

EN TRANSLATION OF THE ORIGINAL INSTALLATION AND OPERATING MANUAL

Swing gate operator

twist UG
twist UG+



Dear customer,
Congratulations on your purchase of a product of **SOMMER GmbH Antriebs- und Funktechnik**. This product has been developed and manufactured under high standards of quality and with reference to ISO 9001. Our passion for the product is just as important to us as the needs and requirements of our customers. We place particular emphasis on the safety and reliability of our products.
Read this installation and operating manual carefully and follow all instructions. This will ensure that you can install and operate the product safely and optimally. If you have any questions, please contact your specialist retailer, installer or contact.

Information on the operator:

Serial No.: See the title page of this Installation and Operating Manual and the control unit (if applicable warranty label).

Year of manufacture: from 04/2016

Information on the installation and operating manual

Version of the installation and operating manual:

twist-UG_S10451-00001_352017_0-DRE_Rev-B_EN

Warranty

The warranty complies with statutory requirements. The contact person for warranties is the qualified dealer. The warranty is only valid in the country in which the operator was purchased. There is no warranty for consumables such as batteries, accumulators and safety products as well as light bulbs. This also applies for wear parts. The operator is only designed for a limited frequency of use. More frequent use leads to increased wear.

Contact data

If you require after-sales service, spare parts or accessories, please contact your qualified specialist retailer or installer.

Feedback on this installation and operating manual

We have tried to make the Installation and Operating Manual as easy as possible to follow. If you have any suggestions as to how we could improve it or if you think more information is needed, please send your suggestions to us:



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Service

If you require service, please contact us on our service hotline (fee required) or see our web site:



+49 (0) 900 1800-150

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1. About this installation and operating manual

1.1 Storage and circulation of the installation and operating manual

Read this Installation and Operating Manual carefully and completely before installation, commissioning and operation and also before removal. Follow all warnings and safety instructions.

Keep this Installation and Operating Manual accessible at all times at the place of use. A replacement installation and operating manual can be downloaded from

SOMMER at:

www.sommer.eu

In the event of transfer or resale of the gate operator to third parties, the following documents must be passed on to the new owner:

- EC Declaration of Conformity
- handover protocol and inspection book
- this Installation and Operating Manual
- proof of regular maintenance, testing and care
- documents recording retrofitting and repairs

1.2 Important for translations

The original installation and operating manual was written in German. The other available languages are translations of the German version. You can get the original installation and operating manual by scanning the QR code.



<http://som4.me/orig-twist-ug-revb>

For other language versions, see:

www.sommer.eu

1.3 Description of the product type

The operator has been constructed according to state-of-the-art technology and recognised technical regulations and is subject to the EC Machinery Directive (2006/42/EC).

The operator is fitted with a radio receiver. Optionally available accessories are also described. The actual scope of delivery deviates from this.

1.4 Target groups of the installation and operating manual

The installation and operating manual must be read and observed by everyone assigned with one of the following tasks:

- Unloading and in-house transport
- Unpacking and installation
- Initial operation
- Setting
- Usage
- Maintenance, testing and care
- Troubleshooting and repairs
- Disassembly and disposal

1.5 Explanation of warning symbols and notes used

The warnings in this Installation and Operating Manual are structured as follows.



Hazard symbol



Signal word

Type and source of hazard
Consequences of the hazard

- Preventing/avoiding the hazard

The hazard symbol indicates the hazard. The signal word is linked to a hazard symbol. The hazard is classified into three classes depending on its danger:

DANGER

WARNING

CAUTION

1. About this installation and operating manual

There are three different classifications of hazards.



DANGER

Describes an immediate danger that leads to serious injury or death.

Describes the consequences of the danger to you or other persons.

- ▶ Follow the instructions for avoiding or preventing the danger.



WARNING

Describes a potential danger of serious injury or death.

Describes the potential consequences of the danger to you or other persons.

- ▶ Follow the instructions for avoiding or preventing the danger.



CAUTION

Describes a potential danger of a hazardous situation

Describes the potential consequences of the danger to you or other persons.

- ▶ Follow the instructions for avoiding or preventing the danger.

The following symbols are used for notes and information:



NOTE

Describes additional information and useful notes for correct use of the operator without endangering persons. If it is not observed, property damage or faults to the operator or door may occur.



INFORMATION

Describes additional information and useful tips. Functions for optimum usage of the operator are described.



INFORMATION

This symbol indicates that all operator components that have been taken out of service must not be disposed of with household waste, as they contain hazardous substances. The components must be disposed of correctly at an authorised recycling centre. The local and national regulations must be observed.



INFORMATION

This symbol indicates that all old accumulators and batteries must not be disposed of with household waste. Old accumulators and batteries contain hazardous substances. These must be disposed of properly at municipal collection points or in the containers provided by dealers. The local and national regulations must be observed.



The following symbols are used in the figures and text.



Continue reading the installation and operating manual for more information.



Disconnect the operator from the mains voltage.



Connect the operator to the mains voltage.



Symbol refers to factory settings.



Symbol refers to a WiFi-enabled device.

1. About this installation and operating manual

1.6 Special warnings, hazard signs and mandatory signs

To specify the source of danger more precisely, the following symbols are used together with the above-mentioned hazard symbols and signal words. Follow the instructions to prevent a potential hazard.



DANGER

Danger due to electric current!
Contact with live parts may result in electric current flowing through the body. Electric shock, burns or death will result.

- ▶ Installation, testing and replacement of electrical components may only be carried out by a **trained electrician**.



WARNING

Danger due to projecting parts!
Parts must not project into roads or public footpaths. This also applies during the movement of the gate. Persons or animals may be seriously injured.

- ▶ Keep public roads and footpaths clear of projecting parts.



WARNING

Danger of crushing and shearing!
If the gate moves and there are persons or animals in the movement area, crushing and shearing injuries may be caused by the mechanism and safety edges of the gate.

- ▶ Never put your hand near the gate when it is moving or near moving parts.



WARNING

Danger of tripping and falling!
Unsafely positioned parts such as packaging, operator parts or tools may cause trips or falls.

- ▶ Keep the installation area free of unnecessary items.



WARNING

Danger due to hot parts!
After frequent operation, the motor and control unit may become hot. If the cover is removed and hot parts are touched, they may cause burns.

- ▶ Allow the operator to cool down before removing the cover.



WARNING

Risk of eye injury!
Chips flying when drilling may cause serious injuries to eyes and hands.

- ▶ Wear safety glasses.



CAUTION

Risk of injury to hands!
Rough metal parts may cause abrasions and cuts when picked up or touched.

- ▶ Wear safety gloves.



CAUTION

Risk of injury to feet!
Falling parts could cause foot injuries.

- ▶ Wear safety shoes.



1.7 Information regarding the depiction of text

1. Stands for directions for an action.
⇒ Stands for the results of the action.

Lists are shown as a list of actions:

- List 10pt
- List 10pt

- 1, A Item number in the figure refers to a number in the text.



Important text items, for example in directions for actions, are emphasised in **bold** type.
References to other chapters or sections are in **bold** type and set in "quotation marks".

1. About this installation and operating manual

1.8 Intended use of the operator

The operator is intended exclusively to open and close gates. Any other use does not constitute intended use. The manufacturer accepts no liability for damage resulting from use other than intended use. The user bears the sole responsibility for any risk involved. It also voids the warranty.

Any changes to the operator must be made with original **SOMMER** accessories only and only to the extent described.

Gates automated with this operator must comply with all valid international and domestic standards, directives and regulations. Examples include EN 12604, EN 12605 and EN 13241-1.

The operator may only be used:

- if the EC Declaration of Conformity has been issued for the gate system
- if the CE mark and the type plate for the gate system have been attached to the gate
- if the handover protocol and the inspection book have been completed and are available
- the installation and operating manuals for the operator and the gate are present
- as specified in this Installation and Operating Manual
- in good technical condition
- with attention to safety and hazards by trained users.

1.9 Improper use of the operator

Any other use or additional use that has not been described in Chapter "1.8 Intended use of the operator" constitutes improper use. The user bears the sole responsibility for any risk involved.

The manufacturer's warranty will be voided by:

- damage caused by other use and improper use
- use with defective parts
- unauthorised modifications to the operator
- modifications and non-approved programming of the operator and its components

The gate must not be part of a fire and smoke protection system, an escape route or an emergency exit that automatically closes the gate in the event of fire.

Installation of the operator will prevent automatic closing.

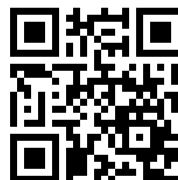
1.10 Qualifications of personnel

People under the influence of drugs, alcohol, or medications that can influence their ability to react may **not** work on the operator.

After installation of the operator, the person responsible for the installation of the operator must complete an EC Declaration of Conformity for the gate system in accordance with Machinery Directive 2006/42/EC and apply the CE mark and a type plate to the gate system. This also applies if the operator is retrofitted to a manually operated gate. All documents as well as the inspection book for the gate, the installation and operating manual and the handover protocol must be retained by the user.

The following is available for this purpose:

- handover protocol for the operator
- Declaration of Conformity



<http://som4.me/konform>

Qualified specialist for installation, initial operation and disassembly

This Installation and Operating Manual must be read, understood and complied with by the qualified specialist who installs or performs maintenance on the operator. Work on the electrical system and live parts may be performed only by a **trained electrician** in accordance with EN 50110-1.

The installation, initial operation and disassembly of the operator may only be performed by a qualified specialist. The qualified specialist must be familiar with the following standards:

- EN 13241-1 Doors and gates
- Product standard
- EN 12604 Doors and gates - Mechanical aspects - Requirements
- EN 12605 Doors and gates - Mechanical aspects - Test methods
- EN 12445 and EN 12453 - Safety in use of power-operated doors and gates

1. About this installation and operating manual

A qualified specialist is a person commissioned by the installer. The qualified specialist must instruct the user:

- on the operation of the operator and its dangers
- on the handling of the manual emergency release
- on regular maintenance which the user can carry out.

The user must be informed that other users must be instructed on the operation of the operator, its dangers as well as the emergency release.

The user must be informed about which work may only be performed by a qualified specialist:

- installation of accessories
- settings
- regular maintenance, testing and care
- troubleshooting and repairs

The following documents for the gate system must be handed over to the user:

- EC Declaration of Conformity
- handover protocol and inspection book
- the installation and operating manuals for the operator and the gate

1.11 For the user

The user must ensure that the CE mark and the type plate have been attached to the gate system.

The following documents for the gate system must be handed over to the user:

- EC Declaration of Conformity
- handover protocol and inspection book
- the installation and operating manuals for the operator and the gate

The user must always keep this Installation and Operating Manual at the place of use, ready for consultation and accessible to all users.

The user is responsible for:

- the intended use of the operator
- its good condition
- instructing all users how to use the gate system and in the associated hazards
- operation
- maintenance, inspection and care by a qualified specialist
- troubleshooting and repair by a qualified specialist

The operator must not be used by persons with restricted physical, sensory or mental capacity or who lack experience and knowledge. All users must be specially instructed and have read and understood the installation and operating manual.

Children must never play with or use the operator, even under supervision. Children must be kept clear of the operator. Handheld transmitters or other control devices must never be given to children.

The user will observe the accident prevention regulations and the applicable standards in Germany. In other countries, the user must comply with the applicable national regulations.

The guideline "Technical regulations for workplaces ASR A1.7" of the German committee for workplaces (ASTA) is applicable for commercial use. The guidelines described must be observed and complied with.

This applies for the use in Germany. In other countries the user must comply with the applicable national regulations.

2. General safety instructions

2.1 Basic safety instructions for operation

Follow the basic safety instructions listed below. The operator must not be used by persons with restricted physical, sensory or mental capacity or who lack experience and knowledge. All users must be specially instructed and have read and understood the installation and operating manual.

Children must never play with or use the operator, even under supervision. Children must be kept clear of the operator. Handheld transmitters or other control devices must never be given to children. Transmitters must be safely stored and protected from unauthorised use. Transmitters must be safely stored and protected against unauthorised use.



DANGER

Danger if not observed!
If safety instructions are not observed, serious injury or death may result.

- ▶ All safety instructions must be complied with.



DANGER

Danger due to electric current!
Contact with live parts may result in electric current flowing through the body. Electric shock, burns or death will result.

- ▶ Installation, testing and replacement of electrical components may only be carried out by a **trained electrician**.
- ▶ Before performing work on the operator, it must be disconnected from the power supply.
- ▶ If an accumulator is connected, disconnect it from the control unit.
- ▶ Check that the operator is not live.
- ▶ Secure the operator against being switched back on.



DANGER

Danger due to use of the operator with incorrect setting or when it is in need of repair!

If the operator is used despite incorrect settings or if it is in need of repair, severe injury or death may result.

- ▶ The operator may only be used with the required settings and in the proper condition.
- ▶ You must have faults repaired professionally without delay.



DANGER

Danger of hazardous substances!
Improper storage, use or disposal of accumulators or batteries are dangerous for the health of humans and animals. Serious injury or death may result.

- ▶ Accumulators and batteries must be stored out of the reach of children and animals.
- ▶ Keep accumulators and batteries away from chemical, mechanical and thermal influences.
- ▶ Do not recharge old accumulators and batteries.
- ▶ Components of the operator as well as old accumulators and batteries must not be disposed of with household waste. They must be disposed of properly.

2. General safety instructions



WARNING

Danger of crushing and shearing!
If the gate moves with persons or animals in the movement area, crushing and shearing injuries to persons and animals may be caused by the mechanism and safety edges of the gate.

- ▶ Only use the operator when you have a direct view of the gate.
- ▶ All danger zones must be visible during the entire gate operation.
- ▶ Always keep the moving gate in sight.
- ▶ Keep persons and animals clear of the range of movement of the gate.
- ▶ Never put your hand near the gate when it is moving or near moving parts.
- ▶ Do not drive through the gate until it has opened completely.
- ▶ Store the handheld transmitter so that unauthorised or accidental operation, e.g., by children or animals, is impossible.
- ▶ Never stand in the opened gate.



INFORMATION

All operator components that have been taken out of service must not be disposed of with household waste, as they contain hazardous substances. The components must be disposed of correctly at an authorised recycling centre. The local and national regulations must be observed.



INFORMATION

Old accumulators and batteries must not be disposed of with household waste as they contain hazardous substances. These must be disposed of properly at municipal collection points or in the containers provided by dealers. National guidelines must be observed.



2.2 Additional safety information for the radio remote control

Follow the basic safety instructions listed below.



WARNING

Danger of crushing and shearing!
If the gate is not visible and the radio control is operated, crushing and shearing injuries to persons or animals may be caused by the mechanism and safety edges of the gate.

- ▶ In particular when operating control elements such as the radio control, all danger zones must be visible during the entire gate operation.
- ▶ Always keep the moving gate in sight.
- ▶ Keep persons and animals clear of the range of movement of the gate.
- ▶ Never put your hand near the gate when it is moving or near moving parts.
- ▶ Do not drive through the gate until it has opened completely.
- ▶ Store the handheld transmitter so that unauthorised or accidental operation, e.g., by children or animals, is impossible.
- ▶ Never stand in the opened gate.



NOTE

If the gate is not in view and the radio remote control is actuated, objects in the movement area of the gate may be jammed and damaged. Objects must not be in the range of movement of the gate.



WARNING

Danger due to projecting parts!
Parts must not project into roads or public footpaths. This also applies during the movement of the gate. Persons or animals may be seriously injured.

- ▶ Keep public roads and footpaths clear of projecting parts.



NOTE

If the gate is not in view and the operator is actuated, objects in the movement area of the gate may be jammed and damaged. Objects must not be in the range of movement of the gate.



NOTE

Dispose of all components in accordance with local or national regulations to avoid environmental damage.

2. General safety instructions

The user of the radio system is not protected from interference due to other telecommunications equipment or devices. This includes radio-controlled systems that are licensed to operate in the same frequency range. If significant interference occurs, please contact your appropriate telecommunications office which has radio interference measuring equipment or radio location equipment.

For the Declaration of Conformity for the radio see:

www.sommer.eu



<http://som4.me/konform-funk>

3. Description of function and product

3.1 The operator and its mode of operation

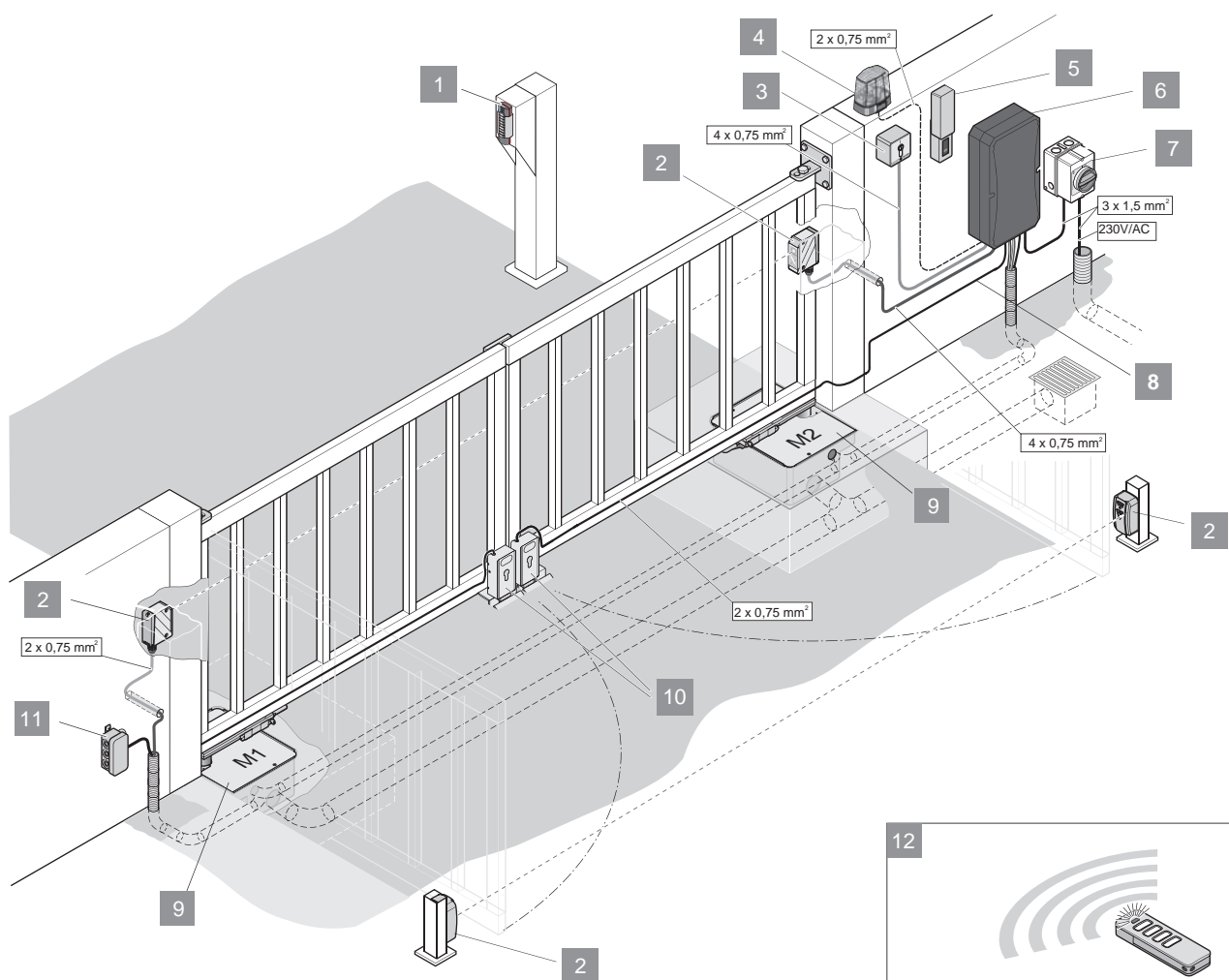


Fig. Application example

- 1) Telecody+
- 2) Photocell with relay output, inside and outside
- 3) Key switch (1 or 2 contacts)
- 4) Warning light
- 5) ENTRAsys GD
- 6) Control unit
- 7) EMERGENCY STOP
- 8) Connecting cable set, 12 m
- 9) Foundation box with motor
- 10) Electric lock 24 V DC/24 W
A separate electric lock can be connected for each leaf.
- 11) Terminal box
- 12) Handheld transmitter

1- and 2-leaf swing gates can be operated with the electrically powered operator and the separate control unit. Optionally available accessories make it possible to adapt the operators to special characteristics of these gates. The operator can be controlled, for example, via a handheld transmitter.

The operator is positioned at ground level in a foundation and connected to the corresponding gate leaf with an arm fitting. The rotating movement of the operator is transmitted to the gate leaf via the fitting. With 2-leaf gates, settings in the control unit ensure compliance with a certain order when opening or closing the gate leaves. The operator is delivered with accessories such as a handheld transmitter. The set for 2-leaf gates also contains a connection cable for the control unit to the second operator.

For more information on using the operator or accessories, contact your specialist dealer.

3. Description of function and product

3.2 Safety equipment

The operator stops and reverses slightly if it encounters an obstacle. This prevents injury and damage to property. The gate will be partially or completely opened, depending on the setting.

If the power fails, the gate leaves can be opened via an emergency release lever. For more information, contact your specialist dealer.

3.3 Product designation

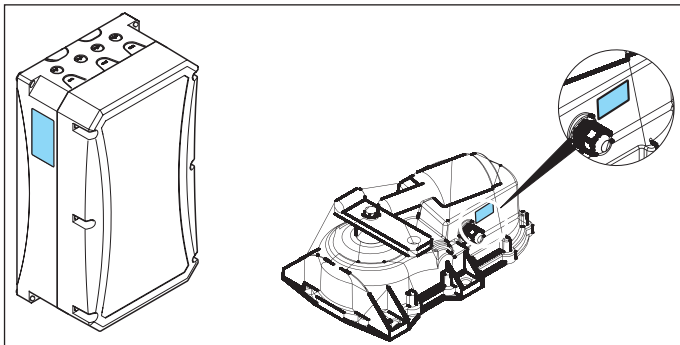


Fig. Type plates

The type plate on the control unit and the motor shows:

- type designation
- item number
- date of manufacture with month and year
- serial number

In case of questions or service, please supply the type designation, the date of manufacture and the serial number.

