

# Use and Maintenance Manual



## Stand radial fans **WPA-E-N**

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## 1. Introductory Remarks

The purpose of the present User's Manual is to supply User with directions within the range of application, installation, start-up and the operational use of the **WPA-E-N stand radial fans**.

**Installing, start up and operational use are exclusively admissible after getting acquainted with the contents of the Use and Maintenance Manual.**

With regard to continuity of work carried on improvement of our products, we reserve for ourselves the revision possibility of the draft and technological changes improving their functional features and safety.

The construction of the **WPA-E-N stand radial fans** meets the requirements of the current state of technology as well as the safety and health assurances included in:

- **2006/42/EC Machinery Directive** of the European Parliament and of the Council of 17 May, 2006 on machinery – amending the 95/16/EC (recast) */Journal of Laws EC L157 of 09.06.2006, page 24/*
- **2014/35/EC Directive** of the European Parliament and of the Council of 26 February, 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits. */Journal of Laws EC L96 of 29.03.2014/*

The appliance meets the requirements included in:

- **2009/125/EC (ErP) Directive** of the European Parliament and of the Council of October 21<sup>th</sup>, 2009 establishing a framework for the setting of ecodesign requirements for energy-related products */Journal of Laws L285 of 31.10.2009/*
- **327/2011 (EU) Commission Regulation** of March 30<sup>th</sup>, 2011 on implementing the **2009/125/EC Directive** of the European Parliament and of the Council with regard to ecodesign requirements for fans driven by motors with an electric input power between 125W and 500 kW */Journal of Laws L90 of 06.04.2011/*

The device has been constructed and produced on the basis of following harmonized standards:

- |                                      |  |
|--------------------------------------|--|
| • <b>EN ISO-12100:2012</b>           | - "Safety of machinery – Basic concepts, general principles for design. Risk assessment and risk reduction". |
| • <b>EN 60204-1:2018-12</b>          | - "Safety of machinery – Electrical equipment of machines. Part 1: General requirements".                    |
| • <b>EN 60034-1:2011</b>             | - "Rotating electrical machines – Part 1: Rating data and parameters".                                       |
| • <b>EN ISO 5802:2008/A1:2015-07</b> | - "Industrial Fans – Performance testing in situ of installing".   |
| • <b>EN ISO 13857:2010</b>           | - "Safety of machinery – Safe distances to prevent hazard zones being reached by upper and lower limbs".     |

## 2. Application

In general, WPA-E-N fans have been developed for local ventilation. They have to be installed on wall brackets inside buildings (indoor application). As they can overcome significant flow resistances, they are especially appropriate for application in systems with local exhausts.

Radial stand fans are designed for conveying the air of dustiness not exceeding 0,3 g/m<sup>3</sup>, without viscous impurities, without aggressive pollutants or substances creating explosion hazard.

### 3. Reservations of Producer

- A. Manufacturer accepts no liability for any consequences following from the operational use that is in contradiction to the purpose of application.
- B. It is unacceptable to install on the device structure any additional elements not belonging to its normal construction or accessory set.
- C. Any structural changes or modification of the device, carried out by User on one's own are not permitted.
- D. Protect the housing from mechanical damage.
- E. Prior to installing check the load capacity of the building structure where the device will be mounted. Unsure mounting could cause risk to personnel / people in vicinity and effect in damage of the device.
- F. **The fan cannot be used for conveying the air contaminated with a mixture of flammable substances in form of gas, vapour, mist and dust that in connection with the air create the explosive atmosphere.**
- G. Do not use the fan for conveying the air containing viscous impurities that could accumulate on the device surface, especially on the impeller.
- H. Neither use it for forwarding the air with aggressive pollutants which will destructively effect the device structure.
- I. During operation, the maximum impeller rotations should not exceed the nominal rotations.
- J. Manufacturer is not responsible for wounds, injuries, body laceration experienced by User or personnel during the improper operational use.

