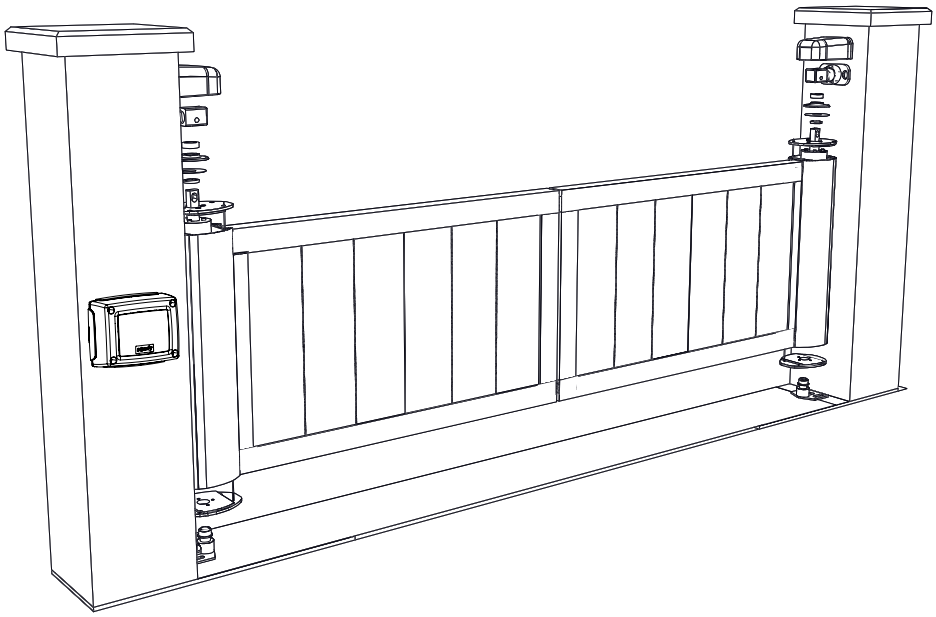

INVISIO 3S io

EN Installation manual

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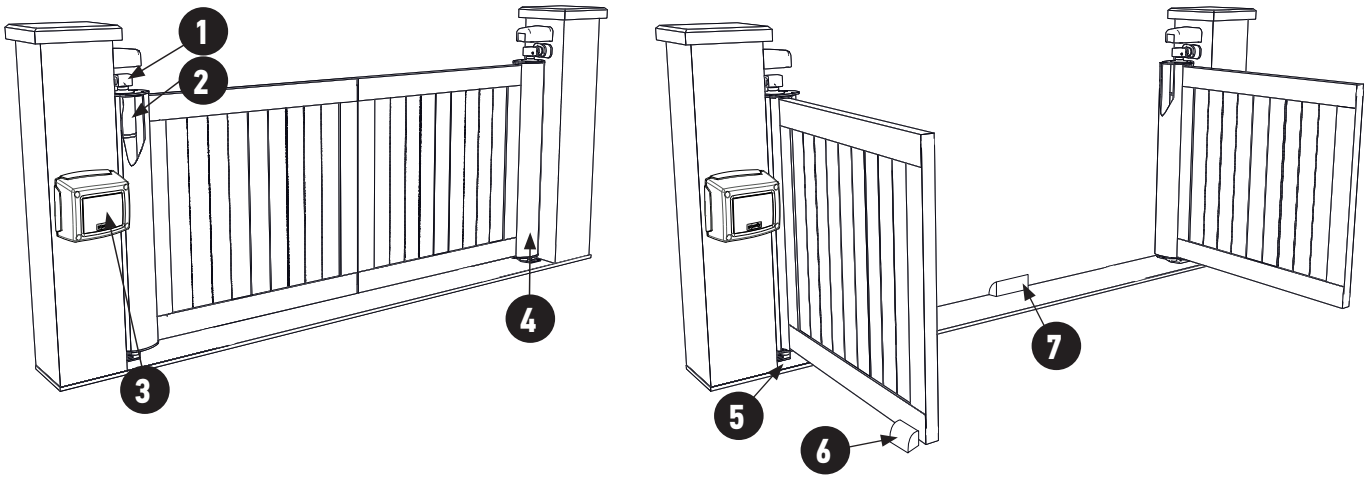