3.4 Explanation of terms and tool symbols used

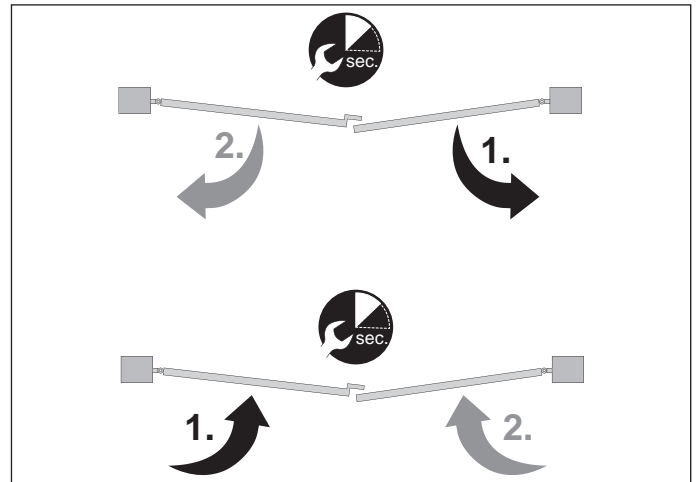


Fig. Example of movement sequence

Left gate/right gate

In this Installation and Operating Manual, it is always assumed that the observation direction is from the interior of the property. The operators are situated inside the property. The gate opens into the property.

Active leaf

Designates the gate leaf which opens first and closes second. The sequence of movements is necessary, e.g. with a locating face on a gate leaf.

Inactive leaf

Designates the gate leaf which opens second and closes first.



INFORMATION

1-leaf gates only have an active leaf.

These symbols refer to the use of tools required for installation.

3. Description of function and product

Tool symbols



Phillips screwdriver



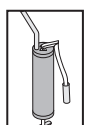
Allen wrench



Fork or ring wrench



Ratchet wrench



Grease gun

3. Description of function and product

3.5 Scope of delivery

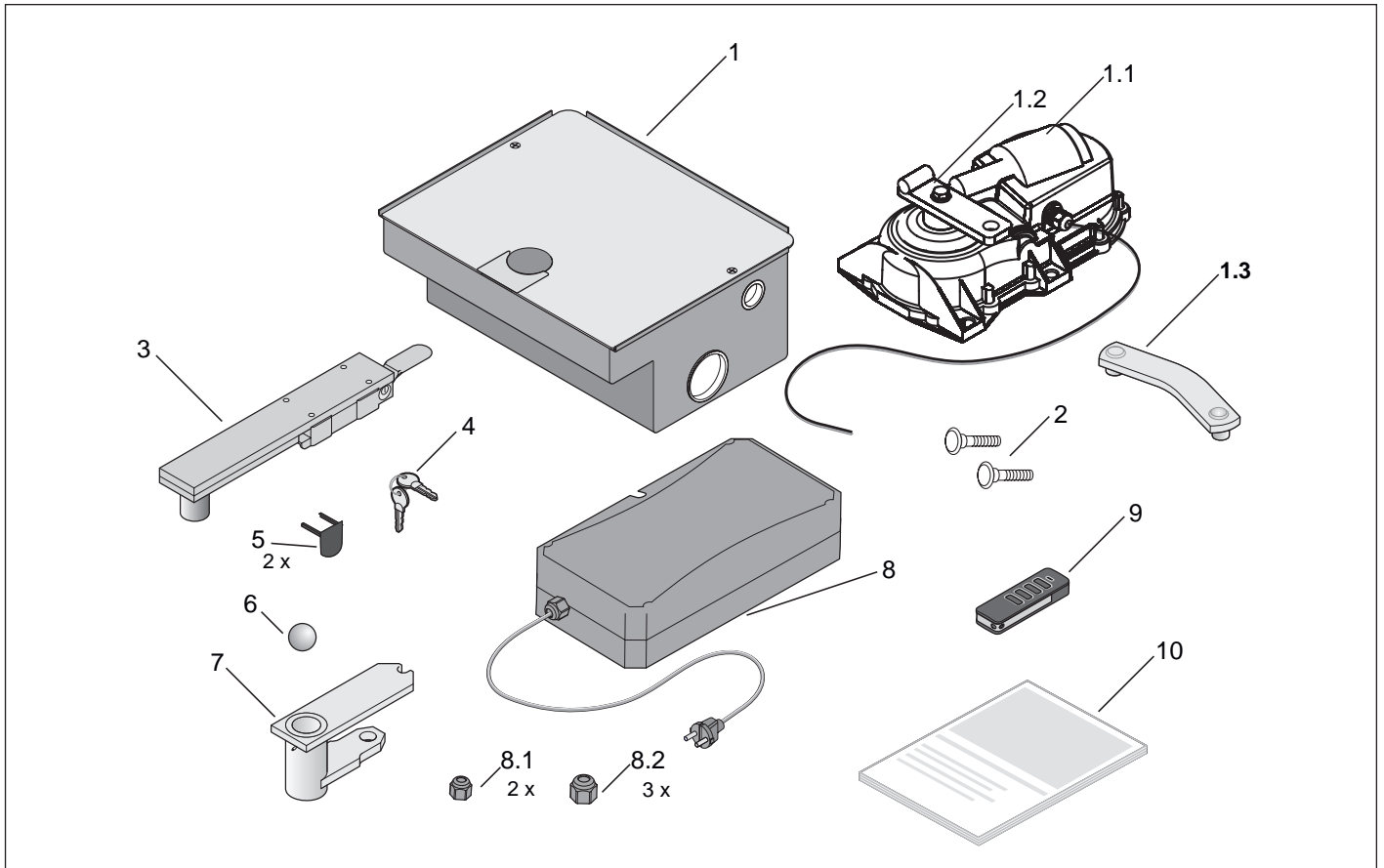


Fig. Scope of delivery, 1-leaf

Complete set	1-leaf	2-leaf
1) Foundation box, pre-assembled:	1 x	2 x
1.1) Motor with connection cable	1 x	2 x
1.2) Operator part	1 x	2 x
1.3) Hinged lever	1 x	2 x
2) Screws M 10 x 80	2 x	4 x
3) Gate fitting, pre-assembled with emergency release	1 x	2 x
4) Key for emergency release	1 x	2 x
5) Covering caps for closing cylinder	2 x	4 x
6) Ball	1 x	2 x
7) Pivoted lever	1 x	2 x

Complete set	1-leaf	2-leaf
8) Control unit with mains line and mains plug	1 x	1 x
8.1) M 16 plug-in connection	2 x	2 x
8.2) M 20 plug-in connection	3 x	3 x
9) Handheld transmitter	1 x	1 x
10) Installation and Operating Manual	1 x	1 x



NOTE

Mounting material such as screws and dowels are not included. Select suitable mounting material for the respective substructure.

3. Description of function and product

3.6 Dimensions

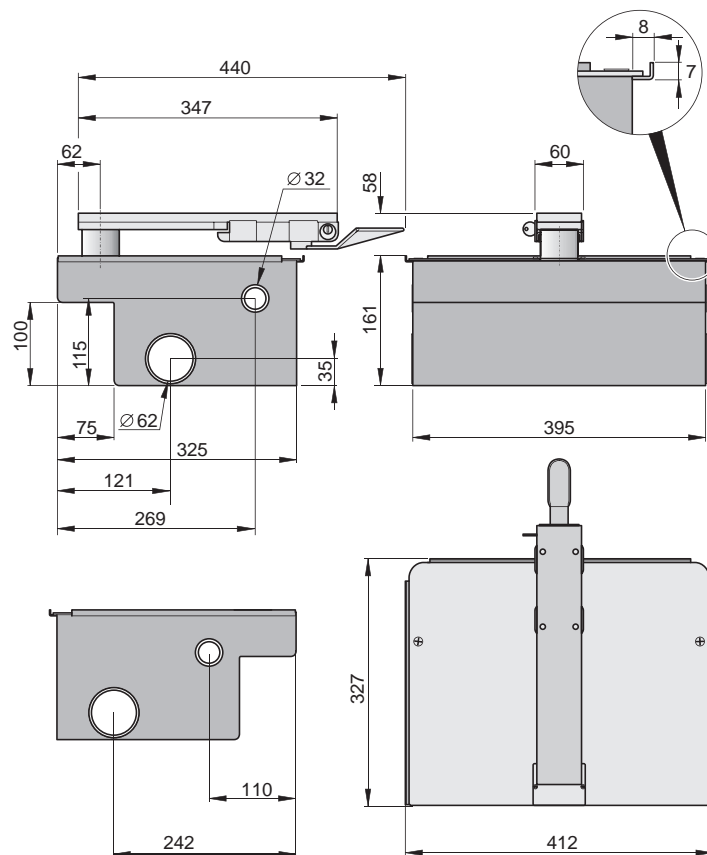


Fig. Dimensions (all dimensions are in mm)

3. Description of function and product

3.7 Technical data

Infill

Height (m)	Infill [%]			
1.8	50 %	30 %	20 %	20 %
1.5	60 %	40 %	30 %	20 %
1.0	90 %	60 %	40 %	30 %
	2	2.5	3	3.5

Tab. Relation of gate area to filling level

In compliance with DIN EN 1991-1-4 Wind pressure, with values 32.3 m/s , wind zone 2, and 11 on the Beaufort scale.

Permitted gate leaf dimensions

	twist UG	twist UG+
Length	3.0 m*	3.5 m**
Weight	300 kg*	600 kg**
Gate inclination	0%	

* Gate leaves with a length of up to 3.5 m and a weight of up to 350 kg may also be operated with an active safety contact strip. In particular, compliance with standards EN 12453 must be ensured.

** Gate leaves with a length of up to 3.5 m and a weight of up to 600 kg may also be operated with an active safety contact strip. In particular, compliance with standards EN 12453 must be ensured.

Technical data for operator

	twist UG	twist UG+
Rated voltage	220 V – 240 V AC	
Rated frequency	50/60 HZ	
Memory positions in radio receiver	40	
Duty cycle	S3 = 40%	
Operating temperature	-25 °C to + 65 °C	
Emission value according to operating environment	<53 dBA	
IP protection class	Operator IP67	Control unit IP65
IP-code	I	
Max. angular velocity	10°/s	
Max. torque per leaf	320 Nm	
Rated torque per leaf	96 Nm	
Max. power consumption per leaf	420 W	
Max. current consumption per leaf	2 A	
Rated power consumption per leaf	160 W	
Rated current consumption per leaf	0.9 A	
Power consumption in power-saving mode	0.5 W	
Max. gate weight per leaf*	350 kg	600 kg
Max. leaf length*	3.5 m	
Gate inclination	0%	
Max. opening angle	105°	

* With use of active safety contact strips and in compliance with the valid standards.

4. Tools and protective equipment

4.1 Required tools and personal protective equipment

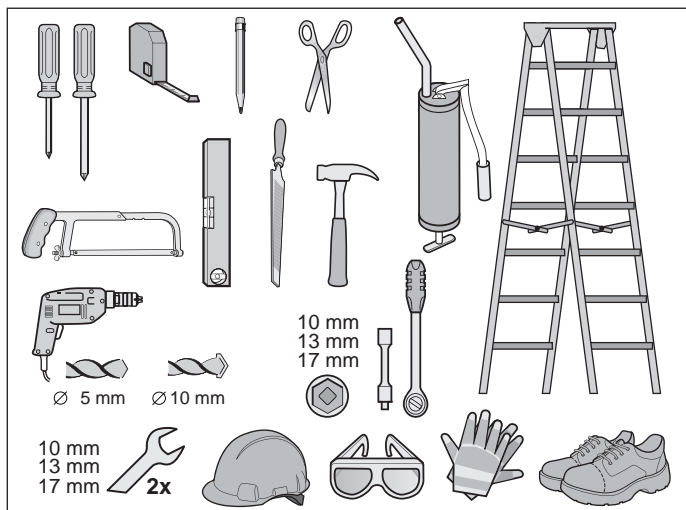


Fig. Recommended tools and personal protective equipment for installation

We recommend the use of the tools and protective equipment shown above to assemble and install the operator. Lay out the required tools and personal protective equipment beforehand to ensure fast and safe installation.



WARNING

Risk of injury to feet!
Falling parts can cause serious foot injuries.



- ▶ Safety shoes must be worn when performing work on the gate.



CAUTION

Risk of injury to hands!
Metal parts may cause abrasions and cuts when picked up or touched.



- ▶ You must wear safety gloves when working on the operator.

Wear your personal protective equipment.

This includes:

- safety helmet
- safety glasses
- safety gloves
- safety shoes

Wear suitable personal protective equipment when welding:

- face protection
- protective clothing
- safety gloves



WARNING

Risk of injury to body!
During welding, the body and in particular eyes and hands may be seriously injured by radiation or sparks as well as mechanical and thermal hazards.



When welding, wear appropriate personal protective equipment such as:

- ▶ face protection
- ▶ protective clothing
- ▶ safety gloves



WARNING

Risk of eye injury!
Chips flying when drilling may cause serious injuries to eyes and hands.



- ▶ Wear safety glasses when drilling.

5. Declaration of Installation

Declaration of Installation

for the installation of an incomplete machine
in accordance with the Machinery Directive 2006/42/EC, Annex II, Section 1 B

SOMMER Antriebs- und Funktechnik GmbH

Hans-Böckler-Straße 21-27
73230 Kirchheim/Teck
Germany

hereby declares that the swing gate operators
twist UG, twist UG+

have been developed, designed and manufactured in conformity with the:
Machinery Directive 2006/42/EC
Low Voltage Directive 2014/35/EU
Electromagnetic Compatibility Directive 2014/30/EU
RoHS Directive 2011/65/EU.

The following standards were applied:

EN ISO 13849-1, PL "C" Cat. 2	Safety of machines - safety-related parts of controls - Part 1: General design guidelines
EN 60335-1/2, where applicable	Safety of electrical appliances / operators for gates
EN 61000-6-3	Electromagnetic compatibility (EMC) - interference
EN 61000-6-2	Electromagnetic compatibility (EMC) - interference resistance
EN 60335-2-103	General safety requirements for household and similar electrical appliances - Part 2: Special requirements for operators for gates, doors and windows

The following requirements of Annex 1 of the Machinery Directive 2006/42/EC are met:

1.1.2, 1.1.3, 1.1.5, 1.2.1, 1.2.2, 1.2.3, 1.2.4, 1.2.5, 1.2.6, 1.3.1, 1.3.2, 1.3.4, 1.3.7, 1.5.1, 1.5.4, 1.5.6, 1.5.14, 1.6.1, 1.6.2, 1.6.3, 1.7.1, 1.7.3, 1.7.4

The special technical documentation was prepared in accordance with Annex VII Part B and will be submitted to regulators electronically on request.

The incomplete machine is intended for installation in a gate system only to form a complete machine as defined by the Machinery Directive 2006/42/EC. The gate system may only be put into operation after it has been established that the complete system complies with the regulations of the above EC Directives.

The undersigned is responsible for compilation of the technical documents.



i.V. 

Kirchheim, 20-04-2016

Jochen Lude Responsible for documents

6. Installation

6.1 Important information on installation

Please observe and comply with all instructions to ensure safe installation.

Persons under the influence of drugs, alcohol, or medications that can influence their ability to react may not work on the operator.

The installation of the operator may only be performed by a qualified specialist.

This Installation and Operating Manual must be read, understood and complied with by the qualified specialist who installs the operator.



DANGER

Danger if not observed!
If safety instructions are not observed, serious injury or death may result.

- ▶ All safety instructions must be complied with.



WARNING

Danger due to projecting parts!
Parts must not project into roads or public footpaths. This also applies while the gate is moving. Persons or animals may be seriously injured.

- ▶ Keep public roads and footpaths clear of projecting parts.



WARNING

Danger due to unstable falling parts!
Unstable posts or gate leaves or an improperly installed operator can tip over. Persons or animals may be struck by these parts. Severe injuries or death may result.

- ▶ Posts, gate leaves and installed operators must be installed to be stable. Suitable mounting material must be used to install the operator.



WARNING

Danger of crushing and shearing!
If safety-related operator settings are made or changed, the gate can react unexpectedly. This may cause crushing or shearing injuries to persons.

- ▶ Only use the operator when you have a direct view of the gate.
- ▶ All danger zones must be visible during the entire gate operation.
- ▶ Always keep the moving gate in sight.
- ▶ Keep persons and animals clear of the range of movement of the gate.
- ▶ Never put your hand near the gate when it is moving or near moving parts.
- ▶ Do not drive through the gate until it has opened completely.
- ▶ Never stand in the opened gate.



WARNING

Danger of tripping and falling!
Unsafely positioned parts such as packaging, operator parts or tools may cause trips or falls.

- ▶ Keep the installation area free of unnecessary items.
- ▶ Place all parts where no-one is likely to trip or fall over them.
- ▶ The general workplace guidelines must be observed.



WARNING

Risk of injury to body!
During welding, the body and in particular eyes and hands may be seriously injured by radiation or sparks as well as mechanical and thermal hazards.

When welding, wear appropriate personal protective equipment such as:

- ▶ face protection
- ▶ protective clothing
- ▶ safety gloves



6. Installation



WARNING

Risk of eye injury!
Chips flying when drilling may cause serious injuries to eyes and hands.
▶ Wear safety glasses when drilling.



WARNING

Risk of injury to feet!
Falling parts can cause serious foot injuries.
▶ Safety shoes must be worn when performing work on the gate.



CAUTION

Risk of injury to hands!
Metal parts may cause abrasions and cuts when picked up or touched.
▶ Wear safety gloves when deburring or performing similar work.



NOTE

If the gates or the gate posts are unstable, parts could break and fall off. Objects may be damaged.
Gates and gate posts must be stable.



NOTE

To prevent damage to the gate or operator, use only suitable and, where applicable, mounting material approved for public areas. The mounting material must be suitable for the material of the gates and gate posts.



NOTE

Damage to the gate system can occur if the gate leaves are relatively large or the leaf filling level is high and there is high wind pressure. We recommend using electric locks for secure locking.



INFORMATION

Ask your specialist dealer if you require additional installation accessories for different installation or attachment situations.

6.2 Preparation for installation

Check the existing gate mechanism and installation posts

Before beginning installation, ensure that the operator is suitable for the existing gate system.

The existing gate system must fulfil the following criteria:

- Gate length of a leaf 0.80 m to 2.50 m.
- Maximum gate height 2.00 m.
- Maximum weight of an individual gate leaf 250 kg.
- Weight should be evenly distributed.
- It must be possible to move the gate leaf slightly by hand in the entire swivel range.
- The gate leaf must stand still in every position and must not move independently into a default state.
- Not suitable for inclined gates.
- Stable installation posts.
- Closed areas on the gate leaf must not be larger than the maximum allowed cover, see chapter "3.7 Technical data", table Infill.

Check all existing accessories for proper function and exchange them if necessary. Only original accessories from **SOMMER** may be connected.

Removing unsuitable components

Before installation, remove:

- all manual locking systems, e.g. locks or bolts.



NOTE

If attached parts, e.g. bolts or locks, are installed on a gate, they may block the operator. This may cause faults or damage to the operator.
Before installing the operator, remove all unsuitable attached parts or reliably disable them.

6. Installation

Checking mechanisms

Check the upper hinge on the gate for correct functioning. Adjust it if necessary.

Ensure secure fastening to the gate leaf, as unexpected forces can be generated when opening and closing the gate.

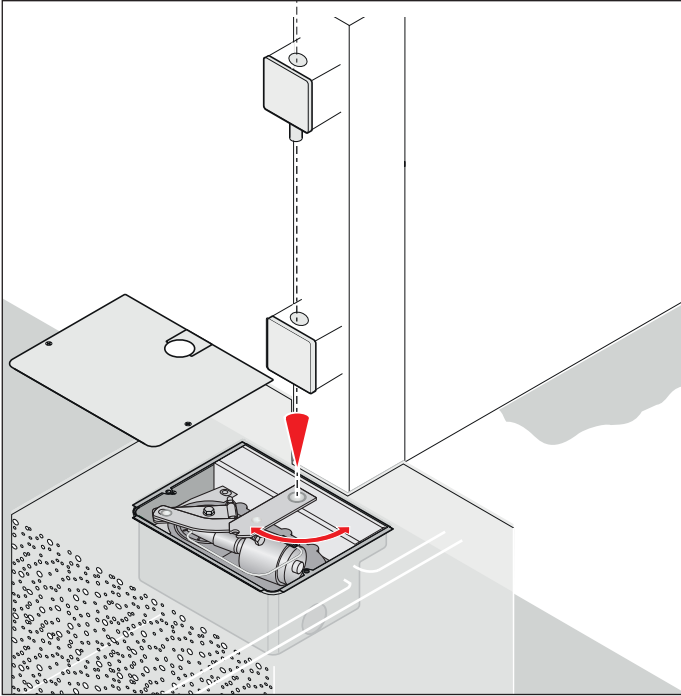


Fig. Upper door hinge aligned perpendicularly



NOTE

The upper door hinge must always be perpendicular to the lower rotation point. If this is not the case, tension can be generated in the operator. This may damage the operator.



NOTE

The mechanism of the gate must be checked to prevent damage to the operator unit and the gate leaves.



NOTE

If the gates or the gate posts are unstable, parts could break and fall off. Objects may be damaged. Gates and gate posts must be stable.

Requirements for installation

For information on the permissible weights of the gate leaves, see chapter "3.7 Technical data". In the case of 1- and 2-leaf gates, an end stop must be installed on the gate side at the gate CLOSE and gate OPEN end positions. In addition, the integrated end stops in the operator can be used for both end stops, see chapter "6.6 Gate OPEN mechanical end position".

We recommend installing the control unit on the property.



NOTE

The operator switches off via end stops. End stops are required for gate OPEN and gate CLOSE. The existing stops on the gate system must be used as end stops. In addition to the existing end stops on the gate, the mechanical end stops of the operator can be used for gate OPEN. This is an additional safeguard for the gate system.



NOTE

We recommend installing the control unit on the property to protect the control unit against possible damage by third parties.

