Installation Instructions

ELEKTROMAT

TSE 5.24 WS-25,40

Model: 10003805 00012

-en-

Status: 23.08.2018

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Symbols

Warning - Potential injury or danger to life!

Warning - Danger to life from electric current!

Note - Important information!

▶ **Requirement -** Required action!

Schematic representations are based on product examples. Deviations from delivered products are possible.

1 General safety information

Specified normal use

The drive unit is intended for sectional doors with full counter-balancing.
The safe operation is only guaranteed with normal specified use. The drive unit is to be protected from rain, moisture and aggressive ambient conditions. No liability for damage caused by other applications or non-observance of the information in the manual.
Modifications are only permitted with the agreement of the manufacturer. Otherwise the Manufacturer’s Declaration shall be rendered null and void.

Safety information

Installation and initial operation tasks are to be performed by trained, skilled fitters only.
Only trained electrical craftsmen are permitted to work on electrical equipment. They must assess the tasks assigned to them, recognise potential danger zones and be able to take appropriate safety measures.
The installation is only to be carried out with the supply off.
Observe the applicable regulations and standards.

Coverings and safety devices

Do not operate unless corresponding coverings and safety devices are fitted/installed.
Ensure that gaskets are correctly positioned and cable glands are correctly tightened.

Spare parts

Use only original spare parts.

2 Technical Data

Type	KG 50	
Output torque	50	Nm
Output speed	24	rpm
Output shaft / hollow shaft	25,40	mm
Maximum holding torque	200	Nm
Maximum door weight	2500	N
Supply voltage	1N~ 230	V
Operating current	3,50	A
Operating frequency	50	Hz
Power factor cos φ	0,99	
Maximum movement per hour	12	h^{-1}
Class of protection	IP 65	
Limit switch range (maximum revolutions of output shaft / hollow shaft)	20	
Temperature range	-10 / +40 (+60)	°C

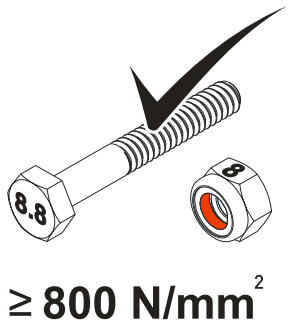
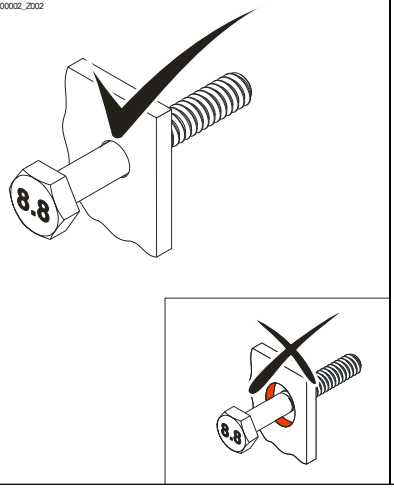
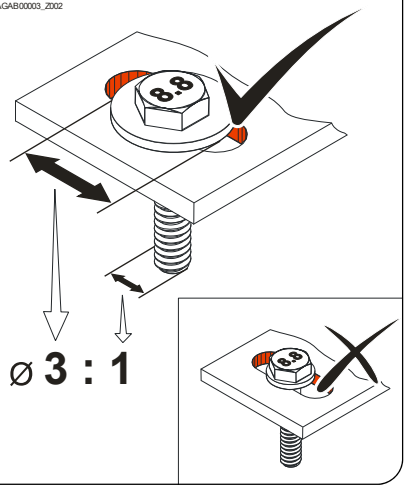
1) When using a temperature range of +40°...+60°C use half of maximum movements per hour.

3 Mechanical installation

Prerequisites

The permissible loads on walls, fastenings, mountings and transmission elements must not be exceeded, even for maximum holding torques or locking torques (▸ refer to technical data).

Connection elements:

▸ Self-locking connection elements with a minimum strength of 800 N/mm² (8.8) must be used.	▸ Utilize the hole diameter to the full.	▸ Use adequately dimensioned washers for elongated holes.
BAGAB00001_Z002  	BAGAB00002_Z002  	BAGAB00003_Z002 

Permissible mounting positions

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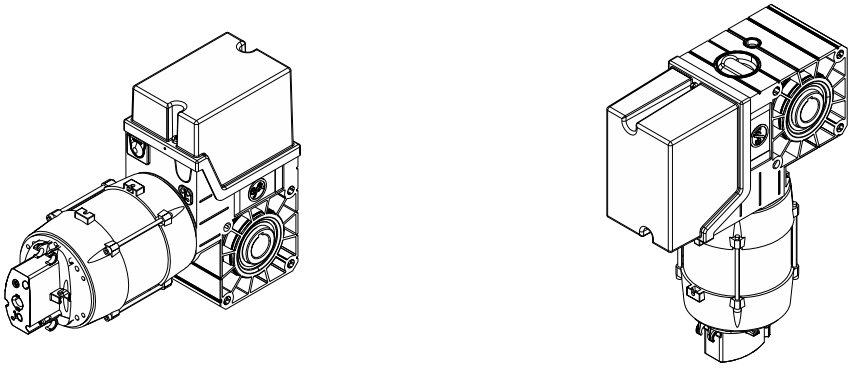


