



RADONTEC ALPHAEX

150 / 200 / 250

Manual

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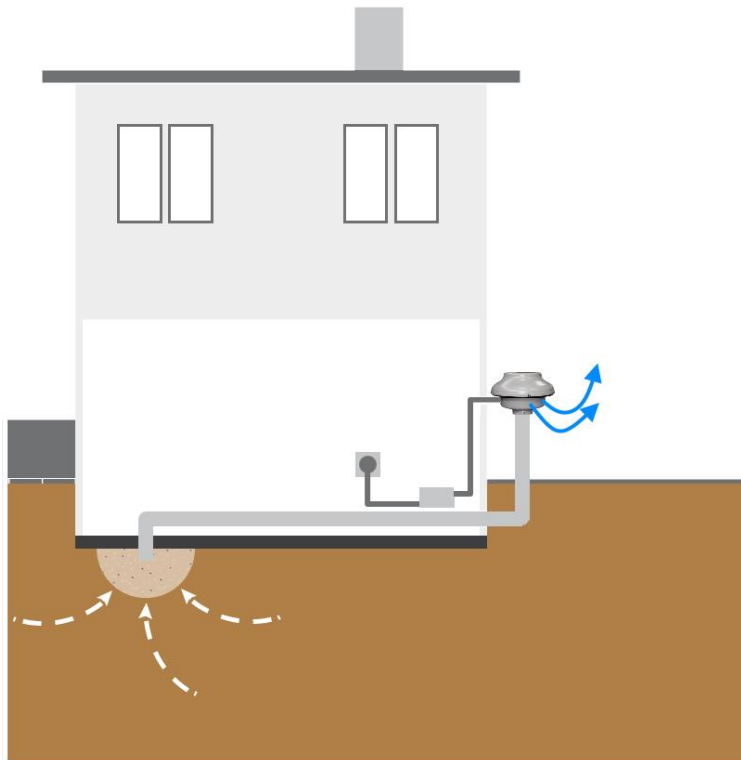
1 Introduction

The RADONTEC ALPHAEX was developed for the underfloor extraction of radon gas. With a drainage underneath the foundation, radon-containing soil air is extracted over a wide area and conducted outside by negative pressure. With a so-called radon well in or near the house, the radon-containing soil air is extracted selectively and thus kept away from the walls of the house that are in contact with the soil. This prevents the radon from entering the building.

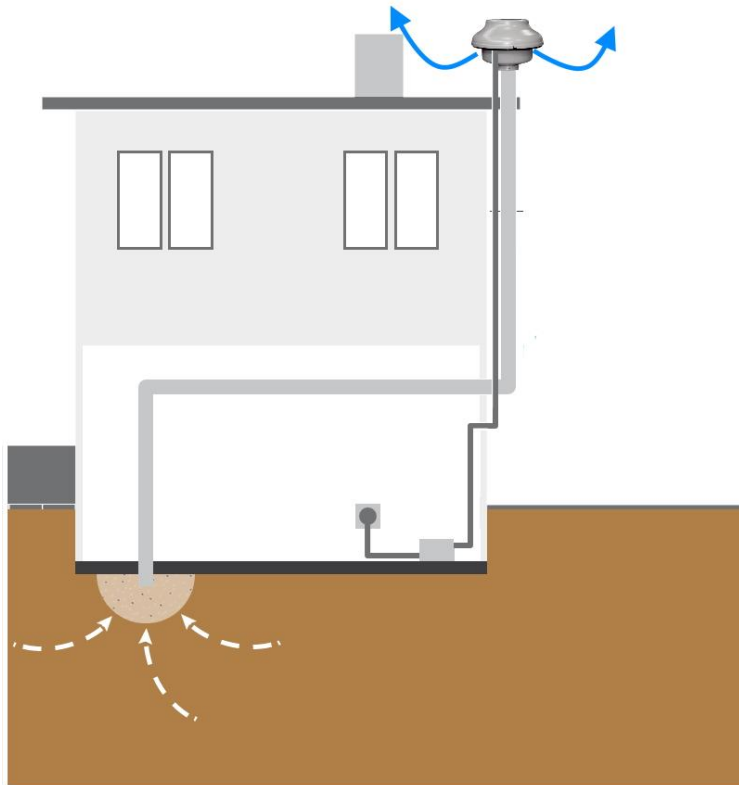
The placement of the RADONTEC ALPHAEX outside the building can be freely chosen.

