

EN TRANSLATION OF THE ORIGINAL INSTALLATION AND OPERATING MANUAL

### Swing gate operator

twist UG

twist UG+



Download the current manual:



# Table of contents

Dear customer,

Congratulations on your purchase of a product from **SOMMER Antriebs- und Funktechnik GmbH**.

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 or installer.

All our products are intended for use by persons of all genders, even where this is not specifically stated.

## 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:



+49 (0) 7021 8001-403



doku@sommer.eu

## Service

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



+49 (0) 900 1800-150

(€ 0.14/minute from land line telephones in Germany, mobile prices may vary)

[www.sommer.eu/de/kundendienst.html](http://www.sommer.eu/de/kundendienst.html)

## Copyright and proprietary rights

The manufacturer retains the copyright for this Installation and Operating manual. No part of this Installation and Operating Manual may be reproduced in any form or processed, copied, or distributed using electronic systems without the written permission of **SOMMER Antriebs- und Funktechnik GmbH**. Violations of the above stipulations will lead to damage claims. All brands mentioned in this Installation and Operating Manual are the property of their respective manufacturer and hereby recognised as such.

<b>1. About this Installation and Operating Manual</b>	<b>4</b>
1.1 Storage and circulation of the Installation and Operating Manual	4
1.2 Important for translations	4
1.3 Description of the product type	4
1.4 Target groups of the Installation and Operating Manual	4
1.5 Explanation of symbols and notes	4
1.6 Special warning symbols and mandatory signs	5
1.7 Information regarding the depiction of text	6
1.8 Intended use of the operator	6
1.9 Improper use of the operator	6
1.10 Qualifications of personnel	7
1.11 Information for the user	7
<b>2. General safety instructions</b>	<b>8</b>
2.1 Basic safety instructions for operation	8
2.2 Additional safety information for the radio remote control	9
2.3 Notes and information on operation and remote control	9
2.4 Simplified Declaration of Conformity for radio systems	9
<b>3. Description of function and product</b>	<b>10</b>
3.1 The operator and its mode of operation	10
3.2 Safety equipment	11
3.3 Product designation	11
3.4 Explanation of terms and tool symbols used	11
3.5 Scope of delivery	12
3.6 Dimensions	13
3.7 Technical data	13
<b>4. Tools and protective equipment</b>	<b>15</b>
4.1 Required tools and personal protective equipment	15
<b>5. Declaration of Installation</b>	<b>15</b>
<b>6. Installation</b>	<b>16</b>
6.1 Important notes and information	16
6.2 Preparing for installation	17
6.3 Installing the foundation box	19
6.4 Installing the gate leaf fitting and gate leaf	20
6.5 Installing accessories	21
6.6 Mechanical end position gate OPEN and gate CLOSE	21
6.7 Installing the control unit	22
<b>7. Opening and closing the foundation box and control unit housing</b>	<b>23</b>
7.1 Opening and closing the foundation box	23
7.2 Opening and closing the control unit housing	23
<b>8. Connections and functions of the control unit</b>	<b>24</b>
8.1 Testing the provisional connection	24
8.2 Control unit circuit board	25
8.3 Overview of the LEDs	26
8.4 Connecting the motor	28

# Table of contents

8.5	Connecting the warning light	29	<b>14. Troubleshooting</b>	<b>54</b>	
8.6	Connecting the safety inputs	29	14.1	Important notes and information	54
8.7	Connecting an 8k2 safety contact strip	30	14.2	Preparing for troubleshooting	54
8.8	Connecting an external EMERGENCY STOP	31	14.3	Troubleshooting table	55
8.9	Connecting an electric lock	31	<b>15. Taking out of operation, storage and disposal</b>	<b>58</b>	
8.10	Connecting a button	31	15.1	Important notes and information	58
8.11	Connecting the multi-function relay	32	15.2	Taking out of operation and disassembly	58
8.12	Installing and removing the accumulator	32	15.3	Storage	59
8.13	Setting options for the DIP switches	34	15.4	Disposal of waste	59
8.14	Connecting to the mains voltage	36	<b>16. Short instructions for installation</b>	<b>60</b>	
8.15	Setting the automatic closing function	37	<b>17. Setting options for the DIP switches and connection diagram for twist UG</b>	<b>62</b>	
8.16	Information on SOMlink	38			
<b>9. Initial operation</b>		<b>39</b>			
9.1	Important notes and information	39			
9.2	Preparing for programming	39			
9.3	Programming a 1-leaf gate	39			
9.4	Programming a 2-leaf gate	40			
9.5	Obstacle detection event	41			
<b>10. Radio remote control</b>		<b>42</b>			
10.1	Information on SOMloq2	42			
10.2	Programming a handheld transmitter	42			
10.3	Explanation of the LEDs for radio channels CH 1–4	42			
10.4	Information on Memo	42			
10.5	Overview of the time sequences	43			
10.6	Cancelling programming mode	43			
10.7	Deleting a transmitter button from the radio channel	43			
10.8	Deleting a transmitter completely from the radio channel	43			
10.9	Deleting a radio channel in the receiver	43			
10.10	Deleting all channels in the receiver	44			
10.11	Programming a second handheld transmitter by radio (HFL)	44			
<b>11. Function test/Final test</b>		<b>45</b>			
11.1	Checking the force setting and obstacle detection	45			
11.2	Handover of the gate system	45			
<b>12. Operation</b>		<b>46</b>			
12.1	Important notes and information	46			
12.2	Handover to the user	46			
12.3	Operating modes of gate movement	47			
12.4	Performing obstacle detection	49			
12.5	Setting power-saving mode	49			
12.6	In the event of a power failure	50			
12.7	Function of the emergency release	50			
12.8	Carrying out a reset	50			
12.9	Jog mode in the event of faults	51			
<b>13. Maintenance and care</b>		<b>52</b>			
13.1	Important notes and information	52			
13.2	Maintenance schedule	52			
13.3	Lubrication points on the operator unit	53			
13.4	Care	53			

# 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. Observe all warnings and safety instructions.

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

A replacement for the installation and operating manual can be downloaded from **SOMMER** at:

**www.sommer.eu**

During the transfer or resale of the 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-revd>

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 Machinery Directive (2006/42/EC).

The operator is fitted with a radio receiver. Optionally available accessories are also described. The version can vary depending on the type. This means the use of accessories can vary.

## 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 or using the device:

- 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 symbols and notes

The warnings in this installation and operating manual are structured as follows.

### Signal word



Hazard symbol

#### 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**

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 that may lead to fatal or serious injury**

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

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



# 1. About this Installation and Operating Manual

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 in the operator or gate may occur.



## INFORMATION

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

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 voltage supply



Connect the operator to the voltage supply



Factory setting



Connection via SOMlink to a WiFi-enabled device



Operator components must be disposed of properly



Old accumulators and batteries must be disposed of properly

## 1.6 Special warning symbols 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 due to electric current!**



**Danger of crushing and shearing!**

Applies to 1-leaf gates



Applies to 2-leaf gates



**Danger of tripping and falling!**



**Danger due to hot parts!**



**Risk of injury to feet!**

The following mandatory signs are used for the respective actions. The requirements described must be complied with.



**Wear personal safety glasses**



**Wear personal face protection**



**Wear personal protective clothing**



**Wear personal safety gloves**



**Wear personal safety shoes**

# 1. About this Installation and Operating Manual

## 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 1
- List 2

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

1 A

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**”.

## 1.8 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 accessories from **SOMMER** only and only to the extent described. For more information on accessories, see:



<https://downloads.sommer.eu/>

Gates automated with this operator must comply with all valid international and domestic standards, directives and regulations in their currently valid version. These include EN 12604 and EN 13241.

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
- if 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.

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 control unit is retrofitted to a manually operated gate. In addition, a handover protocol and an inspection book must be completed.

The following are available:

- EC Declaration of Conformity
- handover protocol for the operator



<http://som4.me/konform>

## 1.9 Improper use of the operator

Any other use or additional use that has not been described in Chapter 1.8 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 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.

Observe the local building regulations.

The operator may not be used in:

- areas with explosion hazard
- very salty air
- aggressive atmosphere, including chlorine

# 1. About this Installation and Operating Manual

## 1.10 Qualifications of personnel

### Qualified specialist for installation, commissioning and disassembly

This Installation and Operating Manual must be read and complied with by a **qualified specialist** who installs or performs maintenance on the operator.

Work on the electrical system and live parts must be performed 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. A qualified specialist is a person commissioned by the installer.

The qualified specialist must be familiar with the following standards:

- EN 13241 Doors and gates – Product standard
- EN 12604 Doors and gates – Mechanical aspects – Requirements and test methods
- EN 12453: Safety in use of power-operated doors 2017 (Plc)

After completion of any work, the qualified specialist must:

- issue an EC Declaration of Conformity
- attach the CE mark and the type plate to the gate system

### Instructing the user and handover of documents

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, testing and care which the user can carry out

The qualified specialist must inform the user about which work may only be carried out by a qualified specialist:

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

## 1.11 Information 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 is responsible for:

- ensuring that this Installation and Operating Manual is kept accessible at all times at the place of use
- the intended use of the operator
- its good condition
- instructing all users how to use the operator, the hazards involved and in the operation of the emergency release
- operation
- regular maintenance, testing and care
- 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. Handheld transmitters must be safely stored and protected against unintended and unauthorised use.

The user must observe the accident prevention regulations and the applicable standards. 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. 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.

---

#### **Danger if not observed!**

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

- ▶ All safety instructions must be complied with.

---

#### **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 due to use of the operator with incorrect settings 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 of hazardous substances!**

Improper storage, use or disposal of accumulators, batteries and operator components 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.
- 

---

#### **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.

- ▶ 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.
- ▶ Do not drive through the gate until it has opened completely.
- ▶ Store all handheld transmitters so that unauthorised or accidental operation, e.g., by children or animals, is impossible.
- ▶ Never stand in the opened gate.

---

#### **Danger due to projecting parts!**

Parts must not project into public roads or footpaths. This also applies while the gate is moving. Persons and animals may be seriously injured.

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

---

#### **Danger due to hot parts!**

In 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.

---

#### **Risk of eye injury!**

Chips flying when drilling may cause serious injuries to eyes and hands.

- ▶ Wear safety glasses.

---

#### **Risk of injury to hands!**

Rough metal parts may cause abrasions and cuts when picked up or touched.

- ▶ Wear your personal safety gloves.

---

#### **Risk of injury to feet**

Falling parts can cause foot injuries.

- ▶ Wear safety shoes.
-

## 2. General safety instructions

### 2.2 Additional safety information for the radio remote control

Follow the basic safety instructions listed below.

#### **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 all handheld transmitters so that unauthorised or accidental operation, e.g., by children or animals, is impossible.
- ▶ Never stand under the opened gate.

### 2.3 Notes and information on operation and remote control

The user of the radio system is not protected against 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.

#### **NOTE**

- If the gate is not in view and the operator is actuated, e.g. using the radio remote control, 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.
- Dispose of all components in accordance with local and national regulations to avoid environmental damage.

#### **i INFORMATION**

- Operator components that have been taken out of service as well as old accumulators and batteries must not be disposed of with household waste. Components which are no longer in use, old accumulators and batteries must be disposed of properly. You must observe the local and national regulations here.



### 2.4 Simplified Declaration of Conformity for radio systems

SOMMER Antriebs- und Funktechnik GmbH hereby declares that the radio system (twist UG and twist UG+) complies with Directive 2014/53/EU. The full text of the EU Declaration of Conformity for the radio system can be found at:



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

### 3. Description of function and product

#### 3.1 The operator and its mode of operation

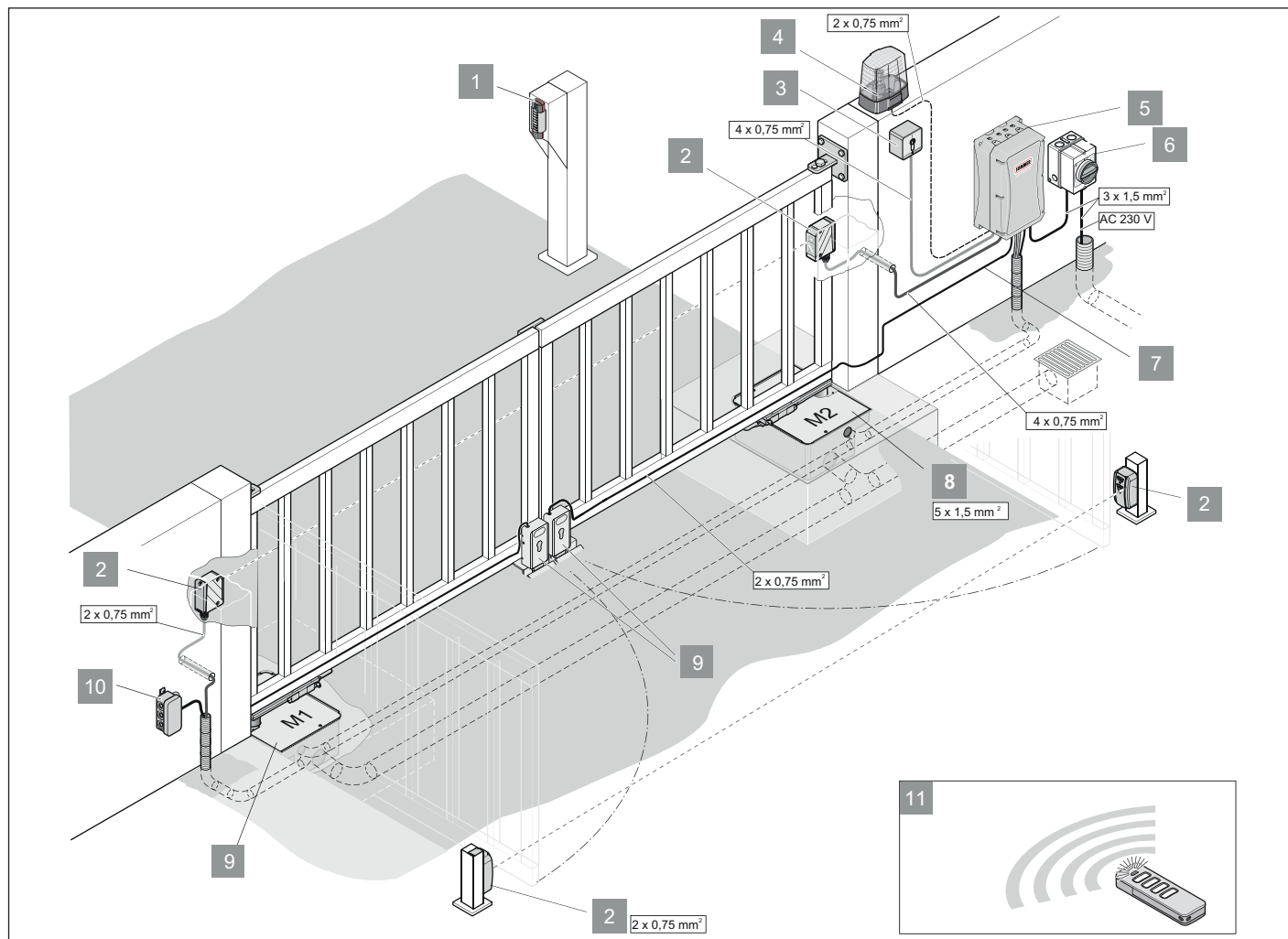


Fig. Application example

- 1) Telecody+
  - 2) Photocell with relay output, inside and outside
  - 3) Key switch (1 or 2 contacts)
  - 4) Warning light
  - 5) Control unit
  - 6) Main switch (all-pole deactivation)
  - 7) Connecting cable set, 12 m
  - 8) Foundation box with motor
  - 9) Electric lock DC 24 V/15 W, 2x
- A separate electric lock can be connected for each leaf.
- 10) Terminal box
  - 11) 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.