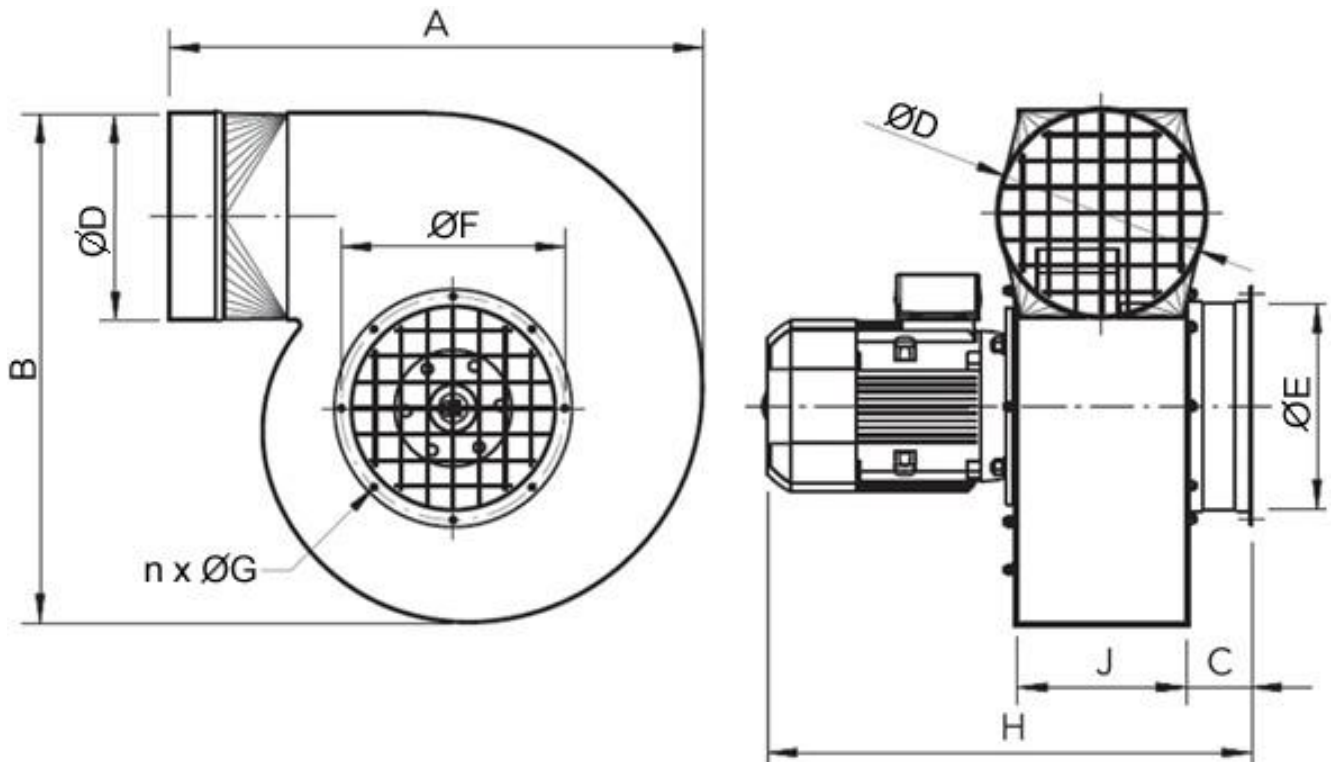
### 4. Technical Data

Table No.1

Type of the fan	Synchronous rotations	Supply voltage	Motor rate	Ingress protection IP	Acoustic pressure level from distance		Maximum volume flow	Maximum vacuum	Weight
					1m	5m			
	[r.p.m]	[V]	[kW]	[dB (A)]	[m <sup>3</sup> /h]	[Pa]	[kg]		
WPA-3-E-1-N	3000	230	<b>0,25</b>	54	78/70*	64/56*	1160	940	12,0
WPA-3-E-3-N		3x400							
WPA-5-E-1-N	3000	230	<b>0,37</b>	54	76/67*	62/53*	1900	1250	16,5
WPA-5-E-3-N	3000	3x400	<b>0,37</b>	54	76/67*	62/53*	1900	1250	
WPA-6-E-1-N	3000	230	<b>0,75</b>	54	83/75*	69/61*	2500	1700	21,0
WPA-6-E-3-N	3000	3x400	<b>0,75</b>	54	83/75*	69/61*	2500	1700	
WPA-7-E-1-N	3000	230	<b>1,1</b>	54	86/74*	72/60*	3100	1800	23,0
WPA-7-E-3-N	3000	3x400	<b>1,1</b>	54	86/74*	72/60*	3100	1800	
WPA-8-E-3-N	3000	3x400	<b>1,5</b>	54	88/78*	74/64*	3900	2050	29,0
WPA-9-E-3-N	3000	3x400	<b>2,2</b>	54	91/82*	77/68*	4500	2400	36,0
WPA-10-E-3-N	3000	3x400	<b>3,0</b>	54	91/81*	77/67*	6200	2450	50,0
WPA-11-E-3-N	3000	3x400	<b>5,5</b>	54	97/88*	83/74*	8050	2950	64,0
WPA-13-E-3-N	3000	3x400	<b>7,5</b>	54	99/90*	85/76*	10800	3300	85,0

