

## SM 40 T



# Table of contents

<b>General information</b> .....	<b>2</b>	<b>Functions and connections</b> .....	<b>14</b>
Symbols	2	General tips	14
Safety instructions	2	Overview of control unit	14
Proper use	2	DIP switches 1–10	14
Permitted gate dimensions	3	Displays on the control unit	15
Technical data	3	Radio receiver	15
Dimensions	3	Partial opening (DIP 3 + 4)	16
Components of the drive	3	Obstacle recognition (DIP 3 + 4)	16
EU Manufacturer's Declaration	3	Early warning period (DIP 5)	17
<b>Preparations for installation</b> .....	<b>4</b>	Automatic closing (DIP 6)	17
Safety instructions	4	End switches	17
Required tools	4	Mains connection	17
Personal protective equipment	4	Connecting light barrier	18
Scope of delivery	4	Connecting the light barrier with tester	18
Installation tips	5	Connecting push button	18
General preparation work	5	Connecting safety switch unit (optical/electrical)	18
<b>Installation</b> .....	<b>6</b>	24 Volt connection	19
Safety instructions	6	Door status indicator	19
Installation site	6	Connecting warning light	19
Foundation	6	Relay output	19
Fixing to the ground	6	Connecting the capacitor	19
Installing the gear rod	7	Connecting an external aerial	19
Connecting to the mains supply	8	<b>Accessories</b> .....	<b>20</b>
Check direction of travel	8	<b>Maintenance and care</b> .....	<b>22</b>
Release ventilation screw	8	Important information	22
Setting the end positions	9	Regular inspections	22
<b>Commissioning</b> .....	<b>10</b>	Changing the fuse	23
Safety instructions	10	<b>Miscellaneous</b> .....	<b>23</b>
'Teaching' the drive	10	Dismantling	23
Setting the slipping clutch	10	Disposal	23
'Teaching' remote control transmitters	11	Warranty and after-sales service	23
<b>Operation and handling</b> .....	<b>12</b>	<b>Conversion instructions: from SM 40 to SM 40 T</b> .....	<b>24</b>
Safety instructions	12	<b>Troubleshooting</b> .....	<b>27</b>
Open gate	12		
Close gate	12		
Pulse sequence of gate movement	12		
Check oil level	13		
Control reset	13		
Emergency release	13		
Interim stop	13		
Stop due to obstacle	13		

# General information

## Symbols



Exclamation mark:  
Indicates a potential risk! Failure to follow instructions may result in serious injuries!



Note symbol:  
Information, useful advice!

1

(1)

In the introduction or main text refers to the relevant illustration.

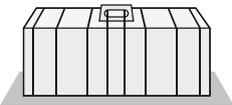
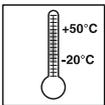
## Safety instructions

### General

- These installation and operating instructions must be read, understood, and complied with, by the person who installs, operates, or maintains the drive.
- Only specialised personnel should assemble, connect, and commission the drive.
- Fit the drive only to correctly aligned gates. An incorrectly aligned gate can cause serious injury or can damage the drive.
- The manufacturer cannot be made liable for any damage or disruptions to operation occurring due to non-compliance with the installation and operating instructions.
- Ensure that these installation and operating instructions are located in an easily accessible place.
- Observe and comply with accident prevention directives and applicable standards in the respective countries.
- Observe and comply with the directive on "Power-driven Windows, Doors and Gates – BGR 232" issued by the Employers' Liability Insurance Association. (Applicable in Germany for the operator)
- Before working on the drive, you must ensure that it is de-energized and safeguarded from being turned on again.
- Use only manufacturer's original replacement parts, accessories, and mounting materials.

### Storage

- The drive may only be stored indoors, in a dry, enclosed environment at an ambient temperature between -20°C and +50°C.
- Store the drive as shown.



### Operation

- Keep your hands clear of a moving gate or any moving parts.
- Keep children, disabled persons, and animals away from the gate.
- Only drive through the gate when it is fully opened.
- There is a risk of persons getting trapped or cutting themselves in/on the gate system's moving parts or the edges where it closes.

## Radio remote control

- Radio remote control may only be used for equipment and systems where defective remote operation of the transmitter or receiver does not constitute a risk to people, animals or objects, or in cases where this risk is eliminated by means of additional safety features.
- All users must be instructed that where there is the risk of an accident, remote control of units may be used, if at all, only when the gate is directly visible.
- Radio remote control may only be used if gate travel can be supervised, and if there are no persons or objects in the travel range.
- Store the hand-held remote control so that there is no risk of it being accidentally used by, for instance, children or animals.
- The operator of this radio-controlled equipment is in no way protected from interference from other telecommunications systems and facilities (e.g. other radio-controlled equipment that is licensed to operate at the same frequency range). Should serious interference be encountered, please contact your nearest telecommunications office with interference measuring facilities (radio signal localisation)!
- Do not use the remote control transmitter near locations or installations that are susceptible to radio interference (such as airports or hospitals).

## Maker's plate

The maker's plate is located on the cover of the equipment.

Exact type designation and date of manufacture (month/year) of the drive are to be found on the maker's plate.

## Proper use

- The drive is intended exclusively for the opening and closing of sliding gates (see EN 12433-1), subsequently referred to only as 'gate'. Any other use does not constitute intended use. The manufacturer is not liable for damages that arise due to non-intended use. The risk is borne solely by the operator. Non-intended use renders the warranty null and void.
- Gates operating with a drive must comply with the standards and directives valid at the given time, e.g.: EN 13241, EN 12453, EN 12604, EN 12605, EN 12978 and other standards.
- Maintain the safety distances between the gate and any nearby object as required by EN 12604.
- The drive may only be used in a technically perfect condition, as intended, in a safety-conscious and hazard-conscious manner, in compliance with the installation and operating instructions.
- The gate should display no rise or fall during opening or closing.
- In order to avoid ice surfaces in winter, lay out the track so that water can drain from it.
- The gate must run faultlessly in the guides and on the track so that the drive can react sensitively and can stop the gate in an emergency.
- The gate must have an end stopper in the open and closed positions, otherwise it may be pushed out of its guides during an emergency opening.
- Malfunctions that can impair safety must be eliminated immediately.
- The gate must be stable and warp-proof, i.e. it should not bend or warp during opening or closing operations.
- The drive is unable to compensate for any defects in the gate or for its incorrect installation.
- Do not install the drive in explosion-prone areas.
- Do not use the drive in areas with a hostile atmosphere.

# General information

## Permitted gate dimensions

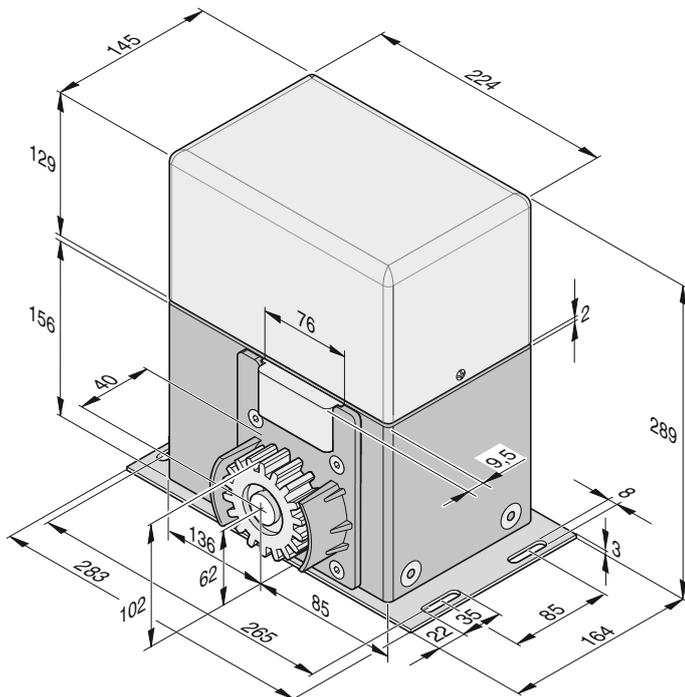
– Travel:	max. 12,000 mm
– Weight:	max. 600 kg
– Rise of gate:	0 %

## Technical data

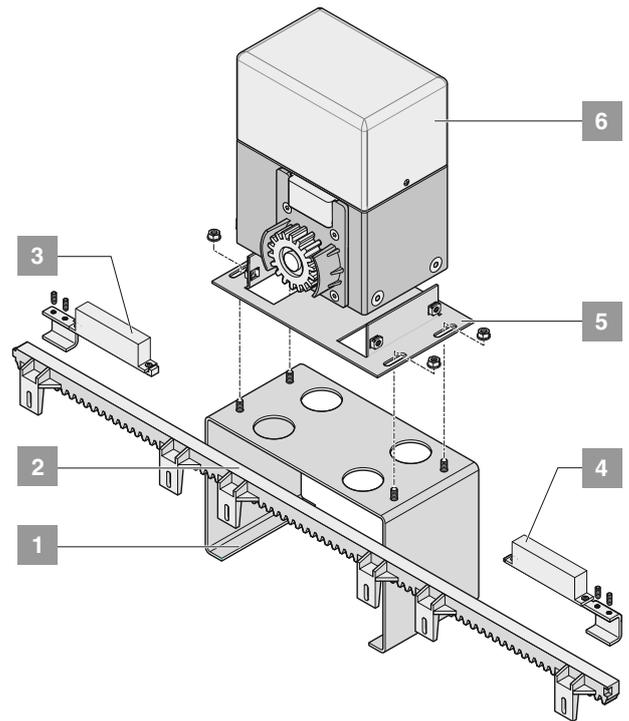
Rated voltage:	230	V/AC
Rated frequency:	50/60	Hz
Operating temp. range:	-20 – +70	°C
Protection class:	IP 43	
Thrust:	640	N
max. current:	3,4	A
max. power consumption:	800	W
Maximum speed:	166	mm/s
Power consumption, stand-by:	~ 3,5	W
Weight:	14	kg
Duration of operation:	60	%
Workplace-specific sound emission value < 75 dBA – drive only		

## Dimensions

All dimensions in mm.



## Components of the drive



- 1 Console (accessories), see 'Accessories' section.
- 2 Gear rod
- 3 Limit switch magnet at right
- 4 Limit switch magnet at left
- 5 Anchoring plate
- 6 Drive including control unit and radio remote control receiver

## EU manufacturer's declaration

The company

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

herewith declares that its drive:

– SM 40 T

complies with the following directives:

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

The following standards/draft standards were specifically applied:

- EN 60335-1, EN 60204-1, EN 50082-2, EN 50081-1

Note:

The gate system may not be commissioned until such time as it has been established that the system in which the above drive is to be installed meets the requirements of all relevant EU directives.

Kirchheim, 02.11.2005

Frank Sommer  
Managing Director

# Preparations for installation

## Safety instructions

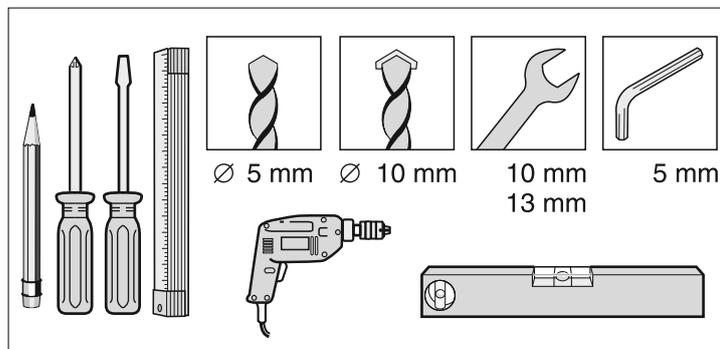
**Caution!**  
Follow all installation instructions. Incorrect installation may result in serious injury

- The voltage of the power supply must agree with that shown on the maker's plate.
- All devices requiring external connection must be equipped with safe contact separation as per IEC 364-4-41, in order to isolate them from the mains voltage supply.
- IEC 364-4-41 must be observed when laying the external device supply cables.
- Installation, connection and initial operation of the drive may only be carried out by qualified specialists.
- Do not operate the gate if people, animals or objects are in its range of travel.
- Keep children, disabled persons, and animals away from the gate.
- Safety goggles should be worn when drilling the mounting holes.
- Cover the drive when drilling to ensure that no grime penetrates the unit.

**The ground must be firm and stable. Fit the drive only to a correctly aligned gate. A gate that has not been aligned correctly can cause serious injuries.**

- Gates must be stable because they are subjected to high traction and pressure forces. Lightweight gates made of plastic or aluminium must be reinforced before installation if necessary. Ask your dealer for advice.
- Remove gate locking systems or disable same.
- Only use approved fixing material (e.g. plugs, screws). The fixing materials must be suitable for the ground structure.
- Check that the gate runs easily.

## Required tools



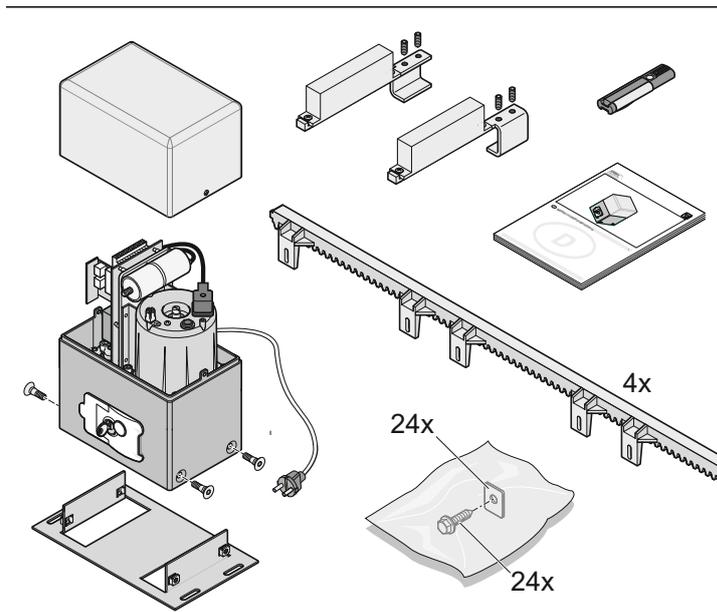
## Personal protective equipment



- Protective goggles: When drilling the boreholes for the screws.

## Scope of delivery

- The scope of delivery may vary according to the type of drive supplied.
- Check that all the parts have been supplied before you start installation work in order to save time and unnecessary work if a part is missing.



