



Endura[®] Delta

Demand- and app-controlled ventilation system
with heat recovery

Introduction < Endura® Delta

As an occupant we are increasingly aware of the fact that energy-efficient construction should be a qualitative and long-term investment in a healthy and comfortable future. An airtight and well-insulated construction can dramatically reduce our energy bills, but what about the occupant?

Ensuring energy efficiency is the most important basic factor that turns a house into a home, a place where people can live in a comfortable and healthy environment. Elements such as **sun protection** (to prevent overheating), **ventilative cooling** (intensive night-time ventilation during hot summer months) and a **high-quality ventilation system** guarantee a comfortable and healthy indoor climate.



Endura® Delta

- Controlled via the Endura® Delta app
- Demand-controlled ventilation system with heat recovery
 - Integrated humidity, CO₂ & VOC-sensor
- Breeze function (modular bypass)
- Extremely quiet and energy-efficient system

Endura® Delta

The Endura Delta is a demand-controlled heat recovery unit. The system provides the house with fresh air and removes polluted indoor air using two fans. Up to 89% of the heat from the extracted air is transferred onto the supply air via the integrated heat exchanger. The system can easily be controlled and programmed by means of the Endura® Delta app. The app also provides information about the way the system is functioning and the air quality in your home.

The appliance is available in a left and right configuration and with either 4 top connections (T4) or 2 top connections and 2 bottom connections (T2/B2). In addition to the standard integrated frost protection, each model can be equipped with an optional pre-heating element for added security against freezing of the heat exchanger.



330 T4



380 T4
450 T4

Heat recovery

The Endura Delta generates 2 air flows in your home: supply of fresh air in the dry rooms (living room, study, bedrooms) and the extraction of polluted air out of the wet rooms (bathroom, laundry room, kitchen, toilet). The extracted air has the same temperature as the indoor ambient temperature, whereas the supply air has the same temperature as the outside air.

The air flows 'cross' in the heat exchanger, and some of the heat of the extracted air is transmitted onto the supply air. This way you will experience a maximum of comfort in your home.



330 T2/B2



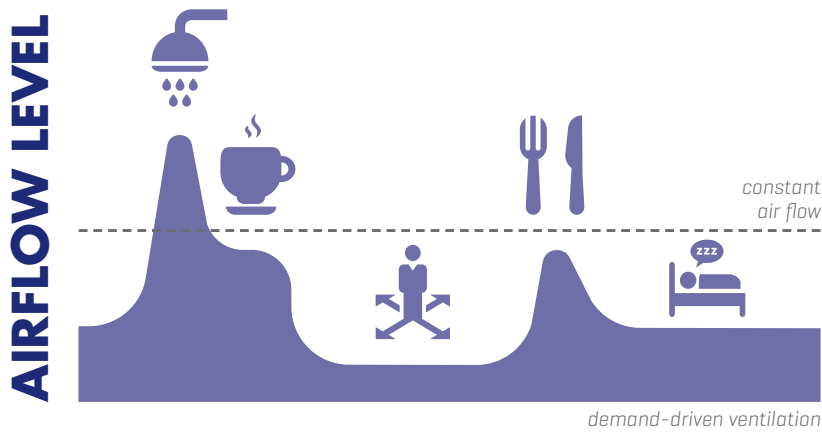
380 T2/B2
450 T2/B2



Demand control < Endura® Delta

Fresh air on demand

The Endura Delta is equipped with dynamic sensors that continuously monitor the extracted air for CO₂, humidity and/or harmful VOCs (volatile organic compounds). On the basis of these measurements, the Endura Delta will adapt the ventilation rate to your living pattern, thus creating a smart and energy-saving form of ventilation.



