

AL-KO

QUALITY FOR LIFE

GB



VENTILATION AND CENTRAL AIRCONDITIONING DEVICES

OPERATING AND INSTALLATION INSTRUCTIONS

**CEILING FAN
ENERGY INDUSTRY**

Table of contents

| | | |
|-----------|--|-----------|
| 1. | Information regarding this manual | 4 |
| 1.1 | Description of symbols..... | 4 |
| 1.2 | Regulations and standards | 4 |
| 1.3 | Legal information | 4 |
| 2. | Safety information | 5 |
| 2.1 | Appropriate use | 5 |
| 2.2 | Possible inappropriate uses..... | 5 |
| 2.3 | Residual risks | 6 |
| 2.4 | Delivery | 6 |
| 2.5 | Storage, transport | 6 |
| 2.6 | Duties of the operating company..... | 7 |
| 2.7 | Disposal of the packaging..... | 7 |
| 3. | Product description | 8 |
| 3.1 | Declaration of incorporation | 10 |
| 3.2 | Declaration of conformity | 11 |
| 3.3 | Technical data..... | 12 |
| 3.3.1 | TYPE DL ENERGIE IND... E..... | 12 |
| 3.3.2 | TYPE DL ENERGIE IND... E/h..... | 13 |
| 3.3.3 | Noise pressure level | 14 |
| 3.4 | Accessory..... | 14 |
| 4. | Transport | 15 |
| 4.1 | Fork lift / industrial truck transport..... | 15 |
| 5. | Assembly | 16 |
| 5.1 | Ceiling installation of the devices..... | 16 |
| 5.2 | Electrical connection..... | 18 |
| 5.2.1 | Fan..... | 18 |
| 5.2.2 | Cable list..... | 19 |
| 6. | Switch cabinet | 20 |
| 7. | Maintenance | 20 |
| 7.1 | Safety | 20 |
| 7.2 | Consumables and spare parts | 20 |
| 7.3 | Maintenance plan | 21 |
| 7.4 | Checking the components | 21 |
| 7.4.1 | Checking outlet jalousies | 21 |
| 7.4.2 | Checking the fans | 21 |
| 7.5 | Cleaning the components | 22 |
| 7.5.1 | Cleaning the outlet vents | 22 |
| 7.5.2 | Clean the fans | 22 |
| 7.6 | Exchanging components | 22 |
| 7.6.1 | Exchange the outlet vents..... | 22 |
| 7.6.2 | Exchanging the fan | 22 |

| | | |
|-----------|-------------------------------|-----------|
| 8. | Help with faults | 23 |
| 8.1 | Contact person | 23 |
| 9. | Shut-down | 23 |
| 9.1 | Decommissioning | 23 |
| 9.2 | Dismantling | 23 |
| 9.3 | Disposal | 23 |

1. Information regarding this manual

- Read this documentation before installation and commissioning. This is a requirement for safe working and fault-free operation.
- Adhere to the safety and warning notes in this documentation and on the product.
- This documentation is a permanent part of the product described and should be handed to the buyer in the event of a sale!

1.1 Description of symbols



Warning!

This symbol refers to safety procedures that are required to prevent injuries!



Caution!

This symbol refers to safety procedures that are required to prevent damage to goods!



Special information to improve comprehension and handling.

1.2 Regulations and standards

The following standards and regulations were applied during the design phase and also apply to installation, commissioning, operation and maintenance:

| | |
|------------------|---|
| DIN EN ISO 12100 | Safety of machinery - General principles for design - Risk assessment and risk reduction |
| DIN EN 60204-1 | Safety of machinery – Electrical Equipment of machines – Part 1: General requirements |
| DIN EN 349 | Safety of machinery – Minimum gaps to avoid crushing of parts of the human body |
| DIN EN ISO 13857 | Safety of machinery – Safety distances to prevent hazard zones being reached by upper and lower limbs |
| VDMA 24167 | Fans - Safety requirements |
| 2006/42/EC | Machinery Directive |
| 2004/108/EC | Electromagnetic Compatibility |

1.3 Legal information

All data provided are only intended to describe the product. They do not guarantee a certain composition of the system or its suitability for a specific application. This information does not release the user from his obligation to perform evaluations and tests.

2. Safety information

Please take note of these issues to prevent injuries, fires and other hazards caused by inappropriate use and operation of the ceiling fan:

**Warning!**

Installation, electrical connection, maintenance, commissioning, repair, etc. may only be performed by trained staff.

Before any work on the ceiling fan is undertaken, it must be ensured that the power supply is switched off (all-pole separation) and secured against unauthorised re-operation!

Only operate the ceiling fan once it is completely assembled and provided with appropriate reach-in protection.

All claims for damages or warranties become void when the installation does not comply with our stipulations or when the fault/damage is causally related to inappropriate alterations, processing or other treatment. The user must prove that the fault is not due to inappropriate installation.

It is essential that the general maintenance instructions in the operating and installation instructions for ceiling fans made by AL-KO are adhered to.

The implementation and design of the ceiling fan corresponds to the standards listed in the declaration of conformity and declaration of incorporation to minimise the threat potential posed by the ceiling fan. The potential risk can only be minimised when these additional, applicable standards for the installation-ready system are adhered to by the system builder.

It must be ensured that all authorised persons have read and understood all of the operating and installation instructions and adhere to them!

All plant, company and work instructions of the user apply in addition to these operating instructions to prevent hazards within the company.

Personal protective equipment is required for work on the ceiling fan!

2.1 Appropriate use

The AL-KO ceiling fan is only to be used to transport the pent-up heat under the ceiling and the rising hot air back to the occupied area.

The ceiling fans may only be operated in an environmental temperature range between -20°C and +40°C and a humidity range between 50% and 85% relative humidity without condensation.

