



Operation, installation and maintenance manual

Mechanical ventilation with heat recovery

Zephyr

Model:

- ☐ 400GT (cat. no. 12-000003)
- ☐ 600GT (cat. no. 12-000004)
- ☐ E 400GT with enthalpy exchanger (cat. no. 12-000005)
- ☐ E 600GT with enthalpy exchanger (cat. no. 12-000006)

 Please read the instructions carefully before starting the installation and use of the product.

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1. Introduction / 2. Safety

1. Introduction

This document includes guidelines for correct operation and maintenance, installation and assembly instructions, and technical information regarding the Zephyr 400GT/600GT supply-and-extract ventilation units with heat recovery.

2. Safety



IMPORTANT! Make sure you read this manual and the other materials provided by the manufacturer carefully before starting the installation and operation of the ventilation unit.

- Read all warnings found in this manual and the warning signs located on the ventilation unit. Always and absolutely comply with safety regulations.
- The installation and use of the device without following the guidelines specified in the manufacturer's instructions or not in accordance with the intended use of the device may cause property damage as well as pose a risk to human health and life.
- The user manual should be retained for the life of the ventilation unit. Do not throw it away. If the device is transferred or sold, ensure that it is accompanied by the manual so that each user has adequate information on the operation and safety of the device.
- Observe health and safety rules when using electrical equipment during the installation of the ventilation unit.
- When carrying out installation or service work on the product, make sure that the device has been disconnected from the power supply and that it is secured against being switched on again.
- On detecting damage to a power cable when connecting the ventilation unit to the power supply, it is strictly forbidden to use the damaged equipment.
- Do not bend the mains cable and avoid actions that could damage it.
- Use the device in accordance with its intended purpose.

2.1. Safe operation of the device

1. The ventilation unit must not be operated outside the temperature range specified in the user manual.
2. The ventilation unit must not be operated in an aggressive or explosive environment.
3. Do not allow the electrical parts of the ventilation unit to come into contact with water.
4. It is forbidden to touch the control panel and the electrical junction box with wet hands.
5. The inlets and outlets of the air ducts must not be obstructed during operation of the ventilation unit.
6. Maintenance operations on the ventilation unit may only be carried out after the unit has been disconnected from the power supply network.
7. The filter flaps must not be opened during operation of the ventilation unit. When changing the air filters, the ventilation unit should be disconnected from the power supply network.
8. The flap of the ventilation unit must not be opened during its operation.
9. The ventilation unit must not be used by children, persons with reduced perceptual or mental abilities, or persons without appropriate training. The ventilation unit must only be used by adults, provided that they have familiarised themselves with the necessary instructions.
10. In particular, avoid damaging the mains cable during the operation of the unit. It is forbidden to place any object on the power supply cable that may cause mechanical damage to the cable.
11. It is forbidden to store explosive or flammable substances around the ventilation unit.
12. If any unusual sounds, odours or smoke are detected, switch off the ventilation unit immediately and report the fault.
13. The installation of the unit should always be carried out in accordance with the general and local construction, safety and installation regulations issued by the relevant official bodies and power and water supply companies.

3. Documentation / 4. Description and intended use of the device

2.2. Qualifications of the installer

The installer must comply with all applicable guidelines, standards and legislation in force at the time of work.

2.3. Regulations and standards

National and European standards and regulations (laws and directives) must be complied with. The ventilation system should be made in accordance with the project drawn up by the designer.

3. Documentation

It is absolutely necessary to follow all instructions and read all the device documentation provided by the manufacturer. Failure to follow instructions found in the device manual may pose a risk to the installer and user.

3.1. Applicability of the manual

The manual applies to the following devices manufactured by Galmet:

- Zephyr 400GT
- Zephyr 600GT
- Zephyr E 400GT
- Zephyr E 600GT

3.2. Obligations of the installer regarding documentation

This manual should be handed over to the user after the installation work is completed.

The installer is obliged to fill in the fields intended for the installer on the device warranty card. Additionally, the installer is required to complete a commissioning/measurement report regarding the supply and extract airflows adjustments carried out and to instruct the customer to send the report to the ventilation unit manufacturer, i.e. Galmet. The report must reach the manufacturer within 14 days of the commissioning of the device. The report must be sent by post or email.

4. Description and intended use of the device

The ventilation unit is a device designed to recover thermal energy by recuperating heat from heated extract air. The ventilation unit is a device for the exchange of indoor air and cannot be used on its own as a source of heating.

The Zephyr 400GT/600GT ventilation unit is designed for providing mechanical ventilation in homes, offices, hotels, cafés and other residential and public spaces, as well as the recuperation of heat energy from exhaust air.

The device is intended neither for industrial use nor for providing ventilation of swimming pools.

4.1. Component parts of the product

The ventilation unit consists of a heat exchanger, supply and extract fans, air filters, automatic by-pass, exchanger protection against freezing and an automatic control system.

4. Description and intended use of the device

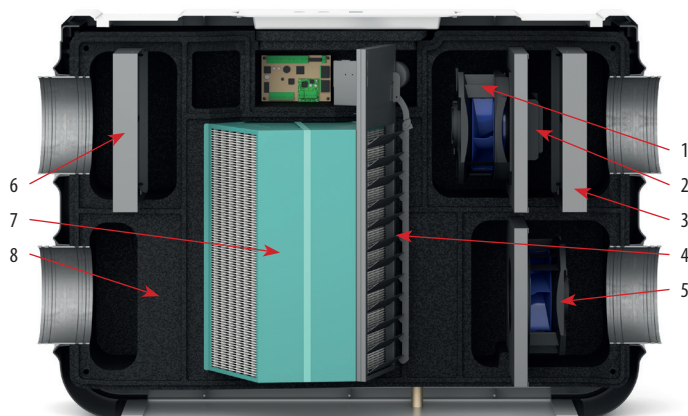


Fig. 1. Component parts of the product

- | | |
|--|--|
| 1. Supply fan | 6. Filter cassette on the exhaust side |
| 2. PTC preheater | 7. Heat exchanger:
- cross-counterflow (Zephyr 400GT/600GT)
- or cross-counterflow enthalpy (Zephyr E 400GT/600GT) |
| 3. Filter cassette on the supply side | 8. EPP heat recovery unit body |
| 4. 100% bypass controlled by an actuator | |
| 5. Exhaust fan | |

4.1.2. Equipment

The standard equipment of the ventilation unit includes:

- A control panel connected via a communication cable to a control element located inside the body of the ventilation unit.
- EC centrifugal fans: supply and extract fans with single-side air inlet, backwards curved impeller blades and an electronically commutated electric motor with external rotor.
- Counterflow heat exchanger.
- 100% automatic by-pass
- Modulated PTC pre-heater.
- G4 ISO Coarse $\geq 65\%$ start-up filters.
- Two drip trays.
- Condensate drain connectors adapter DN 32 to 3/8" or 1/2".
- Connection nipples with gasket $\varnothing 200$ mm.

