



User manual and operating instruction of
standard radial fans series : **WPL, WPM, WPH**

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Producer:

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Distribution:

Thank you for purchasing product of Planetfan Sp. z o.o. sp. k.



Before installing and starting up the fan, please read the user's manual installation of fans. Following the guidance and recommendations of this manual will allow for safe and trouble-free use of the delivered product.

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1. INTRODUCTION

1.1. Symbols used in the installation manual of standard fans produced by Planetfan



Caution! Preliminary safety and preparation of equipment for installation and operation of the installation instructions standard fans Planetfan.



Caution! Electrical device, install the device by qualified personnel. Connecting accordance with the instructions or performed by unqualified personnel may result in electric shock.



Caution! Rotating device - rotor does not stop immediately after switching off the device. Before maintenance work, make sure that the rotating parts are not moving, and whether the device is disconnected from the power supply.

The company Planetfan Sp. o.o. sp. k. is not responsible for any damages caused by improper assembly, installation, operation or maintenance contrary to the instructions below standard installation of fans Planetfan.

1.2. Introduction to installation

Centrifugal fans series WPL, WPM, WPH has been designed for industrial use in general and local ventilation systems. Fans are intended to pump fresh air at a temperature of -20 to + 40 ° C. Fans may run in duct systems with connected channels for suction and discharge sides. In the case of installation of the fan with a free inlet or outlet it must be protected from getting into the zone of the working rotor foreign bodies. Fans WPL, WPM, WPH are designed as standard to draw fresh air from the ambient air and discharge it into the channel connected on the outlet side. Fans series WPL, WPM, WPH can be made in two versions: stationary - marking WPL, WPM, WPH and mobile - marking WPL, WPM, WPH ... /./ M. The mobile version is equipped with wheels for easy transportation of the fan between the positions of work. If you need to connect the channel on the suction side the fan should be equipped with an additional fan tailpiece available as an option from the manufacturer of the fan. Fans WPL, WPM, WPH normally are protected against corrosion by powder painting. Optionally, the fan can be made of galvanized steel. This manual contains information and notes for the safe installation and commissioning of the fan. Installation instructions do not take into account local conditions, laws and regulations, compliance with which is the responsibility of the user.

Centrifugal fans type: WPL, WPM, WPH do not belong to the ready-to-use products are developed only in the form of components, equipment of ventilation systems. Fans can be operated only when installed in accordance with their intended purpose.

Do not use the above mentioned fans in places with high humidity entrusted to above 80% at 20°C, the air with particles of high-viscosity liquids (edible oils, lubricants, etc.), caustic gases or gases, vapors, dust that can create an explosive atmosphere.

The fans can be installed in facilities located at a height of up to 1000 [m] above sea level.



CAUTION! It is forbidden to place any objects on the fan.

You can adjust the performance of radial fan with the dampers on ducts intake or discharge of fan. Adjusting the throttle should not result in unstable operation of the fan in terms of flow.



CAUTION! Fans can be operated only if they have been installed in accordance with their purpose and security is guaranteed by the use of security according to EN13857 or other building protective measures.

1.3. ErP Directive

Due to the EU Commission Regulation No. 327/2011 of 30 March 2011 in order to implement Directive 2009/125 / EC, the scope of some fans in the EU is associated with certain conditions. The fan can be used in the EU only if they are satisfied for him ErP requirements of the Regulation. If the fan does not have the CE marking is not approved for use in the EU.

2. SAFETY.



CAUTION! The electrical connection must be made by qualified personnel in accordance with these instructions and applicable regulations.

Observe the instructions for operating the motor issued by the motor manufacturer, which is attached to the delivery.

Before starting any electrical work related to the fan motor, junction box, and in particular the protective covers against direct contact with live parts, make sure the device is properly disconnected from the power supply voltage. Moreover, all additional and support circuits should also be disconnected.



CAUTION! Before connecting, make sure that the voltage and frequency of the mains correspond to the data on the rating plates. In the case of non-compliance, do not connect the device.



CAUTION! The fan is a rotating device - impeller does not stop immediately after switching off the device. Before maintenance work, and in particular against touching the rotating elements, make sure the device is not working properly and that it is disconnected from the power supply voltage.



CAUTION! Before fitting the fan, make sure that the safety distances are maintained according to EN13857. If the fan is located in the area of threats, the manufacturer of the installation or the user must ensure that the protection / example. safety nets / both at an inlet side and an outlet to eliminate the threat. Security elements of the fan, protective devices may not be dismantled, circumvented or denied their functions. Failure can cause injury damage to the fan or installation.