### 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.

#### 3.3 Product designation

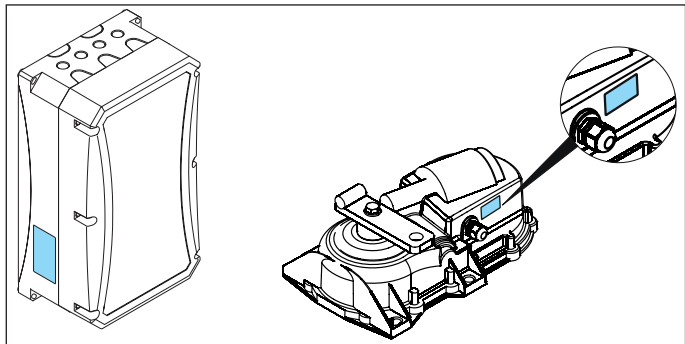


Fig. Type plates

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

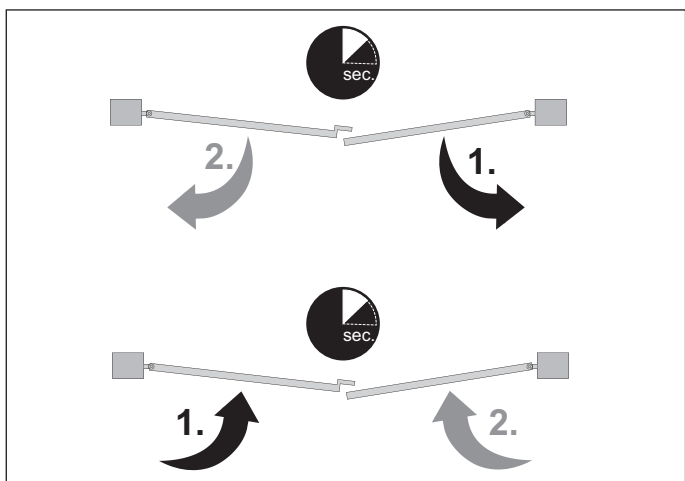


Fig. Example of movement sequence

#### Left gate/right gate

In this Installation and Operating Manual, it is always assumed that the gate is viewed from the interior of the property. The operators are situated between the two posts and 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. 1-leaf gates only have an active leaf.

#### Inactive leaf

Designates the gate leaf which opens second and closes first.

#### Tool symbols

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



Phillips screwdriver



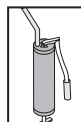
Allen wrench



Fork or ring wrench



Ratchet wrench



Grease gun

### 3. Description of function and product

#### 3.5 Scope of delivery

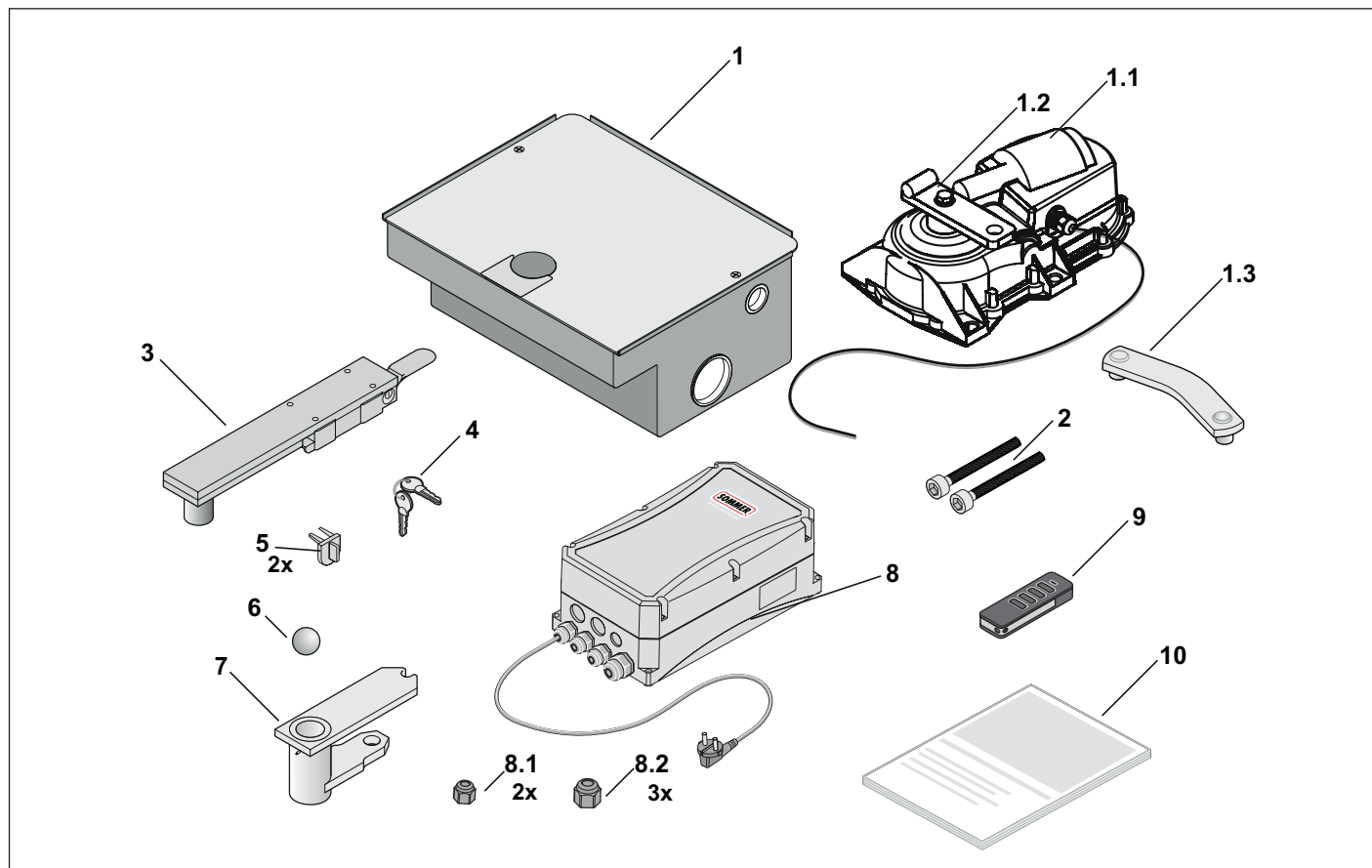


Fig. Scope of delivery, 1-leaf

Complete set	1-leaf	2-leaf
1) Foundation box, pre-assembled:	1x	2x
1.1) Motor with connection cable	1x	2x
1.2) Operator part	1x	2x
1.3) Hinged lever	1x	2x
2) Screws M10 x 80 mm	2x	4x
3) Gate fitting, pre-assembled with emergency release	1x	2x
4) Key for emergency release	1x	2x
5) Covering caps for closing cylinder	2x	4x
6) Ball	1x	2x
7) Pivoted lever	1x	2x
8) Control unit with mains line and mains plug	1x	1x

Complete set	1-leaf	2-leaf
8.1) Plug-in connection M16	2x	2x
8.2) Plug-in connection M20	3x	3x
9) Handheld transmitter	1x	1x
10) Installation and Operating Manual	1x	1x

**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

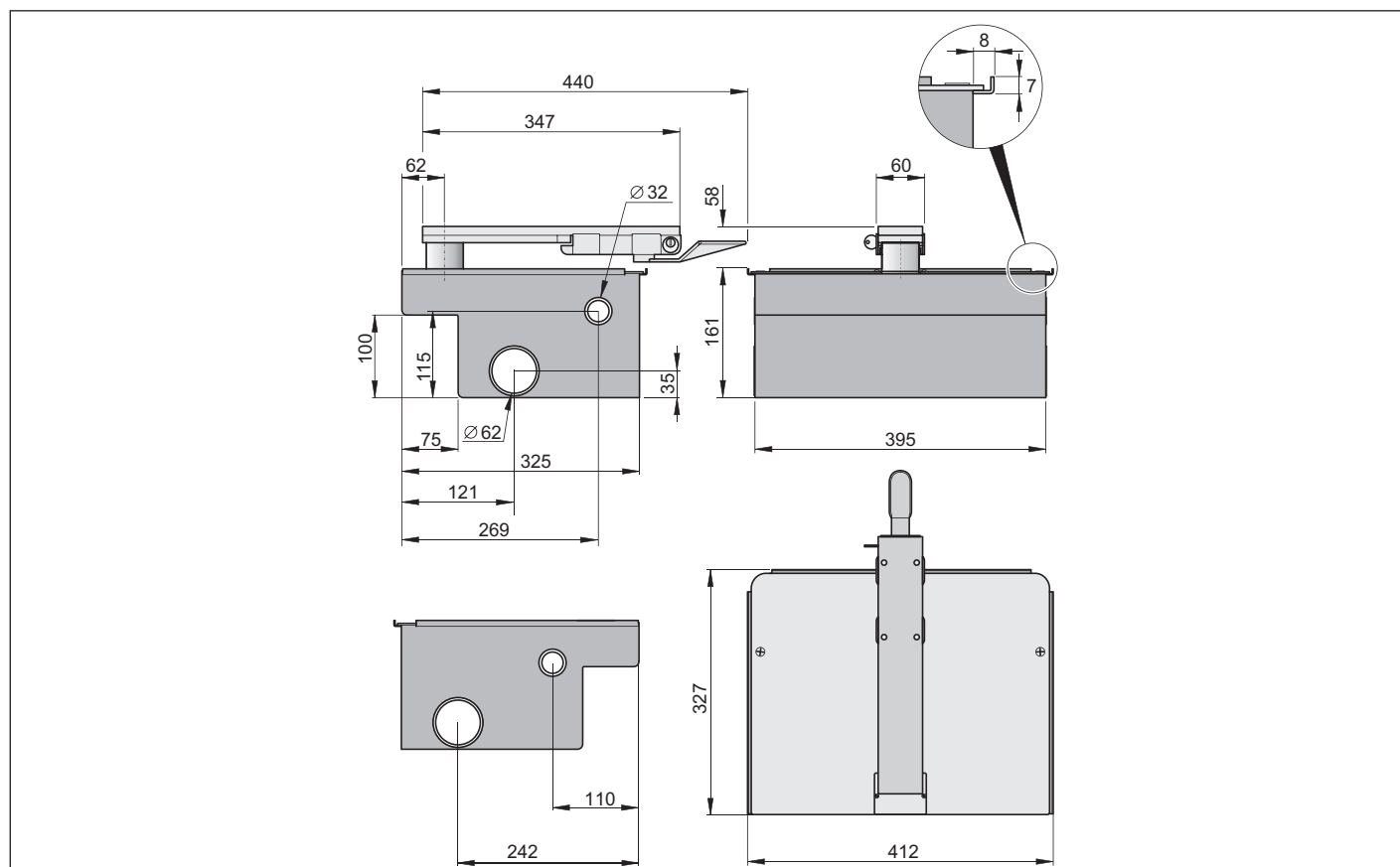


Fig. Dimensions (all dimensions in mm)

#### 3.7 Technical data

##### Infill

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

Tab. Ratio: door surface 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+
Weight	350 kg 1) 2)	600 kg 1) 3)
Length	3.5 m 1) 2)	3.5 m 1) 3)
Gate inclination	0 %	

1) In compliance with the standards and directives listed in the Declaration of Installation, particularly EN 12453:2017(Plc).

2) For leaf lengths from 3 m and gate weights of 300 kg or more, active safety contact strips must be used.

3) The use of active safety devices is mandatory in compliance with the standards and directives listed in the Declaration of Installation, particularly EN 13241.

### 3. Description of function and product

#### Technical data for the operator

	twist UG	twist UG+
Rated voltage	AC 220–240 V	
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 dB(A)	
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*	3,500 mm	
Gate inclination	0 %	
Max. opening angle	105°	

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



## 6. Installation

### 6.1 Important notes and information

In particular, please observe and comply with the following warnings, notes and information to ensure safe installation.

#### DANGER



##### **Danger if not observed!**

If warnings are not observed, serious injury or death may result.

- ▶ All warnings 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.



##### **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 operators installed on them must be stable. Suitable mounting material must be used to install the operator.



##### **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.



##### **Danger of tripping and falling!**

Unsafely positioned parts such as packaging, operator parts or tools may cause persons to trip or fall.

- ▶ Keep the installation area free of unnecessary items.



##### **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



##### **Risk of eye injury!**

Chips flying when drilling may cause serious injuries to eyes and hands.



- ▶ Wear safety glasses when drilling.



##### **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.
- 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.
- 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.



## 6. Installation

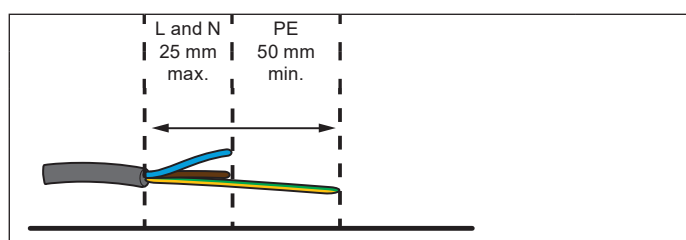
### NOTE

In order to maintain the functionality of the technical equipment, we recommend that you observe the specified maximum lengths and minimum cross-sections for power cables!