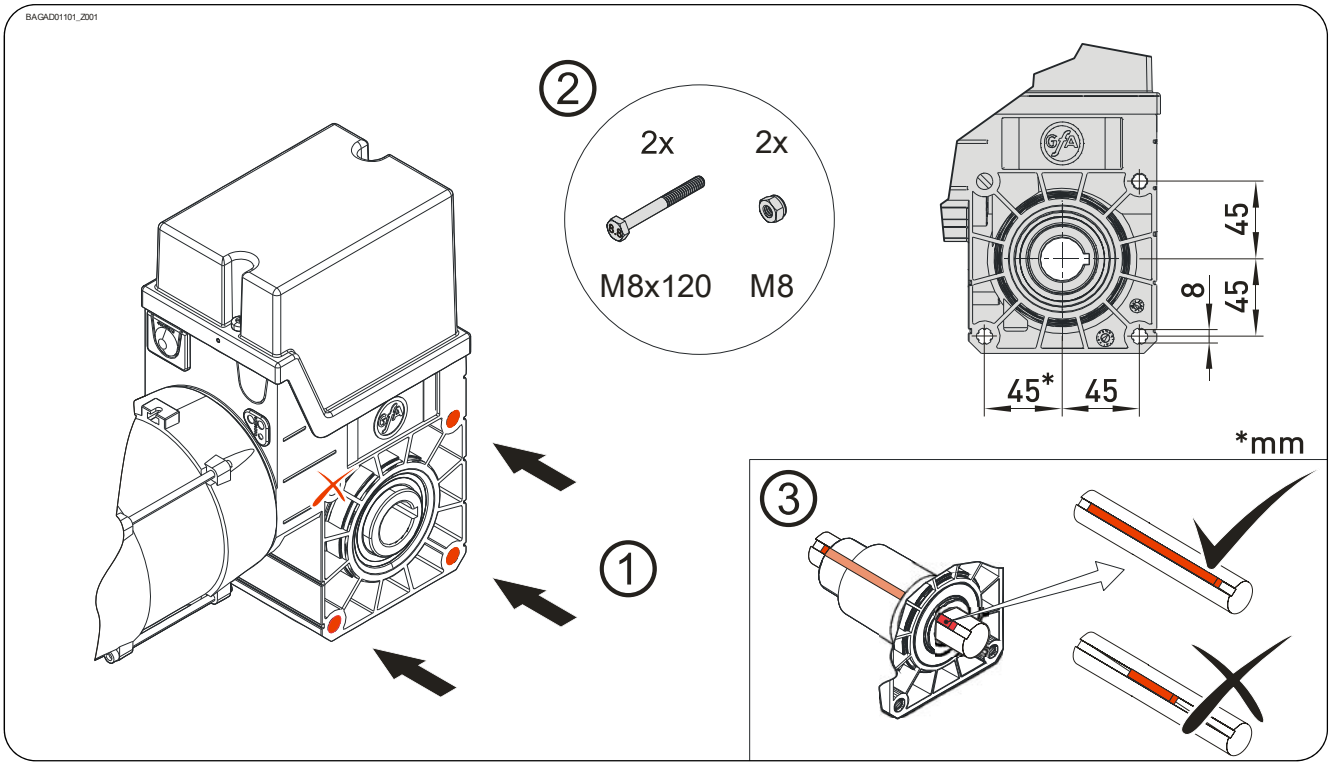
Mounting

Three holes are provided for mounting.

- Use at least 2 of these (①).
- Use the connection elements supplied (②).

Keys are used to connect to the door shaft.

- Use a key that is at least as long as the hollow shaft (③).



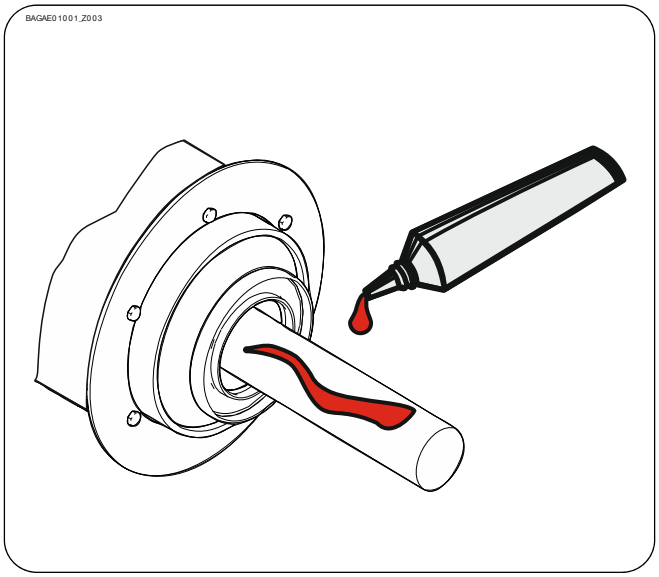
Installation

The descriptions below apply to general door specifications. The specifications of the door manufacturer must also be observed during installation.

