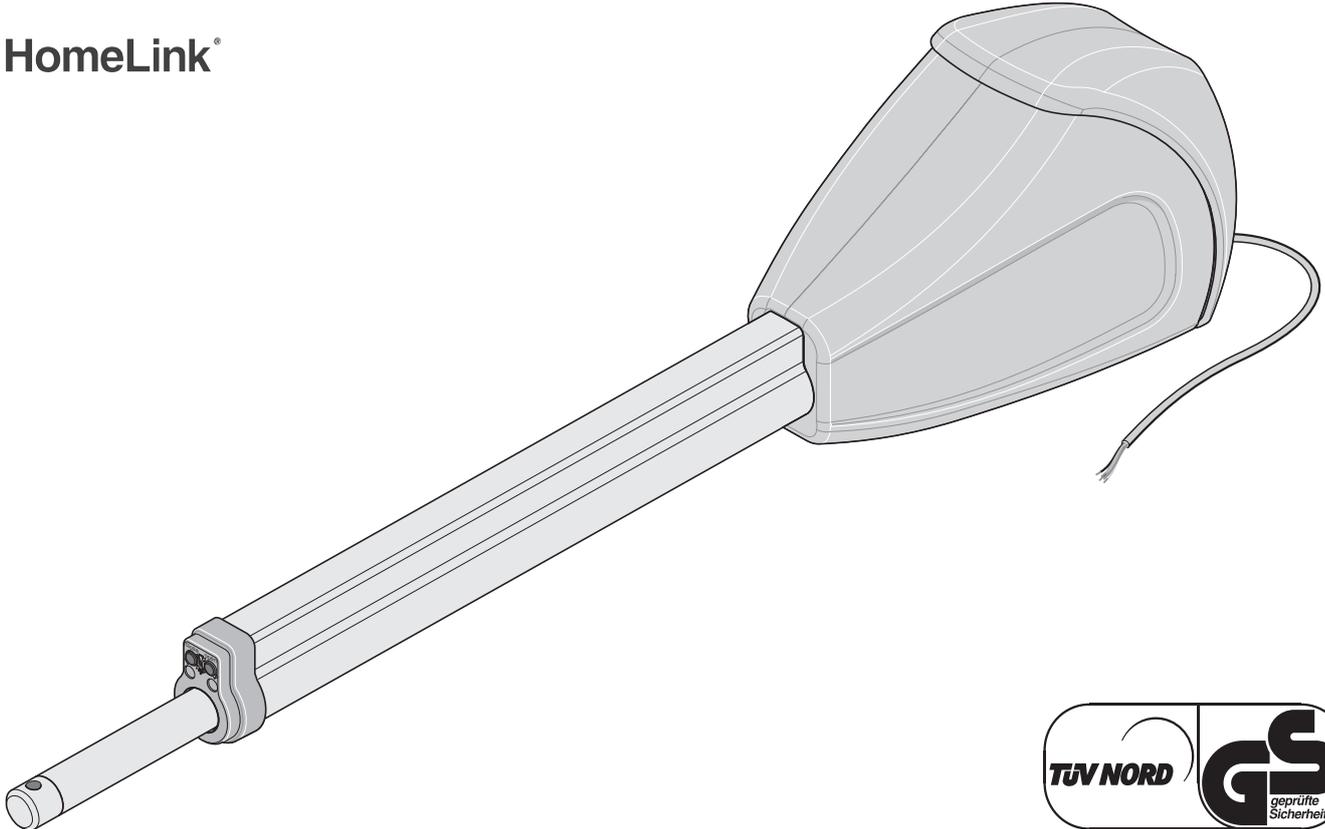


HomeLink®



twist XL



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General Information

Symbols



ATTENTION SYMBOL:

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



NOTE SYMBOL:

Information, useful advice!

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

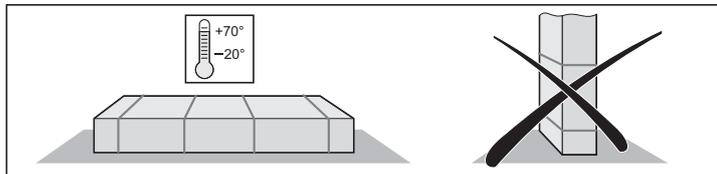
Safety instructions

General

- These installation and operating instructions must be read, understood and complied with by persons who install, use or perform maintenance on the drive.
- 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 for installation and operation, such as: EN 12453, EN 12604, EN 12605
- Before working on the gate or the drive always disconnect the control unit from the power supply and lock to prevent reactivation.
- There is a risk of persons being crushed or cut by the mechanism or sharp edges of the door.
- Never operate a damaged drive.
- After installation and commissioning all users must be instructed in the function and operation of the swing gate drive.
- Only use OEM (Original Equipment Manufacturer) spare parts, accessories and mounting material.

Storage

- The drive must be stored in an enclosed, dry area at a room temperature of -20 - +50.00 °C.
- The drive should be stored horizontally.



Operation

- Do not allow children or persons who have not been instructed to operate the gate control unit.
- Children, persons, animals or objects must not be within the range of motion of the gate during opening or closing.
- Actuate the gate wirelessly only if you have an unobstructed view.
- 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 when they are detected. See Care and maintenance.
- Drive through the gate only when it has opened completely.
- Set the force tolerance as low as possible.
- For automatic closing the main and auxiliary closing edges must be secured in accordance with the applicable directives and standards.

- Always remove the key to ensure that unauthorized persons cannot unlock the drive and open the gates.

Radio remote control

- The remote control must only be used for devices and systems in which radio interference will not endanger people, animals or objects or the risk is reduced by other safety devices.
- The user must be made aware that systems that pose an accident risk should only be remote controlled, if at all, if the user can actually see the door.
- The radio remote control may only be used if the door's movement can be watched and no persons or objects are within the range of movement.
- Store the hand-held transmitter so that unintended operation, e.g., by children or animals, is impossible.
- The operator of the radio system is not protected from faults due to other telecommunications equipment or devices (e.g. radio-controlled systems that are licensed to operate in the same frequency range). If substantial interference occurs, please contact your appropriate telecommunications office which has radio interference measuring equipment (radiolocation).
- Do not operate the hand-held transmitter in areas with sensitive radio communications or systems (e.g. airports, hospitals).

Type plate

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

Intended use



NOTE!

After installation of the drive the person responsible for the installation must complete an EC declaration of conformity for the gate system in accordance with the Machinery Directive 98/37/EC and apply the CE mark and a type plate. This is also required for private installations and also if the drive is retrofitted to a manually operated gate. This documentation and the Installation and Operating Instructions are retained by the operator.

- The drive is designed exclusively for opening and closing hinged gates (see EN 12433-1), referred to below simply as gate or gates. Any other use does not constitute intended use. The manufacturer accepts no liability resulting from use other than intended use. The user bears the sole responsibility for any risk involved. It also voids the warranty.
- Doors automated with an operator must comply with the valid standards and directives: e.g. EN 12453, EN 12604, EN 12605.
- Maintain the safety clearances between the gate and surroundings as specified in EN 12604.
- The drive must be in good technical condition, and it must be used for its intended purpose with awareness of the hazards as described by the installation and operating manual.
- Faults that may affect safety must be repaired without delay.
- The gate must have very little play in the hinges.
- The gates must be stable and resistant to twisting, i.e. they must not bend or twist when opening and closing.
- The DT-A-1 control unit and the twist XL drive must only be used together.
- The electric drive is designed exclusively for opening and closing one or two-wing swing gate installations.

General Information

Improper use

- Opening or closing flaps, e.g. for access to roofs or similar.

Combined operation

- Operation with 2x twist 200/twist 200 E or combined operation (1x twist XL + 1x twist 200/twist 200 E) is only permitted with the 3204V000 connecting cable set.

Permitted gate wing dimensions

- Weight: max. 500 kg
- Gate inclination: 0 %

Height	Fill (%)				
	1,2	2	3	4	5
5	100	100	50	25	20
4	100	100	65	35	25
3	100	100	85	45	35
2	100	100	100	70	50
1	100	100	100	100	100
Length (m)	1,2	2	3	4	5

* Valid with B-dimension 300 mm + A-dimension 100 mm

With lift gates

NOTE!
Risk of injury with lift gates that are not balanced!
 Lift gates must be perfectly balanced to ensure that they do not drop uncontrolled when unlocked.

i **NOTE!**
 The twist XL can and is only permitted to operate with a lift gate in combination with the 7634 gate bracket!

- Weight: max. 300 kg
- Length: max. 5 m
- Gate inclination: max. 10 %

Technical data

	1-wing	2-wing	Unit
General			
Runtime depending on A/B size	approx. 10 ... 40	approx. 15 ... 60	seconds
Protection type			
Drive	IP 44	IP 44	
Controller housing	IP 65	IP 65	
Rated voltage	220 ... 240	220 ... 240	AC/V
Rated frequency	50	50	Hz
Operating temperature range			
Drive	↘ -20 ↗ +70	↘ -20 ↗ +70	°C
Controller housing	↘ -20 ↗ +70	↘ -20 ↗ +70	°C
Lift (per drive)	450	450	mm
Max. tension and compress. force	4500	4500	N
Duty cycle:	S3 40%	S3 40%	
Stand by			
Rated current consumption	20	20	mA
Rated wattage	2,2	2,2	W

	1-wing	2-wing	Unit
--	--------	--------	------

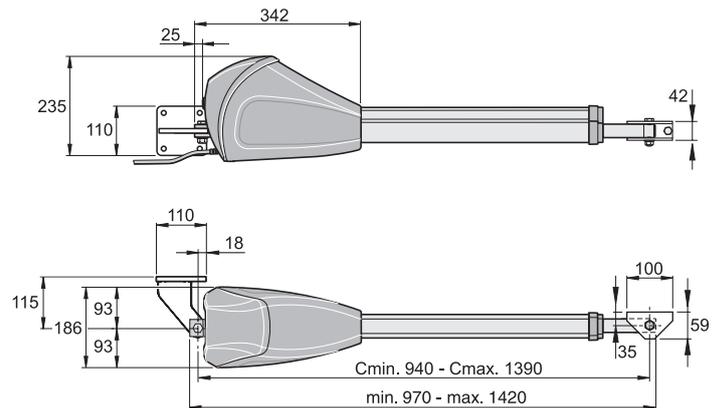
Rating

Motor voltage:	approx. 22	approx. 20	DC/V
Rated current consumption:	approx. 3	approx. 6	A
Rated power consumption:	approx. 118	approx. 234	W

Workplace-related emission value < 75 dBA – drive only

Dimensions

All dimensions are in millimeters.



Functional description

i **NOTE!**
 The end positions (gate OPEN + CLOSE) are set by internal limit switches in the drive and detected during operation.

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

Closing the gate

i **NOTE!**
 A mechanical end stop is essential when the gate operator is fully extended. An electric lock can be installed as an additional lock.

The gate wing does not require a lock, because the drive is self-locking (retained by the control unit). The gate cannot be pushed open manually without damaging the drive or the fittings.

Wireless actuation

The drive can be actuated with the included hand-held transmitter once the transmitter has been set to the radio receiver.

Safety devices

The control system has an automatic force monitor. If the drive requires more force for opening or closing than the value saved during the learning run, the drive stops and reverses (gate "CLOSE" direction) or remains stationary (gate "OPEN" direction).

Various safety devices can be connected to the control unit (see functions and connections).

e.g.

- Photo eye
- Safety contact strip with additional evaluation unit

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 21 - 27
73230 Kirchheim unter Teck
Germany

hereby declares that the controller

twist XL

as of the identification twist XL 01/10 complies with the Machinery Directive 2006/42/EC and is specified for installation in a door system.

- The following fundamental safety requirements have been applied and observed in accordance with Appendix I:
 - General principles No. 1
 - 1.2 Safety and reliability of control units
 - Safety input I terminals 33 + 34: Cat 2 / PL C
 - Internal force limitation: Cat 2 / PL C
 - Safety categories in accordance with EN 13849 - 1:2008
 - Compliant with the regulations of the EC Building Products Guideline 89/106/EC.
For the operating forces part, the respective initial testing has been carried out in consultation with recognized inspecting authorities. In doing so, the harmonized standards EN 13241-1, EN 12453 and EN 12445 have been applied. For the tested combinations, refer to the "Reference list" table in the Internet under www.sommer.eu.
 - Compliant with the Low Voltage Directive 2006/95/EC.
 - Compliant with the Directive on Electromagnetic Compatibility 2004/108/EC.
 - The technical documentation was drawn up in accordance with Appendix VII B.

The product may only be put into operation after it has been established that the door system complies with the regulations of the Machinery Directive.



A handwritten signature in blue ink, which appears to read 'Jochen Lude', is written over a horizontal line.

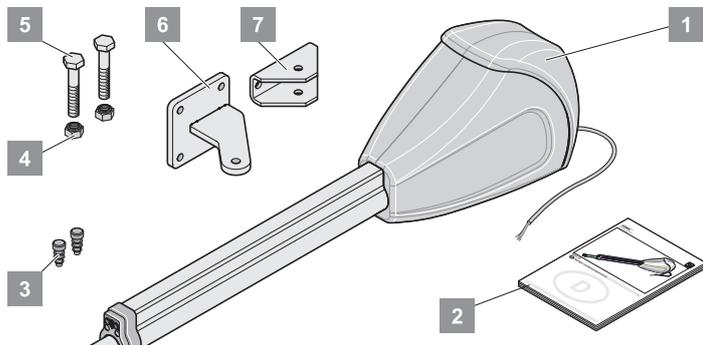
Kirchheim, 12/29/2009

Jochen Lude
Responsible for documents

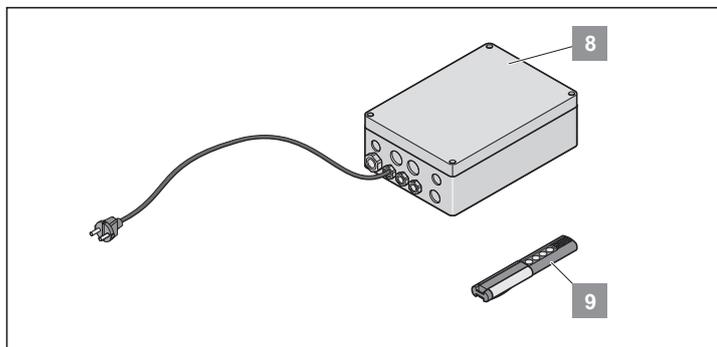
General Information

Scope of supply

- Check the package before installation to avoid unnecessary work and expense if a part is missing.
- The actual scope of supply may vary depending on the design of the drive.



Drive set	1-wing	2-wing	
Weight (drive only)	12,5	2 x 12,5	kg
Package (L x W x H)	982 x 243 x 202		mm
1. Drive with cable	1 x	2 x	
2. Installation and Operating Instructions	1 x	1 x	
3. Plug	2 x	4 x	
4. Locknut M12	2 x	4 x	
5. Hex bolt M12 x 70	2 x	4 x	
6. Fittings for post or pillar	1 x	2 x	
7. Fittings for gate wing	1 x	2 x	



Controller set	1-wing	2-wing	
Weight (control unit only)	2,8	2,8	kg
Package (L x W x H)	120 x 245 x 285		mm
8. Control unit in housing (incl. radio receiver, transformer and power plug)	1 x	1 x	
9. Hand-held transmitter with battery	1 x	1 x	

EU Declaration of Conformity

SOMMER Antriebs- und Funktechnik GmbH hereby declares that the twist XL gate drive and the SOMMER Antriebs- und Funktechnik GmbH hand-held transmitter conform to the basic requirements and the other applicable regulations of Directive 1999/5/EC.

The Declaration of Conformity is available at the following web site:
www.sommer.eu/mrl

Installation preparations

Safety instructions



NOTE!

The control unit is supplied with a mains cable for use in installing the drives only. On completion of installation disconnect the mains cable and replace it with permanent wiring. The mains cable is not approved for continuous or outdoor operation.

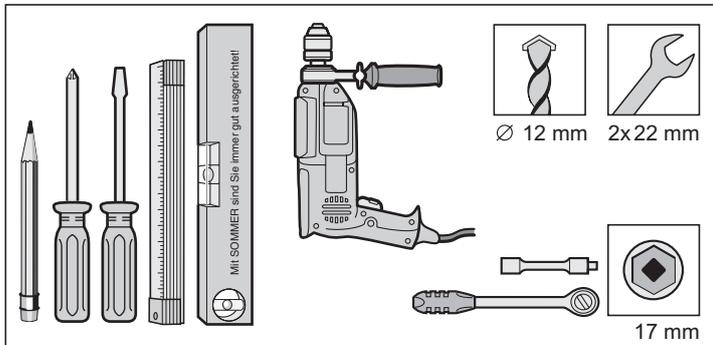


NOTE! DANGER OF DESTRUCTION BY VOLTAGE FLUCTUATIONS.