Connection lines	Signal lines
Maximum length 20 m	Maximum length 25 m
Minimum cross-section 1.5 mm <sup>2</sup>	

Approved wire cross sections for all terminals: 1 mm<sup>2</sup>–2.5 mm<sup>2</sup>.

- Do not remove the sheath of the supply line until it is in the housing!
- Insert the sheath of the connecting line into the control unit housing.
- Remove the line sheaths as shown in the graphic.



### 6.2 Preparing 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 meet the following criteria:

- Length of one leaf min. 800 mm to max. 3,500 mm; see Chapter “3.6 Dimensions”
- Max. gate height 2,000 mm
- Weight of an individual door leaf, maximum 350 kg for twist UG; up to 600 kg for twist UG+; see Chapter “3.6 Dimensions”
- Weight should be evenly distributed
- It must be possible to move the gate leaf easily by hand over 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 “3.6 Dimensions”

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.

### 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.

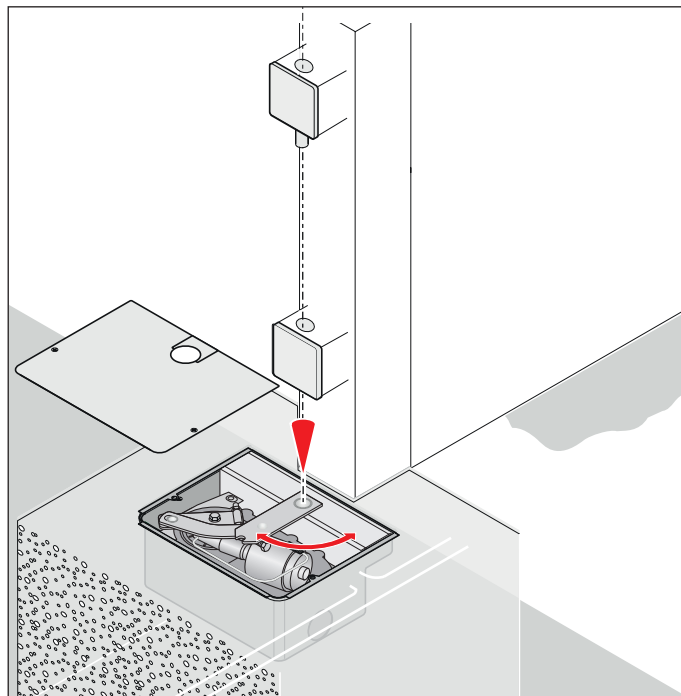


Fig. Upper and lower gate hinge aligned perpendicularly

### NOTE

- The upper gate 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. Compliance with standard EN 12604 must be ensured here.
- The mechanism of the gate must be checked to prevent damage to the operator unit and the gate leaves.
- 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.

## 6. Installation

### Requirements for installation

For information on the permissible weights of the gate leaves, see Chapter “3.6 Dimensions”. In the case of 1-leaf 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 positions; see Chapter “6.6 Mechanical end position gate OPEN and gate CLOSE”.

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

#### 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.

### Use of electric locks

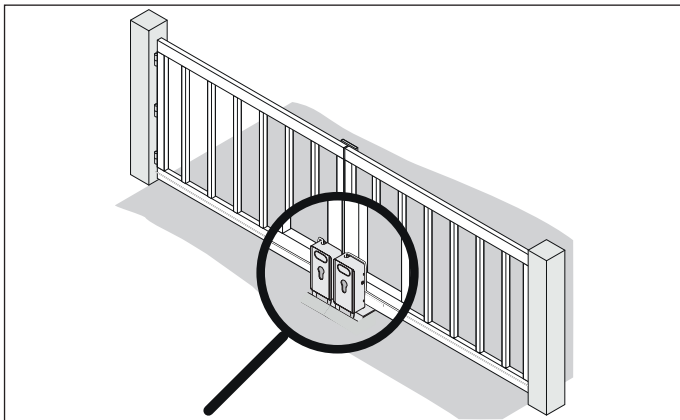


Fig. Installation example for electric locks

To lock the gate securely, a separate electric lock is recommended for every gate leaf. 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.

### Preparing the foundation

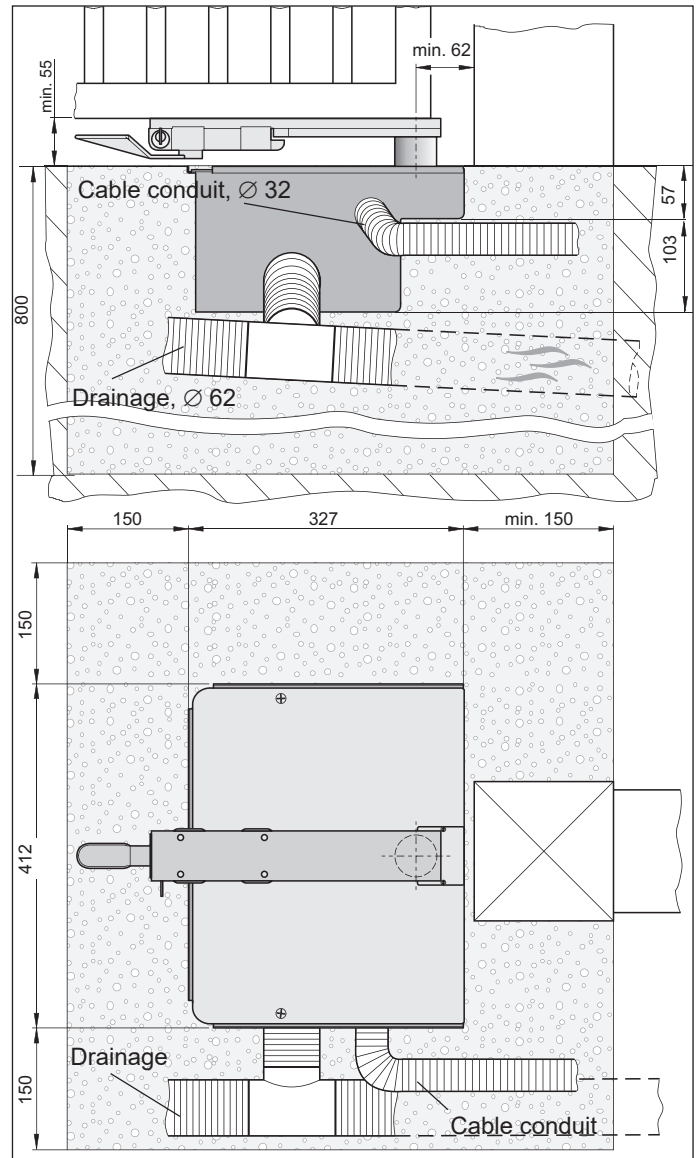


Fig. Example of installation in ground; all dimensions in m

#### 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. Installation

### 6.3 Installing the foundation box

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

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.

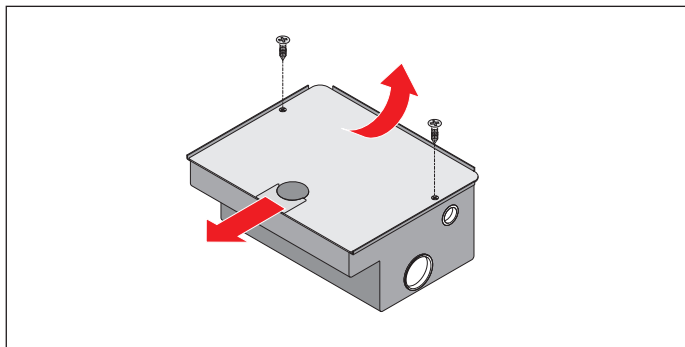


Fig. 2

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

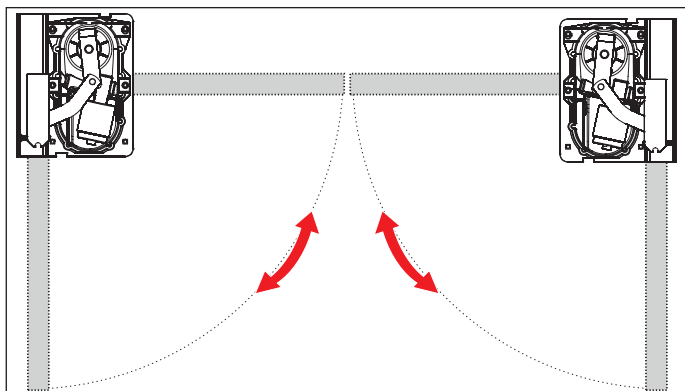


Fig. 3

1. 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”.

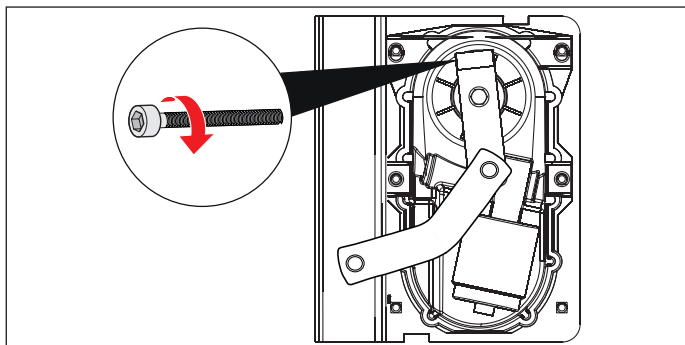


Fig. 4

#### 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.
1. Insert screw M10 x 80 mm for the gate CLOSE end stop into the operator part and tighten it only slightly.

## 6. Installation

### 6.4 Installing the 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



#### Risk of eye injury!

Chips flying when drilling may cause serious injuries to eyes and hands.



- ▶ Wear safety glasses when drilling.



#### Risk of injury to feet!

Falling parts can cause serious foot injuries.



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

#### NOTE

- Residues from welding work can result in rapid corrosion of the fitting and the operator. Cover the operator and the gate during welding to prevent damage to parts caused by sparks or welding beads.
- 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.
- Check whether the gate leaf opens and closes with ease. If this is not the case, the gate leaf must be adjusted.

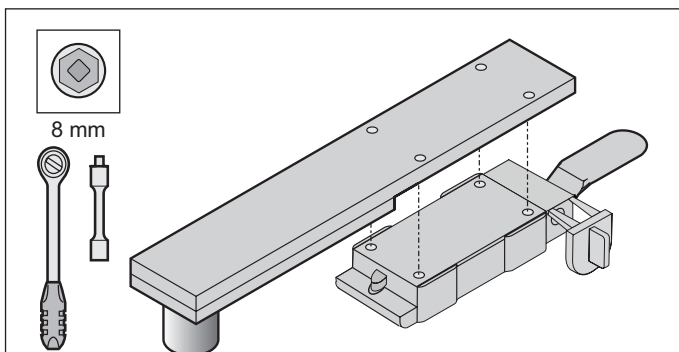


Fig. 1

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.

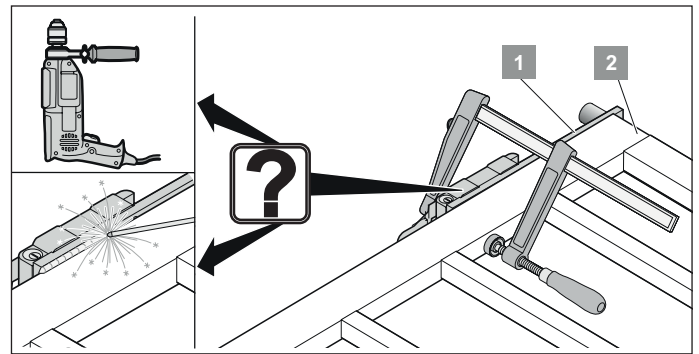


Fig. 2

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).

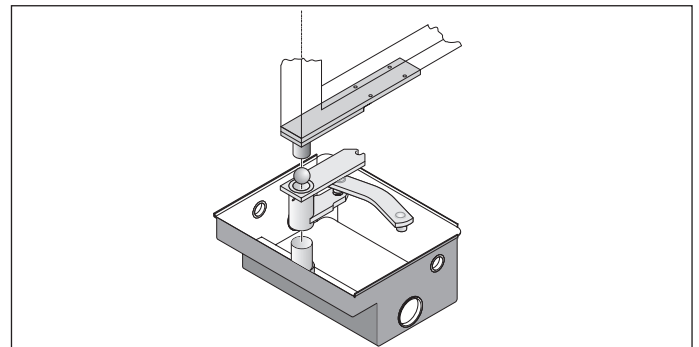


Fig. 3

#### 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 the case of very large and heavy gates, other aids, for example a crane or other suitable lifting device must be used in addition to obtaining the help of a second specialist.

#### 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.

## 6. Installation

4. Move the gate into the gate CLOSE end position and counter the screw in the operator part with the nut.

### 6.5 Installing accessories

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

#### Position of photocells

We recommend installing a 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 Mechanical end position gate OPEN and gate CLOSE

In the case of 1-leaf 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.

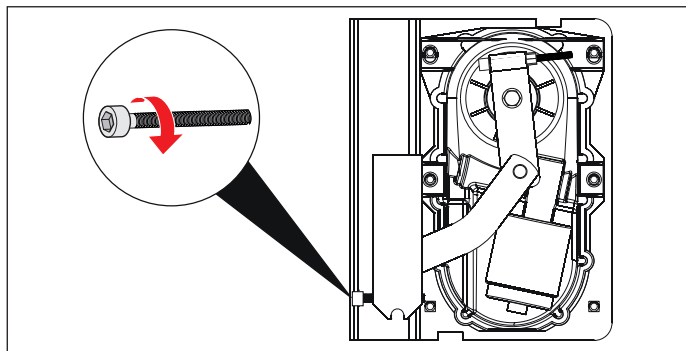


Fig. 4

2. Set the M10 x 80 mm screw for the door OPEN end stop and counter with the M10 nut.
3. Move the gate leaf manually into centre position.

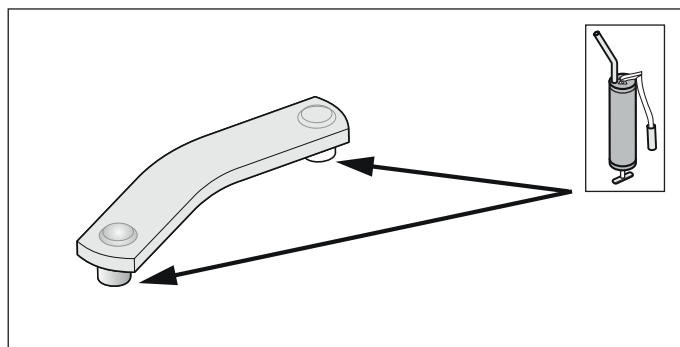


Fig. 5

1. Remove the hinged lever from the operator part of the motor. Lubricate both connection points with the grease gun.
2. Then connect the hinged lever to the operator part and pivoted lever.

