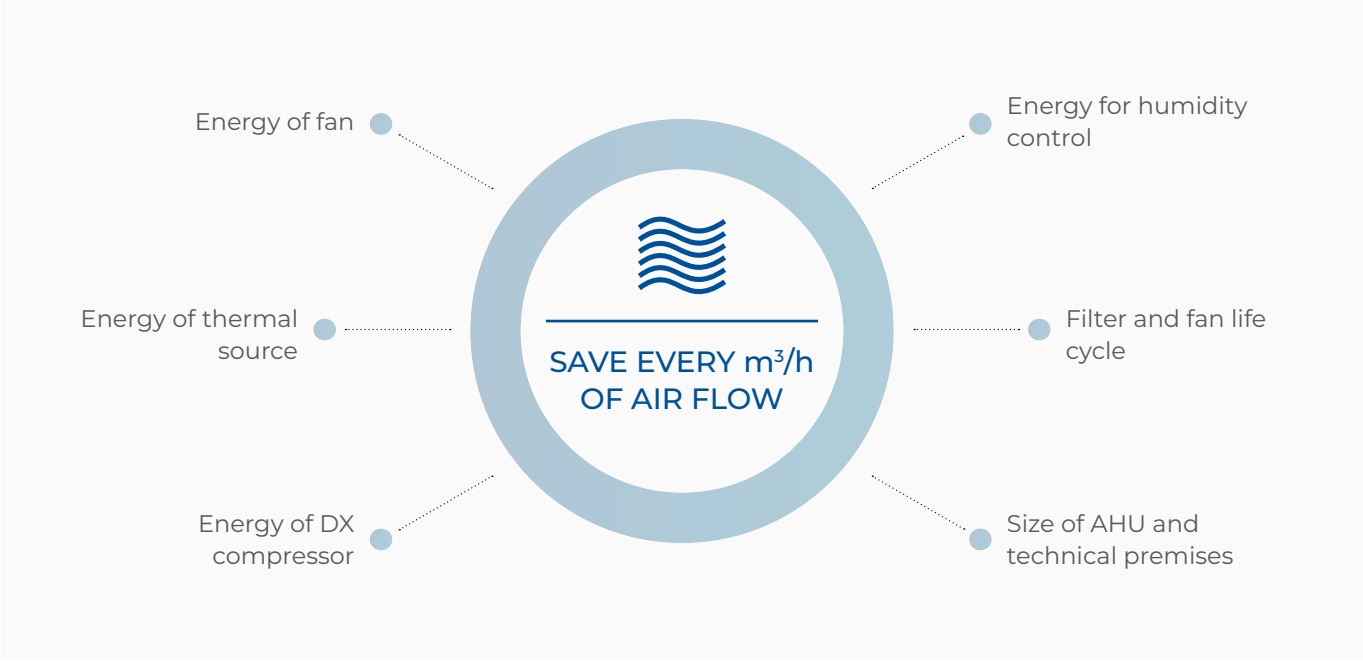
komfovent®

VARIABLE AIR VOLUME DAMPERS

Precise air volume control by demand

Function of the VAV dampers in ventilation systems

Variable air volume dampers are devices that allow to adjust the volume of supplied and exhaust air, depending on the intensity of the ventilation load of the premises. Thus, it is possible to avoid processing an unreasonably high amount of air, maintain different characteristics of the air environment in different zones or rooms individually, carry out accurate remote control and monitoring of ventilation systems, regulate the air flow in a wide range, simplify the adjustment of ventilation systems, reduce the load on the ventilation equipment, increasing its working life and reducing the noise of the fans.



VAV function (Standalone): The pressure sensor measures the current pressure value through the Pitot tubes and transmits it to the controller → The controller compares the received value with that which should ensure the execution of the task received from the room controller → The controller moves (opens or closes) the regulating blade, achieving the execution of the task received from the room controller.

VAV function (BMS): The pressure sensor measures the current pressure value through the Pitot tubes and transmits it to the controller → The controller compares the received value with that which should ensure the performance of the task received from the BMS system (to which the air parameter sensors are connected) → The controller moves (opens or closes) the regulating blade, achieving the execution of the task received from the BMS system.

