

Series VENTS VK



Inline centrifugal fans in plastic casing with the air capacity up to **1700 m³/h**

■ Applications

VK fans are applied for supply and exhaust ventilation systems of commercial, office and other premises. Compatible with Ø 100, 125, 150, 200, 250 and 315 mm round air ducts. Models marked VK...Q are supplied with quiet motors for low-noise applications. Due to the corrosion-resistant durable plastic casing, these models are the perfect solution for the installation in exhaust ventilation systems in humid premises such as bathrooms, kitchens etc.

■ Design

The casing is made of high-quality durable ABS plastic. The fans are equipped with waterproof terminal boxes. Models marked VK..R are supplied with the power cord and a plug.

■ Motor

The impeller with backward curved blades is powered by a single phase asynchronous AC motor with external rotor including the following features:

- ▶ A dynamic balanced impeller with backward curved blades balanced in two planes.

- ▶ Overheating protection with automatic restart.
- ▶ Maintenance-free ball bearings used with motors and designed for at least 40 000 hours operation. Models marked VKS are supplied with high-powered motors. Motor protection rating IP 44.

■ Speed control

Smooth or step speed control with a thyristor or autotransformer speed controller. Several fans may be connected to one speed controller provided that the total power and operating current do not exceed the rated speed controller parameters.

■ Mounting

The fan is mounted to the wall or ceiling with mounting brackets included into delivery set or with PVK holders, specially ordered accessory. The fan can be mounted at any angle. Electric connection and installation shall be performed in compliance with the manual and the wiring diagram on the terminal box.



VK fan kitchen exhaust ventilation example

Designation key: _____

Series	Duct diameter
VENTS VK S – high-powered motor	100; 125; 150*; 200; 250; 315

* VK 150 model is compatible with the air ducts both Ø 150 and 160 mm

Options
Q – low-powered motor. U – speed controller with electronic thermostat and temperature sensor integrated into the air duct. Equipped with power cord and IEC C14 electric plug. Temperature-based operation logic. Un – speed controller with electronic thermostat and external temperature sensor fixed on 4 m cable. Equipped with power cord and IEC C14 electric plug. Temperature-based operation logic. U1 – speed controller with electronic thermostat and temperature sensor integrated into the air duct. Equipped with power cord and IEC C14 electric plug. Timer-based operation logic. U1n – speed controller with electronic thermostat and external temperature sensor fixed on 4 m cable. Equipped with power cord and IEC C14 electric plug. Timer-based operation logic. P – built-in smooth speed controller and power cord with IEC C14 electric plug. R – power cord with IEC C14 electric plug.

Accessories



■ The fan with electronic temperature and control module (U option).

The ideal solution for ventilation of the premises requiring permanent temperature control, i.e. greenhouses. The fan with the electronic temperature and speed control module provides automatic control of the motor speed (air capacity) depending on air temperature in the air duct or in the room.

The front panel of the electronic module has the following control knobs:

- speed control knob for setting the motor speed;
- thermostat control knob for setting the temperature set point;
- thermostat indicator light.

The fan is available in two modifications:

- with the temperature sensor integrated inside the fan air duct (U/U1 option);
- with the external temperature sensor fixed on the cable, 4 m long (Un / U1n).

■ Control logic of the fan with the electronic temperature and speed control module.

Set the desired air temperature (thermostat set point) by turning the thermostat control knob. Set the required minimum impeller speed (air flow) by turning the speed control knob. The motor switches to maximum speed (maximum air flow) as the temperature reaches and exceeds the set temperature set point. The motor switches to the pre-set lower speed as the temperature drops down below the temperature set point. To avoid frequent motor speed switches when the air temperature in the duct is equal to the set temperature point, the speed switch delay is activated. There are two switch delay patterns for various cases:

1. The temperature sensor-based switch delay (U option): the motor switches to higher speed as the air temperature exceeds 2 °C above the set thermostat set point. The motor reverts to the preset lower speed as the air temperature drops below the

thermostat set point. This pattern is used to keep air temperature to within 2 °C. In this case the motor speed switches are rare.

2. The timer-based switch delay (U1 option): as the air temperature exceeds the set thermostat set point, the motor switches to higher speed and the switch delay timer is activated for 5 min. The motor reverts to lower speed as the air temperature drops down below the thermostat set point and only after 5 minutes timer countdown.