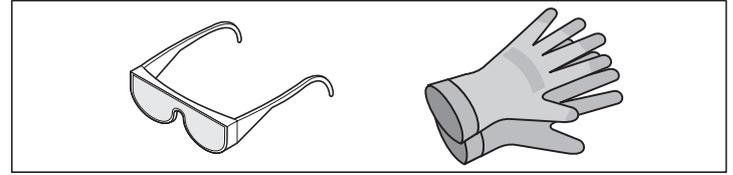
Voltage fluctuations e.g.: caused by welders may destroy the control unit.
Do not connect the control unit to the mains until all installation work is completed.

- Install all wiring for the drive in ducts approved for the purpose (e.g. for underground installation).
- The control unit must be connected to the power supply by an electrician only.
- Installation must be in accordance with the installation and operating manual.
- Remove or disable locking devices (electric locks, bars etc.) before installing the drive.
- Ensure that the drive is securely fastened to posts, pillars and gate wing to withstand forces generated when opening and closing the gate.
- Cover or remove the drive when welding fittings to posts or gate wing to prevent damage from sparks or welding beads.
- If a button is used for opening or closing, it must be installed at a height of at least 1.6 m to prevent operation by children.
- Use only approved fasteners (e.g. wall plugs or anchor pins 12 x 100) in public areas.

Tools required

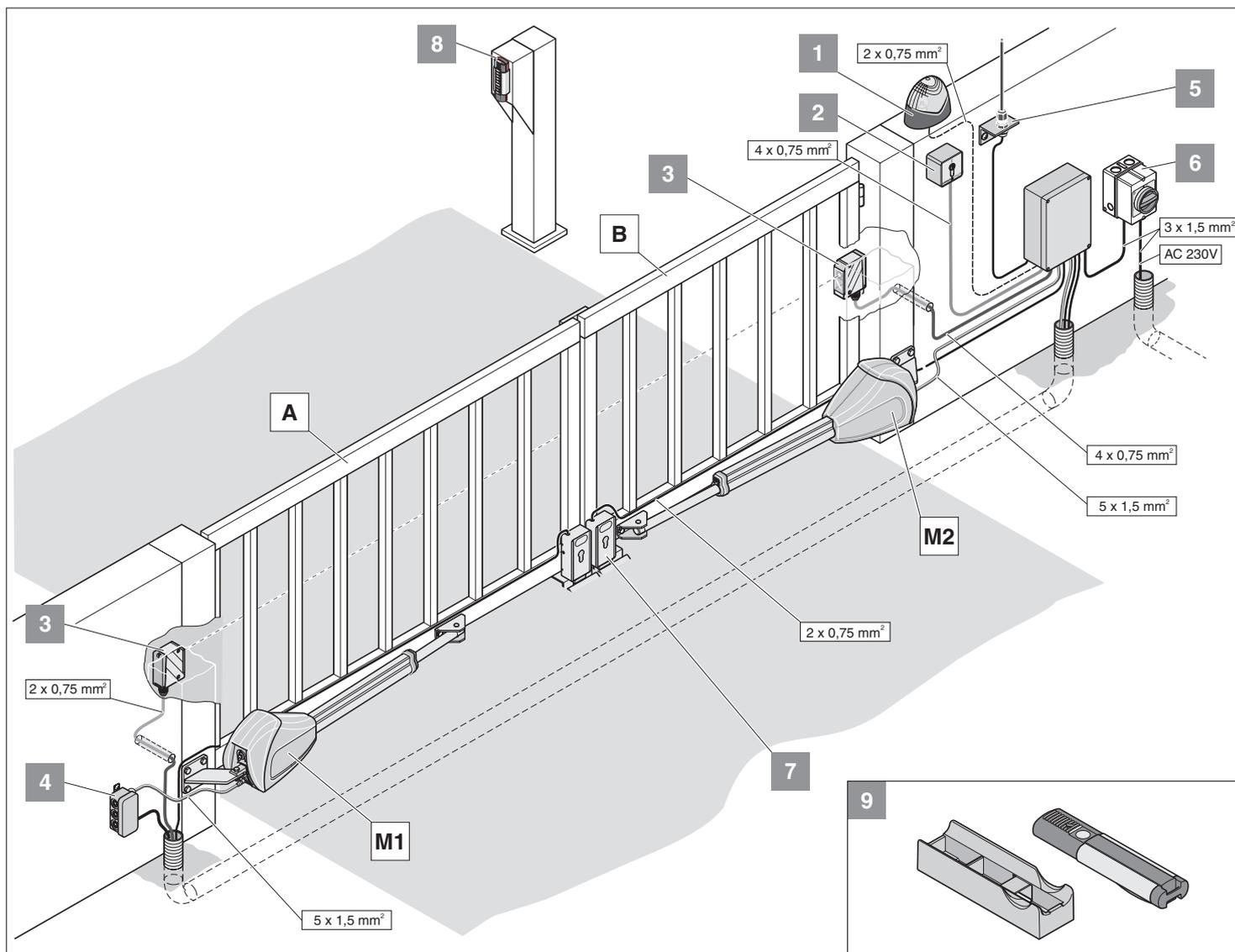


Personal safety equipment



- Safety glasses (for drilling)
- Work gloves

Installation



Tips for installation

- Define the installation location together with the operator.
- Do not install the housing where it could be seen from the street, otherwise the housing and control unit may be damaged by vandalism.
- If the gate wings are larger than 2.5 m or there are two wings, attach a center stop at gate "CLOSED".



NOTE!

Additional pulse transmitters are: hand-held transmitters, Telecody, wireless indoor switches and key switches. In the case of the hand-held transmitter, Telecody or the wireless indoor switches a connecting line to the drive is not required (contact your dealer).

1.	Warning light DC 24 V
2.	Key switch (1 or 2 contact)
3.	Photo eye
4.	Connector wiring set 12 m
5.	rod antenna (with cable)
6.	Main switch (lockable)
7.	DC 24 V electric lock. An electric lock can be mounted separately on each gate wing.
8.	Telecody
9.	Car/wall holder for hand-held transmitter

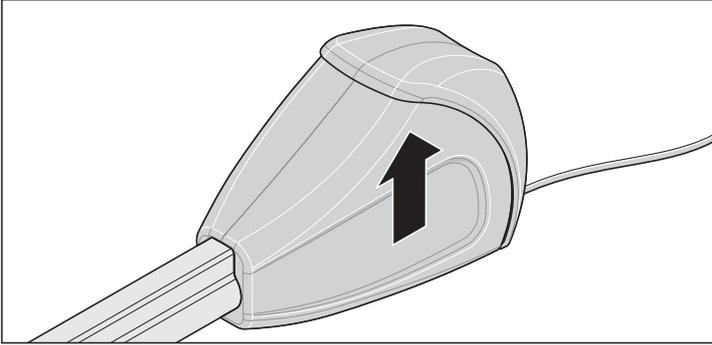
Terms

A.	Gate wing 1 has the stop bar outside if the gate opens inwards.
B.	Gate wing 2 or walk-through gate. This gate wing 1 always opens first in a 2-wing gate system. This gate wing can also be opened alone with the Start-2 button, e.g. to allow a person to enter, therefore it is referred to as a walk-through gate.
M1	Motor 1 is always mounted on gate wing 1.
M2	Motor 2 is always mounted on gate wing 2 or the walk-through gate.

Installation

Drive installation position

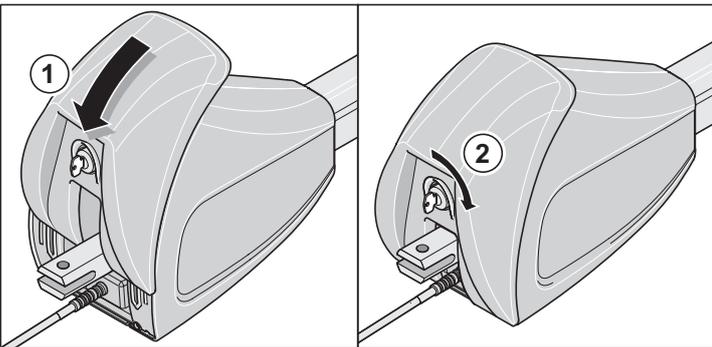
Install drive horizontally. Note installation position of motor; it must always point upright.



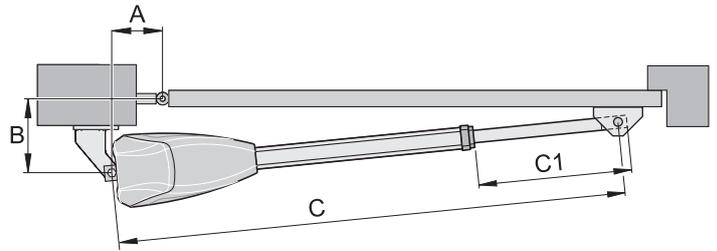
Preparing for setting the end positions

- i** **NOTE!**
All information on work procedures and settings is always based on installation of drives inside on the gate and the gates opening inwards.
- i** **NOTE!**
Never adjust end switches with a power drill or a similar tool. This may pull the end switches out of their brackets.
- i** **NOTE!**
Never connect drive to 230V. This will destroy the motor immediately.
- i** **NOTE**
Before installation set the limit switches for "gate OPEN" and "gate CLOSE". The gate wing must not come into contact with the housing, or it may be damaged.

After the first command the drive must traverse in the gate "OPEN" direction. If the drive traverses to gate "CLOSE", reverse the drive connector cable at the control unit.



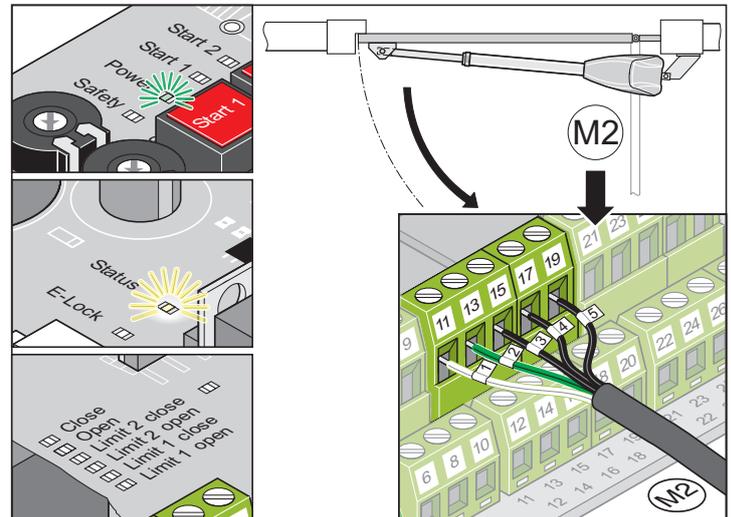
1. Unlock (1) and lock (2) drive.



2. Unscrew gate operator to dimension $C1 = 270$ mm.
3. Measure A and B dimension, take dimension C1 and C2 from the A/B dimension table.

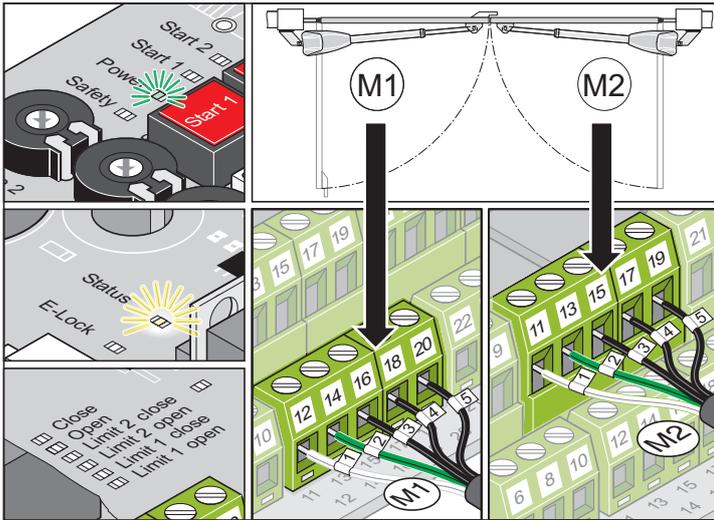
! IMPORTANT!
Connect the drives only with the control unit disconnected from the power and locked to prevent reactivation. The control unit only detects the connected drives (type of end switches) correctly.

Gate 1 wing



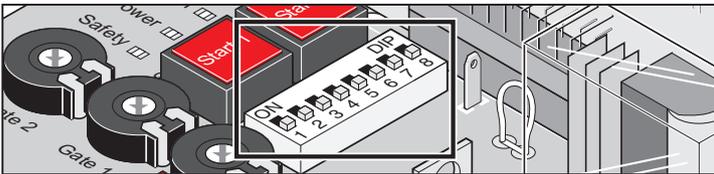
Installation

Gate 2 wing

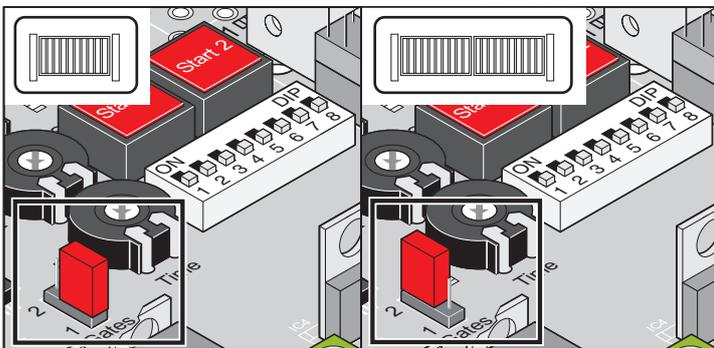


4. Connecting drive to control unit

- First connect and adjust the drive for the gate with stop (M1) and then the drive for the walk-through gate (M2).



5. Set all DIP switches to "OFF".



6. Set jumpers: 1 or 2-wing gate system

7. Connect control unit to the power supply.

- ⇒ "POWER" LED lights and "Status" flashes.

Installation

A/B dimension table (reference values)



NOTE!

Before installation define the A/B dimensions. Without them the drive cannot be correctly installed and operated. Select dimensions so the desired opening angle is reached.

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

- wind speed 25 m/s,
- gate height 3 m,

A \ W	100	120	140	160	180	200	220	Max. gate wing length without E-lock
160	92°							3.5 m
180	92°	98°	104°	109°				4.0 m
200	92°	97°	103°	107°	112°			4.0 m
220	92°	97°	102°	106°	107°	106°	99°	4.0 m
240	92°	96°	101°	105°	98°	98°		4.5 m
260	91°	96°	100°					4.5 m
280	91°	95°						4.5 m
300	91°	95°						5.0 m

Installation range for lift gates

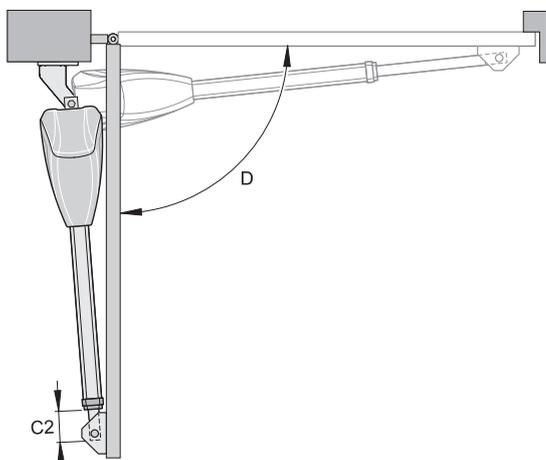
Attention: with corresponding fittings only, max. wing weight 300 kg. Max. lift 10%

- gate filling 35% evenly distributed over the entire gate wing,
- no E-lock

If these reference values are not suitable for the planned gate installation, consult your dealer. The dimensions (reference values) can be customized as required.

- The larger the B-dimension the more sensitive the power cut-off.
- Note different post or pillar dimensions.

Set "AUF/open" gate end position

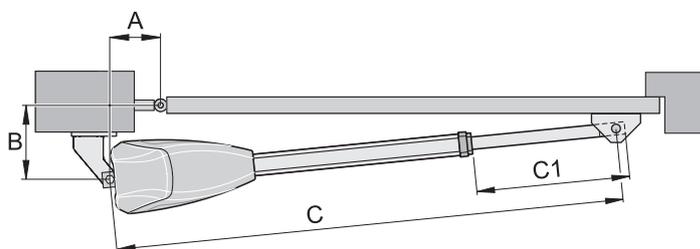


NOTE!

Gate "OPEN" end position preset, approx. C2 = 70 mm.

1. Measure A and B dimension and compare with preset values from A/B dimension table.
2. Install the post fitting on post in accordance with the selected A/B dimensions.
3. Move the gate to the desired OPEN position. Note the maximum possible opening angle D from the A/B dimension table.
4. Remove drive from package and attach to post fitting. The drive at maximum retraction as delivered.
5. Fasten drive temporarily to gate with gate fitting, e.g. with a clamp.
6. Set gate "CLOSE" end position (see "2. Setting the end position for gate "CLOSE", page 10).