\* Measurement has been carried out – with the additional TK L=500 mm silencer installed at the fan at the inlet and outlet. (For the fan WPA-3-E-N apply a silencer TK L=370 mm)

1. Maximum temperature of the conveyed air is +60°C. Maximum temperature in the work area +40°C.
2. Maximum dustiness of the conveyed air must not exceed 0,3 g/m<sup>3</sup>.



**Fig. No.1 – Stand radial fans of series WPA-E-N – Structure and Dimensions**

**Table No.2 – Dimensions**

Type	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	n [szt.]	G [mm]	H [mm]	J [mm]
WPA-3-E-1-N	415	385	50	125	125	155	6	7,0	370	130
WPA-3-E-3-N										
WPA-5-E-1-N	485	480	60	160	160	194	6	7,0	420	140
WPA-5-E-3-N										
WPA-6-E-1-N	500	505	60	160	160	194	6	7,0	445	140
WPA-6-E-3-N										
WPA-7-E-1-N	550	520	60	200	160	194	6	7,0	460	155
WPA-7-E-3-N										
WPA-8-E-3-N	570	550	60	200	200	224	8	9,0	490	155
						234	6	7,0		
						246	8	9,0		
WPA-9-E-3-N	615	615	60	200	200	224	8	9,0	510	155
						234	6	7,0		
						246	8	9,0		
WPA-10-E-3-N	655	625	80	250	250	274	8	9,0	670	232
WPA-11-E-3-N	675	645	80	250	250	274	8	9,0	680	232
WPA-13-E-3-N	805	780	90	315	315	344	8	9,0	735	258