4. Description and intended use of the device

4.1.3. Dimensions



Fig. 2. General view



Fig. 3. Cross-section

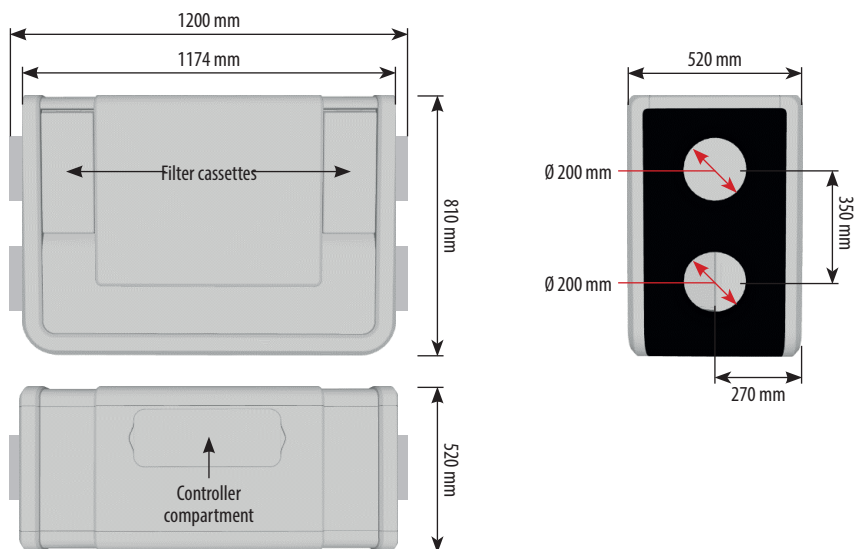


Fig. 4. Dimensions

4. Description and intended use of the device

4.2. Principle of operation

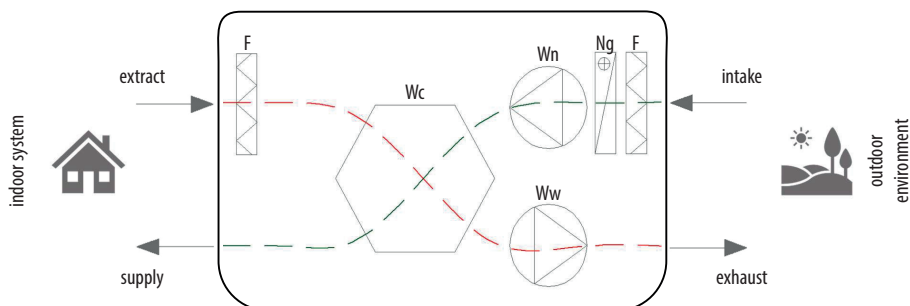


Fig. 5. Principle of operation: F - air filter; Wc - heat exchanger; Wn - supply fan; Ww - extract fan; Ng - pre-heater

Warm, polluted air is drawn out of sanitary and additional rooms where moisture and odours are created such as kitchen, bathroom, toilet, dressing room, vestibule, pantry and laundry room. This air enters the ventilation unit, where filtration takes place, followed by the process of heat transfer, in the heat exchanger, to the incoming fresh airflow from the outside. The air leaving the building is exhausting to the outside with the operation of the extract fan.

Fresh outdoor air is drawn in through the air intake duct to the outdoor air filters where it is purified. Then, the filtered air flows through the counterflow heat exchanger and, after absorbing heat from the extracted air, is supplied to the so-called "clean" rooms such as a living room or bedroom. The air movement is caused by the operation of the supply fan.

The heat exchanger is the most essential component of the ventilation unit. This is where the heat exchange between the cool outside air and the warm extract air takes place. Heat recovery minimises the loss of heat energy in winter and therefore reduces the costs of room heating.

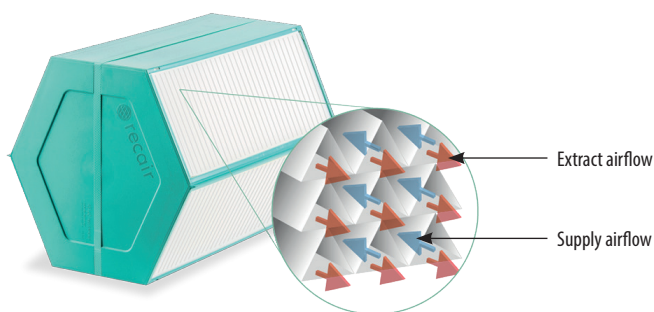


Fig. 6. Heat exchanger

4. Description and intended use of the device

4.3. Enthalpy exchanger

The cross-counterflow enthalpy exchanger (used in Zephyr E 400GT/600GT heat recovery units) utilizes the full potential of the energy contained in the air. It exchanges heat and moisture between the exhaust and supply air, contributing to energy savings and cost reductions.

Maximum heat recovery efficiency is ensured by a special membrane that allows water vapor to pass through while trapping pollutants, viruses, and bacteria.

The use of an enthalpy exchanger eliminates issues related to excessively dry air during the heating season, reduces air conditioning costs in the summer, and, above all, improves indoor comfort year-round by ensuring an appropriate relative humidity level of 30-60%.

A heat recovery unit equipped with an enthalpy exchanger also boasts reduced electricity consumption for the preheater, which lowers operating costs.



