



Electrical operating instructions

ELEKTROMATEN[®] without reversing contactor
with / without terminal box
with / without magnetic brake



consisting of:

- M : Mechanical operating instructions (separately enclosed)**
- E : Electrical operating instructions**

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Basic Directions

This control has been built in accordance with **EN 12453 Industrial, commercial and garage doors and gates - Safety in use of power operated doors - Requirements**; and left the factory in perfect condition from the point of view of safety. To maintain this condition and to ensure safe operation, the user must observe all the directions and warnings contained in these operating instructions.

In principle, only trained electrical craftsmen should work on electrical equipment. They must assess the work which has been assigned to them, identify potential danger sources and take suitable safety precautions.

Reconstruction of or changes to ELEKTROMAT® are only permissible with the approval of the manufacturer. Original replacement parts and accessories authorised by the manufacturer guarantee safety. Liability ceases to apply if other parts are used.

The operational safety of an ELEKTROMATEN® is only guaranteed if it is used in accordance with the regulations. The limiting values stated in the technical data should not be exceeded under any circumstances (see corresponding sections of the operating instructions).

Safety Regulations

During the installation, initial operation, maintenance and testing of the ELEKTROMATEN®, it is necessary to observe the safety and accident-prevention regulations valid for the specific application.

In particular, you should observe the following regulations (this list is not exhaustive):

European normative

- EN 12453
Safety in use of power operated doors - Requirements
- EN 12445
Safety in use of power operated doors - Test methods

Please check normative bellow.

VDE-regulations

- EN 418
Safety machinery
Emergency stop equipment functional aspects
Principles for design
- EN 60204-1 / VDE 0113-1
Safety of machinery - Electrical equipment of machines - Part 1:
General requirements
- EN 60335-1 / VDE 0700-1
Safety of household and similar electrical appliances - Part 1:
General requirements



Regulations

- Please ensure that the local regulations relating to the Safety of Operations of Doors are followed

Explanation of warnings

These operating instructions contain directions which are important for using the ELEKTROMATEN® appropriately and safely.

The individual directions have the following meaning:



DANGER

This indicates danger to the life and health of the user if the appropriate precautions are not taken.



CAUTION

This warns that the ELEKTROMATEN® or other materials may be damaged if the appropriate precautions are not taken.

General warnings and safety precautions

The following warnings are to be understood as a general guideline for working with the ELEKTROMATEN® in conjunction with other devices. These directions must be observed strictly during installation and operation.



- Please observe the safety and accident prevention regulations valid for the specific application. The installation of the ELEKTROMATEN®, the opening of covers or lids and electrical connection must be carried out when the supply is switched off.
- The ELEKTROMATEN® must be installed with the authorised coverings and protective devices. Care should be taken that any seals are fitted correctly and screw couplings are tightened correctly.
- In the case of ELEKTROMATEN® with a permanent mains connection, an all-pole main switch with appropriate back-up fuse must be provided.
- Check live cables and conductors regularly for insulation faults or breakages. When a fault is detected in the cabling, the defective cabling should be replaced after immediately switching off the mains supply.
- Before starting operation, check whether the permissible mains voltage range of the devices corresponds to the local mains voltage.
- Emergency stop devices in accordance with VDE 0113 (EN60204) should remain operational in all operating modes of the control. Releasing the emergency stop device should not cause any uncontrolled or undefined restart.

**Warning! Danger to life through electric shock**

Before starting assembly, disconnect the cables from the electricity supply and check that they are dead.

Only trained electrical craftsmen should work on electrical equipment. They must assess the work which has been assigned to them, identify potential danger sources and take suitable safety precautions.

The following tools are recommended for the appropriate electrical connection of the ELEKTROMATEN®:

- Multimeter (for alternating current up to at least 750VAC)
- Electrically insulated screw driver
- Cable stripper
- Diagonal cutter
- Piercing tool for opening the cable ducts
- Wire end ferrules with associated crimp tool when using flexible cables

In order to connect the ELEKTROMATEN® electrically, the lid of the terminal box housing must first be removed. After loosening the two lid screws, the housing lid can be swivelled about 45° (Fig.1) and removed.

The cable ducts in the terminal box housing must be opened with a piercing tool. The hole in the cable duct should be smaller than the cable diameter to ensure sealing.