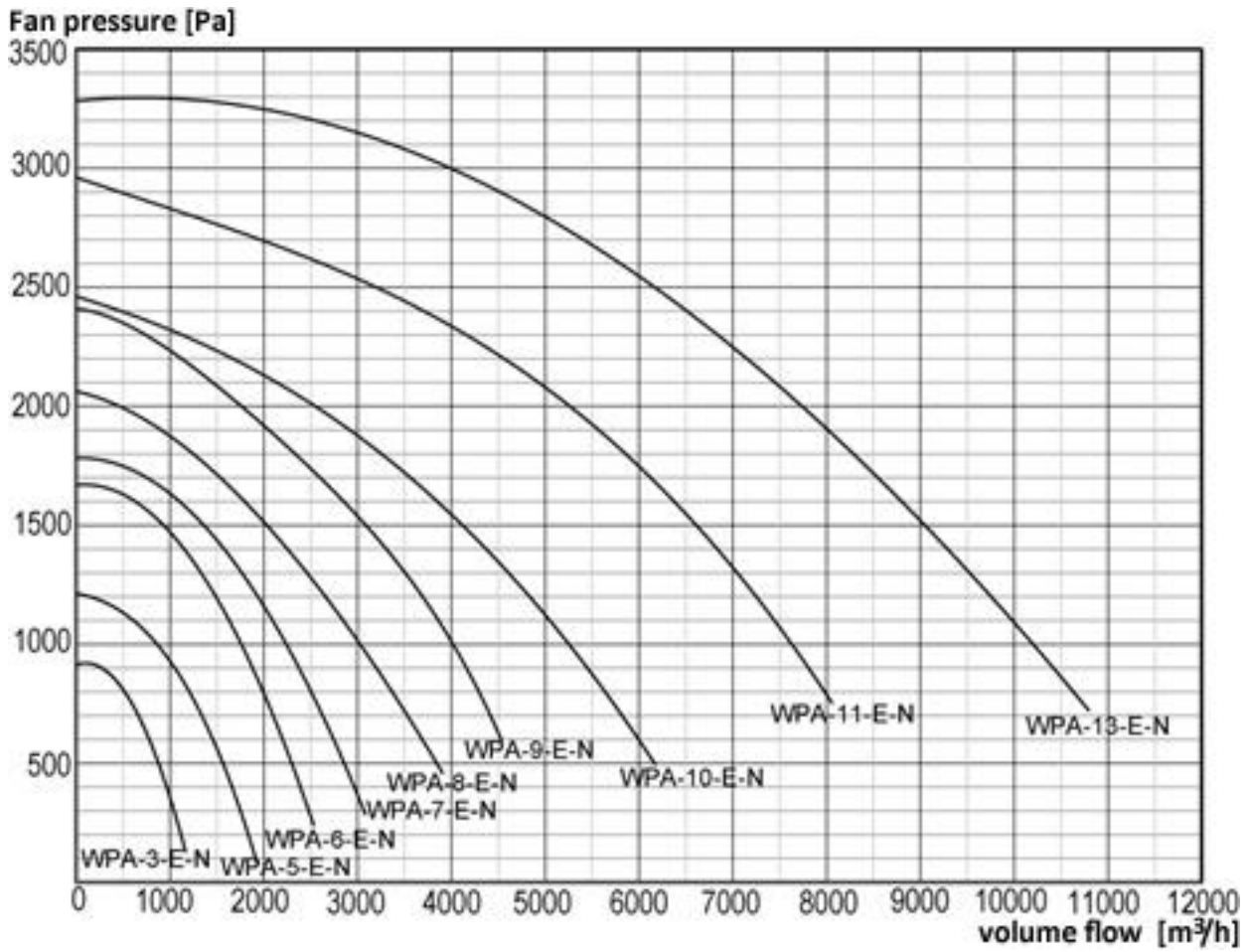


Fig. No.2 – Flow Charts

#### 4.1 Information pertaining to energetic efficiency for fans – according to Regulation of Committee (EU) No. 327/2011

Table No.3

Product information requirements	WPA-3-1	WPA-3-3	WPA-5-1	WPA-5-3	WPA-6-1	WPA-6-3	WPA-7-1	WPA-7-3	WPA-8-3	WPA-9-3	WPA-10-3	WPA-11-3	WPA-13-3
1 Overall efficiency (%)	51	50	67,6	70	54,1	61,1	65,1	65,6	62,2	67	66,1	67,1	65,3
2 Measurement category (A-D)	C												
3 Efficiency category	static												
4 Efficiency grade at optimum energy efficiency point (%)	43,9	44,5	47,9	48,1	50,6	48,7	50,5	51,4	52,2	53,3	55,9	56,9	59,4
5 Did the efficiency calculation use VSD?	no												
6 Year of manufacture	see nominal data plate												
7a Manufacturer's name	see nominal data plate												
7b Commercial registration number	see nominal data plate												
7c Place of manufacturing	see nominal data plate												
8 Model number	see nominal data plate												
9a Rated motor power input (kW)	0,25	0,25	0,37	0,37	0,75	0,75	1,1	1,1	1,5	2,2	3,0	5,5	7,5
9b Flow rate at the optimum Energy efficiency (m <sup>3</sup> /h)	700	600	1430	1180	1580	1250	2000	1870	2030	2230	3750	4250	6800
9c Pressure at the optimum Energy efficiency (Pa)	620	770	970	1000	1270	1360	1400	1400	1595	2000	1700	2376	2440
10 Rotations per minute at the optimum efficiency point (r.p.m.)	2760	2800	2770	2790	2800	2870	2770	2870	2880	2880	2880	2900	2930
11 Specific ratio	1,007												
12 Fan disassembly, recycling and disposal at the end of operational life	see the sections concerning the maintenance and recycling												
13 To minimize the environmental impact and ensure the optimal live expectancy of the fan	follow maintenance instructions of the fan												
14 Description of additional items applied for determining the energetic efficiency of the fan	not supplied with the fan												

