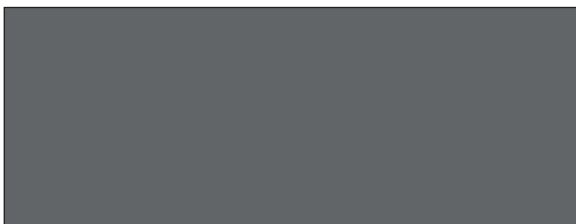


EN TRANSLATION OF THE ORIGINAL INSTALLATION AND OPERATING MANUAL

## Swing gate operator twist 200 E



Download the current  
manual:



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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 or main text.

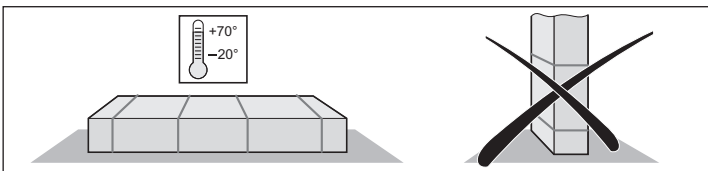
## Safety instructions

### General

- These installation and operating manual must be read, understood and complied with by persons who install, use or perform maintenance on the operator.
- The manufacturer does not accept liability for damage or interruptions to business resulting from non-observance of the installation and operating manual.
- Always ensure compliance with accident prevention regulations and current standards in each respective country.
- All applicable Directives and standards must be observed and complied with for installation and operation, such as: EN 12453, EN 12604, EN 12605.
- Observe and comply with the "ASR A1.7 Technical Regulations for Workplaces" of the German Committee for Workplaces (ASTA), which is mandatory for the operator in Germany.
- Before doing any work on the gate or operator, disconnect it from the power supply and lock it to prevent reconnection.
- Electrical wiring must be firmly secured to prevent displacement.
- There is danger due to the crushing and shearing points presented by the mechanism and the closing edges of the gate.
- Never operate a damaged operator.
- After installation and commissioning, all users must be instructed in the function and operation of the swing gate operator.
- Only use OEM (Original Equipment Manufacturer) spare parts, accessories, and mounting material.

### Storage

- The operator must be stored in an enclosed, dry area at a room temperature between  $-20\text{ }^{\circ}\text{C}$  to  $+70\text{ }^{\circ}\text{C}$ .
- The operator should be stored horizontally.



## Operation

- Do not allow children or persons who have not been instructed to operate the gate control unit.
- Open and close the gate only if there are no children, persons, animals or objects within its area of movement.
- Never put your hand near the gate when it is moving or near moving parts.
- Regularly check the safety and protection functions and repair faults immediately. See Care and maintenance.
- Do not drive through the gate until it is fully open.
- Set the force tolerance as low as possible.
- For automatic closing, secure the main and auxiliary closing edges in accordance with the applicable directives and standards.
- Remove the key to prevent unauthorised use.

## Radio remote control

- If a risk of injury could occur due to radio malfunctions on the transmitter or radio receiver, use additional safety devices.
- Only use the radio remote control when the range of movement of the gate is visible and free of obstacles.
- Store the transmitter so that it is protected from unintended operation, e.g., by children or animals.
- Do not use the radio remote control in areas with sensitive radio communications or systems, e.g. airports or hospitals.
- When significant interference occurs due telecommunications equipment, contact the responsible Telecommunications Office which has radio interference measuring equipment (radio location).

## Type plate

- The type plate is inside the cover of the control unit.

## Intended use



### IMPORTANT INFORMATION!

After installation of the operator, the person responsible for the installation must complete an EC declaration of conformity for the gate system in accordance with Machinery Directive 2006/42/EC and apply the CE mark and a type plate.

This is also required for private installations and also if the operator is retrofitted to a manually operated gate.

This documentation and the installation and operating manual are retained by the operator.

- The operator is designed exclusively for opening and closing one- and two-leaf swing gate installations. Any other use does not constitute intended use.
- The manufacturer accepts no liability resulting from use other than intended use and the warranty expires. The user bears the sole responsibility for any risk involved.
- The operator must be in good technical condition, and it must be used for its intended purpose with awareness of the hazards. Observe the installation and operating manual.
- Only operate the twist 200 E with DSTA-24 control unit.
- Only use the twist 200 E operator and DSTA-24 control unit in private, non-industrial settings.
- Repair faults without delay.
- Only use operator on gates which comply with all valid standards and directives: e.g. EN 12453, EN 12604, and EN 12605.
- Uphold safety distances between the gate leaf and the environment in accordance with EN 12604.
- Only use stable and rigid gate leaves. Gate leaves must not bend or twist when opening and closing.
- Ensure there is little play in the hinges of the gate leaf.

## Improper use

- Opening or closing flaps, e.g. for access to roofs or similar.
- Operation with 2x twist 200 E on one leaf is prohibited.

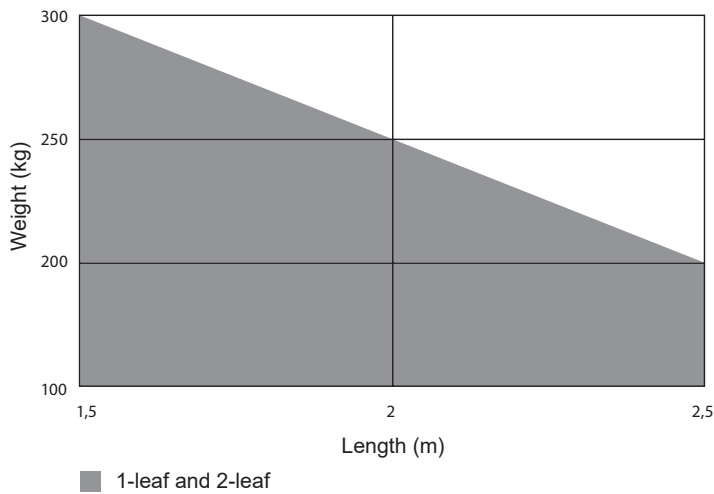
## Combined operation

- 1x twist 200 E and 1x twist XL or twist 350 mixed operation only possible in connection with DTA-1 control unit and the "twist XS" conversion set (Item number: 3248V000).

# General Information

## Permitted gate leaf dimensions

- Gate inclination: 0 %



## Fill table

Height (m)	Fill (%)		
	1.5	2	2.5
2	70	60	50
1.5	90	80	70
1	100	100	100
0.5	100	100	100
Length (m)	1.5	2	2.5

Specifications valid for B dimensions 260 mm and A dimensions 80 mm; recorded values for gate panel thickness 50 mm and centre rotation point, related to the maximum given gate weight.

## With lift gates



### CAUTION!

Risk of injury from uncontrolled shutting in unlocked state with lifting gates which are not weight-balanced.

- Only use weight-balanced lifting gates.
- Only use lifting gates with special gate fittings:  
Gate bracket (Item number: 3129V001, left gate leaf),  
Gate bracket (Item number: 3129V003, right gate leaf).

- Weight: max. 120 kg
- Length: max. 2.5 m
- Gate inclination: max. 10 %

## Technical data

	twist 200 E
Mains voltage	AC 220–240 V
Rated frequency	50–60 Hz
Storage locations in radio receiver	112 <sup>(1)</sup>   40/450 <sup>(2)</sup>
Operating time	S3 = 15 %
travel length   movement range	390 mm
Operating temperature	–30 °C to +70 °C
Emission value according to operating environment	47 dB(A)
IP protection class control unit	IP65
IP protection class operator	IP44
IP-code	I
Max. feed speed	16.5 mm/s
Max. traction and pressure force per leaf	2,000 N
Rated, pulling and pushing force per leaf	660 N
Maximum power consumption per leaf	140 W
Maximum current consumption per leaf	0.8 A
Rated power consumption per leaf	75 W
Rated current consumption per leaf	0.45 A
Power consumption on power-saving mode	2.9 W
Maximum gate weight per leaf*	300 kg
Maximum leaf length**	2.5 m
Gate inclination***	10 %

\* With max. 1.5 m gate leaf width, 1-leaf system.

\*\* At max. 200 kg.

\*\*\* See left-hand column.

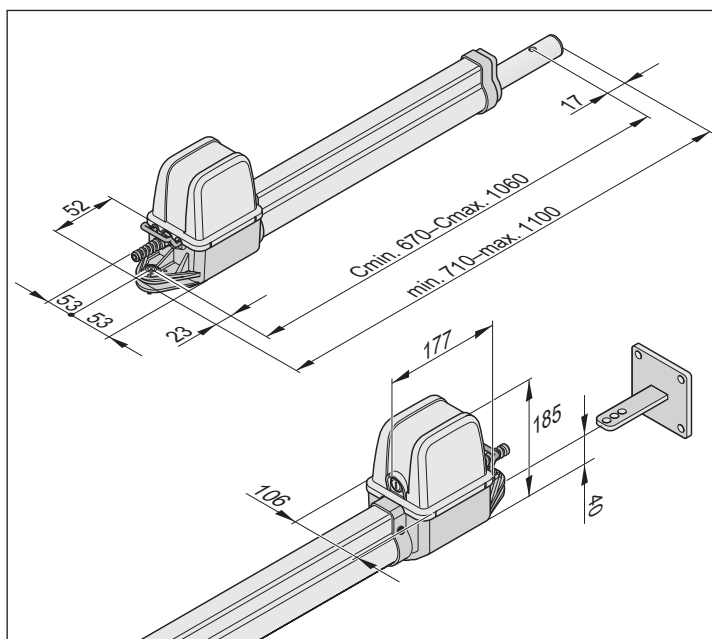
<sup>(1)</sup> 112 Somloq Rollingcode

<sup>(2)</sup> 40 SOMloq2 (Memo 450)

# General Information

## Dimensions

All dimensions are in millimetres.



## Functional description



### IMPORTANT INFORMATION!

The "Gate OPEN" + "Gate CLOSE" end positions are set by internal limit switches in the operator and detected during operation.

The gate leaf is opened and closed by retracting and extending the gate operator. When the defined end positions are reached, the operator is automatically switched off by the limit switch.

## Closing the gate



### IMPORTANT INFORMATION!

A mechanical stop at the "Gate OPEN" and "Gate CLOSE" end position is absolutely essential.  
An electric lock can be used as an additional lock.

The gate leaf does not require a lock, because the operator is self-locking. The gate cannot be pushed open manually without damaging the operator or the fittings.

## Wireless actuation

The operator can be operated with the supplied transmitter.  
The transmitter must be programmed for the radio receiver.

## Safety facilities

The control unit has an automatic force monitor.  
The necessary force is programmed during a learning run.

When the operator requires a higher force than the one programmed, the operator stops and reverses.

Various safety devices can be connected to the control unit, see chapter "Functions and connections".

Examples:

- Photo eye
- Safety contact strip with separate evaluation unit

## EN Remote control / Radio receiver

### EU Conformity Declaration

Messrs

SOMMER Antriebs- und Funktechnik GmbH  
Hans-Böckler-Straße 21-27  
D-73230 Kirchheim/Teck

declares herewith that the product designated below complies with the relevant fundamental requirements as per Article 3 of the R&TTE Directive 1999/5/EG, insofar as the product is used correctly, and that the following standards apply:

Product: RF Remote Control for Doors & Gates  
Type: RM01-868, RM02-868-2, RM02-868-2-TIGA,  
RM03-868-4, RM04-868-2, RM08-868-2,  
RM01-434, RM02-434-2, RM03-434-4, RM04-434-2,  
RX04-RM02-868-2-wi6, RX04-RM02-868-2-TT,  
RX04-RM02-434-2, RX04-RM02-434-2-TT,  
RX01-RM02-868-2/4, RX01-RM02-434-4,  
TX02-868-2, TX02-868-2-UP, TX03-868-4, TX03-868-4-  
XP, TX35,-868-1/5, TX04-868- 10/30, TX08-868-4,  
TX02-434-2, TX03-434-4-XP, TX04-434-10 TX01-868,  
TX01-434, TX45-868-10, TX-45-434-10, RM10-868-1

The relevant guidelines and standards are:

- EN 60950-1
- EN 300 220-1
- EN 300 220 -2
- EN 301 489-1
- EN 301 489-3

Kirchheim/Teck, 07.01.2014  
Jochen Lude  
Responsible for documents

# General Information

## Declaration of Installation

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

### SOMMER Antriebs- und Funktechnik GmbH

Hans-Böckler-Straße 27  
73230 Kirchheim/Teck  
Germany

hereby declares that the swing gate operator

### twist 200 E

was designed, developed and manufactured in compliance with

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

The following norms were used:

- |                                  |  |
|----------------------------------|--|
| • EN ISO 13849-1, PL "C" Cat. 2  | Safety of machines – Safety-related parts of controls<br>– 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<br>– 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 documentation was prepared in accordance with Annex VII Part B and will be submitted to regulators electronically on request.

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

The undersigned is responsible for compilation of the technical documents.

Kirchheim, 20-04-2016



i.V. 

Jochen Lude  
Responsible for documents

# Installation preparations

## Safety instructions



**CAUTION!**  
**DANGER OF DESTRUCTION BY VOLTAGE PEAKS.**

Voltage peaks, e.g. from welding machines, can destroy the control unit.

- Do not connect the control unit until all mounting tasks on the power supply have been concluded.

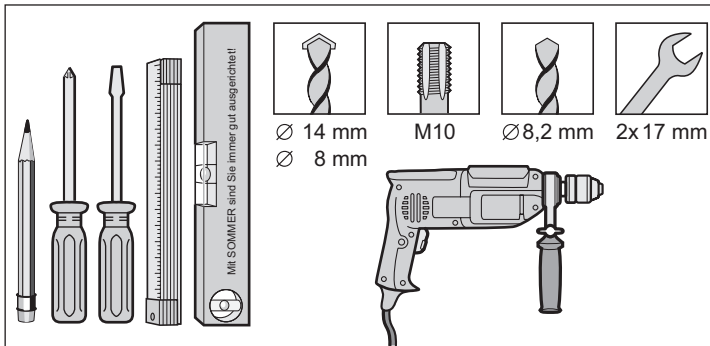


**CAUTION!**

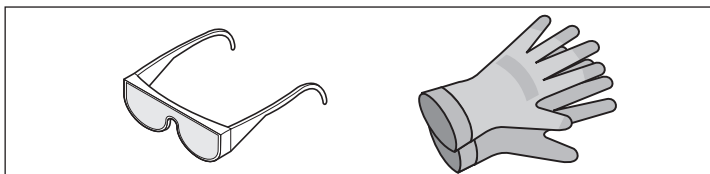
Before doing any work on the gate or operator, disconnect the control unit from the power supply and secure it to prevent reconnection.

- Lay cables in conduits approved for this purpose, e.g. for laying in underground installations.
- Only qualified electricians may connect the control unit to the power supply.
- Install in accordance with the installation and operating manual.
- Before installing the operator, take locking mechanisms (e.g. electric locks or bars) out of operation or disassemble them.
- Ensure that the operator is securely fastened to posts, pillars, and gate leaves to withstand large forces generated when opening and closing the gate.
- Flying sparks can damage the operator, e.g. when welding on posts or gate leaves. Cover or disassemble operator before welding.
- If a button is used for opening or closing, it must be installed out of the reach of children at a height of at least 1.6 m.
- Only use permissible fastening materials.

## Tools required



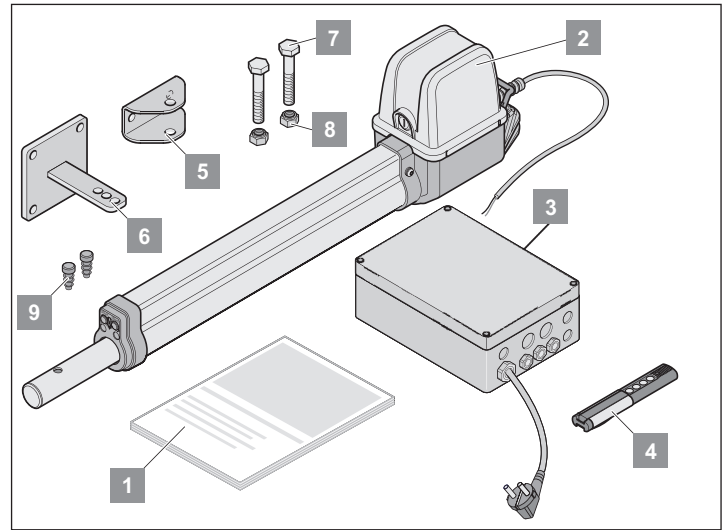
## Personal protective equipment



- Safety glasses (for drilling)
- Work gloves

## Scope of delivery

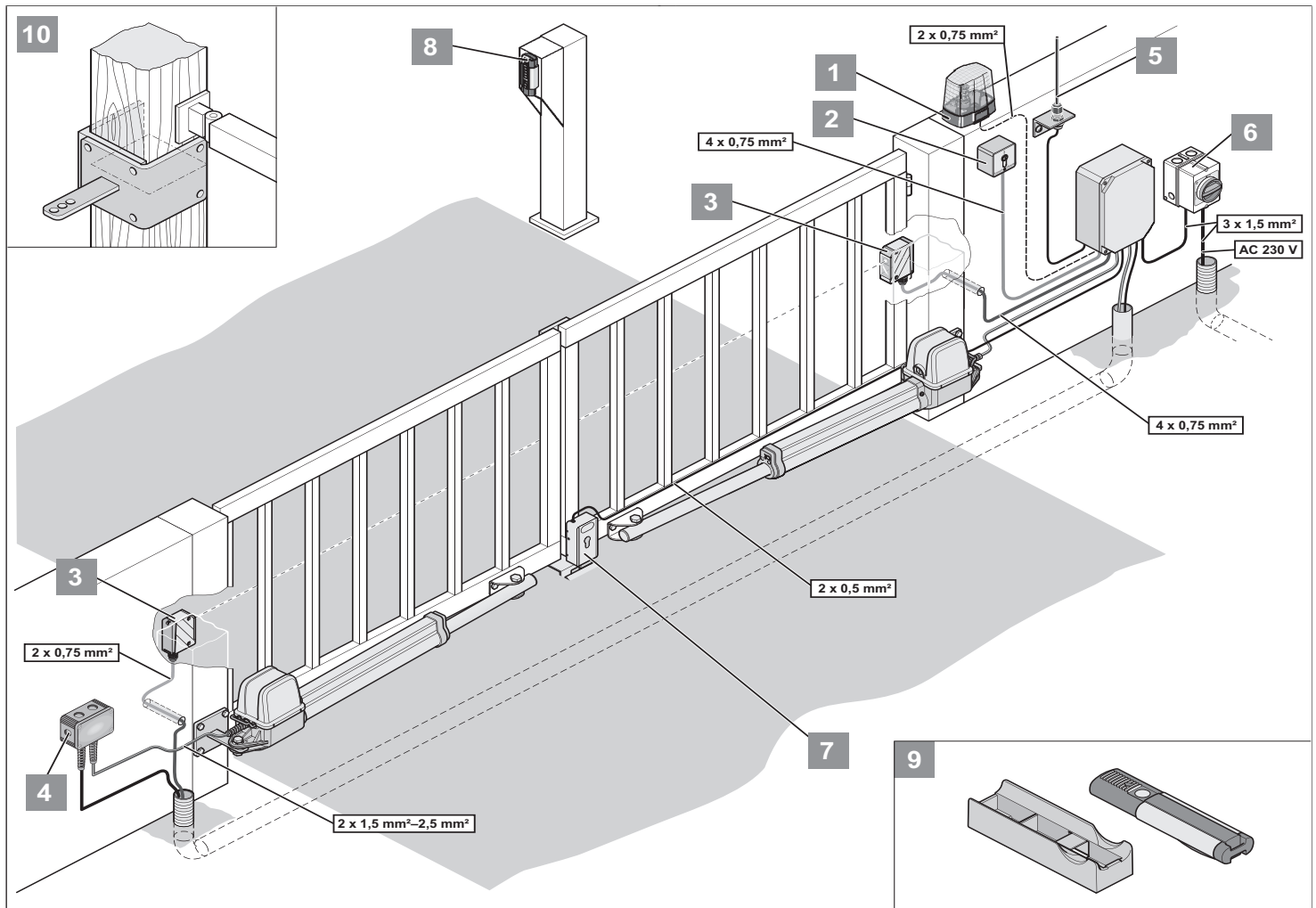
- Check the scope of delivery before installation to prevent unnecessary work and costs.
- The actual scope of supply may vary depending on the operator version.