### Complete installation kit

Packaging (L x W x H) 1020 x 230 x 380 mm  
Weight 26 kg

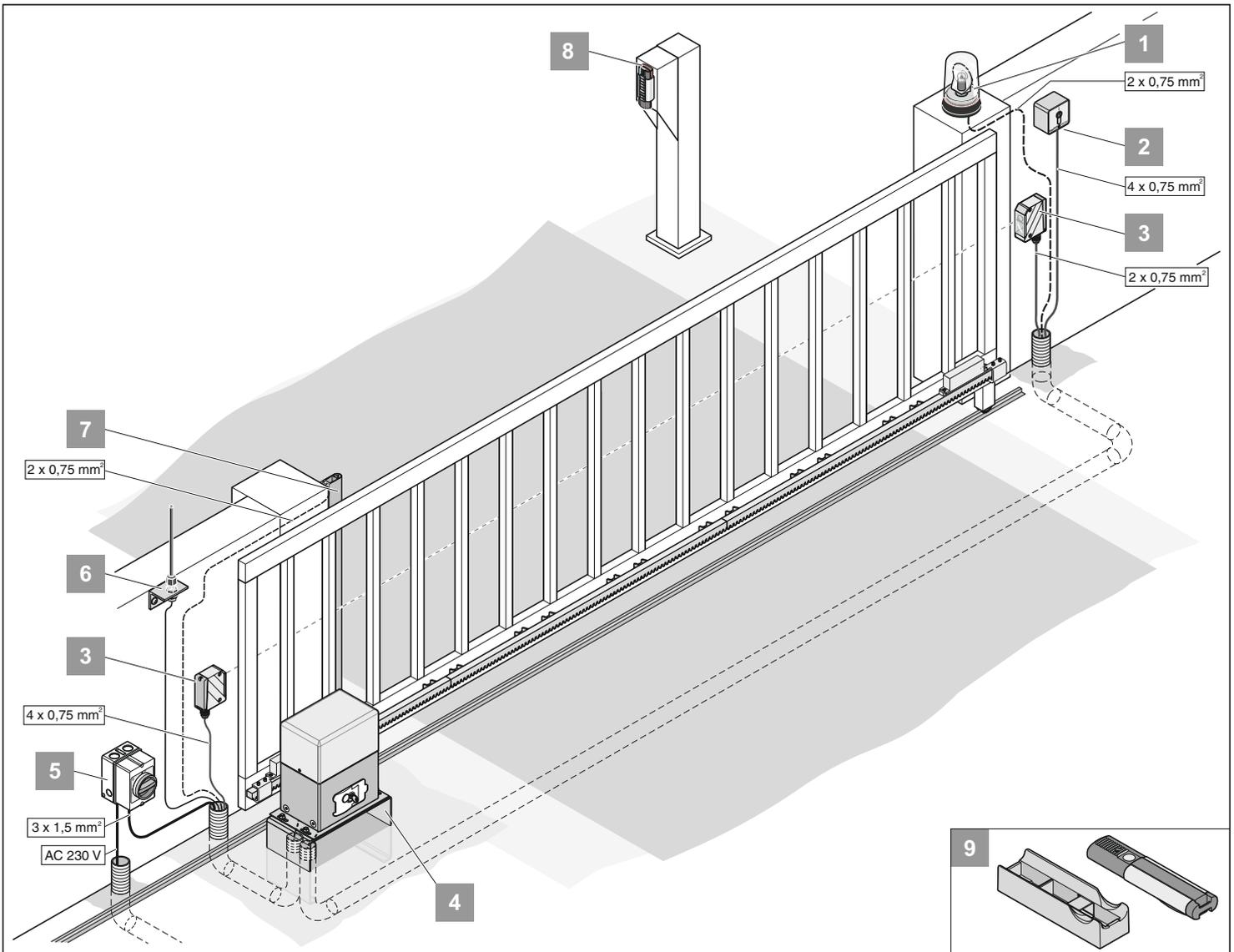
- 1 Sliding gate drive with control unit and radio receiver
- 1 Anchoring plate incl. 4 screws
- 1 4-command hand-held transmitter
- 4 1-m gear rod
- 1 Assembly kit
  - 24 Screws
  - 24 Washers
- 1 Limit switch magnet at left, incl. 2 screws
- 1 Limit switch magnet at right, incl. 2 screws
- 1 Installation and operating manual

### Single drive

Packaging (L x W x H) 430 x 320 x 280 mm  
Weight 11 kg

- 1 Sliding gate drive with control unit and radio receiver
- 1 Anchoring plate incl. 4 screws
- 1 Limit switch magnet at left, incl. 2 screws
- 1 Limit switch magnet at right, incl. 2 screws
- 1 Installation and operating manual

# Preparations for installation



## Installation tips

- A safety device must always be connected as an opener contact. This means that when tripped or in the case of a fault, safety is always ensured.
- Before installation, together with the operator determine the location of the accessories.

**i** Other pulse generators include: remote control transmitters, radio keypad, radio-operated interior switches, and key operated pad. No connection line to the drive is needed for remote control transmitters, radio keypads, or radio-operated interior switches. Ask your dealer if you have questions.

1. Warning light, AC 230 V (similar to diagram)
2. Key operated pad (1 contact or 2 contact)
3. Photo-electric cell (mandatory for automatic closure, see EN 12543)
4. Console
5. Main switch (lockable)
6. Flagpole aerial (with 6, 10 or 16 m cable)
7. Safety switch strip (optical/electrical)
8. Radio keypad
9. Remote control device holder for car or wall

## General preparation work

- All locking devices (electrical locks, locking bolts, etc.) must be removed and disabled prior to installation of the drive system.
- The structure of the gate must be stable and suitable.
- The gate must not display excessive lateral play during its travel.
- The wheels/lower track and roller/upper guide system must work without excessive friction.
- To prevent the gate from derailing, endstops for the gate must be fitted in the 'Gate open' and 'Gate closed' positions.
- Incorporate empty ducting at the base of the gate to take mains and accessory cables (light barrier, warning light, key operated pads, etc).

# Installation

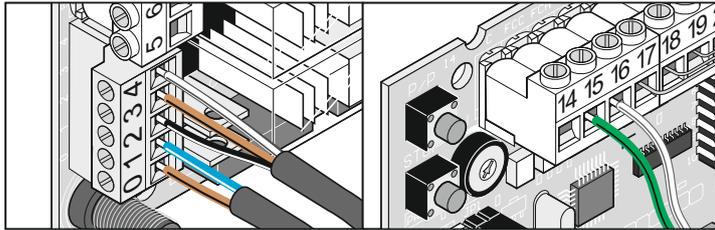
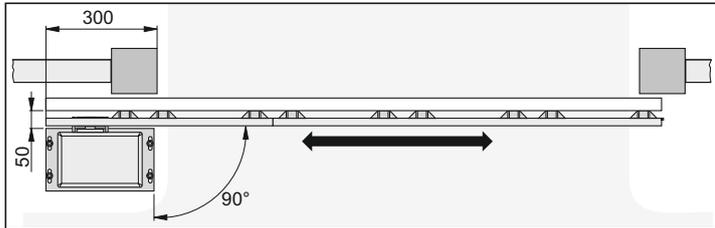
## Safety instructions

- Gates operating with a drive must comply with the standards and directives valid at the given time, e.g.: EN 13241, EN 12453, EN 12604, EN 12605, EN 12978 and other standards.
- Only qualified electricians may connect the control unit to the mains supply.
- Ensure that the drive is properly secured to the ground and that gear rod is properly secured to the gate, as considerable forces arise during opening and closing of the gate.
- 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.
- The gear rod must not press on the gear wheel during operation, otherwise the drive will be damaged.

## Installation site

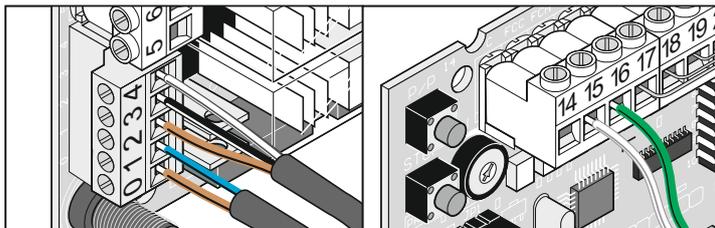
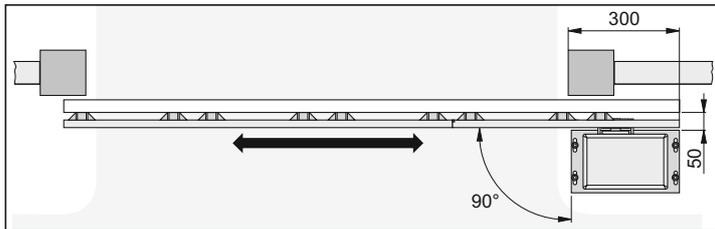
**i** As delivered the drive is on the left, and the gate opens to the left.

### Drive to left



Terminal 2	black	Motor
Terminal 3	brown	Motor
Terminal 15	green	End switch gate CLOSED
Terminal 16	white	End switch gate OPEN

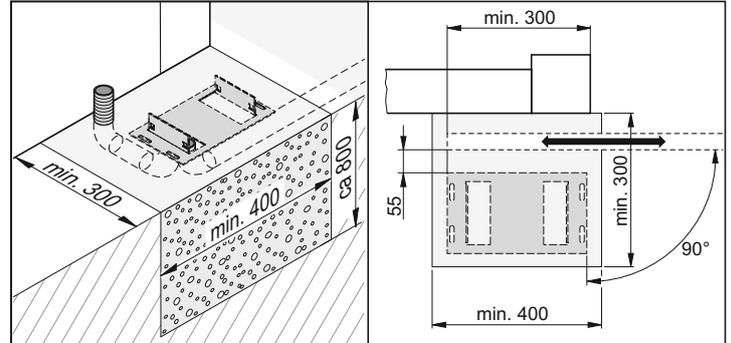
### Drive to right



Terminal 2	brown	Motor
Terminal 3	black	Motor
Terminal 15	white	End switch gate CLOSED
Terminal 16	green	End switch gate OPEN

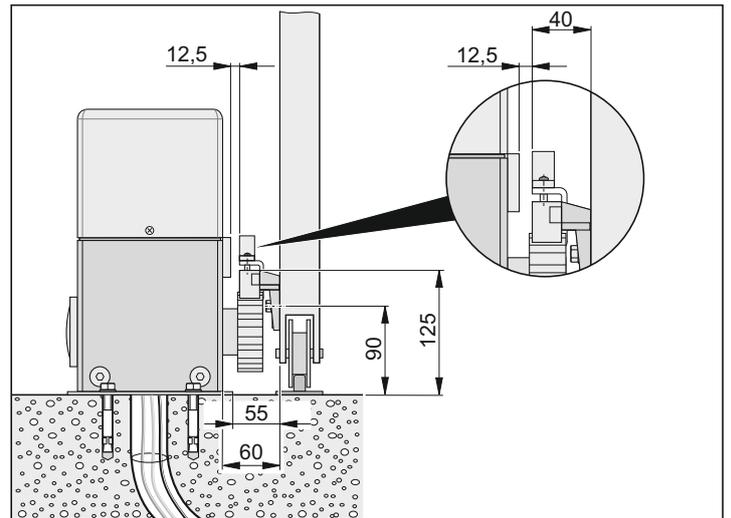
## Foundation

- The drive must be mounted mid-way between the roller bogies for cantilever gates.
- The foundation depth must not be susceptible to frost (in Germany about 800 mm).
- The foundation must have solidified and be horizontal.
- Foundation dimensions as shown.

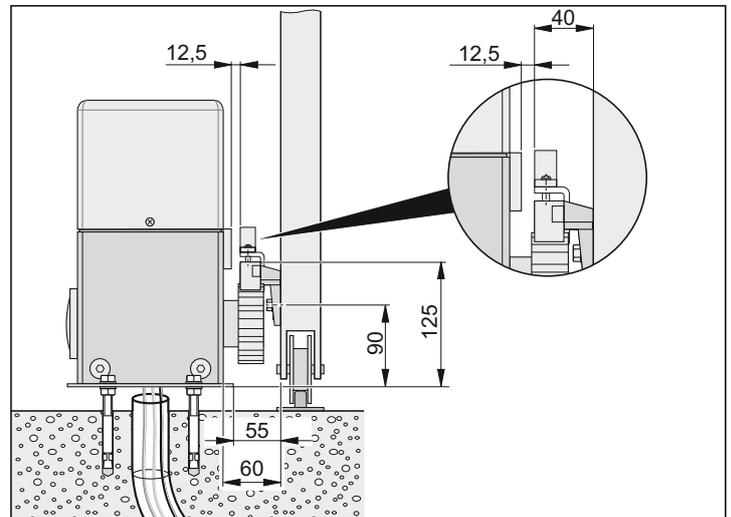


## Fixing to the ground

### Direct installation



### Installation with stud bolts

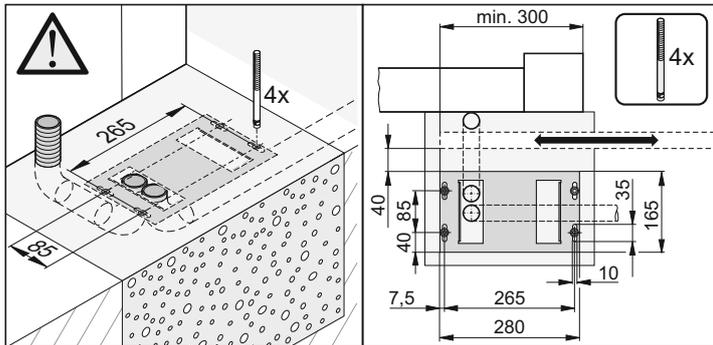
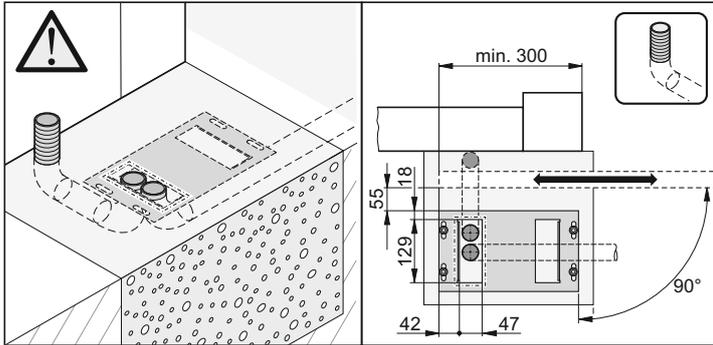


# Installation

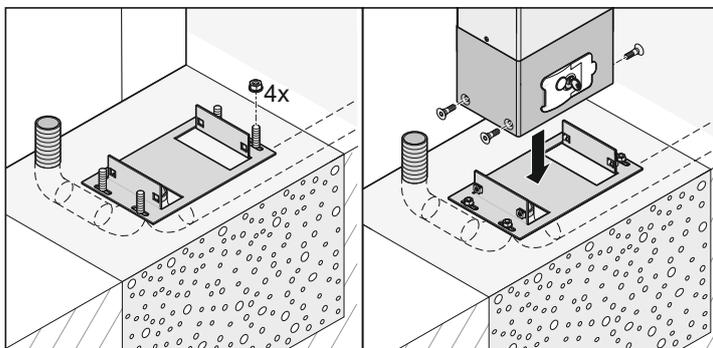
## Procedure:

**i** Dispose of the packaging correctly in accordance with local requirements.

- Remove drive system from packaging.
- Draw cables into empty ducting and identify for connection later on.



- Measure the position of the anchoring plate.
- Mark the drilling points and drill them out.
- Insert plugs and stud bolts (when used).

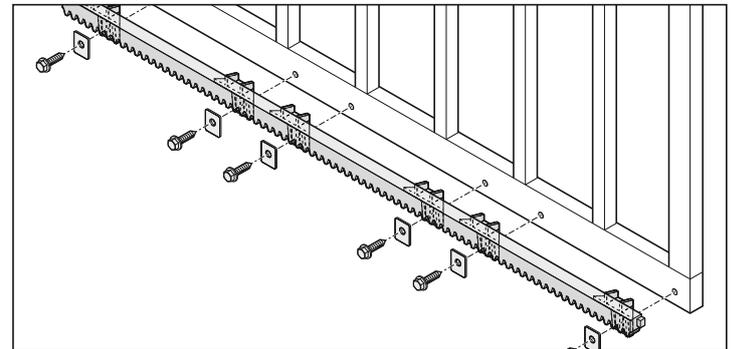


- Mount anchoring plate and fix in place. Check clearances.
- Mount the drive on the anchoring plate and tighten the screws.
- Pull cables through.

## Installing the gear rod

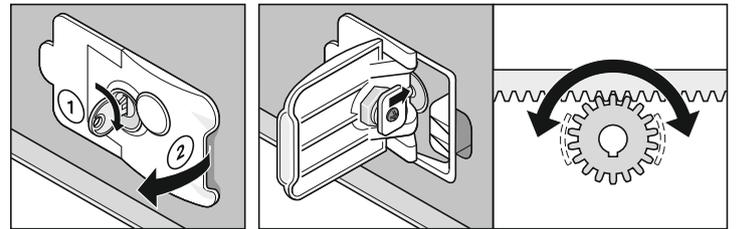
**i** The complete installation kit includes 4 gear rods of 1 m length. Request further gear rods from your specialist dealer.

- Always begin mounting the gear rod at the passage end of the gate. The fixing holes must always be marked near to the gear wheel.

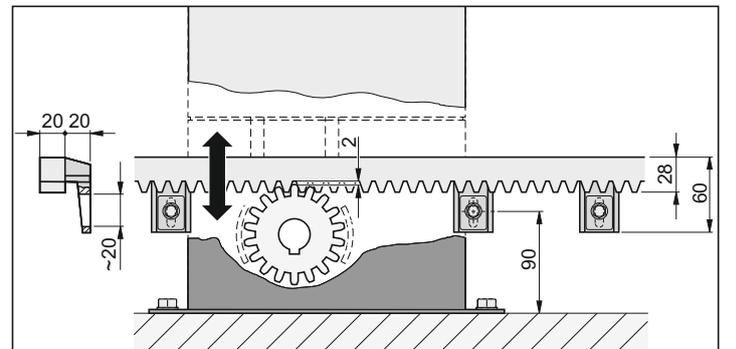


- Fix the gear rod to the gate with suitable fastening components (e.g. the screws supplied). Screw the gear rod to the gate at each of the 6 fastening points.

