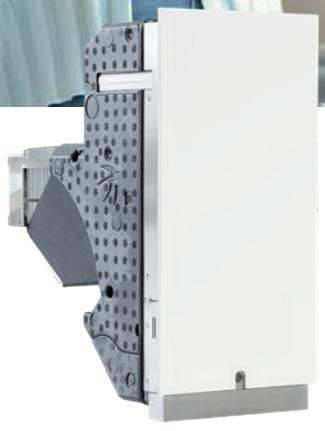
BROCHURE

# SWEGON FREEAIR 100E

Demand-controlled residential ventilation - flexible, simple and highly efficient.





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## Swegon FreeAir

# Persuasive benefits

The FreeAir ventilation system located centrally in the home combines the benefits of centralised and decentralised ventilation systems. It does without incoming air ducts and as a rule needs only one external wall opening per living unit – ideal for new builds and renovation projects.

### More efficient ventilation

The FreeAir ventilation system automatically ensures a pleasant air quality. Sensors record all the relevant air parameters and control the continuous supply of fresh air as required. Thanks to a heat recovery rate of up to 91 %, ventilation heat losses are kept to a minimum, meaning that much less heat energy is needed.

### More economical construction

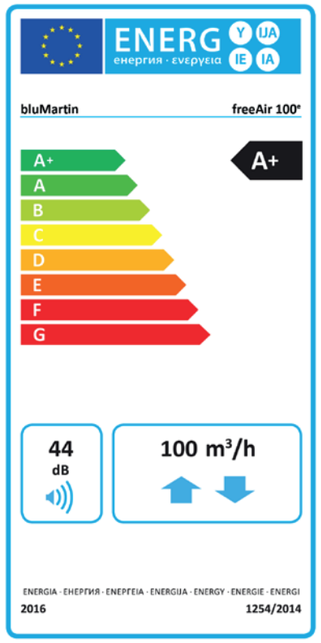
The installation of the FreeAir system can be efficiently integrated in the construction workflow thanks to well-thought-out bare brickwork components. Expensive fire protection measures, such as ceiling partitions or fire dampers are not necessary. The system also gets by with a minimum of ventilation ducts, which simplifies both the planning and the installation.

### Healthier living

The FreeAir ventilation system automatically ensures a cosy indoor climate and protects people's health in three ways: by means of a sensor-controlled exchange of air, an intelligent humidity management system and efficient fine particle filters. Fine particles, pollen and insects are reliably kept outside due to the high-quality filters. That is a relief particularly for allergy sufferers. And all as quiet as a whisper.

### Highest heat recovery

The efficient cross-counterflow heat exchanger used in the FreeAir 100e recovers up to 91 % of the heat held in the exhaust air. This saves a considerable portion of the heating energy. Furthermore, the criteria set by the PHI are exceeded. This results in decisive benefits for funding programmes for climate-friendly new builds (Efficiency House 40) and Sustainable Building (QNG).







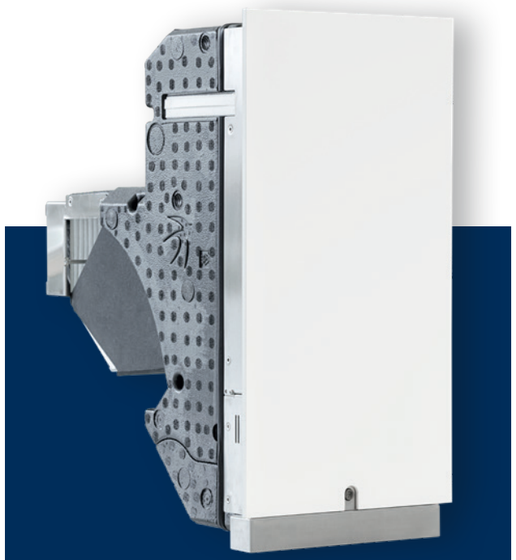
## Swegon Teamwork

# The FreeAir ventilation system

The FreeAir 100e external wall unit and the FreeAir plus active transfer units complement each other in a unique way. The intelligent FreeAir plus transfer unit means there is no need for any ducts and other rooms are easily connected to the domestic ventilation system.

### Ventilation in teamwork

The ventilation system consists of the FreeAir 100e with corresponding bare brickwork set and the FreeAir plus transfer unit. The FreeAir 100e is installed in the bare brickwork set and supplies the living spaces with fresh, pre-heated air from outside. Rooms from which air is extracted, such as the bathroom, are directly connected to the external wall unit via exhaust air ducts. The relevant air parameters are measured by the sensors. The air is thereby exchanged as required. The FreeAir plus transfer unit connects other rooms to the domestic ventilation system without any ducts. The sensors in the intermediate wall fan compare the air quality in adjacent rooms and activate the redirection of fresh air on demand.