Installation of a ceiling fan at a location more than 800 m above sea level may lead to a drop in performance and has to be investigated on a case-by-case basis.

Different areas of application should be discussed with the manufacturing plant.

2.2 Possible inappropriate uses

AL-KO ceiling fans may only be operated within the range specified in the technical data provided by AL-KO. Any other or further use that deviates from the description in Point "2.1" Appropriate use" is deemed inappropriate use. The manufacturer is not liable for damage resulting from such use.

Possible inappropriate use includes, for example:

- Transport of media with temperatures above or below the permitted range, aggressive media or media containing a lot of dust.
- Use in an explosive atmosphere.
- Use in wet areas with high humidity content (e.g. washing system)

2.3 Residual risks

The ceiling fan may pose threats when it is used by untrained persons or in an incorrect or inappropriate way.

Residual risks are potential risks that are not obvious, e.g.:

- Injuries due to not adhering to the safety instructions, standards, guidelines or regulations
- Injuries due to uncoordinated work.
- Risk due to working on the electrical system, the cables and the connections

2.4 Delivery

AL-KO ceiling fans are delivered in cardboard boxes or on pallets incl. film packaging!

2.5 Storage, transport



Warning!



Caution!

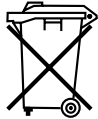
- Store the ceiling fans in their original packaging in a dry place and protected against the weather.
- Cover open pallets with tarpaulins and protect the ceiling fans against dirt (e.g. chips, stones, wire, etc.)
- Additional, protective packaging must be used for transport under harsh conditions, (e.g. on open vehicles, exposed to unusual vibration, transport by sea or in subtropical countries).
- Prevent repeated and, in particular, sudden temperature changes. They are particularly harmful when the humidity can condense.
- Check the ease of movement of the fan bearings (turn them by hand) after storage periods longer than 1 year.
- The device can be transported with a fork lift or and industrial truck as described in the "Fork lift / industrial truck transport" chapter.
- Clear vision must be ensured during transport (use support staff as required)
- No persons may remain in the transport area.
- The relevant worker safety and environmental protection regulations must be adhered to during transport.
- The ceiling fan may only be transported by educated, trained and instructed personnel and with appropriate consideration of safety issues.
- It must be ensured that drivers have appropriate driving licences when transporting devices requiring a driving licence.
- Avoid twisting of the housing or other forms of damage.
- Damage caused by in appropriate packaging, storage or transport are to be borne by the party that caused them.
- When the system stands still for more than one month, the fan must be turned once a month to prevent damage to the bearings.

2.6 Duties of the operating company

The operator of the AL-KO products must regularly train his staff with regard to the following:

- Adherence to and use of the operating and installation instructions as well as the legal regulations.
- Appropriate operation of the ceiling fan.
- Adhere to the instructions of the company security and the operating instructions of the operating company as required.
- Conduct in emergencies

2.7 Disposal of the packaging



Disposal of the packaging must be performed according to the currently valid, local environmental and recycling regulations of your country and your municipality.

3. Product description

AL-KO ceiling fans of the ENERGY series consist of a stable, self-supporting steel sheet housing which is sendzimir-galvanised and has additional powder coating. Pressed air-intake panels are arranged on all four sides. A maintenance-free axial fan ensures low-noise operation. The drives of the AL-KO ceiling fan are external rotor motors. They have a permanently lubricated deep-groove ball bearing and the fan forms a single unit with the rotor. The ceiling fans can be extended with various electrical accessories.

Type key ENERGY:

| | | | | |
|--|---|-----|---|--|
| | DL ENERGY IND | 140 | E | |
| Device type | DL ENERGY IND Ceiling fan ENERGY INDUSTRY | | | |
| Device size | 140 250 400 650 | | | |
| Device versions | E for large room heights E/h for medium room heights | | | |
| Supplementary text for additional options | a console (adjustable) c console (bracket) | | | |

Application area:

AL-KO ENERGY ceiling fans can be used in halls with a height between 5 m and max. 16 m.

The use of AL-KO ENERGY ceiling fans ensures optimal economic performance.

The dynamically operated system reduces the heat layers and prevents rising of the warm air flow. The desired heat output as well as the circulated air volume must be provided by air heating devices or by a static heating system.

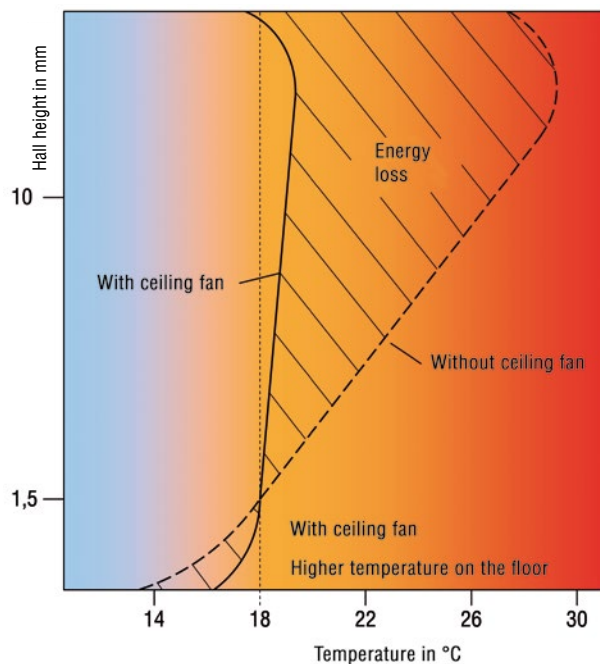


Fig.: Heat layers

We discriminate between three major applications types:

Type 1:

Recirculation heating with ceiling-mounted air heaters.

