



Installation Instructions

ELEKTROMAT

SI 55.15-40,00

Model: 10002480 10011

-en-

Status: 09.07.2020



GfA ELEKTROMATEN GmbH & Co. KG
Wiesenstraße 81
D-40549 Düsseldorf
🌐 www.gfa-elektromaten.de
✉ info@gfa-elektromaten.de

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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 doors, which have to be secured against falling down; a safety brake is included in the gearbox. The drive unit is directly mounted on the door shaft.

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 | SG 85F | |
| Output torque | 550 | Nm |
| Output speed | 15 | rpm |
| Output shaft / hollow shaft | 40,00 | mm |
| Locking torque moment | 1100 | Nm |
| Safety brake (testhouse/approval number) | 14-003612-PR03 | |
| Maximum output speed open / close for frequency inverter operation | 26 / 26 | rpm |
| Supply voltage | 3~ 400 | V |
| Operating current | 4,20 | A |
| Operating frequency | 50 | Hz |
| Power factor $\cos \varphi$ | 0,59 | |
| Maximum movement per hour | 16 | h ⁻¹ |
| Hand forces | 320 | N |
| Class of protection | IP 65 | |
| Limit switch range (maximum revolutions of output shaft / hollow shaft) | 20 | |
| Braking torque spring-loaded brake | 9 | Nm |
| Braking voltage | 103-130 | V DC |
| Rectifier type | EGR 230/103 | |
| Temperature range | -10 / +40 (+60) | °C |

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

3 Integrated safety brake

A safety brake is integrated into the gearbox of this ELEKTROMATEN. The safety brake protects against the door dropping due to breakage or wear of the gear teeth. The safety brake works regardless of the mounting position, speed and rotating direction. It is maintenance-free. The specification of the locking torque and the approval number of the safety brake are available in the technical data of these instructions.



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.

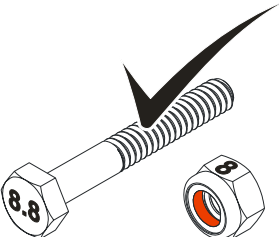
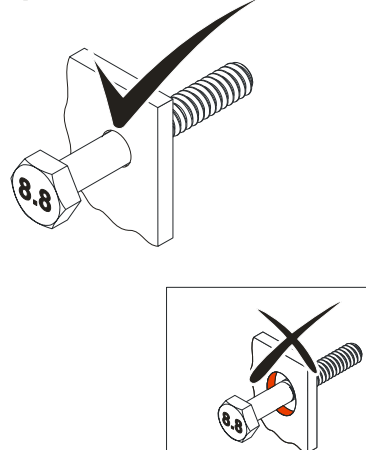
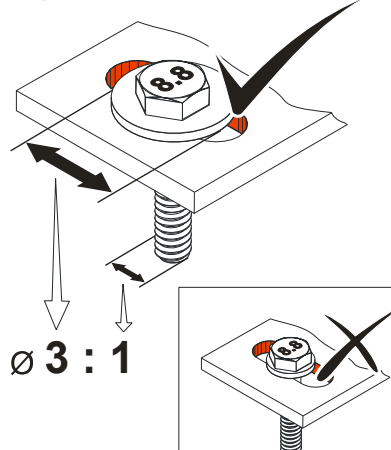
- Adopt a secure position.
- For drive units with brake, the emergency manual operation must be carried out against the closed brake.

