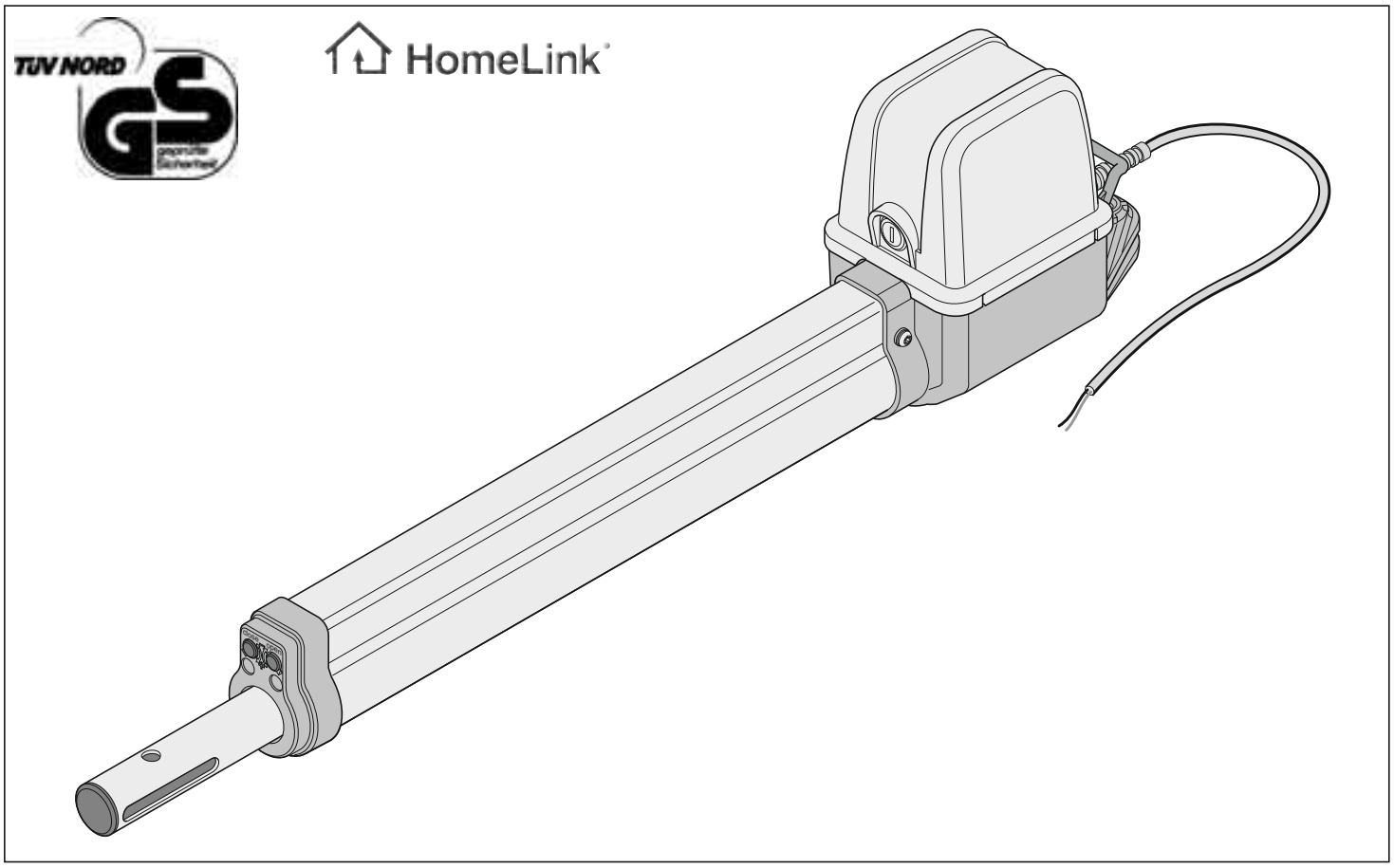


twist 200 E

Contents

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: RM04-868-2, RM03-868-4, RX01-868-2/4, RFSDT-868-1, RFSW-868-1, RM02-868-2, RM06-868-2, RM04-868-1, RM02-868-2-TIGA, RM08-868-2, RM01-868, RM02-434-2, RM03-434-4, RM04-434-2

The relevant guidelines and standards are:
- ETSI EN 300220-1:09-2000, -3:09-2000
- ETSI EN 301489-1:07-2004, -3:08-2002
- DIN EN 60950-1:03-2003

Kirchheim/Teck, 04.08.2004
Frank Sommer
Managing Director

General Information

Symbols

Indicates a potential risk. Failure to comply with the instructions may result in serious injury or damage to property!

Information, useful advice.

1 (1) Refers to the relevant illustration in the introduction or the main text of this manual.

Safety instructions

General safety instructions

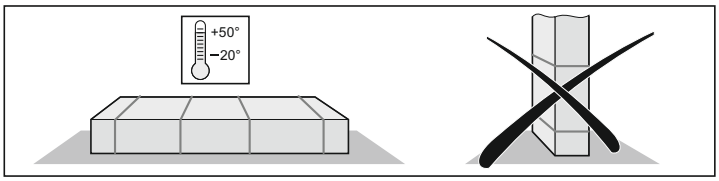
- All persons in charge of the installation, maintenance or operation of the drive system must have read and fully understood these instructions.
- All instructions must be strictly adhered to. The manufacturer accepts no liability for damage or malfunction resulting from non-compliance with the instructions in this manual.
- Always comply with the statutory health and safety regulations and the applicable standards.
- The installation and operation of the drive system is governed by the following standards: EN 12453, EN 12604, EN 12605
- Prior to any work at the gate or drive, disconnect drive system from the power supply and secure it against inadvertent reconnection or actuation.
- There is a risk of injury from crushing at the closing edges of the gates or near the mechanical parts.
- Never operate the drive if you suspect that it might be faulty or damaged.
- After installation and commissioning, all persons operating the drive must be instructed on its functions and proper operation.
- Use only original spare parts, accessories and fixtures supplied by the manufacturer.

Operation

- Ensure that the drive is never operated by children or persons who have not been specifically instructed.
- When operating the gate, ensure that there are no persons, especially children, animals or objects within its operating range.
- Only operate the gate with the remote control device when you have full view of the gate.
- Never reach into the gate or any of its moving parts.
- Regularly inspect the safety devices. Immediately repair damaged or defective parts. For details, see maintenance instructions.
- Only drive through the gate after it has been fully opened.
- Adjust the force tolerance to the minimum level.
- At gates with automatic closing mechanism, all edges must be secured according to the applicable regulations and standards.
- Always remove the key to prevent unauthorised operation.

Storage

- The drive mechanism may only be stored indoors, in a dry, closed environment at an ambient temperature of between -20°C and +50°C.
- Store drives in horizontal position.



Radio remote control

- The radio remote control may only be used for equipment and systems in which defective remote operation of the transmitter or receiver does not constitute a risk to people, animals or property, or in cases where this risk is eliminated by means of additional safety facilities.
- All persons operating the gate must be instructed that systems, where there is a risk of injury or damage, may not be operated by remote control, or that such operation is only permitted, if all movements of the gate can be supervised.
- The radio remote control device may only be used, if the operator can fully supervise the movement of the device and if no persons or objects are within the movement range of the gate.
- Keep the remote control device out of reach of children or animals and prevent any inadvertent use.
- The operator of this radio-controlled equipment is not in any way protected against interference from other telecommunication systems and facilities (e.g. other radio-controlled equipment that is licensed to operate at the same frequency range). If such interference occurs, please contact the local radio and telecommunications authority requesting a radiolocation.
- Do not use transmitters near locations or installations that are susceptible to radio interference (e.g. airports, hospitals).

Rating plate

The rating plate is located on the cover of the control unit housing.

Normal Use

After the drive system has been installed, the person responsible for the installation must complete an EU Declaration of Conformity according to Machine Directive 98/37/EU and attach a CE mark at the type plate of the drive.
This also applies in cases where the owner of the system is a private person, as well as to manually operated gates that have been upgraded with a drive. The above documents and the instructions for installation and operation must be handed over to the operator.

- The drives are exclusively designed for the opening and closing of gates. Any other use is deemed improper. The manufacturer shall not be liable for damages resulting from improper use. The user accepts sole responsibility for any risks thereby incurred. Improper use shall void all warranty.
- Gates that are to be upgraded with an automatic drive system must comply with the applicable standards and directives as amended, e.g. EN 12453, EN 12604, EN 12605.
- Observe the safety distances according to EN 12604 between gate leafs and other objects.
- The drive system may only be operated if it is in proper working order. Always follow standard safety procedures and adhere to the instructions in this installation and operating manual.
- Immediately eliminate any defects that might impair the safety of the equipment.
- The gate leafs must only have minimum play at the hinges.
- The gate leafs must be stable and warp-proof, i.e. they may not bend or warp during opening or closing operation.
- The DSTA24 control and twist 200 drive systems may only be operated in conjunction.
- The DSTA24 control and the twist 200 drives are designed for use in private premises.
- The electric drive may only be used for the opening and closing of gates with one or two leafs.

General Information

Permitted Gate Leaf Dimensions

- **Length:** **min. 0.8 m to max. 2.5 m**
- **Height:** **max. 2.5 m**
- **Weight:** **max. 200 kg**
- **Open surface:** **min. 50 %, irrespective of gate leaf size**
- **Slope:** **0 %**

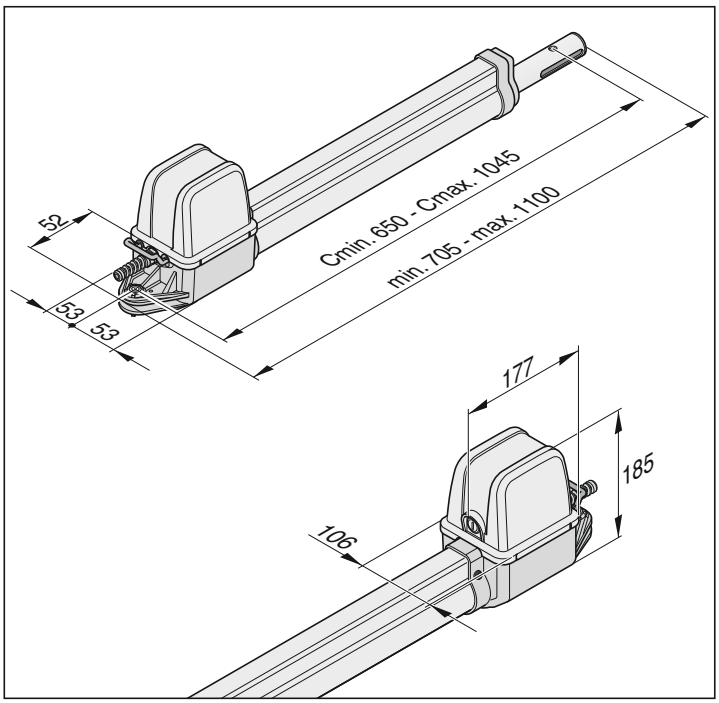
Technical Data

General	1 leaf	2 leaf	
Runtime, depending on A/B	approx. 10 to 22	approx. 15 ...27 sec.	
Protection class Drive Control system housing	 IP 44 IP 54	 IP 44 IP 54	
Rated voltage	220 ... 240	220 ...240	ACV
Rated frequency	50	50	Hz
Operating temperature Drive Control system housing	 -30 to +80 -20 to +70	 -30 to +80 -20 to +70	 °C °C
Travel (per drive)	395	395	mm
Max. traction force and pressure:	2000	2000	N
Dutycycle:	15	15	%
Stand-by			
Rated current consumption	20	20	mA
Rated power consumption	2,2	2,2	W
Rated operation			
Motor voltage	ca. 22	ca. 20	DC/V
Rated current consumption:	ca. 3	ca. 6	A
Rated power consumption:	ca. 118	ca. 234	W

Workplace noise emission < 75 dBA - drive only

Dimensions

All dimensions in mm.



Functions

The stop positions (gate OPEN + CLOSED) are adjusted by means of internal limit switches and are thus detected during operation.

The gate leaf is opened and closed by extending or retracting the push rod. When the preset stop positions are reached, the drive is automatically switched off by means of limit switches.

Locking of gate

For gates with leaf lengths over 2 m and for 2-leaf gates, we recommend the installation of a stop at position gate "CLOSE". An electric lock may be mounted for additional safety.

The gate does not require a lock to be kept closed, as the drive mechanism is self-locking(with connection to the control system). The gate can thus not be forced open by hand without damaging the drive system or fittings.

Remote control

The drive can be operated by remote control with the supplied remote control transmitter, provided that the transmitter and the radio receiver have been properly programmed.

Safety devices

The control unit is equipped with an automatic force monitoring system. If there is more force required for opening or closing the gate as has been programmed during the programming run, the drive is set into reverse motion.

The operator has the option to extend the control with various safety devices. For details see chapter additional functions and connections.

Examples of available accessories:

- Light barrier
- Safety contact unit with auxiliary monitoring system

EU-Manufacturer's Declaration

The company

SOMMER Antriebs- und Funktechnik GmbH
Hans-Bockler-Strasse 21-27
D-73230 Kirchheim/Teck, Germany

herewith declares that its drive system:

- twist 200 E

complies with the following Directives:

- Machine Directive 98/37EU
- Low-Voltage Directive 73/23/EEC
- EU Directive on Electromagnetic Compatibility 89/336/EEC

The equipment fulfils the requirements of the following standards:

- DIN EN 55014-1:1997-09, DIN EN 55014-2:1997-10
- DIN EN 55022:1999-05, DIN EN 61000-3-2:1998-10
- DIN EN 61000-3-3:1998-11, EN 60335-1:2002 (+A11:2004, A1:2004)
- EN 12453:2000, EN 13849-1:2006

Note:
the gate system may not be commissioned until it has been established that the system in which the above drive is to be installed fulfils all specifications of the relevant EU Directives.

