

# OPTIMVENT

## fan performance optimization



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## Principle

In constant pressure or air-flow controlled air handling units in conjunction with a system of variable flow regulators (VAV), some VAVs operates out of the optimal position. It occurs when the damper's blade is too much closed to eliminate the overpressure. By reducing the pressure loss, the operating costs of the air handling unit are reduced. The optimal operating status of the variable flow regulator (VAV) is in the range between 85% to 90% of its opened position, when the pressure loss is minimal. At least one of the VAVs must be within this range.

The Modbus communication protocol can be used to monitor the status of variable flow controllers and their parameterization.

## Energy optimization

Energy optimization of fan power can be ensured only with variable flow controllers, where the fan power is controlled on the basis of data from flow controllers. In the case of air handling units cooperating with variable flow regulators, there is a great potential for reducing the electricity consumption of the fans, therefore a substantial reduction in the financial demands of the operation of the air handling unit. Automatic fan speed control achieves the optimal ratio between the amount of air supplied and energy consumed. The result is a significant reduction of pressure losses of the variable flow regulators, consequently energy savings of tens of percent.

## Improvement of operating comfort

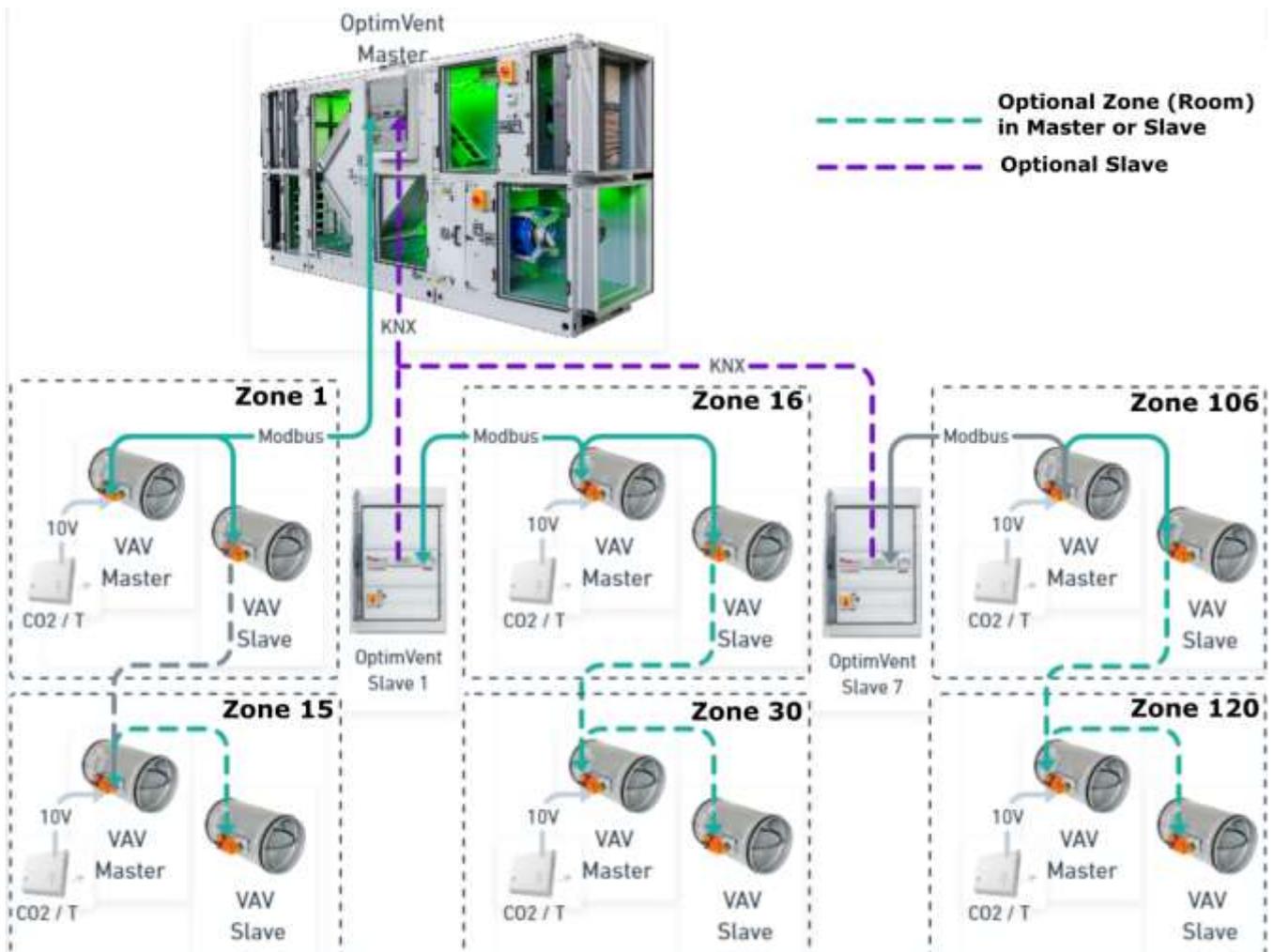
Reducing of the noise of the air is a qualitative advantage of optimizing fan performance, as the position of the dampers of the variable flow regulators is maintained in optimal operating point. It reduces the power of the fans, significantly reduces the pressure of the flowing air in the duct compared to the regulation to a constant pressure and consequently reduces the noise in the air-ducts and air handling units.

