

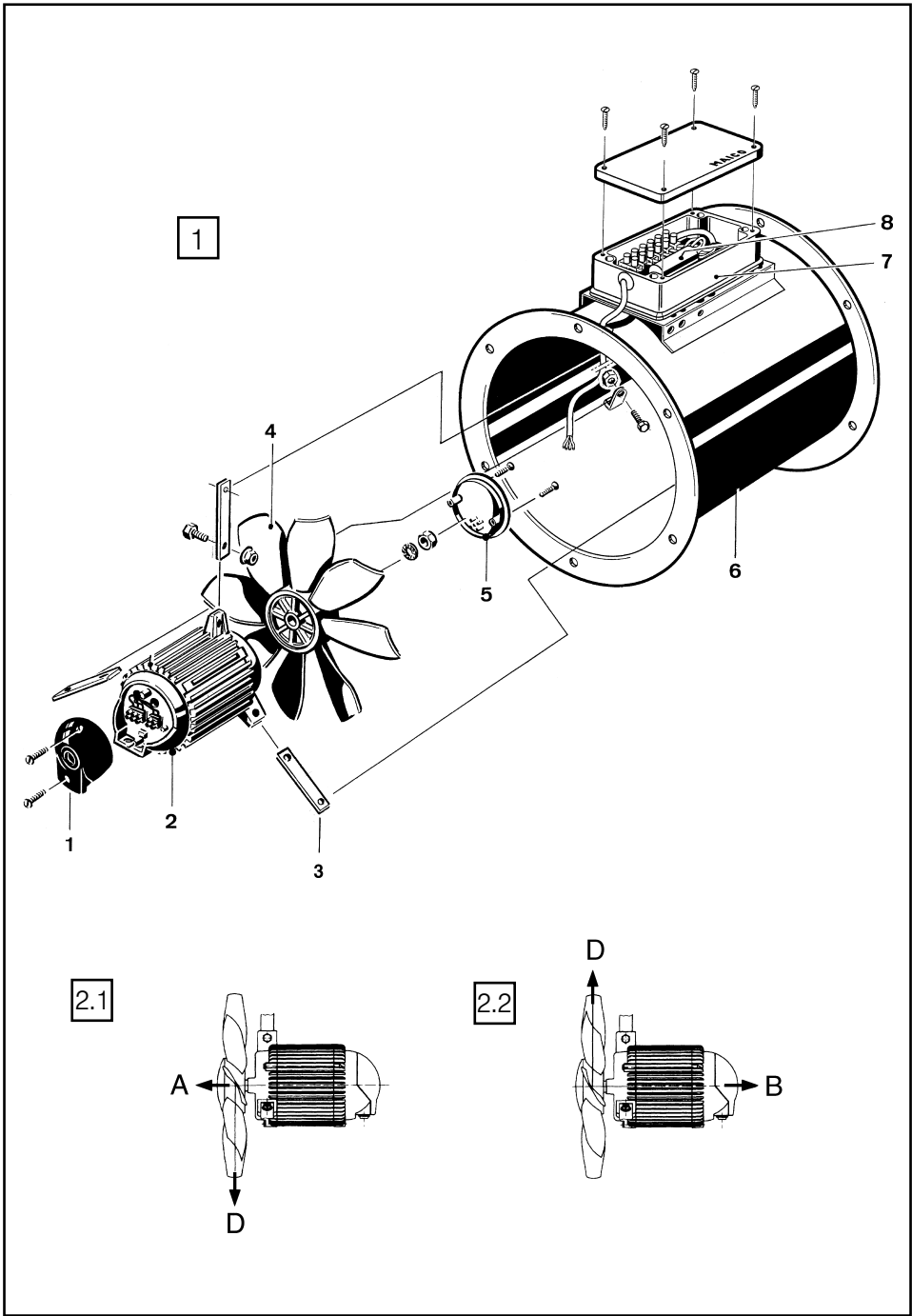
**Axial-Rohrventilatoren**  
**Axial duct fans**  
**Ventilateurs de gaines hélicoïdes**