4 Mechanical installation

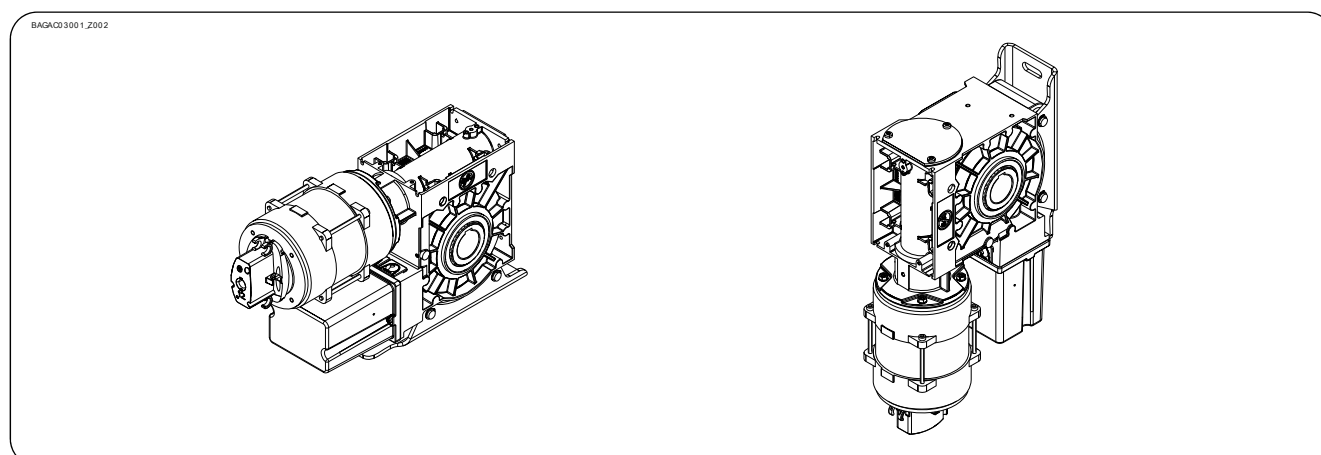
Prerequisites

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

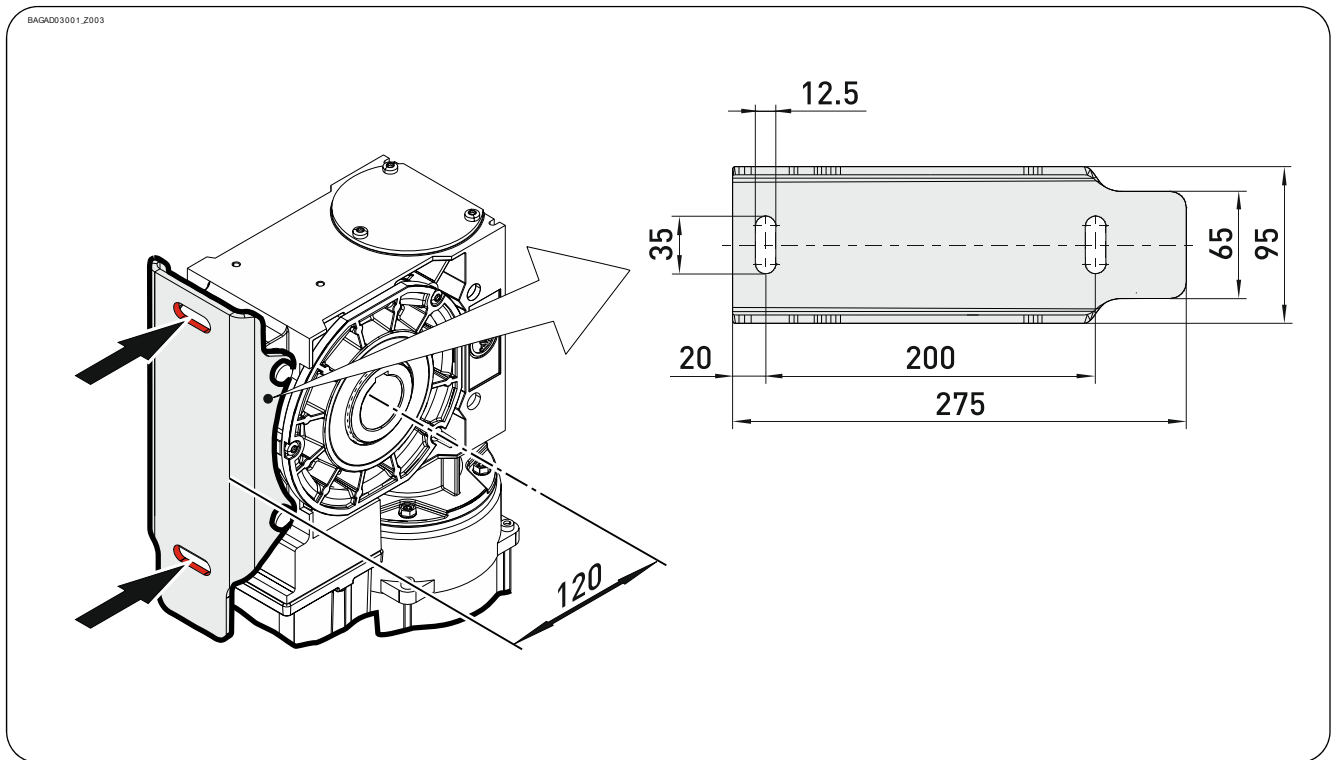
| | | |
|--|---|--|
| <ul style="list-style-type: none"> ► Self-locking connection elements with a minimum strength of 800 N/mm² (8.8) must be used. | <ul style="list-style-type: none"> ► Utilize the hole diameter to the full. | <ul style="list-style-type: none"> ► Use adequately dimensioned washers for elongated holes. |
| <p><small>BAGAB00001_Z002</small></p>  <p>≥ 800 N/mm²</p> | <p><small>BAGAB00002_Z002</small></p>  | <p><small>BAGAB00003_Z002</small></p>  <p>∅ 3 : 1</p> |

