

**COMPLETE
SERIES**

Renovent Excellent series, silent and low-energy ventilation



BRINK

Climate Systems

Ready for future ventilation requirements

Effective ventilation contributes to living comfort and health. Balanced ventilation by Brink Climate Systems gives you a healthy, low-energy and comfortable indoor climate throughout the year. Users are putting ever higher demands upon good ventilation provisions in all seasons. In addition, government requirements with regard to energy efficiency and installation noise are getting stricter all the time. Brink Climate Systems responds to that with the introduction of the Renovent Excellent Series. These heat recovery ventilation appliances are not only fully geared for present-day ventilation requirements, but also for those of the future.

THE RENOVENT EXCELLENT

The Renovent Excellent series includes the Renovent Excellent 400, 300 and 180 with maximum capacities of 400, 300 and 180 m³/h respectively. They come in a left-handed and right-handed version with a range of options for connecting the ducts. In addition to the comprehensive standard version, the Renovent Excellent is also available as 'Plus version'. This version comes with additional connection options, for instance for a CO₂ sensor or geothermal heat exchanger.

COMPLETE

The Renovent Excellent comes as standard with bypass and preheater, with the exception of the Renovent Excellent 180. The bypass contributes to an improved comfort level in summer and it is controlled automatically on the basis of the measured indoor and outdoor temperatures. The supply fan of the Renovent Excellent 180 can be deactivated while the supply air can flow in through the open windows (bypass functionality). The intelligent frost protection with preheater guarantees the high efficiency, also at extremely low temperatures. This energy-efficient frost protection realises additional energy savings of some € 60 per year.

The Renovent Excellent comes with two G3 filters that can easily be changed. These filters remove 95% of the dust from the air. A high-performance fine dust filter (F7 filter) is optionally available. Ideal for people with sensitive respiratory organs.

CONSTANT FLOW CONTROL

Application of 'constant flow control' guarantees the preset air flow rates. Independent of the resistance in the ducts system or the filter fouling degree.

The 'constant flow control' system makes initial adjustment easier, and that saves installation costs. On top of that, the filter fouling degree no longer affects the flow rate of the clean outdoor air supply. 'Constant flow control' helps to reduce the energy consumption.

SILENT

Also as a result of the low-rpm fans and the low internal resistance, Brink Climate Systems managed to reduce the noise level of the

Renovent Excellent series appliances.

The larger connection diameter of the air ducts also contributes to a low air flowrate through the ducts and thus to lower noiseless noise level.

LOW ENERGY CONSUMPTION

The measures for reducing the noise level also reduce the auxiliary energy consumption by some 40%. With the Renovent Excellent, Brink Climate Systems managed to introduce an appliance that amply complies with future European requirements of a maximum of 1,000 J/m³.

DEMAND FLOW

The Renovent Excellent can be controlled in the usual manner with a 4-way switch with filter indication or wireless remote control. Application of the Brink control module with timer, relative humidity sensor and/or the 2-zone demand flow system enables automatic ventilation control and saves even more energy.

ENTHALPY EXCHANGER

An enthalpy exchanger is optionally available for the Renovent Excellent 400 and 300. Such a heat exchanger transfers part of the moisture discharged from the dwelling to the supply air to the dwelling. That is possible because the exchanger features a special membrane film that keeps supply and exhaust air completely separate, but still allows the transfer of moisture between the two air flows. The result is a more comfortable indoor climate with a relative humidity that is an average 3 to 5% higher than when using the conventional heat exchanger.

The advantages:

- Complete, silent and low-energy
- Constant flow control
- High ventilation capacity of 400, 300 and 180 m³/h respectively
- Auxiliary energy consumption reduced by 40%
- Optionally available with demand flow



The Renovent Excellent 400, 300 and 180 complete the Renovent Excellent series.