Kirchheim, 01.12.2007

Frank Sommer
Managing Director

Preparations of Installation

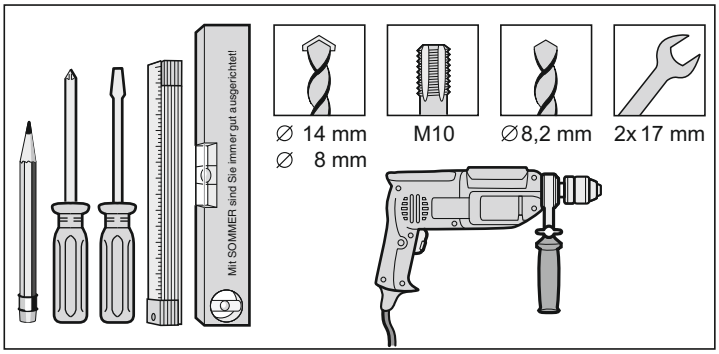
Safety instructions

The power cable supplied with the control unit may only be used for the installation of the drive systems. After completion of the installation, disconnect the cable and replace it with a duct-laid cable. It is forbidden to use the supplied power cable for standard operation of the gate.

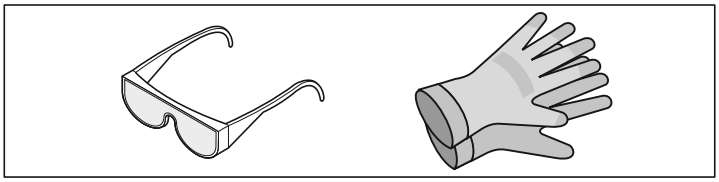
Caution! Risk of damage from voltage fluctuations
Voltage fluctuations, for example caused by welding machines, can damage the control unit.
- Only connect the control unit to the power supply after all installation work has been completed.

- Ensure that all cables of the drive are laid in suitable conduits (e.g. for underground cabling).
- The control unit may only be connected to the power supply by a qualified electrician.
- Always comply with the instructions in this manual.
- Locking devices (electrical locks, locking bolts, etc.) must be removed and disabled prior to installation of the drive system.
- Ensure that the gate leafs are properly secured to the posts as considerable forces are applied to the devices during opening and closing of the gate.
- Prior to welding of fittings to posts or gate leafs, remove or cover the drive unit to prevent damage from sparks, etc.
- If the gate is operated by means of a push-button, it must be installed at a minimum height of 1.6 m above ground to prevent inadvertent activation by children.
- In public areas, use only approved fittings and securing devices (e.g. dowels).

Tools required



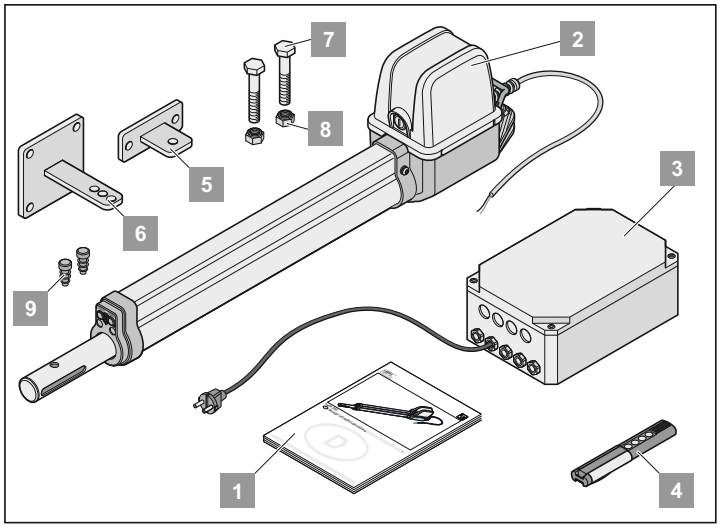
Personal protection equipment



- Safety goggles (for drilling)
- Work gloves

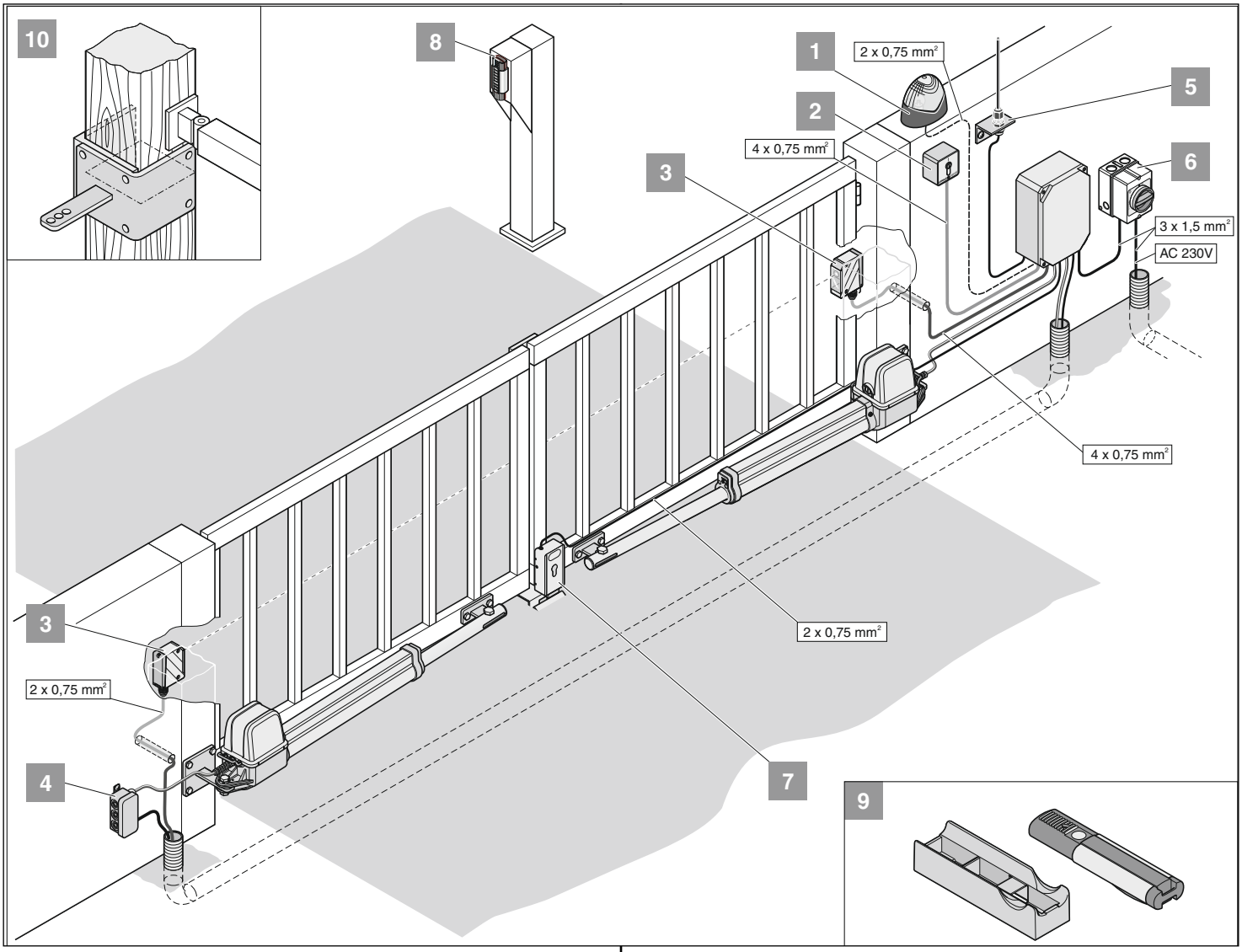
Supplied Components

- Prior to installation, check delivery to ensure that it contains all necessary parts.
- Depending on the design of your drive system, the delivery might deviate from the standard delivery.



Complete installation kit	1 leaf	2 leaf	
Weight	9.1	13.8	kg
Packaging (L x W x H):	800 x 200 x 220		mm
1. Installation and operating manual	1 x	1 x	
2. Drive unit including cables	1 x	2 x	
3. Control system, in housing (with radio receiver, transformer and mains plug)	1 x	1 x	
4. Remote control device including battery	1 x	1 x	
5. Gate leaf fittings	1 x	2 x	
6. Post fittings	1 x	2 x	
7. M10x45 stainless steel hexagon screw	2 x	4 x	
8. M10 stainless steel locking nut	2 x	4 x	
9. Plug	2 x	4 x	

Installation



Installation Tips

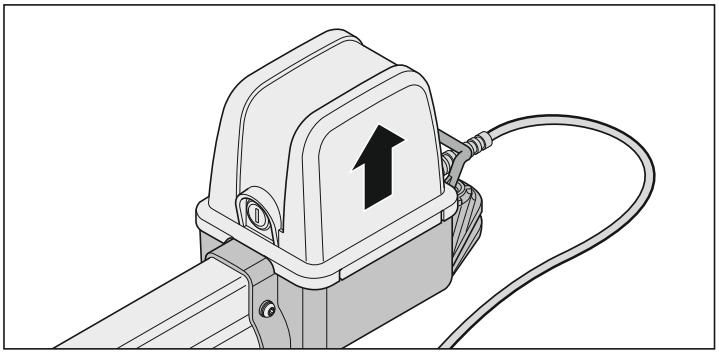
- Consult the operator when deciding on the location for installation of the control unit.
- Do not install the housing where it is visible from the street, in order to protect it against vandalism.
- For gates with leaf lengths over 2 m and for 2-leaf gates, we recommend the installation of a centre respond.

The gate can be operated with a number of different control devices: Hand-held transmitter, Telecody, radio push-button and key switch. With the hand-held transmitter, Telecody and radio push-button, there is no need for cables as they are radio control devices. For more information, contact the supplier.

1. Warning light DC 24 V
2. Key switch (1 or 2 contact)
3. Light barrier
4. Connecting cables 7 m
5. Main switch (lockable)
6. Rod aerial (including cable)
7. DC 24 V electric lock
8. Telecody
9. Holder for transmitter for installation in car or on wall
10. Timber post fittings

Mounting Position of Drive

- Mount drive in horizontal position. The motor must always be at the top of the drive system.



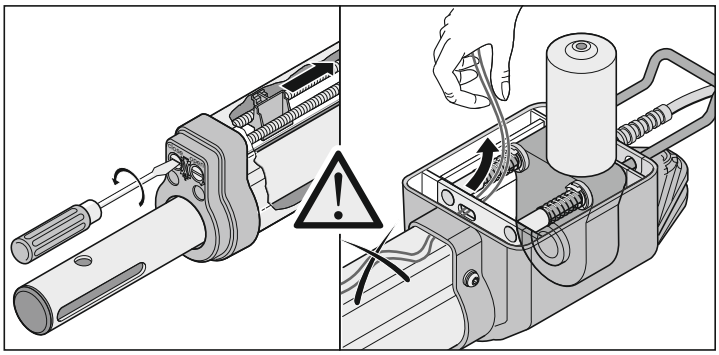
Preparation for Stop Position Settings

Never adjust limit switches with a power drill or similar tool, as the switches could thereby be pulled from the holders.

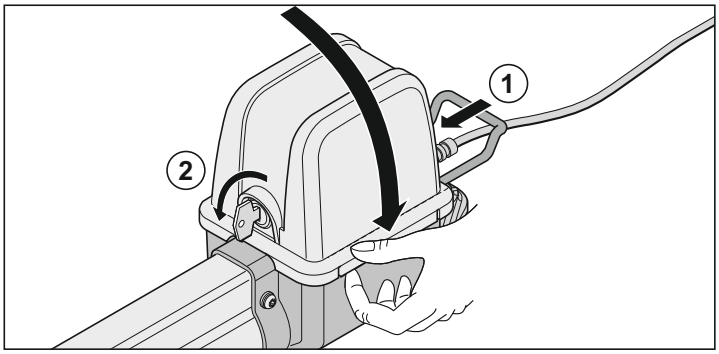
Never connect drive to 230V power, as this would immediately destroy the motor.

First install and adjust the limit switches for “gate OPEN” and “gate CLOSE”. Ensure that the gate leaf does not touch the housing to prevent damage to the drive.

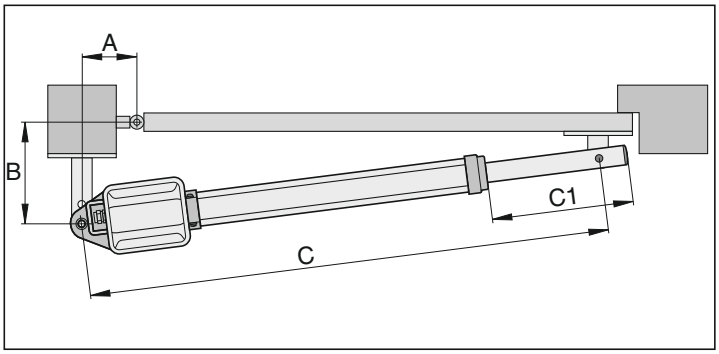
Always tighten the limit switch cables to prevent jamming within the protective tube.



- Upon the first command, the drives must move the gate in direction “OPEN”. If this is not the case, exchange the connecting cables of the drive at the control unit.

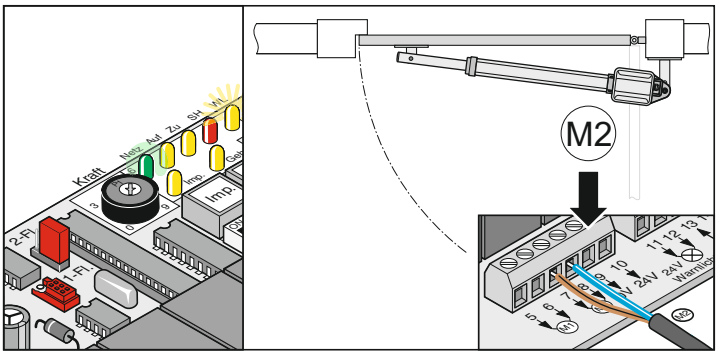


- Mount hood.
- Engage drive (1) and lock it (2).

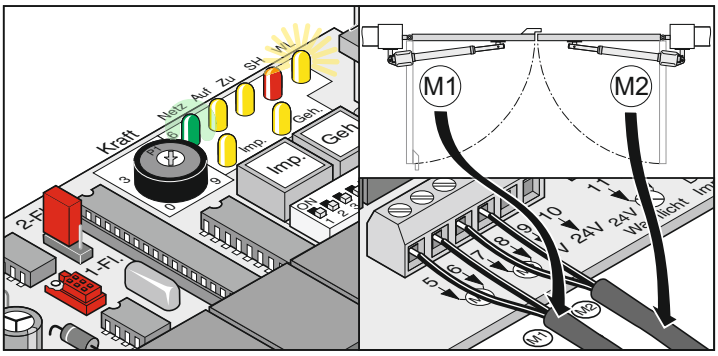


1. Pull out push rod to a length of C1 = 270 mm.
2. Measure dimensions A and B,
   look up dimensions C1 and C2 in the A/B dimension table.
3. Connect drive to control unit.
   - First connect and adjust drive at the leaf with stop (M1),
     then install drive for pedestrian leaf (M2).