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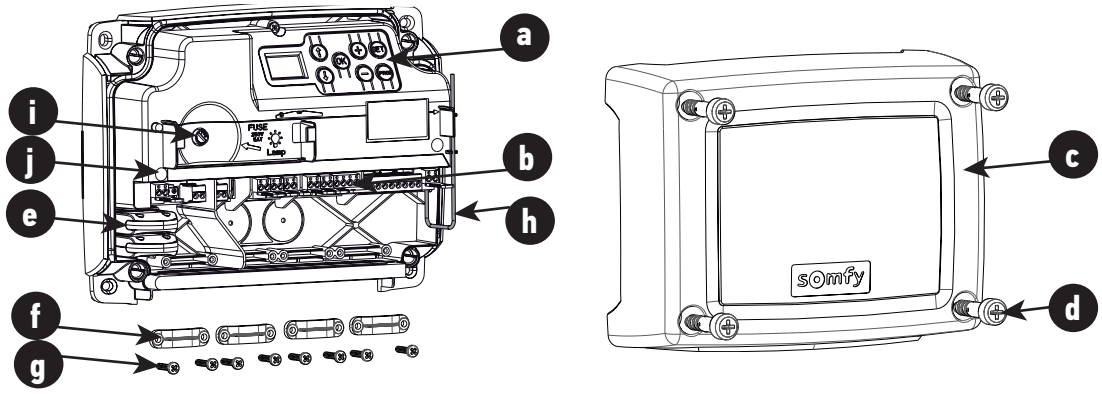

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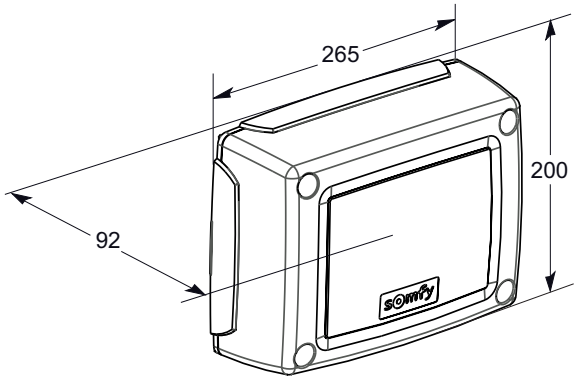

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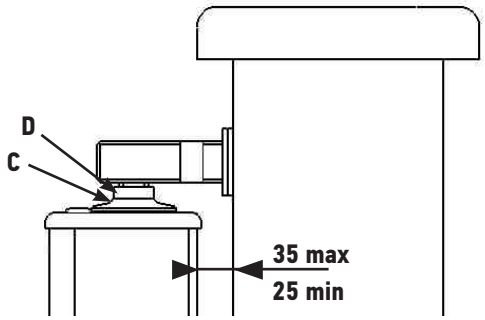

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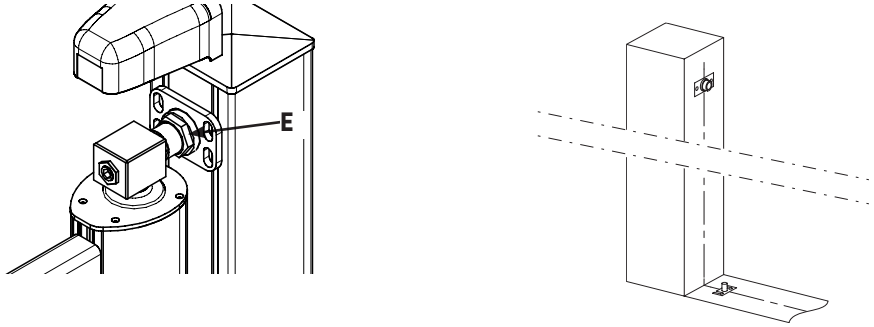