This pattern is used for exact air temperature control. The speed switches for the fan with U1 option are more frequent as compared to the operating logic of the fan with U option, however the minimum operating cycle at one speed is 5 minutes.

■ Example for temperature sensor delay pattern:

Initial conditions:

- rated speed is set as 60% of the maximum speed
- operating threshold is set as 25 °C
- air temperature in the duct is 20 °C

motor operates with the rated speed =60%

- air temperature in the duct rises
- motor operates with the rated speed =60%

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

air temperature in the duct goes down

motor operates with the speed =100%

- temperature in the duct reaches 25 °C again
- motor switches to the preset rated speed =60%

■ Example for timer delay pattern:

Initial conditions:

- rated speed is set as 60% of maximum speed
- operating threshold is set as 25 °C
- air temperature in the duct is 20 °C

motor operates with the rated speed =60%

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

fan switches to the maximum speed =100% and the delay timer switches for 5 minutes again on

- the temperature in the duct goes down
- the motor operates with the maximum speed =100%

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

after the timer stops, the motor switches to the preset rated speed (=60%). After the speed switch the timer switches again for 5 minutes on.

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

after the timer stops, the motor switches to the maximum speed (=100%). After the speed switch the delay timer switches again for 5 minutes on.

Thus, in timer delay pattern the delay timer activates every time the fan speed changes.