Single-leaf gate



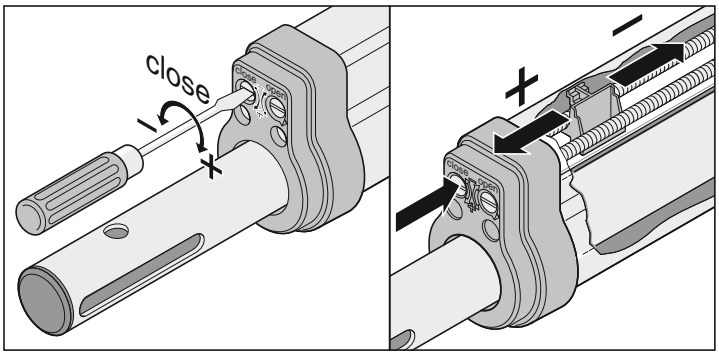
Double-leaf gate



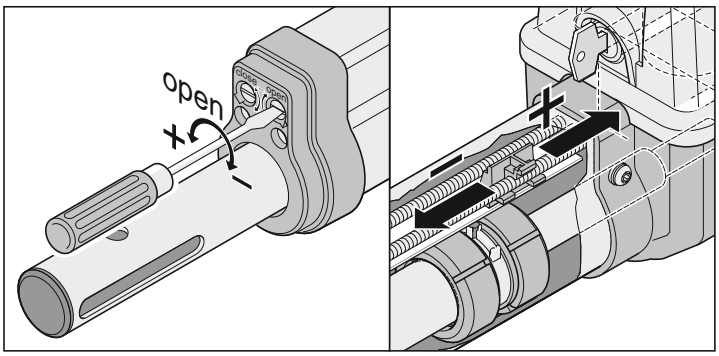
4. Set all DIP switches to OFF.
5. Set jumper: single-leaf or double-leaf gate
6. Connect control system to power supply.
   LED for power supply is on and “WL” LED flashes.

Limit switch settings

Gate CLOSED



Gate OPEN



A/B dimension table

Prior to installation, define dimensions A/B. Without knowing these dimensions, it is not possible to properly install and operate the drive system.

- The greater dimension B, the more sensitive the power cut-off function.
- If possible, ensure that dimensions A/B are corresponding (max. permissible deviation: 40 mm).
- Pay attention to different post dimensions.

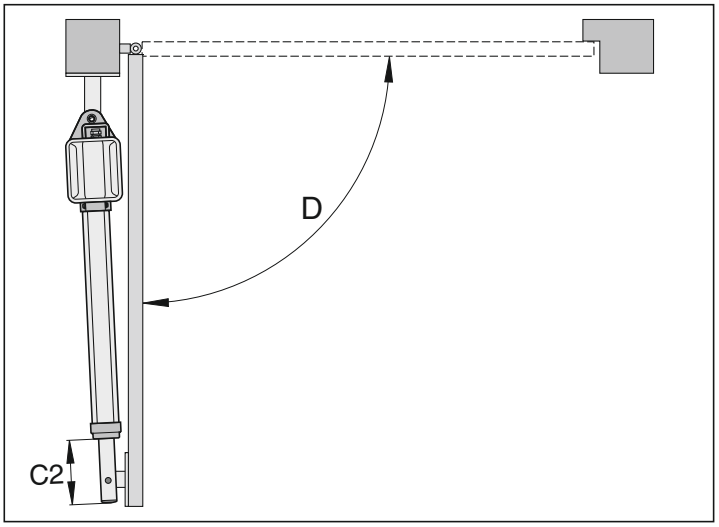
Note
Select dimensions that allow for the desired opening angle. Please note that the values in this table are standard values only. For gate leaf lengths of more than 1.5 m, dimension B must be at least 140 mm.

A / B	80		100		120		140		160		180		200		220		240		260	
	C	C1	C	C1	C	C1	C	C1	C	C1	C	C1	C	C1	C	C1	C	C1	C	C1
	D	C2	D	C2	D	C2	D	C2	D	C2	D	C2	D	C2	D	C2	D	C2	D	C2
100	854	272	889	308	925	344	963	382	1001	420	1035	454	1035	454	1035	454	1035	454	1035	454
	95°	84	105°	84	113°	84	120°	84	126°	84	129°	84	115°	84	107°	84	102°	84	98°	84
120	873	291	908	326	941	360	976	395	1014	433	1035	454	1035	454	1035	454	1035	454	1035	454
	94°	84	103°	84	110°	84	116°	84	122°	84	117°	84	108°	84	102°	84	97°	84	93°	84
140	893	312	924	343	959	377	992	411	1028	447	1035	454	1035	454	1035	454	1035	454		
	93°	84	101°	84	108°	84	114°	84	119°	84	109°	84	101°	84	96°	84	92°	84		
160	915	334	946	365	976	396	1010	428	1035	454	1035	454	1035	454	1035	454				
	93°	84	100°	84	106°	84	112°	84	110°	84	101°	84	95°	84	91°	84				
180	937	356	966	385	997	416	1029	447	1035	454	1035	454	1035	454						
	93°	84	99°	84	104°	84	109°	84	100°	84	94°	84	90°	84						
200	959	377	988	406	1017	436	1035	454	1035	454										
	92°	84	98°	84	103°	84	100°	84	93°	84										
220	982	400	1010	428	1035	454	1035	454												
	92°	84	97°	84	100°	84	90°	84												
240	1005	424	1031	449																
	92°	84	96°	84																
260	1028	447																		
	92°	84																		

Recommended range

Dimensions A, B, C, C1, C2 in mm
D = widest possible opening angle
1 rotation = 1.25 mm setting step

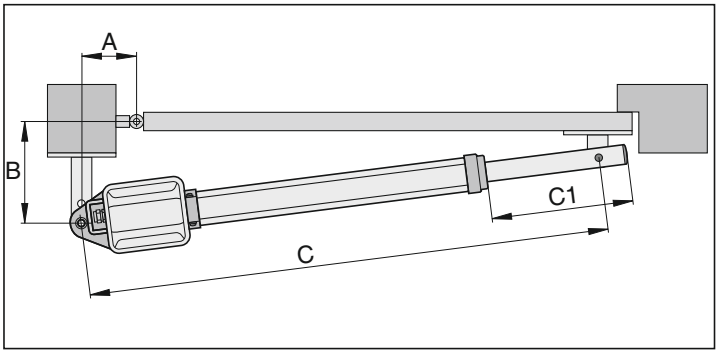
Adjustment of gate stop position “OPEN”



Factory settings for gate “OPEN”: approx. C2 = 84 mm.

1. Press key (Imp). Gate moves to end position gate “OPEN”.
   Hold push rod to prevent it from rotating, as it would otherwise not be retracted.
2. When the end position is reached, measure dimension C2.
3. Set limit switch for gate “OPEN” to respective dimension C2. Prior to adjusting the end switch, move gate slightly in direction gate “CLOSE”.
4. Press key (Imp). Gate moves to end position gate “OPEN”.
5. Repeat steps 1 to 4 until the desired value for dimension C2 is reached.

Adjustment of gate stop position “CLOSED”



Factory settings for gate “CLOSE”: approx. C1 = 455 mm.

1. Press key (Imp). Gate moves to end position gate “CLOSE”.
   Hold push rod to prevent it from rotating, as it would otherwise not be moved out.
2. When the end position is reached, measure dimension C1.
3. Set limit switch for gate “CLOSE” to respective dimension C1. Prior to adjusting the end switch, move gate slightly in direction gate “OPEN”.
4. Press key (Imp). Gate moves to end position gate “CLOSE”.
5. Repeat steps 1 to 4 until the desired value for dimension C1 is reached.

After the end positions for gate “OPEN” and “CLOSE” have been adjusted, mount the post fittings.

Installation of Fittings

The strength of the supplied fittings has been specifically chosen to suit the supplied drive system (twist 200). The manufacturer shall not be held liable for damages, if fittings other than those supplied are used.

If dimension B is smaller than the smallest value in the above table, install a spacer plate below the post fittings to ensure that dimension B is at least 100 mm.

- Prior to welding of fittings to posts or gate leafs, remove or cover the drive unit to prevent damage from sparks, etc.
- At solid stone and concrete posts, mount fittings in such a way that the plugs cannot loosen during operation. Instead of steel or plastic straddling dowels, we recommend using adhesive bond anchors that allow for the tension-free adhesion of the threaded pin in the post.
- Ensure that the distances between the gate leaf and the post, and the gate leaf and the drive system conform with the applicable standards.

Steel posts
Take into account wall thickness of post!
The fittings can be welded directly to the post or fixed by means of screws.

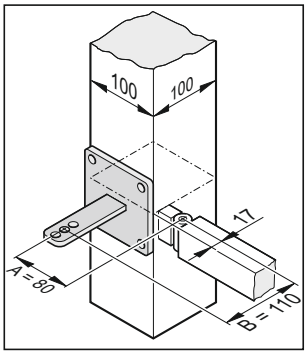
Stone and concrete posts
When mounting fittings onto stone posts, ensure that the boreholes for the screws are not too close to the edge of the post. The distance to be maintained may vary, depending on the dowel used. Please follow the instructions of the dowel producer.

Timber posts
As no additional forces are applied, you can use the supplied fittings.
If the supplied fittings do not fit your posts, contact a specialised dealer for special fittings (e.g. timber post fittings).

After installation of the fittings, do not carry out any welding or grinding work, as residues resulting from such work lead to accelerated corrosion at the fittings.

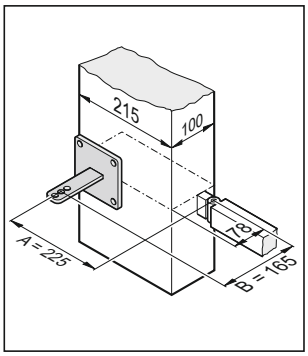
Examples of dimensions A / B

1. Short post



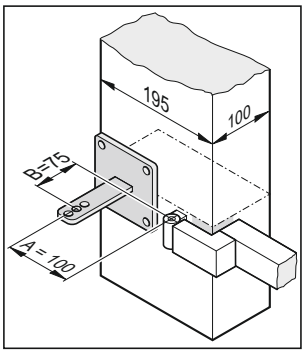
Dimensions:
Steel column 100 mm x 100 mm
Desired opening angle: min. 90°
Length of gate leaf: 1.5 m
Measurements:
A = 80 mm
B = 110 mm
Dimensions according to table
A = 80 mm
B = 120 mm
Max. opening angle = 94°

2. Long post

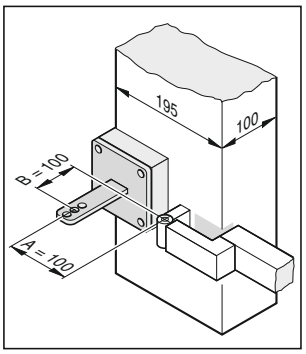


Dimensions:
Concrete column 215 mm x 100 mm
Desired opening angle: min. 95°
Length of gate leaf: 2.5 m
Measurements:
A = 225 mm
B = 165 mm
Dimensions according to table
A = 220 mm
B = 160 mm
Max. opening angle = 91°

3. Inside hinge /fittings



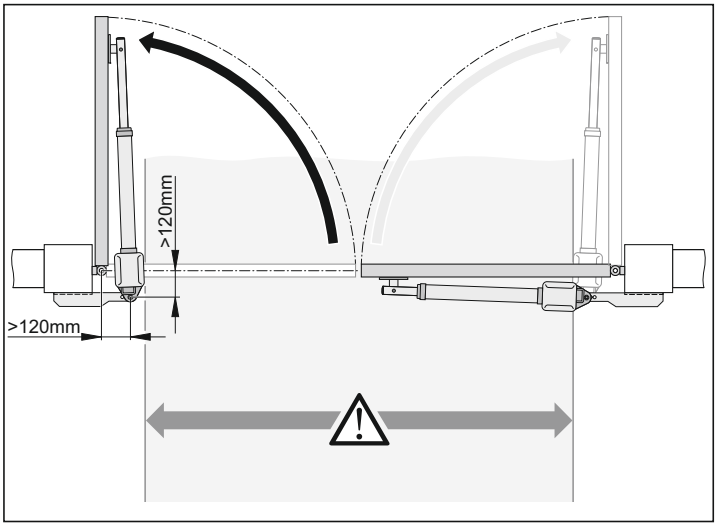
Dimensions:
Post 195 mm x 100 mm
Desired opening angle: min. 100°
Length of gate leaf: 1 m
Measurements:
A = 100 mm
B = 75 mm



As dimension B is 75 mm, insert a spacer plate below the fittings. This ensures that dimension B is increased to minimum 100 mm.

Dimensions according to table
A = 100 mm
B = 100 mm
Max. opening angle = 105°

Gate opening outwards

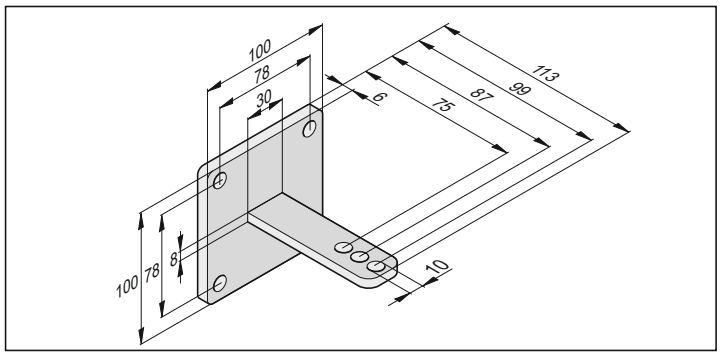


Caution!
Depending on the installation, the clearance width is reduced by approx. 150 mm on each side as the drive units protrude into the clearance of the gate.
The A/B dimensions must be minimum 120 mm.

- Manufacture post fittings in such a way that they suit the dimensions of the particular post.