Use of electric locks

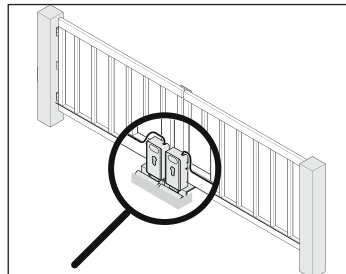


Fig. Installation example for electric locks

A separate electric lock is recommended for every gate leaf to securely lock the gate. A separate electric lock is particularly recommended from a gate length of 2 m. The following requirements must be complied with: DIN EN 1991-1-4 Wind pressure, with values 32.3 m/s, wind zone 2, and 11 on the Beaufort scale.



NOTE

Strong wind can push the gate open. This may cause damage to the operator or the gate system. The use of an electric lock in addition is recommended for relatively large gate leaves or gate leaves with high filling levels.

6. Installation

Preparing the foundation

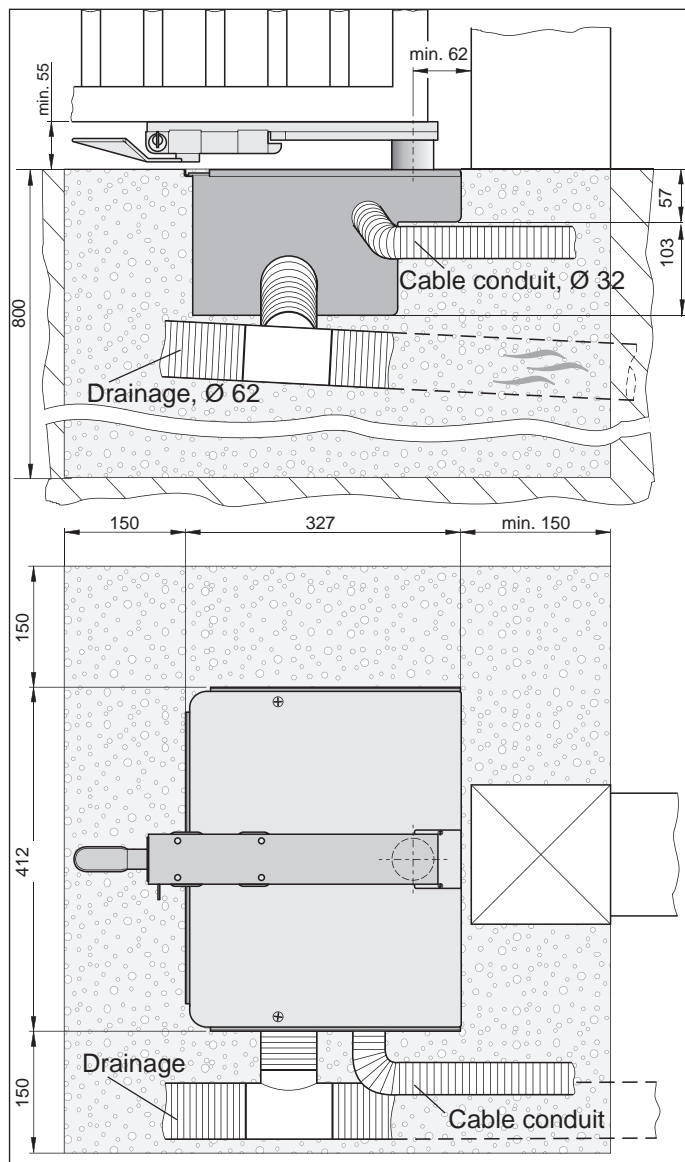


Fig. Installation example in ground



NOTE

All data on the foundations are merely recommendations. The specialist responsible for the foundation must define the precise on-site requirements and conditions.

The foundation depth must always be frost-free. In Germany, the foundation depth must be about 800 mm. All data on the foundations are merely recommendations. Local requirements and circumstances must be observed.

The foundation must be horizontal and hardened during installation so that the operator can be properly mounted.

A drainage system must be installed for the foundation box so that no water collects in it. Only approved empty ducts may be laid in the ground for the respective area of application of the cable routing and the drainpipe.

6.3 Installing the foundation box

Unless otherwise specified, the descriptions apply to a 1-leaf and a 2-leaf gate apply.

1. Open the packages. Check the entire contents against the scope of delivery, see chapter "3.5 Scope of delivery".



INFORMATION

The operators are delivered from the factory for every gate side.

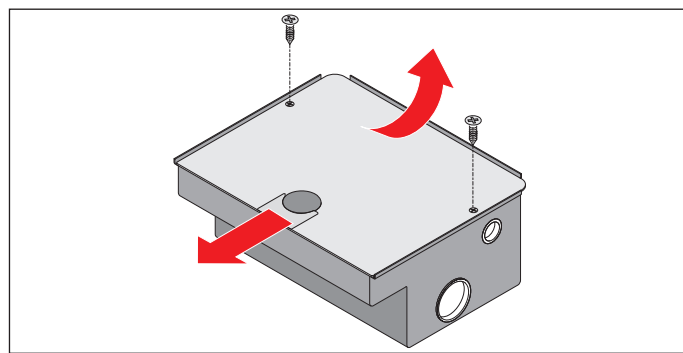


Fig. 2

2. Remove the plastic clip. Screw on the foundation box and remove the housing cover.

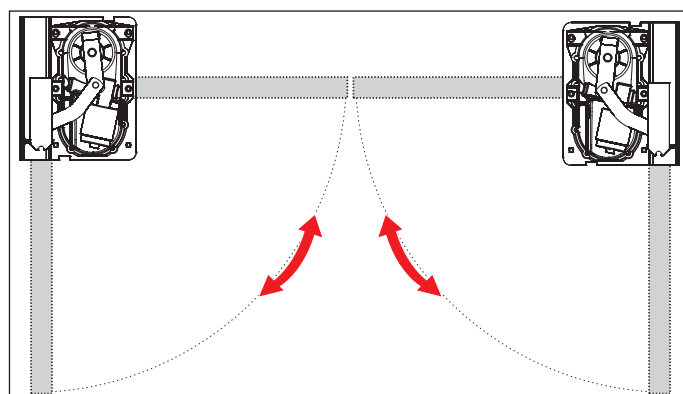


Fig. 3

3. Place the foundation box with the operator unit into the prepared foundation according to the opening direction of the gate leaf as shown in Fig. 3. See also chapter "3.4 Explanation of terms and tool symbols used".

6. Installation

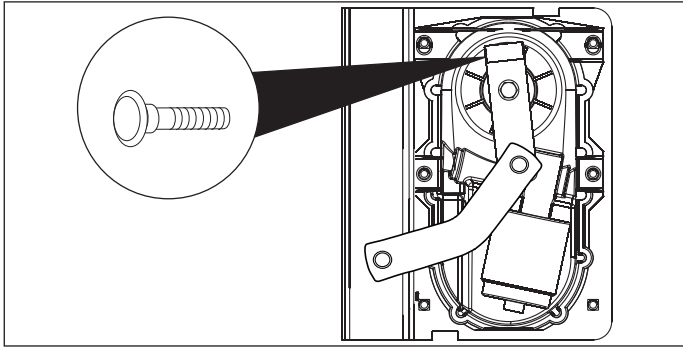


Fig. 4



NOTE

The operator switches off via end stops. End stops are required for gate OPEN and gate CLOSE. The existing stops on the gate system must be used as end stops. In addition to the existing end stops on the gate, the mechanical end stops of the operator can be used for gate OPEN. This is an additional safeguard for the gate system.

4. Insert screw M 10 x 80 for the door CLOSE end stop into the operator part and tighten it only slightly.

6.4 Installing gate leaf fitting and gate leaf



WARNING

Risk of injury to body!
During welding, the body and in particular eyes and hands may be seriously injured by radiation or sparks as well as mechanical and thermal hazards.



When welding, wear appropriate personal protective equipment such as:

- ▶ face protection
- ▶ protective clothing
- ▶ safety gloves



WARNING

Risk of eye injury!
Chips flying when drilling may cause serious injuries to eyes and hands.

- ▶ Wear safety glasses when drilling.



WARNING

Risk of injury to feet!
Falling parts can cause serious foot injuries.

- ▶ Wear safety shoes.



NOTE

Residues from welding work can result in rapid corrosion of the fitting and the operator. Cover the operator and the gate during welding. This prevents them from being damaged by sparks or welding beads.



NOTE

To prevent damage to the gate or operator, use only suitable and, where applicable, mounting material approved for public areas. The mounting material must be suitable for the material of the gates and gate posts.

6. Installation



NOTE

Check whether the gate leaf opens and closes with ease. If this is not the case, the gate leaf must be adjusted.

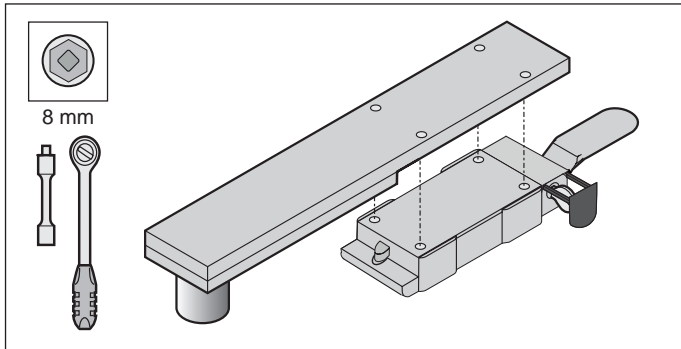


Fig. 1

1. Install the closing cylinder in the emergency release. Remove the emergency release nuts and fasten to the gate leaf with the screws. Place the protective covers on both end pieces of the closing cylinder.

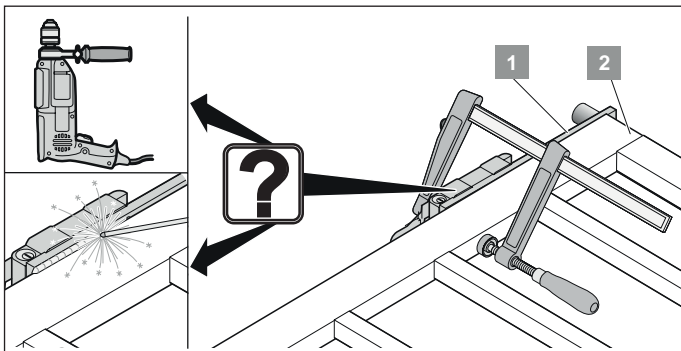


Fig. 2

2. Clamp the gate fitting (1) to the gate leaf (2). Check the position of the fitting by opening and closing the gate manually. It may be necessary to adjust the position of the gate fitting. Tightly screw or weld the gate fitting (1) to the gate leaf (2).

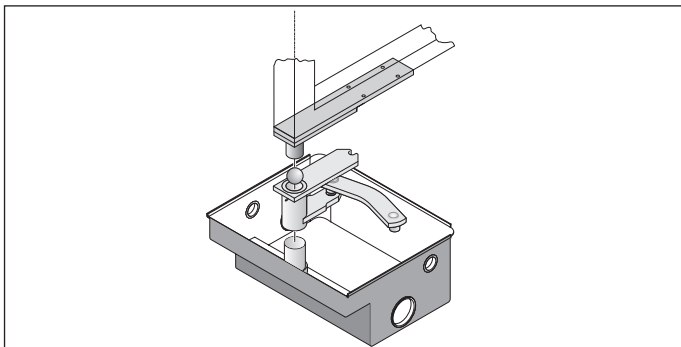


Fig. 3



DANGER

Risk of injury from large or heavy gate leaves!

Unexpected weight shifts can occur when inserting a gate leaf. Severe injuries or death may result.

- ▶ Depending on the size and weight of the gate, it may be necessary to obtain assistance from a **second qualified specialist**.
- ▶ In addition to obtaining the help of another specialist, other aids, for example a crane, must be used in the case of very large and heavy gates.



NOTE

Unexpected weight shifts can cause property damage when inserting a gate leaf. Keep the installation area clear of unnecessary items.

3. Insert the pivoted lever into the provided position in the foundation box. Insert the ball into the pivoted lever. Place the gate fitting with the gate leaf on the pivoted lever.
⇒ Gate is in the centre position.
4. Move the gate into the gate CLOSE end position and counter the screw in the operator part with the nut.

6. Installation

6.5 Installing accessories

Only original accessories from **SOMMER** may be connected. The accessories, e.g. warning light or photocell, come with separate installation instructions.

Position of photocells

We recommend installing the supplied photocell outside. As an option, a second photocell can be installed inside for additional functions, see application example in chapter "3.1 The operator and its mode of operation." Select the position of the photocell so that the movement of the gate leaf does not interrupt the light beam.

6.6 Gate OPEN mechanical end position

In the case of 1- and 2-leaf gates, an end stop must be installed at the gate CLOSE and gate OPEN end positions. In addition, the internal mechanical end stop of the operator can be used for gate OPEN and gate CLOSE.

NOTE

The operator switches off via end stops. End stops are required for gate OPEN and gate CLOSE. The existing stops on the gate system must be used as end stops. In addition to the existing end stops on the gate, the mechanical end stops of the operator can be used for gate OPEN. This is an additional safeguard for the gate system.

1. Move gate leaf manually into the desired end position for gate OPEN.

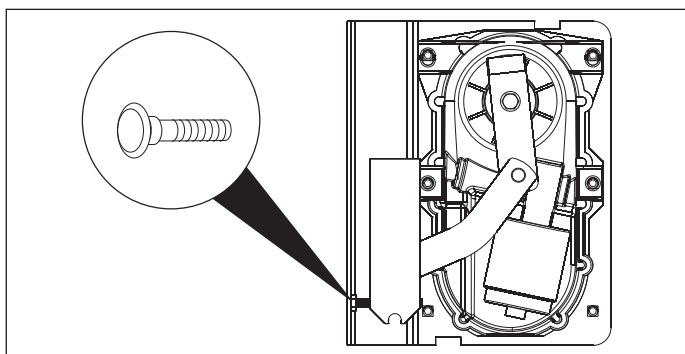


Fig. 2

2. Set the M 10 X 80 screw for the gate OPEN end stop and counter with the M 10 nut.
3. Move the gate leaf manually into centre position.

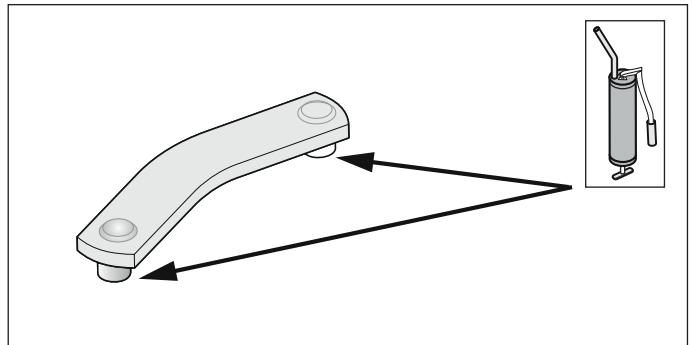


Fig. 4

4. Remove the hinged lever from the operator part of the motor. Lubricate both connection points with the grease gun.
5. Then connect the hinged lever to the operator part and pivoted lever.
⇒ Gate leaf connected to the motor.

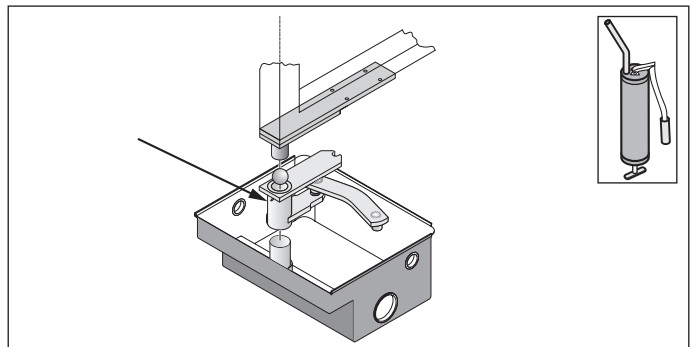


Fig. 6

6. Using the grease gun, lubricate the pivoted lever via the grease nipple.
⇒ The gate can now only be moved by the operator.
7. Check to make sure no part of the gate projects into public footpaths or roads.



WARNING

Danger due to projecting parts! Parts must not project into roads or public footpaths. This also applies while the gate is moving. Persons or animals may be seriously injured.

- Keep public roads and footpaths clear of projecting parts.

6. Installation

6.7 Installing the control unit

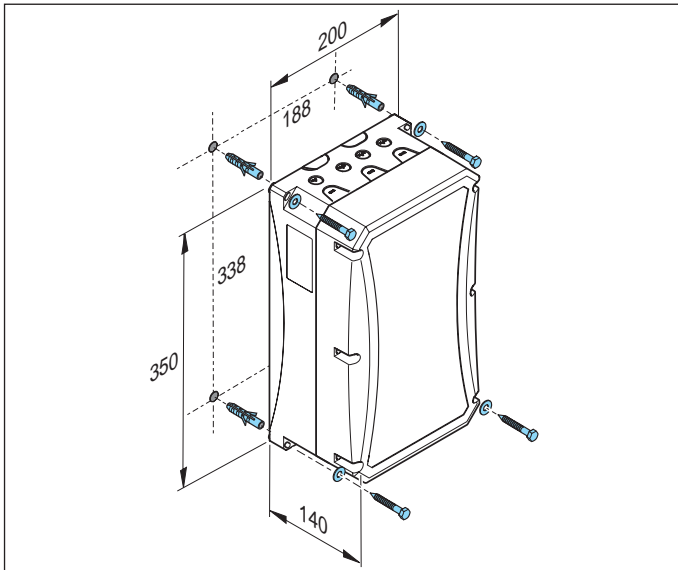


Fig. Installation example for mounting of the control unit

The scope of delivery does not include mounting material.



NOTE

To prevent damage to the gate or operator, use only suitable and, where applicable, mounting material approved for public areas. Select suitable mounting material for the respective substructure.



NOTE

Always install the control unit housing upright with the cable inlets facing downwards. Use only the fixing points provided. This ensures that no water can get in and that the cover is watertight when closed.



NOTE

Powerful sprays of water lead to damage to the control unit. Protect the control unit housing against powerful jets of water, e.g. from a garden hose.



NOTE

To prevent damage to the operator, do not connect the control unit to the power supply until installation is complete .

1. Mark four holes at the desired positions and drill.
Attach the control unit with suitable material.
⇒ The control unit is attached.

7. Opening and closing the foundation box and control unit housing

7.1 Opening and closing the foundation box

Opening the foundation box

1. Move gate to the gate OPEN end position.
⇒ Gate OPEN.

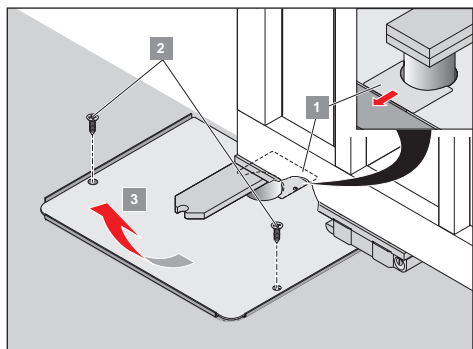


Fig. 2.

2. Remove the plastic clip (1). Unscrew the housing cover of the foundation box (2) and remove (3).
⇒ The foundation box is open.

Closing the foundation box

Proceed in reverse order to close the foundation box.

7.2 Opening and closing the control unit housing

Opening the control unit housing



DANGER

Danger due to electric current! Contact with live parts may result in electric current flowing through the body. Electric shock, burns or death will result.

- ▶ All work on electrical components must be carried out by a **trained electrician**.
- ▶ Before initial operation, ensure that the voltage of the power source matches the voltage listed on the type plate.
- ▶ Before performing work on the operator, it must be disconnected from the power supply.
- ▶ If an accumulator is connected, disconnect it from the control unit.
- ▶ Check that the operator is not live.
- ▶ Secure the operator against being switched back on.



WARNING

Danger due to hot parts!

After frequent operation, the motor and control unit may become hot. If the cover is removed and hot parts are touched, they may cause burns.

- ▶ Allow the operator to cool down before removing the cover.

1. Disconnect the control unit from the mains voltage.
2. If an accumulator was used, disconnect the accumulator, too.
3. Check that the operator is disconnected from the power supply and secure it against being switched on again.

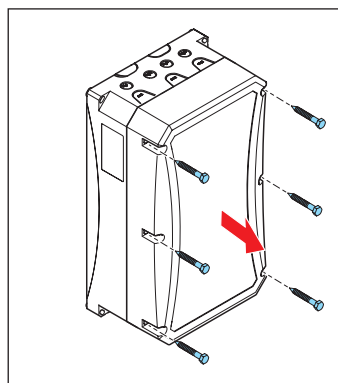


Fig. 4.

4. Now unscrew and remove all 6 screws on the control unit housing. Fold the cover to the side.

Closing the control unit housing

After working on the control unit, replace the housing in reverse order. If necessary, reinsert the accumulator and re-establish connection to mains voltage.

8. Connections and functions of the control unit

8.1 Test with provisional connection

Please observe and comply with all instructions to ensure safe installation.

Persons under the influence of drugs, alcohol, or medications that can influence their ability to react may not work on the operator.

Work on the electrical system and live parts may be performed only by a **trained electrician**.



DANGER

Danger due to electric current!
Contact with live parts may result in electric current flowing through the body. Electric shock, burns or death will result.

- ▶ All work on electrical components must be carried out by a **trained electrician**.
- ▶ Before initial operation, ensure that the voltage of the power source matches the voltage listed on the type plate.
- ▶ If an accumulator is connected, disconnect it from the control unit.
- ▶ Check that the operator is not live.
- ▶ Secure the operator against being switched back on.



WARNING

Danger of crushing and shearing!
If the gate moves, crushing and shearing injuries may be caused by the mechanism and safety edges of the gate.

- ▶ Only use the operator when you have a direct view of the gate.
- ▶ All danger zones must be visible during the entire gate operation.
- ▶ Always keep the moving gate in sight.
- ▶ Keep persons and animals clear of the range of movement of the gate.
- ▶ Never put your hand near the gate when it is moving or near moving parts.
- ▶ Do not drive through the gate until it has opened completely.
- ▶ Never stand in the opened gate.



