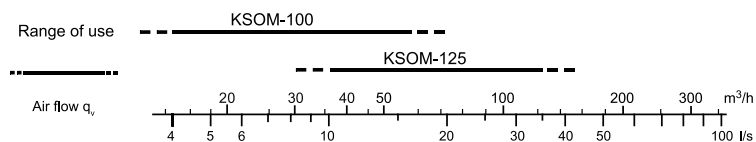


KSOM Control exhaust valve



KSOM is ideal for rooms which require forced exhaust air flow. KSOM consists of exhaust valve, control motor and controller card, which are installed in the valve cone. KSOM has an integrated humidity sensor which controls the valve. The valve is perfect for use for example in the bathrooms of single family homes, terraced houses and apartment blocks. Using various control units, air flow can be controlled to suit the needs of different rooms and changing operating conditions.

Quick Selection



Specifications

- Exhaust valve with control motor and controller card.
- Includes also a humidity sensor.
- Operates within a wide pressure and air flow range.
- Low noise level.
- Airflow easily measured and controlled.
- Augmentation time can be set steplessly for anywhere between 15 minutes to 2 hours.
- Suitable for new construction and renovation installation.
- Manufactured of steel sheet.

Product code example

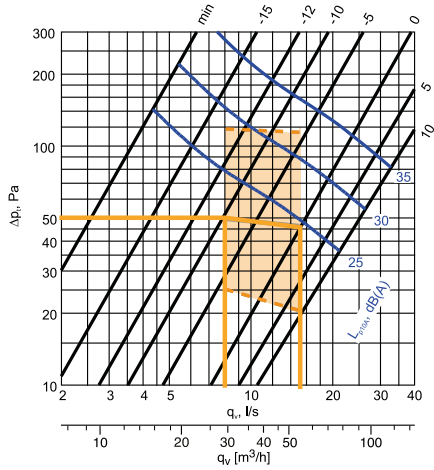
Exhaust air valve KSOM-100

AIRTREND Ltd
 Predstavništvo u Beogradu
 Kumanovska 14, 11000 Beograd
 Tel: 011/3836886, 3085740
 Faks: 011/3444113
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 web: www.airtrend.rs

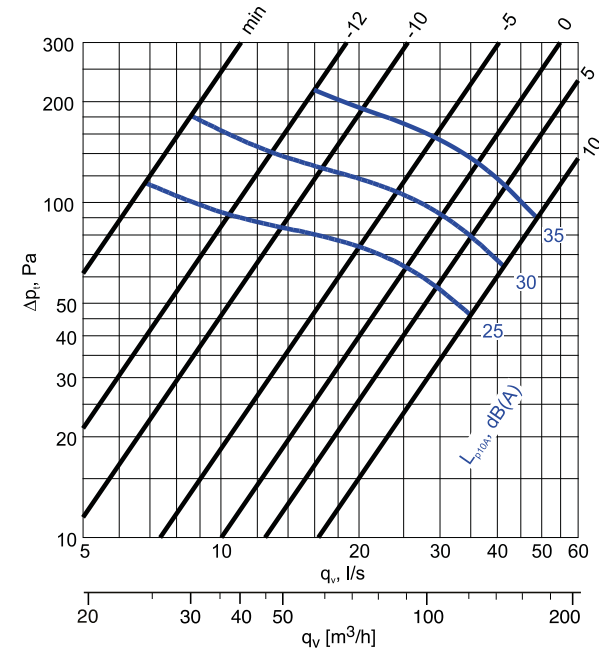
Dimensioning

Selection diagrams

KSOM-100



KSOM-125



The desired forced exhaust is achieved with the choice of pressure level and forced exhaust position: 5, 10, 15 or 20 mm. (See selection diagrams).

Ventilation system

The room-specific forced exhaust achieved with KSOM valve can be realized according to two principles depending on the ventilation system. The valves can be used as a part of a constant pressure system, in which case the forced exhaust is achieved by increasing the total air flow. When the constant pressure maintaining is not used, the forced exhaust is achieved by “loaning” from other rooms.

Selection

KSOM is selected on the basis of the desired basic air flow rate, forced air flow rate and noise level. The used air flow can be adjusted steplessly by turning the screw spindle of the motor.

The valve must however be selected so that the basic adjustment position can be set at -15 - 0 mm to enable a sufficient forced effect.

Selection example

Bathroom ventilation according to part D2 of the Finnish Code of Building Regulations.

- Normal exhaust 8 l/s and forced exhaust 15 l/s.
- The pressure drop of the air terminal device is defined (e.g. 50 Pa).
- A suitable air terminal device size is chosen (Ø100).
- The normal exhaust adjustment is -10 and the desired forcing is achieved at position 0. The pressure drop from the ducts increases during forced exhaust, in which case the proportion of the total pressure drop to be used by the valve decreases.
- The forced exhaust position is set at 10 mm (increases the air flow from 8 l/s of the normal exhaust to 15 l/s of the forced exhaust)

Sound data

Sound power level L_w

KSOM	Correction K_{oct} (dB)							
	Middle frequency by octave band (Hz)							
	63	125	250	500	1000	2000	4000	8000
100	2	-6	-5	0	-2	-1	-9	-16
125	1	2	-3	-1	-4	1	-11	-19
Tol.±	6	3	2	2	2	2	2	3

Sound power levels by octave bands are obtained by adding to the total sound pressure level L_{p10A} , dB(A), the corrections K_{oct} presented in the table according to the following formula:

$$L_{W_{oct}} = L_{p10A} + K_{oct}$$

Correction K_{oct} is an average value in the range of use of the KSOM.