- Release the drive.



- Turn the key (1) 90° in clockwise direction and pull the lever (2) round until it engages: The drive disengages and the gate can be moved manually.



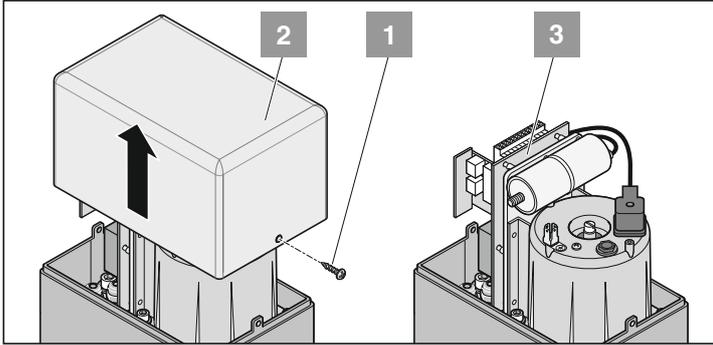
- The gear rod must not push against the gear wheel whatever the position of the gate, otherwise the gearing will be damaged.
- Alignment of the gear rod: push the gate several times back and forth. Set a play of about 2 mm between gear wheel and gear rod, and check it along the whole length of the gate. Adjust the clearance of the gear rod by means of the elongated holes on the gear rod.

# Installation

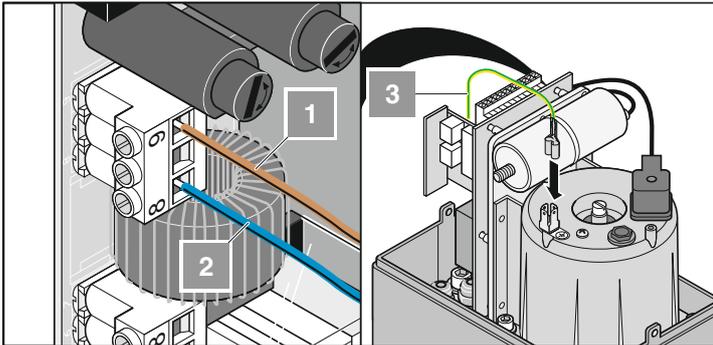
## Connecting to the mains supply

**⚠** Connect to mains voltage according to EN 12453 (all-pole separating fixture). Fit a lockable main switch (disconnected at all terminals) so that the mains supply cannot be switched on unintentionally during maintenance.

- The mains connection should be made only by a trained specialist.
- Before working on the drive, you must ensure that it is de-energized and safeguarded from being turned on again.
- It is recommended to fit a motor protection switch to protect the drive and control unit from excessively high current 'spikes'.
- When working on the control unit, protect this from damp (rain, snow, etc).



- Loosen screws (1). Remove lid (2).

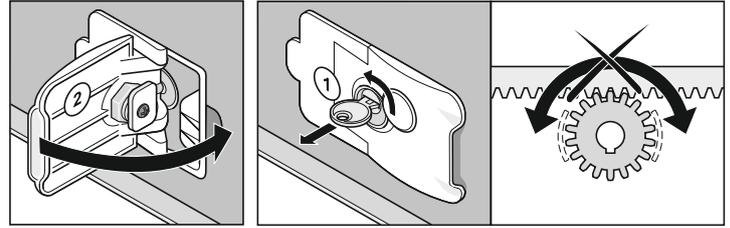


- Pass the mains connection through the free screw cable connection.
- Affix mains connection:
 

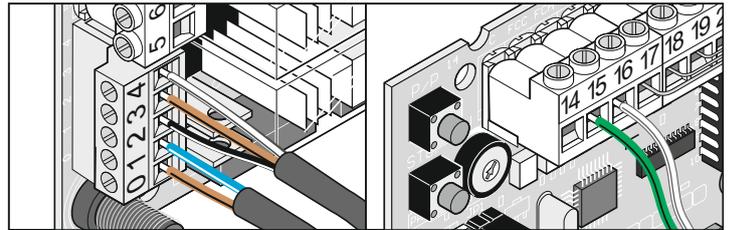
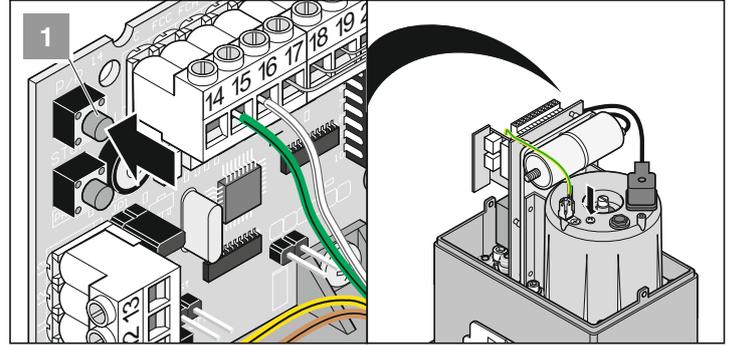
1. AC 230 V (brown)	-> Terminal 9
2. Neutral conductor (blue)	-> Terminal 8
3. Protective earth connector (yellow/green)	-> Motor
- Tighten the cable connections, and close off unused cable connections with e.g. a piece of cable.

## Check direction of travel

- Bring the gate to its central position.
- Turn on mains power.



- Engage the drive: push lever (2) back in – turn key (1) 90° anticlockwise and remove: The drive engages and the gate can be moved only with the motor.

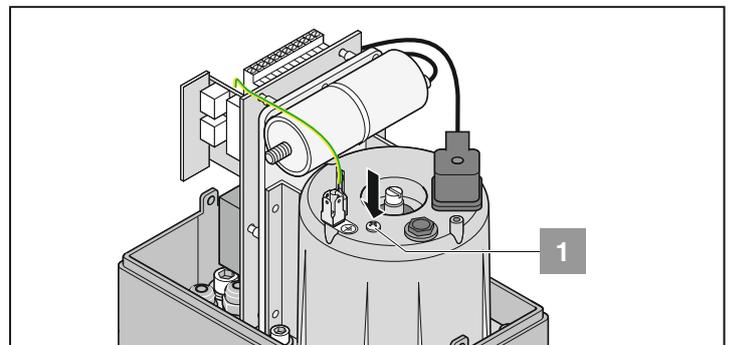


- Close the gate and press button P/P (1). The first direction of movement after the main switch is set to ON must correspond to OPENING of the gate. If this is not the case, exchange the cables connected to terminals 2 + 3 (motor) with those connected to terminals 15 + 16 (end switch).

## Release ventilation screw

This screw is for ventilating the motor, as the motor oil expands when the motor warms up and contracts on cooling.

**⚠ Caution!** If the screw is not released, excess pressure will arise when the drive is operated. This excess pressure damages the seals on the drive, and oil escapes.



- Loosen screw (1) somewhat, but do not remove it.

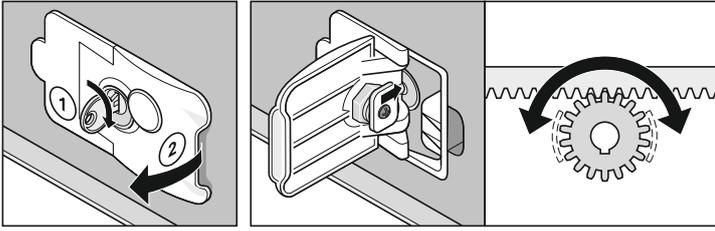
**⚠ Caution!** During transport of the drive unit, tighten the screw to prevent oil from escaping. Transport the drive unit in a vertical position (motor at the top) to prevent oil from entering and thus destroying the control unit.

# Installation

## Setting the end positions

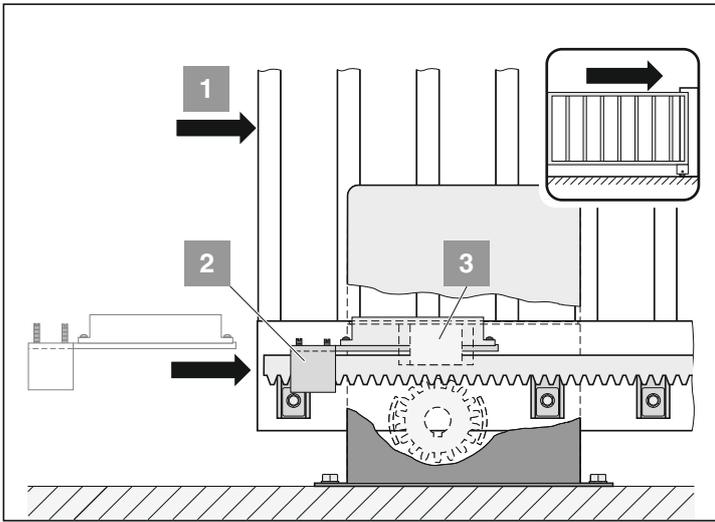
**Caution!**  
During an emergency release the gate can open or close independently.

- Release the drive.



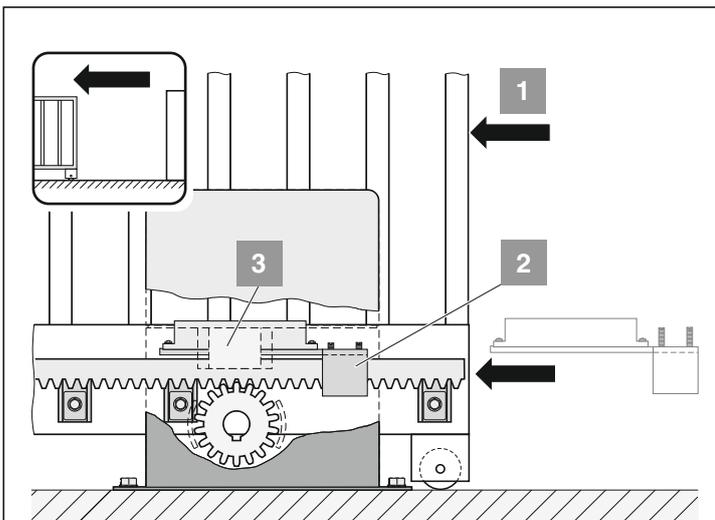
- Turn the key (1) 90° in clockwise direction and pull the lever (2) round until it engages. The drive disengages and the gate can be moved manually.

### End position gate CLOSED



- Push the gate into the CLOSED end position (1).
- Push limit switch magnet (2) towards limit switch (3) until this trips (LED FCC extinguishes on the control unit).
- Screw limit switch magnet (2) tight.

### End position gate OPEN



- Push the gate into the OPEN end position (1).
- Push limit switch magnet (2) towards limit switch (3) until this trips (LED FCA extinguishes on the control unit).
- Screw limit switch magnet (2) tight.

# Commissioning

## Safety instructions

**i** After installing the drive, the person responsible for installation of the drive according to Machine Directive 98/37/EC must issue an EC Declaration of Conformity for the gate system and affix the CE mark as well as a maker's plate.

This also applies to gates installed for private purposes and in cases where the drive has been retrofitted to a manual gate. These instructions, as well as the drive's installation and operating instructions should be kept by the user for reference.

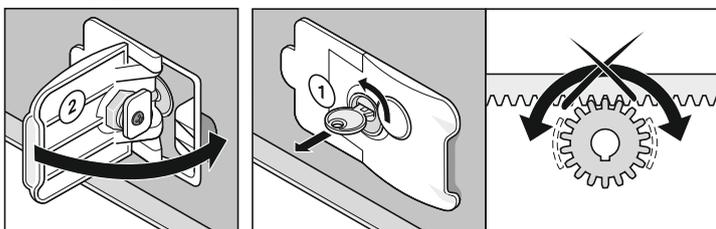
- Gates operating with a drive must comply with the standards and directives valid at the given time, e.g.: EN 13241, EN 12453, EN 12604, EN 12605, EN 12978 and other standards.

**!** The setting of the slipping clutch affects the system's safety and must therefore be made with extreme care and attention. If the force setting is impermissibly high then objects can be damaged.

Select the lowest possible force setting so that obstructions are quickly and safely recognised.

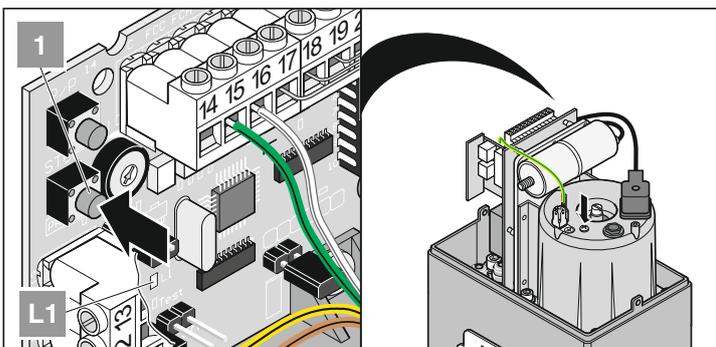
## 'Teaching' the drive

- Bring the gate to its central position.
- Engage the drive.



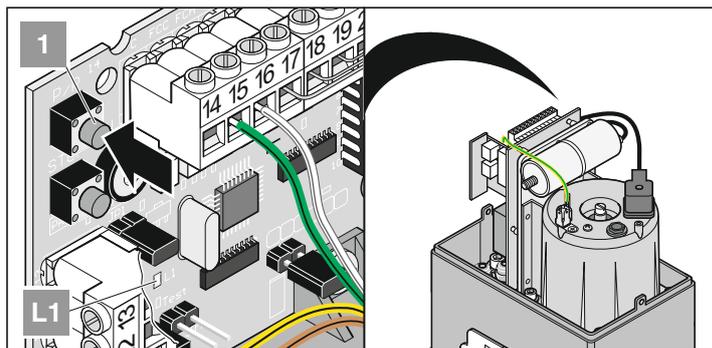
- Push lever (2) back in – turn key (1) 90° anticlockwise and remove: The drive engages and the gate can be moved only with the motor.
- Move the gate by hand slightly until the gear engages with a loud click.

## Activate learning mode



- Disconnect mains supply.
- Push STOP/PROG. button (1), and also switch on the mains supply. Push STOP/PROG. button (1) until LED (L1) lights up.

## Perform the following sequence:



**i** If the drive opens the gate, exchange the cables connected to terminals 2 + 3 (motor) with those connected to terminals 15 + 16 (end switch).

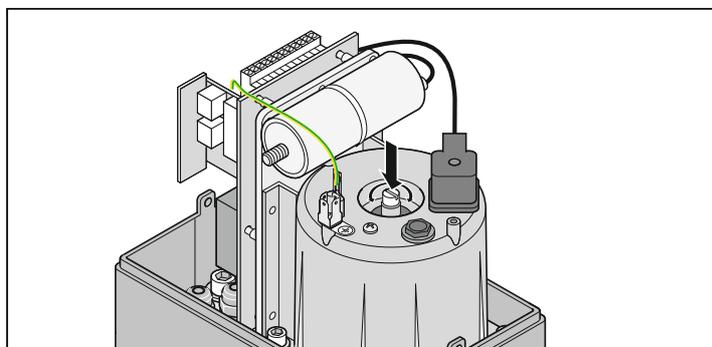
- Press button P/P (1) 1x. The drive closes the gate as far as the limit switch magnet (gate CLOSED) and then opens the gate automatically as far as the limit switch magnet (gate OPEN).

**i** If automatic closure is activated (DIP 6 ON), wait the desired opening period that the gate should stay open. Then close the gate by pressing button P/P (1).

- Push button P/P (1) 1x. The gate closes as far as the limit switch magnet (gate CLOSED).
- LED (L1) goes out – drive has completed the "learning" process.
- Test the OPEN and CLOSED end positions by opening and shutting the gate a number of times. If necessary, reset the end positions until the gate opens and closes completely.

## Setting the slipping clutch

**!** Set the slipping clutch carefully and check for correct functioning every 4 weeks.



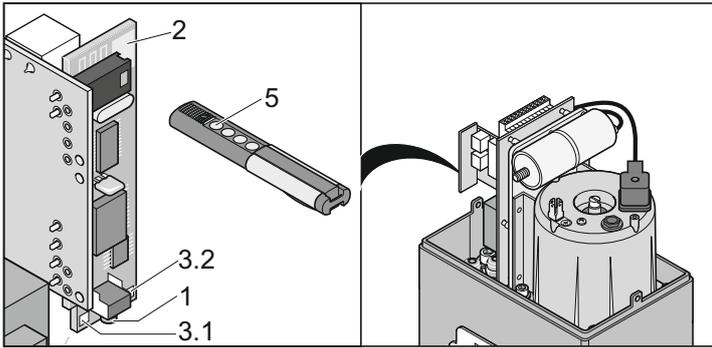
The slipping clutch slips when an obstacle is encountered (drive stops). After the preset running period, the drive switches off.