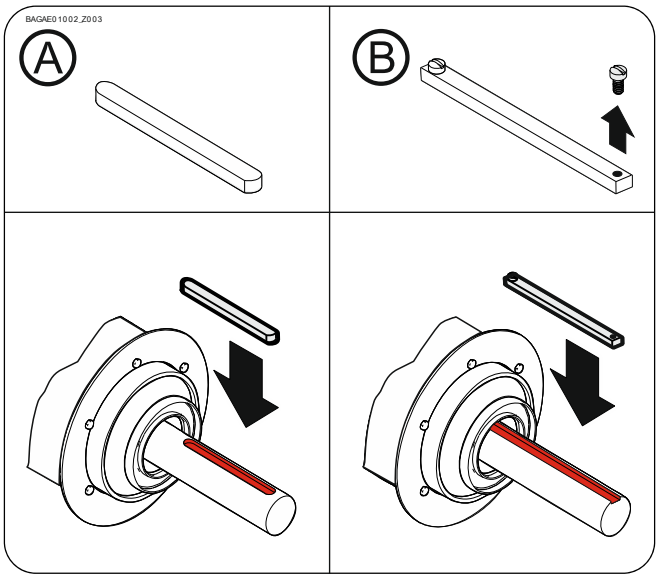
Warning - Potential injury or danger to life!

- During installation, be sure to use a lifting device that has a sufficient load-carrying capacity.

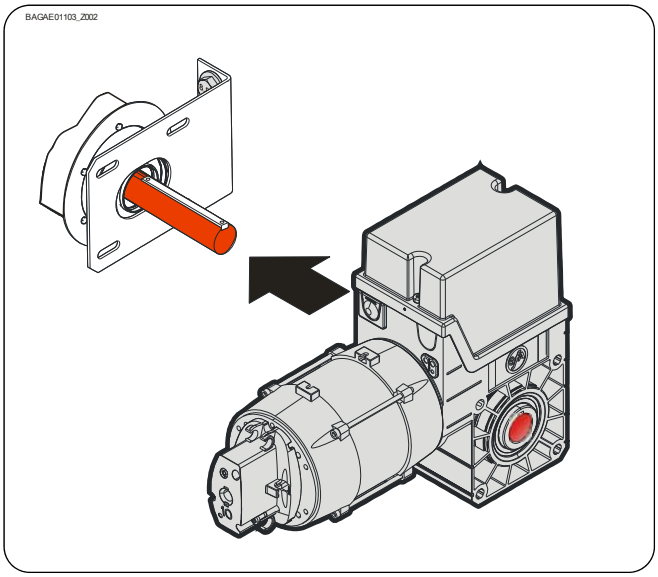
▸ Thoroughly grease the door shaft.



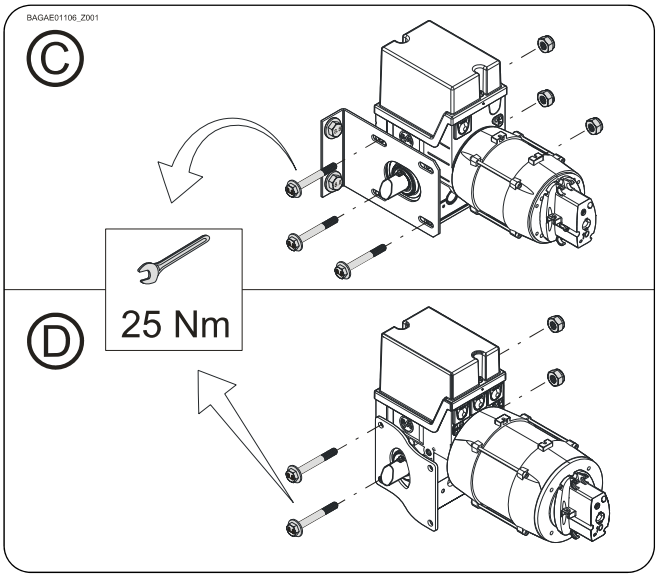
▸ Mount the keys. Observe possible variants Ⓐ or Ⓑ.



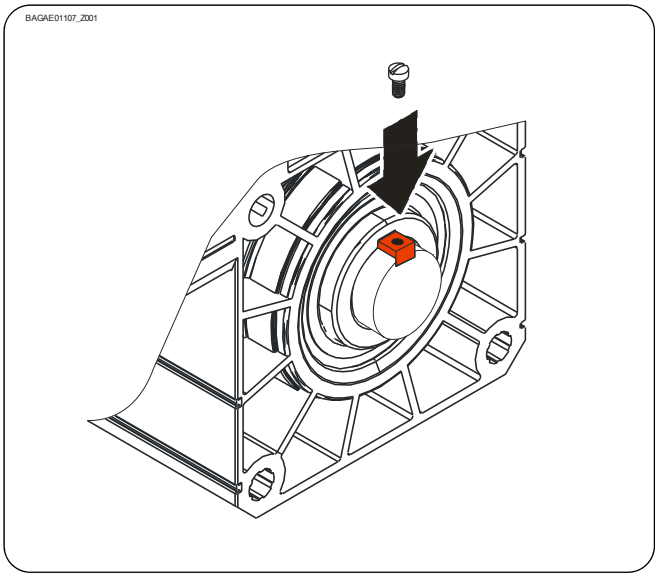
- Attach the drive unit.



- Tighten all connection elements on the drive (M8) to 25 Nm. Install all other connection elements according to the specifications of the door manufacturer.



- Secure the keys (version Ⓑ only).



4 Electrical installation

Warning - Danger to life from electric current!