Complete set	1-leaf	2-leaf
Weight	9.1 kg	13.8 kg
Package (L x W x H):	800 x 200 x 200 mm	
1 Installation and operating manual	1x	1x
2 Operator with cable	1x	2x
3 Control unit in housing (including radio receiver, transformer, and power plug)	1x	1x
4 Hand-held transmitter, including battery	1x	1x
5 Fittings for gate leaf	1x	2x
6 Fittings for post or pillar	1x	2x
7 Hex bolt (M10 x 55 mm)	2x	4x
8 Locknut (M10)	2x	4x
9 Plug	2x	4x



# Installation



1	Warning light DC 24 V/24 W
2	Key switch (1 or 2 contact)
3	Photo eye
4	Connecting cable set 7 m (IP67)
5	External antenna (including cable)
6	Main switch (lockable)
7	Electric lock DC 24 V
8	Telecody
9	Car/wall holder for transmitter
10	Timber post fittings

## Tips for installation

Define the installation location of the control unit together with the operator.

Install the housing so that it is hidden from unauthorised persons to prevent deliberate damage to the housing and control unit.

Attach threshold or stop bar to the gate:

- Gate leaf length longer than 2 m
- 2-leaf gate

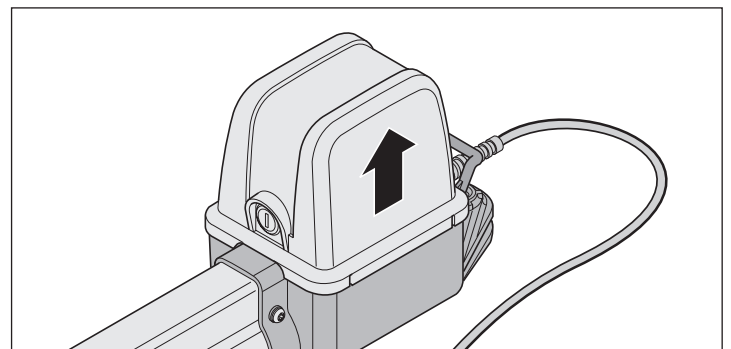


### IMPORTANT INFORMATION!

**Additional pulse transmitters are: transmitters, Telecody, wireless indoor switches and key switches. For transmitters, Telecody or the radio interior push-buttons, no connecting line must be installed for operation.**

## Operator installation position

Install operator horizontally. Note installation position of motor; it must always point upright.



# Installation

## A/B dimension table (reference values)



### IMPORTANT INFORMATION!

Before mounting, define the A/B dimensions. Without these dimensions, the operator cannot be correctly installed and operated.

- Observe the different post and pillar dimensions.

**White fields:** Installation range only for horizontal gates

**Grey fields:** Installation range for lift and horizontal gates

**Attention:** Only use lifting gates with special gate fittings:  
Gate bracket (Item number: 3129V001, left gate leaf),  
Gate bracket (Item number: 3129V003, right gate leaf).

B	A		80	100	120	140	160	180	200	220	240	260	Max. gate leaf width Without electric lock								
	C	C1												D							
100	851	221	875	245	918	288	957	327	994	363	1026	396	1041	411	1043	413	1051	421	1040	410	1.5 m
			<b>90°</b>	<b>93°</b>	<b>105°</b>	<b>113°</b>	<b>118°</b>	<b>120°</b>	<b>115°</b>	<b>108°</b>	<b>102°</b>	<b>98°</b>									
120	872	242	896	266	935	305	968	338	1194	374	1035	405	1041	411	1042	412	1040	410	1037	407	
			<b>90°</b>	<b>93°</b>	<b>103°</b>	<b>108°</b>	<b>113°</b>	<b>115°</b>	<b>108°</b>	<b>102°</b>	<b>97°</b>	<b>93°</b>									
140	894	264	918	288	951	321	987	357	1018	388	1048	418	1040	410	1040	410	1038	408	1043	412	2.5 m
			<b>90°</b>	<b>93°</b>	<b>100°</b>	<b>107°</b>	<b>110°</b>	<b>112°</b>	<b>101°</b>	<b>96°</b>	<b>92°</b>	<b>90°</b>									
160	916	286	940	310	971	341	1001	371	1035	405	1049	419	1051	421	1040	410					
			<b>90°</b>	<b>93°</b>	<b>99°</b>	<b>103°</b>	<b>108°</b>	<b>104°</b>	<b>98°</b>	<b>91°</b>											
180	938	308	961	332	991	361	1021	391	1050	420	1041	410	1050	420							
			<b>90°</b>	<b>93°</b>	<b>98°</b>	<b>102°</b>	<b>105°</b>	<b>94°</b>	<b>92°</b>												
200	961	331	984	354	1010	380	1039	409	1042	412											
			<b>90°</b>	<b>93°</b>	<b>96°</b>	<b>100°</b>	<b>93°</b>														
220	983	354	1008	378	1032	403	1051	421													
			<b>90°</b>	<b>93°</b>	<b>96°</b>	<b>95°</b>															
240	1007	377	1031	401																	
			<b>90°</b>	<b>93°</b>																	
260	1030	400																			
			<b>90°</b>																		



### IMPORTANT INFORMATION!

Select A/B dimensions so the desired opening angle (D) is reached. The specified opening angle is a reference value for the largest possible angle.

For gate leaf lengths of greater than 1.5 m or full surface closed gates, the B dimension must amount to at least 140 mm.

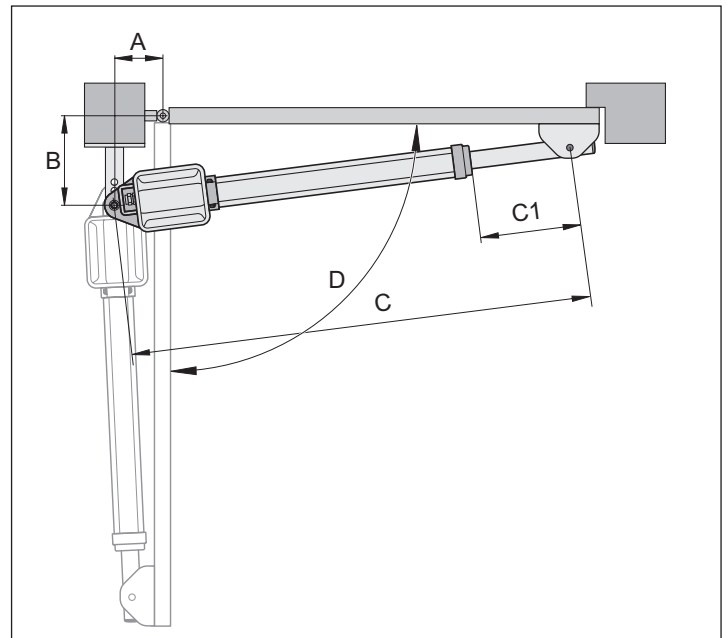
As the data in the table may vary depending on the gate mechanism, they should be checked in advance.



### IMPORTANT INFORMATION!

The reference values in the table have been calculated based on the following data:

- Wind speed 28.3 m/s
- Gate height 2.0 m
- Gate width 2.5 m
- Gate filling 35 %, uniformly distributed
- Without electric lock



# Installation

## Fittings



### IMPORTANT INFORMATION!

The strength of the included fittings is designed for the operator. The warranty expires if other fittings are used.



### IMPORTANT INFORMATION!

The B dimensions must be at least 100 mm (see "A/B dimension table"). Compensation for smaller B dimensions with a space plate under the post fitting.

- Clearances between the gate leaf and post or gate leaf and operator must be maintained in accordance with the applicable standards.



### CAUTION!

Only use permissible fastening materials.

- Fasten fittings on stone or cement pillars with expansion dowels or adhesive-bonded anchors. The fastenings must not loosen during operation.
- Flying sparks can damage the operator, e.g. when welding on posts or gate leaves. Cover or disassemble operator before welding.



### CAUTION!

Welding and grinding residues accelerate corrosion of the fittings.

- After mounting the fittings, do not perform any more welding or grinding work.

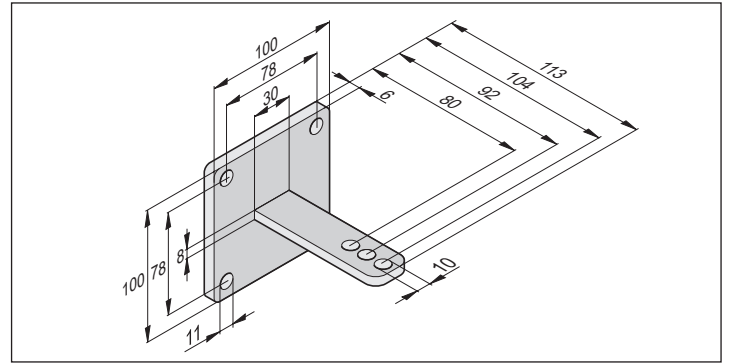
## Steel posts

- Note the thickness of the post.
- Weld or bolt the fitting directly to steel posts.

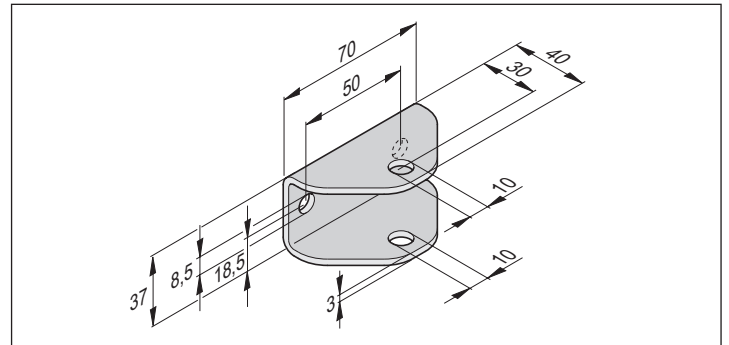
## Brick or concrete pillars

- Uphold the distance of the fastening holes from the pillar edge. The distance depends on the type of expansion dowels or adhesive-bonded anchors. Observe the recommendations of the manufacturer.

## Post/pillar fitting

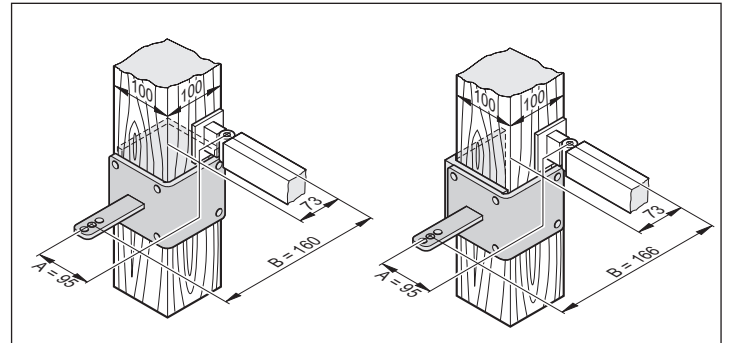


## Gate leaf fitting



## Timber post fittings

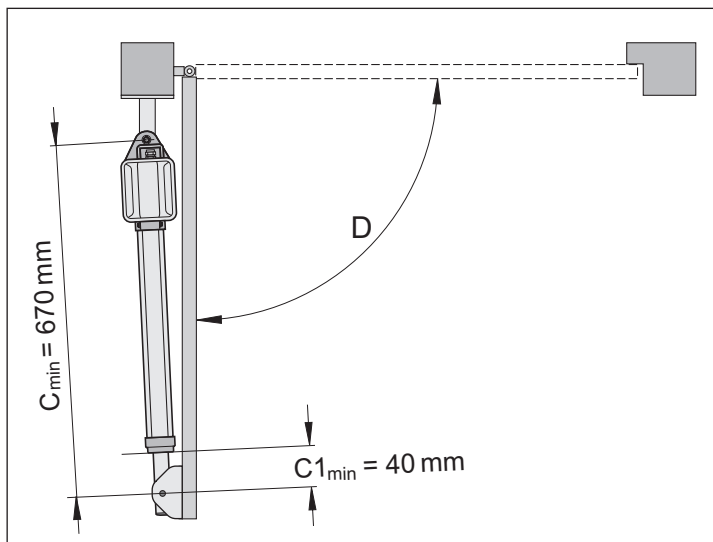
Available as an accessory.



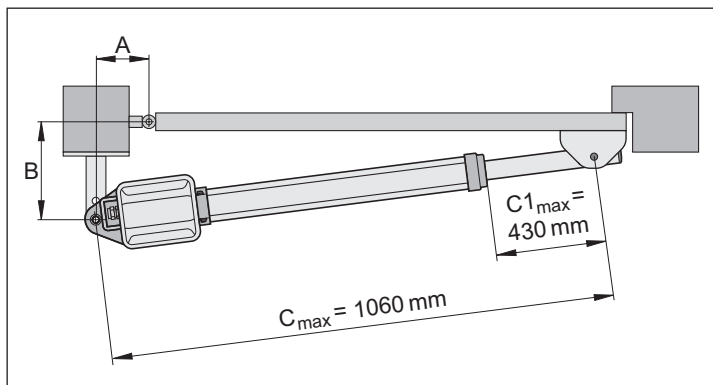
# Installation

## Installing fittings

1. Close the gate by hand.
2. Compare the A/B dimensions with the A/B dimension table.
3. Fasten the post/pillar fitting temporarily (e.g. with a clamp).
4. Check installation situation and dimensions.  
⇒ Uphold distance to the floor: at least 50 mm.
5. Fasten post/pillar fitting.



6. Manually move the gate to the "Gate OPEN" position. Note the maximum possible opening angle D from the A/B dimension table.
7. Hang the operator in the post fitting and secure it with a screw.  
⇒ The operator push rod is at maximum retraction as delivered.
8. Unscrew push rod, at least to  $C1_{min}$ .
9. Fix the gate leaf fitting to the push rod.
10. Insert the screw from above.
11. Fasten the gate leaf fitting temporarily to the gate (e.g. with a clamp).
12. Unlock the operator, see chapter "Locking and unlocking the operator".
13. Close the gate by hand.



**i IMPORTANT INFORMATION!**  
The smaller the C1 dimension, the higher the stability.

14. Measure C1 dimensions and set between  $C1_{min}$  and  $C1_{max}$ .  
Do not exceed  $C1_{max}$ .

15. Check that the operator is horizontal in the positions:
  - "Gate OPEN"
  - "Gate CLOSE"
  - Opened 45°
16. Check the position of the gate leaf fittings.
17. Fix gate leaf fittings.
18. Screw in the nuts of the connecting screws (operator to fitting) only tight enough that the gate with the operator can still be turned easily.

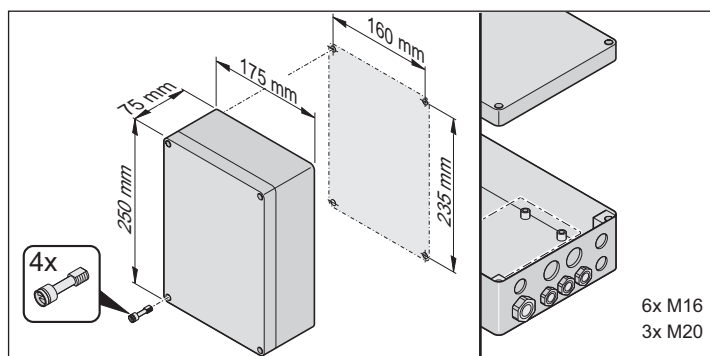
## Installing the control unit



### CAUTION! DANGER OF DESTRUCTION BY MOISTURE

Penetration of moisture may destroy the control unit.

