection roofs

The rain protection roofs for outdoor installation of vertical units

Unit type	Rain-protected roofs
vertical	
HR852-070V	HR852-070V-ROOF-X-0A0
HR852-100V	HR852-100V-ROOF-X-0A0
HR852-150V	HR852-200V-ROOF-X-0A0
HR852-200V	HR852-200V-ROOF-X-0A0
HR852-250V	HR852-250V-ROOF-X-0A0
HR852-320V	HR852-320V-ROOF-X-0A0
HR852-400V	HR852-400V-ROOF-X-0A0
HR852-500V	HR852-500V-ROOF-X-0A0
HR852-700V	HR852-700V-ROOF-X-0A0
HR852-10KV	HR852-10KV-ROOF-X-0A0
HR852-14KV	HR852-14KV-ROOF-X-0A0

Electric heater

EOKO – The heater output is controlled by the ALFA852 unit control system via 0-10 V.



Recommended combinations:

Unit type	Type of electric Pre-heater
HR852-070U	EOKO2-250-XX-X-D
HR852-070V	EOKO2-315-XX-X-D
HR852-090U	EOKO2-315-XX-X-D
HR852-100V	EOKO2-315-XX-X-D
HR852-120U	EOKO2-315-XX-X-D
HR852-150V	EOKO2-400-XX-X-D
HR852-160M	EOKO2-355-XX-X-D
HR852-200V	EOKO2-400-XX-X-D
HR852-200U	EOKO2-355-XX-X-D

Unit type	Type of electric Pre-heater
HR852-320V	EOKO2-560-XX-X-D
HR852-320U	EOKO2-500-XX-X-D
HR852-400V	EOKO2-560-XX-X-D
HR852-400U	EOKO2-500-XX-X-D
HR852-500V	EOKO2-630-XX-X-D
HR852-500U	EOKO2-400-XX-X-D
HR852-700V	EOKO2-630-XX-X-D
HR852-10KV	EOKO2-630-XX-X-D
HR852-14KV	EOKO2-630-XX-X-D

Square/circular adapter

PR - Adapter from four sided to circular pipes made of galvanised metal sheet.



Unit type	Circular adapter
Vertical	
HR852-320V	PR-VO-0600X500-D560-L300
HR852-400V	PR-VO-0600X500-D560-L300
HR852-500V	PR-O-800X500-D5600-L400
HR852-700V	PR-O-1200X600-D630-L600
HR852-10K / 14K	PR-O-1400X700-D710-L700

Unit type	Circular adapter
Upper	
HR852-320U	PR-VO-0400X400-D500-L300
HR852-400U	PR-VO-0400X400-D500-L300
HR852-500U	PR-O-0500X400-D400-L300

Shutting Flap

KRTK-A



Recommended combinations

Unit type	Shutting Flap without servo drive	Shutting Flap with servo drive
HR852-070U	KRTK-A-250	KRTK-A-250-SB
HR852-070V	KRTK-A-315	KRTK-A-315-SB
HR852-090M		
HR852-100V		
HR852-120U		
HR852-150V	KRTK-A-400	KRTK-A-400-SB
HR852-160U	KRTK-A-355	KRTK-A-355-SB
HR852-200U		
HR852-200V	KRTK-A-400	KRTK-A-400-SB
HR852-250V		
HR852-250U	KRTK-A-355	KRTK-A-355-SB

Filtration inserts

FILTR-HR852 – replacement filtration inserts of various filtration classes.



Unit type	Pre-filter type – Coarse 65% (class G4 - standard)	Inlet filter type – ePM 1 60% (class F7 - standard)	Inlet filter type – ePM 1 80% (class F9 - optional)	Extract filter type – ePM 10 50% (class M5 - optional)
vertical				
HR852-070V	HR852-070V-FI-G4-0A0	HR852-070V-FI-F7-0A0	HR852-070V-FI-F9-0A0	HR852-070V-FI-M5-0A0
HR852-100V	HR852-100V-FI-G4-0A0	HR852-100V-FI-F7-0A0	HR852-100V-FI-F9-0A0	HR852-100V-FI-M5-0A0
HR852-150V	HR852-150V-FI-G4-0A0	HR852-150V-FI-F7-0A0	HR852-150V-FI-F9-0A0	HR852-150V-FI-M5-0A0
HR852-200V	HR852-200V-FI-G4-0A0	HR852-200V-FI-F7-0A0	HR852-200V-FI-F9-0A0	HR852-200V-FI-M5-0A0
HR852-250V	HR852-250V-FI-G4-0A0	HR852-250V-FI-F7-0A0	HR852-250V-FI-F9-0A0	HR852-250V-FI-M5-0A0
HR852-320V	HR852-320V-FI-G4-0A0	HR852-320V-FI-F7-0A0	HR852-320V-FI-F9-0A0	HR852-320V-FI-M5-0A0
HR852-400V	HR852-400V-FI-G4-0A0	HR852-400V-FI-F7-0A0	HR852-400V-FI-F9-0A0	HR852-400V-FI-M5-0A0
HR852-500V	HR852-500V-FI-G4-0A0	HR852-500V-FI-F7-0A0	HR852-500V-FI-F9-0A0	HR852-500V-FI-M5-0A0
HR852-700V	HR852-700V-FI-G4-0A0	HR852-700V-FI-F7-0A0	HR852-700V-FI-F9-0A0	HR852-700V-FI-M5-0A0
HR852-10KV	HR852-10KV-FI-G4-0A0	HR852-10KV-FI-F7-0A0	HR852-10KV-FI-F9-0A0	HR852-10KV-FI-M5-0A0
HR852-14KV	HR852-14KV-FI-G4-0A0	HR852-14KV-FI-F7-0A0	HR852-14KV-FI-F9-0A0	HR852-14KV-FI-M5-0A0

Unit type	Pre-filter type – Coarse 65% (class G4 - standard)	Inlet filter type – ePM 1 60% (class F7 - standard)	Inlet filter type – ePM 1 80% (class F9 - optional)	Extract filter type – ePM 10 50% (class M5 - optional)
upper				
HR852-070U	HR852-070U-FI-G4-0A0	HR852-070U-FI-F7-0A0	HR852-070U-FI-F9-0A0	HR852-070U-FI-M5-0A0
HR852-090U	HR852-090U-FI-G4-0A0	HR852-090U-FI-F7-0A0	HR852-090U-FI-F9-0A0	HR852-090U-FI-M5-0A0
HR852-120U	HR852-120U-FI-G4-0A0	HR852-120U-FI-F7-0A0	HR852-120U-FI-F9-0A0	HR852-120U-FI-M5-0A0
HR852-160U	HR852-160U-FI-G4-0A0	HR852-160U-FI-F7-0A0	HR852-160U-FI-F9-0A0	HR852-160U-FI-M5-0A0
HR852-200U	HR852-200U-FI-G4-0A0	HR852-200U-FI-F7-0A0	HR852-200U-FI-F9-0A0	HR852-200U-FI-M5-0A0
HR852-250U	HR852-250U-FI-G4-0A0	HR852-250U-FI-F7-0A0	HR852-250U-FI-F9-0A0	HR852-250U-FI-M5-0A0
HR852-320U	HR852-320U-FI-G4-0A0	HR852-320U-FI-F7-0A0	HR852-320U-FI-F9-0A0	HR852-320U-FI-M5-0A0
HR852-400U	HR852-400U-FI-G4-0A0	HR852-400U-FI-F7-0A0	HR852-400U-FI-F9-0A0	HR852-400U-FI-M5-0A0
HR852-500U	HR852-500U-FI-G4-0A0	HR852-500U-FI-F7-0A0	HR852-500U-FI-F9-0A0	HR852-500U-FI-M5-0A0

Four-sided closing flap without servo drive
MLKR/S

Unit type	Four-sided closing flap without servo drive	Recommended servo drive
HR852-300V	MLKR/S-600X505	SERVO-LM230-05
HR852-400V		
HR852-320U	MLKR/S-400X405	
HR852-400U		
HR852-500V	MLKR/S-800x500	
HR852-500U	MLKR/S-500X400	
HR852-700V	MLKR/S-1200x605	
HR852-10KV	MLKR/S-1405x710	
HR852-14KV		

Mixing valve

the **SMU** mixing unit is designed for controlling the heat-output of water-type heat exchangers. It is used especially for controlling standalone water-type air heaters, heaters inbuilt into the ventilation units.

Recommended values for individual types of the **ALFA 85** units:

**SMU2-024-06,3-SC**

- SC** – with short circuit
- WO** – without short circuit
- 00,6** – mixing valve – k_{VS} 0,6
- 01,0** – mixing valve – k_{VS} 1,0
- 01,6** – mixing valve – k_{VS} 1,6
- 02,5** – mixing valve – k_{VS} 2,5
- 04,0** – mixing valve – k_{VS} 4,0
- 06,3** – mixing valve – k_{VS} 6,3
- 12,0** – mixing valve – k_{VS} 12,0
- 24,0** – mixing valve – k_{VS} 24,0
- 40,0** – mixing valve – k_{VS} 40,0
- 024** – 24V stepless control
- SMU2** – mixing unit

Mixing chamber

Mixing chamber module for heat recovery units ALFA 852

Type	Phase [pcs]	Voltage [V]	Frequency [Hz]	Protection IP	Weight [kg]
HR852-070V-MOMC-X-0A0	1	230	50-60	43	102
HR852-100V-MOMC-X-0A0	1	230	50-60	43	108
HR852-200V-MOMC-X-0A0	1	230	50-60	43	132
HR852-250V-MOMC-X-0A0	1	230	50-60	43	127
HR852-320V-MOMC-X-0A0	1	230	50-60	43	154
HR852-400V-MOMC-X-0A0	1	230	50-60	43	156
HR852-500V-MOMC-X-0A0	1	230	50-60	43	172
HR852-700V-MOMC-X-0A0	1	230	50-60	43	210
HR852-10KV-MOMC-X-0A0	1	230	50-60	43	235
HR852-14KV-MOMC-X-0A0	1	230	50-60	43	250

Roof for a mixing chamber

Rain protection roof for a mixing chamber of ALFA 852

Mixing chamber type	Roof type
HR852-070V-MOMC-X-0A0	HR852-070V-MCRF-X-0A0
HR852-100V-MOMC-X-0A0	HR852-100V-MCRF-X-0A0
HR852-200V-MOMC-X-0A0	HR852-250V-MCRF-X-0A0
HR852-250V-MOMC-X-0A0	HR852-250V-MCRF-X-0A0
HR852-320V-MOMC-X-0A0	HR852-400V-MCRF-X-0A0
HR852-400V-MOMC-X-0A0	HR852-400V-MCRF-X-0A0
HR852-500V-MOMC-X-0A0	HR852-500V-MCRF-X-0A0
HR852-700V-MOMC-X-0A0	HR852-700V-MCRF-X-0A0
HR852-10KV-MOMC-X-0A0	HR852-10KV-MCRF-X-0A0
HR852-14KV-MOMC-X-0A0	HR852-14KV-MCRF-X-0A0



HR852- 070 V- MOMC- X- 0 A0

- A0** - Reserve
- 0** - Standard RAL
- X** - Universal service access (right/left)
- MOMC** - Module of Mixing chamber
- MCRF** - Rain protection roof for a mixing chamber
- V** - Vertical outlets, floor standing unit
- 070** - for HR852-070
- 100** - for HR852-090, HR852-100, HR852-120
- 200** - for HR852-150, HR852-200
- 250** - for HR852-250
- 320** - for HR852-320
- 400** - for HR852-400
- 500** - for HR852-500
- 700** - for HR852-700
- 10K** - for HR852-10K
- 14K** - for HR852-14K

Accessories for ALFA 85 2nd generation

Channel sensor CO₂
CI-EE850-C3xx-FP

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

**Duct sensor of relative humidity**
CI-LCN-FTK140VV

Duct sensor for measuring relative humidity in air-conditioning systems

**Spatial sensor CO₂**
CI-CO2-R

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

**Spatial sensor RH**
CI-RH-R

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

**Signal combiner**
CI-AQS-COMBI

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

**PIR sensor**
CI-PS 1003

Spatial infrared sensor for automatic ventilation based on presence of people in the ventilated area.

Power supply of this sensor must be outsourced. Unit doesn't support this kind of power supply (15-24V DC).





KEY TO CODING

HR852- 070 V P RS E 7 5- X S0 S- 0 A0

- A0** - Reserve code
- 0** - Standard RAL
- S** - SUPERIOR AirGENIO control
- X** - Without control
- S0** - Without post-heater
- E1** - With el. post-heater
- V1** - Water post-heater (sizes 090 - 14K)
- C4** - C/O water post-heater (sizes 320 - 14K)
- D3** - DX post-heater (sizes 320 - 14K)
- X** - Without pre-heater
- 5** - Extract filter ePM 10 50% (M5)
- 7** - Supply filter ePM 1 60% (F7)
- E** - EC fans
- RS** - Standard Rotary Wheel
- RQ** - Sorption Rotary Wheel
- R** - Right
- L** - Left
- V** - Vertical outlets, floor-standing unit (070, 100, 150, 200, 250, 320, 400, 500, 700, 10K, 14K)
- U** - Upper outlets (070, 090, 120, 160, 200, 250, 320, 400, 500)
- 070** - Nominal flow rate 700m³/h
- 090** - Nominal flow rate 900m³/h
- 100** - Nominal flow rate 1000m³/h
- 120** - Nominal flow rate 1200m³/h
- 150** - Nominal flow rate 1500m³/h
- 160** - Nominal flow rate 1600m³/h
- 200** - Nominal flow rate 2000m³/h
- 250** - Nominal flow rate 2500m³/h
- 320** - Nominal flow rate 3200m³/h
- 400** - Nominal flow rate 4000m³/h
- 500** - Nominal flow rate 5000m³/h
- 700** - Nominal flow rate 7000m³/h
- 10K** - Nominal flow rate 10000m³/h
- 14K** - Nominal flow rate 14000m³/h

Heat recovery unit **ALFA 85 2nd generation**



VENTILATION UNITS





BASIC FEATURES

- Six sizes with airflow up to 10 000 m³/h
- Sophisticated integrated regulations and intuitive control by touch controller
- Energy-efficient EC fans with low SFP and silent operation
- Integrated electric/water after-heater, modular C/O or DX coils concept
- Low installation height suitable for suspended ceilings
- Simple maintenance
- Easy installation

The ALFA EC is a highly effective ventilation unit for ventilating and heating rooms with air with commercial use in **offices, shops, coffee bars, restaurants and sports facilities.**

The unit shall be installed indoor in a dry area with ambient temperatures ranging from +5 °C up to +35 °C and relative humidity of up to 80 %. It is designed for conveying air free of rough dust, grease, chemical fumes, and other impurities with a temperature ranging from -30 °C up to +40 °C and relative humidity of up to 90 %. The complete unit installed in a duct has an IP rating of 20. **The ventilation unit project shall always be developed by the HVAC designer.**

The housing of the unit is made of sandwich panels. The control system allows controlling the air capacity of the unit in five levels. In addition, it allows controlling the air heating, adjusting the flaps, and identification of failure conditions.

The ALFA units are supplied in the following versions

Model of unit		Unit size					
		50	100	200	300	500	800
	S0	✓	✓	✓	✓	✓	✓
	E0	✗	✓	✗	✗	✗	✗
	E1	✓	✓	✓	✓	✗	✗
	E2	✓	✓	✓	✓	✗	✗
	E3	✗	✓	✓	✓	✗	✗
	V2	✓	✓	✓	✓	✓	✓
	C*	✓	✓	✓	✓	✓	✓
	D*	✓	✓	✓	✓	✓	✓

- S0 - without heater
- E0 - electric heater with ΔT 10°K
- E1 - electric heater with ΔT 20°K
- E2 - electric heater with ΔT 30°K
- E3 - electric heater with ΔT 40°K
- V2 - hot water heater 2 row
- C - change over coil (external module)
- D - direct eevaporator (external module)

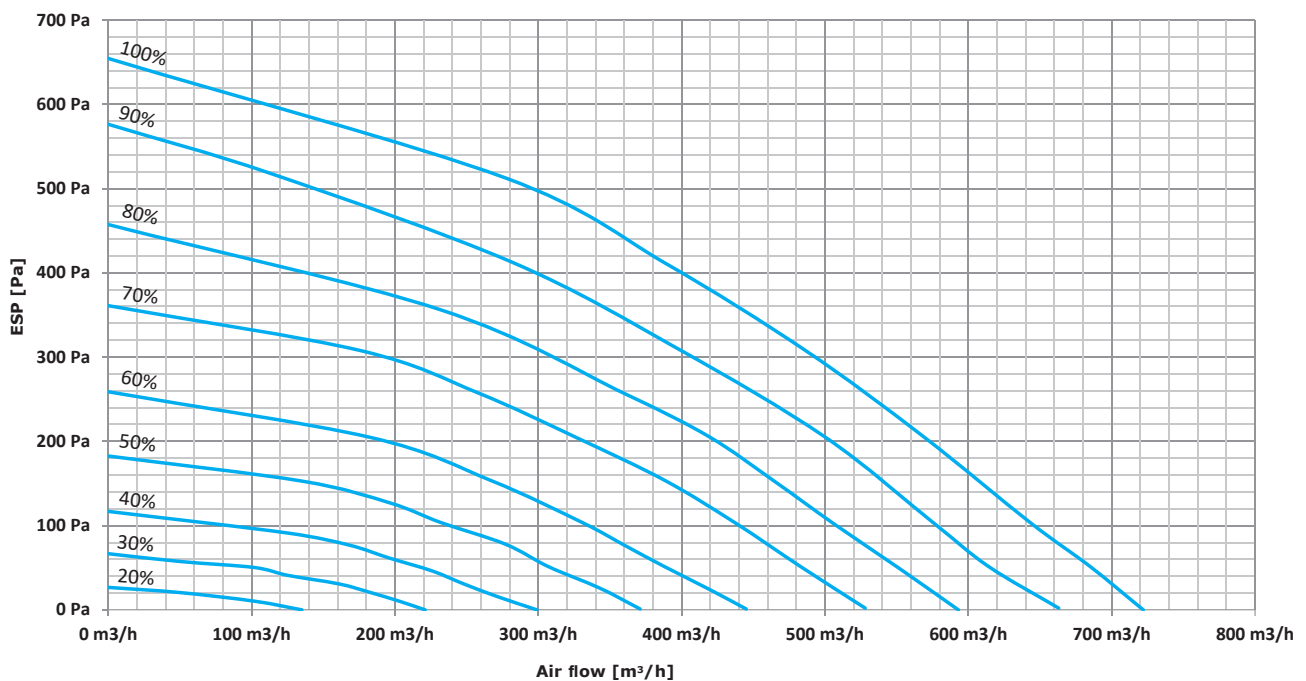


PRIMARY PARAMETERS

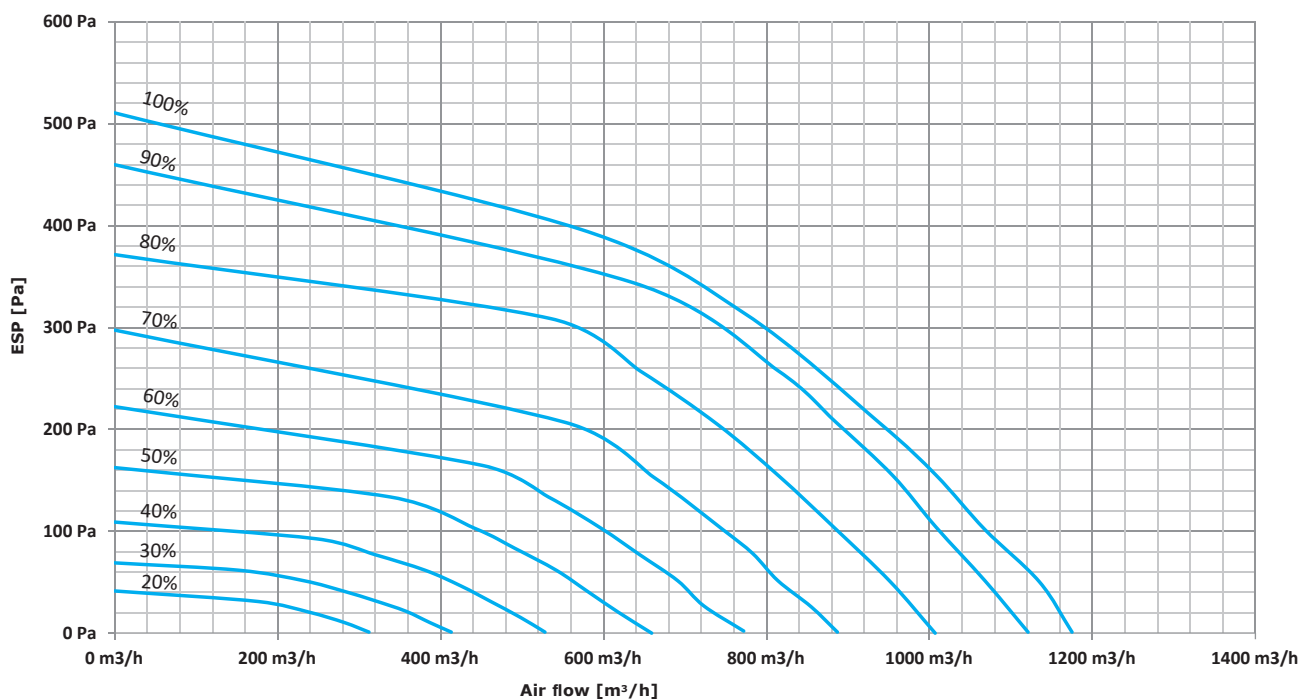
Performance characteristics

With filter class Coarse 90% (G4)

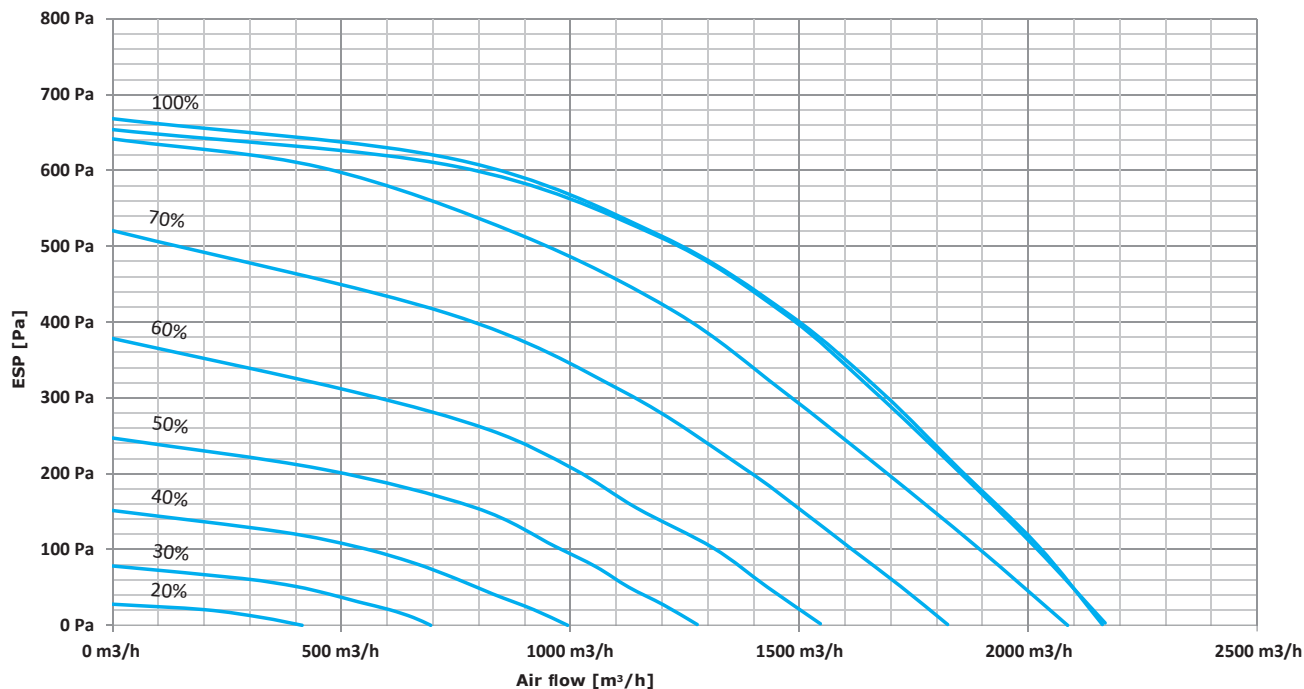
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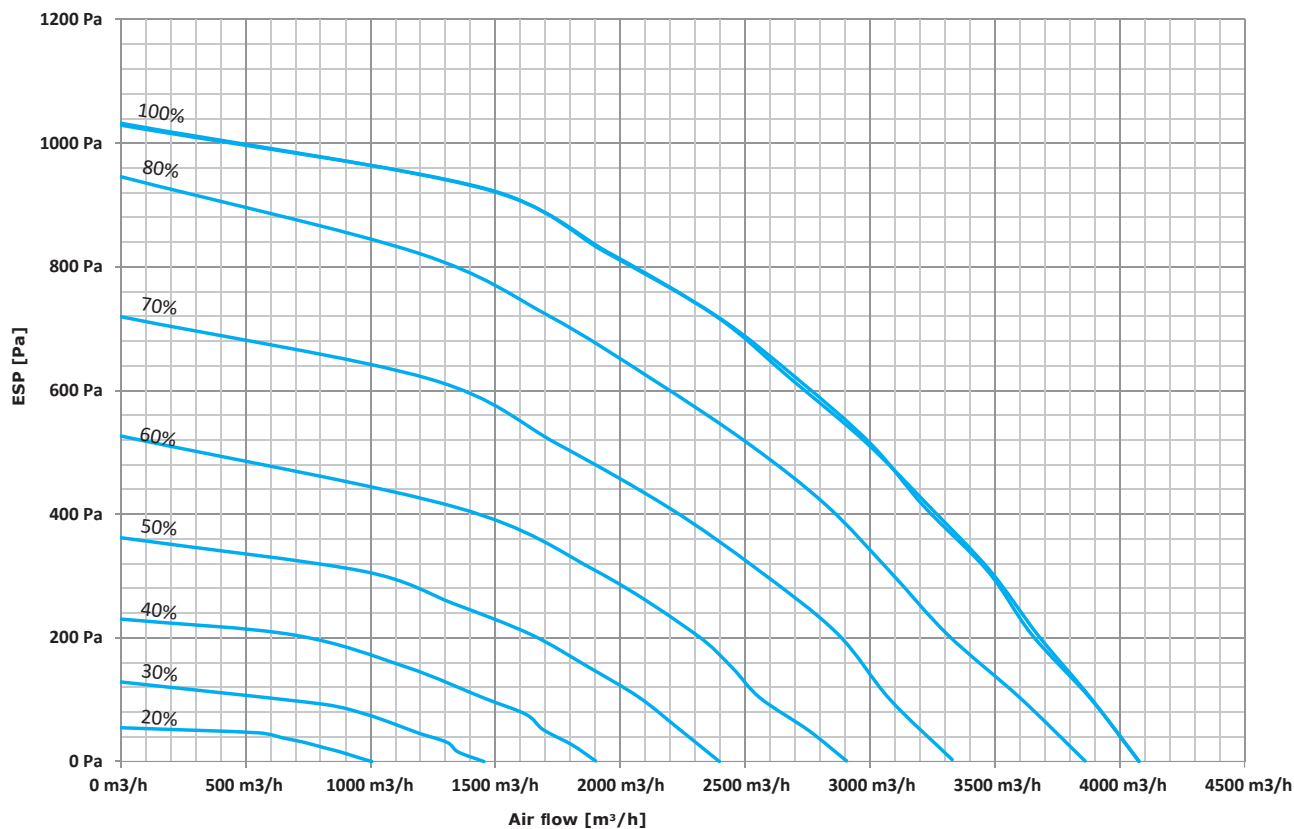
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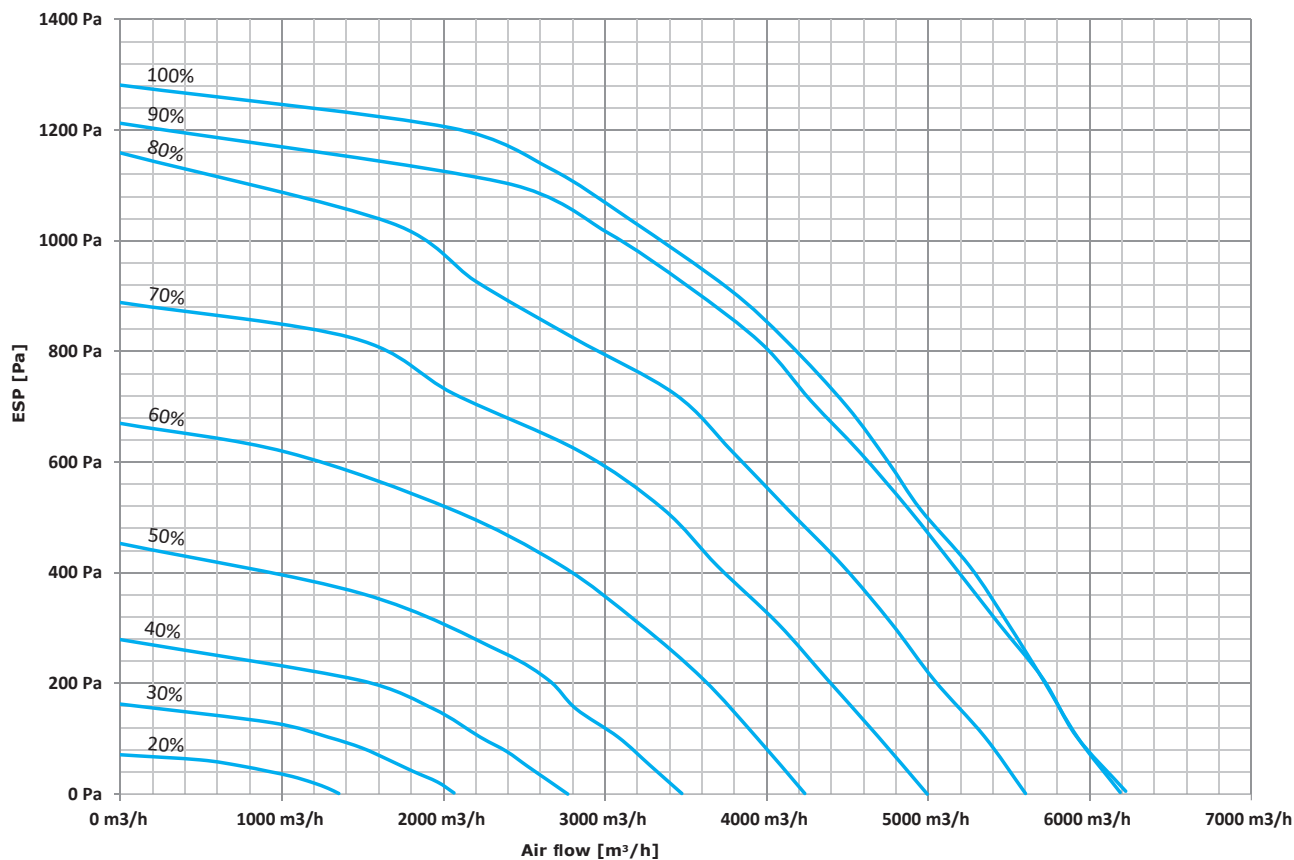
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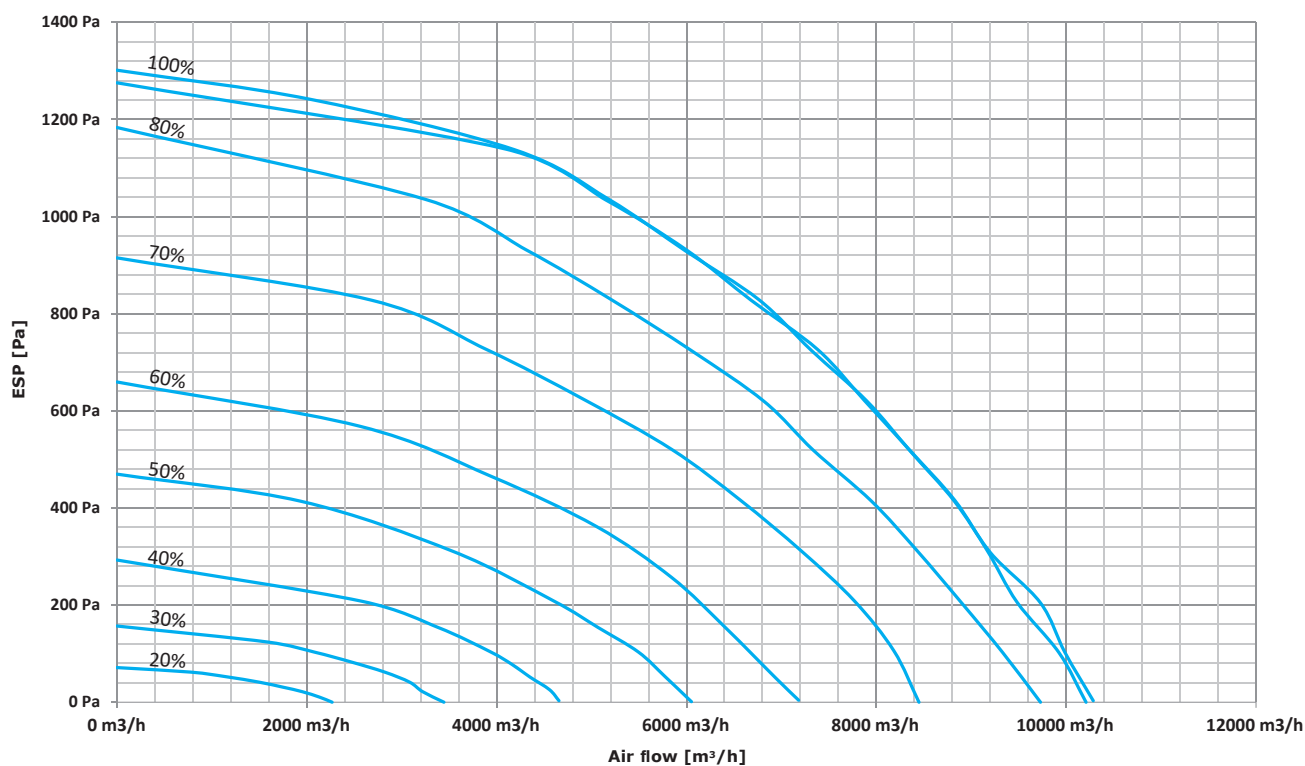
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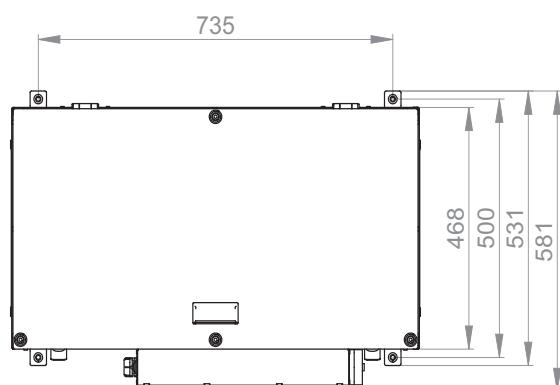
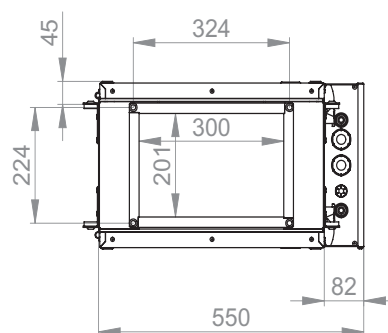
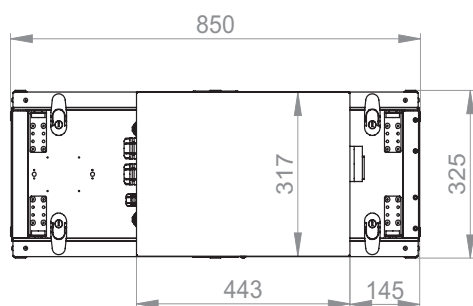
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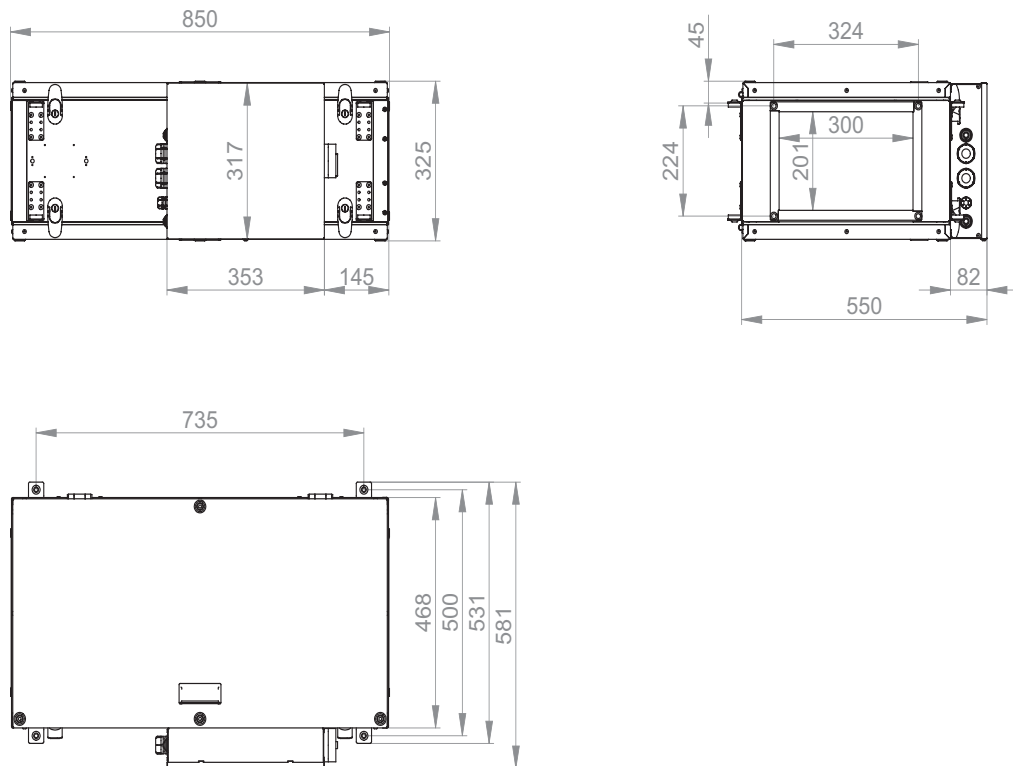
AHAL4-800...



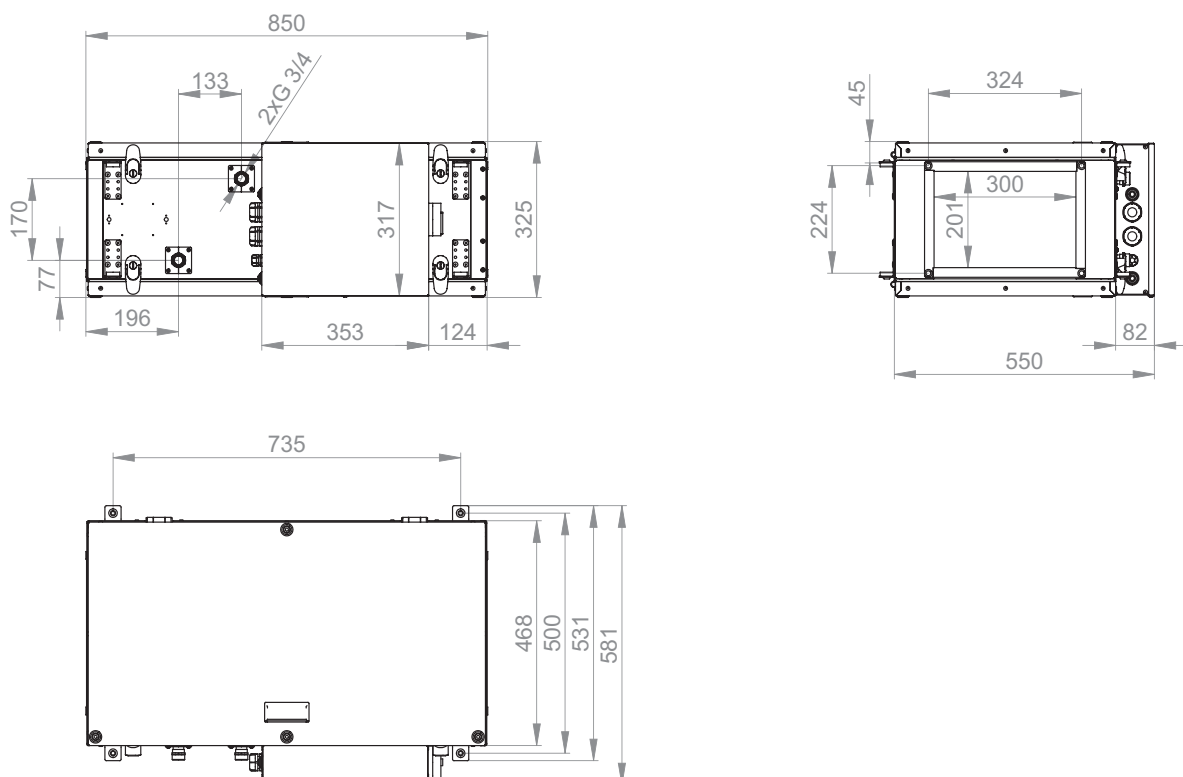
AHAL4-050HX00E40-XE... (E1,E2,E3)



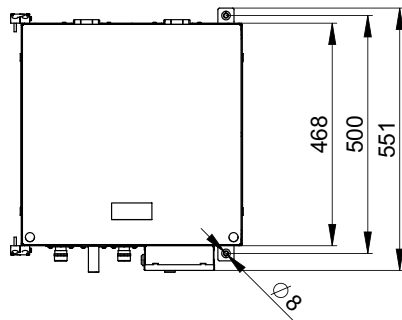
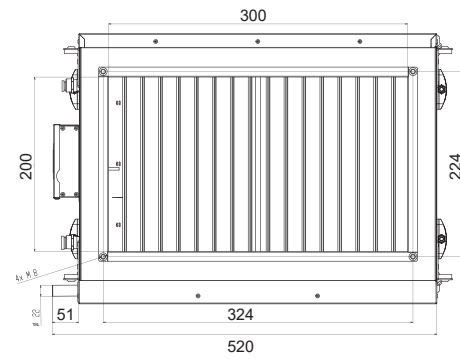
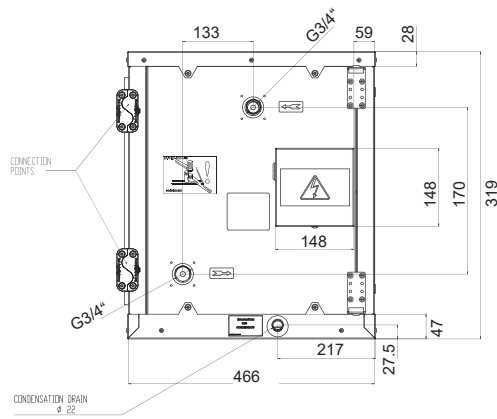
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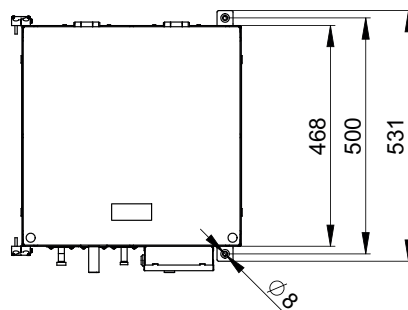
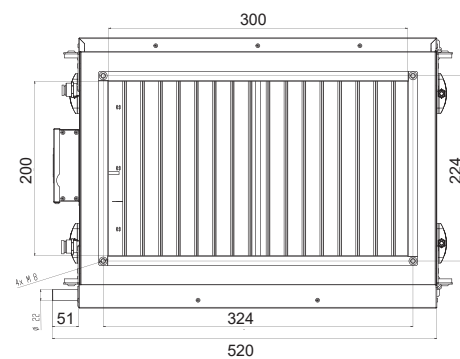
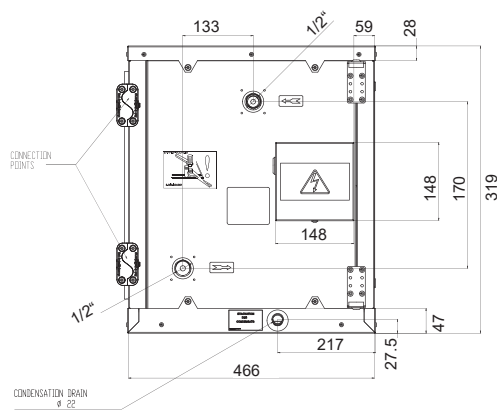
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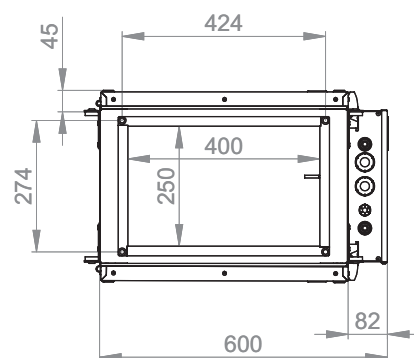
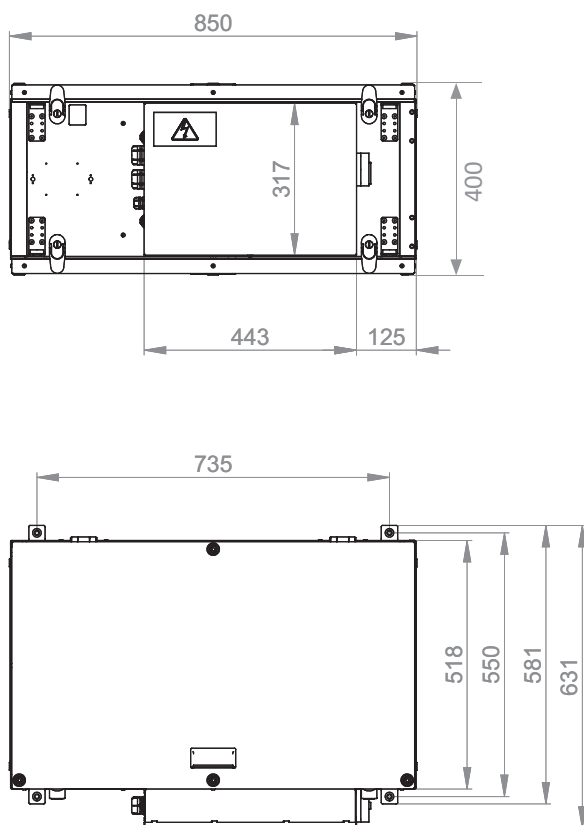
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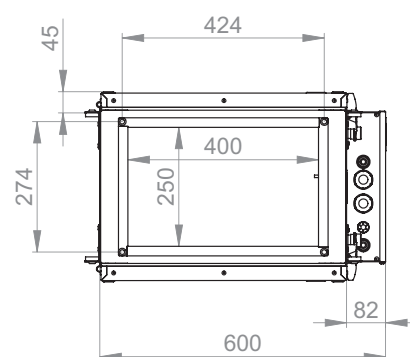
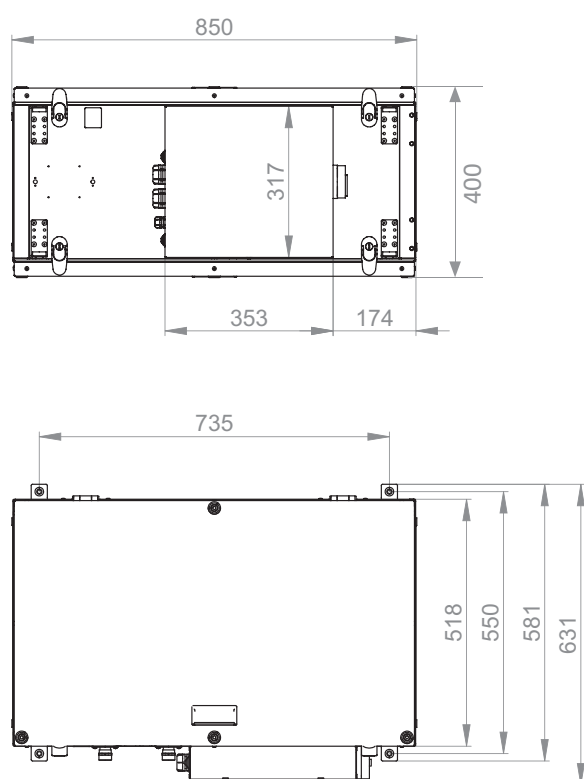
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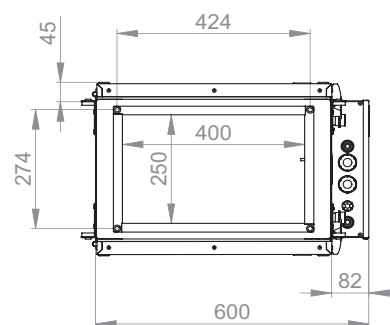
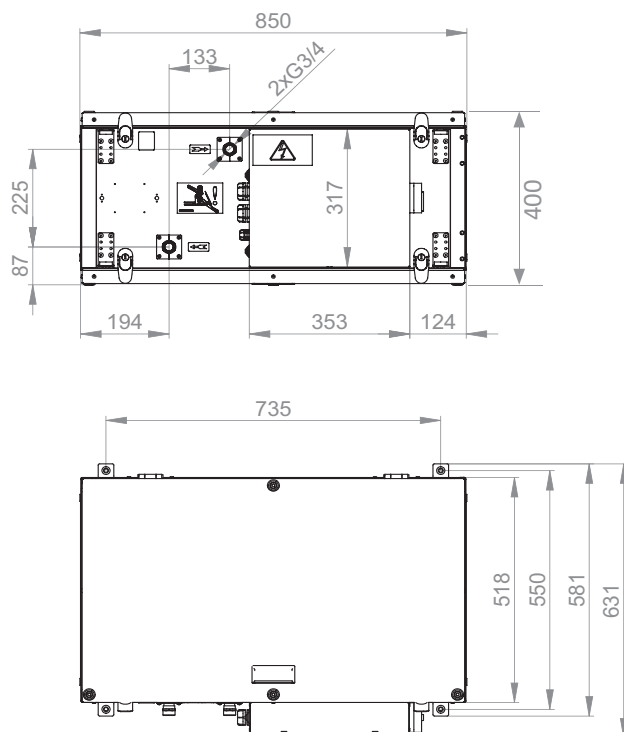
AHAL4-100HX00E40-XE... (E0,E1,E2,E3)



