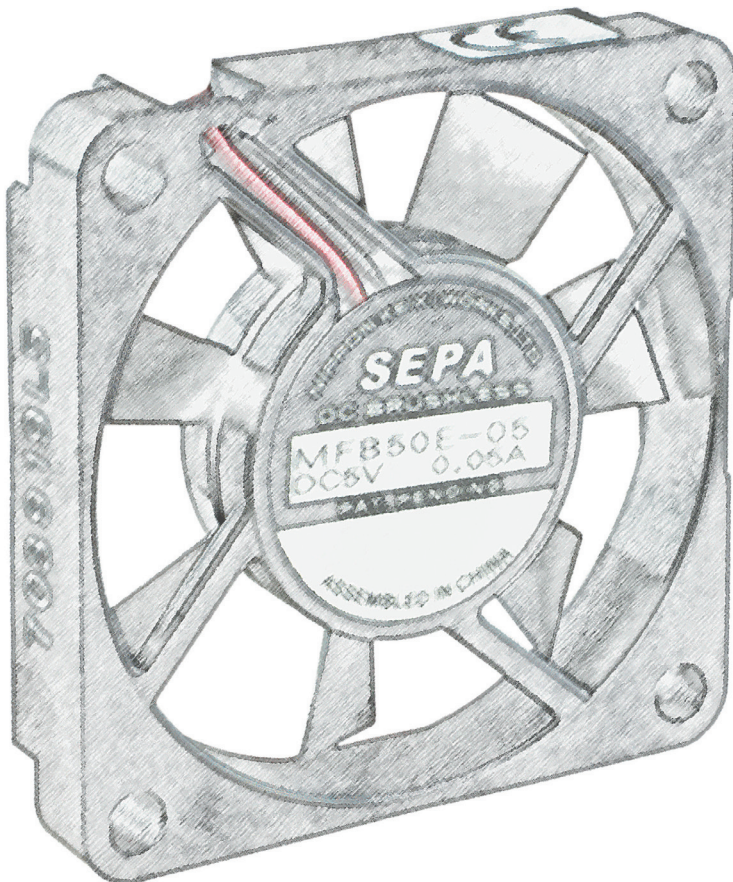


OPERATING MANUAL DIRECT CURRENT (DC) - Fans



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1. Safety regulations and warning notices

The operating manual must be accessible for all work (installation, repair and maintenance work and any other use) that is carried out at or with the product. Keep this operating manual for further potential users.

Read the operating manual carefully before commencing work at or with the product. Pay attention to the following warnings to avoid faults or endangering personnel. This operating manual is an integral part of the product. In the event of resale or change of ownership ensure that it always accompanies the product. Should you have any further questions, please contact **SEPA EUROPE GmbH** directly.

Hazard classification of warning notices

The following risk ratings are employed in this operating manual to denote potentially dangerous situations and important safety instructions:



Danger

Denotes a potentially dangerous situation and impending risk of serious and mortal injuries if the safety instructions are not observed. Observe the safety instructions at all times!



Warning

The dangerous situation can occur and can result in serious and mortal injuries if the safety instructions are not observed. Exercise extreme caution when working!



Caution

The dangerous situation can occur and can result in minor injuries or damage to property if the safety instructions are not observed.



Note

A potentially dangerous situation can occur and can result in damage to property if not avoided.

Qualification of personnel

The product may only be transported, unpacked, installed, operated, maintained and used otherwise by qualified, trained and authorized personnel (if necessary only by a skilled electrician).

Basic safety regulations

Safety risks related to the product must be rechecked and reassessed after installation in the final device. The Operating Manual was compiled in accordance with European Directives (2011/65/EU, 2006/42/EC and 2014/30/EU). It may need adapting to the market requirements of the country in question.

When working at the product, pay attention to the following:

Do not make any changes to the product



Impermissible high load

Stop the product immediately after it has been subject to impermissible overloading (e.g. impact, heat, overvoltage).

