

freeAir®

outstanding ventilation



freeAir®

Apartment-based mechanical ventilation with heat recovery



Top mark A+ for energy efficiency



Recognised as an affordable ventilation solution



Certified as a passive house component



No supply air ducts



Demand-dependent control and humidity management with 8 sensors



Optimum sound reduction of up to 60 dB and extremely quiet operation



Protection against fine particles and pollen thanks to effective filters (ePM1 or ePM10)



Automatic service emails and smartphone control



Life with fresh air

Provide your home with clean, fresh air while saving on heating energy! Controlled mechanical ventilation with heat recovery makes this possible, with the additional benefit of protecting the fabric of your building.

We spend more than 90 percent of our lives indoors, which is precisely where we need our most important commodity – fresh air. Without sufficient air changes, harmful substances can accumulate, along with damp, dust and odours. Ventilating simply by opening the windows is no longer sufficient, given today's airtight construction methods.

Perfect indoor climate

The freeAir ventilation system automatically ensures pleasant air quality. Eight sensors record all the relevant air parameters and manage the continuous supply of fresh air according to demand. This prevents the air from becoming too dry or too humid. Effective filters remove fine particles and pollen.

Save costs – protect the climate

Thanks to effective heat recovery of over 90 percent, ventilation heat losses are minimised, so you require considerably less heating energy. This reduces heating costs, whilst increasing the energy rating and the value of your building. freeAir is an important element in fulfilling requirements for funding from the KfW bank in Germany.

Discover our freeAir system and bring fresh air into your home!

Greater efficiency, fewer ducts

The freeAir mechanical ventilation system with heat recovery combines the benefits of centralised and decentralised ventilation units. No supply air ducts are required and in most cases only one penetration is necessary per apartment in the external envelope – ideal for new builds and modernisation projects.

Ventilation by teamwork

In the bluMartin ventilation system, the freeAir 100 exterior wall ventilation unit and the intelligent freeAir plus active transfer unit complement one another in a unique way: The freeAir 100 supplies the living spaces with fresh outdoor air, while extract air areas such as bathrooms are connected directly to the exterior wall unit via ventilation ducts. The freeAir plus transfer unit connects other rooms to the mechanical ventilation unit without any ducts at all. The sensors in the intermediate wall fan compare the air quality of adjacent rooms and activate the supply of fresh air to them when required.

Reduced installation work

The successful concept minimises the number of ventilation ducts and therefore the work involved in design and installation. The apartment-based design eliminates the need to install and maintain fire safety equipment, such as fire dampers. Cascaded air routing contributes – in conjunction with high heat recovery and a low energy demand – to outstanding system efficiency.



