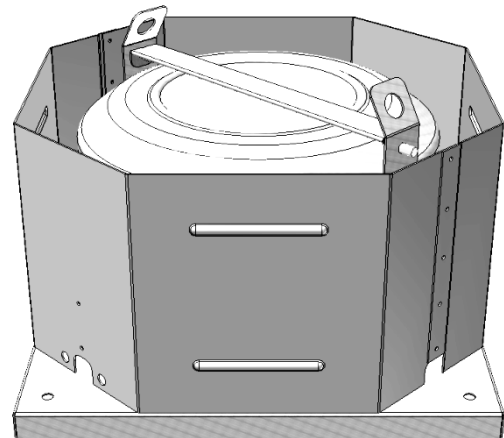


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1 SAFETY REGULATIONS AND INSTRUCTIONS

These instructions are a component of the device and must be kept in the immediate vicinity of the device and accessible to personnel at all times. The personnel must have read through these instructions carefully and understood them before beginning any work.

The operating instructions must be handed on if the device is sold or passed on.

These operating instructions can be duplicated and distributed to provide information about any potential hazards.

1.1 Symbols and safety notices

Safety instructions in these instructions are labelled via symbols and key words that provide information about the level of hazard involved.



DANGER!

... indicates an imminently dangerous situation that could lead to death or serious injuries if not avoided.



WARNING!

... indicates a potentially dangerous situation that could lead to death or serious injuries if not avoided.



CAUTION!

... indicates a potentially dangerous situation that could lead to minor or slight injuries if not avoided.



NOTE!

... highlights useful tips and recommendations as well as information for efficient and trouble-free operation.

1.2 Personnel requirements (qualifications)

The device must be transported, unpacked, operated, maintained and used in any other manner only by specialist personnel who have been instructed and are authorised to do so.

Only specialist electricians may install the device and carry out the test run and any work on the electrical systems.

1.3 Safety regulations

The device is used in the commercial sector. The operator of the device is thus subject to the statutory obligations on occupational safety.

Alongside the safety regulations in these instructions, the safety, accident prevention and environmental safety regulations that are applicable for the area of use of the device must be complied with.

→ Alterations, extensions or modifications are not permitted without the permission of the manufacturer.

1.4 Electrical current



DANGER!

Danger of lethal electrocution from electrical current!

There is an immediate danger to life if any current-carrying components are touched. Damage to the insulation or to individual components can be life-threatening.

Therefore:

- Switch off immediately and have repair work carried out in the event of any damage to the insulation of the power supply.
- Employ only specialist electricians to carry out work on electrical systems.
- For all work on the electrical system, disconnect the power supply and determine that no voltage is present.
- Switch off the power supply and secure it against being switched on again before any maintenance, cleaning and repair work.
- Do not bypass or put any fuses out of operation. Comply with the correct currents when changing fuses.
- Keep humidity away from current-carrying components. This can lead to a short circuit.
- When carrying out any work on the device, place it on a rubber mat.



CAUTION!

The motor starts up automatically again if a control voltage is applied or speed setpoint is stored, e.g. following a power outage. Risk of injury!

1.5 Electro-magnetic radiation

Influence from electro-magnetic radiation is possible e.g. in connection with control and regulation devices.

Suitable shielding arrangements should be carried out on site.

1.6 Storage

Store the packages under the following conditions:

- Store dry and free of dust.
- Do not expose to any aggressive media.
- Avoid mechanical shocks.
- Recommended storage period:
max. 1 year

1.7 Disposal

If no return or disposal agreements have been made, bring the dismantled components to recycling:

- Have metals scrapped.
- Give plastic elements to recycling.
- Bring electronic components to the appropriate disposal centre.
- Dispose of the remaining components sorted by the material characteristics.

2 INTENDED USE

The device is designed and constructed exclusively for the intended purpose described here.

The fan is exclusively used for transporting normal, dust-free and air-conditioned air and other non-aggressive and non-flammable, non-explosive gases.

Additional applications approved by the manufacturer that arise from the fan's optional equipment are described in the customer specification.



WARNING!

Danger from non-intended use!

Every application that goes beyond intended use and / or other use of the device can lead to dangerous situations. Therefore:

- Use the device only for its intended purpose.
- Strictly comply with all information in these operating instructions.

Claims of any kind for damage that have arisen from non-intended use are excluded.

The operator alone shall be liable for all damage arising from non-intended use.