⇒ Gate leaf connected to the motor.

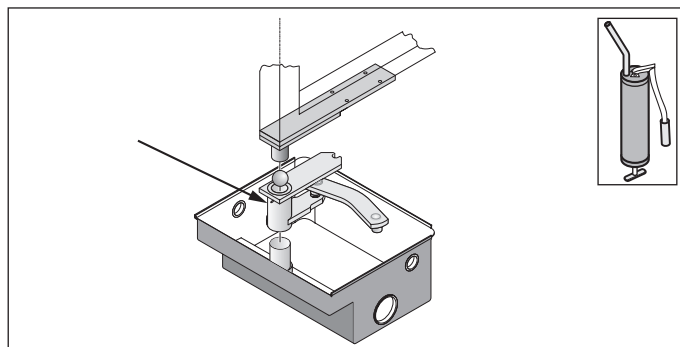


Fig. 6

3. Using the grease gun, lubricate the pivoted lever via the grease nipple.

⇒ The gate can now only be moved by the operator.

4. 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 public roads or footpaths. This also applies while the gate is moving. Persons and animals may be seriously injured.

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

## 6. Installation

### 6.7 Installing the control unit

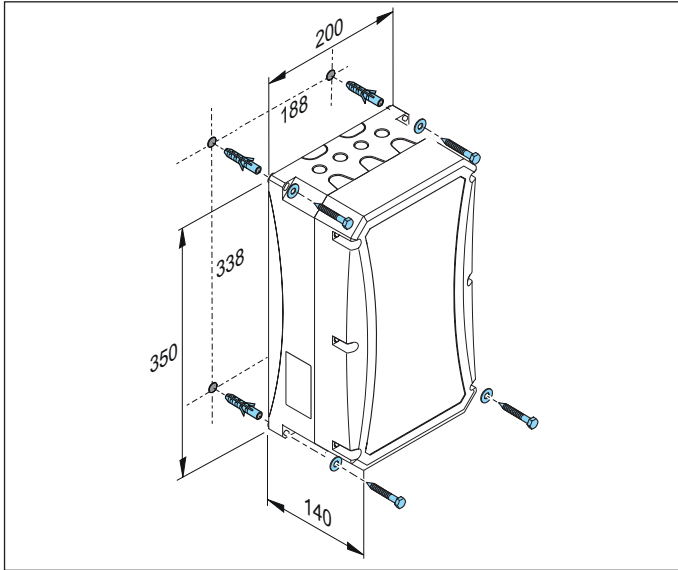


Fig. Installation example for mounting of the control unit

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.
- Always install the control unit housing upright with the cable inlets facing downwards. Use only the fixing points provided. The control unit is then protected in accordance with IP65.
- 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.
- 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.

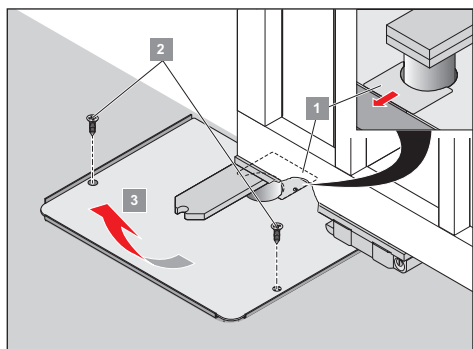


Fig. 2.

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!**

In 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 power supply.
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.

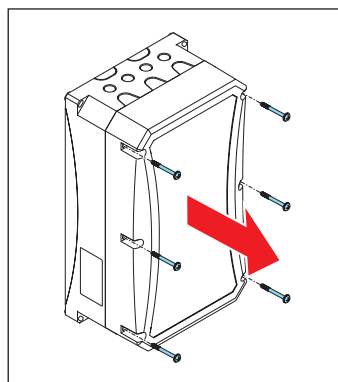


Fig. 4

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 Testing the provisional connection

Work on the electrical system and live parts must be performed by a **trained electrician**. In particular, observe the warnings below.

#### **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 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.



##### **Danger due to hot parts!**

In 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.
- The power cord supplied may only be used for initial operation. After initial operation, it must be replaced with a suitable fixed mains connection.
- 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 power cord supplied may only be used for initial operation. After initial operation, it must be replaced with a suitable fixed mains connection; 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 installation regulations (e.g. VDE) must be observed.





## 8. Connections and functions of the control unit

LED	Flash sequence	Cause
Warning light, WL (yellow)	<input type="checkbox"/> Off	• No gate movement/gate is at a standstill
	<input checked="" type="checkbox"/> On	• Continuous light during gate movement
		• Normal operation, flashes while gate is moving • Programming mode activated • Clearing time activated
		• Waiting for confirmation during the programming run for gate OPEN or 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 “ <b>12.9 Jog mode in the event of faults</b> ”
		• Operator or control unit fault; see Chapter “ <b>14. Troubleshooting</b> ”
		• Service required (e. g. pre-set limit value reached)
Multi-function relay, MUFU (yellow)	<input type="checkbox"/> Off	• Multi-function relay is deactivated
	<input checked="" type="checkbox"/> On	• Multi-function relay is activated

A connection diagram can be found in Chapter “**17. Setting options for the DIP switches and connection diagram for twist UG**”.

## 8. Connections and functions of the control unit

### 8.4 Connecting the motor

#### Connecting the cable



#### INFORMATION

- The first gate movement must always be gate OPEN. Otherwise, the cable colours for the motor (blue/black) must be reversed.

- Break out a pre-punched section in the lower part of the control unit.
- Insert one of the plug-in connections into the opening and screw on with a hexagonal nut.
- 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 relieved of strain.
- Attach core end sleeves to the strands for flexible lines. Connect the strands to the corresponding terminal blocks.

#### Connecting a 1-leaf gate

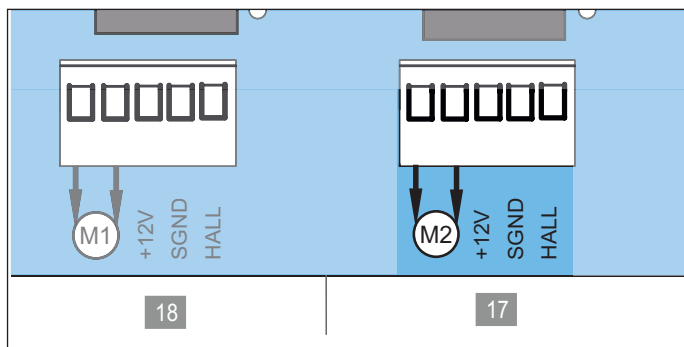


Fig. Terminal block for the active leaf (M2)

- Connect the motor for the active leaf to terminal block 17; see table.

Terminal block 17	Cable colour
M2	black/blue
	blue/black
+12 V	grey
SGND	green/yellow
HALL	brown

- Set all DIP switches to "OFF". This is also the factory setting and the setting if no other accessories are to be connected.
- Connect the control unit to the voltage supply.

#### Connecting a 2-leaf gate

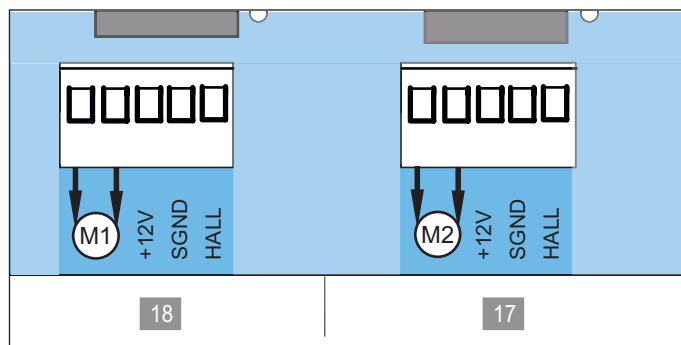


Fig. Terminal block for the inactive and active leaf (M1, M2)

- First, connect the motor for the inactive leaf to terminal block 18; see table.

Terminal block 18	Cable colour
M1	blue/black
	black/blue
+12 V	grey
SGND	green/yellow
HALL	brown

- Then connect the motor for the active leaf to terminal block 17; see table.

Terminal block 17	Cable colour
M2	blue/black
	black/blue
+12 V	grey
SGND	green/yellow
HALL	brown

- Set all DIP switches to "OFF". This is also the factory setting and the setting if no other accessories are to be connected.
- Connect the control unit to the voltage supply.



## 8. Connections and functions of the control unit

### 8.5 Connecting the warning light

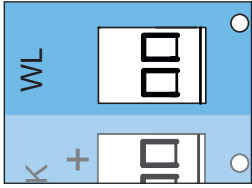


Fig. Warning light terminal block and LED for warning light  
A warning light with DC 24 V/24 W can be connected.  
The polarity is optional. The warning light flashes during normal operation (factory setting).

### 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 a 2-wire and a 4-wire photocell to one safety input at the same time.

We recommend installing the photocell at a height of up to 300 mm. To protect property, it may be necessary to install an additional photocell at a height of approx. 600 mm. on the inside and outside 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 12453:2017 (Plc), 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

- It may be necessary to install 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.

#### **i** INFORMATION

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

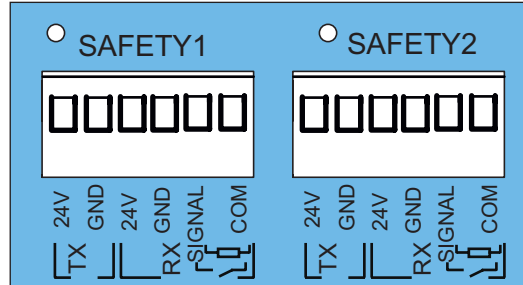


Fig. Overview of terminal blocks SAFETY 1 and SAFETY 2

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

#### 4-wire photocell – outside: SAFETY 1

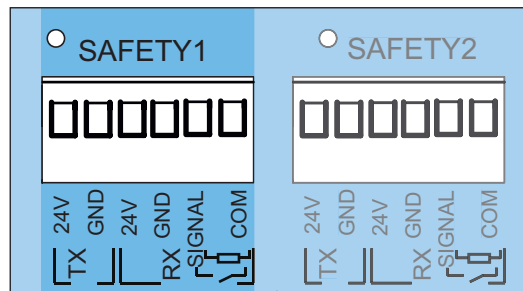


Fig. Connection to SAFETY 1

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

Designation	Terminal block	Function
TX (transceiver)	max. 20 V	Voltage 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

### 4-wire photocell – inside: SAFETY 2

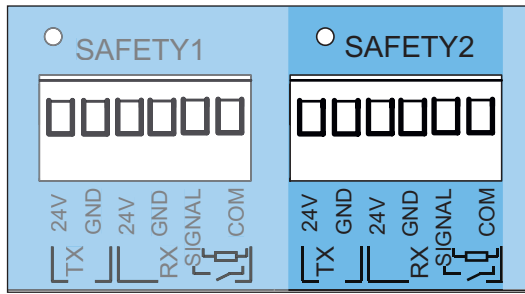


Fig. Connection to SAFETY 2

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

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

### 2-wire photocell – outside: SAFETY 1

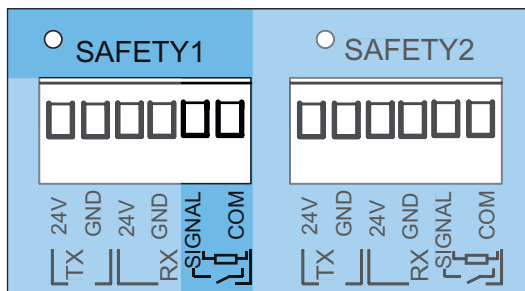


Fig. Connection to SAFETY 1

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

Terminal block	Function
SIGNAL	2-wire photocell
COM	

### 2-wire photocell – inside: SAFETY 2

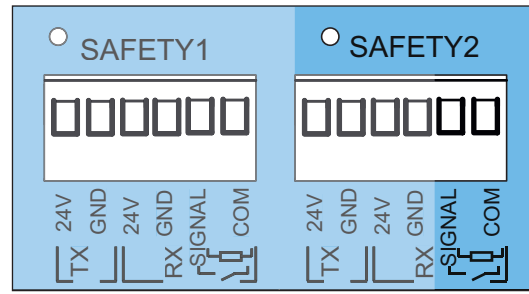


Fig. Connection to SAFETY 2

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.

### 8.7 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 Important notes and information”.

#### 8k2 safety contact strip – outside: SAFETY 1

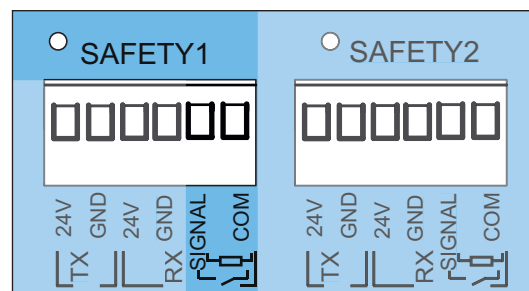


Fig. Connection to SAFETY 1

Terminal block	Function
SIGNAL	8k2 safety contact strip
COM	

## 8. Connections and functions of the control unit

### 8k2 safety contact strip – inside: SAFETY 2

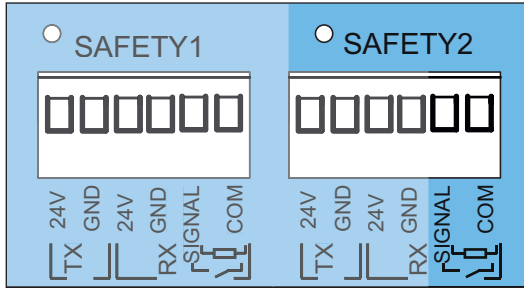


Fig. Connection to SAFETY 2

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.

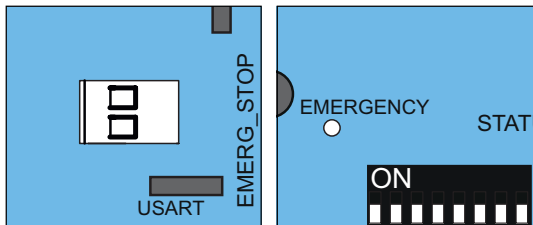


Fig. Connection and LED for EMERGENCY STOP

Only a floating normally closed contact may be used.