### Setting:

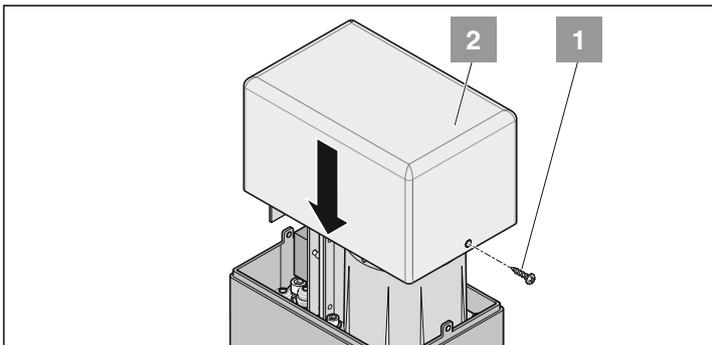
- Turning clockwise -> increases force
  - Turning anticlockwise -> decreases force
- Check: See chapter 'Maintenance and care'

# Commissioning

## 'Teaching' remote control transmitters



- Push the "Learn" button (1)
  - 1x for channel 1, LED (3.1) lights up
  - 2x for channel 2, LED (3.2) lights up
- Press the desired hand transmitter button (5). Hand transmitter sends the radio code into the radio remote control receiver:
  - LED goes out – "Learning" process is complete.
- If no radio code is transmitted within 10 seconds, the receiver switches back to normal operating mode.
- "Teaching" additional remote control transmitters. Repeat the above steps. The control system is equipped with 112 memory positions.



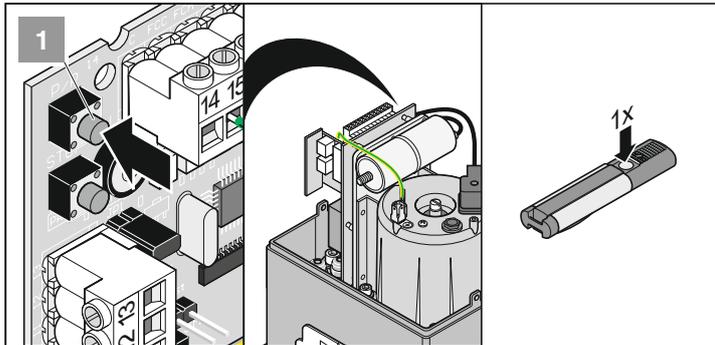
- Fit cover (2), secure screw (1).

# Operation and handling

## Safety instructions

- Keep children, disabled persons, and animals away from the gate.
- Keep your hands clear of a moving gate and of any moving parts.
- Only drive through a gate when it is fully opened.
- There is a risk of persons getting trapped or cutting themselves in/on the gate system's moving parts or the edges where it closes.

## Open gate



- Press button P/P (1) or remote control button (1) 1x.
- The gate stops moving if this button is pressed again while the gate is opening. DIP switches 1 + 2 OFF.
- If the button is pressed again, the gate closes.

## Close gate

- Press button P/P (1) or remote control button (1) 1x.
- The gate stops moving if this button is pressed again while the gate is opening. DIP switches 1 + 2 OFF.
- If the button is pressed again, the gate opens.

## Power stop by means of slipping clutch

**⚠ Set the slipping clutch carefully and check for correct functioning every 4 weeks.**

The slipping clutch slips when an obstacle is encountered (drive stops). After the preset running period, the drive switches off.

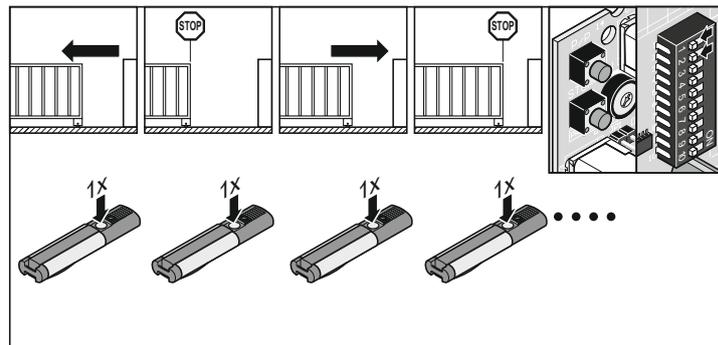
## Operation following power failure

The values remain in memory even during a power failure. The first movement of the unit following a power failure is always gate OPEN.

## Pulse sequence of gate movement

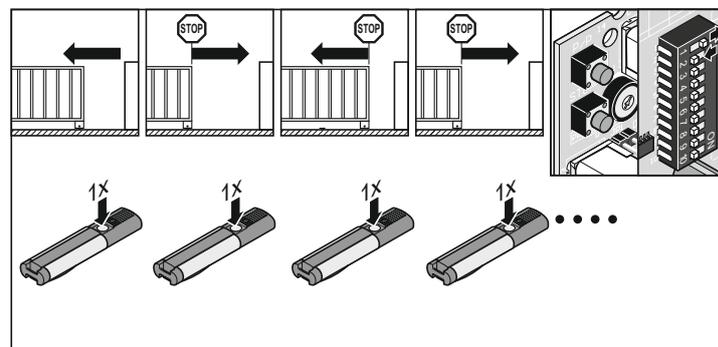
Set pulse sequence with DIP switches 1 + 2.

### Factory setting



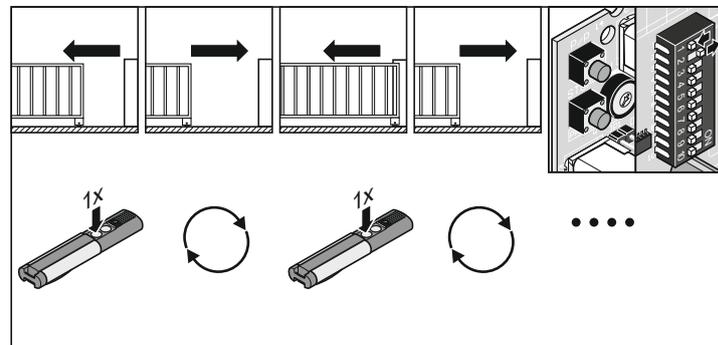
- DIP 1 + 2 OFF:  
– open – stop – close – stop – open – etc.

### Reversal of direction after a short stop



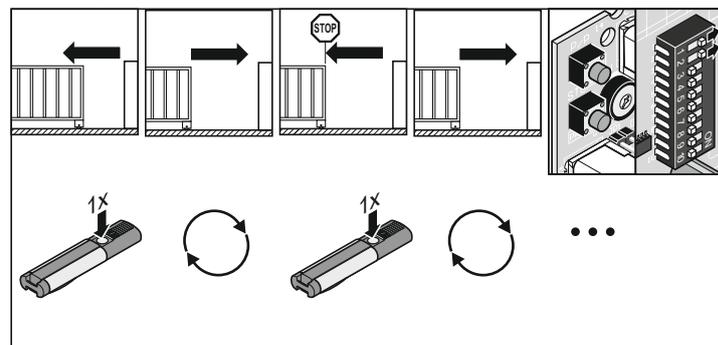
- DIP 1 ON, DIP 2 OFF:  
– open – close – open – close etc.

### Open only in connection with automatic closure



- DIP 1 OFF, DIP 2 ON:  
– open – automatic closure – close – etc.

### Open only in connection with automatic closure



- DIP 1 ON, DIP 2 ON:  
– open – automatic closure – open – etc.

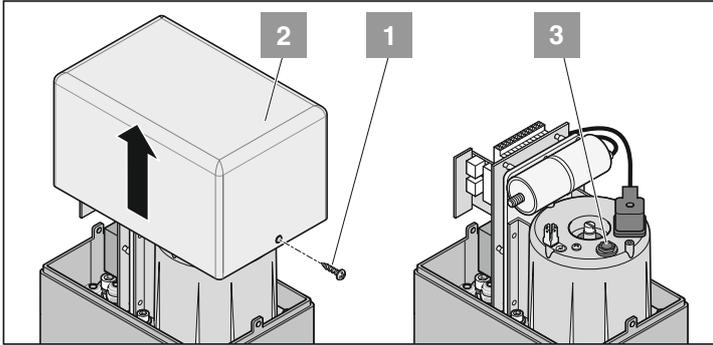
# Operation and handling

## Check oil level

Check the oil level at least once per year.

### Procedure:

- Disconnect mains supply.



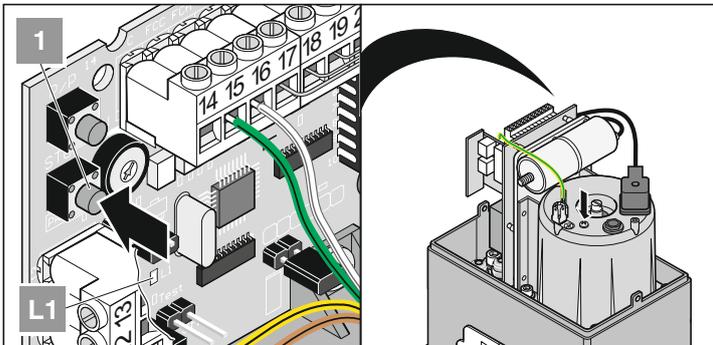
- Loosen screws (1) and remove cover (2).
  - Remove oil plugs (3).
  - Check whether the coil is completely covered with oil. The normal oil level is 20 mm below the plug.
    - max. 15 mm
    - min. 25 mm
- If an oil top-up is necessary, use Texaco Texamatic 7045 or Mobil Oil ATF 220.

## Control reset

Delete all stored values (e.g. running time) and then learn new values.

Reset the control unit

- if the drive has learnt incorrect values or the gate has been modified.



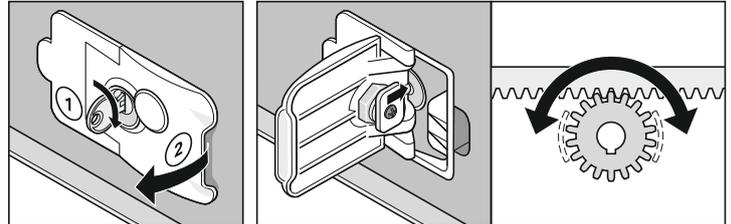
- Disconnect mains supply.
- Push STOP/PROG. button (1), and also switch on the mains supply. Push STOP/PROG. button (1) until LED (L1) lights up.

## Emergency release

**Caution!** During an emergency release the gate can open or close independently.

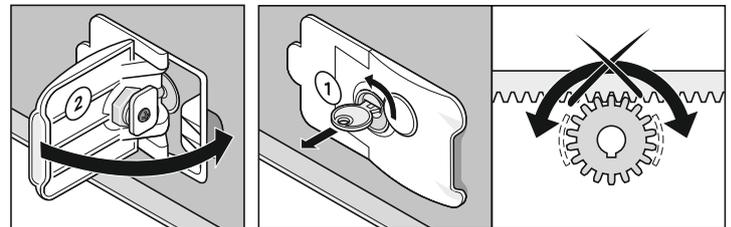
**i** The drive can be engaged or disengaged in any position of the gate.

### Disengaging



- Turn the key (1) 90° in clockwise direction and pull the lever (2) round until it engages. The drive disengages and the gate can be opened manually.

### Engaging



- Push lever (2) back in – turn key (1) 90° anticlockwise and remove. The drive engages and the gate can be moved only with the motor.

## Interim stop

Behaviour of drive depends on settings of DIP switches 1 + 2; see chapter "Pulse Sequence of Gate Movement".

## Stop due to obstacle

### 1. Power stop (slipping clutch)

- when closing and opening the gate -> drive stops because slipping clutch reacts.

At the next command, the drive moves the gate in the opposite direction. See chapter 'Pulse sequence of gate movement'.

### 2. Safety input 1 tripped e.g. safety contact strip actuated

- when gate is closing -> drive stops and reverses
- when gate is opening -> no reaction from the drive

At the next command, the drive moves the gate in the opposite direction. See chapter 'Pulse sequence of gate movement'.

### 3. Safety input 2 tripped e.g. light barrier has tripped

When the safety input is tripped, the drive reacts according to the settings of the DIP switches. See chapter "Obstacle detection"

Default settings:

- when gate is closing or opening -> drive stops and reverses

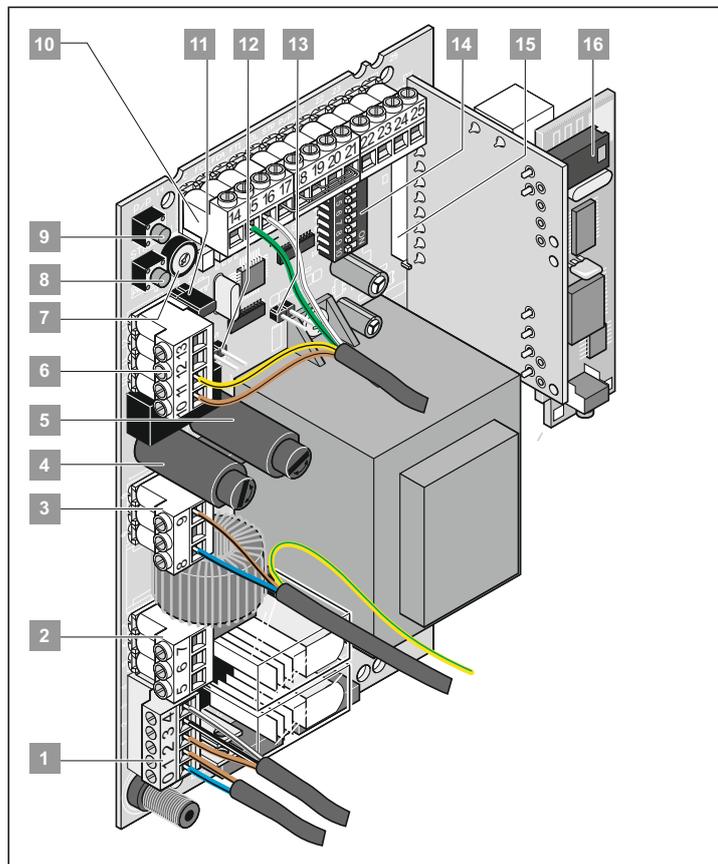
At the next command, the drive moves the gate in the opposite direction. See chapter 'Pulse sequence of gate movement'.

# Functions and connections

## General tips

- As delivered, all DIP switches are in OFF position.
- Do not apply unknown power sources to the control unit connections. This immediately disrupts the control unit.

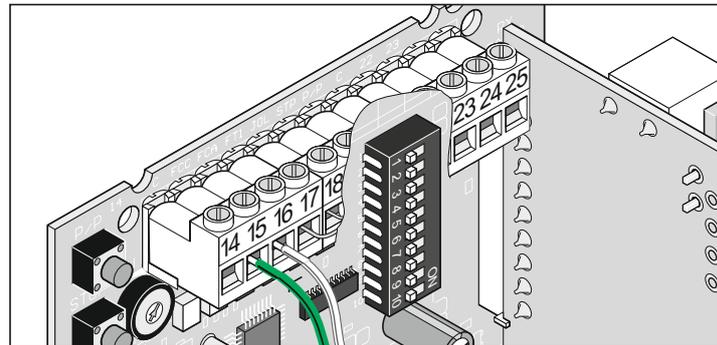
## Overview of control unit



1. Plug-in terminal, 5-pole: Motor + capacitor
2. Plug-in terminal, 3-pole: Relay contact, warning light AC 230 V
3. Plug-in terminal, 2-pole: Mains connection
4. Fuse 250 V, 6.3 A
5. Fuse 24 V, 0.3 A
6. Plug-in terminal, 4-pole: AC 24 V with and without test, door status indicator
7. Potentiometer: Torque/power of motor
8. STOP/PROG. button
9. P/P button
10. Plug-in terminal, 12-pole: Safety and push-button connections
11. Jumper JP1
12. Test jumper
13. Reset jumper
14. DIP switches 1–10
15. Insertion slot for radio receiver
16. Radio receiver

## DIP switches 1–10

**i Caution!**  
Before resetting the DIP switches, disconnect the power from the control unit. The DIP switches are re-read after the control unit has been powered up again.