Set "ZU/close" gate end position



NOTE!

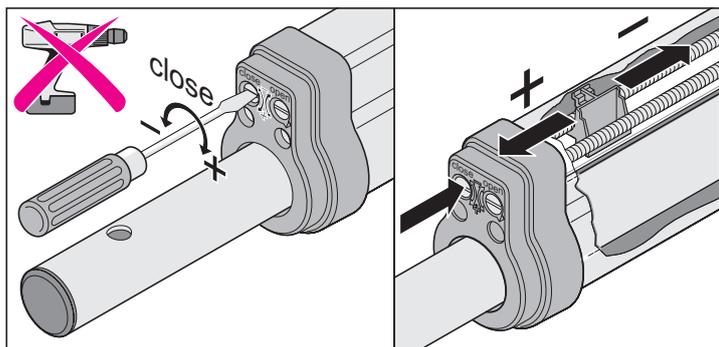
Gate "ZU/close" end position preset, approx. C1 = 450 mm.

1. Close the gate manually. Unlock the drive to allow this (see "Unlocking the drive").
2. Measure dimension C1 on drive and check that C1 is no greater than C1max = 430 mm.
3. Set dimension C1 (see "Setting the end switches").
4. Connect the control unit to the preinstalled plug and connect the drive (see "Connecting drive to control unit").

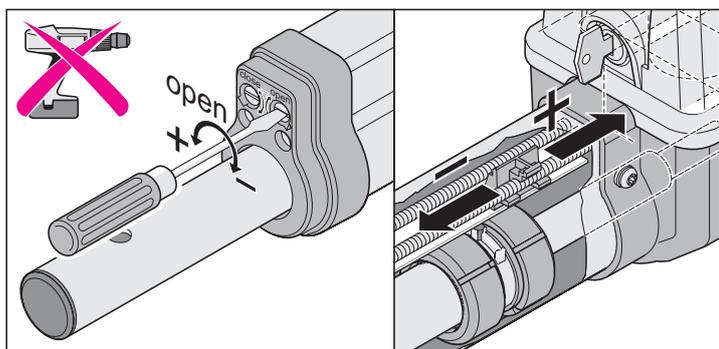
Installation

Setting the limit switches

Gate CLOSE



Gate OPEN

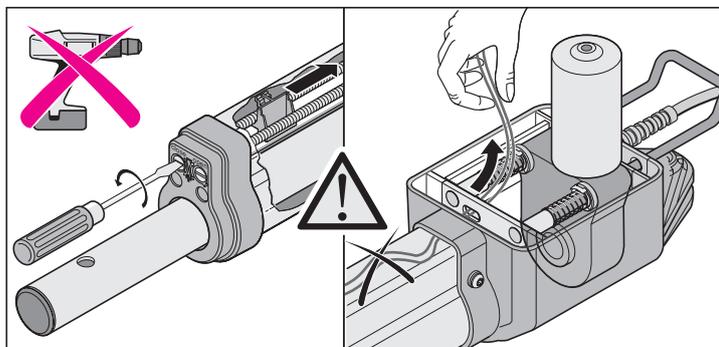


Instructions for setting the end positions

i **NOTE!**
Never adjust end switches with a battery-powered screwdriver or a similar tool. This may destroy the end switches.

i **NOTE!**
Never connect drive to 230V. This will destroy the motor immediately.

i **Note!**
Before installation set the limit switches for "gate OPEN" and "gate CLOSE". The gate wing must not come into contact with the housing, or it may be damaged.



! **NOTE!**
Always reposition the limit switch connector cable after adjustment to prevent it from being jammed in the gate operator.

Installation of fittings

i **NOTE!**
The strength of the included fittings is designed for the drive (twist XL). If other fittings are used, the warranty will not apply.

i **NOTE!**
If the B dimension is smaller than the smallest B dimension in the table, install a spacer plate under the post fitting to ensure that the B dimension is at least 160 mm.

- Cover or remove the drive when welding fittings to posts or gate wing to prevent damage from sparks or welding beads.
- With thick brick or concrete pillars attach the fittings so the wall plugs cannot come loose during operation. Adhesive-bonded anchors, with which a threaded pin is cemented to the brickwork without tension, are more suitable than steel and plastic expanding plugs.
- Clearances between the gate wing and post or gate wing and drive must be maintained in accordance with the applicable standards.

Steel posts

Note the thickness of the post.
The fitting can be welded or bolted directly to steel posts.

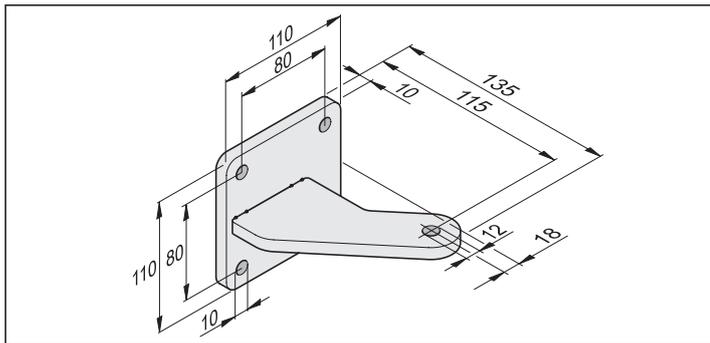
Brick or concrete pillars

When attaching the fitting to the brick pillar, ensure that the holes are not too close to the edge of the pillar. The distance may vary depending on the type of plug. The plug manufacturer will provide recommended distances.

i **Note**
After installation of fittings do not do any more welding or grinding. Residues of such work will result in rapid corrosion of fittings.

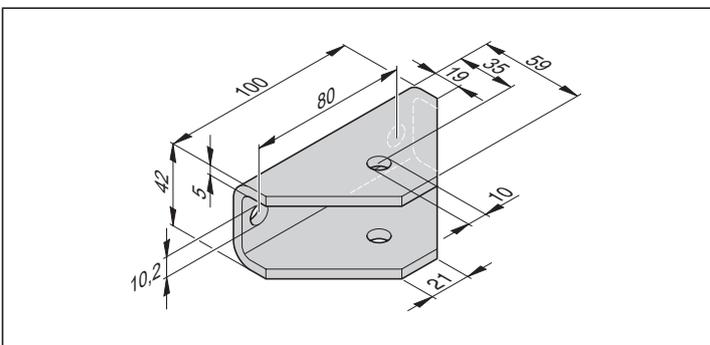
Installation

Post or pillar fitting



1. Height from ground to bottom of fitting min. 50 mm. This may be restricted by the fastening options of the drive to the gate wing.
2. Tighten the nut on the bolt so the drive can still be easily rotated.

Gate wing fitting



1. Close door
2. Mount fitting on the gate operator of the drive, insert bolt from above.
3. Clamp the fitting to the gate wing and check the end position setting of the limit switch with a test movement.
4. Check that the drive is horizontal in three positions:
 - Gate "CLOSE"
 - Gate "OPEN"
 - Gate opened 45°
5. Position of fitting OK, fix fitting to gate wing.
6. Tighten the nut on the bolt so the drive can still be easily rotated.

Installing the control unit



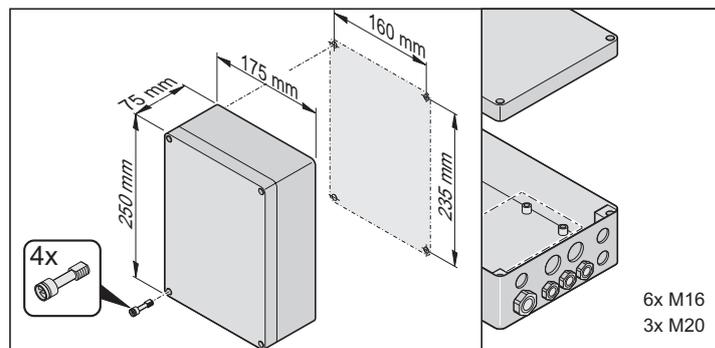
NOTE!

The control unit is supplied with a mains cable for use in installing the drives only. On completion of installation disconnect the mains cable and replace it with permanent wiring. The mains cable is not approved for continuous or outdoor operation.



NOTE!

Implement the mains connection according to EN 12453 (all-pole line disconnecter).



ATTENTION DANGER OF DESTRUCTION BY WATER

Penetration of water may destroy the control unit. Use the fixture points provided for screwing on the housing. Do not drill through the rear wall of the housing. The housing is not sealed, water will penetrate and the control unit will be destroyed.

- Disconnect the power to the control unit before working on it.
- Dry any moisture that enters the housing with a fan.
- The control unit must be connected to the power supply by an electrician only.
- Install the control unit housing in a perpendicular position with the wire feed at the bottom without strain to prevent penetration of water and the cover is watertight.
- The wire feeds are approved only for wires 1.5 mm² to 2.5 mm² in cross section.
- Use the fixture points provided for screwing on the housing. Do not drill through the rear wall of the housing. The housing will leak.

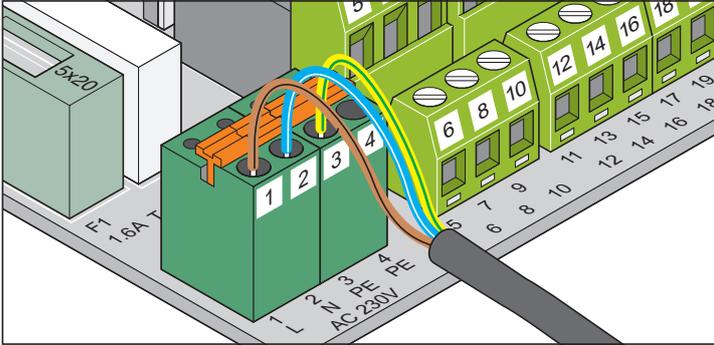
Installation

Connection to mains power (AC 230 V)



NOTE!

Approved wire cross sections for all terminals:
0,5 mm² - 2.0 mm².



Terminal	Description	Description
1	L	Mains supply line AC 230 V
2	N	Neutral wire
3 + 4	PE	Protective ground



NOTE!

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

Connecting drive to control unit



ATTENTION

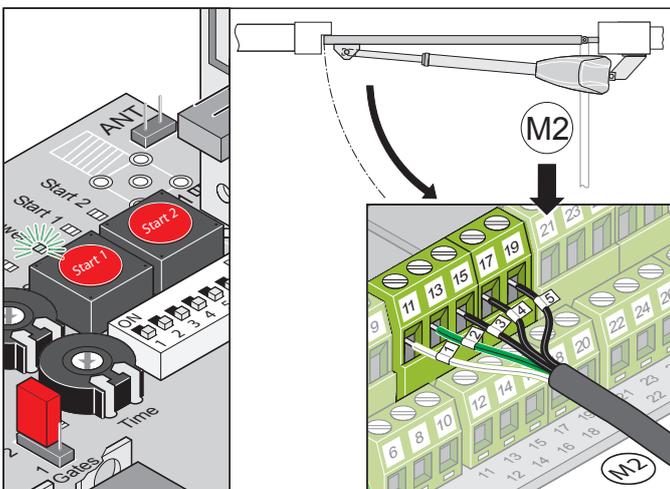
Connect the drives only with the control unit disconnected from the power and locked to prevent reactivation. The control unit detects only the connected drives correctly (type of limit switch).



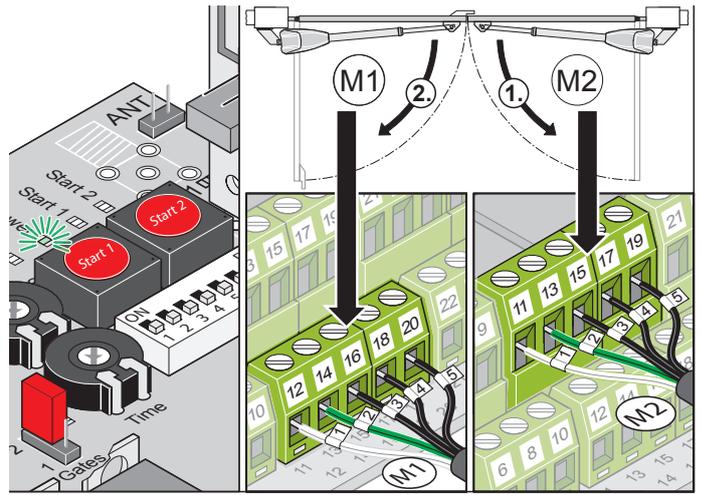
NOTE!

Never connect drive directly to 230 V. This will destroy the motor immediately.

Gate 1 wing

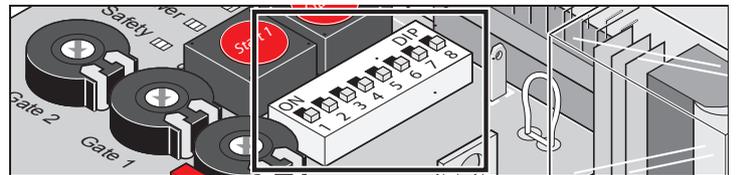


Gate 2 wing

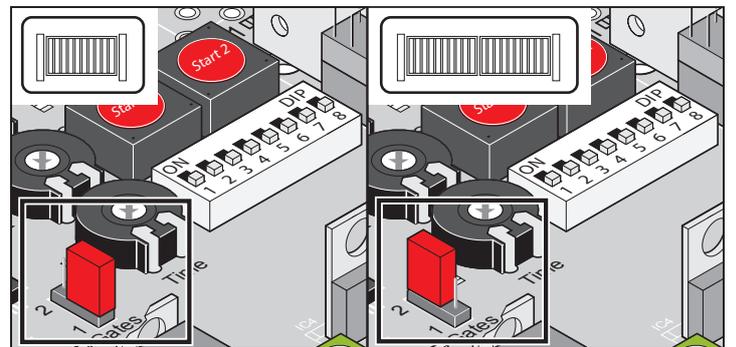


1. Connecting drive to control unit

- First connect and adjust the drive for the gate with stop (M1) and then the drive for the walk-through gate (M2).



2. Set all DIP switches to "OFF".



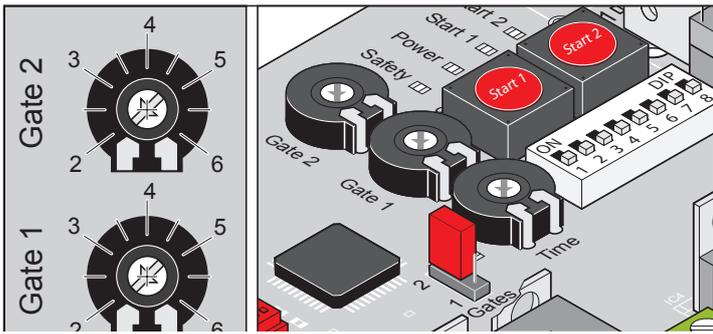
3. Set jumpers: 1 or 2-wing gate system

4. Connect control unit to the power supply.

- ⇒ "POWER" LED lights, "Status" flashes and all other LEDs are off.
- ⇒ LEDs for the end switches (limit 1 + 2 open, limit 1 + 2 close) light or are off depending on the position (retracted or extended) of the gate operator.

Installation

Adjusting the gate wing length



The length of the gate wing is set at the control unit with the "Gate 1 (M1) + Gate 2 (M2)" potentiometers. The speed of movement and the force tolerance for the separate wings of the gate installation are determined based on this setting.

- Setting 2 = gate wing length approx. 2 m (small gate -> high speed -> lower force tolerance)
- Setting 5 = gate wing length approx. 5 m (large gate -> low speed -> greater force tolerance)
- Setting 6 = for compensation of influences by A and B-dimensions.

1-wing gate system:

1. Measuring gate wing length Gate 2 (M2) (Pos. B diagram page 5)
2. Set Gate 2 (M2) potentiometer accordingly.

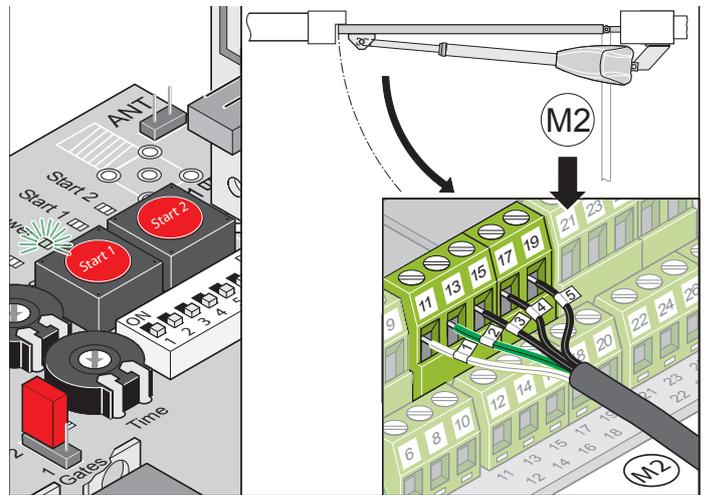
2-wing gate system:

1. Measuring gate wing length Gate 1 (M1) (Pos. B diagram page 5)
2. Set Gate 1 (M1) potentiometer accordingly.
3. Measuring gate wing length Gate 2 (M2) (Pos. B diagram page 5)
4. Set Gate 2 (M2) potentiometer accordingly.