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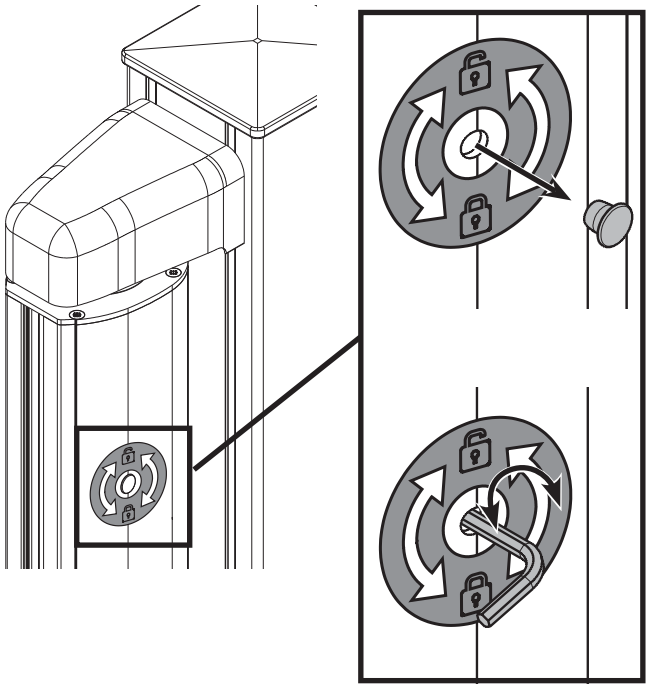

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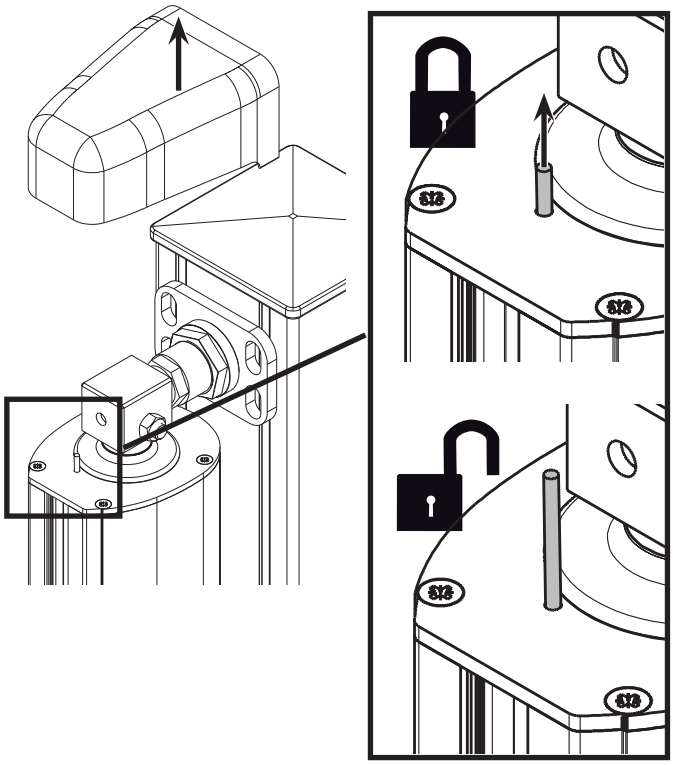