Switches	Works setting	Function/reaction
----------	---------------	-------------------

For button input and radio channel operating modes see "Pulse sequence of gate movement"

1 OFF	2 OFF	Pulse sequence
1 ON	2 OFF	Reversal of direction after a short stop
1 OFF	2 ON	Open only when automatic closure is active
1 ON	2 ON	Open without a stop. Command when closing, opens gate fully again.

Safety input function (JOL) 18 + 21

3 OFF	4 OFF	Opener contact e.g. for light barrier
3 ON	4 OFF	Timer connection
3 OFF	4 ON	Drive stops at gate OPEN or CLOSED
3 ON	4 ON	Partial opening, only possible from gate CLOSED.

Warning time for warning light connection terminal 6 + 7

5	OFF	Warning time 0 sec.
	ON	Warning time 5 sec. – warning light flashes

Automatic closure, min. 1 second up to 15 minutes max.

6	OFF	Deactivated
	ON	Activated

Tester for safety input 2, Terminals 18 + 21

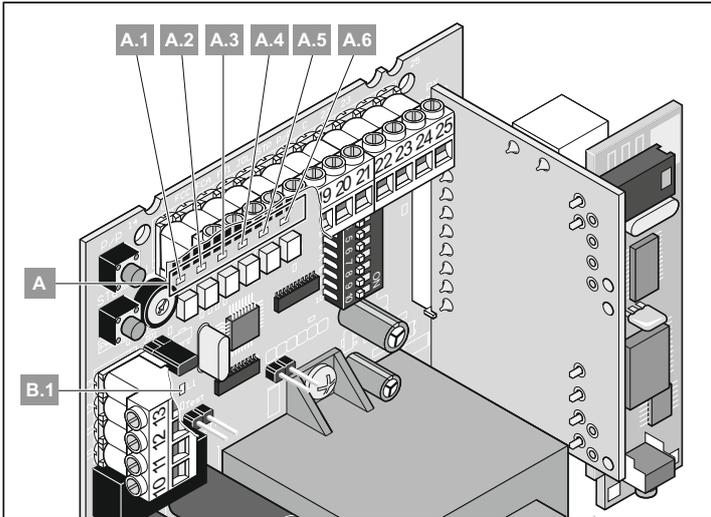
7	OFF	Deactivated
	ON	activated. For description, see Functions and connections

Factory setting – do not adjust!

8	OFF
9	OFF
10	OFF

# Functions and connections

## Displays on the control unit



- A.1 FCC (red): Gate CLOSED end switch lights when the end switch is not actuated.
- A.2 FCA (red): Gate OPEN end switch lights when the end switch is not actuated.
- A.3 FT1 (red): Safety input 1 lights when the input is not actuated.
- A.4 JOL (red): Safety input 2 lights when the input is not actuated.
- A.5 STP (red): Stop input lights when the input is not actuated.
- A.6 P/P (green): Button input lights when the input is actuated or closed.
- B.1 L1 (red): lights when drive is in "learn" mode.

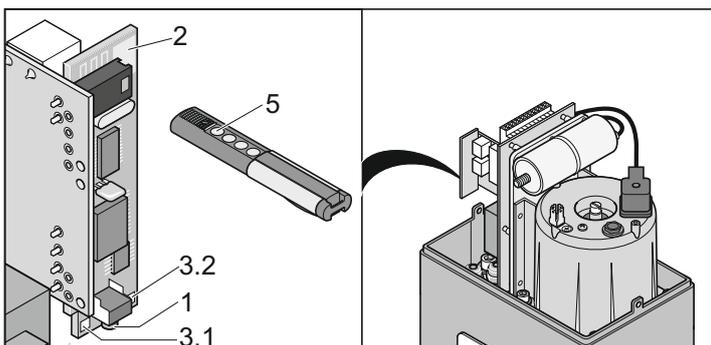
## Radio receiver

**i** 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

- For safe operation, comply with the locally applicable statutory safety regulations for this equipment! Information is provided by electrical power utilities, VDE (Association of German Engineers) and Employers' Liability Insurance Associations (or similar institutions).
- The operator is in no way protected from interference from other telecommunications systems and facilities (e.g. radio-controlled equipment that is licensed to operate at the same frequency range).
- Try replacing the batteries of the remote control should reception problems be encountered.

## Description of display and buttons



(1) 'Learn' button  
 switches the radio receiver between different operating modes:  
 Learn, delete, and normal mode

(2) internal aerial

**i** Radio channel 2 (3.2) is needed only for "Defined opening and closing or partial opening" functions.

(3) LEDs  
 indicate which channel is selected.

(3.1) LED radio channel 1

(3.2) LED radio channel 2

(4) Connection for external aerial (4)

If the transmission range is not sufficient with the internal aerial, then an external aerial can be used.  
 See 'Accessories' section.

(5) Hand-held remote control button

(6) External aerial

## 'Teaching' remote controller

- Push the "Learn" button (1)
  - 1x for channel 1, LED (3.1) lights up
  - 2x for channel 2, LED (3.2) lights up
- Press the desired remote controller button (5). Remote controller sends the radio code to the radio receiver:
  - LED goes out – "Learning" process is complete.
- If no radio code is transmitted within 10 seconds, the receiver switches back to normal operating mode.
- "Teaching" additional remote controllers. Repeat the above steps, There is a maximum of 112 memory positions.

## Deleting remote controller button from radio receiver

**!** If a user of a gate unit moves premises and wants to take his remote control transmitter with him, all the codes of the given user's remote control transmitter must be deleted from the radio receiver.

**For security reasons, delete each button and/or combination of buttons on the remote control transmitter!**

- Press the 'Learn' button (1) and hold it for 5 seconds until a LED starts to flash (any LED)
- Release the 'Learn' button (1) – radio receiver is in delete mode.
- Press button on the remote control to be disabled – the LED is off. Deletion process is completed.

Repeat procedure for all buttons and combinations of buttons.

## Deleting a channel from the radio receiver

- Push the "Learn" button (1) and keep it depressed
  - 1x for channel 1, LED (3.1) lights up
  - 2x for channel 2, LED (3.2) lights up
- 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 the 'Learn' button (1) – deletion process is completed.

## Clearing radio receiver memory

**!** If a remote control transmitter is lost, for security reasons all channels on the receiver must be deleted! After this has been done, all the remote control transmitters must be 're-taught' by the receiver.

- Press and hold the 'Learn' button (1).
- After 5 seconds, the LED starts to flash and then after an additional 10 seconds is continuously illuminated
- After 25 seconds altogether, all LEDs are on.
- Release the 'Learn' button (1) – deletion process is completed.

# Functions and connections

## Partial opening (DIP 3 + 4)

Example of use:

Open gate to allow a person to walk through. Partial opening can also be achieved using two buttons or by radio (remote control, radio keypad, etc).



Two of these variants are not available for the safety input (JOL).

DIP switches 3 + 4 ON

### Partial opening using 2 push-buttons

Fit additional push-button and connect as push-button 2 to terminals 14 + 18.

**Push button 1** always opens the gate fully.

If the gate has been partially opened with push button 2, the use of push button 1 opens the gate fully.

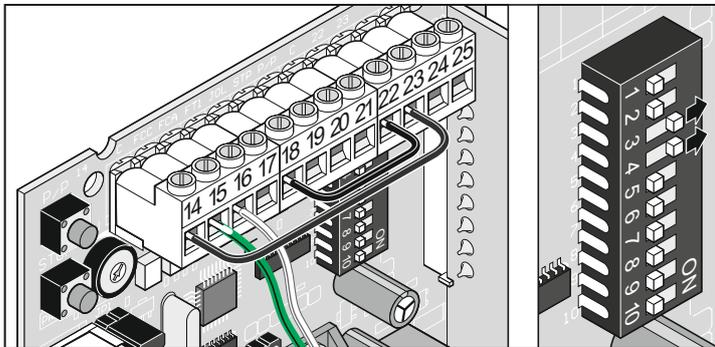
**Push button 2** carries out a partial opening only when the gate is closed.

If the gate is fully opened using push button 1 or partially opened with push button 2, pressing button 2 again will close the gate.

### Partial opening via remote controller (2-channel operation)

“Teach” two of the buttons on the remote controller:

e.g. push-button 1 onto radio channel 1 and push-button 2 onto channel 2.



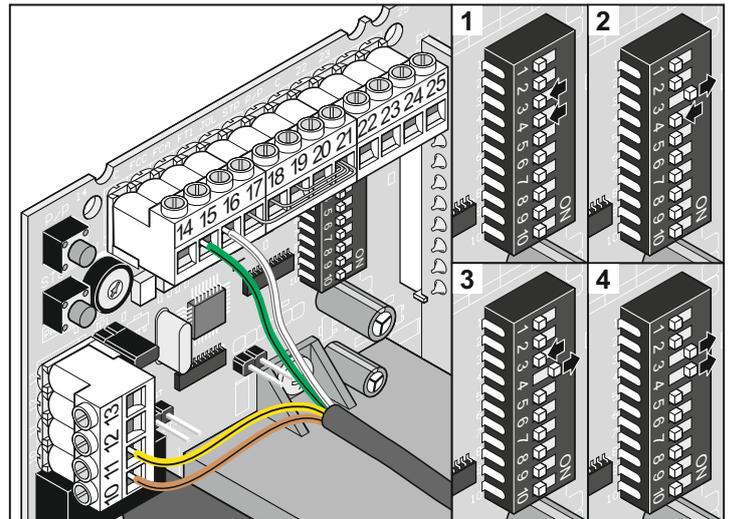
Radio channel 1 always has the same function as push-button 1, terminal 20 + 21.

Radio channel 2 always has the same function as push-button 2, terminal 14 + 18.

Place a cable bridge between terminal 22 + 18 and 23 + 14.

Procedure as described above.

## Obstacle recognition (DIP 3 + 4)



## Contact with obstacle when gate opens

### Power stop by means of slipping clutch



Set the slipping clutch carefully and check for correct functioning every 4 weeks.

The slipping clutch slips, and the drive switches off after the stored running period.

### Safety input 1, terminals 14 + 17

Drive fails to respond.

### Safety input 2, terminals 18 + 21 (DIP 3 + 4)

Should the safety input be interrupted (e.g. someone crosses the light barrier), the drive recognises this and reacts in accordance with the setting of DIP switches 3 + 4.

#### DIP switches 3 + 4 OFF

Opener contact: e.g. for light barrier, analyser unit for optical or electrical safety contact strips (e.g. 8.2 kOhm).

– Drive stops and reverses (closes the gate a little).

#### DIP switches 3 ON + 4 OFF

No further safety function, connection for timer instead.

#### DIP switches 3 OFF + 4 ON

Opener contact: e.g. for light barrier, analyser unit for optical or electrical safety contact strips (e.g. 8.2 kOhm).

– Drive stops.

#### DIP switches 3 ON + 4 ON

No further safety function, partial opening instead.

# Functions and connections

## Contact with obstacle when gate closes

**i** When automatic closure is activated the gate is always opened fully.

## Power stop by means of slipping clutch

**!** Set the slipping clutch carefully and check for correct functioning every 4 weeks.

The slipping clutch slips, and the drive switches off after the stored running period.

## Safety input 1, terminals 14 + 17

Opener contact: e.g. for light barrier, analyser unit for optical or electrical safety contact strips (e.g. 8.2 kOhm).

– Drive stops and reverses (opens gate a little).

## Safety input 2, terminals 18 + 21 (DIP 3 + 4)

Should the safety input be interrupted (e.g. someone crosses the light barrier), the drive recognises this and reacts in accordance with the setting of DIP switches 3 + 4.

## Early warning period (DIP 5)

A warning light (230 V AC – the light is responsible for creating the flashing) connected to the warning light connection (terminal 6 + 7) flashes after activation of a push button or a remote controller.

### DIP switch 5

OFF Warning light flashes while the drive opens or closes the gate.

ON Warning light flashes for 5 seconds before the drive opens or closes the gate, and during opening or closing.

## Automatic closing (DIP 6)

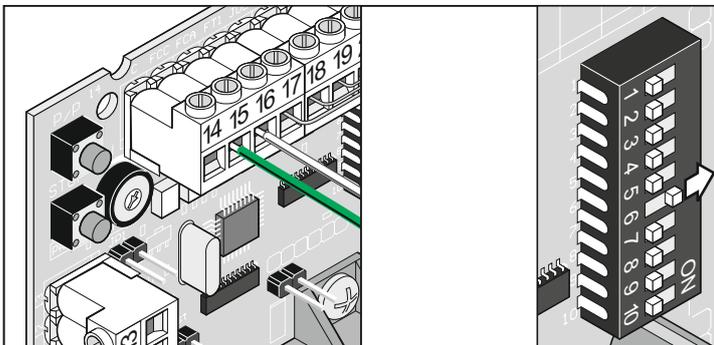
**i** Observe standard EN 12453 (e.g. fit light barrier) for automatic close mode.

The automatic CLOSE mode is activated when the gate reaches the OPEN final travel position. The preset period starts running from this point onwards. A command given during this period restarts the preset period.

Use of the drive from push buttons and remote controls.

### **i** Automatic closure and partial opening

Use both functions together; first set the automatic closure and then activate the partial opening.



The hold open time can be set: min. 1 second up to 15 minutes max.

### Settings:

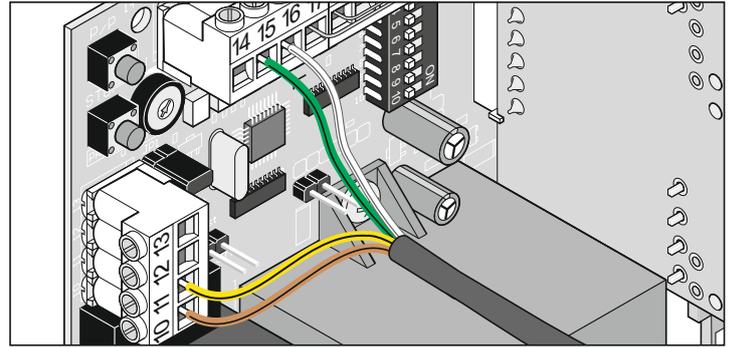
– DIP switch 6 ON

– For procedure see section "Teaching the drive"

For behaviour of drive when safety inputs 1 + 2 are tripped, see section 'DIP switches 1–10'.

## End switches

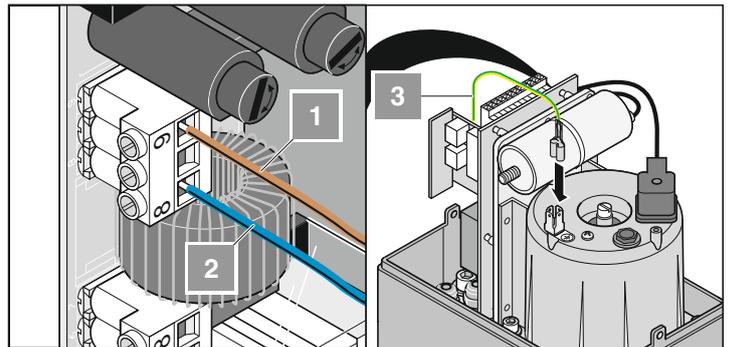
• Permissible cable cross-sections: max. 2.5 mm<sup>2</sup>.



Terminal	Colour of cable	Designation
10	brown	24 V AC
11	yellow	Ground
15	green	End switch gate CLOSED
16	white	End switch gate OPEN

## Mains connection

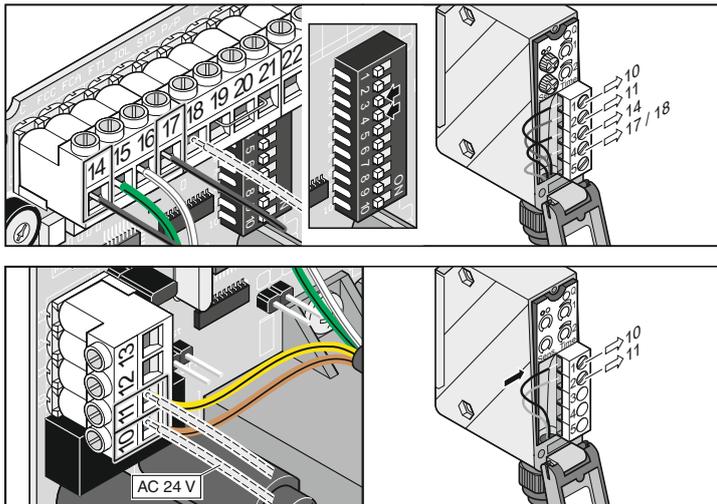
• Permissible cable cross-sections: max. 2.5 mm<sup>2</sup>.