## 5. Structure and Function

The fan consists of a spiral steel housing and a motor with directly mounted (on its shaft) radial aluminium impeller. Its impeller with profiled blades provides low acoustic pressure level. The fan Inlet is equipped with a mounting flange to install the fan on a wall bracket or on a filtering unit. Whereas, the fan outlet is ended with a round connection fitting piece, for a safe attachment of the rigid seam spiral ducts or for flexible connections. For safety reasons, both, the fan inlet and outlet are equipped with protective grills. It is recommended to install silencers type TK on the inlet and outlet (see acoustic data in Table No.1).

#### ADDITIONAL EQUIPMENT – delivery on separate order:

- motor protective switches WS – with short-circuit- and overload protection,
- isolating switches (safety switches),
- wall brackets,
- silencers.

## 6. Assembly and Start-up

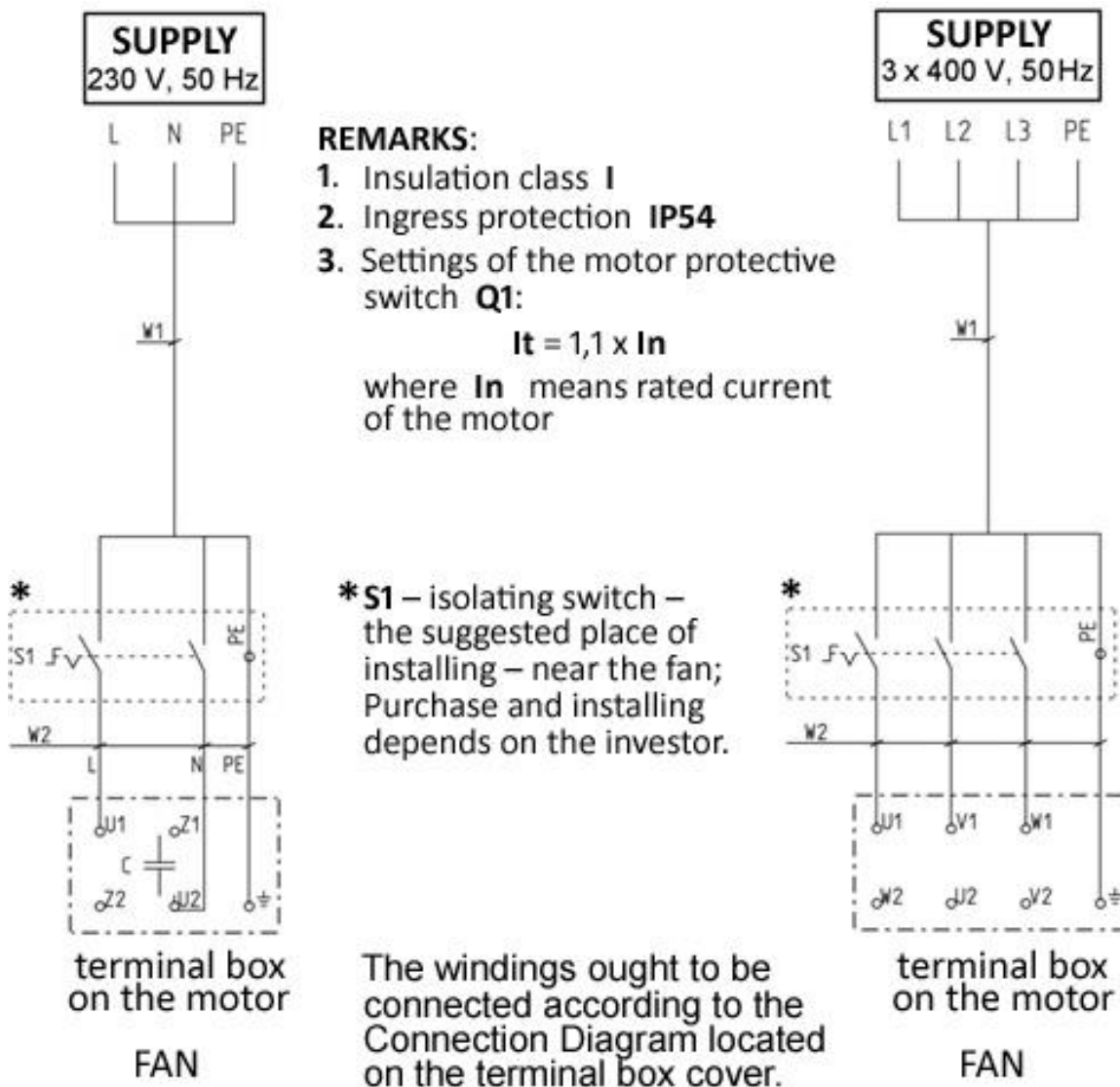
The appliance has been developed for use in industrial rooms. Manufacturer suggests installing the fan on a wall bracket (delivery on separate order).