VAV Standard dampers KOS-C and KOS-R

The most used type of VAV dampers for airflow control, perfect for the wide variety of standard applications, such as:

- Use in circular and rectangular ventilation and conditioning systems.
- Use for both variable and constant air volume systems.
- Use as a shut-off damper via switchover.
- Use for pressure control providing in complex with relevant control elements.

KOS-C

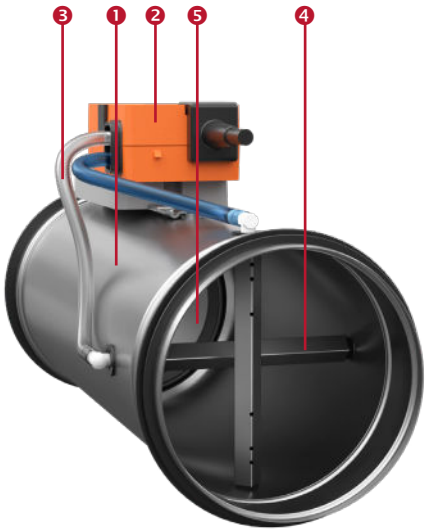
KOS-C -I

KOS-R

KOS-R-I

Highlights

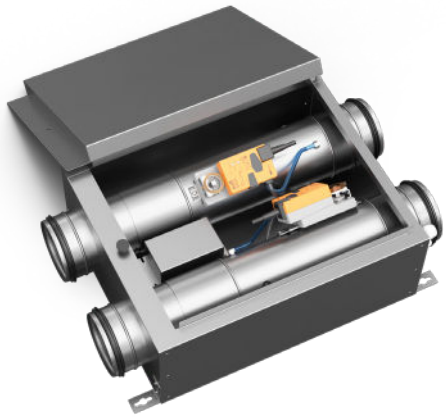
- KOS-C circular connection d100-d560
- KOS-R rectangular connection 200x100-1000x1000 mm
- KOS-C-I and KOS-R-I models with 50 mm mineral wool insulation
- High measurement accuracy at low velocities
- Air flow from 15 m^3/h to 36000 m^3/h
- Operational air velocity from 0.5 m/s to 10 m/s
- C3 air tightness class acc. to EN 1751
- Galvanized or stainless steel execution
- Belimo or Siemens actuators
- Control signal: 0…10 V or 2…10 V
- Communication types: Analogue, MP-bus, Modbus, BACnet, KNX
- Constant Air Volume (CAV) function also performed
- Hygienic certificate in acc. to VDI 6022

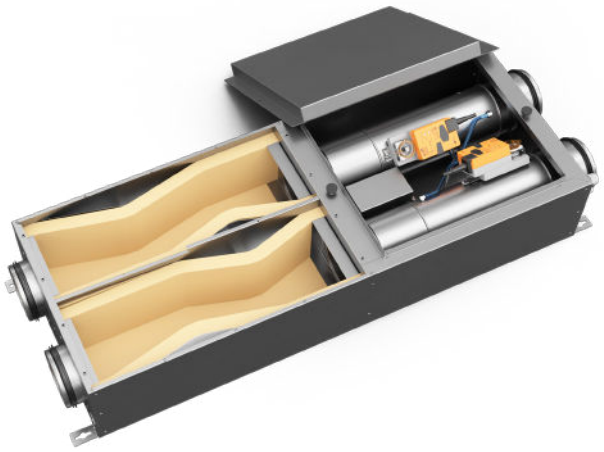


1. Casing
2. Volumetric Flow Controller
3. Connection air pipes
4. Pilot tubes
5. Damper blade

VAV Box damper units KOS-B and KOS-B-S

VAV BOX is easy and minimized cost installation and maintenance compact solution for multi-premises buildings with central ventilation system where independent demand controlled ventilation needed (hotels, offices, apartment houses etc).

