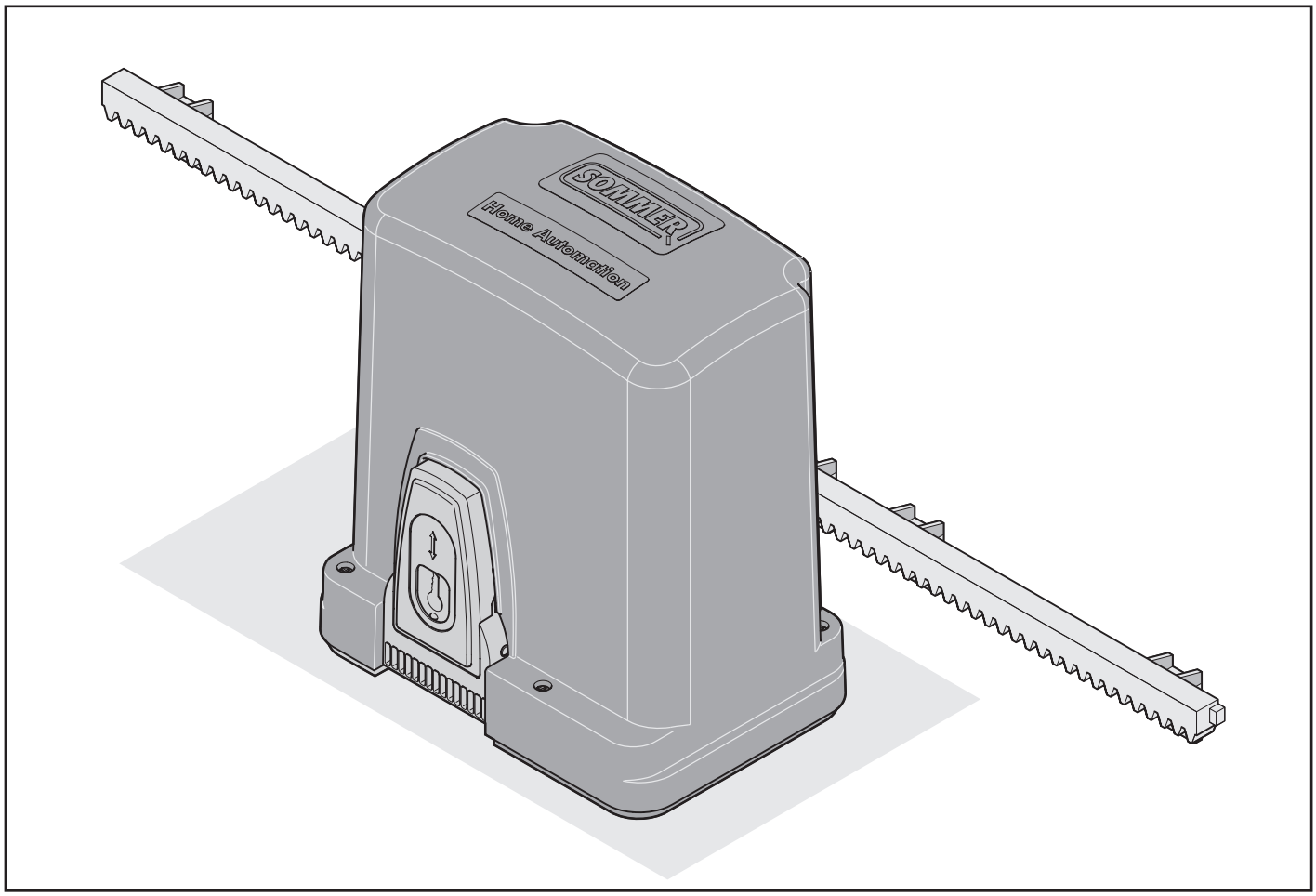
SOMMER



EN TRANSLATION OF THE ORIGINAL INSTALLATION AND OPERATING MANUAL

Sliding gate operator

STArter
STArter+

Download the current manual:

STArter+_46761V001_302022_0-DRE_Rev-G_EN

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General information

Symbols

CAUTION SYMBOL:

Important safety instructions!

To ensure personal safety, it is important to observe all instructions. Save these instructions!

IMPORTANT INFORMATION SYMBOL:

Information, useful advice!

1 (1) Refers to a respective picture in the introduction ormain text.

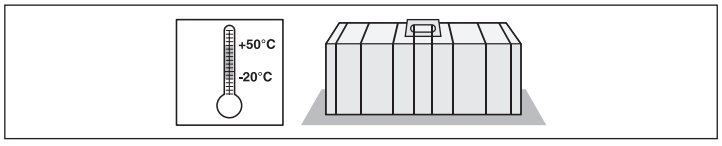
Safety instructions

General

- This installation and operating manual must be read, understood and complied with by persons who install, use or perform maintenance on the operator.
- Keep this installation and operating manual accessible at all times.
- The operator may only be installed, connected and taken into operation by technical specialists.
- The operator must only be installed on correctly aligned gates. An improperly aligned gate can cause serious injuries or damage the operator.
- The manufacturer accepts no liability for damage or malfunctions resulting from a failure to observe the installation and operating manual.
- Always ensure that the accident prevention regulations and current standards in each country are observed and complied with.
- Read and comply with “ASR A1.7 Technical Regulations for Workplaces” of the committee for workplaces (ASTA). (Applies to operators in Germany)
- Before working on the operator, disconnect it from the power supply and secure it against being switched on again.
- Only use original spare parts, accessories and mounting material.

Storage

- The operator must be stored in an enclosed, dry area at a room temperature of –20 °C to +50 °C.
- The operator should be stored horizontally.



Operation

- The operator must be operated only if a non-hazardous force value is set or safety is guaranteed at all times by other safety devices. This force value must be set low enough to ensure that the closing force poses no risk of injury, see Chapter **“Maintenance and care” on page 28**.
- **STArter:**
  No active safety contact strip required on the main closing edge. Passive rubber profile edge sufficient.
- **STArter^{+}:**
  An active safety contact strip must be attached as a safety edge.
- Never reach into a moving gate or moving parts.
- Do not drive through the gate until it is fully open.
- There is a risk of people being crushed or cut by the mechanism or safety edges of the gate.
- When the automatic closing function is used, the main and auxiliary closing edges must be secured in accordance with the applicable directives and standards.
- Open and close the gate only if there are no children, other people, animals or objects within its range of movement.
- Regularly check the safety and protection functions to ensure that they are working correctly, and repair any faults when they are detected. See Chapter **“Maintenance and care” on page 28**.

Radio remote control

- The radio remote control may only be used for equipment and/or systems where interference in the transmitter or receiver does not pose a risk to people, animals or objects, or where the risk is covered by other safety devices.
- Users must be made aware that systems which pose an accident risk should only be operated remotely, if at all, if the user can actually see the gate.
- The radio remote control may only be used if the movement of the gate can be seen and if no people or objects are within the range of movement.
- Keep the handheld transmitter in a safe place to prevent unintended operation e.g., by children or animals.
- The user of the radio system is not protected against interference due to other telecommunications equipment or devices (e.g.: radio-controlled systems that are licensed to operate in the same frequency range). If substantial interference occurs, please contact the local telecommunications office which has radio interference measuring equipment (radio location).
- Do not operate handheld transmitters in locations or installations that are sensitive to radio interference (e.g.: airports, hospitals).

Type plate

- The type plate is attached to the inside of the base frame/housing. The type plate shows the exact type designation and the date of manufacture (month/year) of the operator.

General information

Intended use

- The operator is designed exclusively for opening and closing sliding gates (see EN 12433-1), referred to below as gates. Any other use does not constitute intended use. The manufacturer accepts no liability for damage resulting from use other than the intended use. The user bears the sole responsibility for any risk involved. It also voids the warranty.
- Gates automated with an operator must comply with all valid standards and directives: e.g. EN 12604, EN 12605.
- Maintain the safety clearances between the gate leaf and its surroundings as specified in EN 12604.
- The operator must be in good technical condition, and it must be used for its intended purpose with awareness of the hazards as described by the installation and operating manual.
- The gate must not rise or fall during opening or closing.
- Position the track to allow water to drain to prevent ice forming in winter.
- The gate must move freely in the guide and on the track to allow the operator to react sensitively and the gate to be switched off in an emergency.
- The gate must have end stops in the open and closed position, otherwise it may be pushed out of the guide in the event of an emergency release.
- Malfunctions which could affect safety must be corrected immediately.
- The gate must be stable and resistant to warping, i.e. it must not bend or twist during opening or closing.
- The operator cannot compensate for any defects in the gate or for incorrect installation of the gate.
- Do not install the operator in potentially explosive areas.
- Do not use the operator in rooms with a corrosive atmosphere.

Simplified Declaration of Conformity

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

https://som4.me/mrl

Permitted gate leaf dimensions

Data	STArter	STArter⁺
Min. movement range	min. 1,400 mm	
Max. movement range	max. 6,000 mm	max. 8,000 mm
Weight	max. 300 kg	max. 400 kg
Gate inclination	0 %	

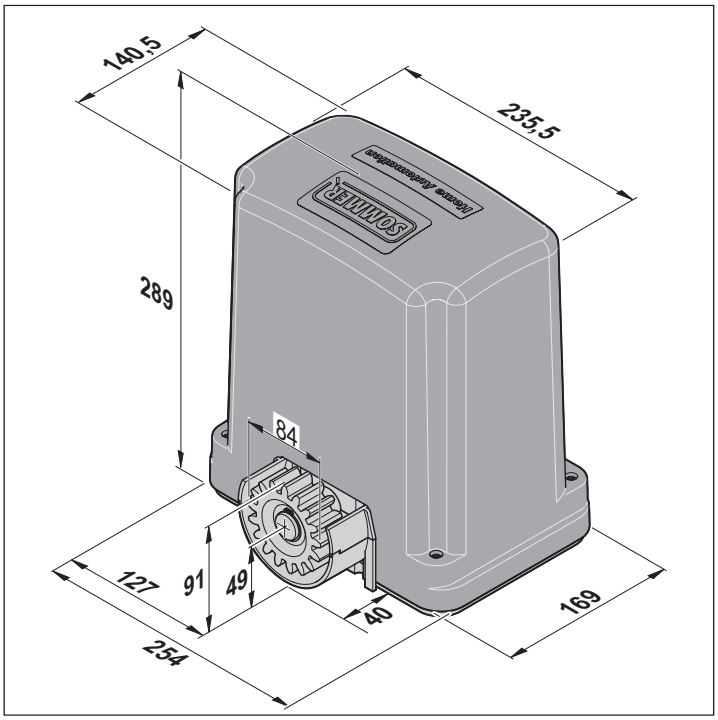
Technical data

Data	STArter	STArter⁺
Rated voltage	AC 220–240 V	
Rated frequency	50–60 Hz	
Operating temperature range	–20 °C to +50 °C	
IP protection class	IP54	
Protection class	I	
Max. torque	11 Nm	
Rated torque	3.3 Nm	
Rated current consumption	0.6 A	
Rated power consumption	140 W	
Max. speed	170 mm/s	240 mm/s
Power consumption, stand-by	2 W	
Weight	8 kg	
Duty cycle	S3 = 30%	
Workplace-related emission value <75 dB(A) – operator only		

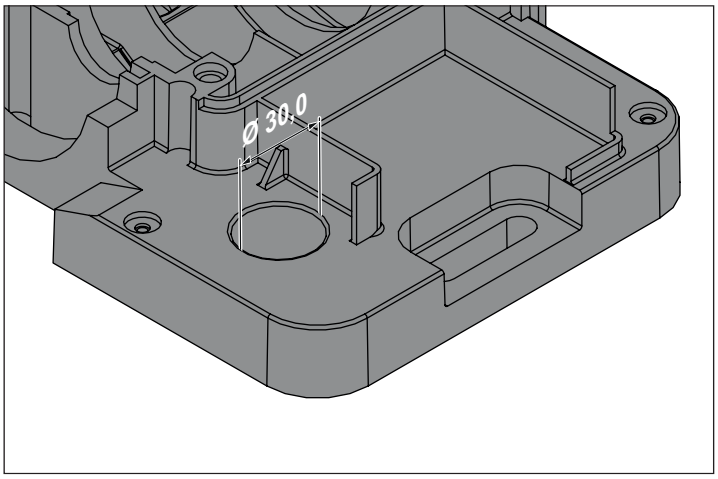
General information

Dimensions

The operator is locked (dimensions in mm).



Gear housing (dimensions in mm).



NOTE!

Open cable inlets should be sealed to keep out small animals which live in the soil!

Open cable inlets must always be sealed!

Declaration of incorporation

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

SOMMER Antriebs- und Funktechnik GmbH
Hans-Böckler-Straße 27
73230 Kirchheim/Teck
Germany

hereby declares that the sliding gate operator

STArter / STArter+

has been developed, designed and manufactured in conformity with the

- Machinery Directive 2006/42/EC
- Low Voltage Directive 2014/35/EU
- Electromagnetic Compatibility Directive 2014/30/EU
- RoHS Directive 2011/65/EU.

The following standards were applied:

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

The following requirements of Annex 1 of the Machinery Directive 2006/42/EC are met:
1.1.2, 1.1.3, 1.1.5, 1.2.1, 1.2.2, 1.2.3, 1.2.4, 1.2.6, 1.3.2, 1.3.4, 1.3.7, 1.5.1, 1.5.4, 1.5.6, 1.5.14, 1.6.1, 1.6.2, 1.6.3, 1.7.1, 1.7.3, 1.7.4
The special technical documents have been prepared in accordance with Annex VII Part B and will be submitted electronically to the regulators on request.

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

The undersigned is responsible for compilation of the technical documents.

Kirchheim,
20.04.2016

CE

i.V.

Jochen Lude
Responsible for documents

Installation preparations

Safety instructions

CAUTION!

Follow all the installation instructions. Incorrect installation can cause serious injuries.

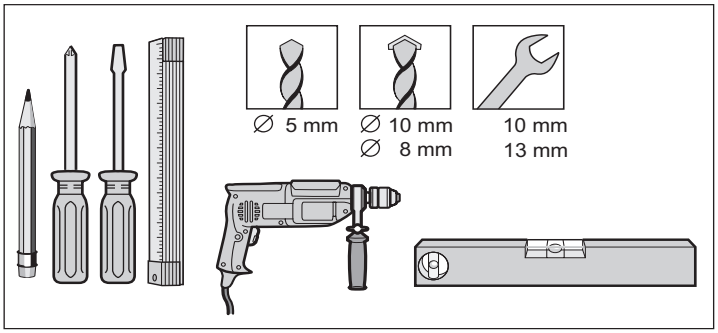
- The voltage of the power source must correspond with the voltage shown on the type plate of the operator.
- The contacts of all devices to be connected externally must be safely isolated from the mains voltage supply in accordance with IEC 60364-4-41.
- Comply with standard IEC 60364-4-41 when laying the leads of the external devices.
- The operator may only be installed, connected and taken into operation by technical specialists.
- Only move the gate if there are no people, animals or objects within its range of movement.
- Keep children, disabled persons and animals away from the gate.
- Wear safety glasses when drilling the fastening holes.
- Cover the operator during drilling to prevent dirt from entering the operator unit.