**Prior to connection, make sure whether the parameters of the hitherto existing electrical installation are matching the values on the nominal plate. In case of inconsistency the connection cannot be executed.**

Any activities related to connection to the power supply line has to be carried out by User on one's own. Additionally, important is to select the appropriate sort and section of the power supply cable, according to the regulations, and selecting the short-circuit- and overload protection, with reference to the local conditions.

**WARNING**

Any activities related to connection to the power supply system ought to be executed by an authorized person with electrical qualifications and according to the being in force regulations and to the information in Fig. No.3.



**Fig. No.3 – Connection Diagram – WPA-E-N**

Before the start-up check the connection between the motor and the PE protection cable and the correctness of the electrical connections (**impeller rotation sense has to be according to the arrow on the housing – if opposite – change the phase connection sequence**).



## 7. Operational Use

Construction of the device provides reliable function, directly after its start-up without continuous technical supervision. If the place of operational use is changed – repeat the steps as mentioned in Section 6, according to the installing and adapting the ventilation system to the to the new conditions.

In case when any failure or defective function of the device is visually or by noise noticed, take steps as stated in the Section 8.

## 8. Troubleshooting Guide

Table No.4

	Problem	Possible reason	Corrective action
1.	Sudden and significant drop in intake volume flow.	Pollutants, foreign objects (being obstacle / barrier do the air flow) have deposited at the inlet grill.	Remove the pollutants; clean the ventilation conduits.
2.	Sudden vibrations of the fan are occurring.	Obstacle objects reducing the air flow got stack at the impeller.	Disconnect the fan from the power supply system, and remove the obstacle.
		The impeller is defective.	Replace the impeller with motor for a new one.
3.	Noisy work of the fan along with small volume flow.	Incorrect impeller rotation sense.	Change the impeller rotation sense by changing the phase connection sequence (three-phase fans only).

## 9. Maintenance and Control

During the operational use, the fan construction guarantees its efficient function without continuous everyday technical supervision. Nevertheless, in the course of operational use, remember to undertake systematic maintenance steps.

Once a year the fan should undergo technical revision – the electrical motor ought to be examined according to the instructions of the motor manufacturer.

Every several years, check the mechanical and electrical connections. The electrical installation must be examined according to the PN-HD 60364-6 “Electrical installations of low voltage – Part 6: Verification”.

If faulty function of the system is noticed, undertake additional control. The inlet grills must be kept in clean state.



**Any maintenance activities ought to be executed exclusively by an authorized person with adequate qualifications, and after disconnection from the power supply system.**

## 10. Occupational Health and Safety

**Start up and the operational use is only admissible exclusively after getting acquainted with the contents of the present manual.** The fan will not cause any hazard to User/personnel, if it is stably installed to the supporting structure or fastened within the ventilation system.

Connect the fan to the power supply system, strictly according to the enclosed Connection Diagram and the guidelines shown in Section 6 of the present Use and Maintenance Manual.

**WARNING**

Any activities connected with energizing ought to be executed exclusively by an authorized person with adequate qualifications and in accordance with the valid safety regulations.