CAUTION! Centrifugal fans standard series: WPL, WPM, WPH cannot be operated in the explosive atmosphere - the danger of ignition and explosion hazard!

3. TECHNICAL DATA, PRODUCT DESCRIPTION, FLOW PARAMETERS

Detailed flow data of supplied fan are shown in the Certificate of Quality Control.

For fans series: WPL, WPM, WPH to determine the energy efficiency category measuring B category performance has been used: **total**. In the calculation of the efficiency of the fan does not include the use of the control system of rotation, this unit is not a part of the fan structure.

3.1. Description of products.

Centrifugal standard fan series: WPL, WPM, WPH consist of the following elements:

- Impeller, - motor, - steel casing.

Fans can operate in temperatures ranging from -20 to + 40 ° C, optionally up to + 60 ° C.

Used motors have degree of protection IP54 or IP55.

Rotors of all fans are dynamically balanced in class G6.3 according to PN-N-01359: 1993.

Used motors: three-phase.

Any information regarding the type of fan, power supply, motor power, year of manufacture are indicated on the rating plate of the fan.

The fan is made with standard outlet of rectangular cross section. In the case of the need to connect the circular duct should be installed special connector on the outlet that meets the connection dimensions. Such connectors are not in the standard delivery, these elements represent the standard offer manufacturers of ventilation ducts.

3.2. Delivery / packaging, collection / transport and storage.

Fans and accessories are supplied in boxes, pallets EURO or on special pallets adapted to the dimensions of the product. In the case of delivery of products on pallets wrapped in protective foil.

Receipt of goods / transport.

- During transportation, loading and unloading, observe safety rules in the field of personal protective equipment (shoes and gloves) and safety rules governing the manual handling and mechanical (information on the weight of the fan on the nameplate!).
- Before commissioning, make sure that the packaging of the fan is not damaged. If you notice any damage to the packaging - must file a complaint with a company that provided transport service and notify the manufacturer. After unpacking, make sure the fan was not damaged during transport. Each fan is recommended to unpack in the presence of the driver of the transport company. If you notice any damage, report it to the driver and noted in the letter forwarding the transport company and contact the manufacturer of the fan.
- If in doubt, do not use the device. You should contact the manufacturer.
- Fans are transported in the assembled state. Each delivery is accompanied by fan documentation. The recipient is obliged to check compliance with the delivery documentation.
- Avoid impacts and shocks.

Storage.

- Fans should be stored under cover in a dry place, preferably in the warehouse adapted for storage of industrial products.
- The fan should be stored in its original packaging, so as not to affect its functional properties and performance.
- Avoid exposure to extreme heat and cold.
- Avoid too long period of storage, follow the recommendations of the motor manufacturer.
- Each time before starting the buildings and the user must check the correct mounting of the motor and the rotor inside the fan housing.

4. Installation, electrical connection

4.1. Fan installation

Centrifugal fans type: WPL, WPM, WPH are not ready-to-use products. These are industrial products manufactured on the basis of the customer's order, they can be operated only when installed as intended.

Keep in mind that:

- You have to follow the safety instructions, also in the field of personal protective equipment,
- Manufacturer of ventilation system is responsible for the compliance of the typical installation instructions and safety regulations in accordance with current norm.
- Before installing the fan at the final destination, check that the fan has not been damaged during transport, paying particular attention to the fan propeller: slightly rotate impeller inside the casing and check whether the impeller blades do not touch the fan casing, then check the equal gap between the blade tip and the casing . You should also pay attention to any obstacles in the inlet and outlet, if so remove it.
- Fan must be mounted the without any additional stresses, paying attention to the correct direction of rotation and flow direction according to the arrows located on the fan casing. Install the fan using screws in strength class 8.8. Permissible tightening torques: M6 = 9,5Nm, M8 = 23 Nm, M10 = 47Nm, M12 = 81 Nm. The fan is not equipped with a plug for direct plugging into the power supply. The power cables must be connected to the terminals on the motor in a place of installation. Pay attention to the proper selection of cables. When installed cable is long with a small cross-section it may cause the drop of tensions hindering motor starting.

When connecting rigid or flexible duct, remember not to add any additional load to the fan inlet/ outlet connectors.



CAUTION! Each motor must be protected against overload and short circuit with appropriate safety device chosen by the installer in accordance with PN-89 / E-05012.
Do not use the motor without neutralization or without earthing system, as this may cause electric shock and can lead to accumulation of dangerous electrostatic charges on the propeller blades.