Permissible mounting positions



Mounting

Two elongated holes are provided for mounting.



Installation

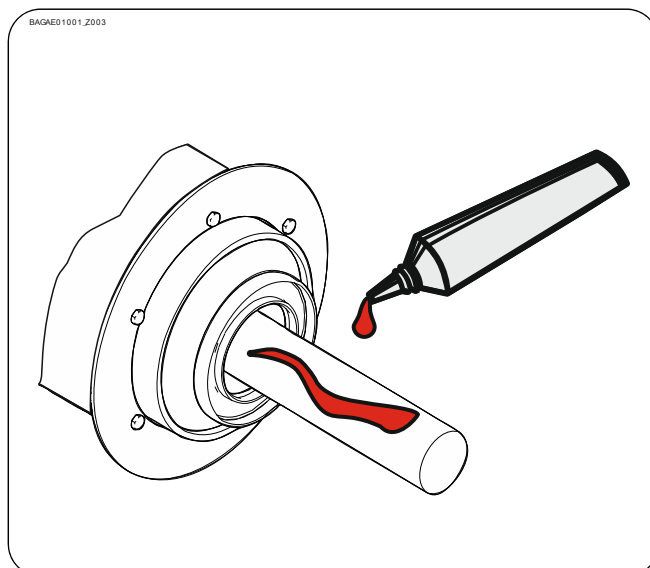
The descriptions below apply to general door specifications. The specifications of the door manufacturer must also be observed during installation.



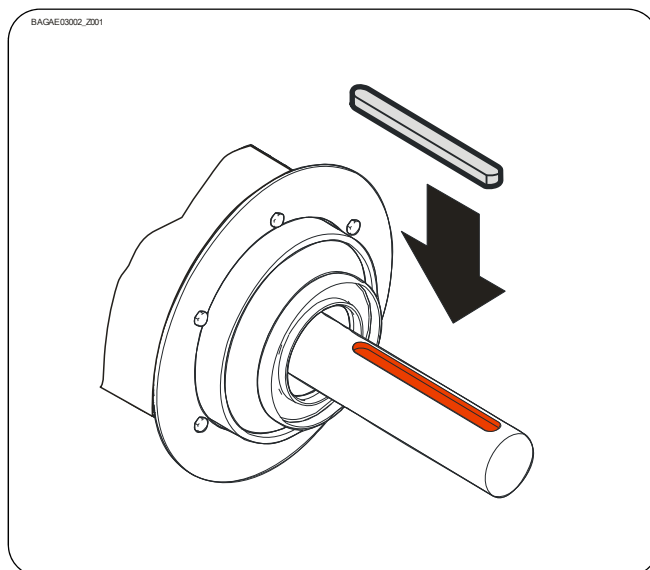
Warning - Potential injury or danger to life!