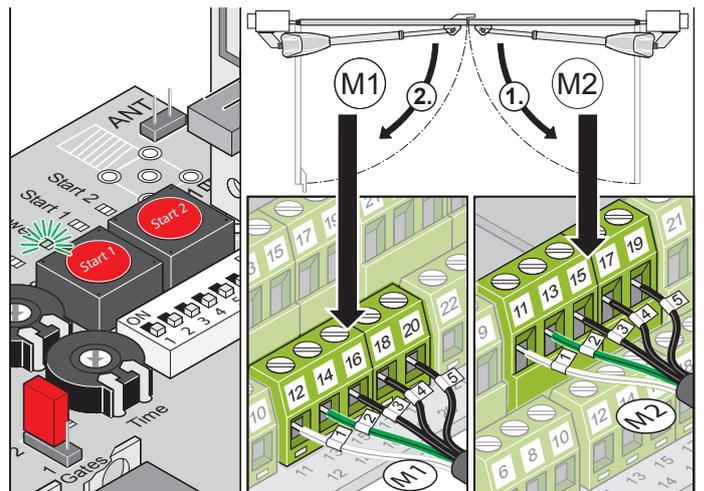
Checking the direction of running

- After the first command the drive must traverse in the gate "OPEN" direction. If the drive traverses to gate "CLOSE", reverse the drive connector cable at the control unit.

Gate 1 wing



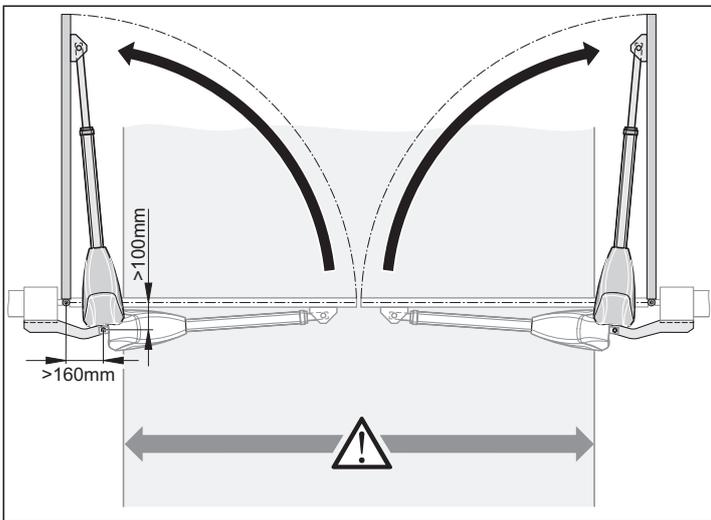
Gate 2 wing



Installation

Terminal -> wire with no.	Description	Description
12 -> 1	Motor	2 wing: Connection for motor-1: The motor must be on the gate wing that opens second or on which there is an outside stop bar.
14 -> 2	Motor	
16 -> 3	End switch "gate CLOSED"	
18 -> 4	End switch "gate OPEN"	
20 -> 5	Ground end switch	
11 -> 1	Motor	1 wing: Connection for the motor
13 -> 2	Motor	2 wing: Connection for motor-2: The motor must be on the gate wing that opens first or on which there is no outside stop bar.
15 -> 3	End switch "gate CLOSED"	
17 -> 4	End switch "gate OPEN"	
19 -> 5	Ground end switch	

Opening gate outwards

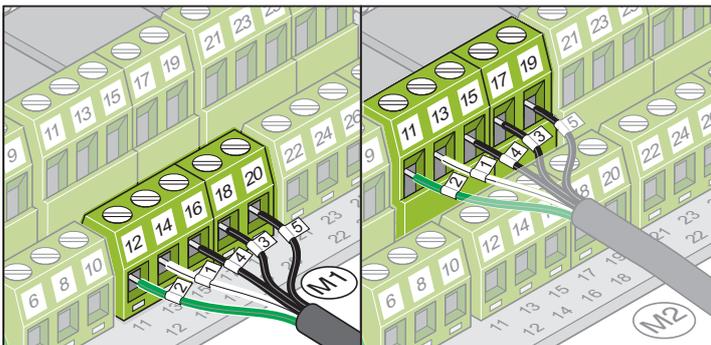


ATTENTION

Depending on the actual installation the passage width will be reduced by about 250 mm on each side, because the drives project into the passage. The A/B dimensions must each be at least 100/160 mm.

Prepare the post or pillar fitting on site. It must always be fitted to the actual dimensions of the post or pillar.

Connecting drive to control unit



Initial operation

General information



NOTE!

After installation of the drive the person responsible for the installation must complete an EC declaration of conformity for the gate system in accordance with the Machinery Directive 98/37/EC and apply the CE mark and a type plate. This is also required for private installations and also if the drive is retrofitted to a manually operated gate. This documentation and the Installation and Operating Instructions are retained by the operator.



NOTE!

The adjustment of the force tolerance is safety-relevant and must be performed by qualified personnel with 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.



NOTE!

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

- "Status" LED and a connected warning light (accessory) flash during the learning procedure 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.

Preparations for continuous operation



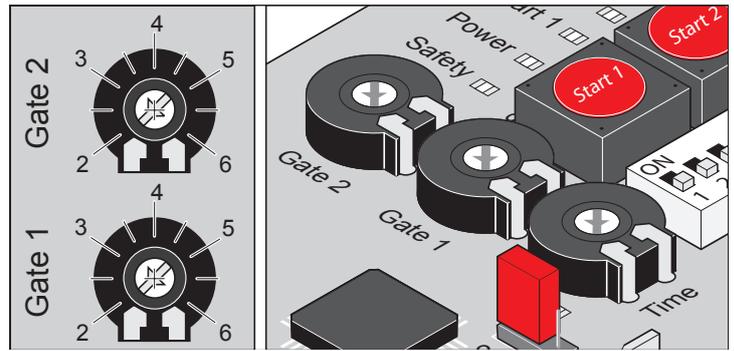
ATTENTION! DANGER OF SHORT-CIRCUIT!

Before switching the DIP switches, disconnect the power supply to the control unit.

1. Selection 1 or 2-wing, desired components connected and settings made, see additional functions and connections.
2. Mains power connected and voltage (AC 230 V) at control unit ("POWER" LED on).
3. Fittings bolts tightened, drives can be moved easily.
4. Close gate.
5. Set emergency unlock and lock with padlock.

Adjusting the gate wing length

- Maximum force = learnt force + force tolerance (this is set at the "Gate 1 (M1) / Gate 2 (M2)" potentiometer depending on the gate wing length).
- Changes to the setting after configuring the drive are not taken into account. First reset the control unit, reconfigure the potentiometer and repeat the learning procedure.



The length of the gate wing is set at the control unit with the "Gate 1 (M1) + Gate 2 (M2)" potentiometers. The speed of movement and the force tolerance for the separate wings of the gate installation are determined based this setting.

- Setting 2 = gate wing length approx. 2 m (small gate -> high speed -> lower force tolerance)
- Setting 5 = gate wing length approx. 5 m (large gate -> low speed -> greater force tolerance)
- Setting 6 = for compensation of influences by A and B-dimensions.

Enabling continuous operation

"Status" LED flashes until the force values, runtimes and closing delays are learned and saved.

2-wing gate system!

Gate wing 1 (M1 gate with stop) closes first, then gate wing 2 (M2 walk-through gate), this prevents an incorrect closing sequence for gates with different runtimes.

- Check the setting of the limit switches. Open and close gate. If the drive switches off correctly at both end positions, run learning procedure.

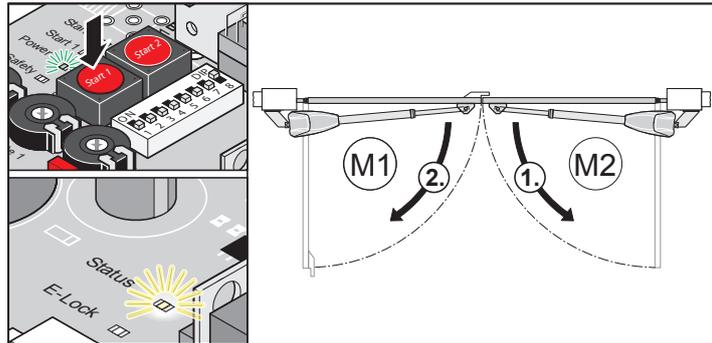
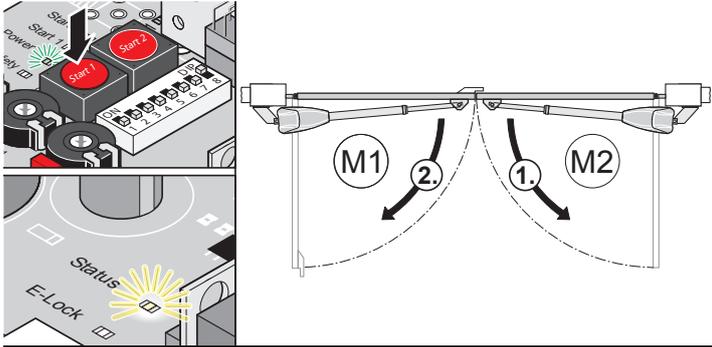


NOTE!

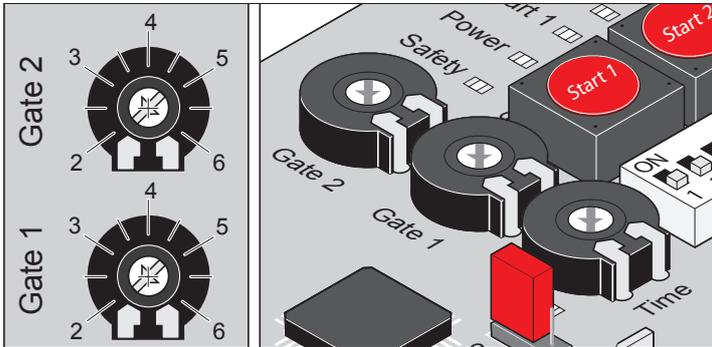
Set DIP switch 8 to "ON" and leave in this position.

Initial operation

Learn drive (Run learning procedure at least twice)



1. Press (Start 1) button, drive traverse to gate "OPEN" end position.
⇒ "POWER" LED lights and "Status" LED flashes.



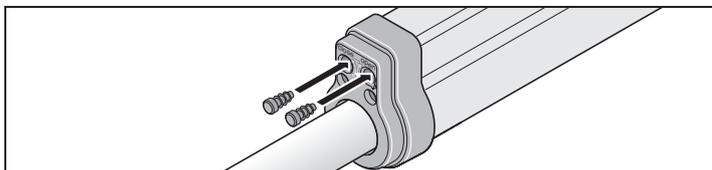
2. Press (Start 1) button, drive traverse to gate "CLOSE" end position.
⇒ "POWER" LED lights and "Status" LED flashes.
3. Repeat item 1 + 2.
⇒ "Status" LED stops flashing, all values learned and saved.

At the next command the gates are started and stopped with soft running. Every time the gates are opened the control unit monitors the force, runtime and closing delay and adjusts them incrementally when the end position is reached.



NOTE!

If the learning procedure is not correctly completed (drives traverse without soft running, "Status" LED flashes), reset the control unit (delete saved values, see control unit reset) and run the learning procedure again.

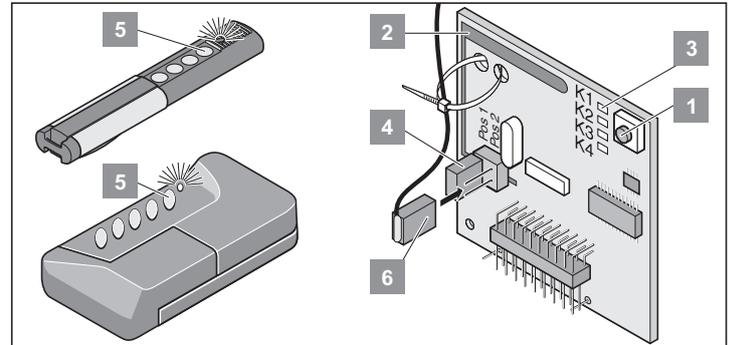


Programming the hand-held remote control



NOTE!

Before programming the hand-held transmitter for the first time, always clear the radio receiver memory completely.



Deleting the radio receiver memory

1. Press and hold the Learn button (1).
⇒ After 5 seconds the LED flashes - after another 10 seconds the LED is steady.
⇒ After a total of 25 seconds all LEDs light.
2. Press the learn button (1).
⇒ All LEDs off - clearing process complete.

Programming the hand-held remote control

Gate system 1-wing:

- Button 1 on radio channel 1

Gate system 2-wing:

- Button 1 on radio channel 1 (both gate wings open)
- Button 2 on radio channel 2 (only the walk-through gate opens)

1. Press the Learn button (1).
 - 1 x for channel 1; LED (K1) lights.
 - 2 x for channel 2; LED (K2) lights.
2. Press the desired hand-held transmitter button (5) until the LED is off.
 - Depending on which channel that has been selected. The hand-held transmitter has transferred the radio code to the radio transmitter.
 - ⇒ LED extinguishes - programming is finished.
3. Canceling the Learn mode: Press the Learn button (1) until no more LEDs are lit.



NOTE!

If no radio code is sent within 10 seconds, the radio receiver switches to normal operation.

Control

1. Press button 2, walk-through gate wing opens.
2. Press button 1, both gate wings open.
3. Repeat the above steps to program additional hand-held transmitters.
 - The radio receiver can save a maximum of 112 different radio codes (hand-held transmitter buttons).

Safety instructions

- Never operate a damaged drive.
- Children, persons, animals or objects must not be within the range of motion of the gate during opening or closing.
- Do not operate the hand-held transmitter in areas with sensitive radio communications or systems (e.g. airports, hospitals, etc.).
- Actuate the gate wirelessly only if you have an unobstructed view of it.
- Store the hand-held transmitter so that unintended operation, e.g., by children or animals, is impossible.
- 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.

Normal mode

The force required for opening and closing may be affected by changes to the gate as a result of damage, moisture absorption, ground subsidence, outside temperature, etc.

If the force required for opening or closing increases within the defined tolerance on the potentiometer, the new value is automatically learned by the control unit. The control unit also learns a reduced force requirement in the same way.

If the force required for opening or closing exceeds the permitted force tolerance (e.g. at an obstacle), the drive stops and reverses a short distance. This is referred to as a power cut-off with reverse and is required for safety.

Obstacle detection



NOTE!

Obstacle detection requires a correctly completed learning run.

If the gate wing contacts an obstacle when opening or closing, this is detected. The gate wing will react differently depending on the direction of motion and the settings of the DIP switches. The direction of motion following a detected obstacle is always away from it.

Summer-winter mode

Weather differences between summer and winter mean that the drive requires different forces for opening or closing the gate. If the gate will not open or close, reset the control unit and run a new learn procedure.

Temperature differences between summer and winter may mean that the gate wings have different end positions, which must be compensated by adjusting the limit switches.

Intermediate stop

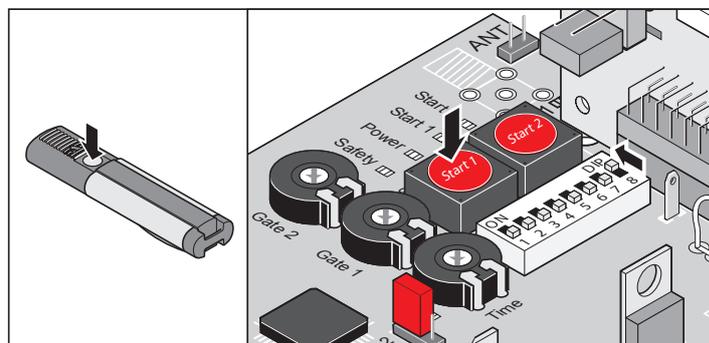
2-wing gate system:

Open gate wing with the pulse command and then send the stop command immediately after. If gate wing 1 is not yet open, the open walk-through gate can only be closed with the walk-through gate command.

Opening and closing gate

Requirements:

- Set DIP switch 8 set to "ON" and learning run completed.
- Hand-held transmitter (button 1 on channel K1, button 2 on channel K2) programmed.