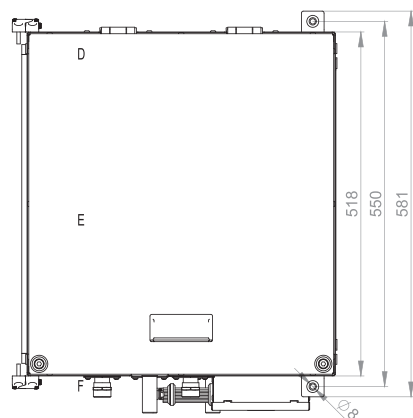
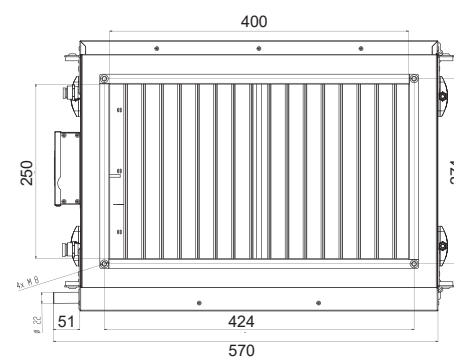
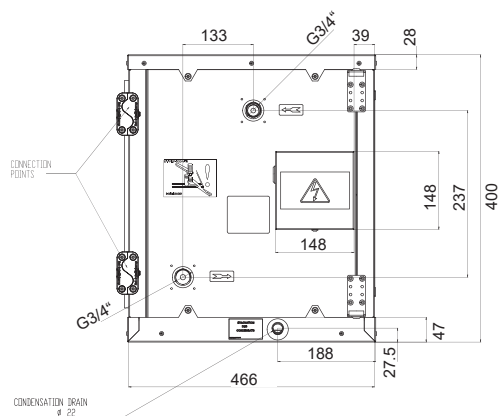
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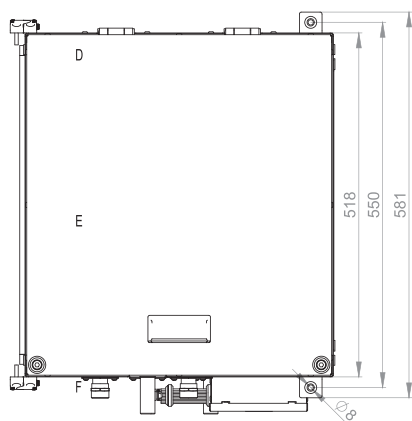
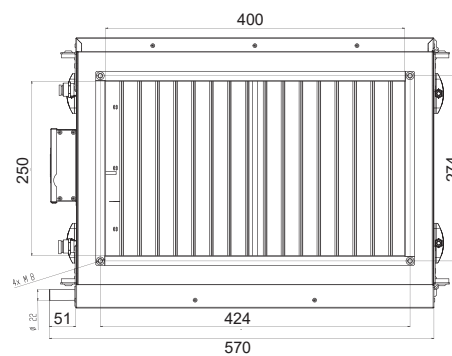
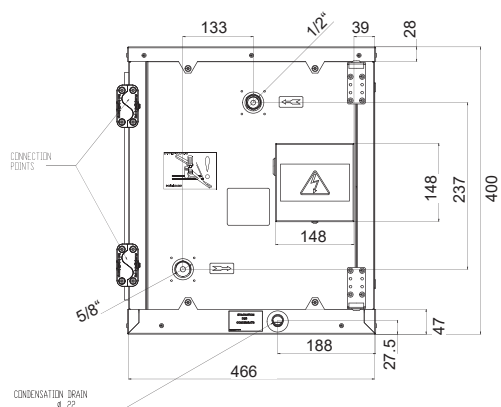
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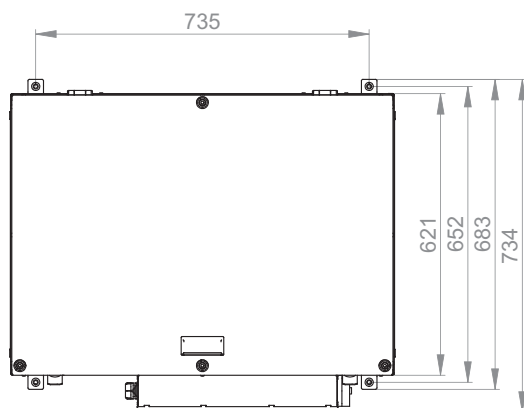
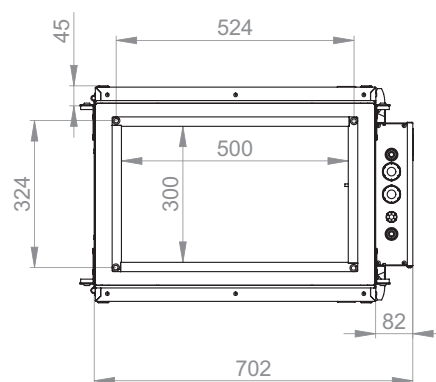
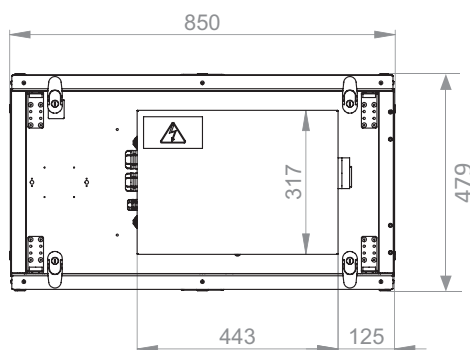
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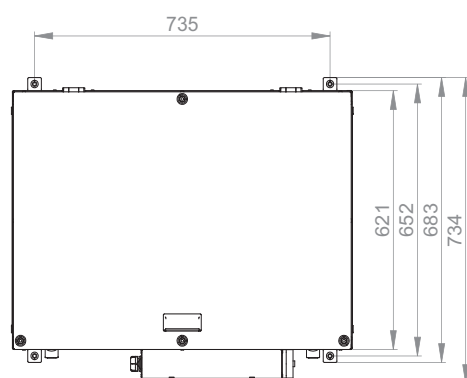
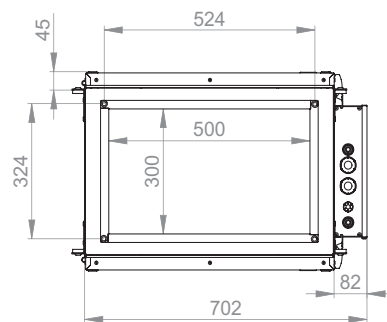
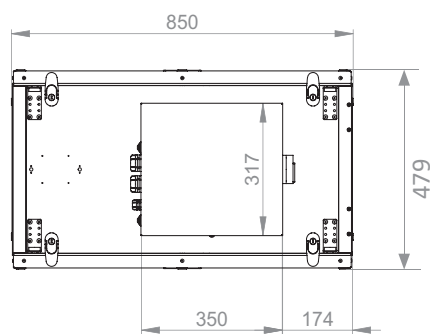
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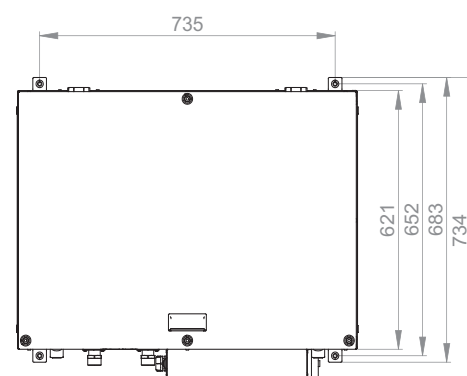
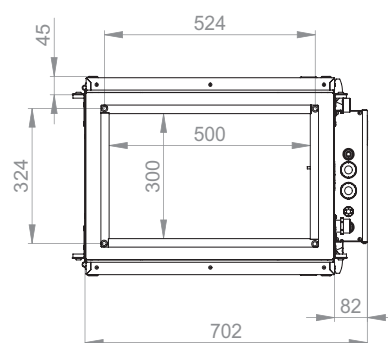
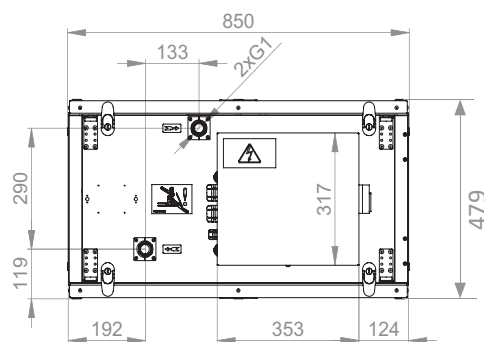
AHAL4-200HX00E40-XE... (E1,E2,E3)

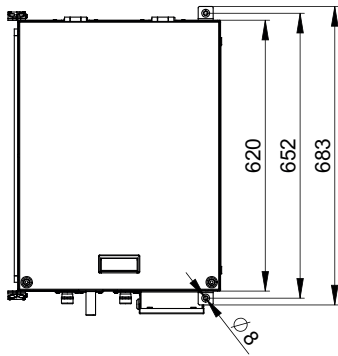


AHAL4-200HX00E40-XS0...



AHAL4-200HX00E40-XV2...



[illegible]

CONNECTION POINTS

CONDENSATION DRAIN
ø 22

133

1/2"

39

28

148

290

479

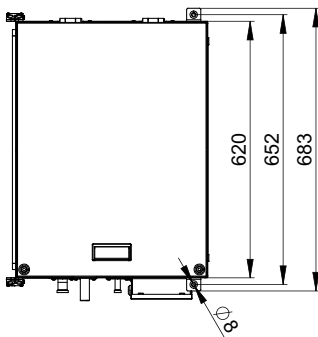
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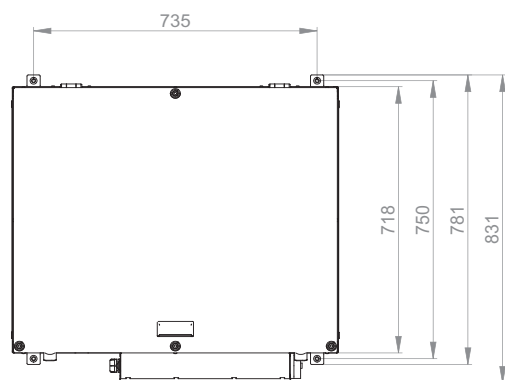
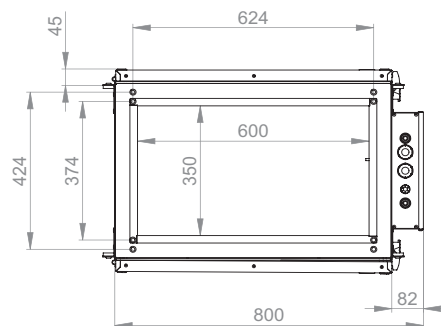
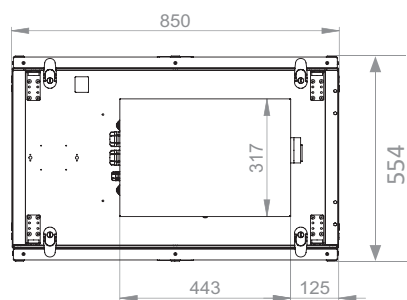
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466

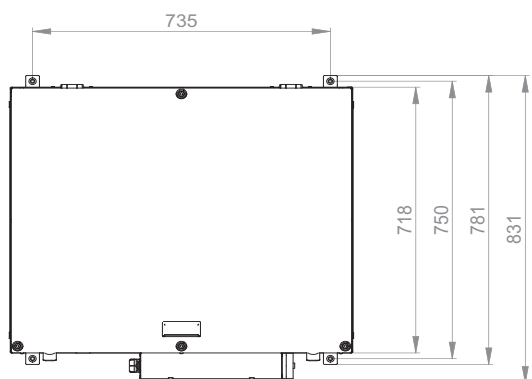
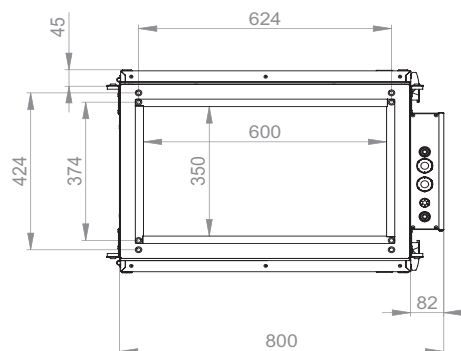
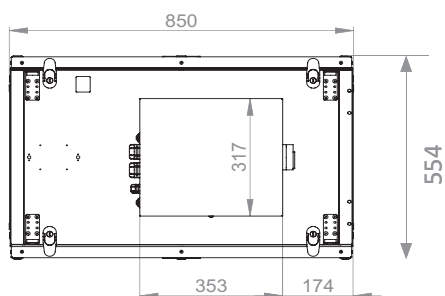
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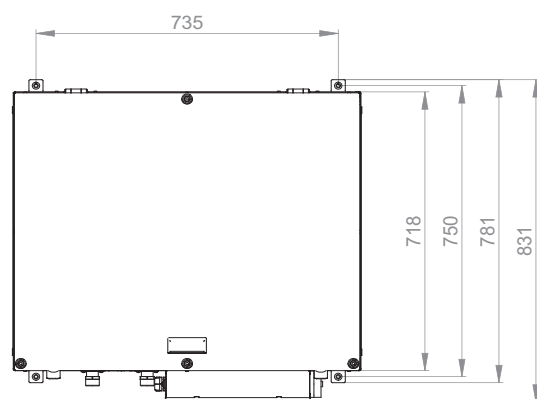
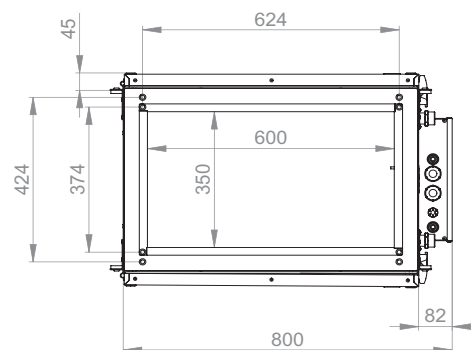
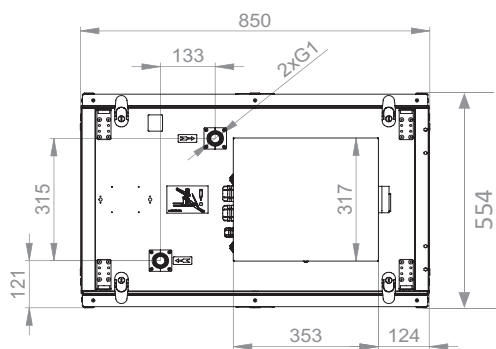
AHAL4-300HX00E40-XE... (E1,E2,E3)



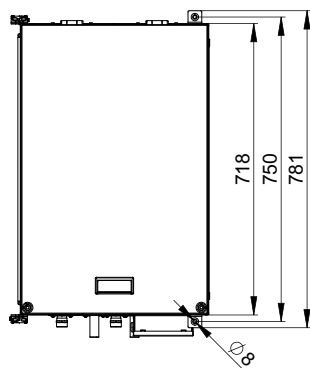
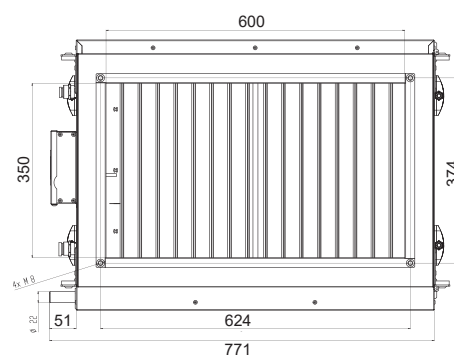
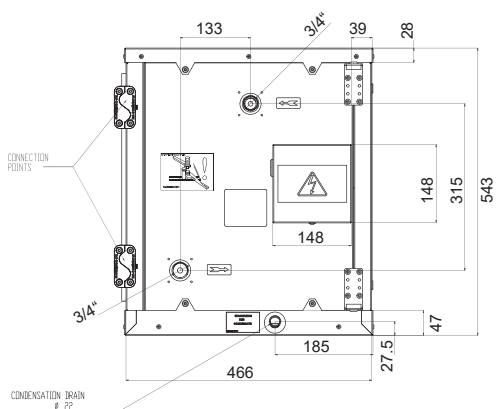
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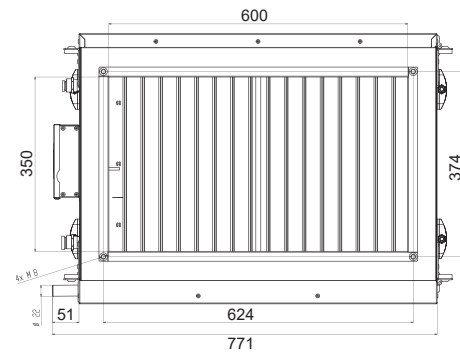
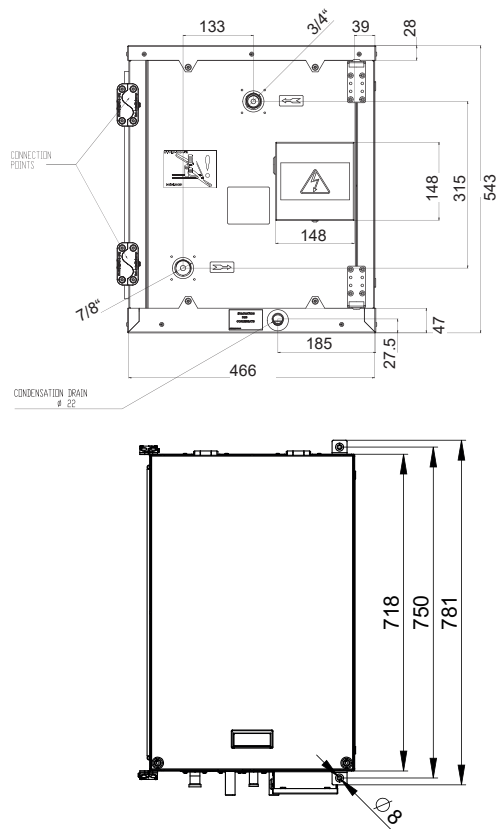
AHAL4-300HX00E40-XV2...



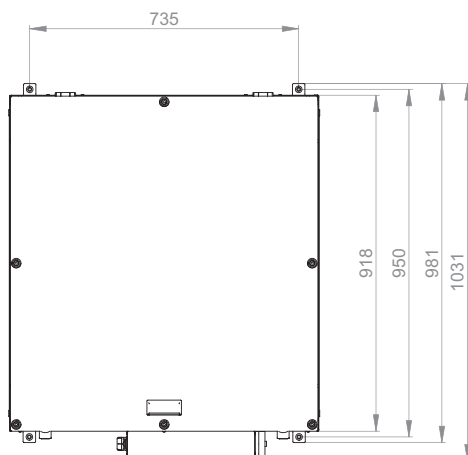
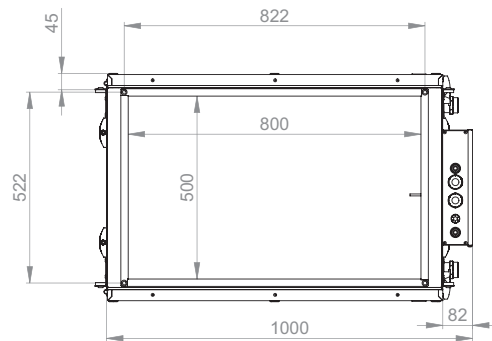
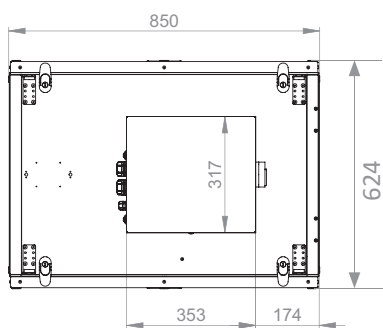
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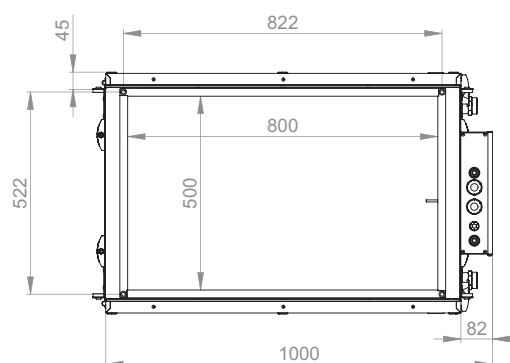
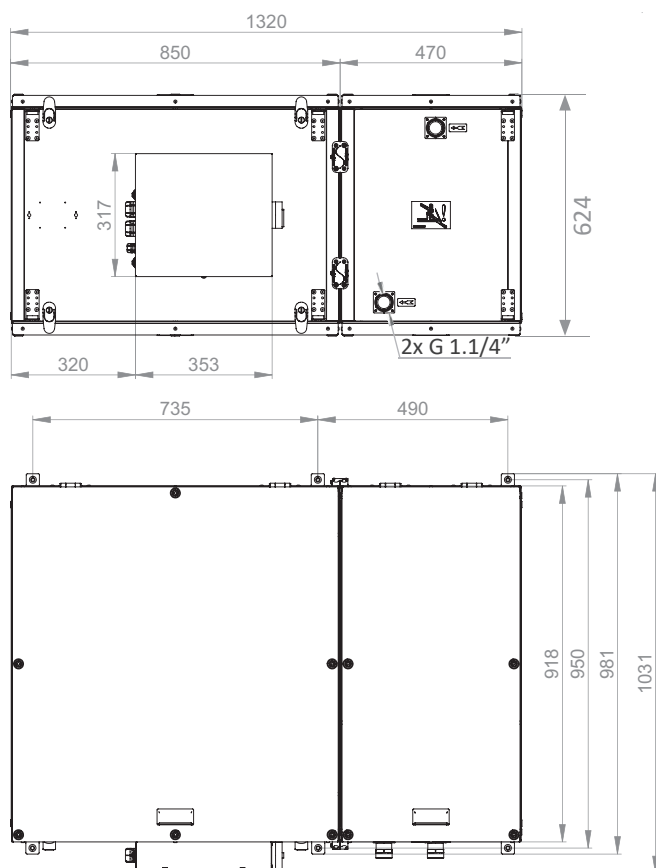
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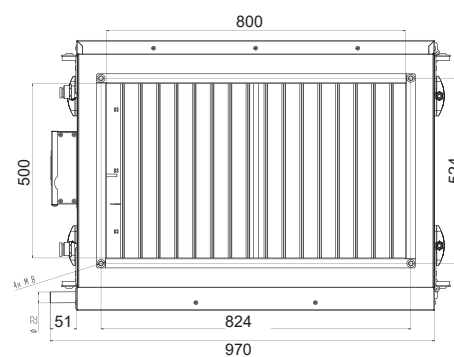
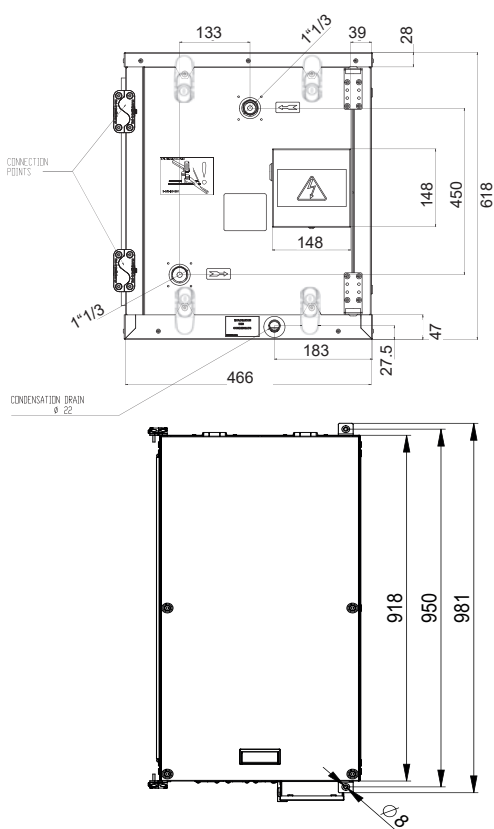
AHAL4-500HX00E40-XS0...



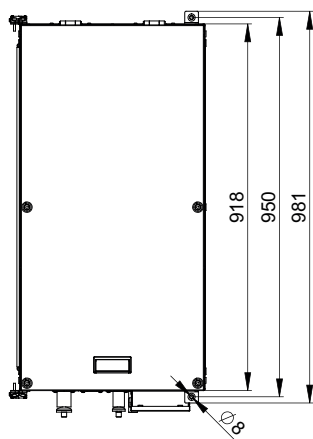
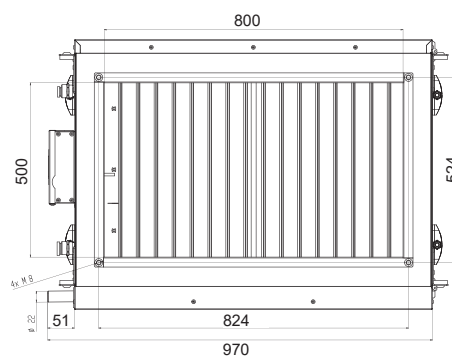
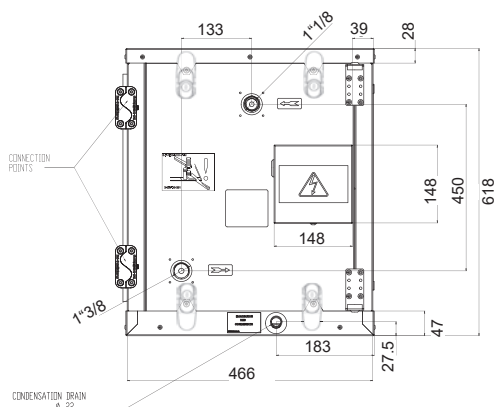
AHAL4-500HX00E40-XV2...



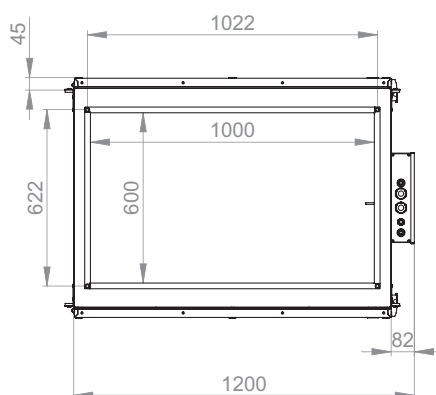
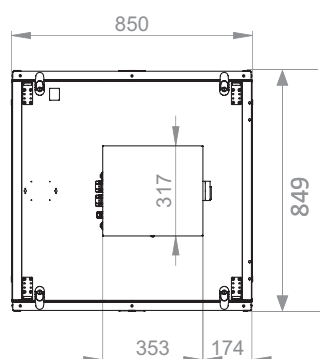
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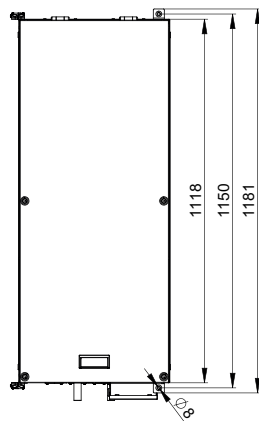
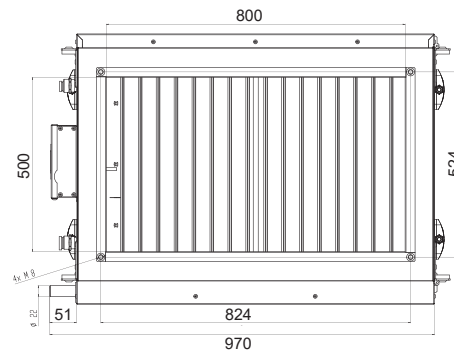
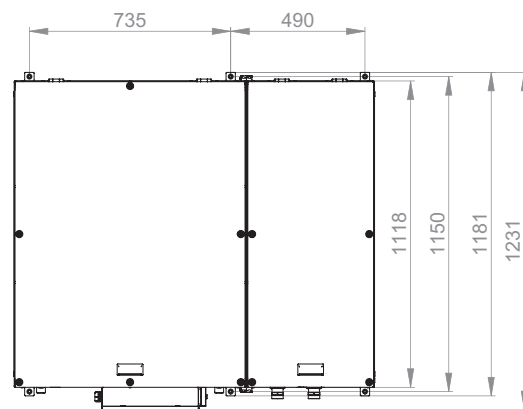
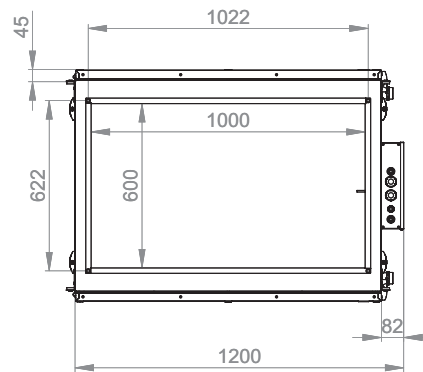


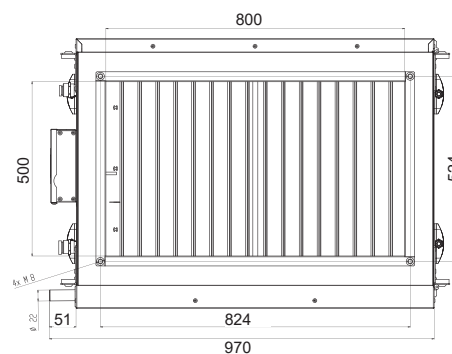
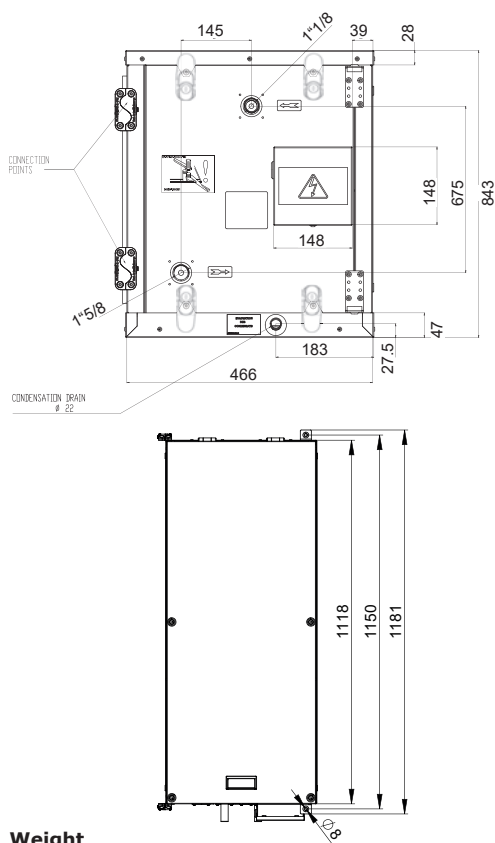
MOAL1-500HX00000-XD3X-...



AHAL4-800HX00E40-XS0...





MOAL1-800HX00000-XD3X-...

Weight

Type	Weight (kg)	ALFA + modul C/O (kg)	ALFA + DX module (kg)
AHAL4-050HX00E40-XS0...	34	60	60
AHAL4-050HX00E40-XE1...	36	62	62
AHAL4-050HX00E40-XE2...	36	62	62
AHAL4-050HX00E40-XV2...	36	not possible	62
AHAL4-100HX00E40-XS0...	37	67	67
AHAL4-100HX00E40-XE0...	41	71	71
AHAL4-100HX00E40-XE1...	41	71	71
AHAL4-100HX00E40-XE2...	41	71	71
AHAL4-100HX00E40-XV2...	41	not possible	71
AHAL4-200HX00E40-XS0...	50	88	88
AHAL4-200HX00E40-XE1...	55	93	93
AHAL4-200HX00E40-XE2...	55	93	93
AHAL4-200HX00E40-XE3...	55	93	93
AHAL4-200HX00E40-XV2...	55	not possible	93
AHAL4-300HX00E40-XS0...	65	109	109
AHAL4-300HX00E40-XS0...	70	114	114
AHAL4-300HX00E40-XE1...	70	114	114
AHAL4-300HX00E40-XE2...	70	114	114
AHAL4-300HX00E40-XE3...	70	not possible	114
AHAL4-500HX00E40-XS0...	95	147	147
AHAL4-500HX00E40-XV2...	104	not possible	147
AHAL4-800HX00E40-XS0...	120	202	202
AHAL4-800HX00E40-XV2...	128	not possible	202

Basic technical parameters of fans

Type	Phase (No)	Voltage [V]	Frequency [Hz]	Power consumption [W]	Current [A]	Speed (rpm) [1/min]	Max. operating temperature [°C]
050	1	230	50-60	118	0,87	3635	60
100	1	230	50-60	145	0,99	2900	60
200	1	230	50-60	430	2,59	2600	60
300	3	400	50-60	1031	1,8	2580	60
500	3	400	50-60	1739	2,54	2600	60
800	3	400	50-60	2771	4,03	2040	60

Basic technical parameters of electric heaters

Units fitted with electric heater are fitted with the safety thermostat with automatic reset and emergency thermostat with manual reset.

Electric heaters type E0

Type	Air flow [m³/h]	Temperature rise of air [°C]	Total power consumption [kW]	Current [A]	Number of phases [pc]	Voltage [V]
100...E0	1000	20	3,3	14,4	1	230

Electric heaters type E1

Type	Air flow [m³/h]	Temperature rise of air [°C]	Total power consumption [kW]	Current [A]	Number of phases [pc]	Voltage [V]
050...E1	500	20	3,3	14,4	1	230
100...E1	1000	20	6,6	9,5	3	400
200...E1	2000	20	13,5	19,5	3	400
300...E1	3000	20	20	28,9	3	400

Electric heaters type E2

Type	Air flow [m³/h]	Temperature rise of air [°C]	Total power consumption [kW]	Current [A]	Number of phases [pc]	Voltage [V]
050...E2	500	30	6,6	9,5	3	400
100...E2	1000	30	9,9	14,3	3	400
200...E2	2000	30	18	26	3	400
300...E2	3000	30	27	39	3	400

Electric heaters type E3

Type	Air flow [m³/h]	Temperature rise of air [°C]	Total power consumption [kW]	Current [A]	Number of phases [pc]	Voltage [V]
100...E3	1000	40	13,5	19,5	3	400
200...E3	2000	40	27	39	3	400
300...E3	3000	40	40	57,8	3	400

Basic technical parameters of LPHW coils

The LPHW coils are designed for a maximum operating water temperature of +100 °C and maximum operating pressure of 1.6 MPa.

LPHW coil type V2

Table for 90/70°C temperature drop

Type	Air flow	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss
	[m³/h]	[°C]	[kW]	[l/s]	[kPa]	[°C]	[kW]	[l/s]	[kPa]
Supply air temp.	-20°C					-10°C			
AHAL4-050HX00E40-XV2S-0A0	500	36,9	9,16	0,11	9	41,20	8,12	0,10	8
AHAL4-100HX00E40-XV2S-0A0	1000	30,4	16,4	0,20	7	35,3	14,5	0,18	6
AHAL4-200HX00E40-XV2S-0A0	2000	24,3	29,3	0,36	5	29,8	25,9	0,32	4
AHAL4-300HX00E40-XV2S-0A0	3000	24,5	44,1	0,54	7	30	39	0,48	5
AHAL4-500HX00E40-XV2S-0A0	5000	23,9	72,6	0,89	12	29,6	64,3	0,79	9
AHAL4-800HX00E40-XV2S-0A0	8000	24,5	117	1,44	5	29,9	104	1,27	4
Supply air temp.	0°C					10°C			
AHAL4-050HX00E40-XV2S-0A0	500	45,50	7,11	0,10	6	49,70	6,11	0,08	5
AHAL4-100HX00E40-XV2S-0A0	1000	40,1	12,7	0,16	4	44,9	10,8	0,13	3
AHAL4-200HX00E40-XV2S-0A0	2000	35,2	22,5	0,28	4	40,5	19,2	0,23	3
AHAL4-300HX00E40-XV2S-0A0	3000	35,5	33,9	0,42	6	40,9	29	0,36	4
AHAL4-500HX00E40-XV2S-0A0	5000	35,1	56	0,69	9	40,7	48	0,59	6
AHAL4-800HX00E40-XV2S-0A0	8000	35,4	90,1	1,10	5	40,7	76,9	0,94	3

Table for 80/60°C temperature drop

Type Typ	Air flow	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss
	[m³/h]	[°C]	[kW]	[l/s]	[kPa]	[°C]	[kW]	[l/s]	[kPa]
Supply air temp.	-20°C					-10°C			
AHAL4-050HX00E40-XV2S-0A0	500	30,30	8,27	0,10	8	34,70	7,23	0,09	6
AHAL4-100HX00E40-XV2S-0A0	1000	24,4	14,7	0,18	6	29,3	12,8	0,16	5
AHAL4-200HX00E40-XV2S-0A0	2000	18,8	26,2	0,32	4	24,3	22,7	0,28	4
AHAL4-300HX00E40-XV2S-0A0	3000	19,1	39,5	0,48	6	24,6	34,4	0,42	6
AHAL4-500HX00E40-XV2S-0A0	5000	18,7	65,2	0,79	10	24,4	56,8	0,69	9
AHAL4-800HX00E40-XV2S-0A0	8000	19	105	1,28	4	24,5	91,1	1,11	3
Supply air temp.	0°C					10°C			
AHAL4-050HX00E40-XV2S-0A0	500	39	6,21	0,08	5	43,20	5,22	0,06	6
AHAL4-100HX00E40-XV2S-0A0	1000	34,2	11	0,13	3	39	9,16	0,11	4
AHAL4-200HX00E40-XV2S-0A0	2000	29,7	19,3	0,24	3	35	16	0,19	4
AHAL4-300HX00E40-XV2S-0A0	3000	30,1	29,3	0,36	5	35,5	24,4	0,30	5
AHAL4-500HX00E40-XV2S-0A0	5000	48,6	30	0,59	7	35,5	40,6	0,49	5
AHAL4-800HX00E40-XV2S-0A0	8000	29,9	77,7	0,95	3	35,3	64,5	0,79	2

Table for 70/50°C temperature drop

Type	Air flow	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss
	[m³/h]	[°C]	[kW]	[l/s]	[kPa]	[°C]	[kW]	[l/s]	[kPa]
Supply air temp. / Zulufttemp.	-20°C					-10°C			
AHAL4-050HX00E40-XV2S-0A0	500	23,90	7,35	0,09	7	28,20	6,31	0,08	5
AHAL4-100HX00E40-XV2S-0A0	1000	18,4	13	0,16	5	23,3	11,1	0,14	4
AHAL4-200HX00E40-XV2S-0A0	2000	13,3	22,9	0,28	4	18,8	19,4	0,24	3
AHAL4-300HX00E40-XV2S-0A0	3000	13,7	34,7	0,42	6	19,3	29,6	0,36	5
AHAL4-500HX00E40-XV2S-0A0	5000	13,6	57,6	0,70	9	19,2	49,1	0,60	7
AHAL4-800HX00E40-XV2S-0A0	8000	13,6	92	1,12	4	19,1	78,3	0,95	4
Supply air temp. / Zulufttemp.	0°C					10°C			
AHAL4-050HX00E40-XV2S-0A0	500	32,50	5,29	0,06	6	36,80	4,28	0,05	6
AHAL4-100HX00E40-XV2S-0A0	1000	28,2	9,24	0,11	4	33	7,44	0,09	3
AHAL4-200HX00E40-XV2S-0A0	2000	24,2	16,1	0,19	4	29,6	12,8	0,16	2
AHAL4-300HX00E40-XV2S-0A0	3000	24,8	24,6	0,30	5	30,2	19,7	0,24	3
AHAL4-500HX00E40-XV2S-0A0	5000	24,8	41	0,50	5	30,3	33	0,40	5
AHAL4-800HX00E40-XV2S-0A0	8000	24,5	64,8	0,79	2	29,9	51,7	0,63	3

Table for 45/35°C temperature drop

Type	Air flow	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss
	[m³/h]	[°C]	[kW]	[l/s]	[kPa]	[°C]	[kW]	[l/s]	[kPa]
Supply air temp.	-20°C					-10°C			
AHAL4-050HX00E40-XV2S-0A0	500	12,7	5,69	0,13	13	17,2	4,64	0,11	10
AHAL4-100HX00E40-XV2S-0A0	1000	8,8	10,1	0,24	9	13,8	8,21	0,19	8
AHAL4-200HX00E40-XV2S-0A0	2000	5,2	17,9	0,43	7	10,7	14,4	0,35	5
AHAL4-300HX00E40-XV2S-0A0	3000	5,4	27	0,65	10	11	21,8	0,52	7
AHAL4-500HX00E40-XV2S-0A0	5000	5,2	44,5	1,07	18	10,8	36,1	0,87	12
AHAL4-800HX00E40-XV2S-0A0	8000	5,3	71,5	1,7	6	10,9	57,8	1,39	5
Supply air temp.	0°C					10°C			
AHAL4-050HX00E40-XV2S-0A0	500	21,4	3,63	0,08	7	25,7	2,62	0,06	6
AHAL4-100HX00E40-XV2S-0A0	1000	18,7	6,33	0,15	5	23,6	4,51	0,15	4
AHAL4-200HX00E40-XV2S-0A0	2000	16,1	11	0,26	4	21,5	7,72	0,18	3
AHAL4-300HX00E40-XV2S-0A0	3000	16,5	16,8	0,41	6	21,9	11,9	0,28	5
AHAL4-500HX00E40-XV2S-0A0	5000	16,4	27,9	0,67	9	22	20	0,48	5
AHAL4-800HX00E40-XV2S-0A0	8000	16,3	44,3	1,07	5	21,7	31,3	0,75	2

External module - water heater/cooler type C
Table for 80/60°C temperature drop

Type	Air flow	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss
	[m³/h]	[°C]	[kW]	[l/s]	[kPa]	[°C]	[kW]	[l/s]	[kPa]
Supply air temp.	-20°C					-10°C			
AHAL4-050	500	55,1	11,4	0,14	4	56,7	10,1	0,12	5
AHAL4-100	1000	50,2	21,5	0,26	6	52,3	18,9	0,23	5
AHAL4-200	2000	46	40,7	0,50	10	48,6	35,9	0,44	8
AHAL4-300	3000	43,9	59,5	0,89	5	46,6	52,3	0,64	4
AHAL4-500	5000	42,7	97,6	1,19	6	45,6	85,7	0,04	6
AHAL4-800	8000	44,3	159	1,94	4	47	140	1,71	4
Supply air temp.	0°C					10°C			
AHAL4-050	500	58,3	8,76	0,11	4	59,8	7,45	0,09	3
AHAL4-100	1000	54,4	16,4	0,20	5	56,4	13,9	0,17	4
AHAL4-200	2000	51,1	31	0,38	7	53,7	26,3	0,32	5
AHAL4-300	3000	49,3	45,2	0,55	3	52	38,1	0,46	3
AHAL4-500	5000	48,4	74	0,90	5	51,5	62,4	0,76	3
AHAL4-800	8000	49,6	121	1,47	3	52,1	102	1,24	3

Table for 70/50°C temperature drop

Type Typ	Air flow	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss
	[m³/h]	[°C]	[kW]	[l/s]	[kPa]	[°C]	[kW]	[l/s]	[kPa]
Supply air temp,	-20°C					-10°C			
AHAL4-050	500	45,8	10,3	0,13	6	47,4	8,93	0,11	4
AHAL4-100	1000	41,4	19,3	0,23	5	43,5	16,7	0,20	6
AHAL4-200	2000	37,7	36,5	0,44	8	40,3	31,6	0,38	8
AHAL4-300	3000	35,6	53,2	0,65	5	38,4	45,9	0,56	3
AHAL4-500	5000	34,6	87,2	1,06	6	37,5	75,1	0,91	5
AHAL4-800	8000	35,9	142	1,73	4	38,6	123	1,49	3
Supply air temp,	0°C					10°C			
AHAL4-050	500	49,1	7,58	0,09	3	50,6	6,23	0,08	2
AHAL4-100	1000	45,6	14,1	0,17	4	47,7	11,6	0,14	3
AHAL4-200	2000	42,9	26,7	0,33	6	45,4	21,9	0,27	5
AHAL4-300	3000	41,1	38,6	0,47	3	43,7	31,4	0,83	3
AHAL4-500	5000	40,3	63,2	0,77	4	43,2	51,5	0,63	4
AHAL4-800	8000	41,3	103	1,25	3	43,9	84,1	1,02	2

Table for 60/40°C temperature drop

Type	Air flow	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss
	[m³/h]	[°C]	[kW]	[l/s]	[kPa]	[°C]	[kW]	[l/s]	[kPa]
Supply air temp.	-20°C					-10°C			
AHAL4-050	500	36,5	9,09	0,11	5	38,2	7,71	0,09	3
AHAL4-100	1000	32,6	17	0,20	6	34,7	14,4	0,17	4
AHAL4-200	2000	29,3	32,1	0,38	8	32	27,1	0,23	6
AHAL4-300	3000	27,3	46,5	0,56	4	30,1	39,1	0,47	3
AHAL4-500	5000	26,4	76,2	0,92	5	29,4	64	0,77	4
AHAL4-800	8000	27,6	124	1,50	5	30,3	105	1,26	3
Supply air temp.	0°C					10°C			
AHAL4-050	500	39,8	6,32	0,07	2	41,3	4,54	0,06	4
AHAL4-100	1000	36,8	11,7	0,14	3	38,8	9,16	0,11	4
AHAL4-200	2000	34,6	22,2	0,27	5	37,1	17,3	0,21	5
AHAL4-300	3000	32,8	31,7	0,38	4	35,5	24,4	0,29	4
AHAL4-500	5000	32,3	52	0,63	4	35,1	40	0,48	2
AHAL4-800	8000	33	84,8	1,02	3	35,6	65,2	0,78	2

Table for 6/12°C temperature drop

Type	Air flow	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss
	[m³/h]	[°C]	[kW]	[l/s]	[kPa]	[°C]	[kW]	[l/s]	[kPa]
Supply air temp.	25°C					30°C			
AHAL4-050	500	14	2,2	0,09	3	14,9	4,1	0,16	7
AHAL4-100	1000	14,7	3,9	0,16	4	16	7,5	0,30	10
AHAL4-200	2000	14,9	6,9	0,27	6	16,6	14,3	0,57	16
AHAL4-300	3000	15,6	9,6	0,38	4	17,3	19,4	0,77	7
AHAL4-500	5000	15,8	15,8	0,63	4	17,5	32	1,27	9
AHAL4-800	8000	15,6	25,7	1,02	4	17,3	51,9	2,06	6
Supply air temp.	35°C					40°C			
AHAL4-050	500	16	6,3	0,25	13	17,2	9	0,36	23
AHAL4-100	1000	17,3	11,7	0,46	17	18,8	16,6	0,66	32
AHAL4-200	2000	18,2	22,1	0,88	32	-			
AHAL4-300	3000	19	31	1,23	15	20,8	44,7	1,78	28
AHAL4-500	5000	19,2	50,8	2,02	18	21,1	73,3	2,91	33
AHAL4-800	8000	19	82,8	3,29	13	20,7	120	4,76	23

Table for 7/13°C temperature drop

Type	Air flow	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss	Air temperature behind exchanger	Heat output	Water volume flow	Water pressure loss
	[m³/h]	[°C]	[kW]	[l/s]	[kPa]	[°C]	[kW]	[l/s]	[kPa]
Supply air temp.	25°C					30°C			
AHAL4-050	500	14,2	1,8	0,07	2	15,7	3,8	0,15	6
AHAL4-100	1000	15,1	3,4	0,13	3	16,6	6,9	0,27	8
AHAL4-200	2000	15,6	6,4	0,25	5	17,2	13	0,52	13
AHAL4-300	3000	16,3	8,9	0,35	4	17,9	17,7	0,70	8
AHAL4-500	5000	16,4	14,6	0,58	4	18	29,2	1,16	7
AHAL4-800	8000	16,3	23,7	0,94	3	17,9	47,2	1,88	5
Supply air temp.	35°C					40°C			
AHAL4-050	500	16,7	6	0,24	12	17,9	8,6	0,34	21
AHAL4-100	1000	18	11	0,44	15	19,4	16	0,63	29
AHAL4-200	2000	18,8	20,9	0,83	29	-			
AHAL4-300	3000	19,6	29,2	1,16	14	21,3	42,9	1,70	26
AHAL4-500	5000	19,8	48	1,90	16	21,6	70,4	2,80	31
AHAL4-800	8000	19,5	78,1	3,10	11	21,3	115	4,57	21

External module - direct evaporator type D

Type	Air flow	Cooling capacity	Air temperature behind exchanger	Relative humidity	Air pressure drop	Fluid pressure drop	Outside temperature
	m³/h	kW	°C	%	Pa	kPa	°C
AHAL4-050	500	1,9	8,9	81,9	27	11	20
		3,0	11,6	74,3	35	23	25
		4,1	13,9	73,3	35	41	30
		5,4	16,5	72,8	34	67	35
AHAL4-100	1000	3,5	10	76,4	45	14	20
		5,4	12,7	71,8	59	30	25
		7,4	15,4	71	58	53	30
		9,8	18,2	70,4	58	87	35
AHAL4-200	2000	6,3	10,9	71,5	72	8	20
		8,0	13,3	82,9	71	13	25
		13,6	16,5	68,8	94	32	30
		18,1	19,4	68,3	92	53	35
AHAL4-300	3000	9,4	11	71,3	78	14	20
		11,9	13,4	82,3	77	22	25
		20,0	16,6	68,5	91	55	30
		26,5	19,7	68	90	90	35
AHAL4-500	5000	15,2	11,2	70,2	89	14	20
		19,4	13,7	80,8	88	21	25
		32,7	16,9	67,8	104	53	30
		43,2	20	67,4	103	86	35
AHAL4-800	8000	25,5	10,8	72,1	75	24	20
		32,2	13,3	83,1	74	37	25
		53,6	16,6	68,7	87	90	30
		69,9	19,8	68,3	86	143	35

Noise data

* Indicative values of sound pressure at a distance of 3m

AHAL4-050

Into environment - Sound power level											
Air flow	Pressure	Frequency band LW (dB)								Total	
		63	125	250	500	1 k	2 k	4 k	8 k	LWA	LPA 3m
645	100	59	58	54	58	48	46	44	36	57	40
530	250	58	55	51	55	47	43	42	37	55	37
390	400	57	55	50	56	46	42	40	31	54	37
110	600	60	63	58	54	49	45	42	33	56	39

AHAL4-100

Into environment - Sound power level											
Air flow	Pressure	Frequency band LW (dB)								Total	
		63	125	250	500	1 k	2 k	4 k	8 k	LWA	LPA 3m
1070	100	61	60	65	60	49	44	42	35	60	43
920	220	66	58	63	59	47	43	41	33	59	41
700	350	60	56	61	56	46	42	39	33	56	39
310	450	67	64	59	52	46	43	40	34	55	38

AHAL4-200

Into environment - Sound power level											
Air flow	Pressure	Frequency band LW (dB)								Total	
		63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	LWA	LPA 3m
2040	100	65	70	63	65	58	55	50	38	65	48
1770	250	65	71	62	63	56	54	49	35	64	46
1380	450	65	70	60	60	53	52	47	35	61	44
840	600	67	73	68	60	54	51	46	36	63	46

AHAL4-300

Into environment - Sound power level											
Air flow	Pressure	Frequency band LW (dB)								Total	
		63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	LWA	LPA 3m
3890	100	74	72	77	69	61	59	55	47	71	54
3480	300	73	70	75	68	62	59	55	46	70	53
2680	600	73	69	72	67	63	61	58	47	70	52
1450	900	76	77	73	68	64	63	60	50	71	54

AHAL4-500

Into environment - Sound power level											
Air flow	Pressure	Frequency band LW (dB)								Total	
		63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	LWA	LPA 3m
5930	100	76	72	83	74	66	64	61	48	77	59
5260	400	76	72	79	72	66	64	60	48	74	57
4130	800	77	74	76	70	69	65	62	50	74	57
2050	1200	78	77	79	70	72	66	64	53	76	59

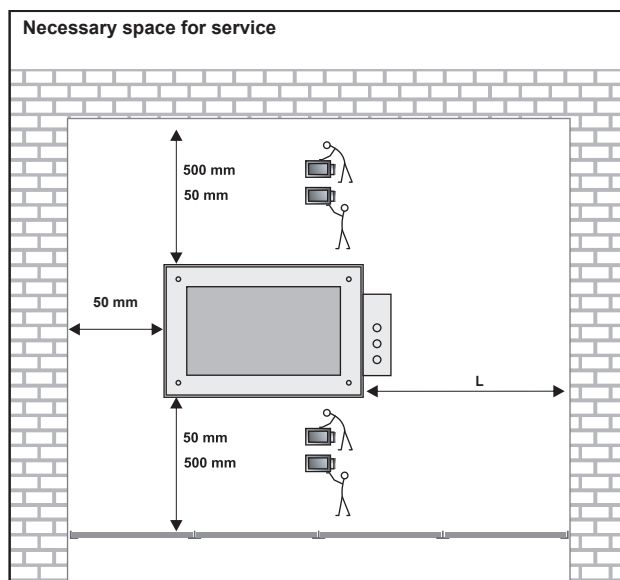
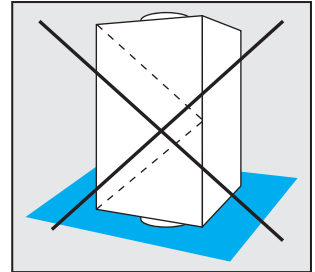
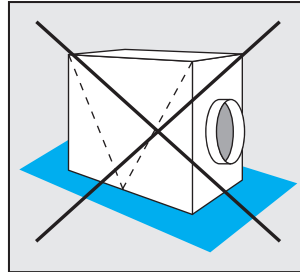
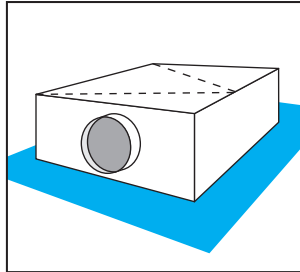
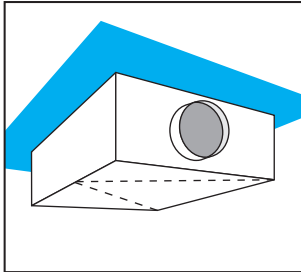
AHAL4-800

Into environment - Sound power level											
Air flow	Pressure	Frequency band LW (dB)								Total	
		63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	LWA	LPA 3m
9370	250	85	84	83	69	67	63	59	52	77	59
8360	500	76	73	80	71	69	65	58	49	75	58
5990	900	81	74	79	69	67	64	59	51	74	57
2040	1200	85	84	83	69	67	63	59	52	77	59



INSTALLATION AND ASSEMBLY

- The unit is designed for installation in the horizontal position with the inspection cover facing upwards or downwards. Other installation positions are not possible. To access the unit, it is also possible to choose the upper or lower inspection cover.
- Installation of the unit shall allow a sufficient access for performing maintenance, servicing, and dismounting operations. This particularly applies to access to at least one inspection cover and access to the control system box.