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

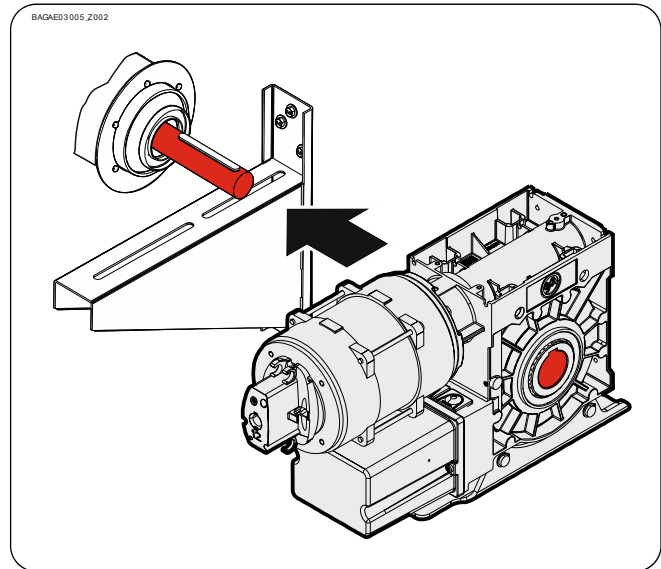
- ▶ Thoroughly grease the door shaft.



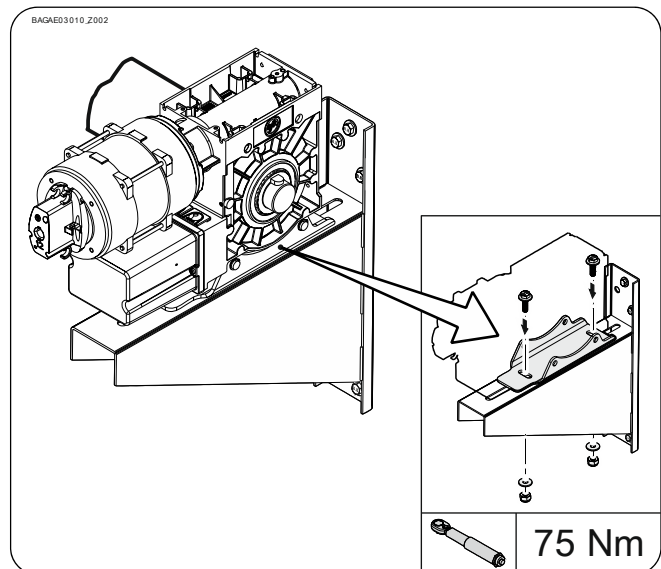
- ▶ Mount the keys.



- ▶ Attach the drive unit.



- ▶ Tighten all connection elements (M12) to 75 Nm. Install all other connection elements according to the specifications of the door manufacturer.



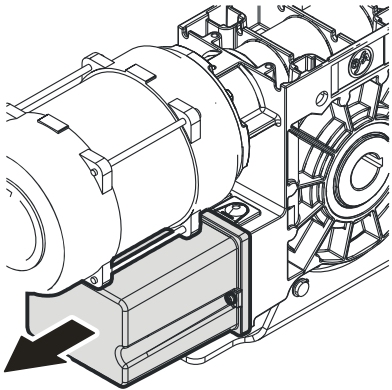
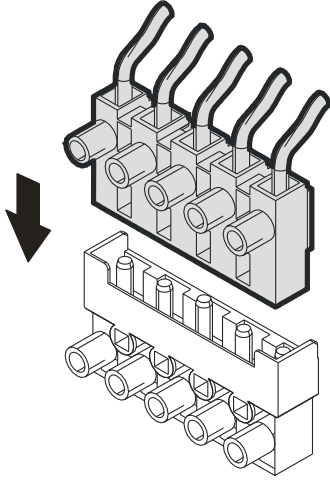
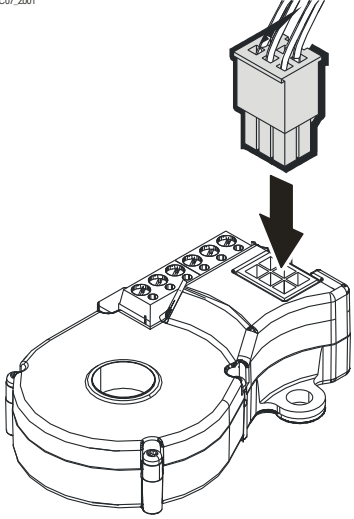
5 Electrical installation