Terminal	Colour of cable	Designation
8	blue (2)	Neutral conductor (N)
9	brown (1)	230 V AC (L)
Motor	green/yellow (3)	Protective earth conductor (PE)

# Functions and connections

## Connecting light barrier



### Safety input 1 (FT1)

Terminals 14 + 17: Connection for potential-free contacts

### Safety input 2 (JOL)

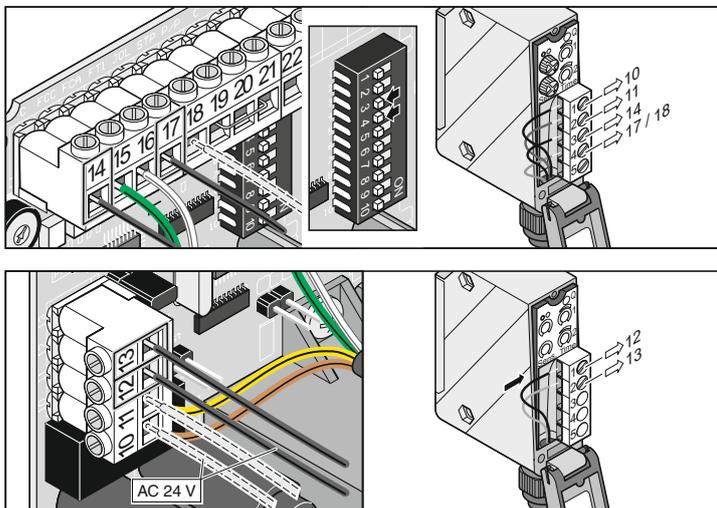
Terminals 14 + 18: Connection for potential-free contacts. **Functions in accordance with settings of DIP switches 3 + 4.**

### Mains supply

Terminal 10: 24 V AC, max. 0,15 A

Terminal 11: Earth

## Connecting the light barrier with tester



### Safety input 1 (FT1)

Terminals 14 + 17: Connection for potential-free contacts

### Safety input 2 (JOL)

Terminals 14 + 18: Connection for potential-free contacts. **Function in accordance with settings of DIP switches 3 + 4.**

### Mains supply for receiver

Terminal 10: regulated 24 V AC, max. 0.15 A

Terminal 11: Earth

### Spannungsversorgung Sender

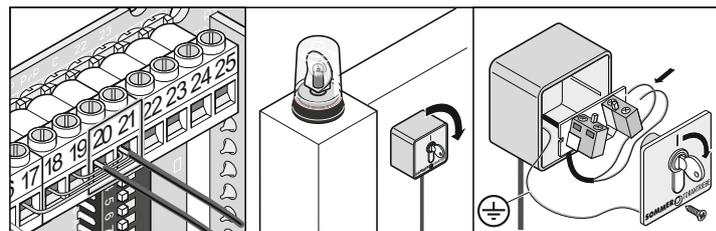
Terminal 12: regulated 24 V AC, max. 0.15 A

Terminal 13: Earth

DIP switch 7 ON

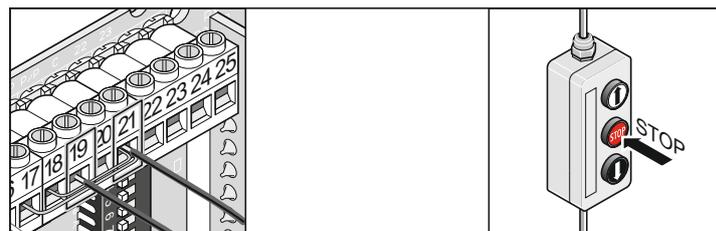
## Connecting push button

### Push button 1



Terminals 20 + 21

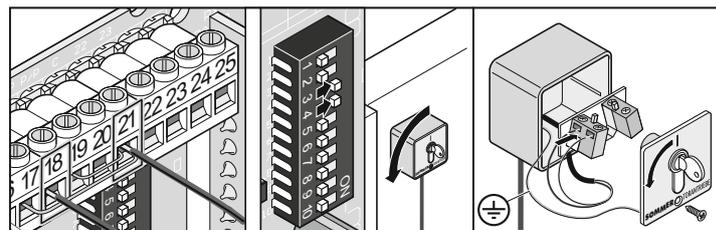
### STOP button



Terminals 19 + 21

STOP button has only stop function (for gate OPEN and CLOSED) and does not serve as an emergency-stop button.

### Push button 2



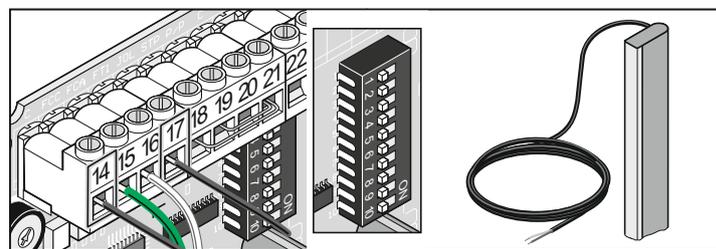
Terminals 18 + 21

Push button 2 is only for the partial opening function.

DIP switches 3 + 4 ON

## Connecting safety switch unit (optical/electrical)

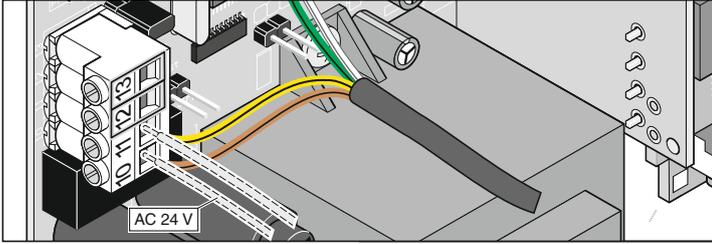
**i** Connection only with special analyser.



Terminals 14 + 17 Connection for potential-free contacts

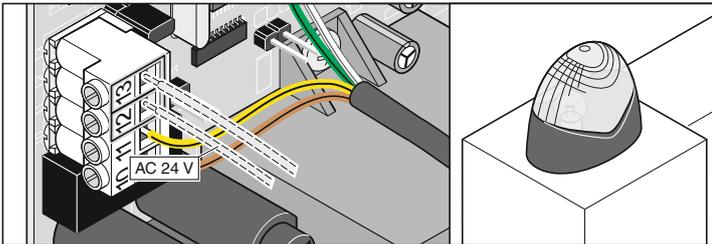
# Functions and connections

## 24 Volt connection



Terminal 10: regulated 24 V AC, max. 0.15 A  
Terminal 11: Earth

## Door status indicator



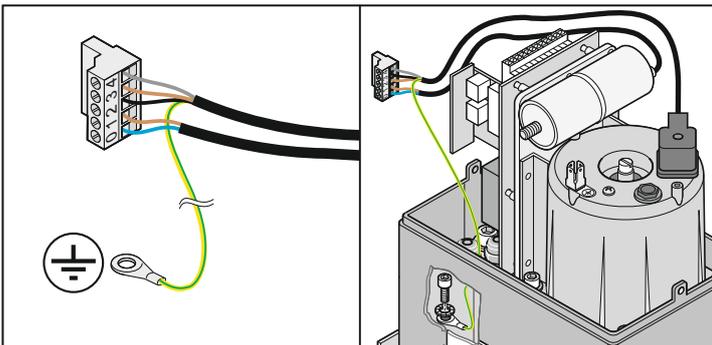
Terminal 12: regulated 24 V AC, max. 0,15 A  
Terminal 13: Earth

**DIP switch 7 OFF**

### Warning light behaviour (example)

Gate CLOSED	OFF
Gate OPEN	ON (in automatic closing mode: 3 x flashing – off, etc.)
Intermediate stop	ON
Gate OPENING	flashing
Gate CLOSING	flashing fast

## Motor

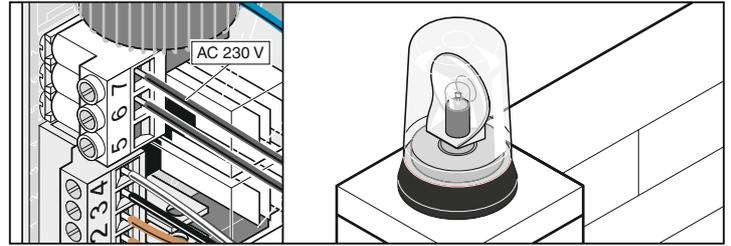


Terminal	Colour of cable	Designation
2	black	
3	brown	
4	grey	
Drive	green/yellow	

Connections to terminal 2 + 3; for drive swap to the right.

## Connecting warning light

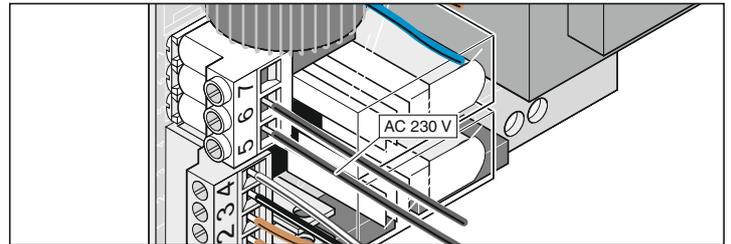
The warning light is responsible for creating the flashing.



Terminal 6: Earth  
Terminal 7: 230 V AC, max. 1 A

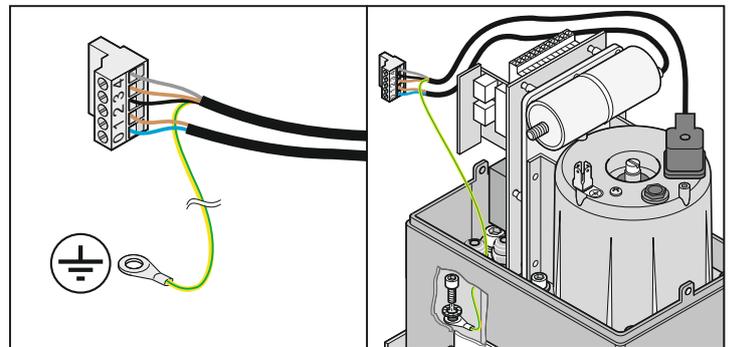
## Relay output

Each time the drive starts, the relay closes and stays closed for approx. 2 minutes after the drive has stopped.



Terminal 5: 230 V AC, max. 1 A  
Terminal 6: Earth

## Connecting the capacitor



Terminal	Colour of cable	Designation
0	blue	
1	brown	

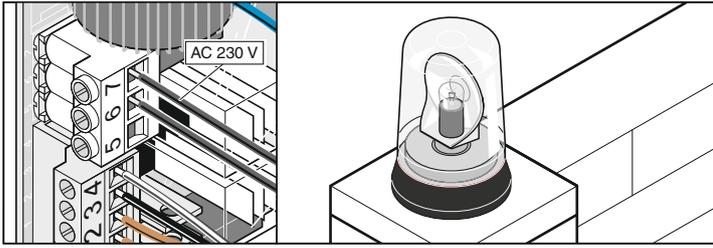
## Connecting an external aerial

See "Accessories".

# Accessories

## 1. Warning light

The warning light is responsible for creating the flashing.

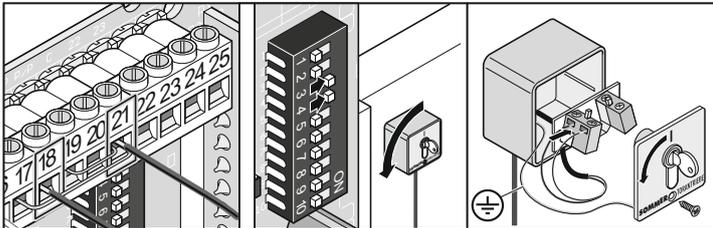
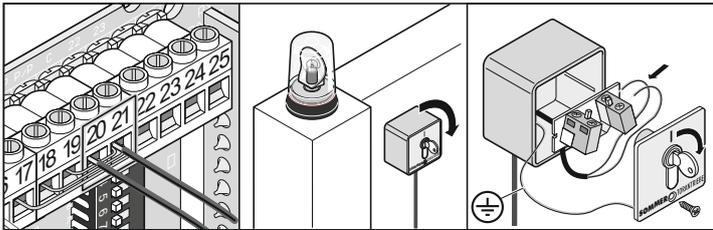


Terminal	6	Earth
	7	230 V AC, max. 1 A

## 2. Key operated pad

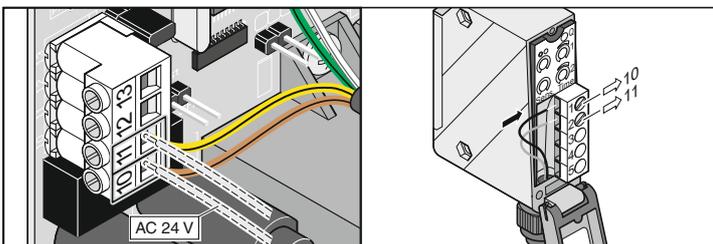
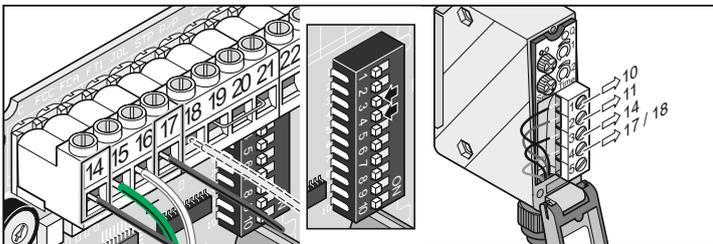
**⚠** When pushing the key operated pad, the user should not stand in the gate's travel range and the user must have a clear view of the gate.

- Never run the push-button cable alongside a power cable as this can cause the control unit to malfunction.
- Lay button cable and secure in position.



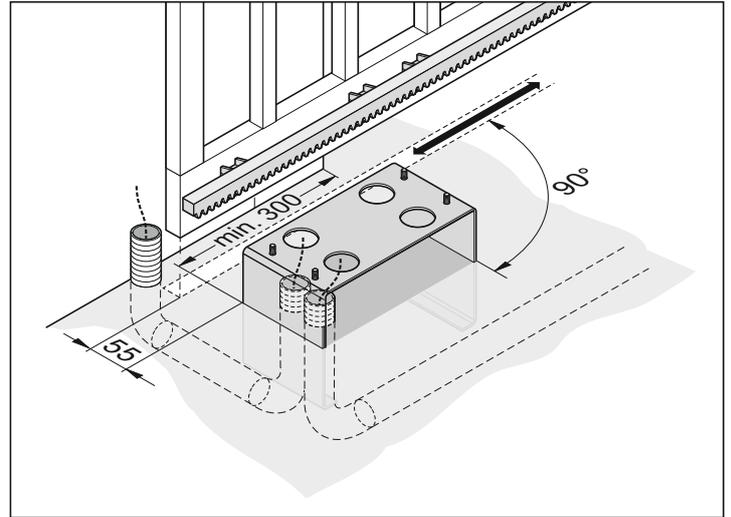
- Install the key operated pad in an appropriate, easily accessible location.