This arrangement moves part of the pent-up heat to the occupied zone. The additional ceiling fans ensure a more intense recirculation of the room air while the air heating devices are standing still and support them during operation.

Layout: Recirculation 1.5- to 2-times the room volume

Type 2:

Recycled air heating with air heaters installed on the wall.

The situation does not allow installation of the air heaters on the ceiling, e.g. rooms too high, high-bay warehouse, crane tracks, etc.

Layout: Recirculation 2 to 2.5 times the room volume

Type 3:

Recirculation heating with static heating system
e.g. radiators, convection heaters, underfloor heating, etc. No dynamic air recirculation facilities are present.

Layout: Recirculation 2.5 to 3 times the room volume



Important:

The recirculation must be distributed over a sensible number of devices.

3.1 Declaration of incorporation

Manufacturer's Name and Address:

AL-KO THERM GMBH
Hauptstraße 248-250
D-89343 Jettingen-Scheppach (Germany)

EC Declaration of Incorporation

According to EC Machinery Directive 2006/42/EC, Appendix II, Part 1, Section B of May 17, 2006.

We hereby declare that by design and construction the following machine

Partly completed machine: Ceiling fan ENERGY without control

Series: DL-ENERGY INDUSTRY ...E; E/h

Type: 140; 250; 400; 650;

complies with the following applicable standards and directives.

| | |
|--------------------------|-------------------------------------|
| EC Directive 2006/42/EC | Machinery Directive |
| EC Directive 2004/108/EC | Electromagnetic Compatibility (EMC) |

Applicable Harmonized Standards, in particular:

| | |
|------------------|--|
| DIN EN ISO 12100 | Safety of Machinery; General Design Principles – Risk Assessment and Risk Containment |
| DIN EN 349 | Safety of Machinery; Minimum Clearances to Avoid the Crushing of Body Parts |
| DIN EN 60204-1 | Safety of Machinery; Integration of Electrical Devices into Machinery |
| DIN EN ISO 13857 | Safety of Machinery; Safety Clearances to Keep the Arms and Legs away from Hazardous Areas |

Applied National Standards and Technical Specifications:

| | |
|------------|-----------------------------------|
| VDMA 24167 | Ventilators – Safety Requirements |
|------------|-----------------------------------|

We compiled the specific technical documents according to Appendix VII, Part B. Upon justified request, the specific technical documents shall be submitted to the official authorities. The documents may be submitted electronically or as hard copies. The above named manufacturer reserves all property rights.

Our product is not cleared for use until it has been determined that the product is going to be integrated into a facility/machine and/or is used as part of an assembly, which complies with all applicable laws and regulations.

Authorized Representative in Charge of the
Technical Document Compilation:

Leo Kohl
Address: see manufacturer's address

This declaration shall be null and void in case the machine is altered or modified without the manufacturer's prior written permission.

Jettingen-Scheppach, May 01, 2012



C. Stuck, CEO

3.2 Declaration of conformity

Manufacturer's Name and Address:

AL-KO THERM GMBH
Hauptstraße 248-250
89343 Jettingen-Scheppach (Germany)

EC Declaration of Conformity

According to EC Machinery Directive 2006/42/EC, Appendix II, Part 1, Section A of May 17, 2006.

We hereby declare that by design and construction the following machine

Machine: Ceiling fan ENERGY with control
Series: DL-ENERGY INDUSTRY ...E; E/h
Type: 140; 250; 400; 650;

complies with the following applicable standards and directives.

EC Directive 2006/42/EG Machinery Directive
EC Directive 2004/108/EC Electromagnetic Compatibility (EMC)

Applicable Harmonized Standards, in particular:

DIN EN ISO 12100 Safety of Machinery; General Design Principles – Risk Assessment and Risk Containment
DIN EN 349 Safety of Machinery; Minimum Clearances to Avoid the Crushing of Body Parts
DIN EN 60204-1 Safety of Machinery; Integration of Electrical Devices into Machinery
DIN EN ISO 13857 Safety of Machinery; Safety Clearances to Keep the Arms and Legs away from Hazardous Areas

Applied National Standards and Technical Specifications:

VDMA 24167 Ventilators – Safety Requirements

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Jettingen-Scheppach, May 01, 2012



C. Stuck, CEO

3.3 Technical data

3.3.1 TYPE DL ENERGY IND... E

| Type | Dimensions in mm | | | | | | | Weight |
|---------------------|------------------|---------|---------|---------|---------|---------|---------|--------|
| | L mm | b mm | c mm | d mm | e mm | f mm | g mm | Kg |
| DL ENERGY IND 140 E | 600 | 572 | 407 | 460 | 2x170 | 310 | 290 | 30 |
| DL ENERGY IND 250 E | 700 | 672 | 407 | 560 | 2x215 | 385 | 340 | 38 |
| DL ENERGY IND 650 E | 900 | 872 | 407 | 760 | 3x215 | 500 | 500 | 60 |

