



## Electrical operating instructions

ELEKTROMATEN<sup>®</sup> without reversing contactor  
with / without terminal box  
monophase asymmetric





consisting of:

**E : Electrical operating instructions**

**M : Mechanical operating instructions (separately enclosed)**

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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®.

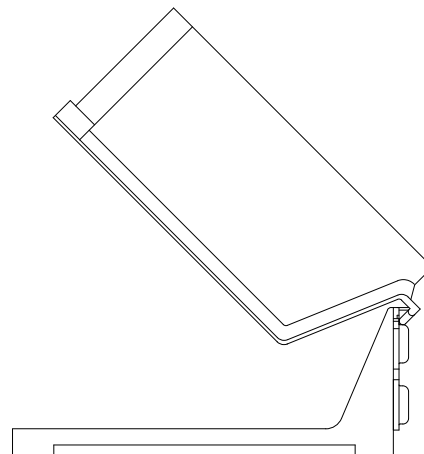


Fig. 1: Terminal box housing

The inserted cables are connected in accordance with the terminal diagram. The motor phases of the external control, to change direction of twist, are connected to the terminals Z2 / U1 / Z1 / U2. 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 plug contacts for the limit switch make it easy to assemble and/or change the terminal box.

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 - pol. motor plug Z2/U1/Z1/U2 and PE (**Fig. 2**)
- Pull the connecting cable for the terminal box housing, together with the cable duct, out of the gearbox housing
- Remove the terminal box housing by loosening the mounting screws

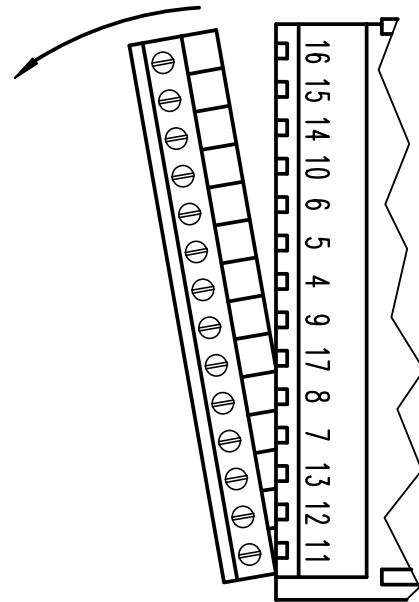


Fig. 1: Limit switch plug

## Assembly:

- Mount the terminal box housing
- Insert the connecting cable with the cable duct into the gearbox housing
- Plug in 5- pol. motorsocket Z2/U1/Z1/U2 and PE
- Insert the limit switch plug whilst holding the entire limit switch board firmly with the other hand
- Check limit switch adjustment
- Mount limit switch cover

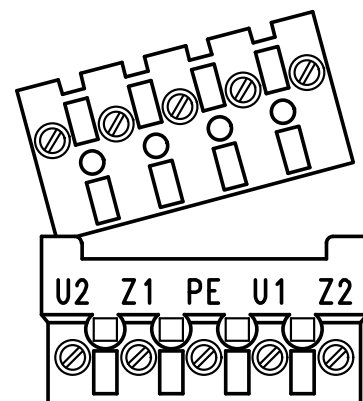


Fig. 2: Motor Terminal Rail

The switching cams of the additional limit switches are adjusted as described for the operational limit switches (Part M). After tightening the coarse adjustment screw, the switching point can be corrected with the fine adjustment screw.

## **5th and 6th Additional limit switches (also for "Safedrive - Compact"))**

The ELEKTROMATEN® is equipped with two additional limit switches (S5 / S6). Both additional limit switches are designed as potential-free changeover contacts and can be used in both directions of movement of the door.

## **5t and 6th + 7th Additional limit switches (on request)**

(7<sup>th</sup> limit not available at "Safedrive - Compact)

The ELEKTROMATEN® is equipped with three additional limit switches (S5/S6/S7). These additional limit switches can be used as potential-free make and/or break contacts in both directions of movement of the gate. For example, the terminal diagrams show the connection wiring for two make contacts and one break contact.

The desired function (make or break contact) of the respective limit switch can be determined by interchanging the connection cables.