CAUTION!

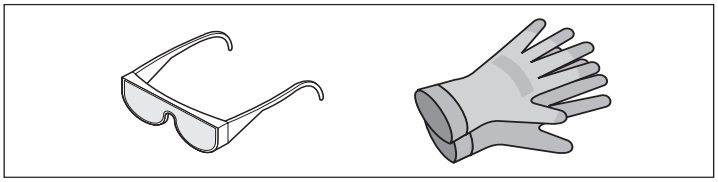
The foundation must be solid and stable. Only install the operator on a correctly aligned gate. An incorrectly aligned gate could cause serious injuries.

- The gates must be inherently stable, because they are exposed to powerful pulling and pushing forces. If necessary, reinforce lighter gates made of plastic or aluminium before installation. Ask your specialist retailer for advice.
- Remove or disable gate locks.
- Use only approved mounting material (e.g. anchor fittings, screws). The mounting material must be suitable for the type of ground/floor.
- Check that the gate runs smoothly.

Tools required



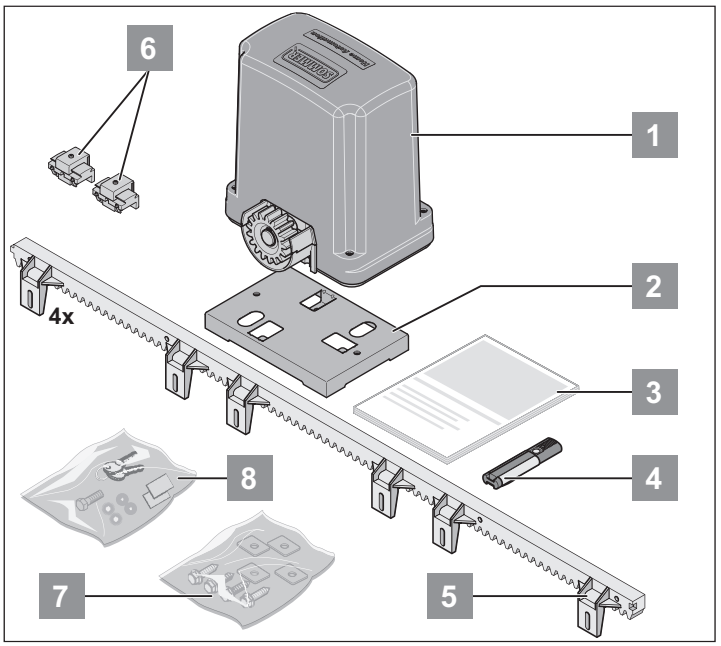
Personal protective equipment



- Safety glasses (for drilling)
- Work gloves

Scope of delivery

- Check the package before installation to avoid unnecessary work and expense if a part is missing.
- The scope of delivery may vary depending on the version of the operator.



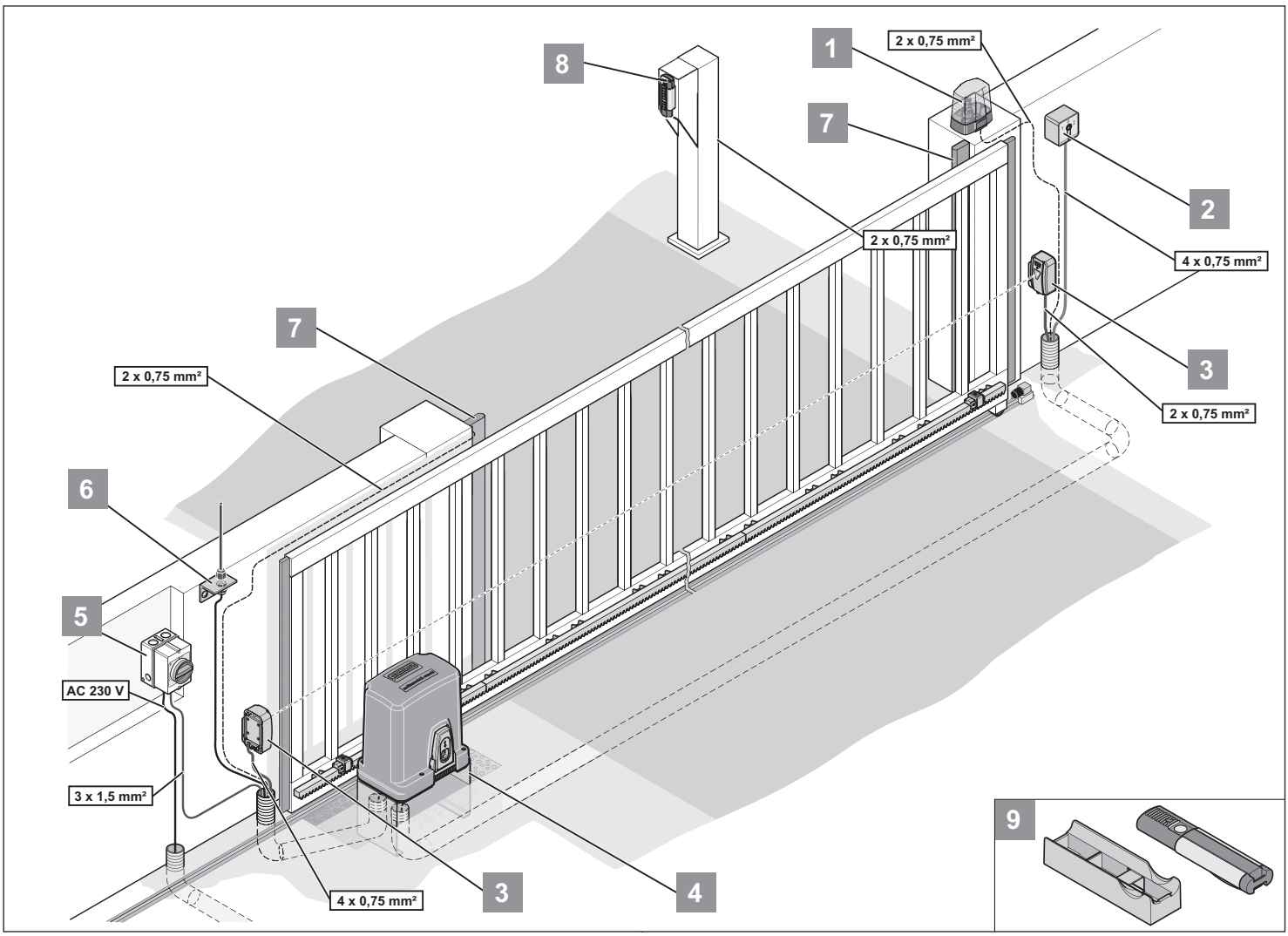
Complete set

Packing (L x W x H)		1035 x 350 x 270 mm
Weight		12 kg
1	1x	Sliding gate operator with control unit and radio receiver
2	1x	Console
3	1x	Translation of the Installation and Operating Manual
4	1x	4-command handheld transmitter
5	4x	1 m rack
6	2x	Solenoid limit stop
7	1x	Installation bag (racks) 24 screws 24 washers
8	1x	Installation bag (mounting material) 4 auxiliary mounting plates 2 spring washers 2 screws 2 washers 2 lock washers 2 keys

Single operator

Packing (L x W x H)		400 x 355 x 225 mm
Weight		8 kg
1	1x	Sliding gate operator with control unit and radio receiver
2	1x	Console
3	1x	Translation of the Installation and Operating Manual
6	2x	Solenoid limit stop
8	1x	Installation bag (mounting material)

Installation preparations



Tips for installation

- A safety device must always be connected as a normally closed contact. This is ensures that the system is always safe if it is triggered or there is a fault.
- Work with the user to decide on the position of the accessories before installation.

NOTE!

Other pulse transmitters are: Handheld transmitters, Telecodys, wireless wall buttons and key switches. In the case of a handheld transmitter, Telecody or wireless wall button, a connection cable to the operator is not required. Ask your specialist retailer.

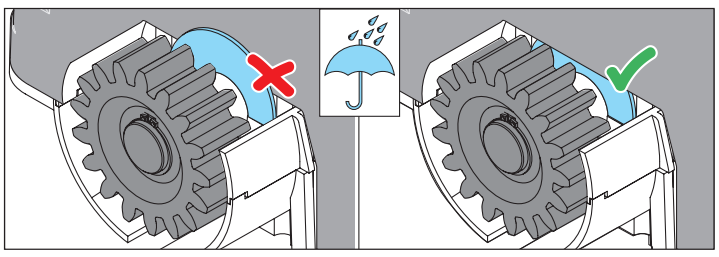
1	Warning light DC 24 V
2	Key switch (1- or 2-contact)
3	Photocell (required for automatic closing function, see EN 12543)
4	Console
5	Main switch (lockable)
6	Rod antenna (including 10 m cable)
7	Safety contact strip (8.2 kOhm, Fraba system)
8	Telecody
9	Car/wall holder for handheld transmitter

General preparations

- Remove or disable all locking devices (electric lock, bars etc.) before installing the operator.
- The structure of the gate must be stable and suitable for the purpose.
- The gate must not have excessive lateral deviation throughout its range of movement.
- The wheels/bottom track and the roller/top guide must operate without excessive friction.
- To prevent the gate leaving its track, end stops must be installed at the **"Gate OPEN + Gate CLOSE"** position.
- Install empty ducts at the base of the gate for the mains supply cable and the accessory cables (photocell, warning light, key switch etc.).

NOTE!

To prevent the ingress of water, the wiper must be located behind the cover, as shown.



Installation

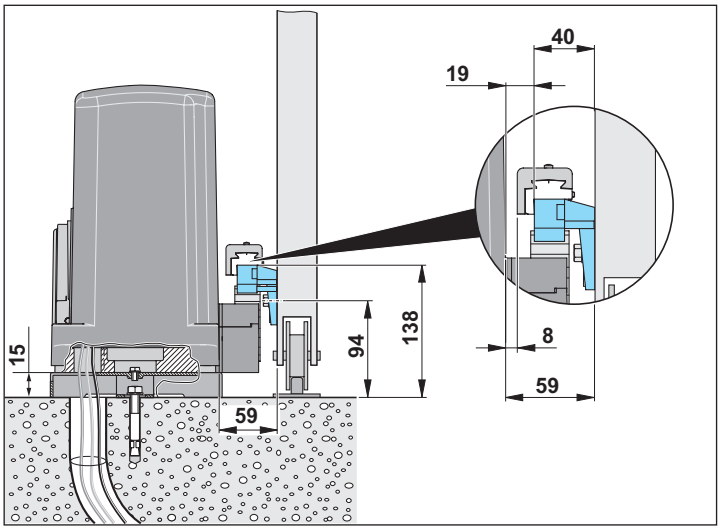
Safety instructions

- The control unit must be connected to the power supply by an electrician.
- Ensure that the operator is securely fastened to the ground and the racks on the gate because it could be exposed to powerful forces when opening and closing the gate.
- If a button is used for opening or closing the gate, it must be installed at a height of at least 1.6 m to prevent it being pressed by children.
- The rack must not press on the pinion during operation, otherwise the operator will be damaged.
- Follow the standards for installation, e.g.: EN 12604, EN 12605.

Installation on the ground

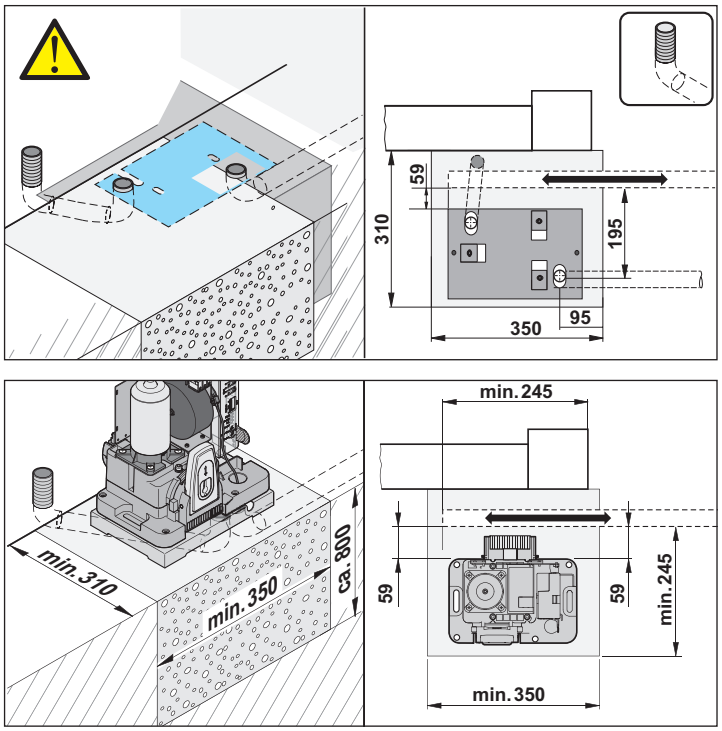
NOTE!

Dispose of the packaging in accordance with national regulations.



Foundation

- With cantilever gates, install the operator centrally between the moving blocks.
- The foundation must extend below the frost line (approximately 800 mm in Germany).
- The foundation must be cured and horizontal.
- Foundation dimensions as shown.



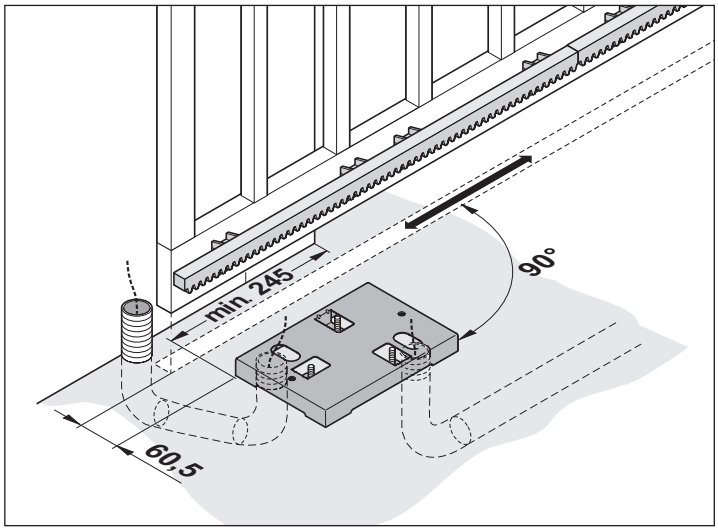
Installing the console

1. Checking the scope of delivery
2. Measure and mark drill holes in the foundation
3. Drill holes
4. Insert anchor fittings
5. Screw down the console

Console

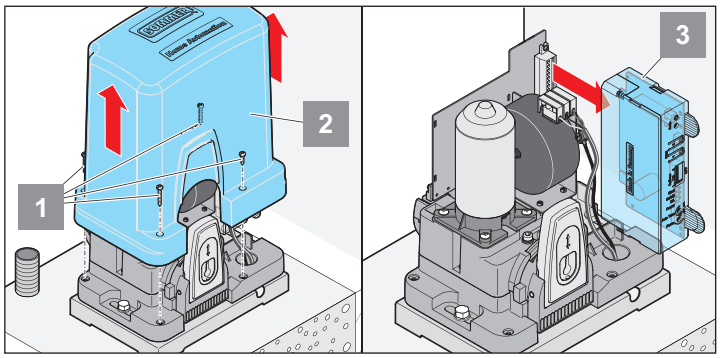
NOTE!