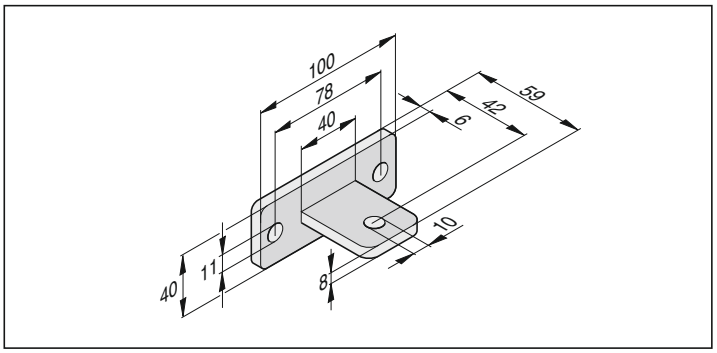
Installation

Post Fittings



1. Minimum distance between ground and bottom edge of hinge plate: 50 mm. However, ensure that the drive can be properly mounted onto the gate leaf.
2. Tighten nut at screw, ensuring that the drive can still be easily moved.

Gate Leaf Fittings



1. Close gate.
2. Mount hinge plate at the push rod of the drive.
   Insert screws but do not tighten.
3. Clamp the hinge plate to the gate leaf and complete a programming run to ensure that the limit switch settings are correct.
4. At three different positions, inspect drive and ensure that it is in a horizontal position:

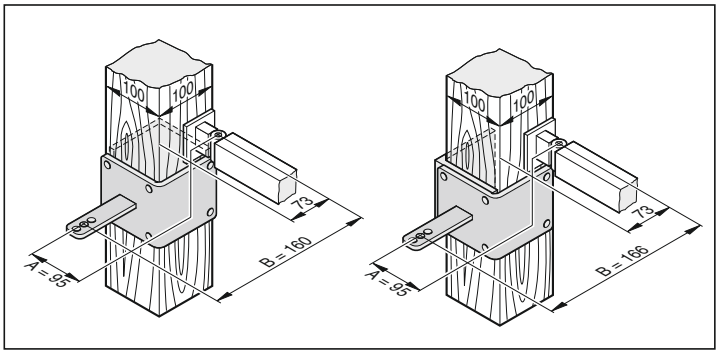
   A. Gate “CLOSE”

   B. Gate “OPEN”

   C. Gate at 45° angle
5. Check position of hinge plate; if ok, secure hinge plate to leaf.
6. Tighten nut at screw, ensuring that the drive can still be easily moved.

Timber Post Fittings

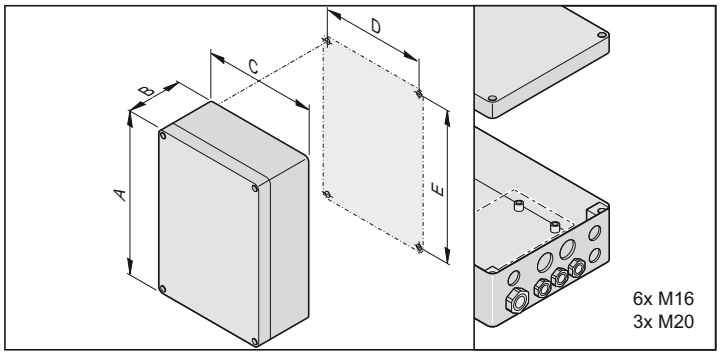
Available as optional accessories.



Installation of Control Unit

The power cable supplied with the control unit may only be used for the installation of the drive systems. After completion of the installation, disconnect the cable and replace it with a duct-laid cable. It is forbidden to use the supplied power cable for standard operation of the gate.

Establish power connection according to EN 12453 (all-pole disconnecting switch).



Dimension	Housing 1	Housing 2
A	254 mm	250 mm
B	90 mm	75 mm
C	180 mm	175 mm
D	165 mm	160 mm
E	239 mm	235 mm

CAUTION: Risk of damage from water

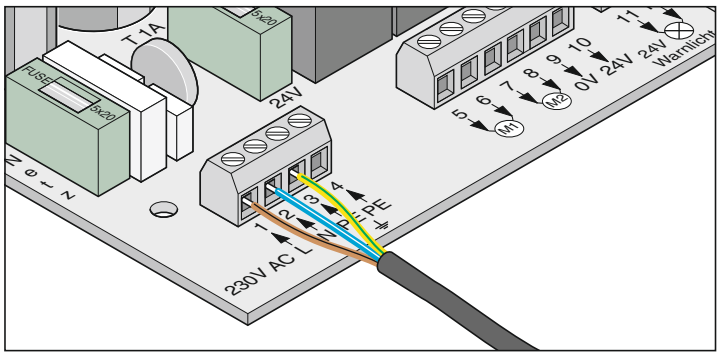
Penetrating water can destroy the control unit.

- Secure the housing only with screws at the provided securing points; do not drill holes into the rear panel of the housing, as this could lead to water entering the system, destroying the control unit.

- Prior to carrying out any work at the control unit, disconnect it from the power supply.
- If there is humidity inside the housing, dry it with a blower.
- The control unit may only be connected to the power supply by a qualified electrician.
- Install control unit in upright position (cable ducts at base) and without applying any strain. The cover must fully close to prevent water from penetrating the housing.

Connection to power supply (AC 230 V)

The cable ducts are designed for 1.5 mm² to 2.5 mm² cables.



Terminal	Name	Function
1	L	AC 230 V mains
2	N	Neutral conductor
3 + 4	PE	Earth conductor

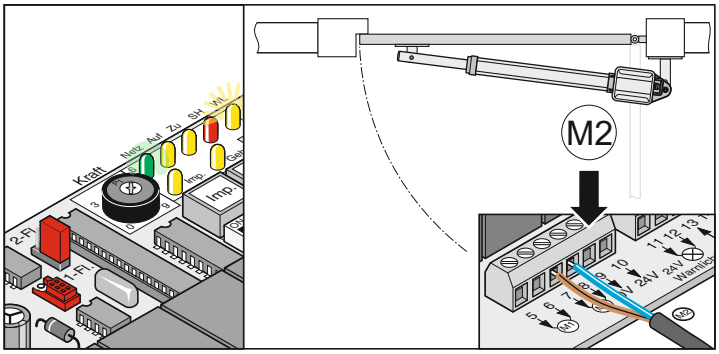
The connection to the power supply must be carried out by a qualified electrician.

Connecting drive to control unit

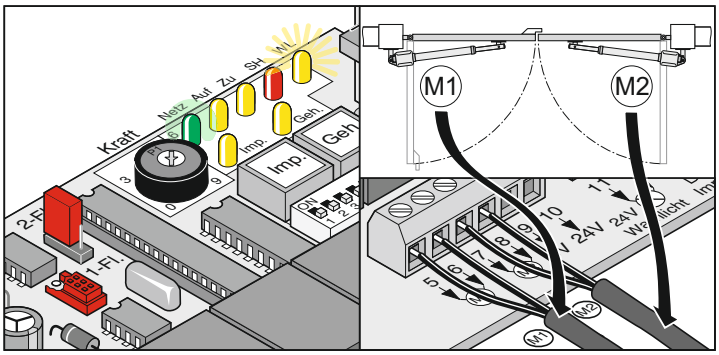
Never connect the drive directly to the AC 230 V mains supply, as this could destroy the motor.

Connect the drive only if the control system is not powered and is secured against inadvertent activation.

Single-leaf gate



Double-leaf gate

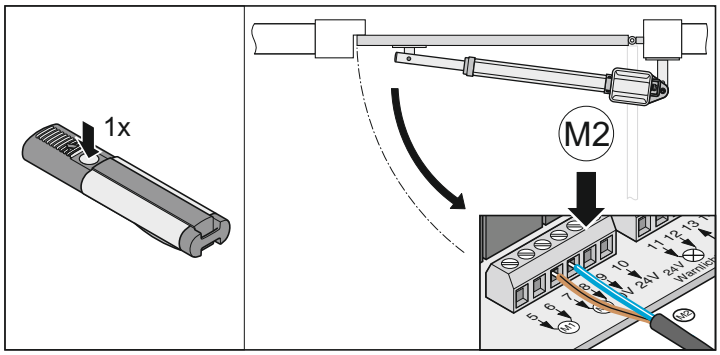


1. Connecting drive to control unit
   - First connect and adjust the drive at the leaf with the stop (M1), then install the drive for the pedestrian leaf (M2).
2. Set all DIP switches to OFF.
3. Set jumper: single-leaf or double-leaf gate
4. Connect the control system to the power supply.
   The LED for power supply is on and the "WL" LED flashes.

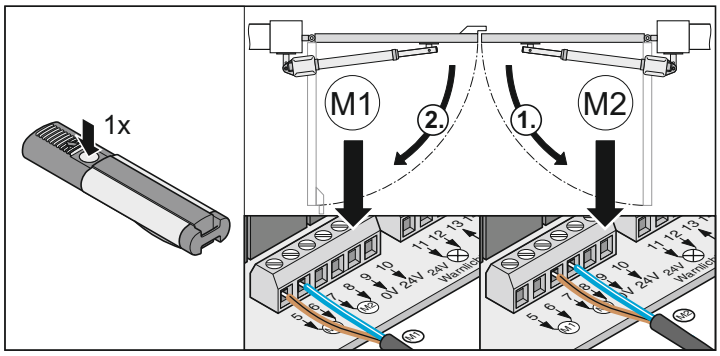
Checking direction of drive

- Upon the first command, the drives must move the gate in direction “OPEN”. If this is not the case, exchange the connecting cables of the drive at the control unit.

Single-leaf gate



Double-leaf gate



Terminal	Label	Function
5 + 6	M1	single-leaf gate: no function assigned double-leaf gate: connection for motor-1 The motor must be mounted on the leaf that opens as the second leaf, or that is equipped with a stop bar at the outside. Terminal 5: Motor cable, brown Terminal 6: Motor cable, blue
7 + 8	M2	single-leaf gate: connection for motor double-leaf gate: connection for motor-2 The motor must be mounted on the leaf that opens as the first leaf, or that is not equipped with a stop bar at the outside. Terminal 7 Motor cable, brown Terminal 8: Motor cable, blue

Commissioning

General Instructions

All programming runs must be supervised, as the drives operate at full force and at half the normal speed. Ensure that no persons or objects are located within the operating range of the gate.

- During the programming run, the “WL” LED or the connected warning lamp are flashing, irrespective of position of DIP switch 4.
- During the programming runs, the force necessary to properly open and close the gate, the runtime and the delay upon closing are learnt and stored by the control system.
- If a programming run is interrupted before it is completed (“WL” LED is on during opening or closing), all previously saved values are deleted.

Preparation for Standard Operation

Caution!
Risk of short circuit! Prior to adjusting the DIPswitch settings, disconnect control unit from power supply.

1. Select 1 or 2 leaf option, connect desired components and complete settings (see additional functions and connections).
2. Connect control unit to power supply (AC 230 V) (“Power” LED is on).
3. Tighten all screws at the fittings so that the drives can easily be moved.
4. Replace cover and snap on.
5. Engage emergency release and secure with lock.
6. Close gate.

Activating Standard Operation

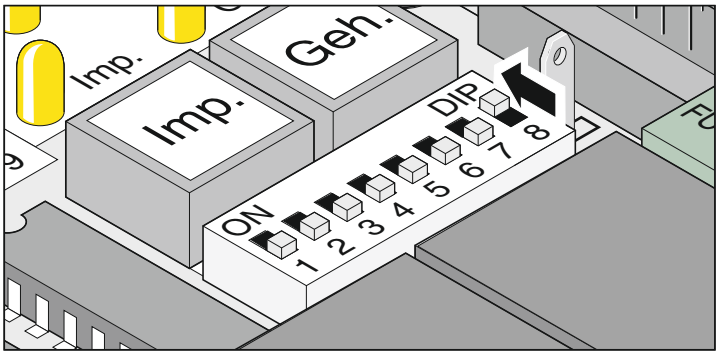
- Check limit switch settings. Open and close the gate. If the drive switches off when an end position is reached, start with teach-in process.

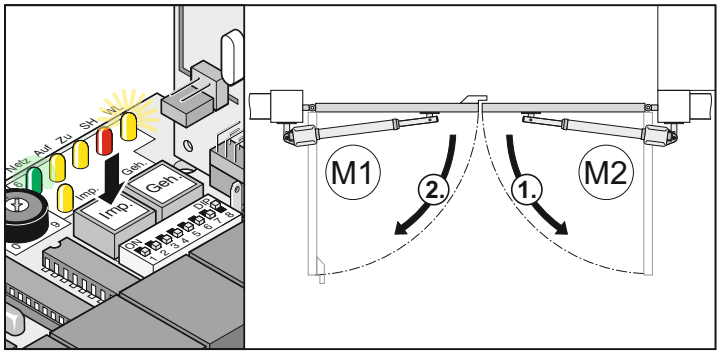
Set DIP switch 8 to ON.

“WL” LED flashes, until the values for force, runtime and closing delay have been learnt and stored.

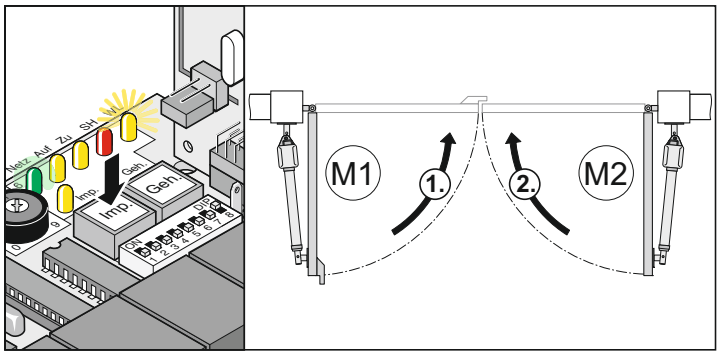
2 leaf gate!
Leaf 1 (M1 leaf with stop) is closed first, followed by leaf 2 (M2 pedestrian leaf). This prevents that gates with different runtimes are closed in the wrong sequence.

Complete at least 2 programming runs:





1. Press key (Imp). The operator moves the gate to end position “gate OPEN”.
   - The LED for power supply is on and the “WL” LED flashes.



2. Press key (Imp). Gate moves to end position “CLOSED”
   - The LED for power supply is on and the “WL” LED flashes.
3. Repeat steps 1 + 2.

✓ When the “WL” LED stops flashing, all values have been registered and stored.

Hier fehlt ein kompletter Absatz.

If a programming run could not be properly completed (drives not in soft run mode, LED "WL" flashes), reset the control system (all stored values are deleted, see control reset). Start a new programming run.

Adjusting Force Tolerance

After the drive system has been installed, the person responsible for the installation must complete an EU Declaration of Conformity according to Machine Directive 98/37/EU and attach a CE mark at the type plate of the drive.
This also applies in cases where the owner of the system is a private person, as well as to manually operated gates that have been upgraded with a drive. The above documents and the instructions for installation and operation must be handed over to the operator.