- Only screw the housing on the intended fixing points.
- Install the housing vertically with the cable conduits facing downwards.
- Permitted cross-section of cable conduits: 1.5 mm<sup>2</sup> to 2.5 mm<sup>2</sup>. If cable cross-sections are smaller, insert bushing adapters into the cable conduits.
- Place the cover so it sits flush.



# Installation

## Connecting control unit to power mains (AC 230 V)



### CAUTION! DANGER OF ELECTROCUTION!

The control unit must be connected to the power mains by an electrician.

- Implement the mains connection according to EN 12453 (all-pole line disconnecter).
- Before doing any work on the gate or operator, disconnect it from the power supply and lock it to prevent reconnection.



### CAUTION!

The supplied mains cable is not approved for constant or outdoor operation.

- Only use this power cord for the mounting and commissioning of the operators.
- After completion of installation and commissioning: Replace power cord with a permanently laid line.



### IMPORTANT INFORMATION!

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



### IMPORTANT INFORMATION!

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!

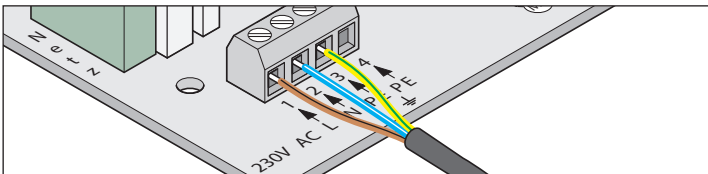
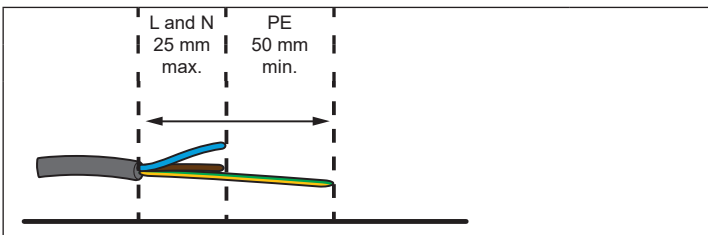
Connection lines	Signal lines
Maximum length 20 m	Maximum length 25 m
Minimum cross-section 1.5 mm <sup>2</sup>	

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



### IMPORTANT INFORMATION!

- 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.



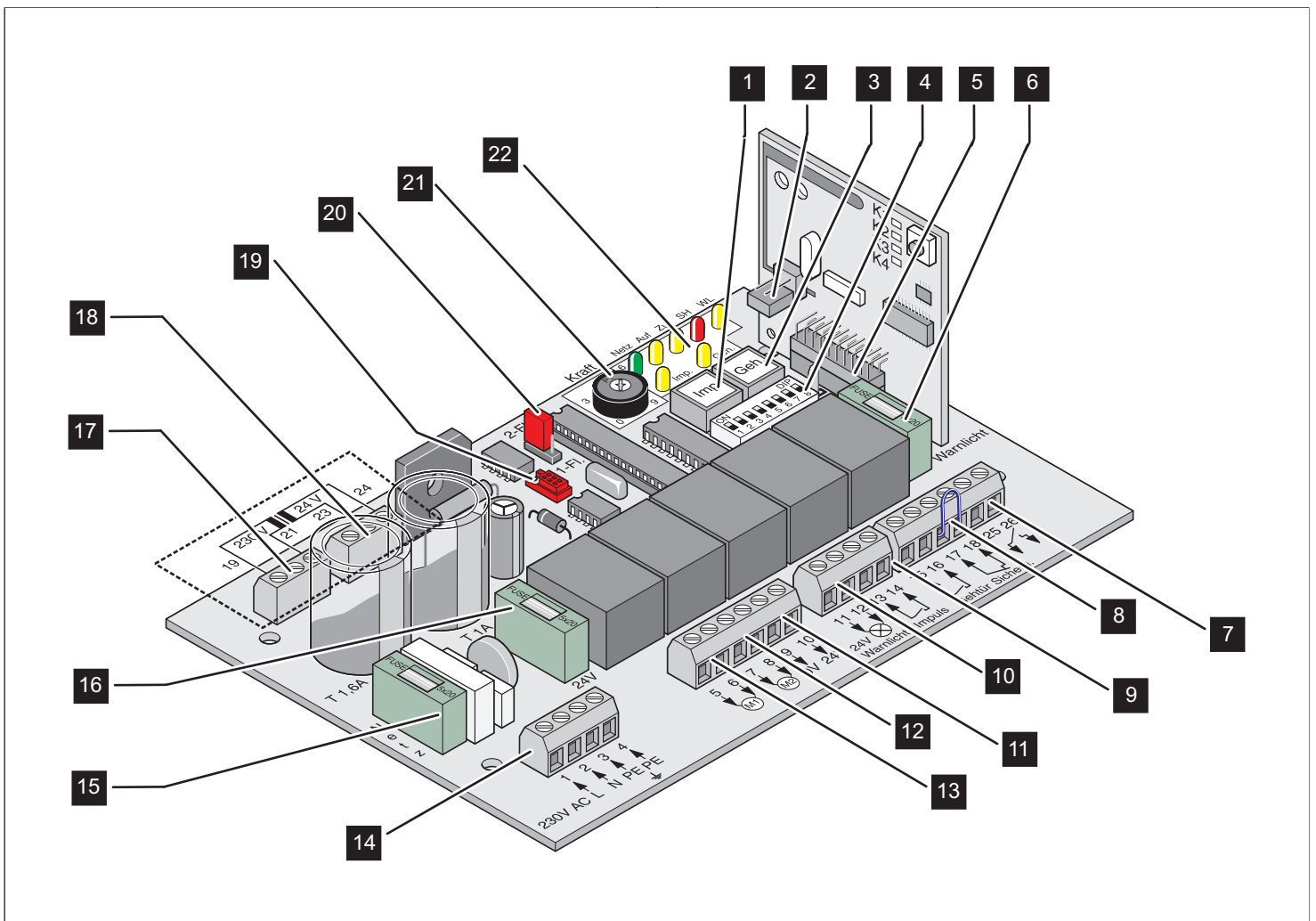
Terminal	Description	Description
1	L	Outer conductor AC 230 V
2	N	Neutral wire
3 + 4	PE	Protective earthing conductor



### IMPORTANT INFORMATION!

Secure the line from being moved with cable binders!

# Installation



- |     |   |     |  |
|-----|---|-----|--|
| 1.  | Button (imp.)                                 | 12. | Motor 2 (M2) connection                                    |
| 2.  | Connection of the external antenna            | 13. | Motor 1 (M1) connection                                    |
| 3.  | Button (walk-through)                         | 14. | Mains connection   |
| 4.  | DIP switches                                  | 15. | Mains fuse, slow-acting, 1.6 A                             |
| 5.  | Radio connector                               | 16. | Fuse DC 24 V (9, 10) slow-acting, 1 A                      |
| 6.  | Warning light fuse (11, 12), slow-acting, 1 A | 17. | Primary transformer  |
| 7.  | Potential-free relay contact                  | 18. | Secondary transformer                                      |
| 8.  | Safety device connection                      | 19. | TorMinal interface   |
| 9.  | Button connection                             | 20. | Jumper, gate (1-leaf, 2-leaf)                              |
| 10. | Warning light connection                      | 21. | Potentiometer (Gate 2) for force tolerance of Motor 2 (M2) |
| 11. | External consumer connection                  | 22. | LEDs   |

# Installation

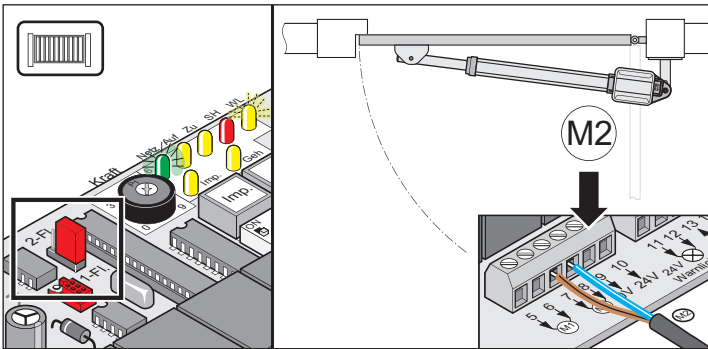
## Connecting operator to control unit

**CAUTION! DANGER OF ELECTROCUTION!**  
 Before doing any work on the gate or operator, disconnect it from the power supply and lock it to prevent reconnection.  
 The operator is only correctly detected by the control unit after connection in a de-energised state.

**CAUTION!**  
 Never connect the operator directly to the AC 230 V mains power. Risk of deadly electric shock!

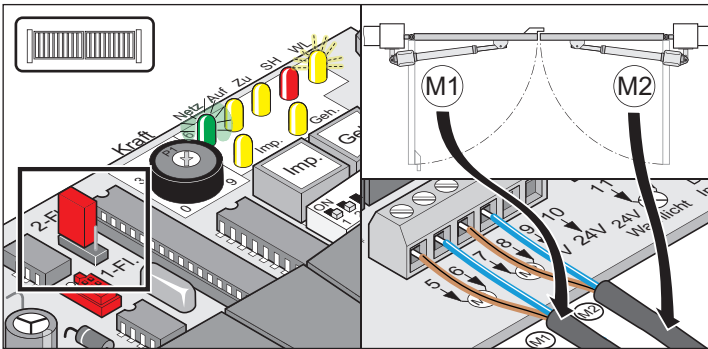
**IMPORTANT INFORMATION!**  
 Observe jumper setting for 1- and 2-leaf gate systems!

### 1-leaf gate



Terminal	Description	Description
7	M2	motor wire brown
8	M2	motor wire blue

### 2-leaf gate

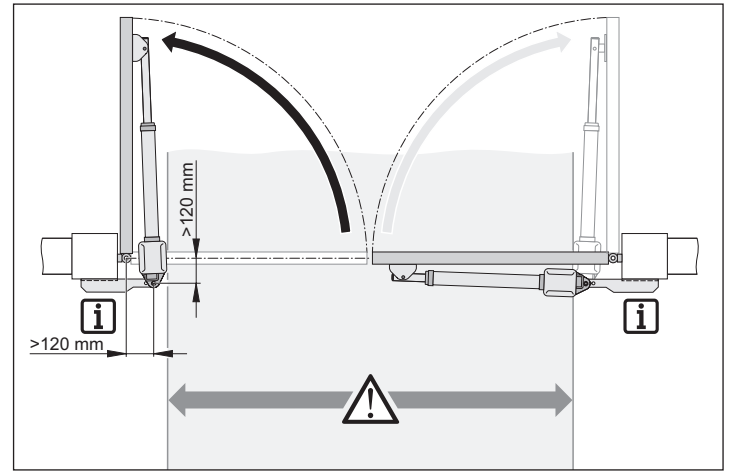


Terminal	Description	Description
5	M1	motor wire brown
6	M1	motor wire blue
7	M2	motor wire brown
8	M2	motor wire blue

1. Connect and set inactive leaf Motor 1 (M1).  
(Inactive leaf: gate leaf which opens second and closes first)
2. Connect and set active leaf motor 2 (M2) on control unit.  
(Active leaf: gate leaf which opens first and closes second)
3. Set all DIP switches to "OFF".
4. Set jumpers: Set 1- or 2-leaf gate.
5. Connect control unit to the power supply.  
 ⇒ "Mains" LED on.  
 ⇒ "WL" LED flashes.

## Installation situation: "Opening gate outwards"

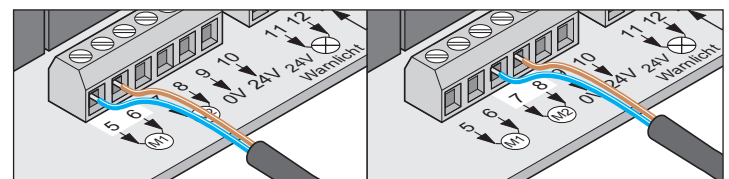
**IMPORTANT INFORMATION!**  
 The gate post fittings in the diagram below are examples of fittings. These fittings must be manufactured individually by a door builder or metalworker, depending on the size of the gate and the posts.



**CAUTION!**  
 Depending on the installation situation, the operators protrude roughly 150 mm per side into the drive-through and reduce the drive-through width.

- Swapping A/B dimensions:  
 A dimensions = B dimension in the A/B dimension table.  
 B dimensions = A dimension in the A/B dimension table.
- Set post and pillar fittings according to A/B dimensions.

**IMPORTANT INFORMATION!**  
 In the case of this "opening gate outwards" installation situation, the connection deviates from the standard connection. Observe the following connection diagram!  
 The logic of the limit stops is also reversed; see note on Page 16.



### 1-leaf gate

Terminal	Description	Description
7	M2	motor wire blue
8	M2	motor wire brown

### 2-leaf gate

Terminal	Description	Description
5	M1	motor wire blue
6	M1	motor wire brown
7	M2	motor wire blue
8	M2	motor wire brown

# Installation

## Adjust end positions

**CAUTION! DANGER OF ELECTROCUTION!**  
Before doing any work on the gate or operator, disconnect it from the power supply and lock it to prevent reconnection.

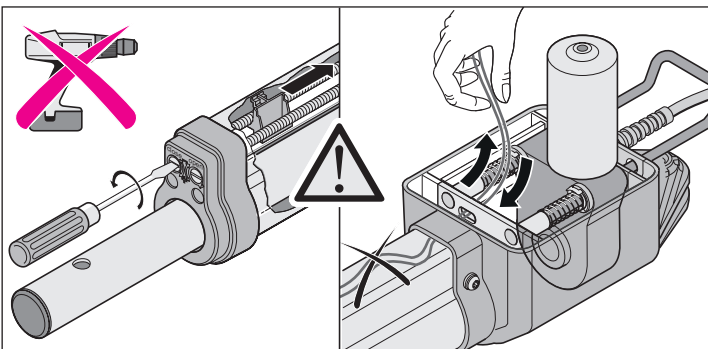
**CAUTION!**  
Never connect the operator directly to the AC 230 V mains power. Risk of deadly electric shock!

**CAUTION!**  
Adjusting the limit switches with a battery-powered screwdriver or similar tool destroys the limit switches.  
• Use recommended tools.

**CAUTION!**  
Connecting cables can jam when adjusting the limit switches in the protective tube.  
When adjusting the limit stops, always insert and bundle the connecting cable to prevent individual wires becoming pinched/trapped in the housing.

**i** **IMPORTANT INFORMATION!**  
1 revolution = 1.25 mm adjustment path when adjusting the limit switch.

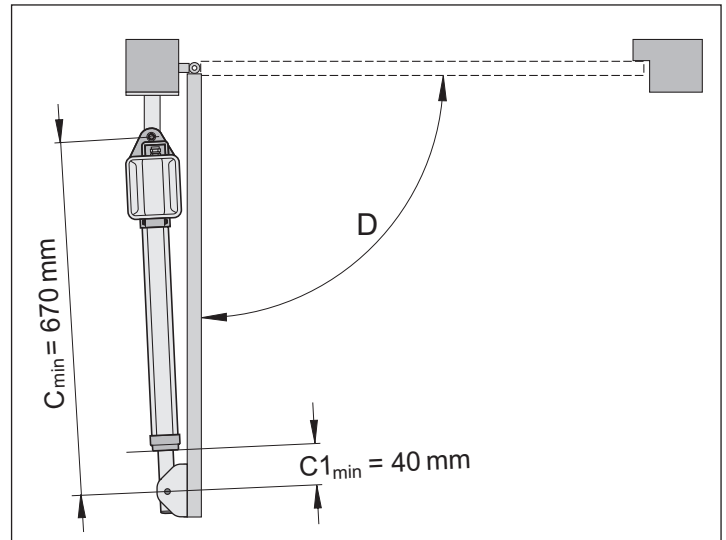
**i** **IMPORTANT INFORMATION!**  
In the installation situation “opening gate outwards”, see Page 15, the logic of the limit stops is reversed. The “Gate OPEN” end position is set via the “close” screw and the “Gate CLOSE” end position via the “open” screw.



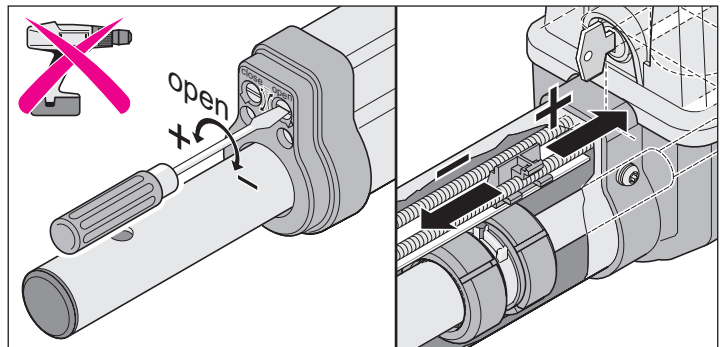
**i** **IMPORTANT INFORMATION!**  
Setting the end positions achieves the following:

- The operator has maximum rigidity in the “Gate CLOSE” end position.
- The maximum possible path is fully used.
- Only one limit switch must be set to the “Gate CLOSE” end position.

## 1. Setting “Gate OPEN” end position



**i** **IMPORTANT INFORMATION!**  
“Gate OPEN” end position preset to  $C1_{min}$ .



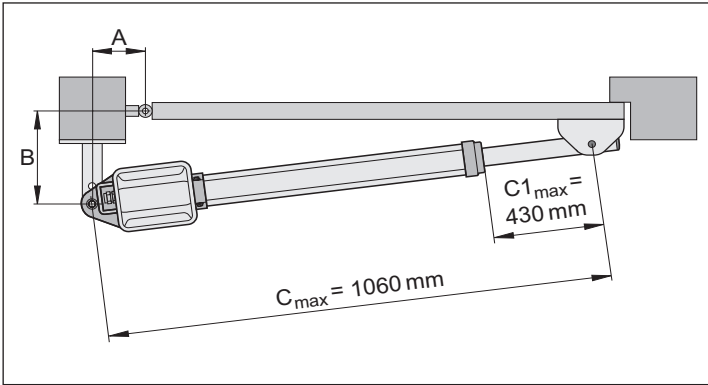
If necessary, readjust end position with a screwdriver.