EZR ...B    EZR...D  
DZR ...B    DZR...D

**Montage- & Bedienungsanleitung**  
**Mounting & operating instructions**  
**Instructions de montage & mode d'emploi**





## Axial-Rohrventilatoren EZR .. B, DZR .. B und EZR 25/4 D

### Intended use

EZR.. and DZR.. fans are used for **extracting air from or the ventilation of** changing rooms, prefabricated offices, restaurants, garages, business and commercial premises, fitness rooms, etc

- **EZR .. B and EZR 25/4 D** : AC model
- **DZR .. B and DZR 25/4 D**: Three-phase AC and pole-changing models

**It is permitted to transport air or air-based mixtures. It is not permitted to transport steam saturated air, mixtures of gases, mist or vapours or liquids and solids.**

**Operation is also not permitted in areas subject to explosion hazards or in the area of inflammable materials.**

The fan may only be used when correctly installed in ducts, if safety is guaranteed through safety equipment in accordance with EN 294 or other structural safety measures.

Modifications and changes to the device are not permitted. MAICO is not liable for damage caused by non-authorized use.

### Fig. 1: Components/spare parts

**Advice about ordering spare parts:** Always quote the print number 0185.0928.0002 of these instructions, the rating plate number (on the housing) and the relevant item number.

- 1 End cover
- 2 Motor
- 3 Strut (3 pieces)
- 4 Impeller
- 5 End cover
- 6 Duct sleeve
- 7 Terminal box
- 8 Capacitor (only with AC-motors)

#### Acknowledgements

© Maico Elektroapparate-Fabrik GmbH. This instruction is a translation of the German original operating instructions. We are not responsible for mistakes or printing errors and retain the right to make technical modifications without giving prior notice.



### Safety Instructions

**Read the instructions through carefully and completely before you install the fan or commission it. Keep the instructions somewhere safe.**

- Installation should only be carried out by specialists with knowledge and experience of ventilation technology.
- Only qualified electricians are permitted to make the electrical connections and/or repairs.
- During assembly and electrical installation, please take note of the valid regulations, in particular DIN VDE 01011 and the corresponding parts.
- Before removing the safety devices, the fan must be completely removed from the power supply.
- If the fans are being used with air-ventilated fireplaces, you must ensure that there is sufficient flow of supply air.
- The fan is designed in accordance with VDE safety requirements within the framework of the equipment and product safety legislation as well as the pertinent regulations laid down in the EC directives.

### Thermal overload protection

- **EZR .. /DZR .. B fans:** The fan motor is thermally protected. It must be connected to an external control unit with automatic switch-off, such as a Maico MVE 10 or MVE 25 motor protection switch for example or to a self-latching contactor circuit. The control unit should not be able to switch itself back on after being triggered.
- **EZR .. /DZR .. D fans:** The fan motor is thermally protected. It must be connected to an external control unit with automatic switch-off, such as a self-latching contactor circuit or a self-latching motor protection switch for example. The control unit should not be able to switch itself back on after being triggered.
- **Before starting it up again,** leave the fan switched off long enough for the motor and the temperature limiter to have cooled down. Depending on the size and the temperatures involved, the **cool-down time** could be up to **30 minutes**. Only switch it back on again then.

## Operating conditions

### ● Installation location, installation position

The fan is used in ducts with DN200...DN 600 (depending on the fan type). It can be mounted in any installation position in dry rooms. The complete unit may only be installed in walls, ceilings, brackets etc. with sufficient load-bearing capacity.

### ● Protective grille

The fan/duct should be secured against the danger of foreign bodies falling in or being sucked in, in line with the safety requirements of equipment and product safety legislation. In the case of free inlet or outlet, you should install a protective grille, in line with DIN EN 294 (DIN 31001).

### ● Degree of protection

The fan complies with the degree of protection indicated on the rating plate (IP54 or IP55) if mounted horizontally, and, if mounted vertically, with air flow direction downwards.

### ● Temperatures

Please refer to the valid Maico catalogue for the maximum permitted airstream temperature.

### ● Rated voltage, Power frequency

The fan should only be operated using the rated voltage and power frequency indicated on the rating plate.

### ● Fixed electrical cabling

The fan may only be connected to a fixed electrical installation. This must be fitted with a mains isolation device that has contact openings of at least 3 mm at each pole.

