Series
VENTS VK

Duct centrifugal fans in plastic case with air flow capacity to **1700 m³/h**

Application

Fans are applied in exhaust and intake ventilationof trade, office and other premises. These fans are compatible with the air ducts of 100, 125, 150, 200, 250, 315 mm. For premises with high requirements to the level of noise, we offer units in low-noise design (VK...B). Owing to high quality plastic not influenced by corrosion, these models are ideal for installation in exhaust ventilation system of premises with high humidity: bathroom, kitchen etc.

Design

The fans cases are made of high-quality and high-strength ABC plastic. Mounting block is hermetical. Fan is equipped with power cord with a plug (VK..P).

Motor

Single-phase motor with outer rotor and plastic impeller with backward curved blades. Motors are supplied with thermal protection with automatic restart. For some dimension types the version of motor with more powerful features is available (VKS). Motors are equipped with ball bearings for longer service life (40 000 hours). For precise features, safe operation and low noise, each turbine is dynamically balanced while assembly. Class of motor protection is IP 44.

Speed control

Smooth or step speed control is performed with thyristor or autotransformer controller. Several fans may be connected to one controller in case total power and operating current will not exceed rated values of controller.

Mounting

Mounting at any angle to the fan axis is permitted. Mounting to wall or ceiling is performed with fastening brackets (supplied with the unit) or with extra fastening PVK stand (to be purchased). Electric connection and mounting are to be carried out in compliance with the manual and electrical circuit on terminal block.

VK fan with electronic temperature and speed module

These fans are ideal for ventilation of premises requiring air temperature control (for example, greenhouses).
Fans of VK...U series with electronic module TSC (Temperature and speed controller) enable automatic change of impeller rotation speed (air consumption) depending on the temperature of air in the duct. There are several controllers on the front panel:
- preliminary setting of impeller rotation speed;
- threshold of electronic thermostat action.

There is one more design of fan with temperature sensor built in the duct or outer temperature sensor

A variant of application of fan in a kitchen

Legend:

Fan series	Option*
VENTS VK	**S** – high-powered motor

Flange diameter
100; 125; 150; 160; 200; 250; 315

Additional options
Q – low-noise design; **U** – with electronic "temperature" module and temperature sensor built in the fan duct; **Un** – with electronic "temperature" module and outer temperature sensor; **U1** – with electronic "timer" module and temperature sensor built in the fan duct; **U1n** – with electronic "timer" module and outer temperature sensor; **R** – supply cable with a C14 plug.

Accessories


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(length of cable – 4m, sensor is protected from mechanical damage).
LED of thermostat action is placed on the front panel of the fan.

Operation pattern of VK with electronic temperature and speed

Set desirable air temperature with controller knob (threshold of thermostat action). Set the required rotation speed (air consumption) with the knob of impeller speed controller. If the temperature rises exceeding the set threshold of thermostat action, automation sets the fan motor to maximal rotation speed (maximal consumption). If the temperature goes down below the set threshold of thermostat action, automation sets the fan motor to rotation speed set prior.

To exclude the possibility of highly repetitive motor switches (if set duct temperature is equal to threshold), switch delay was introduced. There are two patters of delay that may be used in various cases:

1. Temperature sensor delay (VK...U): if temperature rises for 2°C from the set threshold of thermostat action, motor starts operating on higher speed. If the temperature goes down below the set threshold of thermostat action, motor returns to prior set (lower) speed.
This pattern may be used to keep air temperature to within 2°C. In this case fan switches will be rare.
2. Timer delay (VK...U1): if temperature rises exceeding the set threshold of thermostat action, motor sets to higher speed and delay timer switches on for 5min. If the temperature goes down below the set threshold of thermostat action, motor returns to prior set (lower) speed, but only after the end of delay time set in timer.
This pattern may be used to keep air temperature at the precise level. In this case fan will switch more frequently than in the pattern of temperature sensor delay, but with intervals not more than 5 minutes.

Example for temperature sensor delay:

Initial conditions:
- rotation speed is set as 60% of maximal
- threshold of action is set as 25°C
- air temperature in the duct =20°C

Fan operates with impeller rotation speed =60%

▼

- air temperature in the duct rises
Fan operates with impeller rotation speed =60%

▼

- air temperature in the duct reaches 27°C
Fan switches to impeller rotation speed =100%

▼

- air temperature in the duct goes down
Fan operates with impeller rotation speed =100%

▼

- air temperature in the duct returns to 25°C
Fan switches to impeller rotation speed set prior =60%

Example for timer delay:

Initial conditions:
- rotation speed is set as 60% of maximal
- threshold of action is set as 25°C
- air temperature in the duct =20°C

