

**Halbradial-Rohrventilatoren**  
**Semi-centrifugal duct fans**  
**Ventilateurs hélico-centrifuges**

 **MAICO**  
VENTILATOREN

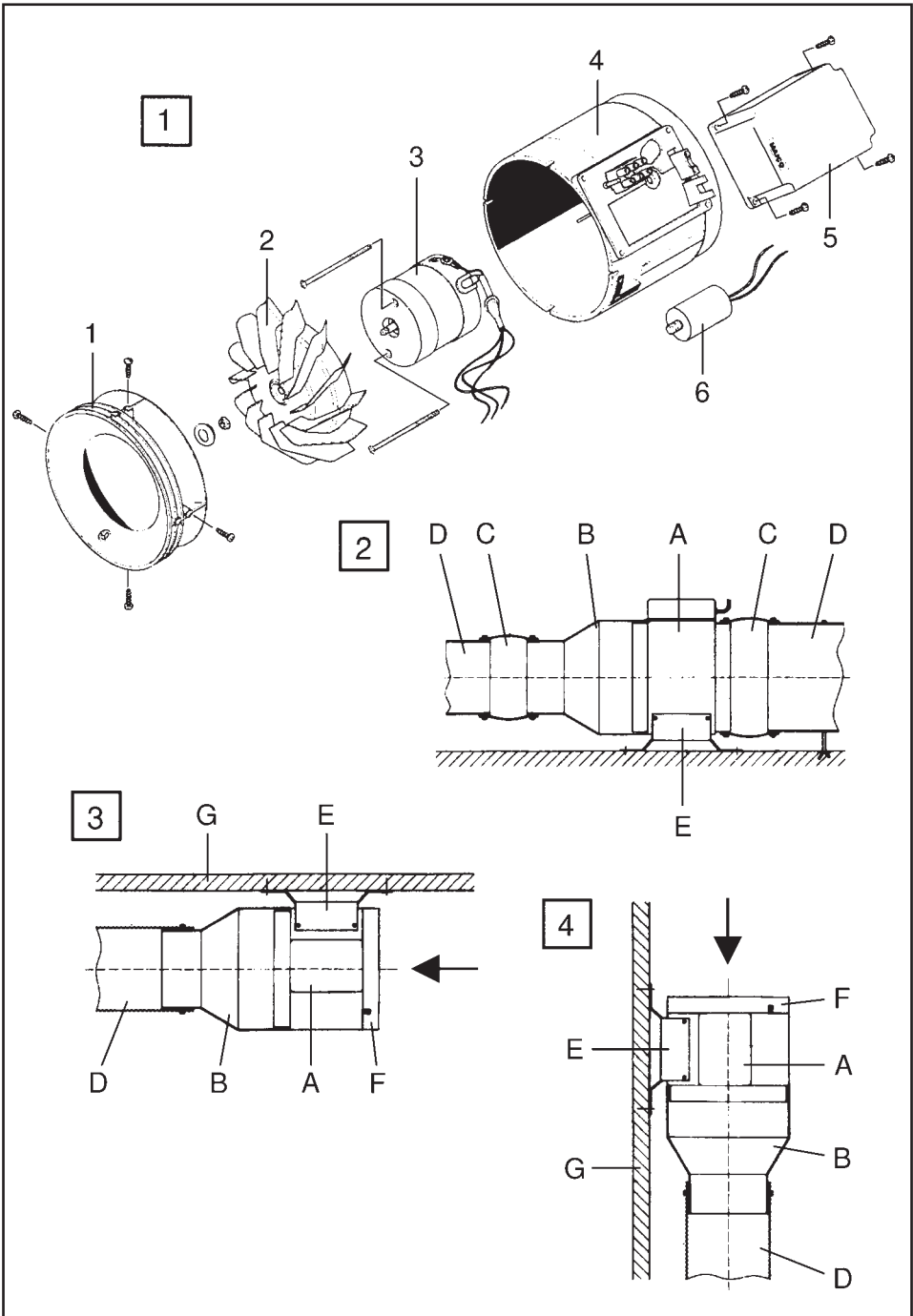
ERM 15	DRM 18
ERM 18	DRM 22
ERM 22	DRM 25
ERM 25	DRM 28
ERM 28	



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



**CE**



## Semi-centrifugal duct fans ERM.. and DRM..

### Intended use

ERM.. and DRM.. fans are used **for air extraction or ventilation** of commercial premises, canteens, production sites, fitness rooms, workshops, laboratories, conservatories etc.