Safety and protective function



Lack of safety device and non-functioning protective equipment

Without protective equipment serious injuries can occur by reaching into the product during operation. Do not operate the product without a protection against accidental contact (protection guard), so that parts that are rotating or energized cannot be touched.

Electrical voltage and current



Electrical Voltage

Check the electrical equipment of the product **regularly**. Eliminate loose connections and defective cables immediately.

Electromagnetic radiation

Electromagnetic compatibility (EMC) may affect system integration of the product due to interaction.

Ensure that the complete system is electromagnetically compatible.

Mechanical movement

 **DANGER**

Self-starting product



When voltage is applied, the motor restarts automatically after a power failure or after eliminating the blocking. Do not stand in the danger zone of the product. Always switch off the mains voltage when working on the product and secure against switching on again.

 **DANGER**

Rotating impeller



Risk of injury to parts of the body that come into contact with the impeller. Before starting the product, ensure that it is fixed securely and the protection guards are in place.

 **WARNING**

Parts transported by the airflow



The product can transport small parts in the airflow and catapult them out. Ensure that there are no loose small parts in the intake and exhaust area. Do not stand in the danger zone of the product.

 **WARNING**

Rotating fan



Long hair, loose-fitting garments and jewellery can be caught and pulled into the product. This can result in injuries. Do not wear loosefitting garments or jewellery when working on moving parts. Protect long hair by wearing a hair net.



CAUTION

Risk of spreading fire

Can cause fires to spread. Do not direct the airflow (intake/exhaust side) at potential sources of fire.

Hot surfaces



CAUTION

High temperatures at motor housing

Risk of burns

Provide adequate protection against accidental contact.

Transport, Storage, Cleaning and Disposal

Transport and Storage

Only transport the product in its original packaging and secure during transport. The humidity levels and the temperature stipulated in the technical data should not be exceeded during transport.

Store the product in a dry and clean environment that is adequately protected.

Cleaning

Product damaged during cleaning



Before commencing the cleaning, ensure that the product is switched off.

Clean the product carefully with a damp cloth or brush without applying pressure to the rotor. Do not use cleaning agents that contain acid, caustic or solvent additives.

Disposal

Observe the valid requirements and regulations pertaining to disposal that are applicable in your country.

2. Intended use

The product is designed exclusively as a built-in device for conveying air according to the relevant technical data. Every use other than the intended use is regarded as misuse of the product.

The customer's equipment must comply with the applicable mechanical, thermal and service life requirements

Intended use comprises:

- Operating the product with all protective equipment
- Not putting the product into operation before it has been installed in the customer's application
- Observing the Operating Manual

Improper use

Using the product for the following purposes is prohibited and can be dangerous:

- Conveyance of air that contains abrasive particles
- Conveyance of air that has a highly corrosive effect
- Conveyance of air that has a high dust load, e.g. suctioning off saw dust
- Conveyance of inflammable gases/particles
- Contact with materials that can damage product components, e.g. acids, caustic solutions, solvents
- Exposure to radiation that can damage the product components, e.g. strong UV rays or heat radiation.
- Operating the product close to inflammable materials or components
- Operating the product in an explosive atmosphere
- Use of the product as a safety component or for performing safety-relevant functions
- Operating in devices with life-sustaining or life-saving function
- Operating in systems that demand higher product requirements than those defined in the data sheet.
- Operating with fully or partially dismantled or manipulated protective equipment
- Operating the product under conditions other than those mentioned in the technical data
- Furthermore, all areas of application not mentioned under intended use

An in situ assessment must be carried out of the heating (proper and improper operation) and the protection against contact, foreign bodies and humidity as well as usage at heights >2000 m.

Should you have any specific questions, please contact **SEPA EUROPE GmbH**.

3. Technical data

See the Datasheet of the fan in question!

4. Connection and commissioning

Connect mechanical parts

NOTICE



Check the product for transport damage. Do not install defective products.

Install the product in accordance with the application.