Sound attenuation ΔL

KSOM	Sound attenuation ΔL (dB)							
	Middle frequency by octave band (Hz)							
	63	125	250	500	1000	2000	4000	8000
100	25	20	13	9	10	11	6	7
125	21	16	12	10	9	14	6	6
Tol.±	6	3	2	2	2	2	2	3

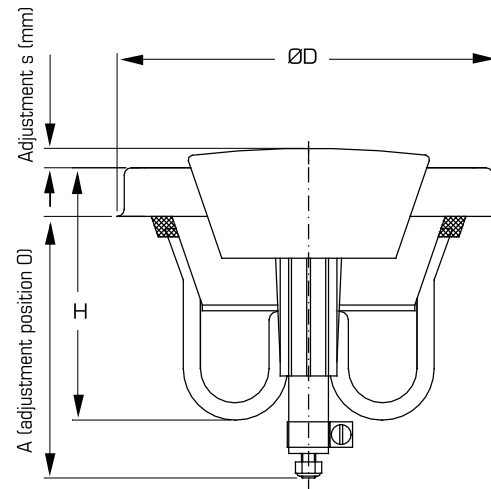
Average sound attenuation ΔL from duct to room including the end reflection of the connecting duct in wall installation.

Definitions

q_v	air flow	(l/s)
Δp_t	total pressure drop	(Pa)
L_{p10A}	sound pressure level with 4 dB room attenuation (10 m ² sab)	[dB(A)]
$L_{W_{oct}}$	sound power level	(dB)
K_{oct}	correction	(dB)
ΔL	sound attenuation from duct to room	(dB)

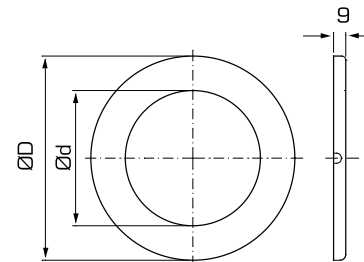
Dimensions and weights

KSOM



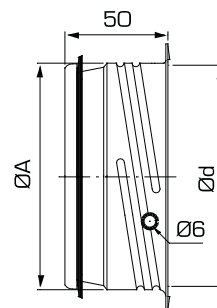
Size	D (mm)	d (mm)	H (mm)	A (mm)	Weight (kg)
100	135	87	89	105	0.63
125	161	107.5	105	105	0.76

Extension ring



Size	ØA (mm)	Ød (mm)
100	151	103
125	181	128

Frame



Size	ØA (mm)	Ød (mm)
100	99.3	98
125	124.3	123

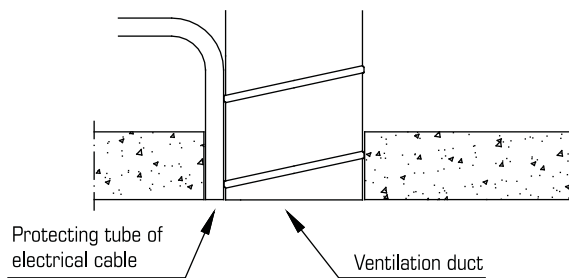
Installation and connecting

The mounting frame delivered with the product is fitted to the duct with rivets. The valve is rotated into the frame.

Detailed instructions in the installation and connecting manual delivered with the product.

The control exhaust valve is delivered with a fixedly installed 1 m cable. This requires placing the connecting box close enough to the valve. The frame / extension ring has a hole for the wire.

In concealed mounting, a protecting tube must be brought from the connecting box to the valve (Fig. 1) to enable the drawing of the cable delivered with the valve to the box. It is not allowed to change the cable delivered with the valve, but it can be extended with a cable satisfying the requirements.



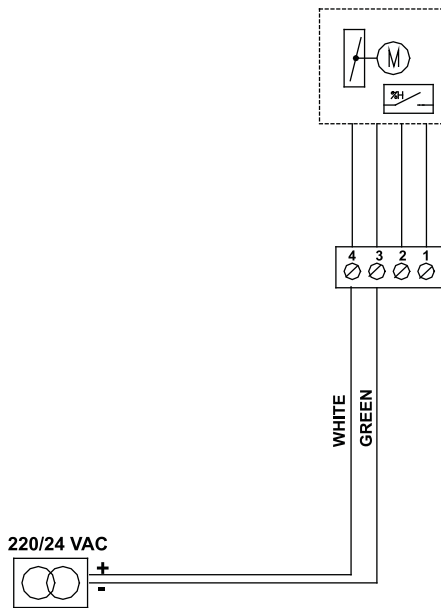
Measurement and regulation of air flow

The air flow is measured by a pressure difference measurement with a separate measuring tube.