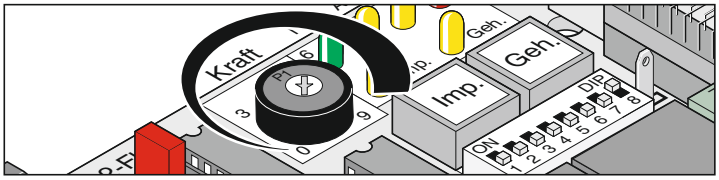
The force settings are relevant for the system’s safety and must therefore be adjusted with due care and attention. If the force tolerance is outside the permitted range, there is a serious risk of injury and damage.
Select the lowest possible force tolerance in order to ensure that obstacles are immediately and reliably detected.

- Maximum force = programmed force + force tolerance (adjustable at potentiometer)
- If the set force is not sufficient to fully open or close the gate, increase the force tolerance by turning the potentiometer clockwise.
- Adjust value while the gate is in operation; the new values are subsequently stored upon the next opening operation of the gate.
- After the adjustment of the force tolerance is completed, check the end positions and readjust, if necessary.

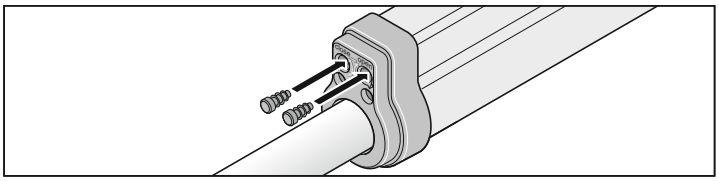
Inspection of force tolerance settings

For detailed instructions, see chapter Maintenance / Regular Inspections

Adjustment of force tolerance to programmed value. The the potentiometer setting is read every time the system is started.

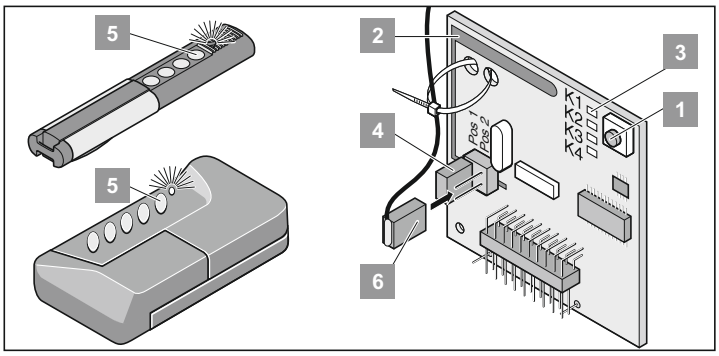


- Potentiometer at the left stop (0): smallest tolerance value; potentiometer at the right stop (9): highest tolerance value



Programming remote control

Prior to the initial programming of the transmitters, clear the memory of the radio receiver.



Clearing radio receiver memory

1. Press and hold programming key (1).
   - After 5 seconds, the LED begins to flash. After another 10 seconds, the LED is continuously on.
   - After 25 seconds, all LEDs are on.
2. Release programming key (1)

✓ All LEDs are off, the memory is cleared.

Programming remote control

Gate system with 1 leaf:

- Key 1 to radio channel 1

Gate system with 2 leafs:

- Key 1 to radio channel 1 (both leafs open)
- Key 2 to radio channel 2 (only the pedestrian leaf opens)

1. Press programming key (1)
   1x for channel 1; LED (K1) is on
   2x for channel 2; LED (K2) is on
   - If no code signal is transmitted within 10 seconds, the radio receiver switches to standard operation.
   - Aborting programming: repeatedly press programming key (1) until all LEDs are off.
2. Press and hold the desired remote control key (5) until the LED is off.
   - LED is on, indicating the selected channel. The respective code is transmitted to the radio receiver.

✓ LED is off - the programming process is completed.

Check

Press key 2. The pedestrian gate leaf opens.

Press key 1. Both leafs open.

"Teaching" additional remote controllers. Repeat the above steps. Max. 112 different radio codes (remote control keys) can be stored in the radio receiver.

Operation

Safety instructions

- Never operate the drive if you suspect that it might be faulty or damaged.
- Before opening or closing the gate, ensure that no persons, especially children, animals or objects are within the opening range of the gate.
- Never use remote control device at locations where it might interfere with other important radio systems (e.g. airports, hospitals).
- Only operate the gate with the remote control when you have full view of the gate.
- Keep the remote control device out of reach of children or animals and prevent any inadvertent use.
- Use remote control only, if the force tolerance is set to a permitted value. Select the lowest possible force tolerance to reduce the risk of injury.

Standard Operation

Damage to the gate, humidity, subsidence, extreme temperature, etc. may affect the force that is required to open and close the gate.

If the force required to open or close the gate is increased within the tolerance range set at the potentiometer, the force settings are automatically adjusted accordingly. In the same way, the drive adjusts the settings, if less force is required.

Operation in Summer/Winter

Due to the temperature variations between summer and winter, the forces required to operate the gate might vary considerably. If the gate cannot be opened or closed, reset the control system and complete a programming run.

The temperature difference might also affect the end position of the leafs. If necessary, adjust positions at the limit switch.

Intermediate Stop

2 leaf gate system

If the leaf is opened by means of the pulse command and stopped with the stop command, before leaf 1 is opened, the pedestrian gate leaf can only be closed with the pedestrian gate command.

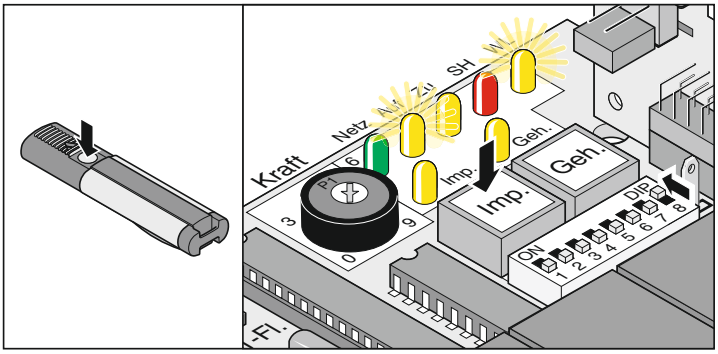
Obstacle Detection:

The obstacle detection function is only working properly after the programming runs are completed and the force tolerance is set.

If the moving gate leaf touches an obstacle, it is identified as such. Depending on the actual movement and DIP switch settings, the gate leaf responds in different ways. The first subsequent gate movement is always away from the obstacle.

Opening and Closing Gate

- **DIP switch 8 set to ON and programming run completed.**
- **Remote control programmed (key 1 to channel K1, key 2 to channel K2).**



Procedure for single-leaf gates

1. Press key (Imp) or key 1 at remote control.
   - Gate opens until end position “OPEN” is reached. LEDs “OPEN”+ “WL” are on.
   - When end position “OPEN” is reached, the LEDs “OPEN” + “WL” are switched off.
2.

Procedure for double-leaf gates - operation of both leafs

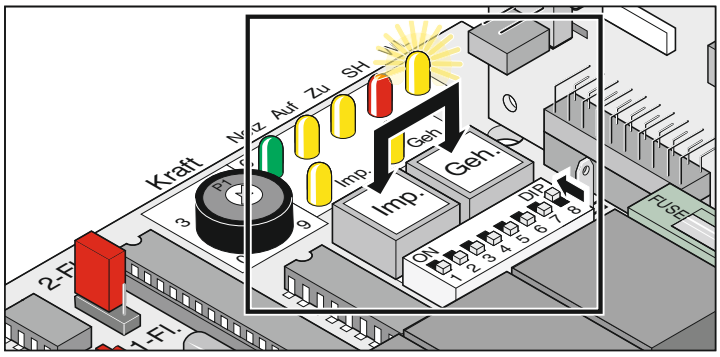
1. Press key (Imp) or key 1 at remote control.
   - Leaf 2 (M2/pedestrian leaf) opens first. After 3 seconds, leaf 1 (M1) opens - LEDs “OPEN” + “WL” are on.
   - When end position “OPEN” is reached, the LEDs “OPEN” + “WL” are switched off.
2. Press key (Imp) or key 1 at remote control.
   - Leaf 1 (M1) closes first. After 5 seconds, leaf 2 (M2/pedestrian leaf) closes - LEDs “CLOSE” + “WL” are on.
   - When end position “CLOSE” is reached, the LEDs “CLOSE” + “WL” are switched off.

Procedure for double-leaf gates - operation of pedestrian gate only

1. Press key (Geh) or key 2 at remote control.
   - Leaf opens until end position “OPEN” is reached - LEDs “OPEN” + “WL” are on.
   - When end position “OPEN” is reached, the LEDs “OPEN” + “WL” are switched off.
2. Press key (Geh) or key 2 at remote control.
   - Gate closes until end position “CLOSE” is reached - LEDs “CLOSE” + “WL” are on.
   - When end position “CLOSE” is reached, the LEDs “CLOSE” + “WL” are switched off.

Resetting Control

When the control system is reset, all programmed values (e.g. force settings: drive force required to open/close the gate, delay settings) are deleted. Under certain circumstances, it might be necessary to delete all stored values and reprogramme the system.

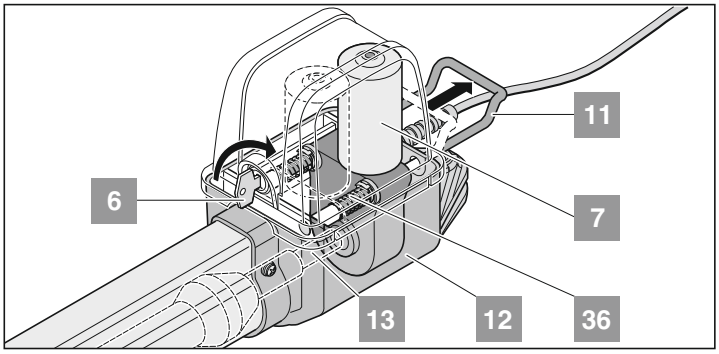


1. Press keys (Imp. + Geh) and hold until LED “WL” begins to flash.
2. LED “WL” is off - all data is deleted. Release keys.
3. LED “WL” flashes.
4. Complete programming run, see chapter “Activating Standard Operation”

Emergency Release in the Event of a Power Failure

This procedure should only be applied if the control system is not powered and is secured against inadvertent activation.

In the event of a power failure, the gate can be manually opened or closed, irrespective of its initial position.

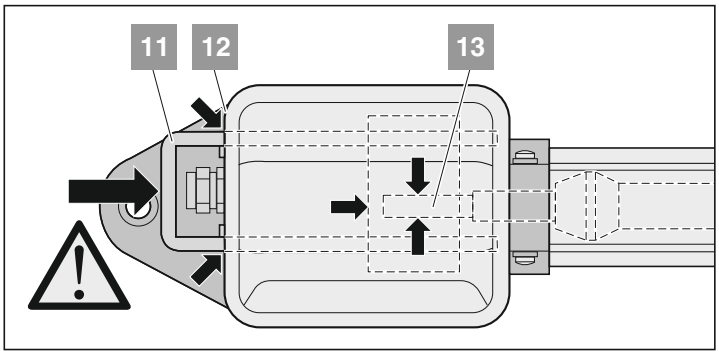


1. Turn key (6) 90° to the right - emergency release lever is released.
2. Pull emergency release lever (11) from the housing (12); the motor (7) is removed from the threaded spindle (13).
   The springs (36) push the motor (7) from the threaded spindle (13).
   To make opening easier: move gate leaf manually.

Engaging of drive system

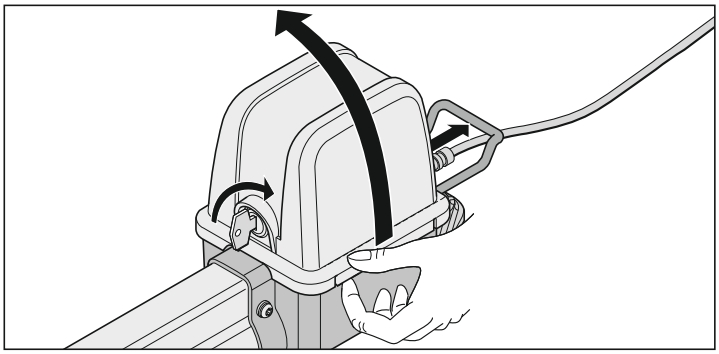
Complete above steps in reverse order.

The emergency release lever (11) must be firmly pressed against the housing (12).
If the drive is not properly engaged, the motor might be damaged (7).



Removing the Cover

The cover may only be removed, if the control system is not powered and is secured against inadvertent activation.



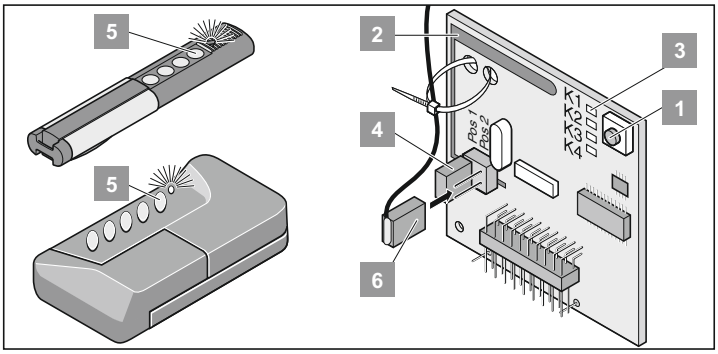
Radio Receiver

Homelink compatible!
If your vehicle is equipped with a Homelink system (version 7), you can reach our drive/radio receiver at 868.6 MHz. With older Homelink systems, you must use a different frequency (40.685 or 434.42 MHz). For more information, please visit: "http://www.eurohomelink.com"

Safety instructions

- The operator of this radio-controlled equipment is not in any way protected against interference from other telecommunications systems and facilities (e.g. other radio-controlled equipment that is licensed to operate at the same frequency range).
- In the event of poor reception, replace the battery of the remote control.

Display and Keys



1 Programming key

2 internal aerial

3 LEDs: indicate the selected channel.
K1 = radio channel 1 -> same function as Imp key
K2 = radio channel 2 -> same function as pedestrian gate key
! K3 = radio channel 3 -> no function assigned
! K4 = radio channel 4 -> no function assigned

4 Connection for external aerial (6)
If the internal aerial does not have the necessary reach, connect an external aerial to the device. For details, see accessories.