- Extending travel length: Turn “open” setscrew in (+) direction.
- Reducing travel length: Turn “open” setscrew in (-) direction.

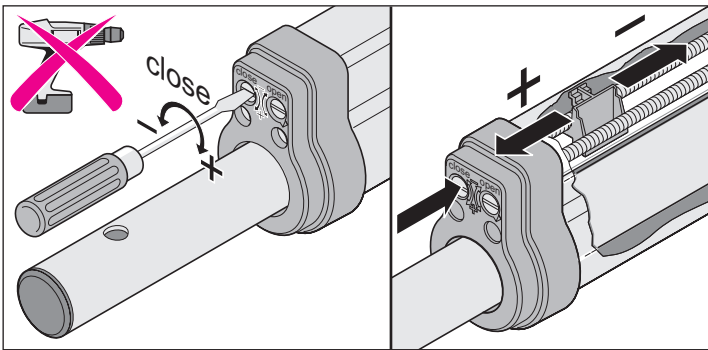


# Installation

## 2. Setting "Gate CLOSE" end position



**i** **IMPORTANT INFORMATION!**  
 "Gate CLOSE" end position preset to  $C1_{max}$ .  
 Do not exceed maximum values:  $C1_{max}$  and  $C_{max}$ .



If necessary, readjust end position with a screwdriver.

- Extending travel length: Turn "close" setscrew in (+) direction.
- Reducing travel length: Turn "close" setscrew in (-) direction.

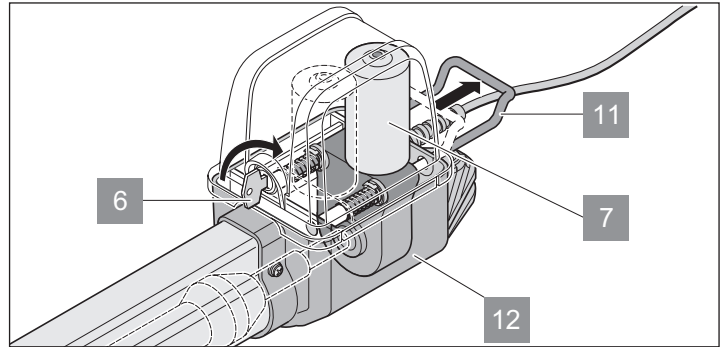
## Locking and unlocking the operator

**!** **CAUTION!**  
 Before doing any work on the gate or operator, disconnect it from the power supply and lock it to prevent reconnection.

**i** **IMPORTANT INFORMATION!**  
 The emergency release lever can only be adjusted with application of force and it engages noticeably.

In the event of a power failure, the gate can be moved by hand after unlocking.

## Unlocking operator

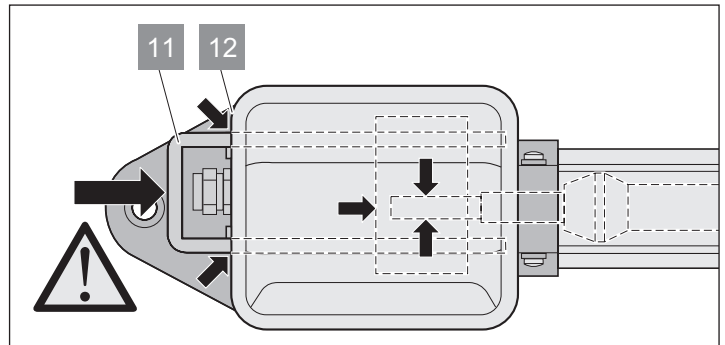


1. Turn key (6) 90° clockwise.
2. Pull emergency release bracket (11) from housing (12).  
 To simplify unlocking: Move gate leaf manually.  
 ⇒ Operator is unlocked  
 ⇒ The gate can now be moved by hand.

## Lock operator

1. Move the emergency release bracket (11) towards housing (12).

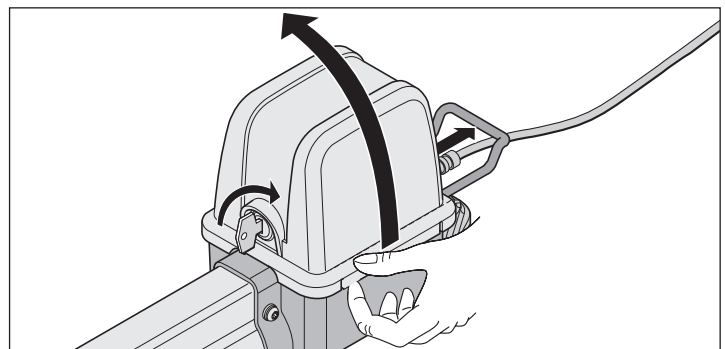
**i** **IMPORTANT INFORMATION!**  
 The emergency release bracket (11) must be almost in contact with the housing (12).  
 If the operator is not completely locked, it will damage the motor (7).



2. Turn key (6) 90° anti-clockwise.  
 ⇒ The gate can now only be moved using the operator.

## Removing cover

**!** **CAUTION!**  
 Before doing any work on the gate or operator, disconnect it from the power supply and lock it to prevent reconnection.



# Commissioning

## Safety instructions



### CAUTION!

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



### CAUTION!

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



### CAUTION!

Always perform learning run under supervision, because the operators traverse at full power. This is dangerous for persons, animals and object within the range of motion of the gates.



### CAUTION!

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

- “WL” LED and a connected warning light (accessory) flash during the learning run and as a visual warning at standstill.
- In the commissioning process the force required for opening and closing, the runtime and the closing delay are learned and saved by the control unit.

## Preparing continuous operation



### IMPORTANT INFORMATION!

Do not use a metal object to set the DIP switches, because this may damage the DIP switches or the circuit board. The DIP switches can be set with a narrow, flat plastic object.

- Components for 1- or 2-leaf gate are connected and set, see chapter “Functions and connections”.
  - Mains power is connected and voltage (AC 230 V) is present at control unit: “Mains” LED on.
  - The fittings bolts are tightened, operators can be moved easily.
1. Position cover and click into place.
  2. Set emergency unlock and lock with padlock.
  3. Close the gate.
  4. Check jumper setting for 1- or 2-leaf operation, see “Jumper” chapter.

## Adjusting the force tolerance



### IMPORTANT INFORMATION!

After installation of the operator the person responsible for installation of the operator must issue an EC Declaration of Conformity for the gate system in accordance with Machinery Directive 2006/42/EC and attach the CE symbol and a type plate. This is also required for private installations and also if the operator is retrofitted to a manually operated gate. This documentation and the Installation and Operating Instructions are retained by the operator.



### CAUTION!

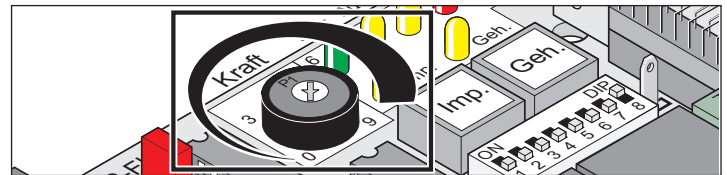
The adjustment of the force tolerance is safety-relevant and must be performed by qualified personnel with the utmost care. If the adjustment of the spring unit is excessively high, people or animals could be injured and objects damaged. Select a force tolerance that is as low as possible so that obstacles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

- Maximum force = learned force + force tolerance (adjustable with the 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 next time the gate is opened.
- After setting the force tolerance it may be necessary to reset the end positions.

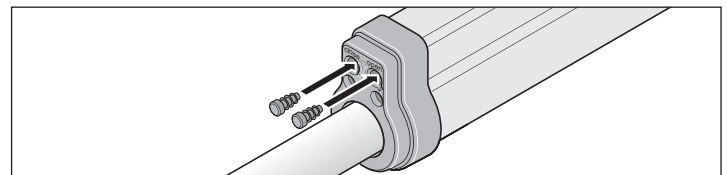
## Checking force tolerance

See Care and maintenance/regular testing.

Setting the force tolerance to the automatically learned force. The potentiometer setting is imported again at every start.



- Left stop of potentiometer (0) is the lowest tolerance, the right stop (9) is the highest tolerance.



- Insert plugs.

## Enabling continuous operation

- “WL” LED flashes until the force values, runtimes and closing delays are learned and saved.



### IMPORTANT INFORMATION!

2-leaf gate close sequence.

- Motor 1 (M1) on the gate leaf with the stop closes first.
- Motor 2 (M2) on the gate leaf with walk-through gate closes last.

1. Check the setting of the limit switches.
2. Open and close gate.
3. If the operator switches off correctly at both end positions: Perform learning run.

# Commissioning

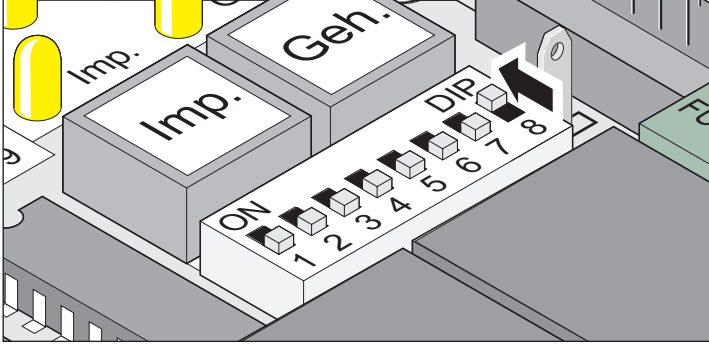
## Performing learning run



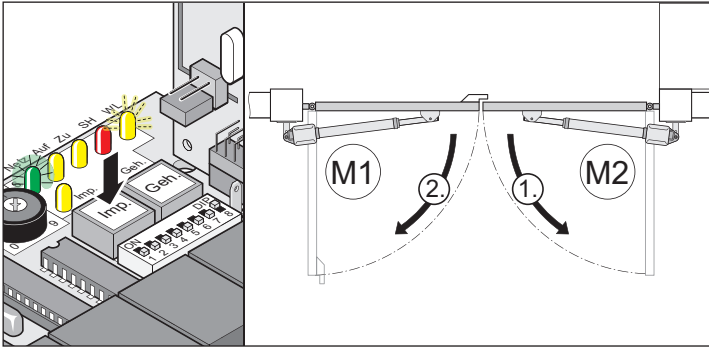
### CAUTION!

Always perform learning run under supervision, because the operators traverse at full power. This is dangerous for persons, animals and object within the range of motion of the gates.

1. Lock the operator, see chapter "Locking and unlocking the operator".



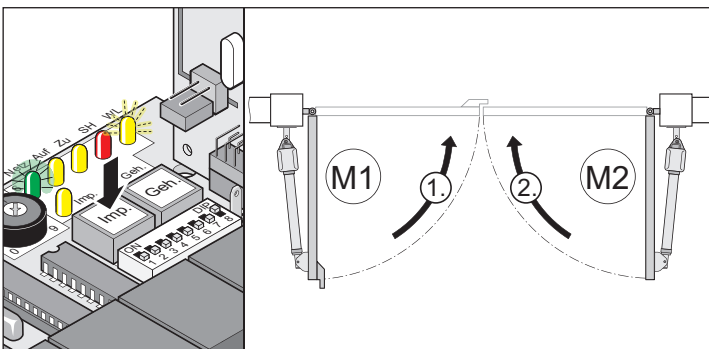
2. Set DIP switch 8 to ON.
  - Connect the DIP switch during the learning run and leave it in this position during normal operation.



### IMPORTANT INFORMATION!

**Checking direction of running:** After the first command, the operator must traverse in the "Gate OPEN" direction. If the operator moves to the "Gate CLOSE" position, reverse the operator connector cable on the control unit, see chapter "Connecting operator to the control unit".

3. Press the button (imp.).
  - ⇒ Operators move into the "Gate OPEN" end position.
  - ⇒ "Mains" LED lights, "WL" LED flashes.



4. Press the button (imp.).
  - ⇒ Operators move into the "Gate CLOSE" end position.
  - ⇒ "Mains" LED lights, "WL" LED flashes.

5. Repeat steps 3 and 4.
  - ⇒ If all values are programmed: The "WL" LED goes out in both end positions.
6. Programming process completed.
7. After successful programming run.
  - ⇒ Operators are started and stopped with soft running. Every time the gates are opened and closed, the control unit monitors the required force, runtime, and closing delay and adjusts them incrementally when the end positions are reached.



### IMPORTANT INFORMATION!

After the programming run, the operators must open and close the gate several times to allow the control unit to set the soft run for the end positions correctly. Depending on the gate, 5–10 gate movements may be necessary.

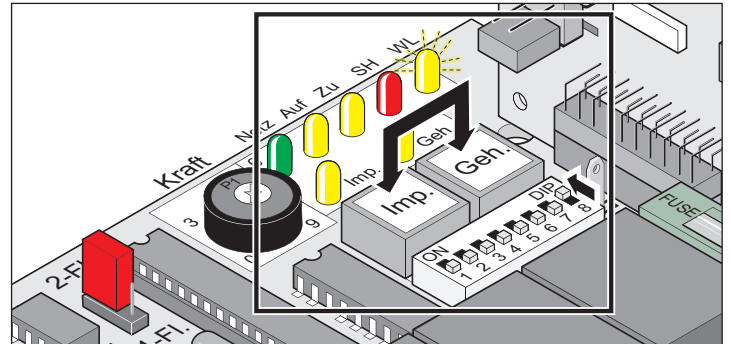
8. Leave DIP switch 8 "ON".

## Detecting faulty learning runs

- Operators run without soft running.
  - The "WL" LED flashes in both end positions.
1. Reset the control unit.
  2. Perform learning run.

## Resetting the control unit

The control unit reset deletes all programmed values (e.g. force values: force required by operator to open or close the gate, closing delay).



1. Press and hold the button (imp. + walk-through)
  - ⇒ "WL" LED flashes.
  - ⇒ "WL" LED goes out after approx. 5 seconds.
  - ⇒ All values deleted.
2. Release button.
  - ⇒ "WL" LED flashes.
  - ⇒ Clicking of relays can be heard.
3. Perform a learning run, see chapter "Performing learning run".

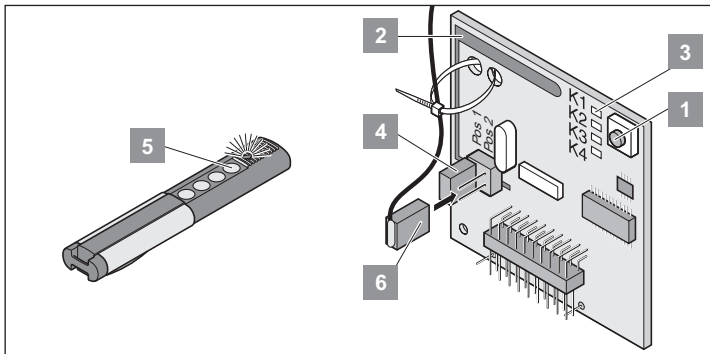
# Commissioning

## Radio receiver (version Somloq Rollingcode)

### Safety instructions

- The operator is not protected against interference caused by other telecommunications equipment or devices (e.g. wireless systems which are being operated properly in the same frequency range).
- Replace the hand-held transmitter unit's batteries if you experience reception problems.

### Display and button explanation



No.	Description
1	Teach-in button
2	Internal antenna
3	<b>LEDs show selected channel</b> K1 = radio channel 1 -> same function as "Start 1" (pulse) K2 = radio channel 2 -> same function as "Start 2" (active leaf) ! K3 = radio channel 3 -> no function ! K4 = radio channel 4 -> no function
4	Connection of the external antenna (6)
5	Handheld transmitter button
6	External antenna

\* See chapter "Opening and closing gate".

**i** **IMPORTANT INFORMATION!**  
Before programming transmitters: Delete the radio receiver memory.

### Deleting the radio receiver memory

- If a hand-held transmitter is lost, all transmitters in the radio receiver must be deleted for security reasons!  
After that, reprogram all hand-held transmitters in the radio receiver.
1. Press and hold the Teach-in button (1).  
⇒ After 5 seconds, the LED flashes – after another 10 seconds, the LED is lights up steadily.  
⇒ After a total of 25 seconds, all LEDs light.
  2. Release the Teach-in button (1).  
⇒ All LEDs go off – memory clearing process complete.

## Programming transmitter

### 1-leaf gate

- Button 1 on radio channel 1.

### 2-leaf gate

- Button 1 on radio channel 1 (both gate leaves open).
  - Button 2 on radio channel 2 (only the active leaf opens).
1. Press the learn button (1).
    - 1x for channel 1; LED "K1" lights.
    - 2x for channel 2; LED "K2" lights.
  2. Press one of the transmitter buttons (5).  
⇒ The transmitter has sent the radio code to the radio receiver.  
⇒ LED flashes during programming.  
⇒ When the radio code has been programmed, the LED goes out.
  3. Cancelling the teach-in mode: Press the Teach-in button (1) several times until no more LEDs are lit.

**i** **IMPORTANT INFORMATION!**  
If no radio code is sent within 10 seconds, the radio receiver switches to normal operation.

### Control

1. Press button 2.  
⇒ Only the gate leaf with walk-through gate opens.
  2. Press button 1.  
⇒ Both gate leaves open.
  3. Programming additional transmitters: Repeat "Programming transmitter".
- The radio receiver can save a maximum of 112 different radio codes (transmitter buttons).
  - If a user moves a mutually used gate system and also takes the transmitter, all radio codes of the transmitter must be deleted from the radio receiver.

### Deleting radio code

1. Press Teach-in button (1) and keep it pressed for 5 seconds.  
⇒ LED "K1" or "K2" flashes.
2. Release the Teach-in button (1).  
⇒ The radio receiver is in Deletion mode.
3. Press the transmitter button of the radio code.  
⇒ LED goes off – wipe procedure complete.

### Deleting all radio codes of a channel

1. Press Teach-in button (1) and keep it pressed for 5 seconds.
  - 1x channel 1
  - 2x channel 2
 ⇒ The channel LED flashes.
2. Keep the Teach-in button (1) pressed for another 10 seconds.  
⇒ The channel LED lights up.
3. Release Teach-in button (1) – the deletion procedure is ended.