CAUTION! In case of free inlet use the fan inlet guard protection!
In case when the fan is mounted at the beginning or end of the ventilation system to avoid any unwanted object getting to the working space of impeller also use guard protection. **The decision to mount safety guards is the responsibility of the installer.**

4.2. Electrical connection

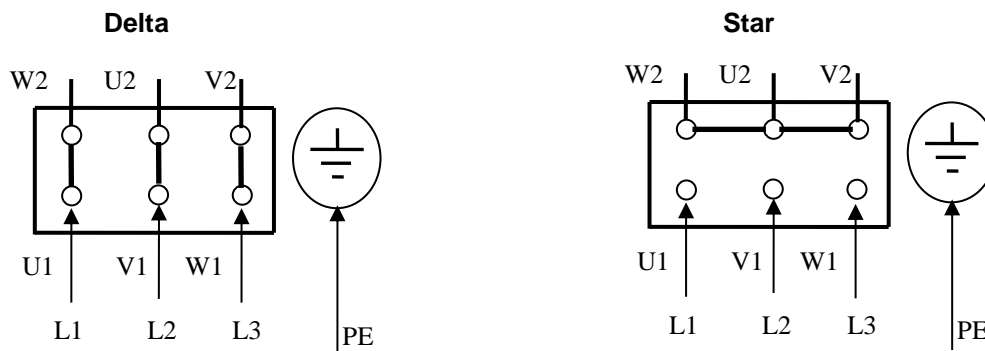
All work associated with connecting the fan should be conducted by trained professionals, adhering to regulations and safety rules.

Before connecting the motor the data connection has to be compared to the information on the nameplate of the fan. 3-phase motors connected to 3 phases with phase to phase voltage $U = 400V$, 50Hz, according to the connection diagram section on the motor terminal box and the motor manufacturer's instructions contained in the Manual of the motor.

Check the standard wiring diagrams below.

4.2.1. Connection of 3-phase motor.

3-phase motor must be connected according to information provided on the nameplate of the fan motor. The standard single speed motors are connected in either star or delta. Connection diagrams below.



CAUTION!

Exceeding the maximum allowable RPM (round per minute) of fan it is prohibited.

5. START UP

Before starting, check that:

- the impeller rotates freely without friction,
- fan is properly installed and adjusted,
- fan is properly connected to the mains,
- motor is electrically protected by:
 - overload protection,
 - short circuit protection,
 - neutralization or protective earth,
- elements have been installed to prevent direct touch moving parts and are under the voltage,
- all electrical connections, mounting screws and connecting elements are properly adjusted and tightened,
- residual fixing and other foreign bodies were removed from the interior of the fan.

Commissioning can take place only after checking all safety hazards and exclusion.

**CAUTION!**

It should be noted that the permissible fluctuations in input voltage for 3-phase motor is no greater than +/- 10% of nominal voltage.

5.1. First start-up

Turn on temporarily fan to verify the correct direction of rotation, and thus the correct direction of air flow. When during this test the motor shaft rotates in the opposite direction to a predetermined, in three-phase motors change two phase conductors in single-phase motors is needed to change places bridges according to the attached diagram.

After starting the fan, check that the current consumption does not exceed the rated value shown on the nameplate of the motor. You should also pay attention to the smooth operation of the fan. Strong vibrations due to unstable work / unbalance / caused for instance by damage during transportation, may cause damage to the fan and / or motor.

**CAUTION!**

It is not allowed to operate the fan in the opposite direction to that intended. Such operation is incorrect and may cause damage to the fan. Such damage is not considered as a warranty claim.

5.2. Quiet and stable work

When installing the fan on the floor, use the appropriate mounting lugs, frame or in the case of higher powers - concrete foundations. When the fan is equipped with a motor - mounting position IM B3 - should always be placed horizontally to the ground and the motor resting on the base. The use of dampers is permitted for fixing the legs to fan frames / floors / ceilings.

6. OPERATION / MAINTENANCE.

While the fan is working it is absolutely forbidden to perform any work within the rotor and motor.

Before maintenance work, perform the following steps:

- check whether the impeller is not rotating,
- make sure that the power supply was cut off electric motor,
- remove the fan from the place where it is operated,
- transport fans to the place where the service work is carried out,
- service work to be performed only by trained personnel.
- follow the rules and safety standards.

It is recommended:

- once per quarter to control construction of the fan to detect symptoms of possible irregularities, in order to avoid any serious fault,
- Once every 6 months to check if there are mechanical vibrations. The maximum allowable vibration velocity is 2.8 mm / s / according to DIN ISO 10816-1 /,
- Maintenance of the motor, including the replacement of motor bearings in accordance with the manufacturer's motor technical data - the information in the manual of motors.