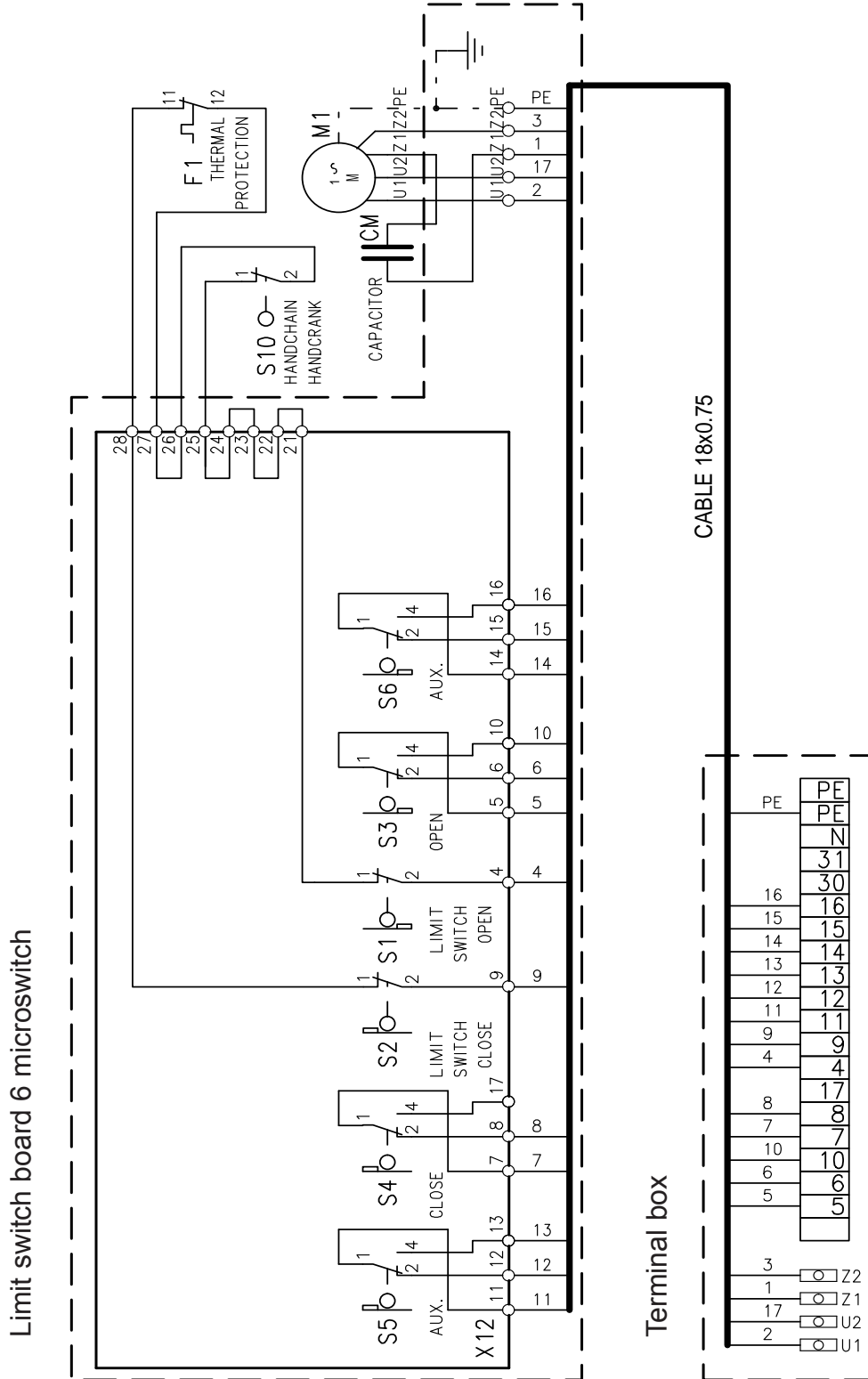


# CONNECTION DIAGRAM FOR TERMINAL BOX

52370055

## 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. All the limit switch contacts and the motor connection are placed in this terminal box.