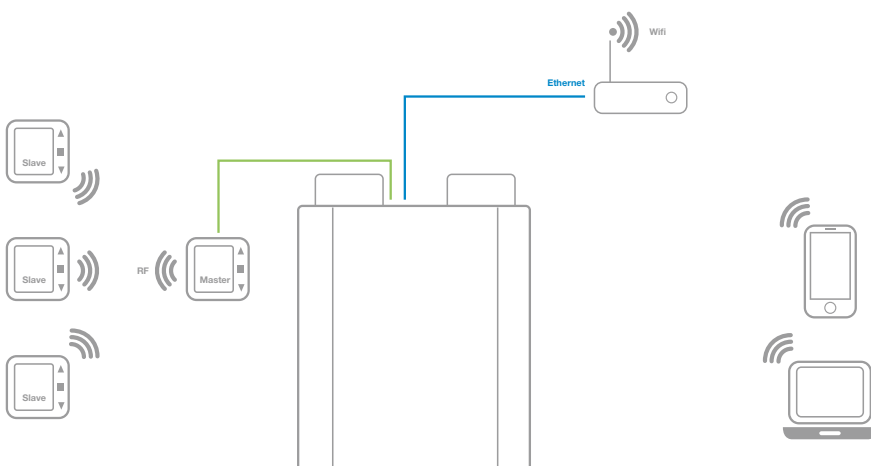
Within a constant air flow, there is not only useless energy consumption, loss of heat and sound emission. There will also be insufficient ventilation when needed.

For instance: The Endura Delta detects that the humidity of the extracted air increases whenever somebody takes a shower. It then temporarily increases the extract airflow rate until the humidity level has sufficiently gone down again.

External air quality sensors

Although the Endura Delta is standardly equipped with internal air quality sensors, it is also possible to install external sensors (CO₂) in the dry rooms. This allows the system to react even more quickly to changes of the indoor air quality.

The air quality sensors indicate the active ventilation level and the actual air quality (colour scale from green to red).



Wireless air quality sensor

Endura® Delta App

As an innovative ventilation specialist, RENSON has set itself the objective to transform every home into a healthy and comfortable living environment. The Endura Delta – a demand-controlled ventilation system with integrated heat exchanger – can be controlled by smartphone or tablet. The app also provides information about the functioning of the system and the air quality in your home.

The Endura Delta app allows you to:

- Control the system by quickly and intuitively navigating through the various menus
- Check the status of the ventilation system. The app offers you feedback on the total air flow, the relative humidity level, the indoor air quality, the inside and outside temperature and the filter status.
- Set timers that allow you to make temporary changes to the current ventilation program
- Configure the unit (installer)
- Fill in a measurement report and register the unit (installer)

Ventilation is made easy by the Endura Delta app!



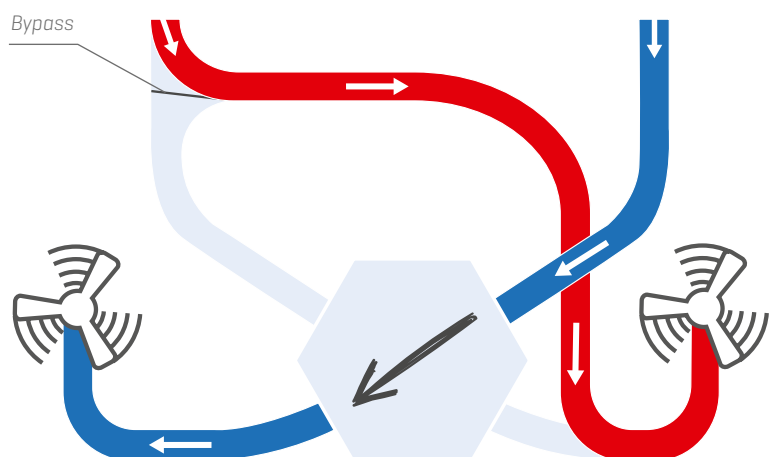


Breeze

The Endura Delta is equipped with a fully automatic summer bypass. This bypass ensures that during hot summer months the house can be cooled down overnight with fresh air from outside. When the bypass is activated, the warm extracted air does not pass through the heat exchanger so that the heat is no longer transmitted onto the fresh air supply. The supply air can then be used to cool down the house. However, the ventilation air flow doesn't need to be increased to achieve a better effect. The bypass is activated automatically depending on the interior and exterior temperatures.

The **Breeze function** also activates the bypass (depending on another condition that should be completed) but you can set the intensity of the ventilation rate.

Apart from the automatic activation, you can also start the Breeze function manually via the Endura Delta app, so you can decide for yourself when and how intensively you want to cool down the house.



Filters

The Endura Delta is standardly equipped with two high-quality G4 cartridge filters (coarse filters) to protect the heat exchanger and the fans against pollution from dust and insects. Cartridge filters recognizable by their accordion-like structure are used because they have a larger filter surface area.

If allergy problems are an issue, it is also possible to install an F7 cartridge filter (pollen filter). These filters retain smaller particles and provide for a greater comfort for people allergic to pollens. As such filters have more narrow openings, they present a greater resistance to flow, and this will have an influence on the efficiency of the system.