Always note the dimensions and angles, see Chapter “Installation location” on page 12.

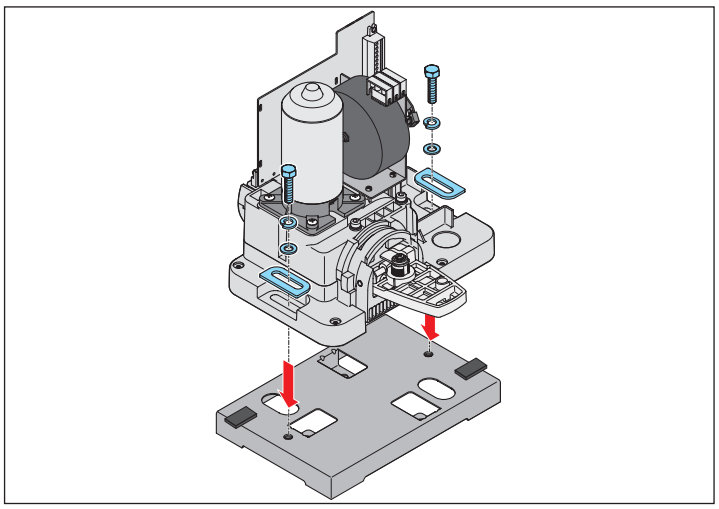


6. When excavating, allow for the dimensions of the console and cable ducts for the mains connection and accessories (e.g.: photocell), see Chapter **“Foundation” on page 8**.
7. Check the dimensions and the horizontal position of the console. Screw down or concrete in cable ducts and console.

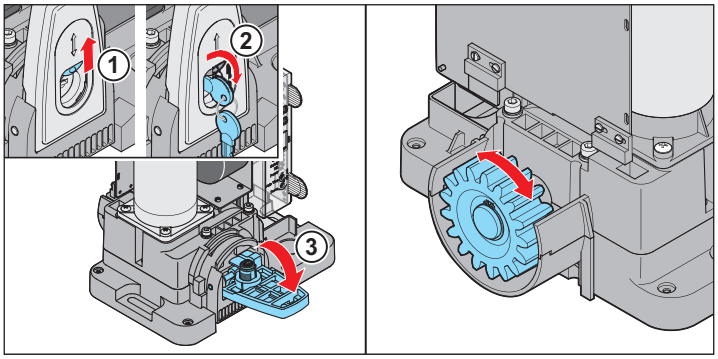
Installing operator on console



8. Undo the screws **(1)** and remove the cover **(2)**.
9. Remove controller **(3)**.
10. Screw operator to console. Use the auxiliary mounting plates (30 x 20 x 1.5 mm) to set a distance of 1.5 mm between operator and console. This allows optimum adjustment of the gear play.



Unlocking the operator



11. Lift protective cover **(1)**.
12. Insert key **(2)** and turn.
13. Fold cover **(3)** to the outside.
14. Operator is released and the gate can be moved manually.

Installing the racks

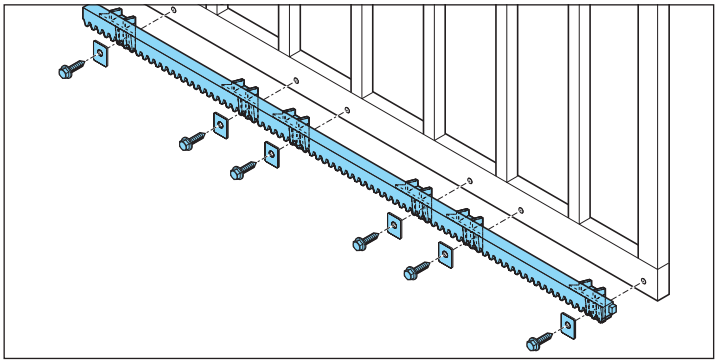
CAUTION!

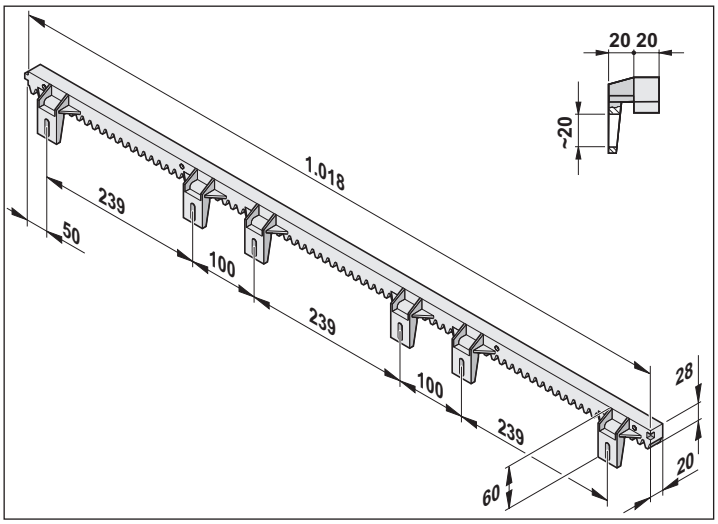
Steel racks must have a minimum width of 12 mm. Narrower steel racks may damage the gears.

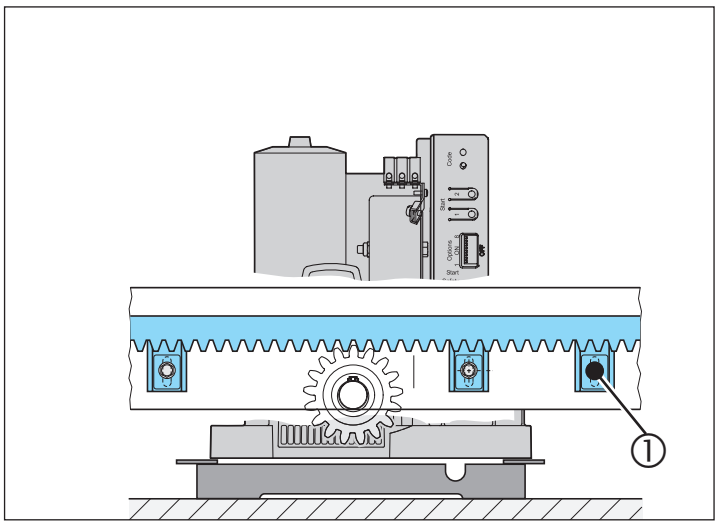
NOTE!

The complete set contains 4 racks, each 1 m long. Contact your specialist retailer if you require more racks.

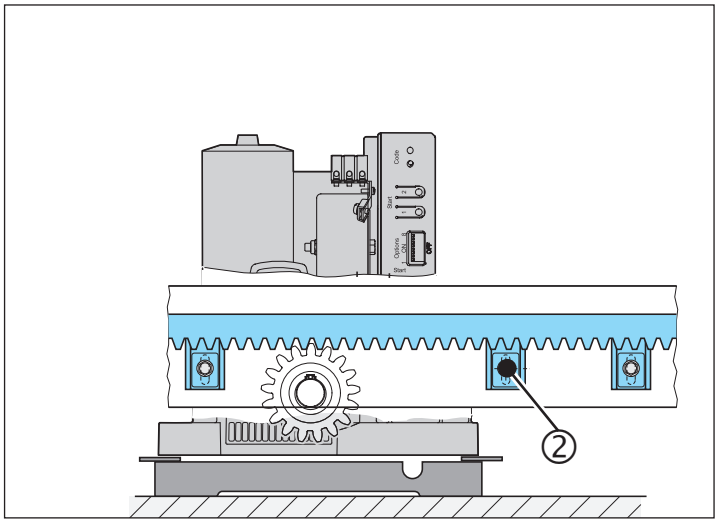
- The rack must not exert any pressure on the pinion in any position of the gate, as otherwise, the gears will be damaged.
- Always start installing the rack on the passage side of the gate.
- The holes must always be marked near the pinion.







1. Before marking the first hole, open the gate completely by hand.
2. Position the rack on the pinion and align it horizontally with a spirit level.
3. Mark the first hole, drill it and fasten.

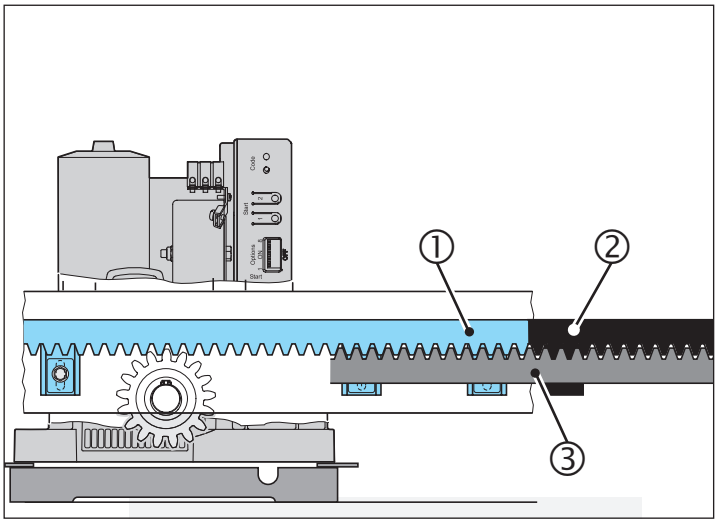


4. Push the gate in **"Close"** direction until the next drilling point is positioned in accordance with the illustration and mark the holes again.
5. Repeat until all drill positions are marked.
6. Fasten rack.

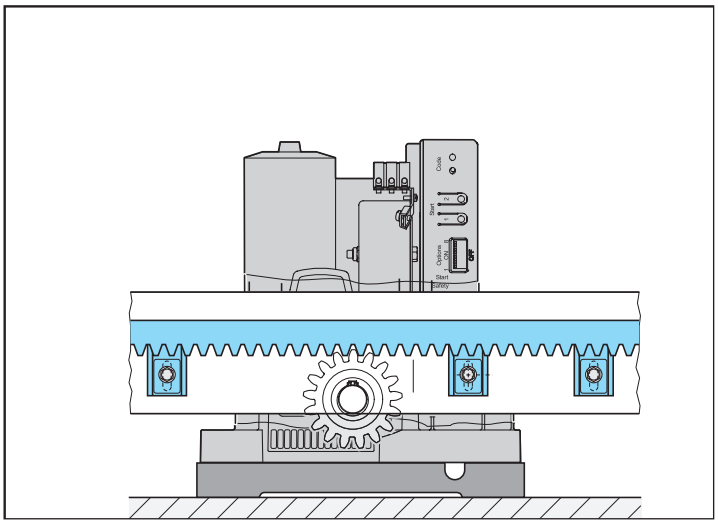
Installing additional racks

TIP!

**First, mark the two outer holes and drill. Fasten rack temporarily and mark the remaining holes.
Then remove the rack and drill the remaining holes.
The rack can then be finally bolted in position.**

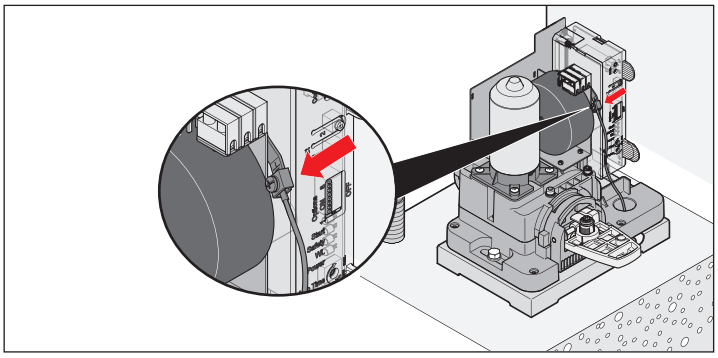


1. Position second rack **(2)** flush with the first rack **(1)** and hold another rack **(3)** against them from below so that the teeth of the third rack **(3)** mesh with the teeth of the top two racks **(1 and 2)**. This ensures that the second rack **(2)** is fitted accurately
2. Mark and drill the holes for the second rack.
3. Attach rack.
4. If a third rack is required, use the same procedure as for the second rack.



5. Remove the auxiliary mounting plates.

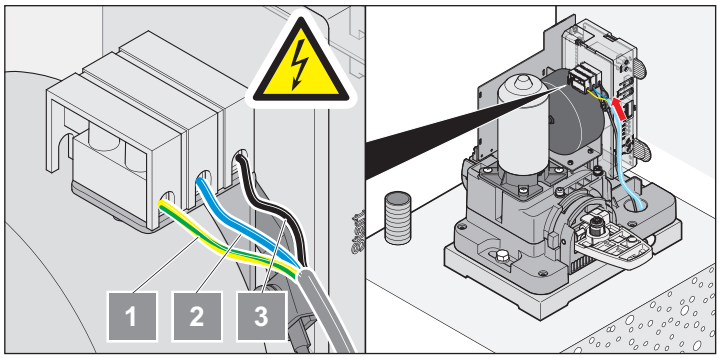
Earth



1. Connect the earth wire (factory-installed) to the earth clamp (see diagram)

Mains connection

➢ Permissible cable cross-sections: max. 2.5 mm².



1	PE	Protective earthing conductor
2	N	Neutral wire
3	L	Mains supply line AC 220 V–240 V

NOTE!

Open cable inlets should be sealed to keep out small animals which live in the soil!

Open cable inlets must always be sealed!

Installation location

NOTE!

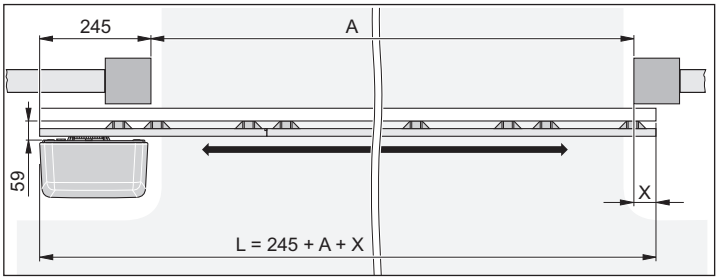
As delivered the operator is installed on the left and the gate opens to the left.