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

Performing electrical installation

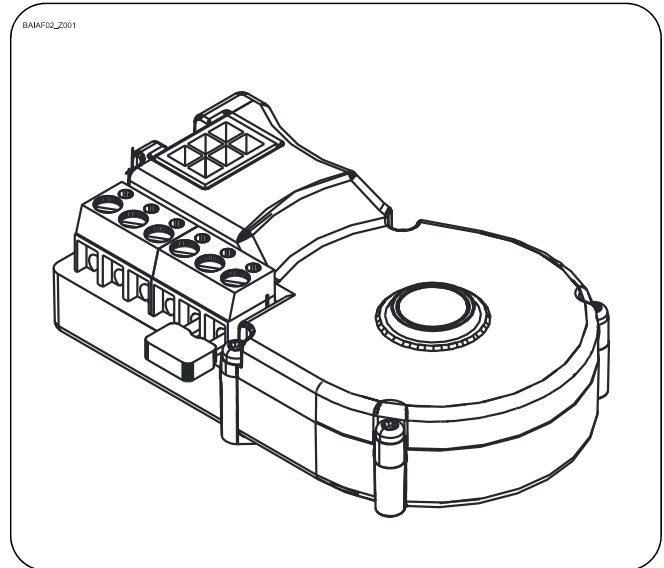
| Remove the cover. | Insert the motor plug. | Insert the limit switch plug. |
|---|--|--|
| <p><small>BH4AD3_Z001</small></p>  | <p><small>BH4AB01_Z001</small></p>  | <p><small>BH4AC07_Z001</small></p>  |

Completing the electrical installation

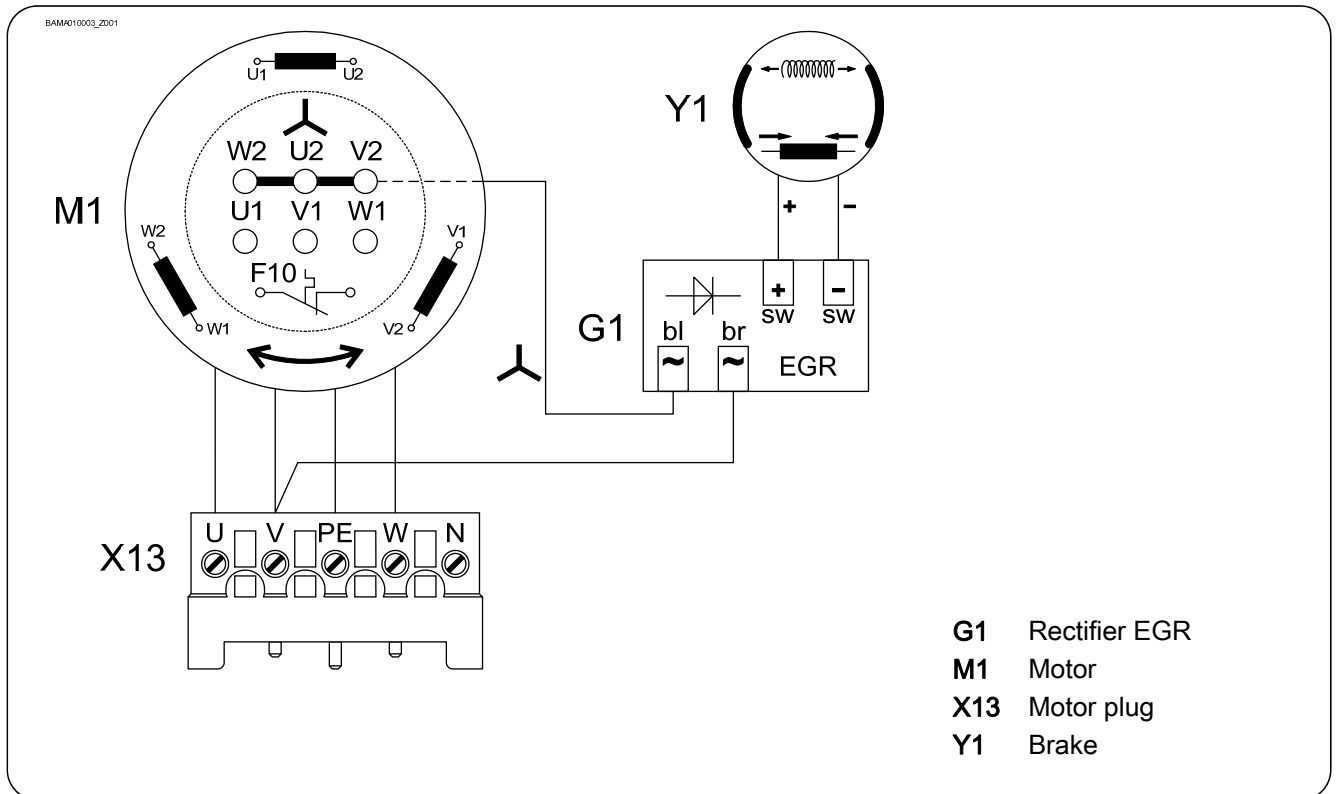
Mount the cable entries and/or cable glands.

