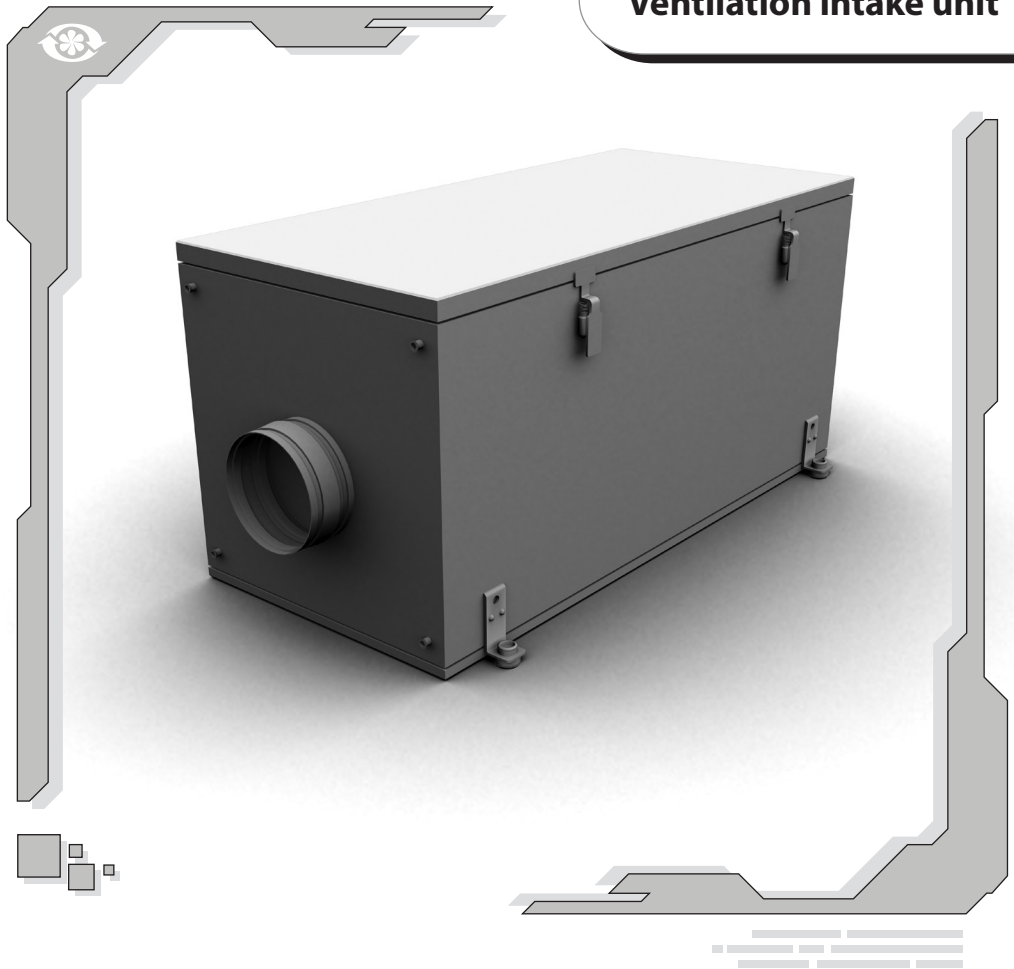


OPERATING MANUAL

Ventilation intake unit





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INTRODUCTION

This operating manual is joined with technical description, operation instruction and technical certificate for **Ventilation Intake Unit** (hereinafter referred to as «**VPA**») and contains information concerning the mounting, rules and warnings essential for proper and safety **VPA** operation.

Prior to commencement of operation, carefully read this manual and observe the instructions given in it.

DESIGNATION

VPA is designed for supplying the cleaned and heated outer air, free of flammable or explosive substances, chemically active fumes, dust, carbon black, etc., to residential and public buildings (individual houses, offices, hotels, conference-halls and other premises), and for providing the required quality of the air. The unit is mounted in enclosed and dry room with ambient temperature $+1\text{ }^{\circ}\text{C}$ to $+40\text{ }^{\circ}\text{C}$.