# Commissioning

## Troubleshooting

### All LEDs flashing

- All 112 storage locations of the radio receiver are occupied. If additional transmitters are to be programmed, delete radio codes from the radio receiver.

### LED on

- Learn mode: radio receiver is waiting for a radio code from a hand-held transmitter.
- radio receiver is receiving a radio code from a hand-held transmitter.

## Important note for more detailed information

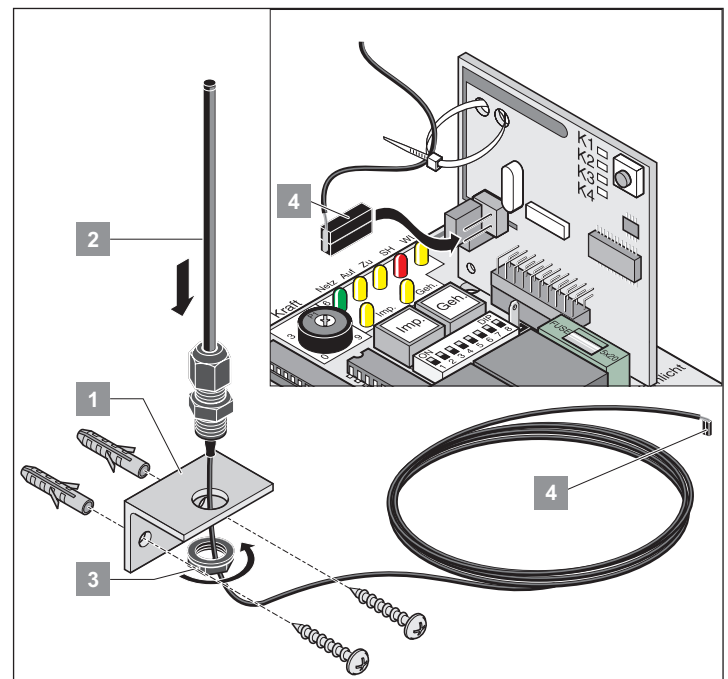
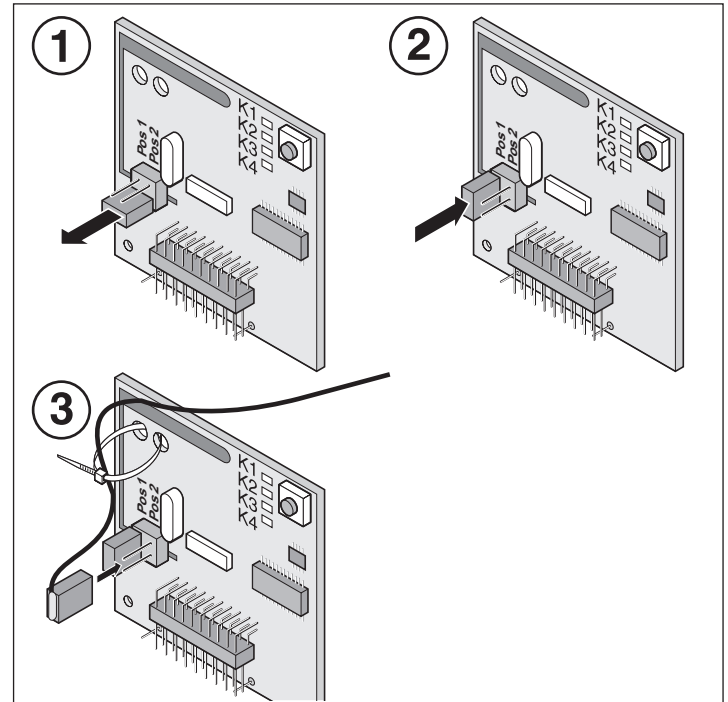
You can get the separate Installation and Operating Manual (radio receiver, 4-channel – Somloq Rollingcode/868.8 MHz) by scanning the QR code.



<https://downloads.sommer.eu/?category=40>

## Connecting external antenna

- Attach a strain relief on the antenna cable to prevent mechanical stresses on the radio receiver.
- If the range of the internal antenna is insufficient, connect external antennas.
- Attach connecting cables of the external antenna.
- Define the installation location together with the operator.



# Commissioning

## Radio receiver (version SOMloq2)

### Information on SOMloq2

The bidirectional data transmission between the transmitter and receiver allows a wide range of functions. Transmission is tap-proof and particularly reliable thanks to the special coding. Separate antennas or other installations are not necessary.



#### IMPORTANT INFORMATION!

The receiver is SOMlink-compatible!

### Safety instructions



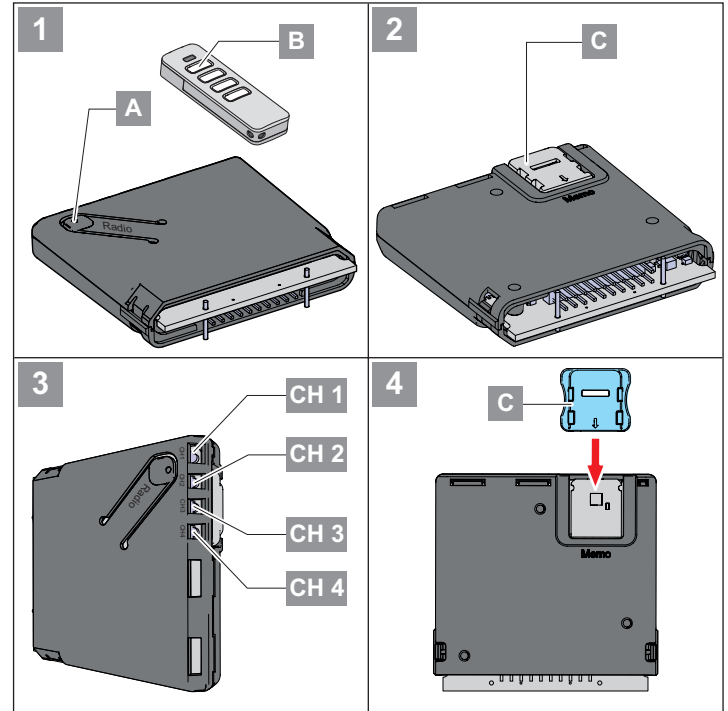
#### CAUTION!

- Opening the device is strictly prohibited and will cause loss of any claims for warranty service.
- Have faulty devices repaired by a technician authorised by the manufacturer.
- 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.

### Intended use

- Systems that pose an accident risk should not be operated by remote control unless the complete range of movement of the system is visible to the user!
- Remote control of devices and systems with increased accident risk (e.g. hoists) is prohibited!
- The remote control must only be used for devices and systems in which radio interference in the handheld transmitter or radio receiver will not endanger people, animals or objects, or the risk is reduced by other safety devices.
- The operator of the radio system has no protection against interference from other telecommunications systems or terminal equipment (e.g. including other radio systems that are licensed to operate in the same frequency range).
- After a power interruption, (e.g. in the event of a power failure), the radio receiver sets all outputs to **OFF**. Switch on an actuated alarm system again after a power interruption or use a backup battery.

### Explanation of display and buttons



#### IMPORTANT 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. Press the Radio button (A) on the control unit repeatedly to select the desired radio channel (CH).

	1x	2x	3x	4x
LED				
CH 1				
CH 2				
CH 3				
CH 4				

LED	Description
	<b>LEDs show selected channel</b>
CH 1	Radio channel 1 -> same function as "Start 1" (pulse)
CH 2	Radio channel 2 -> same function as "Start 2" (active leaf)
CH 3	Radio channel 3 -> no function
CH 4	Radio channel 4 -> no function

# Commissioning

## Programming the transmitter



### IMPORTANT INFORMATION!

The transmitter that is to be programmed must be located near the receiver during the programming process!

1. Press button **(A)** briefly.
  - 1x for channel 1,  
⇒ LED CH 1 lights up green.
  - 2x for channel 2,  
⇒ LED CH 2 lights up green.
  - 3x for channel 3,  
⇒ LED CH 3 lights up green.
  - 4x for channel 4,  
⇒ LED CH 4 lights up green.

⇒ If no command is transmitted within 30 seconds, the radio receiver switches over to normal mode.

⇒ Cancelling programming mode: Press the Teach-in button **(A)** repeatedly until no more LEDs are lit.
2. Press and hold the desired handheld transmitter button **(B)** until the LED for the selected channel blinks quickly and goes out.
  - ⇒ Programming is finished.
3. Repeat steps 1–2 to program other handheld transmitters to this radio receiver.

## Defined OFF

This command only switches the output off.

1. Select radio channel with button **(A)** and hold the button pressed for 5–10 seconds until the LED for the selected channel flashes green.
2. Release button **(A)**.
  - ⇒ If no command is transmitted within 30 seconds, the radio receiver switches over to normal mode.
  - ⇒ To interrupt programming mode: Press button **(A)** again; LED goes out.
3. Press and hold the desired handheld transmitter button **(B)** until the LED for the selected channel blinks quickly and goes out.
  - ⇒ Programming is finished.

## Defined ON

This command only switches the output on.

1. Select radio channel with button **(A)** and hold the button pressed for 10–15 seconds until the LED for the selected channel blinks green.
2. Release button **(A)**.
  - ⇒ If no command is transmitted within 30 seconds, the radio receiver switches over to normal mode.
  - ⇒ To interrupt programming mode: Press button **(B)** again; LED goes out.
3. Press and hold the desired transmitter button **(B)** until the LED for the desired channel blinks quickly and goes out.
  - ⇒ Programming is finished.

## Installing accessories

Only **SOMMER** accessories may be connected.

## Programming by radio (HFL)

### Function

Each handheld transmitter that has already been programmed can put the receiver into programming mode by radio. This allows additional transmitters to be programmed without having to press button **(A)** on the receiver. The button assignment on handheld transmitter **A (Fig. HFL)** (which activated the receiver) is also used for handheld transmitter **(B)** which needs to be programmed. Both handheld transmitters must be located within the range of the radio receiver.



### IMPORTANT INFORMATION!

Only the programming of identical handheld transmitters by radio is recommended!

If different handheld transmitter types are used, only the first button command is transferred from handheld transmitter 1 to important information! handheld transmitter 2.

### Procedure

1. Press and hold buttons (1+2) of the previously programmed handheld transmitter A for 3–5 seconds until LEDs (CH 1 and CH 2) on the receiver fast flash inverted green.
2. Release buttons (1+2).
  - ⇒ If a command is not transmitted within another 30 seconds, the radio receiver switches over to normal mode.
3. Press any button on the new handheld transmitter B.
  - ⇒ LEDs (CH 1–CH 4) on the receiver blink quickly and go out.
  - ⇒ Commands and key assignment on handheld transmitter B and handheld transmitter A are now identical.

### Operation

1. Press transmitter button **(B)** briefly.
  - ⇒ LED for the programmed channel lights up orange as long as the button is pressed.
  - ⇒ The assigned output switches.

## Deleting a transmitter button from the radio channel

1. Select radio channel with button **(A)** and hold the button pressed for 15 to 20 seconds until the LED for the selected channel flashes red.
2. Release Teach-in button **(A)**.
  - ⇒ To cancel delete mode: Press button **(A)**; LED goes out.
  - ⇒ If no command is transmitted within 30 seconds, the radio receiver switches over to normal mode.
3. On the transmitter, press the button for which the command is to be deleted in the radio receiver.
  - ⇒ LED blinks quickly – delete complete.
  - ⇒ Radio receiver switches to normal mode – delete complete.

## Deleting a transmitter from the radio receiver

1. Press and hold button **(A)** for 20 to 25 seconds until LED (CH 1) blinks red.
2. Release button **(A)**.
  - ⇒ To cancel delete mode: Press button **(A)**; LED (CH 1) goes out.
  - ⇒ If no command is transmitted within 30 seconds, the radio receiver switches over to normal mode.
3. Press any button on the transmitter that is to be deleted from the receiver memory.
  - ⇒ Radio receiver deletes the transmitter, LED (CH 1) blinks quickly.
  - ⇒ Radio receiver switches to normal mode – delete complete.

# Commissioning

## Deleting a radio channel



### IMPORTANT INFORMATION!

This action cannot be interrupted!

1. Select the radio channel to be deleted with button **(A)** and hold button **(A)** pressed for 25–30 seconds until the LED for the selected channel lights up red.
2. Release button **(A)**.
  - ⇒ The channel is deleted from the radio receiver.
  - ⇒ Receiver switches to normal mode – delete complete.

## Deleting the entire memory of the radio receiver



### IMPORTANT INFORMATION!

This action cannot be interrupted!

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

1. Press and hold button **(A)** for more than 30 seconds until the LEDs (CH 1–CH 4) simultaneously light up red.
2. Release button **(B)**.
  - ⇒ Radio receiver deletes the memory.
  - ⇒ Radio receiver switches to normal mode – delete complete.

## 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.

## 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.

## Installing the Memo



### IMPORTANT INFORMATION!

If the Memo is removed, the receiver memory is empty. Radio commands need to be programmed again!

1. Turn off the power supply to the operator control unit.
2. Disconnect the receiver from the operator control unit.
3. Plug the Memo **(C)** into the slot.
4. Reconnect the receiver to the operator control unit.
5. Restore the power supply.
  - ⇒ A total of 450 memory positions is now available for radio commands.

You can get the separate Installation and Operating Manual (radio receiver SOMup4 – SOMloq2/868.95 MHz) by scanning the QR code.



<https://downloads.sommer.eu/?category=36>



## Safety instructions

- Never operate a damaged operator.
- During opening or closing, no children, people, animals, or objects may be in the range of movement of the gate.
- Do not operate the hand-held transmitter in areas with sensitive radio communications or systems (e.g. airports, hospitals, etc.).
- Actuate the gate system by remote control only if you have a clear view of the gate.
- Keep the hand-held transmitter so that an unintended operation e.g., by children or animals, is prevented.
- Use the radio remote control only if a non-hazardous force tolerance is set. Set the force tolerance low enough to eliminate any danger of injury by the closing force.

## Emergency release in case of power failure

See chapter "Locking and unlocking the operator".

## Normal mode

Changes to the gate affect the force needed for opening and closing.

Examples for changes to the gate:

- Damage
- Moisture absorption
- Ground submergence
- Changes in weather in summer-winter mode
- Obstacles


## Obstacle detection

- ⇒ We offer a range of different safety strips. It includes both active (trigger an immediate stop of the gate at contact) and passive (take up part of the inertial mass of the moving gate) strips.

## Obstacle detection by photocell

**CAUTION!**  
 **A photocell must be used for object protection only. A photocell must not be used for personal protection!**

- Wire the photocell in accordance with Chapter "Installation".

**IMPORTANT INFORMATION!**  
 **Obstacle detection requires a correctly completed learning run.**

A tolerance for the force required for opening or closing can be set on the potentiometer.

- If the force required increases or decreases within the set tolerance, the control unit automatically learns this value.
- If the force required is outside the set tolerance (e.g. due to an obstacle), the operator stops and reverses a short distance. This power deactivation with reverse is required for safety.

## Summer-winter mode

Differences in weather between summer and winter can influence the operators:

- The force required varies for opening and closing.
- The gate reverses without a noticeable obstacle.
- The end positions of the gate leaf change.

If the gate will not open or close or reverses without a noticeable obstacle:

1. Perform a control unit reset, see chapter "Resetting the control unit".
2. Perform a learning run, see chapter "Performing learning run".

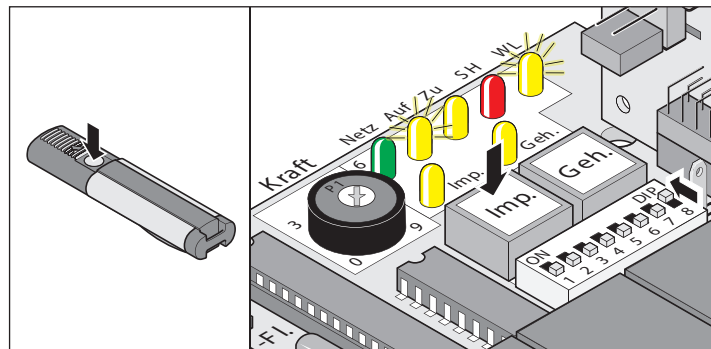
If the end positions have changed:

1. Adjust limit switch.

## Opening and closing gate

### Requirements

- DIP switch 8 to ON.
- Learning run performed.
- Transmitter programmed: Button 1 to channel K1, button 2 on channel K2.



### 1-leaf gate

1. Press button (imp) or hand-held transmitter (button 1).
  - ⇒ Gate opens to "gate OPEN" end position – LED "OPEN" and "WL" on.
  - ⇒ "Gate CLOSE" end position reached – LED "OPEN" and "WL" go out.

### 2-leaf gate – both gate leaves

1. Press button (imp) or hand-held transmitter (button 1).
  - ⇒ Gate leaf with walk-through gate opens.
  - ⇒ Gate leaf with stop opens with a delay of approximately 3 seconds – "Open" and "WL" LEDs light up.
  - ⇒ "Gate CLOSE" end position reached – LED "OPEN" and "WL" go out.
2. Press button (imp) or hand-held transmitter (button 1).
  - ⇒ Gate leaf with stop closes.
  - ⇒ Active leaf closes with a delay or simultaneously (depending on installation situation) – "Close" and "WL" LEDs light up.
  - ⇒ "Gate CLOSE" end position reached – LED "Close" and "WL" go out.

## 2-leaf gate – gate leaf with walk-through gate

1. Press button (walk-through) or hand-held transmitter (button 2).
  - ⇒ Gate opens to “gate OPEN” end position – LED “OPEN” and “WL” on.
  - ⇒ “Gate CLOSE” end position reached – LED “OPEN” and “WL” go out.
2. Press button (walk-through) or hand-held transmitter (button 2).
  - ⇒ Gate closes to “gate OPEN” end position – LED “OPEN” and “WL” on.
  - ⇒ “Gate CLOSE” end position reached – LED “Close” and “WL” go out.