Vents VK...U with the electronic temperature and speed module



Bracket for easy installation supplied with the fan



VENTS VK...P with built-in speed controller

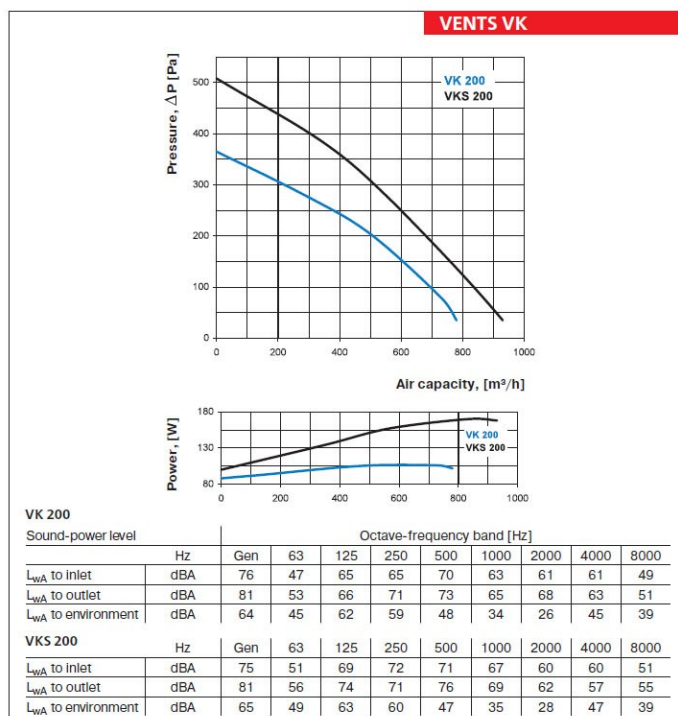
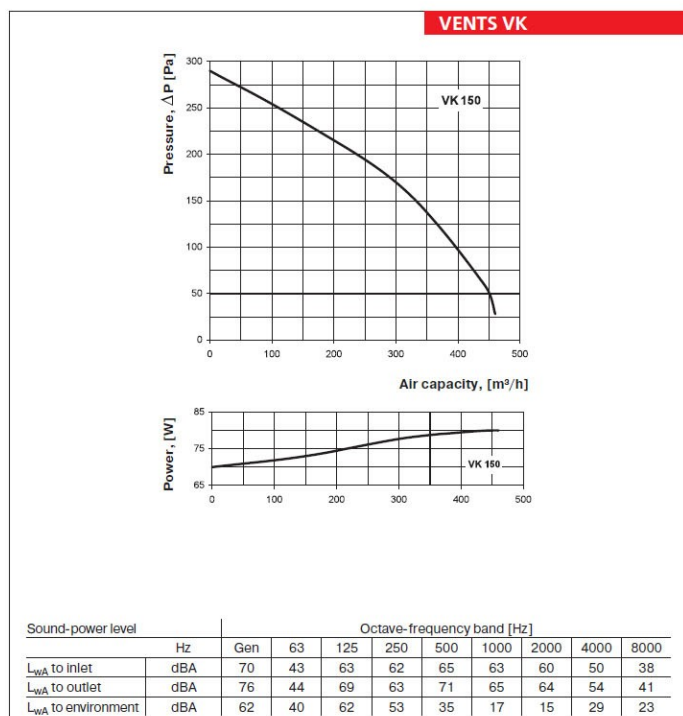
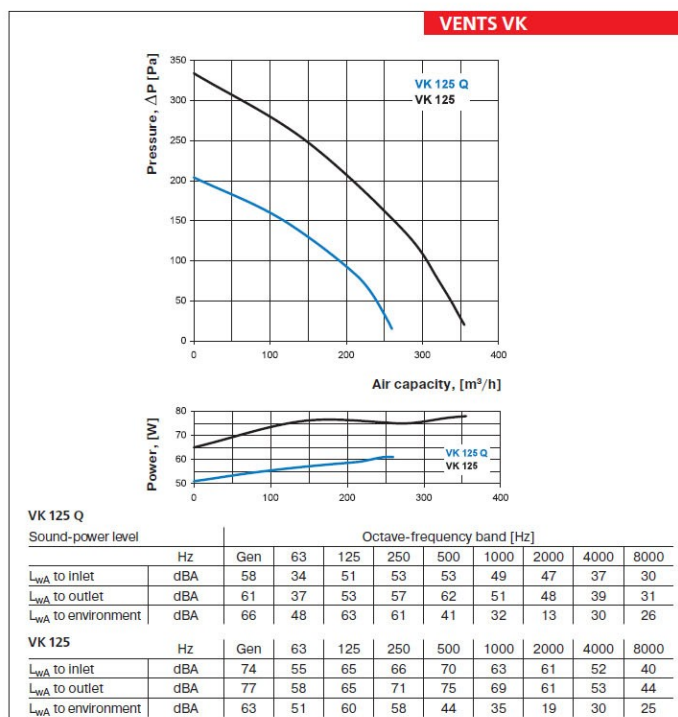
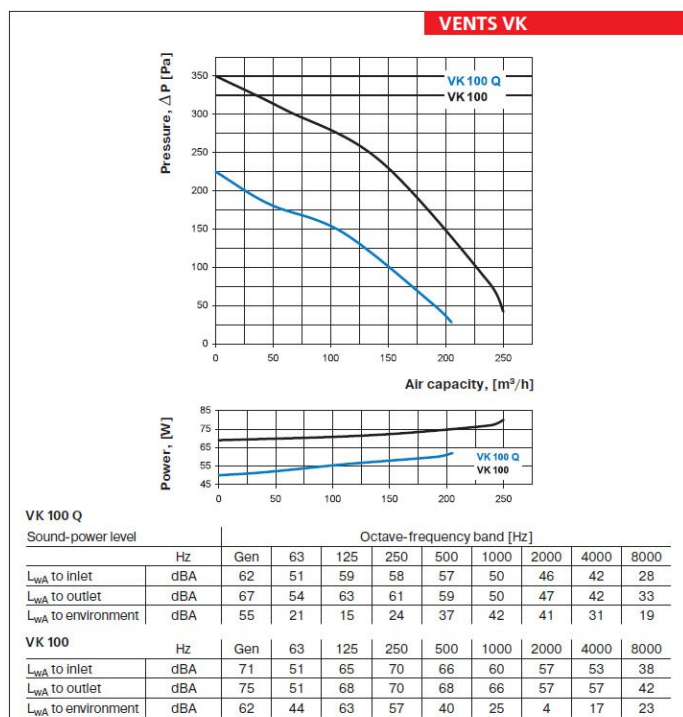