- Switch the mains OFF and check that the cables are de-energised
- Observe the applicable regulations and standards
- Make a proper electrical connection
- Use suitable tools

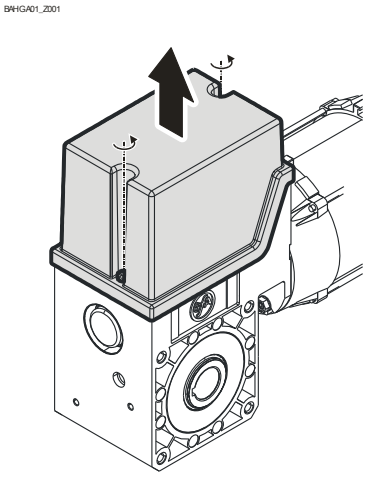
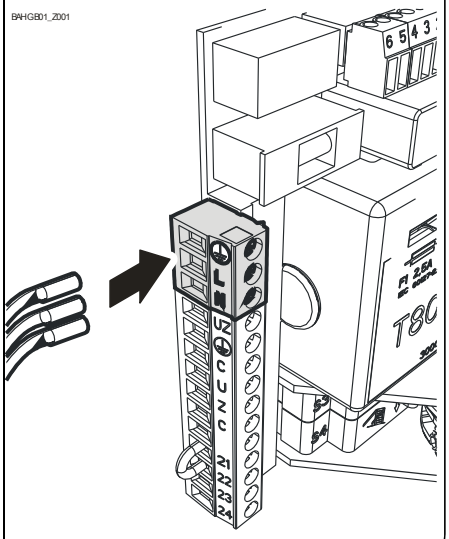
Installation location for the control!

- Use indoors only

On-site back-up fuse and mains disconnector!

- Use a single-pole automatic circuit breaker with a maximum of 10 A as protection.
- Connect to the indoor installation via an all-pole disconnector unit ≥ 10A in accordance with EN 12453 (e.g. plug connection CEE, mains switch)

Performing electrical installation

Remove the cover.	Connect the supply cables.
	

Completing the electrical installation

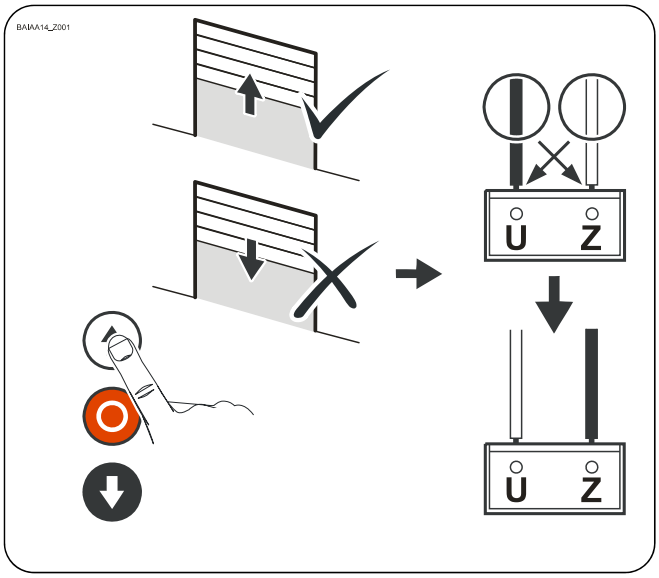
Mount the cable entries and/or cable glands.

5 Limit switch adjustment

Adjust the limit switches to define the final limits positions for OPEN and CLOSE.

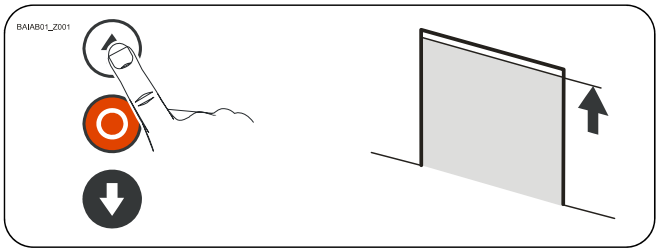
Prerequisite

The door must open when the OPEN pushbutton is operated. If the door closes, U and Z must exchanged with the current switched off.