They are also used in air extraction systems for machine and workplace extraction or manufacturing areas.

- ERM.. : standard model single-phase AC motor
- DRM..: special version three-phase AC motor

**It is permitted to transport air or air-based mixtures.** It is not permitted to transport gasses, mist or vapours or mixtures thereof, as well as 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 DIN EN 294 or other structural protective 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 0185.0845.0008 of these instructions, the rating plate number (on the housing) and the relevant item number..

- 1 Inlet flange
- 2 Impeller
- 3 Motor
- 4 Housing
- 5 Terminal box
- 6 Capacitor (only with ERM..)

### Fig. 2 ERM../DRM.. with duct connection on both sides

### Fig. 3 ERM../DRM.. with duct connection on one side / free inlet

### Fig. 4 ERM../DRM.. in vertical installation position, with downwards air flow direction

### System components

- A Fan ERM.. /DRM..
- B REM.. reducer
- C ELM.. flexible cuffs
- D Duct / flexible duct
- E FUM.. mounting foot
- F SGM.. protective grille
- G Ceiling / wall / girder



### 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 of and experience in 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 0100 and the pertinent sections.
- The fan motor is thermally protected. It must be connected to an external control unit with automatic switch-off, such as the Maico MVE 10 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.

Before starting it up again, leave the fan 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 then should you switch it back on.

- 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 supply air intake.
- The fan is designed in accordance with VDE safety requirements within the framework of the equipment and product safety act as well as the pertinent regulations laid down in the EC directives.

## Operating conditions

### ● Installation location, installation position

The fan is used in ducts with DN100...DN 280 (depending on the fan type). It can be mounted in any installation position in dry rooms. We recommend the optional FUM mounting foot for mounting. The overall 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 the equipment and product safety act. 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 air medium temperature.

### ● Rated voltage, Power frequency

The fan should only be operated using the rated voltage and power frequency indicated on the rating plate (230V, 50Hz).

### ● Rotating speed

Please refer to the current Maico catalogue for speed control accessories.

### ● Fixed electrical cabling

The fan may only be connected to a permanent electrical installation. This must be fitted with a mains isolation device that has contact openings of at least 3.5 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  $-10$  to  $+40$  °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

### Notes

- Airstream and rotational directions are indicated by arrows marked on the fan housing.
- Use ELM.. flexible cuffs to prevent transfer of vibrations onto the duct system.
- ERM22/DRM22: Use both the supplied reducers (reduction to DN 200) for mounting.

### Procedure

1. **Prepare the ducting.** Folded spiral-seams ducts with a DN 100 to DN 280 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. If necessary use REM.. reducers.
2. **Installing a fan with a „FUM..“ 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 inlet flange, on the inlet and on the pressure side.**
4. **Fasten folded spiral-seams duct to the fan using the ELM.. flexible cuffs.**
5. **Attach an additional protection grille with free inlet (see fig. 3 and 4).**

## Electrical connection

- Only qualified electricians are permitted to make the electrical connections, according to the wiring diagram (see page 12 ... 14).
- 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. It must be connected to an external control unit with automatic switch-off**, such as the Maico MVE 10 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.**

### Procedure

1. Wire up the fan according to the wiring diagram.
2. Connection should be made from both motor connector blocks „TK“ to the control unit when using ERM fans.