Process 1-wing

1. Press button (Start 1) or hand-held transmitter (button 1)
2. Gate opens to gate "OPEN" end position
 - ⇒ "OPEN + Status" LED on
 - ⇒ Gate "OPEN" end position reached - LED "OPEN + Status" off

Process 2-wing - both gate wings

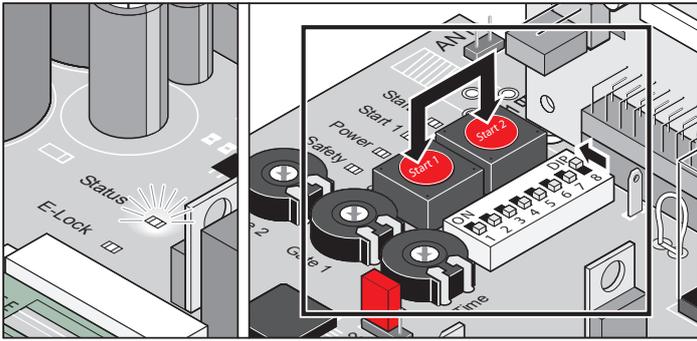
1. Press button (Start 1) or hand-held transmitter (button 1)
 - ⇒ Gate wing 2 (M2/walk-through gate) opens first and then gate wing 1 (M1) after a delay of 3 seconds - LED "OPEN + Status" is on.
 - ⇒ Gate "OPEN" end position reached - LED "OPEN + Status" off
2. Press button (Start 1) or hand-held transmitter (button 1)
 - ⇒ Gate wing 1 (M1) closes first and then gate wing 2 (M2/walk-through gate) after a delay of 5 seconds - LED "CLOSE + Status" is on.
 - ⇒ Gate "CLOSED" end position reached - LED "Close + Status" off

Process 2-wing - walk-through gate

1. Press button (Start 2) or hand-held transmitter (button 2)
 - ⇒ Gate opens to gate "OPEN" end position - LED "OPEN + Status" on.
 - ⇒ Gate "OPEN" end position reached - LED "OPEN + Status" off
2. Press button (Start 2) or hand-held transmitter (button 2)
 - ⇒ Gate closes to gate "CLOSE" end position - LED "CLOSE + Status" on.
 - ⇒ Gate "CLOSED" end position reached - LED "Close + Status" off

Control unit reset

The control unit reset deletes all programmed values (e.g. force values: force required by drive to open or close the gate, closing delay). It may be necessary to reset the control unit to delete the saved values and reprogram the unit.



1. Press and hold the button (Start 1 + Start 2).
⇒ The "Status" LED flashes.
2. "Status" LED off - all values deleted. Release button.
⇒ The "Status" LED flashes.
3. Run learning procedure again, see activating continuous operation.

Emergency release in case of power failure

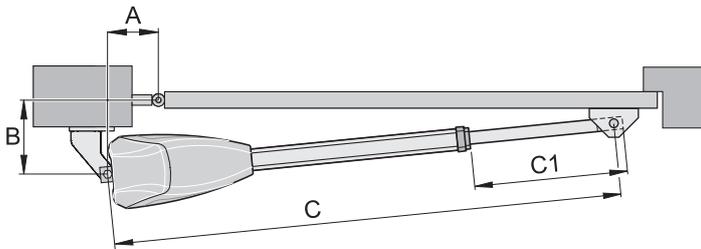


NOTE!

Actuate the emergency lock only with the control disconnected from the power and locked to prevent reactivation.

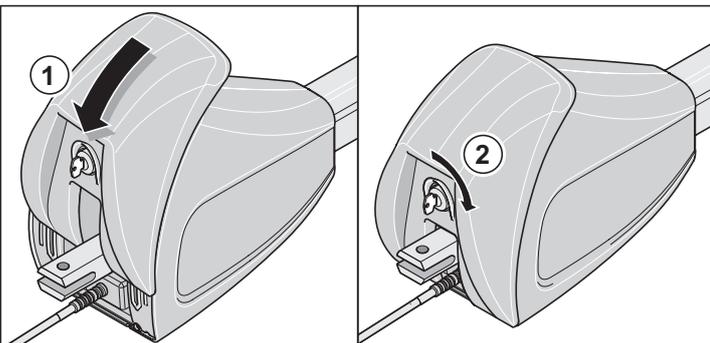
In case of power failure the gate can be opened or closed manually, regardless of its position.

Unlocking the drive



1. Turn key (1) 90° counterclockwise and remove it.
2. Pull emergency release handle (2) up to the stop, motor is unlocked.

Locking the drive



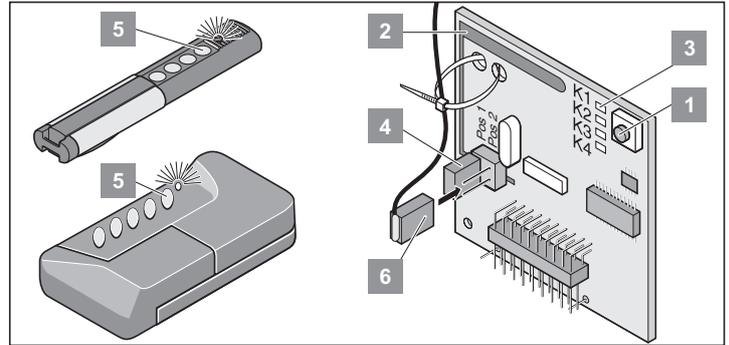
1. Proceed in reverse order of emergency unlock.

Radio receiver

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



1	Learn button
2	internal antenna
3	LEDs: show which channel is selected. K1 = radio channel 1 -> same function as "Start 1" button K2 = radio channel 2 -> same function as "Start 2" button ! K3 = radio channel 3 -> no function ! K4 = radio channel 4 -> no function
4	Connection for external antenna (6) Use an external antenna if the range with the internal antenna is not sufficient. See accessories
5	Hand-held transmitter button
6	External antenna

Programming the hand-held remote control



NOTE!

Before programming the hand-held transmitter for the first time, always clear the radio receiver memory completely.

1. Press the Learn button (1).
 - 1 x for channel 1; LED (K1) lights.
 - 2 x for channel 2; LED (K2) lights.
2. Press the desired hand-held transmitter button (5) until the LED is off.
 - Depending on which channel that has been selected. The hand-held transmitter has transferred the radio code to the radio transmitter.
 ⇒ LED extinguishes - programming is finished.



NOTE!

If no radio code is sent within 10 seconds, the radio receiver switches to normal operation.

3. Canceling the Learn mode: Press the Learn button (1) until no more LEDs are lit.
4. Programming additional hand-held remote controls. Repeat the above steps. A maximum of 112 memory slots is available.

Deleting a hand-held remote control button from the radio receiver

If a user moves to a group garage unit and wishes to use the hand-held transmitter with it, all radio codes in the transmitter must be deleted from the radio receiver.



NOTE!

For safety reasons every button and all button combinations must be deleted from the hand-held transmitter.

1. Press the learn button (1) and hold it down for five seconds until any LED flashes.
2. Release the learn button (1) - the radio receiver is in delete mode.
3. Press the button on the hand-held transmitter corresponding to the radio code you want to delete - LED goes off. The deletion procedure is ended.
 - ⇒ LED off - wipe procedure complete.

Deleting all radio codes of a channel

1. Press and hold the Learn button (1).
 - 1 x for channel 1; LED (K1) lights.
 - 2 x for channel 2; LED (K2) lights.
 - ⇒ The LED lights depending on the channel that has been selected.
 - ⇒ After 5 seconds the LED flashes - after another 10 seconds the LED is steady.
2. Release the Learn button (1) - the deletion procedure is ended.

Deleting the radio receiver memory

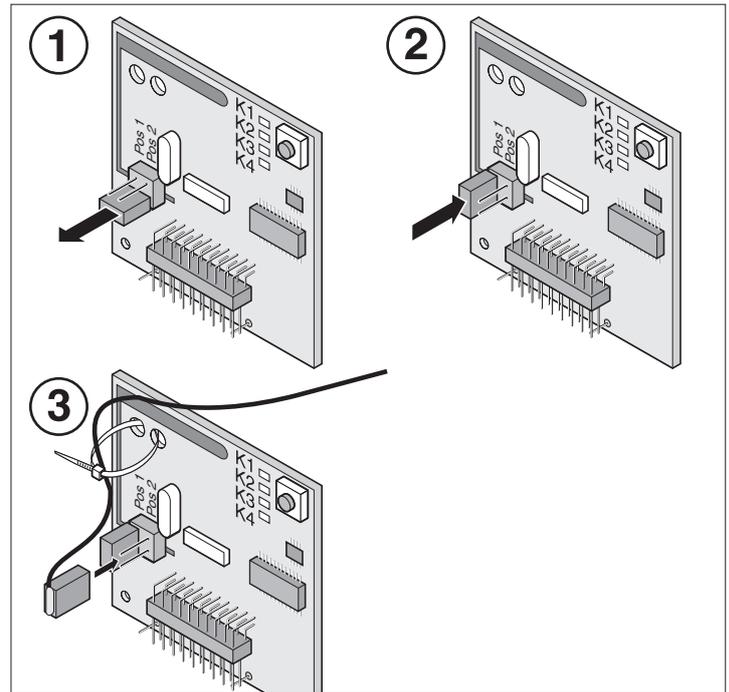
If a hand-held transmitter is lost, all channels in the radio receiver must be deleted for security reasons!

After that, reprogram all hand-held transmitters in the radio receiver.

1. Press and hold the Learn button (1).
 - ⇒ After 5 seconds the LED flashes - after another 10 seconds the LED is steady.
 - ⇒ After a total of 25 seconds all LEDs light.
2. Release the Learn button (1).
 - ⇒ All LEDs off - clearing process complete.

Connecting external antenna

- The antenna cable may not exert any mechanical force on the radio receiver; provide for stress relief.



Troubleshooting

All LEDs flashing:

- Attempt to set more than 112 memory slots on the radio receiver. If additional hand-held transmitters are to be programmed, delete other hand-helds from the receiver first.

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.

Functions and connections

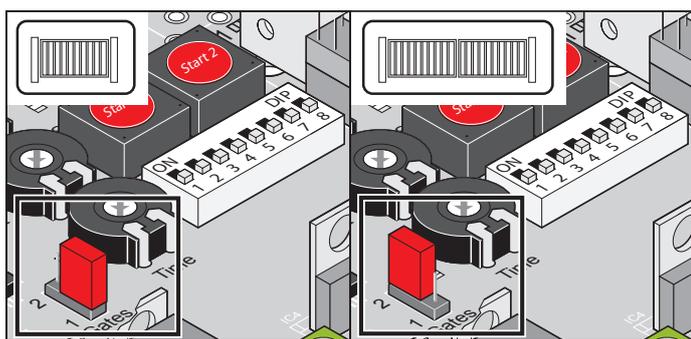
Safety instructions

- Approved wire cross sections for all terminals:
max. 0.5 mm² - 2.0 mm².
- 10 m max. approved cable length at terminal:
5 + 6, 7 + 8, 9 + 10, 35 + 36
- 30 m max. approved cable length at terminal:
21 + 22, 23 + 24, 25 + 26, 27 + 28, 29 + 30, 31 + 32, 33 + 34

Jumper

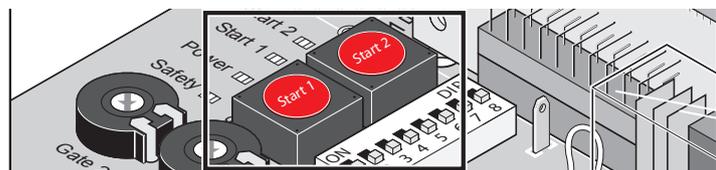
Selection of gate system, 1 or 2-wing

- i** **NOTE!**
After moving the jumper reset the control unit and run a learning procedure again.



Label	Description
Gates 1 / 2	Jumper on top pins = 2-wing Jumper on bottom pins or not connected = 1-wing

Button on control unit



Label	Description
Start 1	Pulse button: opens both gate wings. Actuating the button while the walk-through gate is moving stops it. If the walk-through wing is open, the button also opens gate wing 1. Function sequence: Open - Stop - Close - Stop - Open ...
Start 2	Walk-through button: opens walk-through wing only. Pressing the button opens the walk-through wing only of a 2-wing gate. Walk-through wing always opens first in gate systems with the stop bar outside. Function sequence: Open - Stop - Close - Stop - Open ...

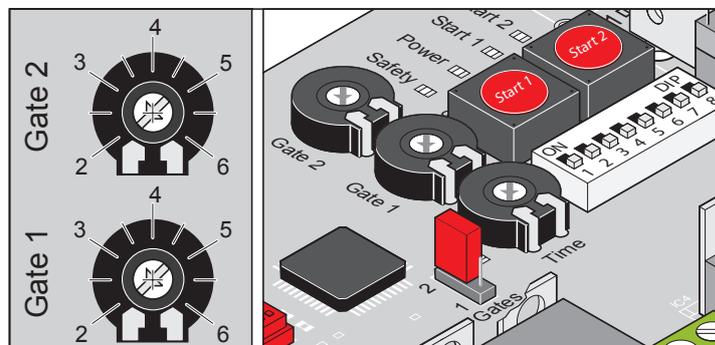
- i** **NOTE!**
Button (Start 2) operates only if wing 1 is fully closed.

Control unit reset:

To reset the control unit to the factory settings (RESET), press and hold both buttons simultaneously for 5 seconds - until LED (Status) is out.

Potentiometer for gate wing length

- Maximum force = learnt force + force tolerance (this is set at the "Gate 1 (M1) / Gate 2 (M2)" potentiometer depending on the gate wing length).
- Changes to the setting after configuring the drive are not taken into account. First reset the control unit, reconfigure the potentiometer and repeat the learning procedure.

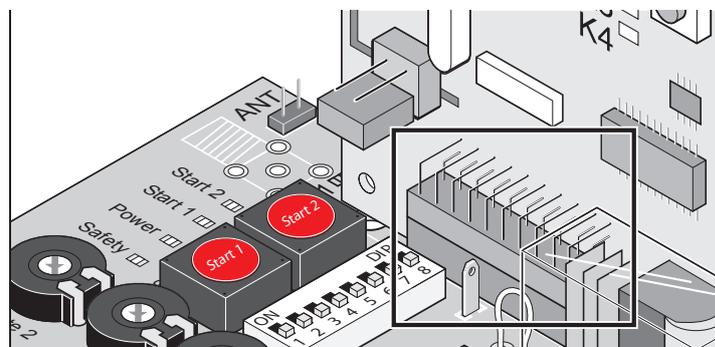


The length of the gate wing is set at the control unit with the "Gate 1 (M1) + Gate 2 (M2)" potentiometers. The speed of movement and the force tolerance for the separate wings of the gate installation are determined based on this setting.

- Setting 2 = gate wing length approx. 2 m
(small gate -> high speed -> lower force tolerance)
- Setting 5 = gate wing length approx. 5 m
(large gate -> low speed -> greater force tolerance)
- Setting 6 = for compensation of influences by A and B-dimensions.

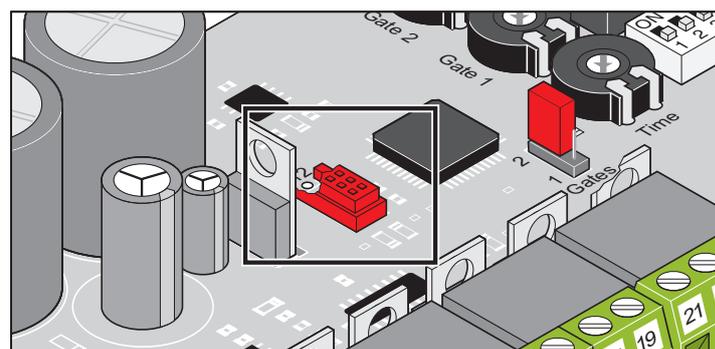
Radio connector

The radio receiver is connected here. Installed on delivery.



TorMinal interface

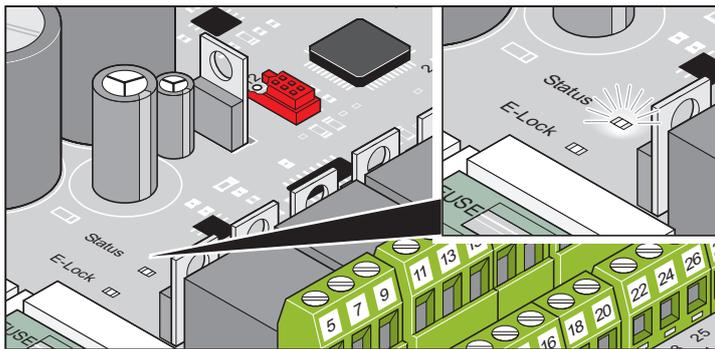
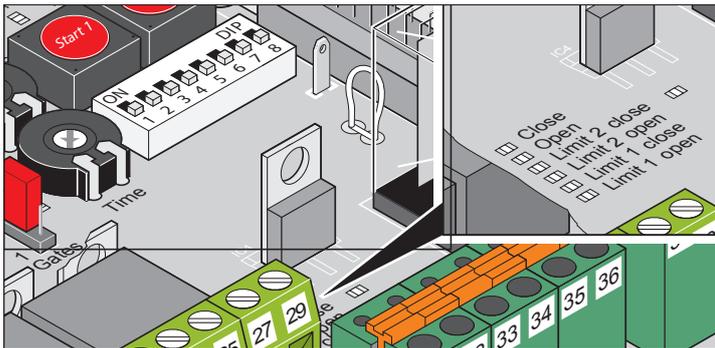
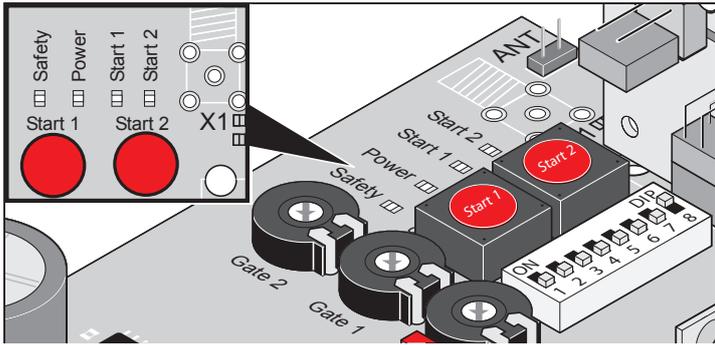
See TorMinal owner's manual.