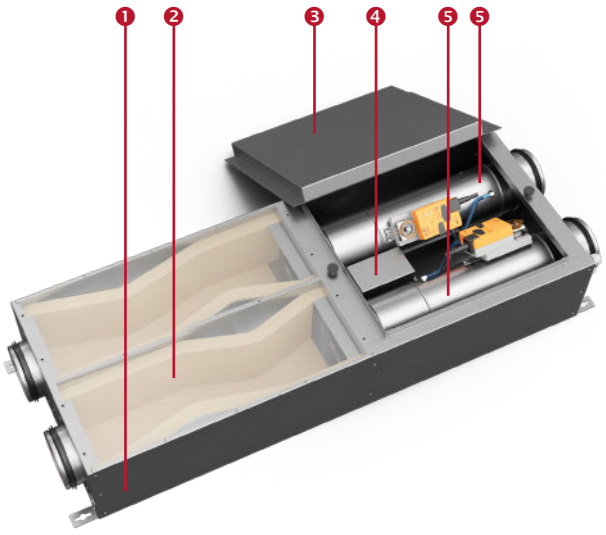




Highlights

- Circular connection d100-d160
- KOS-B-S model with acoustic attenuation
- Air flow from 15 m^3/h to 723 m^3/h
- 230 V power supply
- Master/slave or parallel connection of VAV dampers
- C3 air tightness class acc. to EN 1751
- Galvanized or stainless steel execution
- Communication types: Analogue, MP-bus, Modbus, BACnet, KNX

VAV BOX unit with sound attenuation cassette



1. Casing
2. Silencers
3. Access door
4. Power supply / commutation box
5. Supply and extract VAV dampers

VAV Lab dampers KOS-C-LAB and KOS-R-LAB

VAV Lab is series of VAV dampers for duct or room pressure control. They are almost irreplaceable in cases where contaminated air reaching to clear areas prevention is needed (surgery operation rooms, laboratories working with dangerous agents etc.). Airflow control models also available.

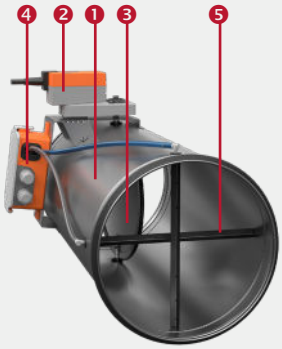
KOS-C-Lab

KOS-C-Lab-I

KOS-R-Lab

KOS-R-Lab-I

Construction



VAV Lab damper for flow control

❶ Casing
❷ Actuator
❸ Damper blade
❹ Controller with manometer
❺ Pilot tubes

VAV Lab damper for duct or room pressure control

❶ Casing
❷ Actuator
❸ Damper blade
❹ Controller with manometer

Highlights

- KOS-C-Lab circular connection d100-d560
- KOS-R-LAB rectangular connection 200x100-1000x1000 mm
- KOS-C-Lab-I and KOS-R-Lab-I models with 50 mm mineral wool insulation
- Ducts pressure, room pressure, air flow VAV/CAV, mode models
- Standard and fast running actuators
- Electric and mechanic fail-safe actuators
- Dynamic duct pressure controller for non-contaminated air
- Static duct pressure controller for contaminated air
- Room pressure controller for contaminated and non-contaminated air
- C3 air tightness class acc. to EN 1751
- Galvanized or stainless steel execution
- Control signal: 0…10V or 2…10V
- Communication types: Analogue, BACnet MS/TP, Modbus RTU, MP-Bus
- Hygienic certificate in acc. to VDI 6022

VAV damper automatic air volume control

KOMFOVENT room SQR and SCR air quality controllers

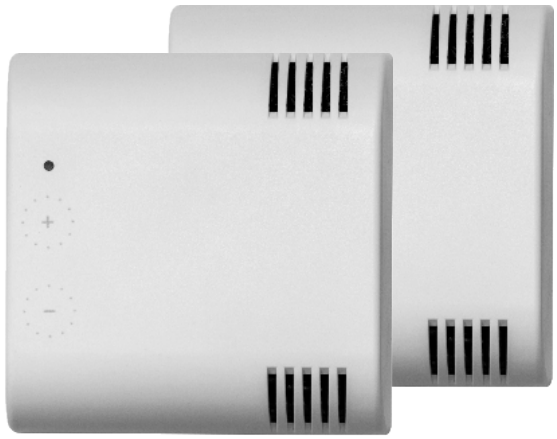
CE certified in acc. with EN 61326-1

Room air quality controller SCR monitors 3 different type sensing elements simultaneously – CO_2 (ppm), relative humidity (%RH), air temperature (°C). 2 analog outputs are available for reading measured air parameters. AO1 (analogue output 1) is always CO_2, while AO2 is user selectable - %RH or °C.

Room air quality controller SCQ monitors 3 different type sensing elements simultaneously – VOC (%), relative humidity (%RH), air temperature (°C). 2 analog outputs are available for reading measured air parameters. AO1 is always CO_2, while AO2 is user selectable - %RH or °C.