Frost protection

The Endura Delta is standardly equipped with a frost protection mechanism. If the outside temperature drops below zero, there is a danger that the heat exchanger freezes. As heat is transferred from the extracted air to the supply air, condensation forms in the heat exchanger. Condensation is drained off through a condensation drain connected to the plumbing. If the supply air temperature is below zero in winter, the possibility of condensation freezing in the heat exchanger cannot be excluded. In this case the efficiency of the appliance drops dramatically and there is a chance of damages to the heat exchanger.

To prevent this, the Endura Delta is equipped with a frost protection facility. The proportion of warm extracted air to cold supply air is increased so as to maintain positive temperatures for as long as possible.

There is also the option to equip the Endura Delta with an electric pre-heating element. At temperatures below zero, this pre-heating element prevents freezing by partially pre-heating the supply air. The pre-heating element works according to a modular principle to ensure that the extra electricity consumption remains as low as possible.



Air ducts < Endura® Delta

Easyflex®

A good ventilation unit isn't enough to ensure proper ventilation of your home. Well-designed and qualitative air ducts are crucial in ensuring good and quiet ventilation. RENSON's Easyflex duct system has been specifically designed to achieve optimum ventilation with the least possible impact on comfort of the occupants tightness.



Air tightness

The unique connection system ensures an almost perfect airtightness. The coupling piece with integrated double rubber seal is inserted into the flexible duct and clamped by means of a quick fastener, producing a completely airtight whole. The quick fastener can be anchored in the ground to ensure that the connection cannot move.



Airflow rate guaranteed

A large diameter was specifically put forward when designing the Easyflex flexible air ducts. This allows for the movement of large volumes of air (57 m³/h) at a low air speed (2.5 m/s). The combination of size and excellent air-tightness ensures that each room gets the required airflow (assuming the installation instructions are respected).



Acoustic comfort

The large size of the air ducts also has an effect on the acoustic comfort, because the possibility of whistling noises resulting from a high air speed, is drastically reduced.

The design of the SQair input and extraction valves also contributes to the acoustic comfort in the house.



SQair

The Endura Delta uses special acoustically optimized valves to guarantee that exactly the right amount of air is supplied and extracted from each room. With their sleek design (flat, white aluminium cover plate), these valves blend in perfectly with any interior design style. The supply and extraction valves have the same appearance and can be installed very unobtrusively.

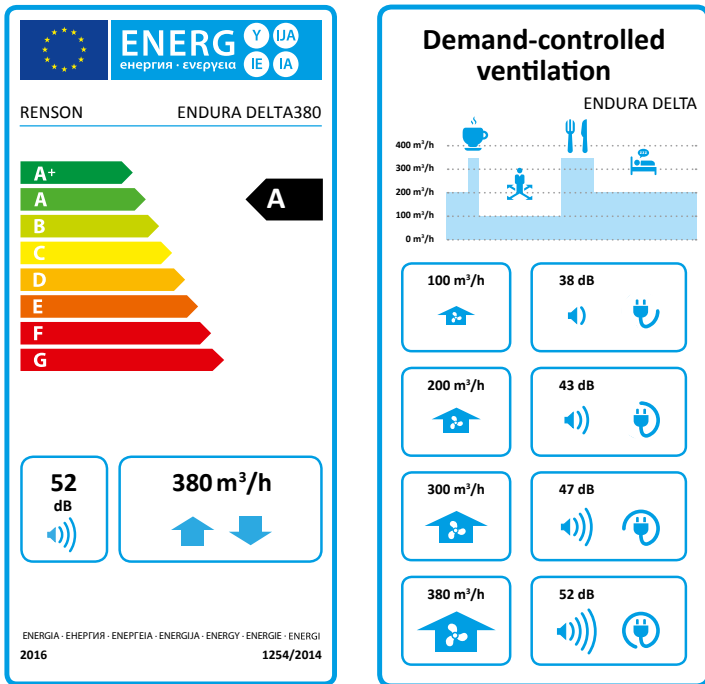
The integrated rotary valve allows you to adjust the airflow rate exactly as required in each room.

The direction of the airflow can be controlled by means of deflectors in the Deluxe supply valve. This ensures that any draughts coming from the valve can be kept to a minimum.



