

The quality of indoor air in residential ventilation



DUCOBox Energy Comfort

DUCOBox Energy Premium



What is
(heat recovery) ventilation?

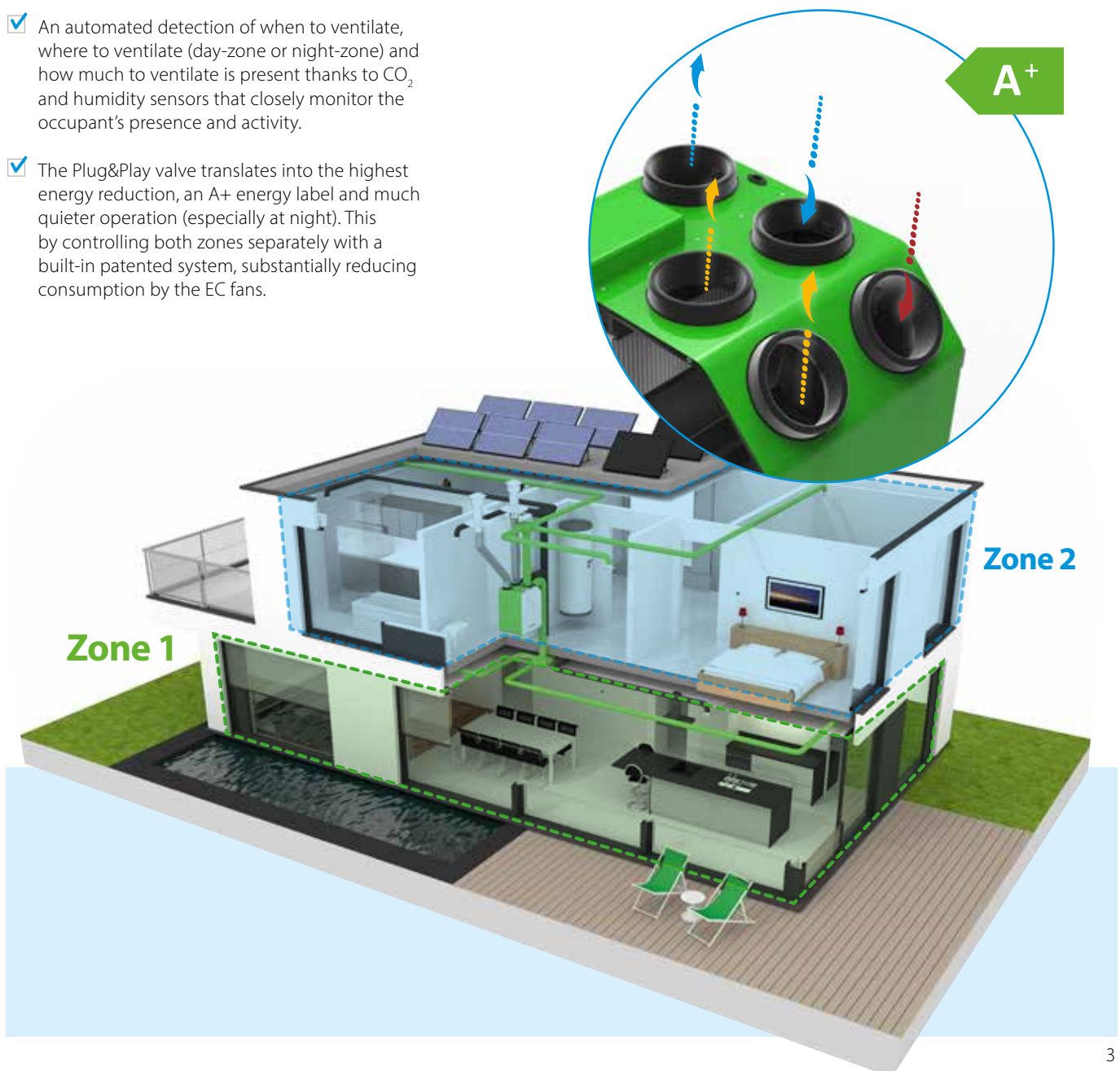
Replenishing the air = making the indoor air healthier

Ventilation is all about allowing a house to breath. It is useful for allowing fresh, healthy outdoor air to come inside. Ventilation takes place through the action of dedicated devices which act like actual lungs.