Employ ESD protective equipment when mounting and ensure that the power has been turned off.

Connect electrical parts

Electrical parts may only be connected by a qualified electrician and after the mechanical installation!

⚠ DANGER



Always comply with the electrical installation regulations.

Observe the connection regulations that are valid in your country (e.g. fuses, circuit breaker)

⚠ CAUTION



Electrical voltage, electric shock

The product is a built-in part and has no switch for disconnecting power.

Only connect the product to current circuits that can be switched off by a switch with all poles disconnected.



When working on the product, ensure that the system/machine in which the product is installed, is disconnected from the mains and cannot be switched on again.

NOTICE

Electromagnetic compatibility (EMC) may affect system integration of the product due to interaction. Ensure the electromagnetic compatibility of the complete system.

Voltage control (if existing)

Speed control via the supply voltage is only permitted within the stipulated supply voltage range. A speed control via PWM of the supply voltage is not permitted.

Requirements

Ensure that the voltage supply corresponds with the voltage of the product before putting the product into operation.

Check that the data on the nameplate corresponds with the pin connection data.

Only use cables that are designed for the current stipulated on the nameplate and for the corresponding ambient conditions. Ensure that the electrical connection has adequate mechanical protection.

Check connections

Cut off the power at all phases and ensure that it cannot be switched on again.

Check that the connector contacts are correctly connected to the connection cable and the panel-mounted connectors are correctly connected to one another.



NOTICE

DC fans $\leq 120\text{VAC}$ are products of Protection Class III!

Switch on product

Before switching on, check the product for visible damage and ensure that the protective equipment is functioning correctly. In case of damage, do not switch on the product.

Check the airflow and ensure that there are no foreign objects. Remove them if necessary.

Apply the nominal voltage to supply the product. Start the product after changing the input signal.

Switch off product

Switch off the product via the control input (if existing).

Disconnect the product from the voltage supply.

5. Faults

Do not repair your product, replace it by a new one.



Electrical voltage at motor

Wait five minutes after the voltage has been switched off (all poles) before opening the product.


Fault/Error	Possible Cause	Possible Remedial Action
Motor does not rotate	Mechanical blocking	Switch off, de-energize and eliminate blocking
	Defective mains voltage	Check mains voltage, re-connect voltage supply
	Defective connection	Rectify connection, see pin assignment (Data Sheet)
	Motor is too hot	Allow motor to cool down/identify cause of fault
	Electronics defect	Exchange product
	Motor winding interrupted	Exchange product
Impeller runs untrue	Ambient temperature too high	Reduce ambient temperature if possible
	Unbalance of rotating parts	Clean product. If still running untrue after cleaning, exchange product



In the event of further faults, please contact **SEPA EUROPE GmbH**.

Safety inspection		
What requires inspecting?	How to check??	Frequency
Casing of protection against accidental contact	Visual inspection	Min. ½ yearly
Product for damage	Visual inspection	Min. ½ yearly
Fixation of product	Visual inspection	Min. ½ yearly
Fixation of connection cables	Visual inspection	Min. ½ yearly
Insulation of wires	Visual inspection	Min. ½ yearly

6. Approvals

 The product is CE-labelled under the EMC Directive 2014/30/EU, the Machinery Directive 2006/42/EC and the RoHS Directive 2011/65/EU.

The CE label can also be found on adequately large nameplates.

Within the meaning of the Machinery Directive 2006/42/EC, this document is an:

- Operating Manual according to Art. 5(1) and Annex 1, Number 1.7.4

Within the meaning of the EMC Directive 2014/30/EU, this document is/are:

- Assembly instructions according to Art.18(1)
- Installation instructions according to Art. 18(1)
- Operating Manual according to Art. 18(3)
- Maintenance Manual according to Art. 18(1)

Usage restriction notice for residential areas according to Art. 18(2) Supporting documents according to Annex 1, Number 1

The information contained in this document and the specification is applicable to assembly, installation, operation, usage, and maintenance of the product.