The RADONTEC ALPHAEX is suitable for permanent outdoor use (IP X4 - protection against splash water from all sides and a temperature range of -25 °C to +50°C).

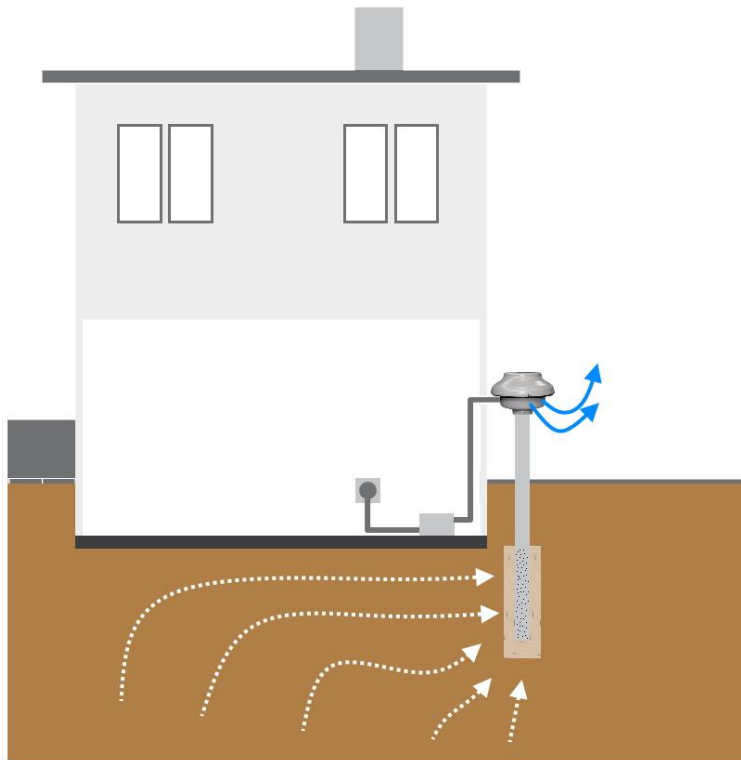
The built-in radial motor is extremely robust and designed for a long service life.



Application example 1: Point radon extraction with discharge at floor level.



Application example 2: Point radon extraction under the floor slab with discharge above the roof.



Application example 3: Extraction of radon soil air via an external radon well.

2 Technical Data

Impeller type	radial
Speed controllable	yes
Voltage type	Alternating current
Rated voltage	1~ 220-240 V
Mains frequency	50 Hz
Protection class	IP X4
Installation location	Roof
Mounting position	vertical
Material	Powder-coated steel
Fluid temperature at I_{Max}	-25 °C to 50 °C
Sound pressure level	48 dB(A) (distance 3 m, free field conditions)

The RADONTEC ALPHAEX radon aspirator is available in different versions, each of which differs in the pipe diameter and the resulting performance and air volumes.

	EX 150	EX 200	EX 250
Nominal width	150 mm	200 mm	250 mm
Nominal power	98 W	154 W	194 W
I_{Max}	0,43 A	0,67 A	0,85 A
Delivery volume	555 m ³ /h	950 m ³ /h	1310 m ³ /h
Weight	7,2 kg	8,1 kg	10,1 kg

3 Scope of delivery

- RADONTEC ALPHAEX radon aspirator is supplied with square roof base. The roof base can be removed for direct pipe mounting.
- Assembly and operating instructions

4 Product features

- Units for radon extraction, horizontal discharge
- Speed controllable
- High pressure capacity and delivery volume
- Unit is switched on or off with a switch to be provided by the customer
- Radial impeller with backward curved blades
- AC version, with capacitor motor (operating capacitor ready for connection in terminal box).



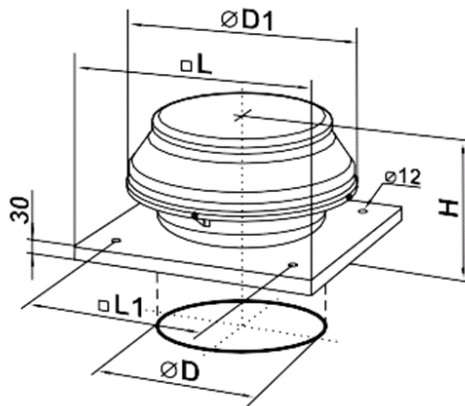
Thermal overload protection

The fan motor is thermally protected (temperature sensor in the motor winding). The overload protection automatically switches off the fan in case of overheating.