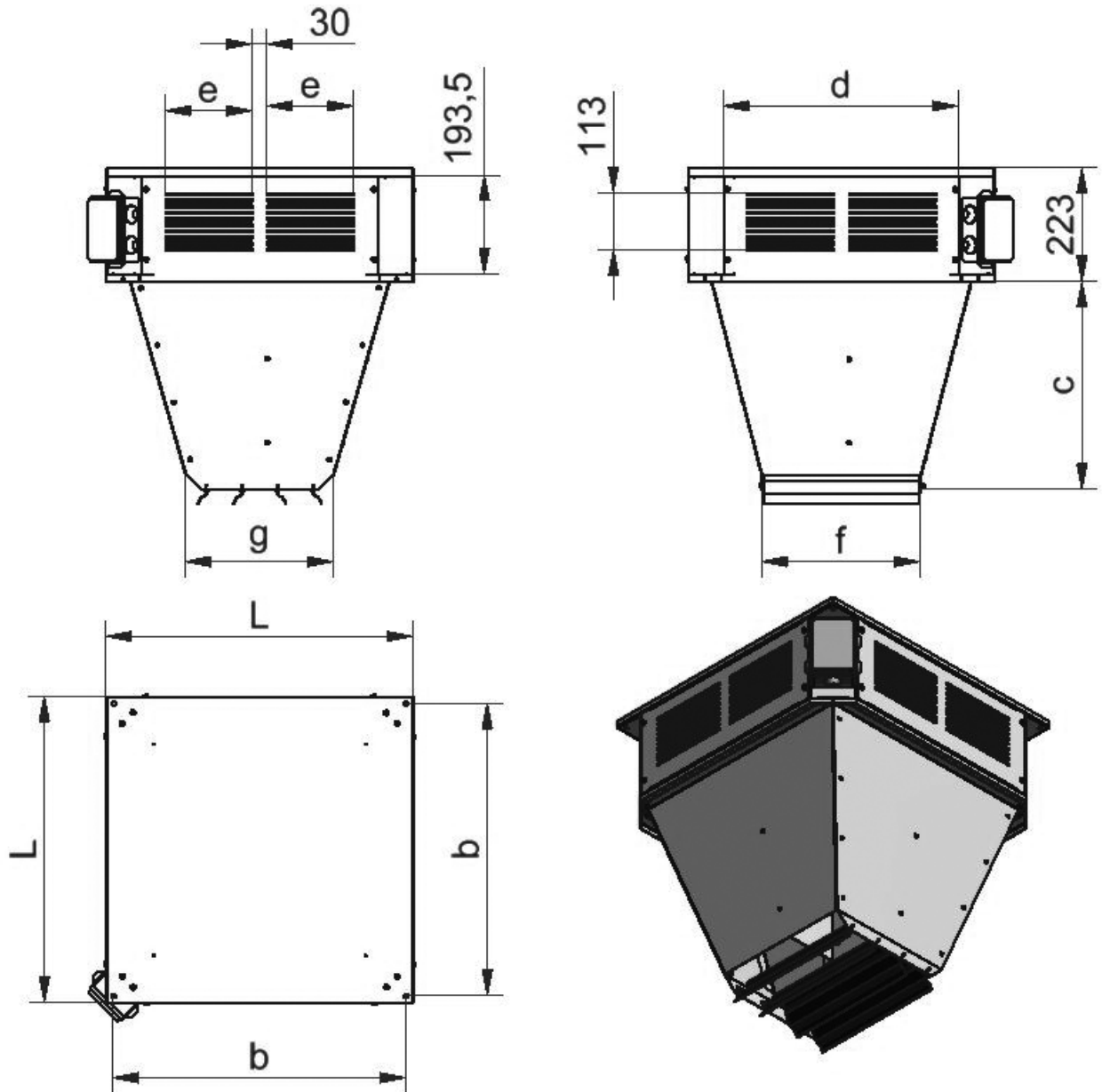


Fig.: Device series Type DL ENERGY IND...-E

3.3.2 TYPE DL ENERGY IND... E

| Type | Dimensions in mm | | | | | | Weight |
|-----------------------|------------------|---------|---------|---------|---------|---------|--------|
| | L mm | b mm | c mm | d mm | e mm | f mm | kg |
| DL ENERGY IND 140 E/h | 600 | 572 | 109 | 460 | 2x170 | 350 | 25 |
| DL ENERGY IND 250 E/h | 700 | 672 | 109 | 560 | 2x215 | 450 | 33 |
| DL ENERGY IND 400 E/h | 800 | 772 | 109 | 660 | 3x170 | 550 | 40 |
| DL ENERGY IND 650 E/h | 900 | 872 | 109 | 760 | 3x215 | 650 | 53 |