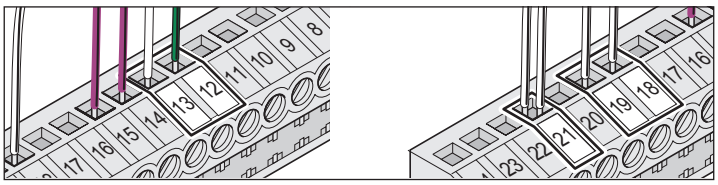
Operator left, calculating gate leaf length

L = required gate leaf length

A = available passage width

X = overlap (e.g.: gate leaf – post)





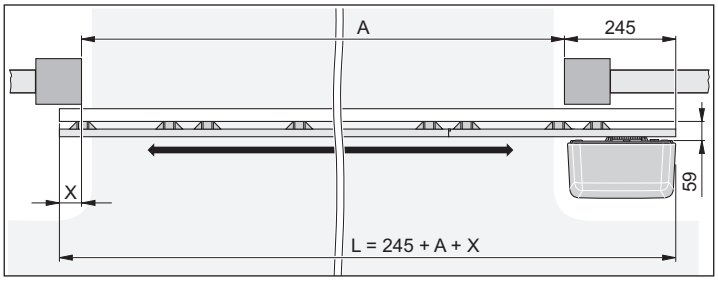
Terminal	Cable colour	Name
12	green	Motor
13	white	Motor
18	white	Gate OPEN sensor
19	white	Gate CLOSE sensor
21	white	Earth, Gate OPEN + CLOSE sensor

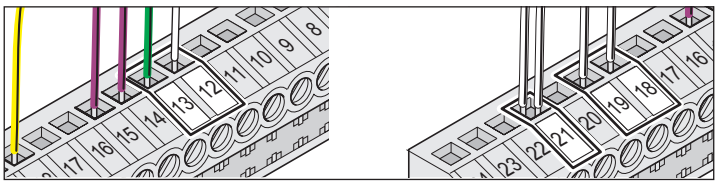
Operator right, calculating gate leaf length

L = required gate leaf length

A = available passage width

X = overlap (e.g.: gate leaf – post)





Terminal	Cable colour	Connection
12	white	Motor
13	green	Motor
18	white	Gate OPEN sensor
19	white	Gate CLOSE sensor
21	white	Earth, Gate OPEN + CLOSE sensor

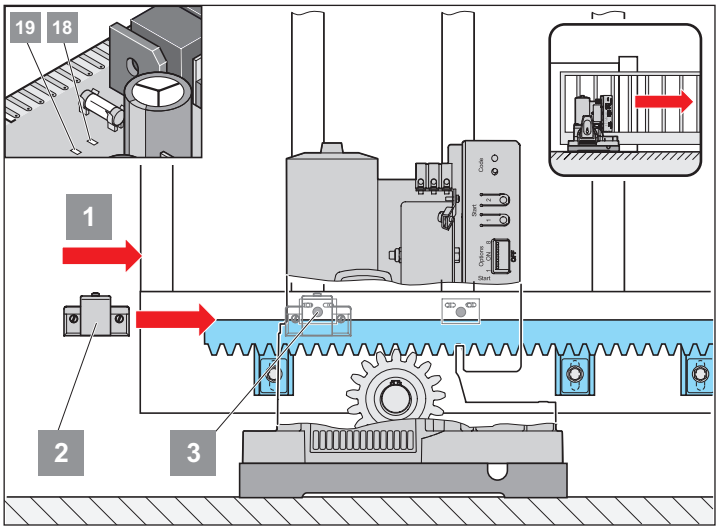
NOTE!

For right-hand installation, reverse motor connection 12 + 13 and sensor lines 18 + 19.

NOTE!

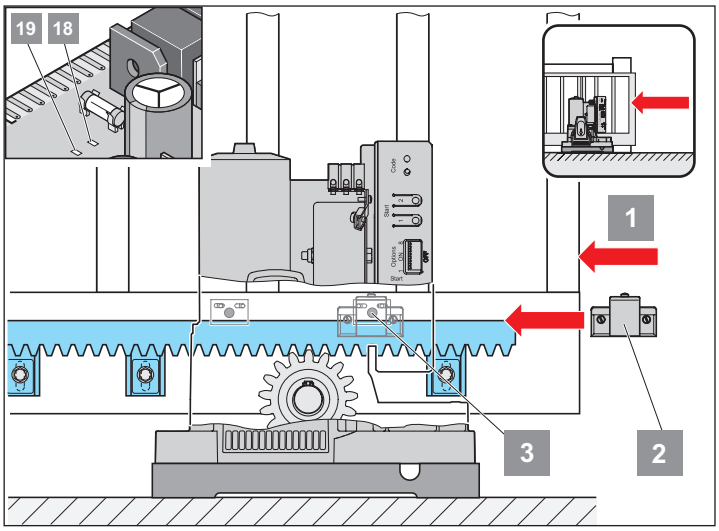
For max. line lengths, see “Connection diagram” on page 33.

Setting gate CLOSE end position



- Push the gate into the gate CLOSE end position **(1)**.
- Slide limit stop magnet **(2)** towards sensor **(3)** until the sensor switches (LED on the control unit lights up).
  Operator left: LED 18 -> Gate CLOSE
  Operator right: LED 19 -> Gate CLOSE
- Screw limit stop magnet 2 in position.

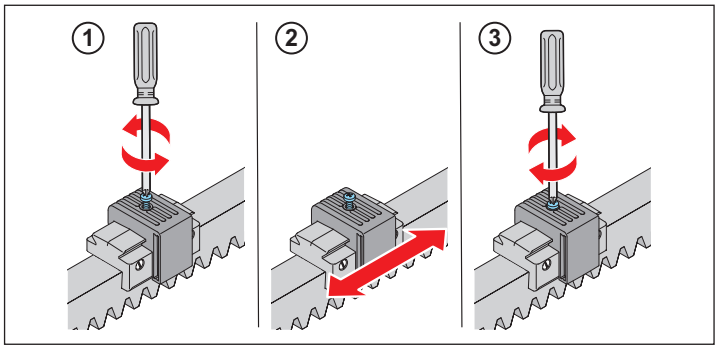
Setting gate OPEN end position



- Push the gate into the gate CLOSE end position **(1)**.
- Slide limit stop magnet **(2)** towards sensor **(3)** until the sensor switches (LED on the control unit lights up).
  Operator left: LED 19 -> Gate OPEN
  Operator right: LED 18 -> Gate OPEN
- Screw limit stop magnet 2 in position.

NOTE!

Fine adjustment of the limit stops.



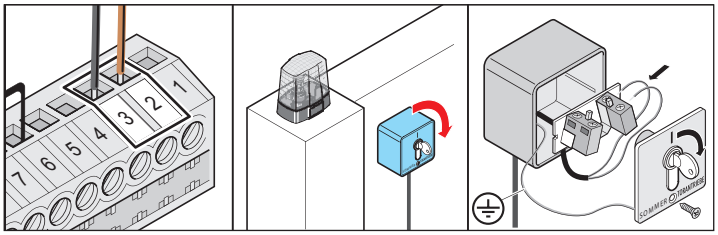
Connecting buttons or key switches

CAUTION!

When operating the key switch, the user must not stand within the range of movement of the gate and must have a direct view of it.

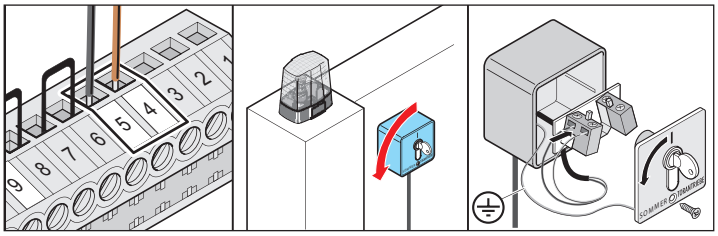
NOTE!

The button inputs are potential-free!



Button 1:

Terminal 2 + 3



Button 2:

Terminal 4 + 5

What is button 2 for?

For settings, see Chapter **"Functions" on page 21**.

Defined opening and closing (2-channel operation)

Button 1 opens and button 2 closes the gate.

Partial opening

Button 1 always opens and closes the gate completely.

Button 2 only opens the gate partially and closes the gate.

Dead man operation (switch on with TorMinal only)

Button 1 opens the gate while the button is pressed.

Button 2 closes the gate while the button is pressed.

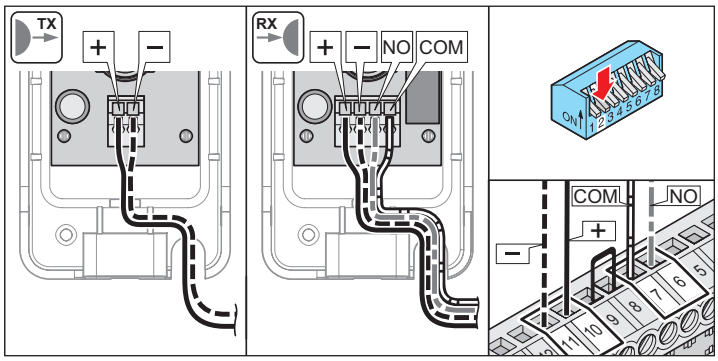
Safety accessories

Safety instructions

CAUTION!

Before working on the gate or the operator, always disconnect the control unit from the power supply and lock to prevent reactivation.

Connecting a 4-wire photocell

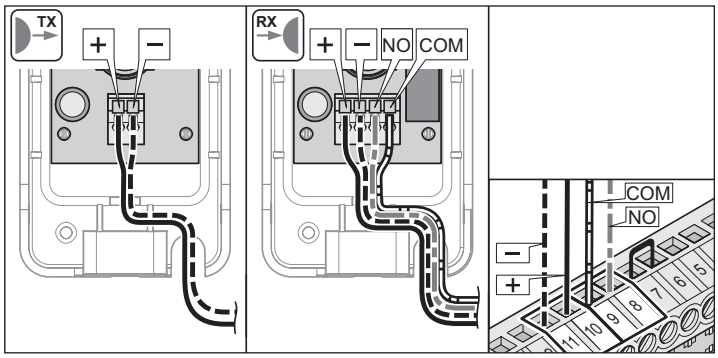


Safety input 1 (Safety-1)

Terminal 6 + 7	Tested connection for potential-free contacts, only if DIP switch 2 is **"OFF"**

Voltage supply

Terminal 10	Regulated DC 24 V, max. 0.1 A
Terminal 11	Earth



Safety input 2 (Safety-2)

Terminal 8 + 9	Tested connection for potential-free contacts, reacts only with gate CLOSE

Voltage supply

Terminal 10	Regulated DC 24 V, max. 0.1 A
Terminal 11	Earth

NOTE!

Connection of a 2-wire photocell is only possible with an external evaluation unit!

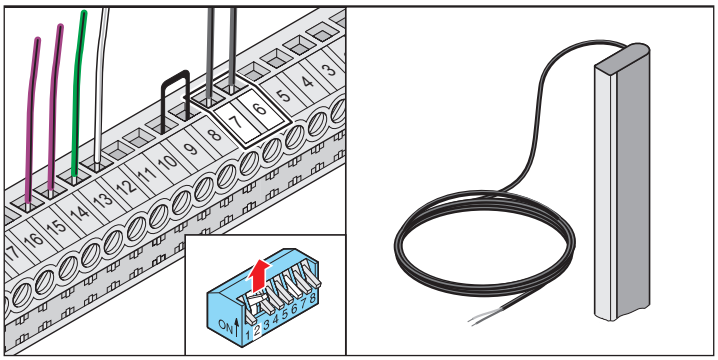
STArter+: Connecting an active safety contact strip (optional with STArter)

NOTE!

With the STArter+ (optional with the STArter), you can connect either an 8.2 kOhm or an optoelectronic strip, but not both at the same time.

Electrical safety contact strip (8.2 kOhm)

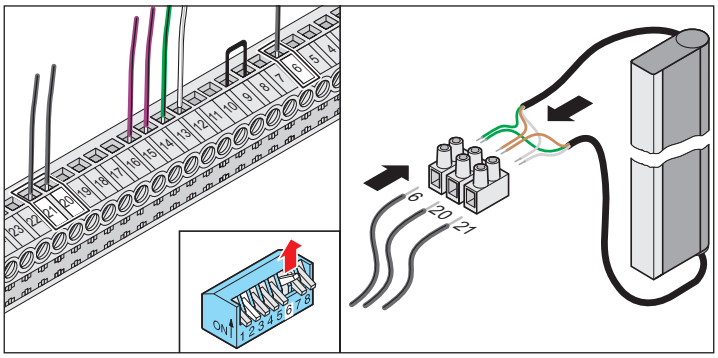
Evaluation 8.2 kOhm. Connection without special evaluation unit, the control unit performs the evaluation.



Terminal 6 + 7	Tested connection for an 8.2 kOhm strip
DIP switch 2	**"ON"**

Optoelectronic safety contact strip

One strip can be connected without a special evaluation unit, the control unit performs the evaluation. A special evaluation unit is necessary in order to connect two strips.



Terminal 6	Green cable from Fraba System
Terminal 20	Brown cable from Fraba system
Terminal 21	White cable from Fraba system
DIP switch 6	**"ON"**
DIP switch 2	**"OFF"**

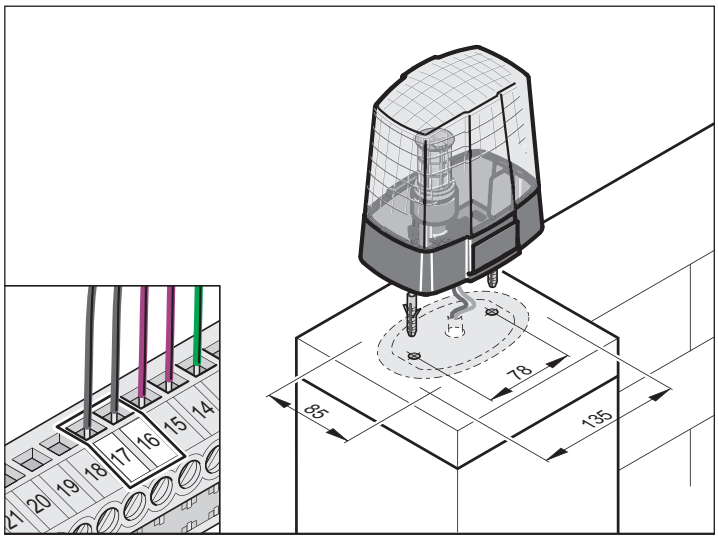
Other accessories

Safety instructions

CAUTION!

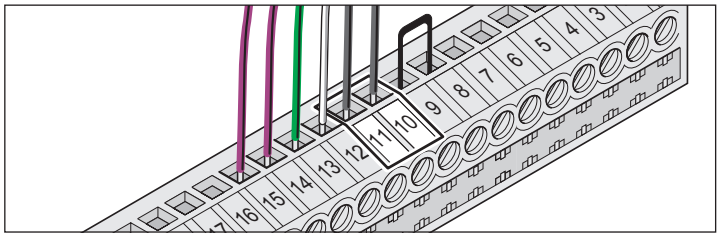
Before working on the gate or the operator, always disconnect the control unit from the power supply and lock to prevent reactivation.