When the cable duct is opened with a knife or a screw driver, sealing cannot be guaranteed.

If necessary, the complete terminal box housing can be removed, after loosening the two mounting screws, and mounted next to the ELEKTROMATEN®.

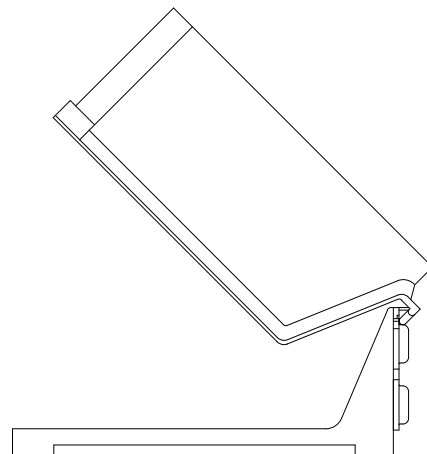


Fig. 1: Terminal box housing

The inserted cables are connected in accordance with the terminal diagram. The 3 motor phases of the external control are connected to the terminals U/V/W.

The neutral is to connect, at power supply of 3x400V, at terminal designated N.

The PE conductor is connected to the terminals designated PE.



Check that all screw connections are secure before operating the control on the attachment side and adjusting the limit switches.

The use of non-interchangeable connectors for the limit switch make it easy to assemble and/or change the reversing contactor board.

When doing so, the following steps should be carried out:

Disassembly:

- Remove limit switch cover
- Detach the plug from the limit switch board; after pulling the upper end of the plug, the entire plug can be pulled out easily (**Fig. 1**, whilst doing so, hold the entire limit switch board firmly with the other hand)
- Pull out 5 - pole motor plug and PE (**Fig. 2 / 3 / 4**)
- Pull the connecting cable for the reversing contactor housing, together with the cable duct, out of the gearbox housing

Assembly:

- Insert the connecting cable with the cable duct into the gearbox housing
- Plug in 5 - pole motor socket (**Fig. 2 / 3 / 4**)
- Insert the limit switch plug whilst holding the entire limit switch board firmly with the other hand (**Fig. 1**)
- Check limit switch adjustment
- Mount limit switch cover