Functions and connections

Light-emitting diodes (LED)

Show the status of the control unit.



NOTE!

If both LEDs are on (Limit 2 close/open or Limit 1 close/open), either a motor or a twist 200 E (not approved!) is not connected.

Label	Color	Description
Limit 2 close (CLOSE) (M 2)	Red	on = <ul style="list-style-type: none"> • Gate CLOSE end switch actuated • twist 200 E connected • No motor connected off = idle
Limit 2 open (OPEN) (M 2)	Red	on = <ul style="list-style-type: none"> • Gate OPEN end switch actuated • twist 200 E connected • No motor connected off = idle
Limit 1 close (CLOSE) (M 1)	Red	on = - Gate CLOSE end switch actuated twist 200 E connected No motor connected off = idle
Limit 1 open (OPEN) (M 1)	Red	on = - Gate OPEN end switch actuated • twist 200 E connected • No motor connected off = idle
E-lock	Yellow	off = idle on = E-lock actuated
Status	Yellow	off = idle with programmed force values. flashing = in test mode, with DIP switch 8 set to OFF. <ul style="list-style-type: none"> • In drive learning mode (even at standstill), with DIP switch 8 set to ON. • At every gate movement, gate OPEN or CLOSED. on = can be set with TorMinal only. Acts as with flashing, warning light only on.

Label	Color	Description
Safety	Red	off = idle on = safety connection was interrupted (e.g.: photo eyes triggered).
Power	Green	off = no power supply to control unit on = power supply to control unit



ATTENTION! DANGER OF ELECTROCUTION!

If the fuse is burnt out, this LED will not be on, but there may still be mains voltage (230 V AC) at terminals 1 and 2.

Label	Color	Description
Start 1	Yellow	off = idle on = Start 1 button or radio channel 1 actuated.
Start 2	Yellow	off = idle on = Start 2 button or radio channel 2 actuated.
Close	Yellow	off = idle on = gate is closing
Open	Yellow	off = idle on = gate opens

Functions and connections

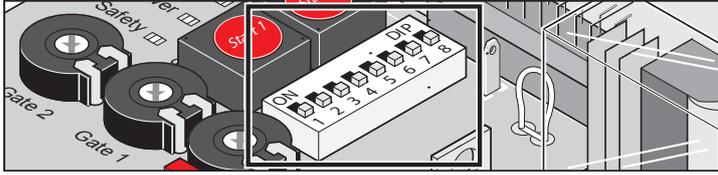
DIP switches



NOTE!

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

Factory setting: OFF



DIP	Function in "OFF" setting	Function in "ON" setting
1	No reaction to triggering safety input with gate OPEN.	Gate stops when safety connection triggered (terminal 33 + 34) with gate OPEN.
2	Safety connection (terminal 33 + 34) set to NC contact.	Safety connection (terminal 33 + 34) set to 2-wire photo eye.
3	Short reverse when safety connection triggered (terminal 33 + 34) with gate CLOSED.	Gate opens completely when safety connection triggered (terminal 33 + 34) with gate CLOSED. DIP 1 ON and safety connection interrupted: gate reverses and stops.
4	Relay contact (terminal 37 + 38) is time relay*.	Relay contact (terminal 37 + 38) is status display, see DIP 6 for more information.
5	Early warning time "OFF"	Early warning time 3 sec. Warning light flashes before gate moves.
6	Only if DIP 4 ON! Status display via relay contact (terminal 37 + 38): gate open -> opened gate close -> closed	Only if DIP 4 ON! Status display via relay contact (terminal 37 + 38): gate open -> closed gate close -> closed
7	No function	Door closes 5 seconds after passing through photo eyes, e.g.: after a car passes through. (After 60 seconds without actuation)
8	Test operation: drive can traverse without programmed force values. Setting for setting the end switches.	Continuous operation: <ul style="list-style-type: none"> drive learns force values, runtime and closing delay for opening and closing after switching from OFF to ON. Gate opens or closes.



NOTE!

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



NOTE

DIP switch 8 after learning: always leave in ON position.

* For additional settings see TorMinal owner's manual.

Automatic closing function



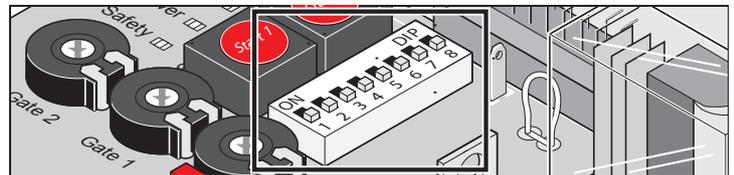
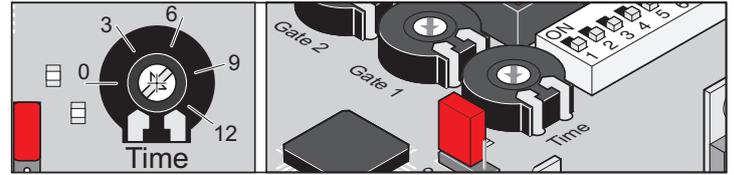
NOTE!

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

The gate closes automatically after a programmable open time. The gate can only be opened but not closed by a command from a button or hand-held remote control. While the gate is being opened, it cannot be stopped by a command.

Automatic closing is activated when gate OPEN end position is reached. The configured open hold time starts at this point.

If a command is sent while the door is automatically closing, it will open completely. A command during the open hold time will start the procedure again from the beginning.



Switch open hold time on and off with potentiometer (time):

- Time can be set from 2 - 120 seconds
- Switch off -> left stop

Behavior of drive when safety connection is triggered

Gate OPEN:

drive behavior depends on the setting of DIP switch 1.

Gate CLOSED:

drive behavior depends on the setting of DIP switch 3.

Automatic closing, variation 1

Settings:

- Set the potentiometer for the desired time (2 - 120 seconds)
- DIP switch 7 "OFF"
- DIP switch 8 ON
- other DIP switches as desired

Automatic closing + photo eye, Variant 2



NOTE!

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

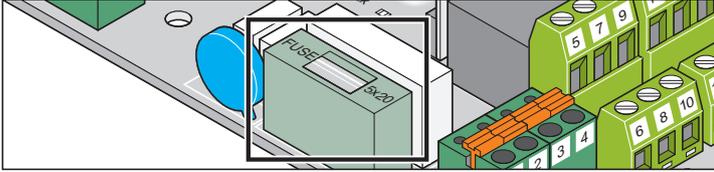
However, as described above, the drive closes the door 5 seconds after crossing the photo eye.

Settings:

- for the desired time (2 - 120 seconds)
- DIP switch 7 ON
- DIP switch 8 ON
- other DIP switches as desired

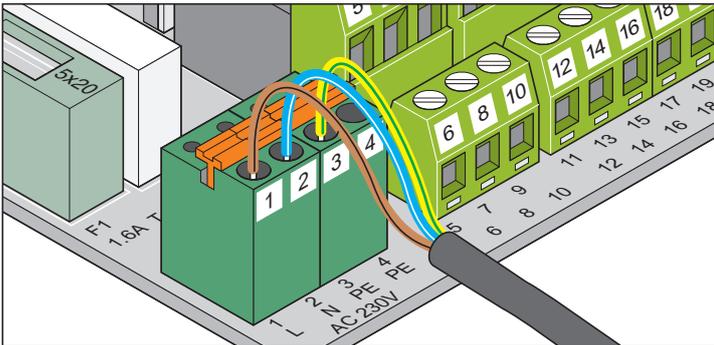
Functions and connections

Fuses



Label	Size	Description
F1	1.6 A slow-blow	Mains supply line AC 230 V

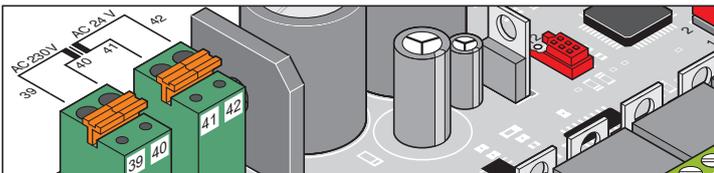
Connection to mains power (AC 230 V)



Terminal	Description	Description
1	L	Mains supply line AC 230 V
2	N	Neutral wire
3 + 4	PE	Protective ground

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

Transformer terminal

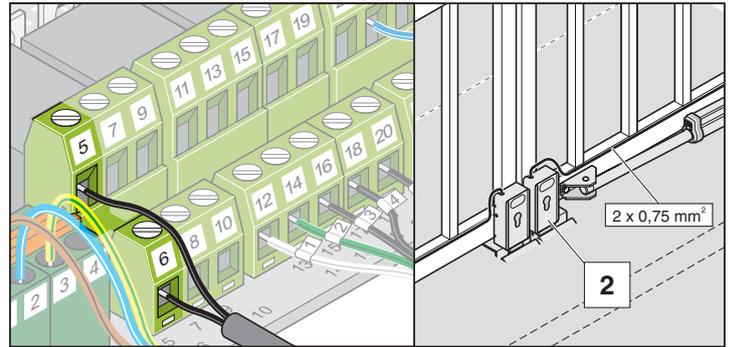


Terminal	Description	Description
39 + 40	230 V AC	Mains supply line (primary winding), brown
41 + 42	24 V AC	Output (secondary winding), Supply line to control unit, white

Connect electric lock 2

Available as an accessory.

Electric lock 2 must be mounted on walk-through wing B (M2).



Terminal	Description	Description
5	Ground	Connection for DC 24 V electric lock, limited to 2 A at max. 24 W power.
6	DC 24 V	



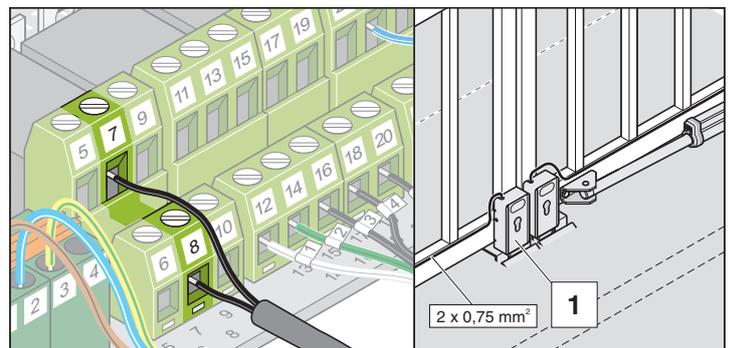
NOTE

It is direct-current, unregulated transformer voltage. It can fluctuate between DC 22 V ... DC 32 V under full load.

Connect electric lock 1

Available as an accessory.

Electric lock 1 must be mounted on the gate wing (M1).



Terminal	Description	Description
7	Ground	Connection for DC 24 V electric lock, limited to 2 A at max. 24 W power.
8	DC 24 V	



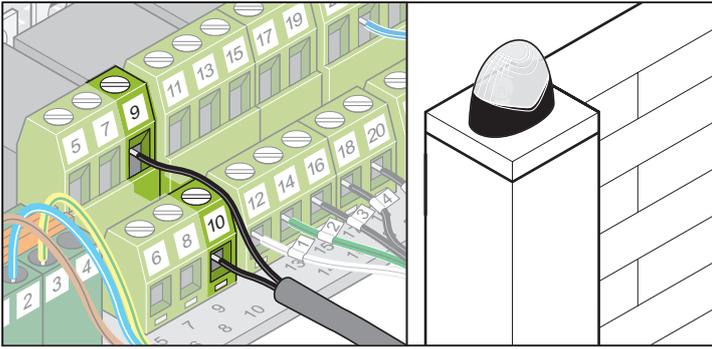
NOTE

It is direct-current, unregulated transformer voltage. It can fluctuate between DC 22 V ... DC 32 V under full load.

Functions and connections

Connecting warning light

Available as an accessory.



Setting the function, see DIP switch 5.

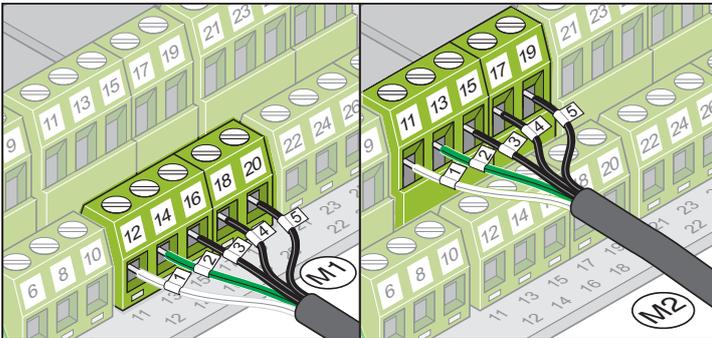
Continuous light on is programmable with TorMinal.

Terminal	Description	Description
9	Ground	Connection for DC 24 V warning light, limited to 1 A at max. 24 W power.
10	DC 24 V	

i **NOTE**
It is direct-current, unregulated transformer voltage. It can fluctuate between DC 22 V ...DC 32 V under full load.

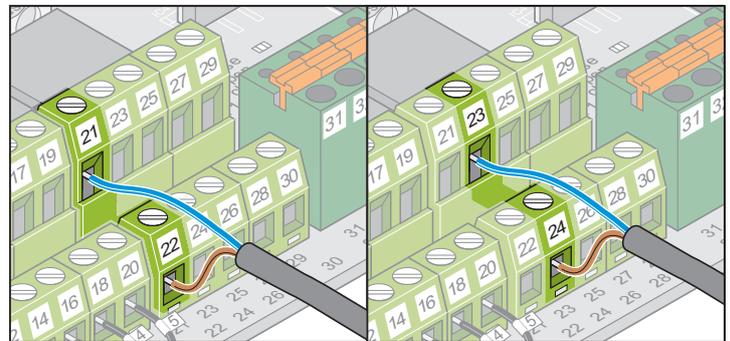
Connecting drives

! **ATTENTION**
Connect the drives only with the control unit disconnected from the power and locked to prevent reactivation. The control unit detects only the connected drives correctly (type of limit switch).



Terminal -> wire with no.	Description	Description
12 -> 1	Motor	2 wing: Connection for motor-1: The motor must be on the gate wing that opens second or on which there is an outside stop bar.
14 -> 2	Motor	
16 -> 3	End switch "gate CLOSED"	
18 -> 4	End switch "gate OPEN"	1 wing: Connection for the motor
20 -> 5	Ground end switch	
11 -> 1	Motor	2 wing: Connection for motor-2: The motor must be on the gate wing that opens first or on which there is no outside stop bar.
13 -> 2	Motor	
15 -> 3	End switch "gate CLOSED"	Ground end switch
17 -> 4	End switch "gate OPEN"	
19 -> 5	Ground end switch	

Connecting button



Terminal	Description	Description
21	Ground	Connection for pulse transmitter for actuating one or both wings.
22	Signal	
23	Ground	Connection for pulse transmitter for actuating gate wing 2 or walk-through gate.
24	Signal	

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

A 2-contact button is required for a two-wing gate only if the walk-through function is used.

The buttons (Start 1 + 2) have the same function in a 1-wing gate system.