Warning light



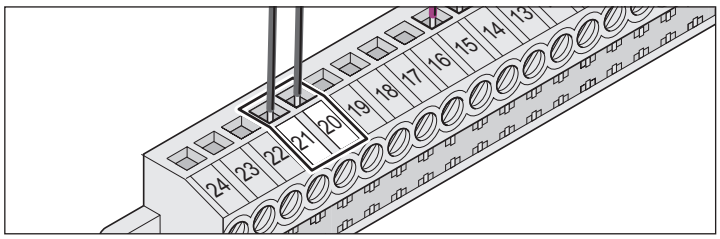
Terminal 16
Terminal 17

24 V connection



Terminal 10	Regulated DC 24 V, max. 0.1 A
Terminal 11	Earth

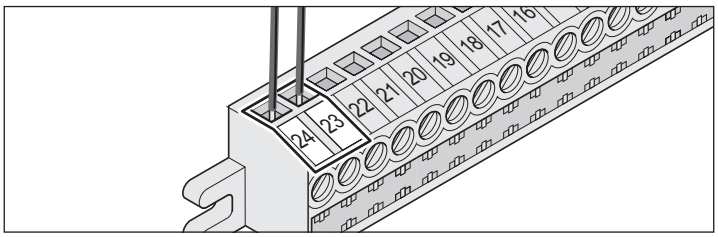
12 V connection



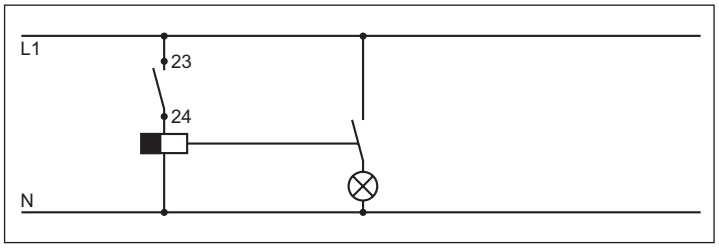
Terminal 20	DC 12 V, max. 0.1 A
Terminal 21	Earth

Floating relay output

Every time the operator is started, a pulse is pending at the relay output that can be used, for example, to switch on lights in a stairwell.



Terminal 23 + 24 Max. switching capacity: AC 230 V, max. 5 A
The setting **"max. switching duration"** can only be changed with the TorMinal.



Example: Automatic lights in stairwell

Connecting an external antenna

See Chapter **"External antenna" on page 19**.

TorMinal interface

See TorMinal operating manual.

Special functions

Dead man operation

Maintenance monitoring

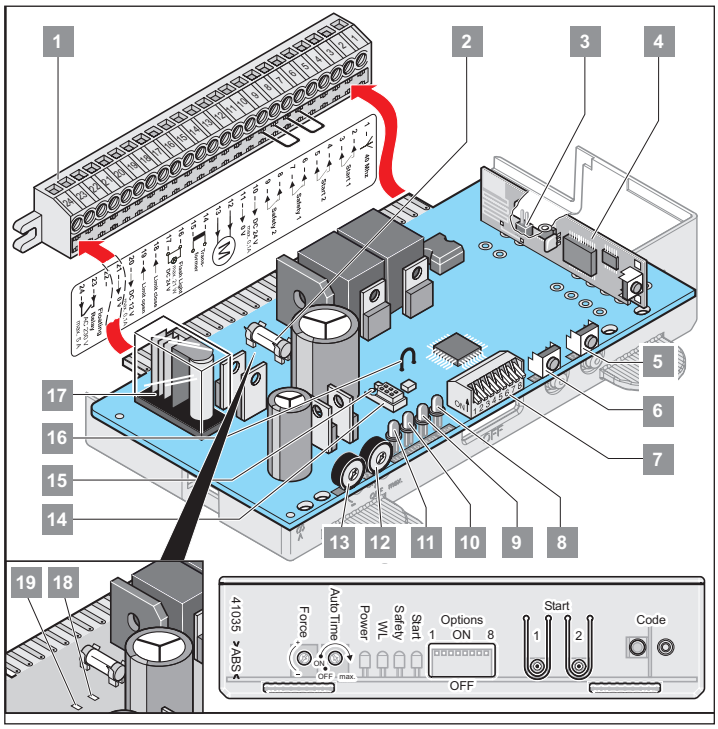
These and other functions or settings require the TorMinal.

Initial operation

General information

- On delivery, DIP switches are set to **“OFF”**.
- Do not apply an external voltage to the connections of the control unit, or the control unit will immediately be permanently damaged.

Overview of the control unit



1	Direct connector, 24-pole
2	Fuse for warning light-1 connection, terminal 16 + 17
3	Connection of the external antenna
4	Radio receiver
5	Button 2 (T2*)
6	Button 1 (T1*)
7	DIP switch 1–8
8	Start (LED 4*) Lights up when a radio command is sent or a button is pressed.
9	Safety (LED 3*) Lights up when a safety input is actuated.
10	WL (LED 2*) Blinks when the operator opens or closes the gate.
11	Power (LED 1*) Lights up when mains voltage is present.
12	Potentiometer (P2*) for setting time of automatic closing
13	Potentiometer (P1*) for adjusting the force tolerance.
14	TorMinal connection
15	Protection against incorrect insertion for the TorMinal connection
16	Wire jumper, disconnecting switches off the soft run
17	Relay contact, terminals 23 + 24
18	LED: Operator left: Gate CLOSE end position Operator right: Gate OPEN end position
19	LED: Operator left: Gate OPEN end position Operator right: Gate CLOSE end position

* You will also find this labelling on the control unit circuit board.

Safety instructions

NOTE!

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

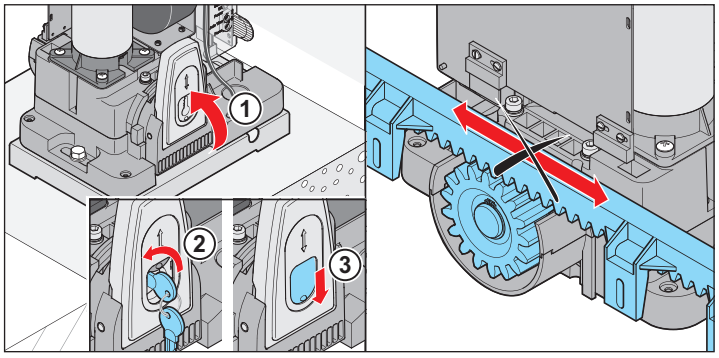
CAUTION!

The setting of the force tolerance is safety-relevant and must be performed by qualified personnel and with the utmost care. If the force tolerance is impermissibly high, people or animals could be injured and objects damaged. Select a force setting that is as low as possible so that obstacles are detected quickly and safely.

Programming the operator

The control unit has an automatic force setting. The control unit memorises the required force during the **“Open”** and **“Close”** gate movements and stores it when the end position has been reached.

Locking the operator



1. Move operator to centre position.
2. Lift lever **(1)** up and lock with key until the motor locks in place – with a loud click. Release lever **(1)**
3. Remove key and push dust cap down

NOTE!

Move gate back and forth by hand so that the pinion meshes with the rack more easily and the motor can lock in place.

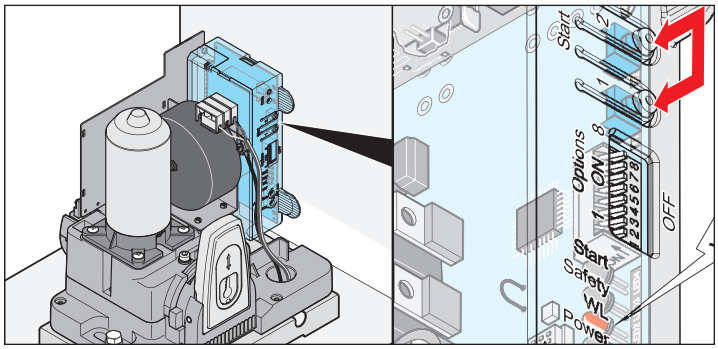
⇒ Operator is locked and the gate can now only be moved with the motor

4. Plug in the control unit
5. Switch on the main switch

⇒ LED (Power) lights up

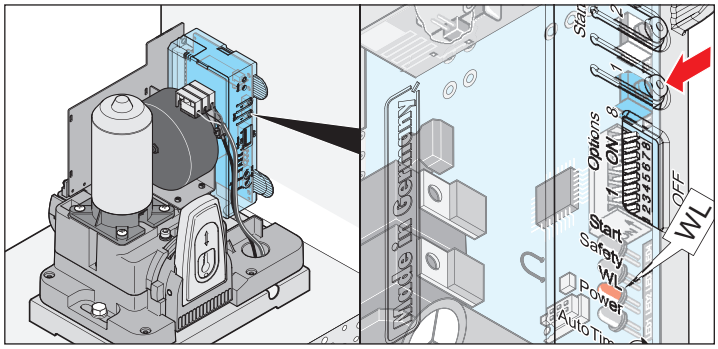
Initial operation

Resetting the control unit



1. Press the buttons (1 + 2) until LED **“WL”** goes out.
   ⇒ LED **“WL”** off – force values deleted.
2. Release the buttons (1 + 2).
3. Reset is complete
   ⇒ LED **“WL”** blinks

Programming the force values



1. Press button **(1)**.
   ⇒ Gate opens as far as limit stop magnet (end position gate OPEN)
   ⇒ If the gate does not open, the motor may be incorrectly connected (see **“Connection” on page 12**)
   ⇒ LED **“WL”** blinks
2. Press button **(1)**.
   ⇒ Gate closes as far as end switch magnet (end position gate CLOSE)
   ⇒ LED **“WL”** blinks
3. Repeat Steps 1 and 2.
   ⇒ LED **“WL”** lights up and goes out – force values programmed
4. Test gate OPEN and CLOSE end positions by opening and closing the gate. Adjust the end positions if necessary until the gate opens and closes completely.

NOTE!

Soft running length with gate CLOSE min. 500 mm.

Adjusting the force tolerance

- Shut-off force = learned force + force tolerance (adjustable with the **“Force”** potentiometer)
- If the force is not sufficient for opening or closing the gate completely, increase the force tolerance by rotating the potentiometer clockwise.
- If the setting is changed while the gate is opening or closing, the control unit imports the setting the next time the gate is opened.
- After setting the force tolerance, it may be necessary to reset the end positions.

Checking the force tolerance

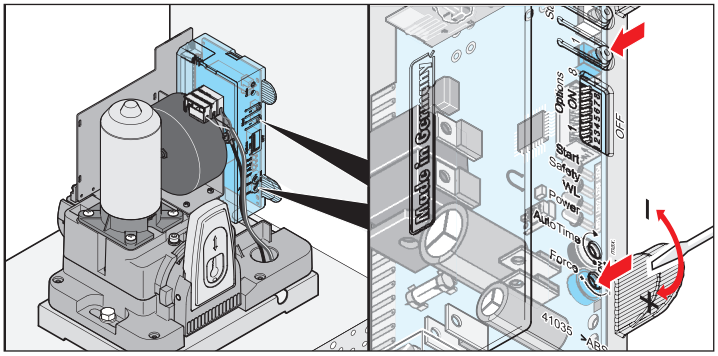
CAUTION!

Rubber safety contact strips must be used on the main and auxiliary closing edges. Sliding gates must not be operated without safety contact strips!

⇒ Our range includes various safety strips, both active (triggers an immediate reversal of the gate at contact) and passive (takes up part of the momentum of the moving gate and causes reversal of the operator via the obstacle recognition). Strips can be ordered from an authorised **SOMMER** dealer.

See Chapter **“Maintenance and care” on page 28**, Regular testing.

Force tolerance is set to the automatically programmed force. The potentiometer setting is imported again at every start.



- Left stop of the potentiometer **(–)** is the lowest force tolerance, right stop **(+)** is the highest force tolerance.

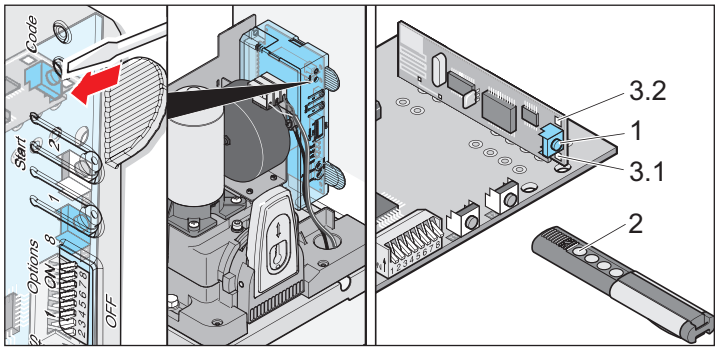
Test run

1. Close the gate.
2. Press button (Start 1) once.
   Gate opens to gate OPEN end position.
3. Press button (Start 1) once.
   Gate closes to gate CLOSE end position.
4. If one of the set gate end positions is not reached (gate OPEN or CLOSE), the force tolerance must be increased.
5. Turn **“Force”** potentiometer approx.10 degrees clockwise.
6. Repeat test run until the gate reaches the gate OPEN and CLOSE end positions.

Programming handheld transmitter

NOTE!

Before programming the handheld transmitter for the first time, always clear the radio receiver memory completely.



Clearing the radio receiver memory

1. Press and hold the Teach-in button **(1)**.
   ⇒ After 5 seconds, the LED (3.1 or 3.2) blinks, and after another 10 seconds, the LED (3.1 or 3.2) lights up.
   ⇒ After a total of 25 seconds, all LEDs are on (3.1 and 3.2).
2. Release the Teach-in button **(1)**.

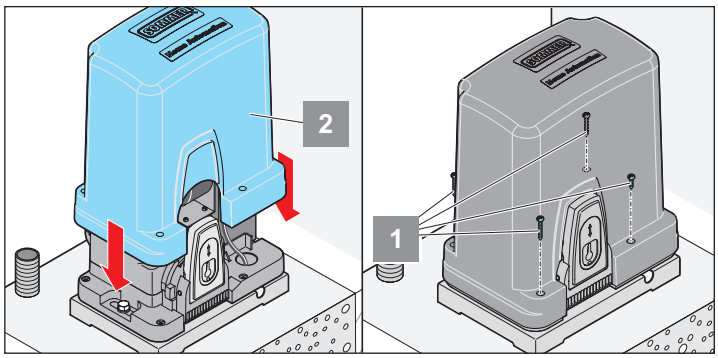
Programming handheld transmitter

1. Press the Teach-in button **(1)**.
   - 1x for channel 1; the LED (3.1) lights up.
   - 2x for channel 2; the LED (3.2) lights up.

   ⇒ If no code is sent within 10 seconds, the radio receiver switches to normal mode.
2. Press the desired handheld transmitter button **(2)** until the LED (3.1/3.2) goes out – depending on which channel was selected.
   ⇒ LED goes out – programming is completed.
   ⇒ The handheld transmitter has transferred the radio code to the radio receiver.
3. Repeat the above steps to program additional handheld transmitters. A maximum of 112 memory positions are available for each radio receiver.

NOTE!

To cancel programming mode, press the Teach-in button (1) until all LEDs are off.

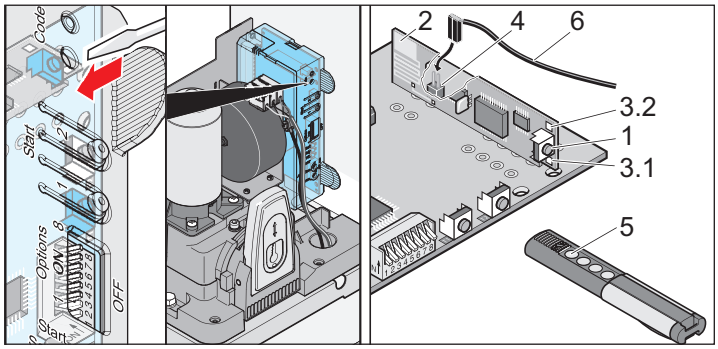


1. Position cover **(2)** and push down.
2. Fasten cover **(1)**.
   ⇒ Initial operation completed.

Safety instructions

- The local safety regulations for the system must be observed to ensure safe operation! Information is available from electrical utility companies, VDE (Association for Electrical, Electronic & Information Technologies) and professional associations.
- The user is not protected against interference caused by other telecommunications equipment or devices (e.g. wireless systems which are being operated correctly in the same frequency range).
- If you have reception problems, replace the batteries in the handheld transmitter.