### 8.9 Connecting an 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 **SOM-MER** 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.

#### ! 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.



- ▶ 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 1.5 m. Install the button in an easily accessible position.

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

**The following control elements are available:**

- Button
- Radio switch
- Key switch

## 8. Connections and functions of the control unit

### Terminal blocks

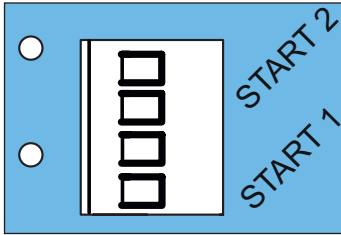


Fig. Terminal blocks START 1 and START 2

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

The connections are potential-free.

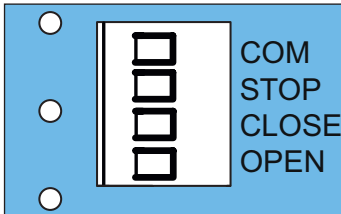


Fig. Terminal block COM, STOP, CLOSE and OPEN

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



#### INFORMATION

- Only buttons with a floating contact can be connected. Continuous contacts can block the proper function of the gate operator.
- The jumper must be removed when a STOP button is connected.

Other pulse generators such as handheld transmitters, ENTRAsys, Telecody+ and key switches can be connected. In the case of ENTRAsys, no connecting line to the operator needs to be installed.

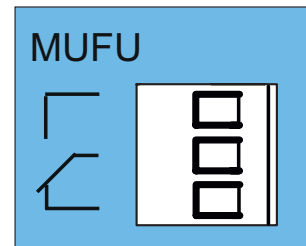
### 8.11 Connecting the multi-function relay

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.



#### INFORMATION

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



	Function
1	NO contact
2	COM
3	NC contact

Fig. Multi-function relay terminal block

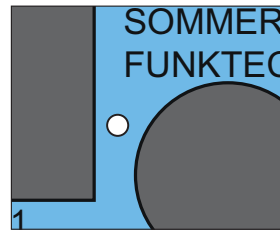


Fig. LED for multi-function relay

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

### 8.12 Installing and removing the accumulator

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. Mains voltage is required for initial operation of the operator.

Only a **trained electrician** is permitted to install, test and replace the accumulator. Follow the instructions in the separate installation and operating manual for the battery pack.

See also Chapter “7.2 Opening and closing the control unit housing”.

## 8. Connections and functions of the control unit

### 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.

### Installing and connecting the accumulator

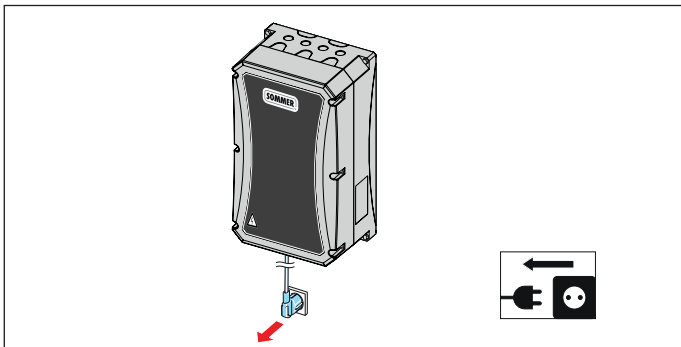


Fig. 1

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

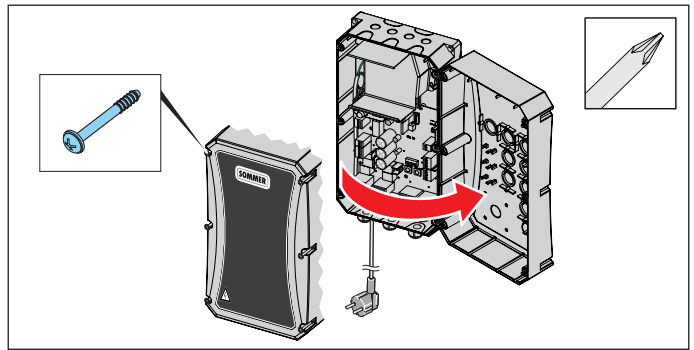


Fig. 2

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

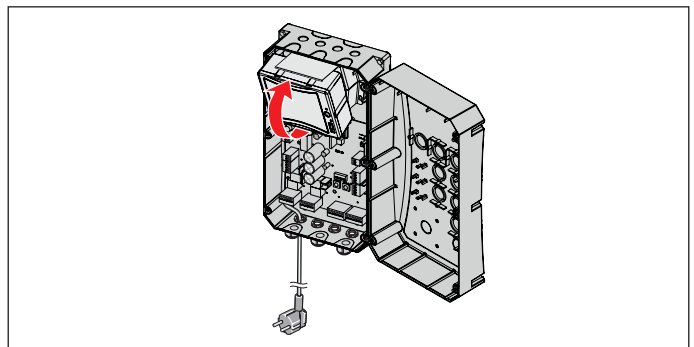


Fig. 3

1. Insert the accumulator into the carrier plate in the control unit. Slightly tilt the accumulator to do so.

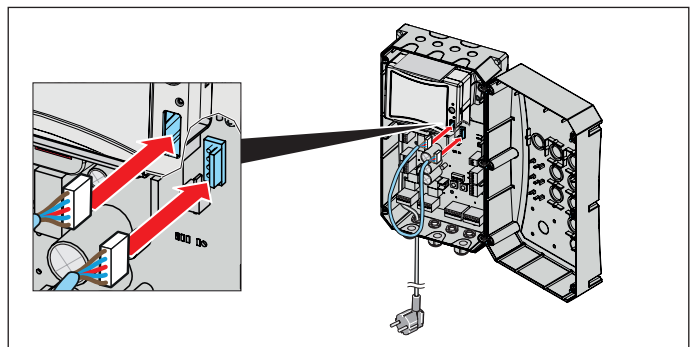


Fig. 4

1. Plug the connection cable into the accumulator and into the accumulator slot on the control unit circuit board.
2. 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.
3. Connect the operator to the voltage supply. Check that the power supply is connected.

## 8. Connections and functions of the control unit

### 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”.

#### WARNING



#### Danger of hazardous substances!

Improper storage, use or disposal of accumulators, batteries and operator components 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 and national regulations to avoid environmental damage.



#### INFORMATION

- Operator components that have been taken out of service as well as old accumulators and batteries must not be disposed of with household waste. Components which are no longer in use, old accumulators and batteries must be disposed of properly. You must observe the local and national regulations here.



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

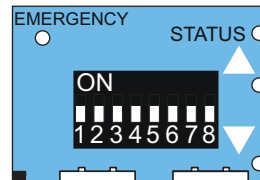


Fig. DIP switches









#### INFORMATION

- If a safety contact strip is connected at SAFETY 1 or SAFETY 2, the settings of DIP switches 1–3 have no effect. The reaction with the safety contact strips is always EMERGENCY STOP with subsequent partial reversion.

## 8. Connections and functions of the control unit

### Overview of the setting options for the DIP switches

DIP switches		Function	Effect
1	OFF 	SAFETY 1, exterior photocell, CLOSE gate movement	SOFT STOP, full reversion
	ON		SOFT STOP, partial reversion
2	OFF 	SAFETY 2, interior photocell, OPEN gate movement	No reaction
	ON		SOFT STOP, partial reversion
3*	OFF 	SAFETY 2, interior photocell, CLOSE gate movement	SOFT STOP, no reversion
	ON		SOFT STOP, partial reversion, full reversion**
4	OFF 	Power-saving mode	Activated
	ON		Deactivated
5	OFF 	Pre-warning time	Warning light flashes during a gate movement.
	ON		Warning light flashes for an additional 4 seconds before the operator starts.
6	OFF 	Automatic closing, only possible with photocell	Normal mode
	ON		Automatic closing function
7 + 8		No function	

 Factory setting

\* The setting of DIP switch 3 only applies for photocells.

\*\* Only with automatic closing function (DIP switch 6 ON).



## 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 installation regulations (e.g. VDE) must be observed.

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 or the motor:
  - Do not connect the control unit to the voltage supply until installation is complete.
  - Never connect the motor directly to 230 V.
- 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.
- 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.

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

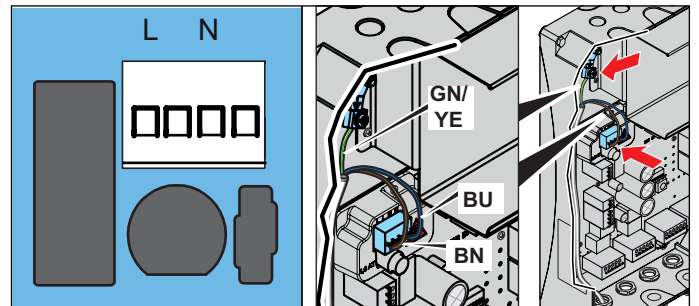


Fig. Mains connection on the circuit board

Fig. Connection for the protective earthing conductor

Designation	Function
L	Mains supply line AC 220–240 V
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 12453:2017 (Plc), all-phase mains disconnection.

## 8. Connections and functions of the control unit

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

#### 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.



#### INFORMATION

- Operation with automatic closing must comply with EN 12453: 2017 (Plc). This is a legal requirement. National regulations must be observed in non-European countries. A photocell must be connected. Bridging the safety inputs with jumpers is not permitted.
- Normal mode is pre-set at the factory. DIP switch 6 is in “OFF” position.
- The operator always completely reverses when the automatic closing function is activated.

### Activating the automatic closing function

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.

#### Shortening the hold open time

- 5 seconds after passing through a photocell
- possible in semi-automatic closing via a command

## 8. Connections and functions of the control unit

---

### 8.16 Information on SOMlink

SOMlink is a combination of an additional device and a web-based application. Since safety-relevant values can also be changed, SOMlink is only sold to qualified specialists. **Qualified specialists** only can use the SOMlink to change functions and settings on the gate operator. These include force and speed values as well as operating parameters and other convenient functions. All changes to settings via the SOMlink are logged.

You can access a demo version of the WEB APP under:

**[http://www.sommer-projects.de/gta\\_app/#home](http://www.sommer-projects.de/gta_app/#home)**



#### **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 Important notes and information

In particular, observe the warnings below.

#### DANGER



#### **Danger if not observed!**

If warnings are not observed, serious injury or death may result.

▶ All warnings 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 all handheld transmitters so that unauthorised or accidental operation, e.g., by children or animals, is impossible.

▶ Never stand in the opened gate.

### 9.2 Preparing for programming

Before programming and connecting the voltage supply 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 Mechanical end position gate OPEN and gate CLOSE”.
- 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”.

### 9.3 Programming a 1-leaf gate

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

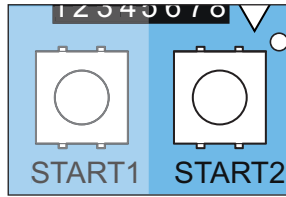


Fig. 2

2. Press the **START 2** button **briefly**.  
⇒ The gate leaf moves to the gate OPEN end position.
3. Confirm the position by **pressing the START 2 button briefly**.  
⇒ The gate OPEN end position for the gate leaf is confirmed.  
⇒ The gate leaf **automatically** moves to the gate CLOSE end position.
4. At the desired gate CLOSE position, **press the START 2 button briefly**.  
⇒ The gate leaf stops.
5. Fine adjustment:  
Press the **START 2 button for 2 seconds** until the gate leaf moves briefly.  
Release the START 2 button.
- 5.1 The process can be repeated until the desired end position is reached.

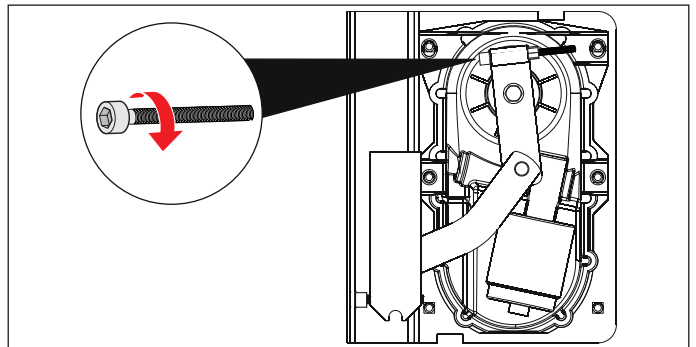


Fig. 6

6. Set the M10 x 80 mm screw for the gate CLOSE end position and counter with the nut.
7. Confirm the position by **pressing the START 2 button briefly**.  
⇒ The gate CLOSE end position for the gate leaf is confirmed.  
⇒ The gate leaf moves **automatically** to the following positions:  
⇒ Gate OPEN  
⇒ Gate CLOSE  
⇒ Gate OPEN
8. Press the **START 1 and START 2 button simultaneously** until the LEDs for OPEN and CLOSE start to blink.  
⇒ The programming process ends.
9. 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.

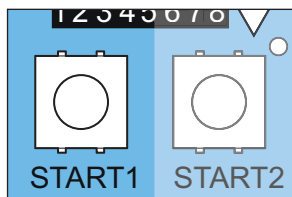


Fig. 2

2. Press the **START 1** button **briefly**.
  - ⇒ The inactive leaf moves to the gate OPEN end position.
3. Confirm the position by **pressing the START 1 button briefly**.
  - ⇒ The gate OPEN end position for the inactive leaf is confirmed.
  - ⇒ The inactive leaf **automatically** moves to the gate CLOSE end position.
4. At the desired gate CLOSE position, **press the START 1 button briefly**.
  - ⇒ The inactive leaf stops.
5. Fine adjustment:
 

Press the **START 1** button for 2 seconds until the inactive leaf moves briefly. Release the START 1 button.
- 5.1 The process can be repeated until the desired end position is reached.