## FreeAir 100e

- Demand-controlled ventilation unit with cross-counterflow heat exchanger and connection option for further rooms (exhaust/supply air)

- Volumetric flow rate 8-100 m3/h
- Heat recovery rate up to 91 %
- Certified in accordance with PHI and EN 13141-8 and EN 13141-7

- Controlled by 8 sensors:
  - 1 CO2 sensor
  - 2 humidity sensors
  - 4 temperature sensors
  - 1 air pressure sensor



## FreeAir plus

- Intelligent, active transfer unit to connect rooms to the domestic ventilation system without ventilation ducts

- Volumetric flow rate 30-70 m3/h

- Controlled by 3 sensors
  - VOC sensor
  - humidity sensor
  - temperature sensor

# Swegon FreeAir

# More efficiency, fewer ducts

The tried and tested concept minimises the number of ventilation ducts and hence the amount of planning and construction work. The cascaded airflow enables the air to be used multiple times and contributes to the system's excellent efficiency.

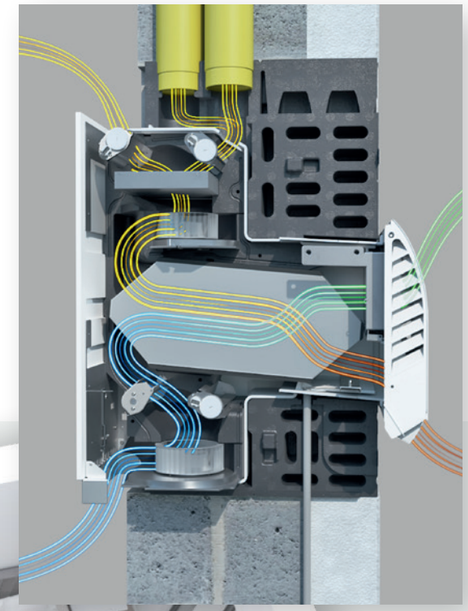
## Minimal construction work and simple planning

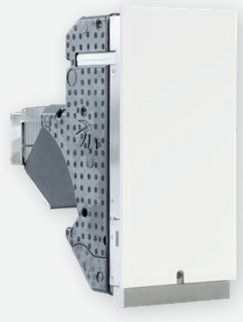
Due to the ventilation system being arranged centrally in the home, there is no need for fire protection measures such as fire dampers and their maintenance, since the ventilation is not laid out across fire compartments.

Another benefit when it comes to planning is that the FreeAir 100e is approved both according to EN 13141-8 as a decentralised ventilation unit and according to EN 13141-7 as a centralised ventilation unit. The relevant requirements are thus fulfilled and the planning made much easier.intermediate wall fan compare the air quality in adjacent rooms and activate the redirection of fresh air on demand.

## Optimal demand-based airflow with 8 sensors

The FreeAir 100e external wall ventilation unit and the FreeAir plus intermediate wall fan are controlled by sensors and continuously adjust the ventilation to the actual demand. On the one hand this ensures a constantly high air quality. Secondly, energy consumption, noise emissions and ventilation heat losses are minimised. This optimal result is ensured in case of the FreeAir 100e by a total of eight (including for humidity, CO2 and temperature) and in case of the FreeAir plus by three sensors (VOC, humidity and temperature).





## FreeAir 100e

Demand-controlled ventilation unit with cross-counterflow heat exchanger and ability to connect to other rooms (exhaust/ supply air)





## FreeAir plus

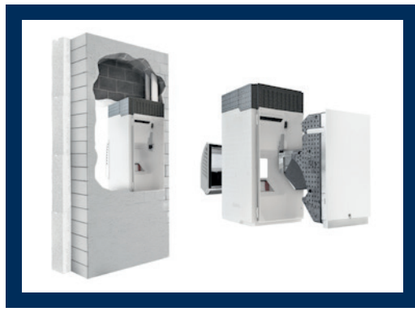
Intelligent, active transfer unit to connect rooms to the domestic ventilation system without ventilation ducts

FreeAir ventilation system in a concretewall with the window reveal solution and a premium cover on the inside.

## One device for all applications

# Extremely flexible installation

Whether installed in solid, timber, prefabricated and modular constructions or when renovating a building, the FreeAir ventilation system can be used flexibly and individually. At its heart is the FreeAir 100e ventilation unit. For all construction methods, corresponding bare brickwork sets are available.



### Solid and timber construction

- Easy installation of the bare brickwork set with EPS box
- Brickwork set without box (ideal for timber construction)
- Used with a wall thickness from 32 cm
- Can be extended for wall thicknesses over 53 cm



### Prefabricated and modular construction

- Factory-integrated into the wall
- Suitable for walls with a thickness of 32 cm or more
- Adapter for space-saving, secure transport; with a factory wall thickness of at least 20 cm
- Time savings on site due to precise pre-work



### Window reveal

- Ideal for design-oriented and uniform facades
- Individual wall thicknesses from 38.5 cm
- Ventilation ducts of the raw brickwork set can be shortened between 42 and 95 cm
- Narrow front grille for unobtrusive, discreet installation



### Renovation

- No laborious opening up of the external wall
- A 35 cm drilled core hole is adequate
- Used for wall thicknesses between 28 and 46 cm
- Optionally extendable up to a wall thickness of 64 cm

# How does it look?

# Clear design

The FreeAir ventilation system fits discreetly into the structural design. Whether for interior or exterior design, there are a wide range of versions and options depending on design specifications or personal taste.