TECHNICAL SPECIFICATIONS

Appliance type	400	300	180
Ventilation capacity at 150 Pa [m ³ /h]	Maximum 400	Maximum 300	Maximum 180
Rated power [W] (at 70% of the maximum appliance capacity)	64 at 280 m ³ /h (and 50 Pa)	40 at 210 m ³ /h (and 50 Pa)	46 at 125 m ³ /h (and 50 Pa)
Dimension duct connection [mm]	Ø 180	Ø 150	Ø 125
H x W x D [mm]	765 x 677 x 564	765 x 677 x 564	600 x 560 x 302
Weight [kg]	38	38	25
Temperature efficiency [%]	95	95	95
Constant flow control	✓	✓	✓
Standard bypass	✓	✓	✓ (bypass functionality)
Standard preheater	✓	✓	-
Connection provisions for humidity sensor	✓	✓	✓
Connection provisions for 2-zone demand flow	✓	✓	✓
Connection for timer	✓	✓	✓
Also available as Plus version*	✓	✓	✓

*The Plus versions have additional connections for a CO₂ sensor, geo-heat exchanger, bedroom diffuser and postheater.

Enthalpy exchanger

Moisture recovery heat exchanger



ENTHALPY EXCHANGER MOISTURE TRANSFER

The standard heat exchanger by Brink Climate Systems transfers heat. With the specially developed polymer membrane in the new enthalpy exchanger, in addition to heat, also moisture is transferred between the air flows. The quantity of moisture that is transferred depends on the relative humidity of the indoor and outdoor air and may run to about 60%. This will prevent a too low relative humidity indoors under cold and dry outdoor conditions.

The enthalpy exchanger is also excellently suitable for use at high outdoor temperatures and air humidities. The enthalpy exchanger makes it possible to keep the high humidity in the atmosphere outdoors because the moisture in the supplied outdoor air is transferred to the dryer exhaust air. If an air conditioner is used, energy will be saved because cooling dry indoor air takes less energy than cooling humid indoor air. The cooling capacity for instance of underfloor cooling may also increase because the floor's dew point will be lower at a lower relative humidity.

EFFICIENCY FROM HEAT AND HUMIDITY

The enthalpy exchanger not only has a temperature efficiency, but also an enthalpy efficiency (moisture transfer efficiency). That makes the total energy efficiency of the enthalpy exchanger 136%. Because of the slightly lower temperature efficiency of the enthalpy exchanger, the supply temperature in the habitable room with standard heat exchanger is a little lower. If that is not desired, the postheater may be used. This postheater can be connected to all Plus versions of the Renovent Excellent and the Renovent Sky.

The supply of cold and dry outdoor air in wintry conditions and exhaust of fouled, humid air will cause a gradual drop of the relative humidity in dwellings and offices. A too low relative humidity indoors is considered uncomfortable. For that reason it is not always desirable to discharge all moisture produced indoors to the atmosphere. Brink Climate Systems' enthalpy exchanger transfers part of the moisture in the exhaust air to the supplied dry outdoor air, so too much dehydration of the indoor air is prevented.

ACCESSORY FOR RENOVENT EXCELLENT AND RENOVENT SKY

The enthalpy exchanger is available as an accessory for the Renovent Excellent 400 and 300 and for the Renovent Sky 300. When installed in a new building, it is recommended to postpone installing the enthalpy exchanger until the excess building moisture has been carried off. The standard heat exchanger can easily be replaced by the enthalpy exchanger without modifications to the appliance settings.