WARNING

Danger due to hot parts!
After frequent operation, the motor and control unit may become hot. If the cover is removed and hot parts are touched, they may cause burns.

- ▶ Allow the operator to cool down before removing the cover.



NOTE

To prevent damage to the operator, do not connect the control unit to the power supply until installation is complete .



NOTE

The gate operator is delivered with a connected power cord for adjustment work and provisional commissioning. After commissioning, the power cord must be removed and replaced with a fixed mains connection. Otherwise, the operator will be damaged.



NOTE

Do not use metal objects to set the DIP switches, because this may damage the DIP switches or the circuit board. Use a suitable tool to set the DIP switches, for example a flat, thin plastic object.

The mains power cannot be connected until all other connections have been established. The connection to the accumulator is established last.

The door operator is equipped at the factory with a power cord for tests and initial operation. This power cord with plug is not suitable for continuous use. After initial operation, the power cord must be replaced, see chapter **"8.14 Connecting to the mains voltage"**.

The power outlet for the power cord must be protected by a fuse. Local and national regulations for installation (e.g. VDE) must be observed.

8. Connections and functions of the control unit

8.2 Circuit board of the control unit

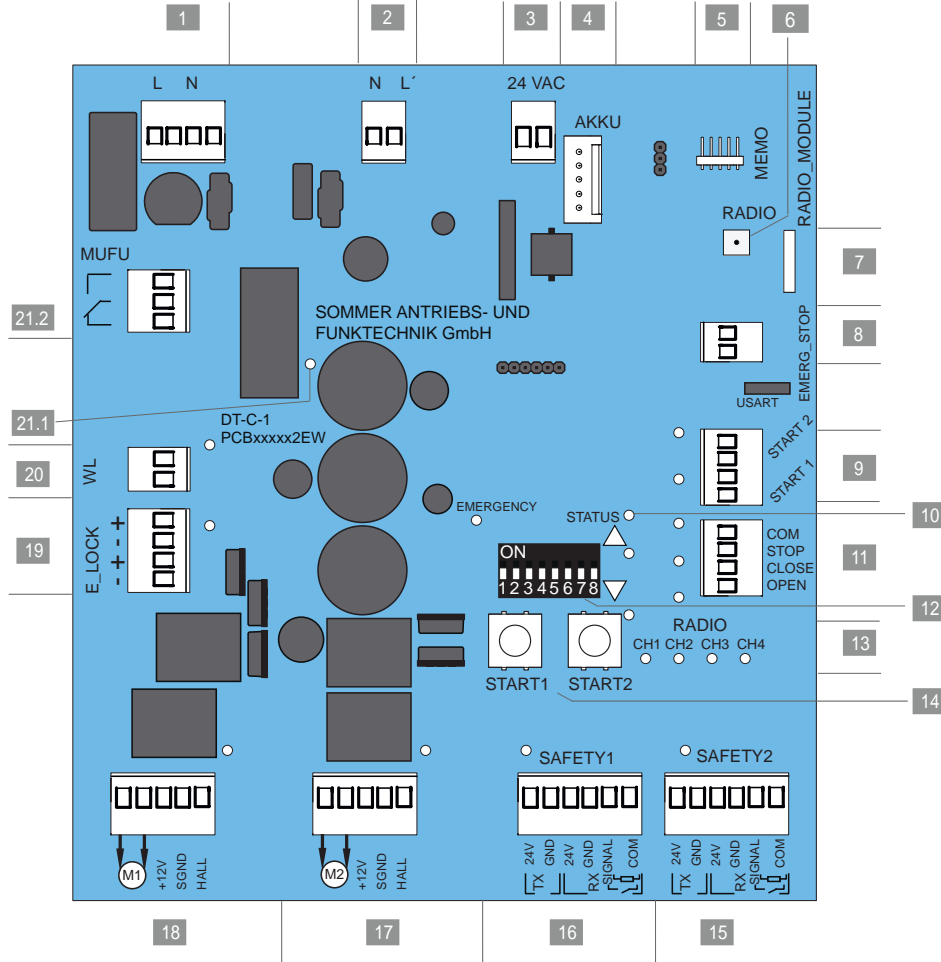




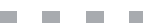
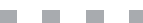





Fig. Circuit board of the control unit Connection options and buttons

1	Terminal block, 4-pin, mains voltage/supply voltage, 220 - 240 V AC	12	DIP switch with LED
2	Terminal block, 2-pin, transformer primary side, 220 - 240 V AC	13	LEDs for CH 1 - CH 4, red, display for radio channels
3	Terminal block, 2-pin, transformer secondary side, 24 V AC	14	Buttons: START 1, START 2
4	AKKU slot, connection for accumulator	15	SAFETY 2 with LED, 6-pin: interior Connection for safety contact strip 8k2, 2-wire photocell or 4-wire photocell
5	MEMO slot, connection for MEMO memory extension, optional accessory	16	SAFETY 1 with LED, 6-pin: exterior Connection for safety contact strip 8k2, 2-wire photocell or 4-wire photocell
6	Radio button	17	Active leaf, 5-pin, Motor 2
7	Radio receiver slot	18	Inactive leaf, 5-pin, Motor 1
8	Terminal block, 2-pin, EMERGENCY STOP	19	Electric lock 1 and 2 with LED, 4-pin per electric lock 15 W
9	Terminal block with LEDs, 4-pin, START 1, START 2	20	Terminal block with LED, 2-pin warning light, 24 V DC/ 24 W
10	Status LED	21.1	LED for multi-function relay
11	Terminal block with LEDs, 4-pin gate STOP button, gate CLOSE button, gate OPEN button	21.2	Multi-function relay, 3-pin floating relay contact, max. 250 V AC, 5 A or 24 V DC, 5 A

8. Connections and functions of the control unit

8.3 Overview of the LEDs

The flash sequences provide information on malfunctions for the installer, the end customer and telephone support.

LED	Flash sequence	Cause
STATUS	<input type="checkbox"/> Off	• Operating voltage absent or power-saving mode activated
	<input checked="" type="checkbox"/> On	• Hardware self-test
		• Operator is in force programming run/power-saving mode
		• Operator is in position run
SAFETY 1	<input type="checkbox"/> Off	• No safety device connected in exterior
	<input checked="" type="checkbox"/> On	• Safety device detected in exterior
		• Safety device in exterior interrupted/fault
SAFETY 2	<input type="checkbox"/> Off	• No safety device connected in interior
	<input checked="" type="checkbox"/> On	• Safety device detected in interior
		• Safety device interrupted in interior/fault
STOP	<input type="checkbox"/> Off	• EMERGENCY STOP not actuated
	<input checked="" type="checkbox"/> On	• EMERGENCY STOP actuated
Close	<input type="checkbox"/> Off	• Operator is deactivated
	<input checked="" type="checkbox"/> On	• Operator running in gate CLOSE direction
Open	<input type="checkbox"/> Off	• Operator is deactivated
	<input checked="" type="checkbox"/> On	• Operator running in gate OPEN direction
E-lock	<input type="checkbox"/> Off	• Electric lock is locked
	<input checked="" type="checkbox"/> On	• Electric lock is unlocked
WL, warning light	<input type="checkbox"/> Off	• Operating voltage absent, power-saving mode activated
	<input checked="" type="checkbox"/> On	• Warning light is triggered/activated • Gate movement is displayed, no other status indication possible
		• Normal operation, flashes while gate is moving • Programming mode activated • Pre-warning time activated • During reversing movement or soft reversal
		• Waiting for a confirmation during the programming run for gate OPEN and gate CLOSE position
		• Fault display. Display via warning light for additional 10 seconds after a gate movement • Safety device not OK before movement • Safety device interrupted during movement • Interrupted safety device, see chapter "12.9 Jog mode in the event of faults"
		• See chapter "14. Troubleshooting"
		• Service required (e. g. pre-set limit value reached)
MUFU	<input type="checkbox"/> Off	• Multi-function relay is activated
Multi- function relay	<input checked="" type="checkbox"/> On	• Multi-function relay is deactivated

A connection diagram can be found in chapter "17. Connection diagram for twist UG."

8. Connections and functions of the control unit

8.4 Connecting the motor

Connecting the cable



NOTE

The first gate movement must always be gate OPEN. Otherwise, the cables for the M2/M1 connection must be reversed.

1. Break out a pre-punched section in the lower part of the control unit.
2. Insert one of the plug-in connections into the open spot and screw on with a hexagonal nut.
3. Insert the cable into the control unit housing through the plug-in connection and strip the cable if necessary. Tighten the screw of the plug-in connection so the cable is sealed and can be clamped.
4. For flexible lines, attach the core end sleeves to the strands. Connect the strands to the corresponding terminal blocks.

Connecting a 1-leaf gate

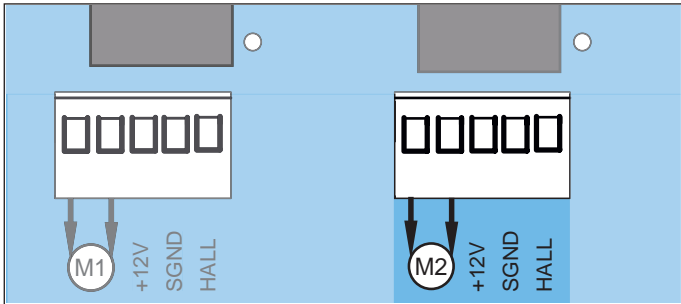


Fig. Terminal block for Motor 2

Terminal block	Cable colour
M2	black/blue
	blue/black
+12 V	grey
SGND	green/yellow
HALL	brown

1. First connect Motor 1 for the inactive leaf to the control unit (M2).
2. Set all DIP switches to "OFF." This is also the factory setting and the setting if no other accessories are to be connected.
3. Connect the control unit to the mains voltage.

Connecting a 2-leaf gate

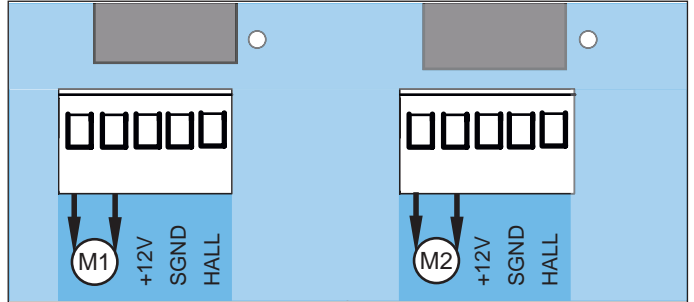


Fig. Terminal block for Motor 1 and Motor 2

Terminal block	Cable colour
M2	blue/black
	black/blue
+12 V	grey
SGND	green/yellow
HALL	brown

1. First connect Motor 1 for the inactive leaf to the control unit (M2).

Terminal block	Cable colour
M1	blue/black
	black/blue
+12 V	grey
SGND	green/yellow
HALL	brown

2. Then connect Motor 2 for the active leaf (M1).
3. Set all DIP switches to "OFF." This is also the factory setting and the setting if no other accessories are to be connected.
4. Connect the control unit to the mains voltage.

8. Connections and functions of the control unit

8.5 Connecting the warning light

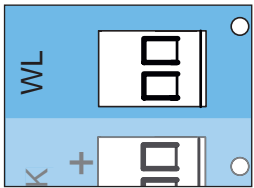


Fig. Warning light terminal block and LED for warning light

A warning light with 24 V DC/ 24 W can be connected. The polarity is optional. The warning light flashes during normal operation (factory setting).



INFORMATION

A permanent light, for example, can be configured via SOMlink and a WiFi-enabled device.



8.6 Connecting the safety inputs

To ensure correct functioning, photocells and safety devices must be correctly mounted and connected before initial operation.

Either a 2-wire or a 4-wire photocell can be connected per safety input. Connection of an 8k2 safety contact strip is another option. It is not possible to connect different photocells to one safety input at the same time.

We recommend installing the photocell at a height of 300 mm. To protect property, it may be necessary to install an additional photocell at a height of approx. 600 mm. Only photocells with 4-wire technology can be connected in series. For the positions of the photocells on the gate system, see the application example in chapter "3.1 The operator and its mode of operation".



WARNING

Danger of crushing and shearing!
If the gate moves, crushing and shearing injuries may be caused by the mechanism and safety edges of the gate.

- ▶ In accordance with EN 12453, a photocell must be installed at a height of 300 mm to protect persons.
- ▶ Always keep the moving gate in sight.
- ▶ Keep persons and animals clear of the range of movement of the gate.
- ▶ Never put your hand near the gate when it is moving or near moving parts.



NOTE

We recommend installing a second photocell inside and outside at an installation height of e.g. 600 mm. This makes it possible to secure larger vehicles, for example.



INFORMATION

Only light-switching photocells with a floating relay contact and a voltage range of 12 - 20 V can be connected.

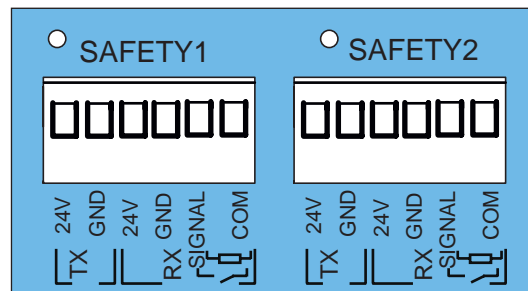


Fig. Overview of terminal blocks SAFETY 1 and SAFETY 2

SAFETY 1 stands for **outside** and SAFETY 2 for **inside**.

4-wire photocell

Exterior: SAFETY 1

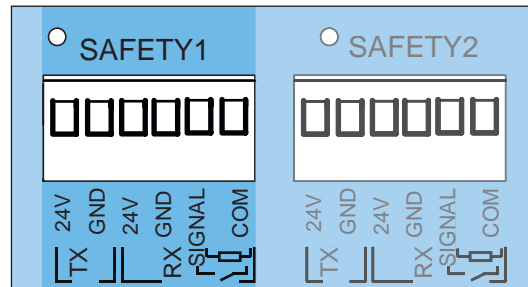


Fig. Connection to SAFETY 1

Connect the 4-wire photocell for outside to the SAFETY 1 terminal block.

Designation	Terminal block	Function
TX (transceiver)	max. 20 V	Power supply
	GND	
RX (receiver)	max. 20 V	Floating relay contact
	GND	
	SIGNAL	
	COM	

The supply for RX (Receiver) should be on the side facing away from the sun.

8. Connections and functions of the control unit

Interior: SAFETY 2

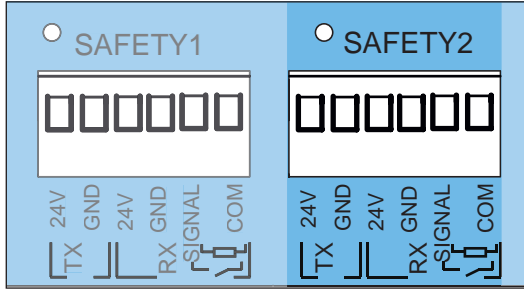


Fig. Connection to SAFETY 2

Connect the 4-wire photocell for **inside** to the SAFETY 2 terminal block.

Designation	Terminal block	Function
TX (transceiver)	24V	Power supply
	GND	
RX (receiver)	24V	Floating relay contact
	GND	
	SIGNAL	
	COM	

2-wire photocell

Exterior: SAFETY 1

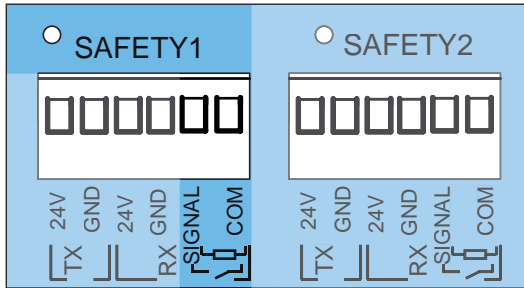


Fig. Connection to SAFETY 1

Connect the 2-wire photocell to the SAFETY 1 terminal block. The polarity is optional.

Terminal block	Function
SIGNAL	2-wire photocell
COM	

Interior: SAFETY 2

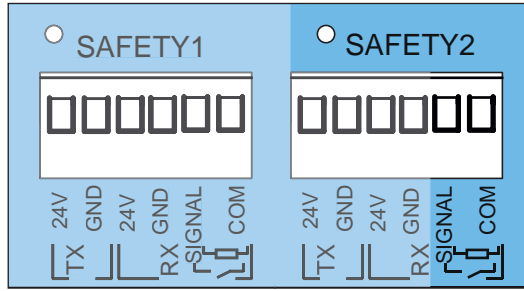


Fig. Connection to SAFETY 2

Terminal block	Function
SIGNAL	2-wire photocell
COM	



INFORMATION

If the safety device is retrofitted, the control unit must be reset. Then the intended connections can be made and the operator can be reprogrammed.

8. Connections and functions of the control unit

8.7 Connecting an 8k2 safety contact strip

To ensure correct functioning, photocells and safety devices must be correctly mounted and connected before initial operation. In place of a second photocell, an 8k2 safety contact strip can be connected as a safety device. Safety devices connected later are only detected after the control unit has been reset and a new programming run performed. See chapter "12.7 Function of the emergency release", section "Reset of the safety device" and chapter "9.1 Safety instructions for initial operation".

Exterior: SAFETY 1

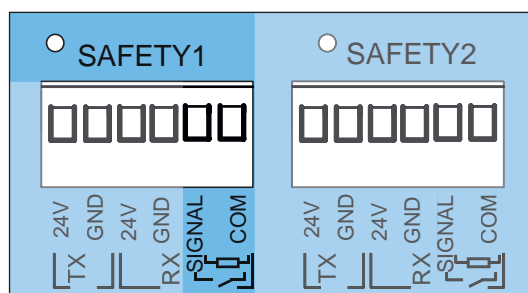


Fig. Connection to SAFETY 1

Terminal block	Function
SIGNAL	8k2 safety contact strip
COM	

Interior: SAFETY 2

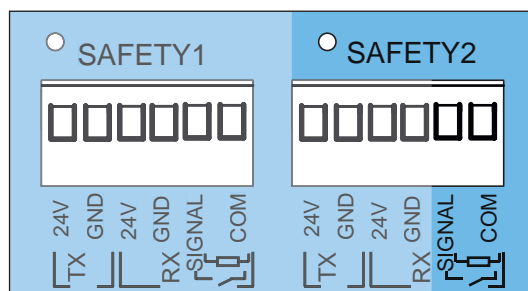


Fig. Connection to SAFETY 2

Terminal block	Function
SIGNAL	8k2 safety contact strip
COM	

8.8 Connecting an external EMERGENCY STOP

The control unit is prepared for the connection of an external EMERGENCY STOP signal.



INFORMATION

When an EMERGENCY STOP is triggered, the motor relay control is interrupted and the operator is forced off. There is no all-pole disconnection of the power supply. After the EMERGENCY STOP has been triggered, there is no gate movement. Not until EMERGENCY STOP has been released does the gate move in the gate OPEN direction. This gate movement is performed in a soft run.



INFORMATION

Only a floating normally closed contact may be connected.

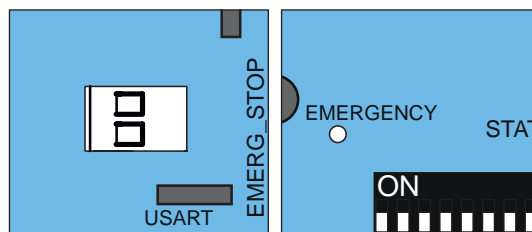


Fig. EMERGENCY STOP connection and LED for EMERGENCY STOP

Only a floating normally closed contact may be used.

8. Connections and functions of the control unit

8.9 Connection for the electric lock

The control unit is prepared for the connection of optional electric locks. Electric locks lock the gate leaves in a closed or open state. Only original accessories from **SOMMER** may be connected.



INFORMATION

The voltage for the electric lock is the direct and unregulated transformer voltage. The voltage can fluctuate between 22 V and max. 34 V.

Terminal block	Function
E_1LOCK	+ Motor 2
	- Motor 2
E_2LOCK	+ Motor 1
	- Motor 1

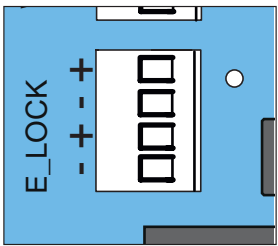


Fig. Electric lock

8.10 Connecting a button

The control unit is prepared for the connection of optional control elements.



DANGER

Danger of crushing and shearing! As soon as the operator is supplied with power and the gate moves, crushing and shearing injuries can arise in the gate movement area.

- ▶ Control devices may only be installed within view of the gate.
- ▶ In particular when operating control elements, all danger zones must be visible during the entire gate operation.
- ▶ Always keep the moving gate in sight.
- ▶ Keep persons and animals clear of the range of movement of the gate.
- ▶ Never put your hand near the gate when it is moving or near moving parts.
- ▶ Do not drive through the gate until it has opened completely.
- ▶ Never stand in the opened gate.



INFORMATION

If a button is used for opening or closing, it must be installed at a height of at least 1.6 m. Install the button in an easily accessible position.

The cable lengths for connecting a button must be no longer than 30 m.

The following control elements are available:

- button
- key switch

Terminal blocks

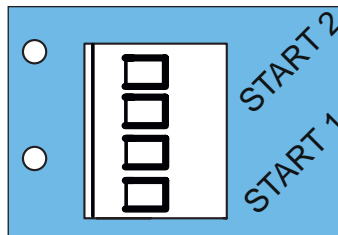


Fig. Terminal blocks START 1 and START 2

Terminal block	Circuit symbol	Function
START 2		Active leaf pulse button
START 1		Active and inactive leaf pulse button

The connections are potential-free.

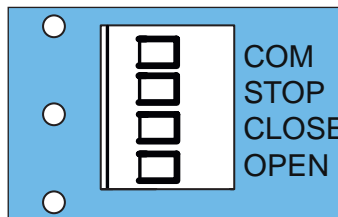


Fig. Terminal block COM, STOP, CLOSE and OPEN

Terminal block	Circuit symbol	Function
COM		COM
STOP		Stops ongoing movements
CLOSE		Defined Close
OPEN		Defined Open



NOTE

Only buttons with a floating contact can be connected. Continuous contacts can block the proper function of the gate operator.



NOTE

The jumper must be removed when a STOP button is connected.