Outside hood for FreeAir 100ᵉ – stainless steel



Outside hood for FreeAir 100ᵉ – white



Pair of Outside hoods for window reveal II for FreeAir 100ᵉ – stainless steel or white



Inside front panel for FreeAir 100ᵉ – white
Plastic or primed



Inside Front Cover II for FreeAir 100ᵉ – white
Plastic or paintable, -5 dB (incoming air only)



Inside Front Cover III for FreeAir 100ᵉ – white
Plastic or paintable, -5 dB



Inside premium cover for FreeAir 100ᵉ – white
Plastic or paintable, -12 dB



Bare brick cover for wall box inside for front or premium cover, dimensions 1-20 cm, paintable



FreeAir plus transfer unit – white
Plastic front or primed

## Outside design

Whether for a modern new build or an old listed building – the FreeAir system offers the right solution for perfect integration in the facade. Due to being arranged centrally in the home, as a rule only one external wall opening per residential unit is necessary. The Outside hoods are available in white or with a stainless steel surface and can be made in the customer's choice of colour. Installation in the window reveal make the ventilation almost invisible.

## Internal design

The front panel of the domestic ventilation unit is hardly bigger than a sheet of A3. All fronts are available as a white plastic version or can be individually designed. This means they can be integrated unobtrusively in the living area. The front cover and the premium cover are soundproofing covers and reduce noise by -5 dB or -12 dB. For renovation projects, various claddings are available so that the ventilation unit can be discreetly integrated in the existing building.



## Smart and intelligent
# Convenient ventilation

An intelligent sensor control system, the humidity management and the summer night-time cooling are standard features of the FreeAir domestic ventilation system. Over and above this, smart control software is available.

### Intelligent humidity management

Humidity and temperature are measured inside and outside. As a result, the FreeAir 100e can actively dehumidify or optimise moisture entry. Harmful mould growth and air that is too dry are thereby prevented and the building material is protected.

### FreeAir Connect app

The browser-based FreeAir Connect app provides a perfect overview of air quality, energy savings and the filter status of the ventilation unit. Even the preferred comfort level can be directly selected and controlled using a smartphone. Automatic service messages by email give landlords, hotel operators and facility managers in particular the assurance that all units are working soundly.

### bluHome connect

The bluHome Connect controller enables the integration of FreeAir ventilation units into building management systems via KNX, Modbus or BACnet, providing increased control and system security.
Fast and easy installation and commissioning without the need for additional software make the controller an ideal solution, particularly for larger construction projects such as hotels, residential buildings, offices or multi-storey buildings, as well as for facility management applications.

### Wonderfully quiet

Quietness is one of the most important feel-good factors. The sound-absorbing ventilator simply leaves noise outside and thanks to the ventilator motors specially developed for the appliance, the FreeAir 100e is extremely quiet, thus providing the highest living comfort. The FreeAir 100e has a sound insulation value of up to 62 dB and simply leaves noise outside. The optional premium cover also makes it ideally suitable for bedrooms.

### Pleasant summer night-time cooling

This function allows the cooler outside air in summer to flow directly into living areas and bedrooms at night. If the appliance detects via the temperature sensors that the room temperature in summer is rising above a preset value, the appliance activates the bypass and directs the cooler outside air past the heat exchanger, directly into the rooms. This also automatically increases the amount of air.

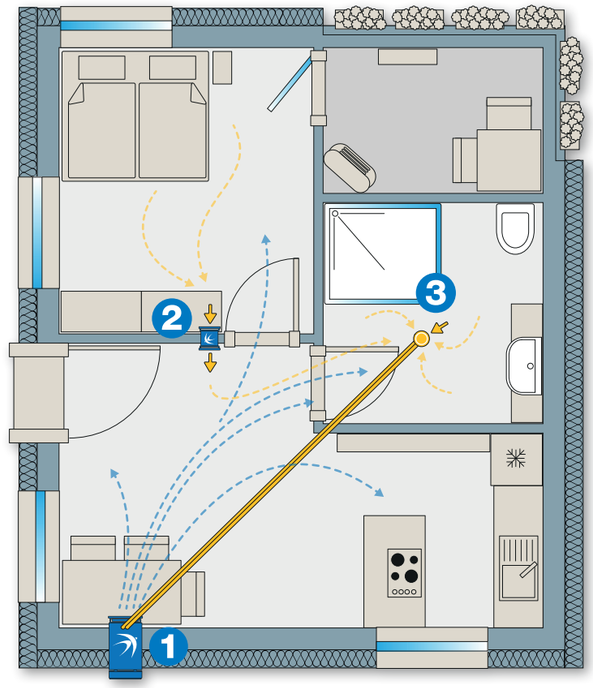





## 1+2+3 = FreeAir
# 3 components 1 simple solution!

The FreeAir ventilation system stands out for its exceptional simplicity. With just three components – the FreeAir 100e ventilation unit, the FreeAir plus transfer element, and a short exhaust duct – a fully functional ventilation system can be effortlessly integrated.




