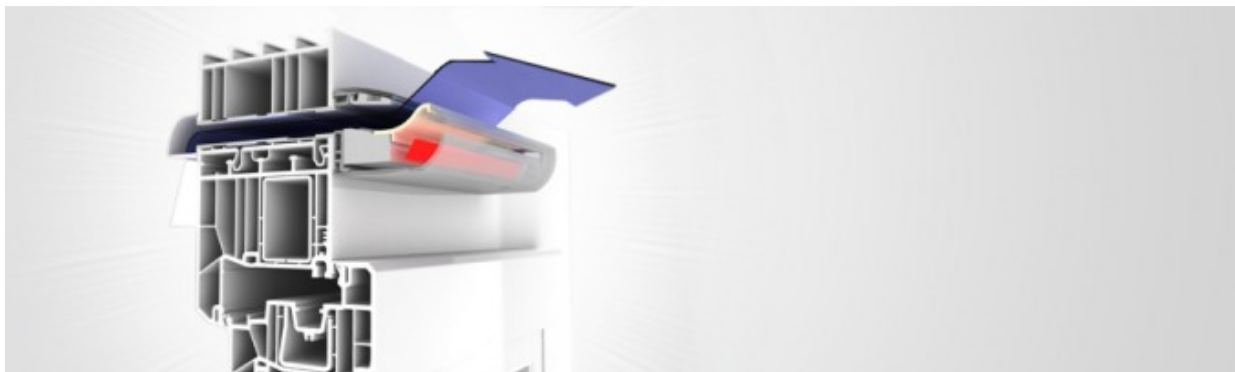


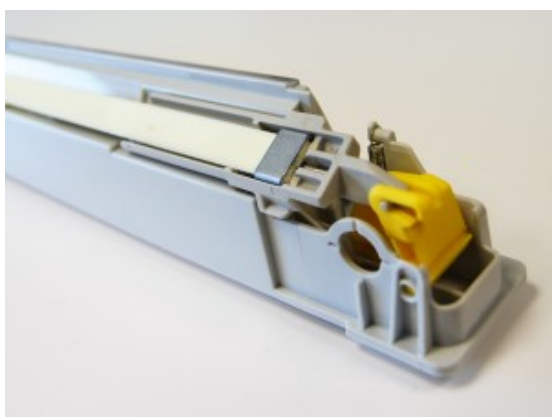
Humidity sensitive ventilation



Invented in 1984 by Aereco, humidity sensitive air inlets and extract units automatically adjust airflow in response to relative indoor humidity, without electricity.

Working of the humidity sensitive ventilation

Aereco humidity sensitive ventilation systems are principally based upon the modulation of airflow, through air inlets and extract units, using an ingenious mechanical sensor which (without electricity) directly drives a shutter set in the air stream.



An accurate and reliable automatic sensor

As detector and driver of our humidity sensitive products, the hygro-sensor exploits the natural tendency of certain materials to expand and contract with the rise and fall in humidity. On this principle, the 8 or 16 polyamide bands of the sensor activate one or more shutters, thus determining the passage of air according to the ambient relative humidity rate. The greater the level of humidity, within a building, the more the shutters are opened. The sensor is isolated from the incoming airflow to ensure that it only measures the indoor humidity.

Moreover, thanks to a [thermal correction](#) ^[1] applied to the humidity sensor of the air inlets, the opening of the shutters is carried out independently of the external climatic conditions, even when the absolute humidity is low, as in winter.

Moisture, a relevant indicator of indoor

air pollution

Moisture is a particularly relevant indicator of the need for ventilation. Whether this is produced through activities such as cooking, showering or washing/drying clothes etc. or through metabolic processes such as respiration and sweating, moisture is produced at various times, in different locations, and in variable quantities. In a relatively airtight home without a properly designed ventilation system, moisture condenses on colder walls and windows promoting mould growth. This not only has the potential to cause structural damage, but also presents a health risk to the respiratory systems of the occupants*. By adjusting



the airflow with reference to relative humidity, the system provides an effective and coherent response to the problem of condensation. More generally, elevated levels of humidity accompany almost systematically the production of other pollutants such as CO₂ produced by breathing and cooking odours**. Consequently, humidity sensitive ventilation also provides a continuous and proportional response to these pollutants.

** A relative humidity level between 40 and 60% is essential for the proper functioning of the respiratory system, and extreme moisture can prove detrimental to both the building and its occupants.*

*** Carbon dioxide in an indoor domestic environment is largely produced by human respiration (at an average hourly rate of 1.9 litres of carbon dioxide for each adult). Along with carbon dioxide, respiration also produces a quantity of water vapour, which makes relative humidity a good indicator of the presence of carbon-dioxide. Furthermore dust mites, (well known as producers of allergens) thrive in environments with high relative humidity (75% or above), and are known to disappear when relative humidity falls below 45%.*

Printed from Aereco : : <http://www.aereco.co.uk/ventilation-techniques/demand-controlled-ventilation/humidity-sensitive-ventilation>

URLs in this post:

[1] thermal correction: <http://www.aereco.co.uk/thermal-behaviour-of-the-humidity-sensitive-air-inlet>

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