THE ADVANTAGES

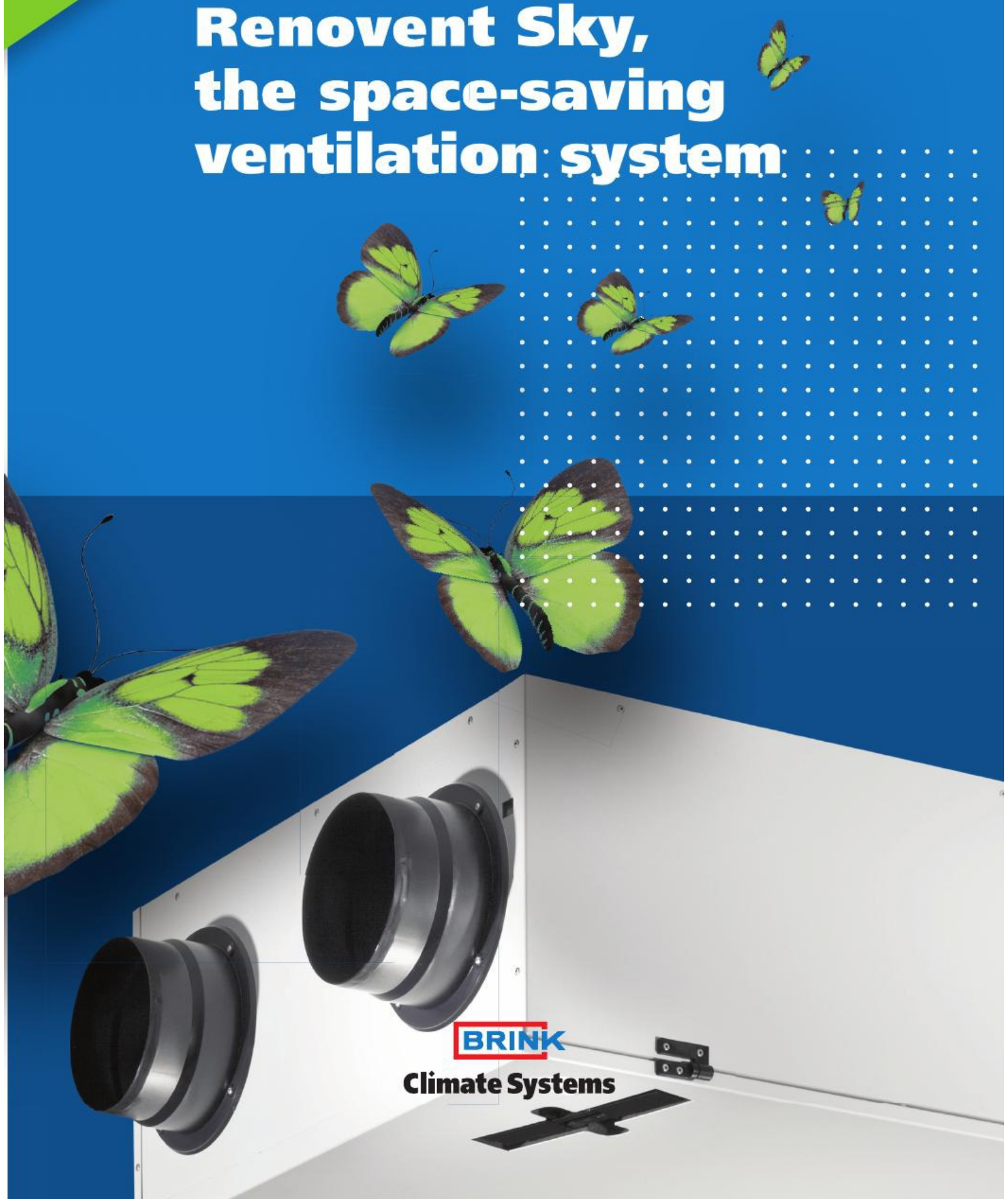
- Moisture recovery till 60%
- Increased comfort
- A high enthalpy efficiency of 136%
- Energy savings on the air conditioner at high outdoor temperatures and high relative humidities
- Standard heat exchanger can be exchanged one-on-one by the enthalpy exchanger
- No condensate discharge required
- Longer service life
- Easily cleaned with water (up to 50 °C)

TECHNICAL SPECIFICATIONS

Technical specifications	Enthalpy exchanger
Temperature efficiency [%]	77 under EN308 at 225 m³/h
Enthalpy efficiency [%]	136 under EN308 at 225 m³/h

Now also
Renovent Sky 150

Renovent Sky, the space-saving ventilation system



BRINK

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Silent, low-energy and comfortable ventilation

With the Renovent Excellent series, Brink Climate Systems offers an extensive range of wall-mounted heat recovery appliances. In response to our clients' demands, Brink Climate Systems introduced ceiling-mounted, high-efficiency appliances, the Renovent Sky 300 and 150. Designed on the basis of Renovent Excellent technology, these appliances are real trendsetters in the field of low auxiliary energy consumption, low noise production and range of applications.

VERSIONS

The high-efficiency appliances Renovent Sky 300 and 150 are particularly suitable for ceiling mounting. The supplied brackets make both appliances also highly suitable for mounting on a wall. The Renovent Sky 300 has a maximum ventilation capacity of 300 m³/h and the Renovent Sky 150 has a maximum ventilation capacity of 150 m³/h. These appliances are unique for their low height of 310 mm for the Renovent Sky 300 and 200 mm for the Renovent Sky 150. Both appliances are also available as 'Plus' version. This version has additional connection options for instance for a CO₂ sensor.