Next qualitative advantage in terms of air handling unit operation is the compensation of the fan power in the event of an increased pressure losses caused by clogged filters.

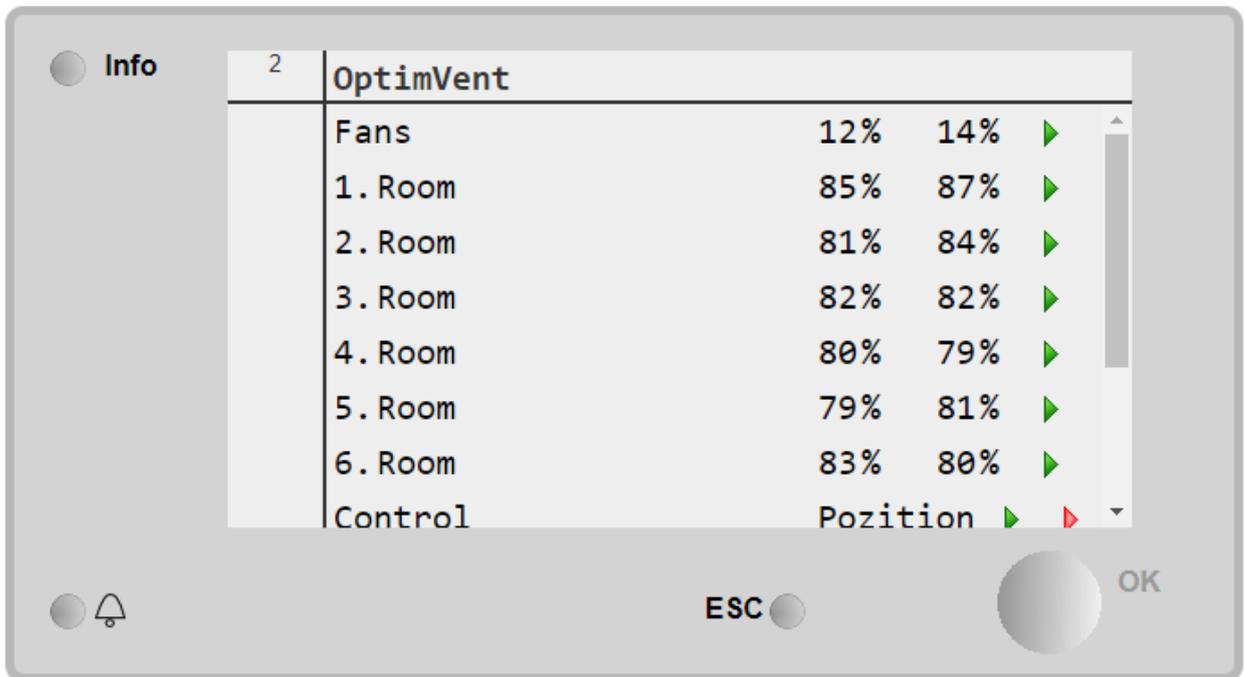
Last important advantage may be considered the combination of air handling unit control and 30 variable flow dampers by one programmable Climatix controller from Siemens.