Fan operates with impeller rotation speed =60%

▼

- air temperature in the duct rises, reaches 25°C and keeps rising

▼

Fan switches to impeller rotation speed =100%, at the same time delay timer activates for 5 minutes

▼

- air temperature in the duct goes down
Fan operates with impeller rotation speed = 100%

▼

- air temperature in the duct reaches 25°C and keeps going down

▼

Fan waits for timer stop and after that switches to prior set rotation speed (=60%). After switching to the set speed (=60%), delay timer will activate again for 5 minutes

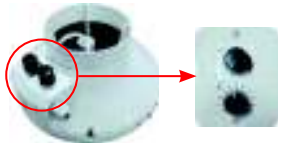
▼

- air temperature in the duct rises, reaches 25°C and keeps rising

▼

- air temperature in the duct rises, reaches 25°C and keeps rising
Fan waits for timer stop and after that switches to impeller rotation speed =100% (at the same time delay timer activates for 5 minutes)

In other words, in timer delay pattern the delay timer will activate every time fan changes its speed.



Vents VK...U is equipped with electronic module

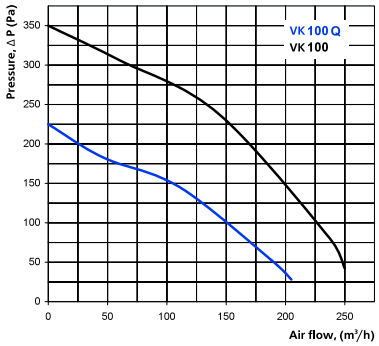
Bracket for easy mounting (supplied with the fan)

Holder

VK

	VK 100 Q	VK 100	VK 125 Q	VK 125	VK 150	VK 200	VKS 200
Voltage, V/50Hz	230	230	230	230	230	230	230
Power consumption, W	62	80	61	79	80	107	173
Current, A	0,38	0,34	0,38	0,34	0,35	0,47	0,76
Maximum air consumption, m^3/h	205	250	260	355	460	780	930
RPM	2650	2820	2610	2800	2725	2660	2125
Noise level at 3 m, dBA	36	46	36	46	46	48	51
Maximal temperature of transferred air, °C	-25 +55	-25 +55	-25 +55	-25 +55	-25 +55	-25 +50	-25 +45
Index of protection	IP X4	IP X4	IP X4	IP X4	IP X4	IP X4	IP X4

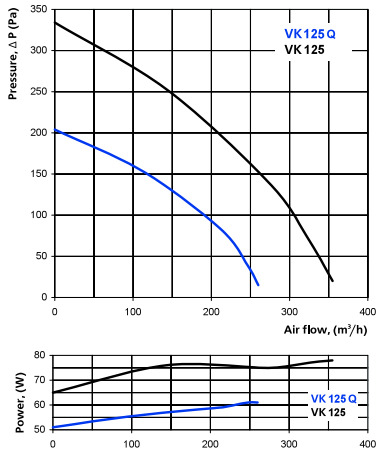
VENTS VK



VK 100 Q

Sound-power level		Octave-frequency band, (Hz)								
	Hz	Total	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	62	51	59	58	57	50	46	42	28
L_{wA} to outlet	dBA	67	54	63	61	59	50	47	42	33
L_{wA} to environment	dBA	55	21	15	24	37	42	41	31	19
VK 100	Hz	Total	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	71	51	65	70	66	60	57	53	38
L_{wA} to outlet	dBA	75	51	68	70	68	66	57	57	42
L_{wA} to environment	dBA	62	44	63	57	40	25	4	17	23

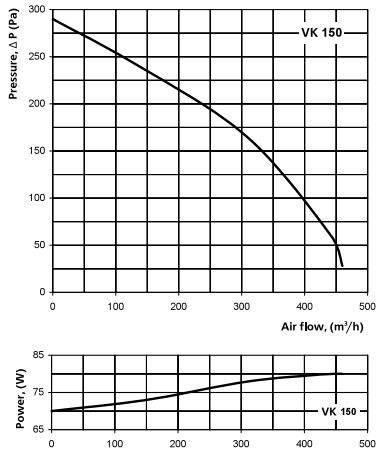
VENTS VK



VK 125 Q

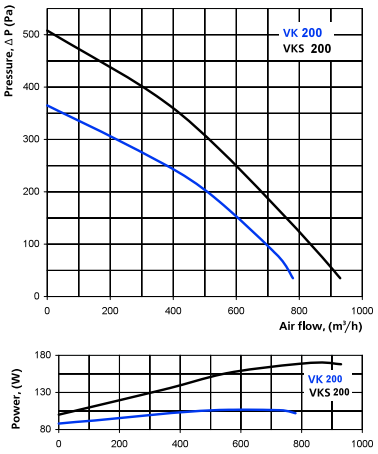
Sound-power level		Octave-frequency band, (Hz)								
	Hz	Total	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	58	34	51	53	53	49	47	37	30
L_{wA} to outlet	dBA	61	37	53	57	62	51	48	39	31
L_{wA} to environment	dBA	66	48	63	61	41	32	13	30	26
VK 125	Hz	Total	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	74	55	65	66	70	63	61	52	40
L_{wA} to outlet	dBA	77	58	65	71	75	69	61	53	44
L_{wA} to environment	dBA	63	51	60	58	44	35	19	30	25