Other pulse generators such as handheld transmitters,

8. Connections and functions of the control unit

ENTRASys, Telecody+ and key switches can be connected. In the case of ENTRASys and key switches, no connecting line to the operator needs to be installed. For more information on using the operator or accessories, contact your specialist dealer.

8.11 Connection for the multi-function relay

The control unit is fitted with a multi-function relay. The multi-function relay can be used for various functions such as additional exterior lighting or a gate status display. The multi-function relays output a pulse of 1 second every time the motor starts. This is pre-set at the factory.



NOTE

The contact of the multi-function relay is a floating contact and may only be loaded with max. 250 V AC, 5 A or max. 24 V DC, 5 A.

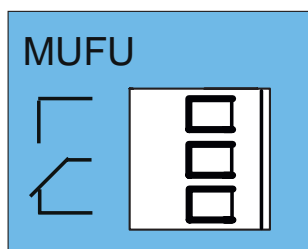


Fig. Multi-function relay terminal block

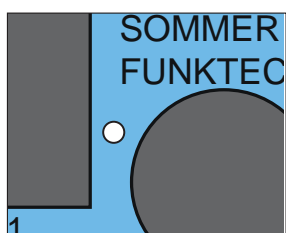


Fig. LED for multi-function relay

The overview table shows the idle state of the multi-function relay.

	Function
1	NO contact
2	COM
3	NC contact

8.12 Installing and removing the accumulator

The accumulator is part of the range of optional accessories. The accumulator can supply power during a mains power failure. A fully-charged accumulator has energy for about 5 cycles. The number is dependent on the mass and mobility of the gate leaf, the connected accessories as well as the age of the accumulator. Only a **qualified electrician** is permitted to install, test and replace the accumulator.

Follow the instructions in the separate installation and operating manual for the accumulator.

See also chapter "7.2 Opening and closing the control unit housing".



DANGER

Danger due to electric current!
In order to insert the accumulator, it is necessary to open the operator, and the electrical components are then accessible. Contact with live parts may result in electric current flowing through the body.
Electric shock, burns or death will result.

- ▶ All work on electrical components must be carried out by a **trained electrician**.
- ▶ Before performing work on the operator, it must be disconnected from the power supply.
- ▶ If an accumulator is connected, disconnect it from the control unit.
- ▶ Check that the operator is not live.
- ▶ Secure the operator against being switched back on.



WARNING

Danger of crushing and shearing!
As soon as the operator is supplied with power and the gate moves, crushing and shearing injuries can arise in the gate movement area.

- ▶ Ensure that no accidental operation occurs after the accumulator is connected.



NOTE

Objects in the movement area of the gate may be jammed and damaged. Objects must not be in the range of movement of the gate.

8. Connections and functions of the control unit



INFORMATION

Only an original accumulator from SOMMER may be used.



INFORMATION

Initial operation is not supported if the accumulator is the sole power supply. Mains voltage is required for commissioning the operator.



INFORMATION

The accumulator serves only as an emergency power supply in the event of a power failure. The accumulator is not suitable for continuous operation.

Installing and connecting the accumulator

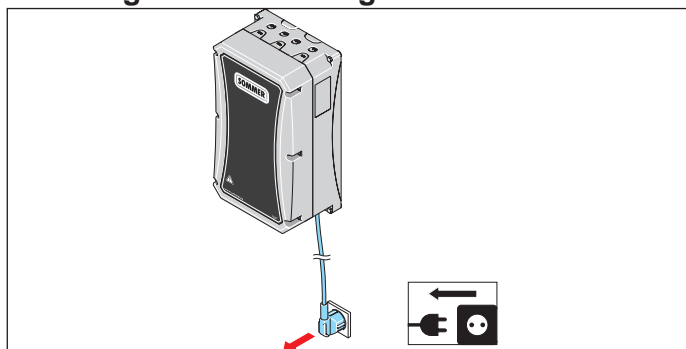


Fig. 1

1. Disconnect the operator from the mains voltage. Check that the operator is disconnected from the power supply.

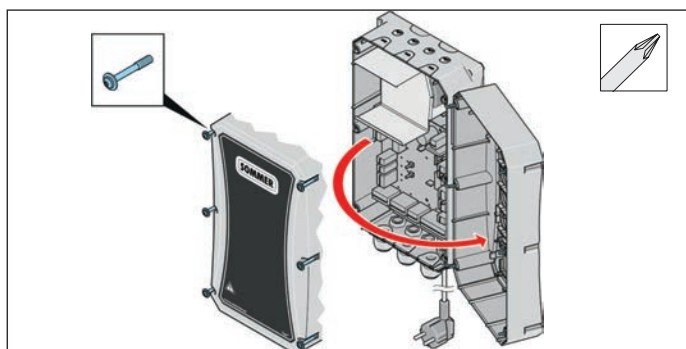


Fig. 2

2. Unscrew the screws on the control unit housing and remove.

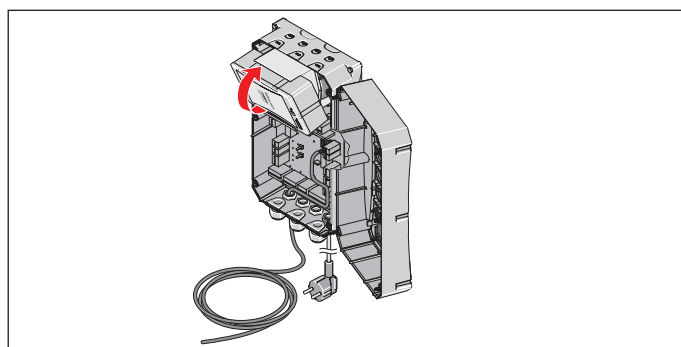


Fig. 3

3. Insert the accumulator in the position provided in the control unit. Slightly tilt the accumulator to do so.

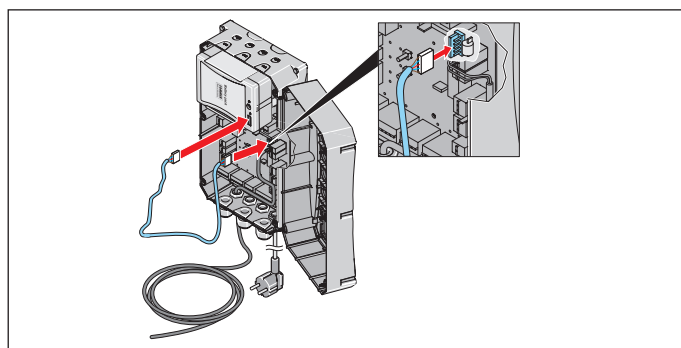


Fig. 4

4. Plug the connection cable into the accumulator and into the accumulator slot on the control unit circuit board.
5. Press the programmed transmitter button to check the operator function.
 - ⇒ The operator is powered by the accumulator.
 - ⇒ Operator opens or closes the gate at reduced speed.
6. Supply the operator with mains voltage. Check that the power supply is connected.

Unplugging and removing the accumulator

The accumulator is removed in the reverse order, see chapter "8.12 Installing and removing the accumulator," section "Installing and connecting the accumulator."

8. Connections and functions of the control unit



DANGER

Danger of hazardous substances! Improper storage, use or disposal of accumulators or batteries are dangerous for the health of humans and animals. Serious injury or death may result.

- ▶ Accumulators and batteries must be stored out of the reach of children and animals.
- ▶ Keep accumulators and batteries away from chemical, mechanical and thermal influences.
- ▶ Do not recharge old accumulators and batteries.
- ▶ Components of the operator as well as old accumulators and batteries must not be disposed of with household waste. They must be disposed of properly.



NOTE

Dispose of all components in accordance with local or national regulations to avoid environmental damage.



INFORMATION

All operator components that have been taken out of service must not be disposed of with household waste, as they contain hazardous substances. The components must be disposed of correctly at an authorised recycling centre. The local and national regulations must be observed.



INFORMATION

Old accumulators and batteries must not be disposed of with household waste as they contain hazardous substances. They must be disposed of properly at municipal collection points or in containers provided by dealers. National guidelines must be observed.



8. Connections and functions of the control unit

8.13 Setting options for the DIP switches

You can select different functions via the DIP switches. The following table summarises the various setting options.

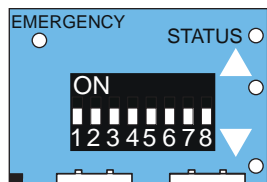


Fig. DIP switch



INFORMATION







In the factory setting, all DIP switches are set to OFF.



INFORMATION

If a safety contact strip is connected at SAFETY 1 or SAFETY 2, the settings of the DIP switches have no effect. The reaction with the safety contact strips is always EMERGENCY STOP with subsequent partial reversion.

Overview of the setting options for the DIP switches

DIP switch	Function	Effect
1	OFF 	SAFETY 1, exterior photocell, CLOSE gate movement
	ON	SOFT STOP, full reversion SOFT STOP, partial reversion
2	OFF 	SAFETY 2, interior photocell, OPEN gate movement
	ON	No reaction SOFT STOP, partial reversion
3	OFF 	SAFETY 2, interior photocell, CLOSE gate movement
	ON	SOFT STOP, no reversion SOFT STOP, partial reversion
4	OFF 	Power-saving mode
	ON	
5	OFF 	Pre-warning time
	ON	
6	OFF 	Automatic closing, only with photocell
	ON	
7 + 8	No function	



Factory setting

8. Connections and functions of the control unit

8.14 Connecting to the mains voltage

The power cable supplied for connecting to the power supply is only used to perform a final commissioning check. The cable is not suitable for continuous operation. Local and national regulations for installation (e.g. VDE) must be observed.

Persons under the influence of drugs, alcohol, or medications that can influence their ability to react may **not** work on the operator.

The mains power cannot be connected until all other connections have been established. See from chapter "8. Connections and functions of the control unit." The connection to the accumulator is established last.



DANGER

Danger due to electric current!
Contact with live parts may result in electric current flowing through the body. Electric shock, burns or death will result.

- ▶ All work on electrical components must be carried out by a **trained electrician**.
- ▶ All wires and the exposed strands must be completely insulated up to the contact point.



WARNING

Danger of crushing and shearing!
As soon as the operator is supplied with power and the gate moves, crushing and shearing injuries can arise in the gate movement area.

- ▶ The mains power and, if applicable, the accumulator, must be connected as the last step.
- ▶ All other connection work must be carried out with the mains voltage disconnected and the accumulator unplugged.
- ▶ All danger zones must be visible during the entire gate operation.
- ▶ Always keep the moving gate in sight.
- ▶ Keep persons and animals clear of the range of movement of the gate.
- ▶ Never put your hand near the gate when it is moving or near moving parts.
- ▶ Never stand in the opened gate.



NOTE

To prevent damage to the operator, do not connect the control unit to the power supply until installation is complete.



NOTE

To prevent damage to the operator, never connect the motor directly to 230 V. This will destroy the motor immediately.



NOTE

Objects in the movement area of the gate may be jammed and damaged. Objects must not be in the range of movement of the gate.



NOTE

The gate operator is delivered with a connected power cord for adjustment work and provisional commissioning. This power cord must be removed after initial operation and replaced with a fixed mains connection with a mains circuit breaker. Otherwise, the operator will be damaged.

8. Connections and functions of the control unit

The following overview must be observed when connecting to the mains voltage:

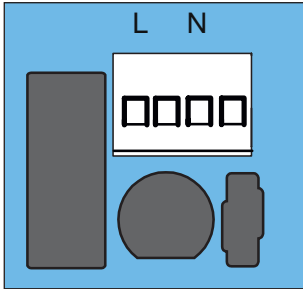


Fig. Mains connection on the circuit board

Designation	Function
L	Power cord 220 - 240 V AC
N	Neutral wire
PE	Protective earthing conductor



DANGER

Danger due to electric current!
Loosened strands can trigger a short circuit if they make contact with other conductive parts. Contact with live parts may result in electric current flowing through the body. Electric shock, burns or death will result.

- ▶ All work on electrical components must be carried out by a **trained electrician**.
- ▶ Ensure that the strands are secured against unintentional loosening after connection to the mains power and cannot trigger a short circuit.



INFORMATION

The mains power must be connected in accordance with EN 12453, all-phase mains disconnection .

8.15 Setting the automatic closing function

When automatic closing is activated, the gate is opened via a command. The gate moves to the gate OPEN end position. After expiry of the hold open time, the gate automatically moves into the gate CLOSE end position. The gate is closed.



DANGER

Risk of injury during automatic closing!

Automatically closing gates can injure people and animals in the movement area of the gate when the gate is closing. Serious injury or death may result.

- ▶ It is mandatory to install a photocell before activating the automatic closing function.
- ▶ In particular when automatic closing is activated, all danger zones must be visible during the entire gate operation.
- ▶ Always keep the moving gate in sight.
- ▶ Keep persons and animals clear of the range of movement of the gate.
- ▶ Never put your hand near the gate when it is moving or near moving parts.
- ▶ Do not drive through the gate until it has opened completely.
- ▶ Never stand in the opened gate.



NOTE

If the gate is not in view and the operator is actuated, objects in the movement area of the gate may be jammed and damaged. Objects must not be in the range of movement of the gate.



NOTE

Connection of a photocell is a prerequisite for the automatic closing function.



INFORMATION

During operation with the automatic closing function, standard EN 12453 must be observed.

This is a legal requirement. National regulations must be observed in non-European countries.

A photocell must be connected. Bridging the safety inputs with wire jumpers is not permitted.

8. Connections and functions of the control unit



INFORMATION

The factory setting is fully automatic closing with a pre-set hold open time of 1 minute. The hold open time starts at the gate OPEN end position. The progress of the pre-warning time is indicated by the flashing status LED.



INFORMATION

The settings for the pre-warning time, automatic closing and hold open time can be adjusted via SOMlink and a WiFi-enabled device. See chapter "8.16 Information on SOMlink."



The hold open time starts as soon as the gate is fully opened. The factory setting is 1 minute. Then the automatic closing function starts the gate leaf closing process.

Activating the automatic closing function



INFORMATION

In the factory setting, all DIP switches are set to OFF.

1. Close the gate.



Fig. 2

2. Set DIP switch 6 to "ON" position.
3. When the Pulse button on the transmitter is pressed, the gate moves into the gate OPEN position. The gate movement cannot be stopped with the transmitter. The pre-set hold open time of the gate is 1 minute. Every new command within this time restarts the hold open time.
 - ⇒ Status LED flashes.
 - ⇒ Gate OPEN.
4. The gate closes automatically after 1 minute.
 - ⇒ Status LED off.
5. The closing movement can be stopped by a command with the transmitter.
 - ⇒ Status LED flashes.
 - ⇒ Gate opens completely - reversal of direction.

6. The gate starts the closing process again after 1 minute.

- ⇒ Status LED is off.
- ⇒ Gate CLOSE.



INFORMATION

The factory setting is fully automatic closing with a pre-set hold open time of 1 minute. The hold open time starts at the gate OPEN end position and from partial opening position. The progress of the pre-warning time is indicated by the flashing status LED. This setting and the selection of semi-automatic closing can be adjusted via SOMlink and a WiFi-enabled device.

Shortening the hold open time

- with a command (e.g. handheld transmitter button)
- only possible in semi-automatic closing (can be activated via SOMlink)
- 5 seconds after passing through a photocell



INFORMATION

The operator always completely reverses when the automatic closing function is activated.

8. Connections and functions of the control unit

8.16 Information on SOMlink

SOMlink makes it possible for qualified specialists to change many functions and settings on the gate operator. These include force, speed and operating parameters or other convenient functions.

If you would like to make changes, contact your specialist dealer.



INFORMATION

SOMlink is a combination of an additional device and a web-based application for changing gate operator functions. SOMlink may only be installed by a qualified specialist. Settings may only be made by a qualified specialist. All changes to settings via SOMlink are logged.



INFORMATION

All operator parameters are reset to the factory settings by a factory reset. All settings via SOMlink and WiFi-enabled device are also reset. The DIP switches can only be manually reset.



9. Initial operation

9.1 Safety instructions for initial operation

Follow the basic safety instructions listed below.



DANGER

Danger if not observed!
If safety instructions are not observed, serious injury or death may result.

- ▶ All safety instructions must be complied with.



WARNING

Danger of crushing and shearing!
If the gate is not visible and the radio control is operated, crushing and shearing injuries to persons may occur.

- ▶ In particular when operating control elements such as the radio control, all danger zones must be visible during the entire gate operation.
- ▶ Always keep the moving gate in sight.
- ▶ Keep persons and animals clear of the range of movement of the gate.
- ▶ Never put your hand near the gate when it is moving or near moving parts.
- ▶ Do not drive through the gate until it has opened completely.
- ▶ Store the handheld transmitter so that unauthorised or accidental operation, e.g., by children or animals, is impossible.
- ▶ Never stand in the opened gate.



INFORMATION

Operation is only possible with an original Sommer radio receiver.

9.2 Preparing for programming

Preparations

Before programming and connecting the mains voltage for the first time, the following conditions must be met:

- The gate-side and internal end stops on the gate system are present, installed and set, see chapter "6.6 Gate OPEN mechanical end position".
- All lines such as mains power, accumulator and signal lines to the gate operator are permanently laid and connected, see chapter "8 Connections and functions of the control unit".
- Optional warning light is installed and connected, see chapter "8.5 Connecting the warning light".
- Optional photocell is installed and connected, see chapter "8.6 Connecting the safety inputs".
- The factory setting of the DIP switches is "OFF".
- Optional safety devices, e.g. 8k2 safety contact strip, are installed and connected, see chapter "8.7 Connecting an 8k2 safety contact strip".
- Optional buttons are connected.
- The definitions (active leaf, inactive leaf) can be found in chapter "3.4 Explanation of terms and tool symbols used".



DANGER

Danger due to electric current!
Contact with live parts may result in electric current flowing through the body. Electric shock, burns or death will result.

- ▶ The operator must be disconnected from the power supply before fixing the mechanical end positions.
- ▶ Check that the operator is not live.
- ▶ Secure the operator against being switched back on.

9. Initial operation

9.3 Programming a 1-leaf gate

1. Gate is pre-set to be in centre gate position.

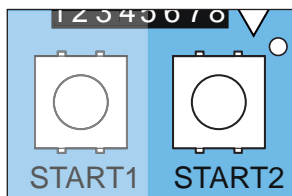


Fig. 2

2. Press the START 2 button **briefly** (< 1 second).
⇒ The gate moves to the gate OPEN end position.
3. Confirm the position by pressing the START 2 button **briefly**.
⇒ Gate OPEN end position confirmed.
⇒ Gate moves **automatically** to gate CLOSE end position. **Briefly** press the START 1 button in the desired gate CLOSE end position.
⇒ The gate stops.
4. **Fine adjustment (optional):**
Press the START 2 button for 2 seconds until the gate **moves briefly**.
Release the START 2 button.
- 4.1 The process can be repeated until the desired end position is reached.

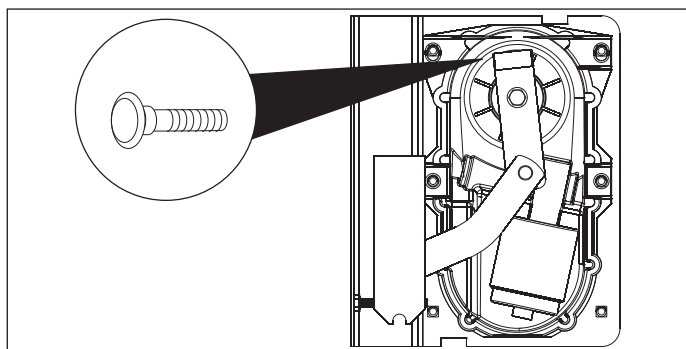


Fig. for 5.

5. Set the M 10 x 80 screw for the gate OPEN end position and counter with the nut.
6. Confirm the end position by pressing the START 2 button **briefly**.
⇒ Gate CLOSE end position is confirmed and the **automatic** force programming runs start.
⇒ The gate moves **automatically** to the following positions:

- Gate OPEN
 - Gate CLOSE
 - Gate OPEN
7. Press the START 1 and START 2 button simultaneously for 1 second until the LEDs for OPEN and CLOSE start to flash.
⇒ The programming process ends.
 8. Close the foundation box, see chapter "7.1 Opening and closing the foundation box".

9. Initial operation

9.4 Programming a 2-leaf gate

1. Gate is pre-set to be in centre gate position.

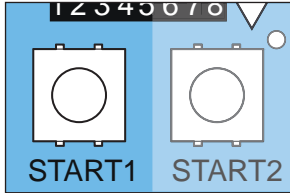


Fig. for 2.

2. Press the START 1 button.
 - ⇒ The inactive leaf moves to the gate OPEN end position.
3. Confirm the end position by pressing the START 1 button **briefly**.
 - ⇒ The gate OPEN end position for the inactive leaf is confirmed.
 - ⇒ The gate **automatically** moves to the gate CLOSE end position.
4. Briefly press the START 1 button at the desired end position for gate CLOSE.
 - ⇒ The gate stops.
5. **Fine adjustment (optional):**
Press the START 1 button for 2 seconds and keep it pressed until the gate moves briefly. Release the START 1 button.
- 5.1 The process can be repeated until the desired end position is reached.

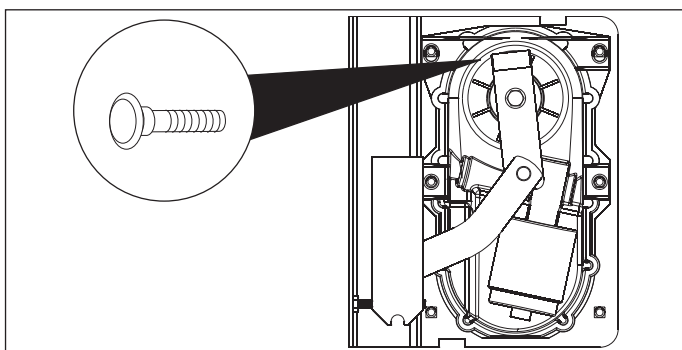


Fig. for 6.