Fig. 1: Limit switch plug

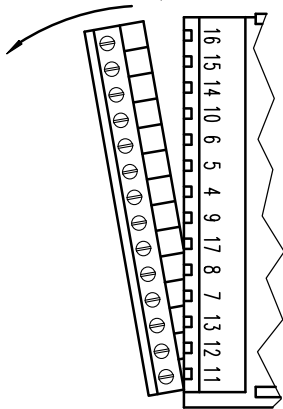


Fig. 2: Motor Terminal Rail for 3x400V/230V

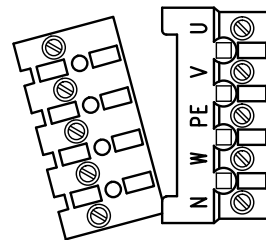


Fig. 3: Motor Terminal Rail for single-phase motor asymmetric winding

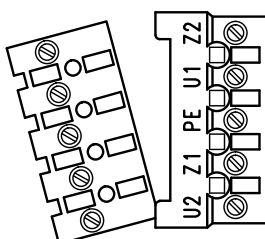
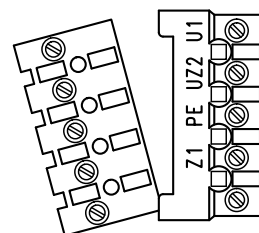
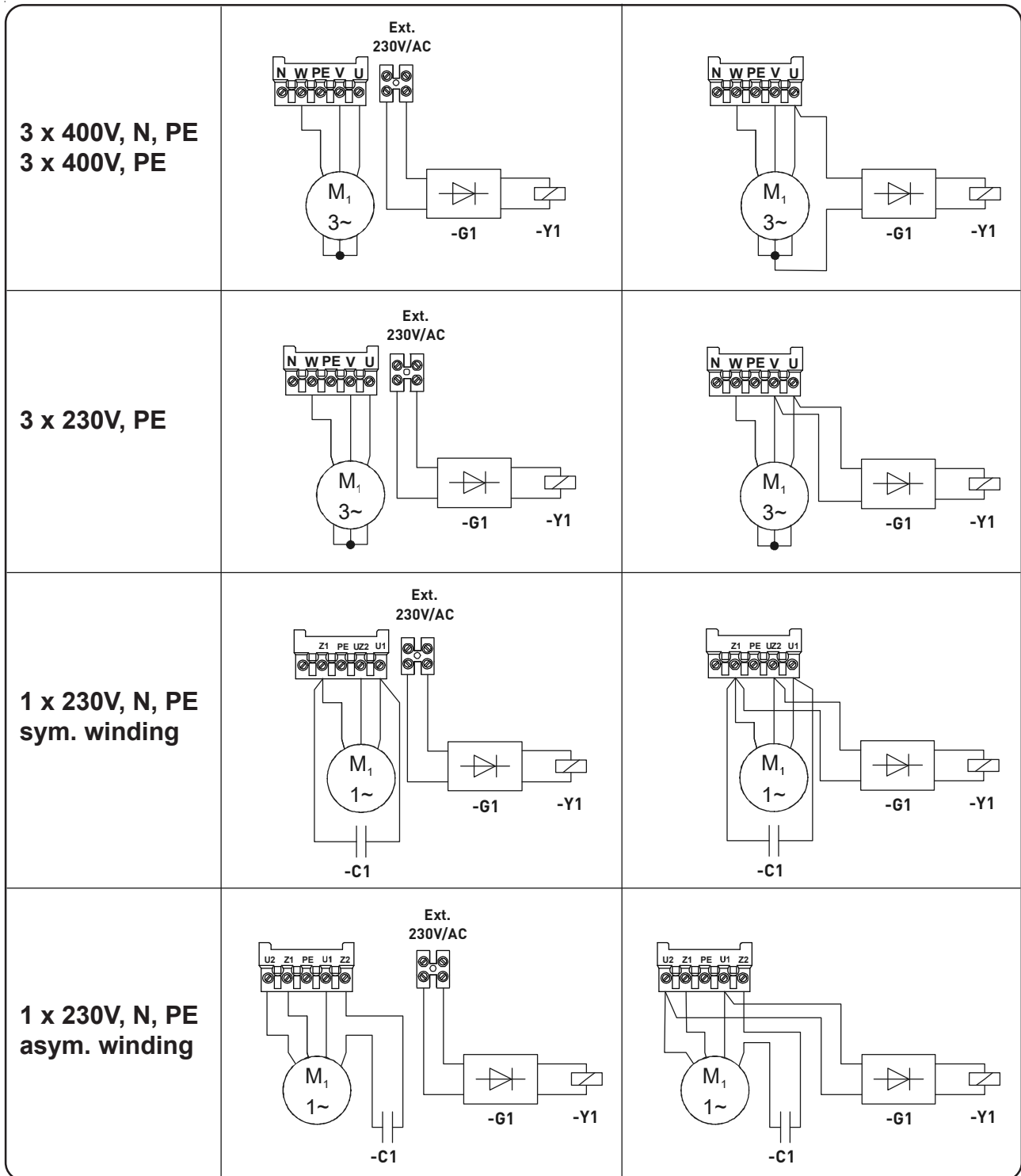