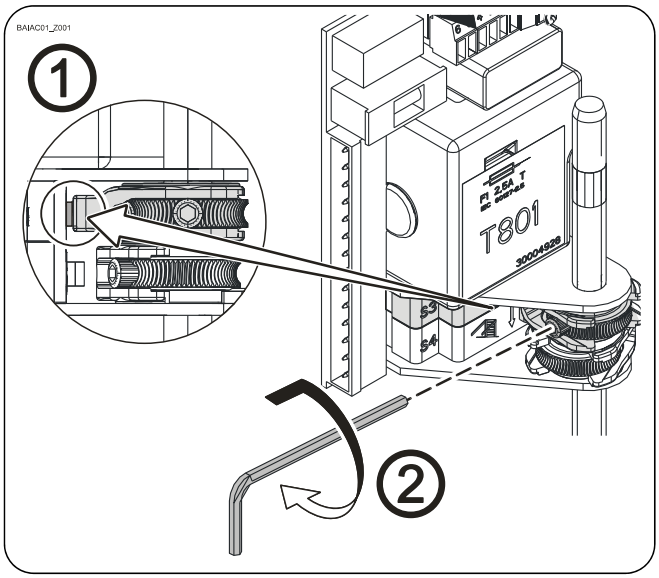


Adjusting the OPEN limit position

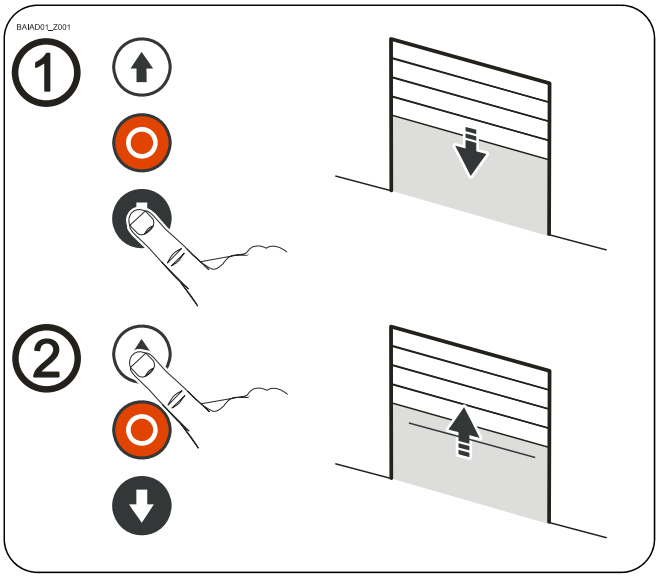
Use the OPEN pushbutton to open the door to the desired OPEN final limit position.



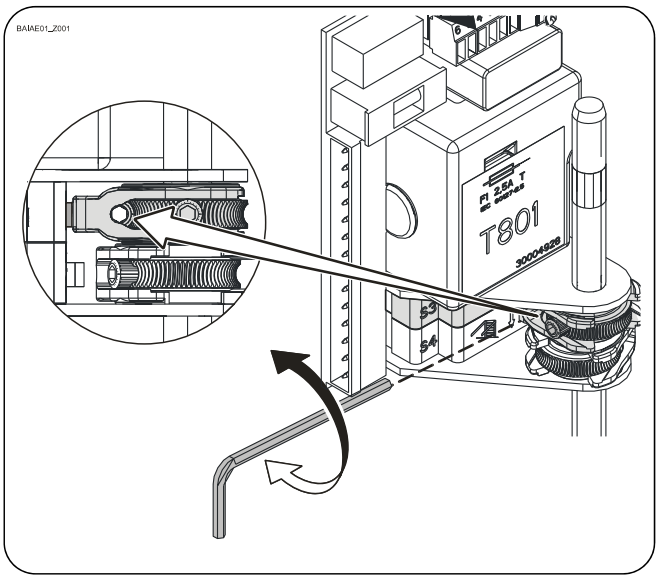
Rotate the cam of the OPEN limit switch S3 to the middle of tappet ①.
Tighten the screw of the cam ②.



Check the position of the door:
Close the door ① until the cam is free and open the door again ② at OPEN final limit position.



Carry out fine adjustment to correct the OPEN final limit position. Check the door position after correction.



Adjusting the CLOSE limit position

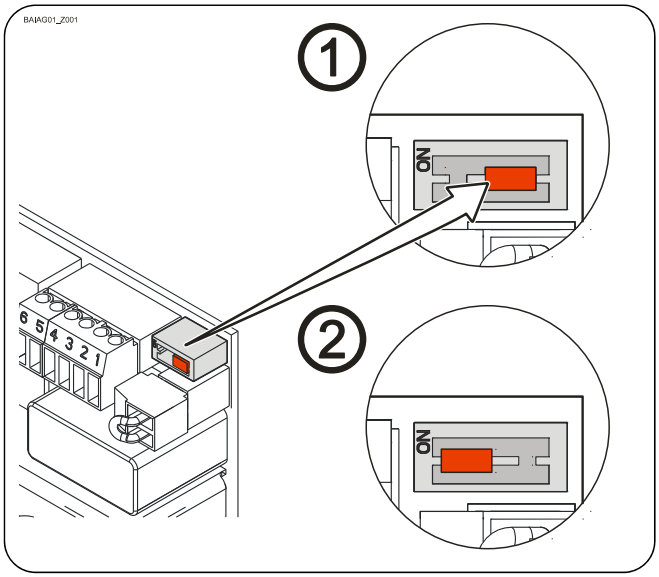
Carry out adjustment as for OPEN final limit position.