- ✓ Did you know that fresh air is different than cool air? Indeed, cool air refers to air at low temperature, while fresh air means that the air is more pure, coming from outside of the house.
- ✓ To guarantee the health of its inhabitants and of the house itself, it is critical that the indoor air is replenished (removing contaminants and letting outdoor fresh air in).
- ✓ Indoor air can be up to 5 times more polluted than outdoor air.
- ✓ At Daikin, in partnership with DUCO, we provide double flow ventilation (also known as CHRV - Centralized Heat Recovery Ventilation) to be able to offer a full solution for residential applications.

2-zone ventilation system

- ✓ An automated detection of when to ventilate, where to ventilate (day-zone or night-zone) and how much to ventilate is present thanks to CO₂ and humidity sensors that closely monitor the occupant's presence and activity.
- ✓ The Plug&Play valve translates into the highest energy reduction, an A+ energy label and much quieter operation (especially at night). This by controlling both zones separately with a built-in patented system, substantially reducing consumption by the EC fans.



Why is it essential to properly ventilate?

Indoor air can be up to 5 times more polluted than outdoor air



Every day we breath in 15.000 liters, roughly 15 kg, of air. The air we breath can be damaged by pollutants. Ventilation is therefore essential to keep under control the amount of impurities inside our buildings.

- ✓ Life inside a house creates pollutants (breathing, heating, cooking, cleaning products, emissions from materials, activities, etc.).
- ✓ According to the study by the OPQAI (Professional Office for the Qualification of Interior Designers), only 16% of residents measured have an acceptable concentration of CO₂, 93% have dust mite allergens, and 80% have very high concentrations of formaldehyde!
- ✓ Nowadays, we have more confined ways of living: 90% of our time is spent indoors, of which 30% is spent sleeping in a bedroom.

Indoor environment quality components

Ventilation:

Ensures the provision of fresh and clean air.

Energy recovery:

Delivers energy savings by transferring heat airflows, thus helping to bring supply air to the required indoor conditions of temperature and humidity.

Humidification:

Ensures the desired moisture level in the conditioned space.

Particles & areas of deposit



The lighter and smaller a particle is, the longer it stays in the air.

PM₁₀:

All particles up to 10 µm (0.01 mm) deposit in the **nose and pharynx** of the human respiratory system.

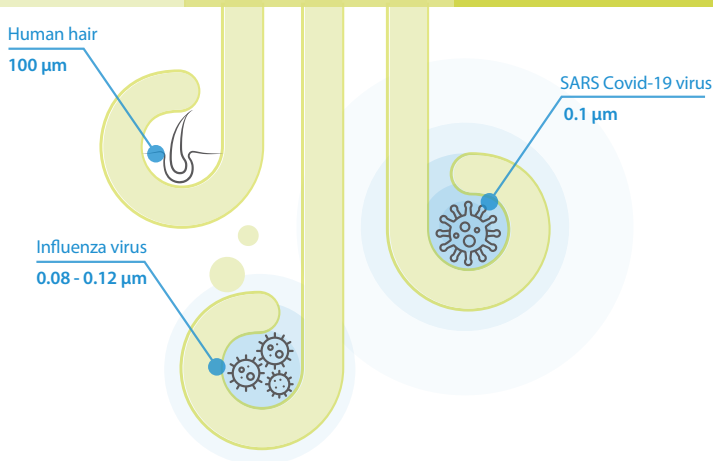
PM_{2.5}:

All particles up to 2.5 µm (0.0025 mm) are small enough to reach the human **lung**.

PM₁:

All particles up to 1 µm (0.001 mm = 1 micron) are small enough to find their way of the alveoli into the human **blood stream** and cause life-threatening diseases.