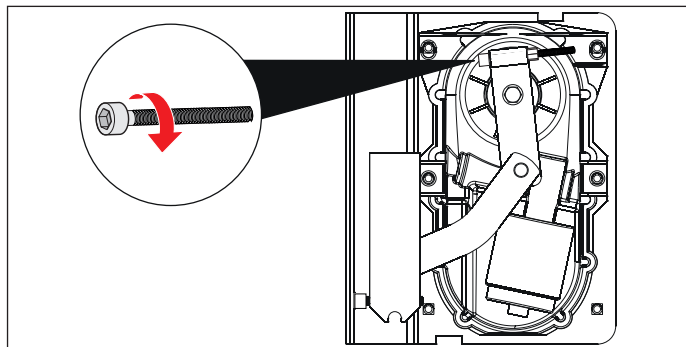


Fig. 6

6. Adjust the M10 x 80 mm screw to the gate CLOSE end position and tighten.
7. Confirm the position by **pressing the START 1 button briefly**.
  - ⇒ The gate CLOSE end position for the inactive leaf is confirmed.
  - ⇒ The inactive leaf moves **automatically** to the following positions:
    - ⇒ Gate OPEN
    - ⇒ Gate CLOSE
    - ⇒ Gate OPEN

8. Optionally, the inactive leaf can be closed again to brace it with the active leaf. To do this, press the **START 1** button **briefly**.

⇒ The inactive leaf moves to the gate CLOSE end position.

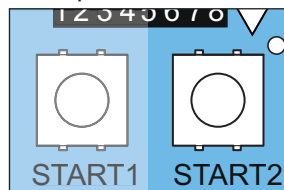


Fig. 9

9. Press the **START 2** button **briefly**.
  - ⇒ The active leaf moves to the gate OPEN end position.
10. Confirm the position by **pressing the START 2 button briefly**.
  - ⇒ The gate OPEN end position for the active leaf is confirmed.
  - ⇒ The active leaf **automatically** moves to the gate CLOSE end position.
11. At the desired gate CLOSE position, **press the START 2 button briefly**.
  - ⇒ The active leaf stops.
12. Fine adjustment:
 

Press the **START 2** button for 2 seconds until the active leaf 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 M10 x 80 mm screw to the gate CLOSE end position and tighten.
14. Confirm the position by **pressing the START 2 button briefly**.
  - ⇒ The gate CLOSE end position for the active leaf is confirmed.
  - ⇒ The active leaf moves **automatically** to the following positions:
    - ⇒ Gate OPEN
    - ⇒ Gate CLOSE
    - ⇒ Gate OPEN
  - ⇒ 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 event

The following section describes two different obstacle detection events.

#### Obstacle detection event during programming of end positions

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 leaf.  
⇒ After 2 seconds, 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 for the respective gate leaf **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. Press the START 1 or START 2 button for the respective gate leaf **briefly** (<1 second).  
⇒ The force programming run continues.  
⇒ The gate leaf moves to the end position for the last direction selected.
2. Press the START 1 or START 2 button for the respective gate leaf **briefly** (<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.



## 10. Radio remote control

### 10.1 Information on SOMloq2

The gate operator is equipped with a SOMloq2 radio system. The transmission is tap-proof and particularly reliable thanks to the special coding. Separate antennas or other installations are not necessary. The bidirectional data transmission between the transmitter and receiver allows a wide range of functions. You can find more information in the SOMloq2 brochure.



### 10.2 Programming a handheld transmitter

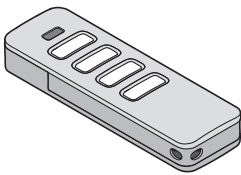


Fig. Handheld transmitter

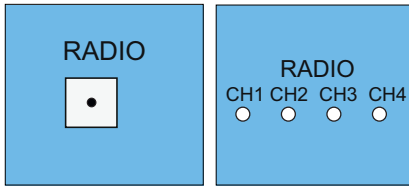


Fig. Radio button and radio channels CH 1–4 on the control unit

### 10.3 Explanation of the LEDs for radio channels CH 1–4

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.

	1x	2x	3x	4x
LED				
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.

### 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 1–4 blink. If more memory space is needed, see Chapter “10.4”.

### 10.4 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 Memo back to the internal memory.

All radio channels, including the memory of the Memo, can be deleted, see Chapter “10.10 Deleting all channels in the receiver”.



# 10. Radio remote control

## 10.5 Overview of the time sequences

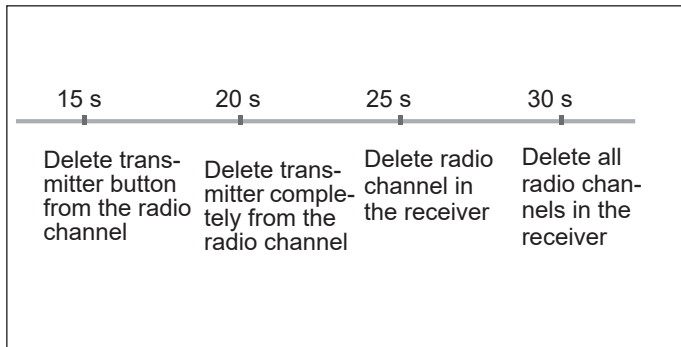


Fig. Time sequences for selecting the functions  
The time sequences for the selection menu of the functions can be derived from the table. More exact descriptions are given in the following chapters.

## 10.6 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.

## 10.7 Deleting a transmitter button from the radio channel

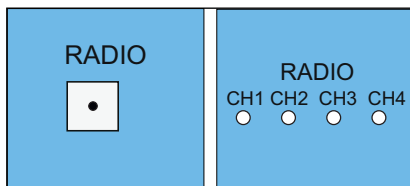


Fig. Radio button and radio channels CH 1–4 on the control unit

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

	1x	2x	3x	4x
<b>LED</b>				
<b>CH 1</b>				
<b>CH 2</b>				
<b>CH 3</b>				
<b>CH 4</b>				

- ⇒ The LED flashes 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.

## 10.8 Deleting a transmitter completely from the radio channel

1. Press and hold the Radio button (A) for 20 seconds.  
⇒ The LED flashes after 15 seconds.
2. After another 5 seconds, the flash sequence changes to blinking.
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 has been completed.  
⇒ The transmitter is deleted from the radio receiver.  
Repeat for additional transmitters as required.

## 10.9 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.

	1x	2x	3x	4x
<b>LED</b>				
<b>CH 1</b>				
<b>CH 2</b>				
<b>CH 3</b>				
<b>CH 4</b>				

- ⇒ The LED flashes after 15 seconds.
  - ⇒ After another 5 seconds, the flash sequence changes to blinking.
  - ⇒ After another 5 seconds, the LED of the selected radio channel remains steady.
2. Release the Radio button (A).  
⇒ The deletion procedure is ended.  
⇒ All programmed handheld transmitters on the selected radio channel have been deleted from the radio receiver.

## 10. Radio remote control

### 10.10 Deleting all channels in the receiver

1. Press and hold the Radio button (A) for 30 seconds.
  - ⇒ The LED flashes after 15 seconds.
  - ⇒ After another 5 seconds, the flash sequence changes to blinking.
  - ⇒ 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.

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

#### Restrictions

- This function is not possible with the Pearl twin handheld transmitter.
- The targeted programming of a selected handheld transmitter button to a radio channel with HFL is not possible.

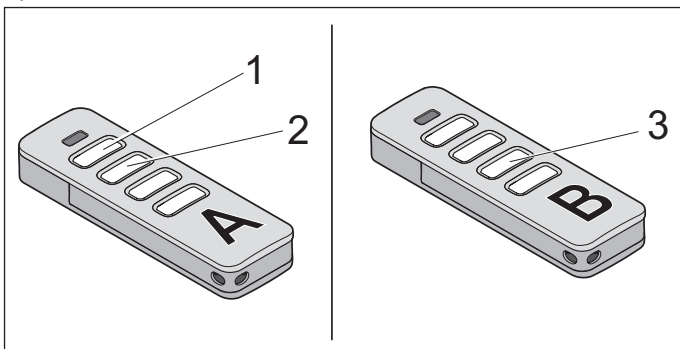


Fig. 1

1. Press buttons 1 and 2 of a programmed handheld transmitter (A) for 3–5 seconds until the LED on the handheld transmitter briefly lights up.
  - ⇒ The operator lighting blinks.
  - ⇒ If a code is not transmitted within another 30 seconds, the radio receiver switches over to normal mode.
2. Release buttons 1 and 2 of handheld transmitter (A).
3. 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

After initial operation of the operator, the force setting of the operator must be checked with a force measurement device and an obstacle detection test must be performed. In particular, observe the warnings below.

### **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**.



#### **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.



#### **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.
- The obstacle detection must be tested once a month to prevent damage to the operator.



### **INFORMATION**

- 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. This documentation and this Installation and Operating Manual for the operator must be handed over to the user. This also applies if the control unit is retrofitted to a manually operated gate.
- If a photocell is interrupted, the gate reverses in soft run.
- 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 if an obstacle is detected.

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

You can find important information on handover to the user in Chapter “**1.10 Qualifications of personnel**”, Section “**Instructing the user and handover of documents**”.

## 12. Operation

### 12.1 Important notes and information

In particular, observe the warnings below and the following Chapters “13. Maintenance and care” and “14. Troubleshooting”.

#### DANGER



##### **Danger if not observed!**

If warnings are not observed, serious injury or death may result.

- ▶ All warnings must be complied with.

#### WARNING



##### **Danger due to use of the operator with incorrect settings 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 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.



##### **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.
- 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 the Installation and Operating Manual accessible at all times at the place of use.
- Reversing: The operator stops when it hits an obstacle. The gate then moves slightly in the opposite direction to release the obstacle. In the automatic closing function, the gate opens completely.
- 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

You can find important information on handover to the user in Chapter “1.11 Information for the user”.

## 12. Operation

### 12.3 Operating modes of gate movement

In the following description of the gate movement, it is assumed that buttons 1–4 on the handheld transmitter have been assigned to radio channels CH 1–4.

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. The gate then moves slightly in the opposite direction to release the obstacle. In the automatic closing function, the gate opens completely.
- 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”.

The following safety devices are installed to detect obstacles:

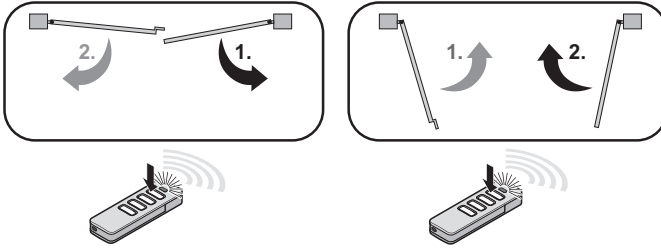
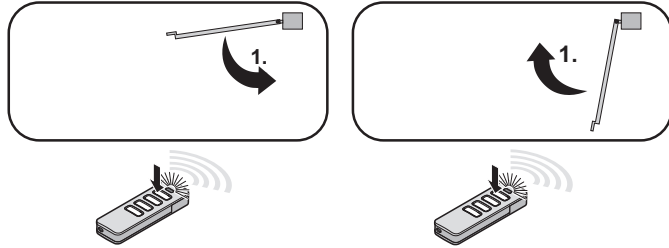
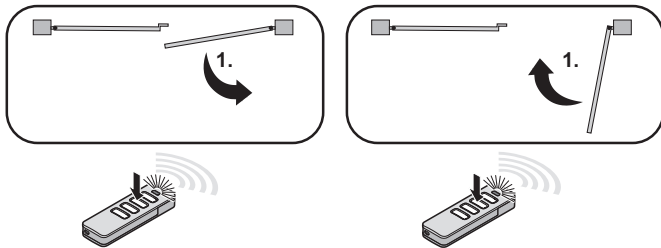
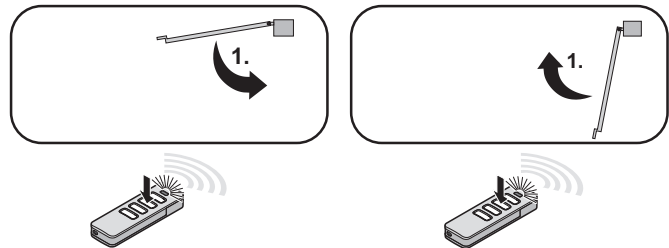
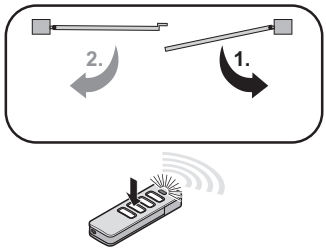
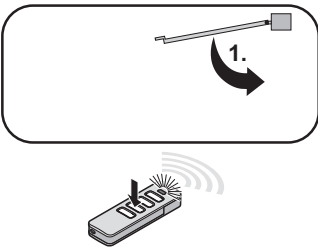
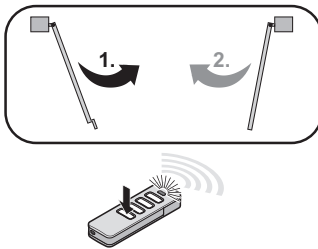
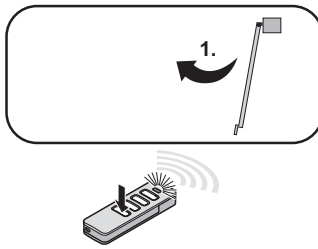
- photocell (object protection)
- safety contact strips (personal protection)
- obstacle detection of the operator (personal protection)

### Overview of gate movements

The figures show the sequence of movements of the gate leaves. 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”.

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

## 12. Operation

2-leaf	1-leaf
<p><b>Open and close both gate leaves</b></p>  <p>Pulse sequence of button 1 on the handheld transmitter</p>	<p><b>Open and close active leaf</b></p>  <p>Pulse sequence of button 1 on the handheld transmitter, button 2 identical</p>
<p><b>Selectively open and close active leaf</b></p>  <p>Pulse sequence of button 2 on the handheld transmitter</p>	<p><b>Open and close active leaf</b></p>  <p>Pulse sequence of button 2 on the handheld transmitter, button 1 identical</p>
<p><b>Selectively open active and inactive leaf</b></p>  <p>Pulse sequence of button 3 on the handheld transmitter</p>	<p><b>Selectively open active leaf</b></p>  <p>Pulse sequence of button 3 on the handheld transmitter without function if gate OPEN</p>
<p><b>Selectively close active and inactive leaf</b></p>  <p>Pulse sequence of button 4 on the handheld transmitter</p>	<p><b>Selectively close active leaf</b></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 reversal is pre-set at the factory.

#### **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**.



#### **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 when it hits an obstacle. The gate then moves slightly in the opposite direction to release the obstacle. In the automatic closing function, the gate opens completely.
- If a photocell is interrupted, the gate reverses in soft run.
- 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 gate does not reverse, a **qualified specialist** must be consulted. 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 an external radio receiver, power-saving mode must be deactivated.

DIP switches	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.



#### **INFORMATION**

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



## 12. Operation

### 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 within 12 hours. 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 blink after opening.
- If 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.
- ▶ First secure the gate against unexpected movement. Then you can use 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.
- 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 unlocked in any gate position. It might be necessary to move the gate leaf slightly in order to engage it.