6 Selecting the operating mode

The operating mode can be selected using the switch

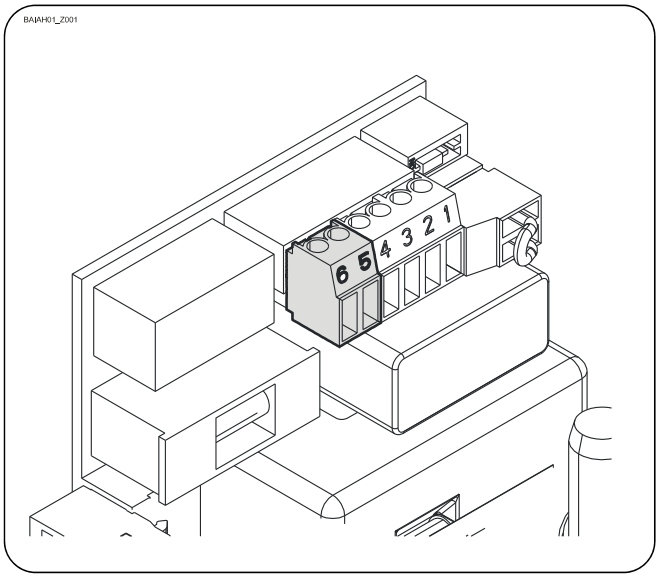
① Hold to run OPEN
Hold to run CLOSE

② Self hold OPEN
Hold to run CLOSE



7 Message door OPEN

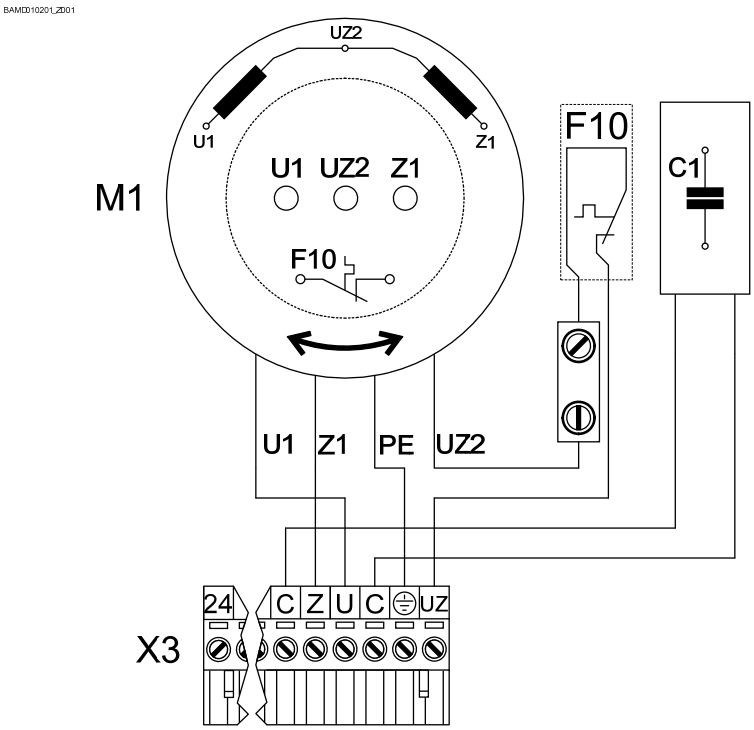
The T801 has a potential-free NO contact that is closed when the final limit position OPEN is reached.



Caution - Component damage can result!

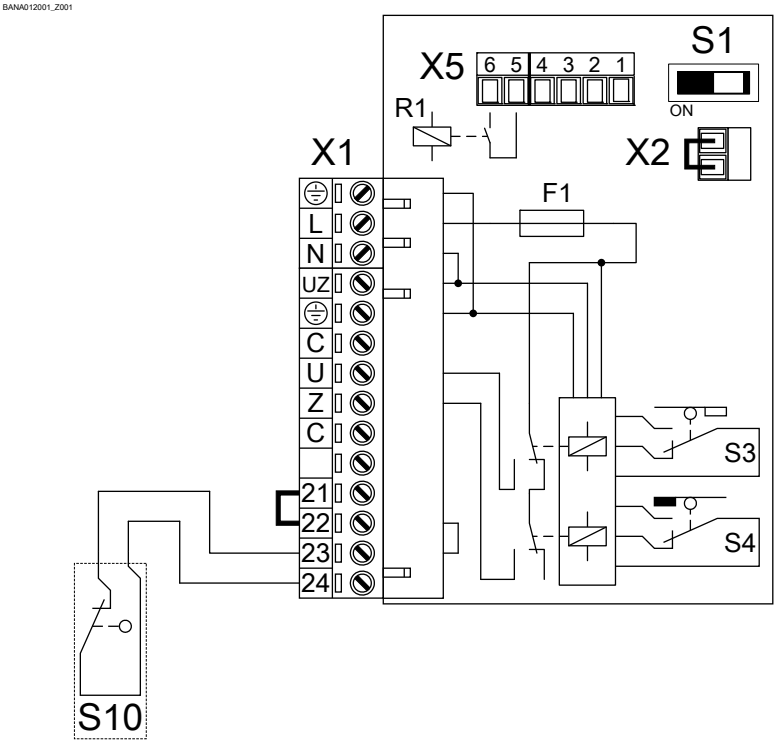
- The maximum switching current is 24V DC 0.2 A