APPLICATION

The Renovent Sky 300 is an excellent choice for offices and apartments where lack of space makes it impossible to place a wall-mounted appliance. The Renovent Sky 150 is catered for the specific demand for appliances for smaller dwellings such as senior citizens apartments and student flats. For renovation applications, its height of only 200 mm makes it easy to mount the Renovent Sky 150 above a suspended ceiling in the central hall of an apartment. In combination with the specially designed module with muffler and connections for the Air Excellent air distribution system, the Renovent Sky 150 can easily provide ventilation for the entire apartment.

CONSTANT FLOW CONTROL

Application of 'constant flow control' guarantees the preset air flowrates, independent of the resistance in the ducts system or the filter fouling degree. The 'constant flow control' system makes initial adjustment easier, and that saves installation costs. On top of that, the filter fouling degree no longer affects the flow rate of the clean outdoor air supply. 'Constant flow control' helps to lower the energy consumption.

SILENT AND LOW-ENERGY

Application of slow-running fans is another aspect that helped Brink Climate Systems to further reduce the sound level. Reduction of

the internal appliance resistance and introduction of a larger heat exchanger also contribute to the noiseless operation of the Renovent Sky. Additional advantage of the measures to reduce the noise level is that they also reduce the auxiliary energy consumption. With the Renovent Sky, Brink Climate Systems succeeded in introducing an appliance that amply complies with the future European requirements of a maximum of 1,000 J/m³.



Brink control module

The Brink control module with time switch function is a standard feature.

CONTROL OPTIONS

The Renovent Sky comes as standard with a control module that can be used to adjust the basic settings. The built-in timer function can be used to set the ventilation intensity per day/week/weekend. Additionally, one or more 4-way switches, wireless RF controls or a humidity sensor may be installed.

FROST PROTECTION

An intelligent frost protection system based on temperature and pressure prevents the heat exchanger from freezing when it is very

cold outside. The Renovent Sky 150 combines this frost protection system with a built-in preheater. An external preheater is available for the Renovent Sky 300. That guarantees the high-efficiency also in winter.

STANDARD BYPASS

The appliances come as standard with a 100% bypass for use when it is warm outside and heat recovery is not desired. The bypass is controlled fully automatically on the basis of the measured indoor and outdoor temperatures.

ENTHALPY EXCHANGER

An enthalpy exchanger is optionally available for the Renovent Sky 300. Such a heat exchanger transfers part of the moisture discharged from the dwelling to the air that is supplied to the dwelling. That is possible because the exchanger features a special membrane film that keeps supply and exhaust air completely separate, but still allows the transfer of moisture between the two air

The advantages

- Constant flow control
- Silent
- Reduced auxiliary energy consumption
- Standard 100% bypass
- Intelligent frost protection
- Communication through the E bus system

flows. The result is a more comfortable indoor climate with a relative humidity that is on average 3 to 5% higher than when using a conventional heat exchanger.

CENTRAL HEATING COUPLER

A central heating coupler is available for the Renovent Sky. The exhausted foul ventilation air and the exhaust flue gases from the central heating boiler can be combined with this central heating coupler. That also saves space in the central shafts. The central heating coupler has been approved by Kiwa in combination with a central heating boiler equipped with a special Intergas burner controller.

TECHNICAL SPECIFICATIONS

APPLIANCE TYPE	300	150
Ventilation capacity at 150 Pa [m ³ /h]	Maximum 300	Maximum 150
System sound emission housing [dB(A)]	< 46 at 225 m ³ /h and 100 Pa	*
Rated power [W] (at 70% of the maximum appliance capacity)	51 at 210 m ³ /h and 50 Pa	*
Dimensions duct connection [mm]	4 x Ø 150/160	4 x Ø 125
L x W x H [mm]	1185 x 644 x 310	1000 x 660 x 200
Air filtering	2 x G4-filter (option: supply filter F7)	2 x G4 filter (option: supply filter F7)
Constant flow control	✓	✓
Standard bypass	✓	✓
Built-in preheater	-	✓
Connection provisions for external preheater	✓	-
Connection provisions for humidity sensor	✓	✓
Also available as Plus version**	✓	✓

* Not yet known at the moment of publishing.

