

Everybody knows that air quality is a determining factor when it comes to comfort at home and in the office. Additionally construction sets a major priority upon cutting energy costs. Aereco has been meeting both of these demands by designing and manufacturing innovative flow modulated ventilation units for the past twenty years. Aereco proved to be a forerunner with the invention of the humidity sensitive ventilation system. Today it continues to pursue research, consistently offering new solutions to intelligent ventilation that is adapted to the specific needs of each private dwelling and business environment.

The humidity sensitive ventilation process is a landmark in flow modulated ventilation systems in France. It has bestowed Aereco and its products with an image that insures quality and technical know-how, making Aereco a formidable player in the ventilation sector both in France and abroad. In conjunction with its commercial activities, the company is very engaged in improving regulations in those countries so as to optimise the position that ventilation holds in the building industry.

Aereco is located in France in Marne la Vallée.

Ventilate : A vital need, an essential gesture for health

Emitted by human metabolism, by the human activity or by constitutive materials of housing, the inner pollution of dwelling exists in various forms.

However moisture remains a determining factor for the health of frame and the inhabitants ; it is also a relevant revealing of the state of pollution of housing. The excess of moisture mainly comes from the human activity : steam produced by breathing and evaporation resulting from cutaneous or domestic activities factors (washing, cooking, washing up, linen washing, drying of the linen...), and even a great quantity of plants contribute to raise the inner humidity rate.

In the new or thematically renovated buildings, the lack of ventilation, associated with reinforced insulation and air tightness may cause important damage due to the humidity : condensation on the cold bridges, on glazing, on avoids-vapour of insulator turned toward the outside of the construction, degradation of the insulator of the dividing walls...

Other pollutants such as the carbon dioxide (CO₂) and other volatile organic compound (VOC) supplement the list of the major pollutants met in housing. The emission of carbon dioxide, mainly due to the breathing (a man throws off by this way in average 19 l/h of CO₂), is often accompanied by a steam emission ; that's why the reading of the water rate is a relevant mean of measurement of the state of pollution of housing.

to the left :

Cooking, drying linen or taking a shower are important sources of steam emission in housing

Orders of magnitude of steam emission in housing	
	Steam in g/h
Heat shower	2000
Pot with discovered boiling	900
Gas stove with large fire	400
Pot with covered boiling	350
Hot bath	300
Perspiration of a person in activity	250
5 kg of linen to dry	200
Gas stove with small fire	100
Hot dish on a table	60
Breathing of a person at rest	50

(values given under frequently met conditions)



«Ventilate where it is necessary,
when it is necessary, in correct quantity»

Such is the idea which directs the design of the Aereco products. The components of the ventilation system are controlled and activated according to the needs in each room, of each type of activity. 4 principal modes of action are distinguished :

The humidity sensitive airflow, created by Aereco in 1984.

The airflow activated manually

The airflow activated by the presence sensor

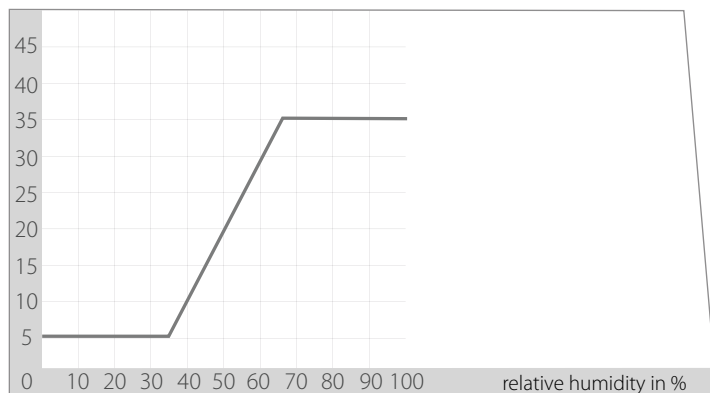
The airflow activated by the agitation sensor

The humidity sensitive airflow

As the real engine of humidity sensitive products it makes use of a known physical phenomenon: the property of some materials in stretching when air humidity rises and shrinking when the air gets drier. On this principle, the 8 nylon material strips of the V8 sensor activate one or more shutters, thus setting the flow of air according to the relative internal humidity. The greater the humidity within the home the more widely open the shutters are. The V8 sensor is insulated from the air inflow ; it measures only the internal humidity. Moreover, thanks to a thermal equaliser it controls shutter opening irrespective of external weather conditions.

The humidity sensitive technology is used on humidity sensitive air inlets, grilles and extract units, in rooms where humidity reveals the inner pollution level (living room, bedroom,kitchen, bathroom).