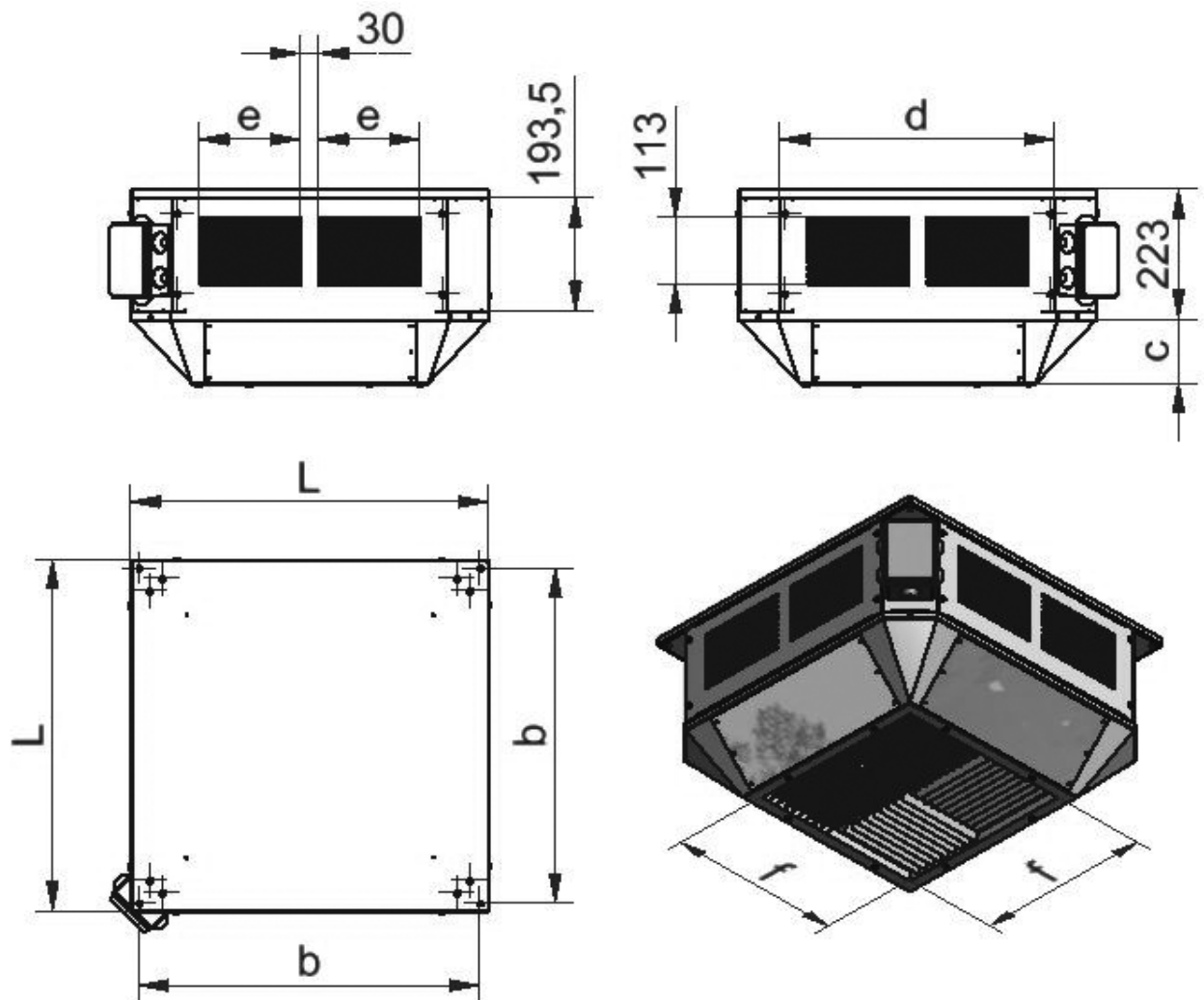


Fig.: Device series Type DL ENERGY IND...-E/h

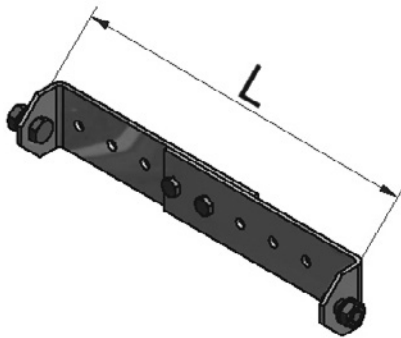
3.3.3 Noise pressure level

| Design size | | 140 | | 250 | | 400 | | 650 | |
|--|---------|------|------|------|------|------|------|------|------|
| Rotation speed | | max. | min. | max. | min. | max. | min. | max. | min. |
| Noise pressure level (measurement in 5 m distance), across fre- quency band in dB | 63 Hz | 52 | 48 | 54 | 48 | 57 | 53 | 61 | 51 |
| | 125 Hz | 57 | 50 | 63 | 52 | 64 | 56 | 64 | 60 |
| | 250 Hz | 60 | 53 | 66 | 55 | 67 | 60 | 68 | 65 |
| | 500 Hz | 56 | 50 | 62 | 52 | 63 | 52 | 64 | 58 |
| | 1000 Hz | 54 | 47 | 59 | 50 | 57 | 47 | 61 | 53 |
| | 2000 Hz | 51 | 44 | 56 | 50 | 55 | 45 | 57 | 49 |
| | 4000 Hz | 45 | 38 | 50 | 45 | 51 | 40 | 54 | 44 |
| | 8000 Hz | 35 | 28 | 46 | 34 | 40 | 30 | 45 | 33 |

3.4 Accessory

Console a

The Console Set a is suited for ceiling installation of the ceiling fans on suspended or inclined ceilings. The distance of the ceiling fan to the ceiling is freely adjustable from 150 – 250 mm. It consists of four consoles and the fastening screws.

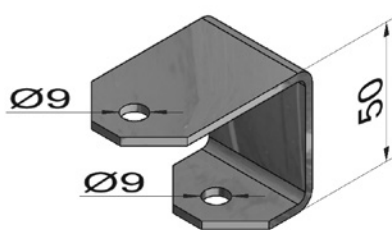


| Type | L mm | Weight kg* |
|------|-----------|------------|
| a | 160 - 260 | 1.4 |

* Weight of the console set

Console c

The Console Set c is suited for ceiling installation of the ceiling fan. The distance of the ceiling fan to the ceiling is approx. 40 mm. The set consists of four consoles and the fastening screws.



| Type | Weight kg* |
|------|------------|
| c | 0.35 |

* Weight of the console set

4. Transport



Caution!

- The individual components of the system may only be moved with the transport devices intended for this purpose.
- Do not step or work under suspended loads.
- Only permitted lifting tools with sufficient carrying capacity may be used.
- The lifting tools must be fault-free.
- The load-handling equipment must be checked for carrying capacity and damage before use.
- Protective gloves should be worn during transport and installation of the devices (risk of cutting).
- Only remove the packaging immediately before installation.

4.1 Fork lift / industrial truck transport

AL-KO ceiling fans can be transported in their original packaging with a fork lift or an industrial truck!



Caution!

Always place the lifting forks of the fork lift against the timbers.
Take note of possibly protruding elements.

- Use suitable fork lengths to prevent damage to the device.
- Use suitable intermediate timber layers.

5. Assembly



Warning!

Installation, electrical connection, maintenance, commissioning, repair, etc. may only be performed by trained staff.

- The place of installation as well as the installation structure must provide permanent and vibration-free support of the devices.