## OptimVent - advantages

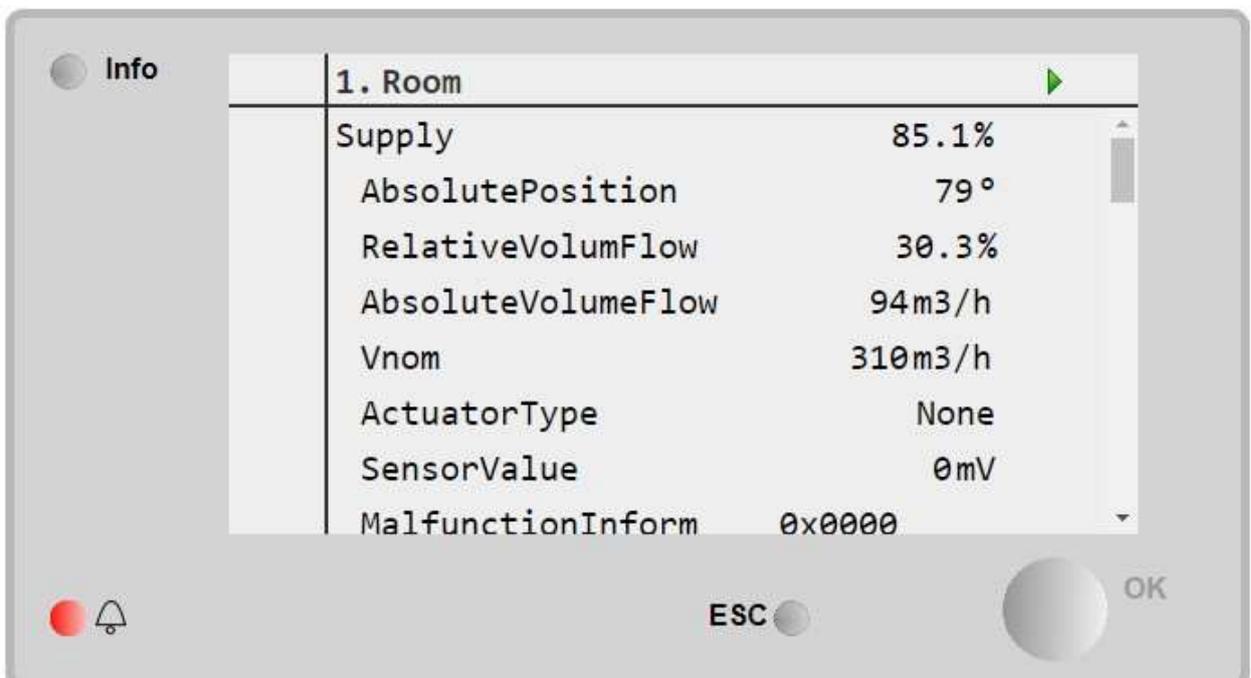
- OptimVent Master is part of the standard software in the Climatix controller for controlling air handling units.
- Supports easy installation, quick commissioning and easy operation.
- The basic module OptimVent Master controls the air handling unit and rooms (30 pieces of VAV dampers).
- Expandability up to 120 residential zones (240 variable flow controllers) with OptimVent Slave modules.
- No additional communication or control modules are required in the residential zone.
- Maximum savings of cabling process, the solution requires only 24V power supply cabling and communication for the variable flow controller.
- Communication between the Climatix controller and the individual flow controllers takes place via the Modbus communication interface. OptimVent modules use KNX communication.



- The display of the Climatix controller shows parameters (visible and adjustable) of all connected VAV dampers, including controlled fans.

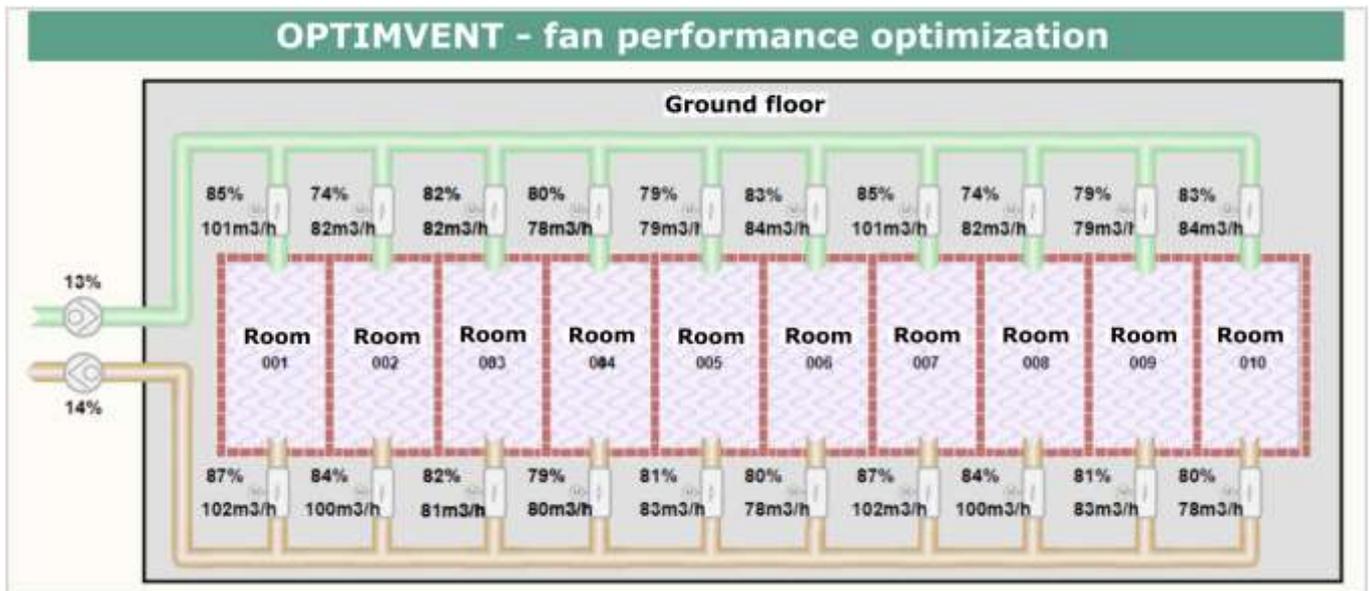


The Climatix controller allows you to set all the parameters of the connected VAV dampers. It replaces the Belimo ZTH adjustment device (excluding Modbus communication parameters).