## Transport, Storage

- When installing the fan, make sure that no loads are placed on sensitive components, such as the impeller or terminal box.
- Maico will not consider any replacements or guarantee claims in the event of incorrect transport methods.
- **Storage:** The fan should only be stored horizontally in a suitable, dry room, with an ambient temperature from  $-10\text{ }^{\circ}\text{C}$  to  $+40\text{ }^{\circ}\text{C}$ . Maico assumes no liability for corrosion damage caused by incorrect storage, for example, if the unit is stored in a humid area. Long periods of storage should also be avoided. Check the correct functioning of the motor bearings before installation.

## Installation

### **i** Notes

- We recommend the use of flexible cuffs and couplings (types EL and ELA), a mounting foot (FU) and vibration dampers (GP), to prevent the transfer of vibrations onto the duct system.
- **Air flow direction, rotational direction**
  - **in the standard model**, the air-flow direction “A” draws the air over the motor, see Fig. 2.1.
  - **Special models** with fan with reverse air-flow direction and non-reduced flow power. In this case, the air-flow direction “B” blows the air over the motor, see Fig. 2.2.
  - **Position “D” = Rotational direction** of the impeller
- Airstream and rotational directions are indicated by arrows marked on the fan housing
- The fan is factory-set such that when it is connected to the power, it delivers the maximum flow power. The flow direction can also be reversed, by swapping the power connections L1 and L2.

Please note that:

- in reverse operation, the flow power is reduced by about 35%,
- the fan is designed for continuous use, i.e. not for frequent changes of rotational direction, which can cause the fan motor to heat up to more than permitted limits.

## Procedure

- 1. Prepare the ducting.** Folded spiral-seams ducts with a DN 200 to DN 600 diameter are allowed, depending on the fan type. Use folded spiral-seams duct with a diameter that matches the fan. Please refer to the valid Maico catalogue for dimensions. If necessary, separate any folded spiral-seams duct at the installation site.
- 2. Installing a fan with an “FU..” mounting foot on a wall, ceiling or bracket:**

Secure the mounting foot at any position on the fan housing using the self-tapping screws supplied. Take note of the position of the terminal box – it must be freely accessible.
- 3. Lay the folded spiral seams ducts flush against the fan, on the intake and on the pressure side.**

4. **Fasten folded spiral seams ducts to the fan with flexible cuffs or couplings (types EL and ELA).**
5. **Fit a protective grille in the case of a free air inlet.**

## Electrical connection

- The electrical connection work should only be carried out by a professional electrician, according to the wiring diagram (see pages 13 ... 16).
- Before working with terminal boxes, always switch off the main fuse at the fuse box and post warning signs advising not to re-apply power. This is particularly valid where the switch is some way away from the fan.
- The connecting cable between the power source and the terminal box must be a permanently laid cable. The cables must be fed into the terminal box so that the cable grommet fits tightly round the non-metallic sheathed cable. If the power cable is not installed correctly, the protection class indicated on the rating plate cannot be guaranteed and no claims can be made under the terms of the warranty .
- **The fan motor is thermally protected, see Chapter "Thermal overload protection". The control unit should not be able to switch itself back on after being triggered.**

- Pole-changing motors with speed ratios of 12/6, 8/4 or 4/2 have a Dahlander pole changing circuit.
- Pole-changing motors with speed ratios of 8/6 or 6/4 are equipped with separate windings.
- **Protective temperature limiter:**  
**Technical Data**

Nominal voltage at 50 Hz/60Hz      250 VAC  
 Nominal current (ohmic)  $\cos\varphi=1.0$     max. 2.5 A  
 Nominal current (inductive)  $\cos\varphi=0.6$     max. 1.6 A

## Procedure

1. Wire up the fan according to the wiring diagram (see pages 13 ... 16).
2. Connect an external control unit with automatic switch-off. Connect the control unit to both "TK" motor contacts in the case of models with installed thermal contact.

## Starting up, Function test

- Before starting up:
  - check that all screwed connections are tight.
  - Check the air channel for dirt. If necessary, clean the air channel.
  - Check compliance with the Technical data.
- After starting up, make sure the impeller is running quietly and if necessary adjust accordingly. It is also important to ensure that there is a free flow of air.