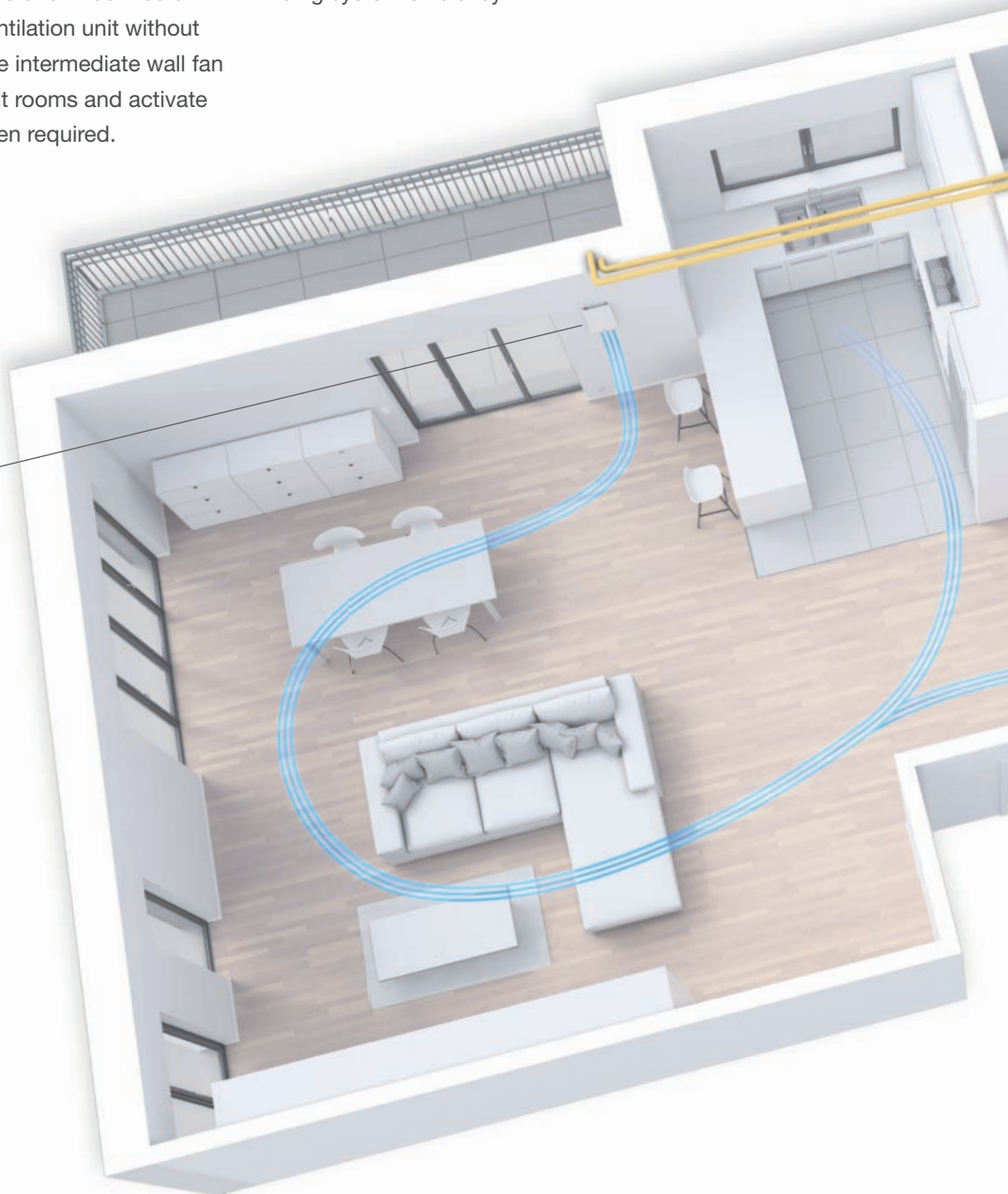
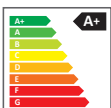
freeAir 100

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

Flow rate 8-100 m³/h
87% heat recovery rate acc. to PH1 and EN 13141-8

Control via 8 sensors:

- 1 CO₂ sensor
- 2 humidity sensors
- 4 temperature sensors
- 1 air pressure sensor



Example for the design of a 2-bedroom apartment with a freeAir 100 and a freeAir plus



freeAir plus

Intelligent active transfer unit for connecting rooms to the mechanical ventilation unit without ventilation ducts

Flow rate 30-70 m³/h

Control via 3 sensors:
- VOC sensor
- Humidity sensor
- Temperature sensor

Video about the freeAir system

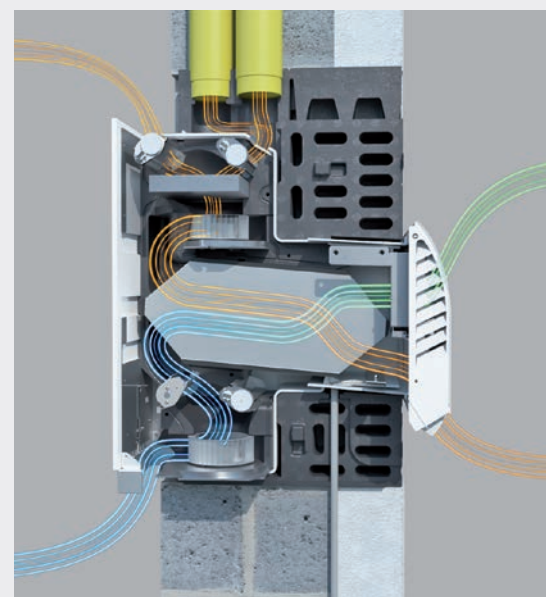


Optimum demand-dependent control

The freeAir 100 exterior wall ventilation unit and the freeAir plus intermediate wall fan are controlled by sensors and continuously adjust the level of ventilation to meet actual demand. This ensures consistently high air quality and minimises energy consumption, sound emissions and ventilation heat losses. The freeAir 100 achieves this optimum result thanks to a total of eight sensors, with a further three sensors in the freeAir plus.