The place of installation and the installation structure has to be checked by a structural engineer, if required.

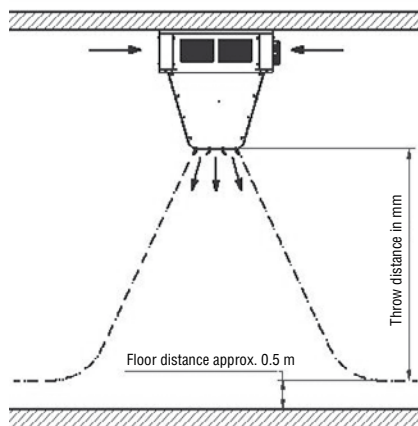
- AL-KO ceiling fans are delivered in pre-assembled form.
- The manufacturer documentation must be considered before installation or removal.
- The ceiling fans must be levelled during the installation!

5.1 Ceiling installation of the devices

Device Version E

The Device Version E is intended for high rooms (5m to max. 16 m). The recirculated air is sucked in at the ceiling on four sides and blown downwards into the room in a cone-shaped stream. The ceiling fan can either be mounted directly under the ceiling or fastened at a distance to the ceiling with Console Set a or c (optional).

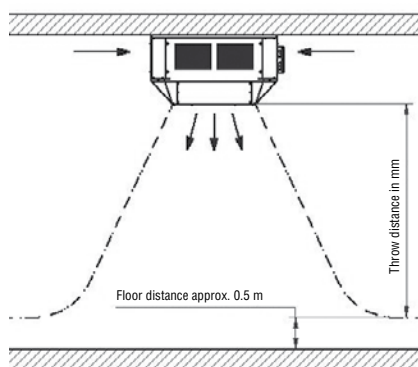
The throwing distance can be freely reduced by adjusting the outlet vents.



| | max. / min. rotation speed | max. / min. rotation speed |
|-------------|-------------------------------|--------------------------------------|
| Design size | Throwing distance in m | Air volume flow in m ³ /h |
| 140 | 11 / 9 | 2700 / 2100 |
| 250 | 12 / 10 | 4000 / 3300 |
| 400 | 13 / 11 | 5500 / 4100 |
| 650 | 14 / 12 | 8400 / 6400 |

Device Version E/h

The Device Version E/h is intended for rooms of medium height (5m to max. 8.5m). The recirculated air is sucked in at the ceiling on four sides and blown downwards into the room in a cone-shaped stream. The ceiling fan can either be mounted directly under the ceiling or fastened at a distance to the ceiling with Console Set a or c (optional).

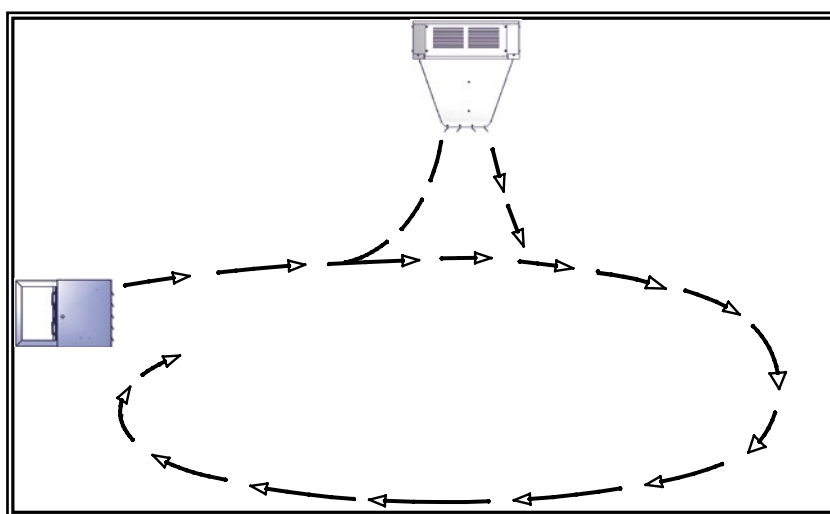
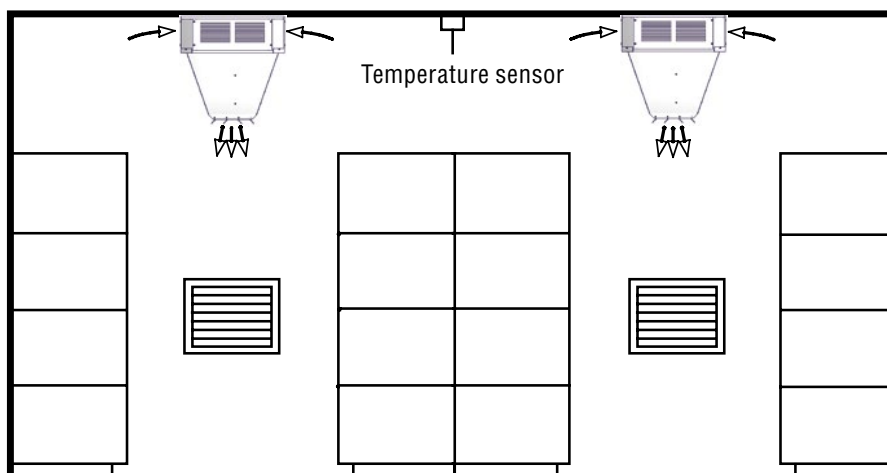
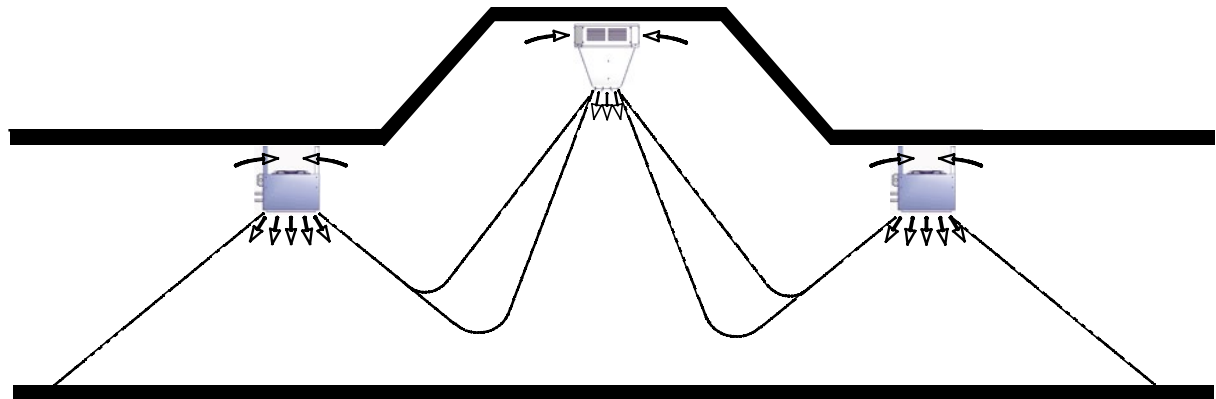