Type	L [mm]
AHAL4-050...	550
AHAL4-100...	550
AHAL4-200...	650
AHAL4-300...	750
AHAL4-500...	850
AHAL4-800...	850

- The unit is fixed using suspension holders located on both sidewalls of the unit.
- Threaded bars with nuts are usually used for attaching the unit to the support structure.
- The unit shall be fixed safely to avoid its dropping.
- No flammable materials are allowed within 100 mm of the unit housing and within 500 mm of the inlet sleeve of the unit or piping.



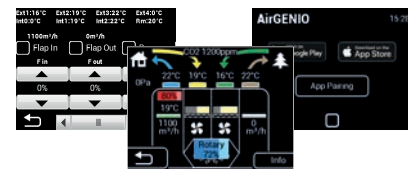
CONTROL

AirGENIO SUPERIOR - Description of control

Remote controller can be used to:

- adjust operational parameters,
 - display the alarms.
 - Possibility of control unit with two controllers
- Data cable shall not exceed length of 50 m.

Recommended data cable type UTP



Product with:

- Integrated temperature sensors
- sensor to protect the postheaters
- digital pressure sensor for filters
- digital pressure sensors for constant air flow / pressure

Overview of the main AirGENIO control function

Control using a wired remote control

Control from a higher regulation system
(Modbus RTU / TCP, BACnet)

Controls based on CO₂ concentration (air quality)

Controls for CAV systems

Controls for VAV systems

Controls for DCV systems

Special night time ventilation

Boost Mode

Fire protection mode

Supply temperature maintenance

Room temperature maintenance

Electrical coil control

LPHW coil control (0-10V)

Change-over control with automatic detection of the heating / cooling (0-10V)

Direct evaporator control with two possible types of control (ON-OFF or 0-10V) with reverse control cycles (heating / cooling mode)

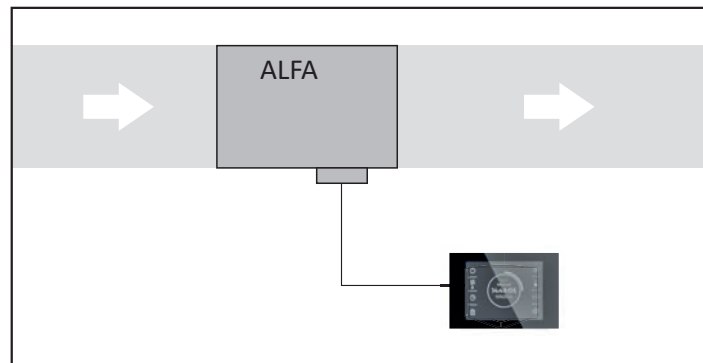
Possible control of external postheater and preheater

Filter clogging indication

Weekly and yearly programming

ALFA MASTER (AHAL4-...-HX00E40-X..S(C)-...)

- No accessories are needed to connect the ventilation unit.

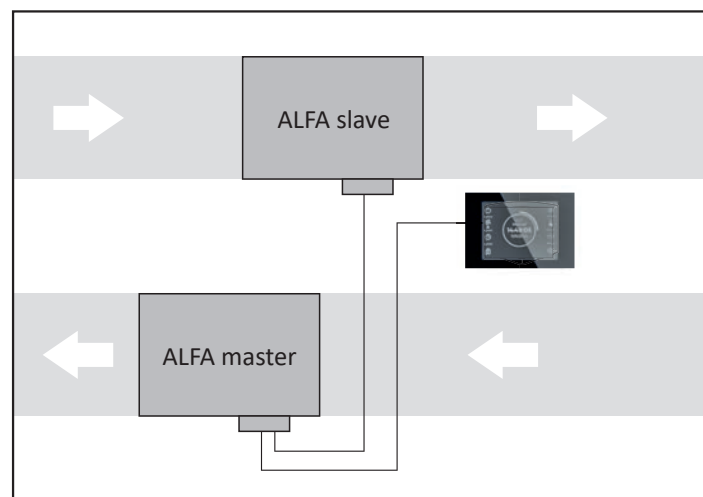


Connection examples of units and accessories necessary to ensure a correct operation

ALFA SLAVE (AHAL4-...-HX00E40-XS0D-...)

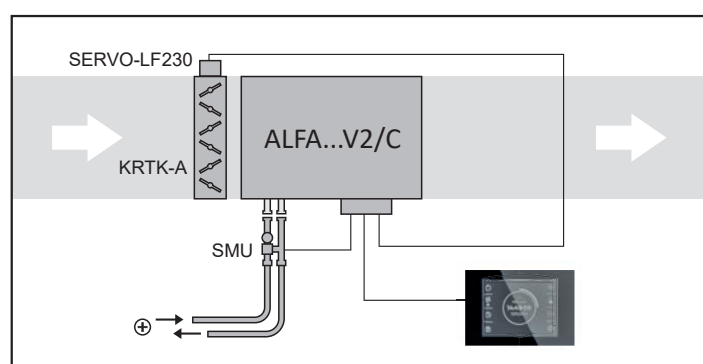
- The unit is fitted with a communication cable. It is necessary to connect the unit as a slave to the ALFA supply unit controller.

This combination is not allowed in EU zone.



ALFA-V2 (AHAL4-...HX00E0-XV2.-...)

- It is necessary to connect a mixing node to control the LPHW coil output and tight flap with a servo drive to provide the LPHW coil with frost protection.




ACCESSORIES
REQUIRED ACCESSORIES

These accessories shall be ordered to make the air handling unit functional.

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

External modul – Additional heating/cooling modul for ALFA unit
MOAL1-050HX00000-XC4X-0A0

0 – Standard RAL

C4 – Change over coil

D3 – Direct evaporator

050 – Nominal air flow 500 m³/h

100 – Nominal air flow 1000 m³/h

200 – Nominal air flow 2000 m³/h

300 – Nominal air flow 3000 m³/h

500 – Nominal air flow 5000 m³/h

800 – Nominal air flow 8000 m³/h

External modul

Type	ALFA + modul C/O	ALFA + DX module
AHAL4-050HX00E40-XS0...	✓	✓
AHAL4-050HX00E40-XE1...	✓	✓
AHAL4-050HX00E40-XE2...	✓	✓
AHAL4-050HX00E40-XV2...	not possible	✓
AHAL4-100HX00E40-XS0...	✓	✓
AHAL4-100HX00E40-XE0...	✓	✓
AHAL4-100HX00E40-XE1...	✓	✓
AHAL4-100HX00E40-XE2...	✓	✓
AHAL4-100HX00E40-XV2...	not possible	✓
AHAL4-200HX00E40-XS0...	✓	✓
AHAL4-200HX00E40-XE1...	✓	✓
AHAL4-200HX00E40-XE2...	✓	✓
AHAL4-200HX00E40-XE3...	✓	✓
AHAL4-200HX00E40-XV2...	not possible	✓
AHAL4-300HX00E40-XS0...	✓	✓
AHAL4-300HX00E40-XS0...	✓	✓
AHAL4-300HX00E40-XE1...	✓	✓
AHAL4-300HX00E40-XE2...	✓	✓
AHAL4-300HX00E40-XE3...	not possible	✓
AHAL4-500HX00E40-XS0...	✓	✓
AHAL4-500HX00E40-XV2...	not possible	✓
AHAL4-800HX00E40-XS0...	✓	✓
AHAL4-800HX00E40-XV2...	not possible	✓

Mixing valve

The **SMU2** mixing unit is designed for controlling the heat-output of water-type heat exchangers. It is used especially for controlling standalone water-type air heaters, heaters inbuilt into the ventilation units

Recommended values for individual types of the **ALFA** units:



Unit type	K _{vs}	Pump pressure (kPa)	C/O Module type	K _{vs}	Pump pressure (kPa)
AHAL4-050HX00E40-XV2.-...	4	60	MOAL1-050HX00000-XC4X-...	4	60
AHAL4-100HX00E40-XV2.-...	4	60	MOAL1-100HX00000-XC4X-...	4	60
AHAL4-200HX00E40-XV2.-...	6,3	60	MOAL1-200HX00000-XC4X-...	6,3	60
AHAL4-300HX00E40-XV2.-...	6,3	60	MOAL1-300HX00000-XC4X-...	12	60
AHAL4-500HX00E40-XV2.-...	12	70	MOAL1-500HX00000-XC4X-...	12	70
AHAL4-800HX00E40-XV2.-...	24	70	MOAL1-800HX00000-XC4X-...	24	70

SMU2-024-06,3-SC

- SC** – with short circuit
- WO** – without short circuit
- 04,0** – mixing valve – k_{vs} 4,0
- 06,3** – mixing valve – k_{vs} 6,3
- 12,0** – mixing valve – k_{vs} 12,0
- 24,0** – mixing valve – k_{vs} 24,0
- 024** – 24V stepless control
- SMU2** – mixing unit

Servo drive

SERVO-TD-04-230-1 – necessary for controlling the shutting flap. Servo drive is installed on a tight shutting flap.



Sensors **CI-LCN-FTK140VV**

This is an electronic sensor of relative humidity. The sensor has an analogue voltage output 0-10V, corresponding to the range of relative air humidity 0-100%.



Channel sensor CO2: **CI-EE850-C3xx-FP**

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



Spatial sensor CO2: **CI-CO2-R**

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



Spatial sensor RH: **CI-RH-R**

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



Signal combiner **CI-AQS-COMBI**

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



PIR sensor **CI-PS 1003**

Spatial infrared sensor for automatic ventilation based on presence of people in the ventilated area.



Replacement air filters

ALFA-xxD-xx – Class plate filter for **ALFA** unit.



Please make the designation key below according to the standard key appearance.

Recommended combinations:

Unit type	Filter type – Coarse 90% (G4 class)	Filter type – ePM 10 70% (M5 class)	Filter type – ePM 2,5 65% (F7 class)
050	ALFA-G4D-050	ALFA-M5D-050	ALFA-F7D-050
100	ALFA-G4D-100	ALFA-M5D-100	ALFA-F7D-100
200	ALFA-G4D-200	ALFA-M5D-200	ALFA-F7D-200
300	ALFA-G4D-300	ALFA-M5D-300	ALFA-F7D-300
500	ALFA-G4D-500	ALFA-M5D-500	ALFA-F7D-500
800	ALFA-G4D-800	ALFA-M5D-800	ALFA-F7D-800

Square manually controlled shutting flap

MLKR/S



Recommended combinations:

Unit type	Flap type
050	MLKR/S-300200
100	MLKR/S-400250
200	MLKR/S-500300
300	MLKR/S-600350
500	MLKR/S-800500
800	MLKR/S-1000600

Round silencer

SPTGLX



Recommended combinations:

Unit type	Silencer type
050	SPTGLX-1,0-200
100	SPTGLX-1,0-250
200	SPTGLX-1,0-315
300	SPTGLX-1,0-400
500	-
800	-

Threaded bar

The unit is suspended using four threaded bars.

ZTZ-M8-1,0 – threaded bar, M8 thread, 1 m length, suitable for all types of **ALFA** units



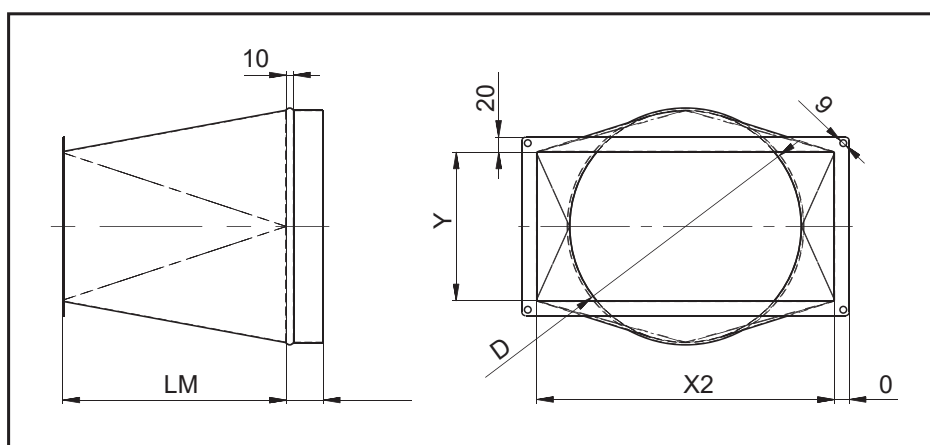
Flexible connection hoses

OH-...



Reduction - rectangular on circular connection

ALFA-PR – Reduction from rectangular flange of ALFA unit on circular connection of duct.



Unit type	Reduction type	Dimensions [mm]				
		X	Y	D	L	M
AHAL4-050...	ALFA-PR-05	300	200	200	180	50
AHAL4-100...	ALFA-PR-10	400	250	250	220	50
AHAL4-200...	ALFA-PR-20	500	300	315	250	70
AHAL4-300...	ALFA-PR-30	600	400	400	300	70
AHAL4-500...	ALFA-PR-50	800	500	500	400	70
AHAL4-800...	ALFA-PR-80	1000	600	630	450	70

The diagram shows a main power supply unit with three phases (L1, L2, L3), neutral (N), and protective earth (PE) terminals. It illustrates two sets of connections: 3-400V and 1-230V. The 3-400V connections are shown with solid lines, while the 1-230V connections are shown with dashed lines. The 1-230V connections are only present for L1, L2, and L3, and N.

The diagram illustrates the wiring for the external module C/O, DX (Accessories). It features a central terminal block with 18 numbered terminals (1-18) and a 24-pin D-sub connector at the top. The terminal block is divided into two rows of 9 terminals each. The top row (terminals 1-9) is labeled 'WAT PUMP', 'HEAT PUMP', 'ADB ON/OFF', 'COOL/HEAT', 'ADB ERROR', 'HEATPUMP DEFROST/ ERROR', 'PIR', and 'CONDEN-SATE'. The bottom row (terminals 10-18) is labeled 'WAT PUMP', 'HEAT PUMP', 'ADB ON/OFF', 'COOL/HEAT', 'ADB ERROR', 'HEATPUMP DEFROST/ ERROR', 'PIR', and 'CONDEN-SATE'. The 24-pin D-sub connector is labeled 'JTAG', 'I-BUS INPUT', and 'I-BUS OUTPUT'. The module is powered by a 230V AC supply (L, N, P) connected to terminals 1 and 2. A water pump (M) is connected to terminals 1 and 2. The module also includes a 2A fuse and a 2A thermal switch (T). The module is labeled 'External module C/O, DX (Accessories)' and 'B'.

Terminal Connections:

- Terminals 1-2:** 230 V ~ N P (Power supply)
- Terminal 2:** Water pump (M)
- Terminals 3-4:** Heat pump (OFF/ON)
- Terminals 7-8:** Cooling/heating/ (OFF/ON)
- Terminals 11-12:** Defrost heat pump (defrost)
- Terminals 13-14:** Error heat pump (Error/Reset)
- Terminals 15-16:** PIR sensor (PIR/Reset)

24-pin D-sub Connector:

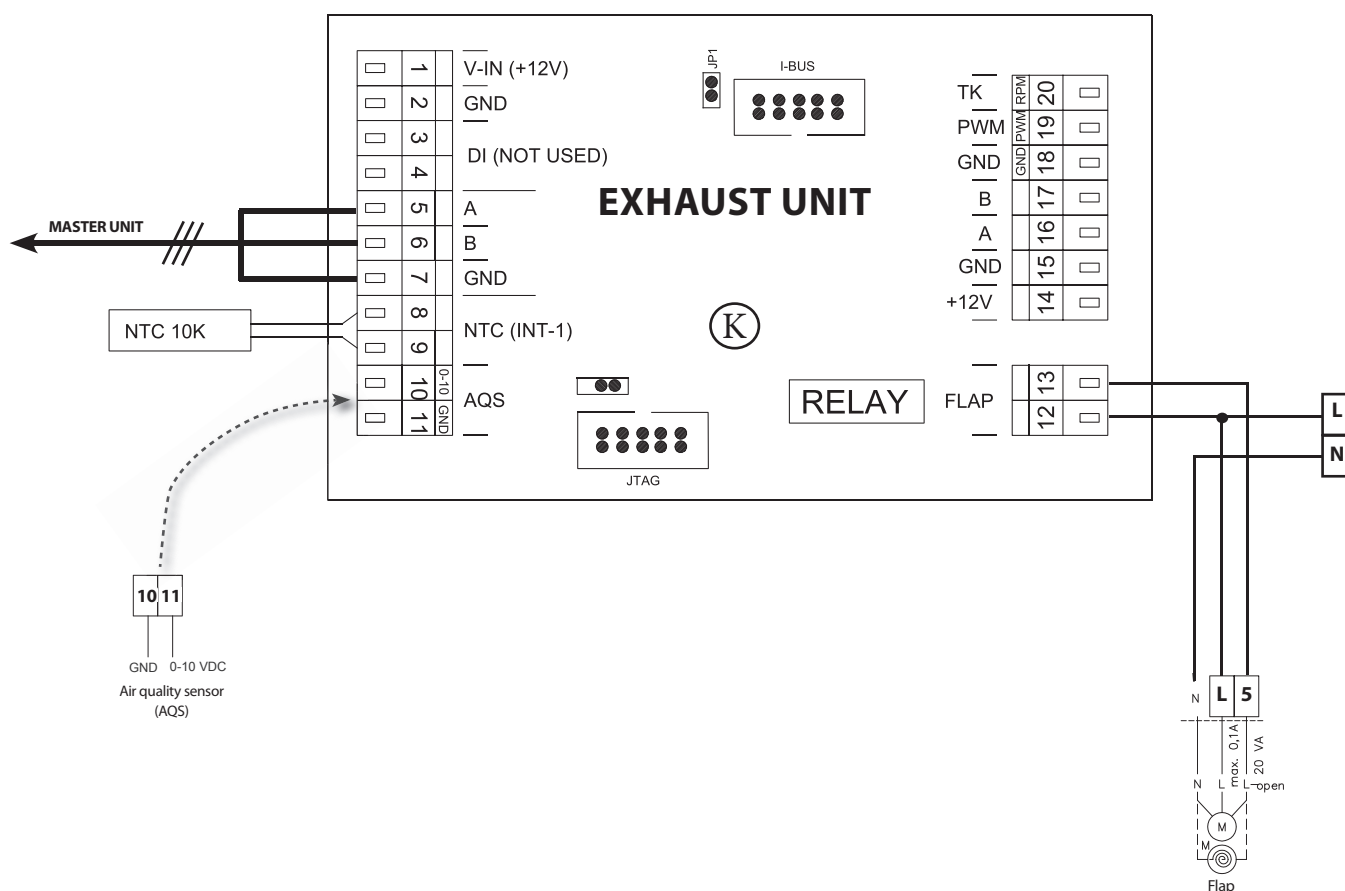
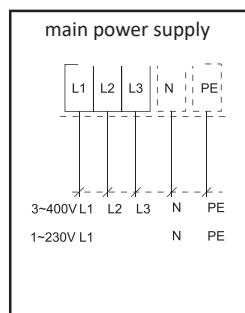
- Pin 1:** JTAG
- Pins 2-4:** I-BUS INPUT
- Pins 5-7:** I-BUS OUTPUT

Internal Components:

- FUSE 2A T**
- RELAY** (4 units)
- WAT PUMP** (2 units)
- HEAT PUMP** (2 units)
- ADB ON/OFF** (2 units)
- COOL/HEAT** (2 units)
- ADB ERROR** (2 units)
- HEATPUMP DEFROST/ ERROR** (2 units)
- PIR** (2 units)
- CONDEN-SATE** (2 units)



Regulator of unit - ALFA SLAVE (AHAL-.....-...D-...)





KEY TO CODING

AHAL4 - 100 HX00E40-X E1 S - 0A0

0 – Standard RAL

S – Superior control

D – Superior slave control

S0 – Air only (all sizes)

E0 – Electric heater (AHAL4-100)

E1 – Electric heater (AHAL4-050,100,200,300)

E2 – Electric heater (AHAL4-050,100,200,300)

E3 – Electric heater / increased power (AHAL4-100,200,300)

V2 – 2-row LPHW coil (all sizes)

050 – Nominal air flow 500 m³/h

100 – Nominal air flow 1000 m³/h

200 – Nominal air flow 2000 m³/h

300 – Nominal air flow 3000 m³/h

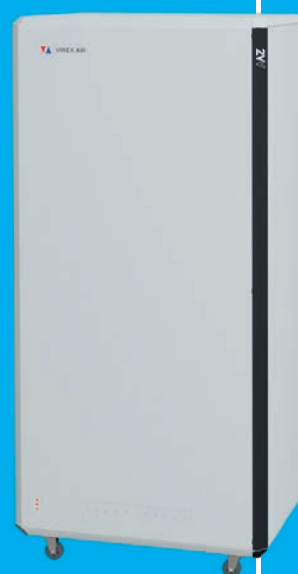
500 – Nominal air flow 5000 m³/h

800 – Nominal air flow 8000 m³/h

ALFA – ALFA ventilation unit



AIR PURIFIERS





HEPA filter H14



UVC chamber



Pre-filter ePM 1 55%



BASIC FEATURES

- Two-stage filtration: ePM1 55 % (F7) and HEPA H14 (99.995% efficiency)
- Air disinfection by UVC ultraviolet radiation at wavelength of 254 nm
- Airflow up to 1000 m³/h
- Energy-efficient EC fans with low SFP
- Quiet operation
- Intuitive and simple control
- Easy installation, manipulation and maintenance

VIREX AIR antiviral air purifier significantly reduces the risk of airborne infection transmission in the typical indoor environment. It filters and disinfects the indoor air and removes from it viruses, bacteria, moulds, fungi and other airborne impurities. It is designed primarily for indoor environments, where groups of people meet, such as **classrooms, auditoriums, waiting rooms, surgeries, lobbies, receptions, open-space offices, fitness centres, small shops, bars, cafes, etc.**

The VIREX AIR delivers two of the finest purifying technologies – disinfecting UVC radiation and 2-stage filtration. Included in the purifier is a very quiet, efficient and powerful EC fan.

The first filtration stage (pre-filter) captures dust and fine particles, filter class ePM1 55 % - ISO16890 (F7 according to EN779: 2012). The pre-filter primarily protects the internal parts of the device and prolongs its lifespan. The second filtration stage consists of highly efficient **HEPA filter of class 14** - EN1822, with **efficiency of 99.995%** for particles 0.1 to 0.3 µm.

Air disinfection is performed in the UVC chamber where **germicidal UVC emitters** provide a total power output of 120 W, of which **48 W is the pure UVC** ultraviolet radiation at a wavelength of 254 nm. The spacious UVC chamber and vertical placement of the UVC emitters ensure high and consistent UVC exposure, killing viruses, bacteria and other living airborne microorganisms.

The filtering efficiency of VIREX AIR is significantly increased with air passing through the UVC chamber. 99.995 % of micro-particles are captured by the HEPA filter, those 0.005 % of micro-particles that might not be captured by the HEPA filter are already treated with a high dose of UVC radiation. Placement of the UVC chamber in front of the HEPA filter ensures that the surface of the filter is constantly treated with UVC radiation. The VIREX AIR is designed to prevent unwanted exposure of UVC radiation and the activation of the UVC emitters is directly dependent on the tightly secured service door.

The VIREX AIR antiviral air purifier is designed to be operated in a dry indoor environment with an ambient temperature in the range from 0 °C to +40 °C and with a relative humidity not exceeding 80 %. The device is designed to convey air free of coarse dust, grease, chemical fumes and other contaminants. It is not intended for use in areas with a risk of explosion and increased risk of fire! The electrical protection of the unit is IP 40.



PRIMARY PARAMETERS

Basic technical parameters

Speed	Air flow [m³/h]	Voltage [V]	Frequency [Hz]	Power consumption [W]	Current consumption [A]	IP	Weight [kg]
MIN	450	230	50-60	30	0,20	40	180
MED	720			70	0,40		
MAX	1000			120	0,60		
MAX + UVC I	1000			190	0,85		
MAX + UVC II	1000			250	1,10		

Acoustic parameters

Speed	Air flow [m³/h]	Sound power L _{WA} [dB(A)]	Sound pressure L _{PA} [dB(A)]*
MIN	450	48	29
MED	720	56	38
MAX	1000	62	44

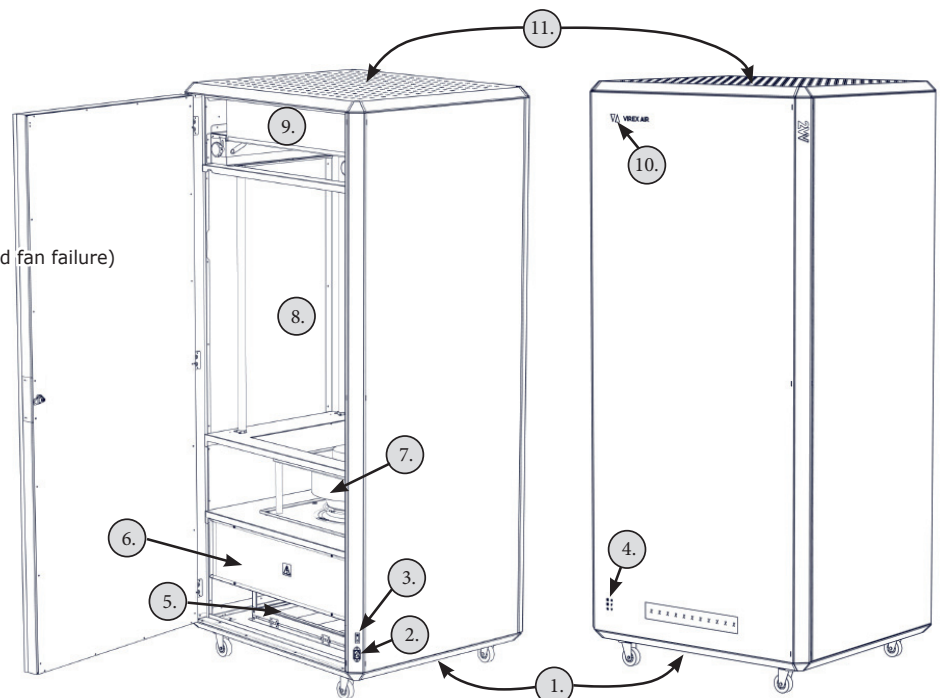
* Acoustic pressure values at 1,5m, Directional factor Q=2

UVC chamber parameters

Type	UV-C radiation [W]	Power consumption [W]	Lifetime [h]
UVC I (first stage)	24	60	9000
UVC II (second stage)	48	120	

MAIN PARTS

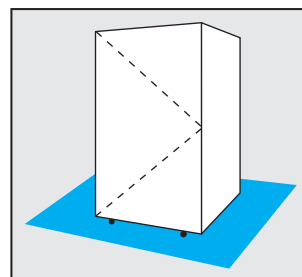
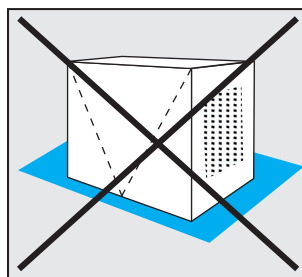
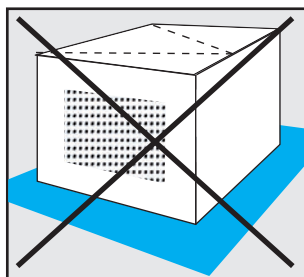
- ① Air inlet
- ② Power socket (power cable included)
- ③ Power switch
- ④ Warning signalization (clogged filters and fan failure)
- ⑤ Inlet filter ePM 1 55% (F7)
- ⑥ Wiring box (controls, sensors, fuse)
- ⑦ EC fans
- ⑧ UVC chamber with germicidal emitters
- ⑨ HEPA filter H14
- ⑩ Run indication
- ⑪ Air outlet



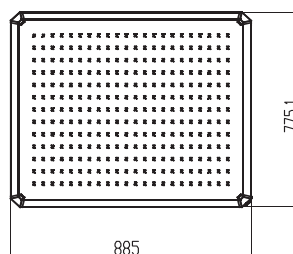
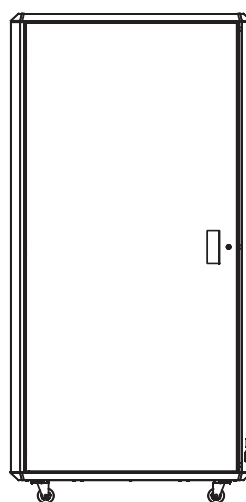
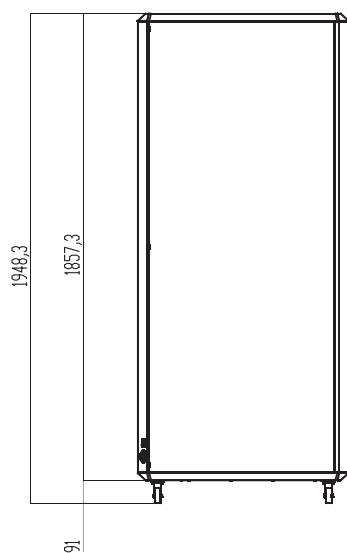
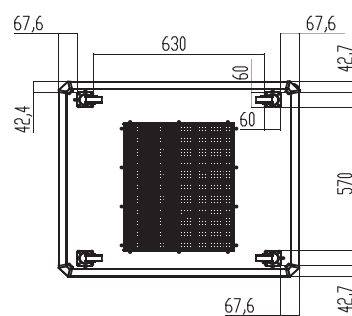


INSTALLATION AND ASSEMBLY

- The only possible working position is free-standing on secured castors wheels!
- Installation of the unit shall allow a sufficient access for performing maintenance, servicing, and dismounting operations.



DIMENSIONS





CONTROL

Overview of functions



Manual IR



Control of airflow in 3 steps



UVC level (OFF, LEVEL 1, LEVEL 2)



Filter clogged indicator



Error indicator

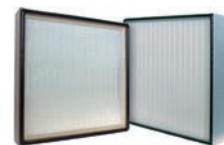


ACCESSORIES

RECOMMENDED ACCESSORIES

Replacement air filters

Inlet filter ePM1 55% (F7 class)	Outlet filter HEPA H14 (Retention 99,95%)
APVA1-100-FI-F7	APVA1-100-FI-H4



APVA1-100-FI-F7

F7 - ePM1 55% (F7)
H4 - type HEPA14

FI - Filter

100 - Size of the air purifier

APVA1 - Spare parts for VIREX air

Replacement UVC lamps

Set of 4pcs UVC lamps	Single UVC lamp
APVA1-100-UVC-04	APVA1-100-UVC-01



APVA1-100-UVC-04

04 - Set of 4pcs
01 - Single piece

UVC - UVC emitter

100 - Size of the air purifier

APVA1 - Spare parts for VIREX air



KEY TO CODING

APVA1 - 100 S E-7 H14 U4-IR-0A0

0 – Standard RAL

IR – Infrared control

U4 – 4pcs of UVC lamps

H14 – HEPA filter H14 (99,95%)

7 – Pre-filter ePM1 55% (F7)

E – EC fan

S – Standing unit

100 – Nominal air flow 1000 m³/h

VIREX AIR – VIREX AIR air purifier



CONTROL SYSTEM





BASIC FEATURES

- Fully automatic AirGENIO control system enabling individual setting and adjusting air speed and heating output for specific conditions.
- BMS control via Modbus RTU, Modbus TCP, BACnet with communication configuration
- Five-level AC fan speed control or EC motor control
- Designed for single-phase fans
- Controls both LPHW and electric coils
- NTC 10K temperature sensor input (measured in °C and °F)
- 36 months guarantee

The AirGENIO **IC** control unit is designed primarily for controlling 2VV industrial air curtains. The control unit shall be installed in dry indoor areas with an ambient temperature of +5°C up to + 40 °C and relative humidity of up to 90%.

The electric IP rating of the control box is IP66 (for AC fans) or IP40 (for EC fans).

The control unit housing is made of painted metal sheet.

PRIMARY PARAMETERS

Type	Regulator's power supply [V/Hz]	Fan maximum current [A]	Electrical protection of control box [IP]	Weight [kg]	Fans*
IC3-C-AC5-04	230 / 50~60	4	66	13,5	N/A
IC3-C-AC5-07	230 / 50~60	7	66	15	N/A
IC3-C-AC5-16	230 / 50~60	16	66	23	N/A
IC3-S-AC5-04	230 / 50~60	4	66	13,5	N/A
IC3-S-AC5-07	230 / 50~60	7	66	15	N/A
IC3-S-AC5-16	230 / 50~60	16	66	23	N/A
IC3-C-EC	115-230 / 50~60	N/A	40	3	10
IC3-S-EC	115-230 / 50~60	N/A	40	3	5

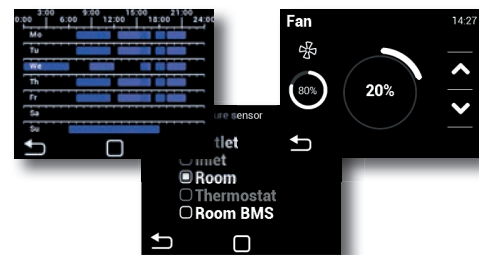
* - Maximum number of connected EC fans to one control unit



Description of AirGENIO IC control

Remote controller can be used to:

- AUT/MAN Control
- Extended protection of electric heater by software and temperature sensors
- Alarm display
- Integrated automatic antifreeze protection of LPHW coil with adjustable limit temperatures
- Door switch and/or external switch can be optionally used for automatic control of air curtain
- Door switch advanced option
- Closed door after-running - adjustable time and temperature
- SMART DOOR FUNCTION - learns door settings
- Room thermostat and/or outside temperature sensor can be optionally used for fully automatic heating control
- Outside/Room/Required/Outlet temperature are measured and displayed on control panel
- Integrated Day/Week time schedule manager
- SUMMER/WINTER mode
- Error indication contact
- Graphical overview of air curtain operation



Overview of the function

Regimes

Heating boost

- instant start of heating at max output when doors are open to keep comfortable heat inside

Smart door function

- self learning mode ensuring smooth air curtain running without useless start-ups at frequent door openings. Saves energy and prolongs the air curtain's working life.

Night mode

- during the pre-set night period air curtain can be switched off completely, or used to heat up the room. Possibility to set lower requested temperature for the night mode.

Summer mode

- to avoid waste of energy for heating, within a pre-set „summer season“, the heating is allowed only if the difference between the outside and inner temperature is higher than pre-set scale.

Auto-speed control

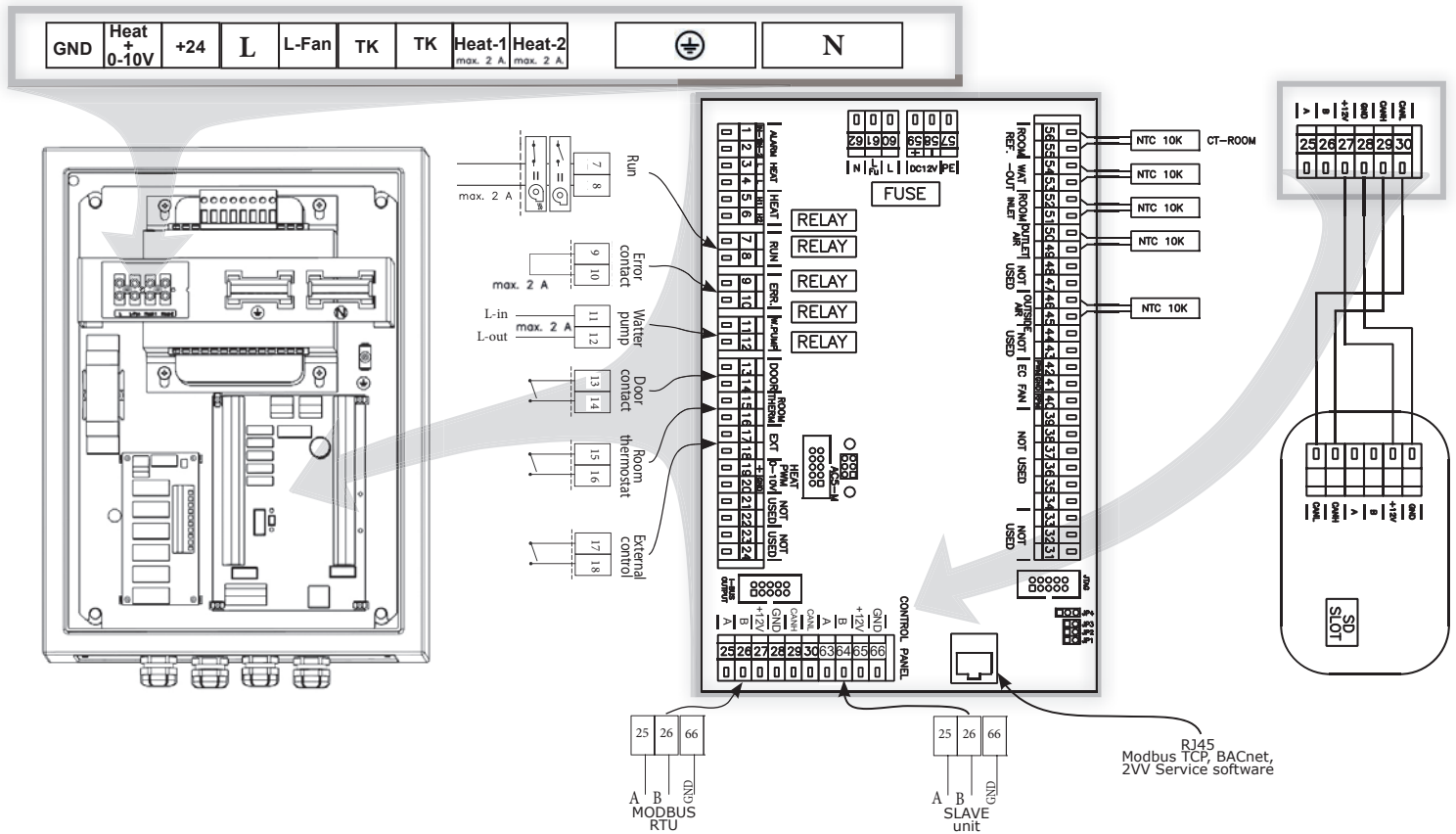
- air curtain evaluates its own temperature on outlet and the temperature outside and inside the room. The air speed and heating output are modified according to the required temperature, time programme and open/closed doors. All parameters are evaluated in order to get the maximal output at the lowest possible operating costs.