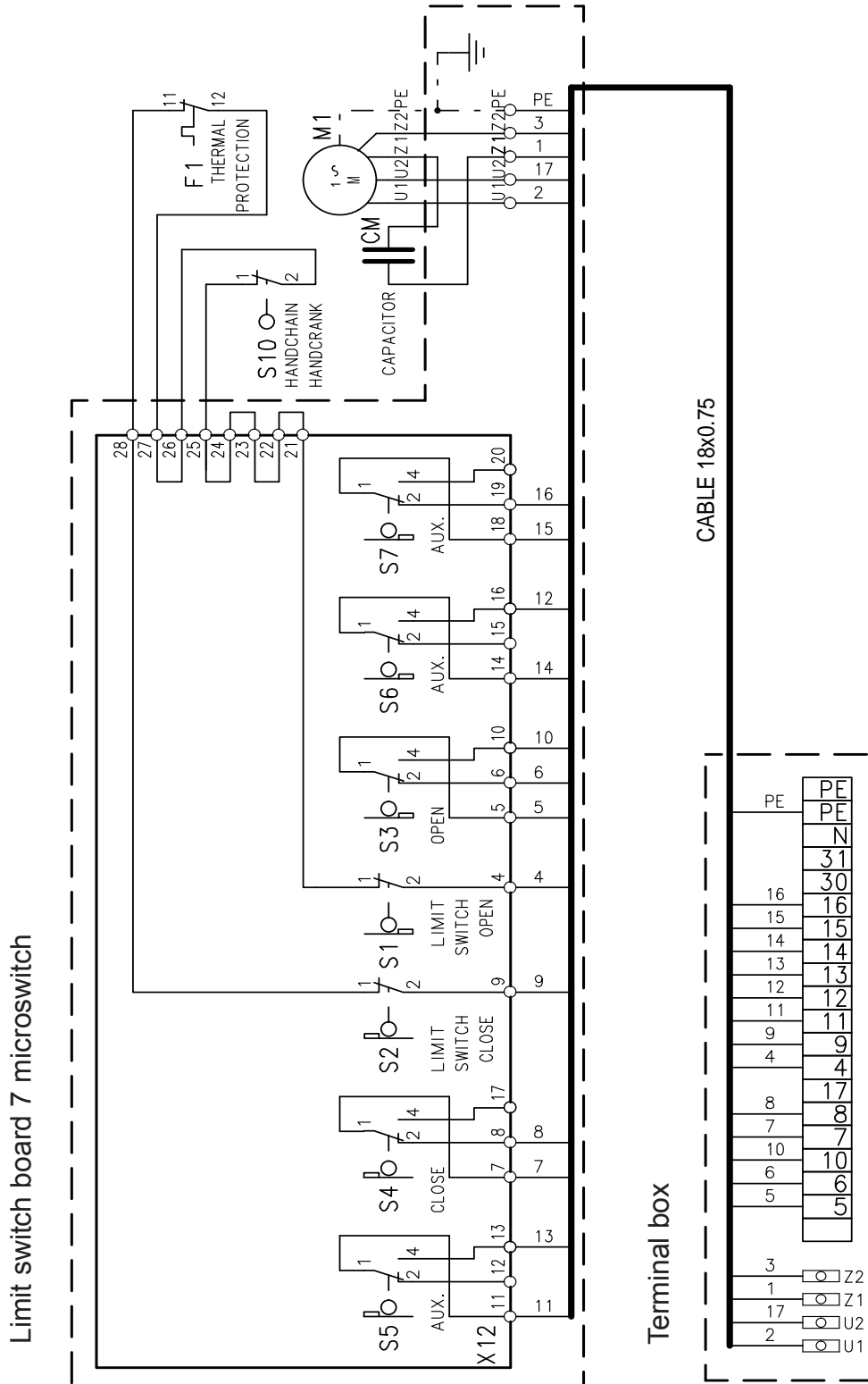


# CONNECTION DIAGRAM FOR TERMINAL BOX

52370056

## Model with 5th and 6th + 7th additional limit switches (on request)

The following diagram shows the connection between the limit switch board 7 micro and the terminal box. All the limit switch contacts and the motor connection are placed in this terminal box.