6. Adjust the M 10 x 80 screw to the gate CLOSE end position and tighten.
7. Confirm the gate CLOSE end position by briefly pressing the START 1 button.
 - ⇒ Gate CLOSE end position is confirmed and the **automatic** force programming runs start.
 - ⇒ The gate moves **automatically** to the following positions:

- Gate OPEN
 - Gate CLOSE
 - Gate OPEN
8. Optionally, the inactive leaf can be closed again with START 1 to brace it with the active leaf.

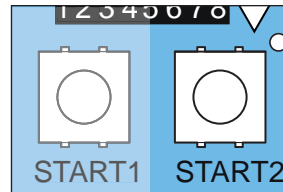


Fig. for 9.

9. Press the START 2 button.
 - ⇒ The active leaf moves to the gate OPEN end position.
10. Confirm the end position by pressing the START 2 button briefly.
 - ⇒ The gate OPEN end position for the active leaf is confirmed.
 - ⇒ The gate **automatically** moves to the gate CLOSE end position.
11. Briefly press the START 1 button at the desired end position for gate CLOSE.
 - ⇒ The gate stops.
12. **Fine adjustment (optional):**
Press the START 2 button for 2 seconds and keep it pressed until the gate moves briefly. Release the START 2 button.
- 12.1 The process can be repeated until the desired end position is reached.
13. Now adjust the M 10 x 80 screw to the gate CLOSE end position and tighten.
14. Confirm the gate CLOSE end position by **briefly** pressing the START 2 button.
 - ⇒ The gate moves to the following positions:
 - Gate OPEN
 - Gate CLOSE
 - Gate OPEN
 - ⇒ 2-leaf operation confirmed.
 - ⇒ The programming process ends.
15. Close the foundation box, see chapter "7.1 Opening and closing the foundation box".

9. Initial operation

9.5 Obstacle detection

The following section describes two different obstacle detection events.

Obstacle detection during programming of end stops

If the gate runs into an obstacle during programming of the end positions, the gate stops. The warning light double-flashes.



INFORMATION

If an obstacle is detected during the force programming run, the operator stops and reverses a short distance.

1. **Press and hold** the START 1 or START 2 button for the corresponding gate.
⇒ After 1 second, the operator triggers a **brief movement** in the last direction of travel.
2. Release the START 1 or START 2 button if the end position is reached after this brief movement. If an additional brief movement is required, **press and hold** the START 1 or START 2 button again until the brief movement is triggered.
3. The operator drives in the last direction of travel as long as the START 1 or START 2 button is **pressed and held** or until the forces become too great.
4. As soon as the end position is reached, release the START 1 or START 2 button.
5. Press the START 1 or START 2 button **briefly** (<1 second) to confirm the end position.
⇒ End position confirmed.

This procedure is identical for both directions of travel. After both end positions have been confirmed, the force programming run starts **automatically**.

Detecting obstacles during the force programming run

If the gate runs into an obstacle during the force programming run, the operator stops and reverses a short distance. At the same time, the warning light flashes.

1. **Briefly** press the START 1 or START 2 button for the respective gate (<1 second).
⇒ The force programming run continues.
⇒ The gate leaf moves to the end position in the direction last selected.
2. Briefly press the START 1 or START 2 button for the respective gate (<1 second) to confirm the end position.
⇒ End position confirmed.
3. Once the obstacle has been removed, the programming process for 1-leaf gates or 2-leaf gates must be completed, see chapter "**9.3 Programming a 1-leaf gate**" and "**9.4 Programming a 2-leaf gate**." This procedure is identical for both directions of travel.



INFORMATION

The operating forces can be modified and adjusted with SOMlink and a WiFi-enabled device. See chapter "8.16 Information on SOMlink".

10. Radio remote control

10.1 Information on SOMloq2

The gate operator is equipped with the innovative SOMloq2 radio system. The transmission is tap-proof and particularly reliable thanks to the special coding. Separate antennas or other installations are not necessary. Many functions are possible due to the bidirectional data transmission between the transmitter and receiver.

You can find more information in the SOMloq2 brochure.



10.2 Programming a handheld transmitter

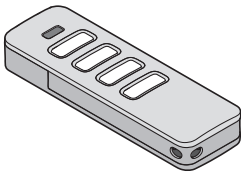


Fig. Handheld transmitter

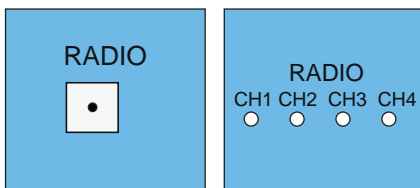


Fig. Radio button and radio channels CH 1 – CH 4 on the control unit

Explanation of the LEDs for radio channels CH 1 - CH 4

LED	Setting/function
CH 1	Both gate leaves open and close
CH 2	Active leaf opens and closes
CH 3	Both gate leaves open
CH 4	Both gate leaves close

These functions are assigned to the 4 radio channels in the factory state. The functions can be randomly assigned to the handheld transmitter buttons.



INFORMATION

If no button is detected as pressed on the handheld transmitter within 30 seconds, the LED for the selected radio channel (CH) goes out and programming mode is ended.

1. Select the desired radio channel (CH) by pressing the Radio button on the control unit repeatedly.

LED	1 x	2 x	3 x	4 x
CH 1	■	□	□	□
CH 2	□	■	□	□
CH 3	□	□	■	□
CH 4	□	□	□	■

⇒ LED for the selected radio channel lights up.

2. Press the desired button on the handheld transmitter until the previously selected LED (CH 1, CH 2, CH 3 or CH 4) goes out.
 - ⇒ LED goes out - programming is complete.
 - ⇒ The transmitter has transferred the radio code to the radio receiver.
3. Repeat the above steps to program additional transmitters.



INFORMATION

Further transmitters cannot be programmed if all memory positions of the receiver are occupied.

If the memory capacity has been reached

A total of 40 handheld transmitter commands are available for all channels. If an attempt is made to program additional transmitters, the red LEDs of radio channels CH 1 - CH 4 flash. If more memory positions are needed, see chapter "10.3 Information on Memo".

10.3 Information on Memo

The memory capacity can be extended to 450 handheld transmitter commands using the optional Memo accessory part. When the Memo is plugged in, all available transmitters are transferred from the internal memory to the Memo and stored there. The Memo must remain plugged in on the control unit. No more transmitters are then stored in the internal memory. Stored transmitters cannot be transferred from the Memoback to the internal memory.

All radio channels, including the memory of the Memo, can be deleted, see chapter "10.9 Deleting all channels in the receiver".

10. Radio remote control

10.4 Overview of the time sequences

15 s	20 s	25 s	30 s
Delete transmitter button from the radio channel	Delete transmitter completely from the radio channel	Delete radio channel in the receiver	Delete all radio channels in the receiver, interrupt programming mode

Fig. Time sequences for selecting the functions

The time sequences for the selection menu of the functions can be derived from the table. More exact descriptions are given in the following chapters.

10.5 Cancelling programming mode

1. Press the Radio button (A) on the control unit repeatedly until the LED for the selected radio channel goes out, or do not make an entry for 30 seconds.
⇒ Programming mode is cancelled.



INFORMATION

Information on deleting channels or handheld transmitters can be found beginning in chapter "10.6 Deleting a transmitter button from the radio channel."

10.6 Deleting a transmitter button from the radio channel

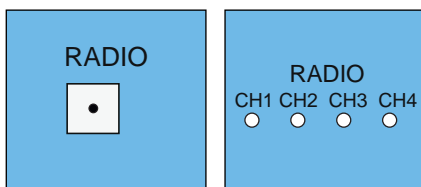


Fig. Radio button and radio channels CH 1–CH 4 on the control unit

1. Press the Radio button (A) repeatedly to select the required channel.
Press and hold the Radio button (A) for 15 seconds.

LED	1 x	2 x	3 x	4 x
CH 1	■	□	□	□
CH 2	□	■	□	□
CH 3	□	□	■	□
CH 4	□	□	□	■

⇒ The LED blinks after 15 seconds.

2. Release the Radio button (A).
⇒ The radio receiver is now in deletion mode.
3. Press the transmitter button for which the command is to be deleted in the radio channel.
⇒ LED goes out.
⇒ The deletion procedure is ended.
4. Repeat the process for additional buttons as required.

10.7 Deleting a transmitter completely from the radio channel

1. Press and hold the Radio button (A) for 20 seconds.
⇒ The LED blinks after 15 seconds.
2. After another 5 seconds, the flash sequence changes to flashing.
3. Release the Radio button (A).
⇒ The radio receiver is now in deletion mode.
4. Press any button on the transmitter that is to be deleted.
⇒ LED goes out.
⇒ The deletion procedure is completed.
⇒ The transmitter is deleted from the radio receiver.
Repeat for additional transmitters as required.

10.8 Deleting a radio channel in the receiver

1. Press the Radio button (A) repeatedly to select the required channel.
Press and hold the Radio button for 25 seconds.

LED	1 x	2 x	3 x	4 x
CH 1	■	□	□	□
CH 2	□	■	□	□
CH 3	□	□	■	□
CH 4	□	□	□	■

⇒ The LED blinks after 15 seconds.

⇒ After another 5 seconds, the flash sequence changes to flashing.


⇒ After another 5 seconds, the LED of the selected radio channel remains steady.

2. Release the Radio button (A).
⇒ The deletion procedure is ended.

10. Radio remote control

⇒ All programmed handheld transmitters on the selected radio channel have been deleted from the radio receiver.

10.9 Deleting all channels in the receiver

1. Press and hold the Radio button (A) for 30 seconds.
 - ⇒ The LED blinks after 15 seconds.
 - ⇒ After another 5 seconds, the flash sequence changes to flashing.
 - ⇒ After another 5 seconds, the LED of the selected channel remains steady.
 - ⇒ After another 5 seconds, all LEDs light up.
2. Release the Radio button (A).
 - ⇒ All LEDs are off after 5 seconds.
 - ⇒ All programmed transmitters are deleted from the receiver.
 - ⇒ Factory settings have been restored. 

10.10 Programming a second handheld transmitter by radio (HFL)

Prerequisites for programming by radio

A handheld transmitter must already be programmed on the radio receiver. The handheld transmitters used must be identical. This means, for example, that a Pearl can only be programmed on a Pearl and a Pearl Vibe on a Pearl Vibe. The key assignment of handheld transmitter (A) that put the radio receiver into programming mode by radio is used for the new handheld transmitter (B) that is to be programmed. The already-programmed transmitter and the new transmitter to be programmed must be situated within the range of the radio receiver.

Example:

1. On handheld transmitter (A), button 1 has been programmed to radio channel CH 1 and button 2 to radio channel CH 2.
 - ⇒ The newly-programmed handheld transmitter (B) adopts the key assignment of handheld transmitter (A): Button 1 to radio channel CH 1 and button 2 to radio channel CH 2.

Restrictions

The targeted programming of a selected handheld transmitter button to a radio channel with HFL is not possible.

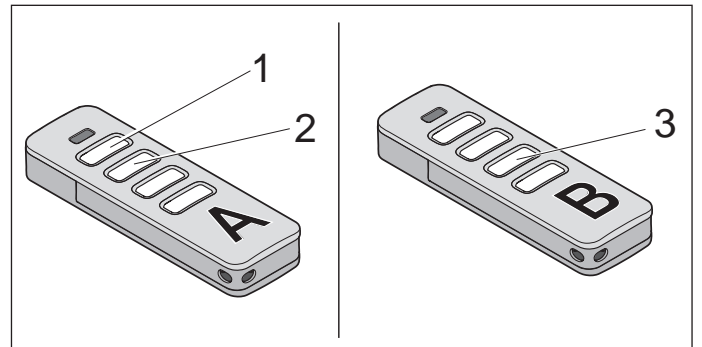


Fig. 1

1. Press buttons 1 + 2 of a programmed handheld transmitter (A) for 3 - 5 seconds until the LED on the handheld transmitter lights up briefly.
 - ⇒ The operator lighting flashes.
 - ⇒ If a code is not transmitted within another 30 seconds, the radio receiver switches over to normal mode.
 - ⇒ Release buttons 1 + 2 of handheld transmitter (A).
2. Press any button, e.g. (3) on the new handheld transmitter (B) to be programmed.
 - ⇒ The LEDs of the operator lighting remain steady.
 - ⇒ The second handheld transmitter (B) has been programmed.

11. Function test/Final test

11.1 Checking the force setting and obstacle detection

Observe in particular the following safety instructions for this chapter.

After commissioning the operator, the force setting of the operator must be checked with a force measurement device and an obstacle detection test must be performed.



WARNING

Danger of entrapment!
If the force setting is too high, persons in the movement area of the gate may be trapped and pulled along with the gate. Severe injuries or death may result.

- ▶ The force setting is relevant to safety and must be very carefully checked and if necessary adjusted by a **qualified specialist**.



WARNING

Danger of crushing and shearing!
If safety-related operator settings are made or changed, the gate can react unexpectedly. This may cause crushing or shearing injuries to persons.

If settings or changes are made to the operator:

- ▶ The force values must be checked by a **qualified specialist**. If necessary, the force values must be reset and reprogrammed.
- ▶ Keep persons and animals clear of the range of movement of the gate.
- ▶ Secure the movement area of the gate leaves.
- ▶ You must be able to see the movement area of the gate leaves.
- ▶ Never put your hand near the gate when it is moving or near moving parts.
- ▶ Never stand in the opened gate.



WARNING

Danger of crushing and shearing!
If the gate moves with persons or animals in the movement area, crushing and shearing injuries may be caused by the mechanism and safety edges of the gate.

- ▶ In particular when obstacle detection is active, all danger zones must be visible during the entire gate operation.
- ▶ Always keep the moving gate in sight.
- ▶ Keep persons and animals clear of the range of movement of the gate.
- ▶ Never put your hand near the gate when it is moving or near moving parts.
- ▶ Do not drive through the gate until it has opened completely.
- ▶ Never stand in the opened gate.



NOTE

Observe the national standards, guidelines and regulations for cut-off of the operating forces.



NOTE

The obstacle detection function must be tested once a month to prevent damage to the operator.



INFORMATION

After installation of the operator, the person responsible for the installation must complete an EC Declaration of Conformity for the gate system in accordance with Machinery Directive 2006/42/EC and apply the CE mark and a type plate. This documentation and the installation and operating manual must be handed over to the user. This also applies if the operator is retrofitted to a manually operated gate.



INFORMATION

Reversing: The operator stops on contact with an obstacle and then moves a short distance in the opposite direction to release the obstacle.



INFORMATION

The operating forces can be modified and adjusted with SOMlink and a WiFi-enabled device. For more information, ask your specialist dealer.



11. Function test/Final test



INFORMATION

If a photocell is interrupted, the gate reverses in soft run.

The force settings must be tested with a force measurement device. Additional safety equipment such as photocells or safety contact strips must then be tested for perfect functioning. If the gate hits an obstacle, it must reverse immediately. If this is not the case, a reset must be performed, see chapter "**12.8 Carrying out a reset**". The positions and the forces must be reprogrammed. After successful testing of the force settings, the obstacle detection and the functions, the qualified specialist must attach the CE mark and type plate to the gate.

11.2 Handover of the gate system

The qualified specialist must instruct the user:

- on the operation of the operator and its dangers
- on the handling of the manual emergency release
- on the regular maintenance, testing and care measures which the user can carry out, see chapter "**13. Maintenance and care**"
- on the troubleshooting measures and repairs which the user can carry out, see chapter "**14. Troubleshooting**"

The user must be informed about which work may only be performed by a qualified specialist:

- installation of accessories
- settings
- regular maintenance, testing and care, with the exception of that described in chapter "**13. Maintenance and care**"
- troubleshooting and repairs, with the exception of those described in chapter "**14. Troubleshooting**"

The following documents for the gate system must be handed over to the user:

- the installation and operating manuals for the operator and the gate
- EC Declaration of Conformity
- handover protocol and inspection book



<http://som4.me/konform>

12. Operation

12.1 Safety information on operation

In particular, observe the safety instructions below and the safety instructions in chapters "13.1 Safety instructions for maintenance and care" and "14.1 Safety instructions on troubleshooting".

The operator must not be used by persons with restricted physical, sensory or mental capacity or who lack experience and knowledge. All users must be specially instructed and have read and understood the installation and operating manual.

Children must never play with or use the operator, even under supervision. Children must be kept clear of the operator. Handheld transmitters or other command devices must never be given to children. Transmitters must be safely stored and protected against unauthorised use.



DANGER

Danger if not observed!
If safety instructions are not observed, serious injury or death may result.

- ▶ All safety instructions must be complied with.



DANGER

Danger due to use of the operator with incorrect setting or when it is in need of repair!

If the operator is used despite incorrect settings or if it is in need of repair, severe injury or death may result.

- ▶ The operator may only be used with the required settings and in the proper condition.
- ▶ You must have faults repaired professionally without delay.



WARNING

Danger due to irregular tests or failure to perform tests!
Failure to test the operator regularly can cause damage or faults leading to serious or fatal injury to persons or animals.

- ▶ Test the operator monthly.
- ▶ The gate operator must reverse if people or obstacles are present.
- ▶ Adjustments and settings may only be performed by a **qualified specialist**. After making adjustments to the operator, the operating forces must always be professionally tested.



WARNING

Danger of crushing and shearing!
If the gate moves with persons or animals in the movement area, crushing and shearing injuries may be caused by the mechanism and safety edges of the gate.

- ▶ All danger zones must be visible during the entire gate operation.
- ▶ Always keep the moving gate in sight.
- ▶ Keep persons and animals clear of the range of movement of the gate.
- ▶ Never put your hand near the gate when it is moving or near moving parts.
- ▶ Do not drive through the gate until it has opened completely.
- ▶ Never stand in the opened gate.



NOTE

If the operating forces of the gate are incorrectly adjusted, the operator may be damaged.

- The gate must be stable.
- It must not bend, rotate or twist when opening and closing.
- The gate must move easily along the entire travel path.
- Rectify faults or defects immediately, see chapter "14 Troubleshooting".

Defects must be repaired without delay by a qualified specialist.

12. Operation



NOTE

Objects in the movement area of the gate may be jammed and damaged. Objects must not be in the range of movement of the gate.



INFORMATION

Keep this Installation and Operating Manual accessible at all times at the place of use.



INFORMATION

Reversing: The operator stops when it hits an obstacle. Then the gate moves slightly in the opposite direction to release the obstacle.
In the automatic closing function, the gate opens completely.



INFORMATION

In the event of interruption of the photocell, the run-on time is longer than when the gate comes into contact with an obstacle.

The following safety devices are installed to detect obstacles:

- obstacle detection of the operator (personal protection)
- safety contact strips (personal protection)
- photocell (object protection)

The prerequisite for button assignment is that the gate system is programmed, see chapter "9.3 Programming a 1-leaf gate" or "9.4 Programming a 2-leaf gate."

12.2 Handover to the user

The user must ensure that the CE mark and the type plate have been attached to the gate system. The following documents for the gate system must be handed over to the user:

- EC Declaration of Conformity
- handover protocol and inspection book
- the installation and operating manuals for the operator and the gate

The user must be informed about which work may only be performed by a qualified specialist:

- installation of accessories
- settings
- regular maintenance, testing and care which can be carried out by the user, except that described in chapter "13. Maintenance and care"
- troubleshooting and repairs which can be carried out by the user, except that described in chapter "14. Troubleshooting"

The user is responsible for:

- the intended use of the operator
- its good condition
- operation
- instructing all users how to use the gate system and in the associated hazards
- maintenance, testing and care
- troubleshooting and repair by a qualified specialist

The user must always keep this Installation and Operating Manual at the place of use, ready for consultation and accessible to all users.

12. Operation

12.3 Operating modes of gate movement

In the following description of the gate movement, it is assumed that buttons 1 to 4 on the handheld transmitter have been assigned to radio channels CH 1 - CH 4. With 2-leaf gates, the movements of the two gate leaves start with a time delay.



WARNING

Danger of injury during gate operation!

Gates can injure people or animals in the movement area of the gate when the gate is closing. This may cause crushing or shearing injuries.

- ▶ In particular when operating control elements, all danger zones must be visible during the entire gate operation.
- ▶ Keep persons and animals clear of the range of movement of the gate.
- ▶ Always keep the moving gate in sight.
- ▶ Never put your hand near the gate when it is moving or near moving parts.
- ▶ Do not drive through the gate until it has opened completely.
- ▶ Never stand in the opened gate.



INFORMATION

Reversing: The operator stops when it hits an obstacle. Then the gate moves slightly in the opposite direction to release the obstacle.

In the automatic closing function, the gate opens completely.



INFORMATION

In the event of interruption of the photocell, the run-on time is longer than when the gate comes into contact with an obstacle.

The prerequisite for button assignment is that the gate system is programmed, see chapter "9 Initial operation".



INFORMATION

Reversing: The operator stops when it hits an obstacle. Then the gate moves slightly in the opposite direction to release the obstacle.

In the automatic closing function, the gate opens completely.