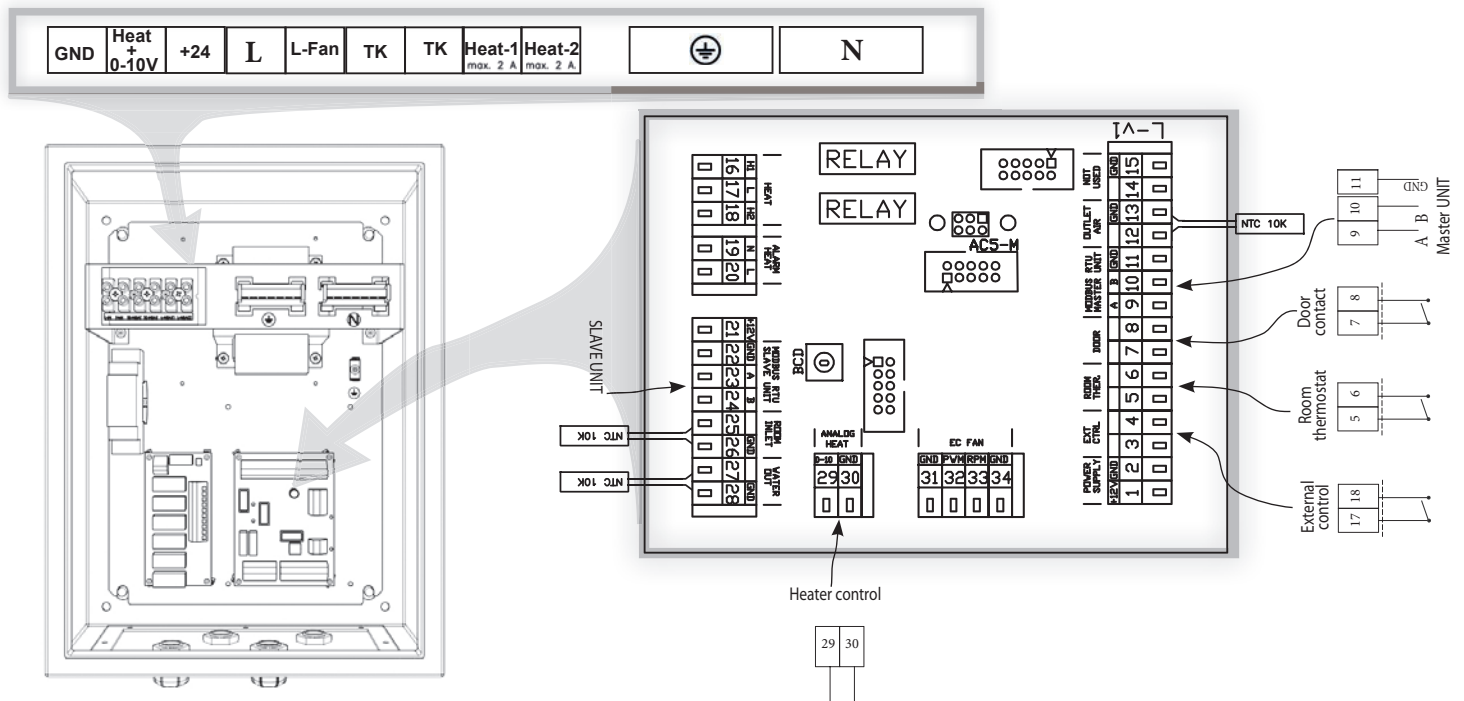


WIRING DIAGRAMS

IC3-C-AC



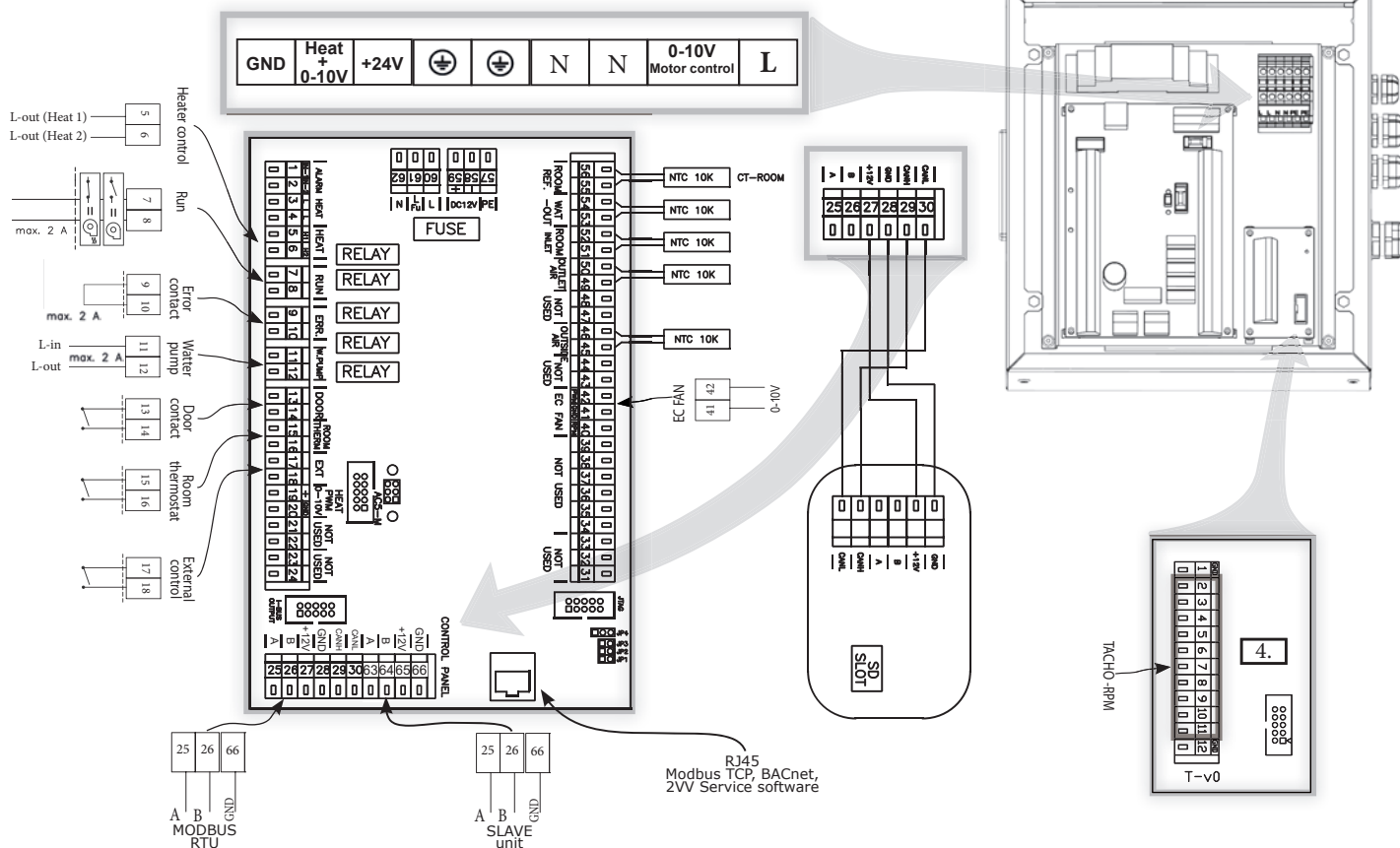
IC3-S-AC



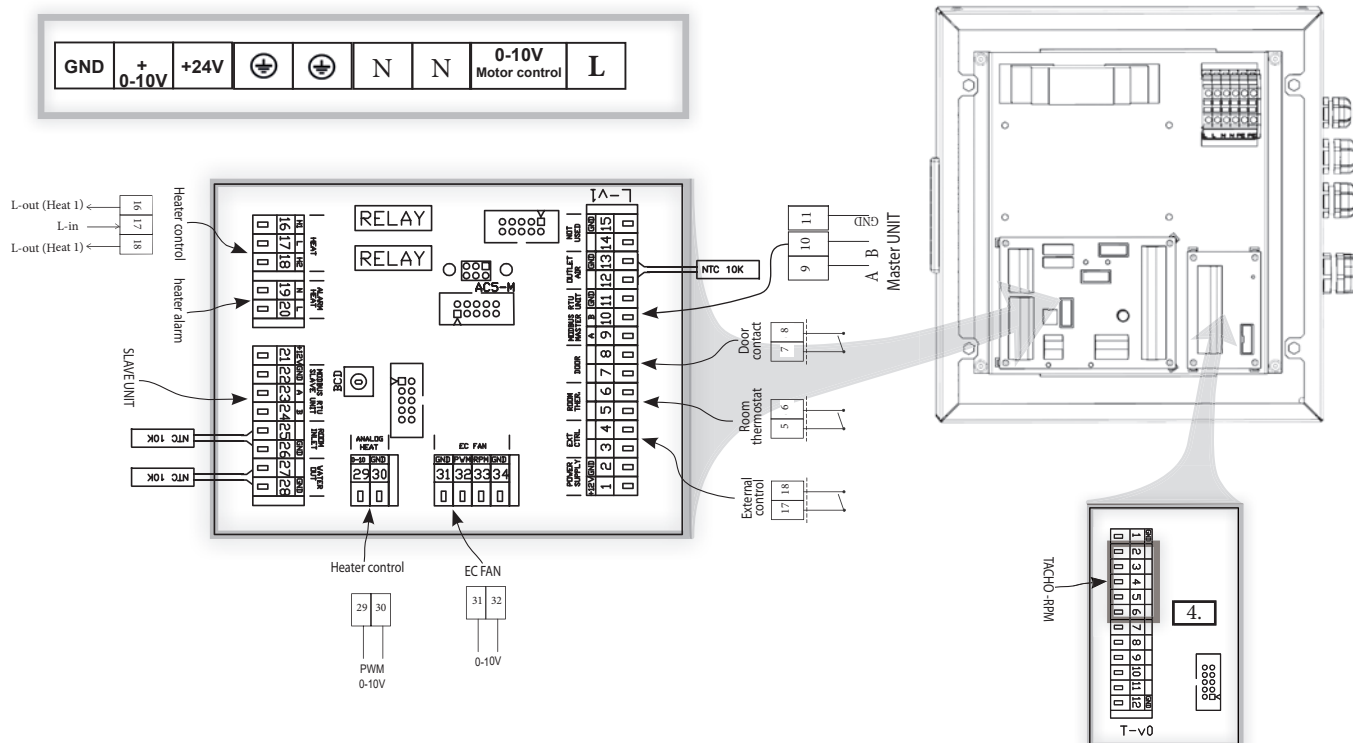


WIRING DIAGRAMS

IC3-C-EC



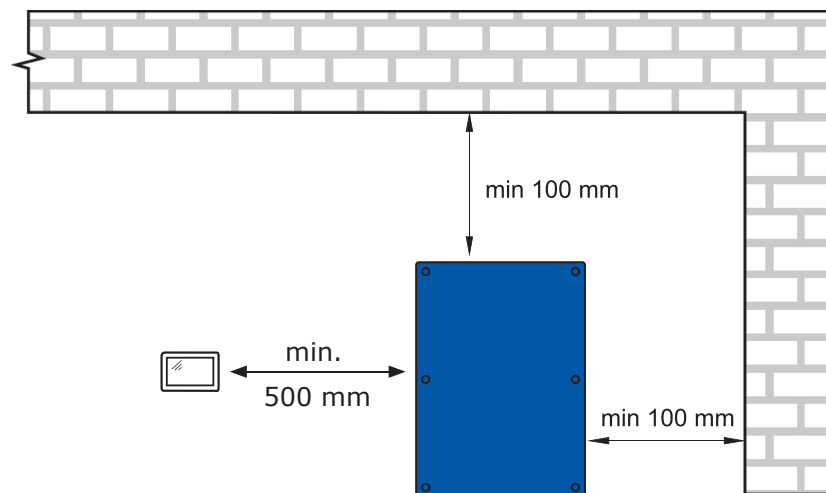
IC3-S-EC





INSTALLATION AND ASSEMBLY

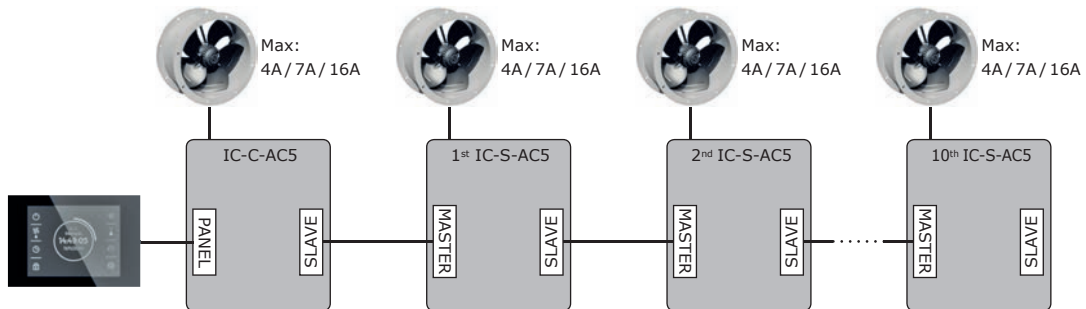
- The control unit is intended to be installed on a wall in the vertical position.
- The control unit must be installed in such a way that the air can flow around to prevent overheating.
- Comply with minimum recommended standoff distances. The control unit must be installed in such a way that ensures sufficient access for maintenance, service and disassembling.
- The control unit is attached using screws and dowels or bolts on a wall.
- There must not be any flammable materials within a distance of 100 mm from the regulator.



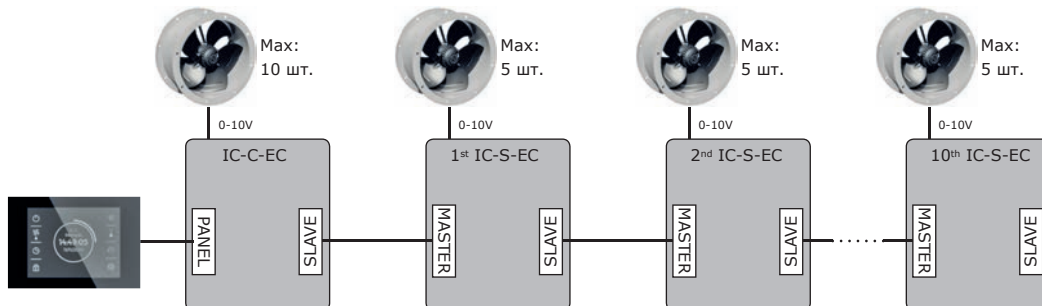


Chaining

IC3-x-AC

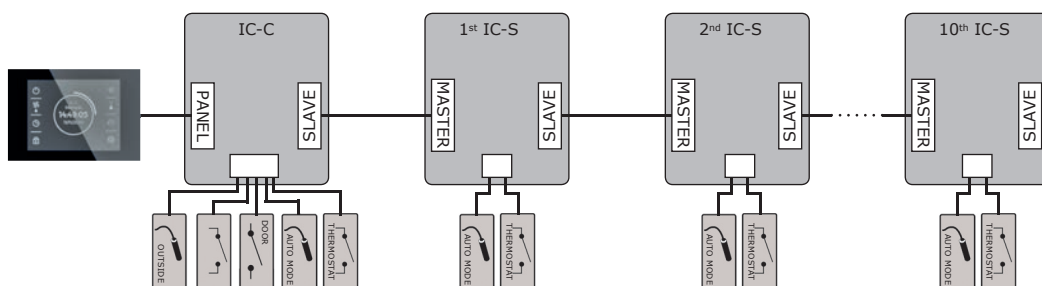


IC3-x-EC

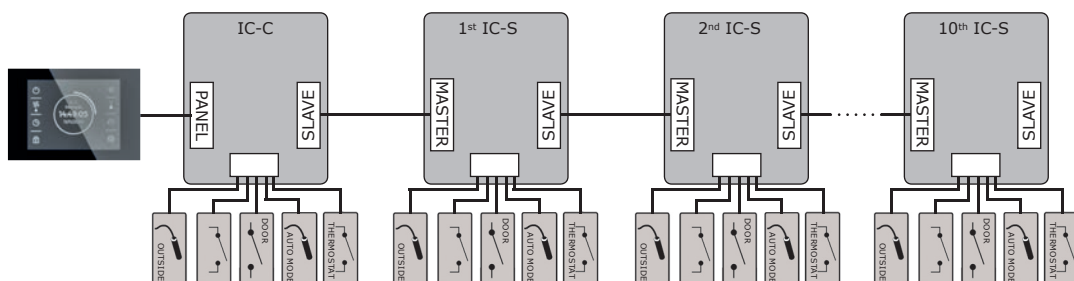


Chaining

IC3 with Global settings



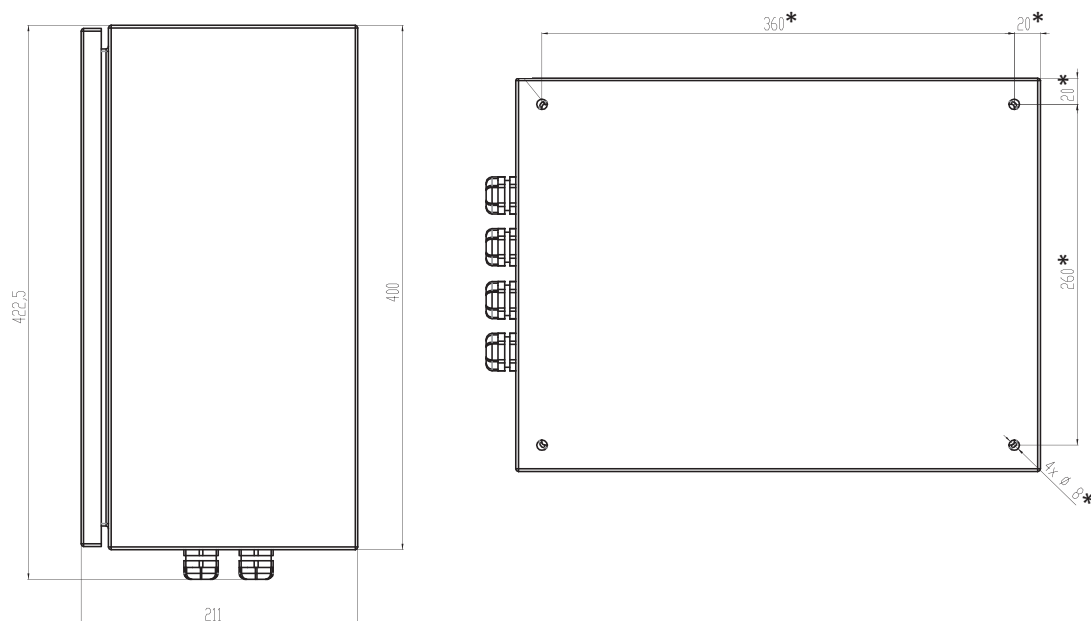
IC3 without Global settings



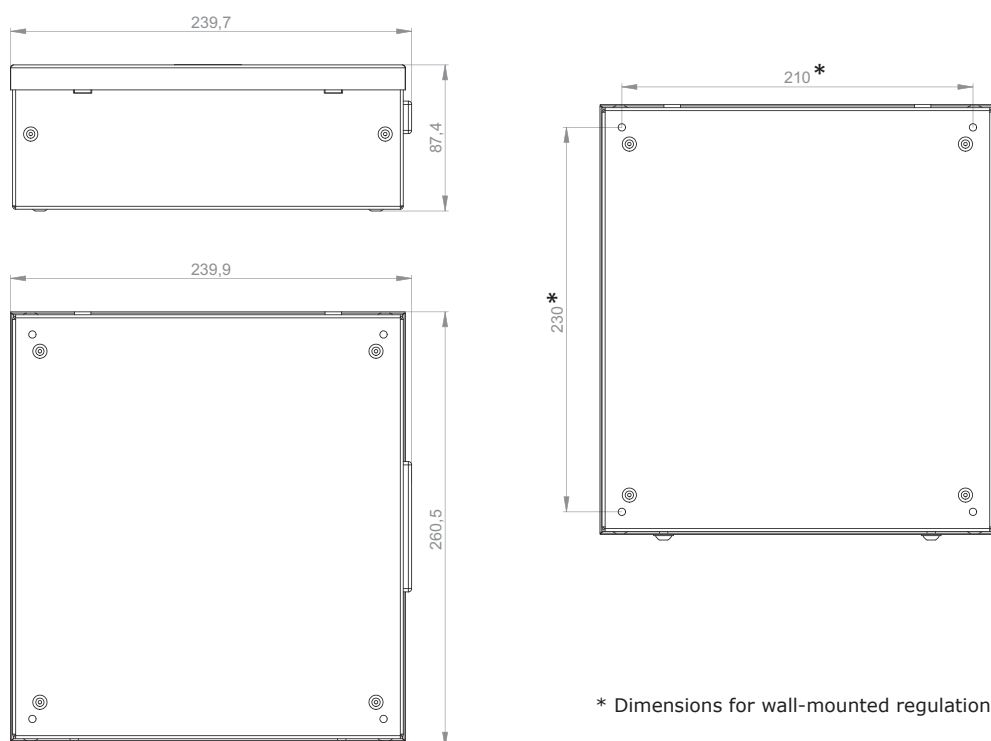


DIMENSIONS

IC3-C-AC / IC-S-AC



IC3-C-EC / IC-S-EC



* Dimensions for wall-mounted regulation

**ACCESSORIES**

More details can be found on the relevant page in catalog

2-way or 3-way valve with servo drive

ZV2-230-xx,x-xx (230V, ON/OFF)

ZV3-230-xx,x-xx (230V, ON/OFF)

ZV2-24V-xx,x-xx (24V, 0-10V)

ZV3-24V-xx,x-xx (24V, 0-10V)

**Three-way valve with servo drive**

RTxx – three-way valve necessary for controlling the water heater output.

**Mixing point**

SMU 2 – mixing unit is designed for controlling the heat-output of water-type heat exchangers.

It is used especially for controlling standalone water-type air heaters, heaters inbuilt into the ventilation units, heaters in air curtains, and so on.

**Contactor**

STYKAC-20-LC2 – three-phase contactor, 400V, max. resistance load 20 A, necessary for switching electric heaters.

**Door contact**

DK-B-3

**Door switch**

DS





ACCESSORIES

Wall-mounted temperature sensor
CT-ROOM

Temperature sensor (3,2m; NTC)
ND-CT-32

Room thermostat
TER-P



KEY TO CODING

IC3-C-AC5-16

04 – max load 4A

07 – max load 7A

16 – max load 16A

AC5 – For AC fans with 5-speed

EC – For EC fans

C – Master

S – Slave

IC3-C – Control unit



BASIC FEATURES

- Fully automatic control system for **water air heaters** enabling individual setting and adjusting air speed and heating output for specific conditions.
- BMS control via Modbus RTU,TCP or BACnet with communication configuration
- Five-level AC fan speed control or EC motor control
- Designed for single-phase fans
- Controls LPHW coils
- NTC 10K temperature sensor input (measured in °C)
- 36 months guarantee

The **AirGENIO SC** control unit is designed primarily for controlling SAVANA heating units.

The control unit shall be installed in dry indoor areas with an ambient temperature of +5°C up to +40 °C and relative humidity of up to 90%.

The electric IP rating of the control box is IP65 (for AC fans) or IP40 (for AC fans).

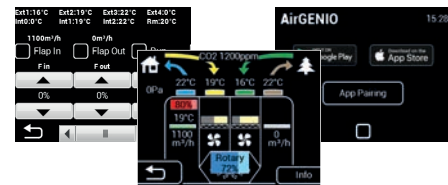
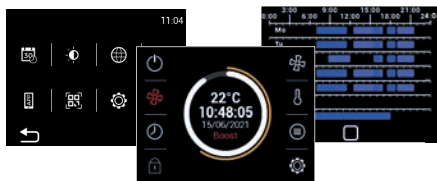
The control unit housing is made of painted metal sheet.



PRIMARY PARAMETERS

Type	Regulator's power supply [V/Hz]	Fan maximum current [A]	Electrical protection of control box [IP]	Weight [kg]	Fans*
SC-C-AC5-04	230 / 50~60	4	65	13,5	-
SC-C-AC5-07	230 / 50~60	7	65	15	-
SC-C-AC5-16	230 / 50~60	16	65	23	-
SC-S-AC5-04	230 / 50~60	4	65	13,5	-
SC-S-AC5-07	230 / 50~60	7	65	15	-
SC-S-AC5-16	230 / 50~60	16	65	23	-
SC-C-EC	115-230 / 50~60	-	40	3	10*
SC-S-EC	115-230 / 50~60	-	40	3	5*

* - Maximum number of connected EC fans to one control unit



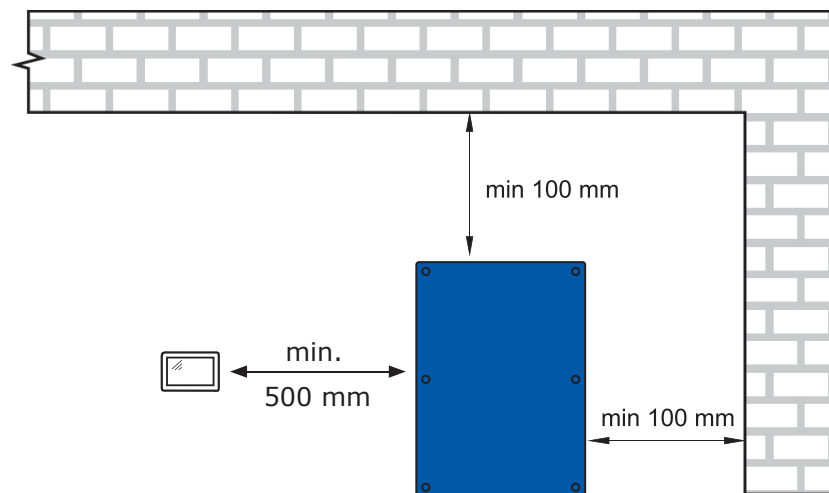
Description of AirGENIO SC-C control

Remote controller can be used to:

- AUT/MAN Control
- Alarm display
- Integrated automatic antifreeze protection of LPHW coil with adjustable limit temperatures
- DAY/NIGHT mode
- Room thermostat can be optionally used for fully automatic heating control
- Outside/Room/Outlet temperature are measured and displayed on control panel
- Integrated Day/Week time schedule manager
- SUMMER/WINTER mode
- Error indication contact
- Graphical overview of operation

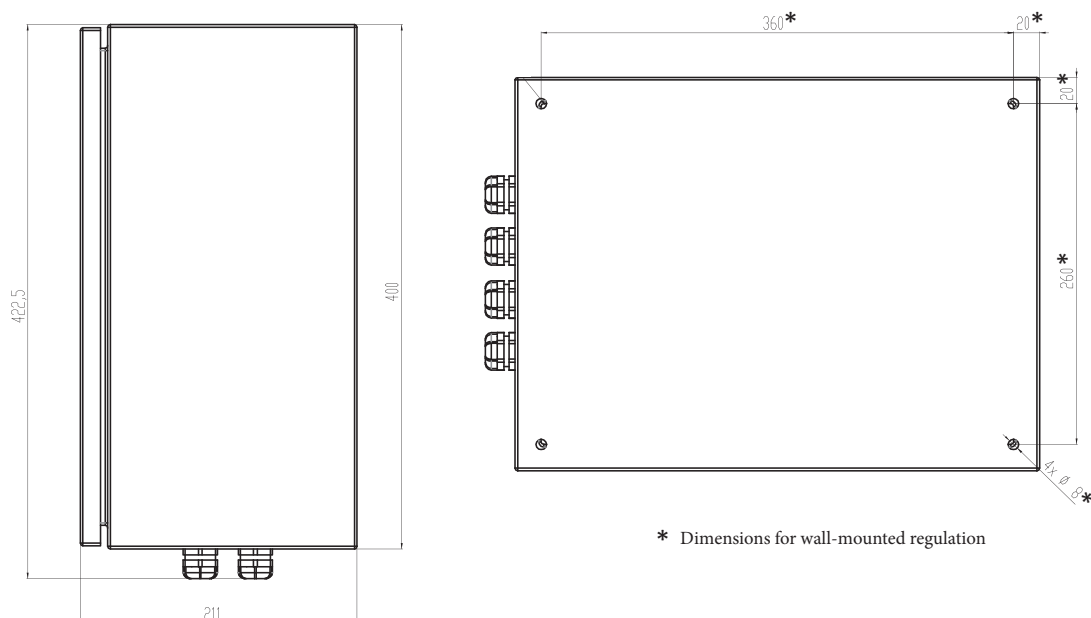
**INSTALLATION AND ASSEMBLY**

- The control unit is intended to be installed on a wall in the vertical position.
- The control unit must be installed in such a way that the air can flow around to prevent overheating.
- Comply with minimum recommended standoff distances. The control unit must be installed in such a way that ensures sufficient access for maintenance, service and disassembling.
- The control unit is attached using screws and dowels or bolts on a wall.
- There must not be any flammable materials within a distance of 100 mm from the control unit.

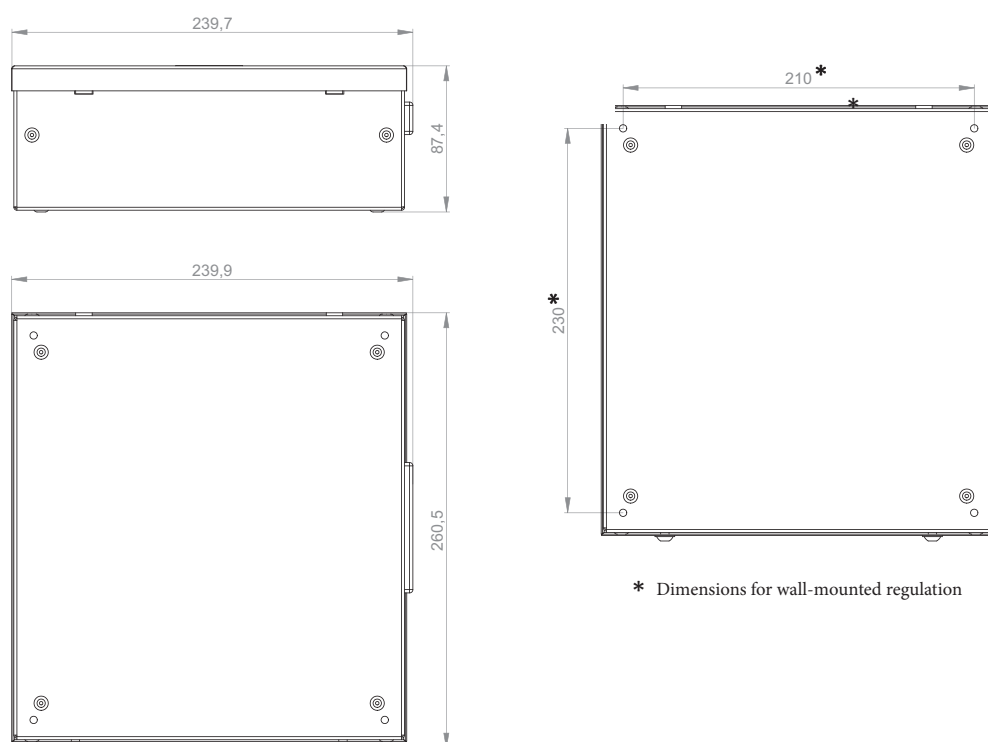




SC-C-AC / SC-S-AC

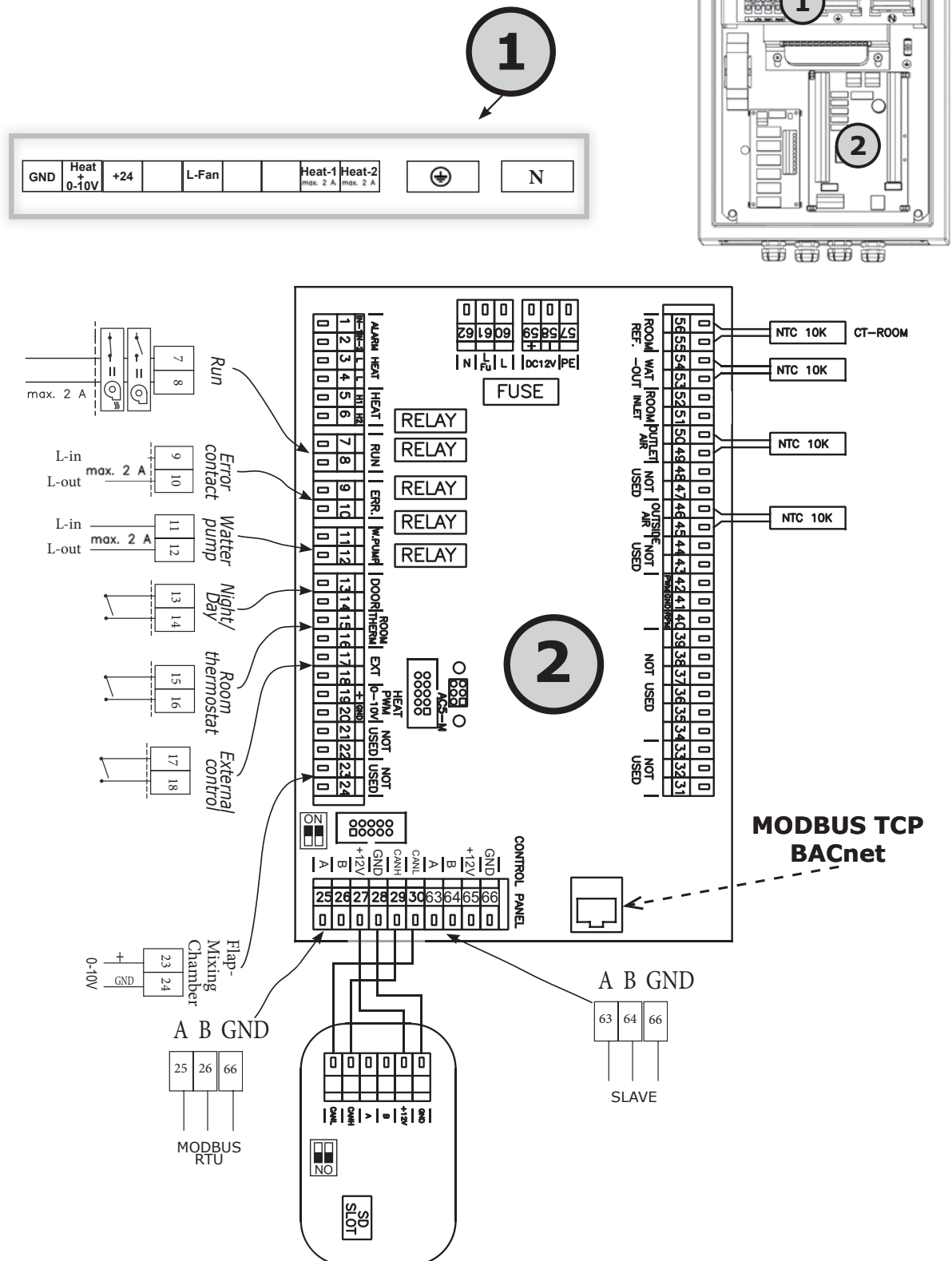


SC-C-EC / SC-S-EC



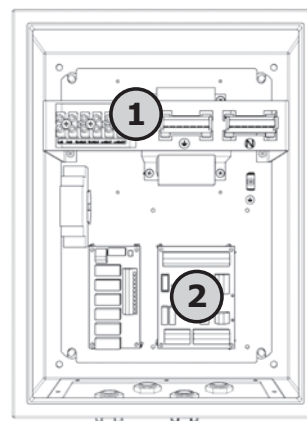
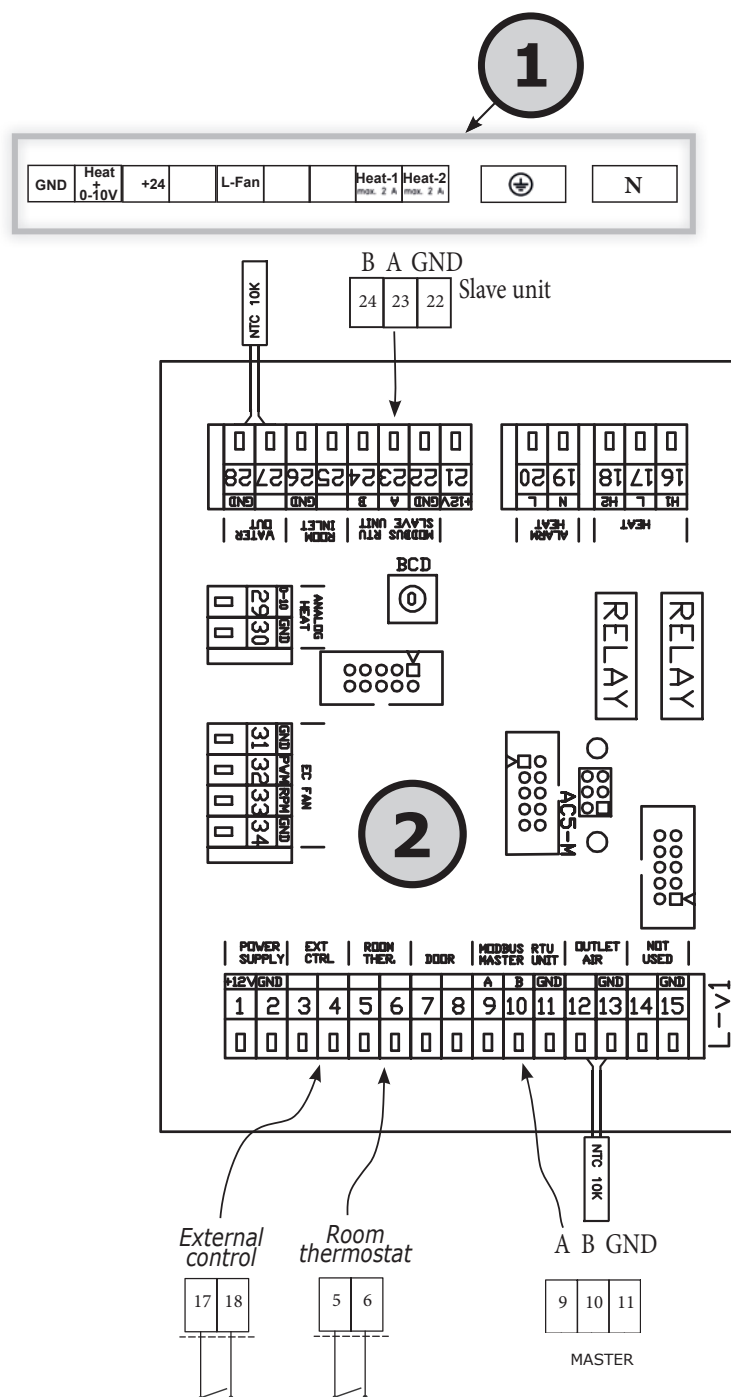


WIRING DIAGRAMS

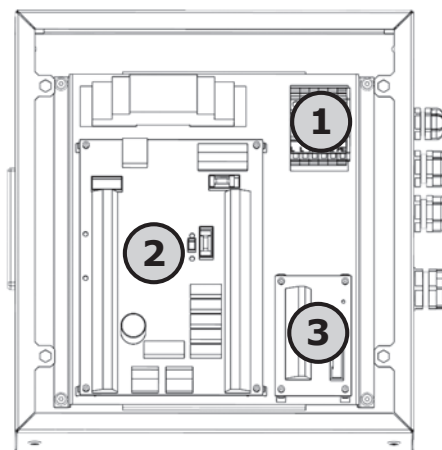
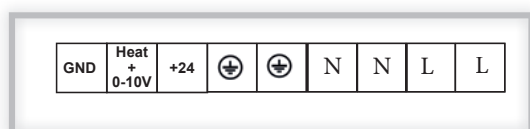
SC-C-AC



WIRING DIAGRAMS

SC-S-AC

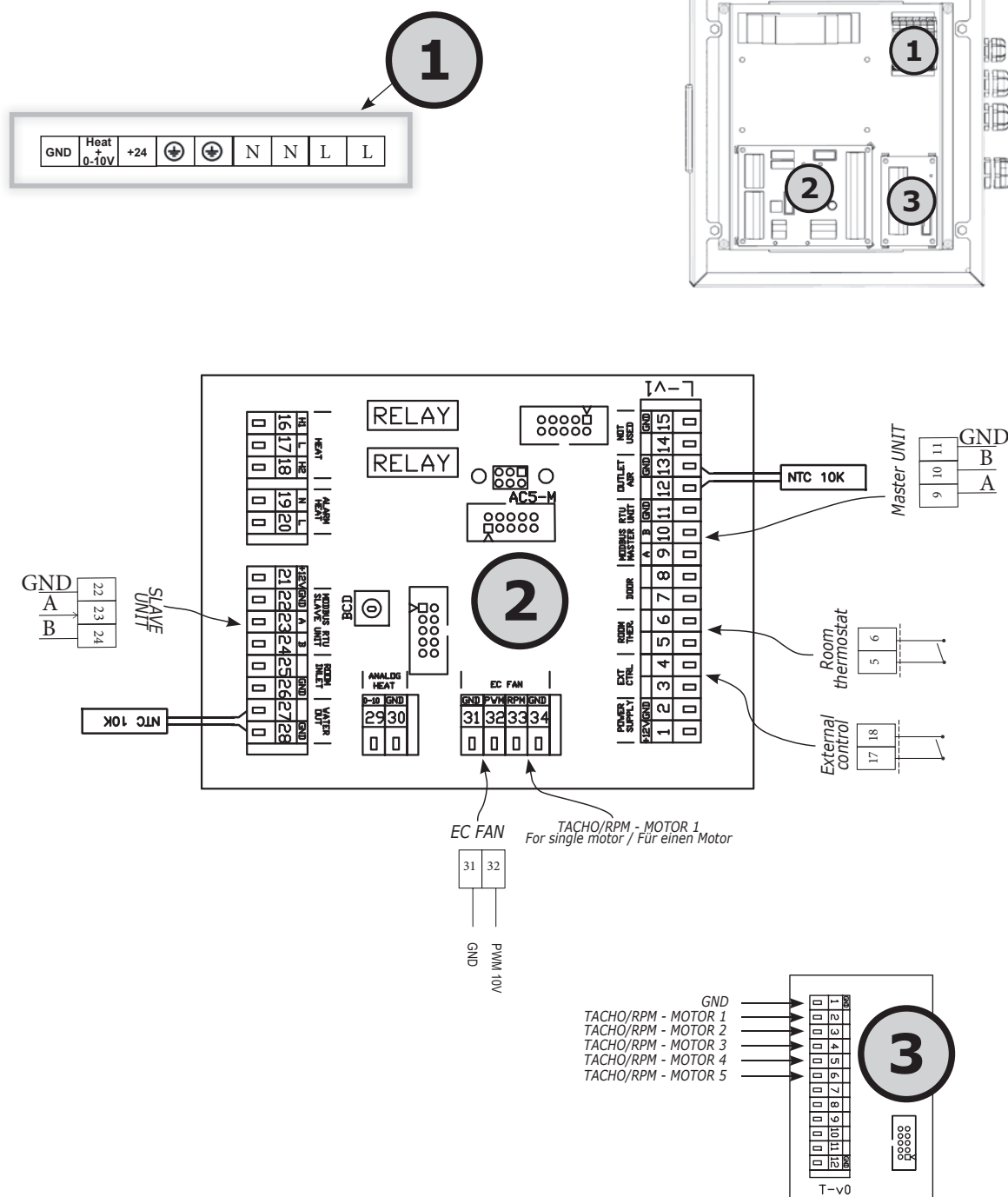
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WIRING DIAGRAMS

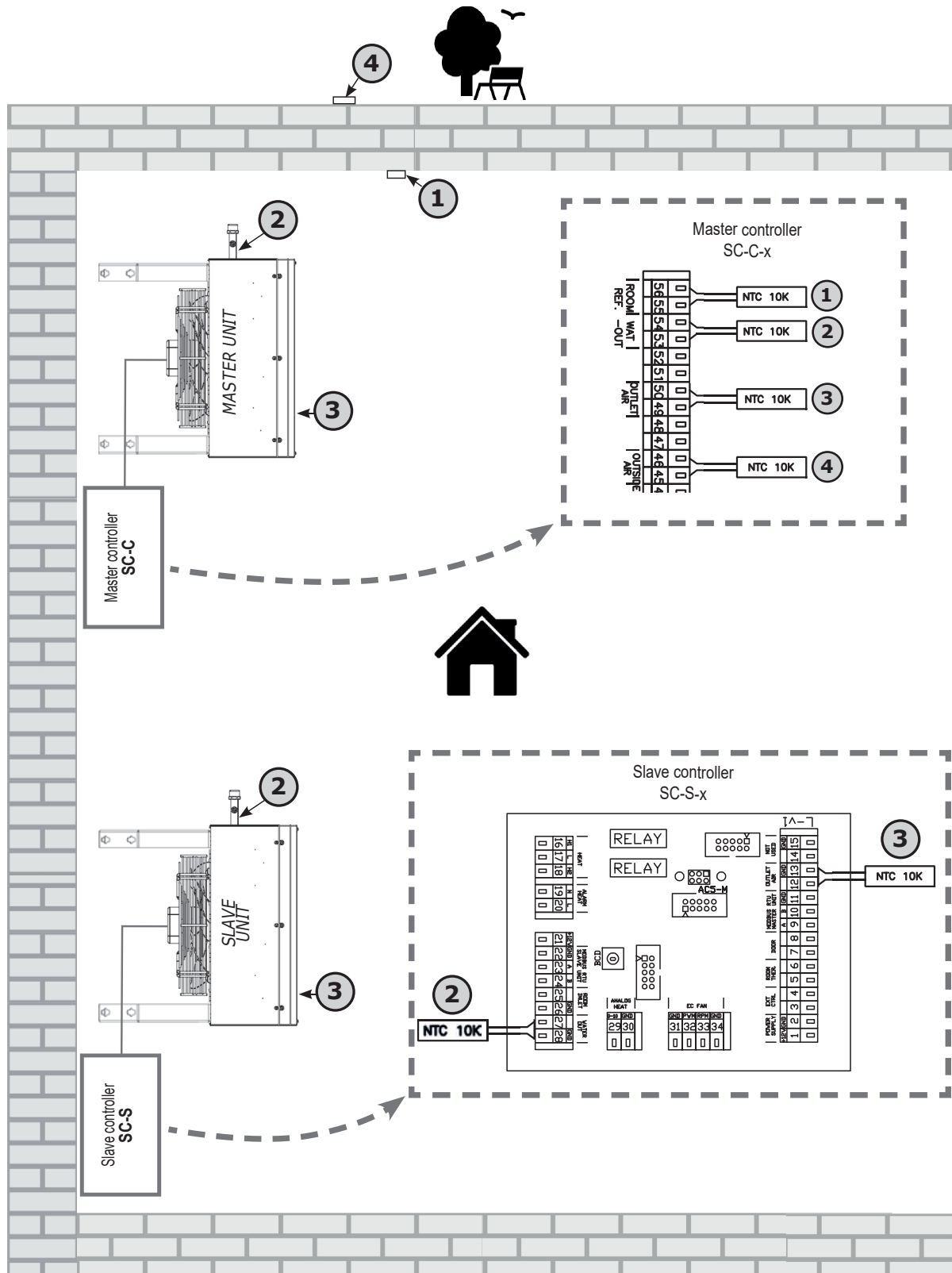
SC-S-EC





INSTALLATION AND ASSEMBLY

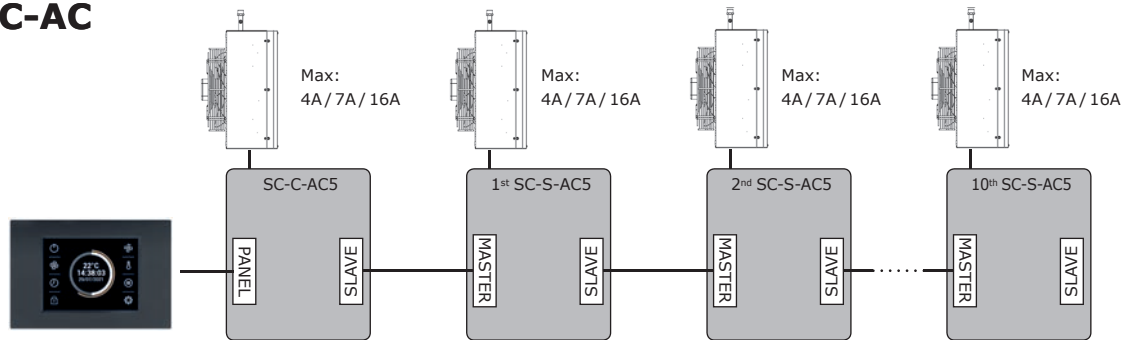
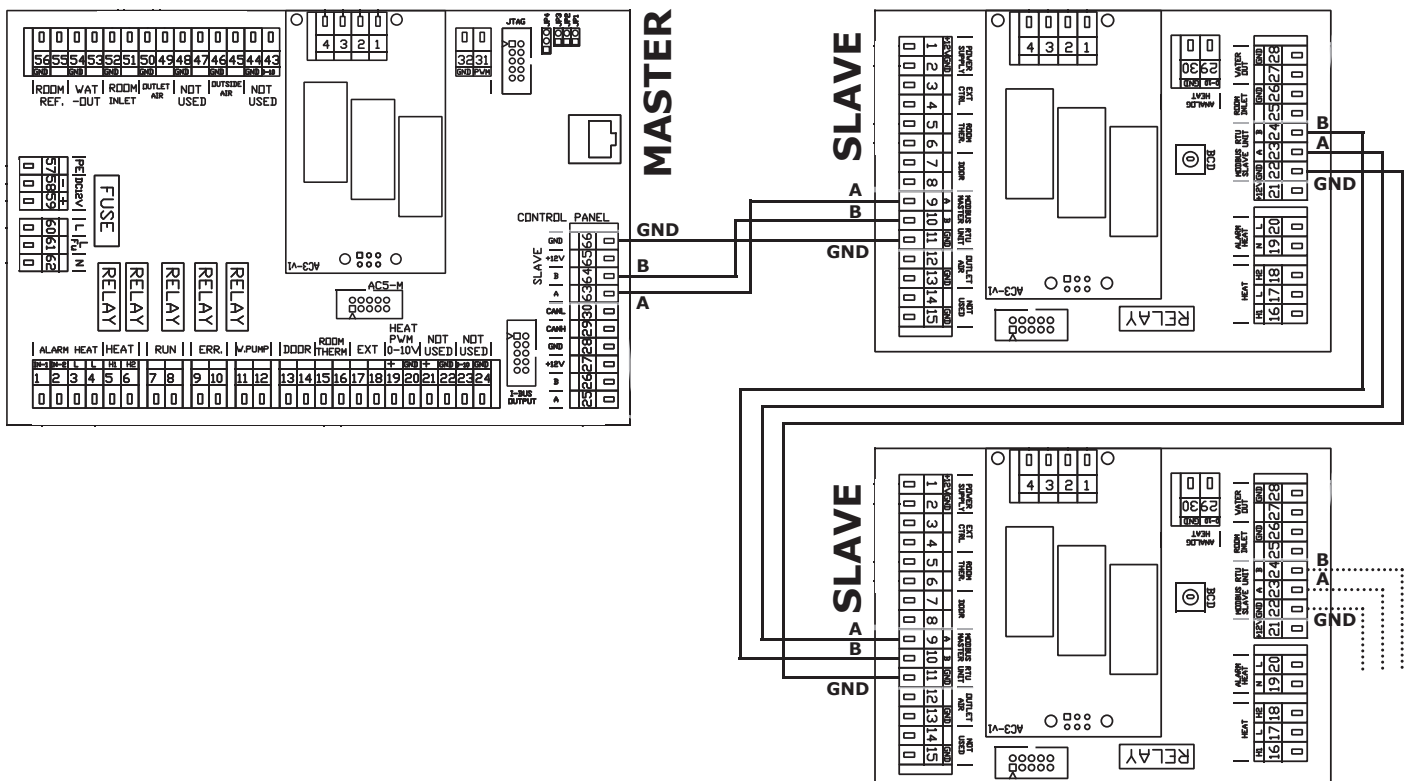
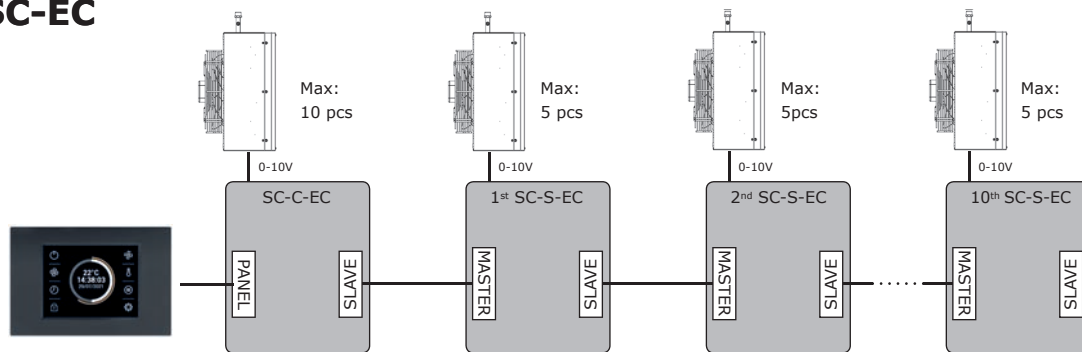
NTC temperature sensors are included





CHAINING

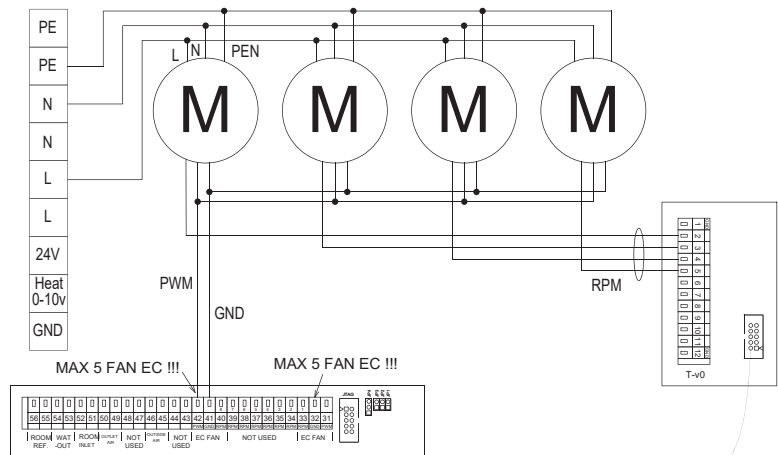
- **The total length of the bus of all chained shutters may not exceed a length of 150m!!!**
- **Recommended type of cable is standard UTP CAT5**

SC-AC**SC-EC**

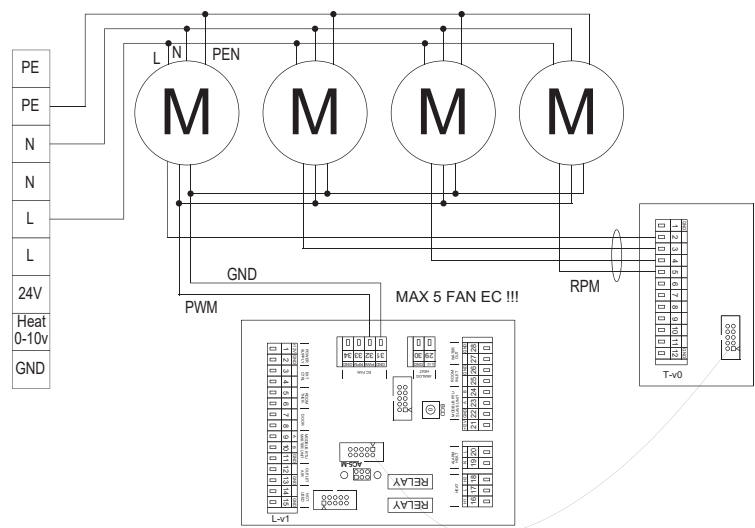


WIRING DIAGRAMS

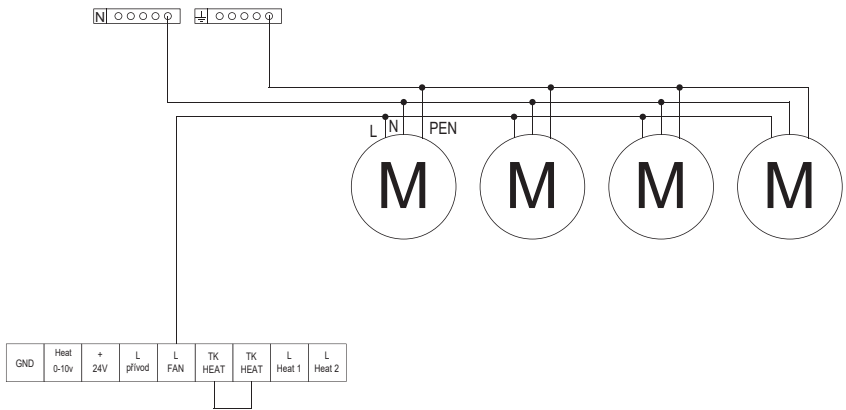
SC-C-EC



SC-C/S-AC

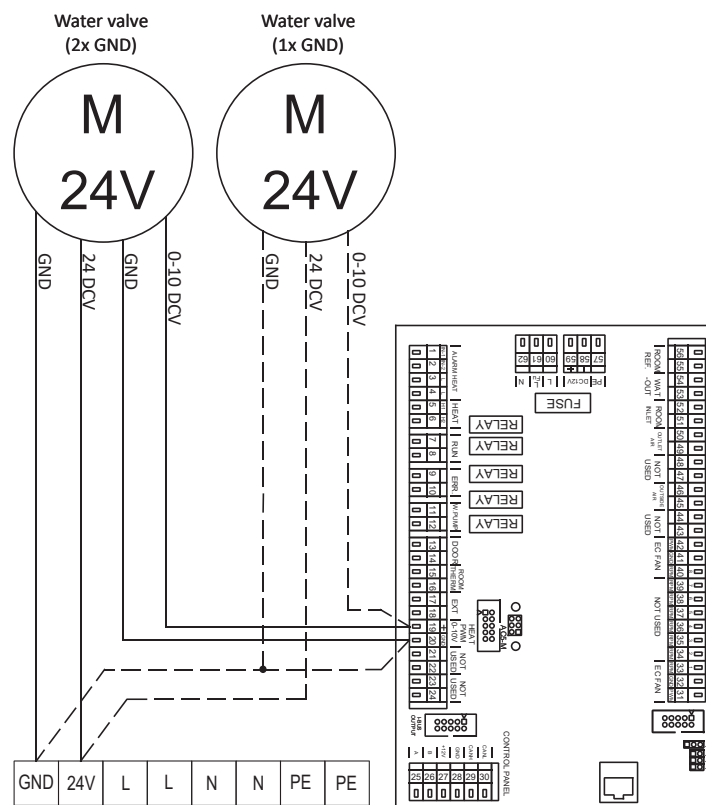
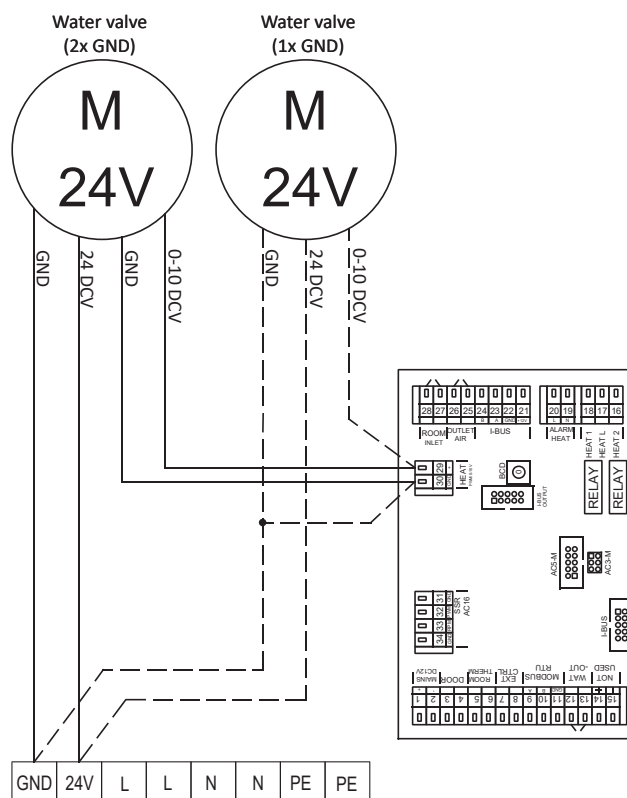


SC-S-EC





WIRING DIAGRAMS

SC-C-EC**SC-S-EC**



ACCESSORIES

More details can be found on the relevant page in catalog

**ZV2-024-08,0-20**

2-way valve with 24DCV actuator, 0-10V DC control signal, Kvs 8, DN20.