3 TECHNICAL DATA

3.1 Rated values

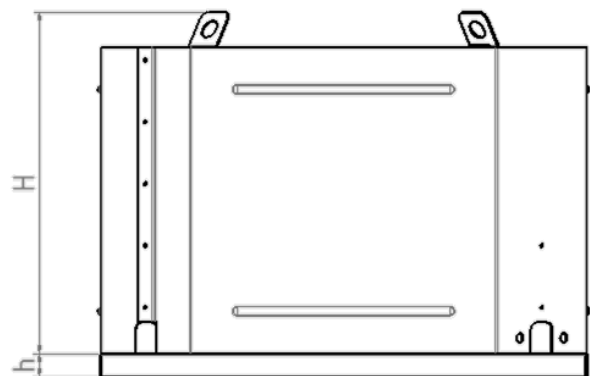
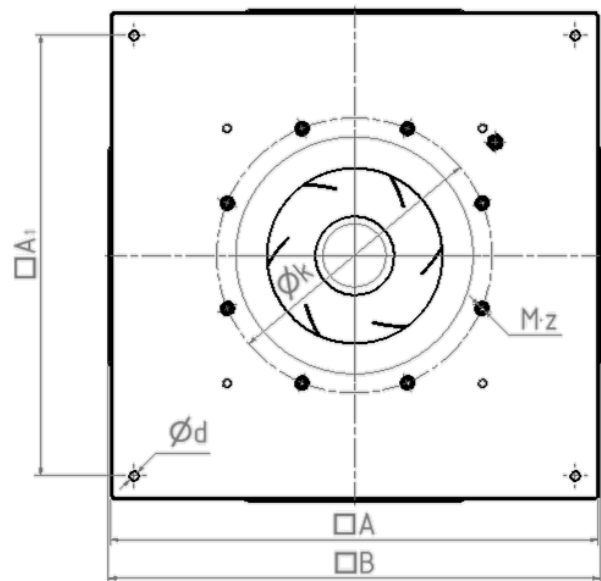
Motor size	18	22	31
Nominal voltage [VAC]	230		
Frequency [Hz]	50		
Speed [min ⁻¹]	1950	1850	1635
Power consumption [W]	85	165	370
Power supply [A]	0.96	1.30	1.65
Temperature [°C]	-25 / +35		
Weight [kg]	12	13	16

3.2 Mounting data

Screw the fan baseplate on a suitable base using the four corner holes (max. M12).

3.3 Device drawings

Motor size	18	22	31
□A	480	520	630
□A ₁	420	460	570
□B	485	525	635
H	300	370	445
h	30	30	30
M • z	M6•3	M6•3	M8•8
Øk	213	259	356
Ød	12	12	12



3.4 Transport and storage conditions

Check the delivery immediately upon receipt for completeness and for any transport damage.

In the event of any identifiable transport damage proceed as follows:

- Do not accept delivery or only provisionally.
- Note extent of damage on transport documents on the haulier's delivery note.
- Lodge complaints.



NOTE!

Lodge a complaint for each defect as soon as it is identified. Claims for compensation may be lodged only within the applicable claim periods.



WARNING!

Suspended loads pose a risk to life!

Raised loads present a risk to life as a result of falling or parts swaying uncontrollably.

Therefore:

- Never step under suspended loads.
- Use only the anchor points provided.
- Max. stop angle: 60°
- Do not attach to protruding machine parts or to the eyes of fitted components and ensure that attachments are sitting securely.
- Use only permitted hoists and attachments with adequate load-bearing capacity.
- Do not use any torn or abraded pulleys and belts.
- Do not place pulleys and belts on sharp edges and corners, do not knot and do not twist.

4 CONNECTION AND COMMISSIONING

4.1 Make mechanical connection



CAUTION!

Danger of cuts!

- Wear safety shoes and cut-resistant protective gloves.
- Lift the device carefully out of the packaging. Impacts must be avoided.
- Check the device for any transport damage. Damaged devices may no longer be mounted.
- Mount the undamaged device on a suitable base based on its application.
- Connect pressure line on the pressure tapping on site (in the duct or pipeline)

4.2 Make electrical connection



DANGER!

Danger of lethal electrocution from electrical current!

Contact with live parts poses a risk to life. Switched-on electrical components can cause uncontrolled movements and lead to the most severe injuries.

Therefore:

- Switch off the power supply before starting any work and secure against unintentional start-up.
- Always fit protective conductor
- Check protective conductor
- Use only wires that satisfy the prescribed installation requirements in terms of voltage, electricity, insulating material, capacity, etc.
- Lay wires such that they do not come into contact with any moving parts.