## Problems, Solutions

- **Main fuse:** Always check whether the mains fuse is switched on in the case of a fault.
- **The thermal overload protection has been triggered, the fan switches off.**  
 Leave the device switched off long enough for the motor and temperature limiter to cool down. Depending on the size and the temperatures involved, the cool-down time could be up to 30 minutes. Only switch it back on again then. If the fault is still present or if it occurs again, remove the power completely (switch off the main fuse and post warning signs advising not to re-apply power). Call on the services of a trained electrician to identify and eliminate the cause of the problem.

## Maintenance

The device is maintenance-free.

## Technical Data

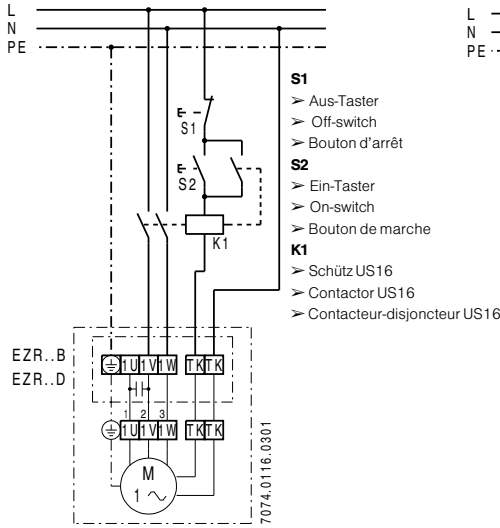
See the rating plate or the valid catalogue.

## Disposal

The fan contains some recyclable materials and some substances that should not be disposed of in the rubbish. After its lifetime has elapsed, dispose of the device according to the valid regulations.

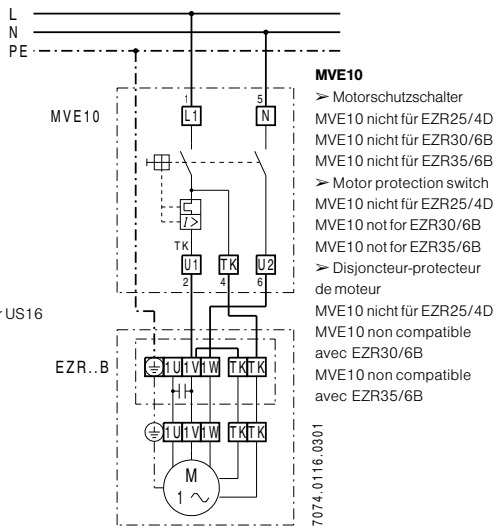
**EZR.. B, EZR.. D**

- mit Schützsicherung (selbsthaltend)
- with contactor-circuit (self-latching)
- avec contacteur-disjoncteur (à auto-entretien)



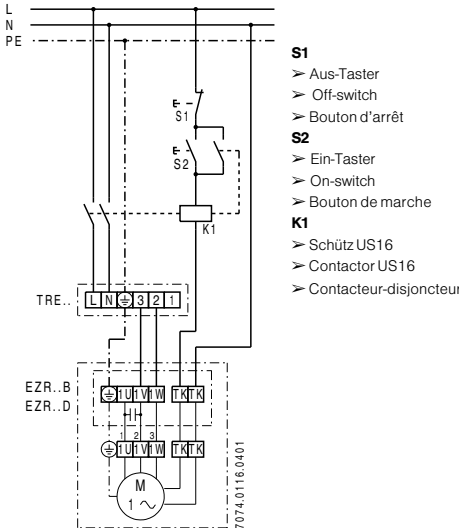
**EZR.. B**

- mit Motorschutzschalter MVE10
- with MVE10 motor protection switch
- avec disjoncteur-protecteur de moteur MVE10



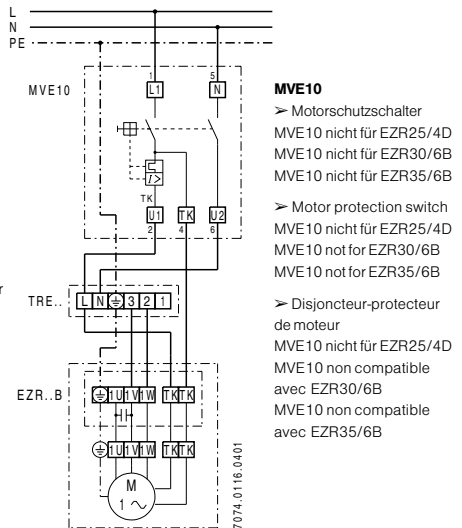
**EZR.. B, EZR.. D**

- mit 5-Stufentransformator TRE..
- with 5-step transformer TRE..
- avec transformateur à 5 plots TRE..