6 Limit switch adjustment

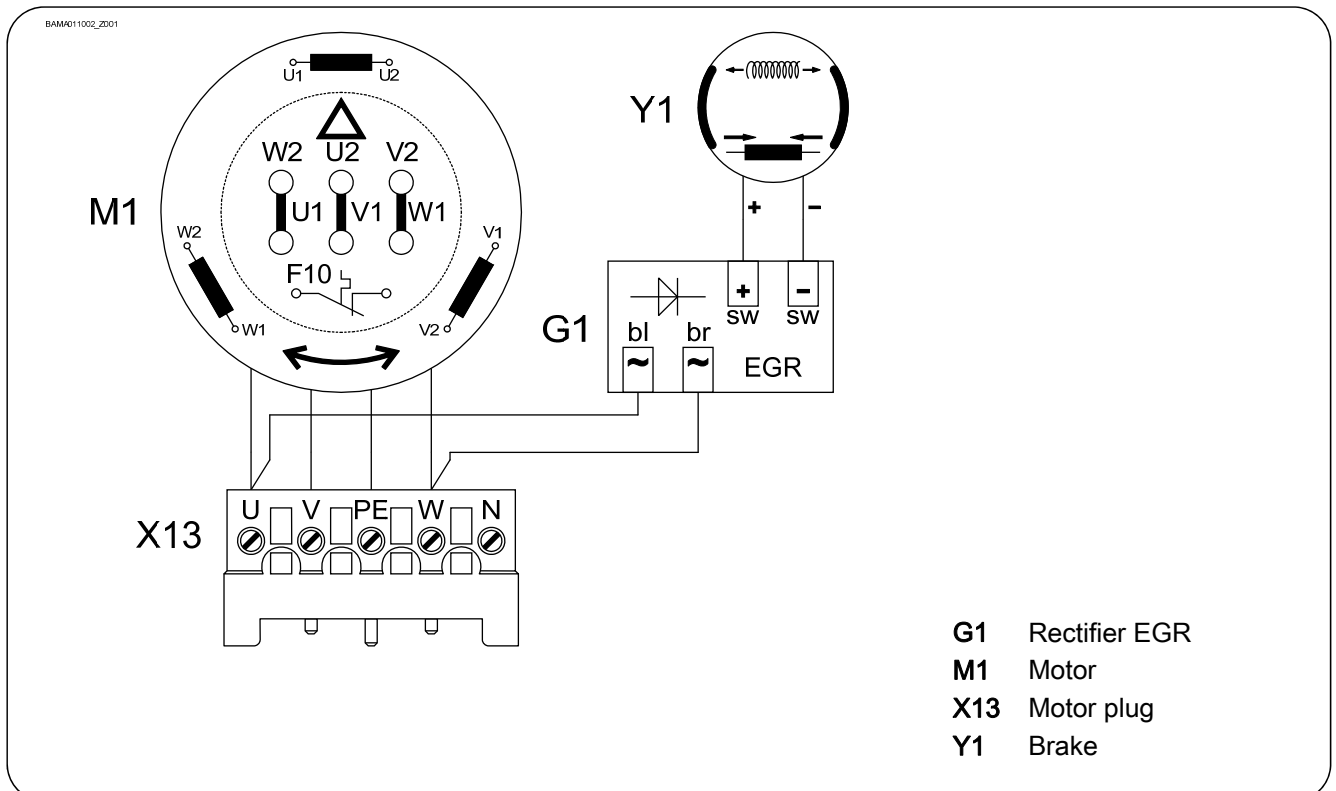
The adjustment of the final limit positions OPEN and CLOSE is described in the instructions for the door control panel.



