

## THE AC-AUTOMATION

The AC-automation is specially developed for Enervent-units for detached houses. It is one of the most versatile of its kind on the market today. The automation system in a house according to the needs and demands of the residents.



## FEATURES OF THE AC-AUTOMATION

\* additional equipment not included in standard unit deliveries

### General:

#### **Home mode / office mode**

One may choose either to use the automation in the home mode or the office mode. The office mode is meant to be used in spaces which are not in use all day, and therefore it is in this mode possible to stop the fans for a chosen time. In this mode overpressure, range hood and vacuum cleaner control is not possible.

### Regulation of fan speeds:

#### **Carbon dioxide control**

Carbon dioxide transmitters\* measure the amount of CO<sub>2</sub> in the inside air. When the amount of people in an apartment increase, the amount of CO<sub>2</sub> increases in the air. When this happens the automation increases the capacity of the fans in order to lower the amount of CO<sub>2</sub>. The CO<sub>2</sub> limit is adjustable. It is possible to connect two CO<sub>2</sub> transmitters\* to the automation.

#### **Humidity control**

Humidity transmitters\* measure the moisture content of the inside air. When the shower or sauna is in use, the amount of moisture in the air increases. When this happens the automation increases the capacity of the fans in order to lower the amount of moisture. The moisture limit is adjustable. All ventilation units with AC-automation have one built-in humidity transmitter. Furthermore two external transmitters\* can be connected.

#### **Constant pressure control**

The idea of the constant pressure control is to keep the pressure level in an apartment unchanged, although the range hood or the central vacuum cleaner is in use. The ventilation unit is controlled by an electrical signal. The benefit of this feature is i.e. that the fireplace burns better, if there is no changes in the pressure level of the apartment.

#### **Over pressure control**

This function allows us to create a momentary over pressure in the apartment, which makes lighting the fire easier. The over pressure can be activated either directly from the ventilation units own control panel or from an extra push button\* beside the fireplace.

**Boosting**

The boosting function increases the capacity of both fans for a given time, creating a momentary controlled ventilation.

**Extended time control**

When the unit is in office mode and the automation has turned it off for the day, the unit can be switched on for a pre-set extended time directly from the units own control panel or from an additional push button\*.

**Constant pressure**

Two pressure difference transmitters\* can be connected to the automation. The transmitters measure the pressure in the supply and exhaust air ducts and keep the pressure constant by changing the fan speeds if necessary. The idea is to maintain a constant airflow in the system.

**Using the heat recovery in the summer time:****Efficiency reduction**

The heat recovery can be stopped in the summer time, if the temperature outside exceeds the set limit (+10...+20°C).

**Cool recovery**

During the efficiency reduction the heat exchanger rotates continuously if the outside temperature is 3°C (or more) higher than the temperature inside. This is cool recovery.

**Defrosting of the heat exchanger:**

Enervent units freeze only under extreme conditions. Nevertheless freeze protection of the heat recovery is built in to the automation. To prevent the heat exchanger from freezing, the supply air fan will start and stop periodically depending on the exhaust air temperature and humidity content, together with the outside air and waste air temperature. The freeze protection can be deactivated.

**Heat exchanger efficiency:**

The heat recovery efficiency of the supply air is shown in percent on the operating panel.

**Temperature regulation:****Constant supply air temperature**

The automation regulates the capacity of the heater or cooler, based on the information retrieved from the supply air temperature sensor, in order to keep the supply air temperature constant.

or

**Constant room temperature**

The automation regulates the capacity of the heater or cooler, based on the information retrieved from the room temperature sensor, in order to keep the temperature in the rooms constant.

or

**Constant exhaust air temperature**

The automation regulates the capacity of the heater or cooler, based on the information retrieved from the exhaust air temperature sensor, in order to keep the exhaust air temperature constant.

**Summer night cooling**

It is possible in the summer time to lower the inside temperature by allowing cool air to freely flow inside in the night. During use of summer night cooling the heater, cooler and the heat recovery are deactivated. An economical form of cooling!

**Over heating protection for the electrical heater (ACE-models):**

Two thermostats check the temperature of the electrical heater. The first stage if the temperature rises too high is that the power supply to the heater is cut, but the fans remain on. The power supply is automatically reset when the temperature decreases. The second stage is, if temperatures still are rising, that the fans will also stop and an alarm is sent. Setting off the over heating protection is manual.

**Freeze protection for the water heater (ACW-models):**

If there is a risk of the water heater to freeze, the automation stops the fans and gives an alarm. The freeze protection can be controlled with a return water sensor.

**Damper motor control:**

The AC-automation makes regulation of damper motors\* possible. The damper motors are regulated in parallel. The dampers are open when the fans are running. The damper motors are equipped with spring returns and are un powered when the dampers are closed.

**Service reminder:**

The automation reminds the user of the need to change the filters and gives an alarm if there is a malfunction in the heat recovery, if there are abnormal temperatures and if the over heating protection of the electrical heater or the freeze protection of the water heater goes off.

**Fan control with weekly timer:**

The weekly timer is a timing program which allows the user to program the fans to run at a set speed, at a set day, on a certain hour. One can i.e. lower the fan speed during week days from 8 am – 4 pm when the residents are at work. It is possible to make five different time programs.

**Several remote controls:**

It is possible to control a unit with AC-automation from four remote control panels. The standard delivery includes one panel (either built-in or remote).

**Languages:**

The following languages are available on the panel: Finnish, Swedish, English, German and Estonian.

**Geothermal cooling:**

Enervent ventilation units with AC-automation can be equipped with CG- (Cooling Geo) automation. Cooling Geo or Geothermal Cooling means that if one has a heat pump one can use the cool fluid circulating in the ground to cool the supply air.