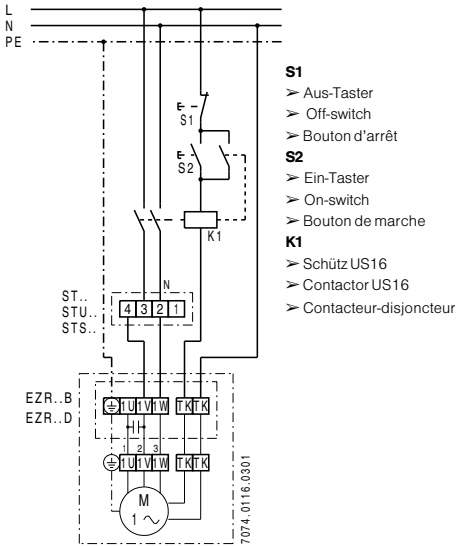
**EZR.. B**

- mit 5-Stufentransformator TRE..
- with 5-step transformer TRE..
- avec transformateur à 5 plots TRE..



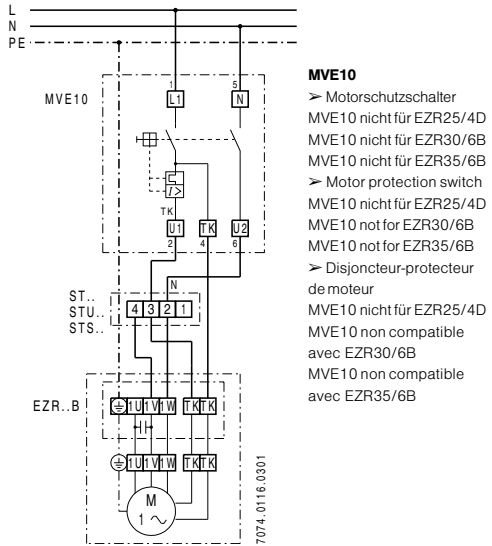
**EZR.. B, EZR.. D**

- mit Drehzahlsteller ST/STU/STS..
- with speed controller ST/STU/STS..
- avec régulateur de vitesse ST/STU/STS..



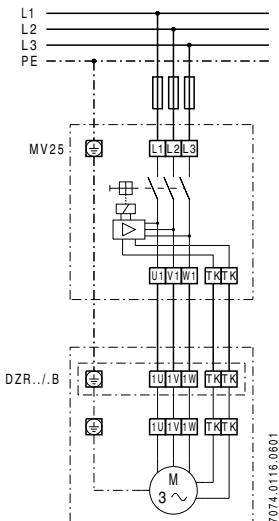
**EZR.. B**

- mit Drehzahlsteller ST/STU/STS..
- with speed controller ST/STU/STS..
- avec régulateur de vitesse ST/STU/STS..



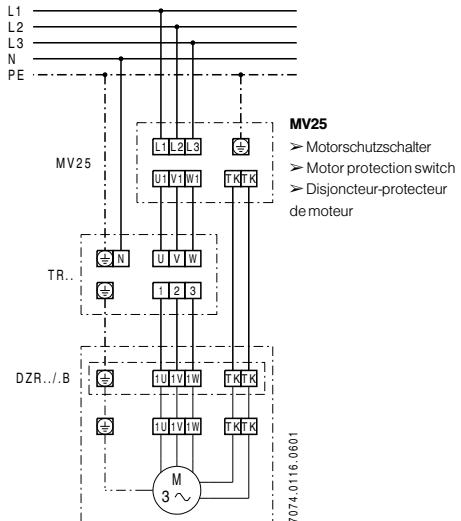
**DZR../B (1 Drehzahl/Revolutions/Vitesse de rotation)**