1-contact button connection:

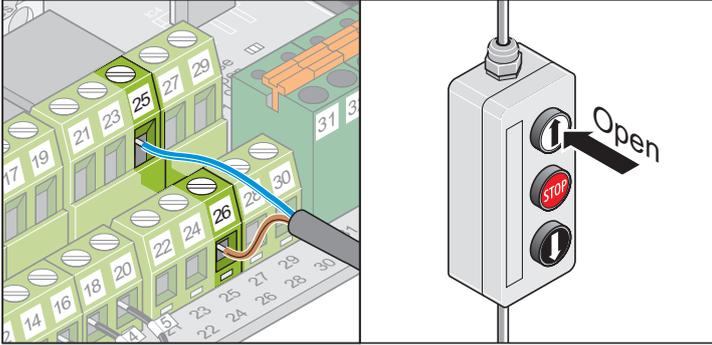
- 1-wing gate buttons at terminals 21 + 22 or 23 + 24
- 2-wing gate buttons at terminals 21 + 22

2-contact button connection:

- Walk-through terminal 23 + 24
- Both gate wings 21 + 22

Functions and connections

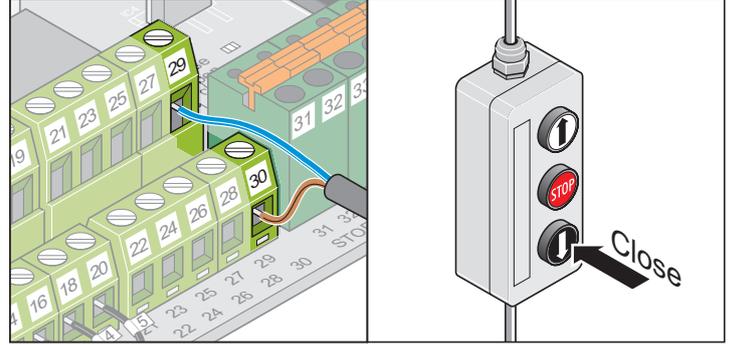
Connecting button (gate OPEN)



Terminal	Description	Description
25	Ground	Connection for pulse transmitter for actuating one or both wings, gate OPEN only.
26	Signal	

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

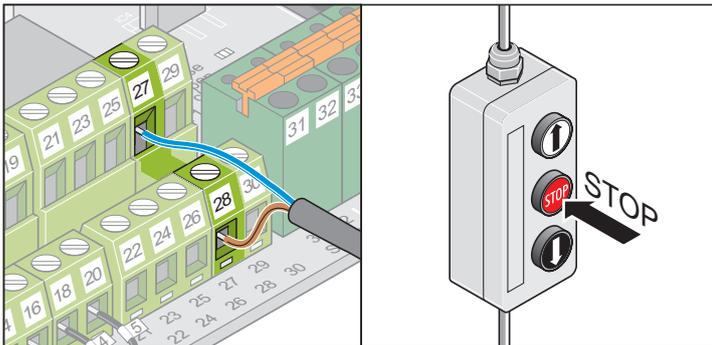
Connecting button (gate CLOSE)



Terminal	Description	Description
29	Ground	Connection for pulse transmitter for actuating one or both wings, gate CLOSE only.
30	Signal	

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

Connecting button (gate STOP)

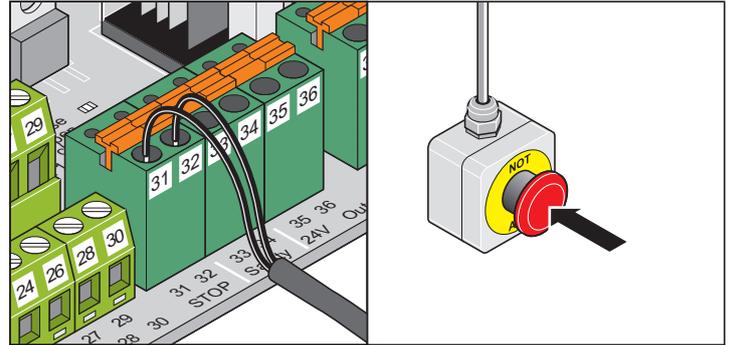


Remove the wire bridge before connection.

Terminal	Description	Description
27	-	Connection for pulse transmitter for actuating one or both wings, gate STOP only.
28	Signal	

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

Connecting EMERGENCY STOP



Remove the wire bridge before connection.

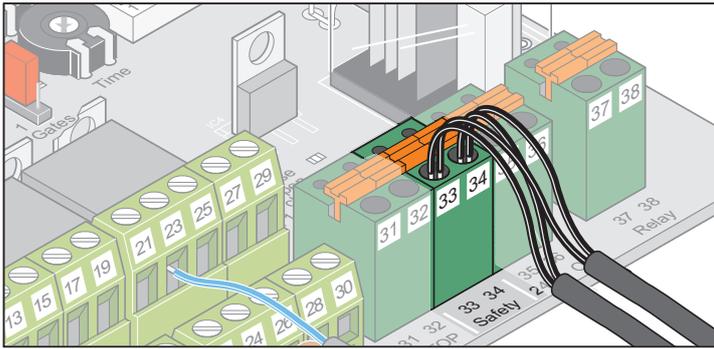
Terminal	Description	Description
31	-	EMERGENCY STOP, stops all functions of the control unit, even dead man operation is disabled.
32	Signal	

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

Functions and connections

Connecting 2-wire photo eyes

Available as an accessory.



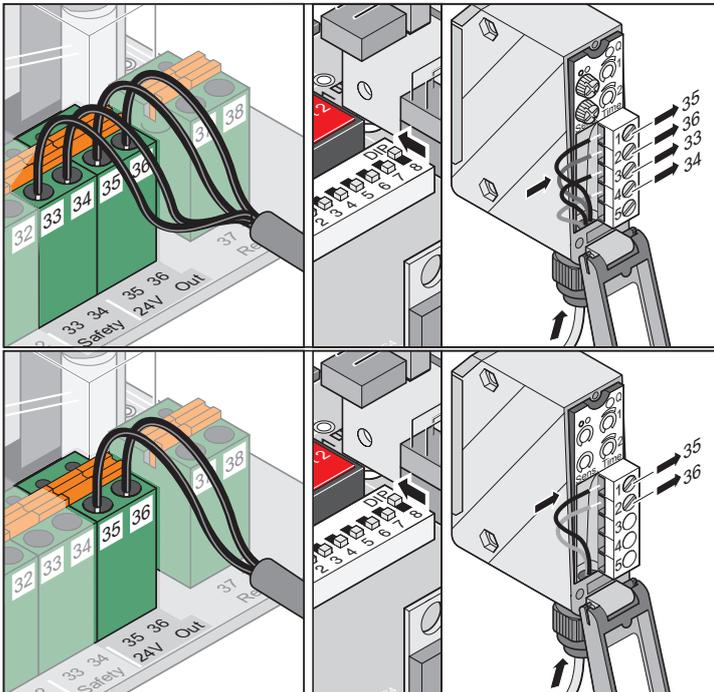
DIP switch 2 ON

Remove the wire bridge before connection.

Terminal	Description	Description
33 + 34	-	Connection of 2-wire photo eyes (polarity-protected) If the connection is not used, install a bridge between the terminals (delivery status) and set DIP switch 2 to OFF.

Connecting safety device

As-delivered status: bridge between terminals 33 + 34.



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

DIP switch 2 "OFF"

Remove the wire bridge before connection.

Terminal	Description	Description
33	Ground	Connection for safety device, e.g. • Photo eye • Safety contact strip requires additional evaluation unit. The contact must be closed when the safety device is in non-actuated status. If the connection is not used, install a bridge between the terminals (delivery status).
34	Signal	

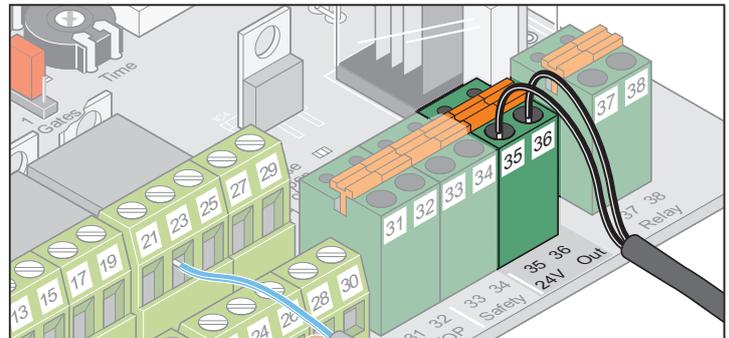


NOTE!

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

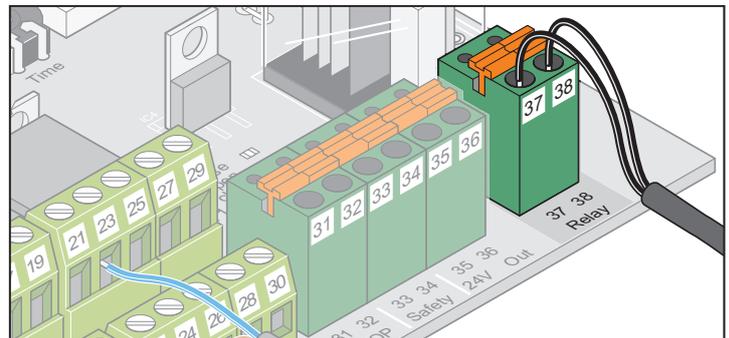
Terminal	Description	Description
35	DC 24 V	DC 24 V output, max. 100 mA
36	0 V (ground)	

Connecting external consumers



Terminal	Description	Description
35	DC 24 V	DC 24 V output, max. 100 mA
36	0 V (ground)	

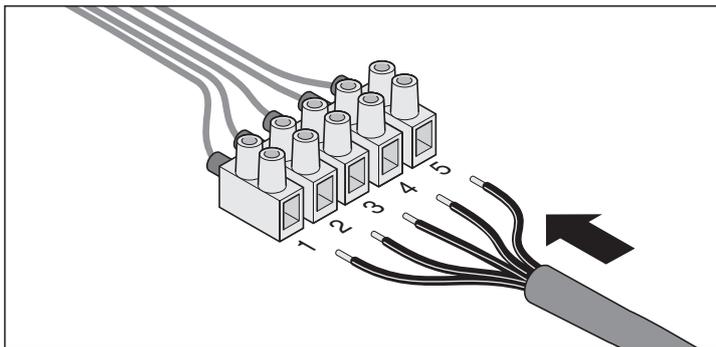
Potential-free relay contact



Terminal	Description	Description
37 + 38	Relay	Connection for e.g. light max 8 A, 230 V under resistance load

Functions and connections

Motor terminal



Cable number	Cable color	Description
1	White	Motor
2	Green	Motor
3	Blue	End switch gate "CLOSE"
4	Yellow	End switch gate "OPEN"
5	Blue + yellow	Ground end switch gate "Auf/open + ZU/close"

Accessories

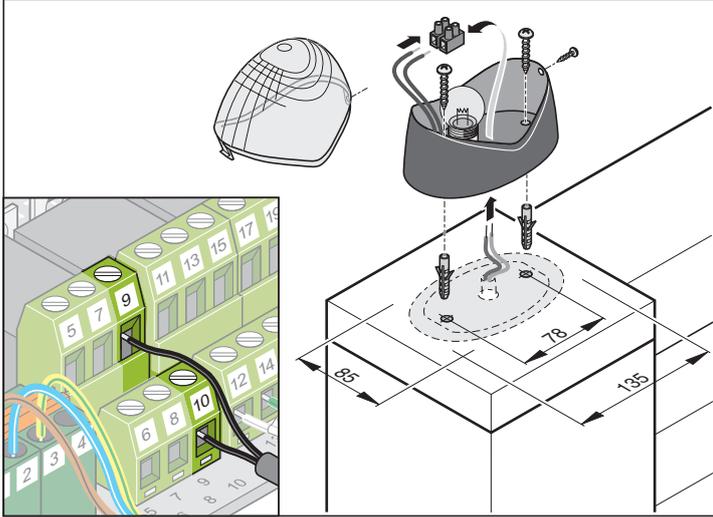
Safety instructions



NOTE!

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

Warning light



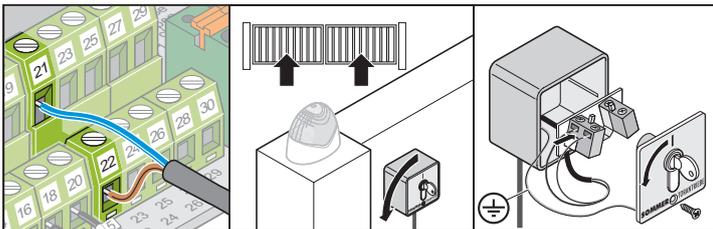
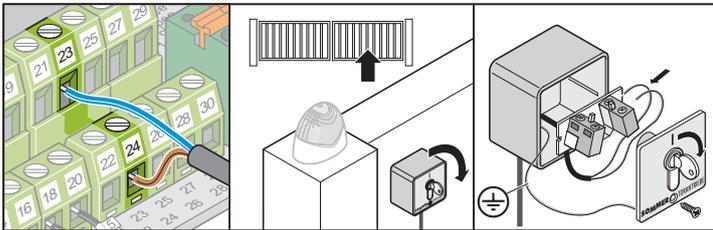
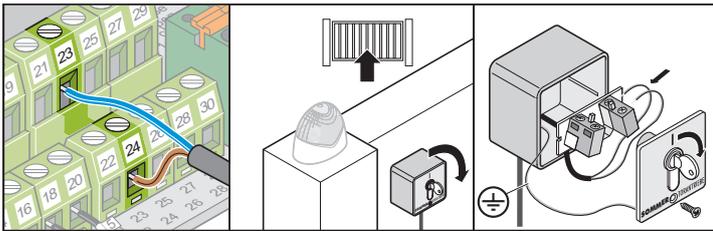
Key switch



NOTE!

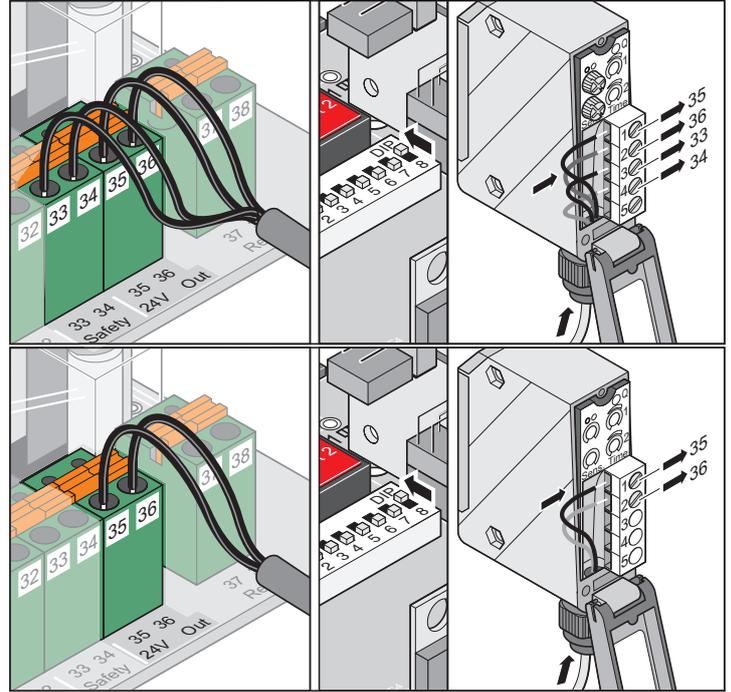
When actuating the key switch the operator must keep clear of the movement zone of gate and must have a direct view of it.

- Never lay the cable of the key switch along a power line as this could cause interference in the control unit.
- Permanently install the switch cable.



- Install key switch at a suitable, accessible position.

Photo eye



Accessories

Connector wiring set

- Terminal box must be fastened with screws through the eyelets.

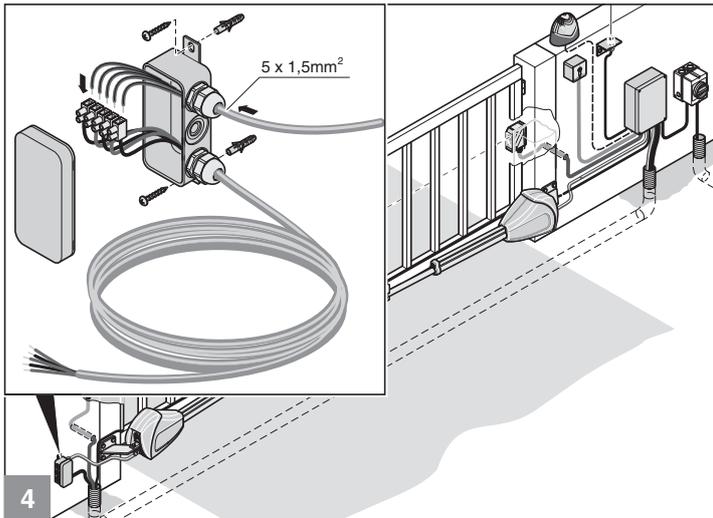
Installation

Always connect wires of the same number:

- 1 to 1
- 2 to 2
- etc.