## Key features

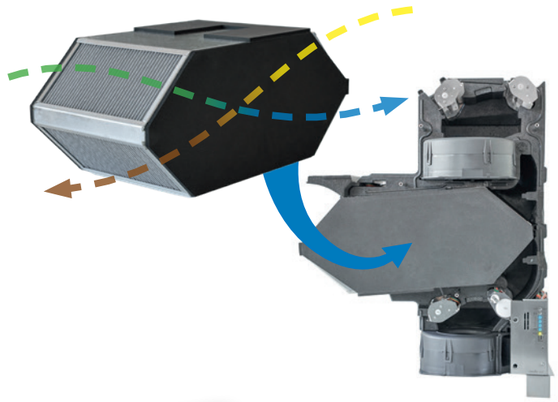
- No supply air ducts
- Highly efficient counterflow heat exchanger with heat recovery > 90%
- Demand-controlled operation and moisture management with 8 sensors
- Approved as both a decentralized and centralized ventilation system
- Flexible and adaptable to all construction methods
- Optimal sound reduction up to 62 dB and extremely quiet operation
- Protection against fine dust, pollen, and odors with effective filters (ePM 10, ePM 1)
- Automatic service emails, smartphone control, and BUS system integration
- Top rating A+ for energy efficiency

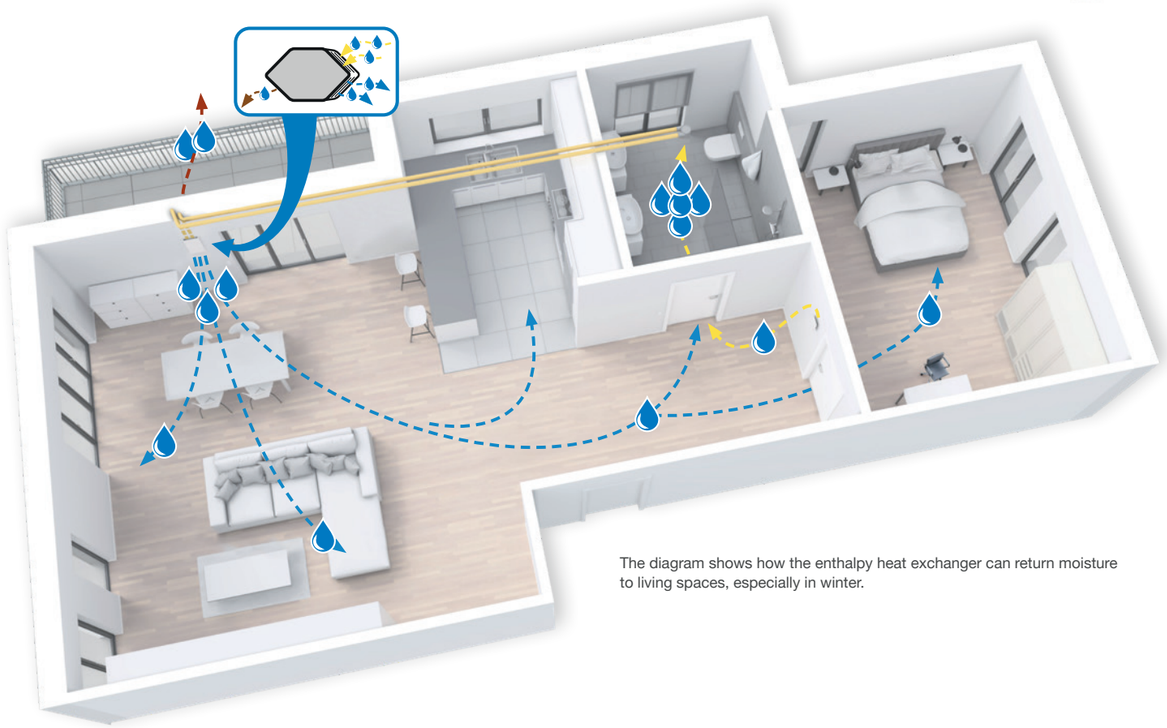
# Fine Tuning -
# The enthalpy Heat-Exchanger

The FreeAir ventilation system offers options to fine-tune the indoor climate down to the smallest detail through optional components such as the new enthalpy heat exchanger or the Ionic module. This allows air quality and humidity to be regulated even more precisely.

## Enthalpy heat exchanger

Thanks to its properties and the materials used, the enthalpy heat exchanger can recover not only heat but also moisture. This is achieved by a special membrane that is selectively permeable to water molecules. As a result, indoor humidity is increased in winter and the supply air can be dehumidified in summer—contributing to a comfortable indoor climate all year round. Since up to 75% of moisture is transferred between the air streams, there is hardly any condensate formation. Nevertheless, the FreeAir 100e regulates humidity sufficiently, e.g. to prevent mould growth.