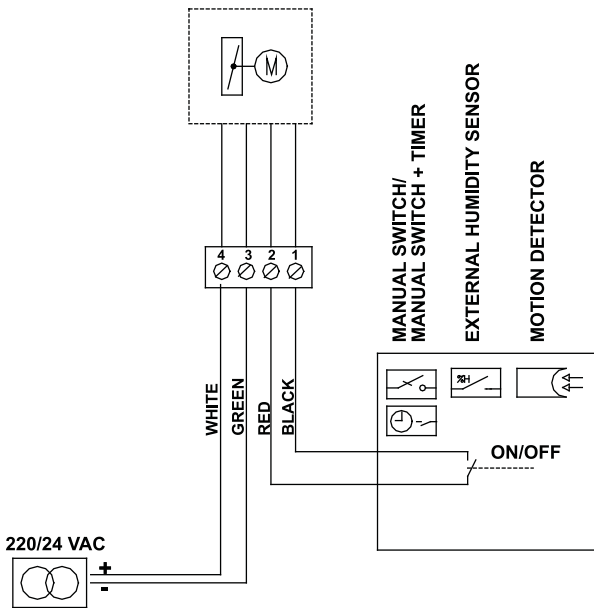
The air flow is regulated by changing the positions. The measuring diagrams and detailed regulation instructions can be found in the installation and connecting instructions delivered with the product.

Wiring diagrams

KSOM Controlled with a humidity sensor integrated in the valve



KSOM Controlled with an external switch



Accessories and technical data of actuator

Accessories

Manual operating switch	Strömfors Artic PS1
Manual operating switch with timer	Strömfors ATC 10 A
Occupancy sensor (wall)	Calectro PIR-TF-25
- mounting base for ceiling	MB-95
- mounting base for wall	MB-98
Occupancy sensor (ceiling)	Calectro PIR-TF-25-360
Humidity controller	
- electronic	E + E Electronics EE14
- mechanical	Industrie Technik DBZH

Choosing transformer

The KSOM valves operate on a voltage of 24 V AC. The transformer size is chosen according to the overall power demand of the devices connected to it. The power demand of one valve is 500 mA / 12 VA. The choice of transformer type is also affected by the placing of the valve and the conditions in its surroundings. A transformer for one valve is available at FläktGroup, see product code.

Technical data of the actuator

Supply voltage	24 V AC (protective extra low voltage, SELV) ± 20 %
Rated power	12 VA / 500 mA
Controlling	With a closing switch
Running time	Max. 6 s
Noise level while running	38 dB(A)
Electric protection	III (protective extra low voltage, PELV)
Enclosure	IP00
Ambient temperature	+ 10 °C ... + 50 °C
Storage temperature	- 25 °C ... + 65 °C
Humidity	... 100 %
Electromagnetic compatibility	89/336/EY
Safety	98/37/EY
Service	Follow separate manual
Calculated life	100 000 cycles

Application, function, construction, product code

Application

KSOM is ideal for rooms which require forced exhausts. The valve can be opened electrically according to operating conditions (with a manual switch or an occupancy or humidity sensor) It is available in sizes Ø100 and Ø125. An extension ring enables surface and concealed mounting for electrical connections.

Function

The basic adjustment of KSOM can be set steplessly when balancing the ducting. The forced exhaust can be set from the controller at 5, 10, 15 or 20 mm (pre-set by the factory at 10 mm).

KSOM has an integrated humidity sensor which controls the valve (forced exhaust RH 65% and return RH 60%).

As well as with an integrated sensor, KSOM can also be controlled externally (e.g. with an operating switch). The integrated sensor can also be disabled with the control switch, enabling only external control.

KSOM controlling with a room-specific controller: see accessories.

In addition, the valve performs an automatic test run every day, irrespective of whether forced ventilation is needed or not.

The valve motor operates with a voltage of 24 VAC.

Construction

KSOM consists of exhaust valve, control motor and controller card, which are installed in the valve cone.

The valve disc contains a control motor with a screw spindle and a controller, with which the disc can be run into the open position. In addition, a plastic tube which prevents the cover from rotating during forced exhaust has been attached to the disc.

The delivery includes a valve with connecting cable, mounting ring and extension ring, with which a free space can be reserved for the connecting cable between the wall or ceiling surface and the frame.

Material

The valve is made of steel sheet and it is powder coated in white. Other colours are available on request. The valve body is equipped with a cellular plastic sealing gasket.

The mounting ring is made of steel sheet. The airtight mounting ring KKT includes a Veloduct rubber sealing gasket and a wire inlet equipped with an inlet rubber gasket.

Descriptive text

Control exhaust valve KSOM, valve for external control, e.g. KSOM-100 manufactured by FläktGroup.

Product code and accessories

Product code

Control exhaust valve **KSOM-aaa**

Control exhaust valve, special colour **KSOM-aaa-E**
(mounting ring included)

Size (aaa)
100, 125

Accessories

Transformer 24 V / 0,5 A **KSOZ-8**