4.2.1 Requirements



NOTE!

Connect the device only to electric circuits that can be switched off using an all-pole disconnecting switch.

- Check if the data on the type plate matches the connection data.
- Before connecting the device, make sure that the supply voltage matches the device voltage.
- Use only cables that are designed for the current based on the type plate.

4.3 Check connections

- Ensure that there is a voltage-free status (in all phases).
- Secure against unintentional start-up.
- Check that the connecting wires are fitted correctly.

4.4 Switch on device

Before switching it on, check the device for any externally identifiable damage and that the safety guards are working.

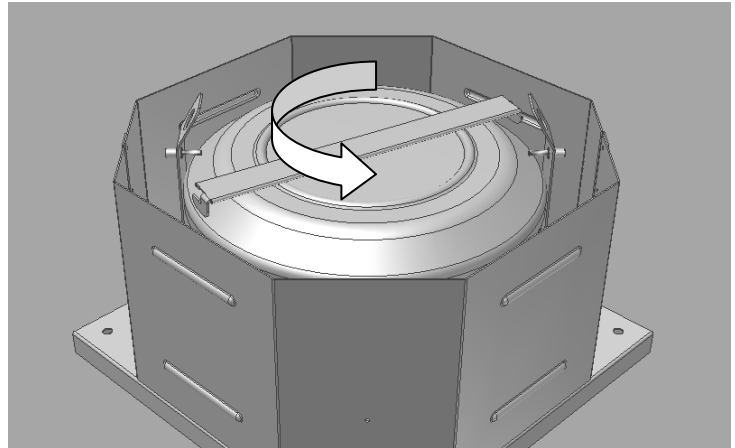
Apply nominal voltage to the supply.
The device starts automatically.

4.5 Switch off device

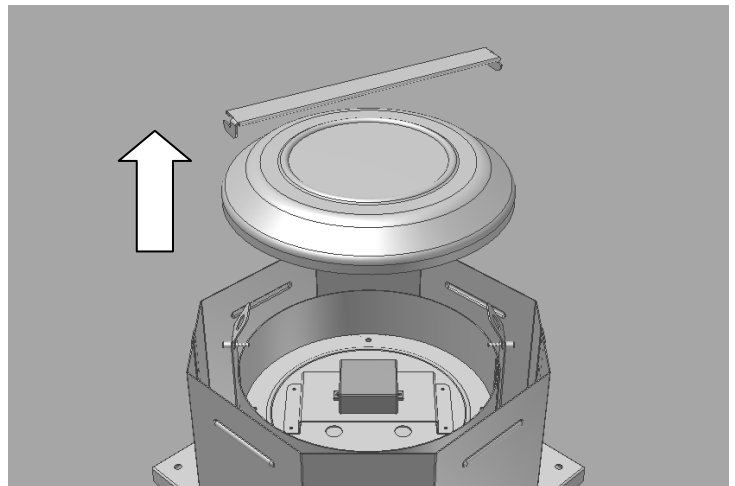
Switch off the device via the mains connection.

4.6 Procedure

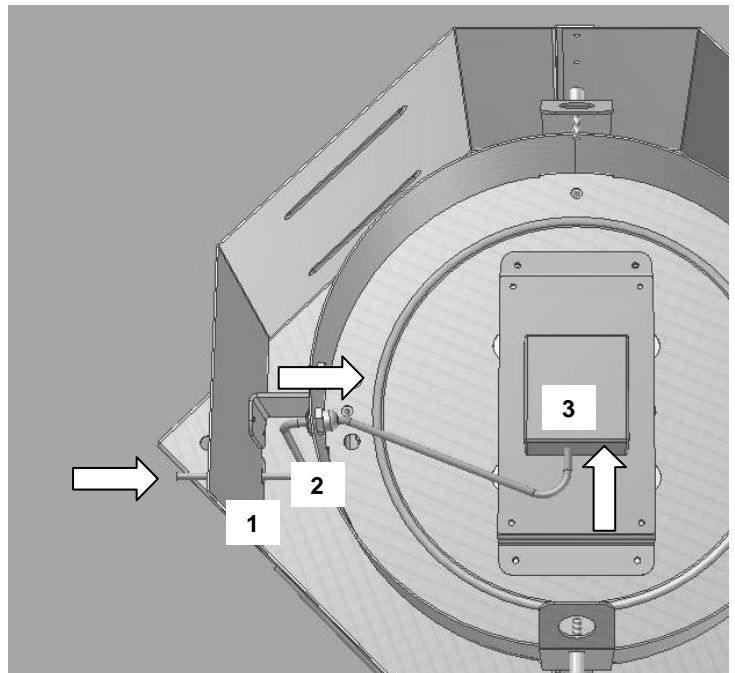
Disconnect mounting bracket with a slight pressure and turn to the side, as indicated. The nuts are pre-set and fastened on the bolt. Their purpose is to fix the lid and may not be removed to release the mounting bracket.