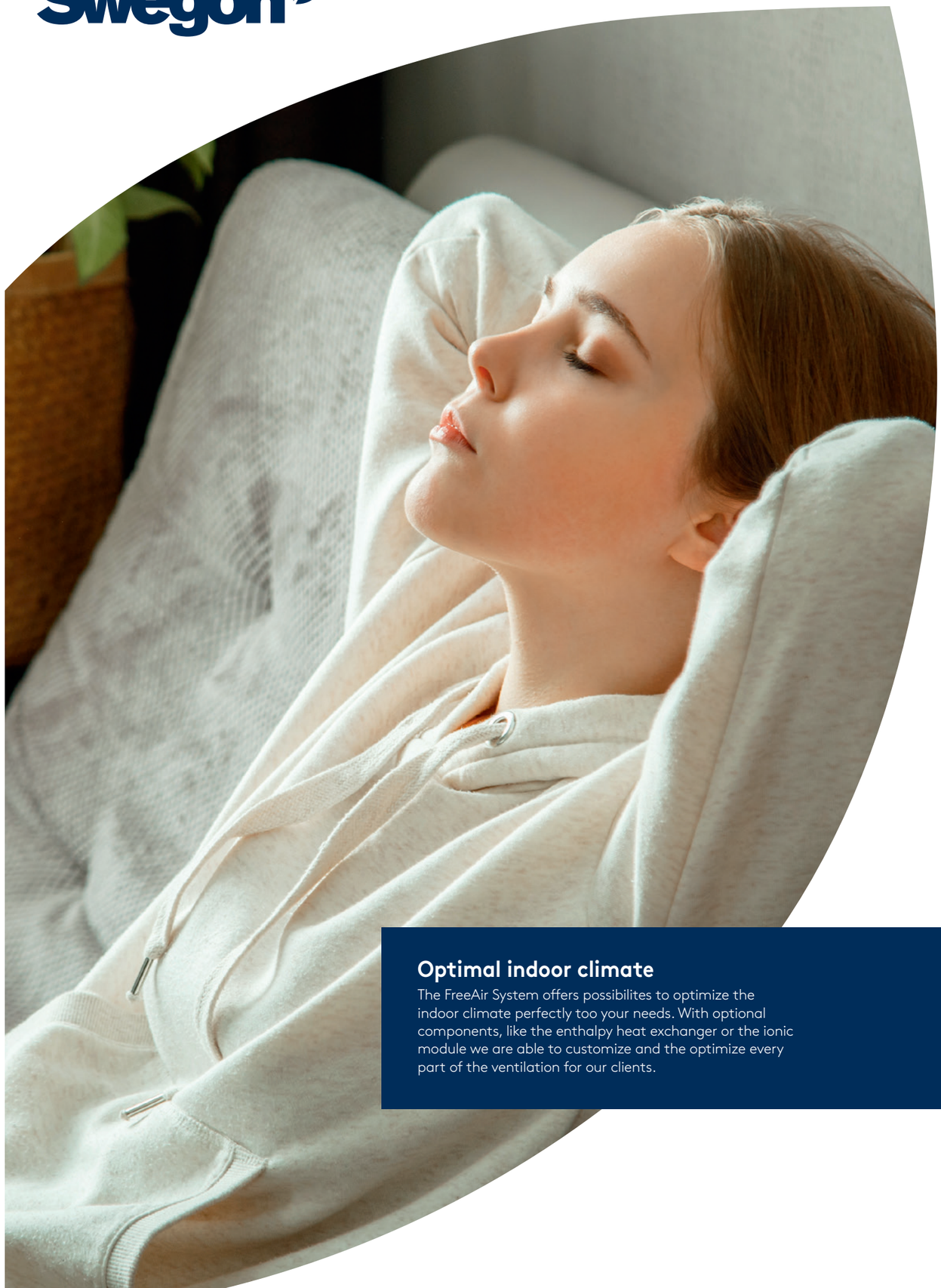




The diagram shows how the enthalpy heat exchanger can return moisture to living spaces, especially in winter.

- By recovering moisture, humidity is maintained at an optimal level.
- Particularly suitable for refurbishment projects, as no condensate drain line is required.
- Improves air quality and creates a more comfortable indoor climate.
- Maintains optimal humidity in living areas even in winter.
- Can reduce the humidity of incoming outdoor air in summer.
- Improved heat recovery in winter thanks to optimised frost protection.

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## Optimal indoor climate

The FreeAir System offers possibilites to optimize the indoor climate perfectly too your needs. With optional components, like the enthalpy heat exchanger or the ionic module we are able to customize and the optimize every part of the ventilation for our clients.