Fig. 7. Enthalpy exchanger

4.4. Version of the ventilation unit

Table 1. Version of the ventilation unit

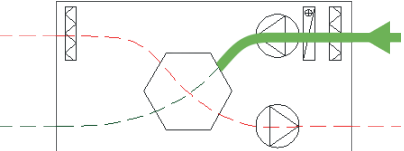
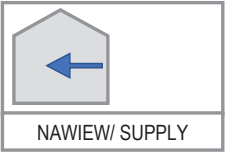
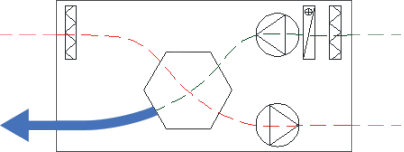
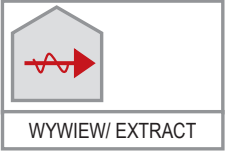
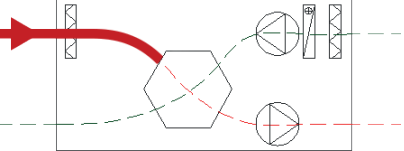
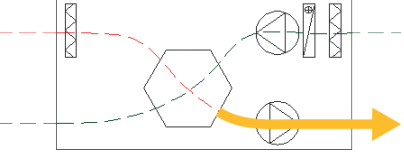
Version of the ventilation unit		Installation options	Location of mounting holes	
Vertical left option	Standing or hanging installation option. Installation on stand or wall bracket			Points marked on the outer casing
Vertical right option	Standing or hanging installation option. Installation on stand or wall bracket			Adjust the position of points to the selected bracket
Horizontal option	Suspended option. Installation on L-type ventilation mounts			Points marked on the outer casing

4. Description and intended use of the device

4.5. Markings of connectors

The ventilation unit has four air duct connectors fitted with a gasket as standard. Air ducts should be connected to the ventilation unit according to the following markings. It is recommended to use rigid ventilation ducts, which should be covered with insulation of sufficient thickness, especially in the case of ducts on the intake and exhaust sides. For recommendations regarding the thickness of duct insulation, see section 6.3.4.

Table 2. Markings of connectors

Marking	Symbol	Connection	Diagram
A	 CZERPNIĄ/ INTAKE	INTAKE Duct for supplying outside air to the ventilation unit	
B	 NAWIEW/ SUPPLY	SUPPLY Duct for supplying outside air to the rooms	
C	 WYWIEW/ EXTRACT	EXTRACT Duct for extracting used air from rooms	
D	 WYRZUTNIĄ/ EXHAUST	EXHAUST Duct for extracting air to the outside	

4. Description and intended use of the device

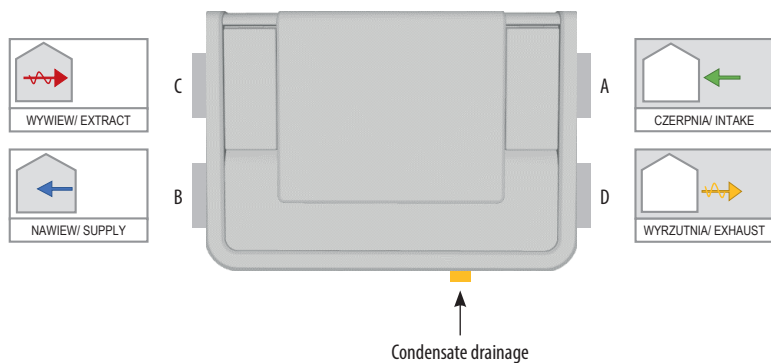


Fig. 8. Vertical option

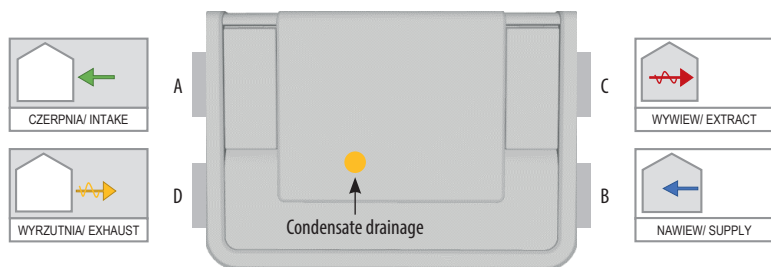


Fig. 9. Horizontal option

5. Technical specifications

Technical specifications

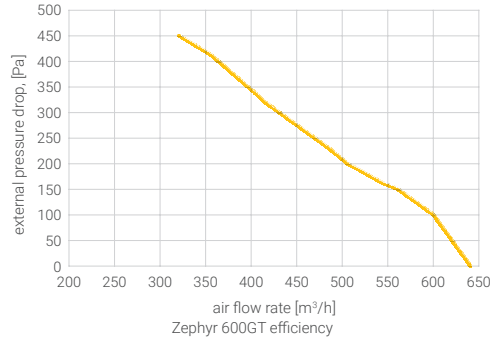
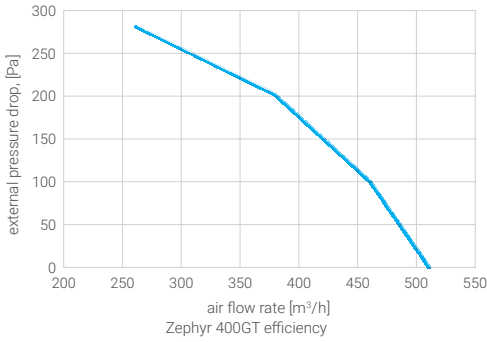
Table 3. Ventilation unit specifications

Specification		Unit	Zephyr 400GT	Zephyr 600GT	Zephyr E 400GT	Zephyr E 600GT
Catalog Number		-	12-000003	12-000004	12-000005	12-000006
Efficiency at 100 Pa		m³/h	460	600	380	540
Maximum Efficiency (at 0 Pa)		m³/h	510	640	455	590
ErP energy efficiency class	work in schedule mode	-	A	A	B	B
	work in automatic mode ¹	-	A+	A+	A	B
Sound power level emitted by the casing ²		dB	62	63	62	63
Power supply voltage		-	230V AC / 50 Hz	230V AC / 50 Hz	230V AC / 50 Hz	230V AC / 50 Hz
Fan power		W	90	170	90	170
Fan type		-	EC		EC	
Heat recovery temperature efficiency (Vnom)		%	85		79	
Maximum heat recovery temperature efficiency		%	95		91	
Maximum moisture recovery temperature efficiency		%	-		85	
AHU dimensions (H x W x D)		mm	810 x 1200 x 520		810 x 1200 x 520	
Weight		kg	43		48	
Connection port diameter		mm	200		200	
Condensate drain		-	DN 32		DN 32	
Heat recovery unit body material / thickness		- / mm	EPP / 40		EPP / 40	
Anti-freeze system		-	PTC pre-heater		PTC pre-heater	
Preheater power		W	1500		1500	
Exchanger type		-	cross-counterflow (heat recovery)		enthalpic cross-counterflow (heat and moisture recovery)	
Exchanger material		-	polystyrene		polymer membrane	
Compressed air temperature		°C	-20°C ÷ +50°C		-20°C ÷ +50°C	
Filter type		-	starter		starter	
Supply filter		-	G4 ISO Coarse ≥ 65%		G4 ISO Coarse ≥ 65%	
Exhaust filter		-	G4 ISO Coarse ≥ 65%		G4 ISO Coarse ≥ 65%	
Bypass		-	100 % automatic		100 % automatic	
Flow stabilization system		-	smooth balancing of supply and exhaust air flows		smooth balancing of supply and exhaust air flows	
Fan location		-	from the intake and exhaust side		from the intake and exhaust side	