### Locking

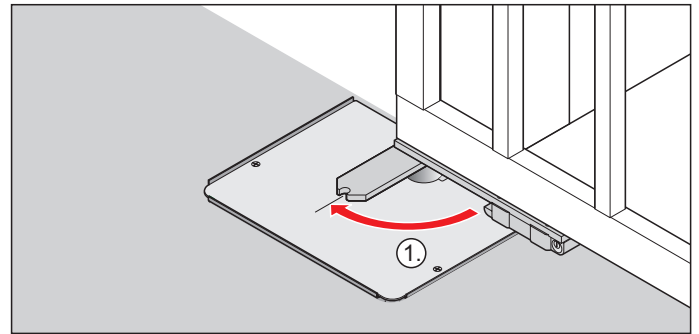


Fig.1

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

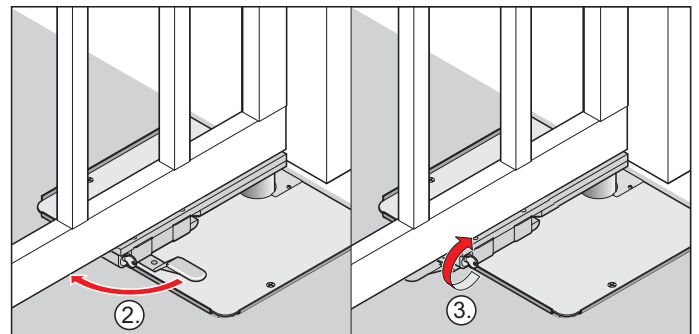


Fig.2

1. Press the emergency release lever 90° to the gate post until it locks into place.
  - ⇒ The gate is locked.
2. 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.
3. 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

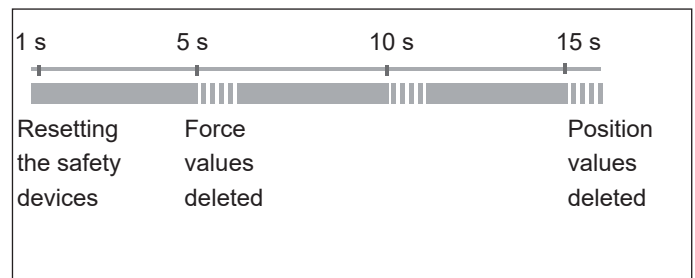


Fig. Time sequence for reset

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

## 12. Operation

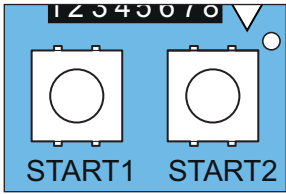


Fig. START 1, START 2 and Status LED



### INFORMATION

- A SOMlink and a WiFi-enabled device are required to reset all parameters to the factory setting.
- The DIP switches can only be manually reset.

### 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.

### 12.9 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 leaves 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.



### 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.

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.

#### Alternative

#### 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 immediately and professionally by a qualified specialist.

## 13. Maintenance and care

### 13.1 Important notes and information

Service the operator regularly as directed below. This ensures safe operation and a long service life for your operator. If you have a question on maintenance and care, contact a **qualified specialist**. In particular, observe the warnings below.

#### **DANGER**



#### **Danger if not observed!**

If warnings are not observed, serious injury or death may result.

- ▶ All warnings must be complied with.



#### **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 voltage supply. This also applies when connecting accessories.
- ▶ 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 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.



- ▶ 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.



#### **Danger due to hot parts!**

In frequent operation, parts of the motor or the 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**.
- 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.
- The use of unsuitable cleaning agents may damage the surface of the operator. Clean the operator with a damp, lint-free cloth only.

### 13.2 Maintenance schedule

How often?	What?	Who? How?
Once a month	• Check all safety devices	• <b>qualified specialist</b> , for correct functioning
	• Test obstacle detection	• <b>qualified specialist</b> , see Chapter “11.1 Checking the force setting and obstacle detection”
	• Check that the gate runs smoothly	• <b>user</b> , see Chapter “6.2 Preparing for installation”
	• Test the emergency release	• <b>user</b> , see Chapter “12.7 Function of the emergency release”
Once a year	• Test the gate and all moving parts	• <b>qualified specialist</b> , as directed by the manufacturer
	• Test the gate hinges	• <b>user</b> , check for smooth running, lubricate if necessary
	• Lubricate	• <b>qualified specialist</b> , see Chapter “13.3 Lubrication points on the operator unit”
As needed	• Clean cover and hinged brackets	• <b>user</b> , with a damp, lint-free cloth
	• Clean the photocell	• <b>user</b> , see Chapter “13.4 Care”, Section “Cleaning the photocell”

## 13. Maintenance and care

### 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:
  - Two lubrication points on the hinged lever
  - One 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

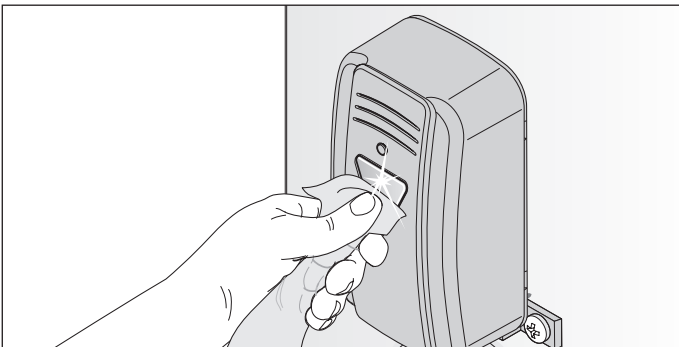


Fig. 1

#### 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 Important notes and information

In particular, observe the warnings below.

#### DANGER



#### **Danger if not observed!**

If warnings are not observed, serious injury or death may result.

- ▶ All warnings must be complied with.



#### **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.

#### WARNING



#### **Danger due to use of the operator with incorrect settings 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 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.



#### **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.



#### **Danger due to hot parts!**

In 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.

### 14.2 Preparing for 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 must be performed 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

The flash sequence of the LEDs for the warning light show information on malfunctions for technicians, end customers and telephone support.

### In normal mode

Flash sequences	Possible cause	Corrective action
<b>Normal mode</b>  "Warning light" LED flashes	<ul style="list-style-type: none"> <li>• Programming mode activated</li> <li>• Pre-warning time activated</li> <li>• Clearing time activated</li> </ul>	<ul style="list-style-type: none"> <li>• Operator programming in progress</li> </ul>
	<ul style="list-style-type: none"> <li>• Interruption of a safety device during the movement</li> </ul>	<ul style="list-style-type: none"> <li>• Remove obstacle</li> </ul>
	<ul style="list-style-type: none"> <li>• Function for HFL activated</li> </ul>	<ul style="list-style-type: none"> <li>• None, for information</li> </ul>

### Flash sequences in the case of faults

Flash sequences	Possible cause	Corrective action
<b>Requirement</b>  Operator expects a command	<ul style="list-style-type: none"> <li>• Waiting for confirmation during the position programming movement of gate OPEN or gate CLOSE position</li> </ul>	<ul style="list-style-type: none"> <li>• Confirmation of position programming run</li> </ul>
<b>Alarm</b>  A process has triggered a fault	<ul style="list-style-type: none"> <li>• Photocell/safety device not OK before movement, SAFETY 1 or SAFETY 2 also blinks</li> </ul>	<ul style="list-style-type: none"> <li>• Check photocell and realign if necessary</li> <li>• If necessary, have parts replaced by a qualified specialist</li> </ul>
<b>Service</b>  A process has triggered a fault	<ul style="list-style-type: none"> <li>• Service required (service days, service cycles have been reached)</li> <li>• Motor temperature is too high (overheating)</li> </ul>	<ul style="list-style-type: none"> <li>• Have the service performed by a qualified specialist</li> <li>• Allow motor to cool</li> </ul>
<b>Fault</b>  Operator or parts of the operator faulty	<ul style="list-style-type: none"> <li>• Self-test of electronics</li> <li>• Blockage detection (gear breakage)</li> </ul>	<ul style="list-style-type: none"> <li>• Have it checked and, if necessary, operator or components replaced by a qualified specialist</li> </ul>
	<ul style="list-style-type: none"> <li>• Run time exceeded</li> </ul>	<ul style="list-style-type: none"> <li>• Movement range too long, movement range is restricted to max. 180°</li> </ul>
	<ul style="list-style-type: none"> <li>• Fault during plausibility test of the Memo, the 4 LEDs of the radio channels CH 1–4 also blink</li> </ul>	
	<ul style="list-style-type: none"> <li>• MEMO identifier error, incorrect Memo</li> </ul>	<ul style="list-style-type: none"> <li>• Disconnect operator from the voltage supply, unplug Memo, re-supply operator with power</li> </ul>
	<ul style="list-style-type: none"> <li>• MEMO device type error</li> </ul>	<ul style="list-style-type: none"> <li>• The Memo can be deleted via the Radio button, and this also deletes <b>all</b> stored transmitters, see Chapter "10.10 Deleting all channels in the receiver"</li> <li>• If necessary, have the Memo replaced</li> </ul>
 All LEDs blinking	<ul style="list-style-type: none"> <li>• The radio receiver is not plugged in or is defective</li> </ul>	<ul style="list-style-type: none"> <li>• Check that the radio receiver is present and plugged in correctly</li> <li>• If necessary, plug the radio receiver in</li> </ul>



## 14. Troubleshooting

Problem	Possible cause	Test/check	Remedy
Gate does not open	• Power failure	• Check fuse	• Replace the fuse
		• EMERGENCY STOP operated	• Release EMERGENCY STOP
		• If necessary, check accumulator	• Charge accumulator or have it replaced if necessary
	• Interior safety contract strip triggered or defective	• Person or obstacle in gate travel path	• Remove person or object
		• Display LED for SAFETY 2	• Have connections checked
		• Rubber profile deformed • Contact fault	
	• Interior photocell triggered or defective	• Obstacle in gate travel path	• Remove obstacle
		• Display LED for SAFETY 2	• Align photocell
		• Dirty lens	• Clean the photocell
		• Correct alignment	• Align photocell
		• Contact fault	• Have connections checked
		• Interrupted safety device, see Chapter “ <b>12.9 Jog mode in the event of faults</b> ”	
	• Radio signal transmission faulty	• Transmitter battery weak	• Replace transmitter battery
		• Range too great	• Reduce distance
• Transmitter defective		• Replace transmitter	
• Electric lock remains locked	• Opening pulse is present	• Check electric lock and connections • Have electric lock replaced	
Gate does not close	• Power failure	• Check 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 for 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 for SAFETY 1	• Check alignment
		• Dirty lens	• Clean the lens
		• Correct alignment	• Check alignment
		• Interrupted safety device, see Chapter “ <b>12.9 Jog mode in the event of faults</b> ”	
	• Radio signal transmission	• Transmitter battery weak	• Replace transmitter battery
		• Check range	• Reduce distance
		• Transmitter defective	• Replace transmitter



## 14. Troubleshooting

Problem	Possible cause	Test/check	Remedy
Gate operation interrupted	• Power failure	• Check 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 “ <b>12.9 Jog mode in the event of faults</b> ”	

## 15. Taking out of operation, storage and disposal

### 15.1 Important notes and information

Disassembly of the operator may only be performed by a **qualified specialist**. In particular, observe the warnings below.

#### DANGER



##### **Danger if not observed!**

If warnings are not observed, serious injury or death may result.

- ▶ All warnings must be complied with.



##### **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.



##### **Danger due to hot parts!**

In 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.



##### **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



##### **Risk of eye injury!**

Chips flying when drilling may cause serious injuries to eyes and hands.

- ▶ Wear safety glasses when drilling.



##### **Risk of injury to feet!**

Falling parts can cause serious foot injuries.

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



#### CAUTION



##### **Danger of abrasions and cuts!**

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

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



#### NOTE

- If there is an accumulator in the control unit, it must be removed by a **trained electrician**; see Chapter “8.12 Installing and removing the accumulator”.

### 15.2 Taking out of operation and disassembly

The operator and its accessories must be disconnected from electrical power 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 reverse order of installation.

# 15. Taking out of operation, storage and disposal

## 15.3 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  $-25\text{ °C}$  to  $+65\text{ °C}$ ;
- secure to prevent falling;
- leave room for unhindered passage.

## 15.4 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, batteries and operator components 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.