## FreeAir examples

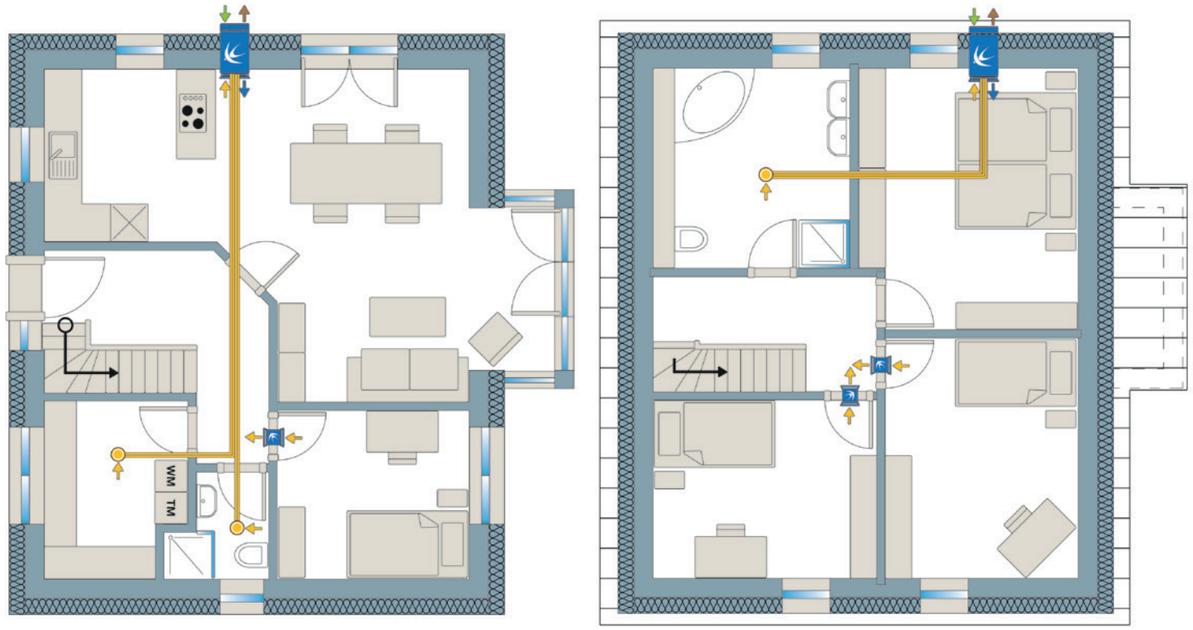
# Detached houses

In private households, the majority of energy is needed for heating. Thanks to the efficient heat recovery, a considerable portion of heating energy is saved. The planning example shows its use in a detached house.



### About the property

- 145 m² of living space
- 2 FreeAir 100e ventilation units
- 3 FreeAir plus transfer units
- Premium cover used in the bedroom






## FreeAir examples

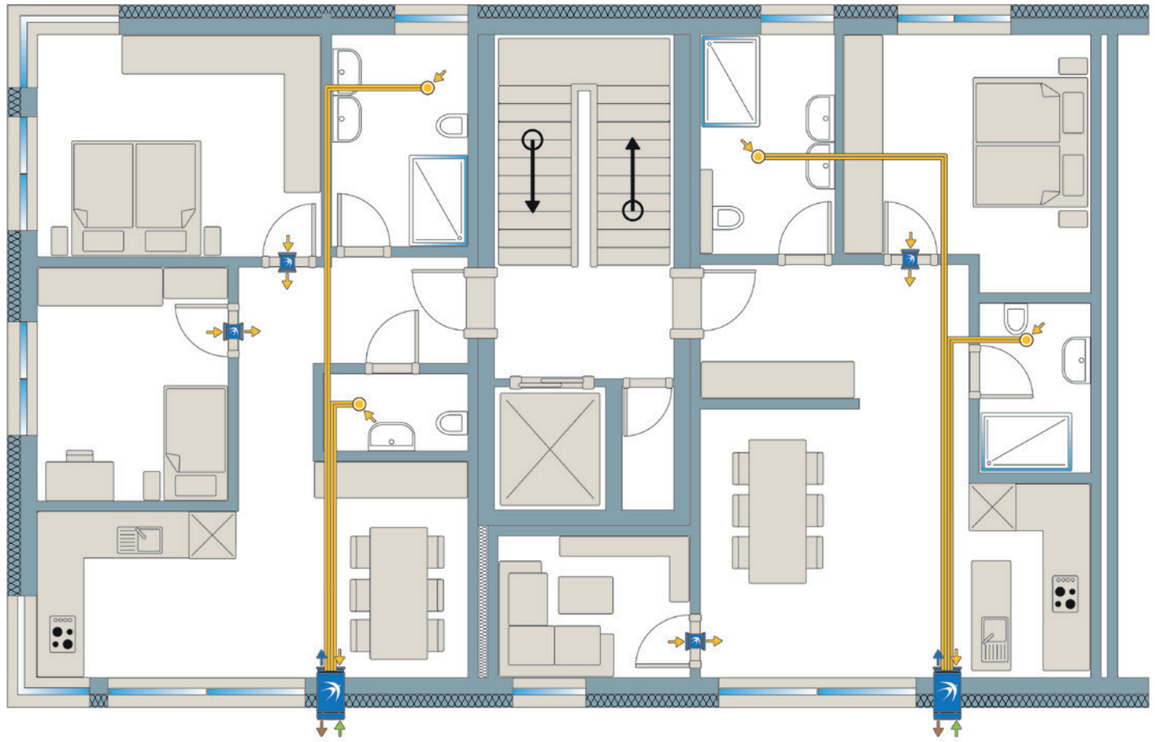
# Apartment buildings

The FreeAir ventilation system ensures the highest living comfort as well as a pleasant and healthy indoor climate independent of users. The following planning example demonstrates its installation in an apartment block.