Flow rate in m³/h



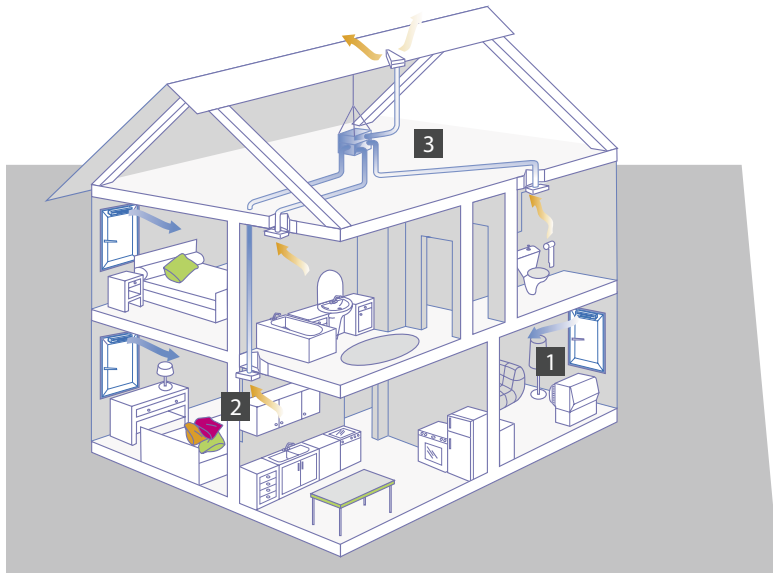
Peak airflow activated by switch



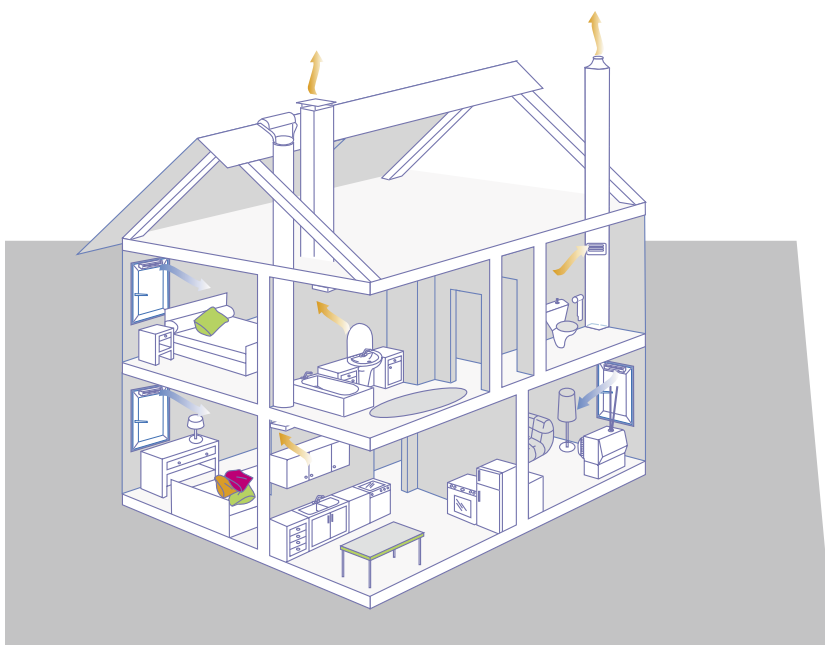
V8 Humidity sensitive sensor



Automatic peak airflow by presence detection



Mechanical ventilation in individual housing



Passive stack ventilation system in individual housing



VBP assistance fan (hybrid ventilation)

A good ventilation means a ventilation technology properly adapted to the needs.

The components of Aereco ventilation optimise each ventilation technology in order to improve the inner air quality, to limit thermal losses and to protect the frame structure.

In **mechanical ventilation**, the renewal of the air in the dwelling is ensured by the presence of a central fan (3). It is located in the roof, on terrace as well as in an attic or inside the dwelling in housing or apartments. Thanks to the pressure generated by the fan, the humidity sensitive extract units (2) balance the extracted airflow according to the needs in the technical rooms and dwellings. The admitted new air is then distributed by the humidity sensitive air inlets (1) according to the needs in the main rooms.

Thus, the rooms and the dwellings with important needs benefit from a greater airflow than the empty rooms or dwellings.

In **passive stack ventilation**, fan is replaced by vertical ducts connected to extract units. The natural draught generated by the wind and outside temperature effects creates the depression. Tributary of these natural motors, the passive stack ventilation may be random : it is so necessary to domesticate it. While measuring the water rate in order to determine the airflow, the humidity sensitive technology gives an adapted answer to the variability of the natural motors.

At the parting of the ways of the passive stack ventilation and mechanical ventilation, the hybrid ventilation is a new concept using components and dimensioning of the passive stack ventilation ducts coupled with a low-pressure non-permanent mechanical assistance. The mechanical assistance is only used when the forces of the natural engines are not sufficient to ensure the required flows. Its start-up is automatic ; it can be activated by a temperature sensor or a pressure controller. The hybrid ventilation aims at gathering the advantages of simplicity of maintenance, energy sobriety, acoustics and reliability of the passive stack ventilation with the aeraulic performances of the mechanical ventilation.

Efficient components for an optimal ventilation

Through humidity sensitive air inlets, inner silent fan and extract units controlled by sensors, the Aereco ventilation components concentrate the best of the technology to offer the ideal compromise between air quality and energy saving.

Simplicity and performance

The Aereco components and ventilation systems combine simplicity of operation and technical performance. They are controlled by intelligent systems able to detect automatically the humidity rate, the presence, the agitation, revealing factors of the local state of occupation and inner pollution.

Discretion and effectiveness

Particularly neat design for a perfect integration in housing, powerful acoustics : the Aereco ventilation components are discrete ; you will notice their presence only by the comfort and the wellness they provide.



Aereco, it is a full range of air inlets, extract units, accessories and efficient fans :

- 1 Humidity sensitive air inlets
- 2 Humidity sensitive extract units with presence peak airflow for mechanical ventilation
- 3 Extract units with presence sensor for mechanical ventilation
- 4 Humidity sensitive extract grilles for passive stack ventilation
- 5 Acoustic fans



1



2



3



4



5



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