Before restarting, the fan must remain switched off until the motor and temperature limiter have cooled down. Depending on the size and temperature conditions, the cooling time can be up to 30 minutes. Do not switch on the unit until this time has elapsed.

5 Dimensions

Depending on the nominal width, the variants of the RADONTEC ALPHAEX have different dimensions.



	Dimensions, mm					Weight,
	D	D1	H	L	L1	kg
EX 150	149	400	230	440	330	7,2
EX 200	198	400	250	440	330	8,1
EX 250	248	400	249	590	450	10,1

6 Bestimmungsgemäße Verwendung

6.1 Intended use

The RADONTEC ALPHAEX fans are suitable for the following applications:

- RADONTEC ALPHAEX fans are suitable for both private and public/commercial use.
- These fans are used for the extraction/venting of soil air containing radon under buildings.
- Extraction of radon drainage systems.
- Connection to indoor radon extraction points (fan must always be placed outside the building).
- Connection to radon wells
- Connection to perimeter drainage systems (Caution: These must be dry. It must be ensured that no water can be sucked in).
- Permissible places of use are roofs (flat, pitched, corrugated or trapezoidal roofs), ceilings or consoles with sufficient load-bearing capacity. As well as installation close to the ground.
- A fixed installation with permanently installed electrical supply cable is mandatory:
 - With roof base only on a suitable substructure.

- Without roof base directly on the vent pipe.

The fan is suitable for vertical mounting on the exhaust air ventilation shaft and may only be used for exhaust air ventilation.

- When connecting to pipes, transitions with elastic connecting pieces are recommended. These prevent vibration transmission to the pipe system.
- In the case of free intake (near the floor), operation is only permitted with contact protection in accordance with EN ISO 13857. We offer the matching protective grille for this as an option. (Must be purchased separately).

6.2 Non-permitted use

RadonTec is not liable for damage caused by improper use. Do not use the unit under any circumstances:

- to convey air that is saturated with water vapour or contains grease
- in conjunction with an extractor hood
- for conveying dust particles, solids, sticky substances and fibrous materials that may adhere to the fan
- in the vicinity of flammable materials, liquids or gases
- for conveying chemicals, aggressive gases or vapours
- in explosive atmospheres

- if there is no protection against contact with the impeller in accordance with EN ISO 13857 for free intake (near the floor)

7 Ambient conditions

Maximum permissible temperature of the pumped medium + 50 °C, depending on the unit variant.

When operating with room air-dependent fireplaces, sufficient supply air must be provided. The maximum permissible pressure difference per living unit is 4 Pa.

8 Safety notes



Read these installation and operating instructions carefully before using the fan for the first time. Follow the instructions.

Keep these instructions in a safe place for later use.



Installation may only be carried out by skilled personnel with knowledge of ventilation technology.



The electrical connection may only be carried out by qualified electricians. These have electrical engineering training and knowledge of the dangers and effects that can result from an electric shock.



The installation personnel must be height- and foot-safe.



When working on the roof, sufficient safety precautions must be taken to protect the installation personnel.



The degree of protection specified on the type plate is only guaranteed if the unit is installed as intended and the cables are properly inserted into the terminal box.



Only connect the unit to a permanently installed electrical installation with cables of type NYM-O or NYM-J (3x 1.5 mm² or 5x 1.5 mm²). In addition, a device for disconnecting from the mains with at least 3 mm contact opening per pole must be fitted.



Only operate the unit with the voltage and frequency specified on the type plate.



It is essential to fit a repair switch at the installation site so that all poles of the unit can be disconnected from the mains on site during cleaning, maintenance or repair work. It must be possible to secure the repair switch against being switched on again.

Only operate the unit when it is completely assembled.



A sufficient supply air flow must be ensured.



Modifications and conversions to the unit are not permitted and release the manufacturer from any warranty and liability.



Never operate the unit without a protective grille in the case of free intake (near the floor). Secure the unit and piping against foreign bodies being sucked in. Risk of injury from objects in the impeller. Do not insert any objects into the unit.