VPA is mounted in the air-distributing system by connecting to air-duct of round channels.

VPA represents the component part and is not a subject of independent operation.

VPA without automation components can be additionally equipped with adapted to it «**VENTS**» automation complex composed of: control panel; control unit; heater control opto-triac module; channel temperature sensor; differential pressure sensor. Application of automation complex allows governing the air flow rate, temperature (heating); air filtration monitoring, that allows significant saving of electric energy. This Unit doesn't include the automation complex.

DELIVERY SET

Delivery set contents:

- | | |
|--------------------------------------|---------|
| ■ VPA (appropriate type) | — 1 pc. |
| ■ operating manual | — 1 pc. |
| ■ transportation package: wooden box | — 1 pc. |



PROTECTION RATE

Protection rating from access to dangerous parts and water penetration is IP 44 (protection against the bodies with size more than or equal to 1.0 mm; protected against the water splashes); — **VPA** installed in the pipeline is related to devices of Class IP 22 (protection against the bodies with size more than or equal to 12.5 mm; protected against the water drops falling down vertically when the casing is deVPAted at angle of 15 °).

DESIGN LETTERS DIAGRAM

VPA XXX X.X X

Number of supply voltage phases:

1.3

Heater power, kW

1.8 2.4 3.4 3.6 5.1 6.0 9.0

Diameter of connecting tubes, mm:

100, 125, 150, 200, 250, 315

Device type:

VPA - ventilation intake unit

Example of design letters:

Ventilation input unit **VPA**, diameter of connecting tubes 150 mm, heater power 6.0 kW, phase connection: «**VENTS VPA 150-6.0-3**»

BASIC PARAMETERS AND DIMENSIONS

Basic technical parameters correspond to values shown in table 1. Overall and mounting dimensions are shown in table 2 and in fig. 1.

VPA design is improved continuously and, therefore, some models can slightly differ from those described in this operating manual.



Table 1

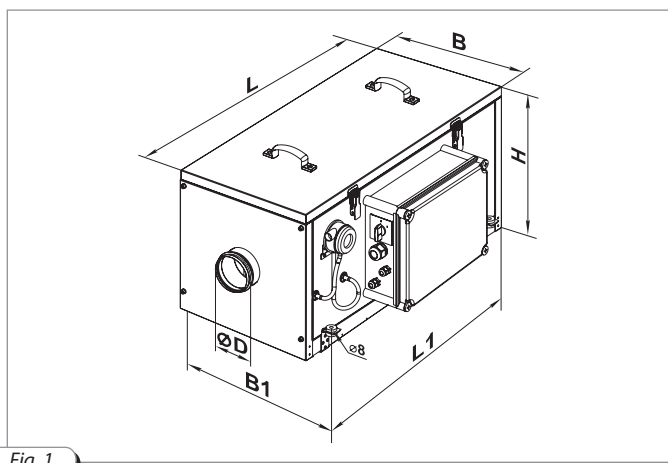
	VPA 100- 1.8-1	VPA 125- 2.4-1	VPA 150- 2.4-1	VPA 150- 3.4-1	VPA 150- 5.1-3	VPA 150- 6.0-3	VPA 200- 3.4-1	VPA 200- 5.1-3	VPA 200- 6.0-3
Voltage [V / 50 Hz]	1~ 230		1~ 230		3~ 400		1~ 230	3~ 400	
Maximum fan power [W]	73	75	98				193		
Fan current [A]	0.32	0.33	0.43				0.84		
Electric heater power [kW]	1.8	2.4	2.4	3.4	5.1	6.0	3.4	5.1	6.0
Electric heater current [A]	7.8	10.4	10.4	14.8	7.4	8.7	14.8	7.4	8.7
Number of electrical heating elements	3	3	2	2	3	3	2	3	3
Total unit power [kW]	1.873	2.475	2.498	3.498	5.198	6.098	3.593	5.293	6.193
Total unit current [A]	8.12	10.73	10.83	15.23	7.83	9.13	15.64	8.24	9.54
Air capacity [m ³ /h]	190	285	425				810		
RPM	2830	2800	2705				2780		
Noise level at 3 m [dBA]	27	28	29				30		
Transported air temperature [°C]	-25 up to +55		-25 up to +55				-25 up to +45		
Casing material	aluzinc		aluzinc				aluzinc		
Insulation	25 mm mineral wool		25 mm mineral wool				25 mm mineral wool		
Filter	G4		G4				G4		
Connected air duct size [mm]	100	125	150				200		
Weight [kg]	50		50				52		