VENTS VK...R is equipped with a power cord

FANS FOR ROUND DUCTS

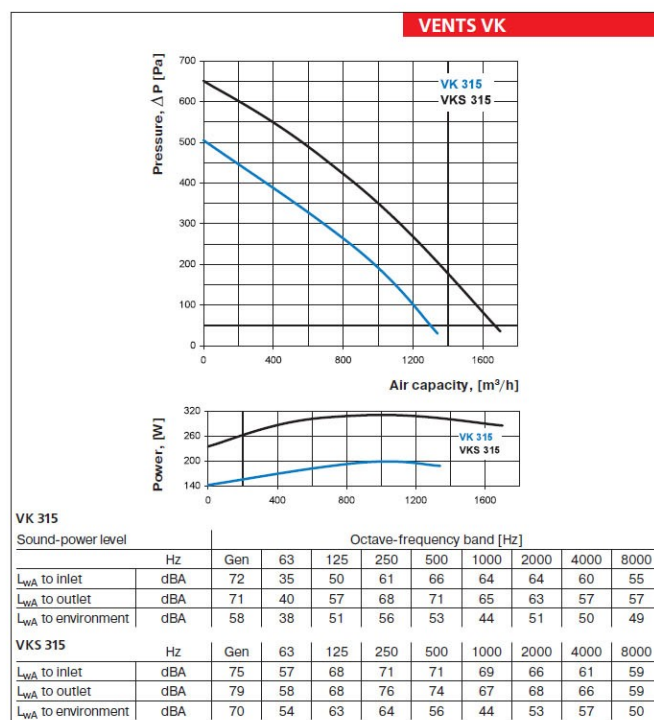
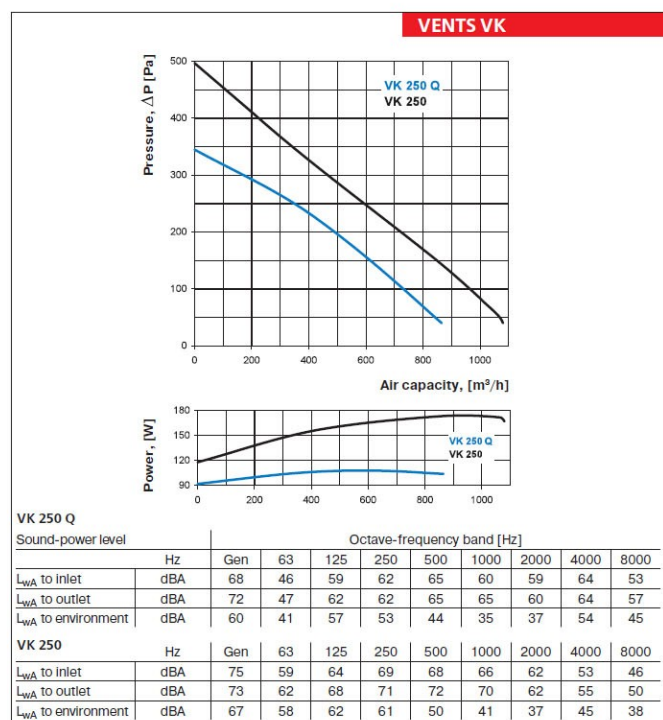
Technical data:

	VK 100 Q	VK 100	VK 125 Q	VK 125	VK 150	VK 200	VKS 200
Voltage [V / 50 Hz]	230	230	230	230	230	230	230
Power [W]	62	80	61	79	80	107	173
Current [A]	0.38	0.34	0.38	0.34	0.35	0.47	0.76
Max. air capacity [m³/h]	205	250	260	355	460	780	930
RPM [min⁻¹]	2650	2820	2610	2800	2725	2660	2125
Noise level at 3 m [dBA]	36	46	36	46	46	48	51
Transported air temperature [°C]	-25 +55	-25 +55	-25 +55	-25 +55	-25 +55	-25 +50	-25 +45
Protection rating	IP X4	IP X4	IP X4	IP X4	IP X4	IP X4	IP X4



Technical data:

	VK 250 Q	VK 250	VK 315	VKS 315
Voltage [V / 50 Hz]	230	230	230	230
Power [W]	108	173	200	310
Current [A]	0.47	0.76	0.88	1.36
Max. air capacity [m³/h]	865	1080	1340	1700
RPM [min⁻¹]	2560	2090	2655	2590
Noise level at 3 m [dBA]	51	50	50	53
Transported air temperature [°C]	-25 +50	-25 +50	-25 +50	-25 +45
Protection rating	IP X4	IP X4	IP X4	IP X4



Fan overall dimensions:

Type	Dimensions [mm]							Weight [kg]
	øD	øD1	B	L	L1	L2	L3	
VK 100 Q / VK 100	100	250	270	230	30	27	30	2.01
VK 125 Q / VK 125	125	250	270	220	30	27	30	2.2
VK 150	150 / 160	300	310	286	30	30	30	2.45
VK 200	200	340	354	276	30	30	40	3.0
VKS 200	200	340	354	276	30	30	40	4.3
VK 250 Q / VK 250	250	340	354	265	30	30	40	4.3
VK 315	315	400	414	276	40	55	40	4.85
VKS 315	315	400	414	276	40	55	40	4.85