- mit Motorschutzschalter MV25
- with MV25 motor protection switch
- avec disjoncteur-protecteur de moteur MV25



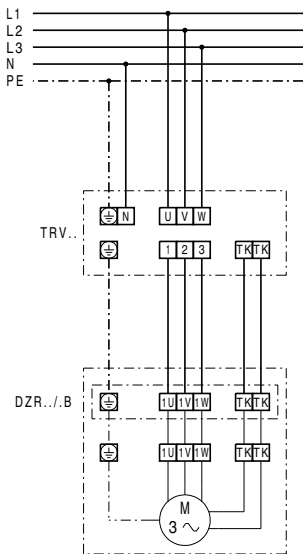
**DZR../B (1 Drehzahl/Revolutions/Vitesse de rotation)**

- mit 5-Stufentransformator TR..
- with 5-step transformer TR..
- avec transformateur à 5 plots TR..

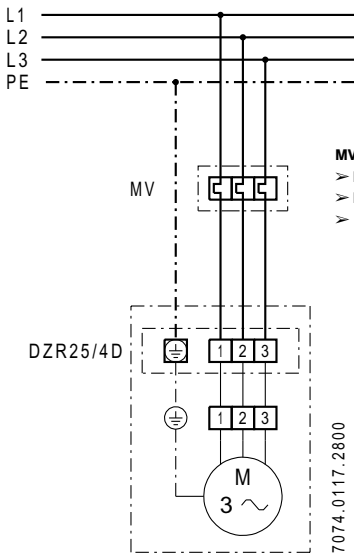


**DZR../.B** (1 Drehzahl/Revolutions/Vitesse de rotation)

- mit 5-Stufentransformator TRV..
- with 5-step transformer TRV..
- avec transformateur à 5 plots TRV..



**DZR 25/4D**

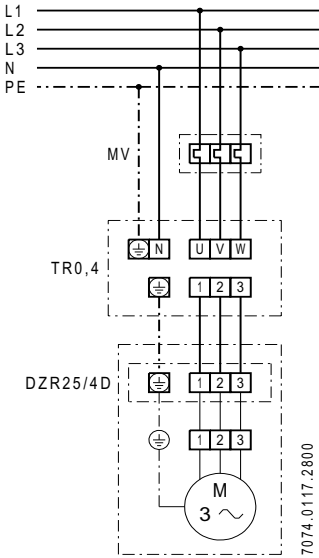


**MV**

- Motorschutzschalter, baueits
- Motor protection switch, provided by customer
- Disjoncteur-protecteur de moteur, sur le site

**DZR 25/4D**

- mit 5-Stufentransformator
- with 5-step transformer
- avec transformateur à 5 plots

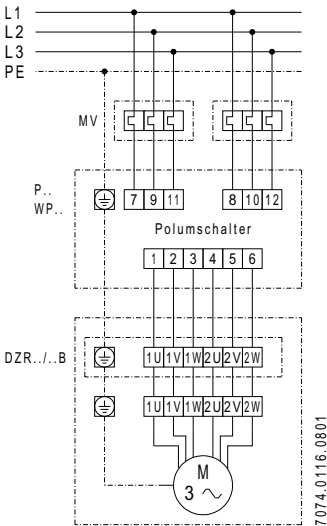


**MV**

- Motorschutzschalter, bauseits
- Motor protection switch, provided by customer
- Disjoncteur-protecteur de moteur, sur le site

**DZR.. /B**

- polumschaltbar, 2 Drehzahlen
- pole-changing, 2 speeds
- à inversion de polarité, 2 vitesses de rotation



**MV**

- Motorschutzschalter, bauseits
- Motor protection switch, provided by customer
- Disjoncteur-protecteur de moteur, sur le site

**P..**

- Polumschalter P1, P2
- Pole-changing switch P1, P2
- Inverseur de polarité P1, P2

**WP..**

- Wendeschalter/Polumschalter WP1, WP2
- Reversing switch/Pole-changing switch WP1, WP2
- Inverseur/Inverseur de polarité WP1, WP2