Due to their harmfulness (high risk for cardio vascular diseases), permanence and frequency, particles smaller than 2.5 µm (i.e. PM_{2.5} and PM₁) need the most attention.

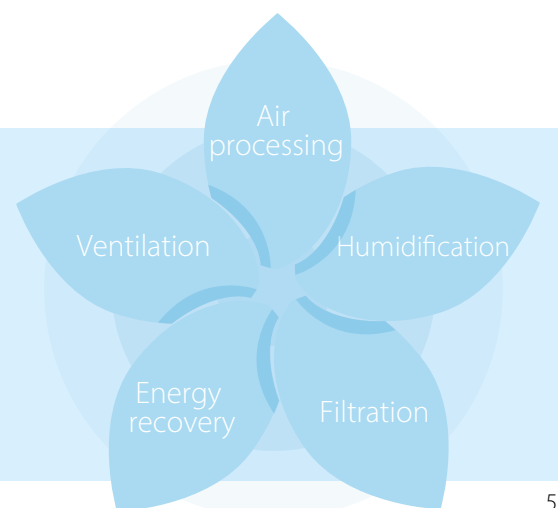


Air processing:

Delivers the required conditioned air to optimize the energy efficiency of indoor HVAC equipment.

Filtration:

Ensures clean and healthy air by filtering out pollen, dust, odors and other contaminants that are harmful to our health.





Allow us to provide advice

Ask for a ventilation system... which breathes!

- ✓ In 2015, Cerema revealed that 58% of new homes demonstrated failures to comply with the requirements of the regulations governing the ventilation of houses, in particular relating to extraction airflows. This level of non-compliance has been a repeated problem for several decades and has not seen any improvement over time.
- ✓ Regularly clean your air vents. To do so, you can take advantage of the practical DucoVent Design vents distributed by Daikin. Their magnetic strips on the cover plates allow easy installation and an even easier cleaning process.

Take care of the indoor air your family is breathing

- ✓ Choose a ventilation system to improve the indoor air quality, while at the same time achieving energy savings thanks to heat recovery.
- ✓ Thanks to remote CO₂ detection sensor, you can only ventilate when there is a real need to do so. Better still, when upgrading, you can fit a CO₂ detection-based zoned extraction system.



Are you refurbishing your home?

- ✓ Undertaking a refurbishment is an excellent opportunity to ask yourself questions that will have an impact on indoor air quality.
- ✓ Insulating a house (and therefore altering its "envelope") will have an impact on the renewal of indoor air. A professional ought to suggest replacing the ventilation system, where necessary.
- ✓ The tightness of air ducts affects indoor air quality, so make sure to have them checked.
- ✓ Use a double-flow ventilation system because as well as recovering heat via the air extract, it improves heating comfort with the air intake by means of a single centralised point rather than a window-based solution. Furthermore, air filtration makes a significant contribution to achieving excellent indoor air quality (don't forget to regularly change your filters!).

Why choose double-flow DUCO?

DUCO provides you with the opportunity to make your double-flow mechanically controlled ventilation units even more high-performing.

✓ Time-saving

Automatic calibration reduces the installation time by 60%.

✓ Easy to maintain

All components easily accessible from the front.

✓ Simplicity

Its ease of installation reduces problems later on.

✓ Interactive

Smart communication by connecting with ModBus or local network.

Optimise your ventilation system by introducing “on demand” double-flow, humidity and CO₂ detection-based features.



Energy efficiency

- › 10% ventilation when there is no demand is always guaranteed.
- › 2-zone operation (Energy Premium).



Health

- › GUARANTEED indoor air quality thanks to continuous, reliable and high-precision electronic measuring combined with filtration on the intake air.



Comfort

- › Whisper-quiet noise level thanks to the modulating motor (Energy Comfort and Premium) and 2-zone operation (Energy Premium).