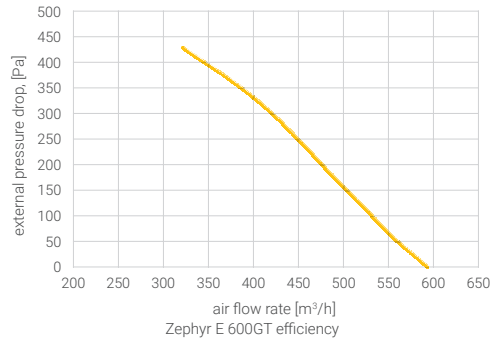
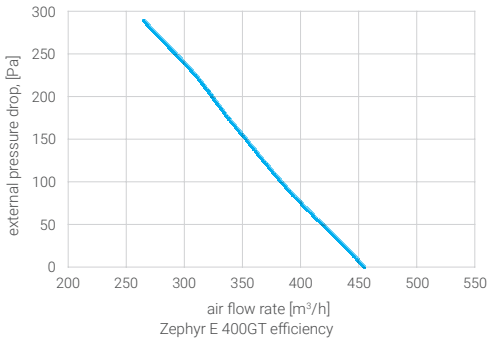
¹ With CO₂ and humidity sensors - local control according to demand.

² Sound power level for the device operating at a reference load value of 70%.

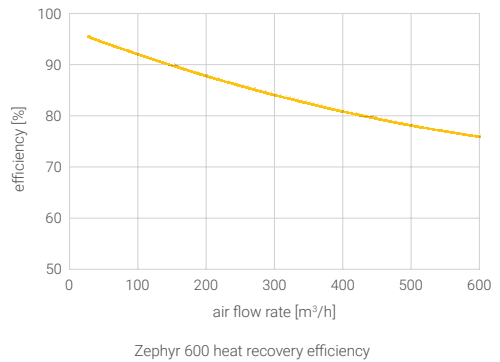
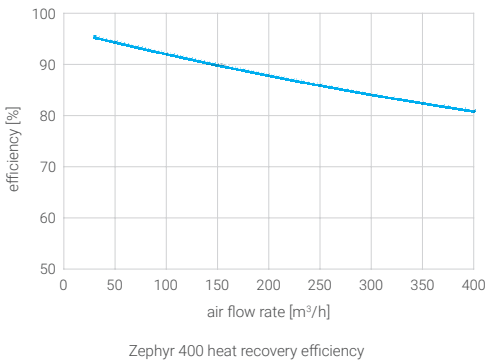
5. Technical specifications



Wykres 1. Zephyr efficiency

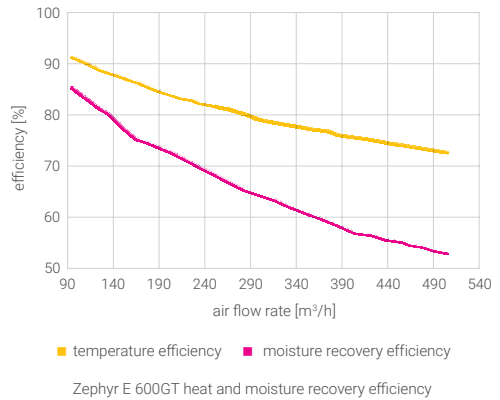
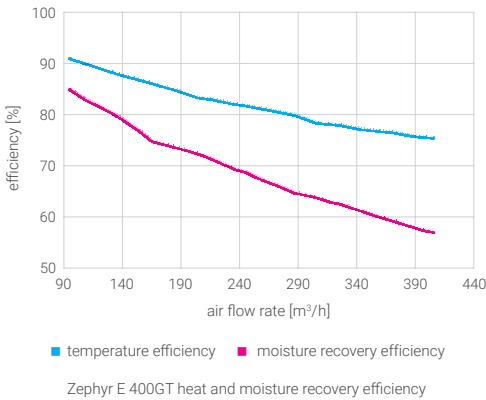


Wykres 2. Zephyr E efficiency



Wykres 3. Zephyr heat recovery efficiency

5. Technical specifications



Wykres 4. Zephyr E heat and moisture recovery efficiency

Table 4. Sound power level of the Zephyr 400GT ventilation unit

Load	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
30 %	43,7	49,1	36,5	33,0	34,5	22,1	19,3
50 %	48,8	62,7	48,8	41,0	41,6	28,8	22,8
70 %	52,2	58,4	48,3	47,3	47,3	34,3	26,9

Table 5. Sound power level of the Zephyr 600GT ventilation unit

Load	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
30 %	44,7	53,9	39,0	34,9	35,2	22,8	20,2
50 %	44,6	63,1	47,8	43,3	42,7	29,8	23,7
70 %	54,0	59,8	54,7	49,1	48,8	36,0	27,9

5.1. CE marking

The CE mark confirms that the product complies with the essential requirements of the relevant directives (low-voltage, electromagnetic, etc.). A declaration of conformity can be found at the end of the device manual.

5.2. Rating plate

The data shown on the rating plate includes the basic parameters of the device as well as its individual serial number, known as the factory number. The rating plate can be found on every device leaving the production line.

5.3. Energy label

The ventilation unit is supplied with a mandatory energy label applied to each unit. The energy label provides information on the energy class, sound power and maximum flow rate of the device.

6. Installation and setting up for operation

6. Installation and setting up for operation

The device should be assembled and connected by a qualified installer holding the appropriate licence, who is responsible for the work carried out. All work should be carried out in accordance with the applicable regulations.

6.1. Transport

The storage and transport temperature of the device must be within the range of -30°C — 60°C. Exercise caution when transporting and unpacking the device. After unpacking, check for completeness and correctness of the delivery.



IMPORTANT! Carefully check the delivery for any damage caused during transport.

6.2. Scope of delivery

- Ventilation unit
- Control panel
- Power supply cable
- Documentation: device operating and installation instructions, controller operating instructions, warranty card, commissioning report.