Impellers are made of steel and are protected against corrosion by painting. In case of getting into the fan dust or abrasive materials such as sand which can lead to premature removal of surface protection of the rotor, prevent corrosion of the rotor by painting. It should be remembered that after dismounting and remounting of the impeller, it is necessary to re-balance in accordance with PN-N-01359!

Operations rely on to clean the entire device. Regular inspections are necessary for any deposits to prevent unbalancing the rotor. The frequency depends on the degree of contamination of the fan impeller. The entire fan can be cleaned with a damp cloth. You cannot use any aggressive cleaning agents, which could cause the dissolution of the paint. For cleaning do not use pressure washer or a strong stream of water.



CAUTION! Wet cleaning of the fan can cause electric shock - mortal danger!

7. Troubleshooting

Radial Fans series: WPL, WPM, WPH

Lp.	Problem/ status:	Solution
1	The is a voltage on fan casing.	Immediately turn off the fan, check the correct connection of neutralization or earthing system.
	Earthing system - ok, correctly connected power supply – still there is a voltage on the fan casing.	Immediately turn off the fan Disconnect from the main power supply to protect against accidental turning on. Contact the manufacturer.
2	The fan is not working after connecting the power supply.	Check the input terminals.
	The fan is not working – there is a voltage on the input terminals.	3-phase motor, check the correct connection of the motor.
	The fan is still not working.	Contact the manufacturer.
3	The fan is operating - the airflow direction other than the required flow and motor rpm incompatible with the arrows on the housing.	Change the direction of rotation of the rotor in accordance with the wiring diagram of the motor.
4	The fan generates high vibrations.	Check the impeller blades for the presence of raid. If yes, remove the raid from the blades. No raid on the blades – check the motors bearings.
	The fan generates high vibrations, no raid on the blades	Check the motor bearings (axial and radial play).
5	Impeller rubs against the housing	Make sure that the casing has not been damaged.
6	Impeller rubs against the housing. Casing is not damaged.	Change the position of inlet element.
7	Impeller rubs against the housing	Contact the manufacturer.
8	Fan casing is damaged.	Contact the manufacturer.
9	Impeller blade is damaged	Contact the manufacturer.
10	Missing blades in the impeller	Contact the manufacturer.

8. SPARE PARTS

Components such as rotors, casings, motors, which are parts of the fans are available from the manufacturer. To order the appropriate parts the type of fan and its serial number shall be given.

9. HANDLING AFTER OPERATION

Disposal must be carried out in a proper and environmentally friendly in accordance with the law.

Component Name, detail	Where to go
Metal casing, hub, protection guard, fasteners, steel rotor	Iron scrap
Aluminum hubs, aluminium rotors, aluminium parts of motors	Aluminum scrap – after melting
Cast-iron elements (casing, bearing discs, covering, etc.)	Cast-iron scrap
Steel parts of motor (shaft, ventilating fan, fasteners)	Steel scrap
Motor bearings	Steel scrap after grease removal (grease disposal in specialized company)
Winding, cables	Copper scrap (removal and disposal of insulation in a specialized company)
Cable inserts	Ferrous metals scrap
Rubber parts (gaskets, rings)	Disposal in specialized company

10. DECLARATION OF CONFORMITY.

The company Planetfan Sp. o.o. sp. k. declares that the following equipment meet the requirements of both health and safety requirements set out in standards and EU directives. Devices that built these products should have a declared compliance with the provisions of this Directive. Please also note that any interference buyer products without consulting the manufacturer is synonymous with the loss of validity of this document.

Description of equipment:

10.1. Radial fan series: WPL, WPM, WPH

The above-described products are in accordance with:

	Dokument nr	Title
1.	2006/42/WE	Directive of the European Parliament and of the Council on machinery. 17th of May 2006 r. (UE L 157/24).
2.	PN-EN 60204-1:2010	Safety of machinery - Electrical equipment of machines - Part 1: General requirements.
3.	PN-M-43011:1992	Fans. Classification and Terminology.
4.	PN-EN ISO 12100:2011	Safety of machinery - General principles for design - Risk assessment and risk reduction.
5.	PN-EN ISO 5801:2008	Industrial fans - Study of the performances of the standard positions
6.	PN-EN ISO 13351:2010	Fans - Dimensions.
7.	PN-M-43023:1997	Fans. Nameplates and directional.
8.	PN-EN 60034-1:2011	Rotating electrical machines - Part 1: Rating and performance

Imielin, 01.07.2014r.

Certifies compliance as above:

mgr inż. Daniel Komraus



Prezes Zarządu Komplementariusza

11. WARRANTY.

Planetfan Sp. o.o. sp. k. The warranty on the products delivered for a period of 12 months from the date of sale.

Serial number	Purchase date	Signature and stamp of the seller	Fault description