8 Motor connection



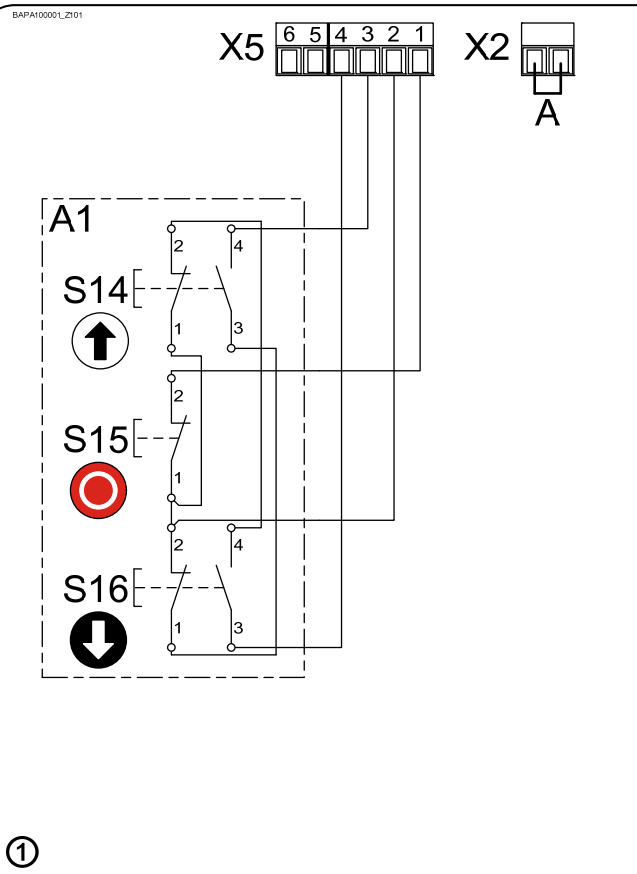
C1 Capacitor
F10 Thermal contact
M1 Motor
X3 Motor plug

9 Limit switch connection

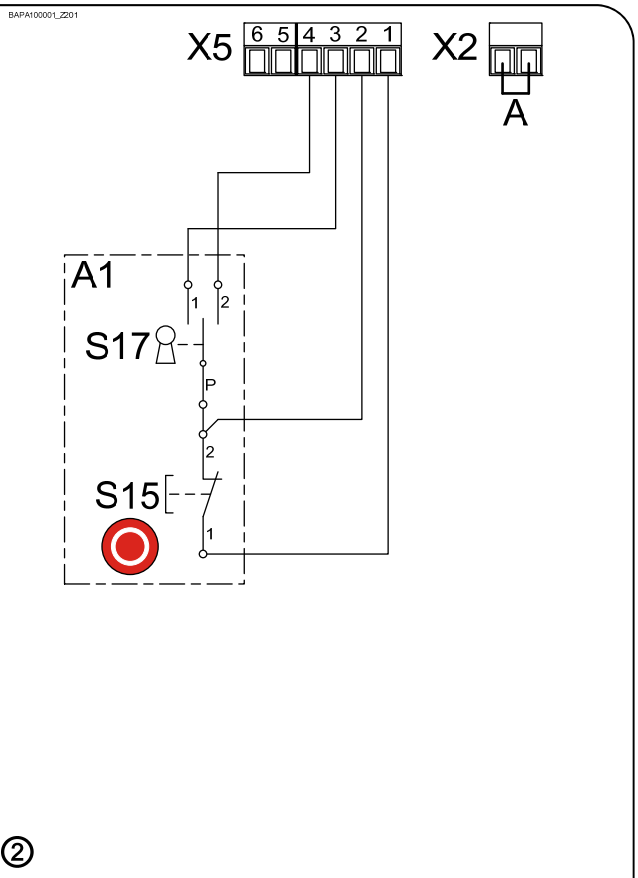


F1 Device fuse
S1 Operating mode selector
S10 Manual operation
X1 Connection terminal
Mains supply
Motor /
Safety circuit
X2 Connection terminal
Slack-rope switch
X5 Connection terminal
Control device
1 Stop
2 Control voltage
3 Open
4 Close
R1 Relay
5-6 Open signal
NO contact

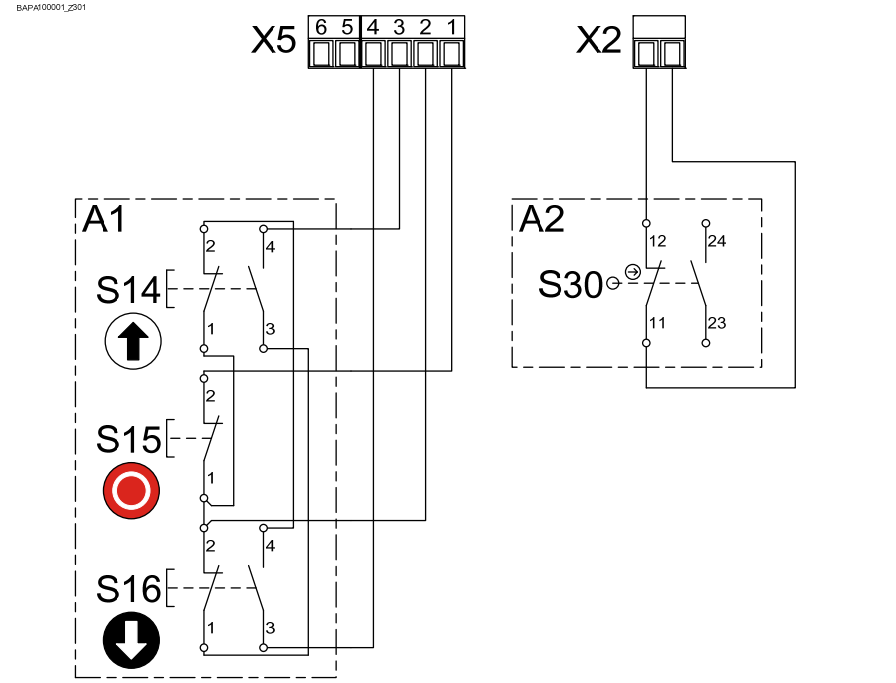
10 Control device connections



①



②



③

① **A1** Three push button

② **A1** Key-switch with stop pushbutton

③ **A1** Three push button
A2 Slack-rope switch

11 Emergency manual operation (rapid hand chain operator)

Emergency manual operation is designed for opening or closing the door without power supply. Its activation interrupts the control voltage. Electrical operation is no longer possible.