	VPA 250- 3.6-3	VPA 250- 6.0-3	VPA 250- 9.0-3	VPA 315-6.0- 3*	VPA 315-9.0- 3*	VPA-1 315-6.0- 3*	VPA-1 315-9.0- 3*
Voltage [V / 50 Hz]	3~ 400			3~ 400			
Maximum fan power [W]	194			171		296	
Fan current [A]	0.85			0.77		1.34	
Electric heater power [kW]	3.6	6.0	9.0	6.0	9.0	6.0	9.0
Electric heater current [A]	5.3	8.7	13.0	8.7	13.0	8.7	13.0
Number of electrical heating elements	3	3	3	3	3	3	3
Total unit power [kW]	3.794	6.194	9.194	6.171	9.171	6.296	9.296
Total unit current [A]	6.15	9.55	13.85	9.47	13.77	10.04	14.34
Air capacity [m ³ /h]	990			1190		1520	
RPM	2790			2600		2720	
Noise level at 3 m [dBA]	30			30		30	
Transported air temperature [°C]	-25 up to +50			-25 up to +50		-25 up to +45	
Casing material	aluzinc			aluzinc			
Insulation	25 mm mineral wool			25 mm mineral wool			
Filter	G4			G4			
Connected air duct size [mm]	250			315			
Weight [kg]	52			62			



Table 2

Type	Max. dimensions, mm					
	ØD	B	B1	H	L	L1
VPA 100...	99	382	421.5	408	800	647
VPA 125...	124	382	421.5	408	800	647
VPA 150...	149	455	496.5	438	800	647
VPA 200...	199	487	526.5	513	835	684
VPA 250...	249	487	526.5	513	835	684
VPA 315...	314	527	566.5	548	900	750



SAFETY REQUIREMENTS

Installation and operation of VPA unit must be compliant with the provisions of all the applicable local and national construction, electrical and technical codes and standards.

VPA relates to electric equipment and, therefore, it is necessary to observe the safety rules concerning the electric equipment handling.

To servicing and mounting this product there are admitted the persons authorized to independent work on electric installations up to 1000 V and carefully studied this operating manual.

VPA must be used according to its designation only.

It is prohibited to carry out any works on VPA if it is connected to power supply.

Never remove the cover if **VPA** is energized!

Before commissioning VPA check:

- correctness of mounting in ducts, correctness of connection to power supply including grounding and external safety circuit-breakers.



In case of sensor-thermal switch operation it is necessary to de-energize **VPA**, identify the cause of this operation, eliminate this cause, and only then reenergize the unit.

Do not use **VPA** for operation with air-dust mixture.

VPA operation without reliable grounding is prohibited.

In the event of fire the **VPA** is extinguished by means of materials with CO₂ or the powder filler.

USING THE WATER FILLER IS PROHIBITED UNDER ANY CIRCUMSTANCES



DESIGN AND OPERATION PRINCIPLE

VPA provides controlling the air flow rate, air temperature (preheating) and to filter it as well. **VPA** exterior view is shown in fig. 2.