5 Remote control transmission key

6 External aerial

Programming of Remote Control

Prior to the initial programming of the transmitters, clear the memory of the radio receiver.

1. Press programming key (1)
   once for channel 1; LED (K1) is on
   twice for channel 2; LED (K2) is on
   - If no code is transmitted within the next 10 seconds, the radio receiver is reset to standard mode.
   - Aborting programming: repeatedly press programming key (1) until all LEDs are off.
2. Press and hold the desired remote control key (5) until the LED is off.
   - LED is on, indicating the selected channel. The respective code is transmitted to the radio receiver.

✓ LED is off - the programming process is completed.

Programme all other remote control devices by repeating the above steps.
The max. number of memory blocks is 112.

Operation

Cancelling remote controller button from radio receiver

If, for instance, a user of a parking facility is moving house and wishes to keep his remote control device, all radio codes of this device must be disabled at the receiver.

For reasons of safety, we recommend to disable every single key and possible key combination!

- Press programming key (1) and hold for 5 seconds until one of the LEDs is flashing.
- Release programming key (1) - the radio receiver is no in delete mode.
- Press the remote control key whose radio code is to be cleared from the radio receiver. The LED is switched off. Löschvorgang beendet.

✓ LED is off - the deletion process is completed.

Deleting all Radio Codes of a Channel

- Press and hold the programming key (1).
  1x for channel 1; LED (K1) is on.
  2x for channel 2; LED (K2) is on.
  - LED is on, depending on which channel has been selected. After 5 seconds, the LED starts to flash and then after an additional 10 seconds is continuously illuminated.
- Release programming key (1) - the deletion process is completed.

Clearing Radio Receiver Memory

If a remote control transmitter is lost, for security reasons the radio receiver must be cleared!

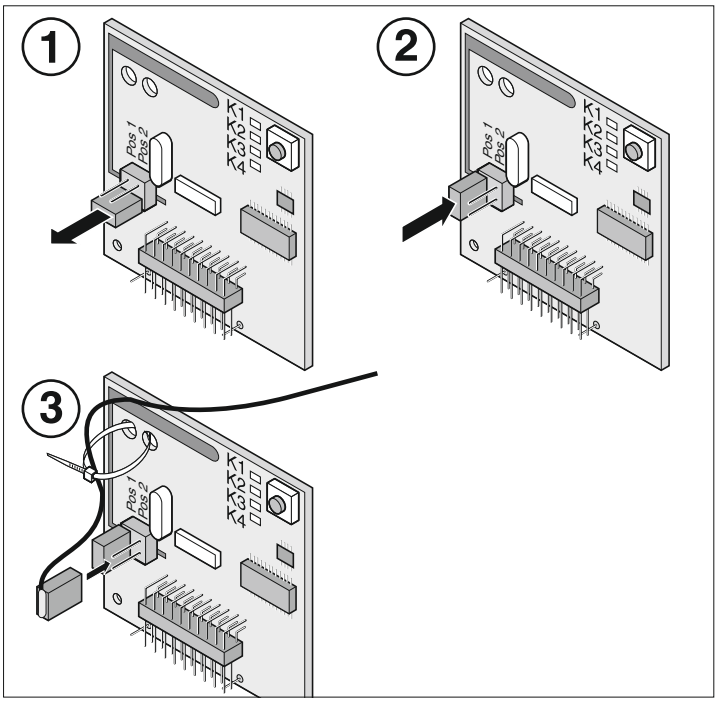
All remote control devices must subsequently be programmed again.

- Press and hold the programming key (1).
  - After 5 seconds, the LED begins to flash. After another 10 seconds, the LED is continuously on.
  - After 25 seconds, all LEDs are on.
- Release the 'Learn' button (1).

✓ All LEDs are off - the memory is cleared.

Connect External Antenna

- The aerial cable should not place any mechanical stress on the radio remote control receiver, attach a strain relief device.



Troubleshooting

All LEDs are flashing:
Attempt to assign more than 112 memory blocks at the radio receiver. If you wish to programme additional remote control devices, first disable other transmitters to free up memory blocks

LED is on:

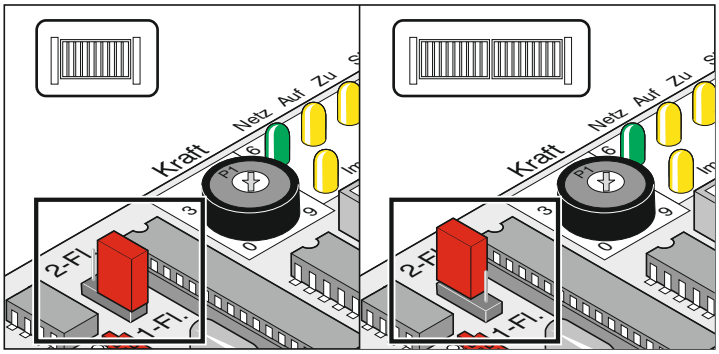
- Programming mode: Learning mode, radio receiver is waiting for a radio code from a transmitter.
- Radio receiver is receiving a signal from a remote control.

Additional Functions and Connections

Jumpers

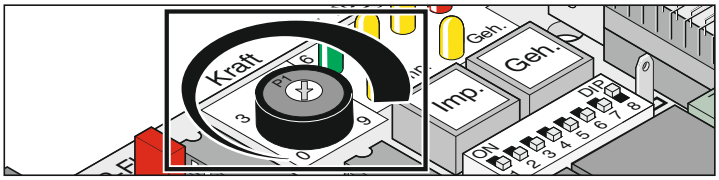
Selection of gate system (single-leaf or double-leaf)

After changing the jumper settings, reset the control system and complete a new programming run.



Label	Function
double-leaf / single-leaf	Jumper at upper pins = double-leaf
	Jumper at lower pins = single-leaf
	Jumper not set = single-leaf

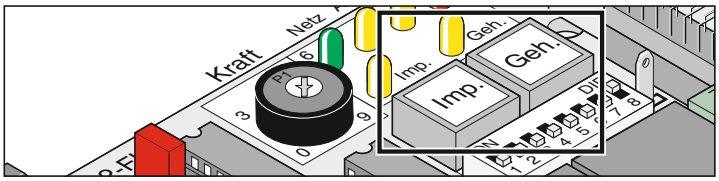
Potentiometer for force tolerance settings



Adjustment of force tolerance additional to programmed value. The potentiometer setting is read every time the system is started.

- Potentiometer at the left stop (0): smallest tolerance value; potentiometer at the right stop (9): highest tolerance value

Control panel keys



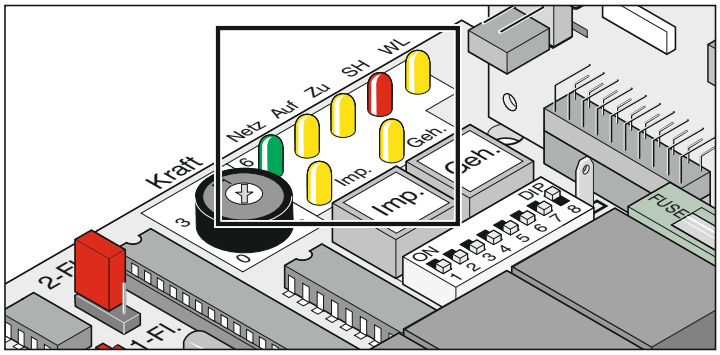
Label	Function
Imp.	Pulse key: opens both gate leafs If the Imp key is pressed while a pedestrian gate leaf is in motion, the leaf is stopped. If the pedestrian leaf is fully opened, leaf 1 can be opened by pressing the Imp key. Sequence: open - stop - close - stop - open ...
Geh.	Pedestrian gate key: Open only the pedestrian gate In a double-leaf gate, this key opens only gate leaf 2. In gates where the stop bar is on the outside, leaf 2 always opens before leaf 1. Sequence: open - stop - close - stop - open ...

Key (Geh) is only enabled, if leaf 1 is fully closed.

Reset of control:
To reset the control, press both keys together for minimum 5 seconds until LED (WL) is switched off.

LEDs

The LEDs indicate the control system status.



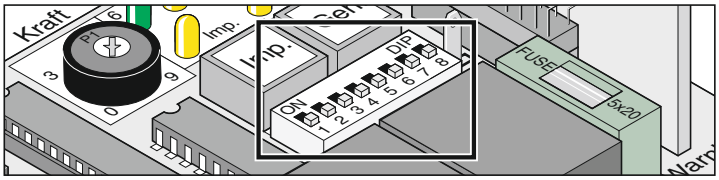
Label	Colour	Status
Power	green	OFF = no power ON = Low-voltage power to the control unit, e.g. DC 24V.
If the mains fuse is blown, this LED is off; terminals 1, 2 19 or 21 might however be powered with mains voltge (AC 230 V).		
OPEN	yellow	OFF = idle ON = gate is opening
CLOSE	yellow	OFF = idle ON = gate is closing
SH	red	OFF = idle ON = signal at safety input (light barrier triggered)
WL	yellow	OFF = idle, with programmed force values flashing = test mode, where DIP switch 8 is set to OFF. - During programming run, where DIP switch 8 is set to ON. - The gate is opened and closed, whereby the programmed force values are applied and DIP switch 4 is set to ON. ON = gate is opening or closing with the programmed force values, and DIP switch 4 is set to OFF.
Imp.	yellow	OFF = idle ON = pulse key or radio channel 1 activated.
Geh	yellow	OFF = idle ON = pedestrian gate key or radio channel 2 activated.

Additional Functions and Connections

DIP Switches

Factory settings: OFF

Prior to adjusting the DIP switch settings, disconnect the control unit from the power supply.



Switch	Function in OFF position	Function in ON position
1	No response to signal at the safety input upon opening of gate.	Gate is reversed, when the safety input is triggered while the gate is opening.
2	Gate movement reversed, when safety input is triggered while the gate is closing.	Gate is stopped, when the safety input is triggered while the gate is closing.
3	Switch 2 OFF: reversion	Switch 2 OFF: gate is fully opened
4	Warning lamp is on	Warning lamp flashes
5	Early warning OFF	Early warning period approx. 3 seconds. Warning lamp is on or flashes, before the gate is started, depending on position of switch 4.
6 *	Manual mode	Automatic close mode: Gate is automatically closed after 60 seconds.
7 *	No function assigned	Gate closes automatically 5 seconds after light barrier is triggered.
8	Test mode: Drive unit opens and closes the gate without programmed force values.	Standard mode: - After switching from OFF to ON; the force values, run times, and delays for closing/opening are programmed in the course of programming runs.

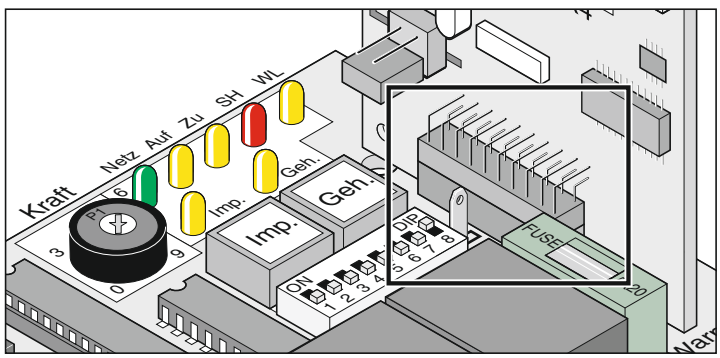
Operate gate only with full view of the gate's operating range.

DIP switch 8
For standard operation, set switch to ON.
Setting to OFF deletes all saved values.

* See TorMinal manual

Radio receiver Slot

Hier wird der Funkempfänger eingesteckt. Connect only potential-free break contacts.



Automatic Close Mode

For operation with automatic close mode, comply with EN 12453 (e.g. installation of light barrier 1).

The gate closes automatically after the time for GATE OPEN set at the potentiometer has lapsed. The gate can only be opened by means of a command issued via a push-button or manual remote control. When the gate is opening, no command issued can stop it from doing so.

When it is closing automatically and a further command is given, the gate opens fully. If a command is issued during the GATE OPEN period, this period is restarted.

The GATE OPEN time can be activated at DIP switch 6:
Time adjustable with TorMinal: 5 to 255 seconds,
default setting 60 seconds.

Behaviour of the drive system when a signal is received at the safety input

While gate is closing:
drive behaves according to the settings of DIP switch 2.

While gate is opening:
drive behaves according to the settings of DIP switch 1.

Automatic close mode, option 1

Automatic closing is activated as soon as the end position gate OPEN is reached; at this moment, the GATE CLOSE time is started. If a command is issued during the GATE CLOSE period, this period is restarted.

Settings:

- DIP switch 6 ON
- the desired time (5 to 255 seconds) by TorMinal, default setting 60 seconds
- DIP switch 7 OFF
- DIP switch 8 ON
- Other DIP switches set as required

Automatic close mode + light barrier, option 2

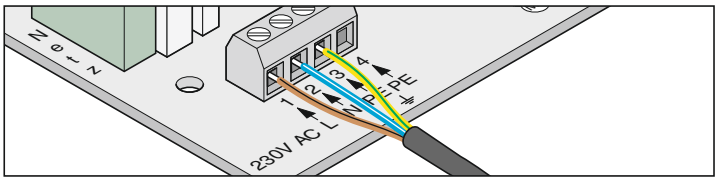
Automatic close mode can be interruped by playcing a switch in supply line of the light barrier.

Similar to the option described above; the gate is, however, automatically closed 5 seconds after the light barrier has been triggered.

Settings:

- DIP switch 6 ON
- the desired time (5 to 255 seconds) by TorMinal, default setting 60 seconds
- DIP switch 7 ON
- DIP switch 8 ON
- Other DIP switches set as required

Connection to Power Supply (AC 230 V)

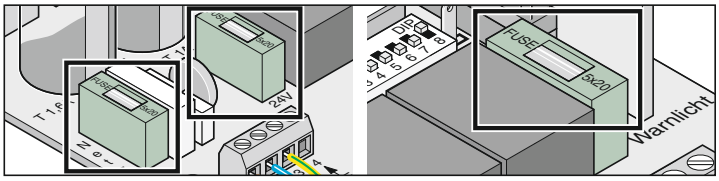


Terminal	Label	Function
1	L	Power conductor AC 230V
2	N	Neutral conductor
3 + 4	PE	Earth conductor

The connection to the power supply must be carried out by a qualified electrician.