6.3. Guidelines for installation

6.3.1. Room

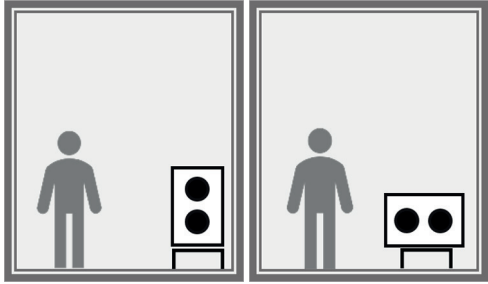
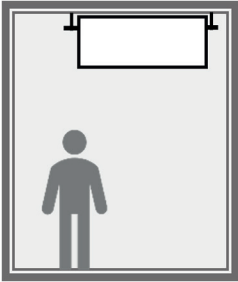
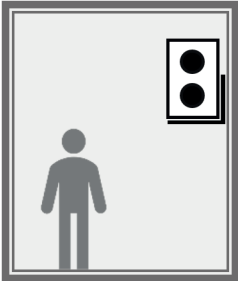
- The room intended for the installation of the device should be dry and protected from the weather. Ensure that the temperature does not fall below -10°C at the device installation site.
- Check that the electrical system is suitable for the maximum power of the device. The room in which the unit is to be installed should be provided with a 230V/50 Hz power supply (a double earthed socket is required close to the installation site of the unit) and a sewer system connection for condensate drainage (minimum diameter of 32 mm).
- The ventilation unit must be installed on a rigid and stable surface. Make sure that the wall is strong enough for the weight of the unit in case of wall or ceiling installation. Anchor bolts suitable for the type of mounting surface must be used.
- Free access to the ventilation ducts, condensate drainage line and power supply line must be provided at the unit installation location.
- At the time of installation of the ventilation unit, the room in which it will be installed must be finished.

6. Installation and setting up for operation

6.3.2. Guidelines for installation

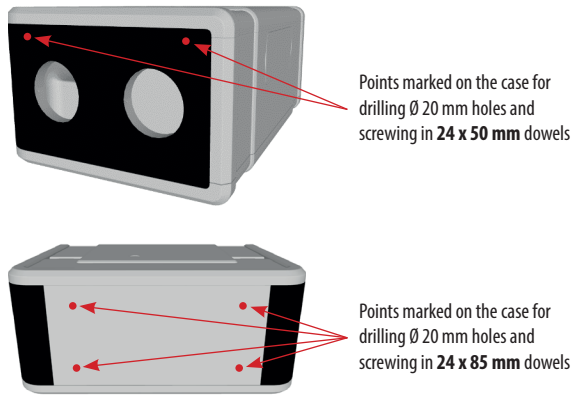
- The device can be installed in one of the three positions using dedicated mounting elements, which include dowels and stud bolts suitable for the type of materials used to manufacture the ventilation unit.

Table 6. Device installation options

Option	Diagram	Remarks
Stand (floor mounting)		The dedicated stand comes with 24 x 85 mm installation dowels and stud bolts with M8 x 140 thread.
Suspension brackets (ceiling mount)		The dedicated installation kit comes with 24 x 50 mm dowels and stud bolts with M8 x 80 thread. L-type ventilation fastener with shock absorber not included in the kit.
Bracket (wall mount)		The dedicated installation kit comes with 24 x 85 mm dowels and stud bolts with M8 x 140 thread. Wall bracket not included. Holes for the mounting system should be adjusted to the hole spacing of the selected bracket.

6. Installation and setting up for operation

The ventilation unit casing features markings that show where to make holes for screwing in the dowels, depending on the chosen mounting position.



- The unit should be installed so that the following maintenance operations can be carried out: opening the unit to clean the heat exchanger, maintenance of the fans, and opening the flaps to change the filters.
- When installing the ventilation unit, it is necessary to ensure that access to the unit is at least sufficient to carry out maintenance or servicing work.

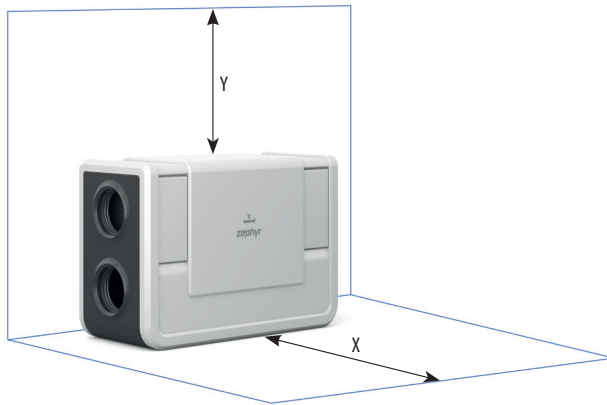


Fig. 10. Minimum distances between the ventilation unit and partition walls or other equipment.

Table 7. Minimum distances between the ventilation unit and partition walls or other equipment.

Symbol	Minimum distance	Description	Explanation
X	70 cm	Distance from the filter flaps and from the main flap.	Access for the replacement of filters, maintenance of the heat exchanger and servicing operations.
Y	50 cm	Distance from the controller compartment.	Access to the control system and access to the connections.

6. Installation and setting up for operation

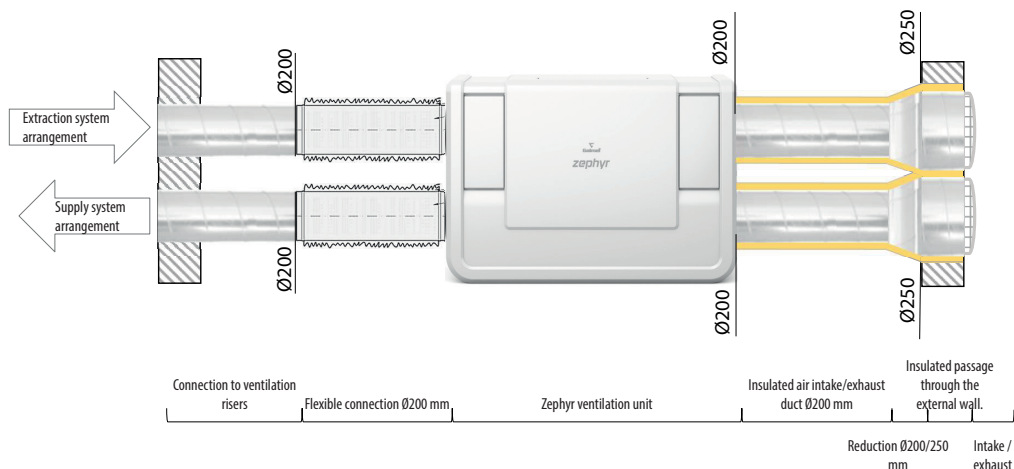


Fig. 11. Example installation diagram

- In order to ensure the best performance of the ventilation unit and to reduce aerodynamic losses due to turbulence, it is recommended that a straight section of air duct be installed at the inlet and outlet of the unit with a minimum length of:
 - 1 air duct diameter on the air inlet side,
 - 3 diameters on the air outlet side.