# Functions and connections

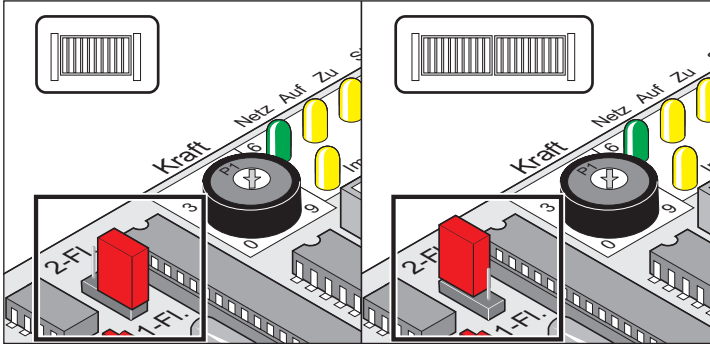
## Safety instructions

➤ Observe cable requirements:

Property	Value	Terminals
Cross-section	0.25–2.5 mm <sup>2</sup>	All terminals
Maximum length	10 m	5 to 10 35 + 36
Maximum length	30 m	21 to 34

## Jumper

Select 1- or 2-leaf gate.

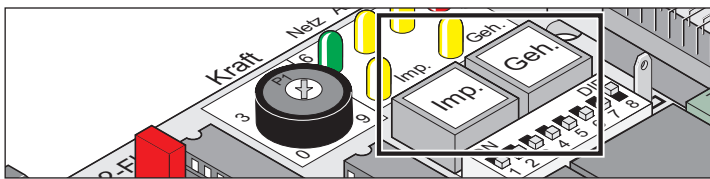


Label	Description
2-leaf/1-leaf	1-leaf: Jumper on bottom pins or removed
	2-leaf: Jumper on top pins

## Setting 1- or 2-leaf gate (jumper)

1. Reset the control unit.
2. Replug jumpers.
3. Reset the control unit.
4. Perform learning run.

## Button on control unit



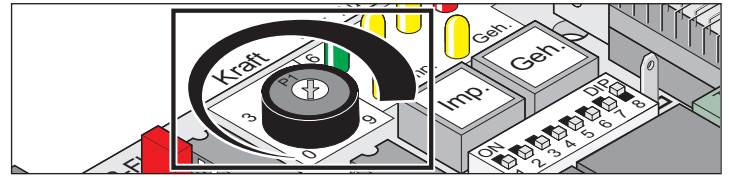
Label	Description
Pulse	<p>Pulse button</p> <ul style="list-style-type: none"> <li>• opens both gate leaves.</li> <li>• Stops moving gate leaf with walk-through gate.</li> <li>• Gate leaf with walk-through gate open: Opens gate leaf with stop.</li> <li>• Function sequence: Open – Stop – Close – Stop – Open...</li> </ul>
Walk-through	<p>Walk-through gate button</p> <ul style="list-style-type: none"> <li>• Opens gate leaf with walk-through gate.</li> <li>• Function sequence: Open – Stop – Close – Stop – Open...</li> </ul>



### IMPORTANT INFORMATION!

Button (walk-through) operates only if the gate leaf with stop is fully closed.

## Potentiometer for force tolerance



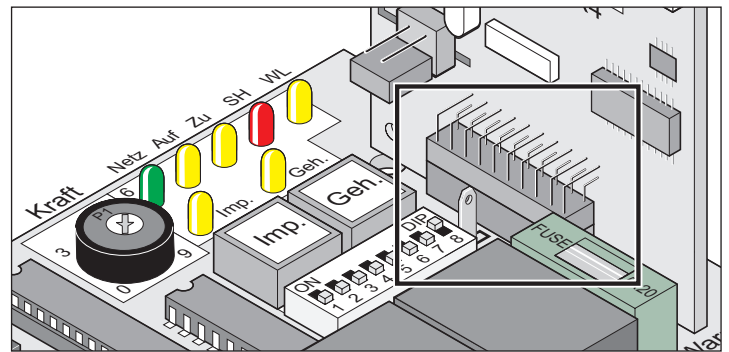
The force tolerance to the automatically learned force is set with the “P1” potentiometer.

The “P1” potentiometer setting is imported again at every start.

- Minimum force tolerance = left stop (0)
- Maximum force tolerance = right stop (9)

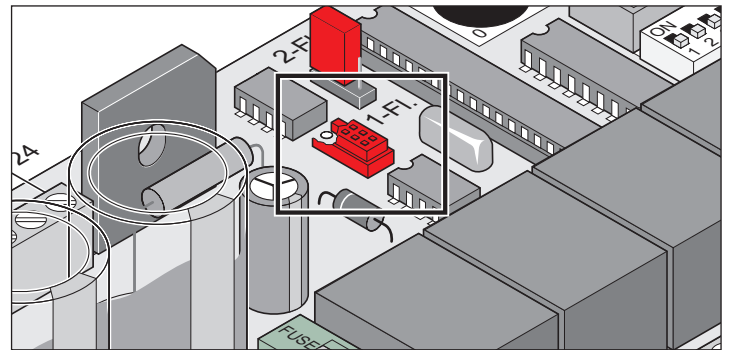
## Radio connector

Slot for radio receiver. Installed on delivery.



## TorMinal interface

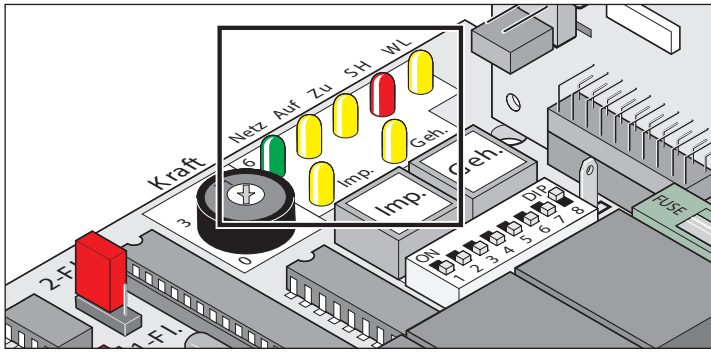
See TorMinal installation and operating manual.



# Functions and connections

## Light-emitting diodes (LED)

Shows the status of the control unit.



### CAUTION! DANGER OF ELECTROCUTION!

If the fuse is burnt out, the “Mains” LED will not be on although the mains voltage (AC 230 V) is present on the control unit.

- Before doing any work on the gate or operator, disconnect it from the power supply and lock it to prevent reconnection.

Label	Colour	Status	Description
Power	Green	Off	Power supply interrupted
		On	Mains voltage present
Pulse	Yellow	Off	Idle mode
		On	Imp. button/radio channel 1 actuated
Walk-through	Yellow	Off	Idle mode
		On	Walk-through button/radio channel 2 actuated
Up	Yellow	Off	Idle mode
		On	Gate opens
Close	Yellow	Off	Idle mode
		On	Gate closes
SH	Red	Off	Idle mode
		On	Safety input interrupted (e.g. photo eye tripped)
WL	Yellow	Off	Idle mode with programmed force values
		Flashes	<ul style="list-style-type: none"> <li>• Test mode</li> <li>• Programming (even in dead man mode)</li> <li>• During every gate movement, “Gate OPEN” or “Gate CLOSE”.</li> </ul>
		On	<ul style="list-style-type: none"> <li>• Gate opens and closes with programmed force values</li> <li>• Warning light on</li> </ul>

## DIP switches



### CAUTION!

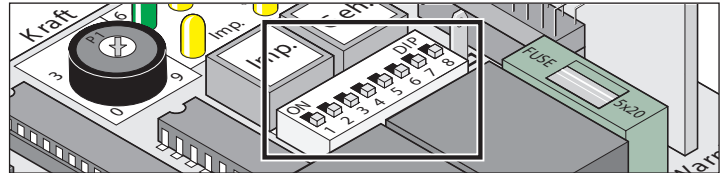
Before switching the DIP switches, disconnect the power supply to the control unit then secure against switching on again.



### CAUTION!

The gate and its movement zone must always be in sight.

Factory setting for all DIP switches: OFF



DIP	Function setting “OFF”	Function setting “ON”
1	Response to triggering the safety input (terminals 17 + 18) while the gate opens: <ul style="list-style-type: none"> <li>• No response</li> </ul>	Response to triggering the safety input (terminals 17 + 18) while the gate opens: <ul style="list-style-type: none"> <li>• Gate stops</li> </ul>
2	Response to triggering the safety input while the gate closes: <ul style="list-style-type: none"> <li>• Gate reverses</li> </ul>	Response to triggering the safety input while the gate closes: <ul style="list-style-type: none"> <li>• The gate stops.</li> </ul>
3	DIP 2 = OFF: <ul style="list-style-type: none"> <li>• Gate reverses</li> </ul>	DIP 2 = OFF: <ul style="list-style-type: none"> <li>• Gate opens completely</li> </ul>
4	Warning light on	Warning light flashes
5	Pre-warning time warning light: <ul style="list-style-type: none"> <li>• OFF</li> </ul>	Pre-warning time warning light: <ul style="list-style-type: none"> <li>• 3 seconds</li> <li>• Warning light flashing or on before gate starts moving, depending on the position of DIP 4</li> </ul>
6*	Manual mode/semi-automatic	Automatic closing, variation 1 and 2 (gate closes automatically after 60 seconds)
7*	No function/automatic closing, variation 1	Automatic closing, variation 2 (gate closes automatically 5 seconds after interruption of the photo eye)/semi-automatic

\* For additional settings, see TorMinal owner’s manual.



### IMPORTANT INFORMATION!

#### DIP switch 8:

Leave DIP switch 8 ON after a learning run. OFF position immediately deletes all saved values.

DIP	Function setting “OFF”	Function setting “ON”
8	Test mode: <ul style="list-style-type: none"> <li>• Operator does not learn any values</li> <li>• Setting the limit switches</li> </ul>	Continuous operation: The operator learns continuously while the gate opens and closes: <ul style="list-style-type: none"> <li>• Force values</li> <li>• Running time</li> <li>• Closing delay</li> </ul>

# Functions and connections

## Automatic closing function

There are two basic variants for automatic closing.

When both variants are activated at the same time, the fully automatic closing function has priority.

### Fully automatic closing function



#### IMPORTANT INFORMATION!

When using the automatic close function, ensure compliance with standard EN 12453 (e.g. install photo eye).

- The gate does not close until the set opening time has expired completely.
- Command via button or radio control system during closing:  
⇒ The gate completely opens.
- Command via button or radio control system while the SOT expires:  
⇒ SOT starts again.
- Response to triggering the safety input (terminals 17 + 18) while the gate opens:  
⇒ DIP 1 setting
- Response to triggering the safety input while the gate closes:  
⇒ DIP 2 setting

<b>DIP 6</b>	ON
<b>TorMinal</b>	Sets the opening time
<b>DIP 7</b>	OFF
<b>DIP 8</b>	ON

#### Sub-variant 1



#### IMPORTANT INFORMATION!

Install a switch in the photo eye supply wire for manual interruption of automatic closing.

- Driving through photo eye:  
⇒ Gate closes after 5 seconds.

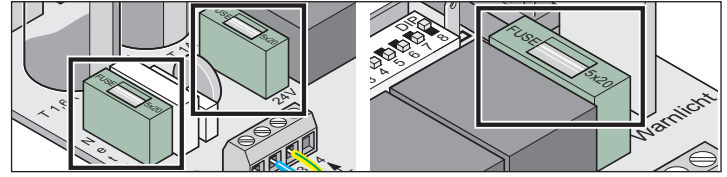
<b>DIP 6</b>	ON
<b>TorMinal</b>	Sets the opening time
<b>DIP 7</b>	ON
<b>DIP 8</b>	ON

### Semi-automatic closing function

- The gate does not close until the set opening time has expired completely.
- Command via button or radio control system while the SOT expires:  
⇒ Gate immediately closes.

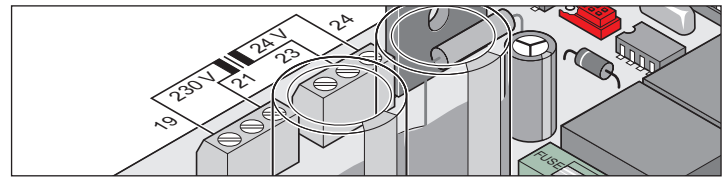
<b>DIP 6</b>	OFF
<b>TorMinal</b>	Sets the opening time (5–255 seconds, factory setting 60 seconds)
<b>DIP 7</b>	ON
<b>DIP 8</b>	ON

## Fuses



Label	Thickness	Description
Power	1.6 A, slow-acting	Mains supply line AC 230 V
24 V	1 A, slow-acting	Power supply output DC 24 V Terminals 9 + 10
Warning light	1 A, slow-acting	Warning light output DC24V Terminal 11 + 12

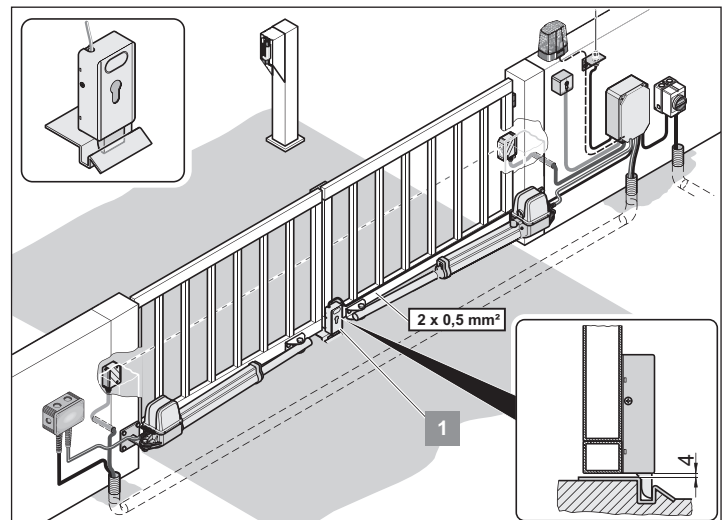
## Transformer terminal



Terminal	Description	Description
19	230 V	Mains supply line (primary winding), brown
21		
23	24 V	24 V input (secondary winding), supply line to control unit, violet
24		

## DC 24 V electric lock

- Reset control unit before assembly.
- After installation, reset the "Gate CLOSE" end position.
- Uphold the distance between lock and strike: min. 4 mm and max. 6 mm.
- Note the polarity of the electric lock.
- Install lock in a perpendicular position, otherwise it may become jammed during closing or opening.



# Functions and connections

## Connecting electric lock

Available as an accessory.



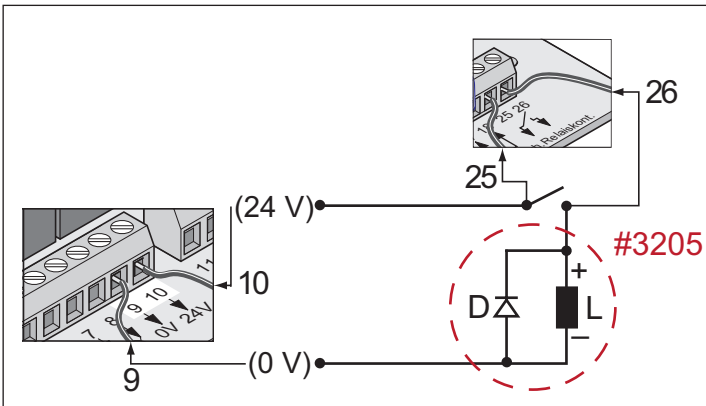
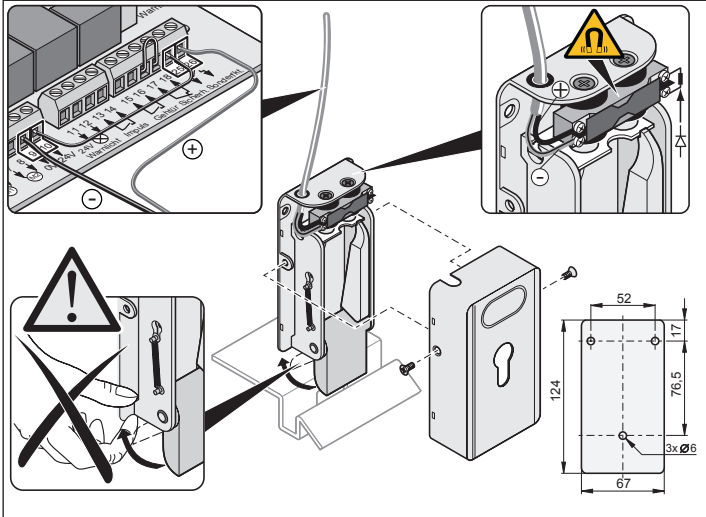
### IMPORTANT INFORMATION!

The electric lock is operated with direct-current, unregulated transformer voltage. The transformer voltage can fluctuate between DC 22–32 V when fully loaded.



### IMPORTANT INFORMATION!

The connection diagram is for a DC 24 V electric lock. DC 12 V electric locks must not be connected without consultation with the manufacturer. Use only electric locks approved by SOMMER Antriebs- und Funktechnik GmbH. Check for the correct polarity. If other types of electric locks are used, the guarantee for the motor control unit will be cancelled.



Terminal	Description	Description
9	0 V	DC 24 V output with max. 30 W power (unstabilised DC 22–32 V).
10	24 V	

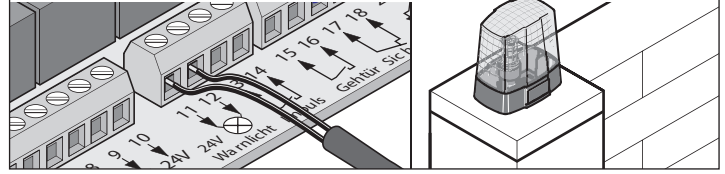
## Connecting warning light

Available as an accessory.



### IMPORTANT INFORMATION!

The warning light is operated with direct-current, unregulated transformer voltage. The transformer voltage can fluctuate between DC 22–32 V when fully loaded.



Setting the function, see DIP switches 4 + 5.

