Control system KOMFOVENT C5

Detailed information for the user

- Air flow indication in (m^3/h, m^3/s, l/s).
- Thermal efficiency of the heat exchanger (%).
- Heat exchanger recovered energy (kW).
- Thermal energy saving indicator (%).
- Operation time counters of fans (h).
- Heater energy consumption counter (kWh).
- Heat exchanger recovered energy counter (kWh).

Various operating modes

- 5 different operation modes: *Comfort1*, *Comfort2*, *Economy1*, *Economy2*, and *Special*. User may set supply and extract air volumes as well as air temperature for each of mode separately.
- Temperature control modes: Supply air / Extract air / Room. Possibility to select which temperature to be maintained.
- Flow control modes: Constant Air Volume (CAV), Variable Air Volume (VAV), Direct controlled volume (DCV).
- Universal operating schedule with up to 20 events, for which of them user can assign weekday(s) and one of five operation modes.
- Holliday scheduling allows the user to change operation mode or switch off the air handing unit at some dates of the year. Up to 10 events are possible.

Extended control possibilities

- Controlling up to 30 units connected into a network from one panel.
- Ability to connect the controller to the Internet network and manage it via a standard internet browser without any accessories.
- Possibility to control air handling unit by Smartphone via Android OS.
- Ability to control the unit not only by a control panel or a computer, but also by different external devices (switch, timer, etc.) and systems (e.g. the smart house system).

Connectivity & Protocols

- *Modbus RTU* over *RS-485*
- *Modbus TCP* over *Ethernet*
- *BACnet/IP* over *Ethernet*

Extended control functions C5

Air quality control	Two different air quality values may be set for two different unit operating modes (e.g. *Comfort* and *Economy*). These values will be maintained by automatically increasing or reducing the intensity of ventilation.
Outdoor compensated ventilation	This function adjusts the air volume depending on the outdoor temperature. It is possible to enter four temperature points where two of them define winter conditions and the other two define summer conditions. Upon entering the compensation curve according to the outdoor temperature, the current intensity of ventilation is decreased or increased accordingly.
Summer night cooling	This function is intended for energy saving in summer: utilising the outside chill of night hours to cool down the heated rooms. The user may enable or disable function at any time as well as set the room temperature at which the function is automatically activated.
Override function	Override control of the unit can be performed by an external device (timer, switch, thermostat, etc.). The signal received from the outside activates the function which switches the unit to the pre-programmed mode ignoring the current operating mode.
Minimum temperature control	This function forces the reduction of the supply and extract air volumes set by the user when the heater capacity available in the unit is insufficient and/or heat recovery does not ensure the supply of the minimum temperature to the room.
Humidity control	An air handling unit can be ordered with an air humidity control function. If this function is available the user is able to choose the humidity control location: supply air, extract air or room. The user is also able to choose the method of control: humidification, dehumidification or both at a time.
Circulation pumps control on demand	Both heating and cooling pumps are controlled according to the current need for heating or cooling instead of a season control.
Air flow density compensation	Air density depends on the temperature. C5 offers a function which adjusts the air flows automatically to avoid any misbalance in rooms while being ventilated.
Operation on demand	The air handling unit start-up function is designed to start the unit operating in off mode when one of the selected parameters (CO_2, air quality, humidity, or temperature) has exceeded the critical limit.
Change-over function	Control of combined water heater- cooler and DX cooler reversing to the heating mode.

New safety features

Rotary or plate heat exchanger failure protection	This function observes the thermal efficiency of the heat exchanger. If it does not reach the required level a fault is recorded and indicated.
Rotary or plate heat exchanger anti-frost	Under the low outdoor temperature conditions, this function is constantly observing decreasing tendency of the heat exchanger thermal efficiency, determines the moment when the heat exchanger starts freezing, and activates the defrosting function automatically.
Service time	A warning message appears when the continuous operation of the AHU has reached 12 months.
Rotor cleaning function	This function ensures that the rotary heat exchanger does not pollute when turned-off. When the air handling unit operates without heat recovery, i.e. when the rotor does not rotate for some time, it is forcibly activated for a little so that moving air flows could blow possible dust.
Rotor warm-up function	This function forcibly activates the rotary heat exchanger if the air handling unit is turned off for some time and the temperature inside the unit or ventilation system is low enough for the rotor to freeze.
Circulation pumps start-up in off mode	This function starts water circulation pumps for a short period of time when they are off longer than the set period.
Warning for too low air flow	If the air handling unit does not reach the air volume set within the time set, the user is warned by an informative message..
External stop	Shut-down function from external device. May be used with or without an automatic unit restart.
Emergency shut-down in case of fire	The external fire alarm is provided when the unit is connected to the building fire alarm system. There is also an internal fire alarm to detect an increased temperature inside the air handling unit or the ventilation system.
Intelligent self-diagnostic	Self-check function of controller and elements of the air handling unit. If a fault is detected, C5 terminates the operation of the unit and warns about such a fault using the respective informative messages.