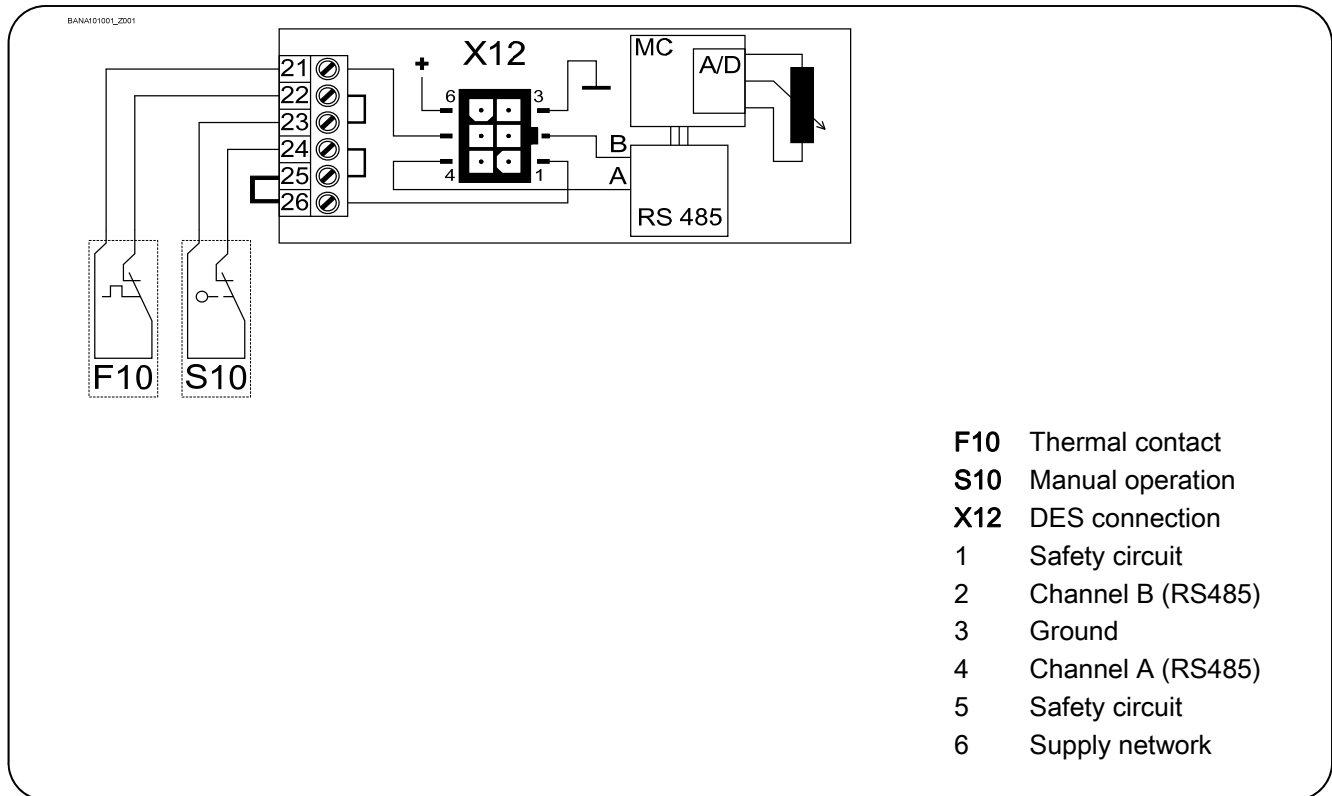
7 Motor connection



8 Motor connection



9 Limit switch connection



10 Emergency manual operation (emergency hand crank)

The 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 or falling objects!

- 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.