### Technical data

#### Protective temperature limiter

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

## 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 then should you switch it back on. If the unit fails to restart or if it breaks down again, remove the power and call on the services of a trained electrician to identify and eliminate the cause of the problem.

## Maintenance

The device is maintenance-free.

## 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.

## Technical Data

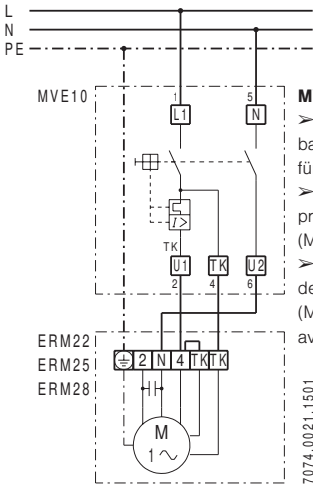
See the rating plate or the valid catalogue.

**ERM22, ERM25, ERM28**

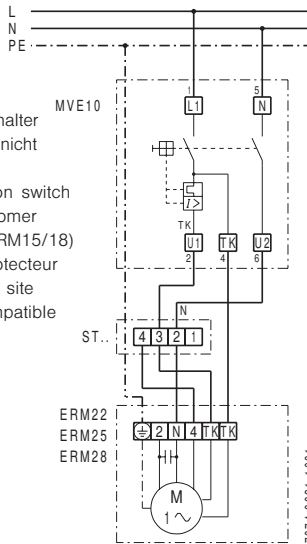
- mit Motorschutzschalter MVE10
- with MVE10 motor protection switch
- avec disjoncteur-protecteur de moteur MVE10

**ERM22, ERM25, ERM28**

- mit Drehzahlsteller
- with speed controller
- avec régulateur de vitesse



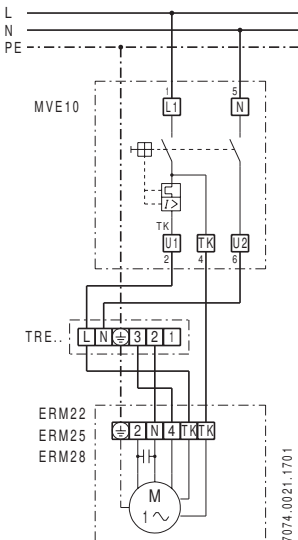
- MVE10**
- Motorschutzschalter bauseits (MVE10 nicht für ERM15/18)
  - Motor protection switch provided by customer (MVE10 not for ERM15/18)
  - Disjoncteur-protecteur de moteur, sur le site (MVE10 non compatible avec ERM15/18)



- MVE10**
- Motorschutzschalter bauseits (MVE10 nicht für ERM15/18)
  - Motor protection switch provided by customer (MVE10 not for ERM15/18)
  - Disjoncteur-protecteur de moteur, sur le site (MVE10 non compatible avec ERM15/18)
- ST..** (ST/STU/STS 2,5/5)
- Drehzahlsteller
  - Speed controller
  - Régulateur de vitesse

**ERM22, ERM25, ERM28**

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

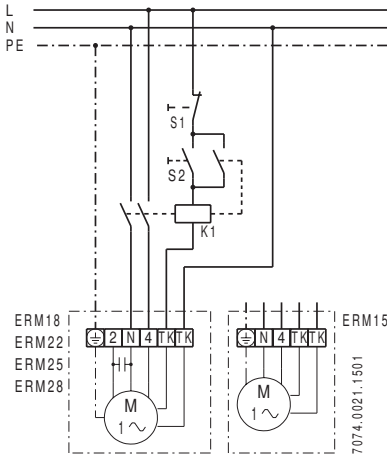


- MVE10**
- Motorschutzschalter (bauseits) (MVE10 nicht für ERM15/18)
  - Motor protection switch (provided by customer) (MVE10 not for ERM15/18)
  - Disjoncteur-protecteur de moteur (sur le site) (MVE10 non compatible avec ERM15/18)