Remove mounting bracket and lid; store safely.



Feed cable, as shown, through the opening in the outer coating (1) and the cable screw fitting in the inner ring (2). Insert cable with suitable radius into the junction box (3). Connect cable cores to the appropriate terminals based on the wiring drawing and colour coding. Tighten all cable screw fittings.



Fit leads based on circuit diagrams in Section 6.

5 MALFUNCTIONS, CLEANING, SERVICING

Do not carry out any repairs to the device. Always send the device to the manufacturer for replacement or repair.



WARNING!

The motor starts up automatically again if a control voltage is applied or speed setpoint is stored, e.g. following a power outage.

Risk of injury!

- Do not remain in the hazard area of the device.
- Switch off the power supply when working on the machine and secure against unintentional start-up.
- Wait until the device has come to a standstill.



NOTE!

If the device has been left standing for a longer period, it is recommended that the device is started up for at least two hours, to allow any condensate that may have infiltrated to evaporate and the bearing to be moved.

5.1 Malfunctions

Malfunctions/defects	Possible causes	Possible remedy
Motor is not rotating	Mechanical blockage	Switch off, isolate from the power supply and remove mechanical blockage.
	Power supply defective	Check power supply, restore supply voltage.
	Faulty connection	Adjust connection, see terminal assignment.
	Temperature sensor has responded	Allow the motor to cool, find cause of the defect and rectify it, where appropriate release anti-pumping device.
Impeller is running untrue	Imbalance in the moving parts	Clean device. If there continues to be an imbalance after cleaning, replace device.
	Defective cooling	Improve cooling, if possible. Reset by switching off the supply voltage for at least 20 s
	Ambient temperature too high	Lower ambient temperature, if possible.
	Inadmissible operating point	Check operating point

Contact the manufacturer if you have further malfunctions.

5.2 Cleaning



NOTE!

Damage to the device through cleaning. Malfunction possible.

- Do not clean the device with a water jet or high-pressure cleaner.
- Do not use any acid, alkali cleaning agents or cleaning agents containing solvents.

5.3 Maintenance

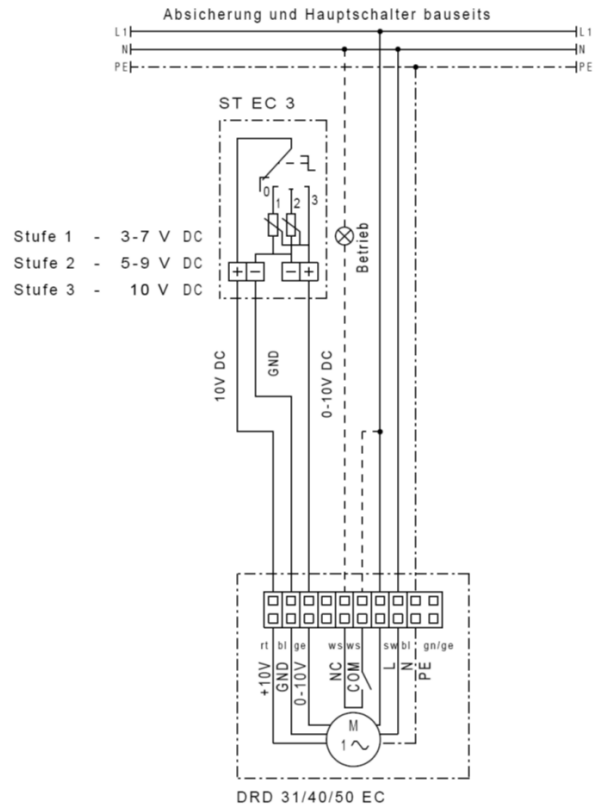
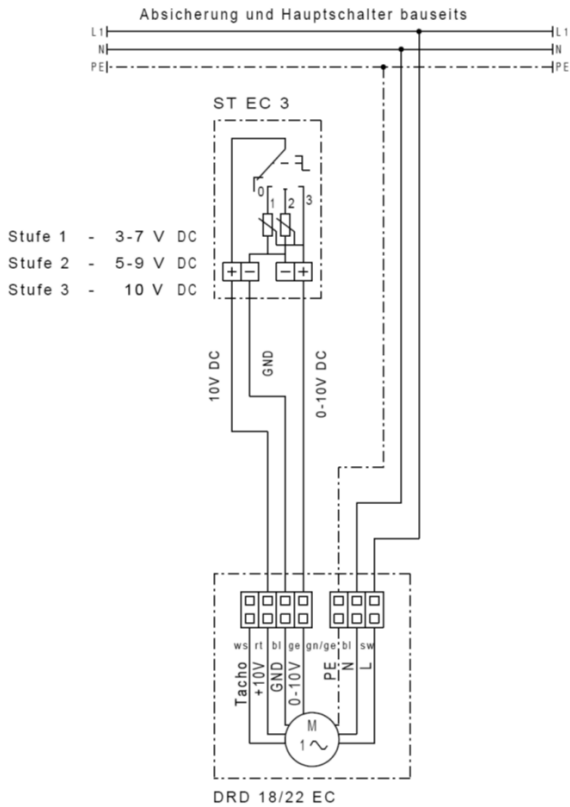
What needs to be checked?	How do you check?
Protective casing	Periodic visual inspection
Check the device for damage	Periodic visual inspection
Secure the device	Periodic visual inspection
Secure the connection leads	Periodic visual inspection
Secure the protective conductor	Periodic visual inspection
Isolate the leads	Periodic visual inspection
Contamination, damage, corrosion	Periodic visual inspection