| | max. / min. rotation speed | max. / min. rotation speed |
|-------------|-------------------------------|--------------------------------------|
| Design size | Throwing distance in m | Air volume flow in m ³ /h |
| 140 | 5 / 4 | 2700 / 2100 |
| 250 | 6 / 5 | 4000 / 3300 |
| 400 | 7 / 6 | 5500 / 4100 |
| 650 | 8 / 7 | 8400 / 6400 |

It has to be ensured that the penetration depth of the vertical air stream is sufficient when ceiling-mounted devices are used. The resulting, vertical penetration depth of the air stream has to be checked to prevent unpleasant temperature layering. The appropriate values are provided in the tables.

The distribution and direction of the air stream change changed by adjusting the vertically aligned outlet vents (only Type E). The penetration depth of the air steam can also be reduced by adjusting the outlet vents in mutual directions (only Type E). The temperature sensors are placed in the pent-up heat area by the customer.

Installation examples:



5.2 Electrical connection



Warning!

The electrical connection may only be performed by a registered electrician and with consideration of the DIN and VDE regulations and the directives of the local energy supply company.

- The electrical connection of the AL-KO ceiling fan must be performed according to the connection plans. Only use the device-specific circuit diagram to connect the device.
- Ceiling fans must be grounded.
- It must be possible to switch off all poles of the supply line with a maintenance switch.
- Fluctuations or deviations from the mains voltage may not exceed the tolerances specified in the technical data, as malfunction can otherwise not be excluded.
- All electrical motors of the fans have a thermal contact as standard equipment. It must be integrated into the controller.

5.2.1 Fan

Check the rotation direction of the fan.

The rotation direction must correspond with the rotation direction arrow on the fan blade or the fan housing.

Technical data for 400-V fan:

| Type | 140 | | 250 | | 650 | |
|------------------------|-----------------|------|------|------|------|------|
| Operating voltage in V | 3~400 V/50 Hz | | | | | |
| | Δ | Y | Δ | Y | Δ | Y |
| Power current in kW | 0.19 | 0.14 | 0.29 | 0.21 | 0.75 | 0.47 |
| Nominal current in A | 0.40 | 0.23 | 0.50 | 0.32 | 1.50 | 0.83 |
| Operating speed rpm | 1390 | 1170 | 1330 | 1020 | 880 | 680 |
| Insulation class | THCL 155 (F) | | | | | |
| Protection type | IP 54 | | | | | |
| Motor contactor | Thermal contact | | | | | |

Terminal strip 400 V without AL-KO rotation speed control

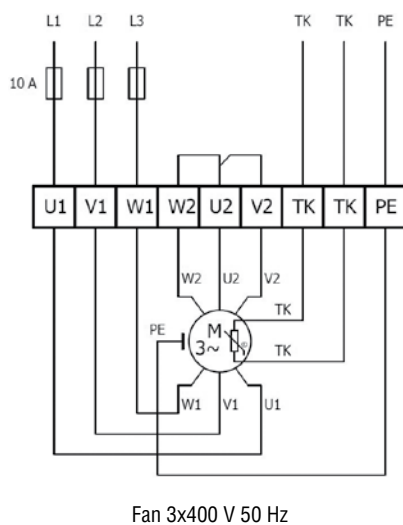


Fig.: Connection scheme for 1-level operation
Low rotation speed (star connection)

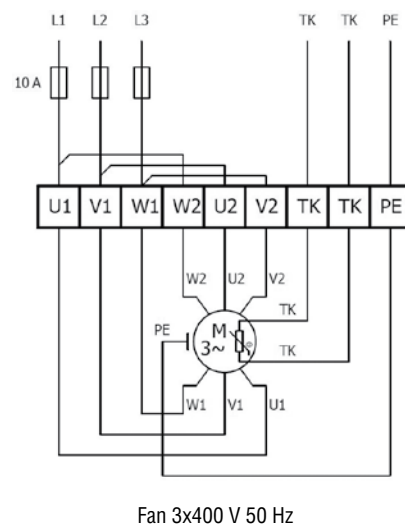


Fig.: Connection scheme for 1-level operation
High rotation speed (delta connection)

5.2.2 Cable list



The cable cross-sections are specified without guarantee.
The type of installation and possible cumulation are not considered!

Devices with three-phase motor:

Supply line (400 V, AC/3 Ph)

Device type

Cable

DL ENERGY IND-140 - 650;

6 G 1.5 mm² (1-level); 9 G 1.5 mm² (2-level)

Cable for optimal field devices:

see "Controllers and regulators for air-heating devices / air-cooling devices" documentation

6. Switch cabinet

AL-KO ceiling fans can be optionally extended with various control accessories.