### About the property

- 56 units between 55 m² and 95 m²
- 70 FreeAir 100e ventilation units
- 93 FreeAir plus transfer units
- The bare brickwork sets are installed directly at the factory



## FreeAir examples

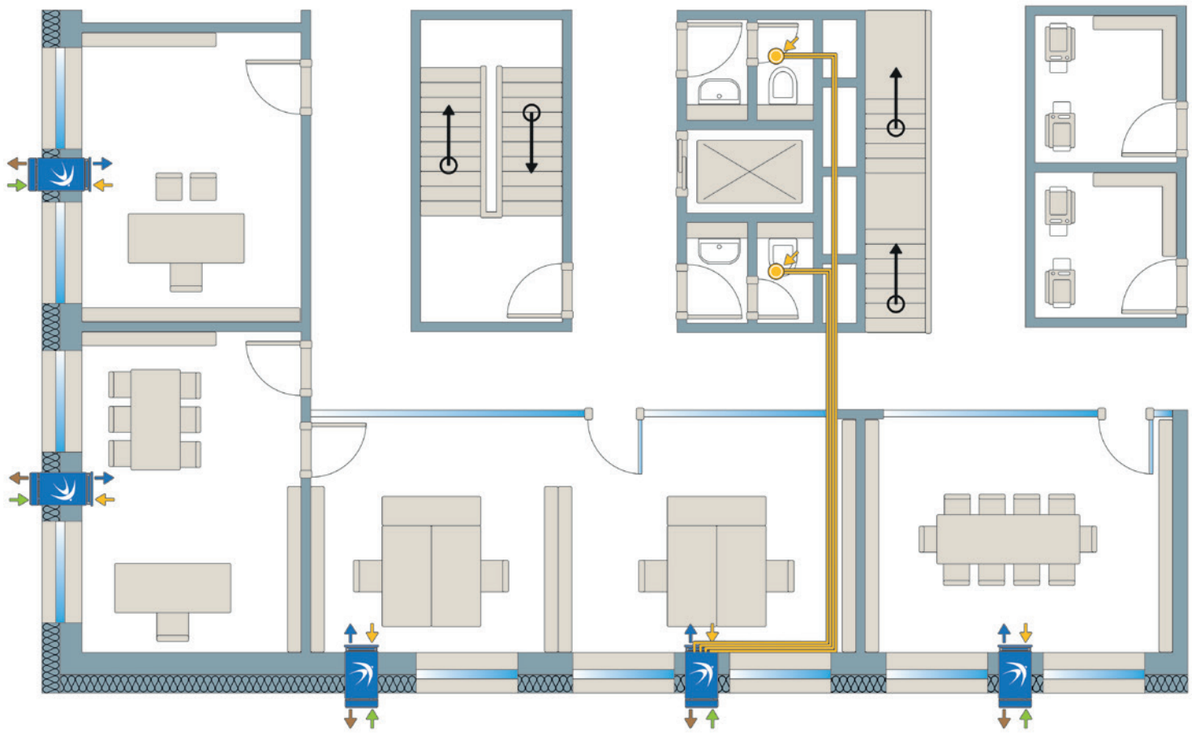
# Office and commercial buildings

The FreeAir ventilation system manages without almost any ventilation ducts. That makes fire protection easier and considerably simplifies the planning process. The planning example shows the integration of the ventilation units in an office building.



### About the property

- 2,000 m² of office space
- 26 FreeAir 100e ventilation units
- Use of the bluHome Connect controller
- Installation in the window reveal