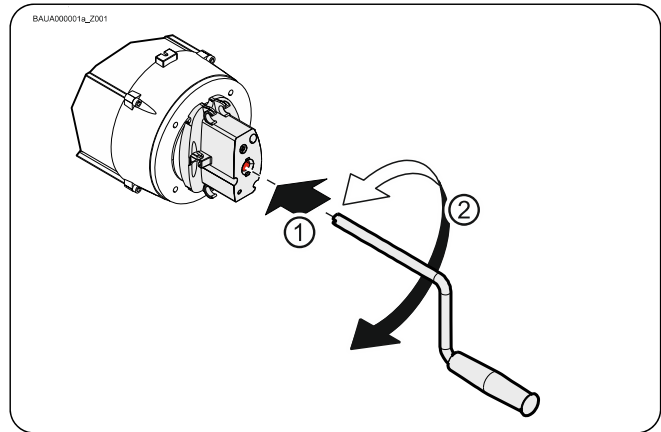
- Adopt a secure position
- For drive units with brake, the emergency manual operation must be carried out against the closed brake.



Caution – Damage to components!

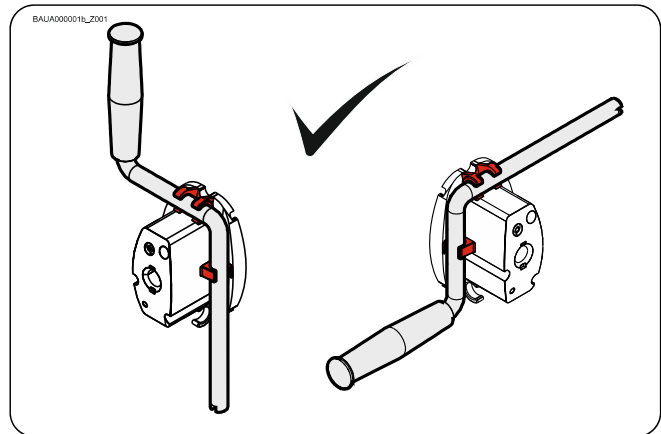
- Do not move the door beyond the final limit positions.

Plug in the crank and turn until it engages
(①). Open or close by turning the crank (②).



After use, the crank may be attached to the drive unit.

- ▶ Attach as illustrated.



11 Completion of commissioning / testing

Check the following components and after that, mount all covers.

Gearbox

Check drive unit for oil loss (a few drops are not critical). Protect output shaft permanently against corrosion.

Safety brake in the gearbox

The safety brake requires no maintenance or inspection.



Warning – Danger of the door dropping

In the case of a gearbox damage, the internal safety brake is triggered to prevent the door from dropping. The gearbox stalls.

Releasing the stalling may cause the door to drop!

- Block the door for pedestrians and vehicles.
- Do not release the stalling. Do not use the emergency manual operation.
- Secure the door against dropping. Please observe the specifications of the door manufacturer.
- The drive unit needs replacement. Please observe the specifications of the door manufacturer.

Mounting

Check all mounting elements (consoles, torque brackets, screws, retaining rings etc.) for tightness and impeccable condition.

Electric wiring

Check connection cables and cables for damage or pinches. Check screw and plug connections for correct seating and electrical contact.

Emergency manual operation

Function to be checked in a de-energised state. Carry out functional test only between final limit positions.

Limit switches

Check the final limit positions by opening and closing the door completely. The safety zone must not be reached.

Brake



Warning – Injury or danger to life possible!

- Carry out brake test. Overrun depends on the door and its equipment. The manufacturer's specifications must be observed.
- The brake release for doors without counter-balancing may only be used in the CLOSE final limit position.



Warning – Injury or danger to life possible!

Service life of the brake - replacement of the entire brake in the case of:

- Operation with mains supply after 250,000 door cycles
- Operation with frequency inverter after 1,000,000 door cycles

Degree of protection IP65i must be used in environments that may change the friction coefficient of the brake pad (atmospheres with oil, solvents, cleaning agents, etc.).

Entire drive unit



Note!

- Have the drive checked annually by a specialist.
- Shorter inspection interval for frequently used doors.
- 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



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

Declaration of conformity

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

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

SI 55.15-40,00

Part no.: 10002480 10011

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