Connecting a third-party frequency converter at the customer side constitutes a change to the device and is therefore not permitted!

Further details and information are provided in the "Controllers and regulators for air-heating devices / air-cooling devices" documentation.

7. Maintenance

The operator is obliged to have the system regularly maintained by specialised staff.

AL-KO undertakes this task when a maintenance contract has been concluded.

7.1. Safety

**Warning!**

Maintenance, repair, work on the electrical system, etc. may only be performed by educated, trained and instructed specialist personnel.

**Warning!**

The device must be switched to a voltage free state and the main switch and/or the maintenance switch must be switched off (all poles) and secured against unauthorised re-operation before any work is performed.

The impeller continues running for approx. 1 to 3 minutes after switching off the device. The impeller may never be slowed down by hand or another object.

After work on the device has been completed, the person responsible must ensure that all protective devices installed in the factory are fully functional before the device is re-operated.

7.2 Consumables and spare parts

**Caution!**

Only use original consumables and spare parts. This is required to ensure safe operation. The warranty might otherwise become invalid!

7.3 Maintenance plan

| No. | Component / activity | Measures | Inspections to be performed at n-month intervals as specified below: | | | |
|-----------|--|--|--|---|---|----|
| | | | 1 | 3 | 6 | 12 |
| 1. | Air inlet and outlet | | | | | |
| | Check for dirt, damage and corrosion | Completely clean and repair | | | | X |
| 2. | Device housing | | | | | |
| | Check for dirt, damage and corrosion on the air inlet side | Clean and repair | | | | X |
| 3. | Outlet blinds | | | | | |
| | Check for dirt, damage and corrosion | Clean as required | | | | X |
| | Check mechanical function | | | | | X |
| 4. | Fans | | | | | |
| | Check the fan for dirt, damage and corrosion | Clean and repair | | | X | |
| | Check the impeller for dirt, imbalance and running noises | Briefly switch on the motor | | | | X |
| 5. | Switch cabinet | | | | | |
| | Visually inspect terminal and plug-in connections | Check for firm attachment and clean as required. | | | | X |

7.4. Checking the components

Components must be regularly checked to detect and repair faults at an early stage.

The regular controls include the following and other measures:

Visual control of the relevant device area for faults such as dirt, rust formation and damage.

7.4.1 Checking outlet жалousies

- Check outlet vents for dirt, damage and corrosion.
- Check the mechanical function of the vents.

7.4.2 Checking the fans

- The fan is maintenance free, due to its ballpoint bearing with life-long lubrication. The bearings have to be exchanged after the end of the grease service life (approx. 30 000 to 40 000 hours with standard use).
- Check the fans for dirt, damage and corrosion.
- Check the fan attachment and fasten all attachment screws.
- Check the function of the protective devices.
- Check for atypical noises of the bearings and vibration-free running.



Caution!

Humid atmosphere:

It is recommended to run the fans at least for two hours per month during prolonged standstill periods to ensure that accumulated humidity is evaporated.

7.5 Cleaning the components

Components identified as dirty during the inspection must immediately be cleaned.

No aggressive, paint-dissolving cleaning agents may be used for cleaning.

7.5.1 Cleaning the outlet vents

- Regularly clean the outlet vents.

7.5.2. Clean the fans

- Regularly clean the fan impeller, motor and grid.
- The whole fan can be cleaned with a damp cleaning cloth.
- Do not use high-pressure cleaners or water beams for cleaning.
- Avoid penetration of water into the motor and the electrical installation.
- After the cleaning process, the motor must be operated for 30 minutes at 80-100% max. rotation speed to evaporate any water that may have entered.

7.6 Exchanging components



Warning!

Maintenance, repair, work on the electrical system, etc. may only be performed by educated, trained and instructed specialist personnel.

7.6.1 Exchange the outlet vents

- Drill holes into the rivets of the outlet vents.
- Remove the outlet vents.
- Install the outlet vents in reverse order!

7.6.2 Exchanging the fan

- Switch the device to a voltage-free state.
- Disconnect the fan cable in the terminal box.
- Pull out the fan cable.
- Unscrew the air outlet hood.
- Remove the rear wall with the fan.
- Loosen the fastening screws of the fan.
- Install the fan in reverse order!

8. Help with faults



Warning!

Diagnosis, fault removal and reoperation may only be performed by duly authorised persons. This applies, in particular, to work on the electrical devices within the switch cabinet (e.g. test work, exchange, etc.).

8.1 Contact person

Please address all questions in connection with our products to the installer of your air system, to one of our branches or directly to:

AL-KO THERM GMBH

Hauptstraße 248-250

89343 Jettingen-Scheppach

Germany

Tele-
phone: (+49) 8225/ 39-0

Fax: (+49) 8225/ 39-2113

E-mail: luftheizung@al-ko.de

Web: www.al-ko.com

9. Shut-down

9.1. Decommissioning

Switch the system to a voltage-free state (all poles disconnected) and secure it against unauthorised switching on before any work is performed.

The points in the Chapter "Commissioning and maintenance" must be adhered to before re-operation.

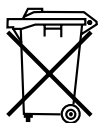
9.2 Dismantling

Switch the system to a voltage-free state (all poles disconnected) and secure it against unauthorised switching on before any work is performed.

The dismantling may only be performed by trained specialist staff.

The dismantling must be performed according to the relevant work and accident prevention regulations valid at the time.

9.3 Disposal



Do not dispose of work out devices as domestic waste!

The currently valid, relevant, local environmental and recycling regulations in your country and your municipality must be adhered to when disposing of the ceiling fan and its accessories.

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