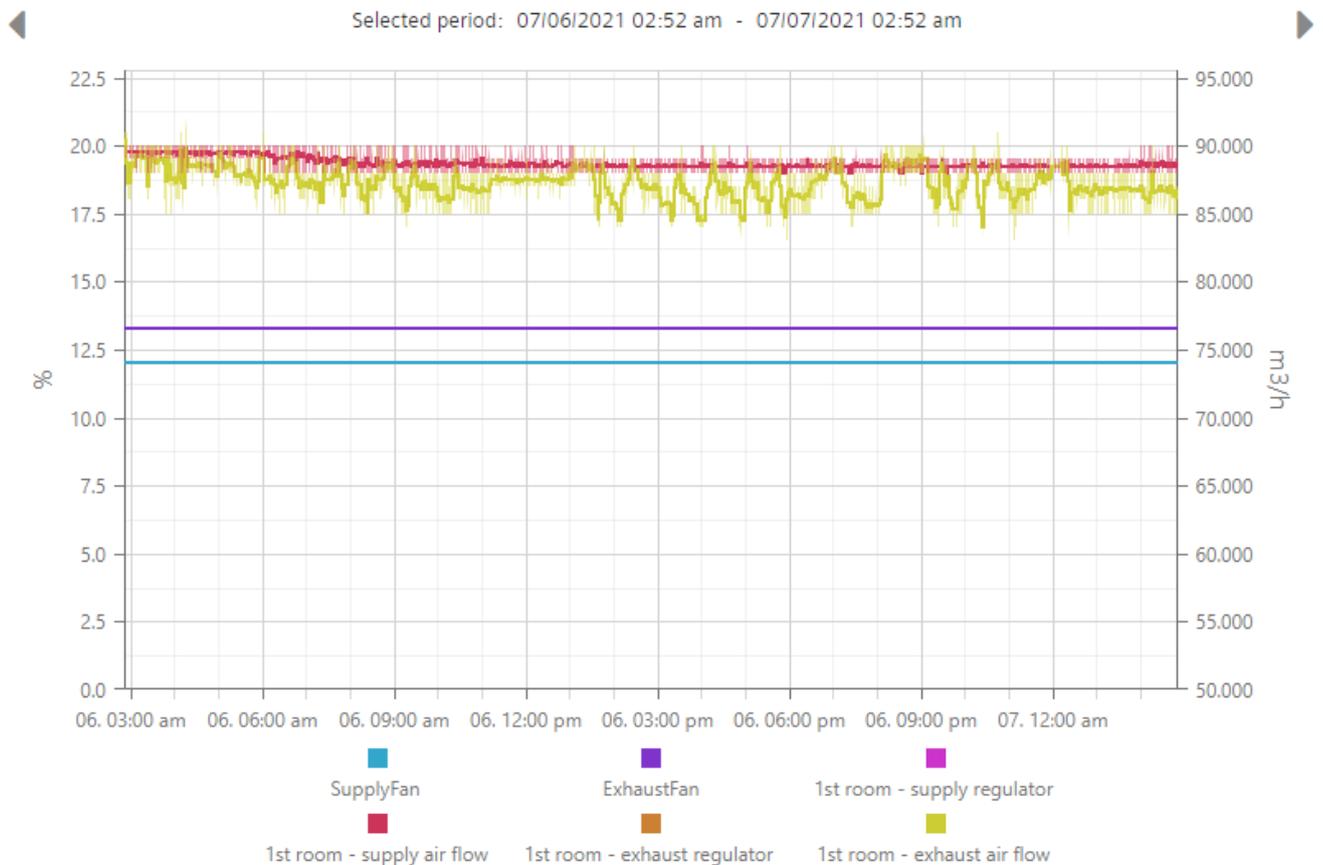


- The connectivity of the Climatix controller with Internet allows the same comfort of remote control as local devices.

- The ability to connect to cloud storage provides visualization and the ability to monitor the status of all VAV dampers from anywhere and at any time (365/24).



- There is possibility to analyse data in the cloud storage for improvement of new set-up of the control system.



- The solution can be used for optimization of air handling units from another manufacturers, not only Mandík brand.