Fig. 12. Air duct length

- If the lengths of the air ducts at one or more connection pipes of the ventilation unit do not meet requirements, the internal components of the ventilation unit must be protected against the penetration of foreign bodies (for example, install a protective grille to prevent open access to the fans).
- If it is necessary to eliminate the resonance of the air duct at the connection with the ventilation unit, it is recommended to use a flexible connection.

6. Installation and setting up for operation

6.3.4. Insulation of ducts

It is absolutely necessary to insulate the air ducts from the intake and to the exhaust with a layer of insulation of sufficient thickness, taking into account the section passing through the wall.

Table 8. Recommended thicknesses of air duct insulation according to SPW guidelines

Ducts	Insulation thickness for a given pipe ambient temperature range [mm].		
	20°C — 15°C	14°C — 1°C	0°C — -20°C
Supply	20	50	20 + (200) ¹
Extract	20	50	20 + (200) ¹
Intake	50	50	20
Exhaust	20 - 30	20	20 + (200) ¹

¹ 20 mm thick mineral wool insulation, covered on one side with aluminium foil + a minimum of 200 mm of mineral wool as cladding or casing for ducts installed in an attic without thermal insulation.

- The air duct running to the air exhaust should be installed with a slope of min. 3% towards the air exhaust.
- An external wall-mounted element acting as an air intake or exhaust vent should be fitted with a drip cap.
- When installing supply and extract ducts through insulated but unheated rooms, use mineral wool insulation with a thickness of min. 20 mm or a special lagging with insulation properties not inferior to those of mineral wool.
- The supply ducts should be insulated when it is planned to connect a cooling or heating device, e.g. ground heat exchanger, heater/cooler, etc., to the system.

6.3.5. Condensate drainage

Condensate accumulates in the drip tray and should be discharged into the sewer system. The ventilation unit is equipped with two drip trays that, depending on the installation position of the unit, collect the condensate generated during the operation of the ventilation unit under certain temperature and humidity conditions.

Since there are two mounting positions available, the ventilation unit is equipped with two drip trays. Two condensate drain connectors of 1/2" or 3/8" in diameter are available for use.

The device is equipped with an adapter DN 32 to 3/8" or 1/2". It is necessary to screw the adapter into the selected drain connector of the drip tray ensuring a tight connection.

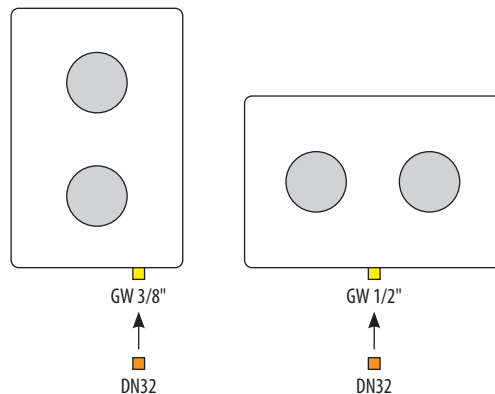


Fig. 13. Condensate drainage connection pipes

6. Installation and setting up for operation

The condensate drainage line should be connected to the sewer connection pipe via an air trap, and should be arranged with a drop of at least 2% towards the sewer system. During the course of operation, the water level in the trap should be checked or a waterless trap should be used.



IMPORTANT! In order to prevent water from accumulating inside the ventilation unit and to reduce the risk of damaging the unit, as well as water leaking into the room, make sure that the condensate from the drip tray flows into the sewer system

If the unit is installed in a room where the air temperature can fall below 0°C (uninsulated attics), the condensate drainage line should be protected against freezing.

6.4. Connection to the electrical system

6.4.1. Power supply

The ventilation unit must be connected to a 230 V / 50 Hz (60 Hz) single-phase AC power supply network using the original power supply cable provided with the unit. Before connecting to the power supply network, check that the cable is not mechanically damaged (crushed, cut, etc.).

The unit should be connected to an earthed socket located close to the unit.

The length of the original power cable is 2.5 m. The rated parameters of the ventilation unit are specified on the rating plate. The connection of the ventilation unit to the power supply network must be made in compliance with the applicable regulations and standards.

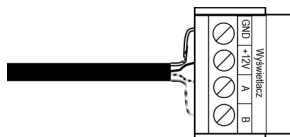


IMPORTANT! Any changes to the internal connection are forbidden and will result in loss of warranty cover.

6.4.2. Control panel

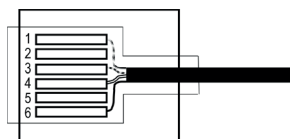
The standard length of the communication cable is 200 cm. The control panel must be connected to the controller in the ventilation unit with a 4-core LiYCY 4 x 0.14 mm² communication cable plugged into the corresponding sockets in the panel.

GND	White
+ 12V	Brown
A	Green
B	Yellow



The communication cable terminated with an RJ12 plug must be plugged into the corresponding output on the controller compartment flap.

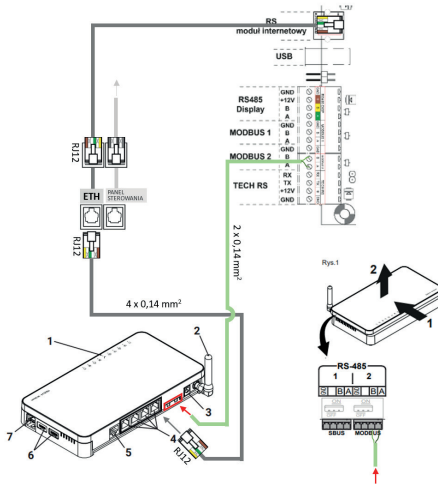
1	Yellow
2	-
3	Green
4	White
5	-
6	Brown



6. Installation and setting up for operation

6.4.3. Connection to the Sinum control unit

In order to connect the heat recovery unit to the Sinum control unit, use a 2 x 0.14 mm² communication cable and a 4 x 0.14 mm² cable to be connected to the ETH input on the control chamber flap..



Description of inputs:

1. Information Indicator Lights
2. Wi-Fi Antenna
3. Power Adapter Inputs
4. RJ-12 Port
5. RJ-45 Port
6. USB 2.0
7. MicroSD Card

6.5. Commissioning of the ventilation unit

The commissioning of the unit and the system air flow rate adjustment must be carried out by a qualified installer holding the appropriate licence, who is responsible for the work carried out.

The ventilation unit should be started up once it has been connected to the ventilation system. The ventilation ducts provide protection against access to the rotating fan blades. The ducts must be secured against being removed from the connection pipes by unauthorised persons.