Risk of injury from rotating impeller. Do not get too close to the appliance so that hair, clothing or jewellery cannot be pulled into the appliance.



This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.



Children must not play with the appliance.



Cleaning and user maintenance must not be carried out by children without supervision.



If the unit is installed close to the floor, it is recommended that the fan be installed at a minimum height of 2 metres. This can reduce wilful damage, tampering or the risk of injury to children or animals.

9 Assembly and electrical connection



Cutting injuries due to sharp-edged housing plates.
Wear protective gloves.

Notes

- The fan is designed for installation on a roof directly above a ventilation shaft or ventilation pipe.
- Observe the permissible roof load.
- Install ventilation ducts properly.
- Lay the mains cable firmly to the installation site.
- It is essential to observe the relevant regulations for electrical installation and device mounting, in Germany in particular DIN VDE 0100 with the corresponding parts.
- To avoid vibration transmission to the pipe system, use elastic fastening collars (type ELR).
- To avoid leakage, only screw the roof base onto a suitable, level substructure. For direct mounting of the RADONTEC ALPHAEX on the ventilation duct, dismantle the roof base (3 self-tapping screws).
- Use suitable insulation, soundproofing and installation material between the unit and the roof base.
- The fan can be mounted on a roof box to prevent snow and water from entering a ventilation pipe.

- Connection of the fan to the ventilation pipe is made with an intake flange fixed directly to the bottom of the fan.

The bottom of the fan has the fixing holes for the screws to connect the fan to a flat surface or to the roof box.

- The roof box, intake flange and fixing screws are not included in the delivery and must be purchased separately.
- Power is supplied through an external junction box or one integrated in the housing.
- The fan belongs to Class I electrical installations and it must be earthed. The terminal must be connected to the earthing circuit.

9.1 Fan installation



Risk of injury in case of wrong mounting location or insufficient fastening with the roof or the piping.

1. Unit only to be mounted at locations with sufficient load-bearing capacity.
2. Only mount the unit at locations with sufficient load-bearing capacity.
3. Sufficiently dimensioned fastening material must be provided by the customer (screws with \varnothing 10 mm, min. strength class 8.8). Screw the unit tightly to the roof, roof base or pipework.



Cutting injuries due to sharp-edged housing plates.
Put on protective gloves.

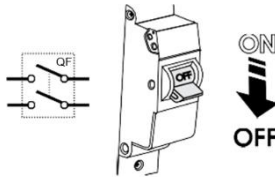


Leakage due to insufficient sealing.

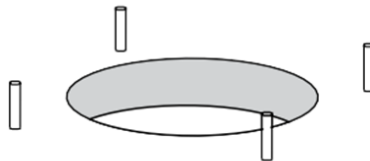
1. Screw the unit tightly with all screws.
2. Attach suitable insulation, sound insulation and installation material.

Installation on the roof or roof plinth

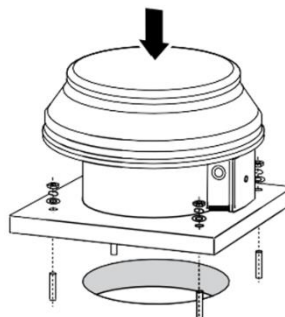
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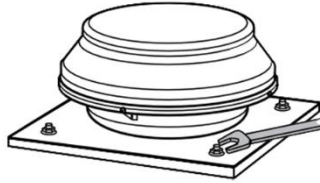
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3.



4.



9.2 Electrical connection



Danger to life due to electric shock.

Switch off all supply circuits before accessing the terminals. Switch off the mains fuse, secure it against being switched on again and visibly attach a warning sign.



Damage to the unit in the event of a short circuit. Insulate any wires that are not needed.



It is essential to observe the relevant regulations for electrical installation and unit assembly, in Germany in particular DIN VDE 0100 with the corresponding parts.

Connection

The fan must be connected to the power supply via insulated, electrical power lines (cables, wires) through the miniature circuit breaker built into the stationary power supply network, which interrupts the circuit in the event of a short circuit or overload.

The mounting location of the QF circuit breaker must be quickly accessible in the event of an emergency fan shutdown.

The tripping current must match the current consumption of the fan.