** The Plus versions have additional connections for a CO₂ sensor, geo-heat exchanger, bedroom diffuser and postheater.

Demand flow ventilation

Gearing the ventilation need to the air quality



As these days the insulation level of houses keeps improving, the importance of adequate ventilation increases as well. This means that the quantity of supplied fresh outdoor air must match the discharged quantity of foul exhaust air. In other words: balanced ventilation. Though heat recovery ventilation systems already keep energy losses at a very low level, demand flow ventilation takes it even one step further. Indoor climate sensors or time control can be used to automatically adjust the ventilation quantity to the current need. Air is only supplied to or exhausted where it is actually required.

WHY DEMAND FLOW VENTILATION?

Demand flow ventilation makes it possible to gear the ventilation flow to the indoor air quality. Indoor climate sensors (CO_2 and/or RH = Relative Humidity) measure the air quality in the habitable and wet rooms and automatically adjust the ventilation flow to the measured values. The advantages:

- Higher comfort level through automatic control system
- Optimum indoor air quality under all conditions
- Energy saving potential

EUROPEAN REGULATIONS

Currently European regulations are being prepared to provide an improved valuation of demand flow ventilation systems. For instance, demand flow ventilation improves the product label in the framework of Ecodesign. The demand flow system also has a positive influence on the energy rating calculations for buildings (EN15241).

SENSOR-CONTROLLED OR TIME-CONTROLLED VENTILATION

Demand flow ventilation can be realised through sensor control or time control. Sensor control means that the air supply is controlled on the basis of CO_2 and the air exhaust on the basis of relative humidity. Time control means that the ventilation flowrate is controlled by a preset timer programme. The demand flow system can optionally be equipped with 2-zone control. Then a 3-way valve divides the dwelling into a living and a sleeping zone. That way the living spaces can be ventilated more in the daytime and the bedrooms during the night.



Time control unit

ACCESSORIES

Brink Climate Systems can supply the following components for demand flow ventilation:

- CO_2 sensor
- RH sensor
- Time control unit
- A 3-way air valve for the 2-zone system

CO_2 CONTROL SYSTEM

The CO_2 concentration in a space is mainly determined by the presence of people and the ventilation rate. Then the ventilation supply is automatically controlled through one or several CO_2 sensors. That means the ventilation rate is increased at a high CO_2 concentration and, conversely, a CO_2 sensor prevents excessive and unnecessary ventilation.

HUMIDITY CONTROL

The ventilation exhaust can automatically be controlled with the RH (Relative Humidity) sensor installed in the central exhaust duct. When the humidity concentration increases as a result of cooking and/or showering, the ventilation system is automatically switched to high mode. The sensor sensitivity can be adjusted at the Renovent Excellent or Renovent Sky.



Climate Systems

Demand flow ventilation

Gearing the ventilation need to the air quality

2-ZONE DEMAND FLOW VENTILATION (FROM 1/2014)

Brink Climate Systems takes it one step further with a 2-zone demand flow system. When not all habitable rooms are occupied at the same time, it is not necessary to ventilate at the same rate in all spaces. With 2-zone demand flow ventilation an intelligent 3-way valve divides the air supply between the living and sleeping zones. The valve of a certain zone is opened or wholly or partly shut off on the basis of time or CO₂ control. The valve of both zones may also be open at the same time when both zones are occupied.



3-way valve for the 2-zone system

RH sensor

- Intelligent control system
- For Renovent Excellent and Renovent Sky (all versions)
- Lifetime approx. 15 years
- 2 m. connecting cable



RH sensor

CO₂ SENSOR

- Output: 0-10V
- For use with the Renovent Excellent Plus and the Renovent Sky Plus (2 pieces can be connected)
- Lifetime approx. 15 years
- Operating principle: non-dispersive infrared
- Self calibrating
- Measuring range: 0-2000 ppm
- Rated power: 0.7 W (24 V AC)