Both controllers setting point for threshold can be adjusted using touch sensitive buttons or onboard potentiometer. PID (proportional–integral–derivative) algorithm cab be used for VAV damper or other device control. One controller can control unlimited* quantity of VAV dampers of one zone.

* depends of distance between controller - VAV dampers and connection scheme



Advantages:

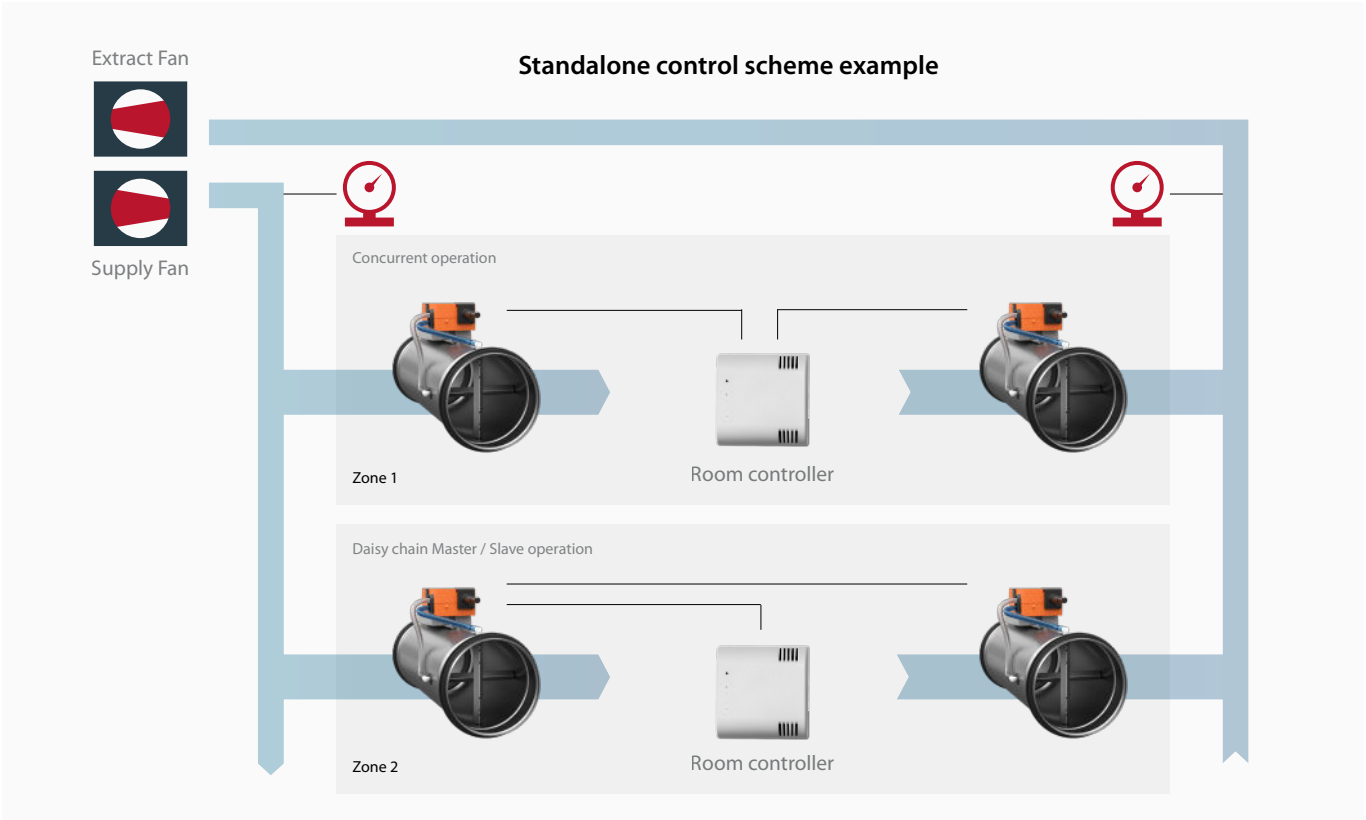
- ✓ SRC.3 sensor type options (CO2, %RH or °C).
- ✓ SRQ.3 sensor type options (VOC, %RH or °C).
- ✓ 2 analog output options (0…10V / 4…20mA).
- ✓ Relay output for ON / OFF control.
- ✓ RS-485 Modbus interface.
- ✓ PID functionality for VAV damper control.
- ✓ Compact design 80x80x26 mm.
- ✓ High measurement accuracy (CO2: ±6%, VOC: ±15%, %RH: ±3%, °C: ±1.0°C).