Warning – Injuries due to incorrect operation!

- Switch off voltage.
- Adopt a secure position.
- For drive units with brake, the emergency manual operation must be carried out against the closed brake.

Warning - Danger of the door dropping!

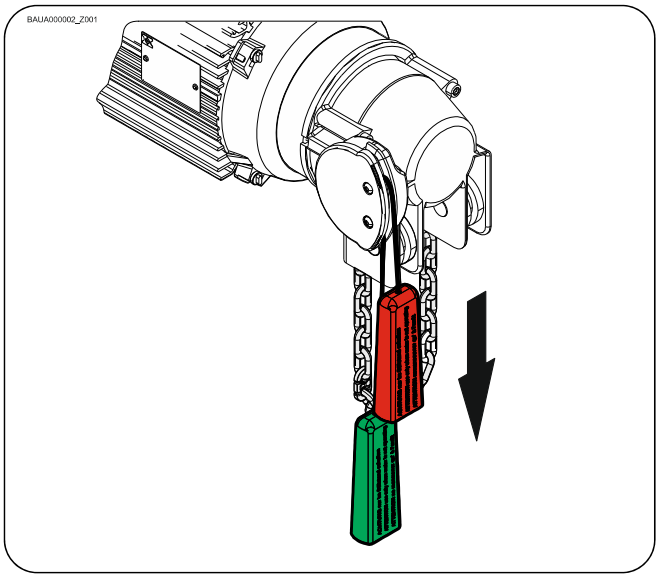
If you need to apply more than the permissible force of 390N (according to DIN EN 12604/DIN EN 12453) to move the door by emergency manual operation, this indicates a stalling on the drive unit or door. Releasing the stalling may cause the door to drop.

- Adopt a secure position.
- For drive units with brake, the emergency manual operation must be carried out against the closed brake.

Caution – Damage to components!

- Do not move the door beyond the final limit positions.

Switch on by pulling the red handle. Open or close by pulling the chain. Switch off by pulling the green handle.



12 Completing commissioning / inspection

Check the following components and then install all covers.

Gearbox

Check the drive unit for loss of oil (a few drops can be neglected). Protect the output-shaft permanently against corrosion.

Mounting

Check that all connection elements (consoles, torque mounts, screws, locking rings, etc.) are secure and in proper condition.

Electrical wiring

Check the connection cables and cabling for damage or crushing. Check that the screw connections and plug connections are fitted properly with a good electric contact.

Emergency manual operation

Check the function with the power disconnected. Perform the check only between the final limit positions.

Limit switch

Check the final limit positions by opening and closing fully.

Drive unit

Note!

- Engage a qualified engineer to check the drive unit annually
- Apply shorter inspection intervals for doors that are operated frequently
- Observe the applicable regulations and standards

Declaration of incorporation

within the meaning of Machinery Directive 2006/42/EC
for partly completed machinery, Appendix II Part B

Declaration of conformity

within the meaning of EMC Directive 2014/30/EU
within the meaning of RoHS Directive 2011/65/EU

GfA ELEKTROMATEN GmbH & Co. KG
Wiesenstraße 81 · 40549 Düsseldorf
Germany

We,
GfA ELEKTROMATEN GmbH & Co. KG
declare under our sole responsibility that the following product complies with the above directives and is only intended for installation in a door system.

Drive unit
TSE 5.24 WS-25,40
Part no.: 10003805 00012

We undertake to transmit in response to a reasoned request by the appropriate regulatory authorities the special documents on the partly completed machinery.

This product must only be put into operation when it has been determined that the complete machine/system in which it has been installed complies with the provisions of the above-mentioned directives.

Authorised representative to compile the technical documents is the undersigned.

Düsseldorf, 10.08.2018

Stephan Kleine
CEO

Signature

The following requirements from Appendix I of the Machinery Directive 2006/42/EC are met: 1.1.2, 1.1.3, 1.1.5, 1.2.2, 1.2.3, 1.2.6, 1.3.2, 1.3.3, 1.3.9, 1.5.1, 1.5.2, 1.5.4, 1.5.6, 1.5.7, 1.5.8, 1.5.9, 1.5.10, 1.5.11, 1.5.13, 1.6.1, 1.6.2, 1.6.4, 1.7.2, 1.7.3, 1.7.4.3.

Standards applied:
EN 12453:2001
Industrial, commercial and garage doors and gates - Safety in use of power operated doors - Requirements

EN 12604:2017
Industrial, commercial and garage doors and gates - Mechanical aspects - Requirements

EN 60335-1:2012
Household and similar electrical appliances - Safety - Part 1: General requirements

EN 61000-6-2:2005
Electromagnetic compatibility (EMC) Part 6-2 Generic standards – Immunity standard for industrial environments

EN 61000-6-3:2007
Electromagnetic compatibility (EMC) Part 6-3 Generic standards – Emission standard for residential, commercial and light-industrial environments