Type	Connection size	k_{vs} [m³/h]	Voltage [V/Hz]	Power consumption	Displacement time	Protection class
ZV2-024-08,0-20	DN 20	8	24DC / 50-60Hz	0,3W	75 s / 90°	IP40

**ZV3-024-04,0-20**

3-way valve with 24DCV actuator, 0-10V DC control signal, Kvs 4, DN20.



Type	Connection size	k_{vs} [m³/h]	Voltage [V/Hz]	Power consumption	Displacement time	Protection class
ZV3-024-04,0-20	DN 20	4	24DC / 50-60Hz	0,5W	90 s / 90°	IP40

**ZV2-024-10,0-25**

2-way valve with 24DCV actuator, 0-10V DC control signal, Kvs 10,0, DN25.



Type	Connection size	k_{vs} [m³/h]	Voltage [V/Hz]	Power consumption	Displacement time	Protection class
ZV2-024-10,0-25	DN 25	10	24DC / 50-60Hz	1,5W	90 s / 90°	IP54

**ZV3-024-06,3-25**

3-way valve with 24DCV actuator, 0-10V DC control signal, Kvs 6,3 DN25.



Type	Connection size	k_{vs} [m³/h]	Voltage [V/Hz]	Power consumption	Displacement time	Protection class
ZV3-024-06,3-25	DN 25	6,3	24DC / 50-60Hz	0,5W	90 s / 90°	IP54

**ZV3-024-16,0-32**

3-way valve with 24DCV actuator, 0-10V DC control signal, Kvs 106,0 DN32.



Type	Connection size	k_{vs} [m³/h]	Voltage [V/Hz]	Power consumption	Displacement time	Protection class
ZV3-024-16,0-32	DN 32	16	24DC / 50-60Hz	2,5W	90 s / 90°	IP54



ACCESSORIES

More details can be found on the relevant page in catalog

Wall-mounted temperature sensor
CT-ROOM



Room thermostat
TER-P



KEY TO CODING

SC-C-AC-16

04 – max load 4A
07 – max load 7A
16 – max load 16A

AC - For AC fans
EC - For EC fans

C - Master
S - Slave

SC-C - Control unit for water air heater

**BASIC FEATURES**

- Five-level fan speed control
- For single-phase fans
- Light indication
- 24-month guarantee

The **STRA1** control unit is designed primarily for controlling motors. In addition, the unit may also be used for controlling devices comprising the voltage controlled fan.

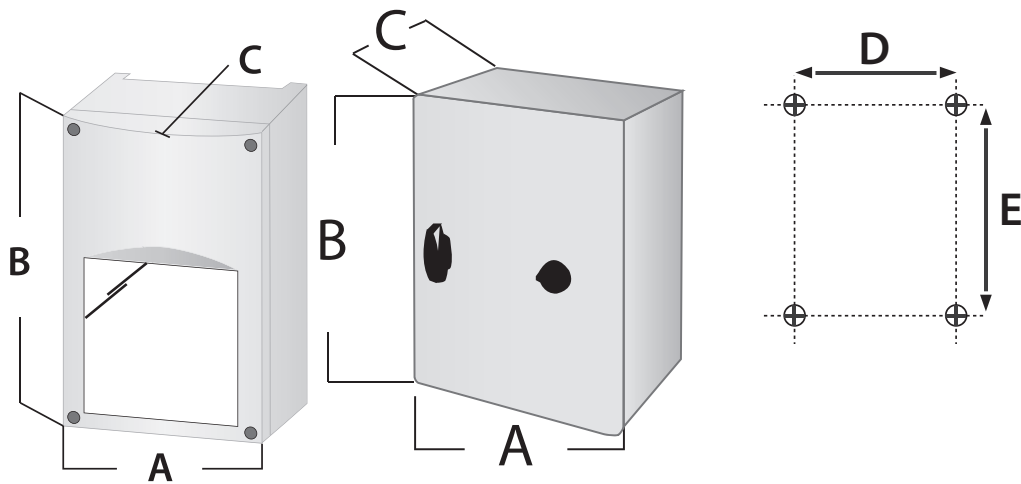
The control unit shall be installed in sheltered dry indoor areas with the ambient temperature up to +35 °C and relative humidity of up to 90 %.

The electric IP rating of the control unit is IP54 (partially dustproof, protected against jets of water in all directions).

The control unit housing is made of grey plastic (STRA1-050, STRA1-075), or from painted metal (STRA1-160).

**PRIMARY PARAMETERS**

Type	Regulator's power supply [V/Hz]	Fan maximum current [A]	Fuse [A]	Electrical protection [IP]	Box material	Weight [kg]
STRA1-050L22	230 / 50~60	5,0	8,0	54	plastic	5,6
STRA1-075L22	230 / 50~60	7,5	12,5 (5*20mm)	54	plastic	8,7
STRA1-160L20	230 / 50~60	16,0	25,0	54	steel	20,0

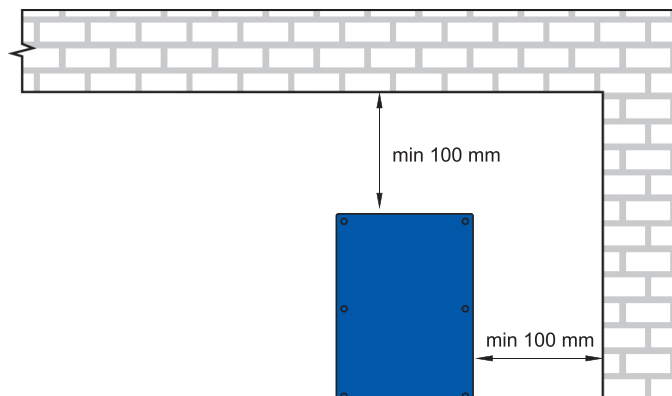


Type	Dimensions [mm]				
	A	B	C	D	E
STRA1-050L22	170	255	140	155	194
STRA1-075L22	200	305	155	183	236
STRA1-160L20	300	425	235	255	355



INSTALLATION AND ASSEMBLY

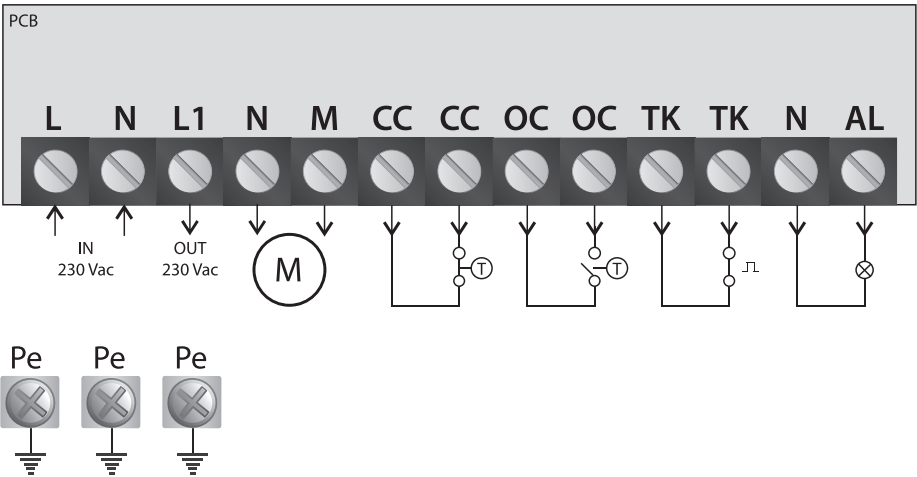
- Both control units are to be installed to a wall or to a device being controlled in a vertical position.
- Free air flow shall be ensured around the control unit to avoid overheating safe distances shall be kept, see figure.
- Installation of the control unit shall allow a sufficient access for performing maintenance, servicing, and dismantling operations.
- The control unit is mounted to the wall using screws and wall plugs.
- No flammable materials are allowed within 100 mm of the unit.



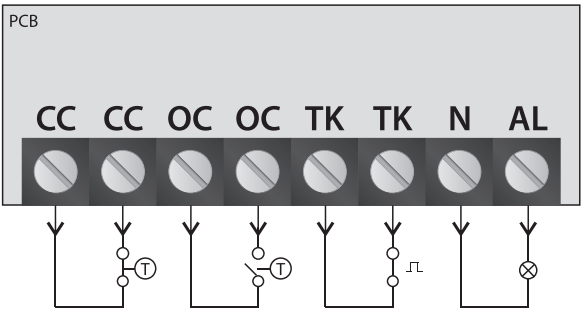
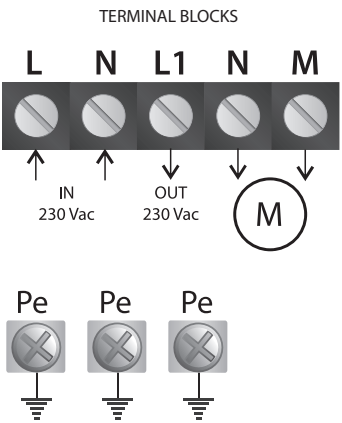


CONTROL

STRA1-050L22
STRA1-075L22



STRA1-160L20



L-N	Power supply 230VAC - 50/60 Hz
L1	Unregulated output 230VAC (2A)
M-N	Motor connection
CC	Contact (NC)
OC	Contact (NO)
TK	Input thermal contacts of the motor
N-AL	Alarm output (1A)
Pe	Earth connections

CC



OC



KEY TO CODING

STRA1-050 L22

L20 - 0-80-100-120-140-170-230 V

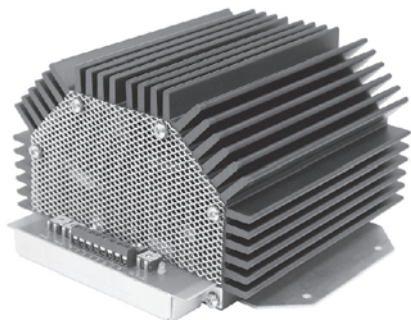
L22 - 0-80-110-140-170-190-230 V

050 - 5,0 A

075 - 7,5 A

160 - 16 A

STRA1 - Control unit

**BASIC FEATURES**

- Stepless (pulse) heater output control
- For three-phase heaters up to 25 kW
- 36-month guarantee

The **RV3-25/P** output controller is designed for controlling output of electric heaters. The controller adjusts output based on temperature required in a room or duct.

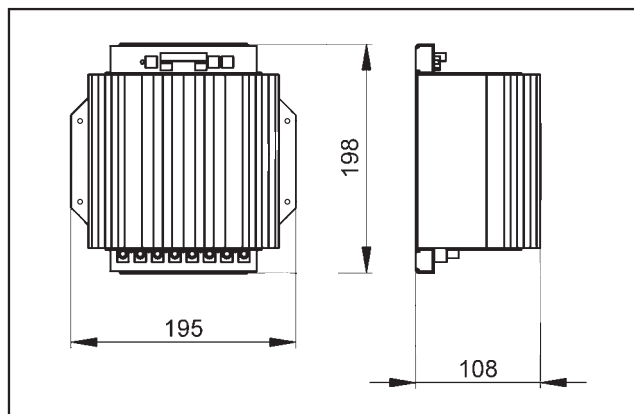
The controller shall be installed in sheltered dry indoor areas with the ambient temperature of 0 °C up to +35 °C and relative humidity of up to 80 %.

The electric IP rating of the controller is IP 20 (protection against solid particles greater than 12.5 mm not protected against water!).

The controller comprises the control unit with aluminum cooler and a motherboard with terminal blocks.

**PRIMARY PARAMETERS**

- Power supply: 3 x 400 V AC / 50-60 Hz
- Switched current range in each phase into applied load 5–36 A
- Maximum heat exchanger capacity 25 kW for symmetric delta/star load
- Setting range of the required room temperature: 0–30 °C
- Setting range of the required duct temperature: 0–45 °C
- Setting range for limiting the minimum duct temperature: 5–15 °C
- Setting range for limiting the maximum duct temperature: 30–50 °C
- Voltage input 0–10 V DC for output control (0 V ~ 0 % output; 10 V ~ 100 % output)



INSTALLATION AND ASSEMBLY

- The controller is installed on a wall or into switchboard.
- Free air flow shall be ensured around the controller and cooling fans shall be in a vertical position to avoid controller overheating.
- Installation of the controller shall allow a sufficient access when performing maintenance, servicing or dismantling.
- The controller is mounted to the wall using screws and wall plugs.
- No flammable materials are allowed within 100 mm of the controller.



CONTROL

On the motherboard of the controller there are three trimmers for setting desired temperature, minimum duct temperature, and maximum duct temperature. Correct operation of the controller requires connection of at least one sensor.

Controlling options depend on connected accessories:

Keeping constant duct temperature – CKT duct-type sensor connected only. Desired temperature is set on the controller using the SET P trimmer. Other trimmers are inactive.

Adjusting to desired room temperature with monitoring the minimum and maximum temperatures in a duct – CKT duct-type sensor and **CPT** room sensor connected. Desired temperature is set on the output controller using the **SET P** trimmer. The MIN and MAX trimmers are used for adjusting the minimum and maximum temperatures in a duct.

Adjusting to desired room temperature using the CPTO sensor with monitoring the minimum and maximum temperatures in a duct – CKT duct-type sensor and **CPTO** room sensor connected. Desired temperature is set directly on the **CPTO** sensor. The MIN and MAX trimmers are used for setting the minimum and maximum temperatures in a duct.

Output control using 0-10 V interface – none of the sensors may be connected. The exchanger output is controlled by voltage (0–10 V) in a range of 0–100 %.

**ACCESSORIES**

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

REQUIRED ACCESSORIES

If the unit is controlled by voltage (0–10 V), no external temperature sensors may be connected to the controller, see “CONTROL” section.

Duct-type temperature sensor

CKT

**OPTIONAL ACCESSORIES****Wall-mounted temperature sensor**

CI-CPT

**Wall-mounted temperature sensor with controller for adjusting the required temperature**

CI-CPTO

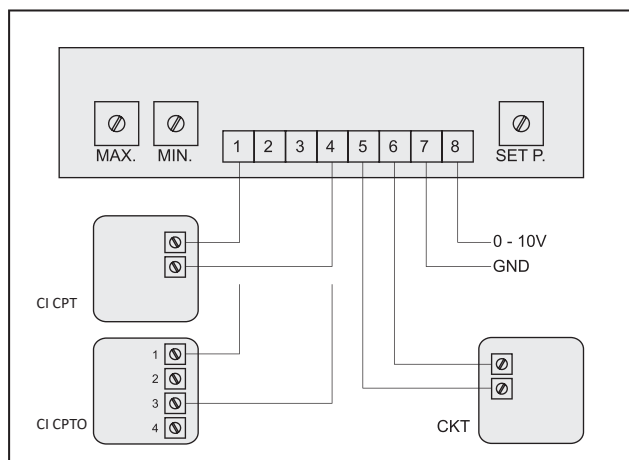




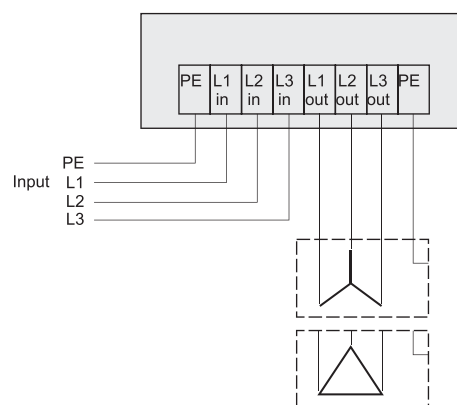
WIRING DIAGRAMS

The recommended cross-section of the main power supply cables is stated in the Instruction Manual.

All wiring diagrams provided in the technical catalog are indicative only. When assembling the product, observe strictly the nameplate ratings as well as directions and diagrams affixed directly to the product or enclosed to the product.



Connection of regulator power section



KEY TO CODING

RV 3 - 25 / P

P – autotuning version

25 – maximum electrical output in kW that can be regulated at 400 V voltage

3 – number of regulated phases

RV – output regulator

**BASIC FEATURES**

- 7 types of three-way valve
- With/Without short-circuit
- 36-month guarantee

The **SMU 2** mixing unit is designed for controlling the heat-output of water-type heat exchangers. It is used especially for controlling standalone water-type air heaters, heaters inbuilt into the ventilation units, heaters in air curtains, and so on.

The mixing unit must be installed in sheltered dry indoor areas with the temperature of surrounding air from +5 °C to +50 °C. Temperature of conveyed water shall range between 0 °C and +110 °C and pressure shall not exceed 1.0 MPa.

The mixing unit has been designed for the control of heating water complying with the VDI 2035. Water being controlled must not contain any solid particles (sand, mud) or chemicals because solid particles or chemicals might damage the mixing unit.

The mixing unit's servo-actuator has the IP40 (24V), IP44(230V) protection.

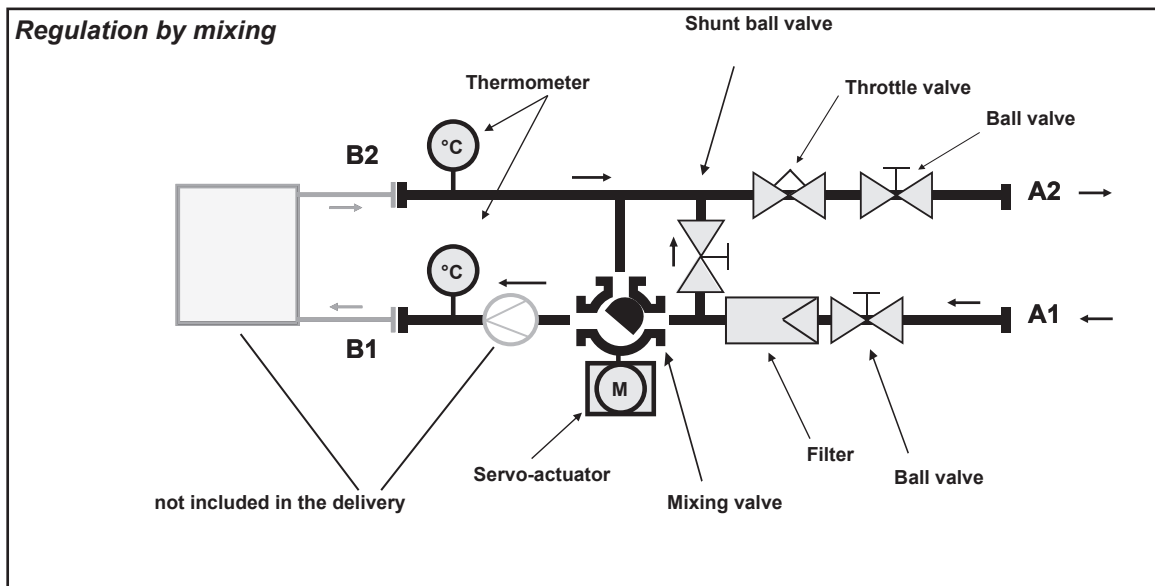


PRIMARY PARAMETERS

The mixing valve turns off the hot water supply and heating water circulates in the heat exchanger circuit.

Leakage of the mixing valve in AB-A direction is $\leq 0,12\%$ of k_{vs}

Leakage of the mixing valve in A-B direction is $\leq 0,030\%$ of k_{vs}

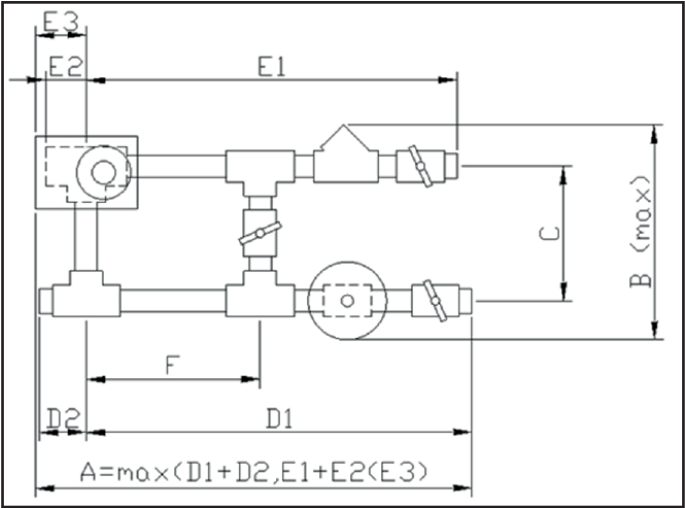


Type	Thread A1 / A2 ["]	Thread B2 ["]	Thread B1 ["]	Throttle valve size ["]	Shunt dimensions ["]	Weight [kg]
SMU2-xxx-00,6	3/4*	3/4*	1/2**	3/4	3/4	3
SMU2-xxx-01,6	3/4*	3/4*	1/2**	3/4	3/4	3
SMU2-xxx-02,5	3/4*	3/4*	1/2**	3/4	3/4	3
SMU2-xxx-04,0	3/4*	3/4*	3/4**	3/4	3/4	3
SMU2-xxx-06,3	1*	1*	1**	1	1	4
SMU2-xxx-12,0	1*	1*	1**	1	1	4
SMU2-xxx-24,0	1 1/4*	1 1/4*	1 1/2**	1 1/4	1 1/4	6
SMU2-xxx-40,0	1 1/2*	2*	1 1/2**	1 1/2	1 1/2	13

* Outer

** Inner

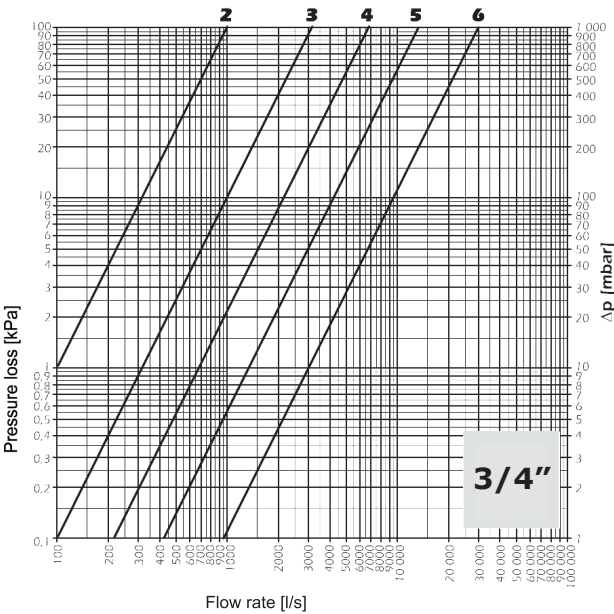
Servo-actuator parameters							
Type	Kvs	Power supply [V/Hz] - AC/DC	Control [V]	Power [W]	Ingress protection [IP]	Heat transfer fluid temperature [°C]	Max. pressure
SMU2-024-00,6	0,6	24V, 50/60Hz	0 - 10	3,5	44	0 +110	PN 10
SMU2-024-01,6	1,6	24V, 50/60Hz	0 - 10	3,5	44	0 +110	PN 10
SMU2-024-02,5	2,5	24V, 50/60Hz	0 - 10	3,5	44	0 +110	PN 10
SMU2-024-04,0	4,0	24V, 50/60Hz	0 - 10	3,5	44	0 +110	PN 10
SMU2-024-06,3	6,3	24V, 50/60Hz	0 - 10	3,5	44	0 +110	PN 10
SMU2-024-12,0	12,0	24V, 50/60Hz	0 - 10	3,5	44	0 +110	PN 10
SMU2-024-24,0	24,0	24V, 50/60Hz	0 - 10	3,5	44	0 +110	PN 10
SMU2-024-40,0	40,0	24V, 50/60Hz	0 - 10	3,5	44	0 +110	PN 10



The dimensions are in mm

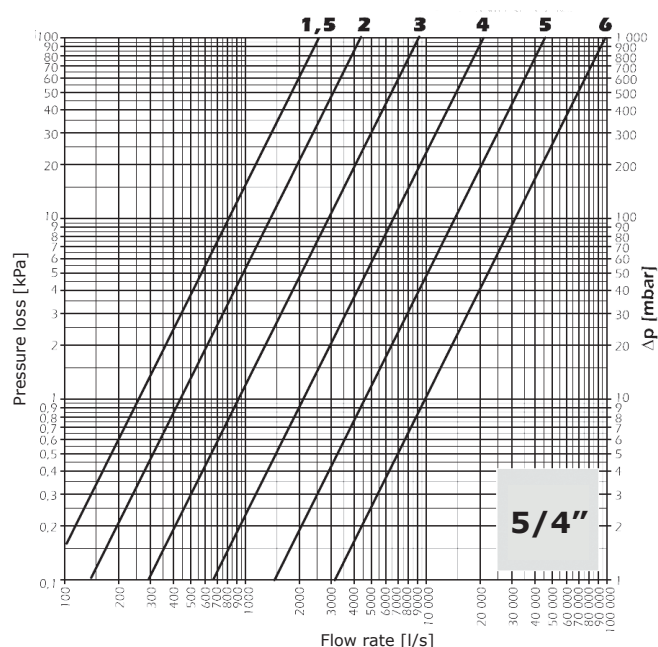
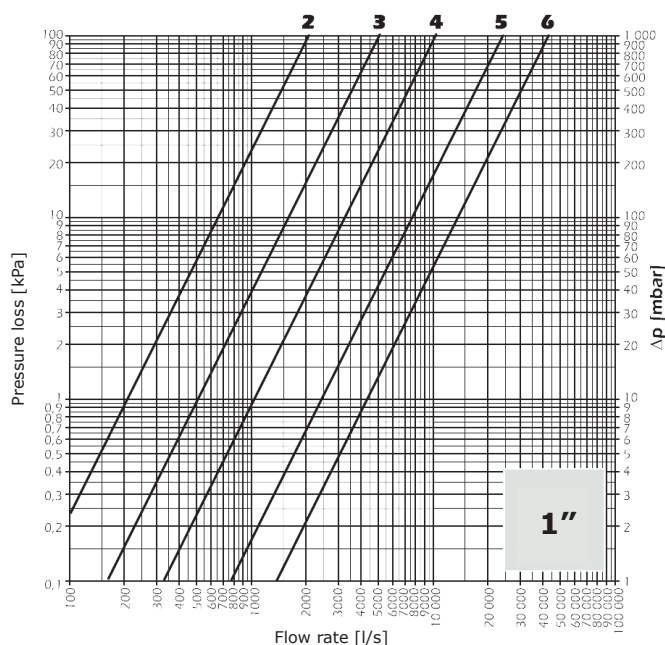
Type	A	B	C	D1	D2	E1	E2	E3	F	Height
SMU2-xxx-00,6	430	250	160	350	50	350	40	75	160	150
SMU2-xxx-01,6	430	250	160	350	50	350	40	75	160	150
SMU2-xxx-02,5	430	250	160	350	50	350	40	75	160	150
SMU2-xxx-04,0	430	250	160	350	50	350	40	75	160	150
SMU2-xxx-06,3	465	265	175	390	60	395	40	75	180	155
SMU2-xxx-12,0	465	265	175	390	60	395	40	75	180	155
SMU2-xxx-24,0	525	305	200	445	80	450	60	75	200	170
SMU2-xxx-40,0	540	380	260	475	65	475	65	75	200	170

Armature characteristics



The k_v value indicates the flow through the valve in m^3 /hour, with the valve in the fully open state, at the valve pressure loss of 100 kPa.

Armature characteristics



The k_v value indicates the flow through the valve in m^3/hour , with the valve in the fully open state, at the valve pressure loss of 100 kPa.



INSTALLATION AND ASSEMBLY

- The mixing unit may be installed in any position.
- The mixing unit shall be connected to the heat exchanger's tubes by means of the flexible hoses.
- Installation of the mixing unit shall allow a sufficient access when performing maintenance, servicing or dismantling.
- For the temperature above 90 °C, electric cables with a sufficient heat resistance must be used.
- The electric cables shall not touch the surface of the mixing unit.
- No flammable materials are allowed within 100 mm of the mixing unit.



CONTROL

Correct operation of the mixing unit requires connection of a device that will perform the control functions.



ACCESSORIES

REQUIRED ACCESSORIES

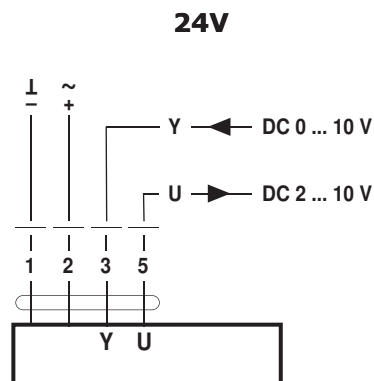
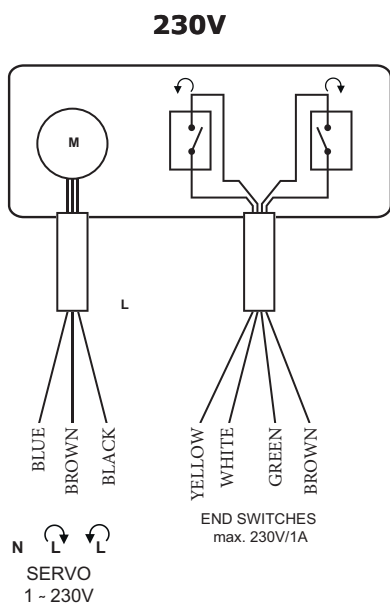
If the mixing unit is not connected directly to a device that will perform the necessary control functions, it shall be controlled by a separate controller.



WIRING DIAGRAMS

The recommended cross-section of the main power supply cables is stated in the Instruction Manual.

All wiring diagrams provided in the technical catalog are indicative only. When assembling the product, observe strictly the nameplate ratings as well as directions and diagrams affixed directly to the product or enclosed to the product.



KEY TO CODING

SMU2-230-06,3-SC

- SC** - with short circuit
- WO** - without short circuit
- 00,6** - mixing valve - k_{VS} 0,6
- 01,6** - mixing valve - k_{VS} 1,6
- 02,5** - mixing valve - k_{VS} 2,5
- 04,0** - mixing valve - k_{VS} 4,0
- 06,3** - mixing valve - k_{VS} 6,3
- 12,0** - mixing valve - k_{VS} 12,0
- 24,0** - mixing valve - k_{VS} 24,0
- 40,0** - mixing valve - k_{VS} 40,0

- 230** - 230 V
- 024** - 24V stepless control

SMU2 - mixing unit



BASIC FEATURES

The **ZV** zone valve is designed for controlling the heat output of water-type heat exchangers. It is used especially for controlling standalone water-type air heaters, heaters inbuilt into the ventilation units, heaters in air curtains, and so on.



PRIMARY PARAMETERS

Type	Voltage [V]	Control signal	k_{vs} [m³/h]	Connection size
 2-way valve with 230V - O/C actuator				
ZV2-230-08,0-20	230V AC	O/C	8	DN20
ZV2-230-21,0-20	230V AC	O/C	21	DN20
 3-way valve with 230V - O/C actuator				
ZV3-230-04,0-20	230V AC	O/C	4	DN20
ZV3-230-21,0-20	230V AC	O/C	21	DN20
 2-way valve with 24V - 0-10V actuator				
ZV2-024-08,0-20	24V DC	0-10V DC	8	DN20
ZV2-024-06,3-25	24V DC	0-10V DC	6,3	DN25
ZV2-024-10,0-25	24V DC	0-10V DC	10	DN25
ZV2-024-16,0-25	24V DC	0-10V DC	16	DN25
 3-way valve with 24V - 0-10V actuator				
ZV3-024-04,0-20	24V DC	0-10V DC	4	DN20
ZV3-024-06,3-20	24V DC	0-10V DC	6,3	DN20
ZV3-024-06,3-25	24V DC	0-10V DC	6,3	DN25
ZV3-024-10,0-25	24V DC	0-10V DC	10	DN25
ZV3-024-16,0-32	24V DC	0-10V DC	16	DN32

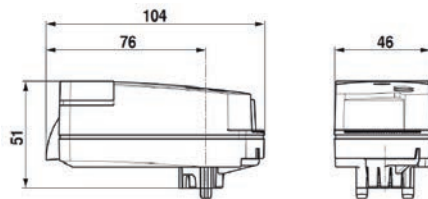


ZV2-230-08,0-20

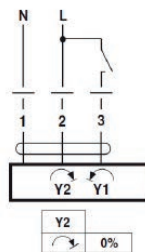
2-way O/C valve with 230V actuator, Kvs 8, DN20.



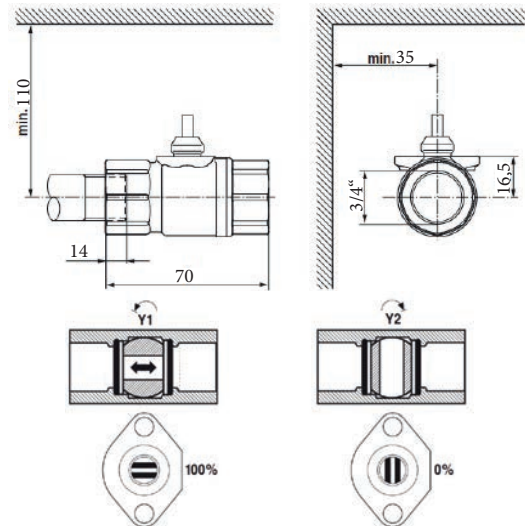
Type	Connection size	k_{vs} [m³/h]	Voltage [V/Hz]	Power consumption	Displacement time	Protection class
ZV2-230-08,0-20	DN 20	8	230V / 50-60Hz	1,5 W	75 s / 90°	IP40



AC 230 V, open-close



Cable colours:
1 = blue
2 = brown
3 = white

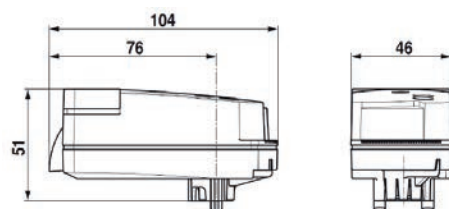


ZV3-230-04,0-20

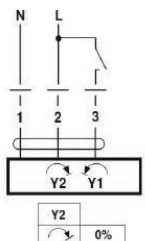
3-way O/C valve with 230V actuator, Kvs 4, DN20.



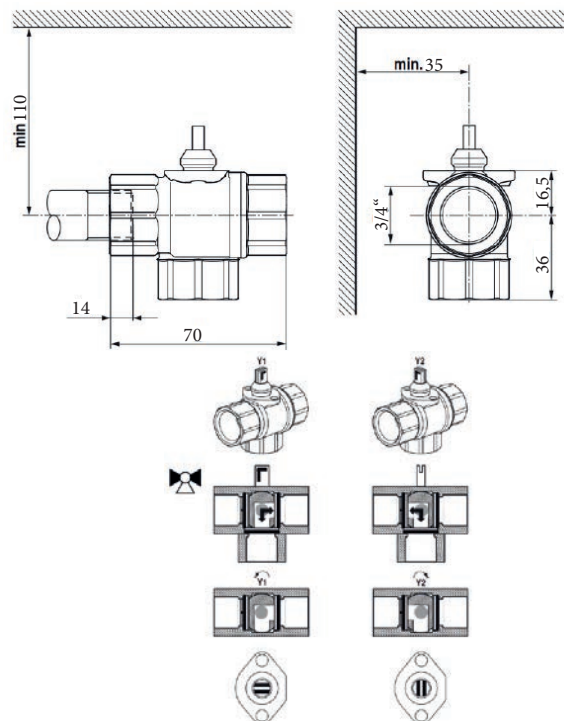
Type	Connection size	k_{vs} [m³/h]	Voltage [V/Hz]	Power consumption	Displacement time	Protection class
ZV3-230-04,0-20	DN 20	4	230V / 50-60Hz	1,5 W	75 s / 90°	IP40



AC 230 V, open-close



Cable colours:
1 = blue
2 = brown
3 = white

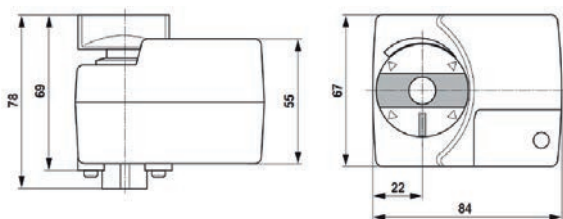


ZV2-230-21,0-20

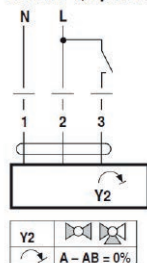
2-way O/C valve with 230V actuator, Kvs 21, DN20.



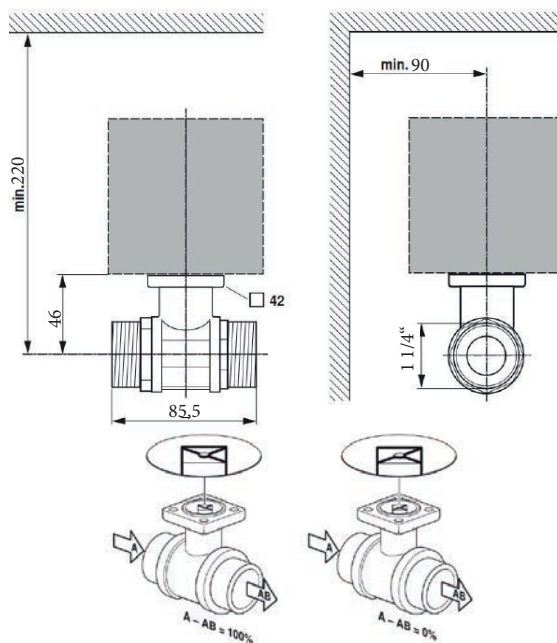
Type	Connection size	k_{vs} [m³/h]	Voltage [V/Hz]	Power consumption	Displacement time	Protection class
ZV2-230-21,0-20	DN 20	21	230V / 50Hz	1W	35 s / 90°	IP40



AC 230 V, open-clo



Cable colours:
1 = blue
2 = brown
3 = white

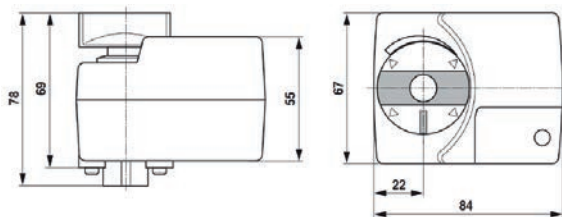


ZV3-230-21,0-20

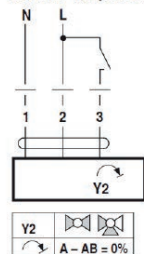
3-way O/C valve with 230V actuator, Kvs 21, DN20.



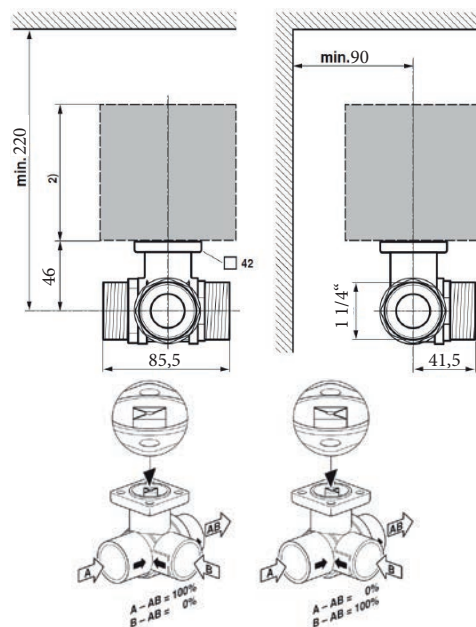
Type	Connection size	k_{vs} [m³/h]	Voltage [V/Hz]	Power consumption	Displacement time	Protection class
ZV3-230-21,0-20	DN 20	21	230V / 50Hz	1W	35 s / 90°	IP40



AC 230 V, open-close



Cable colours:
1 = blue
2 = brown
3 = white



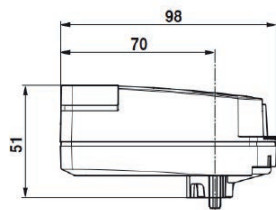


ZV2-024-08,0-20

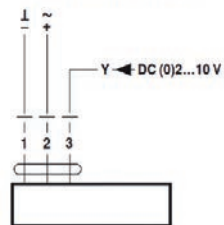
2-way valve with 24DCV actuator, 0-10V DC control signal, Kvs 8, DN20.



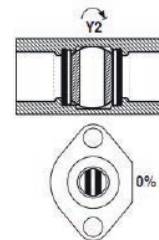
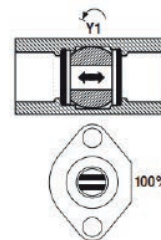
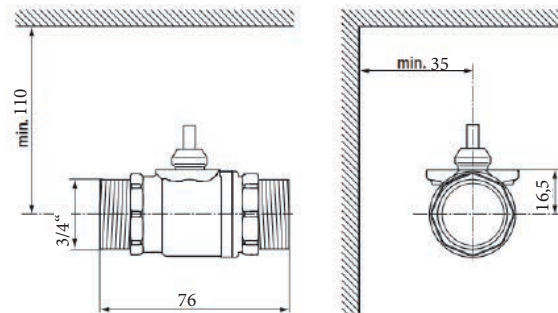
Type	Connection size	k_{vs} [m³/h]	Voltage [V/Hz]	Power consumption	Displacement time	Protection class
ZV2-024-08,0-20	DN 20	8	24DC / 50-60Hz	0,3W	75 s / 90°	IP40



AC/DC 24 V, modulating



Cable colours:
1 = black
2 = red
3 = white

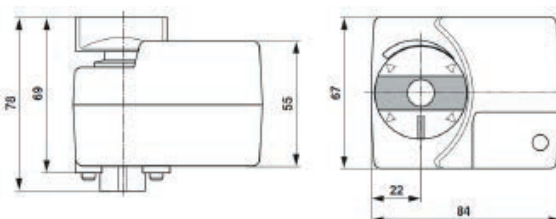


ZV3-024-04,0-20

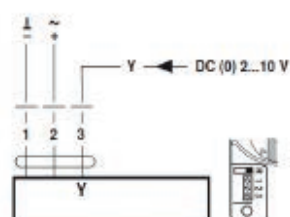
3-way valve with 24DCV actuator, 0-10V DC control signal, Kvs 4, DN20.