The double-flow “DucoBox Energy” range



DucoBox Energy Comfort

- › Double-flow mechanically controlled ventilation units with heat recovery via the air extract.
- › High efficiency thanks to a high-performance heat exchanger.
- › Filtered (enhanced IAQ) air intake.



Specific advantages of the COMFORT

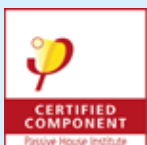
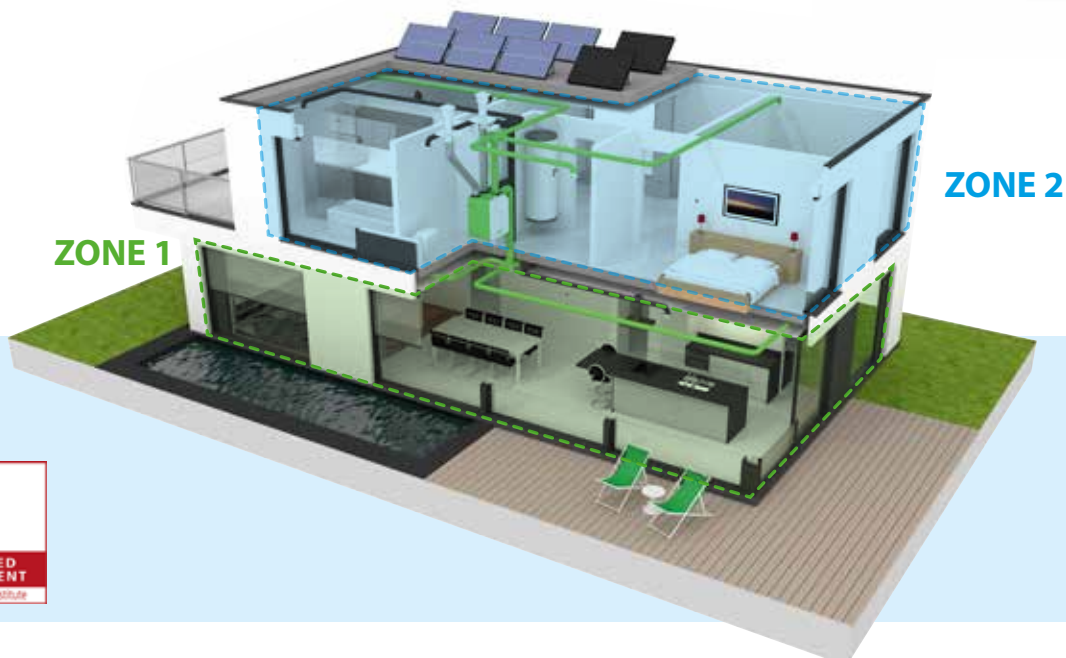
- › Compact and lightweight: only 21 kg.
- › Left <-> right interchangeability without physical intervention on the machine to fit your home.
- › Copy-paste function for roll-out construction (housing development).



DucoBox Energy Premium

Specific advantages of the PREMIUM

- › Unparalleled acoustic performance: the quietest ventilation system on the market on the supply side (gain of 6 dBA to 11 dBA).
- › 2-zone regulation as an option (integrated control valve).
- › Maximum energy efficiency.



Why DUCO?

DUCO offers end-to-end solutions

One-stop-shop for your end-to-end ventilation solution

Complete range of Centralized Heat Recovery Ventilation (CHRV) units, ducts & accessories.

Smart demand control

The room is only ventilated when necessary and in the correct amount. CO₂ concentration and air humidity are used as indicators. This helps avoiding unnecessary heat loss while guaranteeing an optimal indoor climate.

The quietest systems

A comfortable indoor climate is created by extremely quiet ventilation systems. DUCO excels in acoustics in its supply air.

Minimised duct system

Residential units often lack technical rooms, making it difficult to implement a system that requires a lot of ducts. Thanks to air supply control (the so-called DucoTronic System), DUCO is able to minimise the amount of piping.