Explanation of display and buttons



1	Sets the radio receiver to different operating modes: Learn, delete, normal mode
2	Internal antenna

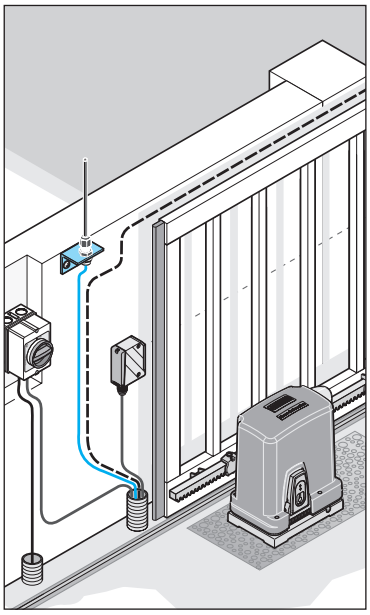
NOTE!

Radio channel 2 (3.2) is only required for the "Defined opening and closing or partial opening" functions.

3	LEDs; show which channel has been selected.
	3.1 LED radio channel 1
	3.2 LED radio channel 2
4	Connection for the external antenna.
	An external antenna can be used if the range with the internal antenna is insufficient. See chapter **"External antenna" on page 19**.
5	Handheld transmitter button
6	External antenna

External antenna

- If the reception is inadequate with the internal antenna of the radio receiver, an external antenna can be connected.
- The antenna cable must not exert any mechanical force on the radio receiver. Fit a strain relief device.
- Agree the installation location of the antenna with the user.



Programming handheld transmitter

NOTE!

Before the first programming of the handheld transmitter, delete the memory of the radio receiver.

1. Press the Teach-in button **(1)**.
   - 1x for channel 1; the LED (3.1) lights up.
   - 2x for channel 2; the LED (3.2) lights up.
   - ⇒ If no code is sent within 10 seconds, the radio receiver switches to normal mode.
2. Press the desire handheld transmitter button **(5)** until the LED (3.1/3.2) goes out – depending on which channel was selected.
   - ⇒ LED goes out – programming is completed.
   - ⇒ The handheld transmitter has transferred the radio code to the radio receiver.
3. Repeat the above steps to program additional handheld transmitters. A maximum of 112 memory positions are available for each radio receiver.

Cancelling programming mode

Press the Teach-in button **(1)** until no more LEDs are lit.

Deleting the handheld transmitter from the radio receiver

If a handheld transmitter is to be deleted from the radio receiver, **every** button and **every** button short cut of the handheld transmitter must be deleted for security reasons!

1. Press and hold the Teach-in button **(1)** for 5 seconds.
   ⇒ An LED blinks (3.1 or 3.2).
2. Release the Teach-in button **(1)**.
   ⇒ The radio receiver is in deletion mode.
3. Press the transmitter button whose code is to be deleted in the radio receiver.
   ⇒ The LED goes out. The deletion procedure has been completed.
4. Repeat the procedure for **all** buttons and button short cuts.

Deleting a channel from the radio receiver

1. Press and hold the Teach-in button **(1)**.
   - 1x for channel 1; the LED (3.1) lights up.
   - 2x for channel 2; the LED (3.2) lights up.

   ⇒ After 5 seconds, the LED blinks (3.1 or 3.2).
   ⇒ After another 10 seconds, the LED lights up steadily (3.1 or 3.2).
2. Release the Teach-in button **(1)**.
   ⇒ The deletion procedure has been completed.

Clearing the radio receiver memory

If a handheld transmitter is lost, all channels in the radio receiver must be deleted for security reasons.
After that, reprogramme all handheld transmitters.

1. Press and hold the Teach-in button **(1)**.
   ⇒ After 5 seconds, the LED blinks (3.1 or 3.2).
   ⇒ After another 10 seconds, the LED lights up steadily (3.1 or 3.2).
   ⇒ After a total of 25 seconds, all the LEDs light up (3.1 + 3.2).
2. Release the Teach-in button **(1)** – memory clearing process completed.

Programming by radio (HFL)

Prerequisites for programming by radio

At least one handheld transmitter has been programmed on the radio receiver (see Programming handheld transmitter).

Restrictions

The following are not possible for programming by radio:

- Targeted programming of a selected handheld transmitter button to a radio channel
- Deletion of a handheld transmitter, radio channel or of the entire radio receiver (memory)
- Changing the programming of a handheld transmitter programmed by radio (e.g.: programming another button)

Properties

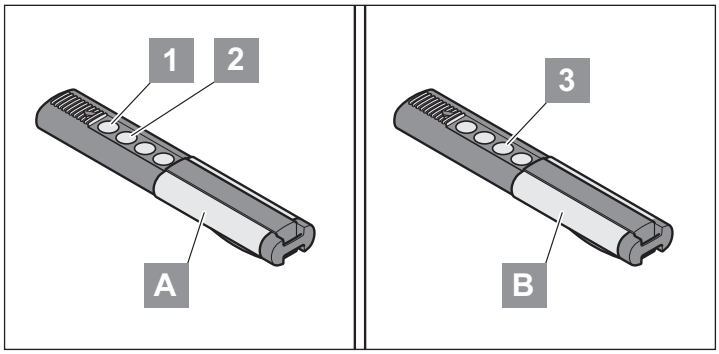
- Each handheld transmitter that has already been programmed can put the radio receiver into programming mode via radio.

NOTE!

Radio receivers which are within the range of the handheld transmitter are put into programming mode simultaneously.

- The key assignment of the handheld transmitter **(A)** that put the radio receiver into programming mode by radio is used for the new handheld transmitter **(B)** which is to be programmed. **Example:** Button 1 has been programmed by radio to channel 1 and button 2 to channel 2 by handheld transmitter **(A)**.
- The newly programmed handheld transmitter **(B)** has received the key assignment of handheld transmitter **(A)**:
- Button 1 to channel 1 and button 2 to channel 2.

Procedure



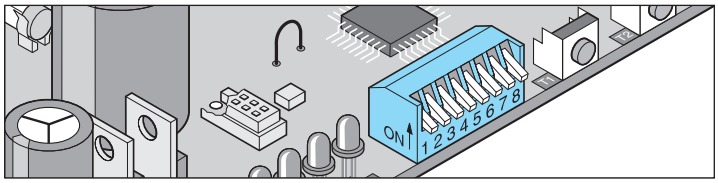
1. Press buttons 1 + 2 of a programmed handheld transmitter **(A)** for 5 seconds, until LED channel 1 on the radio receiver lights up.
   ⇒ If a further 10 seconds pass without a code being transmitted, the radio receiver switches over to normal mode.
   ⇒ To interrupt programming mode: Press button **(1)**, LED channel 1 goes out.
2. Release buttons 1 + 2 of the handheld transmitter **(A)**.
3. Press any button, e.g. **(3)**, on the new handheld transmitter to be programmed **(B)**.
4. LED channel 1 on the radio receiver blinks initially and then goes out.
   ⇒ Handheld transmitter **(B)** has been programmed.

DIP switch

NOTE!

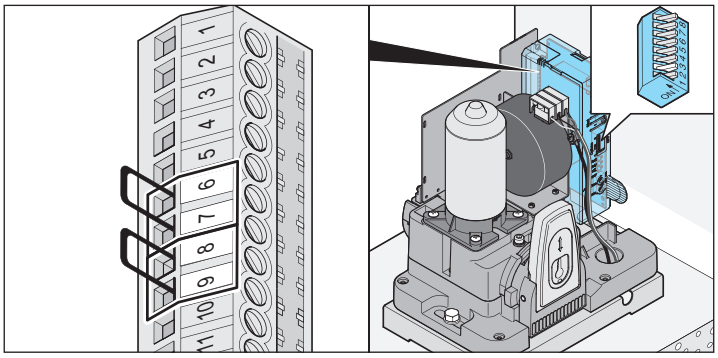
Before switching the DIP switches, disconnect the power supply to the control unit. The DIP switch settings are imported again when the control unit is reconnected to the power supply.

Factory setting: OFF



DIP	Position	Function/reaction
Safety connection 1, terminal 6 + 7; action of operator on gate open		
1	**OFF**	No reaction by operator
	ON	Operator reverses
Safety connection 1, terminal 6 + 7; selection of function as NC contact or 8.2 kOhm		
2	**OFF**	Normally closed contact (e.g. photocell)
	ON	8.2 kOhm
Safety connection 2, terminal 8 + 9; action of operator on gate close		
3	**OFF**	Operator stops and opens the gate slightly, reversion
	ON	The operator stops and opens the gate completely.
Automatic closing: the gate closes 5 seconds after actuation of the photocell (safety connection 1 or 2).		
4	**OFF**	Disabled
	ON	Activated
Pre-warning time for warning light connection terminal 16 + 17		
5	**OFF**	Pre-warning time 0 seconds
	ON	Pre-warning time 3 seconds – warning light blinks
Fraba system		
6	**OFF**	Disabled
	ON	Activated
Defined opening and closing		
7	**OFF**	Pulse sequence with 1 channel operation button/radio channel 1 + 2: OPEN – STOP – CLOSE – STOP – OPEN – STOP – CLOSE – etc.
	ON	Pulse sequence with 2 channel operation button/radio channel 1: OPEN – STOP – OPEN– STOP – OPEN – etc. Button/radio channel 2: CLOSE – STOP – CLOSE – STOP – CLOSE – etc.
Partial opening		
8	**OFF**	Partial opening deactivated
	ON	Partial opening activated button/radio channel 1 = OPEN – STOP – CLOSE – etc. Button/radio channel 2 = partial opening DIP switch 7 OFF

Obstacle detection (DIP 1, 2 + 3)



Obstacle when gate is opening

Obstacle recognition

Operator reverses.

Safety input 1, terminal 6 + 7

If a safety input is interrupted (e.g. someone interrupts the beam of the photocell), the operator detects this and reacts according to the setting of DIP switch 1.

DIP switch 1:

OFF No reaction by operator
ON Operator reverses

DIP switch 2: Safety connection 1, terminals 6 + 7, function

OFF Normally closed contact (e.g. for photocell)
ON 8.2 kOhm (safety contact strip)

Safety input 2, terminals 8 + 9

No reaction from the operator.

Obstacle when gate is closing

NOTE!

When Automatic Closing is activated, the gate always opens completely.

Obstacle recognition

Operator reverses.

Safety input 1, terminal 6 + 7

If a safety input is interrupted (e.g. someone interrupts the beam of the photocell), the operator detects this and reacts according to the setting of DIP switch 3.

DIP switch 3:

OFF Operator stops and opens the gate slightly, reversion
ON The operator stops and opens the gate completely.

Safety input 2, terminals 8 + 9

DIP switch 3:

OFF Operator stops and opens the gate slightly, reversion
ON The operator stops and opens the gate completely.

Automatic closing

CAUTION!

Risk of injury during automatic closing.
Automatically closing gates may injure persons within the range of movement of the gate when it is closing. Always install a photocell before activating the function! This is a legal requirement.

NOTE!

When using the automatic closing function, ensure compliance with standard EN 12453 (e.g. install photocell 1). Connect an additional photocell to safety connection 2. It reacts only when the gate is closing.

NOTE!

Operation with automatic closing must comply with EN 12453.

NOTE!

There are two types of automatic closing. Both allow a hold open time (OHZ) of 1–120 seconds to be set.

1. Semi-automatic closing function

2. Fully automatic closing function

NOTE!

A warning light connected to warning light connection 1 (terminal 16 + 17) blinks during automatic closing.

NOTE!

With the exception of some regions, the fully automatic closing function is set by default.

The type of automatic closing function can only be changed using TorMinal (see the current TorMinal manual).

Fully automatic closing function

- All commands are ignored during opening.
- When the **"Gate OPEN"** end position or the programmed partial opening width is reached, the hold open time (referred to as OHZ below) starts.
- If a pulse command is received (e.g. START button or radio channel 1), the OHT begins again.
- If a new partial opening command is received in the operator setting **"partial opening"**, the OHZ begins again.

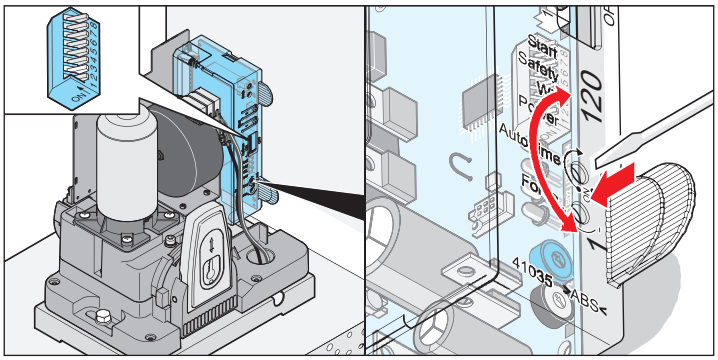
Semi-automatic closing function

- All commands from command devices are accepted.
- When the gate OPEN end position or the programmed partial opening width is reached, the hold open time (referred to as OHZ below) starts.
- The gate closes when the OHZ has expired.
- If a pulse command is received (e.g. START button or radio channel 1), the OHZ is reduced.
- The OHZ is reduced if a partial opening command is received.
- The OHZ does not run on during an intermediate stop.

NOTE!

Partial opening and automatic closing.

To use both functions together, first set partial opening (DIP 8 ON) and then automatic closing.



Switching hold open time on and off with potentiometer

- Time can be set from 1–120 seconds
- Switch off -> left stop

Behaviour of operator when safety inputs 1 + 2 are triggered

When gate is opening:

Operator behaviour depends on setting of DIP switch 1.

When gate is closing:

Operator always opens gate completely, regardless of the setting of DIP switch 3.

Variant 1: Automatic closing

Automatic closing is activated when the gate OPEN end position is reached. The time set with the potentiometer starts to run down at this point. If a command is sent during this period, the period starts again.

Settings

- Set potentiometer to desired time (1–120 seconds)
- DIP switch 4, 7 + 8 **"OFF"**
- Other DIP switches as desired

Variant 2: Automatic closing + photocell (DIP 4)

NOTE!

Install a switch in the photocell supply line for manual interruption of automatic closing.

NOTE!

If a photocell event occurs during automatic closing, the operator reverses completely.

However, as with variant 1, the operator closes the gate 5 seconds after interruption of the photocell.

- Photocell at safety connection 2 (terminal 8 + 9)

Settings

- Set potentiometer to desired time (1–120 seconds)
- DIP switch 7 + 8 **"OFF"**
- DIP switch 4 **"ON"**
- Other DIP switches as desired

Variant 3: Automatic closing + safety contact strip + photocell

NOTE!

Install a switch in the photocell supply line for manual interruption of automatic closing.

However, as with variant 1, the operator closes the gate 5 seconds after interruption of the photocell.