Maximum heat recovery

The effective counterflow heat exchanger in the freeAir 100 recovers more than 90 percent of the heat contained in the extract air. The heat recovery rate according to PHI criteria and EN 13141-8 is 87 percent. A significant proportion of heating energy is therefore saved. This carries important benefits for the building energy certificate and KfW funding category (also KfW 40 Plus).



Cross-section of the freeAir 100 with counterflow heat exchanger



freeAir®

Healthier living

Breathe freely with freeAir. The latest filter technology removes pollen and fine particles. Optimum sound insulation provides a peaceful environment – ideal, especially in cities.

The sensors integrated in the freeAir ventilation system automatically ensure pleasant air quality. Intelligent humidity management prevents the air from becoming too dry or too humid. This ensures a comfortable indoor climate.

Highest filter class

The freeAir 100 ventilation unit has effective ePM 10 filters. The highest class of supply air filter – ePM 1 – is also available as an option. Fine particles, pollen, harmful substances and insects are kept where they belong – outside. Demand-dependent ventilation and the large filter surface area mean that the filters have a long service life, generally lasting for one year.

Sound insulation value of up to 60 dB

Peace and quiet are very important factors that contribute to our sense of wellbeing. With the freeAir 100 sound insulating fan, noise stays outside. The unit has a sound insulation value of 46 dB. With the optional premium cover, this value increases to 58 dB. In conjunction with the reveal solution, the sound insulation value rises to 60 dB.

Pleasant summer cooling

In summer, the heat exchanger in the freeAir 100 functions as a cold exchanger and cools the air flowing in. If it is warmer inside than outside in the warmer months of the year, the summer cooling function utilises the fresh night air and provides cooling through automatic opening of the bypass damper.

Ecological living

More than two thirds of the energy consumed in private households is required for heating. With the freeAir ventilation unit, a significant proportion of heating energy is saved – which is good for the climate and your wallet.

Thanks to its excellent energy efficiency, the freeAir system has been certified for passive houses and awarded the highest rating according to the EU Ecodesign Directive: A+. The system reduces the energy demand of the building and has a decisive impact on eligibility for KfW funding in Germany.

Effective heat recovery

Good thermal insulation is only worthwhile if the majority of heating energy is not lost by opening windows for fresh air. The freeAir 100 works with a highly effective counterflow heat exchanger, which recovers more than 90 percent of the heat from the extract air. Compared

with units with enthalpy heat exchangers, the freeAir boasts five to ten percent higher efficiency.

Maximum energy efficiency

The freeAir 100 unit combines the benefits of high performance heat recovery with an extremely low energy consumption, averaging just 4 W. This is made possible by sensor-controlled matching of the air change rate to actual demand. The ratio of energy used to energy recovered is 1:30 to 1:50. The cascaded air flow principle of the freeAir system also contributes to a reduction in heating energy.



Simpler project design

The freeAir mechanical ventilation system requires virtually no ventilation ducts. No centralised extract air system according to DIN 18017-3 is necessary. This simplifies the fire safety measures and opens up new engineering options.

Usually only one penetration per apartment in the external envelope, no supply air ducts, no sensor cables – the freeAir system simplifies design and installation considerably and is the ideal solution for compliance with the requirements of EnEV and DIN 1946-6 when it comes to new builds and modernisation projects.

No supply air ducts

The system enables entire residential units – subject to size – to be ventilated via just one or two exterior wall units.

Extract air areas such as bathrooms are connected directly to the unit. Thanks to the intelligent freeAir plus active transfer unit, additional supply air areas can be connected to the system without the need for ventilation ducts.

Fewer fire safety measures

No expensive fire safety equipment, such as ceiling partitions or fire dampers, need to be installed or maintained, as the ventilation unit does not cross fire compartments. This means considerable cost savings in multi-storey buildings.



More economical construction

The freeAir system ensures maximum thermal comfort and achieves the air change rate required for moisture protection, irrespective of user behaviour. In 2018, the system received the Component Award from the German Passive House Institute for affordable ventilation solutions in residential buildings.

No floor space required

The freeAir 100 mechanical ventilation unit has a compact design and is installed in the exterior wall together with all of its complex sensor technology. No supply air ducts or centralised extract air systems are necessary. This means that no useful floor space is taken up – a major benefit, especially in residential areas where space is at a premium.

Reduced construction costs

The process of installing the freeAir system can be incorporated efficiently into construction works, thanks to well-designed shell components. As the system does not cross fire compartments, the installation and maintenance of expensive fire safety equipment is not required.