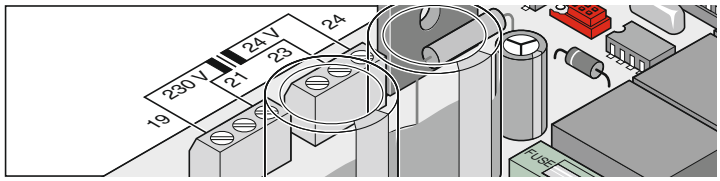
Additional Functions and Connections

Fuses



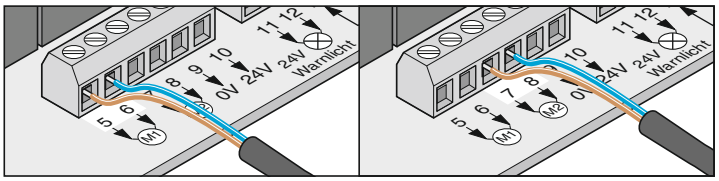
Label	Capacity	Description
Mains	1.6 A, slow	Power supply line AC 230 V
24 V	1 A, slow	Power output DC 24 V Terminals 9 + 10
Warning light	1 A, slow	Warning light output DC 24 V Terminals 11 + 12

Connection of Transformer



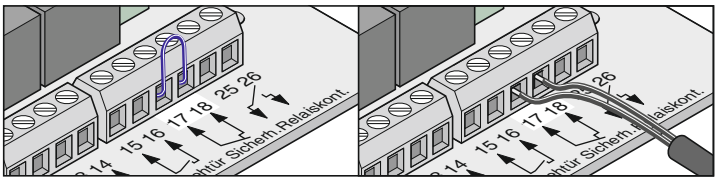
Terminal	Label	Function
19 + 21	230 V	Power supply (primary winding), brown
23 + 24	24 V	24 V input (secondary winding), power supply line to control unit, violet or white

Connecting Drives



Terminal	Label	Function
5 + 6	M1	single-leaf gate: no function assigned double-leaf gate: connection for motor-1 The motor must be mounted on the leaf that opens as the second leaf, or that is equipped with a stop bar at the outside. Terminal 5: Motor cable, brown Terminal 6: Motor cable, blue
7 + 8	M2	single-leaf gate: connection for motor double-leaf gate: connection for motor-2 The motor must be mounted on the leaf that opens as the first leaf, or that is not equipped with a stop bar at the outside. Terminal 7 Motor cable, brown Terminal 8: Motor cable, blue

Connecting Safety Devices



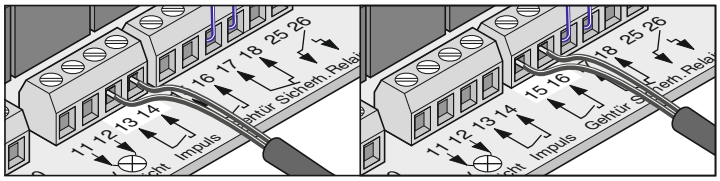
For operation with automatic close mode, comply with EN 12453 (e.g. installation of light barrier).

Factory settings: Bridge between terminals 17 + 18.

Terminal	Label	Function
17 + 18	Security	Connection for safety devices, e.g. - Light barrier - The safety contact unit can only be used in conjunction with the auxiliary monitoring system. If the connected safety device is not triggered, the contact must be closed. If the contact is not used, mount a bridge between the terminals (factory settings).

Use the contact only for floating normally closed contacts. External voltage may damage or destroy the control system.

Connecting Push-button



Terminal	Label	Function
13 + 14	Impuls	Connection for push-button used to operate one or both gate leafs.
15 + 16	Pedestrian leaf	Connection for push-button used to operate one gate leaf.

Use the contact only for floating normally closed contacts. External voltage may damage or destroy the control system.

A 2-contact key is only required for double-leaf gates, and if the pedestrian gate function is to be used.

In single-leaf gates, the pulse and the pedestrian gate key are assigned identical functions.

Connection Key 1 Contact:

single-leaf gate system Key to terminals 13 + 14 or 15 + 16

double-leaf gate system Key to terminals 13 + 14

Connection Key 2 Contact

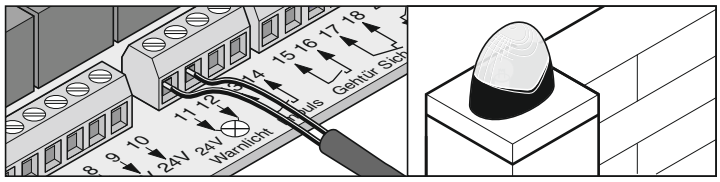
Pedestrian gate terminals 15 + 16

Both leafs terminals 13 + 14

Additional Functions and Connections

Connecting Warning Light

Available as optional accessories.

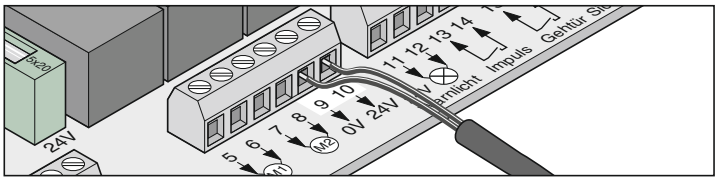


For function settings, see DIP switches 4 + 5

Terminal	Label	Function
11 + 12	24V Warning light	Connection for DC 24 V warning lamp , fused with 1A at max. 24 W.

⚠ **The voltage might fluctuate between DC 22 V and DC 27 V under full load.**

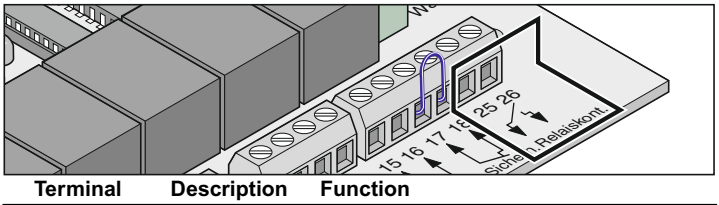
Connecting External Device



Terminal	Label	Function
9	0 V	
10	24 V	24 V supply line, fused with 1A max. 24 W

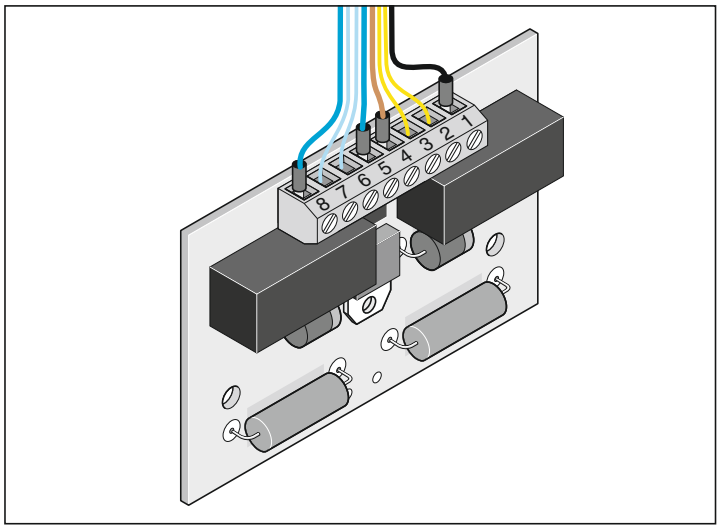
⚠ **Rectified, not stabilised transformer voltage, fluctuating between 22V and 27V at full load.**

Floating Relay Contact



Terminal	Description	Function
25 + 26	Special funct.	Connection for electric lock, etc. max. 8 A, 24 V DC at ohmic load

Motor Circuit Board



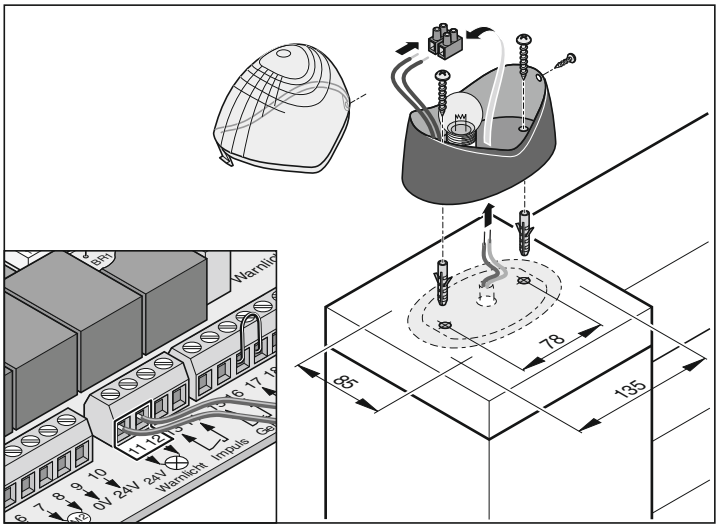
Terminal	Function / Cable colour
1	24 V supply line from control unit, blue
2	Limit switch gate “CLOSE”, blue
3	Limit switch gate “CLOSE”, blue
4	Motor, blue
5	24 V supply line from control unit, brown
6	Limit switch gate “OPEN”, yellow
7	Limit switch gate “OPEN”, yellow
8	Motor, black

Accessories

Safety Instructions

Caution!
Prior to any work at the gate or drive, disconnect control unit from the power supply and secure it against inadvertent reconnection or actuation.

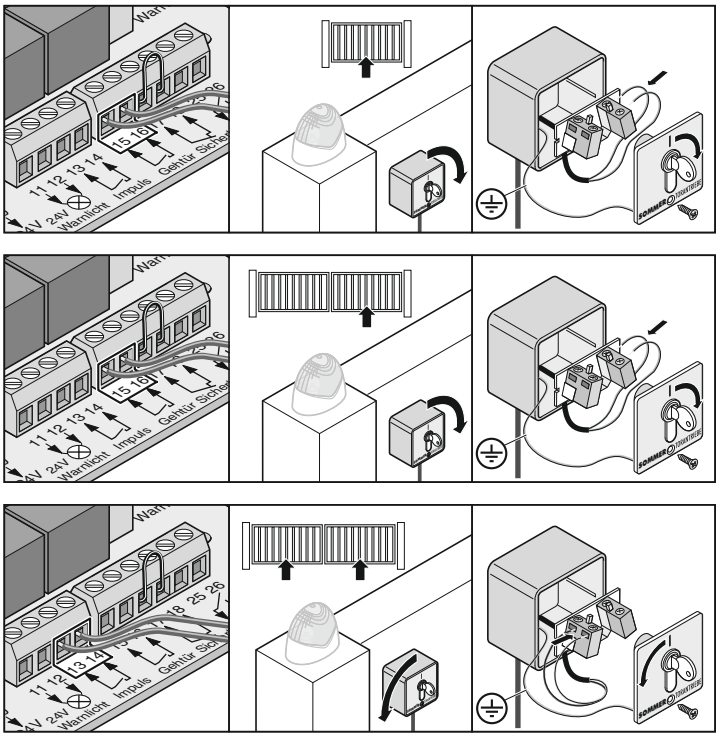
1. Warning light



2. Key switch

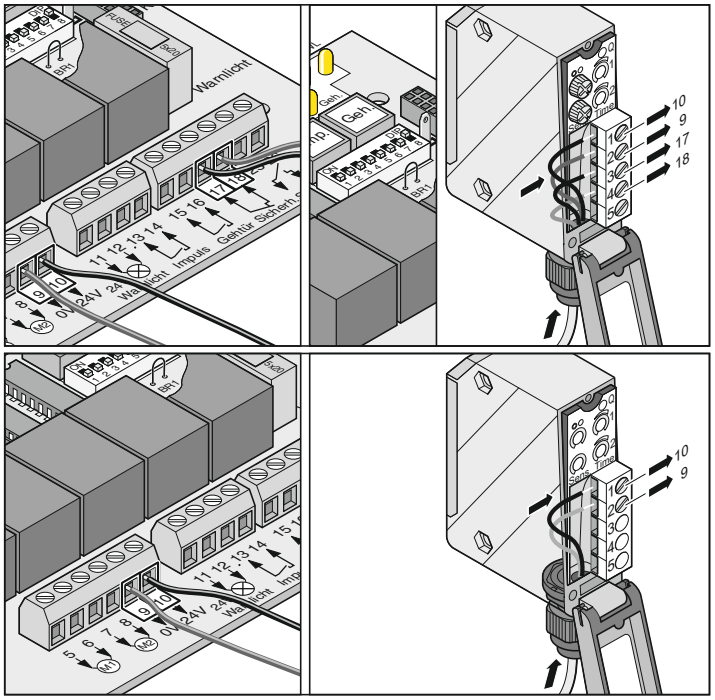
Position the key switch box in such a way that the operator can see the gate, while he/she is not inside the operating area of the gate.

- Never lead the key switch cable along the power line, as this could lead to interference in the control system.
- Use a separate conduit for the key switch line.



- Install key switch box at a suitable location where it can be easily accessed.

3. Light barrier



4. Connecting cables

- Secure distribution box with screws at the provided eyelets.

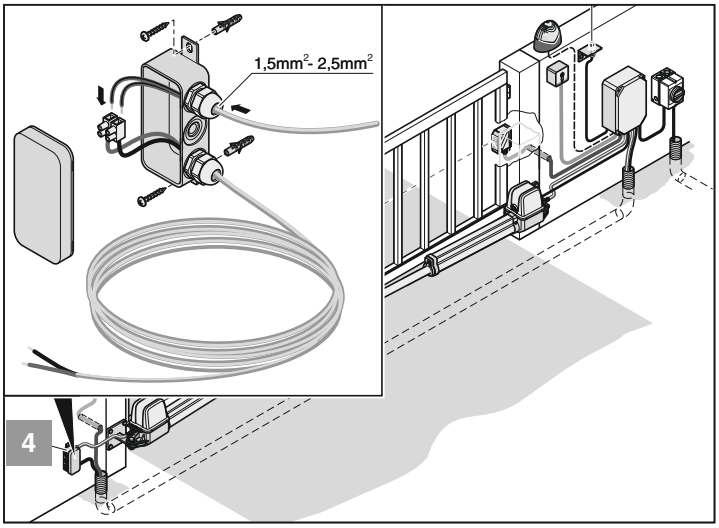
Installation

Only connect cables that have the same colour, i.e.:

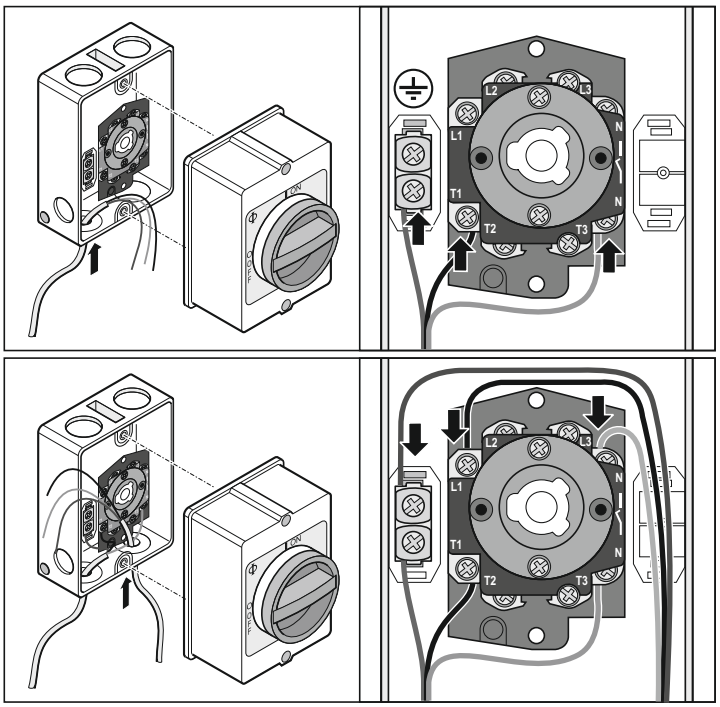
- blue to blue
- brown to brown

Secure cable glands tightly to prevent moisture from penetrating the distribution box. After installation, close distribution box tightly.