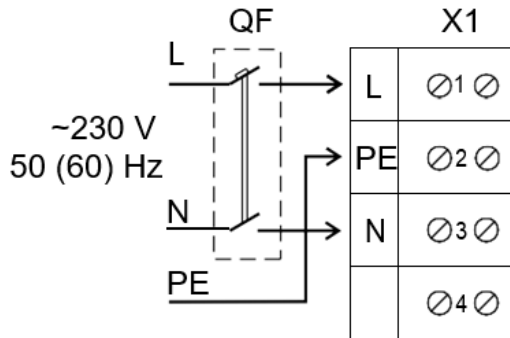
Rated tripping current of the miniature circuit breaker: 1 A

Recommended cable 3 x 0.5 mm².

The specified conductor cross-section is for reference only. When selecting the appropriate miniature circuit breaker, pay attention to the maximum load current and the maximum wire temperature, which depend on the conductor type, insulation, length and installation type of the conductor.

1. Switch off the mains fuse and secure it against being switched on again. Attach the warning label.
2. The fan is connected to the mains via the terminal strip fixed inside the external or integrated terminal box of the fan according to the connection diagram and terminal markings.
3. sticker with the terminal designations is located inside the terminal strip.

Connection example with motor overheating protection

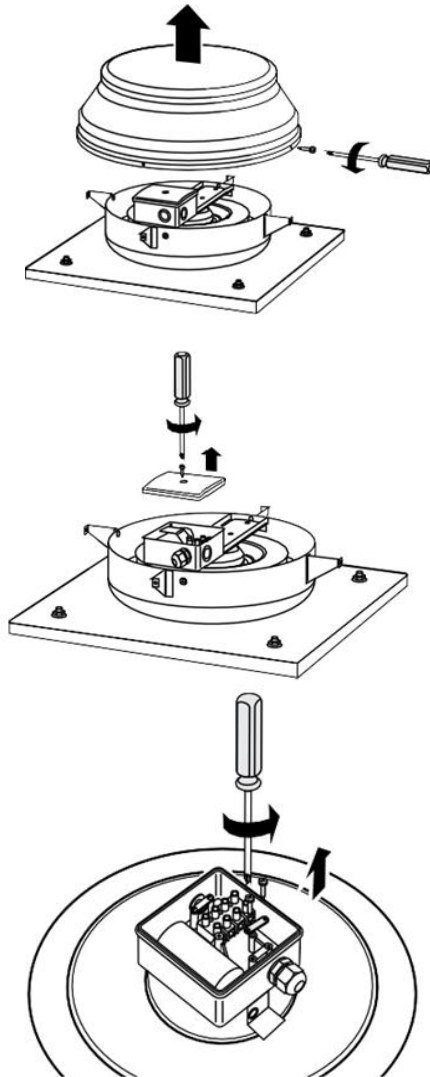


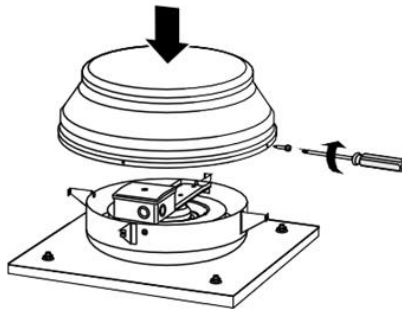
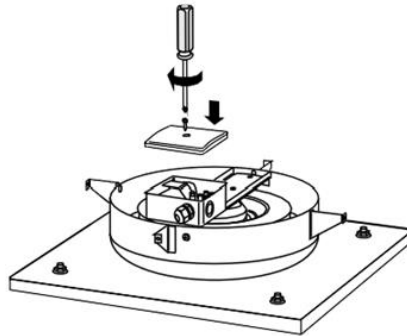
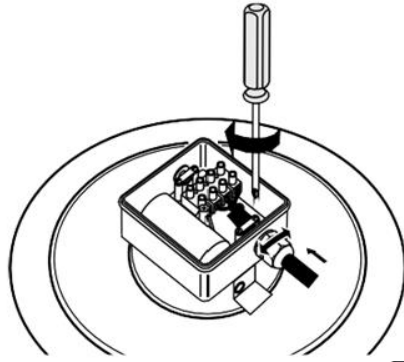
QF: Circuit breaker (not included in the scope of delivery)

X1: Terminal strip

4. Terminals TW1 and TW2 are the electrical leads of the normally closed contact of the motor overheating protection
5. Connect this contact in series to the circuit of the KM1 magnetic starter, which starts the motor after the S1 button is pressed.
6. In case of motor overheating, the contact is disconnected, the winding of the motor starter is switched off and the motor is stopped.