Earlier completion

Once work on the building shell is finished, the units are simply inserted into the wall casings and operation is started via plug & play. Demand-dependent control immediately creates a pleasant indoor climate. There is no need for manual adjustment, as the system works automatically at a constant flow rate.

Low operating costs

Sensor-controlled matching of the ventilation level to actual requirements minimises the freeAir system's operating energy demand and reduces ventilation heat losses. The high level of heat recovery saves a considerable proportion of heating energy. Thanks to demand-dependent control, one filter change per year is generally sufficient.



Innovative and smart

Intelligent sensor control for consistently pleasant air quality and smart software for simple operation and easy monitoring make the freeAir system a technological pioneer when it comes to energy efficient ventilation.

Demand-dependent control via 8 sensors

The freeAir 100 ventilation unit is controlled via 8 sensors (to detect the levels of humidity, CO₂, temperature, etc.). Ventilation is continuously matched to the current demand. At the same time, operating and heating energy is saved and the filter life is extended. The intelligent freeAir plus active transfer unit works with three sensors (VOC, humidity and temperature) for optimum air quality.

Intelligent humidity management

By measuring humidity and temperature both indoors and out, the freeAir unit is able to actively dehumidify or optimise humidity levels. This prevents harmful mould growth and excessively low humidity.

Summer cooling

Using the temperature sensors, the unit detects when the room temperature in summer rises above a preset value. If the outside temperature falls below this value (e.g. at night), the unit activates the bypass and routes the air past the heat exchanger into the rooms. This automatically increases the air flow rate as well.

Software freeAir Connect

The browser-based freeAir Connect app provides a perfect overview of air quality, energy savings and the filter status of the ventilation unit. The required thermal comfort level can also be selected directly via smartphone. Automatic service emails provide landlords, hotel operators and facility managers with the reassurance that all equipment is functioning properly.


freeAir Connect

Transparency



Reassurance

freeAir report
Automatic
service emails

From: freeAir 15014 Kitchen
To: John Smith

 freeAir report

Dear customer,
Your freeAir 100 air handling unit
15014 Kitchen
has the following notification
message:

**The Filter operating time has
been exceeded**
Operating hours have exceeded
8700 hours (= 1 year) since the
last filter change

Your bluMartin service team. ➔

Clear design

The freeAir ventilation system blends unobtrusively into the structural layout of the building. Various designs create scope for an individual look. Using the ventilation unit couldn't be easier – a single button is all it takes.



freeAir 100, stainless steel outside hood



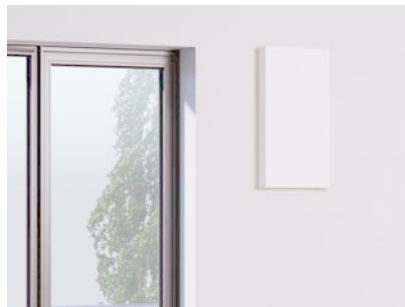
freeAir 100, white outside hood



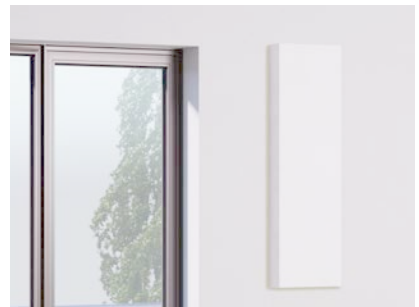
freeAir 100, reveal solution



freeAir 100, interior view with front panel (standard)



freeAir 100, interior view with Front Cover (optional, -3 dB)



freeAir 100, interior view with Premium Cover (optional, -12 dB)



Customisable front cover



Practical design with operation via a single button



freeAir plus

Discreet façade solutions

Whether for a state of the art new build or an older listed building, the freeAir system offers the ideal solution for perfect integration into the façade. Thanks to the apartment-based design, only one penetration in the external envelope is generally required per residential unit. Outside hoods are available in white or with a stainless steel finish, and can be customised in any colour. When installed in a reveal, the ventilation unit is hardly visible.

Harmonious interior

The front panel of the freeAir mechanical ventilation unit is barely larger than an A3 sheet of paper and, in the primed version, can be customised to suit your individual style. Alternatively, the front panel is available in a high grade solid core material with a high quality matt white appearance. The optional Front Cover – as well as the sound insulating Premium Cover – can also be given the same colour finish as the walls, enabling it to blend unobtrusively into the living space.