## FreeAir examples

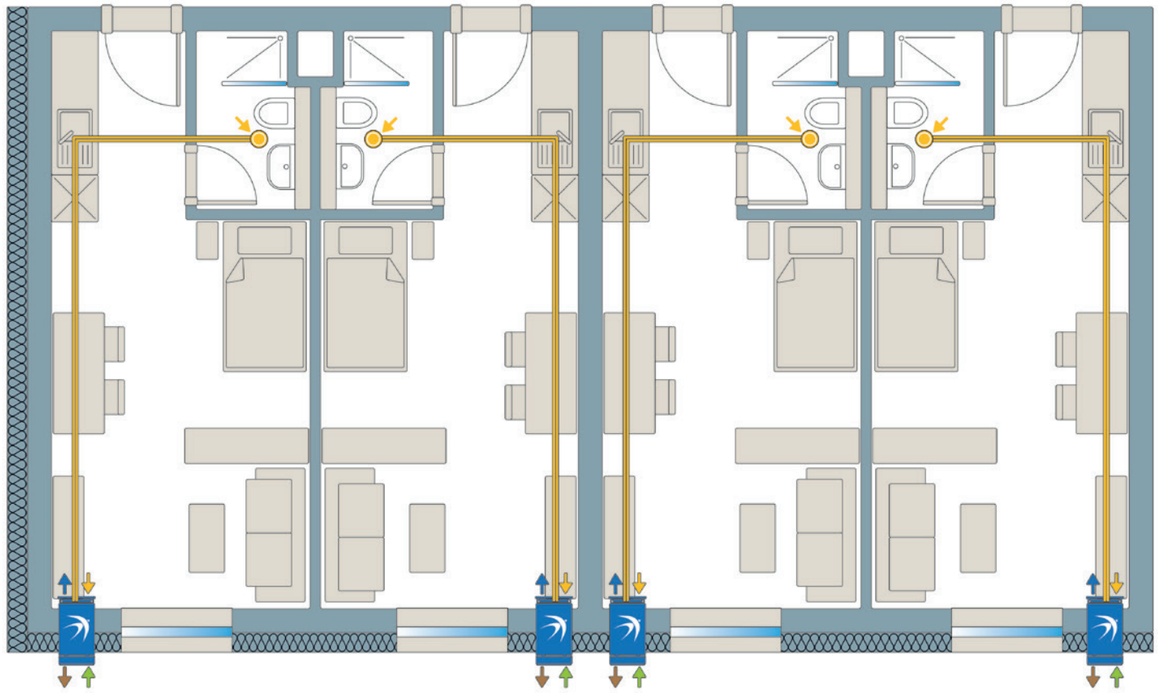
# Residential homes and hotels

The ventilation system enables air to be supplied and extracted for a complete residential unit – depending on size – with just one external wall unit. A ducted air extraction system is not necessary. The floor plan illustrates the simple planning by way of a residential unit for staff.



### About the property

- 111 units between 24 m² and 90 m² of living space
- 117 FreeAir 100e ventilation units
- 21 FreeAir plus transfer units
- The bare brickwork sets are installed directly at the concrete factory



# FreeAir references





Stay KoooK, hotel in Munich




Energy-efficient refurbishment with window reveal solution



Only a short exhaust air duct to the bathroom – done



OIKOS Mannheim, hybrid building – residential construction



The FreeAir window reveal solution – virtually invisible



Single-family home with high-end requirements



# Technical data

## FreeAir 100e (FreeAir 100e (Aluminium HE – HHV / Enthalpy HE – ERV)

| | |
|---|---|
| Inside front dimensions | 28 x 58 cm (front panel); 30 x 63 cm (Front Cover II) |
| Wall thickness | 32 to 53 cm incl. plaster (other dimensions possible with accessories) |
| Airflow | 23 to 100 m³/h |
| Temperature change rate | 86 %, 84,6% (at 100 m³/h and 2 °C) according to EN 13141-8 and EN 13141-7 |
| Heat recovery | up to 91 % (at 50 % relative humidity) |
| Heat exchanger type | Cross-counterflow; aluminium, enthalpy |
| Supply voltage | 125 to 265 V AC; 45 to 65 Hz; internal fuse 3 A |
| Power consumption | 20 m³/h ï 5 W; 70 m³/h ï 16 W; 100 m³/h ï 34 W |
| Specific power consumption | 0.21 W/m³h, 0,25 W/m³h (single room); 0.25 W/m³h, 0,32 W/m³h (multiple rooms) |
| Weight | 10 kg |
| Sound pressure level in the room | 20 m³/h ï 17 dB (A); 30 m³/h ï 22,5 dB (A); |
| (10 m2 sound absorption area) | 74 m³/h ï with Premium Cover 30 dB (A);<br>91 m³/h ï with Premium Cover 35 dB (A); |
| Sound reduction index | Standby ï 52 dB (DIN EN 10140-2; Dn, e, w)<br>Operation ï 46 dB (with Premium Cover max. 62 dB) |
| Regulation | Intelligent Comfort control with 5 levels |
| Airflow regulation | Automatic; constant volume; balanced |
| CO2 regulation | Automatic |
| Humidity management | Automatic (typically 40 to 60 % relative humidity) |
| Summer night-time cooling | Automatic and with Turbo-Cool |
| Frost protection | Automatic bypass regulation from approx. -5 °C, -9 °C outside |
| Temperature range | -40 to +50 °C outside and 0 to +40 °C inside |
| Filter - incoming air | Protect ePM10 (Pollen), Protect plus ePM1 (Allergy sufferers),<br>or Protect carbon ePM10 (Activated carbon) |
| Filter - exhaust air | Protect ePM10 (ISO 16890) |
| Smart home | Connect WiFi; Connect USB;<br>bluHome Connect (accessories for ModBus, KNX, BACnet, RS232) |
| Colour | Front panel white or primed (paintable and customisable) |
| Approval | DIBt, passive house (PHI) (PHI |
| Optional connections | 5 x 75 mm exhaust air; 2 x 75 mm + 51 mm x 138 mm flat duct for supply air |

## FreeAir plus

| | |
|---|---|
| Inside front dimensions | 25 x 25 cm |
| Wall thickness | 10 to 22 cm incl. plaster (less than 12 cm with attached spacers) |
| Airflow | 30 to 70 m3/h |
| Supply voltage | 85 to 265 V AC; |
| Power consumption | Standby » 0.5 W; 30 m3/h » 0.9 W; 50 m3/h » 1.4 W; 70 m3/h » 2.5 W |
| Sound pressure level in the room | 30 m3/h » 13 dB (A); 50 m3/h » 25 dB (A); 70 m3/h » 37 dB (A)<br>(at a distance of 1 m) |
| Sound reduction index | 33 dB (EN ISO 10140-2; Dn, e, w) |
| Regulation | Intelligent Comfort control with 5 levels |
| Airflow regulation | Automatic; practically infinitely variable |
| CO2 regulation (VOC) | Automatic |
| Humidity management | Automatic |
| Summer cooling | Automatic |
| Temperature range | 0 to +40 °C |
| Colour | Front panel white or primed (paintable and customisable) |

Feel good **inside**



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