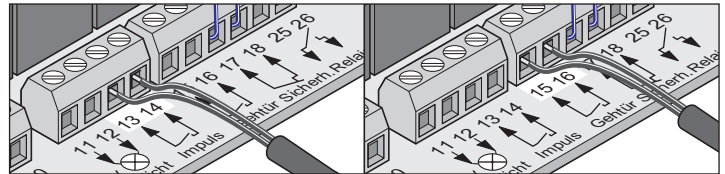
Terminal	Description	Description
11	24 V warning light	Connection for DC 24 V warning light with max. 24 W power (unstabilised DC 22–32 V).
12		

## Connecting button



### CAUTION!

Only use the connection for potential-free closer contacts. External voltage can trigger severe power surges and damage or destroy the control unit.



Terminal	Description	Function
13	Pulse	Connection for pulse transmitter for actuating one or both leaves.
14		
15	Walk-through gate	Connection for pulse transmitter for actuating a gate leaf.
16		

- 1-leaf gate: Start 1 and Start 2 buttons have the same function.
- 2-leaf gate: Button 2 contact is needed for the walk-through gate function.

### 1-contact button

- 1-leaf gate buttons at terminals 13 + 14 or 15 + 16
- 2-leaf gate buttons at terminals 13 + 14

### 2-contact button

- Walk-through terminal 15 + 16
- Both gate leaves 13 + 14

# Functions and connections

## Connecting key switch

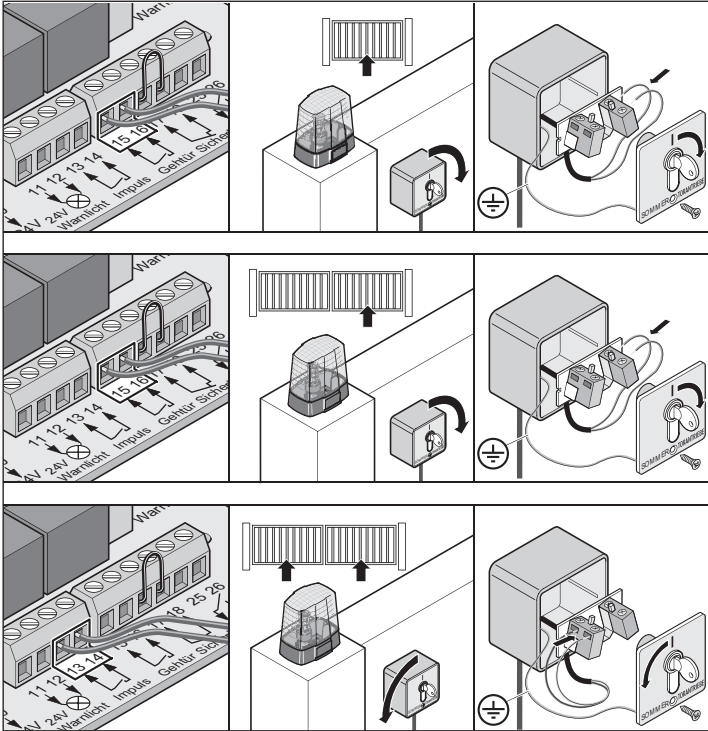
Available as an accessory.



### CAUTION!

When actuating the key switch the operator must keep clear of the movement zone of gate and must have a direct view of it.

- Never lay the cable of the key switch along a power line to prevent control unit faults.
- Permanently install the switch cable.
- Install key switch at an accessible position.



## Connecting 4-wire photo eye

Available as an accessory.



### CAUTION!

Only use the connection for potential-free NC contacts. External voltage can trigger severe power surges and damage or destroy the control unit.



### IMPORTANT INFORMATION!

When using the automatic closing function, ensure compliance with standard EN 12453 (e.g. install photo eye).

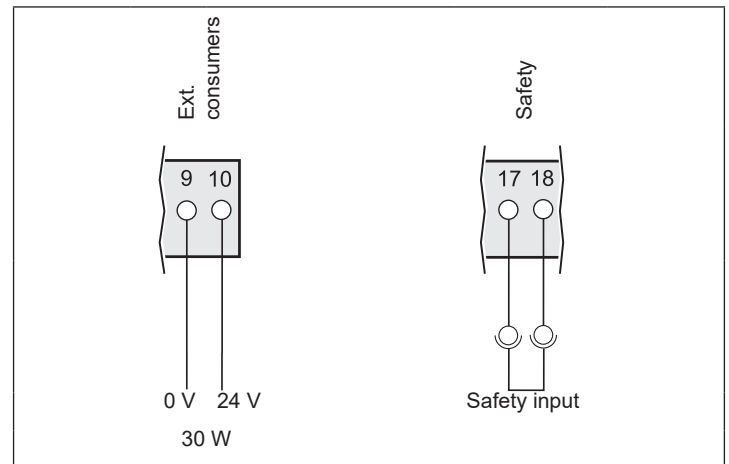


### IMPORTANT INFORMATION!

Connection of a 2-wire photocell is not possible.

As-delivered status: Jumper between terminals 17 + 18.

Remove wire bridge before connection.



Terminal	Description	Description
9	0 V	DC 24 V output with max. 30 W power (unstabilised DC 22–32 V).
10	24 V	
17	Sicherh.	Safety device connection
18		<ul style="list-style-type: none"> <li>• Photo eye</li> </ul> If the connection is not used, install a jumper between the terminals (delivery status).

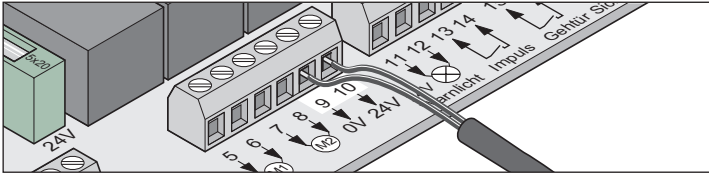
# Functions and connections

## Connecting external consumers



### IMPORTANT INFORMATION!

The external consumer is operated with direct-current, unregulated transformer voltage. The transformer voltage can fluctuate between DC 22–32 V when fully loaded.



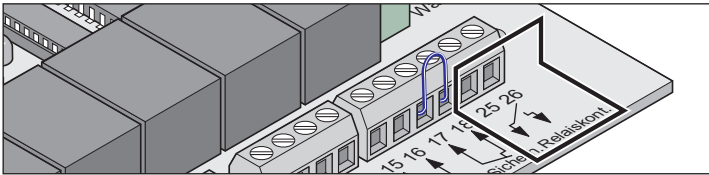
Terminal	Description	Description
9	0 V	DC 24 V output with max. 30 W power (unstabilised DC 22–32 V).
10	24 V	

## Connecting potential-free relay contact



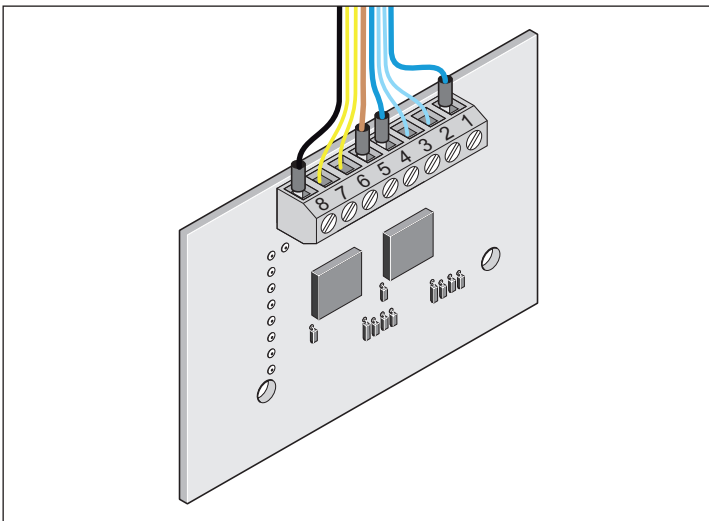
### CAUTION!

Operate under resistance load only. Use only electric locks approved by SOMMER Antriebs- und Funktechnik GmbH. Check for the correct polarity. If other types of electric locks are used, the guarantee for the motor control unit will be cancelled.



Terminal	Description	Description
25	Relaiskont.	Connection, e.g. electric lock max. DC 24 V.
26		

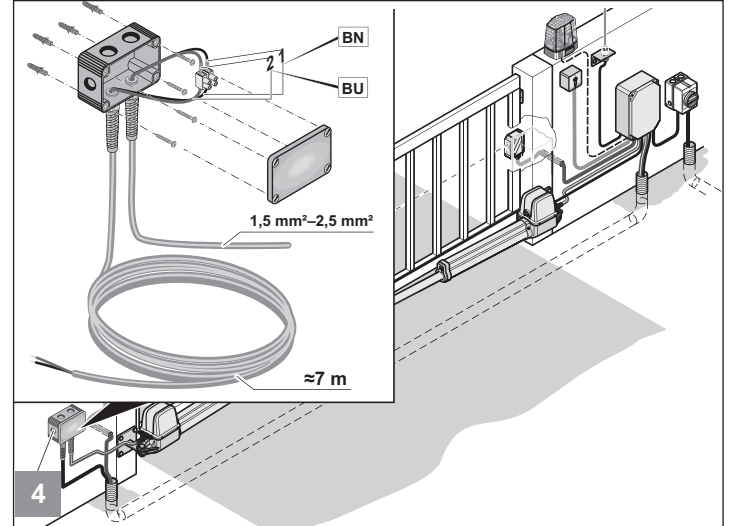
## Connecting motor



Terminal	Description/cable colour
1	24 V feed line from control unit, blue
2	Limit switch gate "CLOSE", blue
3	Limit switch gate "CLOSE", blue
4	Motor, blue
5	24 V feed line from control unit, brown

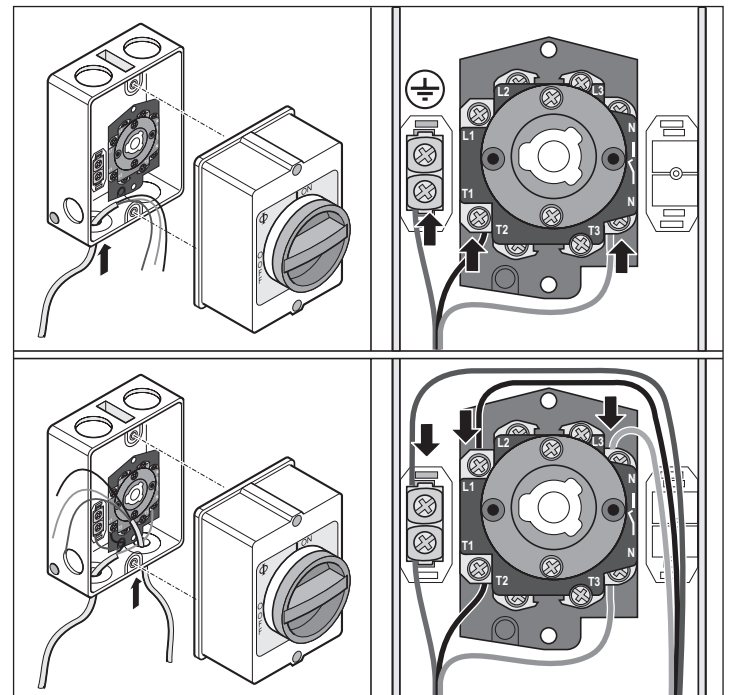
Terminal	Description/cable colour
6	Limit switch gate "OPEN", yellow
7	Limit switch gate "OPEN", yellow
8	Motor, black

## Attaching connecting cable set



1. Attach the junction box appropriately for the respective supporting surface (e.g. concrete, masonry, wood, etc.).
2. Connect cable with the same number:
  - blue with blue
  - brown with brown
  - etc.
3. Tighten fasteners well to prevent ingress of moisture into the terminal box.
4. Close terminal box.

## Main switch





# Maintenance and care

## Safety instructions



### DANGER!

Never use a water hose or high-pressure cleaner to spray down the operator or the control unit housing.

- Do not use acids or alkalis for cleaning.
- Keep operator clean and clean the push rod with a dry cloth when needed.
- Check the control unit housing regularly for insect infestation and clean if necessary.
- Check the control unit housing regularly for moisture and dry if necessary.
- Check that all screws and bolts of the fittings are tightened. Retighten loose fixing bolts.
- Check that the connection control unit housing cover is free of leaks.

## Regular testing

Safety devices must be tested at intervals which do not exceed six months and which must be prescribed in the maintenance instructions for the door, in accordance with EN 12453-1/2.

Check every 4 weeks that pressure-sensitive safety devices (e. g. safety contact strips) are operating correctly, in accordance with EN 60335-2-103.

Testing	Behaviour	Yes/No	Possible cause	Remedy
<b>Power deactivation</b>				
Stop the gate leaf by hand while it is closing. Do not clutch the gate leaf.	Does the gate stop and reverse when lightly held?	Yes		No action necessary.
		No	Force tolerance too high.	Reducing force tolerance: <ul style="list-style-type: none"> <li>• Open and close the gate completely twice under supervision.</li> <li>• Rotate "Kraft" potentiometer counterclockwise until the test is successful.</li> </ul>
			Control unit defective.	<ul style="list-style-type: none"> <li>• Decommission the gate and lock it to prevent reactivation.</li> <li>• Call customer service!</li> </ul>
<b>Emergency release</b>				
Procedure as described under "Locking and unlocking operator".	Can the gate be opened and closed easily by hand? Can the operator be unlocked?	Yes		No action necessary.
		No	Hinges rusted.	Lubricate gate hinges.
<b>Safety contact strip, if present</b>				
Open/close the gate and actuate the strip.	Does the gate behave as set with DIP switch 1, 2 or 3?	Yes		No action necessary.
		No	Cable broken.	<ul style="list-style-type: none"> <li>• Check wiring.</li> <li>• Replace broken cables.</li> </ul>
			Terminal loose.	Tighten terminal.
			DIP switch adjusted.	Set the DIP switch.
			Safety contact strip defective. Safety contact strip evaluation unit defective.	<ul style="list-style-type: none"> <li>• Decommission the gate and lock it to prevent reactivation.</li> <li>• Call customer service!</li> </ul>
<b>Photo eye, if present</b>				
Open/close the gate and interrupt photo eye.	Does the gate behave as set with DIP switch 1, 2 or 3? "Safety" LED on?	Yes		No action necessary.
		No	Cable broken.	<ul style="list-style-type: none"> <li>• Check wiring.</li> <li>• Replace broken cables.</li> </ul>
			Terminal loose.	Tighten terminals.
			DIP switch adjusted.	Set the DIP switch.
			Photo eye soiled.	Clean the photo eye.
			Photo eye fault.	<ul style="list-style-type: none"> <li>• Decommission the gate and lock it to prevent reactivation.</li> <li>• Call customer service!</li> </ul>

## Disassembly



### IMPORTANT!

Observe the safety notices!

See "Safety instructions", page 3.

The sequence is identical to that described in the "Mounting" section, but in reverse order. Ignore the setting instructions.

## Disposal

Observe applicable national regulations.

## Warranty and customer service

The warranty complies with statutory requirements. Please contact your specialist retailer/supplier if you have any queries regarding the warranty.

The warranty is only valid in the country in which the product was purchased.

Batteries, fuses and bulbs are excluded from the warranty.

Ownership of replaced parts passes to us.

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

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

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# Troubleshooting

## Tips on troubleshooting

Fault	Control	Yes/No	Possible cause	Remedy
Gate cannot be opened or closed with buttons or hand-held transmitter.	Is the "Mains" LED on?	No	No supply voltage.	<ul style="list-style-type: none"> <li>• Check connection.</li> <li>• Establish missing connection.</li> </ul>
			Fuse defective.	<ul style="list-style-type: none"> <li>• Check fuse.</li> <li>• Replace defective fuse.</li> </ul>
		Yes	Gate jammed. Gate leaf has sunk or distorted because of high temperature variations.	Fix misaligned gate leaves.
			Motor hums but does not move.	<ul style="list-style-type: none"> <li>• Switch off immediately! Possible motor or control unit fault.</li> <li>• Contact customer service.</li> </ul>
			Operator unlocked.	Lock operator.
			Cable does not have a contact.	Check the cable connection.
			Gate frozen.	Clear snow and ice from gate and hinges.
Snow is blocking the movement zone of gate.	Clear snow.			
Is the LED on the transmitter on?	No	Battery flat.	Replace battery.	
		Battery incorrectly inserted.	Insert battery correctly.	
		Hand-held transmitter defective.	Replace the hand-held transmitter.	
	Yes	Range of the transmitter too short due to weak battery.	Replace battery.	
		Radio receiver defective.	Replace radio receiver.	
		Transmitter not programmed.	Program transmitter.	
		Poor reception.	Install external antenna, see "Accessories".	
Incorrect frequency.	<ul style="list-style-type: none"> <li>• Check frequency.</li> <li>• Check that transmitter and radio receiver are on the same frequency.</li> </ul>			
	Does an LED on the radio receiver come on if a button on the transmitter is pressed?	No	Radio receiver not properly plugged in.	Plug in radio receiver properly.
			Radio receiver defective.	Replace radio receiver.
			Radio receiver without power supply.	Replace radio receiver.
Transmitter not programmed.			Program transmitter.	
Is the "Mains + OPEN/CLOSE" LED on?	Yes	Continuous signal pending. Pulse generator defective.	<ul style="list-style-type: none"> <li>• Check pulse generator.</li> <li>• Replace defective pulse generator.</li> </ul>	
"Mains + Safety" LED on?	Yes	Photo eye interrupted.*	Remove interruption.	
Does the fault occur intermittently or for a short time?	Yes	Very powerful public address systems in hospitals or industrial areas may interfere with the radio control system.	<ul style="list-style-type: none"> <li>• Change radio frequency.</li> <li>• Contact source of interference.</li> </ul>	
Does "SH" LED flash quickly?	Yes	The control unit has stored faulty values (e.g. due to a short power failure).	<ul style="list-style-type: none"> <li>• Reset the control unit.</li> <li>• Reprogram the operator.</li> <li>• If not possible, call customer service.</li> </ul>	