## 3. Light barrier

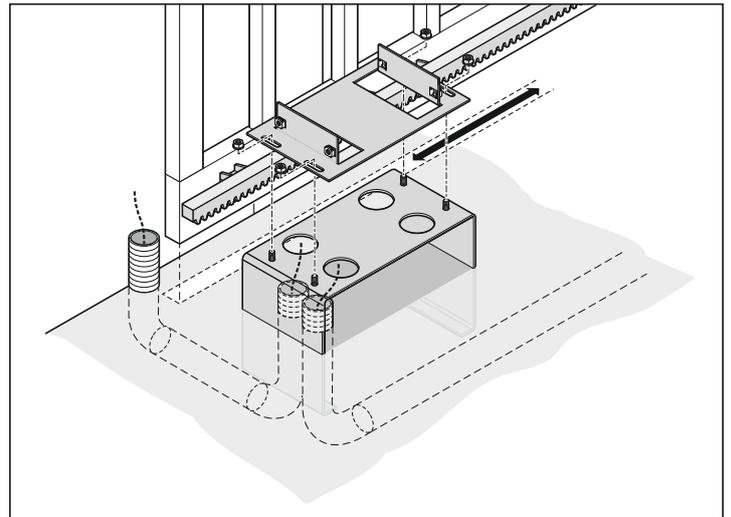


## 4. Console

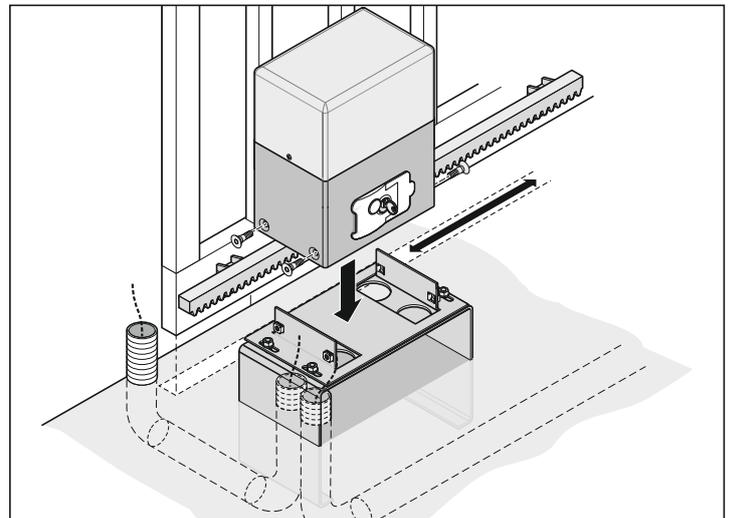
**i** Follow dimensions and angles exactly, see section "Installation site".



- The dimensions of the console and cable ducting for the mains supply and accessories (e.g. light barrier) should be taken into account when excavating; see section "Foundation".
- Check the dimensions and horizontal alignment of the console. Concrete around the cable ducting and console.



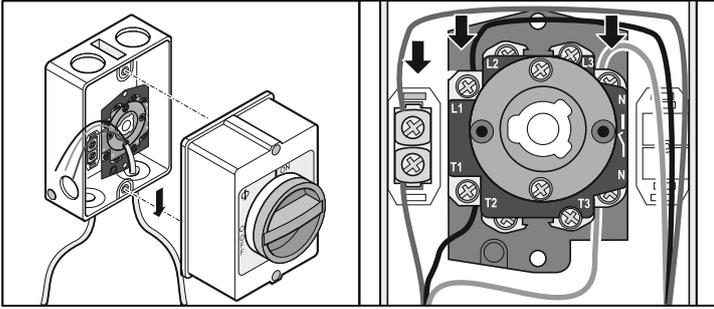
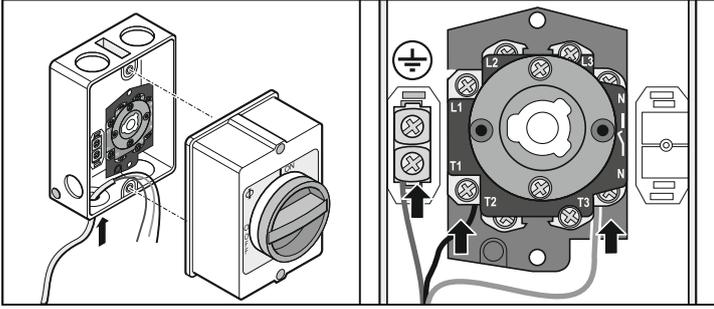
- Fix the anchoring plate to the console.



- Mount the drive on the anchoring plate and tighten the screws.
- Pull cables through.

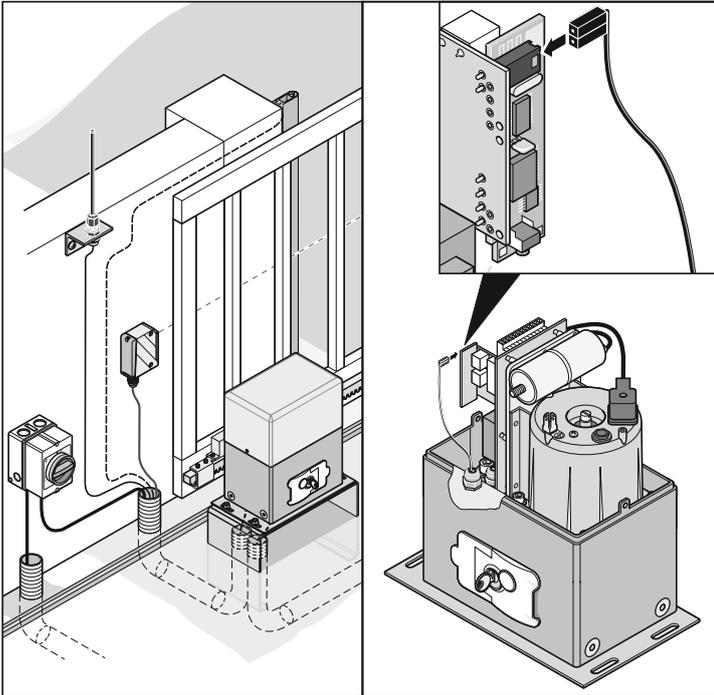
# Accessories

## 5. Main switch



## 6. External aerial

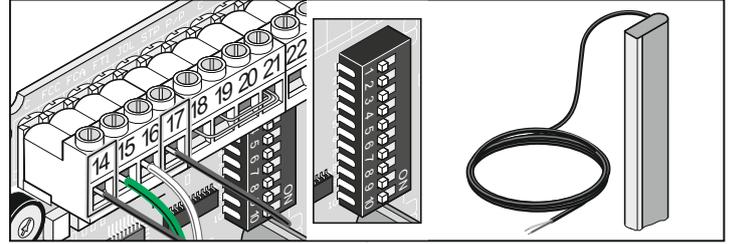
- An external aerial can be fitted if the range of the radio receiver's internal aerial is insufficient.
- The aerial cable should not place any mechanical stress on the radio remote control receiver, attach a strain relief device.
- Consult the operator on the location for installation of the aerial.



- Connect external antenna to the connection.

## Connect safety contact strip (optical/electrical)

Connection only with special analyser.



Terminals 14 + 17 Connection for potential-free contacts

# Maintenance and care

## Important information

 Never play a water hose or a high-pressure cleaner onto the drive.

- Before working on the gate or the drive, ensure that it is de-energized and safeguarded from being turned on again.
- Never use alkaline solutions or acids for cleaning purposes.
- Wipe drive clean with a dry cloth as required.
- Keep hands clear of a gate in operation and of any moving parts.
- There is a risk of persons trapping or cutting themselves in/on the gate system's moving parts or edges where it closes.
- All fixing screws on the drive should be checked for firm seat and tightened if necessary.
- Check the gate in accordance with the manufacturer's instructions.

## Regular inspections

Check safety devices regularly, (at least 1x annually), to ensure they function correctly (e.g. BGR 232 previously ZH 1/494).

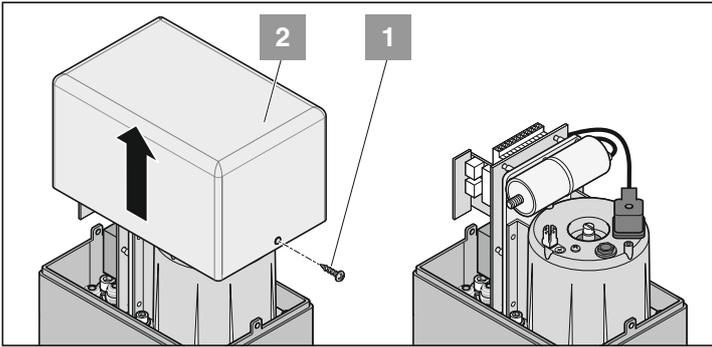
Safety devices that are sensitive to pressure (e.g. safety contact strip) should be checked every four weeks to ensure they function correctly; see pr EN 60335-2-95.

Test	Behaviour	yes/no	Possible cause	Remedy
<b>Sliding clutch</b>				
Stop gate when closing, using a 50 mm wide object.	Drive stops when encountering the object	yes	• Sliding clutch is set correctly.	• Do not adjust settings.
		no	• Sliding clutch is set too tight.	• Set the sliding clutch more loosely until the test is successful.
<b>Emergency release</b>				
Complete the procedure as described in the chapter 'Emergency release'.	It must be possible to open/close the gate easily by hand. (Gate is balanced)	yes	• Settings OK!	
		no	• Emergency release is defective. • Gate jams	• Repair emergency release. • Check gate, see maintenance instructions for gate.
<b>Safety contact strip if present</b>				
Open/close gate and activate the strip in the process.	Behaviour of the gate as set on DIP switches 3 + 4. LED FTC or JOL is out.	yes	• Settings OK!	
		no	• Cable break, loose terminal connection • DIP switch is set incorrectly • Strip is defective	• Check wiring, tighten terminal connections • Set DIP switches correctly • Completely shut down the gate drive and ensure that it cannot inadvertently be restarted. Contact after-sales service!
<b>Light barrier (optional)</b>				
Open/close gate and trip the light barrier in the process.	Behaviour of the gate as set on DIP switches 3 + 4. LED FTC or JOL is out.	yes	• Settings OK!	
		no	• Cable break, loose terminal connection • DIP switch is set incorrectly • Photoelectric cell dirty • Light barrier misaligned (bent bracket) • Photoelectric cell defective	• Check wiring, tighten terminal connections • Set DIP switches correctly • Clean photoelectric cell • Adjust light barrier settings • Completely shut down the gate drive and ensure that it cannot inadvertently be restarted. Contact after-sales service!

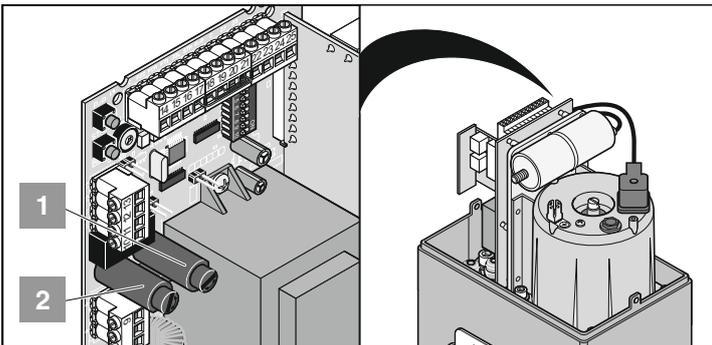
# Maintenance and care

## Changing the fuse

- Disconnect the mains supply.



- Loosen screws (1). Remove lid (2).
- Replace defective fuse.



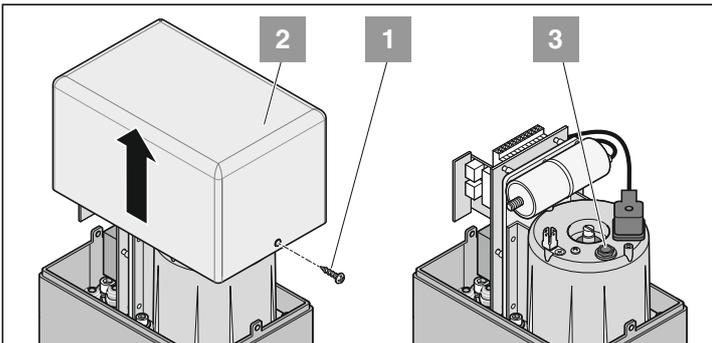
1. Fuse 24 V: 0.3 mA
2. Fuse 250 V, 6.3 A

## Check oil level

Check the oil level at least once per year.

### Procedure:

- Disconnect mains supply.



- Loosen screws (1) and remove cover (2).
  - Remove oil plugs (3).
  - Check that the coil is completely covered with oil.  
The normal oil level is 20 mm below the plug.
    - max .15 mm
    - min. 25 mm
- If an oil top-up is necessary, use Texaco Texamatic 7045 or Mobil Oil ATF 220.

# Miscellaneous

## Dismantling

 Observe safety instructions!

The work procedure is the same as in the "Assembly" section, however, in the reverse sequence. Adjustment of the equipment is not necessary.

## Disposal

Observe applicable statutory regulations!

## Warranty and after-sales service

The warranty is granted in accordance with the applicable law. Contact your local dealer for any warranty claims. Warranty entitlements only apply to the country in which the given drive was purchased.

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

If you require customer service, spare parts, or accessories, please contact your dealer.

We have tried to make the installation and operating instructions as clear as possible. If you have suggestions for a better format, or if information is missing from the assembly and operating instructions, then please send us your suggestions:

Fax.: 0049 / 7021 / 8001-403

E-mail: [doku@sommer.eu](mailto:doku@sommer.eu)

## EU Declaration of conformity

The company

SOMMER Antriebs- und Funktechnik GmbH  
Hans-Böckler-Str. 21–27  
D-73230 Kirchheim unter Teck

herewith declares that the product named below, if operated properly, conforms to the general requirements according to Article 3 of the R&TTE Directive 1999/5/EC and fulfils the requirements of the standards listed below:

Product: RF Remote Control for Doors & Gates

Type: RMO4-868-2, 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

Applicable 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, 04.08.2004  
Frank Sommer  
Managing Director



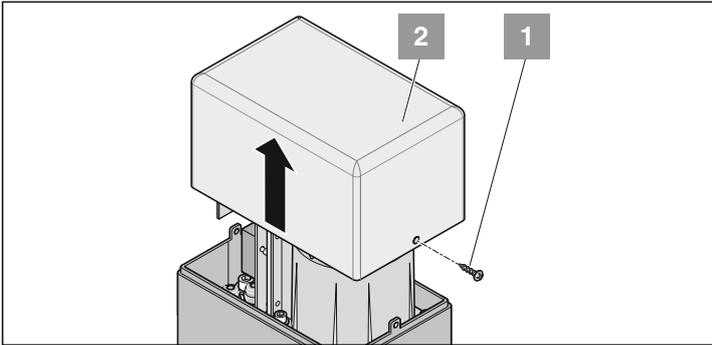
# Conversion instructions: from SM 40 to SM 40 T

## Conversion procedure

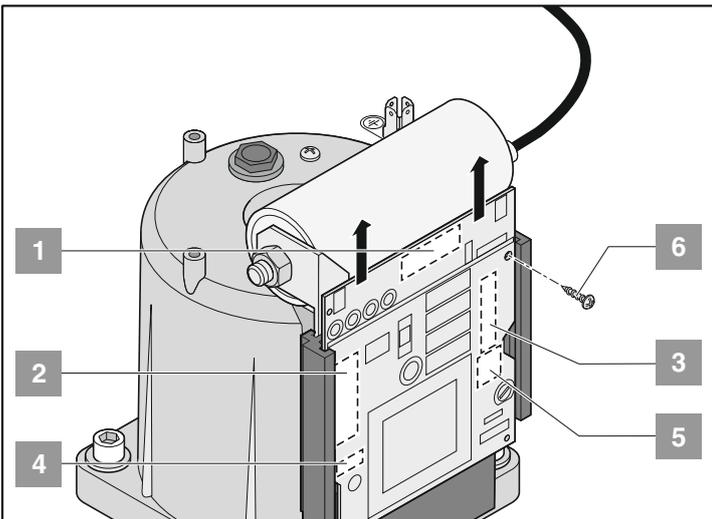
The previous CTD control unit for the SM 40 sliding gate drive is no longer available. Therefore, if the control unit becomes faulty, the drive must be converted to the new T100 control unit. The procedure for conversion is described below.

### Remove the CTD control unit

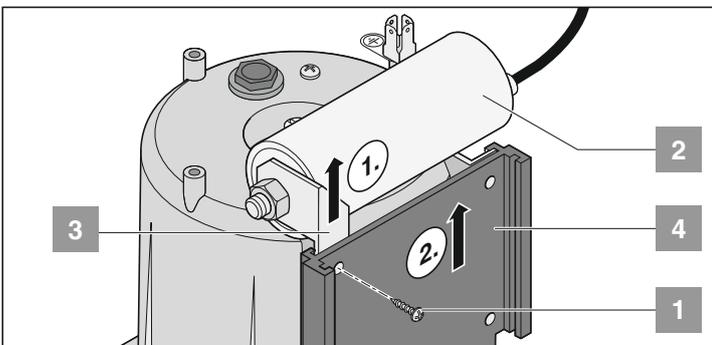
- Before working on the drive, ensure that it is de-energized and safeguarded from being turned on again.
- When working on the control unit, protect this from damp (rain, snow, etc).
  - Disconnect the mains supply and secure the main switch against inadvertent operation.