Energy label

Ecodesign is a European directive that provides a frame of reference for assessing the energy efficiency of electrical appliances, providing end customers with the information they need on the consumption and performance of the appliances that they purchase. As of 1 January 2016, ventilation manufacturers have to equip their ventilation systems (for residential buildings) with energy labels such as those required for other electrical appliances containing basic device information. This includes information about the noise levels generated by the unit, the total airflow value and the energy class (A to G).



The energy label takes into account the maximum air flow. Thanks to the demand-controlled system, the Endura Delta will rarely work on its total air flow.

Product	Label	Sound power level (LWA) dB(A)	M³/h
Endura Delta 330	A	52	330
Endura Delta 380	A	52	380
Endura Delta 450	A	53	450



330 T4



330 T2/B2



380 T4
450 T4



380 T2/B2
450 T2/B2

Technical specifications

EPB product data pending	Endura Delta 330	Endura Delta 380	Endura Delta 450
Total air flow	330m³/h at 150 Pa	380m³/h at 150 Pa	450m³/h at 150 Pa
Efficiency (EN308)	89% at 100m³/h 84% at 250m³/h 82% at 325m³/h 81% at 350m³/h	88% at 100m³/h 85% at 200m³/h 83% at 300m³/h 81% at 400m³/h	87% at 100m³/h 83% at 250m³/h 81% at 350m³/h 79% at 450m³/h
Maximum power consumption	2 x 85W	2 x 83W	2 x 115W
F _{reduc,vent}	0,93		
Fans			
	EC fans		
	Constant flow control		
Unit			
Dimensions	862x745x520 mm (HxWxD)		
Weight	41 Kg	46 Kg	46 Kg
Connections	180/150 mm or 200/180 mm		
	T4 (4 upper connections)		
	T2/B2 (2 upper and 2 lower connections)		
Configuration	Available in left or right configuration		
Optional pre-heating element	Max power 1000 W		
	Modularly controllable		
Full bypass	Automatic		
	Modular control		
	Breeze function		
Integrated condensation drain	Ø 32 mm		
Filters	2 x G4 cartridge filters		
	F7 cartridge filter (optional)		
Integrated TouchDisplay in front panel	-	Configure and control unit	Configure and control unit
	-	Error messages	Error messages
	-	Filter message	Filter message
	-	Visualization of ventilation levels	Visualization of ventilation levels
Internal sensors: demand-controlled ventilation	Relative humidity		
	CO ₂		
	VOC		
External input/output	Digital input/output 24V		
	Analogue input/output 0-10V		
Ethernet connection	For using Endura Delta app		
External air quality sensors	External air quality sensors can be joined (master Touch Display + slave air quality sensors)		
Pre-heating element	Optional integration		
Functionalities			
Operation	Schedule		
	Timers		
	Demand-controlled via internal and/or external sensors		
Frost protection	Automatic		
Breeze function	Optimal cooling in summer		
Open hearth function	Via external pulse switch		
	Temporary overpressure		
Holiday mode	Most energy-efficient ventilation during absence		
Filter message	Indication when filter cleaning/replacement is due		
Control			
Endura Delta App	Android, iOS, Windows		
TouchDisplay	Internal or external (optional)		



Creating healthy spaces

RENSON®: your partner in ventilation and sun protection

RENSON®, headquartered in Waregem (Belgium), is a trendsetter in Europe in natural ventilation and sun protection.

- **Creating healthy spaces**

From 1909, we've been developing energy efficient solutions assuring a healthy and comfortable indoor climate.

Our remarkable headquarters – built according to the 'Healthy Building Concept' – is a beautiful example portraying our corporate mission.

- **No speed limit on innovation**

A multidisciplinary team of more than 80 R&D employees continually optimize our products and develop new and innovative concepts.

- **Strong in communication**

Contact with the customer is of the utmost importance. A group of 100 in-the-field employees worldwide and a powerful international distribution network are ready to advise you on site. EXIT 5 at Waregem gives you the possibility to experience our products on your own and provides necessary training for installers.

- **A reliable partner in business**

We can guarantee our customers optimal quality and service thanks to our environmentally friendly and modern production sites (with automated powder coating line, anodisation line, uPVC injection molding machinery and mold making shop) covering an area of 95.000 m².

Dealer



RENSON® reserves the right to make technical changes to the products described here.
RENSON® meets EPB requirements. You can download the latest brochures at www.renson.eu



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Creating healthy spaces