The motor ought to be protected from the short-circuit- and overload effects. During the operational use, check the connection between the fan and the PE protective cable.

**WARNING**

Any technical revisions and activities connected with repair, have to be executed, necessarily after disconnection from the power supply system (isolating switch).

## 11. Transport and Storage

WPA-3-E, WPA-5-E, WPA-6-E, WPA-7-E, WPA-8-E and WPA-9-E are placed in cardboard (weight is written on the cardboard surface), whereas large fans WPA-10-E, WPA-11-E and WPA-13-E are wrapped in foil and placed on palettes.

Silencers and elbows should be forwarded in separate cardboard packages.

During the loading, re-loading and transport the package should not be thrown neither knocked down or charged with a load on the top. Do not place one package on top of another and during the transport protect the device from atmospheric factors and from damage, indents.

The device ought to be stored in dry and well ventilated rooms.

## 12. Terms of warranty

The period of warranty for the purchased device is indicated in the “Card of Warranty”. The warranty does not comprise:

- mechanical damage and dysfunctions caused by User,
- device failures caused during use which was in contradiction with the purpose of the operational use and the present Use and Maintenance Manual,
- damages / malfunctions being caused during improper transport, storage or incorrect maintenance,

**Infringement of the Section 3 “Reservations of Producer” of the Use and Maintenance Manual and especially modifications undertaken by User on one’s own shall cause the loss of warranty validity.**

## 13. Sample of Declaration of Conformity

### Declaration of Conformity EC No. ....

Manufacturer (eventually the authorized representative / importer):

name: **KLIMAWENT S.A.**

address: **81-571 Gdynia, ul. Chwaszczyńska 194**

A person, authorized for issuing the technical documentation: Teodor Świrbutowicz, KLIMAWENT S.A.

hereby declares that the appliance:

name: **stand radial fan**

type/model: **WPA-E-N**

serial number: ..... year of production: .....

meets the requirements of the subsequent European Directives:

- **2006/42/EC Machinery Directive** of the European Parliament and of the Council of 17 May, 2006 on machinery – amending the 95/16/EC (recast) */Journal of Laws EC L157 of 09.06.2006, page 24/*
- **2014/35/EC Directive** of the European Parliament and of the Council of 26 February, 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits. */Journal of Laws EC L96 of 29.03.2014/*

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The device has been constructed and produced on the basis of following harmonized standards:

- |                                      |  |
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| • <b>EN ISO-12100:2012</b>           | – “Safety of machinery – Basic concepts, general principles for design. Risk assessment and risk reduction”. |
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| • <b>EN 60034-1:2011</b>             | – “Rotating electrical machines – Part 1: Rating data and parameters”.                                       |
| • <b>EN ISO 5802:2008/A1:2015-07</b> | – “Industrial Fans – Performance testing in situ of installing”  |
| • <b>EN ISO 13857:2010</b>           | – “Safety of machinery – Safe distances to prevent hazard zones being reached by upper and lower limbs”.     |

.....  
place, date

.....  
signature of authorised person

.....  
name, surname, function  
of the signatory

**KLIMAWENT S.A.**

**Supported Employment Enterprise**  
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District Court Gdańsk-Północ  
in Gdańsk, VII Wydział Gospodarczy  
of the National Register of Court  
KRS 0000308902 company stock  
13.779.200 zł paid in total

NIP: 958 159 21 35  
REGON: 220631262  
Bank Account: **Santander Bank Polska S.A.**  
56 1500 1025 1210 2007 8845 0000

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804W00	WPA-3-E-1-N	04.06.2019/EN
804W14	WPA-3-E-3-N	04.06.2019/EN
804W01	WPA-5-E-1-N	04.06.2019/EN
804W02	WPA-5-E-3-N	04.06.2019/EN
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804W05	WPA-7-E-3-N	04.06.2019/EN
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804W07	WPA-8-E-3-N	04.06.2019/EN
804W08	WPA-9-E-3-N	04.06.2019/EN
804W09	WPA-10-E-3-N	04.06.2019/EN
804W12	WPA-11-E-3-N	04.06.2019/EN
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