

ErP: Consequences for ventilation systems

The EU Directive 1253/2014 was ratified as part of the Ecodesign Directive. This concerns the "Ecodesign requirements for ventilation systems."

From 1 January 2016, important requirements will apply to ventilation systems and are due to be extended further from 2018. These requirements are intended to improve the efficiency of ventilation systems and as a result should lower energy consumption. If a bidirectional ventilation system is to be installed, the use of an energy efficient Hybrid ECO System

made by Kampmann is recommended. In this system, the air exchange is limited to the bidirectional ventilation unit. Decentralised units provide the thermal conditioning of the interior. This combines the unbeatable efficiency of decentralised units with the heat recovery capability of a ventilation unit.

Summary of the most important points from the EU 1253/2014

- ▶ Separation of ventilation units into residential ventilation units (RVU) (up to 250 m³/h*) and non-residential ventilation units (NRVU) (from 250 m³/h*)
- ▶ The separation of ventilation systems into unidirectional ventilation systems and bidirectional ventilation systems
- ▶ Obligation to provide multi level (> 2 levels) or variable control of fans

* between 250 m³/h and 1000 m³/h the manufacturer can choose the assignment as RVU or NRVU

- ▶ Specifications on fan efficiency
- ▶ Obligation that bidirectional ventilation systems provide heat recovery
- ▶ Specification of minimum efficiency of heat recovery
- ▶ Heat recovery must be controllable and equipped with a thermal bypass
- ▶ max. power consumption/efficiency of the entire ventilation unit

As of 1 January 2016, there are several options for providing the air change inside a building:

1. The unidirectional ventilation system, in which the supply air **or** the extract air is delivered or extracted by a single fan. The airflow not delivered by a fan must be able to enter or exit freely. In other words, it must not be propelled by a separate fan.
2. Bidirectional ventilation system as an AHU unit **with** integral heat recovery. In this case, thermal energy is drawn from the extract air and transferred to the supply air. Both air streams are moved by fans.
3. Bidirectional ventilation system as a **Kampmann Hybrid ECO System** with heat recovery. In this the air exchange is provided by a single bidirectional ventilation unit. Decentralised units provide the thermal conditioning of the interior. This combines the unbeatable efficiency of decentralised units with the heat recovery capability of a ventilation unit.

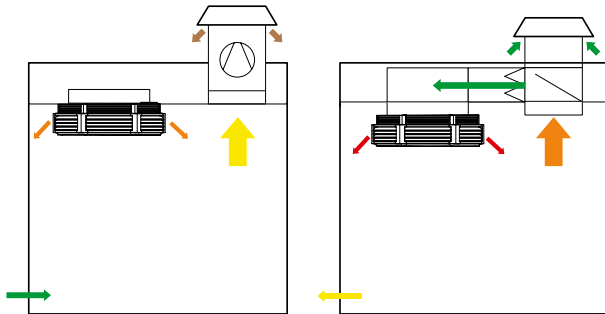
Overview of requirements made for bidirectional ventilation units according to the ErP	Applicable from 01/01/2016	Applicable from 01/01/2018
Level of heat recovery efficiency		
▶ Thermal wheel/plate heat exchanger/miscellaneous	67 %	73 %
▶ Run-around HRS	63 %	68 %
Max. permissible SFP_{int}	Level 1	Level 2, more stringent
Minimum fan efficiency	Level 1	Level 2, more stringent
Optical or acoustic filter indication/warning	–	Obligation

Do you have any questions on the Hybrid ECO System or would you like a selection / quotation? We look forward to hearing from you.

On the following page you will find an overview of possible systems from 1 January 2016.

Possible system configurations post 1 January 2016

1. Unidirectional ventilation system with free replenishment



A single fan provides the air exchange. Depending on whether version 1 or 2 is chosen, the interior will be subjected to slight positive or negative pressure, forcing the air inwards or outwards through the exterior building skin by means of openings.

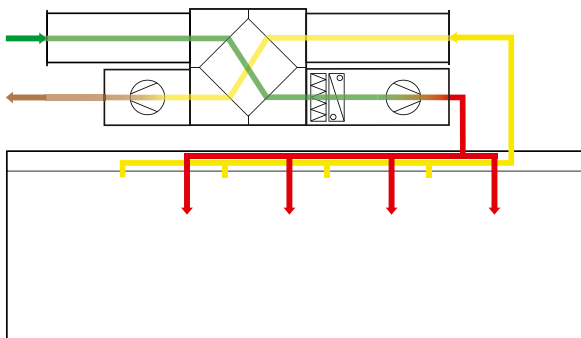
Advantages

- ▶ low investment cost
- ▶ few and small air ducts
- ▶ long filter service life
- ▶ efficient thermal conditioning by decentralised units

Disadvantages

- ▶ no heat recovery

2. Bidirectional ventilation system as an AHU unit with heat recovery (HR)



Contrary to the Hybrid ECO System, this kind of system provides thermal conditioning via the AHU.

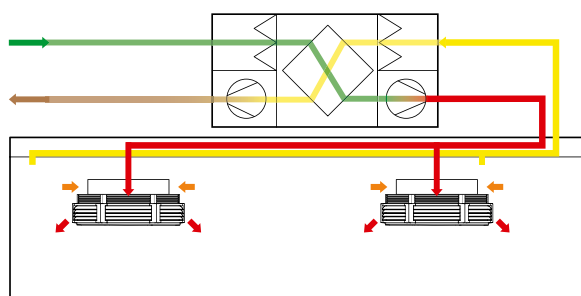
Advantages

- ▶ components can be freely selected according to the modular design principle, for example with the Airblock FG

Disadvantages

- ▶ large space required for unit and ventilation ductwork
- ▶ reduced filter service life
- ▶ fans have higher power consumption

3. Bidirectional ventilation system Hybrid ECO System with heat recovery (HR)



This kind of equipment can be considered an alternative to bidirectional ventilation systems without HR. Air exchange is provided by an AHU with efficient heat recovery; thermal conditioning is provided by decentralised units.

Advantages

- ▶ reduced air duct dimensions (compared to AHU above)
- ▶ ventilation unit requires less space (compared to AHU above)
- ▶ long filter service life
- ▶ efficient thermal conditioning by means of decentralised units
- ▶ several rooms can be ventilated by a single ventilation unit

We would be happy to assist you with your enquiry.

For further information see
Kampmann.co.uk