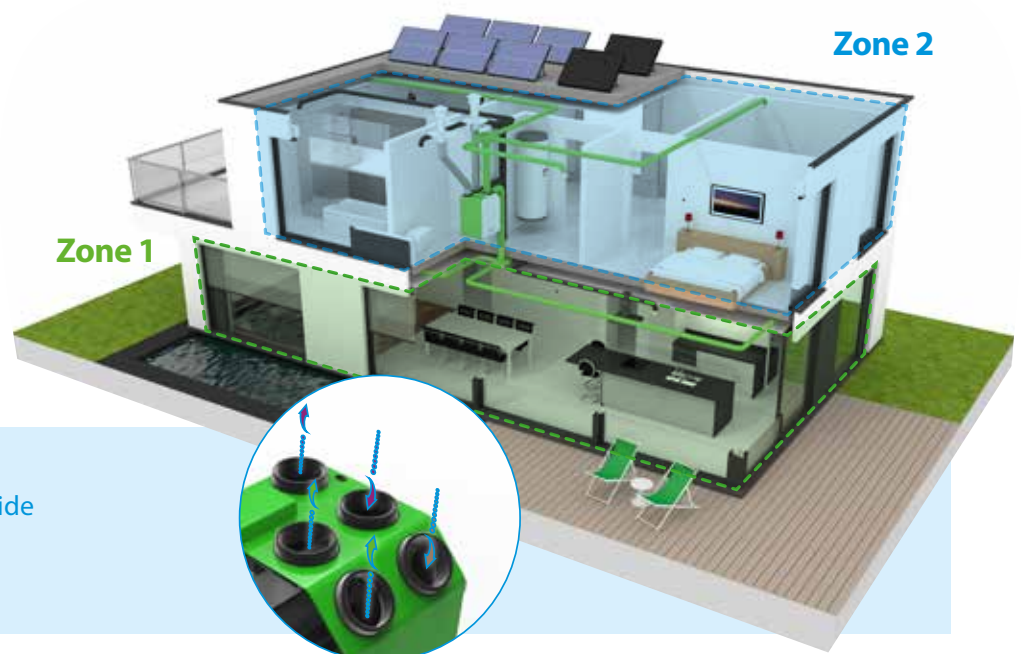
Care-free installation

DUCO puts together the best features and devices to ensure the ultimate care-free installation: automatic configuration, RF or wired communication, pre-programmed connection with Niko Home Control, Q-bus or ModBus...

Only at Daikin

Thanks to DUCO, Daikin offers Centralized HRV systems with an integrated 2-zone valve. With the 2-zone version of the DucoBox Energy Premium, Daikin's product range is extended to a unique ventilation system with embedded 2-zone control. If a certain area of your house does not require ventilation, that area is not ventilated. Cost savings on heating, lower consumption and noise comfort of the unit itself (lower rpm) are the logical consequences.

Sensors meticulously detect the residents' movements throughout the home. This makes it possible to automatically determine where, when and in what amount ventilation is required.



- ✓ Quietest ventilation system on the market on the supply side
- ✓ Automatic configuration



A manufacturer providing a global solution

We care for the air

We deploy our years of experience in air conditioning and our passion for innovative technologies to make the air we live in the best possible air. And we want to do that while caring for the environment and protecting future generations. By 2050, we aim at becoming carbon neutral in all products and solutions we sell. At Daikin, this is our mission.

A manufacturer committed to a healthy indoor climate

The Daikin group globally has a complete line-up of ventilation and air purification equipment. In 2021, Daikin's air purifiers were tested by the renowned Institut Pasteur de Lille and confirmed to be highly efficient in removing respiratory viruses such as Coronavirus and the common flu. Daikin Europe aims at becoming the European leading player in the ventilation and air purification market.

To achieve the best indoor climate,
we provide at once:

- ✓ Hygienic ventilation to guarantee optimal indoor air quality
- ✓ Intensive/night-time ventilation to replenish buildings naturally



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FSC

ECPEN21-798

01/22



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Printed on non-chlorinated paper.