- Safety contact strip at safety connection 1 (terminal 6 + 7)
- Photocell at safety connection 2 (terminal 8 + 9)

Settings

- Set potentiometer to desired time (1–120 seconds)
- DIP switch 7 + 8 **"OFF"**
- DIP switch 2, 4 **"ON"**
- Other DIP switches as desired

Pre-warning time (DIP 5)

A warning light connected to warning light connection 1 (terminal 16 + 17) blinks for 3 seconds after pressing the button or the handheld transmitter before the operator starts.

The pre-warning time is cancelled if a button or handheld transmitter is actuated again within this time.

DIP switch 5:

OFF Disabled
ON Activated, warning light 1 blinks for 3 seconds

Fraba system (DIP 6)

Here, the function of safety connection 1 (terminal 6 + 7) can be switched to evaluation of the signals of a Fraba system.

DIP switch 6:

OFF Disabled
ON Activated

Defined opening and closing (DIP 7)

NOTE!

A combination of defined opening/closing and automatic closing function is possible.

Button/radio channel 1 opens and button/radio channel 2 closes the gate. The 2-channel mode can also be used with only 2 buttons or only with handheld transmitters.

Precondition: DIP switch 8 **"OFF"**, 2 buttons connected or 2 handheld transmitter buttons programmed.

DIP switch 7:

OFF Disabled
ON Activated

Partial opening (DIP 8)

NOTE!

A combination of defined partial opening and automatic closing function is possible.

Depending on the setting, this function partially opens the gate.

Example:

Open the gate to let people go through. Partial opening can be selected using two buttons or via radio (handheld transmitter, Telecody etc.).

DIP switch 8:

OFF Disabled
ON Activated, DIP switch 7 non-functional

Partial opening with 2 buttons

Install additional button and connect to terminals 4 + 5 as button 2.

Button 1 always opens the gate completely. If the gate has been partially opened with button 2, pressing button 1 opens the gate completely.

Button 2 only activates the partial opening function if the gate is closed. If the gate has been completely opened with button 1 or partially opened with button 2, pressing button 2 again closes the gate.

Procedure

1. Close the gate.
2. DIP switch 8 ON: activates partial opening.

NOTE!

Always leave DIP switch 8 set to “ON”, as the OFF setting immediately deletes the set partial opening.

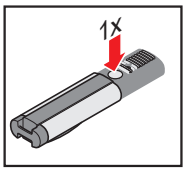
3. Press button 2 (open gate from **“CLOSE”** end position).
   ⇒ Gate opens until button 2 is pressed again or the gate reaches the “gate OPEN” end position.
4. Press button 2 when the desired position is reached.
5. Close gate with button 2
   ⇒ Partial opening is saved, and pressing button 2 opens the gate to the saved position.
6. To delete the partial opening setting, set DIP switch 8 to **“OFF”**.

Operation

Safety instructions

- Keep children, disabled persons and animals away from the gate.
- Never reach into a moving gate or moving parts.
- Do not drive through the gate until it has fully opened.
- There is a risk of people being crushed or cut by the mechanism or sharp edges of the gate.

Opening the gate



1. Press the pulse transmitter **(1)** or handheld transmitter button once.
   - If the button is pressed during the gate **"OPEN"** movement, the gate stops. Depending on DIP switch 7.
   - It closes when the button is pressed again.

Closing the gate

1. Press button **(1)** or handheld transmitter button once.
   - If the button is pressed during the gate **"CLOSE"** movement, the gate stops. Depending on DIP switch 7.
   - It opens when the button is pressed again.

Emergency release

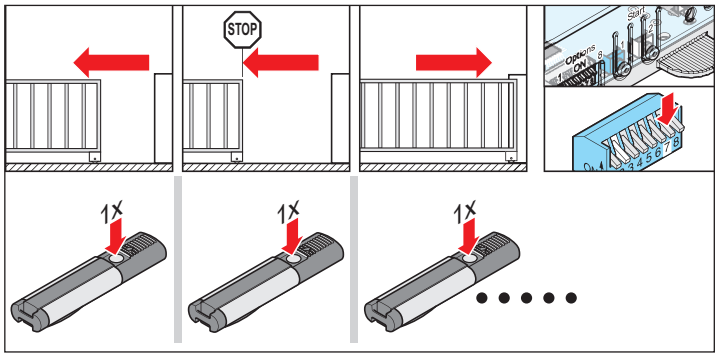
CAUTION!

Before emergency release, always disconnect the power supply to prevent unexpected movements of the gate. Otherwise, unexpected movements of the gate may cause injury.

NOTE!

The gate can be locked and released in any position.

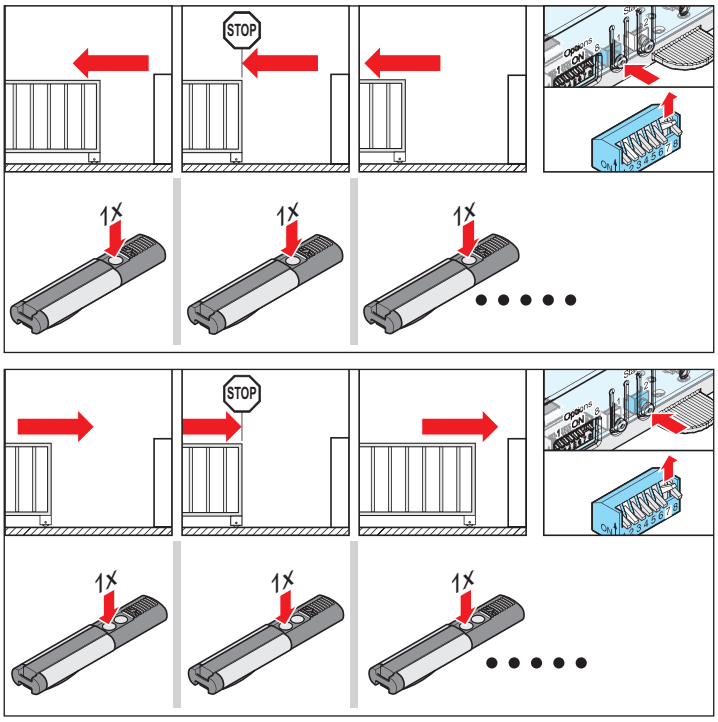
Pulse sequence of the gate movement



Standard setting for all operators

- DIP 7 OFF:
  OPEN – STOP – CLOSE – STOP – OPEN – etc.

Setting the pulse sequence with DIP switch



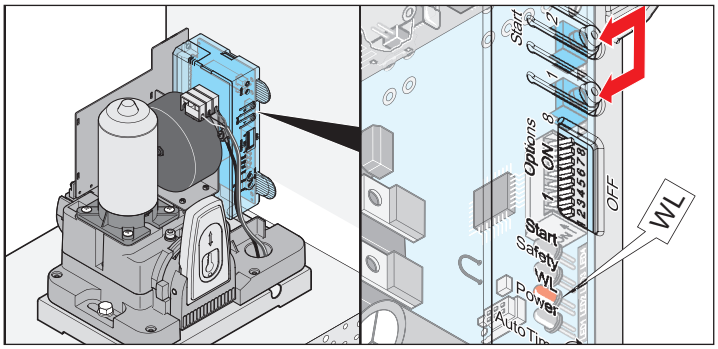
- DIP switch 7 ON:
  Button 1: OPEN – STOP – OPEN– STOP – etc.
  Button 2: CLOSE – STOP – CLOSE – STOP – CLOSE – etc.

Resetting the control unit

All saved values (e.g. runtime, opening force) are deleted; the operator must then be reprogrammed.

Resetting the control unit

- See the TorMinal manual to change the maximum speed or deactivation force.
- If the operator has been programmed with incorrect values or the gate has been changed.



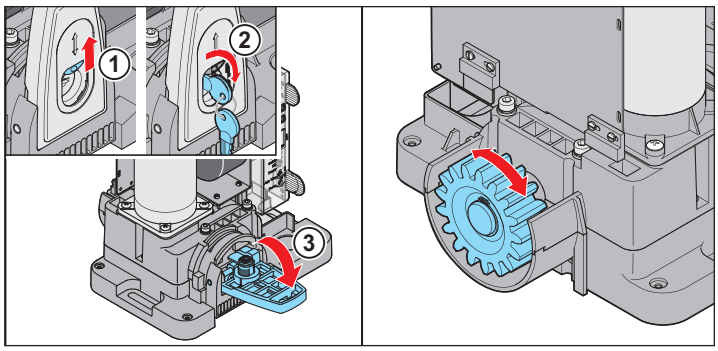
1. Press the buttons (1 + 2) until LED **"WL"** goes out.
   ⇒ LED **"WL"** off – force values deleted.
2. Release the buttons (1 + 2).

Break-in protection due to automatic lock

If an attempt is made to open the gate with force, the operator presses automatically against it via its motor output.

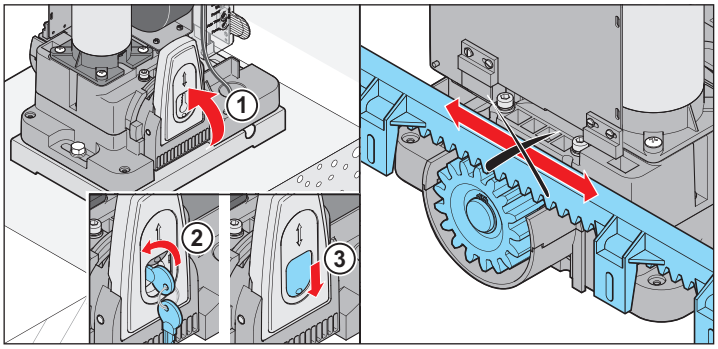
Emergency release

Unlocking the operator



1. Switch off the power supply and secure it against reactivation.
2. Push dust cap **(1)** upwards.
3. Turn key **(2)**.
4. Open flap.

Locking the operator



1. Move operator to centre position.
2. Lift lever **(1)** up and lock with key until the motor locks in place – with a loud click. Release lever **(1)**.
3. Switch power supply on again.

NOTE!

Move gate back and forth by hand so that the pinion meshes with the rack more easily and the motor can lock in place.

⇒ Operator is locked, and the gate can now only be moved with the motor.

Overload protection

If the operator is overloaded during opening or closing, the control unit detects this and stops the operator.

After about 20 seconds or a control unit reset, the control unit releases the overload protection again. The operator can now resume operation.

Operation after a power failure

The programmed force values are stored in the event of a power failure. The first movement of the operator after a power failure is always gate OPEN.

Stopping because of an obstacle

1. Obstacle recognition

- when closing the gate -> operator reverses
- when opening the gate -> operator reverses

With the next command, the operator moves in the opposite direction, see Chapter **“Pulse sequence of the gate movement” on page 25**.

2. Safety input 1 triggered e.g.: safety contact strip activated

When the safety input is triggered, the operator’s reaction depends on the setting of the DIP switches. See Chapter **“Obstacle detection (DIP 1, 2 + 3)” on page 21**.

Factory settings:

- when closing the gate -> operator reverses
- when opening the gate -> operator reverses

With the next command, the operator moves in the opposite direction, see Chapter **“Pulse sequence of the gate movement” on page 25**.

3. Safety input 2 triggered e.g.: Photocell interrupted

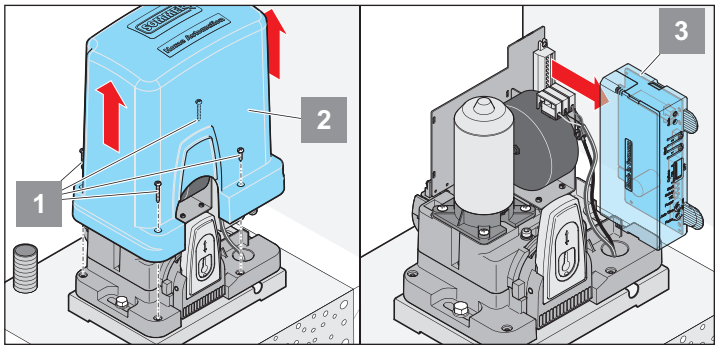
When the safety input is triggered, the operator’s reaction depends on the setting of the DIP switches. See Chapter **“Obstacle detection (DIP 1, 2 + 3)” on page 21**.

Factory settings:

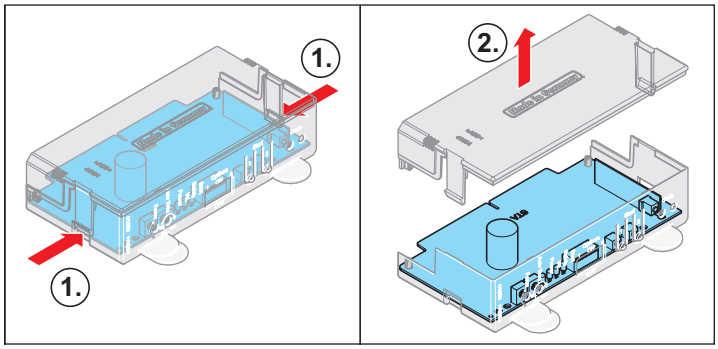
- when closing the gate -> operator reverses
- when opening the gate -> no reaction

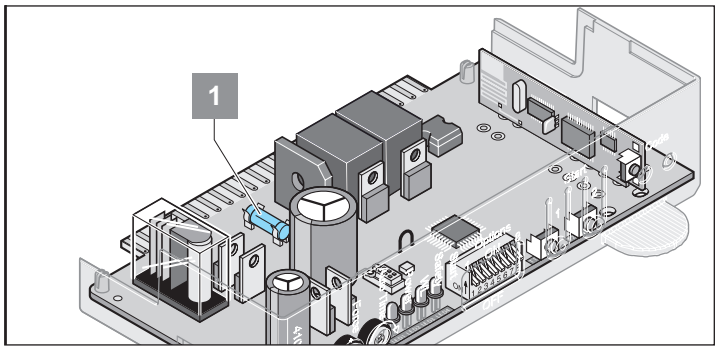
With the next command, the operator moves in the opposite direction, see Chapter **“Pulse sequence of the gate movement” on page 25.**

Changing the fuse

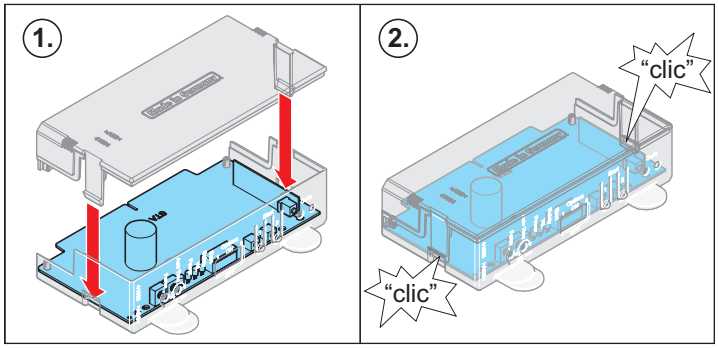


1. Disconnect the power supply.
2. Undo the screws **(1)**.
3. Lift off cover.
4. Remove controller **(3)**.

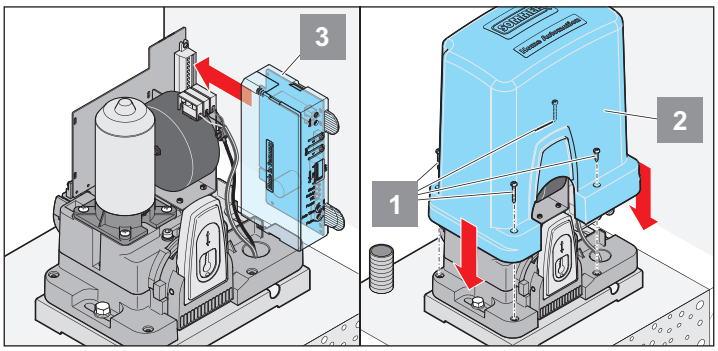




5. Open control unit housing and replace faulty fuse **(1)**. Fuse **"1 A fast-acting"** for warning light 1 connection, terminal 16 + 17.