Inside the case 1 there is installed the centrifugal-axial fan 2 equipped with the motor with external rotor and integrated thermal protection. The motor is inside the operating turbine and doesn't require any maintenance. The air flow rate is controlled by means of the fan 2 speed switch with 3 speed steps. The air filter 3 of EU4 filtration class per DIN 24185 is located in the case 1 guiding rails from the fan 2 tube. For air preheating, the channel electric heater 4 with circular tube is mounted from the pressure tube. The electric heater 4 has the thermal protection against the overheating: safety device with automatic restart of **VPA** and emergency shutoff with manual recovery:

- 50° thermostat for **VPA** automatic switching-off and consequent switching-on after the heater housing has cooled.
- 90° thermal switch with automatic restart of **VPA** using manual recovery.

Sensor of the emergency thermal switch shutoffs circuits and doesn't return **VPA** to operating condition. To recover **VPA** it is necessary to push the manual restart «**RESET**» button.



ATTENTION! VPA operation without the thermal protection switches for tubular electric heating elements is PROHIBITED!

VPA is connected to standard round channels of the air network.

The hinged (pos. 5) or removable cover uses the place for mounting **VPA** in optimal manner.



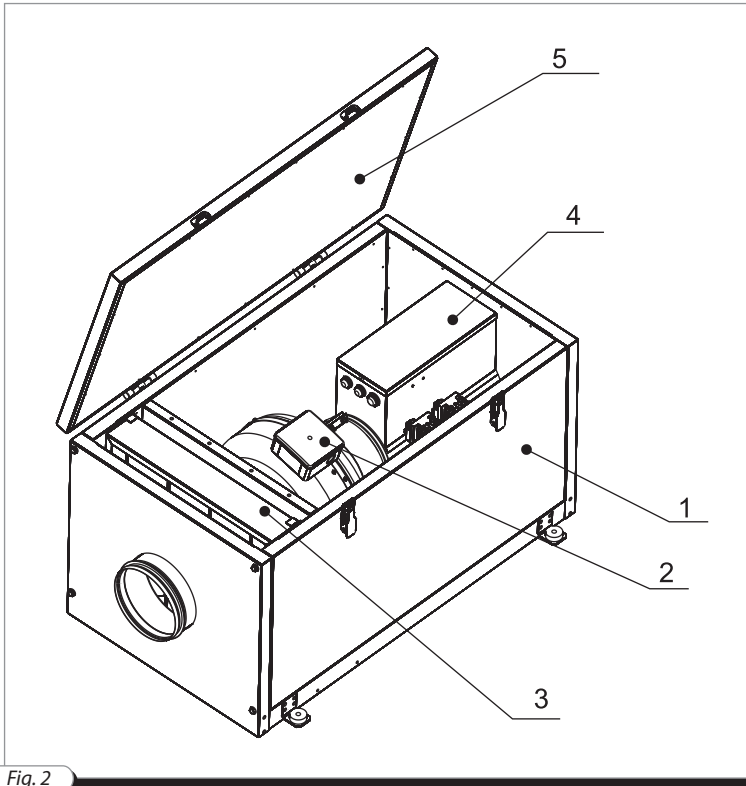


Fig. 2





VPA shall be mounted by qualified person or company properly trained and having the required tools and materials.

MOUNTING

VPA shall be mounted in such way that the arrow on the cover coincides with air flow direction in the system and there is the sufficient space for access for maintenance, service or replacement.

VPA can be mounted on flat surface or hanged at threaded rod; the unit shall be thoroughly secured to eliminate the risk of releasing or falling down (it is necessary to take into consideration the **VPA** weight and material to which the unit is attached), using all mounting L-holders containing the antivibration inserts and attached to unit base (fig. 3)

VPA is designed for mounting in the round ducts;

- we recommend to attach the pipeline **VPA** the flexible fitting to prevent the noise and random oscillation transmission;
- the size of connected channel must coincide with the size of hole in **VPA**

VPA distance to duct turns shall be at least by two times less than the channel connecting diameter.