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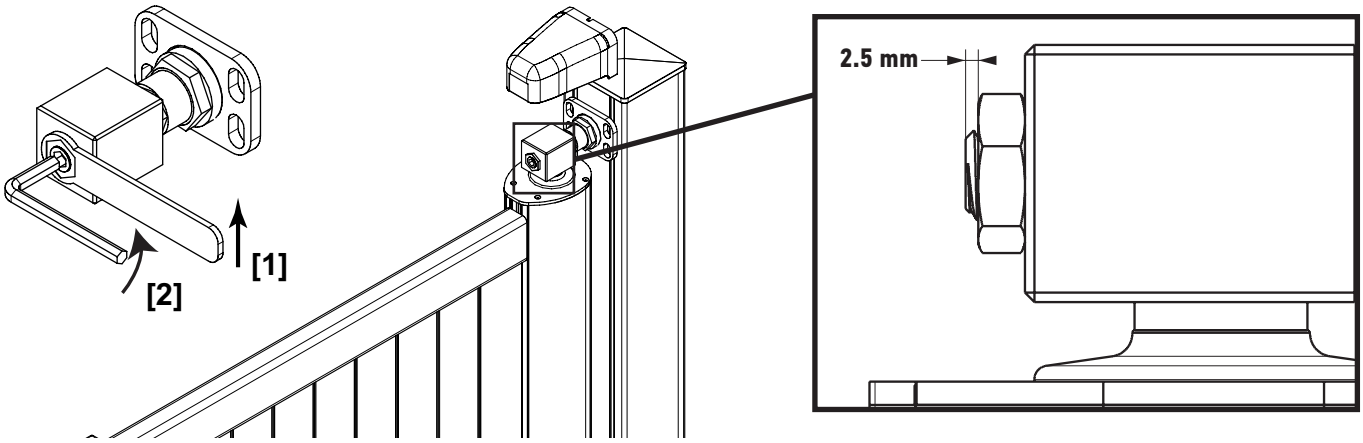

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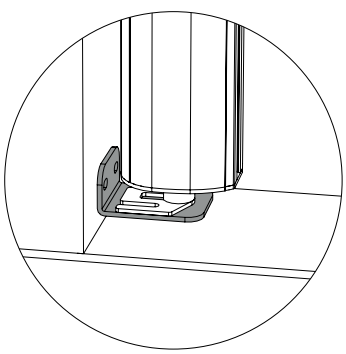

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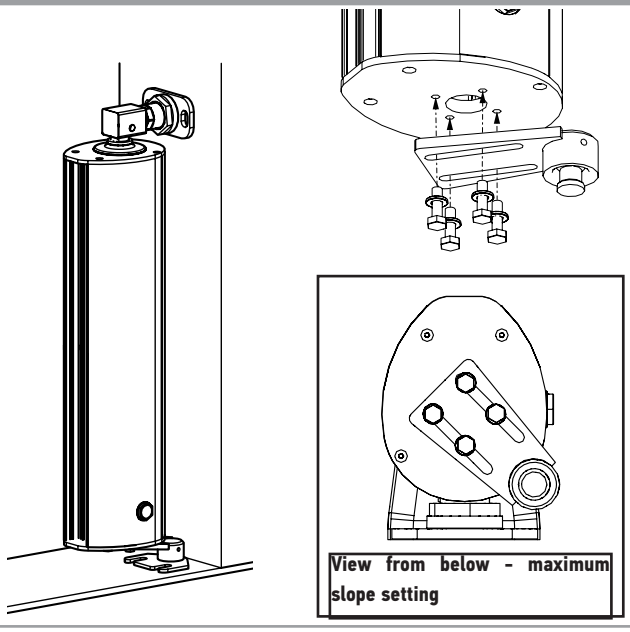