Wiring diagram:

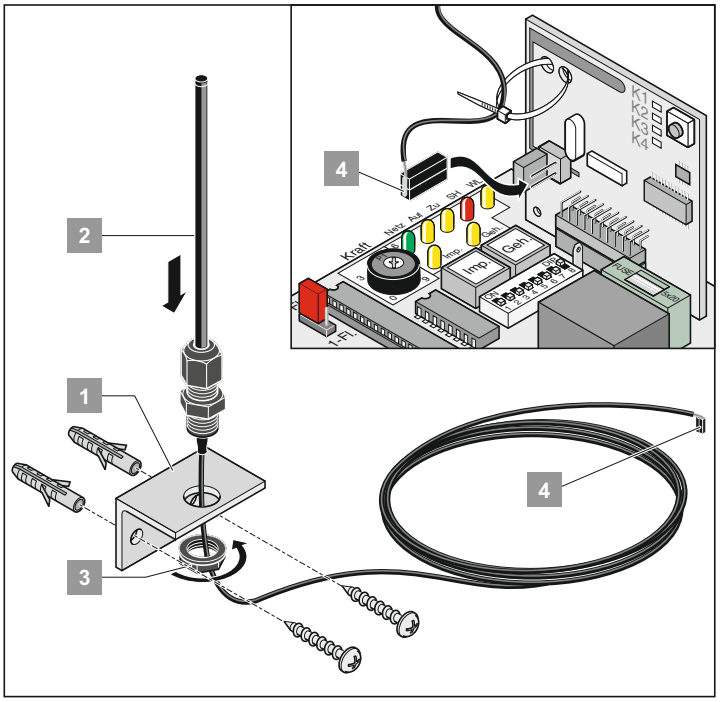


5. Main switch



6. External aerial

- If the built-in aerial is not sufficient for the proper operation of the gate, you have the option to connect an external aerial to the system.
- Ensure that the aerial cable is laid in such a way that there is no mechanical stress to the radio transmitter. Install strain relief, if necessary.
- Consult the operator/owner of the system in order to find a suitable location for the external aerial.



- Connect external aerial to the respective adapter.

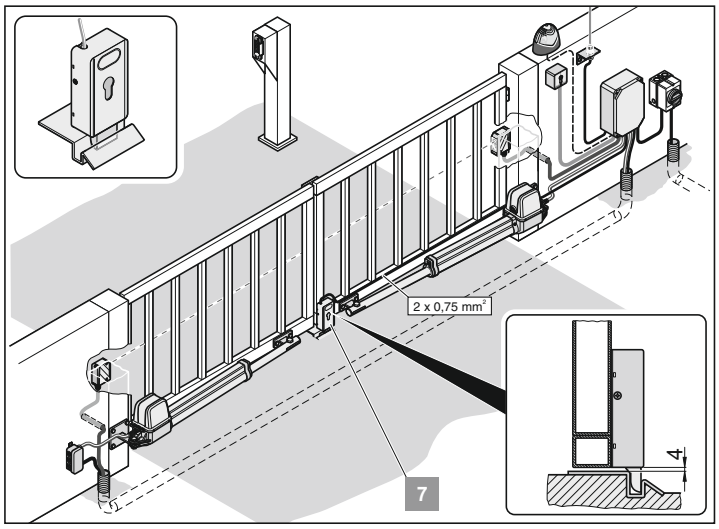
7. DC 24 V electric lock

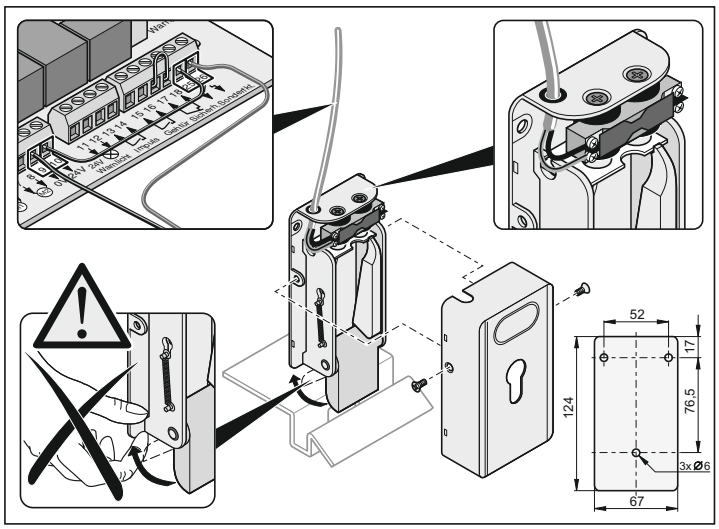
Installation:

- Reset the control system.
- After completion of the installation adjust end position gate “CLOSE”.
- Mount the lock horizontally, as it might otherwise be jammed when the gate is operated.
- Distance between lock and closing plate: min. 4 mm, max. 6 mm.

Connecting diagram for DC 24 V electric lock

This connecting diagram is designed for DC 24 V electric locks only.





Maintenance

Safety instructions

Never clean drive system or control unit with a water hose or power washer.

- Never clean the drive with alkaline or acidic solutions.
- Carefully remove dirt from drive system and clean push rod from time to time with a dry cloth.
- If necessary, clean and/or dry.
- Regularly inspect all screws at the fittings and retighten, if necessary.
- Inspect the cover of control unit and readjust, if necessary, to ensure that it is watertight.

Regular Inspection

- Regularly, at least annually, inspect all safety devices and test their function (see for example BGR 232, 2003, valid only in Germany).
- Safety devices that are sensitive to pressure (e.g. safety contact unit with auxiliary monitoring system) should be checked every 4 weeks to ensure proper functioning, see EN 60335-2-95.

Service and Warranty

The warranty granted complies with statutory requirements. In the event of a repair that is covered by warranty, please contact your dealer/specialist stockist. Warranty entitlements only apply to the country in which the product has been purchased.

Batteries, fuses and light bulbs are not covered by warranty.

Replaced parts remain the property of the service agent.

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

We have made every effort to ensure that these instructions are as clear and concise as possible. However, if you have any queries or wish to comment on this document, please contact us with your suggestions:

Fax: 0049 / 7021 / 8001-403

E-mail: doku@sommer.eu

Disassembly

Observe safety instructions!

To dismantle the unit, complete the respective steps described in chapter “Installation” in reverse order. There is of course no need to adjust settings.

Test	Behaviour	yes/no	Possible cause	Remedy
Force cut-off				
While the leaf is closing, try to stop it by hand. Do not try to hold the leaf.	Does gate stop and move in opposite direction after it has been halted?	yes	• Force cut-off works properly	• Do not change settings.
		no	• Potentiometer at right stop. Force tolerance set too high.	• Set force tolerance to lower value by turning the potentiometer in anticlockwise direction until the test is successful. Prior to test, open and close the gate twice watching its operation.
			• Control system defective	• Shut down the gate and secure against switching on. Contact customer service!
Emergency release system				
Proceed as described in section “Emergency Release”.	It must be possible to open/close the gate by hand without special effort. Can the motor be removed from the shaft?	yes	• Everything OK!	
		no	• Gate fittings rusty	• Lubricate gate fittings
Safety contact unit (optional)				
Open/close gate and interrupt motion by triggering the safety contact strip.	Gate behaviour according to settings of DIP switches 1, 2 and 3.	yes	• Everything OK!	
		no	• Cable defective, terminal screw loose	• Inspect wiring, retighten terminal screws
			• DIP switch settings changed	• Check DIP switch settings and adjust
			• Contact strip defective	• Shut down gate system and secure against inadvertent switching on. Contact customer service!
Light barrier (optional)				
Open/close gate and interrupt motion by triggering the light barrier.	Gate behaviour according to settings of DIP switches 1, 2 and 3. Is the LED “SH” on?	yes	• Everything OK!	
		no	• Cable defective, terminal screw loose	• Inspect wiring, retighten terminal screws
			• DIP switch settings changed	• Check DIP switch settings and adjust
			• Light barrier dirty	• Clean light barrier
			• Light barrier defective	• Shut down gate system and secure against inadvertent switching on. Contact customer service!

Troubleshooting

Tips for Troubleshooting

Should you be unable to identify and eliminate a fault using this table, please take the following steps:

- Carry out a reset of the control system (deletion of set force values).
- Disconnect any accessories (e.g. light barrier) connected to your system.
- Reset all DIP switches to the default settings.
- Reset potentiometer to the default settings.
- If settings have been changed with TorMinal, reset the control system with the TorMinal.

Fault	Check	yes/no	Possible cause	Remedy
Gate cannot be opened or closed with the switch or the remote control.	Is “Power” LED on?	no	• No mains power	• Check power line and reconnect, if necessary
			• Mains fuse blown	• Check fuse and replace, if necessary
		yes	• Gate jammed	• A gate leaf has been pushed down or has warped due to high temperature differences
			• Motor makes a sound but does not move	• Shut down unit. Possible motor and/or control system failure. Contact customer service
			• Drive disengaged	• Engage drive.
			• Cable insulation too long, preventing contact	• Disconnect cable, remove insulation and reconnect again
			• Gate frozen to ground/posts	• Remove ice and snow from gate and hinges.
			• Gate obstructed by snow	• Remove snow
			• Cable disconnected from motor board	• Reconnect cable to motor board
	Is LED at the remote control device on?	no	• Battery empty	• Replace battery
			• Battery incorrectly inserted	• Insert battery correctly
			• Remote control defective	• Replace remote control device
		yes	• Remote control battery nearly empty; resulting in limited radio range	• Replace battery
			• Radio receiver defective	• Replace radio receiver
			• Remote control not programmed	• Programme remote control device
			• Poor reception	• Install external aerial, see section “Accessories”
			• Wrong frequency	• Check frequency; remote control and radio receiver must be set to the same frequency
	Is at least one LED at the receiver on when a remote control key is pressed?	no	• Radio receiver not properly mounted	• Check and readjust radio receiver
			• Radio receiver not powered, or defective	• Replace radio receiver
			• Remote control not programmed	• Programme remote control device
			• Battery of remote control empty	• Replace battery
			• Battery incorrectly inserted	• Insert battery correctly
			• Remote control defective	• Replace remote control device
	Are LEDs “Power” + “OPEN/CLOSE” on?	yes	• Permanent signal	• Pulser defective; disconnect all pulsers
	Are LEDs “Power” + “SH” on?	yes	• Light barrier triggered	• Remove object triggering the barrier
	Disruption occurs only from time to time or temporarily	yes	• Powerful radio transmitters (pager systems) of hospitals or industrial plants might interfere with your gate system.	• Change radio frequency. • Contact telecommunication authority.
	Is the "SH" LED flashing rapidly?	yes	• Control system has registered incorrect values, e.g. due to short-term power failure.	• Reset the control and repeat programming procedure. If this is not possible, dismantle the control unit and return it to the manufacturer, or consult a specialist technician.

Troubleshooting

Fault	Check	yes/no	Possible cause	Remedy
Gate cannot be opened/closed with a key switch.	LEDs “Power” + “Imp./Geh” on?	no	• Cable connections loose • Key switch defective • Cable defective	• Retighten terminals • Replace key switch • Replace cable
		yes	• Pulser (key switch, remote control) defective	• Check pulser and replace, if defective
Gate is stopped or continues in reverse motion.	Obstacle in operating range?	no	• Hinges too stiff • Post has moved • Limit switch settings incorrect	• Lubricate hinges • Contact specialist • Readjust limit switch
		yes	• Force cut-off triggered	• Remove obstacle
	Is gate leaf hopping at start?	yes	• Leaf not stable	• Reinforce leaf
	Is there strong wind?	yes	• Wind pressure too high	• Simply open and close gate again
Gate does not fully open or close.	Does gate stop before it has reach its end position?	no	• Leaf hinge incorrectly mounted	• Change fittings at leaf
		yes	• Limit switch settings incorrect	• Readjust limit switch
Incorrect closing sequence			• Drive wires incorrectly connected at terminals	• Read the instructions and reconnect drives to the the control system
Drive cannot be properly programmed			• **DIP switch 8 is in position OFF** • Limit switch set incorrectly; the drive stops and is reversed, or force cut-off.	• **Set DIP switch 8 to ON** • Adjust limit switch settings
Gate is not stopped by an obstacle			• Gate is completing a programming run • Force tolerance set too high	• After the programming is completed, the force cut-off is operational • Reduce force tolerance, see "Adjusting force tolerance".
Drive touches the post	Have dimensions A/B been remeasured?	no	• Incorrect dimension A or B	• Readjust connection of drive at the post
		yes	• Limit switch settings incorrect	• Readjust limit switch
Irregular gate movement			• Incorrect dimensions A/B	• Adjust dimensions, if possible
Pedestrian leaf cannot be opened with remote control device			• Remote control key not programmed	• Programme key, see section, see "Programming remote control device".
Drive cannot be started	Is LED “SH” flashing rapidly?	yes	• Position of jumper with programmed force values has been changed	• 1. Reset jumper to previous position 2. Reset control system 3. Position jumper as desired 4. Complete programming runs

Wiring Diagram