6 CIRCUIT DIAGRAMS

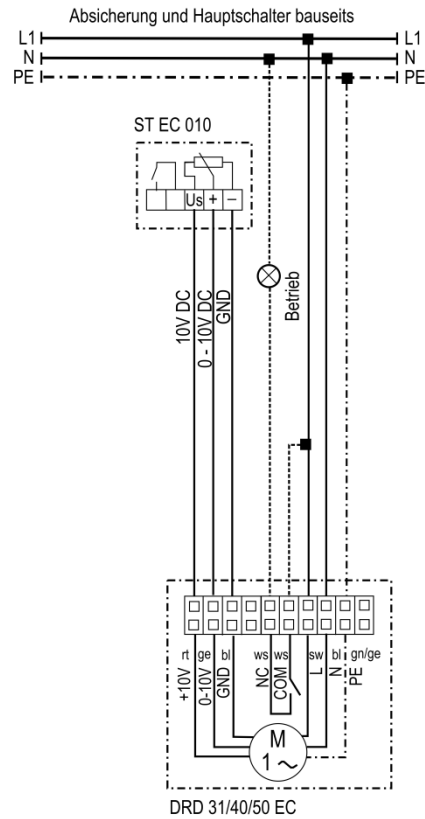
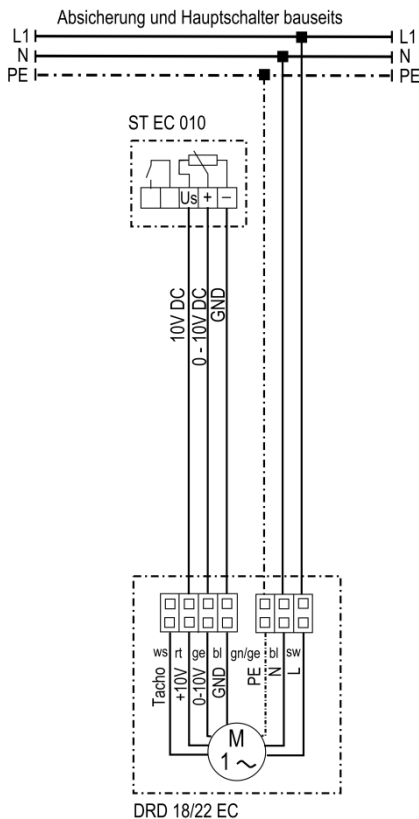
6.1 Wire allocation

Terminal	Colour	Comments
L	Black	230VAC, 50Hz
N	Blue	Neutral conductor
PE	Green/yellow	Protective conductor
P	orange	not switched
+10VDC	red	Voltage output 10VDC, max 1.1mA, not short-circuit-proof
AI1U	yellow	Control input 0-10VDC
GND	dark blue	Control interface connection
Tacho	white	Speed output
COM	white	Potential-free status signalling contact, opener in the event of fault (2A, max 250VAC)
NC	white	Potential-free status signalling contact, opener in the event of a fault

6.2 Version with EC 3



6.3 Version with EC 010



6.4 Version with EC 230