6.5.1. Preparing the device for operation

Make sure that all renovation and construction work has been completed and check the ventilation unit for correct connection to all required systems, and then connect it to the power supply and plug in the control panel.

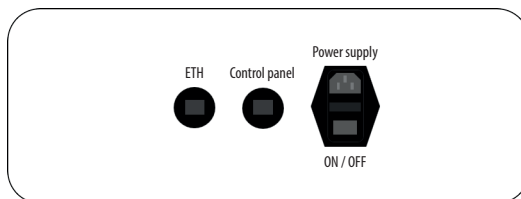


Fig. 14. Description of the outputs in the controller compartment flap

6.5.2. Settings of parameters

When the ventilation unit is started up for the first time, the system must be adjusted according to the air flow balance calculations for the building.

7. Operation

1. Start the unit with the ON button on the control panel screen.
2. Select software version: Zephyr 400GT / Zephyr 600GT.
3. Save your selection permanently.
4. Using a measuring device, the airflows resulting from the air flow balance must be set on the supply and extract elements located in individual rooms so as to ensure that the supply and extract airflows in the building are balanced. The correct adjustment ensures efficient and balanced operation of the ventilation system.
5. Make a report on the ventilation system adjustment carried out (the report is supplied with the unit).
6. Set the air flow rate at the other speeds of the ventilation unit in line with the required ventilation airflow.
7. Connect and configure any additional equipment/components present in the system.
8. Instruct the user in the operation of the basic functionalities of the device.

7. Operation



IMPORTANT! In order to ensure proper and efficient operation of the ventilation unit, the condition of the filters must be periodically checked in a reliable manner and used filters must be replaced as necessary.

7.1. Replacement/cleaning of filters



Fig. 15. Location of the filters

Dirty filters increase airflow resistance, which reduces the amount of air supplied to the rooms and increases consumption of electricity needed to drive the fans.

Check the cleanliness of the filters at least every 3 months. Dirty filters should be cleaned or replaced, depending on the condition of the filter and the degree of filtration used.



IMPORTANT! After switching off the ventilation unit with the ON/OFF button on the control panel, wait until the fans have stopped before opening the filter flap. If the anti-freeze mode was active during shutdown, special care must be taken due to the high temperature of the pre-heater.

1. Switch off the ventilation unit using the ON/OFF button on the control panel.
2. Remove the filter flap cover.
3. Open the filter flap in the EPP body by pulling vigorously on the lower part of the flap.
4. Remove the used filter.
5. Insert a new, clean filter according to the indicated flow direction.
6. Close the flap tightly: insert the upper edge so as to align the flap with the opening and then snap firmly the lower part.
7. Fit the filter flap cover: insert the upper part and then press down the lower part.
8. After replacing the filters reset the countdown timer for the next replacement in the INSTALLER MENU > FILTERS.

7.2. Reusable filter cassettes

The reusable filter cassettes with replaceable filtration mats make it possible to freely configure the filter class and adapt it to the individual user's needs, ensuring a cost-effective and efficient air filtration system.

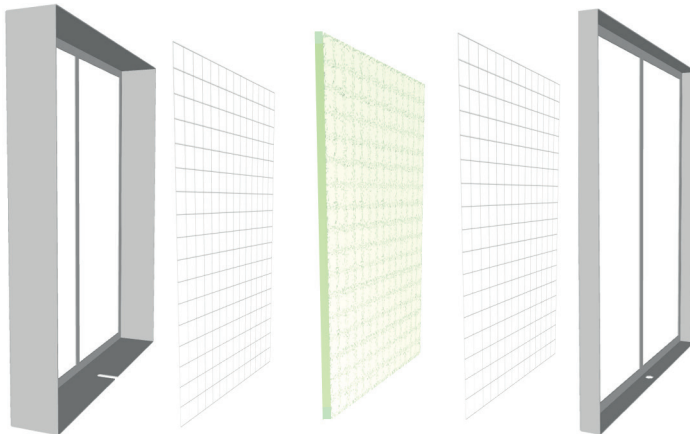


Fig. 16. Reusable filter cassette (exploded view)

8. Maintenance

The filter cassette consists of the outer frame and the inner frame, between which a filter mat of any filtration class is placed. It is possible to adapt the type of mat to the user's needs and the environment in which the filter will be used.

Table 9. Classes of filtration

Option	Class of filtration
G4	ISO Coarse ≥ 65%
M5	ePM 10 ≥ 50%

7.3. Renovation work

When renovation work is carried out in the building, the ventilation system must be protected. The ventilation unit must be de-energised and the air supply and extract components in the rooms sealed off to prevent dust and other contaminants from entering the system and the unit. The ventilation unit can be restarted when the work is fully completed.

8. Maintenance

8.1. Maintenance of the ventilation unit components

In spite of regular maintenance of the filters, impurities may accumulate on the components of the ventilation unit (fans, heat exchanger), which reduces the air flow rate and efficiency of the unit as well as the amount of air supplied to the rooms. Leaves and other larger debris settling on the air intake mesh may reduce the air flow rate of the ventilation unit and also restrict airflow.

Table 10. Recommended frequency of checks of device components

Component	Interval	Description
Intake	TWICE A YEAR	Check the air intake grille for clogging with leaves and other larger debris twice a year and clean as necessary
Condensate drainage system	ONCE A YEAR	Check the operation of the drain line by filling the drainage tank with water and, if necessary, remove debris from the trap and drain line.
Air ducts	EVERY 10 YEARS	Maintenance of the air ducts consists in cleaning or replacing them periodically.



Each time you open the main flap (front or rear), remember to precisely refill the silicone on the clamping surface.

9. Recycling, waste

9.1. Removal of the device

The device must be removed by qualified persons in accordance with the applicable health and safety regulations. When recovering the substances found in the device, every effort must be taken to prevent damage to property and pollution of the environment.

9.2. Disposal of the packaging

Dispose of the transport packaging taking into account the basic principles of correct waste separation.

9.3. Disposal of the device

The device must be disposed of by a specialised entity. The materials used should be disposed of or recovered in accordance with the applicable regulations. The device consists of the following materials:

- Plastic materials: expanded polypropylene, EPDM, polyethylene, rubber.
- Metals: copper, aluminium, galvanised steel, stainless steel (recyclable materials).
- The fans and actuator with motors and permanent magnets, and electronic components.