- TRE..**
- 5-Stufentransformator TRE1,6/3,3
  - 5-step transformer TRE1,6/3,3
  - Transformateur à 5 plots TRE1,6/3,3

**ERM15, ERM18, ERM22, ERM25, ERM28**

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



**S1**

- Aus-Taster (bauseits)
- Off-switch (provided by customer)
- Bouton d'arrêt (sur le site)

**S2**

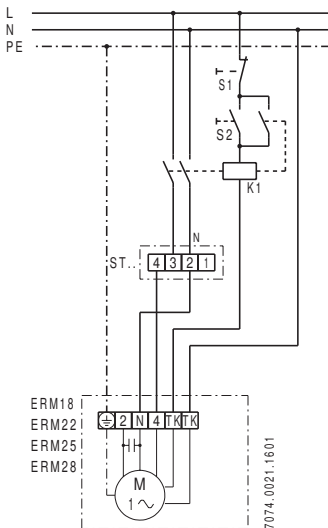
- Ein-Taster (bauseits)
- On-switch (provided by customer)
- Bouton de marche (sur le site)

**K1**

- Schütz US16 (bauseits)
- Contactor US16 (provided by customer)
- Contacteur-disjoncteur US16 (sur le site)

**ERM18, ERM22, ERM25, ERM28**

- mit Drehzahlsteller
- with speed controller
- avec régulateur de vitesse



**S1**

- Aus-Taster (bauseits)
- Off-switch (provided by customer)
- Bouton d'arrêt (sur le site)

**S2**

- Ein-Taster (bauseits)
- On-switch (provided by customer)
- Bouton de marche (sur le site)

**K1**

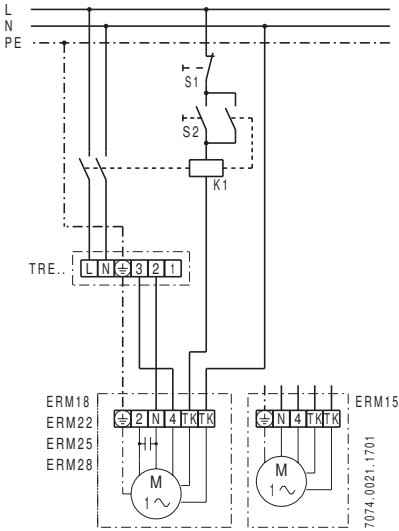
- Schütz US16 (bauseits)
- Contactor US16 (provided by customer)
- Contacteur-disjoncteur US16 (sur le site)

**ST..**

- Drehzahlsteller ST/STU/STS 1/2,5/5
- Speed controller ST/STU/STS 1/2,5/5
- Régulateur de vitesse ST/STU/STS 1/2,5/5

**ERM15, ERM18, ERM22, ERM25, ERM28**

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



**S1**

- Aus-Taster (bauseits)
- Off-switch (provided by customer)
- Bouton d'arrêt (sur le site)

**S2**

- Ein-Taster (bauseits)
- On-switch (provided by customer)
- Bouton de marche (sur le site)

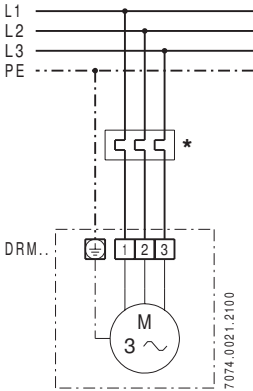
**K1**

- Schütz US16 (bauseits)
- Contactor US16 (provided by customer)
- Contacteur-disjoncteur US16 (sur le site)

**TRE..**

- 5-Stufentransformator TRE0,4/1,6/3,3
- 5-step transformer TRE0,4/1,6/3,3
- Transformateur à 5 plots TRE0,4/1,6/3,3

**DRM18, DRM22, DRM25, DRM28**



**\* DRM 18 ... DRM 28**

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

**DRM18, DRM22, DRM25, DRM28**

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