Type	Connection size	k_{vs} [m³/h]	Voltage [V/Hz]	Power consumption	Displacement time	Protection class
ZV3-024-04,0-20	DN 20	4	24DC / 50-60Hz	0,5W	90 s / 90°	IP40

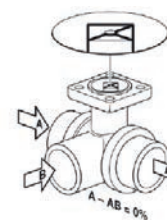
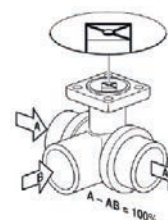
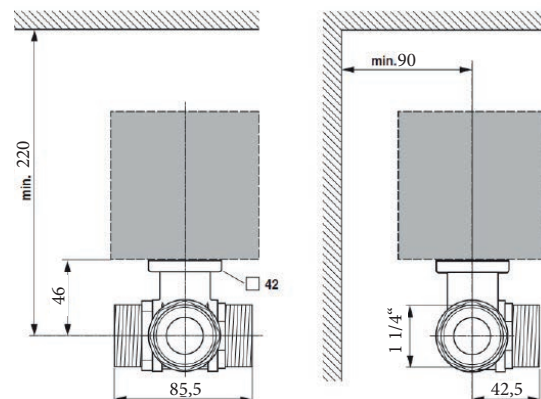


AC/DC 24 V, modulating



Cable colours:
1 = black
2 = red
3 = white

Direction of rotation R (standard)
when switch set to right position

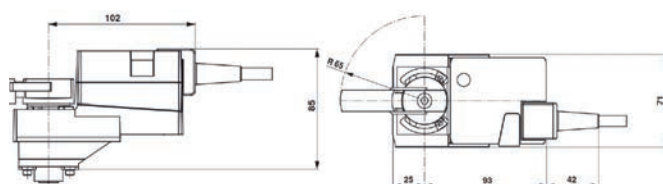


ZV2-024-06,3-25

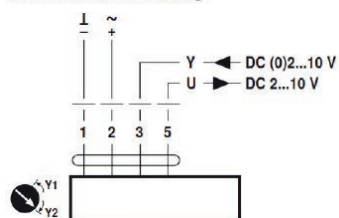
2-way valve with 24DCV actuator, 0-10V DC control signal, Kvs 6,3, DN25.



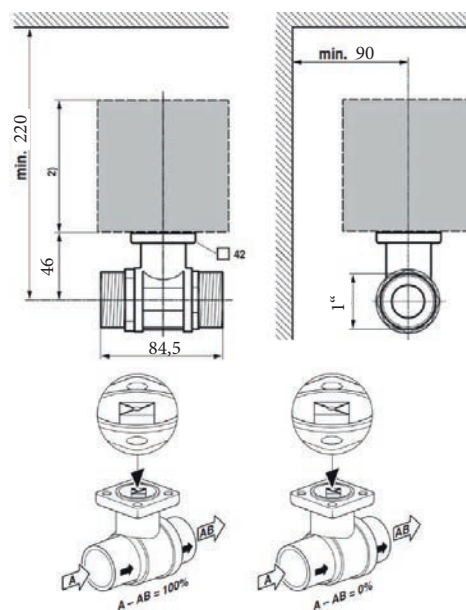
Type	Connection size	k_{vs} [m³/h]	Voltage [V/Hz]	Power consumption	Displacement time	Protection class
ZV2-024-06,3-25	DN 25	6,3	24DC / 50-60Hz	1,5W	90 s / 90°	IP54



AC/DC 24 V, modulating



Cable colours:
1 = black
2 = red
3 = white
5 = orange

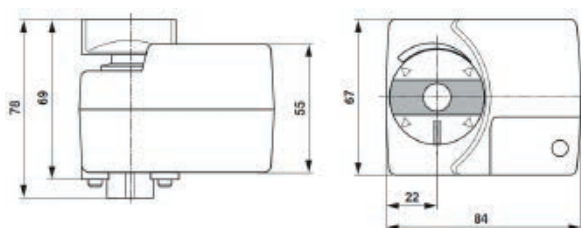


ZV3-024-06,3-20

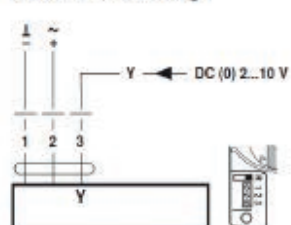
3-way valve with 24DCV actuator, 0-10V DC control signal, Kvs 6,3 DN20.



Type	Connection size	k_{vs} [m³/h]	Voltage [V/Hz]	Power consumption	Displacement time	Protection class
ZV3-024-06,3-20	DN 20	6,3	24DC / 50-60Hz	0,5W	90 s / 90°	IP40

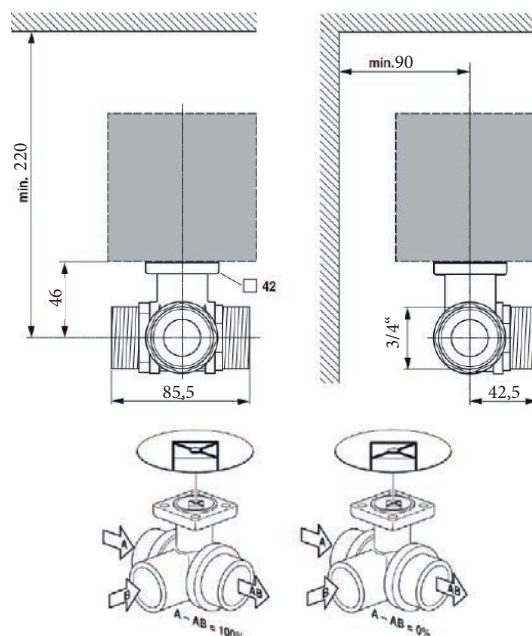


AC/DC 24 V, modulating



Cable colours:
1 = black
2 = red
3 = white

Direction of rotation R (standard)
when switch set to right position



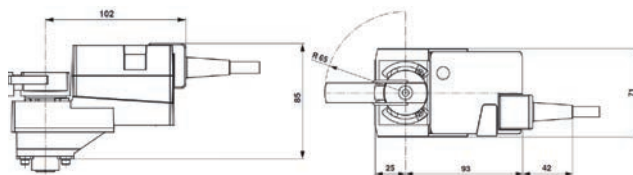


ZV3-024-06,3-25

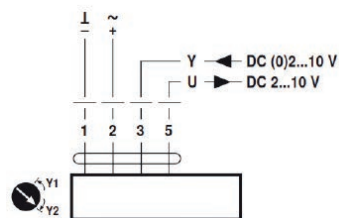
3-way valve with 24DCV actuator, 0-10V DC control signal, Kvs 6,3 DN25.



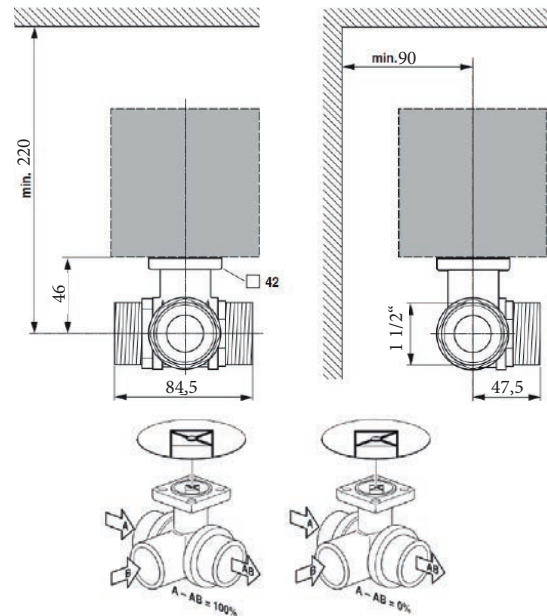
Type	Connection size	k_{vs} [m³/h]	Voltage [V/Hz]	Power consumption	Displacement time	Protection class
ZV3-024-06,3-25	DN 25	6,3	24DC / 50-60Hz	0,5W	90 s / 90°	IP54



AC/DC 24 V, modulating



Cable colours:
1 = black
2 = red
3 = white
5 = orange

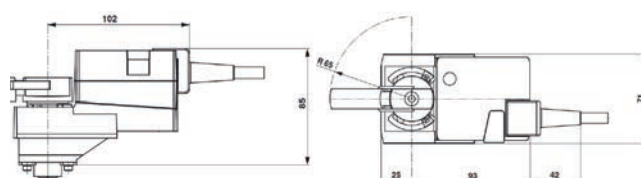


ZV2-024-10,0-25

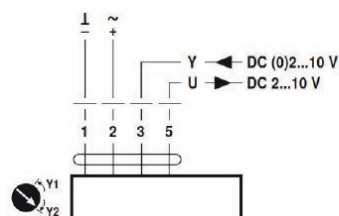
2-way valve with 24DCV actuator, 0-10V DC control signal, Kvs 10,0, DN25.



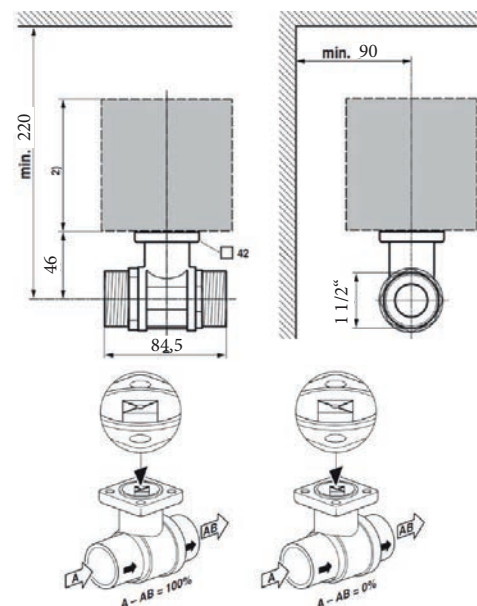
Type	Connection size	k_{vs} [m³/h]	Voltage [V/Hz]	Power consumption	Displacement time	Protection class
ZV2-024-10,0-25	DN 25	10	24DC / 50-60Hz	1,5W	90 s / 90°	IP54



AC/DC 24 V, modulating



Cable colours:
1 = black
2 = red
3 = white
5 = orange



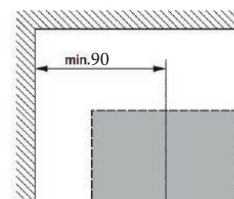
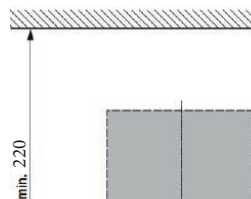
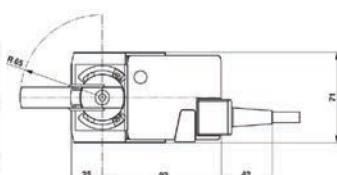
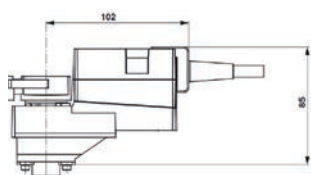


ZV3-024-10,0-25

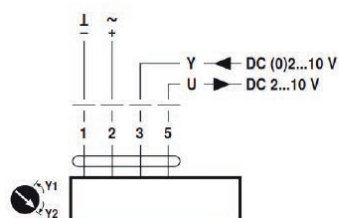
3-way valve with 24DCV actuator, 0-10V DC control signal, Kvs 10,0
DN25.



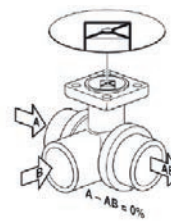
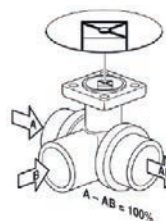
Type	Connection size	k _{vs} [m³/h]	Voltage [V/Hz]	Power consumption	Displacement time	Protection class
ZV3-024-10.0-25	DN 25	10	24DC / 50-60Hz	0,5W	90 s / 90°	IP54



AC/DC 24 V, modulating



Cable colours:
1 = black
2 = red
3 = white
5 = orange

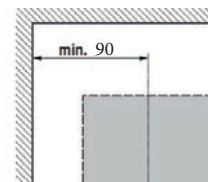
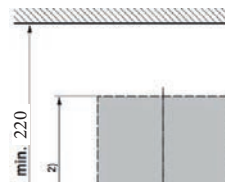
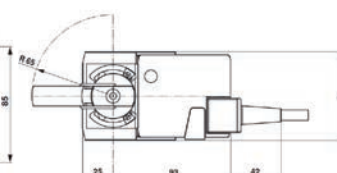
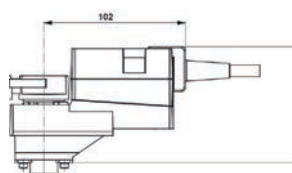


ZV2-024-16,0-25

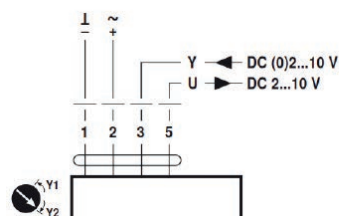
2-way valve with 24DCV actuator, 0-10V DC control signal, Kvs 16,0, DN25.



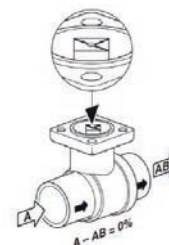
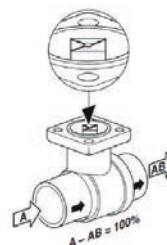
Type	Connection size	k _{vs} [m³/h]	Voltage [V/Hz]	Power consumption	Displacement time	Protection class
ZV2-024-16.0-25	DN 25	10	24DC / 50-60Hz	1.5W	90 s / 90°	IP54



AC/DC 24 V, modulating



Cable colours:
1 = black
2 = red
3 = white
5 = orange



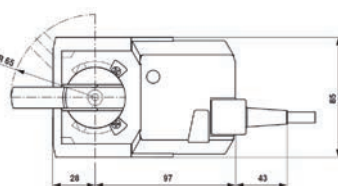
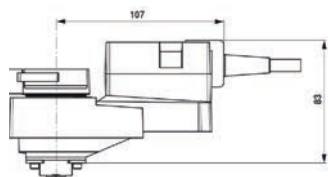


ZV3-024-16,0-32

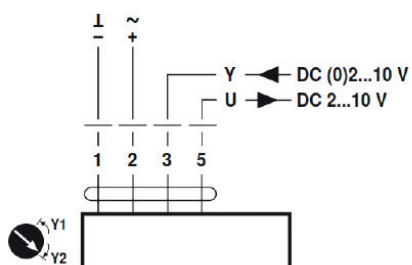
3-way valve with 24DCV actuator, 0-10V DC control signal, Kvs 106,0 DN32.



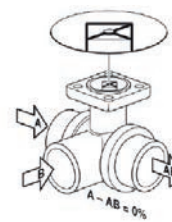
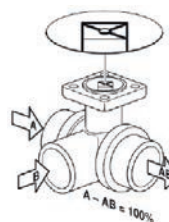
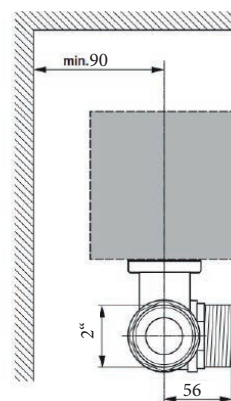
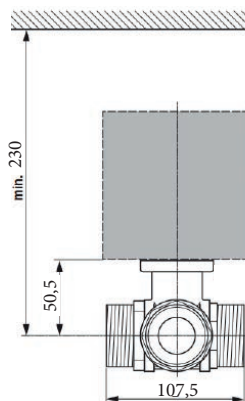
Type	Connection size	k_{vs} [m³/h]	Voltage [V/Hz]	Power consumption	Displacement time	Protection class
ZV3-024-16,0-32	DN 32	16	24DC / 50-60Hz	2,5W	90 s / 90°	IP54



AC/DC 24 V, modulating



Cable colours:
1 = black
2 = red
3 = white
5 = orange



KEY TO CODING

ZV2-230-08,0-20

20 - DN20
25 - DN25
32 - DN32

04,0 - K_{vs} 4,0
06,3 - K_{vs} 6,3
08,0 - K_{vs} 8,0
10,0 - K_{vs} 10,0
16,0 - K_{vs} 16,0

230 - 230V AC (O/C control)
024 - 24V DC (0-10V DC control)

ZV2 - 2-way zone valve
ZV3 - 3-way zone valve



BASIC FEATURES

The **RT** valve is designed for controlling the heat output of water-type heat exchangers. It is used especially for controlling standalone water-type air heaters, heaters inbuilt into the ventilation units, heaters in air curtains, and so on.

The zone valve shall be installed in sheltered dry indoor areas with the ambient temperature of +5 °C up to +55 °C.

Temperature of water being controlled shall range between 0 °C and +110 °C and pressure shall not exceed 1.0 MPa.

The zone valve is designed for controlling the heating water in accordance with VDI 2035. Water being controlled shall not contain any solid particles (sand, mud) or any chemicals.

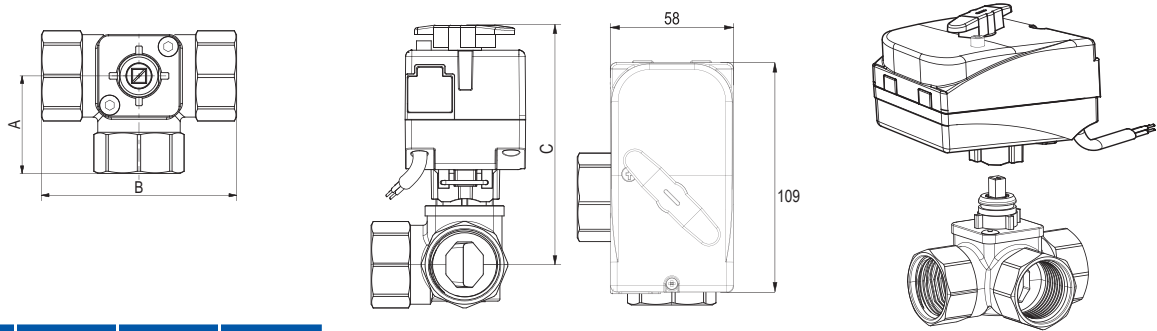
The electric IP rating of the zone valve is IP 44.

The zone valve comprises a three-way valve and a servo drive.



PRIMARY PARAMETERS

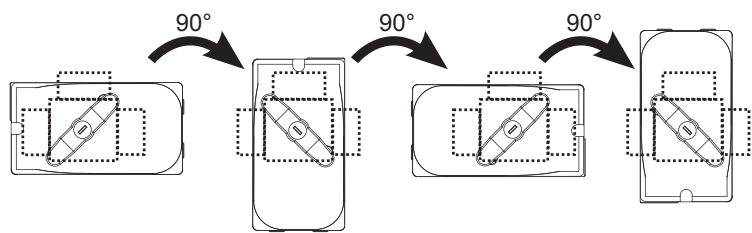
Type	Connection size	k_{vs} [m³/h]	Voltage [V]	Power consumption [W]	Rotation time [s]	Weight [kg]
RT-3-07	3/4"	7	230 (50Hz)	9	12s/90°	0,96
RT-3-11	1"	11	230 (50Hz)	9	12s/90°	0,99
RT-3-15	1 1/4"	15	230 (50Hz)	9	12s/90°	1,31



	A [mm]	B [mm]	C [mm]
RT-3-07	36	72	115
RT-3-11	41	82	115
RT-3-15	47	94	118

The power cord length is 900 mm.

Installation and assembly



 **CLIP SYSTEM**



INSTALLATION AND ASSEMBLY

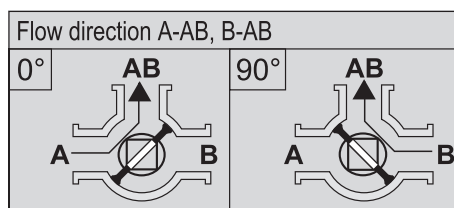
- The zone valve may be installed in any position.
- Installation of the zone valve shall allow a sufficient access when performing maintenance, servicing or dismantling.
- The electric cables shall not touch the surface of the zone valve.
- No flammable materials are allowed within 100 mm of the mixing unit.



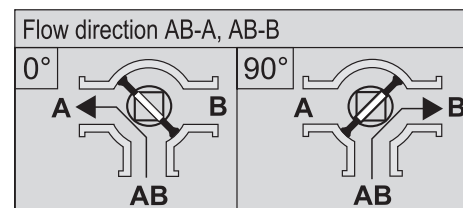
CONTROL

The zone valve is controlled by connecting phase to appropriate terminal. The valve switches between two possible flow paths of the heat-transfer fluid, see figure. Switch or thermostat can thus be used for controlling the valve.

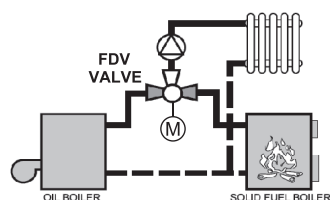
Changeover application



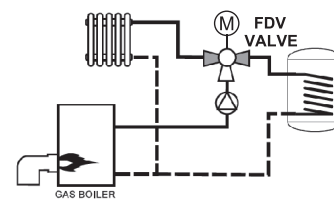
Diverting application



Example of connection



Changeover application



Diverting application



ACCESSORIES

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

REQUIRED ACCESSORIES

No special accessories are required to ensure a proper operation of the zone valve.

OPTIONAL ACCESSORIES

Room thermostat
TER-P

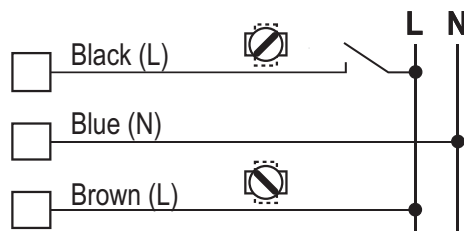


Duct-mounted thermostat
TER-K



WIRING DIAGRAMS

All wiring diagrams provided in the technical catalog are indicative only. When assembling the product, observe strictly the nameplate ratings as well as directions and diagrams affixed directly to the product or enclosed to the product.



KEY TO CODING

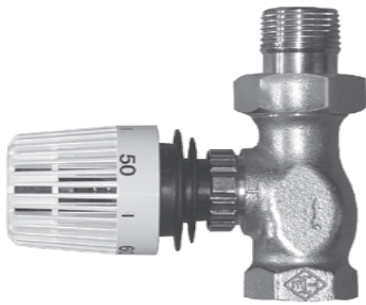
RT-3-11

07 - k_{VS} 7

11 - k_{VS} 11

15 - k_{VS} 15

RT - Zone valve with a servo drive



BASIC FEATURES

The **TV-1-1/1** thermostatic valve is designed for controlling the heat output of water exchangers through throttling. It is used especially for controlling standalone water-type air heaters, heaters inbuilt into the ventilation units, heaters in air curtains, and so on.

The thermostatic valve shall be installed in sheltered dry indoor areas with the ambient temperature of +5 °C up to +60 °C.

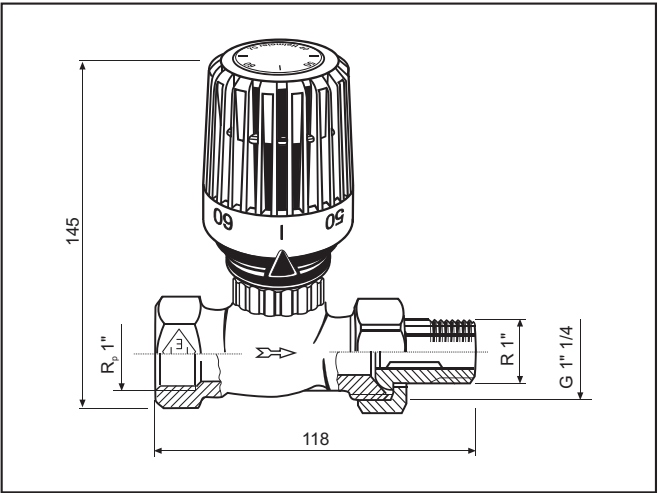
Temperature of water being controlled shall range between 0 °C and +90 °C and pressure shall not exceed 0.1 MPa.

The thermostatic valve is designed for controlling the heating water in accordance with VDI 2035. Water being controlled shall not contain any solid particles (sand, mud) or any chemicals.

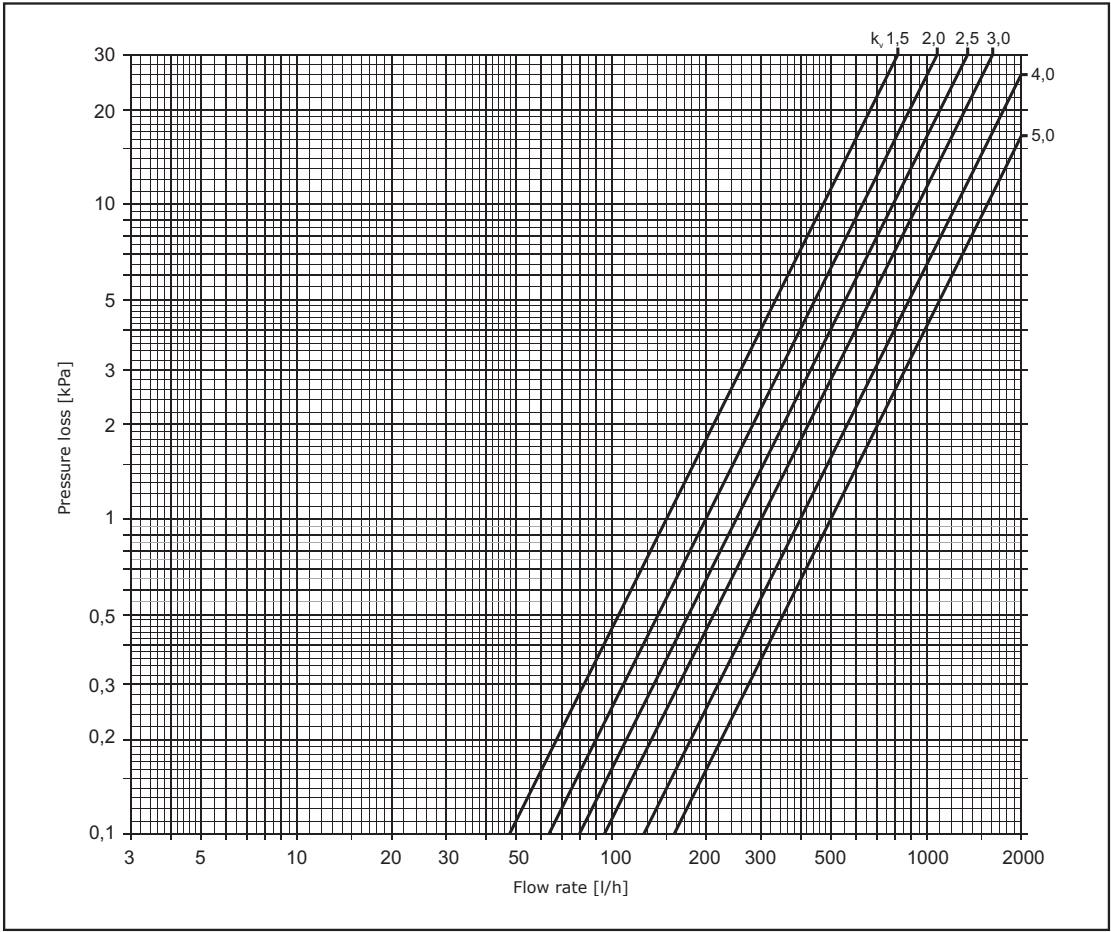
The thermostatic valve comprises a fitting – DN25 (1") and thermostatic head with 2 m capillary.



PRIMARY PARAMETERS



Armature characteristics

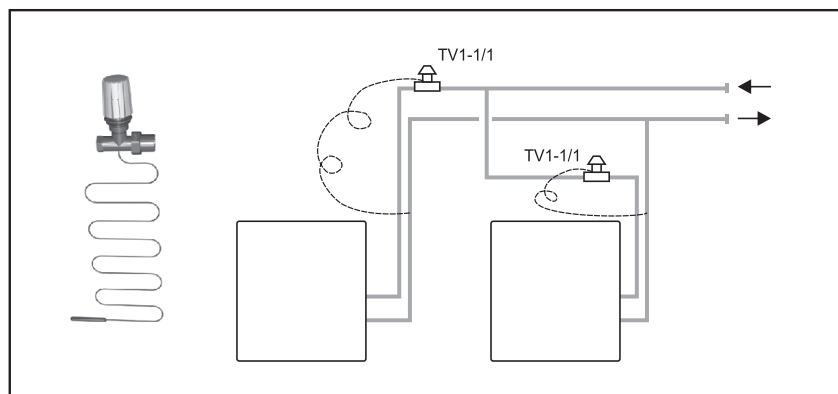


Type	k _v – value [m³/h]				k _{vs} – value [m³/h]	Settings range for required temperature [°C]
	Proportionality range [K]					
	2	4	6	8		
TV-1-1/1	1,49	2,65	3,32	4,2	4,2	40 up to 70



CONTROL

Example of connection



KEY TO CODING

TV-1-1/1

DN25 (1") valve with thermostatic head



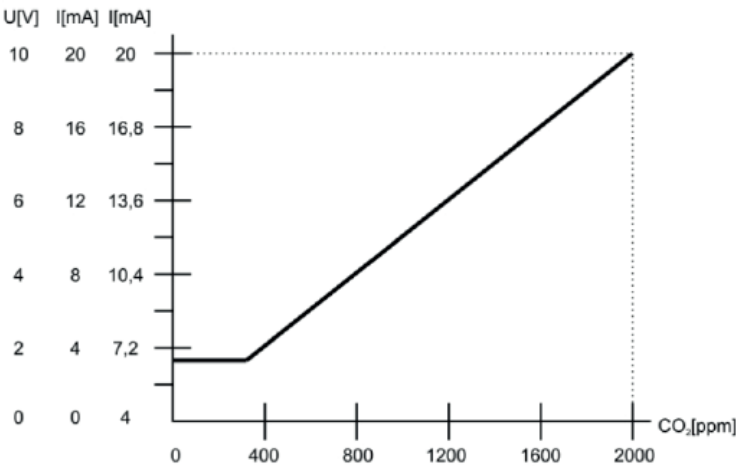
BASIC FEATURES

CI-CO2-M is a room carbon dioxide concentration sensor. CO2 measuring works on the principle of attenuation infrared radiation, depending on the concentration of CO2 in the air. In comparison with other similar sensors which do not have an optical dual channel sensor principle it has an excellent long-term stability. Measured values is possible also read thru Modbus RTU.



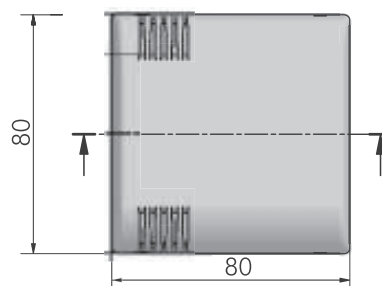
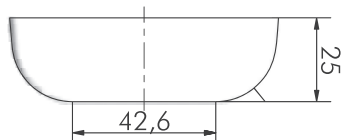
PRIMARY PARAMETERS

Power source	12V – 40V DC , 15V – 30V AC
Output voltage	0-10V DC / 2V - 10V
Output current	0-20mA / 4mA - 20mA
Operating range	370-2.000 ppm
Operational temperature	+0 to +40°C





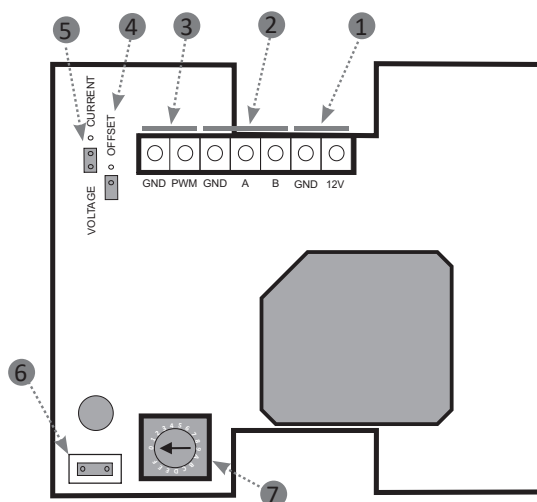
DIMENSIONS



WIRING DIAGRAMS

1	12V – 40V DC , 15V – 30V AC (Input)
2	Modbus RTU communication (Output)*
3	Output (0-10V / 4-20mA)
4	Output offset (+2V / +4mA)
5	Output selection - voltage / current
6	LED signalization (enable/disable)
7	Modbus address (0=120... F=135)

* INPUT REGISTER: Adress 100 = average value PPM,
 Adress 101 = actual value PPM



KEY TO CODING

CI-CO2-M

Room sensor CO2 with Modbus RTU communication



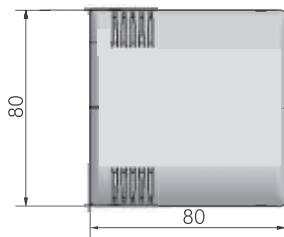
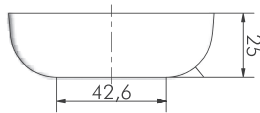
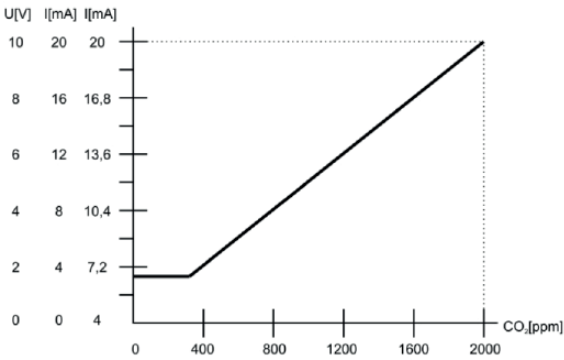
BASIC FEATURES

CI-CO2-R is a room carbon dioxide concentration sensor. CO2 measuring works on the principle of attenuation infrared radiation, depending on the concentration of CO2 in the air. In compare with other similar sensors which have not an optical dual channel sensor principle has excellent long-term stability.



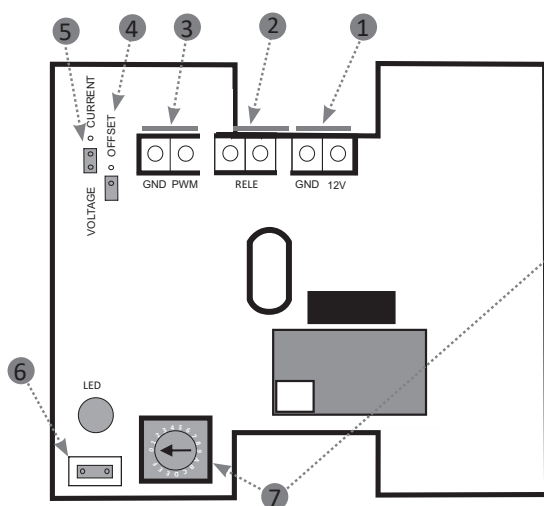
PRIMARY PARAMETERS

Power source	12V - 40V DC , 15V - 30V AC
Output voltage	0-10V DC / 2V - 10V
Output current	0-20mA / 4mA - 20mA
Operating range	370-2.000 ppm
Operational temperature	+0 to +40°C





WIRING DIAGRAMS



BCD setpoint for Relay (CO2 PPM)			
0 BCD	500ppm	8 BCD	1300ppm
1 BCD	600ppm	9 BCD	1400ppm
2 BCD	700ppm	A BCD	1500ppm
3 BCD	800ppm	B BCD	1600ppm
4 BCD	900ppm	C BCD	1700ppm
5 BCD	1000ppm	D BCD	1800ppm
6 BCD	1100ppm	E BCD	1900ppm
7 BCD	1200ppm	F BCD	2000ppm

1	12V – 40V DC , 15V – 30V AC (Input)
2	Potential-free relay output
3	Output (0-10V / 4-20mA)
4	Output offset (+2V / +4mA)
5	Output selection - voltage / current
6	LED signalization (enable/disable)*
7	Setpoint relay output (0=500... F=2000ppm)

* LED signalization:

PPM < 850	= Blue
PPM = 850-1500	= Green
PPM > 1500	= Red



ACCESSORIES

CI-AQS-COMBI

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



KEY TO CODING

CI-CO2-R

Room CO2 sensor with 0-10V analog and relay output.



BASIC FEATURES

CI-RH-M is a capacitive relative humidity sensor with 0-10V analog output. Measured values is possible also read thru Modbus RTU.



PRIMARY PARAMETERS

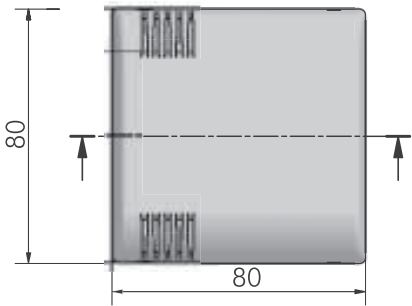
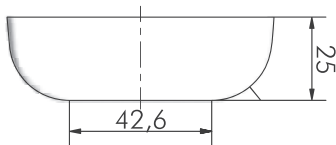
Power source	12V - 40V DC , 15V - 30V AC
Output voltage	0-10V DC / 2V - 10V
Output current	0-20mA / 4mA - 20mA
Operating range	0-100%
Operational temperature	+0 to +40°C

Modbus RTU communication

Speed (baud rate)	19200
Data bits	8 bits
Parity	Even
stop bit	1 bit

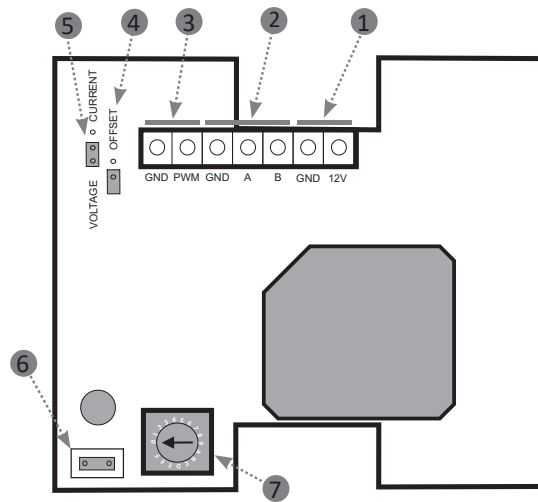


DIMENSIONS





WIRING DIAGRAMS



1	12V – 40V DC , 15V – 30V AC (Input)
2	Modbus RTU communication (Output)*
3	Output (0-10V / 4-20mA)
4	Output offset (+2V / +4mA)
5	Output selection - voltage / current
6	LED signalization (enable/disable)**
7	Modbus adress (0=120... F=135 PLC Base 1)

** LED signalization: RH < 30% = Blue
 RH = 30-60% = Green
 RH > 60% = Red



KEY TO CODING

CI-RH-M

Room relative humidity sensor with Modbus RTU communication



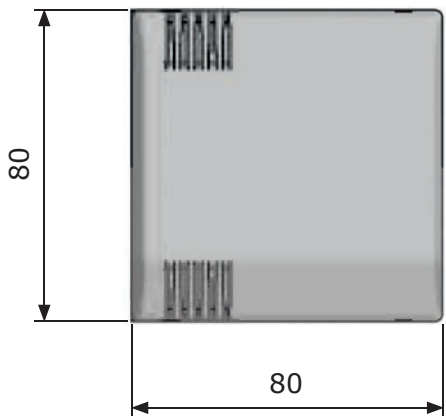
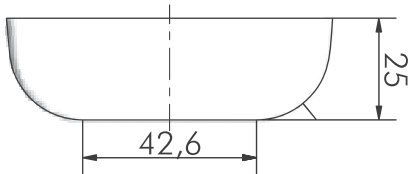
BASIC FEATURES

CI-RH-R is a capacitive relative humidity sensor with 0-10V analog and relay output.



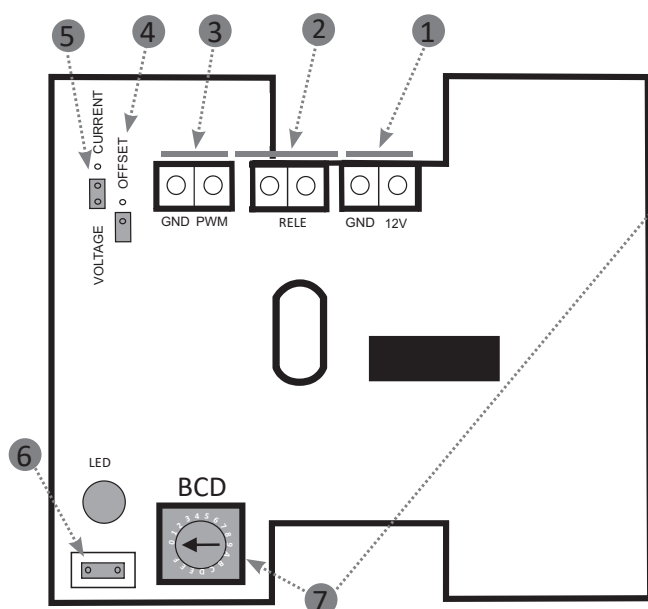
PRIMARY PARAMETERS

Power source	12V - 40V DC , 15V - 30V AC
Output voltage	0-10V DC / 2V - 10V
Output current	0-20mA / 4mA - 20mA
Operating range	0-100%
Operational temperature	+0 to +40°C





WIRING DIAGRAMS



BCD setpoint for Relay (% humidity)			
0 BCD	5 %	8 BCD	45 %
1 BCD	10 %	9 BCD	50 %
2 BCD	15 %	A BCD	55 %
3 BCD	20 %	B BCD	60 %
4 BCD	25 %	C BCD	65 %
5 BCD	30 %	D BCD	70 %
6 BCD	35 %	E BCD	75 %
7 BCD	40 %	F BCD	80 %

0V / 0mA = 0% RH
10V / 20mA = 100% RH

1	12V - 40V DC , 15V - 30V AC (Input)
2	Potential-free relay output
3	Output (0-10V / 4-20mA)
4	Output offset (+2V / +4mA)
5	Output selection - voltage / current
6	LED signalization (enable/disable)*
7	BCD Setpoint relay output (0=5%... F=80% humidity)

* LED signalization: RH < 30% = Blue
RH = 30-60% = Green
RH > 60% = Red



ACCESSORIES

CI-AQS-COMBI

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



KEY TO CODING

CI-RH-R

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



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

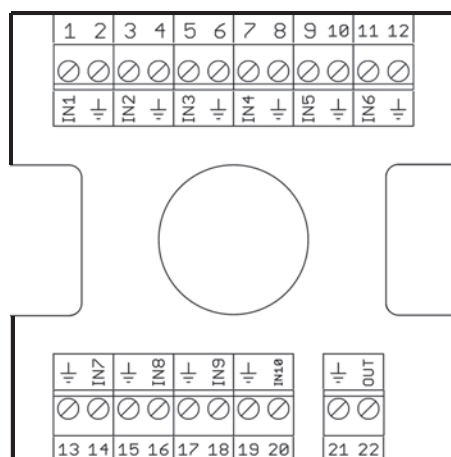


Input voltage	0-10V DC / 2V - 10V
Output voltage	0-10V DC / 2V - 10V
IP	IP30
Operational temperature	+0 to +40°C





WIRING DIAGRAMS



Terminals	Description	Terminals	Description
1-2	Input 1	13-14	Input 7
3-4	Input 2	15-16	Input 8
5-6	Input 3	17-18	Input 9
7-8	Input 4	19-20	Input 10
9-10	Input 5	-	-
11-12	Input 6	21-22	Output

* When the sensors are connected, there is a slight voltage drop of approximately 0.3V on output.



ACCESSORIES

Duct sensor CO2: CI-EE850-C3XXFP-002

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



Duct sensor of relative humidity: CI-LCN-FTK140VV

Duct sensor for measuring relative humidity in air-conditioning systems



Spatial sensor CO2: CI-CO2-R

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

Spatial sensor RH: CI-RH-R

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

Spatial sensor CO2: CI-CO2-M

CO2 sensor with 0-10V analog output. Measured values is possible also read thru Modbus RTU.

Spatial sensor RH: CI-RH-M

Capacitive relative humidity sensor with 0-10V analog output. Measured values is possible also read thru Modbus RTU.

**KEY TO CODING****CI-AQS-COMBI**

Signal combiner for AQS sensors using 0-10V



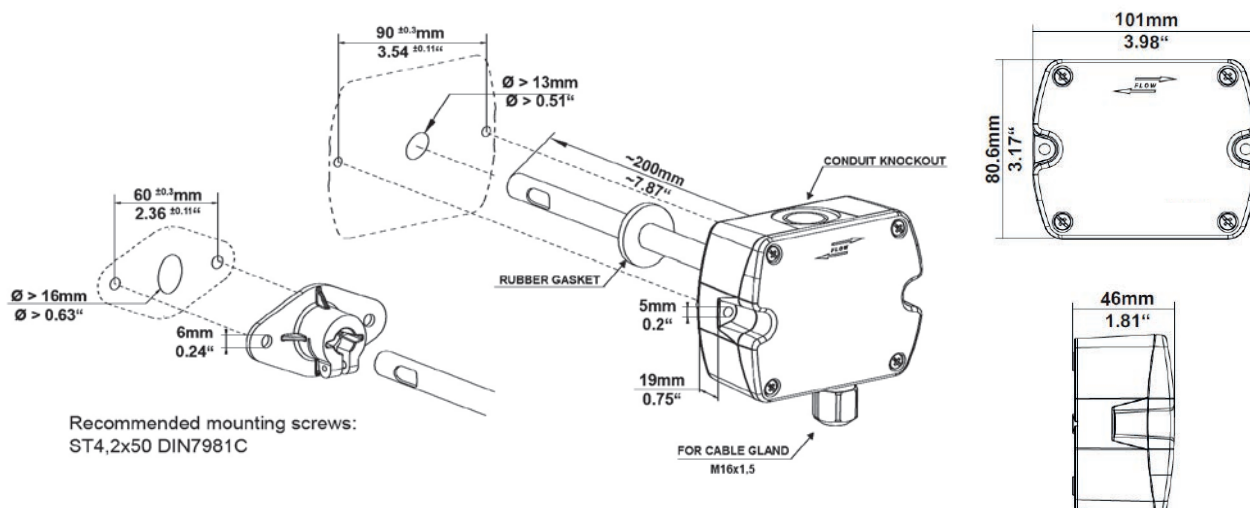
BASIC FEATURES

The **CI-EE850-C3xx-FP** is an CO₂ measurements for HVAC. The operation is based on the infrared principle. A patented auto-calibration procedure compensates for the aging of the infrared source and ensures outstanding long term stability. The transmitters are designed for applications within the HVAC industry.



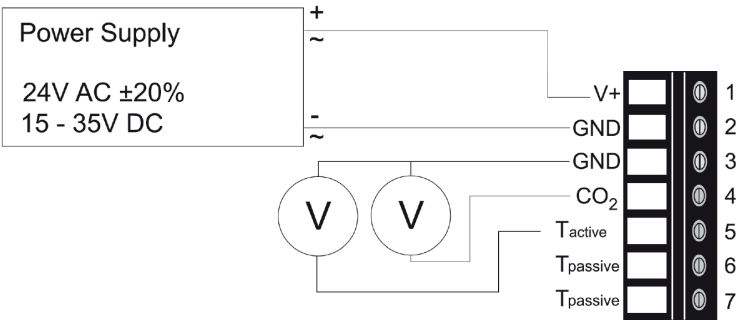
PRIMARY PARAMETERS

Power source	24V AC $\pm 20\%$ or 15–35V DC
Output voltage	0–5/10V 4–20mA
Measuring range	0...2000 ppm: $< \pm (50 \text{ ppm} + 2\% \text{ of mv})$
Operational temperature	0...+50 °C (32...122 °F)
Electrical protection	IP65





WIRING DIAGRAMS



ACCESSORIES

CI-AQS-COMBI

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



KEY TO CODING

CI-EE850-C3XXFP-002

— Duct sensor of the concentration of CO₂



BASIC FEATURES

The **CI-LCN-FTK140VV** is an electronic sensor of relative humidity.

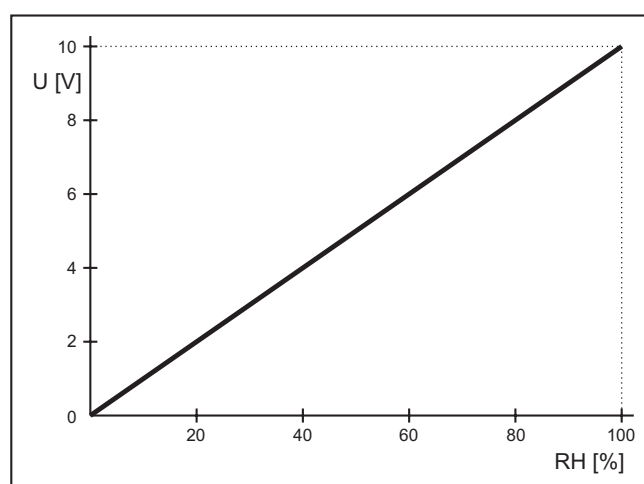
The sensor has an analogue voltage output 0-10V, corresponding to the range of relative air humidity 0-100%.