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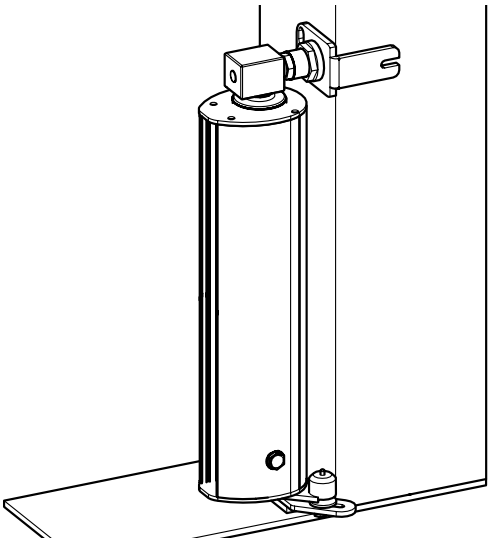
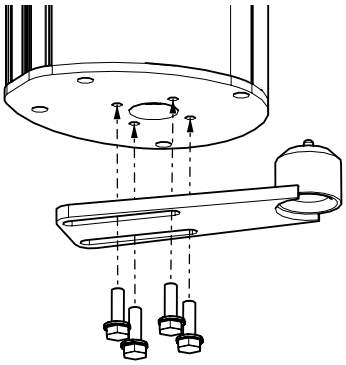
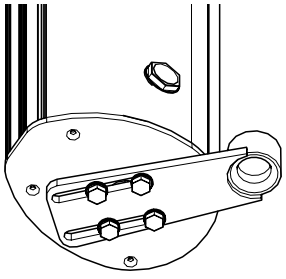
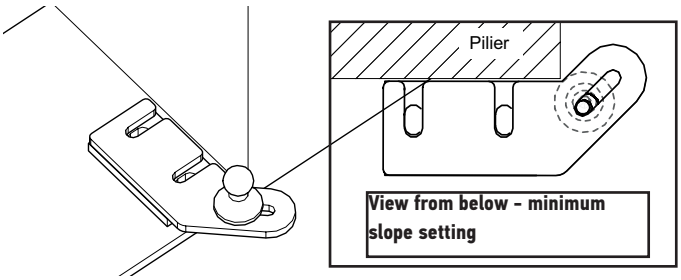
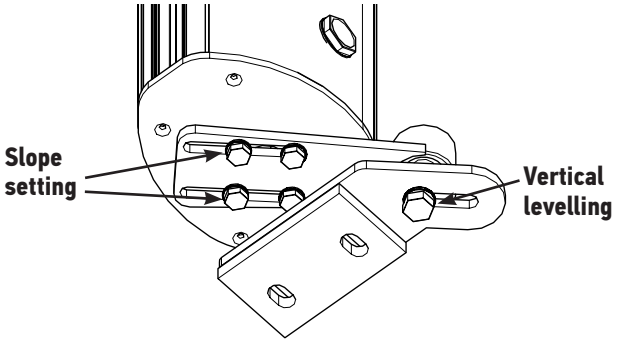
11











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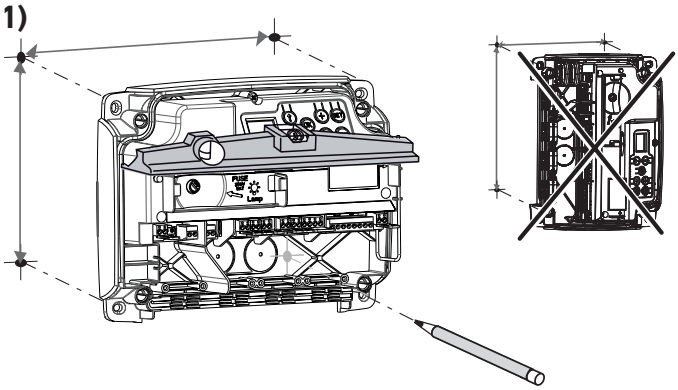

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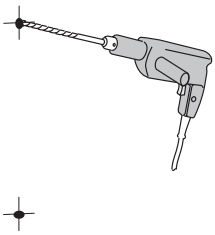

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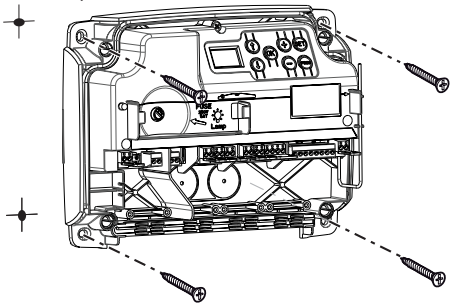