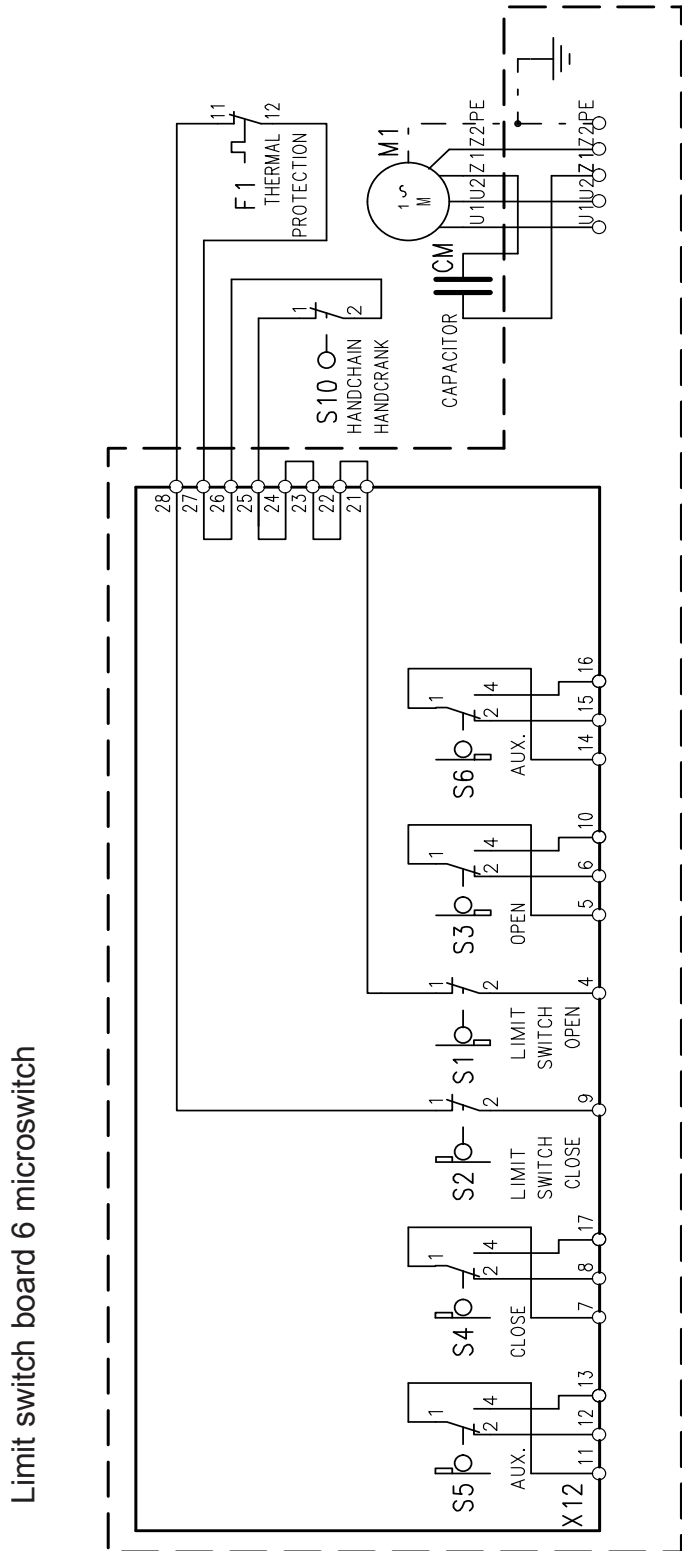


# CONNECTION DIAGRAM WITHOUT TERMINAL BOX

52370057

## Model with 5th and 6th additional limit switches

The following diagram shows the terminal strip of the limit switch board 6 microswitch in the limit switch space. All the limit switch contacts and the motor connection are placed in the limit switch space.



# CONNECTION DIAGRAM WITHOUT TERMINAL BOX

52370058

## Model with 5th and 6th + 7th additional limit switches (on request)

The following diagram shows the terminal strip of the limit switch board 7 microswitch in the limit switch space. All the limit switch contacts and the motor connection are placed in the limit switch space.

Limit switch board 7 microswitch