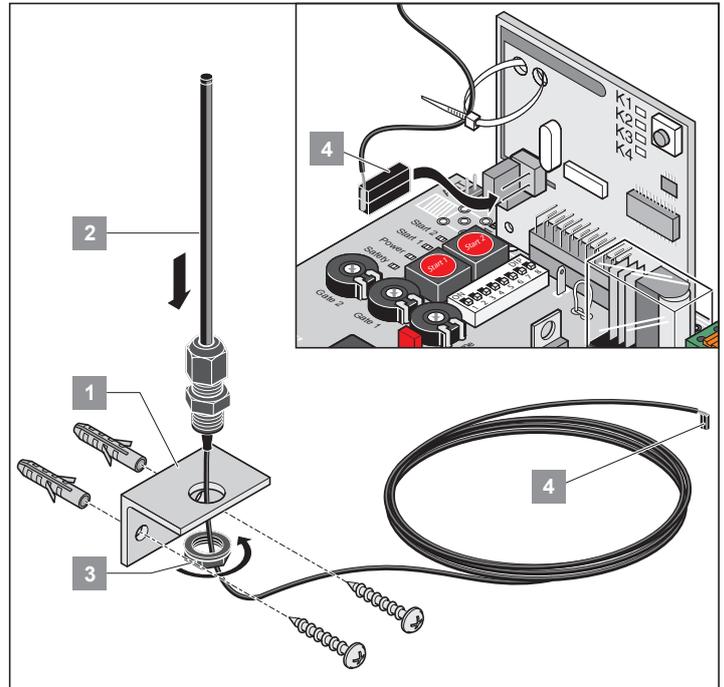
Tighten PG fasteners well to prevent ingress of moisture into the terminal box. Close the terminal box after installation.

Wiring diagram:

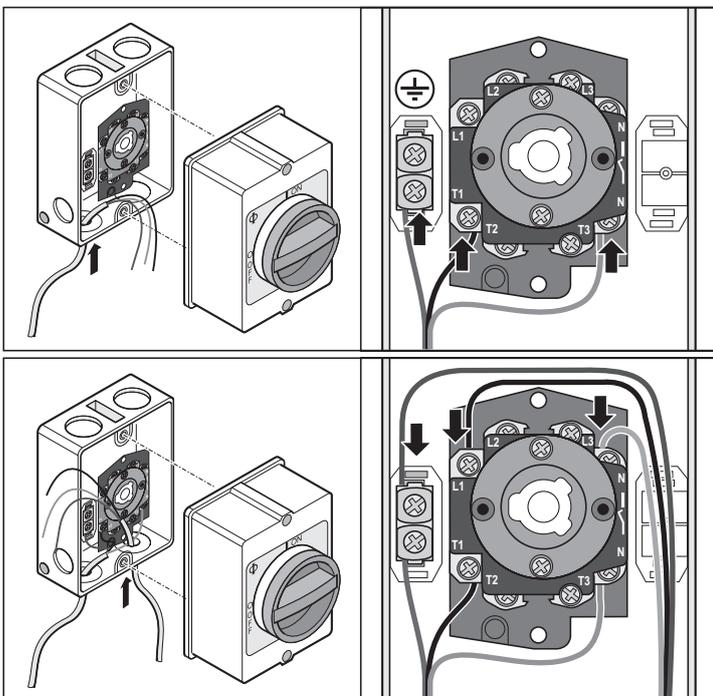


External antenna

- If reception is inadequate with the radio receiver internal antenna, an external antenna can be connected.
- The antenna cable may not exert any mechanical force on the radio receiver; provide for stress relief.
- Define the installation location together with the operator.



Main switch

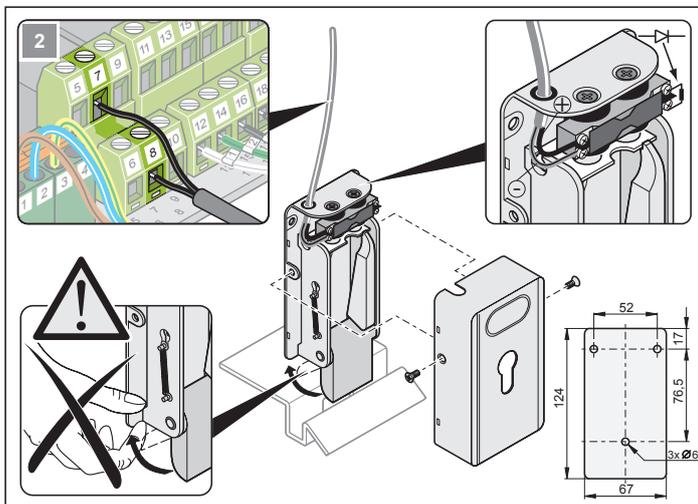
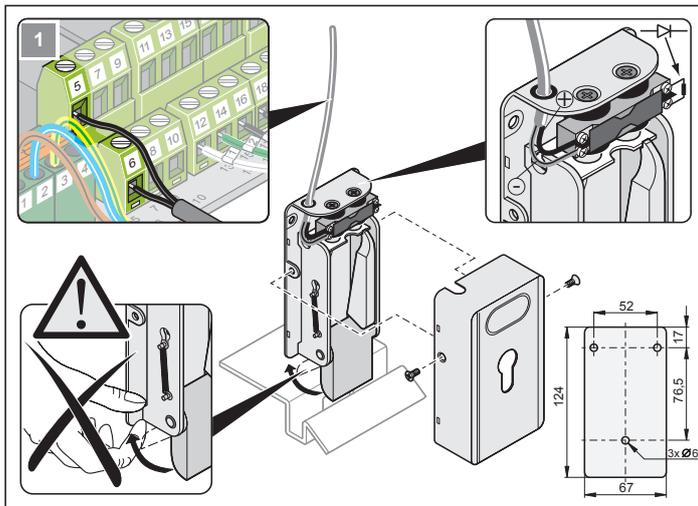
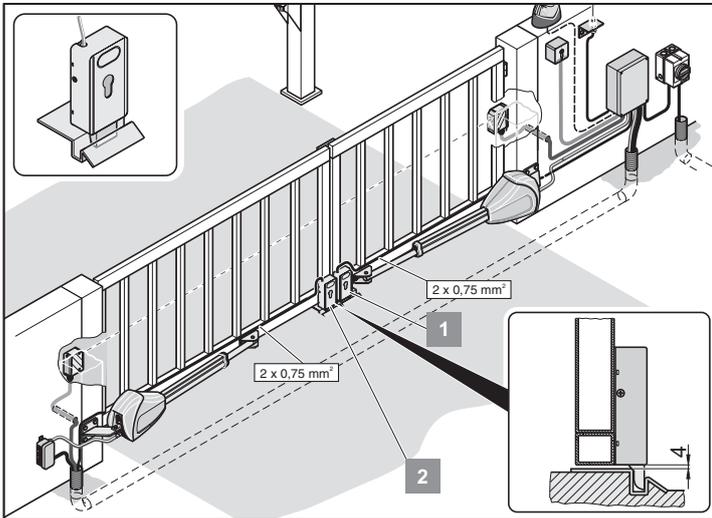


Accessories

Electric lock DC 24 V

- Setting the end position for gate "CLOSE" after installation.
- Install the lock in a perpendicular position, otherwise it may become jammed during closing or opening.
- The distance between lock and strike plate must be between 4 mm and max. 6 mm.

Electric lock DC 24 V connection diagram



Maintenance and care

Safety instructions



DANGER!

Never use a hose or high-pressure cleaner to spray down the drive or the controller housing.

- Do not use acids or alkalis for cleaning.
- Keep drive clean and clean the gate operator with a dry cloth regularly.
- Check the control unit housing regularly for insect infestation and moisture; if necessary clean and dry.
- Check the mounting screws and bolts of the fittings for tightness and tighten if necessary.
- Check that the control unit housing cover is correctly seated.

Regular testing

- Regularly check that the safety devices function correctly; no less than every six months. See EN 12453:2000.
- Check that pressure-sensitive safety devices (e.g. safety contact strip with extra evaluation unit) are operating correctly every four weeks (see EN 60335-2-95:11-2005).

Testing	Behavior	Yes/no	Possible cause	Remedy
Force cut-off Try to stop the gate wing by hand while it is closing. Do not try to hold the gate wing.	Gate stops and reverses when lightly held?	Yes	<ul style="list-style-type: none"> • The force cut-off works without limitations. 	<ul style="list-style-type: none"> • Leave all settings as they are.
		No	<ul style="list-style-type: none"> • Potentiometer at right stop. Force tolerance too high. • Control unit defective 	<ul style="list-style-type: none"> • Reduce the force tolerance. Rotate potentiometer counterclockwise until the test is successful. First open and close the gate completely twice under supervision. • Decommission the gate and lock it to prevent reactivation. Contact customer service.
Emergency release Procedure as described in "Emergency unlock in power failure".	The gate must be easily opened and closed by hand. Drive can be released?	Yes	<ul style="list-style-type: none"> • Everything is OK. 	
		No	<ul style="list-style-type: none"> • Hinges rusted 	<ul style="list-style-type: none"> • Grease hinges.
Safety contact strip, if present. Open and close the gate and actuate the strip at the same time.	Adjust the behavior of the door, as set with DIP switch 1, 2 or 3.	Yes	<ul style="list-style-type: none"> • Everything is OK. 	
		No	<ul style="list-style-type: none"> • Cable breakage, terminal loose. • DIP switch adjusted. • Strip defective. 	<ul style="list-style-type: none"> • Check the wiring; retighten the terminals. • Set the DIP switch. • Decommission the system and lock it to prevent reactivation. Then, contact customer service.
Photo eye, if present. Open and close the door while interrupting the photo eye.	Adjust the behavior of the door, as set with DIP switch 1, 2 or 3. "Safety" LED lights.	Yes	<ul style="list-style-type: none"> • Everything is OK. 	
		No	<ul style="list-style-type: none"> • Cable breakage, terminal loose. • DIP switch adjusted. • Photo eye dirty. • Photo eye defective. 	<ul style="list-style-type: none"> • Check the wiring; retighten the terminals. • Set the DIP switch. • Clean the photo eye. • Decommission the system and lock it to prevent reactivation. Then, contact customer service.

Disassembly



IMPORTANT!

Observe safety information.

The sequence is identical to that described in the "Installation" 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 Instructions as easy as possible to follow. If you have any suggestions as to how we could improve them or if you think more information is needed, please send your suggestions to us:

Fax.: 0049 / 7021 / 8001-403

Email: doku@sommer.eu

Troubleshooting

Tips on troubleshooting

If you cannot find the malfunction in the table and eliminate it, take the following actions:

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

If this does not help, contact your specialist dealer for assistance or consult our website at <http://www.sommer.eu>.

Fault	Control	Yes/no	Possible cause	Remedy
Gate cannot be opened or closed with buttons or hand-held transmitter.	LED "POWER" on?	No	<ul style="list-style-type: none"> • No supply voltage • Mains fuse defective 	<ul style="list-style-type: none"> • Check connection and connect if necessary. • Check fuse and replace if necessary.
		Yes	<ul style="list-style-type: none"> • Door jams • Motor hums but does not move • Drive displaced • Wire insulation too long and no contact • Gate frozen • Too much snow in the movement zone of gate • Wiring on motor PCB disconnected 	<ul style="list-style-type: none"> • Gate wing has sunk or distorted because of high temperature variations. • Switch off immediately. Possible motor or control unit fault. Contact customer service. • Lock drive • Disconnect wire, shorten insulation and reconnect • Clear snow and ice from gate and hinges. • Clear snow. • Connect wiring
Is the LED on the hand-held transmitter on?		No	<ul style="list-style-type: none"> • Battery flat • Battery incorrectly inserted • Transmitter defective 	<ul style="list-style-type: none"> • Replace battery • Insert battery correctly • Replace the hand-held transmitter
		Yes	<ul style="list-style-type: none"> • Hand-held transmitter battery too weak and range reduced • Radio receiver defective • Hand-held transmitter not programmed • Poor reception • Incorrect frequency 	<ul style="list-style-type: none"> • Replace battery • Replace radio receiver • Programming the hand-held remote control • Install external antenna (see accessories) • Check frequency; hand-held transmitter and radio receiver must be on the same frequency
Does an LED on the radio receiver come on if a button on the transmitter is pressed?		No	<ul style="list-style-type: none"> • Radio receiver not properly plugged in • No radio receiver power supply, possible fault • Hand-held transmitter not programmed • Hand-held transmitter battery flat • Battery incorrectly inserted • Transmitter defective 	<ul style="list-style-type: none"> • Plug in radio receiver properly • Replace radio receiver • Programming the hand-held remote control • Replace battery • Insert battery correctly • Replace the hand-held transmitter
Is the "POWER + OPEN/ CLOSE" LED on?		Yes	<ul style="list-style-type: none"> • Continuous signal pending 	<ul style="list-style-type: none"> • Pulse transmitter defective - disconnect all connected pulse transmitters
"POWER + Safety" LED on?		Yes	<ul style="list-style-type: none"> • Photo eyes interrupted* 	<ul style="list-style-type: none"> • Remove interruption
Fault occurs intermittently or for short time.		Yes	<ul style="list-style-type: none"> • Very powerful public address systems in hospitals or industrial areas may interfere with radio 	<ul style="list-style-type: none"> • Change radio frequency • Contact source of interference
"Safety" LED flashes quickly.		Yes	<ul style="list-style-type: none"> • Control unit has saved erroneous values, e.g. as a result of a brief power interruption. 	<ul style="list-style-type: none"> • Reset control unit and reprogram drive. If this is not possible, remove control unit and send it to the manufacturer, call a technician.

Troubleshooting

Gate cannot be opened or closed with a connected key switch	"POWER + Start 1/Start 2" LED is on	Yes	<ul style="list-style-type: none"> • Wire connections loose • Key switch defective • Broken wire 	<ul style="list-style-type: none"> • Tighten terminal screw • Replace key switch • Replace wire
		No	<ul style="list-style-type: none"> • Pulse transmitter (key switch, hand-held transmitter) defective 	<ul style="list-style-type: none"> • Check pulse transmitter and replace if faulty.
Gate remains stationary and reverses during opening and closing.	Obstacle in range of motion	No	<ul style="list-style-type: none"> • Hinges stiff • Post or pillar has changed • End switch out of adjustment 	<ul style="list-style-type: none"> • Lubricate hinges • Call a technician • Adjust end switch
		Yes	<ul style="list-style-type: none"> • Power cut-off tripped 	<ul style="list-style-type: none"> • Remove obstacle
	Does the gate wing vibrate when moving?	Yes	<ul style="list-style-type: none"> • Gate wing unstable 	<ul style="list-style-type: none"> • Reinforce gate wing
	Was there a strong wind?	Yes	<ul style="list-style-type: none"> • Wind pressure too strong 	<ul style="list-style-type: none"> • Simply open and close gate again
Gate remains stopped when opening.	Photo eyes interrupted	Yes	<ul style="list-style-type: none"> • Obstacle in light beam 	<ul style="list-style-type: none"> • Remove obstacle
		No	<ul style="list-style-type: none"> • Connection for external consumers overloaded (terminal 35 +36), voltage drop when drive starts 	<ul style="list-style-type: none"> • note max. connection power and connect corresponding accessories only.
Gate does not open or close completely	Gate stops before required end position	No	<ul style="list-style-type: none"> • Gate fittings not installed correctly 	<ul style="list-style-type: none"> • Change the gate bracket
		Yes	<ul style="list-style-type: none"> • End switch incorrectly adjusted 	<ul style="list-style-type: none"> • Adjust end switch
Closing sequence incorrect			<ul style="list-style-type: none"> • Drives incorrectly connected 	<ul style="list-style-type: none"> • Connect drives to control unit as specified in the manual
Drive does not learn the force values			<ul style="list-style-type: none"> • DIP switch 8 in "OFF" position • Limit switch incorrectly adjusted, drive stops and reverses - power cut-off. 	<ul style="list-style-type: none"> • Set DIP switch 8 to "ON" • Adjust end switches
Gate does not stop at an obstacle			<ul style="list-style-type: none"> • Gate in learning mode • Force tolerance too high 	<ul style="list-style-type: none"> • Force tolerance responds after the learning movement reduce force tolerance (see "Setting force tolerance")
Drive stops at pillar	Measure A/B dimensions again	No	<ul style="list-style-type: none"> • A or B dimension not correct 	<ul style="list-style-type: none"> • Adjust fastening of drive to post or pillar
		Yes	<ul style="list-style-type: none"> • End switch out of adjustment 	<ul style="list-style-type: none"> • Adjust end switch
Gate moves unevenly			<ul style="list-style-type: none"> • Unequal A/B dimensions 	<ul style="list-style-type: none"> • Change dimension if possible
Walk-through gate does not open with hand-held transmitter			<ul style="list-style-type: none"> • Hand-held button not programmed 	<ul style="list-style-type: none"> • Program button (see "Programming hand-held transmitter")
Drives do not start	"Safety" LED flashes quickly	Yes	<ul style="list-style-type: none"> • Jumper was moved with programmed force values 	<ul style="list-style-type: none"> • Replace jumper in previous position • Resetting the control system • Place jumper in desired position • Run learning procedures

* If photo eyes are uninterrupted, the drive can be moved in dead man mode with the "Open" and "Close" buttons. However, there is still a force cut-off if the gate meets an obstacle.