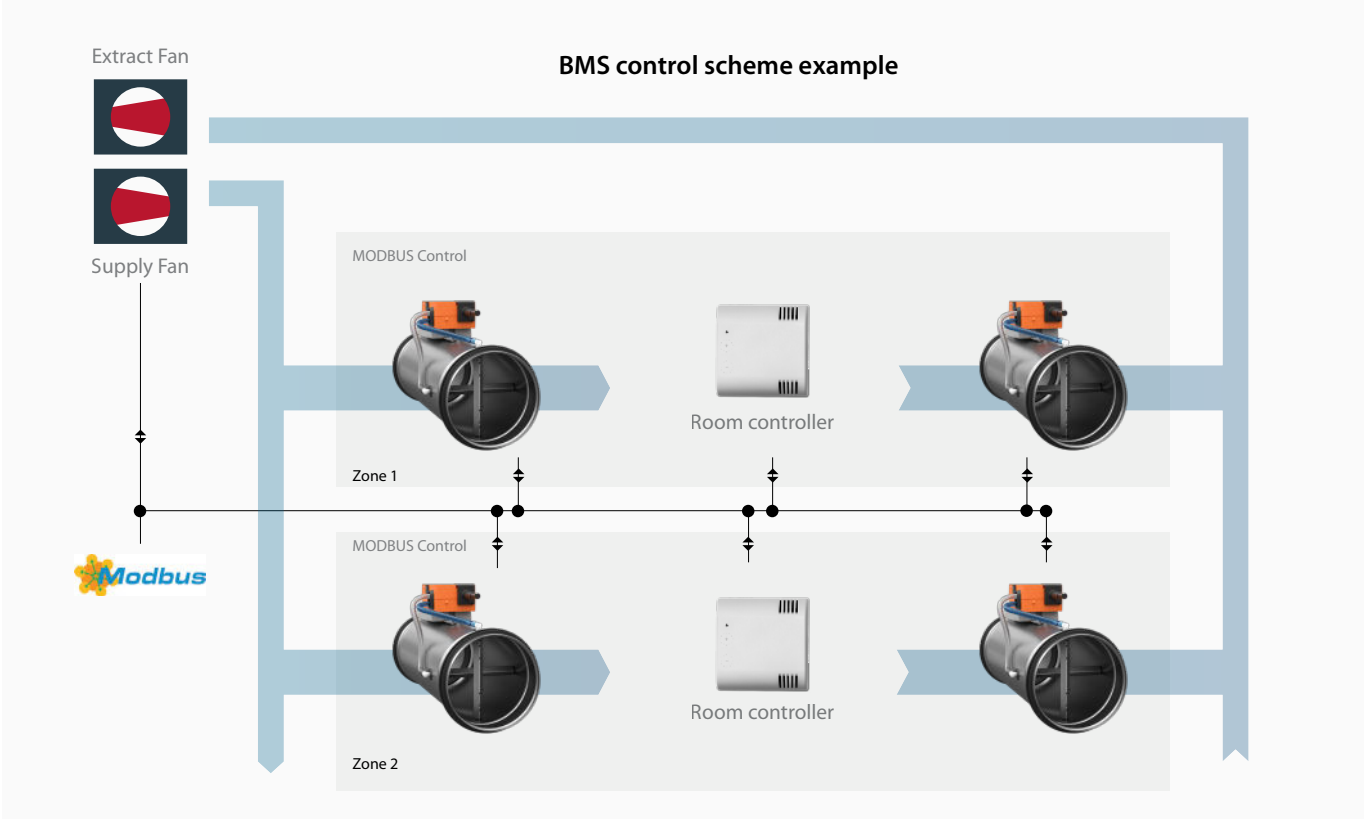
Technical data:

- ✓ 24 VAC / 24 VDC supply voltage.
- ✓ IP 30 protection class.
- ✓ 60 s response time.

TYPE OF THE SENSOR	CO_2	VOC	%RH	°C
SCR	+		+	+
SQR		+	+	+

VAV damper control schemes





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