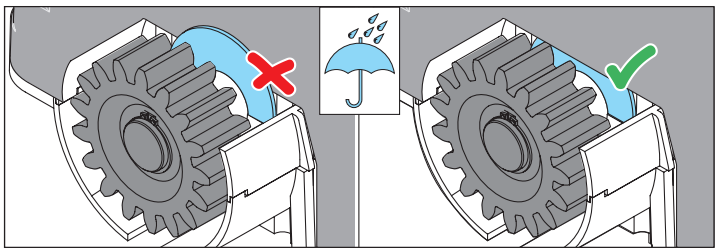
6. Close the control unit housing.



7. Install control unit **(3)**.
8. Position cover **(2)** and fasten.
9. Switch voltage supply on again.

NOTE!

To prevent the ingress of water, the wiper must be located behind the cover, as shown.



Maintenance and care

Safety instructions

DANGER!

Never use a hose or pressure washer to clean the operator or the control unit housing.

- Before working on the gate or the operator, disconnect the operator from the power supply and secure it against being switched back on.
- Do not use acid or alkaline cleaning products.
- Wipe the operator clean with a dry cloth as required.
- Never reach into a moving gate or moving parts.
- There is a risk of crushing and shearing at the closing edges and the mechanical systems of the gate.
- Check all fastening screws and bolts of the operator for tight seating and re-tighten them where necessary.
- Check the door in accordance with the manufacturer's instructions.

Regular testing

- Check the safety devices for correct functioning regularly, but at least every 6 months. See EN 12453-1/2.
- Check every 4 weeks that pressure-sensitive safety devices (e.g. safety contact strip) are operating correctly, in accordance with EN 60335-2-103.

Testing	Behaviour	Yes/No	Possible cause	Remedy
Obstacle recognition				
Try to stop the gate leaf with a 50-mm-wide object while it is closing.	Does the operator reverse when it hits the object?	Yes	• Obstacle recognition is functioning.	
		No	• Force tolerance too high, adjust with TorMinal.	• Reduce the force tolerance until the test is successful. First, open and close the gate completely twice under supervision. See TorMinal operating manual.
			• Gate incorrectly adjusted	• Adjust gate, call a technician!
Emergency release				
Follow the instructions in the Chapter **"Emergency release" on page 25**.	It must be possible to open/close the gate easily by hand. (The gate is balanced.)	Yes	• All OK!	
		No	• Emergency release defective.	• Repair the emergency release.
			• The gate jams.	• Check the gate and refer to the maintenance instructions for the gate.
STArter+: Safety contact strip, (optional for STArter, if present)				
Open/close the gate and operate the strip at the same time.	Adjust the behaviour of the door, as set at DIP switch 1, 2, or 3. Safety LED lights up.	Yes	• All OK!	
		No	• Cable breakage, terminal loose.	• Check the wiring and tighten the terminals.
			• DIP switch misaligned.	• Set the DIP switch.
			• Strip faulty.	• Decommission the system and lock it to prevent reactivation. Then, contact customer service.
Photocell, if installed				
Open and close the gate while interrupting the photocell.	Adjust the behaviour of the door, as set at DIP switch 1, 2, or 3. Safety LED lights up.	Yes	• All OK!	
		No	• Cable breakage, terminal loose.	• Check the wiring and tighten the terminals.
			• DIP switch misaligned.	• Set the DIP switch.
			• Photocell dirty.	• Clean the photocell.
			• Photocell misaligned (holder bent).	• Adjust the photocell.
			• Photocell defective.	• Decommission the system and lock it to prevent reactivation. Then, contact customer service.

Other

Disassembly

IMPORTANT!

Observe the safety instructions!

The sequence is identical to that described in the section **“Installation”**, but in reverse order. Ignore the adjustment instructions.

Disposal

DANGER CAUSED BY HAZARDOUS SUBSTANCES!

Improper storage, use or disposal of accumulators, batteries and operator components pose a risk to 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.
- Batteries may contain hazardous chemical substance which damage the environment and pose a risk to the health of humans and animals. Caution must be exercised, in particular when handling batteries containing lithium, as these can easily ignite and cause fires if not handled correctly.
- Batteries and accumulators in electrical appliances and which can be removed non-destructively must be disposed of separate from the appliance.

NOTE!

This device is labelled in accordance with European Directive 2012/19/EU on used electrical and electronic devices (WEEE – waste electrical and electronic equipment).

This Directive provides the framework for the EU-wide return and recycling of used equipment.

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. Contact your specialist retailer to find out more about current disposal channels.

Warranty and customer service

The warranty complies with statutory requirements.
The contact person for warranties is your specialist retailer.
The warranty is only valid in the country where the operator was purchased.

Batteries, fuses and bulbs are excluded from the warranty.

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

Troubleshooting

Tips on troubleshooting

IMPORTANT!

Many malfunctions can be resolved by a control unit reset (delete force values), then reprogramming the operator.

If you cannot find the fault and rectify it with the help of the table, take the following action.

- Disconnect connected accessories (e.g. photocell) and reconnect the jumper for one safety connection.
- Set all DIP switches to the factory setting.
- Set potentiometer to the factory setting (centre position).
- If settings have been changed using TorMinal, perform control unit reset with TorMinal.
- Check all connections on the direct connectors and terminal strip and tighten if necessary.

If this does not resolve the problem, contact your specialist retailer for help or consult our website at **https://www.sommer.eu**.

Fault	Possible cause	Corrective action
Gate does not open or close	• No mains voltage present, Power LED does not light up.	Check the supply line fuse. Switch on main switch.
	• No control unit installed.	Install the control unit.
	• Fuse for power circuit tripped, Power LED off.	Replace fuse. Check with a different device, e.g. a drill.
	• Control unit incorrectly installed.	Plug the control unit into the connector correctly.
	• Automatic closing function activated.	Gate closes automatically after the set time. Switch off automatic closing, turn potentiometer completely anticlockwise.
	• Photocell interrupted, Safety LED on.	Remove the object interrupting the photocell.
	• Safety contact strip (8.2 kOhm) defective or DIP switch 2 **“OFF”**.	Replace safety contact strip or set DIP switch 2 to **“ON”**.
	• Safety LED lights up.	
	• Optoelectronic safety contact strip switched on but photocell or safety contact strip (8.2 kOhm) connected, Safety LED on.	Switch off the optoelectronic safety contact strip; set DIP switch 6 to **“OFF”**.
Gate does not open or close when a hand-held transmitter or Telecody is actuated.	• The battery is flat. The LED on the hand-held transmitter does not light up.	Replace battery with new one.
	• The handheld transmitter or Telecody has not been programmed for the radio receiver.	Program the handheld transmitter or Telecody.
	• Incorrect radio frequency.	Check the frequency.
	• The command is constantly being sent because the button is stuck. The Start LED and the LED on the radio receiver light up.	Release the button or replace the handheld transmitter or Telecody.
Gate does not open or close when operated with a button (e.g. key switch).	• Button not connected or faulty. Start LED does not light up when button is pressed.	Connect the button or replace it.
	• A constant signal is pending – water in the button housing; Start LED on.	Replace the button and protect it against moisture.

Troubleshooting

Fault	Possible cause	Corrective action
The gate stops while closing, moves about 10 cm in the opposite direction and stops.	• Actuation of the obstacle recognition due to an obstacle.	Remove the obstacle and open the gate completely.
	• Incorrect force values programmed or force tolerance set too low.	Delete force values and reprogram. Do not increase the force tolerance unless this measure does not help.
	• Limit stop magnet incorrectly adjusted, gate travels to block.	Readjust limit stop magnet, see Chapter **“Setting gate CLOSE end position” on page 13**. and **“Setting gate OPEN end position” on page 13**.
	• The gate is incorrectly set or faulty.	Have the gate adjusted or repaired by a specialist.
The gate stops while closing, moves about 10 cm in the opposite direction and stops.	• Actuation of the obstacle recognition due to an obstacle.	Remove obstacle. Move gate completely to gate **“Close”** with button.
	• Incorrect force values programmed or force tolerance set too low.	Delete force values and reprogram. Do not increase the force tolerance unless this measure does not help. Only possible with TorMinal, see TorMinal manual.
	• Limit stop magnet incorrectly adjusted.	Readjust limit stop magnet, see Chapter **“Setting gate CLOSE end position” on page 13**. and **“Setting gate OPEN end position” on page 13**.
The gate stops while opening.	• Connected photocell interrupted and DIP switch 1 **“ON”**.	Remedy interruption or set DIP switch 1 to **“OFF”**.
The operator does not close the gate.	• The power supply to the photocell has been interrupted.	Check the connection. Replace fuse.
	• The operator has been disconnected from the mains power supply.	The operator always opens the gate completely when the first command is sent after the power supply has been restored.
The operator opens the gate and then does not respond to a command from the button or handheld transmitter.	• Safety input triggered (e.g. photocell defective), LED Safety lights up.	Remove obstacle from photocell. Repair photocell. Control unit not properly plugged in.
Connected warning light does not light up.	• Defective fuse.	Replace fuse, see Chapter **“Maintenance and care” on page 28**.
	• Defective bulb.	Replace bulb.
Speed changes during opening or closing.	• Operator starts and slows down before reaching the end position.	Completely normal, operator starts at maximum speed. The operator reduces speed before reaching the other end position (soft run).
Gate can only be operated with the buttons, e.g. key switch, held down – at the same time, the internal lighting blinks (dead man operation).	• Dead man operation activated.	Deactivate dead man operation; see TorMinal manual.
The **“Start”** LED lights up continuously.	• Continuous signal at button connection 1 or 2.	Check connected button (key switch if connected).
	• Continuous signal from the radio receiver, LED 3.1 or 3.2 on the radio receiver is on. The radio signal is being received. The button on the handheld transmitter may be faulty or an external signal may be present.	• Remove the battery from the handheld transmitter. • Wait until the external signal drops.

Troubleshooting

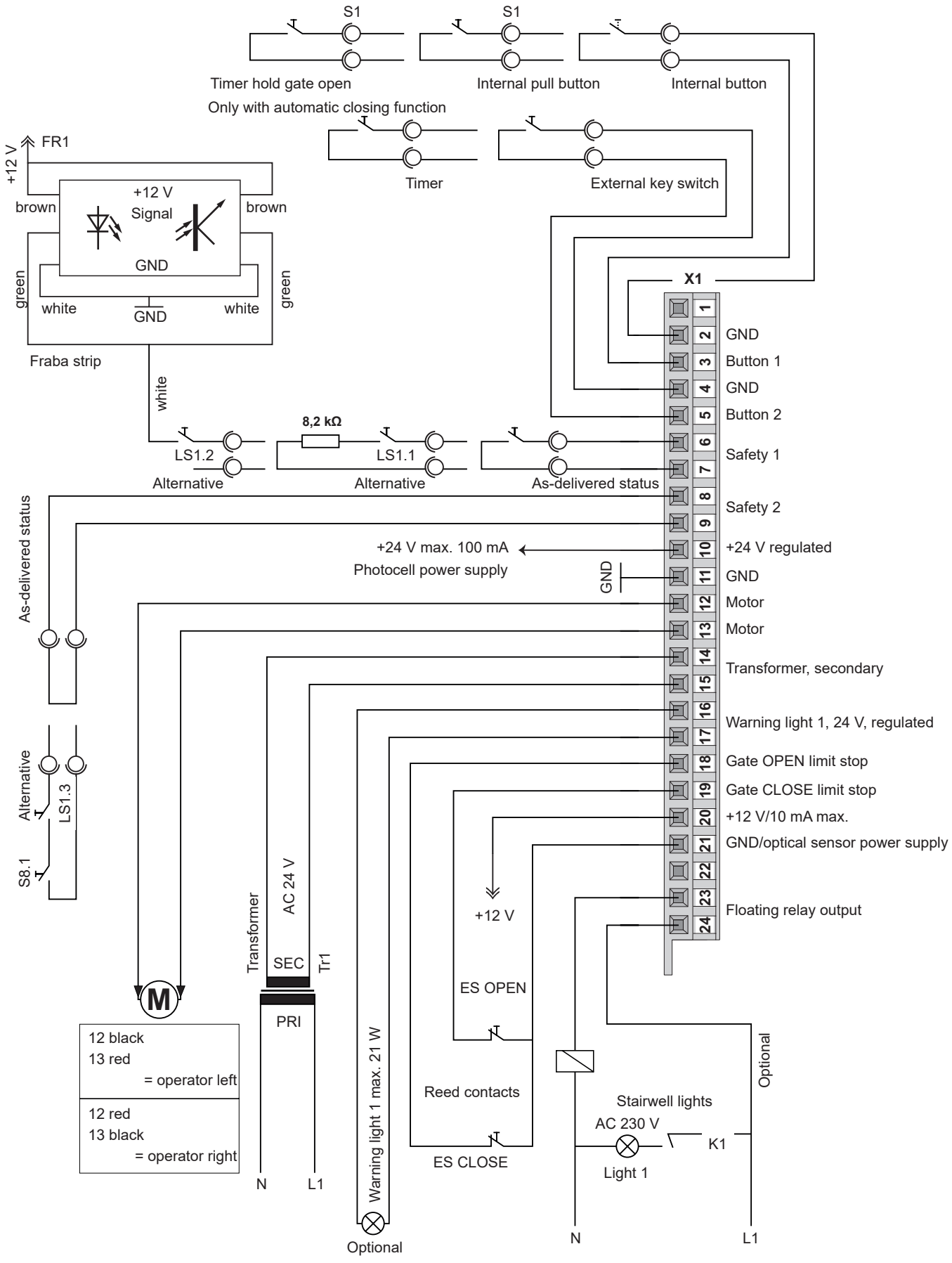
Fault	Possible cause	Corrective action
Radio receiver only!		
All LEDs flashing.	• All the memory locations are occupied, max. 112.	• Delete any handheld transmitters that are no longer needed. • Install an additional radio receiver.
LED 3.1 or 3.2 lights up continuously.	• The radio signal is being received. The button on the handheld transmitter may be faulty or an external signal may be present.	• Remove the battery from the handheld transmitter. • Wait until the external signal drops.
LED 3.1 or 3.2 lights up.	• The radio receiver is in programming mode and waiting for a radio code from a handheld transmitter.	Press the desired handheld transmitter button.

Connection diagram

Terminal	Max. permissible cable length
10, 11, 16, 17, 20, 21	10 m
2, 3, 4, 5, 6, 7, 8, 9	30 m

NOTE!

Connection of a 2-wire photocell is only possible with an external evaluation unit!



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