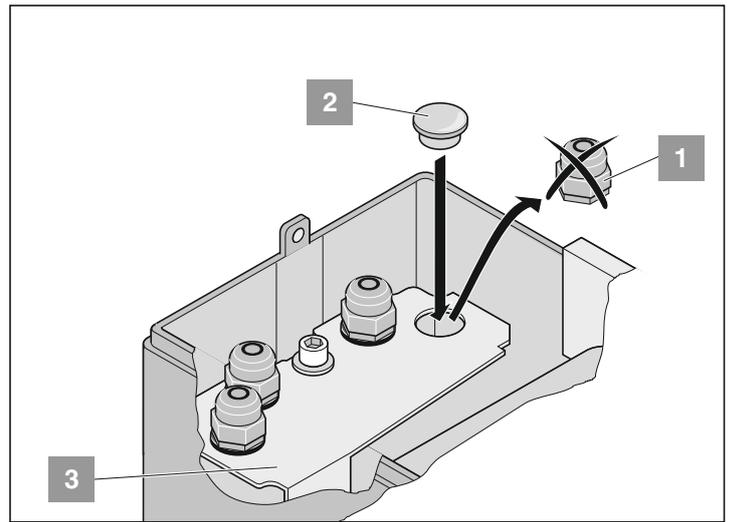
- Loosen screws (1). Remove lid (2).



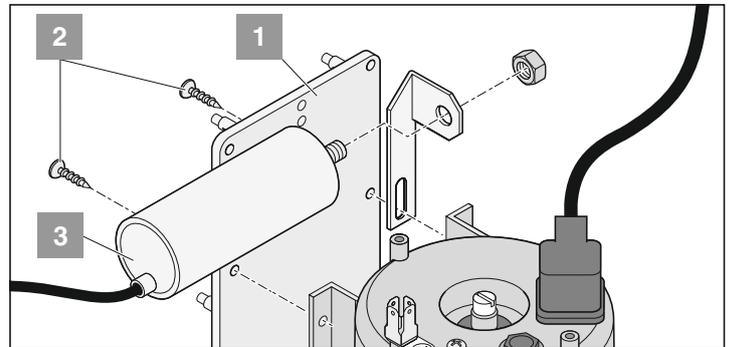
- Dismantle the radio receiver (1).
- Remove plugs (2, 3, 4 + 5) from the CTD control unit.
- Unscrew screw (6) and remove the control unit upwards.



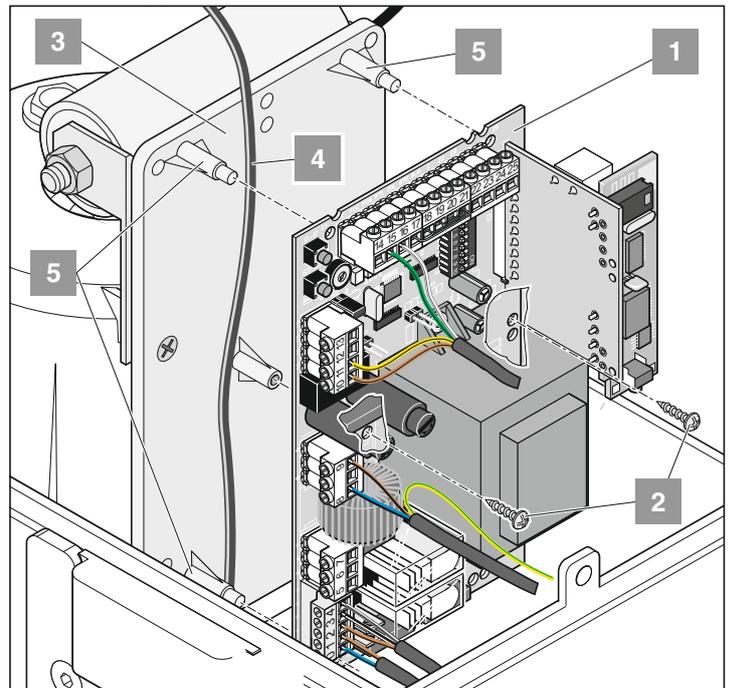
- Unscrew screw (1) and remove the capacitor (2) with sheet metal holder (3) upwards.
- Also remove the black control unit holder (4) upwards.



- Remove the screw cable connection (1) and block the hole with a plug (2). Screw cable connection (1) has no counternut, removal is possible without removing metal plate (3).



- Push the capacitor (3) and its sheet metal holder between the motor and the control unit holder (1) and screw them together with 2 screws (2).



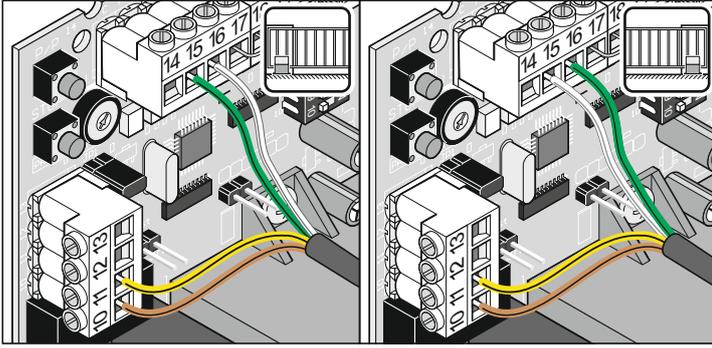
- Insert T100 control unit (1) and screw together with the control unit holder (3) using 2 screws (2). Lead the cable (4) for the magent end switch upwards between the T100 control unit and the control unit holder.

Ensure that the T100 control unit (1) is located correctly on the positioning studs (5) of the control unit holder.

# Conversion instructions: from SM 40 to SM 40 T

## Connecting the end switch

- Permissible cable cross-sections: max. 2.5 mm<sup>2</sup>.



- Please detach the cable for the end switch from the green terminal and connect it to the new control unit. For connections see below.

Terminal	Colour of cable	Designation
10	brown	24 V AC
11	yellow	Earth

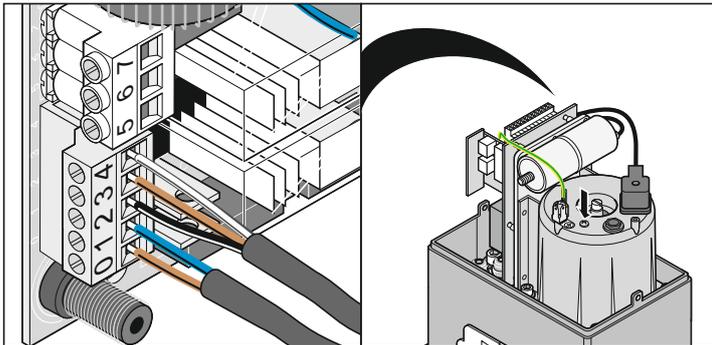
### Drive to left

15	green	End switch gate CLOSED
16	white	End switch gate OPEN

### Drive to right

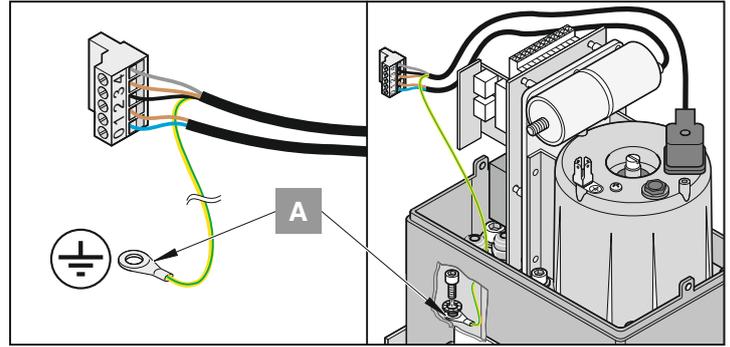
15	white	End switch gate OPEN
16	green	End switch gate CLOSED

## Connecting the capacitor



Terminal	Colour of cable	Designation
0	blue	
1	brown	

## Connecting the motor



### Drive to left

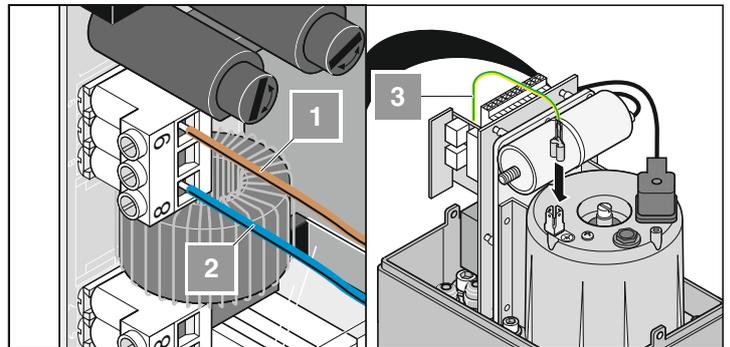
Terminal	Colour of cable	Designation
2	black	
3	brown	
4	grey	
A	green/yellow	Protective earth conductor (PE), already connected

### Drive to right

Terminal	Colour of cable	Designation
2	brown	
3	black	
4	grey	
A	green/yellow	Protective earth conductor (PE), already connected

## Mains connection

- Permissible cable cross-sections: max. 2.5 mm<sup>2</sup>.

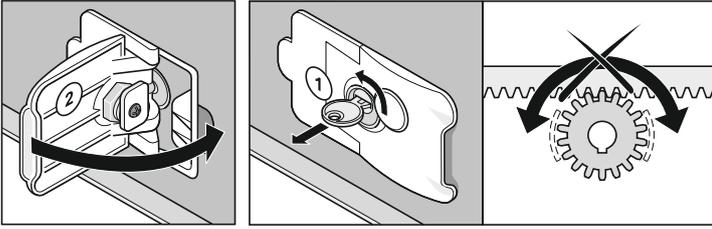


Terminal	Colour of cable	Designation
8	blue (2)	Neutral conductor (N)
9	brown (1)	230 V AC (L)
Motor	green/yellow (3)	Protective earth conductor (PE)

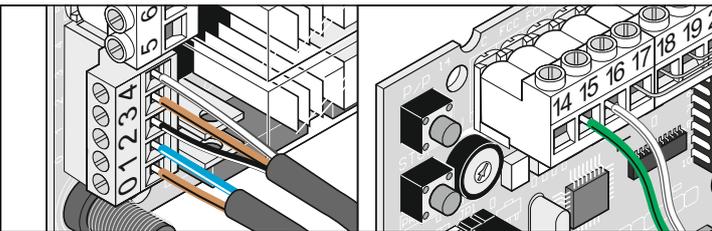
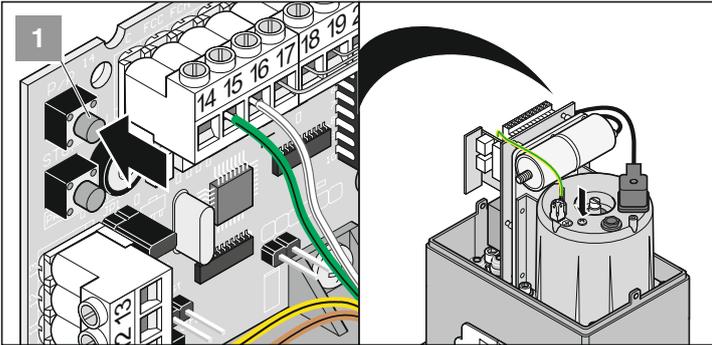
- Tighten the free cable connections, and close off unused cable connections with e.g. a piece of cable.

## Check direction of travel

- Bring the gate to its central position.
- Turn on mains power.



- Engage the drive:  
push lever (2) back in – turn key (1) 90° anticlockwise and remove:  
The drive engages and the gate can be moved only with the motor.



- Close the gate and press button P/P (1).  
The first direction of movement after the main switch is set to ON must correspond to OPENING of the gate. If this is not the case, exchange the cables connected to terminals 2 + 3 (motor) with those connected to terminals 15 + 16 (end switch).

## Commissioning

See chapter 'Commissioning'

# Troubleshooting

## More troubleshooting tips

**i** Many problems can be solved by a control reset and subsequent reprogramming of the drive!

Should you be unable to find and eliminate the fault with the help of this table, take the following steps:

- Carry out a complete control reset.
- Disconnect any accessories (e.g. light barrier) that may have been connected and reconnect the jumper if there is a safety connection.
- Set all DIP switches to default settings.
- Reset potentiometer to the default setting.
- Check all connections to the direct plug-in strip and the terminal strip, and tighten if needed.

To eliminate drive faults, follow the instructions in the table below. If you cannot solve the problem yourself, get advice from your specialist dealer.

Fault	Possible cause	Remedy
Gate does not open or close.	No control unit installed.	Install control unit.
	No mains supply present. LED FTC, JOL, STP and FCC or FCA do not illuminate.	– Check the fuse in the power supply line. Replace fuse, test the supply with a different device e.g. electric drill. – Switch main switch on. – Fuses on control unit faulty.
	Control unit not installed and connected correctly.	Fit the control unit correctly and check the plug-in strips.
	Light barrier tripped, JOL or FTC LEDs do not light up.	Eliminate interruption.
Gate does not open or close when remote control or radio keypad is activated.	Safety contact strip (8.2 kOhm) faulty, JOL or FTC LEDs do not light up.	Replace safety contact strip.
	Battery is flat; LED on remote controller does not illuminate.	Replace battery.
	Remote controller/radio keypad has not been taught to communicate with radio receiver.	Teach remote controller/radio keypad.
	Wrong radio frequency.	Check frequency.
Gate does not open or close when activated by a push button (e.g. key operated pad).	Command is permanently applied because the button is jammed. LED on radio receiver is illuminated.	Release push-button or replace remote controller/keypad.
	Push-button not connected or defective. LED P/P does not illuminate when the button is pushed.	Connect or replace push-button.
	A permanent signal is being sent – there is water in the button housing and the LED P/P is permanently illuminated.	Replace push-button and protect against damp.
Gate stops when closing, moves approx. 10 cm in reverse direction, then stops.	The light barrier or the safety contact strip is responding to an obstacle	Remove obstacle; open gate completely.
	Gate incorrectly set or faulty	Have gate adjusted correctly or repaired by a specialist.
Gate stops when opening, moves approx. 10 cm in reverse direction, then stops.	The light barrier or the safety contact strip is responding to an obstacle.	Remove obstacle; open gate completely.
	Gate incorrectly set or faulty.	Have gate adjusted correctly or repaired by a specialist.
Gate stops when opening.	Connected light barrier has been tripped.	Eliminate interruption.
Drive fails to close gate.	Power supply to light barrier interrupted. FTC or JOL LED is out.	Check connection. Replace fuse.
	Power supply to drive interrupted.	The first command issued after restoration of the mains supply results in the drive opening the gate fully.
Drive opens gate but then no further reaction to a command given via push-button or remote controller.	Safety input tripped (e.g. faulty photoelectric cell) FTC or JOL LED OUT	– Remove obstacle from the light barrier – Repair light barrier

# Troubleshooting

Fault	Possible cause	Remedy
Oil runs out of the motor.	Ventilation screw not loosened.	Not possible on site. Drive must be sent to works for repair. Screw in the ventilation screw and tighten fully before despatch, otherwise oil which escapes may damage the control unit.
Connected warning light does not light up.	Bulb defective.	Replace bulb.
"Start" LED is continuously on.	Permanent signal from radio receiver, LEDs 3.1 or 3.2 at the radio receiver are on. Radio signal is being received; a remote control transmitter button might be defective or an external signal is received.	<ul style="list-style-type: none"> <li>– Remove battery from the remote control transmitter.</li> <li>– Wait until the external signal ceases.</li> </ul>
<b>Only in units with radio receiver!</b>		
All LEDs are flashing.	All memory positions are occupied (max. 112)	<ul style="list-style-type: none"> <li>– Delete all radio control devices no longer in use.</li> <li>– Install additional radio receiver.</li> </ul>
LED 3.1 or 3.2 is continuously on.	Radio signal is being received; remote control transmitter button might be defective or an external signal is received.	<ul style="list-style-type: none"> <li>– Remove battery from the remote control transmitter.</li> <li>– Wait until the external signal ceases.</li> </ul>
LED 3.1 or 3.2 is on.	Radio receiver is in 'teaching' mode and expects a code signal from a remote control device.	Press desired button on remote control transmitter.