Fig. 4: Motor Terminal Rail for single-phase motor symmetric winding



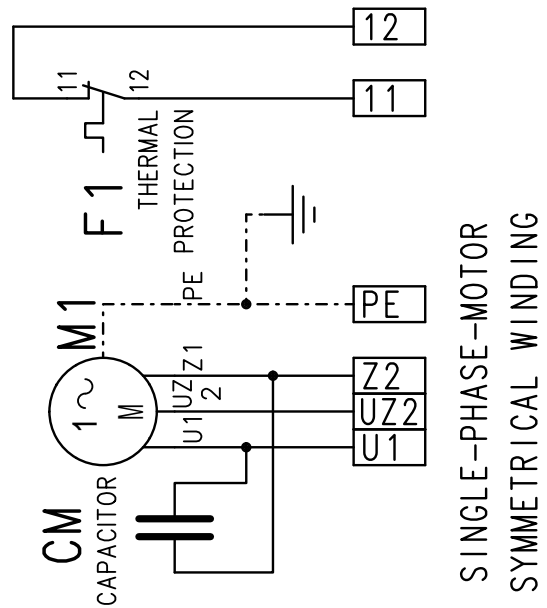
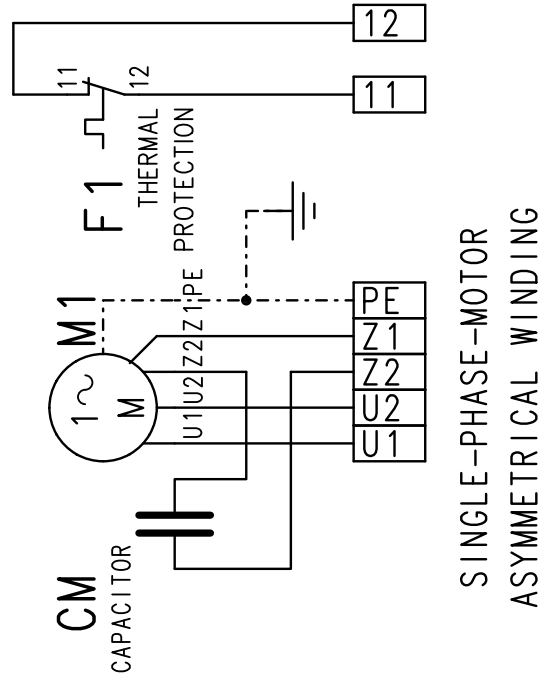
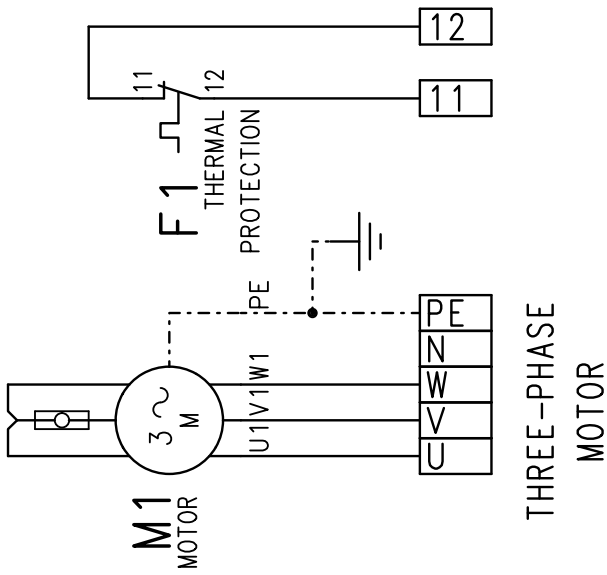
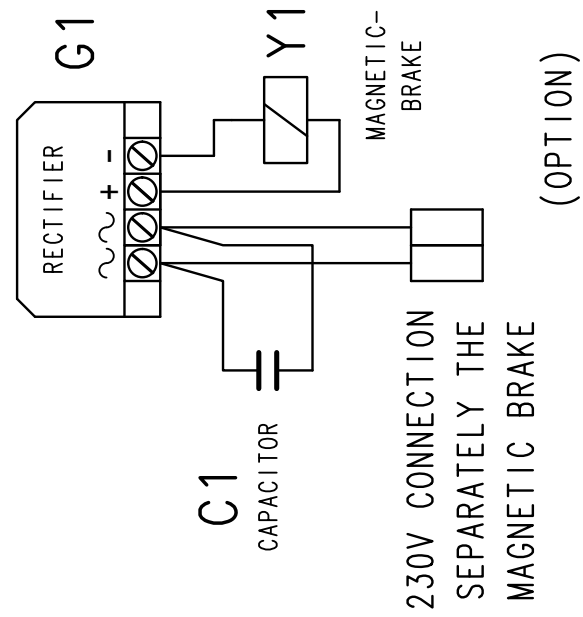
Magnetic locking device

Parking brake



Description Print:

- C1 Capacitor
- G1 Rectifier
- M₁ Motor
- Y1 Brake



WIRING DIAGRAM WITH LIMIT SWITCHES; WITH MAGNETIC BRAKE; 3 x 400V WITH NEUTRAL

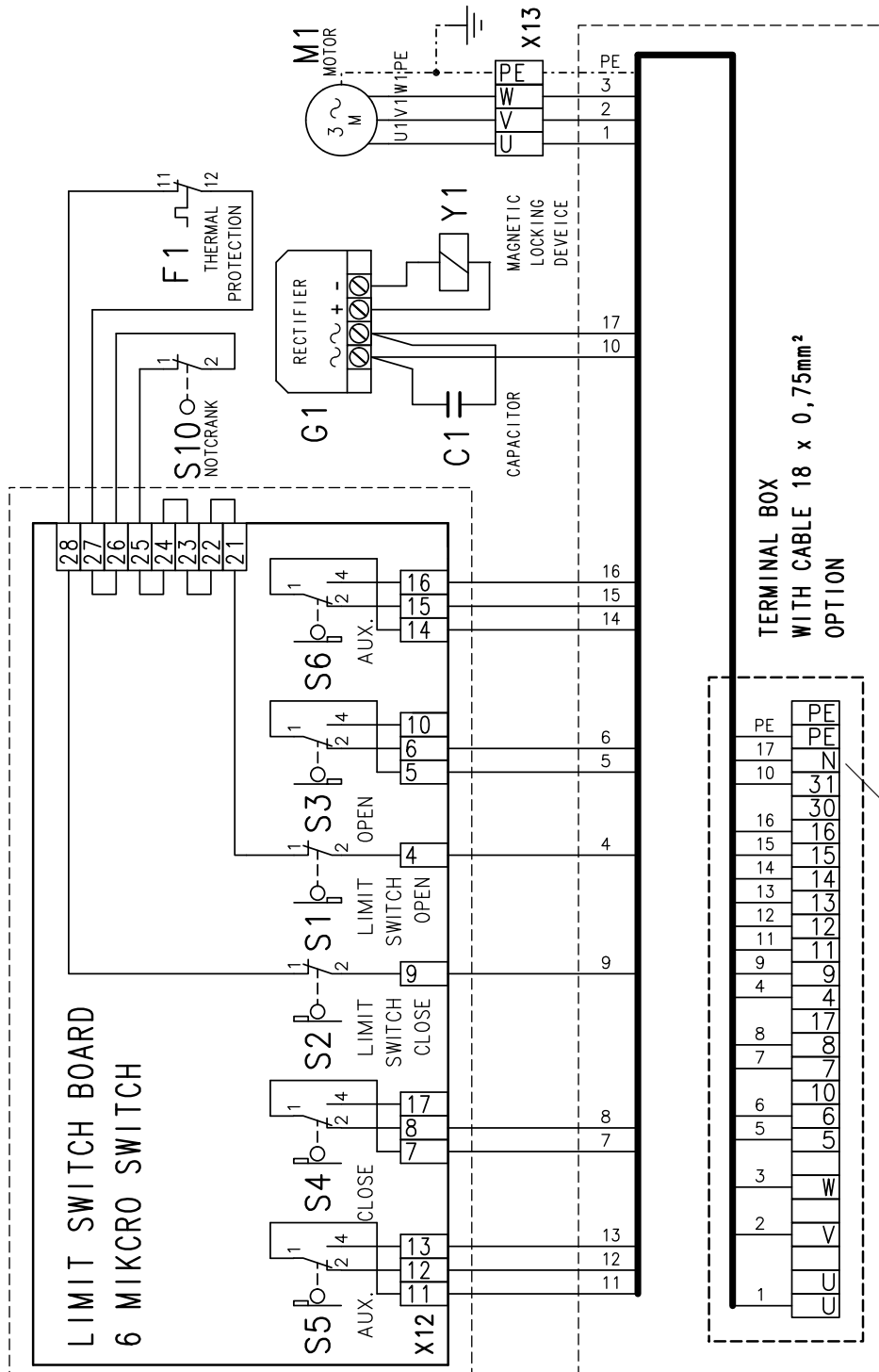
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When setting the limit please use the description mentioned in the mechanical direction. When the coarse adjustment is finished the exact switching point can be adjusted with fine adjustment screw. The 2 off potential free auxiliary limits can be used as a NO or NC contact and they working in either running direction of the door.

Model with 5th and 6th additional limit switches

The following diagram shows the connection between the limit switch board 6 micro and the terminal box (OPTION).

Connect all limit contacts and motor connection into this terminal box.



230V connection separately
the magnetic brake.
N (NEUTRAL) must be connect other
wise brake damage.