# Troubleshooting

Fault	Control	Yes/No	Possible cause	Remedy
Gate cannot be opened or closed with a connected key switch.	"Mains + Start 1/Start 2" LEDs on?	Yes	Cable connections interrupted?	Tighten terminal.
			Key switch defective.	Replace key switch.
			Permanent contact due to damaged wire insulation.	<ul style="list-style-type: none"> <li>• Check wiring.</li> <li>• Replace damaged cables.</li> </ul>
		No	Pulse transmitter (key switch) defective.	<ul style="list-style-type: none"> <li>• Check pulse generator.</li> <li>• Replace defective pulse generator.</li> </ul>
Gate remains stationary and reverses during opening and closing.	Is there an obstacle outside the range of motion?	No	Hinges stiff.	Lubricate hinges.
			Post or pillar has changed.	Align posts/pillars.
			Limit switch out of adjustment.	Adjust limit switch.
	Yes	Power deactivation tripped.	Remove obstacle.	
	Does the gate leaf vibrate when moving?	Yes	Gate leaf unstable.	Reinforce gate leaf.
Strong wind load?	Yes	Wind pressure too strong.	Open and close gate again.	
Gate remains stopped when opening.	Photo eye interrupted?	Yes	Obstacle in light beam.	Remove obstacle.
			Photo eye soiled.	Clean the photo eye.
		No	Connection for external consumers overloaded (terminals 9 + 10). Voltage drop when operator starts.	<ul style="list-style-type: none"> <li>• Observe maximum connection power.</li> <li>• Only connect suitable tools.</li> </ul>
Gate does not open or close completely.	Does the gate stop before the set end position?	No	Gate fittings not installed correctly.	Change the gate bracket.
		Yes	Limit switch incorrectly adjusted.	Adjust limit switch.
Closing sequence incorrect.			Operators incorrectly connected.	Connect operators as specified in the manual.
Operator does not learn the force values.			DIP switch 8 to OFF.	Set DIP switch 8 to ON.
Gate does not stop at an obstacle.			Gate in learning mode. DIP switch 8 to ON. Force tolerance too high.	<ul style="list-style-type: none"> <li>• After learning mode the power cut-off responds.</li> <li>• Set DIP switch 8 to OFF.</li> <li>• Reduce force tolerance.</li> </ul>
Operator stops at pillar.	Are the A/B dimensions correct?	No	A or B dimension not correct.	Adjust fastening of operator to post or pillar.
		Yes	Limit switch out of adjustment.	Adjust limit switch.
Gate moves unevenly.			A/B dimensions unequal.	Change installation dimension.
Walk-through gate does not open with transmitter.			Hand-held button not programmed.	Program button.
Operators do not start.	Does "SH" LED flash quickly?	Yes	Jumper was moved with programmed force values.	<ul style="list-style-type: none"> <li>• Place jumper in previous position.</li> <li>• Reset the control unit.</li> <li>• Replug jumpers.</li> <li>• Perform learning runs.</li> </ul>

\* If photo eye is uninterrupted, the operator can be moved in dead man mode with the "Open" and "Close" buttons. If an obstacle is detected, power deactivation also occurs in this operating mode.

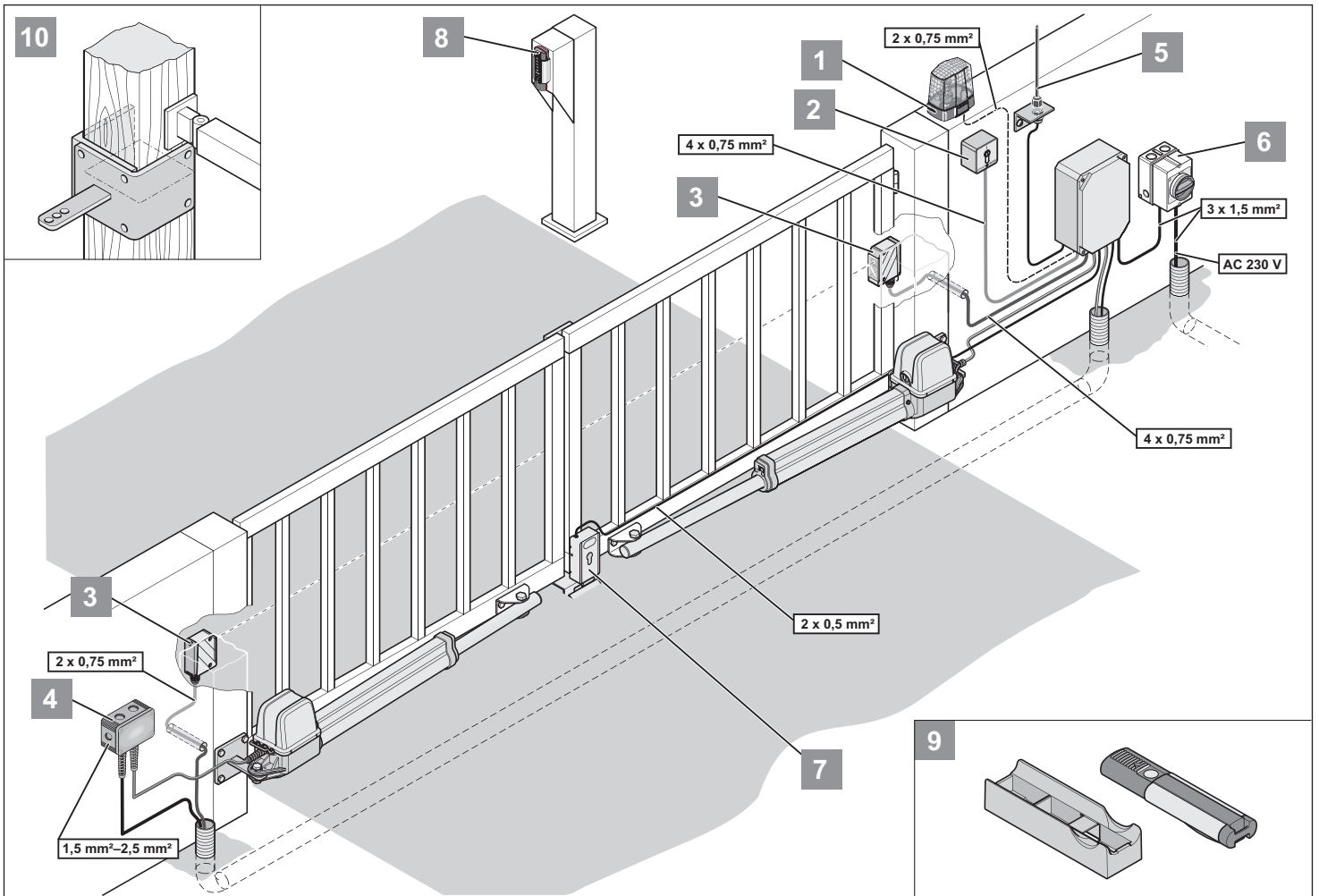
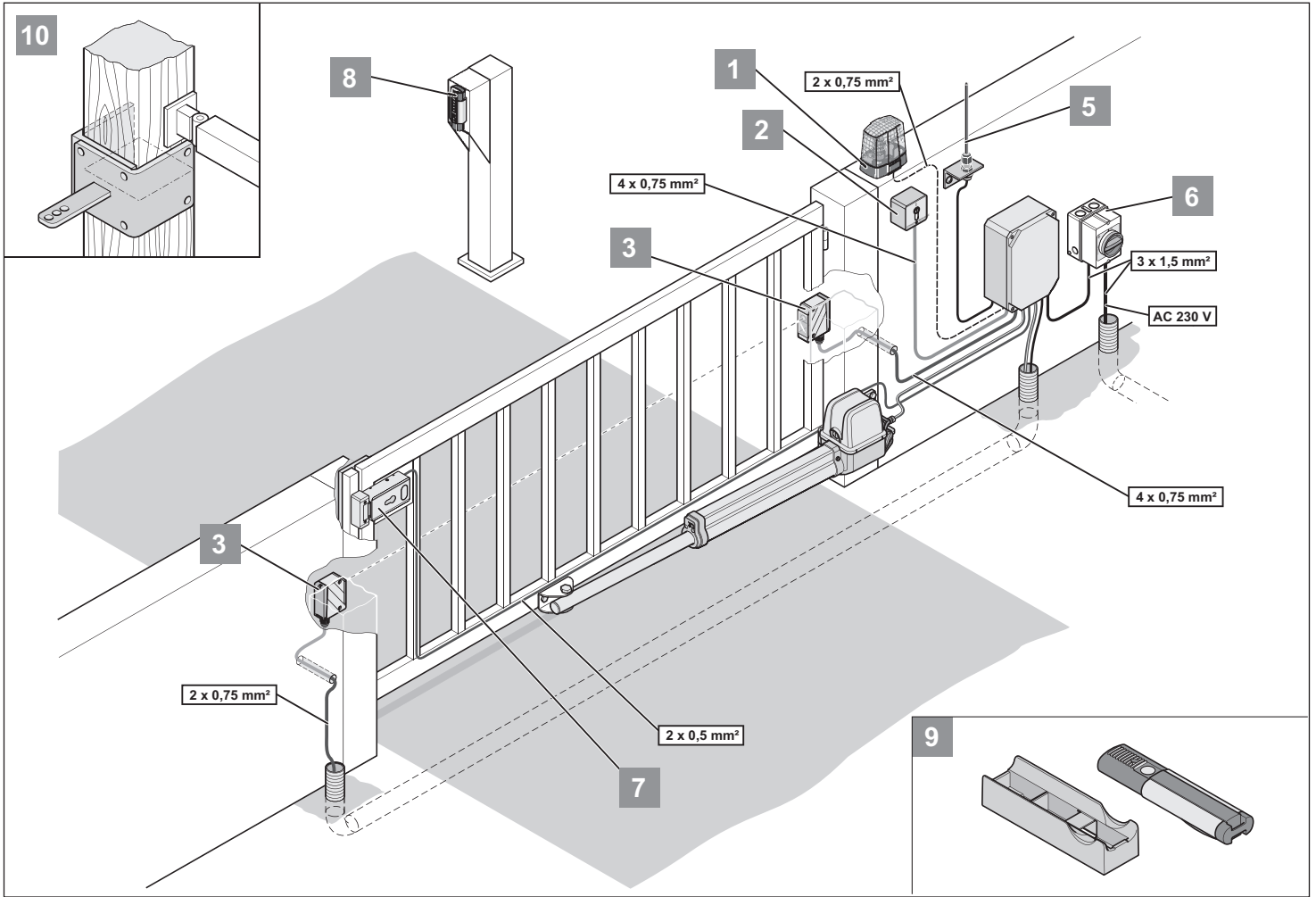
## Additional support during troubleshooting

When the troubleshooting tips are not successful, take the following measures:

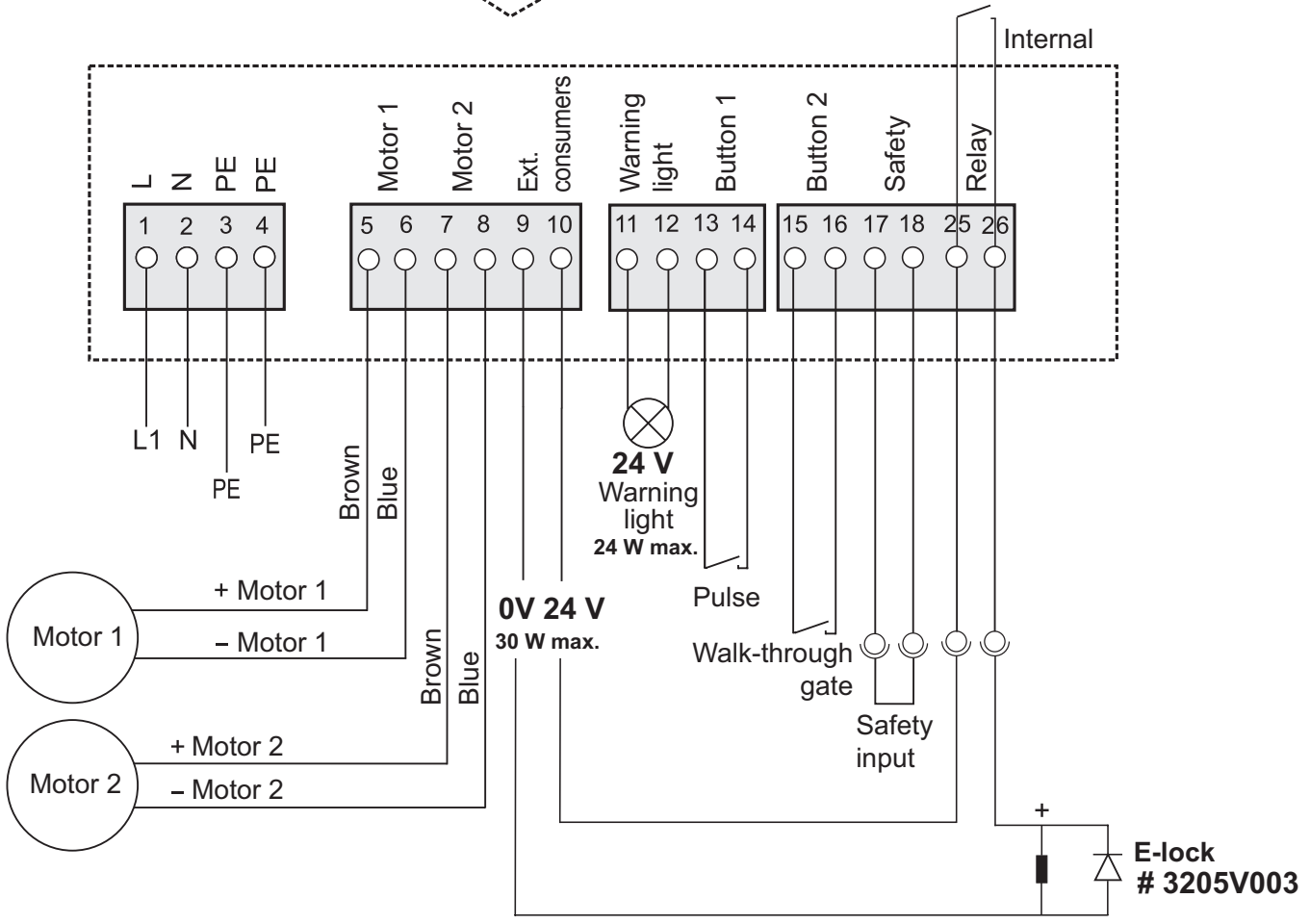
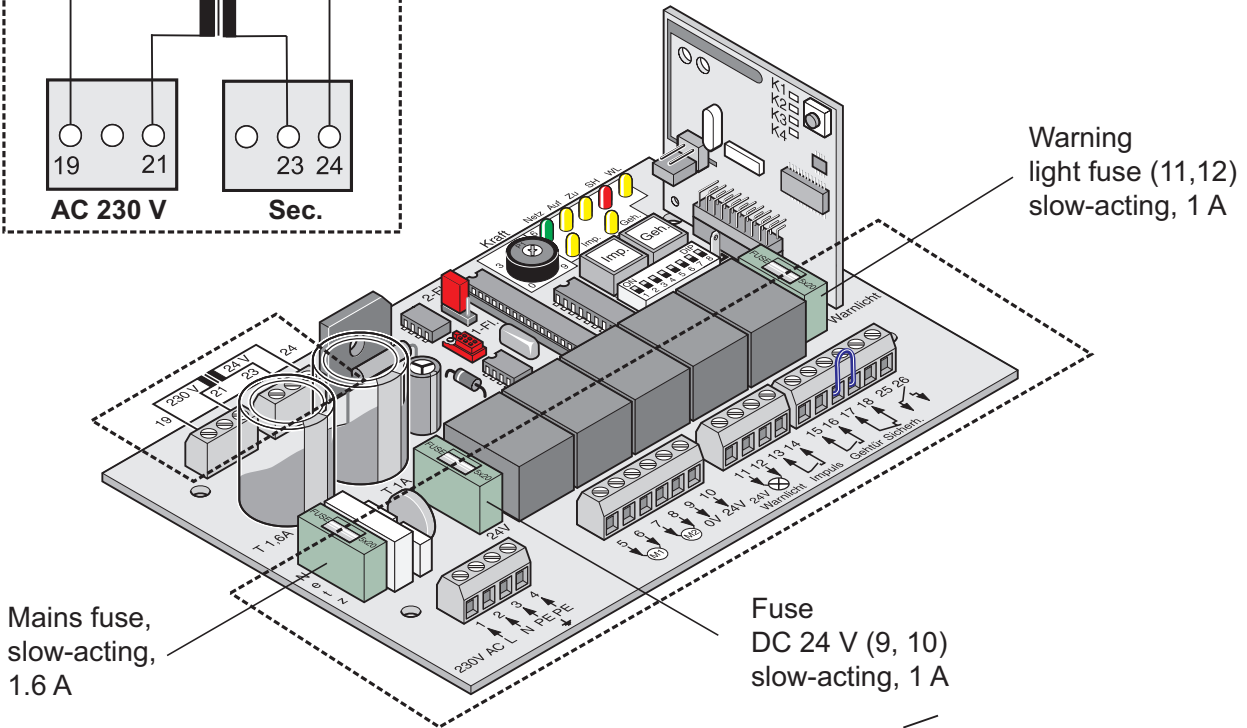
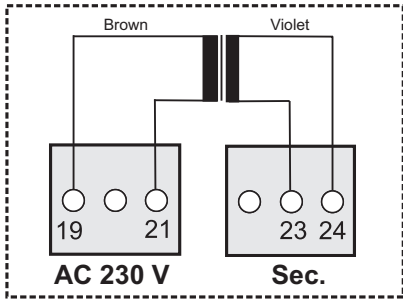
- Reset the control units (delete force values).
- Disconnect the connected accessories (e.g. photo eye) and use wire bridges again.
- Set all DIP switches to the factory setting.
- Turn potentiometer to the factory setting.
- If settings have been changed using TorMinal, perform the control unit reset with TorMinal.

Dealers offer additional support during troubleshooting and elimination of faults.

# Connection diagram




# Wiring diagram





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