The following safety devices are installed to detect obstacles:

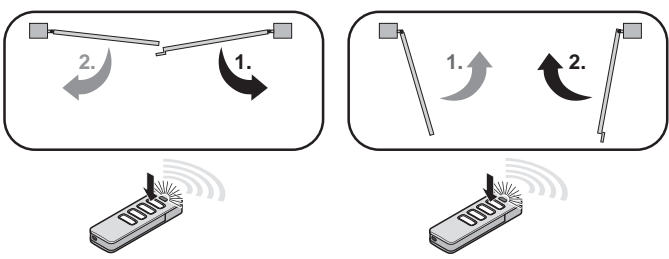
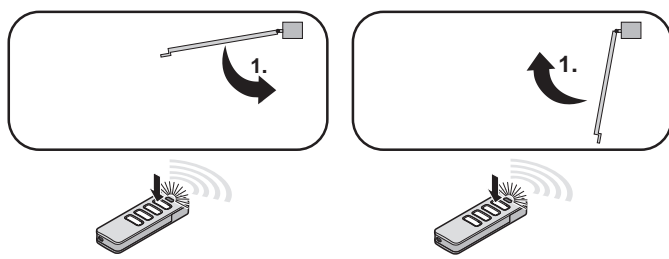
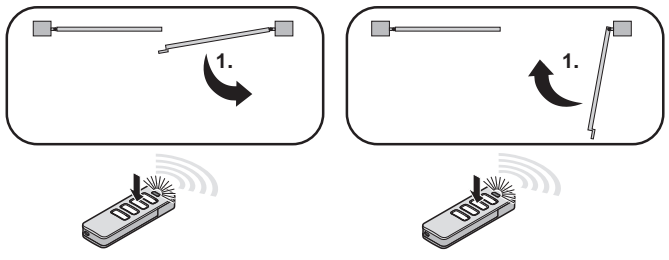
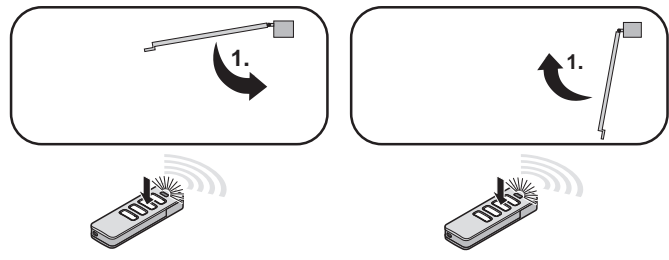
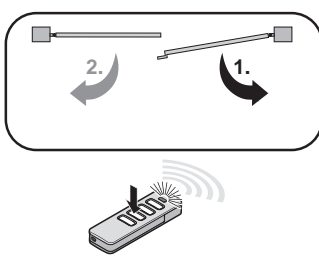
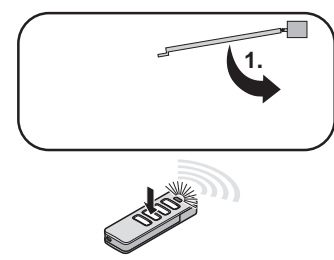
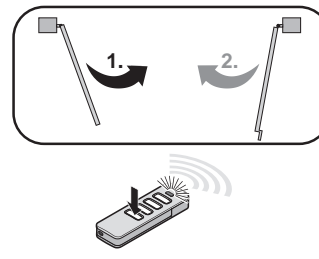
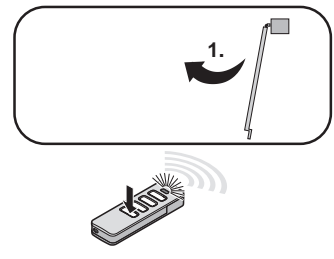
- photocell (object protection)
- safety contact strips (personal protection)
- obstacle detection of the operator (personal protection)

Overview of gate movements

The figures show the sequence of movements of the gate leaves. A requirement for button assignment is that the gate system is programmed, see chapter "9.3. Programming a 1-leaf gate" or "9.4 Programming a 2-leaf gate."

The button assignment of the handheld transmitter corresponds to the basic factory setting.

12. Operation

2-leaf	1-leaf
<p>Open and close both gate leaves</p>  <p>Pulse sequence of button 1 on the handheld transmitter</p>	<p>Open and close active leaf</p>  <p>Pulse sequence of button 1 on the handheld transmitter, button 2 identical</p>
<p>Selectively open and close active leaf</p>  <p>Pulse sequence of button 2 on the handheld transmitter</p>	<p>Open and close active leaf</p>  <p>Pulse sequence of button 2 on the handheld transmitter, button 1 identical</p>
<p>Selectively open active and inactive leaf</p>  <p>Pulse sequence of button 3 on the handheld transmitter</p>	<p>Selectively open active leaf</p>  <p>Pulse sequence of button 3 on the handheld transmitter without function if gate OPEN</p>
<p>Selectively close active and inactive leaf</p>  <p>Pulse sequence of button 4 on the handheld transmitter</p>	<p>Selectively close active leaf</p>  <p>Pulse sequence of button 4 on the handheld transmitter without function if gate CLOSE</p>

12. Operation

12.4 Performing obstacle detection

The operator stops and reverses slightly if it encounters an obstacle. This prevents injury and damage to property. The gate will be partially or completely opened, depending on the setting. The partial reversion is pre-set at the factory. Full reversion can be set via SOMlink and a WiFi-enabled device.



WARNING

Danger of entrapment!
If the force setting is too high, persons in the movement area of the gate may be trapped and pulled along with the gate. Severe injuries or death may result.

- ▶ The force setting is relevant to safety and must be very carefully checked and if necessary adjusted by a **qualified specialist**.



WARNING

Danger of crushing and shearing!
If the gate moves with persons or animals in the movement area, crushing and shearing injuries may be caused by the mechanism and safety edges of the gate.

- ▶ In particular when obstacle detection is active, all danger zones must be visible during the entire gate operation.
- ▶ Always keep the moving gate in sight.
- ▶ Keep persons and animals clear of the range of movement of the gate.
- ▶ Never put your hand near the gate when it is moving or near moving parts.
- ▶ Do not drive through the gate until it has opened completely.
- ▶ Never stand in the opened gate.



INFORMATION

Reversing: The operator stops on contact with an obstacle and then moves a short distance in the opposite direction to release the obstacle
In the automatic closing function, the gate opens completely.



INFORMATION

If a photocell is interrupted, the gate reverses in soft run.



INFORMATION

In the automatic closing function, the gate opens completely.

The following safety devices are installed to detect obstacles:

- photocell (object protection)
- safety contact strips (personal protection)
- obstacle detection of the operator (personal protection)

See also chapter "13 Maintenance and care".

The gate must always reverse if it hits a suitable hard obstacle with an edge length of at least 10 cm before reaching the end position.

1. Open the gate with the operator.
2. Additional safety equipment such as photocells or safety contact strips must be tested for perfect functioning. To do this, briefly interrupt the photocells with suitable materials.
3. Close the gate.
 - ⇒ If the gate hits an obstacle, it must reverse immediately.
4. If the operator does not reverse, a qualified specialist must be contacted. Obstacle detection must be performed once a month by the user.

12.5 Setting power-saving mode

To save energy, the operator control unit switches to power-saving mode after a pre-set time. Connected accessories, e.g. 8k2 safety contact strips or photocells, are then deactivated. With the next command via the buttons or the radio control system, the operator and the accessories are reactivated.



INFORMATION

When using external radio receivers, power-saving mode must be deactivated.

DIP switch	ON	OFF
4		Power-saving mode deactivated Power-saving mode activated (factory state)

DIP 4 must be set to "ON" to deactivate power-saving mode.

12. Operation



INFORMATION

The factory-set time before the control unit switches to power-saving mode is about 1 minute.

12.6 In the event of a power failure

Operation during a power failure is only possible with an accumulator installed.

A fully-charged accumulator has energy for about 5 cycles. The number is dependent on the mass and mobility of the gate leaf, the connected accessories as well as the age of the accumulator.

The programmed force and position values are retained in the event of a power failure. The first movement of the operator after the power supply returns is always gate OPEN.

After a power failure, the gate operator reacts as follows when a button is pressed:

- With a 1-leaf gate system, the active leaf starts up.
- With a 2-leaf gate system, the active leaf opens completely and then the inactive leaf opens.
- The warning light continues to flash after opening.
- After the button on the handheld transmitter is pressed again, the operator once again tries to drive in gate OPEN direction.
- When the button on the handheld transmitter is pressed again, the gate system closes.

Also observe the instructions for emergency release in chapter "12.7 Function of the emergency release".

12.7 Function of the emergency release

In the event of a power failure, the gate can be opened from the inside using a mechanical emergency release.



WARNING

Danger of crushing and shearing!
If the gate is opened with the emergency release lever, the gate can move unexpectedly. Crushing and shearing injuries may be caused by the mechanism and safety edges of the gate.

- ▶ The emergency release lever must not be used during heavy storms or bad weather.
- ▶ Secure the gate against unexpected movement before operating the emergency release lever.
- ▶ Keep persons and animals clear of the range of movement of the gate.



NOTE

The emergency release is only suitable for opening or closing the gate in an emergency. For example, during a power failure or in the case of an operator malfunction.

The emergency release is not suitable for opening or closing the gate regularly. This could cause damage to the operator or gate.



NOTE

The clearance is reduced when the gate is opened with the emergency release lever. To prevent damage, keep an appropriate distance from the emergency release lever.



INFORMATION

The gate can be released in any gate position. It might be necessary to move the gate leaf slightly in order to engage it.

12. Operation

Locking

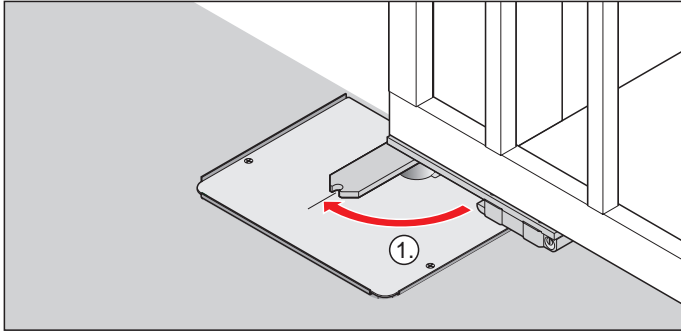


Fig.1

1. Lock the gate in the gate leaf fitting. You will feel a slight resistance when doing this.

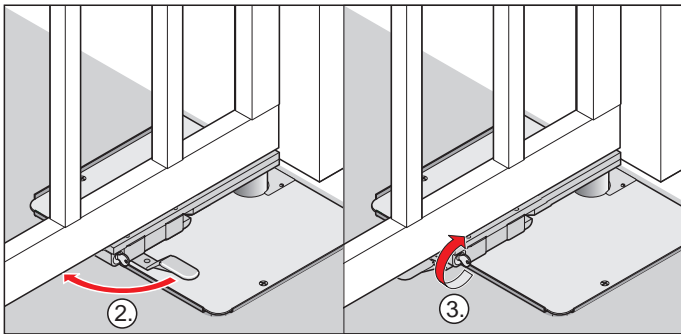


Fig. 2

2. Press the emergency release lever 90° to the gate post until it locks into place.
⇒ The gate is locked.
3. Insert the key into the lock for the emergency release lever and turn it through 90° to the gate post.
⇒ The emergency release lever is locked.
4. Attach the covering cap to the closing cylinder.

Unlocking

Follow the steps in reverse order for unlocking, see chapter "12.7 Function of the emergency release."

12.8 Carrying out a reset

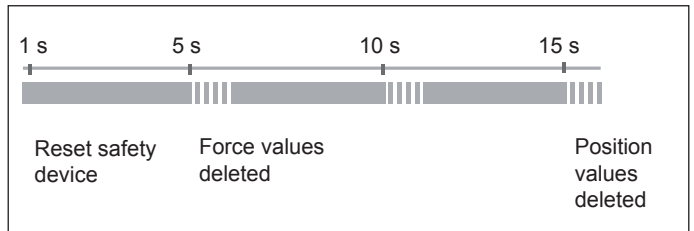


Fig. Time sequence for reset

In the individual time sequences, the warning light and the LED for the warning light blink in the pattern shown.

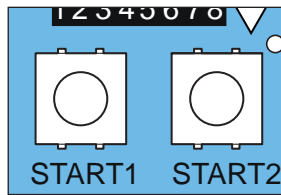


Fig. START 1, START 2 and Status LED



INFORMATION

A SOMlink and a WiFi-enabled device are required to reset all parameters to the factory setting.

Resetting the safety device

1. Press the START 1 and START 2 buttons simultaneously for 1 second.
⇒ Safety devices are deleted.

Deleting the force values

1. Press the START 1 and START 2 buttons simultaneously for 5 seconds.
⇒ Force values are deleted.

Deleting the position values

1. Press the START 1 and START 2 buttons simultaneously for 15 seconds.
⇒ Position values are deleted.

12. Operation

12.9 Jog mode in the event of faults

The control unit may become blocked if a photocell is malfunctioning or defective. This means that the gate system no longer opens or closes at the press of a button. The gate leaf must be moved in "Jog mode" operating mode.

To do so, execute the "Selectively open" or "Selectively close" command. This is done by pressing and holding the respective button on external control elements such as the key switch or on the handheld transmitter. When the cover is open, the command can also be given by pressing the START 1 or START 2 buttons. Jog mode is not suitable for normal operation. Faults must be professionally remedied without delay.



WARNING

Danger of crushing and shearing!
If the gate moves with persons or animals in the movement area, crushing and shearing injuries may be caused by the mechanism and safety edges of the gate.

- ▶ Jog mode may only be executed when you are in the immediately vicinity of the gate.
- ▶ All danger zones must be visible during the entire gate operation.
- ▶ Always keep the moving gate in sight.
- ▶ Keep persons and animals clear of the range of movement of the gate.
- ▶ Never put your hand near the gate when it is moving or near moving parts.
- ▶ Do not drive through the gate until it has opened completely.
- ▶ You must have faults or defects repaired professionally without delay.

1. Check whether there is an obstacle in the range of the gate movement. If there is, remove the obstacle.
2. If there is no obstacle in the range of the gate movement, press the "Selectively open" or "Selectively close" button and hold it pressed until the end position has been reached.



INFORMATION

To prevent unintentional operation, the corresponding button must first be held down for 10 seconds in order to carry out the jog function. Only then does the operator start.

- 2.1 On the control unit:

Press the START 1 or START 2 button on the circuit board. The gate moves as long as the START 1 or START 2 button is pressed.

⇒ The gate moves as long as the buttons are held pressed.

Or:

- 2.2 On the handheld transmitter:

Press the desired button on the handheld transmitter. The gate moves as long as the button on the handheld transmitter is pressed.

⇒ The gate moves as long as the buttons are held pressed.

3. To ensure normal operation, the fault or defect must be remedied professionally by a qualified specialist.



NOTE

Jog mode is not suitable for normal operation. Faults and defects must be remedied professionally and without delay by a qualified specialist to prevent further damage or defects.

13. Maintenance and care

13.1 Safety instructions for maintenance and care

Follow the basic safety instructions listed below. Service the operator regularly as directed below. This ensures safe operation and a long service life for your operator.



DANGER

Danger if not observed!
If safety instructions are not observed, serious injury or death may result.

- ▶ All safety instructions must be complied with.



DANGER

Danger due to electric current!
Contact with live parts may result in electric current flowing through the body. Electric shock, burns or death will result.

- ▶ All work on electrical components must be carried out by a **trained electrician**.
- ▶ Disconnect the power supply before working on the operator.
- ▶ If an accumulator is connected, disconnect it from the control unit.
- ▶ Check that the operator is not live.
- ▶ Secure the operator against being switched back on.



WARNING

Danger of crushing and shearing!
If the gate moves with persons or animals in the movement area, crushing and shearing injuries may be caused by the mechanism and safety edges of the gate.

- ▶ All danger zones must be visible during the entire gate operation.
- ▶ Always keep the moving gate in sight.
- ▶ Keep persons and animals clear of the range of movement of the gate.
- ▶ Never put your hand near the gate when it is moving or near moving parts.
- ▶ Do not drive through the gate until it has opened completely.
- ▶ Never stand in the opened gate.



WARNING

Danger due to hot parts!

After frequent operation, the motor and control unit may become hot. If the cover is removed and hot parts are touched, they may cause burns.

- ▶ Allow the operator to cool down before removing the cover.



NOTE

In the event of faults or if you have questions on maintenance and care, contact a qualified specialist.



NOTE

Powerful sprays of water lead to damage to the control unit. Protect the control unit housing against powerful jets of water, e.g. from a garden hose.



NOTE

The use of unsuitable cleaning agents may damage the surface of the operator. Clean the operator with a damp, lint-free cloth only.

13. Maintenance and care

13.2 Maintenance schedule

How often?	What?	Who? How?
Once a month	Check all safety devices	• Qualified specialist, see chapter "11.1 Checking the force setting and obstacle detection"
	Test obstacle detection	• User, see chapter "11.1 Checking the force setting and obstacle detection"
	Check that the gate runs smoothly	• User, see chapter "12.7 Function of the emergency release"
	Test the emergency release	• User, see chapter "12.7 Function of the emergency release"
Once a year	Test the gate and all moving parts	• Qualified specialist, as directed by the manufacturer
	Check the mounting bolts of the operator	• User, check that bolts are tight and tighten if necessary
	Lubricate	• Qualified specialist, see chapter "13.3 Lubrication points on the operator unit"
As needed	Clean cover and hinged brackets	• User, with a damp, lint-free cloth

13.3 Lubrication points on the operator unit

1. Open the foundation box, see chapter "7.1 Opening and closing the foundation box".
2. Lubricate the lubrication points with the grease gun:
 - 2 lubrication points on the hinged lever
 - 1 lubrication point on the pivoted lever
3. Close the foundation box, see chapter "7.1 Opening and closing the foundation box".

13.4 Care

Cleaning the gate operator

1. The emergency release must be locked. Secure the movement area of the gate.
2. Disconnect the operator from the mains voltage. If an accumulator is connected, disconnect it from the control unit circuit board. Then check that the operator is disconnected from the power supply and secure it against being switched on again.
3. Clean the control unit housing and the cover of the foundation box with a damp, lint-free cloth.



NOTE

Powerful sprays of water lead to damage to the control unit. Protect the control unit housing against powerful jets of water, e.g. from a garden hose.

4. Open the foundation box. Remove loose dirt with a damp, lint-free cloth or vacuum it up with a suitable device. If necessary, carefully remove any foreign bodies which have penetrated the unit. Close the foundation box.
5. Restore the power supply. If an accumulator was used, reconnect it to the control unit circuit board.

Cleaning the photocell

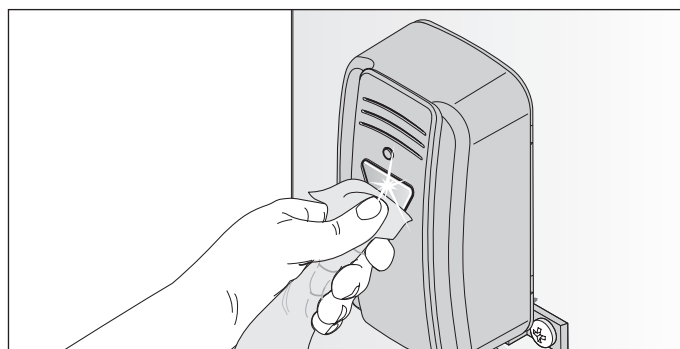


Fig. 1



NOTE

Do not change the position of the photocell when cleaning it.

1. Clean the housing and reflectors of the photocell with a damp, lint-free cloth.
2. Check the mounting of the photocell.

14. Troubleshooting

14.1 Safety instructions on troubleshooting

Follow the basic safety instructions listed below.



DANGER

Danger if not observed!
If safety instructions are not observed, serious injury or death may result.

- ▶ All safety instructions must be complied with.



DANGER

Danger due to electric current!
Contact with live parts may result in electric current flowing through the body.
Electric shock, burns, or death may result.

- ▶ All work on electrical components must be carried out by a **trained electrician**.
- ▶ Before performing work on the operator, it must be disconnected from the power supply.
- ▶ If an accumulator is connected, disconnect it from the control unit.
- ▶ Check that the operator is not live.
- ▶ Secure the operator against being switched back on.



DANGER

Danger due to use of the operator with incorrect setting or when it is in need of repair!

If the operator is used despite incorrect settings or if it is in need of repair, severe injury or death may result.

- ▶ The operator may only be used with the required settings and in the proper condition.
- ▶ You must have faults repaired professionally without delay.



WARNING

Danger of injury to due to trapping of clothing or long hair!
Loose clothing or long hair may be trapped by moving parts of the gate.

- ▶ Keep clear of the moving gate.
- ▶ Always wear tight-fitting clothing.
- ▶ Wear a hairnet if you have long hair.



WARNING

Danger of crushing and shearing!
If operator settings are made or changed, the gate can react unexpectedly. This may cause crushing or shearing injuries to persons.

If settings or changes are made to the operator:

- ▶ The force values must be checked by a **qualified specialist**. If necessary, the force values must be reset and reprogrammed.
- ▶ Keep persons and animals clear of the range of movement of the gate.
- ▶ Secure the movement area of the gate leaves.
- ▶ You must be able to see the movement area of the gate leaves.
- ▶ Never put your hand near the gate when it is moving or near moving parts.
- ▶ Never stand in the opened gate.



WARNING

Danger due to hot parts!

After frequent operation, the motor and control unit may become hot. If the cover is removed and hot parts are touched, they may cause burns.

- ▶ Allow the operator to cool down before removing the cover.



NOTE

If the gate is not in view and the radio remote control is actuated, objects in the movement area of the gate may be jammed and damaged. Objects must not be in the range of movement of the gate.

14. Troubleshooting

14.2 Troubleshooting


The following guide to troubleshooting lists potential problems and their causes and information on correcting them. In some cases, other chapters and sections with a more detailed description are referenced. You will be prompted to call a qualified specialist if this is required. Work on the electrical system and live parts may be performed only by a **trained electrician**.

1. Disconnect the operator from the mains power. If an accumulator is used, it must also be disconnected, see chapter "**8.12 Installing and removing the accumulator**".
2. Check that the operator is disconnected from the power supply and secure it against being switched on again.
3. After working on the operator, first connect the accumulator, then the power supply. Check that the power supply is connected.