The circuit breaker QF, the magnetic starter KM1, the control buttons S1 and S2 are not included in the scope of delivery.





9.3 Operation with speed controller

RADONTEC ALPHAEX units can be controlled continuously with a speed controller suitable for the unit type. (Must be purchased separately)

Due to the phase angle control technology, humming noises may occur.



Standstill / malfunction of the fan if the output voltage at the speed controller is too low.

1. Observe the operating instructions of the speed controller.
2. Always set the minimum speed at the speed controller in such a way that the fan motor restarts after a power failure.

9.4 Operation with transformer

The speed of RADONTEC ALPHAEX units can be adjusted with a 5-stage transformer suitable for the unit type. (Must be purchased separately)

9.5 Commissioning

1. Check all screw connections for tightness.
2. Check the air duct for dirt and clean it if necessary.
3. Check that the connection data correspond to the technical data of the unit
4. Remove the restart fuse and switch on the mains fuse.
5. Carry out a function test. Check the smooth running of the impeller and ensure it if necessary. It is also important that the air can flow freely.
6. Switch off the unit.

10 Maintenance

Please observe the following in the event of maintenance work:



Danger to life due to electric shock.

Switch off all supply circuits before accessing the terminals. Switch the repair switch to the "Off" position and secure it against being switched on again.



Risk of injury from rotating impeller. Before removing the upper part of the casing, wait until the impeller has come to a standstill.



Cutting injuries due to sharp-edged casing plates. Put on protective gloves.

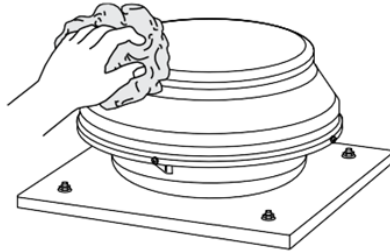


Disconnect the fan from the mains before carrying out maintenance work!

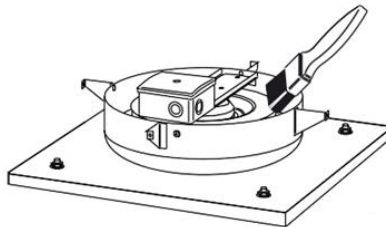
To ensure access to fan parts, partially disassemble the fan.

Wipe the impeller blades with a neutral cleaning solution and a damp cloth.

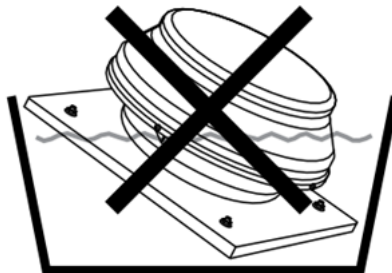
Technical maintenance includes regular cleaning of the fan surfaces from dust and dirt.



Use a soft brush or compressed air to remove dust. Carefully clean the impeller blades every 6 months.



Do not immerse the fan in water.



11 Troubleshooting



In the event of any malfunction, consult a qualified electrician. Repairs may only be carried out by qualified electricians.



Danger to life from electric shock.

Switch off all supply circuits before accessing the terminals. Switch off the mains fuse, secure against being switched on again and visibly attach a warning sign.

Malfunction	Cause and measure
Fan does not switch on.	No mains voltage. Check whether the mains fuse has blown. Switch it on if necessary.
Fan does not switch on.	Check the repair switch if necessary.
Thermal overload protection of the motor switches off the fan.	Impeller blocked. Repair only permitted by a specialist: Check impeller and clean if necessary.
Impeller does not rotate.	Motor too hot.

Deposits on the impeller and in the housing due to dust-laden air.

Leave the unit switched off until the motor and temperature limiter have cooled down. The cooling time can be up to 30 minutes. Only then switch the unit on again.

If the fault persists or occurs repeatedly, disconnect the fan from the mains at all poles.

Have the cause of the fault determined and eliminated by a trained electrician.

12 Transport and Storage



Damage to the unit if the means of transport is incorrectly attached.



Do not load sensitive components, such as impeller or terminal box.



Cutting injuries due to sharp-edged housing plates.
Put on protective gloves.