VENTS VK



Sound-power level		Octave-frequency band, (Hz)								
	Hz	Total	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	70	43	63	62	65	63	60	50	38
L_{wA} to outlet	dBA	76	44	69	63	71	65	64	54	41
L_{wA} to environment	dBA	62	40	62	53	35	17	15	29	23

VENTS VK

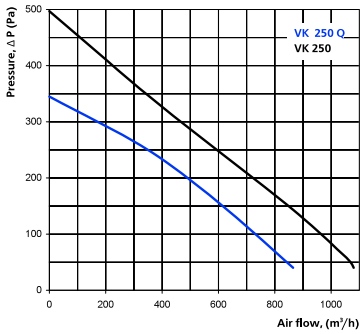


VK 200

Sound-power level		Octave-frequency band, (Hz)								
	Hz	Total	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	76	47	65	65	70	63	61	61	49
L_{wA} to outlet	dBA	81	53	66	71	73	65	68	63	51
L_{wA} to environment	dBA	64	45	62	59	48	34	26	45	39
VKS 200	Hz	Total	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	75	51	69	72	71	67	60	60	51
L_{wA} to outlet	dBA	81	56	74	71	76	69	62	57	55
L_{wA} to environment	dBA	65	49	63	60	47	35	28	47	39

	VK 250 Q	VK250	VK 315	VKS 315
Voltage, V/50Hz	230	230	230	230
Power consumption, W	108	173	200	310
Current, A	0,47	0,76	0,88	1,36
Maximum air consumption, m^3/h	865	1080	1340	1700
RPM	2560	2090	2655	2590
Noise level at 3 m, dBA	51	50	50	53
Maximal temperature of transferred air, °C	-25 +50	-25 +50	-25 +50	-25 +45
Index of protection	IP X4	IP X4	IP X4	IP X4

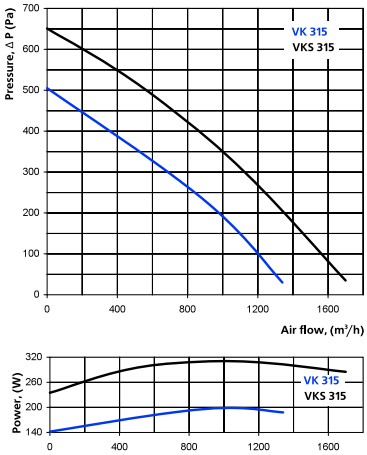
VENTS VK



VK 250 Q

Sound-power level		Octave-frequency band, (Hz)								
	Hz	Total	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	68	46	59	62	65	60	59	64	53
L_{wA} to outlet	dBA	72	47	62	62	65	65	60	64	57
L_{wA} to environment	dBA	60	41	57	53	44	35	37	54	45
VK 250	Hz	Total	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	75	59	64	69	68	66	62	53	46
L_{wA} to outlet	dBA	73	62	68	71	72	70	62	55	50
L_{wA} to environment	dBA	67	58	62	61	50	41	37	45	38

VENTS VK



VK 315

Sound-power level		Octave-frequency band, (Hz)								
	Hz	Total	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	72	35	50	61	66	64	64	60	55
L_{wA} to outlet	dBA	71	40	57	68	71	65	63	57	57
L_{wA} to environment	dBA	58	38	51	56	53	44	51	50	49
VKS 315	Hz	Total	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	75	57	68	71	71	69	66	61	59
L_{wA} to outlet	dBA	79	58	68	76	74	67	68	66	59
L_{wA} to environment	dBA	70	54	63	64	56	44	53	57	50

Type	Dimensions, mm							Weight, kg
	ØD	ØD1	B	L	L1	L2	L3	
VK 100 Q / VK 100	100	250	270	230	30	27	30	2,15
VK 125 Q / VK 125	125	250	270	220	30	27	30	2,2
VK 150	150 /160	300	310	286	30	30	30	2,6
VK 200	200	340	354	276	30	30	40	4,0
VKS 200	200	340	354	276	30	30	40	4,3
VK 250 Q / VK 250	250	340	354	265	30	30	40	4,5
VK 315	315	400	414	276	40	55	40	5,1
VKS 315	315	400	414	276	40	55	40	5,2