At the end of the device's service life, its components should be dismantled using generally available tools. Upon completion of the disassembly work, the individual components must be disposed of in accordance with Directive 2012/19/EU of 4 July 2012 on waste electrical and electronic equipment (WEEE), to which the symbol below refers:



Do not place used equipment together with other municipal waste. Dispose of the product at an appropriate collection point for electrical and electronic waste in accordance with the applicable regulations. When purchasing a new equivalent device, the used one can be handed over to the retailer. Improper disposal of the device incurs legal liability. Items suitable for separation by material type should be placed in containers for separate waste collection (metal, plastic, other).

9.4. End of service life

In order to reduce the amount of waste arising from waste electrical and electronic equipment and to ensure an adequate level of separate waste collection, waste equipment should be delivered to a dedicated location. Products falling under the electrical and electronic equipment group should be returned in:

- Local waste equipment collection points specified by the local authority of the municipality concerned,
- Directly to a waste equipment recycling facility,
- Points of sale, if a device equivalent to the one being returned is to be bought at a given wholesaler or retailer, or if the returned device was bought at a given point of sale.

10. Guidelines for installing the manifold system

10. Guidelines for installing the manifold system

When laying out the system, special attention must be paid to the following points:

- The distance between the air intake and the exhaust must be at least 1.5 m.
- The air intake must be located on the most shaded side, away from sources of air pollution.
- When routing air ducts, the number of sharp changes of direction must be minimised.
- Keep the system airtight; use fittings with gaskets or seal joints with aluminium tape.
- When connecting galvanised rigid ducts, use the shortest possible screws. Protruding screw ends on the inside of the duct make it difficult to clean the system.
- The system must be constructed in accordance with the project provided by the designer.
- After the system has been installed, the air supply and extract points must be plugged to protect the system from contamination during further construction work. Do not remove the plugs and exercise caution when working in their vicinity.
- At the initial start-up, adjust the system with an anemometer and set airflows in the rooms according to the air balance obtained.

10.1. Arrangement of room air exchange

- In the case of rooms equipped with mechanical ventilation, all existing gravity ventilation grilles must be sealed.
- Rooms with gravity ventilation must be separated from mechanically ventilated rooms with a sealed door.
- Gravity ventilation elements, e.g. window ventilators, wall ventilators, etc., must be eliminated from the building envelope.
- For effective air exchange, a free flow of air from "clean" to "dirty" rooms is necessary. In buildings equipped with a mechanical ventilation system, special care must be taken to ensure that the doors have a gap with an adequate cross-sectional area. A gap of 80 cm² must be provided in the living quarters and ancillary rooms, while a gap of 220 cm² must be provided in the sanitary rooms.

For example, an 80 cm wide door must be undercut by 1 cm or 3 cm depending on the room.

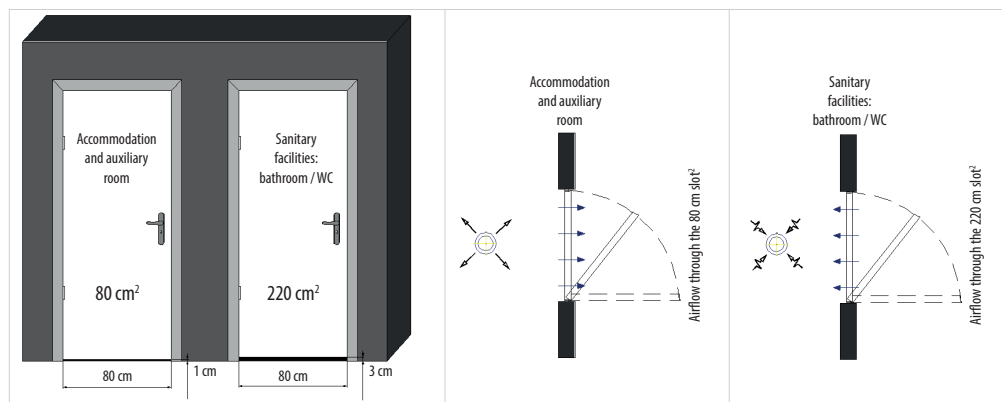


Fig. 17. Ventilation gap depending on room type



IMPORTANT! Do not cover openings, do not interfere with air circulation in the building.

10. Guidelines for installing the manifold system

10.2. Equipment for ventilated rooms

10.2.1. Air conditioning

A mechanical ventilation system can run simultaneously with air-conditioning units, due to the different operating characteristics of the two solutions. Mechanical ventilation provides a continuous exchange of air in the rooms, while the purpose of air conditioning is primarily to reduce the temperature of the indoor air. The circulating airflow does not interfere with the operation of the ventilation system. To increase the cooling effect in the rooms, the air conditioning unit must be installed in the room where the air supply elements are located.

10.2.2. Fireplace

If the building is equipped with a mechanical ventilation system, a fireplace with closed combustion chamber must be installed. It is forbidden to install a fireplace that draws combustion air from the room. The closed combustion chamber ensures airtightness and prevents contact with the air in the room. The air for the combustion chamber must be supplied using an independent air duct in line with the recommendations of the fireplace manufacturer. If a fireplace is present in the building, use the Fireplace Mode (increasing the supply air volume in relation to the extract air volume, i.e. generating a positive pressure in the rooms).

10.2.3. Hood

The hood in the kitchen operates independently. The combination of a local extraction system and a general mechanical ventilation system is economically and technically unjustifiable due to, among other things, the characteristics of the pollutants generated during the thermal processing of foodstuffs. The air from a hood operating in extraction mode must be discharged through a separate ventilation duct directly to the outside or by connection to a free gravity ventilation chimney. The duct must be fitted with a non-return damper to prevent backflow and direct inflow of outside air into the premises. A hood operating in absorber mode uses circulating air and does not affect the operation of the mechanical ventilation system.

11. Declaration of conformity

DECLARATION OF CONFORMITY

„GALMET Sp. z o.o.” Sp. K.
48-100 Głubczyce, Raciborska 36

Hereby declares that the product:

Zephyr mechanical ventilation with heat recovery

Models: Zephyr 400GT; Zephyr 600GT; Zephyr E 400GT; Zephyr E 600GT

to which this Declaration applies complies with the following Directives:

2006/42/EC Machinery Directive
2014/35/EU Low Voltage Directive
2014/30/EU Electromagnetic Compatibility Directive
2009/125/EC Ecodesign Directive
and Commission Regulations (EU) No. 1253/2014, 1254/2014

and the following standards:

PN-EN ISO 12100:2012
PN-EN 60204-1:2018-12
PN-EN 1886:2008
PN-EN 13141-7:2010

Głubczyce 15.12.2022

.....
(Place and date)

PREZES Zarządu
Stanisław Galara

.....
(Signature of authorised person)

Notes



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