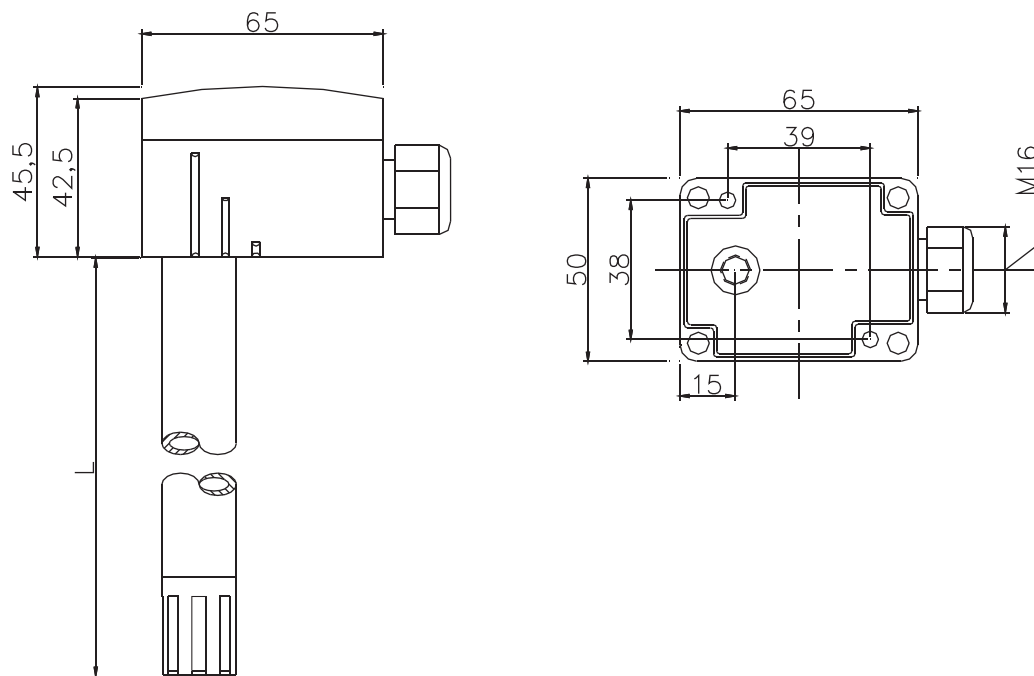
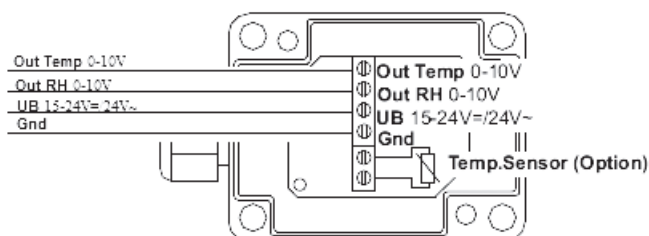


PRIMARY PARAMETERS

Power source	15-24VDC/24AC +/-10%
Output voltage	0-10V DC
Measuring range	-20...+80°C
Operational temperature	-20...+70°C
Electrical protection	IP65

Input voltage related to humidity



**WIRING DIAGRAMS****ACCESSORIES****CI-AQS-COMBI**

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

**KEY TO CODING****CI-LCN-FTK140VV**

relative air humidity sensor



BASIC FEATURES

CI-PS 1003 – motion sensor that controls space, when something enters into space under control, this sensor detects heat emission from bodies entering this space and switches on /off switching (bridging) contacts. Motion sensor PIR is resistant to animals up to 25 kilos in weight. It can be mounted on walls or installed in corners, sensors specifications can be adjusted, for stable work there is built-in temperature control. It's possible to switch on/off light emission diodes (LED). The sensor has 90° detection angle, detection area is 12 meters.

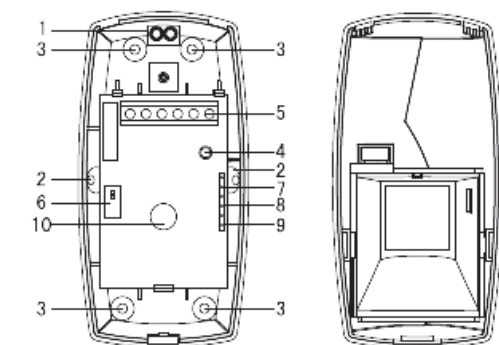


PRIMARY PARAMETERS

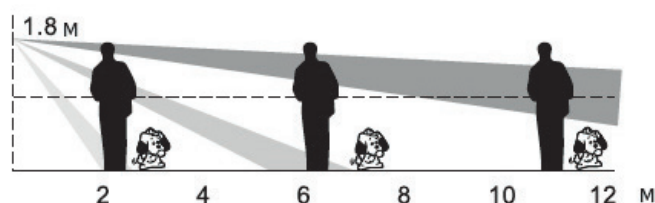
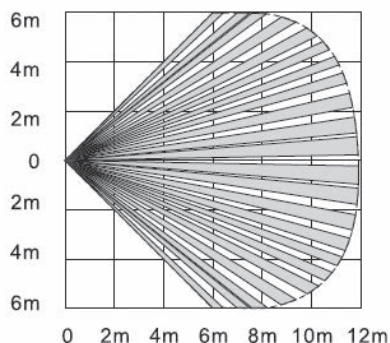
Power source	9-16V DC
Detection area	12m
Detection angle	90°
Sensor	Low noise level of PIR sensor
Resistance to animals	< 25 kg
Pulse scaler	1 or 2
Installation method	Installation on walls
Height of installation	1,8 up to 2,2m
Operating temperature range	-10°C up to +50°C
Signalisation output	1NC/1C 28V DC, 100mA
Operational contacts capacity	1NC, 28V DC, 100mA
Dimensions	106 mm x 54 mm x 36 mm

Installation of motion sensor PIR:

Motion sensor is mounted on walls or in corners (1,8 to 2,2 m high), screw nails are included in supply package, height installation of sensors that are not resistant to animals should be 1,8 m.



1.	Output connection
2.	Corner bores
3.	Wall bores
4.	Light-emission diode (LED)
5.	Terminal block
6.	Anti tamper switch
7.	LED strap
8.	Jumper JP1
9.	Jumper JP2
10.	Sensor



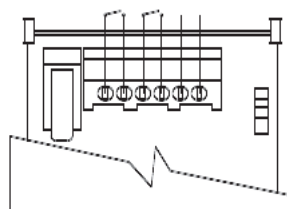
1. Please, use this sensor according to its designated purpose. Don't touch sensor's surface – this can lead to sensor's breakage. When it is necessary, clean sensor's surface with soft cloth and pure alcohol. Before cleaning turn off the sensor. 2. Avoid usage in operating environment with high temperature differences. 3. This product can reduce the likelihood of accident but it can't guarantee absolute safety because of some unexpected factors. That's why, aside from using the sensor, please take all necessary safety measures.



WIRING DIAGRAMS

+ 12 V: DC
GND ANODE:DC
ALARM CATHODE: relay output
TAMPER: Anti tamper switch

ALARM TAMPER + 12 GND



KEY TO CODING

CI-PS 1003

Movement detecting sensor



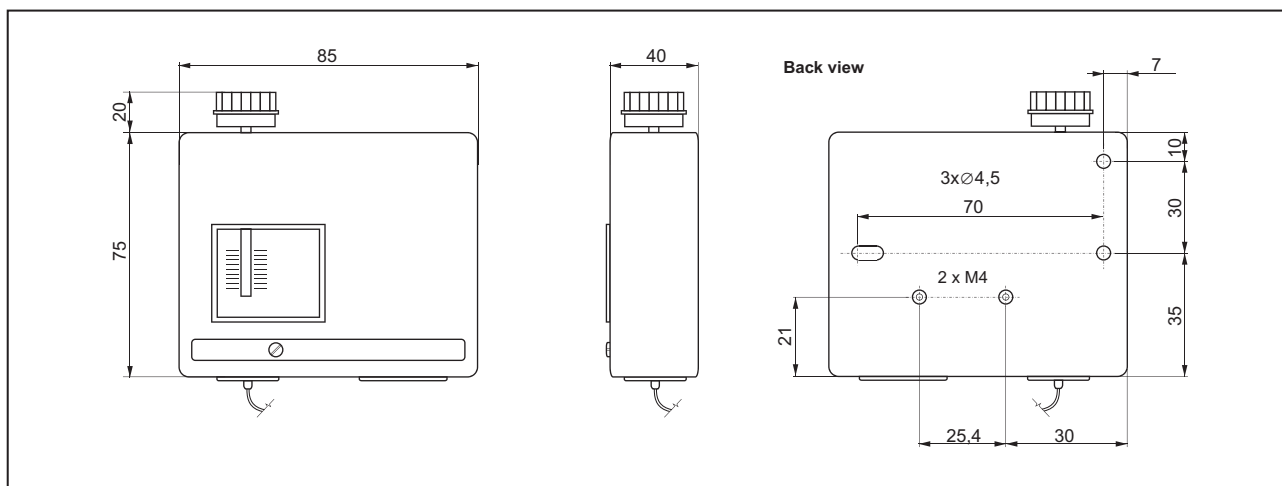
BASIC FEATURES

The **PO** anti-freeze sensor is designed for sensing temperature behind the LPHW coil and for activating the anti-freeze protection system of the LPHW coil when the temperature falls below the preset limit value. It is designed for installation into systems for conveying air free of rough dust, grease, chemical fumes, and other contaminants.

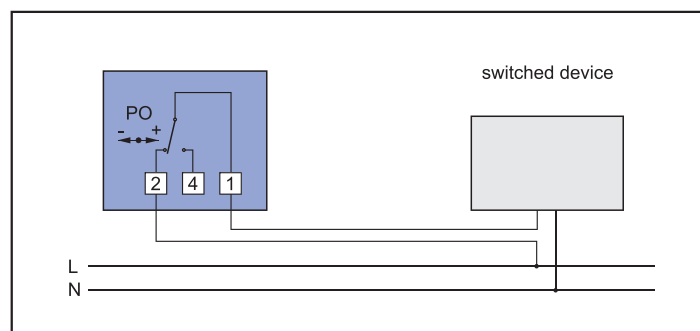
- Installation into a duct behind LPHW coil
- Temperature range: +2 up to +20 °C
- Difference: $\pm 2,5$ °C
- Maximum contact loading: AC 230 V / 24 A (ohmic load), AC 230 V / 10 A (inductive load)
- IP rating: IP43
- Capillary: 1,8 mm diameter, 6000 mm length
- Ambient operating temperature: -50 up to +70 °C
- Maximum sensor temperature: 150 °C



PRIMARY PARAMETERS

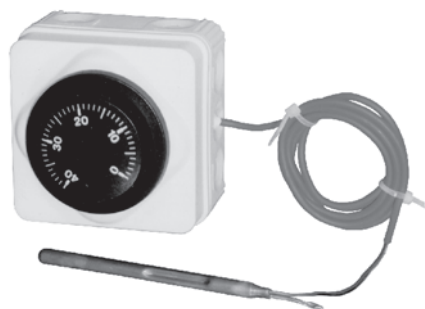


WIRING DIAGRAMS



KEY TO CODING

PO
Anti-freeze sensor



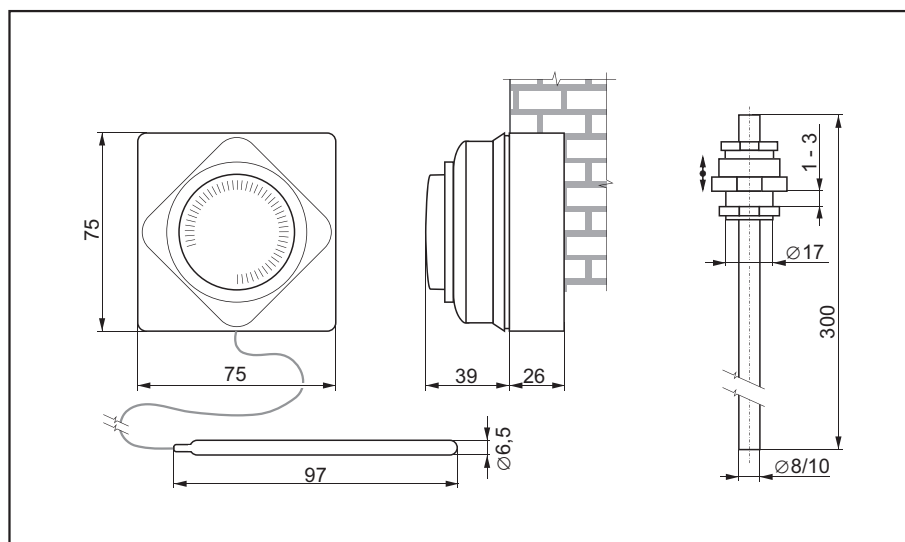
BASIC FEATURES

The **TER-K** capillary thermostat is designed for measuring the air temperature conveyed by the HVAC systems. The thermostat opens contacts once the preset temperature is exceeded.

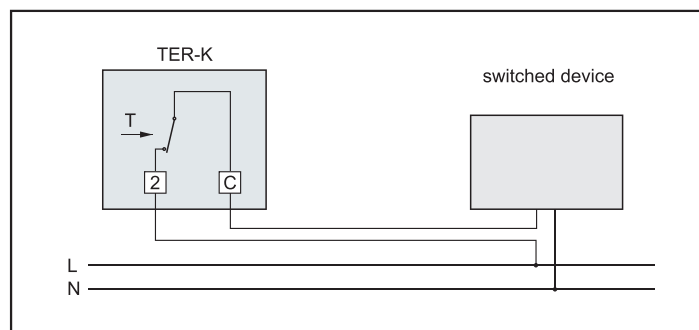
- Temperature range: 0 up to 40 °C
- Tolerance: min. temperature: ± 5 °C, max. temperature: ± 3 °C
- Difference: ± 2 °C
- Maximum contact loading: AC 230 V / 16 A (ohmic load), AC 230 V / 1.5 A (inductive load), AC 400 V / 6 A (ohmic load), AC 400 V / 1 A (inductive load)
- IP rating: IP44
- 1000 mm capillary, Cu with a red PVC R3 thermoplastic
- Ambient operating temperature: -20 up to +40 °C
- Maximum sensor temperature: +120 °C



PRIMARY PARAMETERS



WIRING DIAGRAMS



KEY TO CODING

TER-K

Capillary thermostat



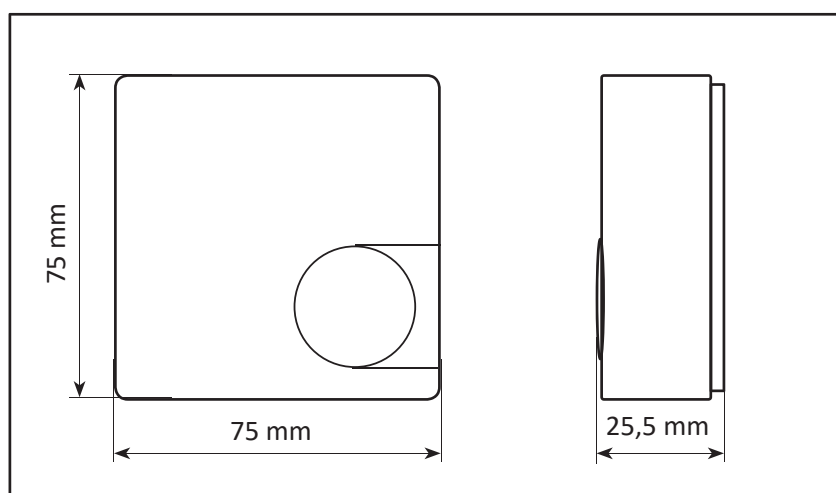
BASIC FEATURES

The **TER-P** room thermostat is designed for measuring the air temperature in a room. The thermostat opens contacts once the preset temperature is exceeded.

- Temperature range: +5 up to +30 °C
- Maximum admissible temperature change rate is 0,5 K
- Supply voltage: 230 V AC 50/60 Hz
- Maximum contact loading: AC 230 V / 10 A (ohmic load), AC 230 V / 4 A (inductive load)
- IP rating: IP30

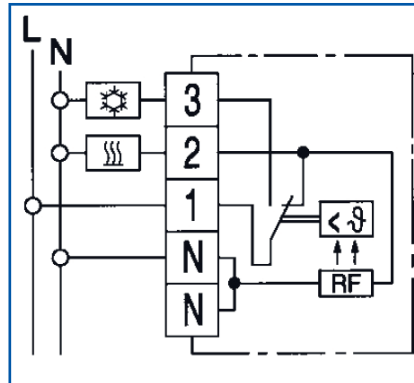


PRIMARY PARAMETERS





WIRING DIAGRAMS



KEY TO CODING

TER-P

— Spatial thermostat



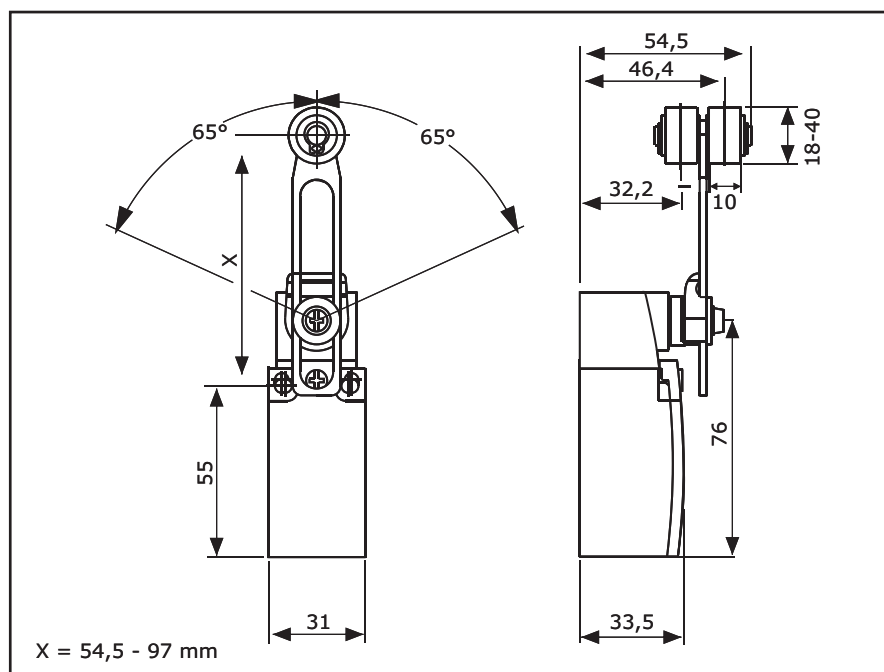
BASIC FEATURES

The **DS** door switch is designed for switching equipment on/off depending on the door position. The door switch is fitted with a change-over contact.

Electrical protection IP67, switching capacity 6 A, 230 V.

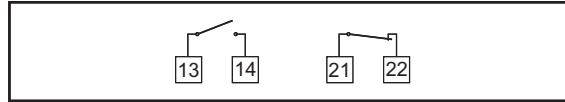


PRIMARY PARAMETERS





WIRING DIAGRAMS



KEY TO CODING

DS

Door switch



BASIC FEATURES

The **DK-B-3** door contact is designed in a metal housing for switching equipment on/off depending on the door position. The contact is closed with door in the closed position.

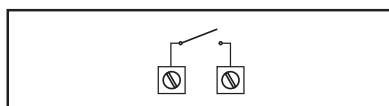


TECHNICAL DATA

Max. reed switched voltage	100 V
Max. switched current	0,4 A
Make distance	38 mm
Break distance	42mm
Dimensions magnet enclosure	50 x 17 x 9,8 mm



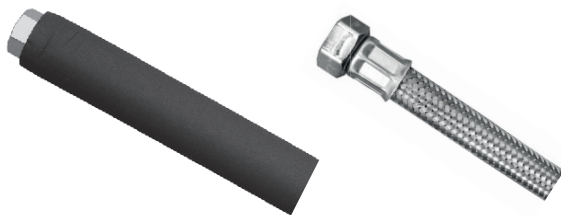
WIRING DIAGRAMS



KEY TO CODING

DK-B-3

Door contact



BASIC FEATURES

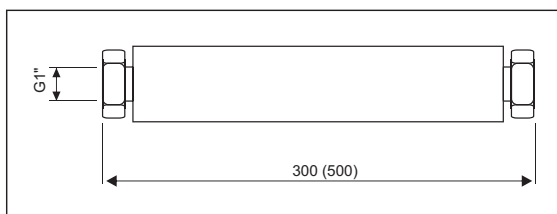
The **OH** flexible hose is designed for an easy connection of exchangers to the heating medium distributions. The hoses made of stainless steel and this is fitted with a thermal insulation.

- Temperature of medium conveyed: -20 up to +110 °C
- Maximum pressure: 1 MPa
- Lengths supplied: 300 and 500 mm
- Connection size: Union nuts DN 25 (G 1"), DN 20 (3/4")
- Number of pieces: 1

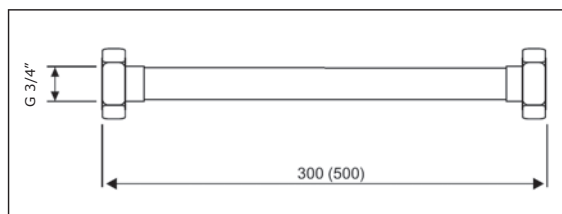


PRIMARY PARAMETERS

OH - 01



OH - 02



KEY TO CODING

OH - 01 - 1/1 - xxx

300, 500 – lengths in mm
1/1 – connection size G 1"
3-4 – connection size G 3/4"

01 – type 1"

02 – type 3/4"

OH – flexible hose



HVAC COMPONENTS





BASIC FEATURES

- Power from 0.4 up to 18 kW
- Diameters 100 up to 630 mm
- Two wiring methods
- Model with integrated impulse output control
- D type control include 0-10V interface
- 36-month guarantee

The **EOKO2** electric heater is designed for heating or re-heating the supply air in HVAC systems. For example, it is used for heating air in small ventilation systems, re-heating air from recuperative exchanger, heating air in a room with requirement for an independent temperature control, and so on.

The heater shall be installed indoor in a dry area with ambient temperatures ranging from 0 °C up to 30 °C and relative humidity of up to 80 %. It is designed for conveying air free of rough dust, grease, chemical fumes, and other impurities. The air temperature on the outlet from the heater shall not exceed +40 °C. The electric IP rating of the cabling housing of the heater is IP 20.

The heater housing is made of galvanized plate.



PRIMARY PARAMETERS

The heaters are supplied in two models B and D differing by their electric system. All models are fitted with an integrated safety thermostat with automatic reset and emergency thermostat with manual reset to ensure the maximum level of safety.



The required electric heater power can be calculated using the following simplified formula:

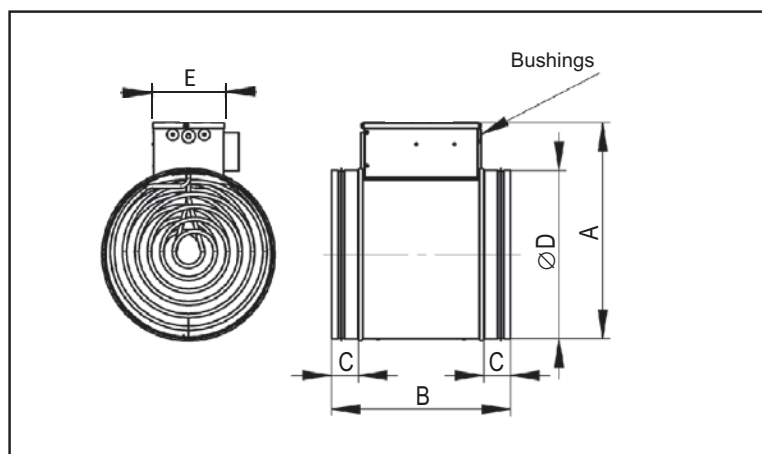
$$P = Q \times 0.34 \times \Delta t$$

P - power [W]

Q - air flow [m³/h]

Table of technical parameters

Type	Nominal diameter [mm]	Output [kW]	Voltage [V]		Connection [type]	Current [A]	Airflow Min. [m³/h]	Dimensions [mm]					Weight [kg]
			Coils only	Heater				A	B	C	D	E	
EOKO2-100-0,4-1	100	0,4	1x230	1x230	parallel	1,7	24	215	325	40	100	100	2,0
EOKO2-100-0,8-1	100	0,8	1x230	1x230	parallel	3,7	48	215	325	40	100	100	2,0
EOKO2-100-1,2-1	100	1,2	1x230	1x230	parallel	5,2	71	215	325	40	100	100	2,4
EOKO2-100-1,6-1	100	1,6	1x230	1x230	parallel	7,2	95	215	325	40	100	100	2,5
EOKO2-125-0,8-1	125	0,8	1x230	1x230	parallel	3,7	48	225	325	40	125	125	2,6
EOKO2-125-1,6-1	125	1,6	1x230	1x230	parallel	7,2	95	225	325	40	125	125	2,9
EOKO2-125-2,4-1	125	2,4	1x230	1x230	parallel	10,6	142	225	325	40	125	125	3,2
EOKO2-160-0,8-1	160	0,8	1x230	1x230	parallel	3,5	48	260	380	40	160	160	3,0
EOKO2-160-1,2-1	160	1,2	1x230	1x230	parallel	5,2	71	260	380	40	160	160	3,0
EOKO2-160-1,6-1	160	1,6	1x230	1x230	parallel	7	95	260	380	40	160	160	3,3
EOKO2-160-2,4-1	160	2,4	1x230	1x230	parallel	10,4	142	260	380	40	160	160	3,3
EOKO2-160-5-2	160	5,0	2x400	2x400	parallel	12,5	295	260	380	40	160	160	4,3
EOKO2-200-0,6-1	200	0,6	1x230	1x230	parallel	2,8	36	315	380	40	200	150	3,1
EOKO2-200-1,2-1	200	1,2	1x230	1x230	parallel	5,2	71	315	380	40	200	150	3,1
EOKO2-200-2-1	200	2,0	1x230	1x230	parallel	8,7	118	315	380	40	200	150	3,5
EOKO2-200-3-1	200	3,0	1x230	1x230	parallel	13,2	177	315	380	40	200	150	3,6
EOKO2-200-3,6-3	200	3,6	3x230	3x400	star	5,2	212	315	380	40	200	150	4,8
EOKO2-200-5-2	200	5,0	2x400	2x400	parallel	12,5	295	315	380	40	200	150	4,4
EOKO2-200-6-3	200	6,0	3x230	3x400	star	8,7	353	315	380	40	200	150	6,1
EOKO2-250-0,6-1	250	0,6	1x230	1x230	parallel	2,8	36	350	380	40	250	150	3,2
EOKO2-250-1,5-1	250	1,5	1x230	1x230	parallel	6,7	89	350	380	40	250	150	3,3
EOKO2-250-2,0-1	250	2,0	1x230	1x230	parallel	8,9	118	350	380	40	250	150	3,6
EOKO2-250-3-1	250	3,0	1x230	1x230	parallel	13,2	177	350	380	40	250	150	3,6
EOKO2-250-4,5-3	250	4,5	3x230	3x400	star	6,7	265	350	380	40	250	150	3,8
EOKO2-250-6-2	250	6,0	2x400	2x400	parallel	15	353	350	380	40	250	150	3,8
EOKO2-250-6-3	250	6,0	3x230	3x400	star	8,8	353	350	380	40	250	150	4,0
EOKO2-315-1,5-1	315	1,5	1x230	1x230	parallel	6,5	89	430	380	60	315	150	4,8
EOKO2-315-2-1	315	2,0	1x230	1x230	parallel	8,7	118	430	380	60	315	150	5,3
EOKO2-315-3-1	315	3,0	2x230	1x230	parallel	13,2	177	430	380	60	315	150	4,8
EOKO2-315-6-2	315	6,0	2x400	2x400	parallel	15	353	430	380	60	315	150	5,0
EOKO2-315-6-3	315	6,0	3x230	3x400	star	8,8	353	430	380	60	315	150	6,2
EOKO2-315-9-3	315	9,0	3x400	3x400	delta	13	530	430	380	60	315	150	8,2
EOKO2-355-1,5-1	355	1,5	1x230	1x230	parallel	6,7	89	470	380	60	355	150	6,4
EOKO2-355-3-1	355	3,0	2x230	1x230	parallel	13,2	177	470	380	60	355	150	7,2
EOKO2-355-9-3	355	9,0	3x400	3x400	delta	13	530	470	380	60	355	150	8,5
EOKO2-355-12-3	355	12,0	3x400	3x400	delta	17,5	706	470	380	60	355	150	8,6
EOKO2-355-18-3	355	18,0	3x400	3x400	delta	26,2	1059	470	380	60	355	150	8,8
EOKO2-400-9-3	400	9,0	3x400	3x400	delta	13	530	500	380	60	400	150	8,9
EOKO2-400-12-3	400	12,0	3x400	3x400	delta	17,5	706	500	380	60	400	150	9,2
EOKO2-400-18-3	400	18,0	3x400	3x400	delta	26,2	1059	500	380	60	400	150	9,4
EOKO2-450-18-3	450	18,0	3x400	3x400	delta	26,2	1059	550	460	50	450	150	10,2
EOKO2-500-18-3	500	18,0	3x400	3x400	delta	26,2	1059	600	460	50	500	150	10,4
EOKO2-560-18-3	560	18,0	3x400	3x400	delta	26,2	1059	660	460	50	560	150	11,6
EOKO2-630-18-3	630	18,0	3x400	3x400	delta	26,2	1059	730	460	50	630	150	13,2

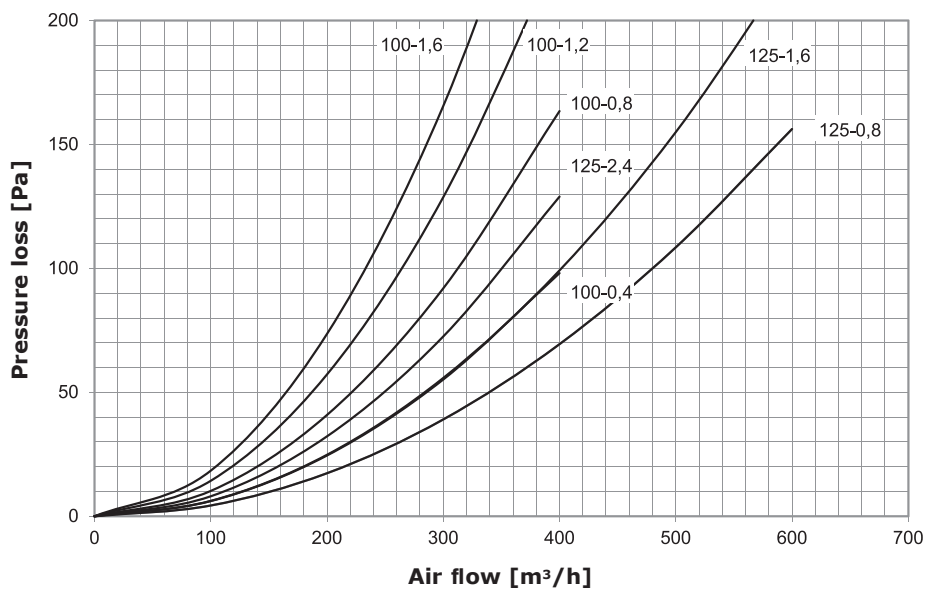


Determination of air temperature increase

$$P[W] = V [m^3/h] \times 0,34 \times \Delta t [^{\circ}C]$$

Diagram for determination of pressure loss

Diameter 100, 125



Diameter 160, 200

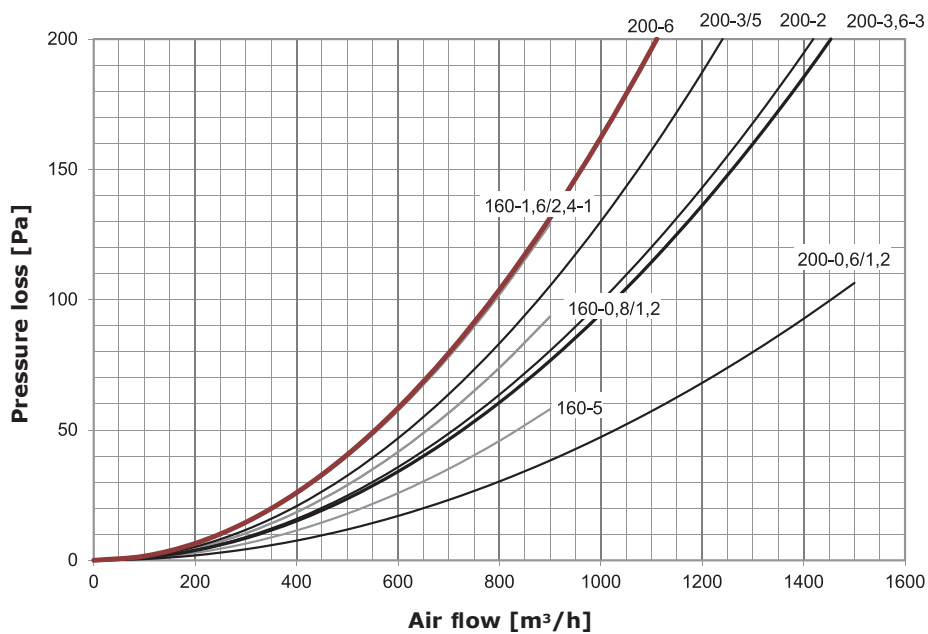
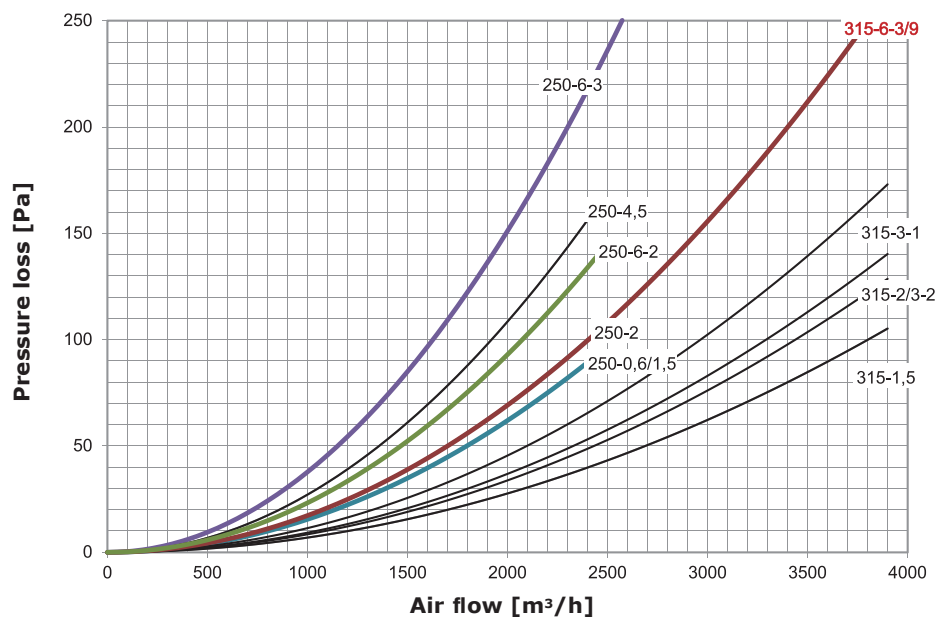
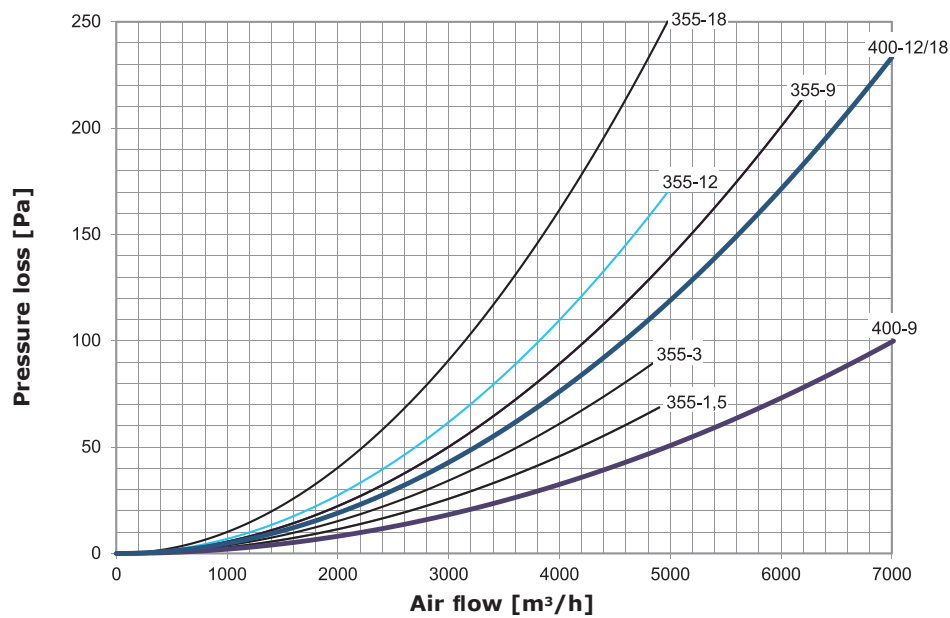


Diagram for determination of pressure loss

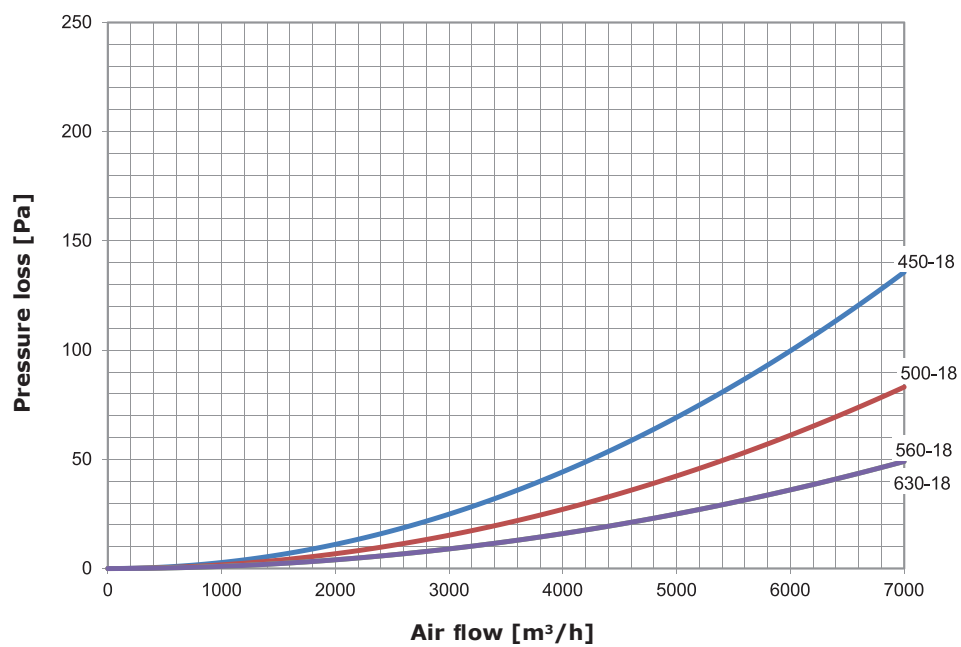
Diameter 250, 315



Diameter 355, 400



Diameter 450, 500, 560, 630



**INSTALLATION AND ASSEMBLY**

The **EOKO2** line heaters allow installation into the HVAC ducting in any operating position. The air flow direction in the heater does not influence any characteristics of the heater. The distance between the heater and other components (bend, fan, flaps, and so on) shall be double of the connection diameter, however, at least 500 mm.

**CONTROL**

All heaters shall be installed in a system ensuring:

- air flow speed in the heater of at least 2 m/s. Heater overheating may occur if this requirement is not met.
- deactivation of the heater in case of air supply failure or if air the flow falls below the specified limit.
- impossibility of heater activation if air is not supplied into the heater.
- aftercooling after heater deactivation.

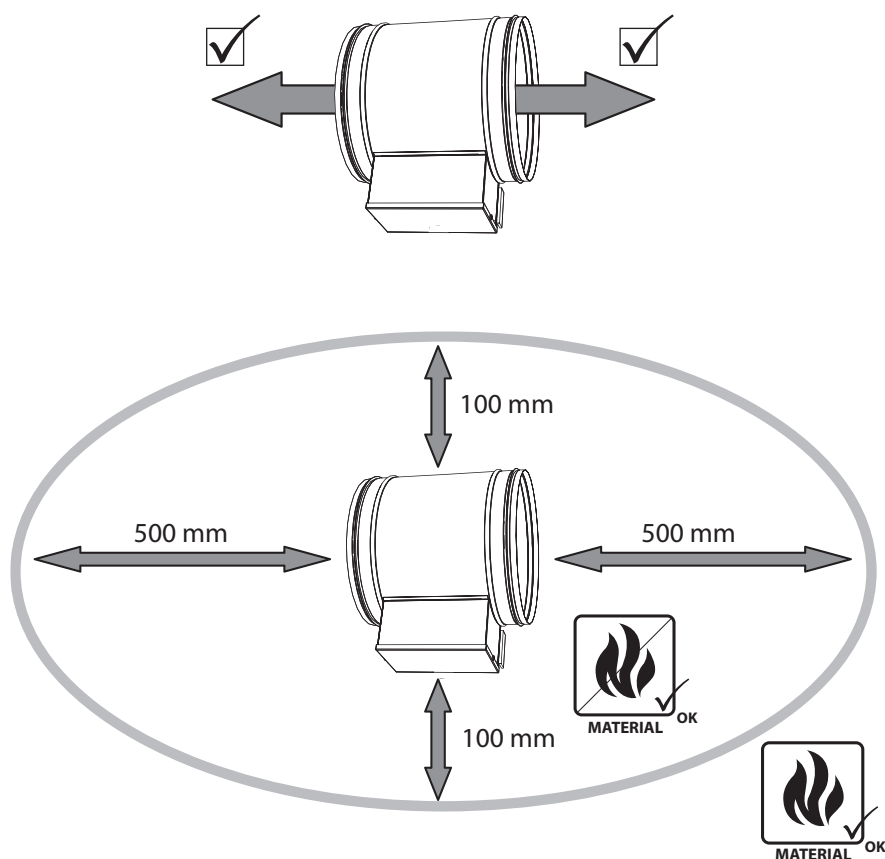
B type heaters

The **B** type electric heaters are not fitted with a control system and require an external control system.

The **Pulser-M** (single-phase and two-phase) or **RV3-25/P** (three-phase) external control system is suitable for controlling the output of these heaters.

D type heaters with internal control system

The **D** type heaters are fitted with the internal control system, i.e. the required air temperature can be set using control on the electric box of the heater. It is necessary to connect the following elements to the controller to ensure a correct operation of the control system: the **CKT** duct-type sensor, the **CPT** wall-mounted sensor, or the **CPTO** wall-mounted sensor with a controller allowing setting the required temperature. The controller regulates the heater output only. Aftercooling, controlling the minimum air flow through the heater, and other emergency and safety functions shall be ensured by the external control system. **0-10V** interface is included.





WIRING DIAGRAMS

All wiring diagrams provided in the technical catalog are indicative only. When assembling the product, observe strictly the nameplate ratings as well as directions and diagrams affixed directly to the product or enclosed to the product.