Store fan only in horizontal position in a suitable, dry room:

- in the original packaging
- in a ventilated room
- at a temperature of +5 °C to +40 °C
- relative humidity of 80 % (at +20 °C)

Before installation, check the proper function of the motor bearing.

13 Disassembly and disposal



Dismantling may only be carried out by a qualified electrician.



Danger to life due to electric shock.

Switch off all supply circuits before accessing the terminals. Switch off the mains fuse, secure it against being switched on again and visibly attach a warning sign.

Disassembly of the AlphaEx

1. Switch off the mains fuse, secure it and attach a warning sign.
2. Remove the connection components from the fan.
3. Remove the upper part of the housing and the terminal box cover.
4. Remove all cables.
5. Remove the fan.

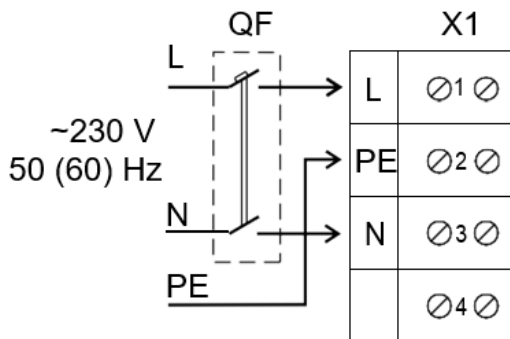
Packaging materials and old units must be disposed of in an environmentally friendly manner at the end of their useful life in accordance with the regulations in force in your country.

Never dispose of the old appliance with normal household waste. The appliance contains recyclable materials and substances that must not be disposed of with other waste.

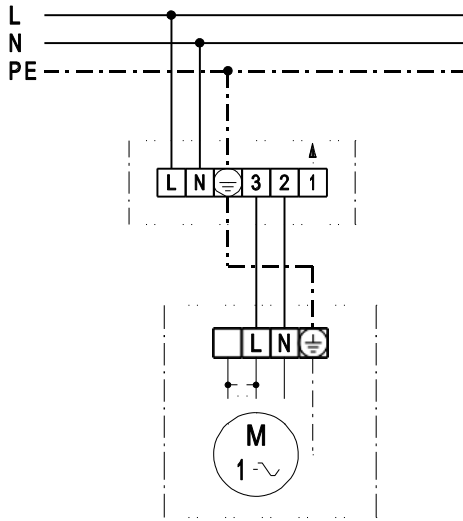
At the end of its service life, the appliance must be disposed of in accordance with the regulations in force in your country.

14 Circuit diagrams

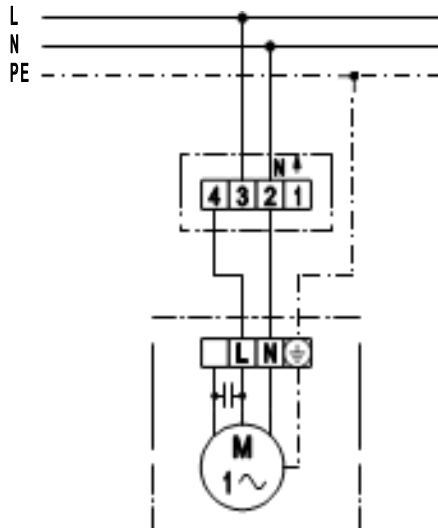
RADONTEC ALPHAEX 150 / 200 / 250



RADONTEC ALPHAEX with 5 stage transformer



RADONTEC ALPHAEX with Speed Controller



15 Two-year warranty

The warranty applies to the RADONTEC ALPHAEX purchased from RadonTec GmbH or authorised dealers.

This covers defects in material or workmanship under normal use for a period of one year after receipt of the product. Contamination due to dirt or improper use is not covered by the warranty.

During the warranty period, the product will be repaired or replaced free of charge.

*Exclusions:

This warranty does not cover damage caused by misuse, neglect or improper use, storage or transportation. This includes damage caused by drops, impacts or penetrations. It is also void if the product has been repaired or altered by another EIC Inc.

To obtain this warranty service, please contact us at:

info@radontec.de

16 Support and Contact

16.1 Troubleshooting/FAQ

You will find answers to the most frequently asked questions on our website:

<https://www.radontec.de>

16.2 Contact Us

Should you have any further questions or require further help and technical support, please do not hesitate to contact us.

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