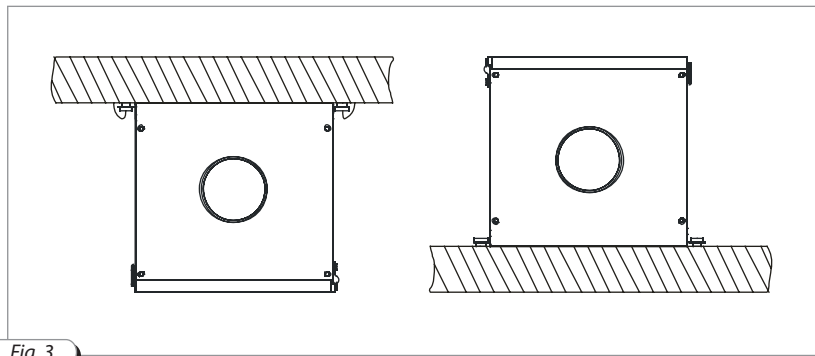


Fig. 3





PRIOR TO ANY WORKS IN VPA, IT MUST BE DISCONNECTED FROM THE POWER SUPPLY!

CONNECTING TO ELECTRIC NETWORK

Depending on **VPA** type, 230 V / 50 Hz AC or 400 V / 50 Hz AC power supply is used.

Connecting **VPA** to electric network is performed by the qualified electrician only.

VPA is connected to electric network by means of durable insulated and thermoresistant wires with the appropriate cross-section area.

For **VPA** connection there are used the terminal blocks X1, X2, X3 located on terminal unit inside **VPA**.

Diagram of connecting **VPA** to single-phase electric network is shown in fig. 4, diagram of connecting **VPA** to three-phase electric network is shown in fig. 5.

Terminal block X1 (group of contacts «M») is designed for connecting the fan motor. Terminal block X3 (group of contacts «E») is designed for connecting the tubular electric heating element (single-phase connection — fig. 4, three-phase connection — fig. 5). Terminal block X2 (group of contacts «TS») is designed for connecting the thermal switches: contacts «1-2» — for connecting the thermal switch with automatic restart (operation temperature is 50 °C); contacts «3-4» — for connecting the thermal switch with manual restart (operation temperature is 90 °C).

All power supply phases should be connected **VPA** the circuit-breaker. For every electric consumer (fan motor, tubular electric heating element), there is used the individual circuit-breaker with parameters according to consumed current rate (see table 1).

Rated values of VPA electric parameters are shown in the manufacture's label.



Any changes in internal connection are prohibited and lead to warranty cancellation.



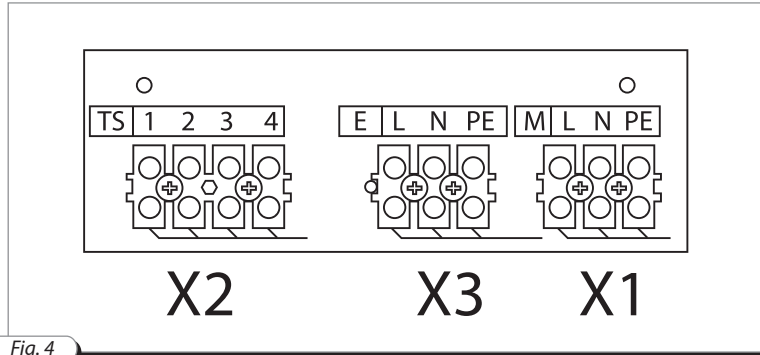


Fig. 4

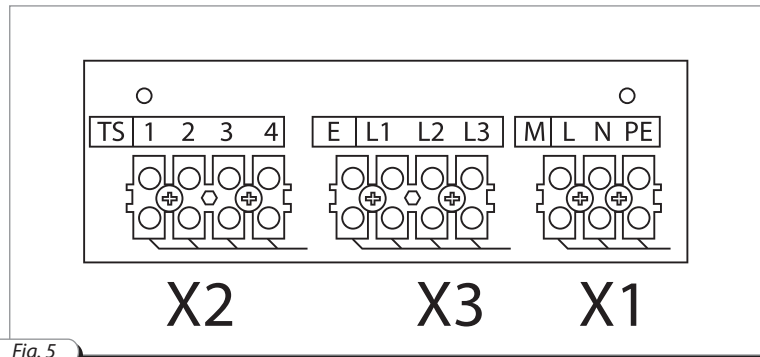


Fig. 5



Cross-section area values in table 3 are guiding only!