Detached house



Special education school in Giesing, Munich



freeAir 100 in the home



HUMMEL Systemhaus company building in Frickenhausen



Student accommodation, Riedberg Campus, Germany



Detached house

freeAir®

Individual solutions

A wide range of successful building projects show that the freeAir system is the number one choice for economical ventilation solutions.



Staff accommodation, Landshut Hospital, Germany



Das Heimsitz hotel in the Kitzbühel Alps, Austria



Apartment building in Bolzano, Italy



Semi-detached house with wooden construction



Modular social housing in Schöppingen, Germany



Listed residential complex in Ludwigshafen, Germany

Specification

freeAir 100

Dimensions of interior cover	28 x 58 cm
Wall thickness	32 to 53 cm incl. plaster (< 40 cm → deeper hood; > 53 cm → extension)
Air flow rate	8 to 100 m³/h
Heat recovery rate	87 % (according to PHI criteria and EN 13141-8)
Heat recovery	94 % (at 50 % relative humidity)
Heat exchanger type	Counterflow; aluminium
Power supply voltage	100 to 265 V AC
Mains fuse	3 A fast (on control PCB)
Mains frequency	45 to 65 Hz
Total power consumption	Standby → 1 W; 20 m³/h → 4 W; 50 m³/h → 9 W; 100 m³/h → 38 W (max. duct lengths)
Weight	10 kg
Sound pressure level in room (at a distance of 1 m)	20 m³/h → 17 dB (A); 30 m³/h → 22 dB (A); 50 m³/h → 34 dB (A), with premium cover → 22 dB (A); 85 m³/h → with premium cover → 35 dB (A);
Sound insulation level	Standby → 52 dB (EN 10140-2; $D_{n,e,w}$) Operation → 46 dB (with premium cover max. 60 dB)
Control unit	Intelligent comfort control unit with 5 levels
Air flow rate control	Automatic; virtually infinitely variable; constant flow rate; balanced
CO2 control	Automatic
Dehumidification	Automatic and special operating mode
Summer cooling	Automatic and with turbo cool
Frost protection	Automatic bypass control from approx. -5 °C outside temperature
Temperature range	Automatic bypass control from approx. -5 °C outside temperature
Filter – supply air	Fine particle filter ePM10 (pollen) or ePM1 (for allergy sufferers)
Filter – extract air	Fine particle filter ePM10 (ISO 16890)
Colour	RAL 9016 or primed (paint finish and customisation possible)
DIBt approval	Z-51.3-287

freeAir plus

Dimensions of interior cover	25 x 25 cm
Wall thickness	10 to 22 cm incl. plaster (< 12 cm with spacers supplied)
Air flow rate	30 to 70 m³/h
Power supply voltage	85 to 265 V AC
Total 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 room (at a distance of 1 m)	30 m³/h → 13 dB (A); 50 m³/h → 25 dB (A); 70 m³/h → 37 dB (A)
Sound insulation level	33 dB (EN ISO 10140-2; $D_{n,e,w}$)
Control unit	Intelligent comfort control unit with 5 levels
Air flow rate control	Automatic; virtually infinitely variable
CO2 control (VOC)	Automatic
Dehumidification	Automatic
Summer cooling	Automatic
Temperature range	0 to +40 °C
Colour	RAL 9016 or primed (paint finish and customisation possible)

Always there for you!



☎ +49 8153 889033-0



Sales

Julian Pahl
sales@bluMartin.de



Planning

Wolfgang Matuszewski
planung@bluMartin.de



Technical support

Benedikt Helm
service@bluMartin.de

About bluMartin

bluMartin GmbH develops, produces and sells apartment-based mechanical ventilation units with heat recovery. Engineers Thomas Schally and Bernhard Martin, together with Elke Martin, jointly founded the company in 2010 with one clear objective: Greater sustainability in the building sector through the development of an innovative ventilation system, combining maximum energy efficiency with optimum comfort. The two engineers have worked together for more than 30 years and have a great deal of experience when it comes to pioneering technology, reliable production and the international sale of high quality equipment.

Outstanding development success by bluMartin GmbH lead to its acquisition by the Swedish Swegon Group in 2016. The Swegon Group is a Scandinavian market leader in the areas of energy efficient ventilation and air conditioning in buildings.



Founders and Managing Directors
Thomas Schally und Bernhard Martin

bluMartin GmbH
Argelsrieder Feld 1b
82234 Wessling / Germany
Phone +49-8153-88 90 33-0
www.bluMartin.de