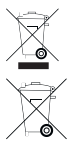
### → NOTE

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



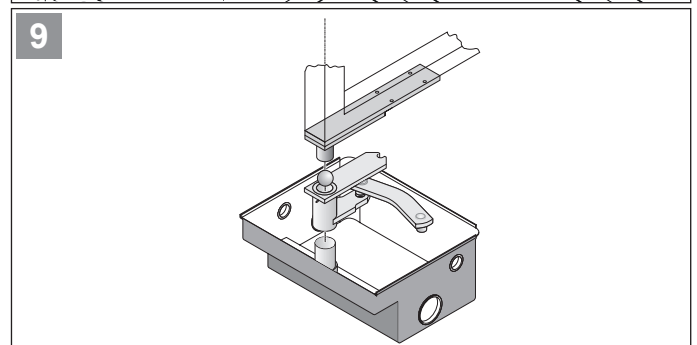
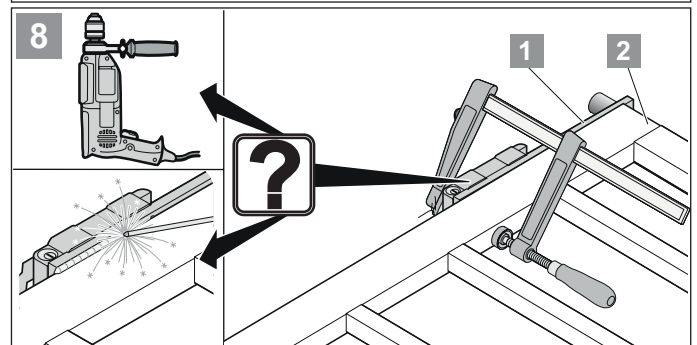
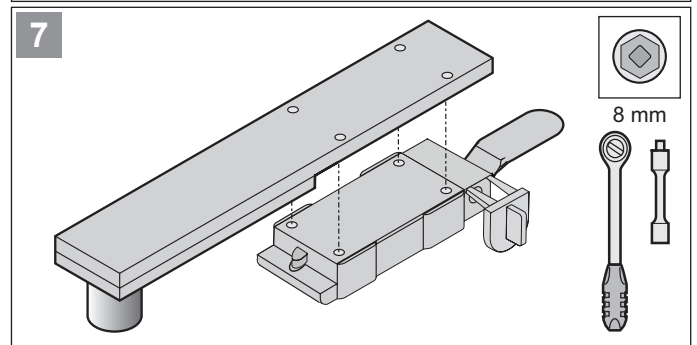
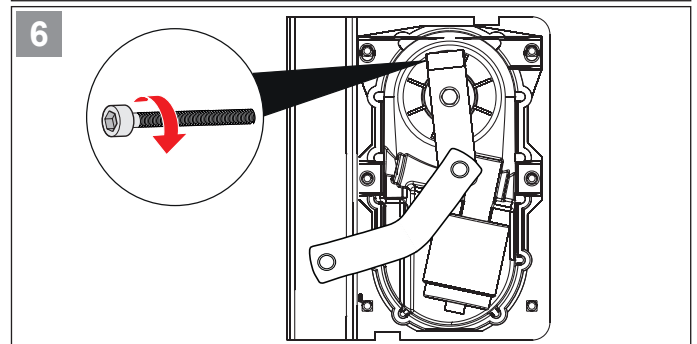
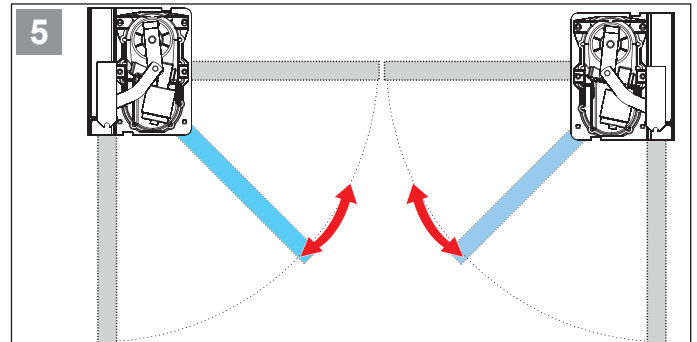
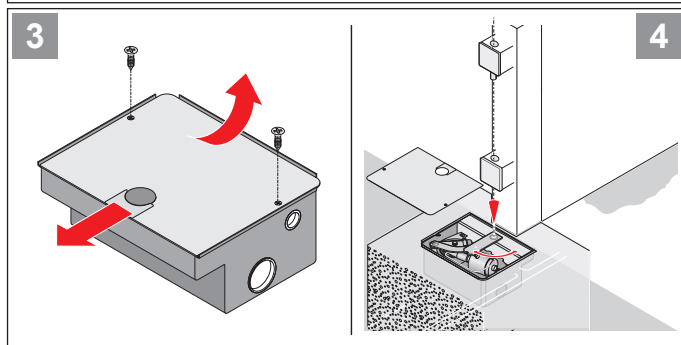
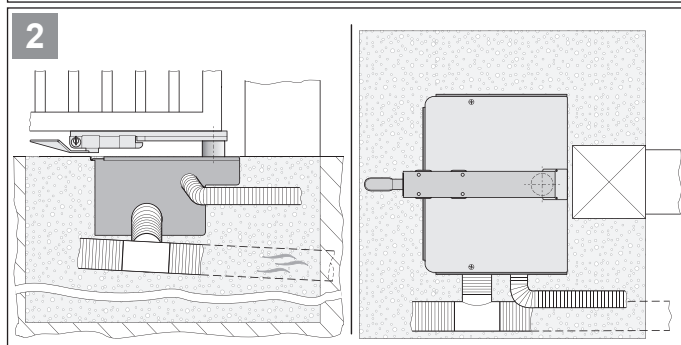
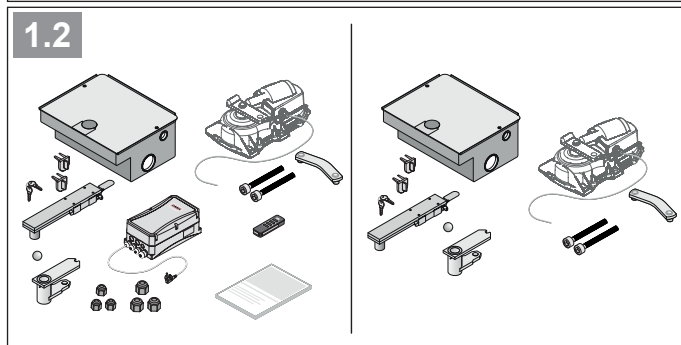
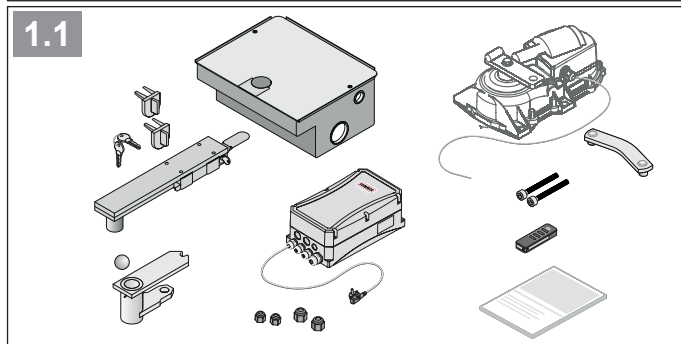
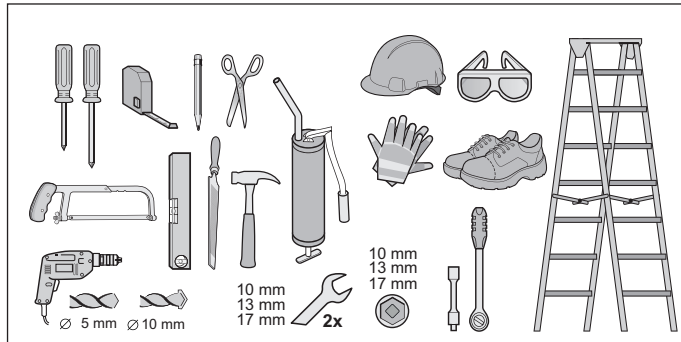
#### **INFORMATION**

- Operator components that have been taken out of service as well as old accumulators and batteries must not be disposed of with household waste. Components which are no longer in use, old accumulators and batteries must be disposed of properly. You must observe the local and national regulations here.

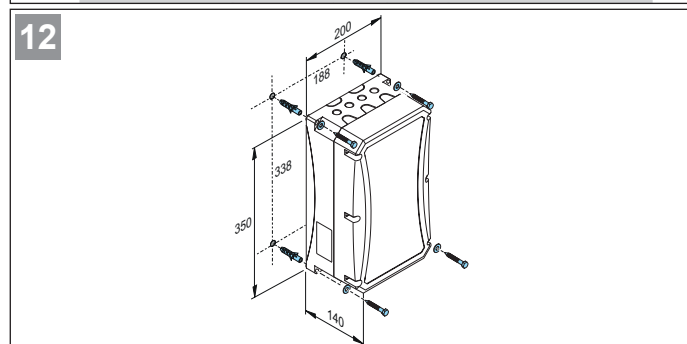
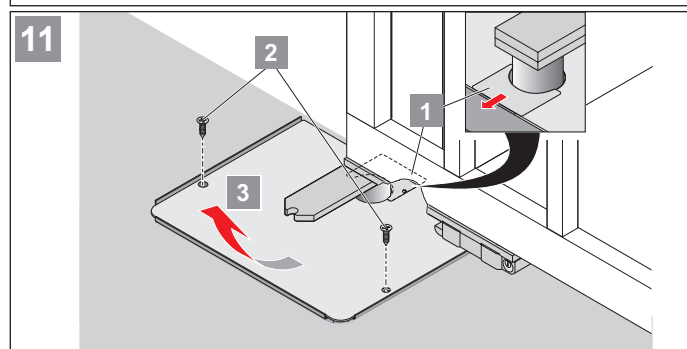
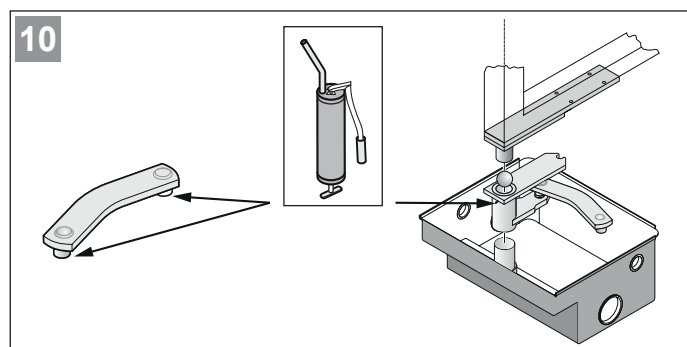


## 16. Short instructions for installation

The short instructions do not replace the installation and operating manual. Read this Installation and Operating Manual carefully and, most importantly, observe all safety instructions and warnings. This will ensure that you can install the product safely and optimally.



## 16. Short instructions for installation



## 17. Setting options for the DIP switches and connection diagram for twist UG

### Setting options for the DIP switches

You can select different functions via the DIP switches. The following table summarises the various setting options. In the factory setting, all DIP switches are set to "OFF".

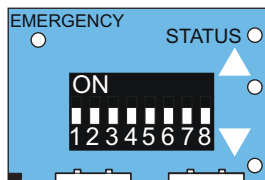








Fig. DIP switches

### INFORMATION

- If a safety contact strip is connected at SAFETY 1 or SAFETY 2, the settings of DIP switches 1–3 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 switches	Function	Effect
1	 SAFETY 1, exterior photocell, CLOSE gate movement	SOFT STOP, full reversion
		SOFT STOP, partial reversion
2	 SAFETY 2, interior photocell, OPEN gate movement	No reaction
		SOFT STOP, partial reversion
3*	 SAFETY 2, interior photocell, CLOSE gate movement	SOFT STOP, no reversion
		SOFT STOP, partial reversion, full reversion**
4	 Power-saving mode	Activated
		Deactivated
5	 Pre-warning time	Warning light flashes during a gate movement.
		Warning light blinks for an additional 4 seconds before the operator starts.
6	 Automatic closing, only with photocell	Normal mode
		Automatic closing function
7 + 8	No function	



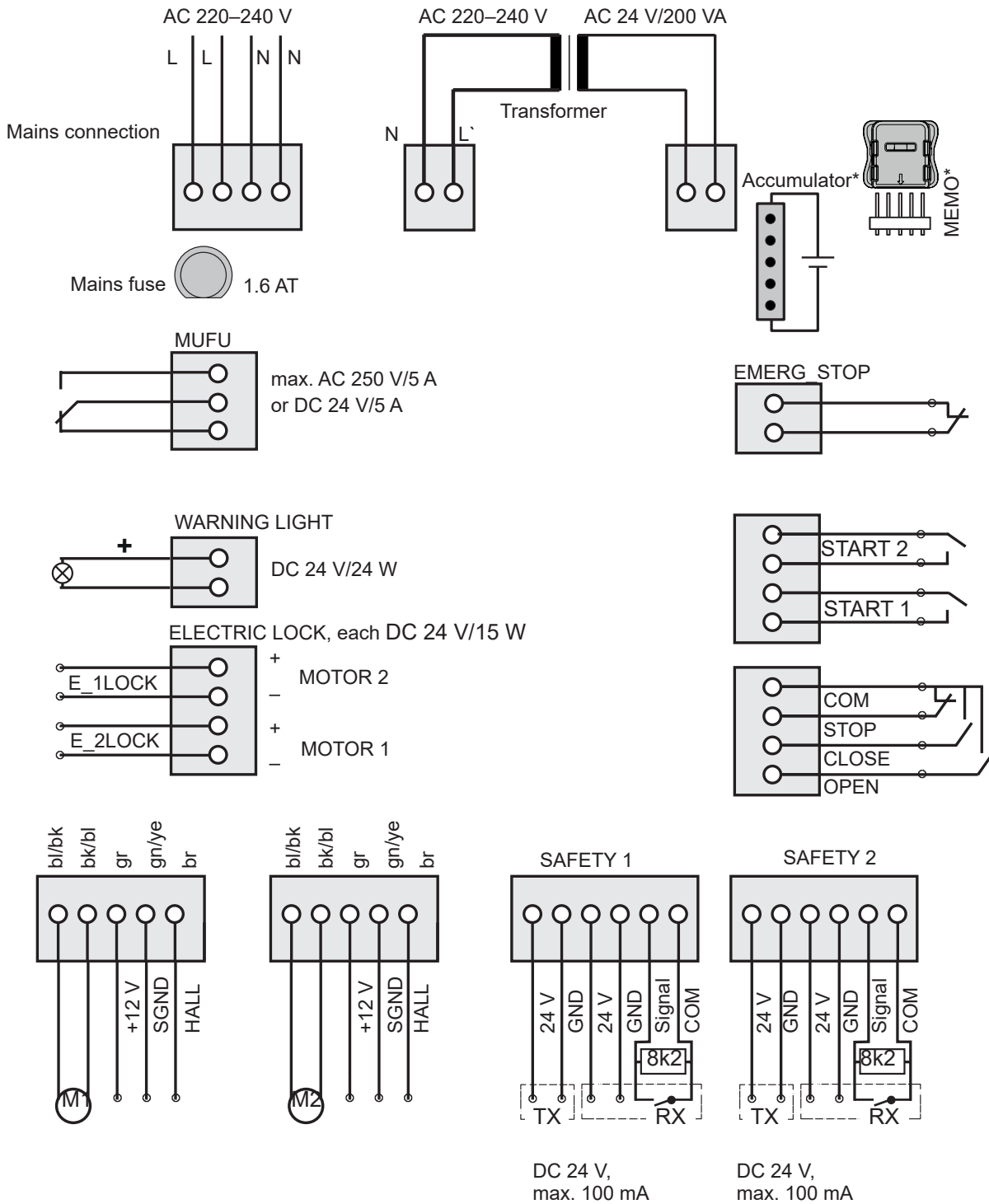
Factory setting

\* The setting of DIP switch 3 only applies for photocells.

\*\* Only with automatic closing function (DIP switch 6 ON).

# 17. Setting options for the DIP switches and connection diagram for twist UG

Fig. Connection diagram, control unit, twist UG




\*optional accessories



**SOMMER Antriebs- und Funktechnik GmbH**

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

 +49 (0) 7021 8001-0

 +49 (0) 7021 8001-100

[info@sommer.eu](mailto:info@sommer.eu)  
[www.sommer.eu](http://www.sommer.eu)