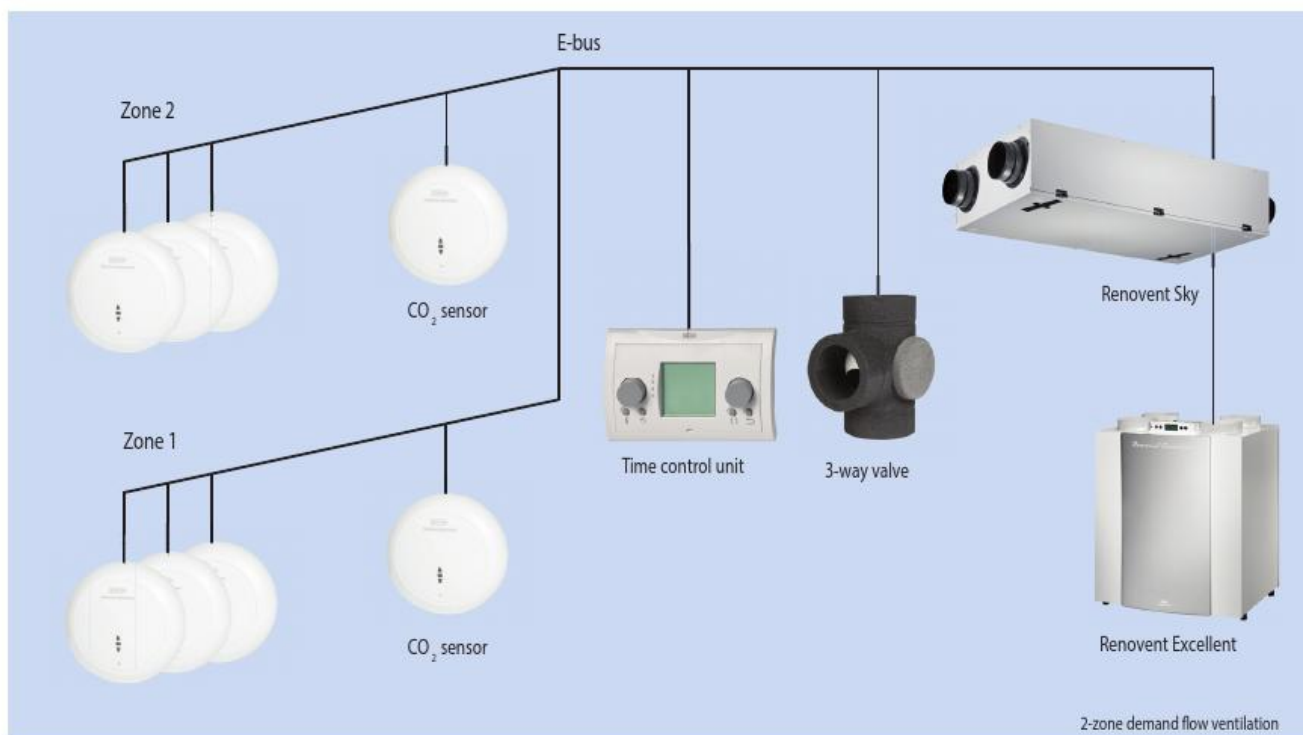
CO₂ sensor

2-ZONE DEMAND FLOW

- E-bus CO₂ sensor
- Up to 8 CO₂ sensors can be connected
- 3-way valve 24 V
- E-bus timer

MORE INFORMATION?

Do you want to know more about demand flow ventilation? Then call Brink Climate Systems B.V. and make an appointment free of engagement.



VENTILATION VALVES

Specially designed ventilation valves

It is recommended to use suitable valves for air supply and extraction in a balanced ventilation system. Specifically for that purpose Brink Climate Systems B.V. developed two ventilation valves made of high-quality synthetic material (colour white, RAL 9016). Both valves have a rubber mounting ring to ensure perfect sealing. Application of clamping springs makes installation simple. Control is continuously adjustable.

Supply valve

The supply valve has a 40 mm raised edge that prevents fouling of the ceiling or the wall. It comes as standard with a strip to create a clean zone. When this strip is mounted, the air is not blown along the adjoining wall. Increasing the valve setting increases the flow rate and reduces the resistance. The supply valve can be mounted in the ceiling (core-side or wall-side). Dependent on the output velocity, the supply valve has a high inductive capacity and a very low noise production. The valve is suitable for ducts with a diameter of 125 mm. The recommended maximum air flow rate is 50 m³/h.



Extract valves

The extract valve can be used where pressure differences are relatively minor and it is specifically suitable for use in damp spaces. The valve fits ducts with a diameter of 100 and 125 mm.