14. Troubleshooting

14.3 Troubleshooting table

In normal mode

Flash sequences	Possible cause	Corrective action
Normal  "Warning light" LED flashes	<ul style="list-style-type: none"> • Programming mode activated • Pre-warning time activated • Clearing time activated • Reversing movement, soft reversing and stopped after a soft and reversing movement 	<ul style="list-style-type: none"> • Operator programming in progress

Flash sequences in the case of faults

Flash sequences	Possible cause	Corrective action
Requirement  Operator expects a command	<ul style="list-style-type: none"> • Waiting for confirmation during the position programming movement of gate OPEN or gate CLOSE position 	<ul style="list-style-type: none"> • Confirmation of position programming movement
Alarm  A process has triggered a fault	<ul style="list-style-type: none"> • Photocell/safety device not OK before movement, SAFETY 1 or SAFETY 2 also flashes 	<ul style="list-style-type: none"> • Check photocell and realign if necessary • If necessary, have parts replaced by a qualified specialist
	<ul style="list-style-type: none"> • Interruption of a safety device during the movement 	<ul style="list-style-type: none"> • Remove obstacle
	<ul style="list-style-type: none"> • Safety device not OK 	<ul style="list-style-type: none"> • Have it checked by a qualified specialist
Service  A process has triggered a fault	<ul style="list-style-type: none"> • Service required (service days, service cycles have been reached) 	<ul style="list-style-type: none"> • Have the service performed by a qualified specialist
	<ul style="list-style-type: none"> • Motor temperature is too high (overheating) 	<ul style="list-style-type: none"> • Allow motor to cool
Fault  Operator or parts of the operator faulty	<ul style="list-style-type: none"> • Self-test of electronics • Blockage detection (gear breakage) 	<ul style="list-style-type: none"> • Have it checked and, if necessary, operator or components replaced by a qualified specialist
	<ul style="list-style-type: none"> • Run time exceeded 	<ul style="list-style-type: none"> • Travel path too long, travel path restricted to max. 120°
	<ul style="list-style-type: none"> • Fault during plausibility test of the Memo, the 4 LEDs of the radio channels CH 1 - CH 4 also flash 	
	<ul style="list-style-type: none"> • MEMO identifier error, incorrect Memo 	<ul style="list-style-type: none"> • Disconnect operator from the mains voltage, unplug Memo, re-connect operator to mains voltage
	<ul style="list-style-type: none"> • MEMO device type error 	<ul style="list-style-type: none"> • The Memo can be deleted via the Radio button, and this also deletes all stored transmitters, see chapter "10.9 Deleting all channels in the receiver" • If necessary, have the Memo replaced

14. Troubleshooting

Problem	Possible cause	Test/check	Remedy
Gate does not open	• Power failure	• Check the fuse	• Replace the fuse
		• EMERGENCY STOP operated	• Release EMERGENCY STOP
		• If applicable, check accumulator	• Charge accumulator or have it replaced if necessary
	• Interior safety contract strip triggered or defective	• Person/obstacle in gate travel path	• Remove obstacle
		• Display LED "SAFETY 2"	• Have connections checked
		• Rubber profile deformed	
		• Contact fault	
	• Interior photocell triggered or defective	• Obstacle in gate travel path	• Remove obstacle
		• Display LED "SAFETY 2"	• Align photocell
		• Dirty lens	• Clean the photocell
		• Correct alignment	• Align photocell
		• Contact fault	• Have connections checked
		• Interrupted safety device, see chapter "12.9 Jog mode in the event of faults"	
	• Radio signal transmission faulty	• Transmitter battery weak	• Replace transmitter battery
		• Range too great	• Reduce distance
		• Transmitter defective	• Have transmitter replaced
	• Electric lock remains locked	• Opening impulse correct	• Check electric lock and connections
• Have electric lock replaced			
Gate does not close	• Power failure	• Check the fuse	• Replace the fuse
		• EMERGENCY STOP operated	• Release EMERGENCY STOP
		• Accumulator may be weak	• Charge accumulator or have it replaced if necessary
	• Interior safety contract strip triggered or defective	• Obstacle in gate travel path	• Remove obstacle
		• Display LED "SAFETY 1"	• Have connections checked
		• Rubber profile deformed	• Have safety contact strip checked and replaced if necessary
		• Contact fault	• Have connections checked
		• Safety contact strip defective	• Have safety contact strip replaced
	• Exterior photocell triggered or defective	• Obstacle in measurement range	• Remove obstacle
		• Display LED "SAFETY 1"	• Check alignment
		• Dirty lens	• Clean safety contact strip
		• Correct alignment	• Check alignment
		• Contact fault	• Align safety contact strip
		• Interrupted safety device, see chapter "12.9 Jog mode in the event of faults"	
	• Radio signal transmission	• Transmitter battery weak	• Replace transmitter battery
		• Check range	• Reduce distance
		• Transmitter defective	• Use replacement transmitter

14. Troubleshooting

Problem	Possible cause	Test/check	Remedy
Gate operation interrupted	• Power failure	• Check the fuse	• Replace the fuse
		• EMERGENCY STOP operated	• Release EMERGENCY STOP
		• If necessary, have accumulator checked	• Charge accumulator/have it replaced
	• Renewed pulse by command device	• Unintended operation	• Secure command device such as handheld transmitter
		• Faulty contact	• Have connections checked
	• Obstacle detection detects an obstacle	• EMERGENCY STOP with reversion, warning light flashes three times	• Remove obstacle • If gate is not running smoothly, have it repaired • Observe wind load
• Safety contact strip detects an obstacle	• EMERGENCY STOP with reversion	• Remove object from the gate travel path • Check the function of the safety device	
• Photocell detects an obstacle	• SOFT STOP with reversion	• Remove object from the gate travel path • Check the function of the safety device • Have defective photocell replaced • Interrupted safety device, see chapter "12.9 Jog mode in the event of faults"	

15. Taking out of operation, storage and disposal

15.1 Taking the operator out of operation and disassembly

Follow the basic safety instructions listed below. Persons under the influence of drugs, alcohol, or medications that can influence their ability to react may not work on the operator.

The disassembly and disposal of the operator may only be performed by a qualified specialist.

This manual must be read, understood and complied with by the qualified specialist who disassembles the operator. Work on the electrical system and live parts may be performed only by a **trained electrician**.



DANGER

Danger if not observed!
If safety instructions are not observed, serious injury or death may result.

- ▶ All safety instructions must be complied with.



DANGER

Danger due to electric current!
Contact with live parts may result in electric current flowing through the body. Electric shock, burns or death will result.

- ▶ All disassembly work on electrical components must be carried out by a **trained electrician**.
- ▶ The operator must be disconnected from the power supply disassembling it.
- ▶ If an accumulator is connected, disconnect it from the control unit.
- ▶ Check that the operator is not live.
- ▶ Secure the operator against being switched back on.



WARNING

Danger of tripping and falling!
Unsafely positioned parts such as packaging, operator parts or tools may cause trips or falls.

- ▶ Keep the disassembly area free of unnecessary items.
- ▶ Place all parts where no-one is likely to trip or fall over them.
- ▶ The general workplace guidelines must be observed.



WARNING

Danger due to hot parts!
After frequent operation, the motor and control unit may become hot. If the cover is removed and hot parts are touched, they may cause burns.

- ▶ Allow the operator to cool down before removing the cover.



WARNING

Risk of injury to body!
During welding, the body and in particular eyes and hands may be seriously injured by radiation or sparks as well as mechanical and thermal hazards.

When welding, wear appropriate personal protective equipment such as:

- ▶ face protection
- ▶ protective clothing
- ▶ safety gloves



CAUTION

Risk of injury to feet!
Falling parts could cause foot injuries.

- ▶ Wear safety shoes.



CAUTION

Risk of eye injury! Chips flying when drilling may cause serious injuries to eyes and hands.

- ▶ Wear safety glasses.



15. Taking out of operation, storage and disposal



CAUTION

Danger of abrasions and cuts!
Metal parts may cause abrasions and cuts when picked up or touched.

- ▶ Wear safety gloves.



NOTE

If there is an accumulator in the control unit, it must be removed by a qualified electrician. See chapter "8.12 Installing and removing the accumulator".

The operator and its accessories must be disconnected from the power supply when taking them out of operation or during disassembly.

1. Disconnect the control unit from the power supply. To do so, switch off the main switch or the fuse. See chapter "7.2 Opening and closing the control unit housing."
2. If an accumulator was used, disconnect it, see chapter "8.12 Installing and removing the accumulator."
3. Disassembly is carried out in the reverse order of installation.

15.2 Storage

NOTE

Improper storage may damage the operator.
The operator must be stored in closed and dry rooms.

Store the packaging units as follows:

- in enclosed, dry rooms so that they are protected from moisture
- at a storage temperature from -25 °C to $+65\text{ °C}$
- secure to prevent falling.
- leave room for unhindered passage

15.3 Disposal of waste

Observe the instructions for disposal of packaging, components, batteries and, if applicable, the accumulator.



DANGER

Danger of hazardous substances!
Improper storage, use or disposal of accumulators or batteries are dangerous for the health of humans and animals. Serious injury or death may result.

- ▶ Accumulators and batteries must be stored out of the reach of children and animals.
- ▶ Keep accumulators and batteries away from chemical, mechanical and thermal influences.
- ▶ Do not recharge old accumulators and batteries.
- ▶ Components of the operator as well as old accumulators and batteries must not be disposed of with household waste. They must be disposed of properly.

NOTE

Dispose of all components in accordance with local or national regulations to avoid environmental damage.



INFORMATION

All operator components that have been taken out of service must not be disposed of with household waste, as they contain hazardous substances. The components must be disposed of correctly at an authorised recycling centre. The local and national regulations must be observed.



INFORMATION

Old accumulators and batteries must not be disposed of with household waste as they contain hazardous substances. These must be disposed of properly at municipal collection points or in the containers provided by dealers. National guidelines must be observed.



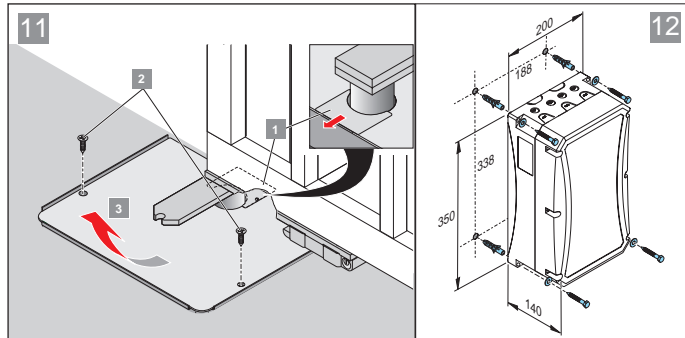
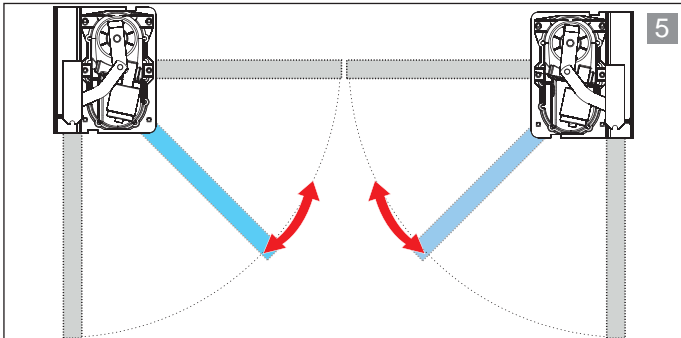
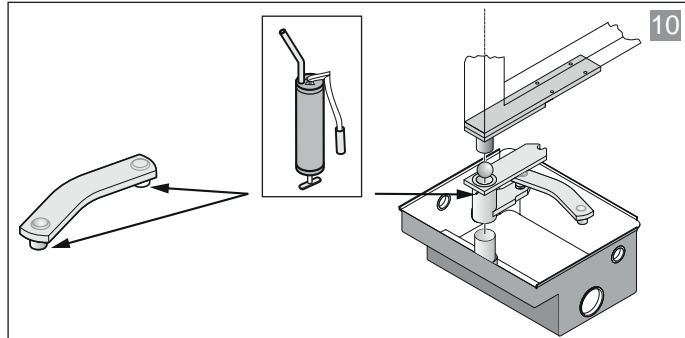
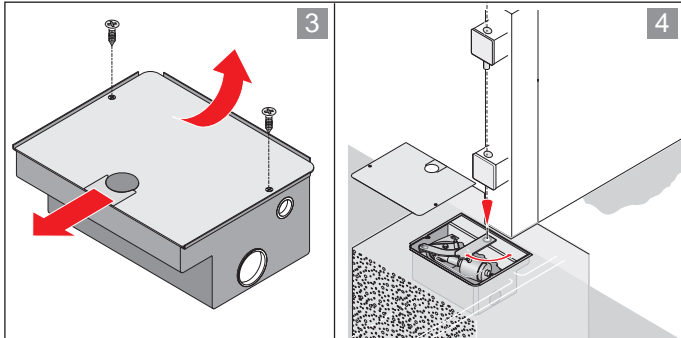
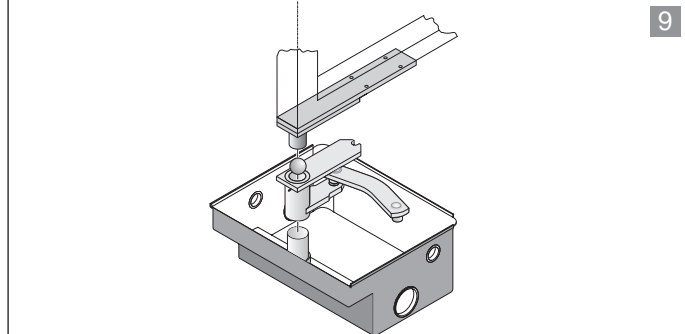
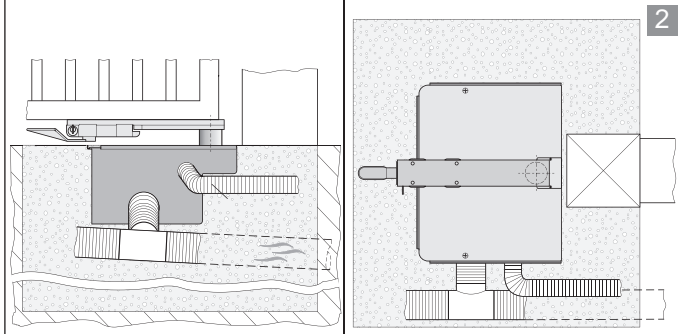
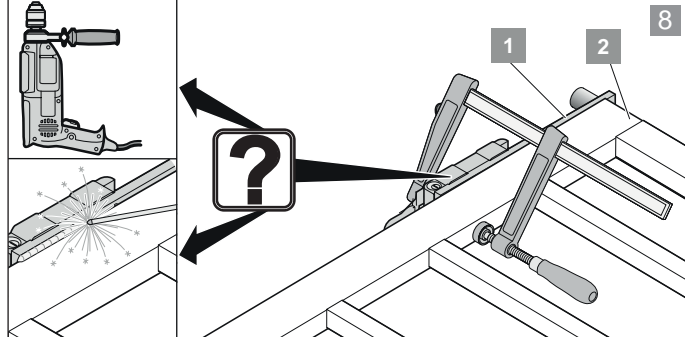
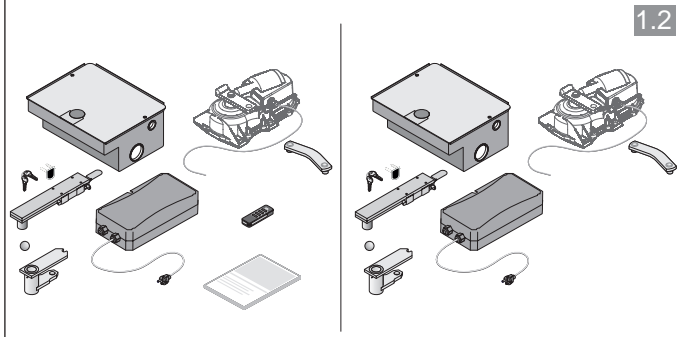
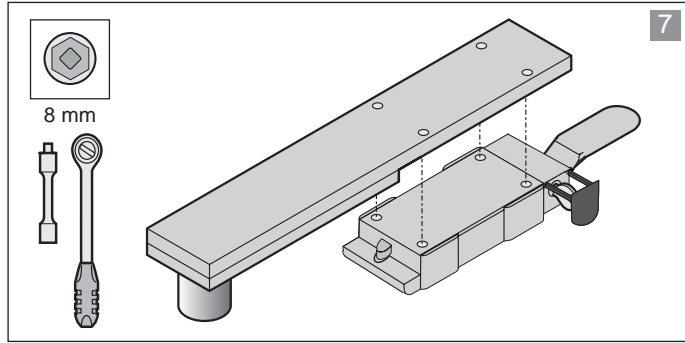
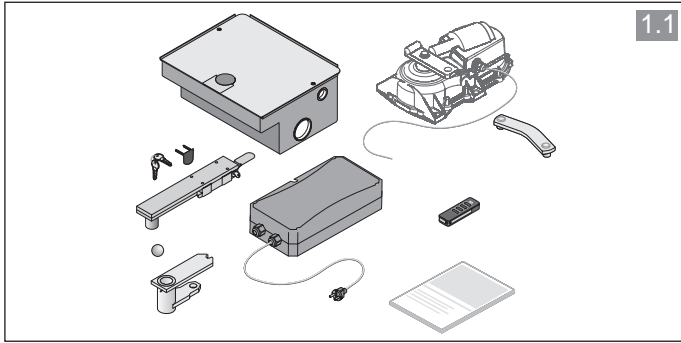
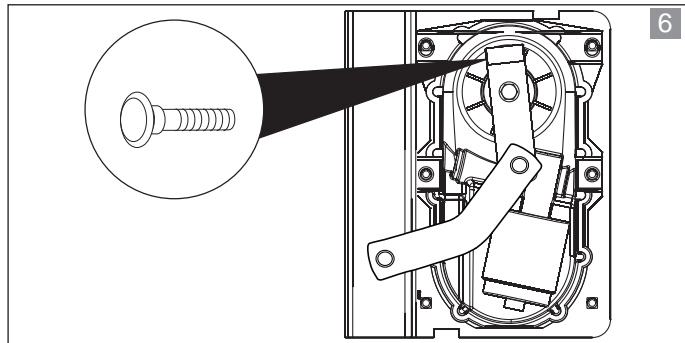
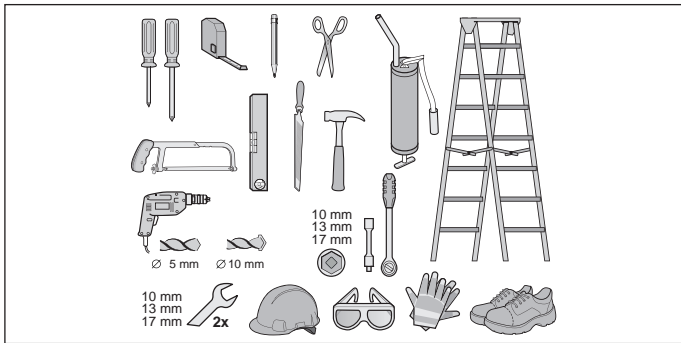
15. Taking out of operation, storage and disposal

16. Short instructions for installation

The short instructions do not replace the installation and operating manual.

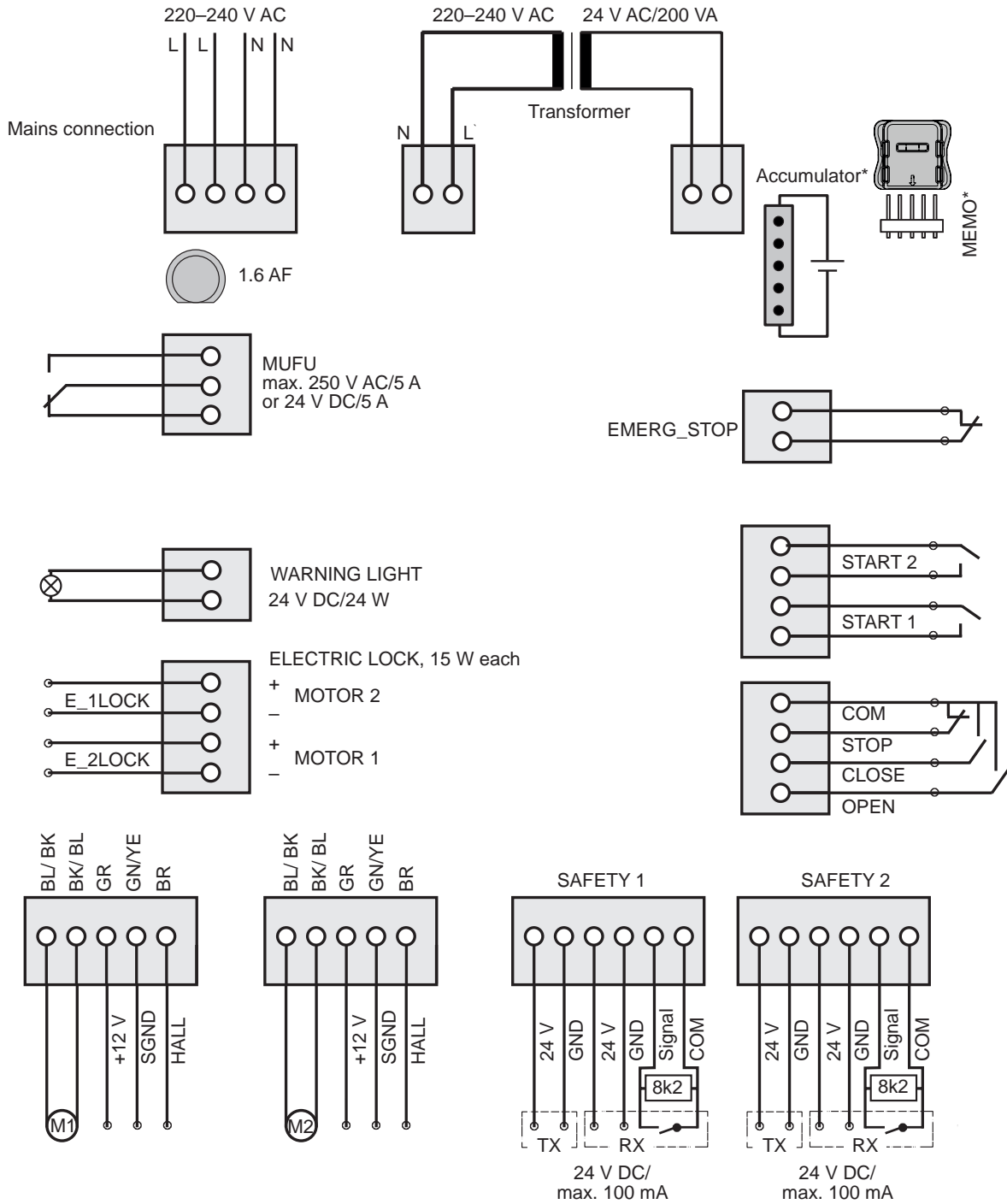
Read this Installation and Operating Manual carefully and, most importantly, follow all warnings and safety instructions.

This will ensure that you can install the product safely and optimally.



17. Connection diagram for twist UG

Fig. Connection diagram, control unit, twist UG



*optional accessories

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