W – heating elements

S – safety thermostat (automatic reset)

T – emergency thermostat (manual reset)

O – over-heating protection switch

P – pulse 1-phase performance regulator or operational thermostat

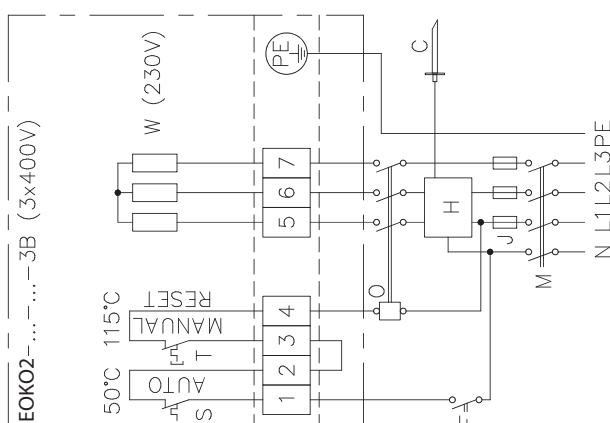
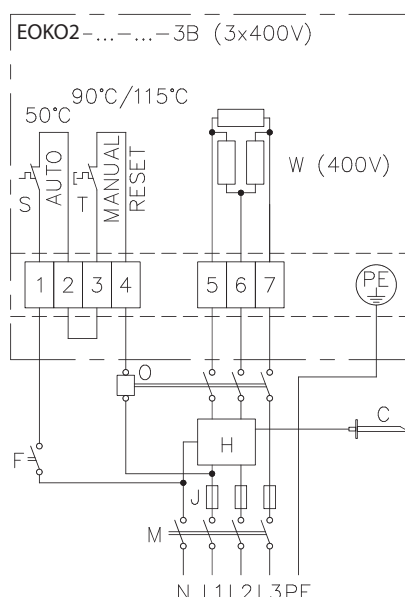
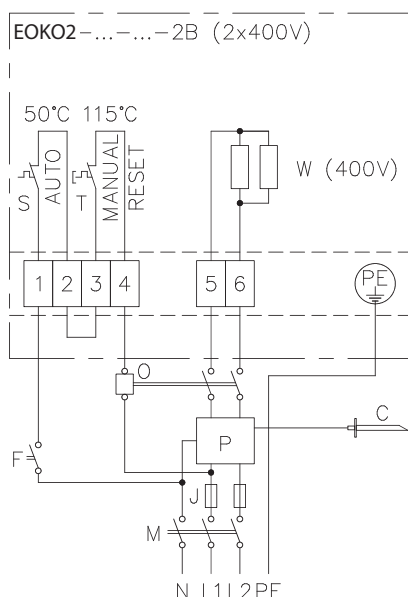
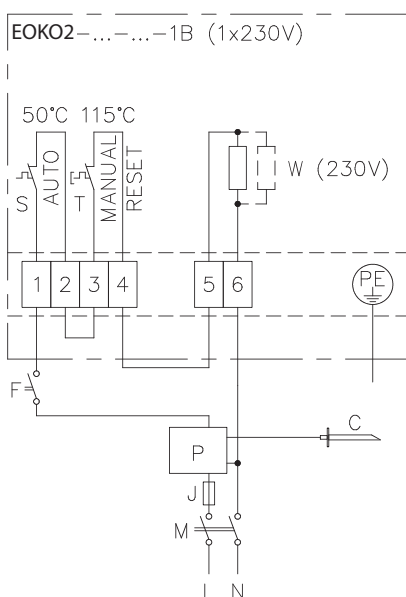
H – pulse 3-phase performance regulator or operational thermostat

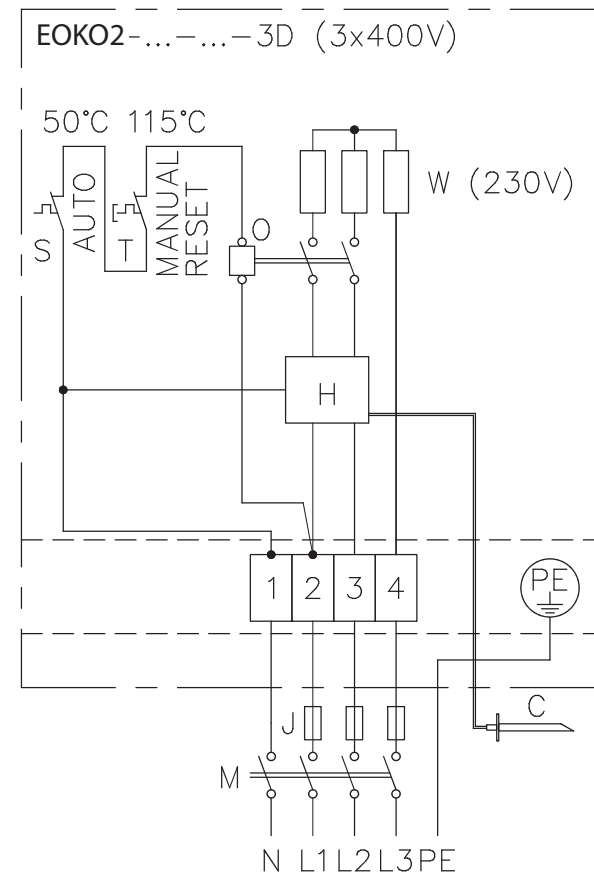
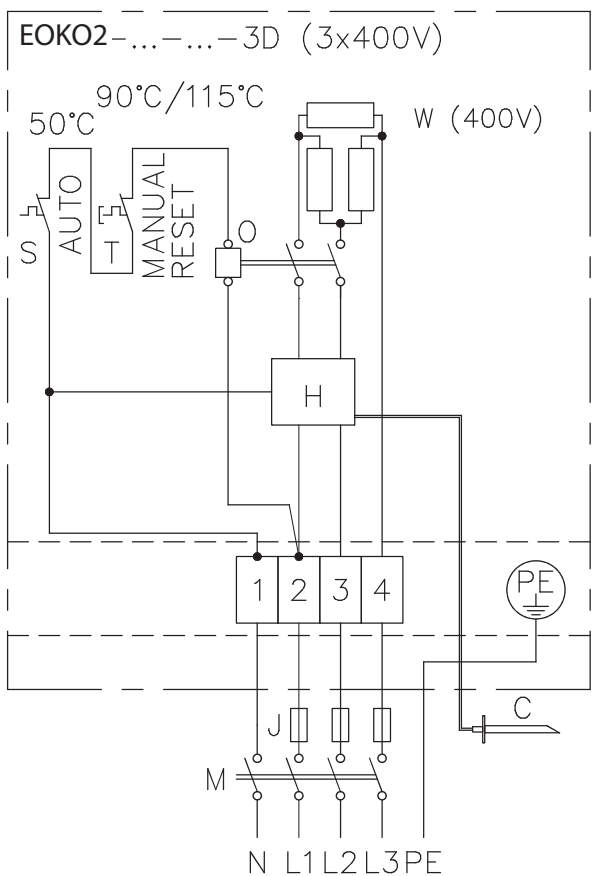
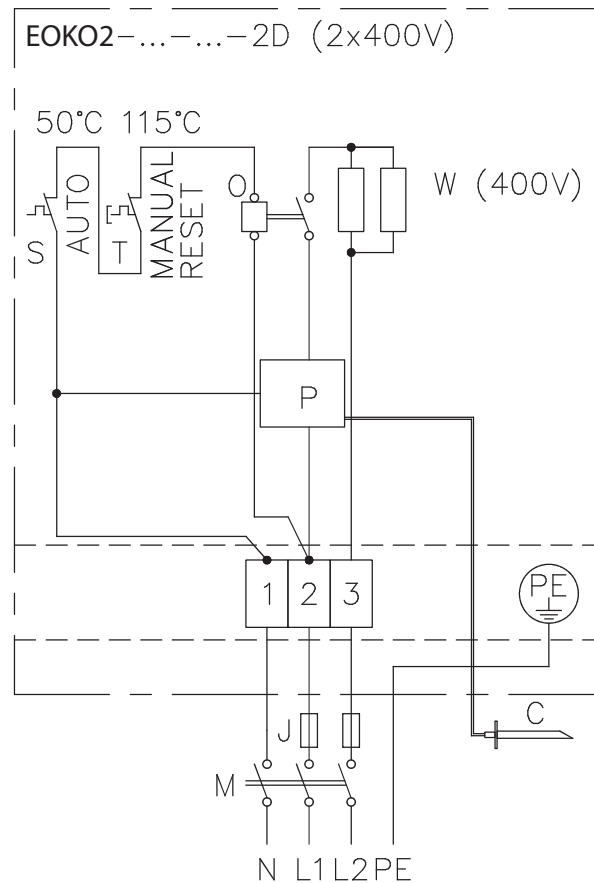
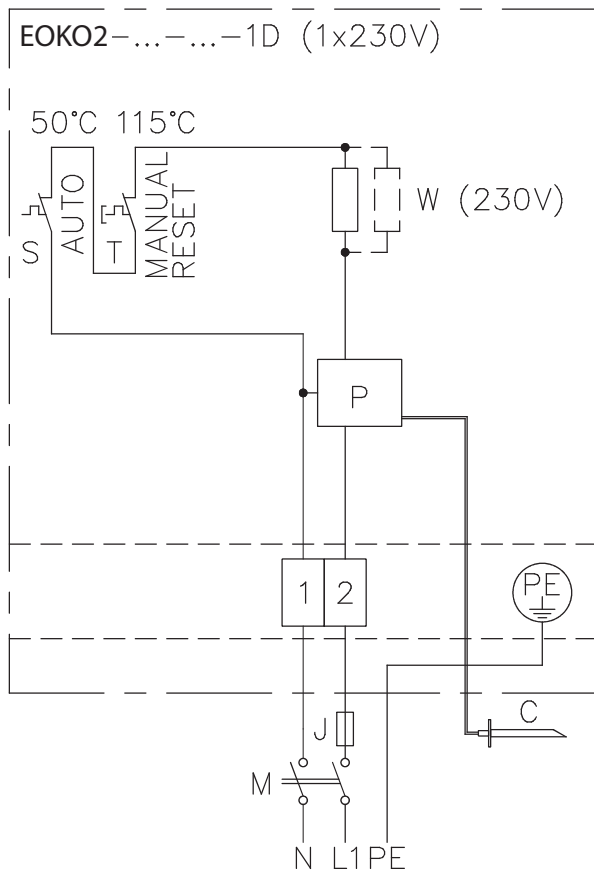
C – temperature sensor (space or channel), or temperature control

F – airflow control switch (pressostat)

M – main switch

J – fuses

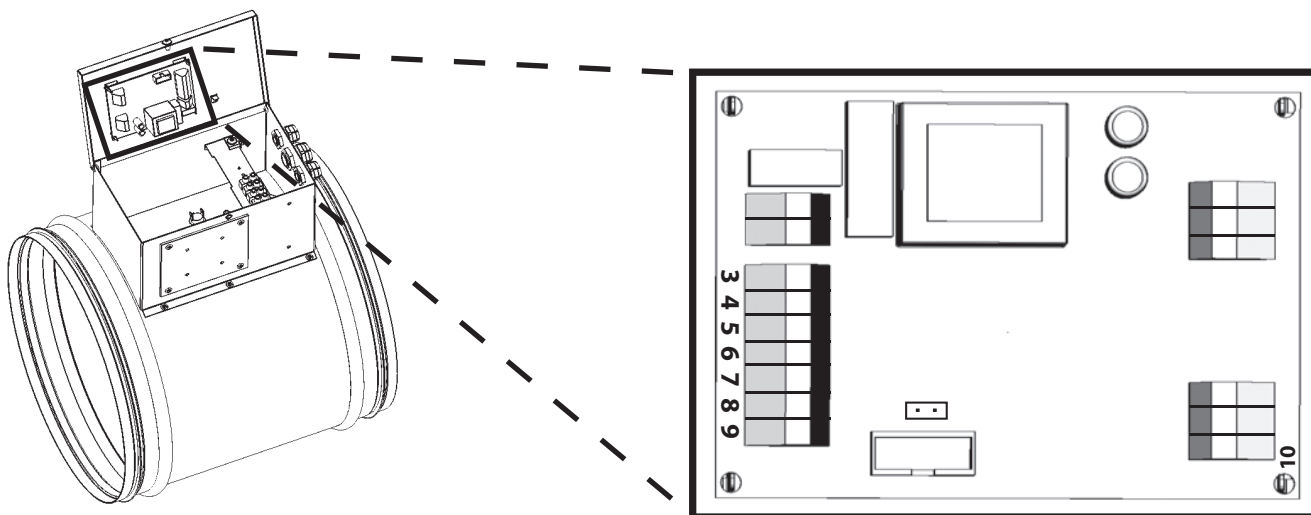






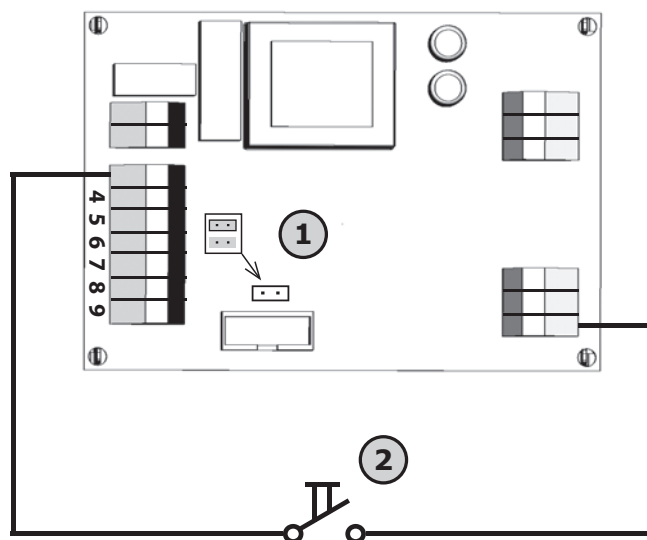
INSTALLATION AND ASSEMBLY

EOKO2-...-...-...D



- 4 - control signal input 0-10V
- 5 - GND (for the 0-10V input)
- 6+7 - input for the CKT sensor
- 8+9 - input for the CPT/CPTO sensor

3+10 - pressostat connection (optional):



- ① connected - pressostat active
disconnected - pressostat inactive
- ② fastened - air flow rate in the pipeline
unfastened - no air flow rate in the pipeline

**ACCESSORIES**

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

OPTIONAL ACCESSORIES

A minimum of one temperature sensor shall be connected to the **D** type heaters, see "CONTROL" section.

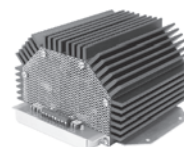
Wall-mounted temperature sensor with controller for adjusting the required temperature
CI-CPTO



Wall-mounted temperature sensor
CI-CPT



Three-phase impulse power controller
RV3-25/P – suitable for controlling output of the **EOKO2** **3B**.

**KEY TO CODING****EOKO2-160-5-2-B**

- B** – external over heat protection
- D** – heaters with internal control system
- 1** – supply 1 x 230 V
- 2** – supply 2 x 400 V
- 3** – supply 3 x 400 V
- 0,4 ... 18** – heater electric output in kW
- 100 ... 630** – nominal diameter in mm
- EOKO2** – circular electric heater



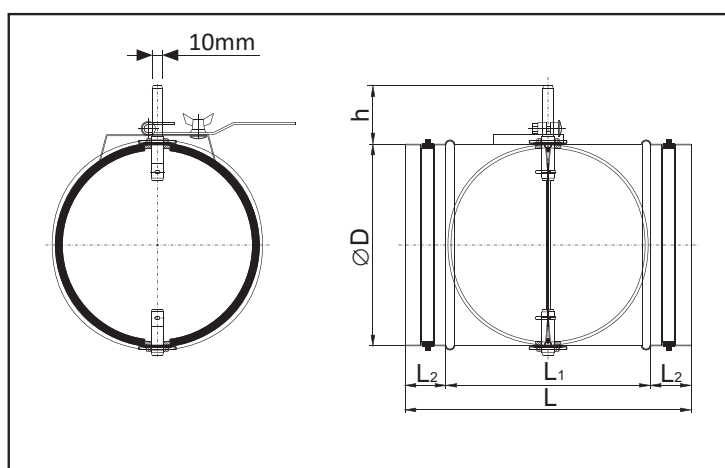
BASIC FEATURES

- Diameters: 100, 125, 150, 160, 200, 250, 315, 355 mm
- Manual or servo drive control

The **KRTK-A** shutting flap is designed for tight closing of individual branches in HVAC systems. The flap is designed for operation in the basic environment for conveying air free of rough dust, grease, chemical fumes, and other contaminants. The flap housing is made of galvanized plate. The flap may be fitted with a servo drive after removing the manual control lever.



PRIMARY PARAMETERS



Type	Dimensions [mm]					Sheet thickness [mm]	Weight [kg]
	D	L	L ₁	L ₂	h		
KRTK-A-100	100	280	200	40	76	0,55	0,4
KRTK-A-125	125	280	200	40	73	0,55	0,6
KRTK-A-150	150	280	200	40	71	0,55	0,7
KRTK-A-160	160	280	200	40	70	0,55	1,0
KRTK-A-200	200	280	200	40	67	0,55	1,4
KRTK-A-250	250	320	200	60	65	0,80	2,1
KRTK-A-315	315	320	200	60	64	0,80	3,6
KRTK-A-355	355	420	300	60	63	0,80	5,1



ACCESSORIES

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

Servo drive

SERVO-LM230-05



KEY TO CODING

KRTK-A 100

100 ... 355 – nominal diameter in mm

KTRK-A – tight closing valve



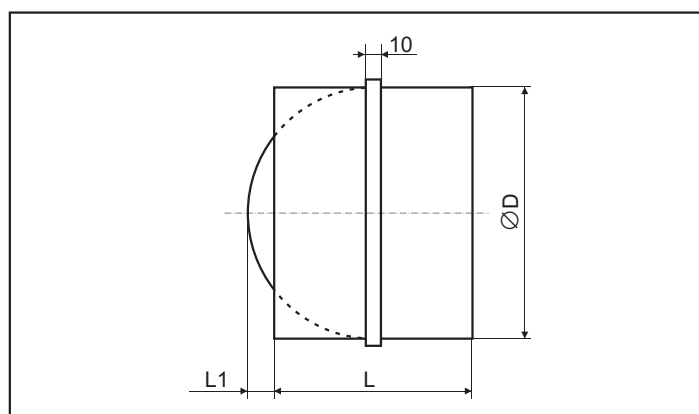
BASIC FEATURES

- 100 up to 630 mm diameters
- Installation between ducts

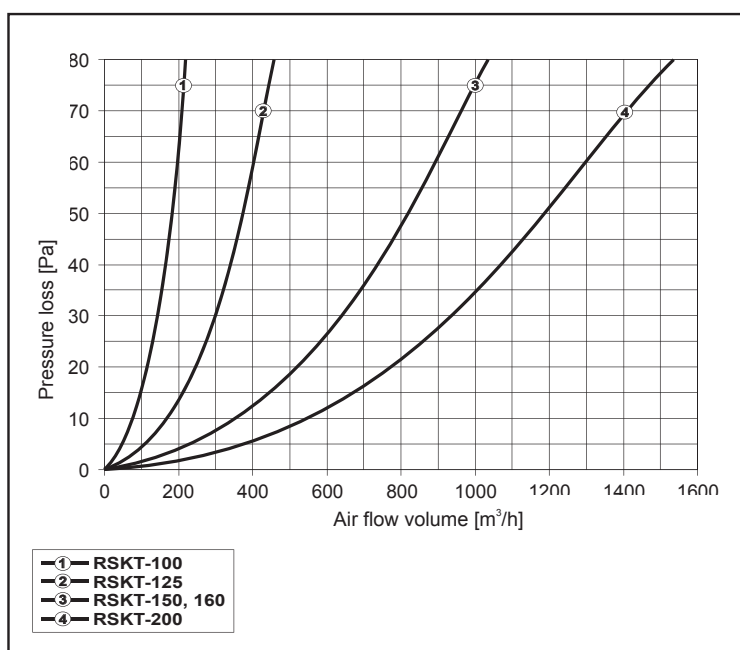
The **RSKR-Z** circular backflow valve is designed for eliminating the backflow of air in HVAC systems. The flap is designed for operation in the basic environment for conveying air free of rough dust, grease, chemical fumes, and other contaminants. The flap housing is made of galvanized plate. The shaft of installed valve shall be in a vertical position.



PRIMARY PARAMETERS



Type	Dimensions [mm]			Sheet thickness [mm]	Weight [kg]
	D	L	L _i		
RSKR-Z100	100	88	6	0,55	0,13
RSKR-Z125	125	88	19	0,55	0,17
RSKR-Z150	150	88	31	0,55	0,22
RSKR-Z160	160	88	36	0,55	0,24
RSKR-Z180	180	88	46	0,55	0,26
RSKR-Z200	200	88	56	0,55	0,29
RSKR-Z250	250	128	61	0,80	0,68
RSKR-Z315	315	128	94	0,80	0,81
RSKR-Z355	355	198	65	0,80	1,47
RSKR-Z400	400	198	94	0,80	1,68
RSKR-Z450	450	248	80	0,80	2,43
RSKR-Z500	500	248	107	0,80	2,76
RSKR-Z560	560	248	136	0,80	3,14
RSKR-Z630	630	248	172	0,80	3,61



KEY TO CODING

RSKR - Z 100

100 ... 630 – nominal diameter in mm

Z – case material galvanised steel sheet

RSKR – back draught shutter



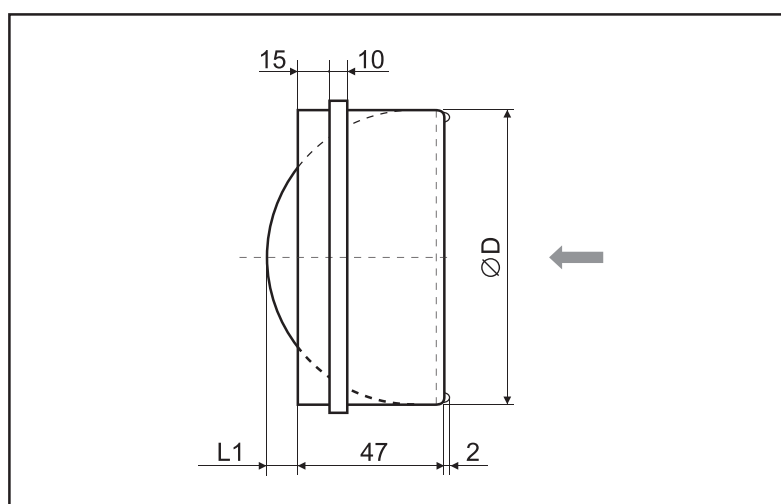
BASIC FEATURES

- 100 up to 200 mm diameters
- Installation into a duct

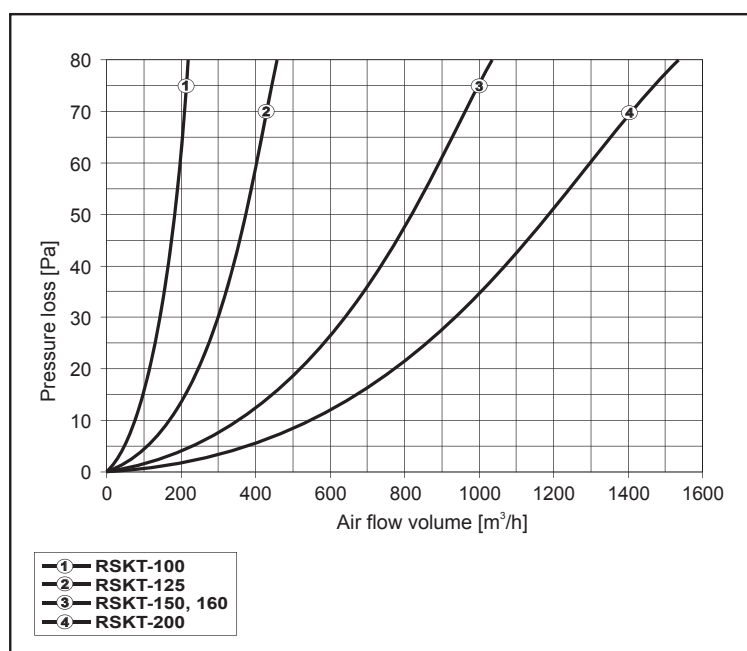
The **RSKT-Z** circular backflow valve is designed for eliminating the backflow of air in HVAC systems. The flap is designed for operation in the basic environment for conveying air free of rough dust, grease, chemical fumes, and other contaminants. The shaft of installed valve shall be in a vertical position.



PRIMARY PARAMETERS



Type	Dimensions [mm]		Weight [kg]
	D	L ₁	
RSKT-Z -100	100	8	0,15
RSKT-Z -125	125	17	0,20
RSKT-Z -150	150	32	0,30
RSKT-Z -160	160	37	0,40
RSKT-Z -200	200	56	0,70



KEY TO CODING

RSKT-Z - 100

100 ... 200 – nominal diameter in mm

RSKT-Z – backflow valve



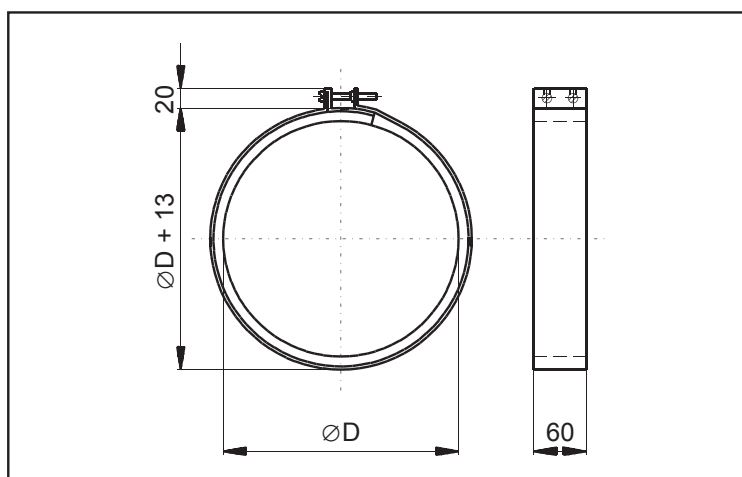
BASIC FEATURES

– for duct diameters of 100 up to 400 mm

The **MK** connection sleeve is designed for a tight connection of HVAC system ducting and elimination of vibration propagation through ducting. The sleeve is made of galvanized plate. Packing is made of expanded polyethylene.



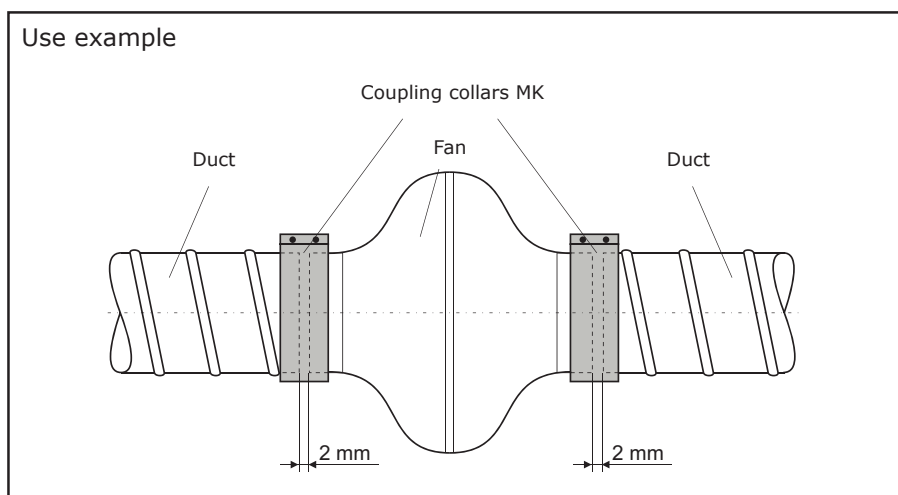
PRIMARY PARAMETERS



Type	Dimensions [mm] D	Sheet thickness [mm]	Weight [kg]
MK100	100	0,55	0,14
MK125	125	0,55	0,16
MK150	150	0,55	0,19
MK160	160	0,55	0,20
MK200	200	0,55	0,23
MK250	250	0,55	0,27
MK315	315	0,55	0,32
MK355	355	0,55	0,40
MK400	400	0,55	0,45



INSTALLATION AND ASSEMBLY



KEY TO CODING

MK 160

100 ... 400 – nominal diameter in mm

MK – coupling collar



BASIC FEATURES

- Connection diameters for 160 - 400 mm pipe
- Class ePM 1 55% (F7) pocket filter cartridge

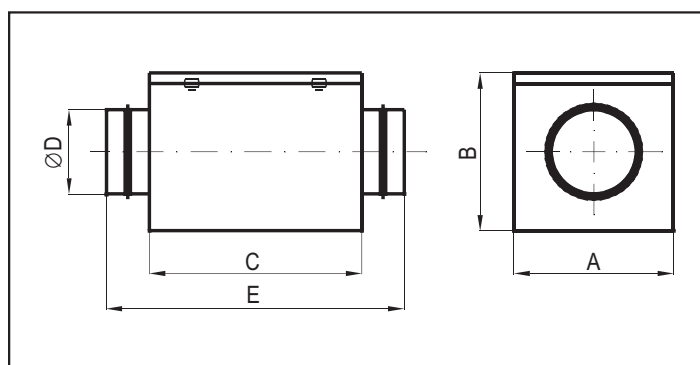
The **FLF-A** pocket filter box is designed for removing common mechanic contaminants (dust, leaves, flowers, and so on) from the air conveyed by HVAC systems. The box is made of galvanized plate. The sleeves are fitted with rubber packing. The filter cartridge is made of unwoven synthetic fiber fabric.

Filter cartridge:

Filtering class / particle separation effectivity ePM 1 55%
(F7) / 98 %

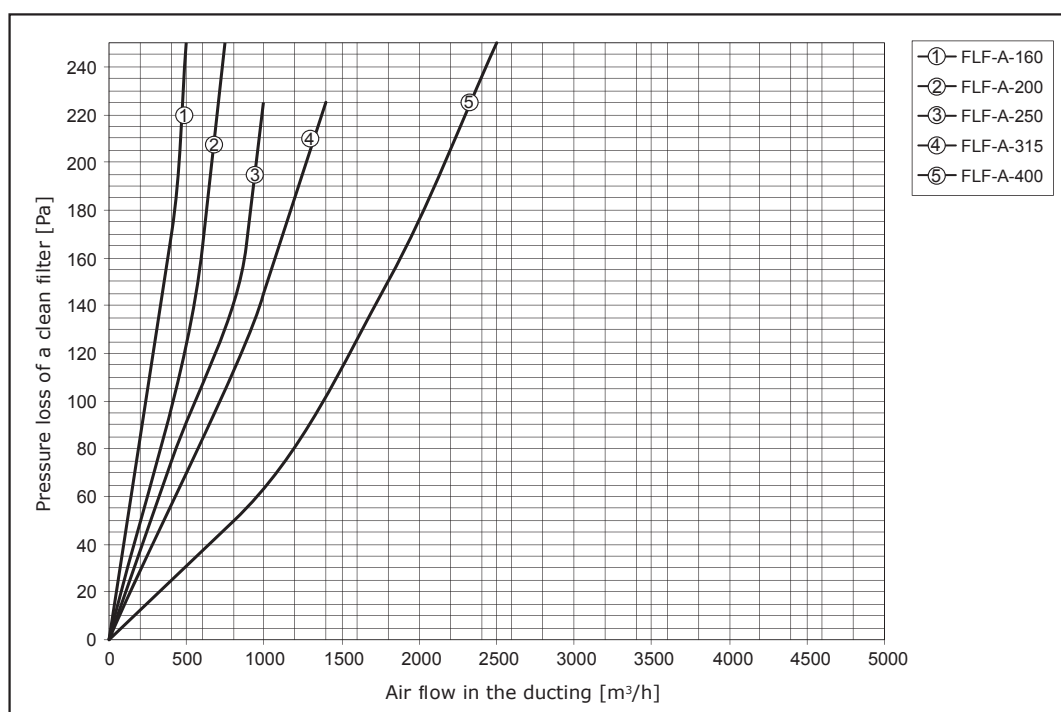


PRIMARY PARAMETERS



Type	Dimensions [mm]					Weight [kg]	Spare air-filter mats	
	D	A	B	C	E		Type class ePM 1 55%	Dimensions [mm]
FLF-A-160-7	160	294	295	400	450	4,3	EU7-160A	288 x 288 x 340
FLF-A-200-7	200	294	295	400	450	4,3	EU7-200A	288 x 288 x 340
FLF-A-250-7	250	424	385	480	530	5,2	EU7-250A	418 x 378 x 440
FLF-A-315-7	315	424	385	480	530	5,2	EU7-315A	418 x 378 x 440
FLF-A-400-7	400	504	505	600	730	6,6	EU7-400A	498 x 498 x 540

Pressure loss curves – FLF-A – filtration class ePM 1 55% (F7)



ACCESSORIES

Spare class ePM 1 55% (F7) filter cartridge

EU7-xxxA – (xxx – filter box connection pipe diameter)



KEY TO CODING

FLF-A - 160 - 7

7 – filtration class ePM 1 55% (F7)

160 ... 400 – nominal ducting diameter in mm

FLF-A – pocket filter box



BASIC FEATURES

- Connection diameters for 100 – 400 mm pipe
- Class Coarse 65% (G4) plate filter cartridge

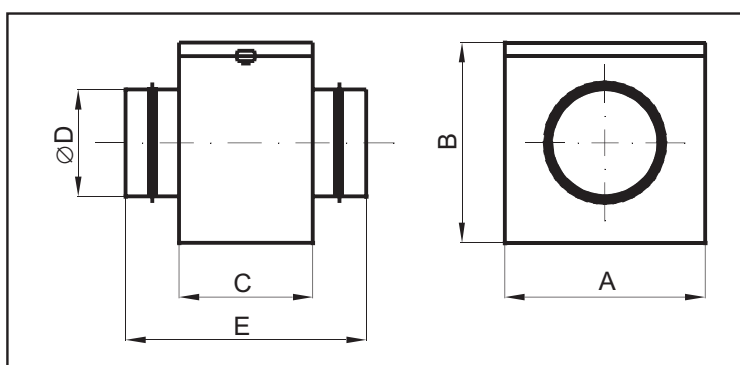
The **FLK-B** plate filter box is designed for removing common mechanic contaminants (dust, leaves, flowers, and so on) from the air conveyed by HVAC systems. The box is made of galvanized plate. The sleeves are fitted with rubber packing. The filter cartridge is made of unwoven synthetic fiber fabric.

Filter cartridge:

Filtering class / particle separation effectivity Coarse 65%
(G4) / 91%

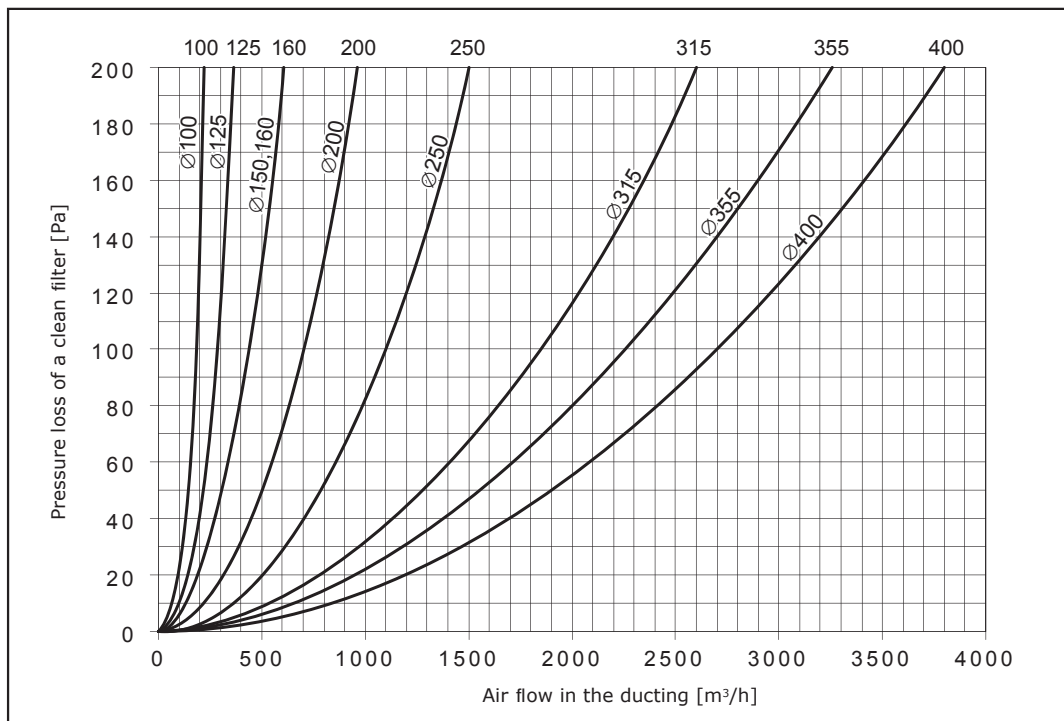


PRIMARY PARAMETERS



Type	Dimensions [mm]					Weight [kg]	Spare air-filter mats	
	D	A	B	C	E		Type class Coarse 65%	Dimensions [mm]
FLK-B-100	100	208	167	120	168	2,1	G4-B-100P+M	298 x 180
FLK-B-125	125	218	202	140	188	2,1	G4-B-125P+M	333 x 215
FLK-B-150	150	268	232	155	203	2,3	G4-B-150P+M	390 x 245
FLK-B-160	160	268	232	155	203	2,3	G4-B-160P+M	390 x 245
FLK-B-200	200	318	271	180	228	3,5	G4-B-200P+M	461 x 285
FLK-B-250	250	365	319	230	278	3,5	G4-B-250P+M	567 x 335
FLK-B-315	315	428	387	330	378	6,1	G4-B-315P+M	762 x 400
FLK-B-355	355	518	492	455	583	8,4	G4-B-355P+M	1021 x 505
FLK-B-400	400	518	492	455	583	8,4	G4-B-400P+M	1021 x 505

Pressure loss curves, filtration class Coarse 65% (G4)





ACCESSORIES

Spare class Coarse 65% (G4) filter cartridge

G4-B-xxxP+M – (xxx – filter box connection pipe diameter)



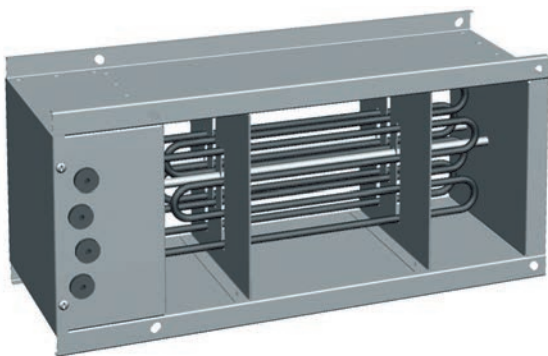
KEY TO CODING

FLK-B - 160 - 3/4

3/4 – filtration class Coarse 65% (G4)

100 ... 400 – nominal ducting diameter in mm

FLK-B – desk air-filter box

**BASIC FEATURES**

- Power from 6 up to 30 kW
- Dimensions: 400 x 200 mm up to 800 x 500 mm
- Two wiring methods
- 36-month guarantee

The **EO** electric heater is designed for heating or re-heating the supply air in HVAC systems. For example, it is used for heating air in small ventilation systems, re-heating air from recuperative exchanger, heating air in a room with requirement for an independent temperature control, and so on.

The heater shall be installed indoor in a dry area with ambient temperatures ranging from 0 °C up to 50 °C and relative humidity of up to 80 %. It is designed for conveying air free of rough dust, grease, chemical fumes, and other impurities. The electric IP rating of the cabling housing of the heater is IP 40.

The heater housing is made of galvanized plate.

**PRIMARY PARAMETERS**

The heaters are supplied in models.

A1 – heating elements utilized delta connection in three sections (bars are supplied with 400 V).

All models feature integrated safety thermostat with automatic reset and emergency thermostat with manual reset to ensure the maximum level of safety.

The required electric heater power can be calculated using the following simplified formula:

$$P = Q \times 0.34 \times \Delta t$$

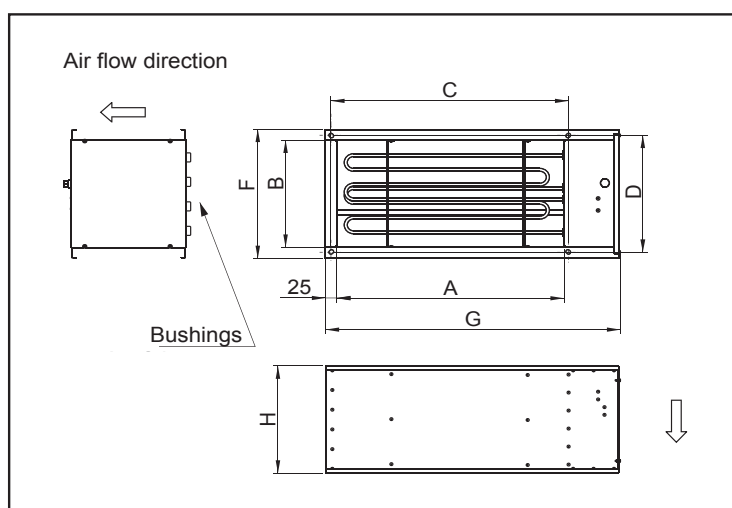
P – power [W]

Q – air flow [m³/h]

Δt – air temperature rise [°C]

Table of technical parameters

Type	Duct width [mm]	Duct height [mm]	Heat output [kW]	Number of heating bars [pcs x kW]	Number of sections [pcs]	Current [A]	Airflow Min. [m³/h]	Dimensions [mm]								Weight [kg]
								A	B	C	D	F	G	H		
Heater power supply 3x400V/50Hz (bars power supply 400V/50Hz, delta connection, three sections)																
EO-A1-40x20/6	400	200	6	3x2	3	8,7	432	400	200	423	223	250	540	200	5,8	
EO-A1-40x20/8	400	200	8	4x2	3	11,5	432	400	200	423	224	250	540	320	6,9	
EO-A1-40x20/14	400	200	14	7x2	3	20,2	432	400	200	523	273	350	540	320	7,8	
EO-A1-50x25/8	500	250	8	4x2	3	11,5	675	500	250	523	273	300	640	200	8,0	
EO-A1-50x25/14	500	250	14	7x2	3	20,2	675	500	250	523	273	300	640	250	11,6	
EO-A1-50x25/22	500	250	22	11x2	3	31,8	675	500	250	523	273	300	640	250	13,0	
EO-A1-50x30/8	500	300	8	4x2	3	11,5	810	500	300	523	323	350	640	200	8,0	
EO-A1-50x30/22	500	300	22	11x2	3	31,8	810	500	300	523	323	350	640	250	13,0	
EO-A1-60x30/14	600	300	14	7x2	3	20,2	972	600	300	623	323	350	740	200	11,5	
EO-A1-60x30/22	600	300	22	11x2	3	31,8	972	600	300	623	323	350	740	200	15,0	
EO-A1-60x30/26	600	300	26	13x2	3	38,5	972	600	300	623	323	350	740	200	16,4	
EO-A1-60x30/30	600	300	30	15x2	3	43,3	972	600	300	623	323	350	740	200	17,2	
EO-A1-60x35/14	600	350	14	7x2	3	20,2	1134	600	350	623	373	400	740	200	11,5	
EO-A1-60x35/30	600	350	30	15x2	3	43,3	1134	600	350	623	373	400	740	200	17,2	
EO-A1-70x40/16	700	400	16	8x2	3	23,1	1512	700	400	723	423	450	840	250	15,0	
EO-A1-70x40/30	700	400	30	15x2	3	43,3	1512	700	400	723	423	450	840	250	20,6	
EO-A1-80x50/16	800	500	16	8x2	3	23,1	2160	800	500	823	523	550	940	250	16,2	
EO-A1-80x50/30	800	500	30	15x2	3	43,3	2160	800	500	823	523	550	940	250	21,8	



Graph for EO-A1 pressure loss

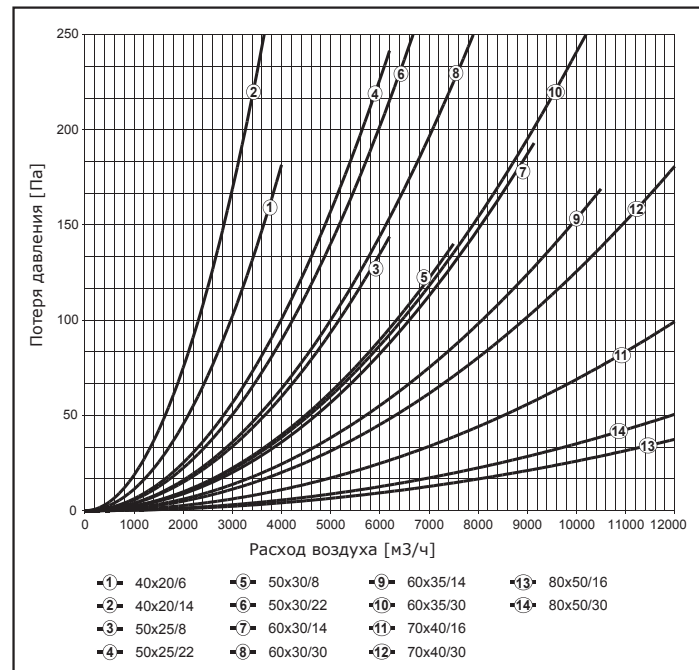


Diagram for determination of air temperature increase EO-A1

$$P [W] = V [m^3/h] \times 0,34 \times \Delta t [^{\circ}C]$$



INSTALLATION AND ASSEMBLY

The EO line heaters allow installation into HVAC ducting in any operating position provided that an arrow on the housing designating the air flow direction corresponds to the actual air flow direction in the system. The distance between heater and other components (bend, fan, flaps, and so on) shall be at least 1,000 mm.



CONTROL

All heaters shall be installed in a system ensuring:

- air flow speed in the heater of at least 1.5 m/s. Heater overheating may occur if this requirement is not met.
- deactivation of the heater in case of air supply failure or if air the flow falls below the specified limit.
- impossibility of heater activation if air is not supplied into the heater.
- aftercooling after heater deactivation.

The **EO** electric heaters are not fitted with a control system and require an external control system.

The RV-3 external controller is suitable for controlling the output of these heaters. The controller ensures regulation of the heater output only. Aftercooling, controlling the minimum air flow through the heater, and other emergency and safety functions shall be ensured by the external control system.



ACCESSORIES

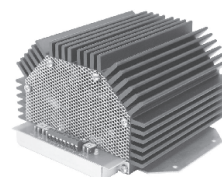
Required accessories

No special accessories are required to ensure a proper operation of the EO heaters. The heaters, however, cannot be operated as standalone units, see "CONTROL" section.

Optional accessories

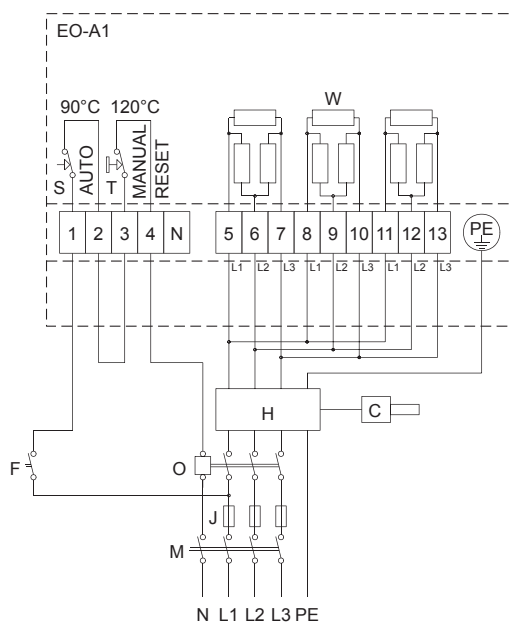
Three-phase impulse power controller

RV3-25/P – suitable for controlling output of the **EO** heaters up to 25 kW.



**WIRING DIAGRAMS**

All wiring diagrams provided in the technical catalog are indicative only. When assembling the product, observe strictly the nameplate ratings as well as directions and diagrams affixed directly to the product or enclosed to the product.



- W - heating elements
- S - safety thermostat (automatic reset)
- T - emergency thermostat (manual reset)
- O - over-heating protection switch
- H - pulse 3-phase performance regulator or operational thermostat
- C - temperature sensor (space or channel), or temperature control
- F - airflow control switch (pressostat)
- M - main switch
- J - fuses

**KEY TO CODING**

EO - A1 - 50x25 / 8

6 ... 30 - installed output in kW

40x20

:

80x50 - nominal height x width (200x400 to 800x500 mm)

A1 - type of connection - delta

EO - rectangular electric heater



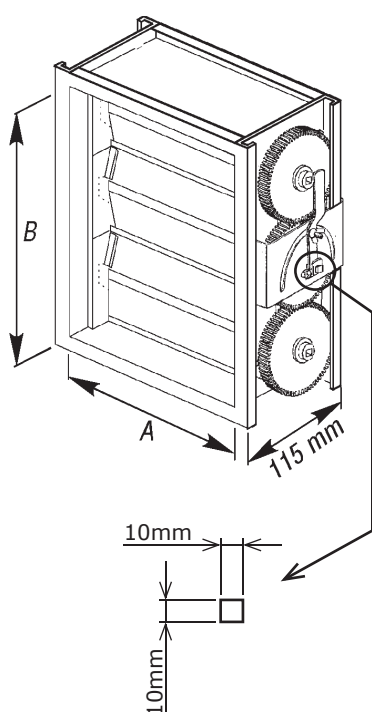
BASIC FEATURES

- Dimensions: 300 x 200 up to 1,405 x 710 mm
- Manual or servo drive control

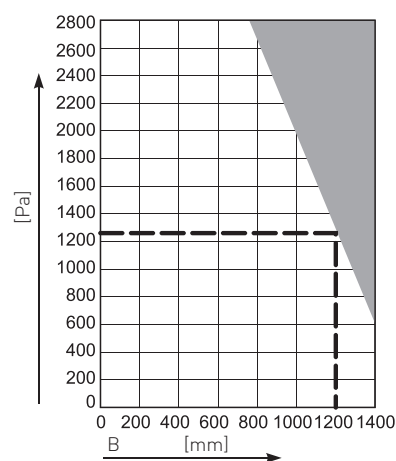
The **MLKR-S** rectangular control flap is designed for controlling and closing the HVAC systems. The flap is designed for operation in the basic environment for conveying air free of rough dust, grease, chemical fumes, and other contaminants. The flanged damper frame is made of galvanized plate. The shutters are made of aluminum. The flap may be fitted with a servo drive after removing the manual control lever.

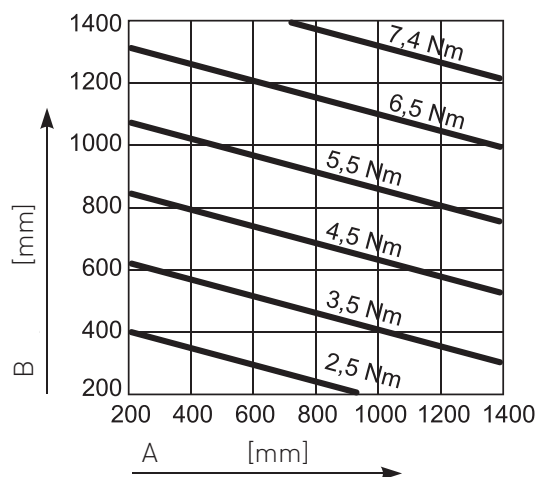
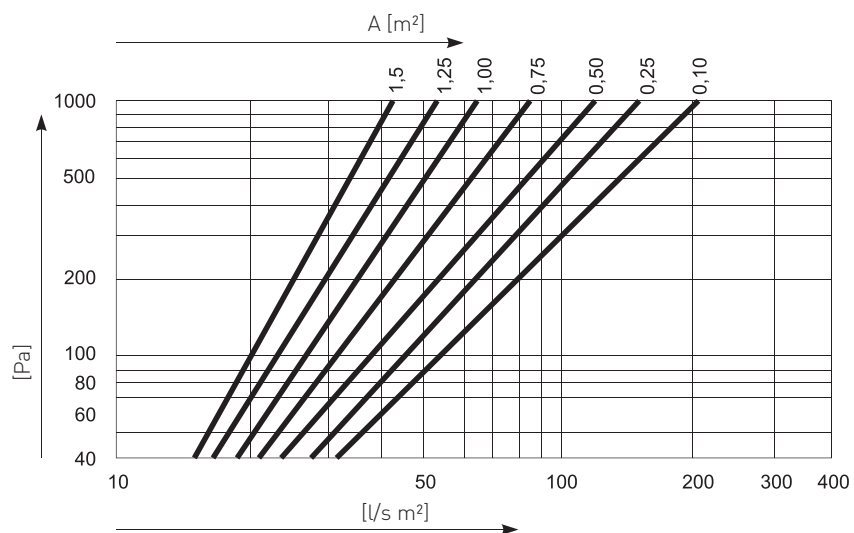
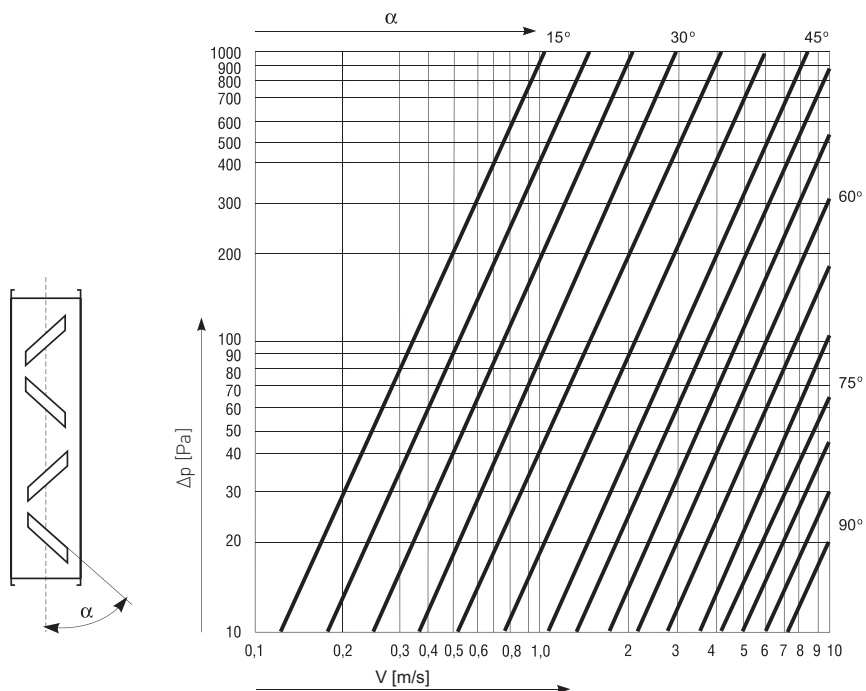


PRIMARY PARAMETERS



Type	Dimensions [mm]		Weight [kg]
	A	B	
MLKR/S-300200	300	200	2,8
MLKR/S-400200	400	200	3,6
MLKR/S-400250	400	250	4,1
MLKR/S-400x405	400	405	4,3
MLKR/S-450400	450	400	4,6
MLKR/S-500250	500	250	4,0
MLKR/S-500300	500	300	4,2
MLKR/S-500500	500	500	6,0
MLKR/S-600300	600	300	4,8
MLKR/S-600350	600	350	5,4
MLKR/S-600400	600	400	5,8
MLKR/S-600x505	600	505	6,8
MLKR/S-700400	700	400	6,4
MLKR/S-700500	700	500	7,6
MLKR/S-800500	800	500	8,4
MLKR/S-1000500	1000	500	10,0
MLKR/S-1000600	1000	600	11,4
MLKR/S-1200x605	1200	605	13,4
MLKR/S-1405710	1405	710	30







ACCESSORIES

Servo drive
SERVO-LM230-05



KEY TO CODING

MLKR-S - 400x200

300 x 200

:

1405 x 710 – nominal width x height in mm

MLKR-S – rectangular control flap



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