While selecting the cross-section area, take into consideration the wire maximum allowable heating dependent on the maximum current, the wire length and its location (air, wall).

Table. 3

Type	Circuit-breaker	Copper cable	
		single-phase	three-phase
VPA 100-1.8-1	230 V; 10 A	3 X 2.5	
VPA 125-2.4-1	230 V; 16 A	3 X 2.5	
VPA 150-2.4-1	230 V; 16 A	3 X 2.5	
VPA 150-3.4-1	230 V; 25 A	3 X 2.5	
VPA 150-5.1-3	400 V; 10 A		5 X 2.5
VPA 150-6.0-13	400 V; 16 A		5 X 2.5
VPA 200-3.4-1	230 V; 25 A	3 X 2.5	
VPA 200-5.1-3	400 V; 10 A		5 X 2.5
VPA 200-6.0-3	400 V; 16 A		5 X 2.5
VPA 250-3.6-3	400 V; 10 A		5 X 2.5
VPA 250-6.0-3	400 V; 16 A		5 X 2.5
VPA 250-9.0-3	400 V; 25 A		5 X 2.5
VPA 315-6.0-3	400 V; 16 A		5 X 2.5
VPA 315-9.0-3	400 V; 25 A		5 X 2.5
VPA-1 315-6.0-3	400 V; 16 A		5 X 2.5
VPA-1 315-9.0-3	400 V; 25 A		5 X 2.5



STORAGE AND TRANSPORTATION RULES

VPA should be stored in the factory package in well ventilated dry premise at temperature of -5 °C to +40 °C.

Presence of the fumes and impurities in the air, leading to corrosion and breaking the insulation and fittings sealing, is not admitted.

During the unloading and storage, it is necessary to use lifting equipment in order to avoid the product damage due to falling down or strong oscillation.

Transportation is allowed by any transport type providing the product protection against precipitation and mechanical damage.

Loading and unloading shall be executed without knocks and impacts.

MANUFACTURER'S WARRANTY

Manufacturer guarantees the normal operation of **VPA** during 2 years from the on-sale date through retail distribution network under the condition of transportation, storage, mounting and operation rules observation.

In the event of absence of on-sale date, the warranty period is calculated from release date.

In case of **VPA** abnormal operation during the warranty period the manufacturer accepts the customer's claims only at receiving from the customer the technically reasonable act with the failure characteristic specified.

In case of unauthorized modification of electric circuit, the product is terminated to be a subject of warranty service.

Warranty (at presence of warranty card with trading organization stamp and operating manual for product) and post-warranty repair of **VPA** is executed at manufacturing factory.



THE CLAIMS WITHOUT THE OPERATING MANUAL FOR PRODUCT WITH FILLED-IN COMMISSIONING CERTIFICATE ARE NOT ACCEPTED.





MANUFACTURER is not responsible for damages resulting from VPA misuse or gross mechanical intervention. VPA owner must follow the guidelines.

ACCEPTANCE CERTIFICATE

Ventilation intake unit «VPA _____» complies with technical requirements and is judged as ready for operation.

Acceptor mark

Release date

Seller

Name of trading organization, shop stamp

On-sell date



COMMISSIONING CERTIFICATE

Ventilation intake unit «VPA _____» is connected to electric network according to requirements of this Operating Manual by specialist:

Name _____

Date _____ **Signature** _____

WARRANTY CARD

V29EN-03



V29EN-03