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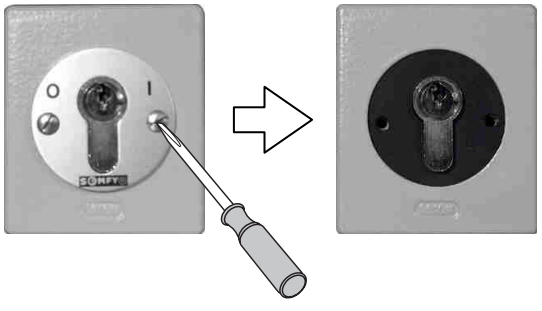

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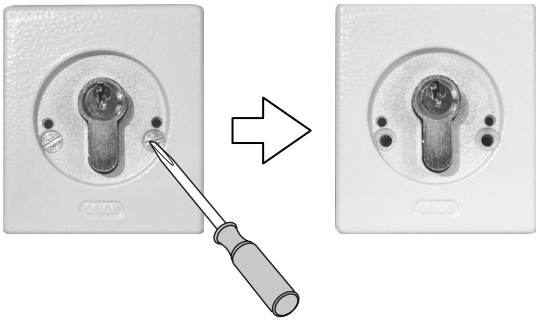

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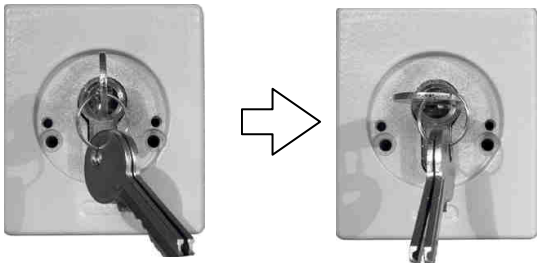

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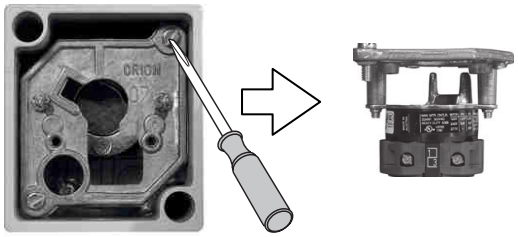

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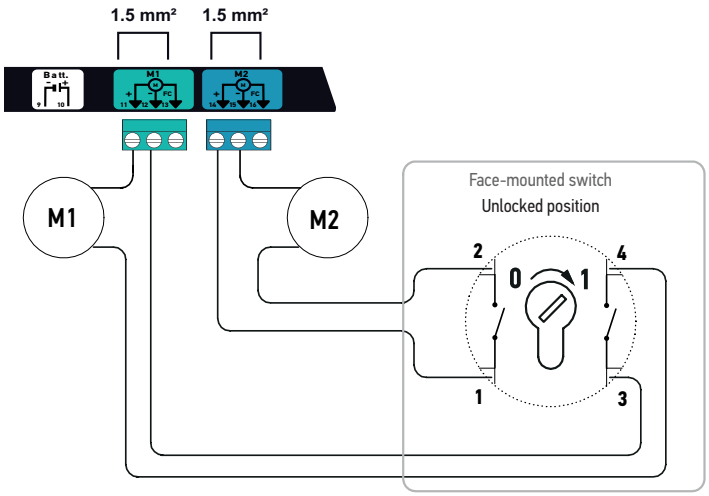

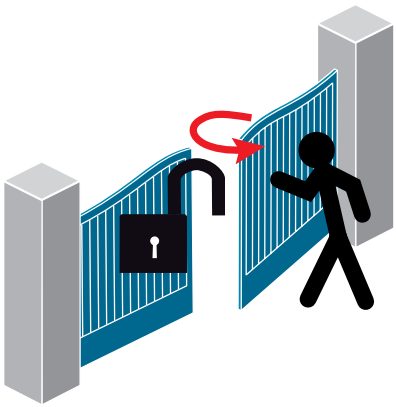

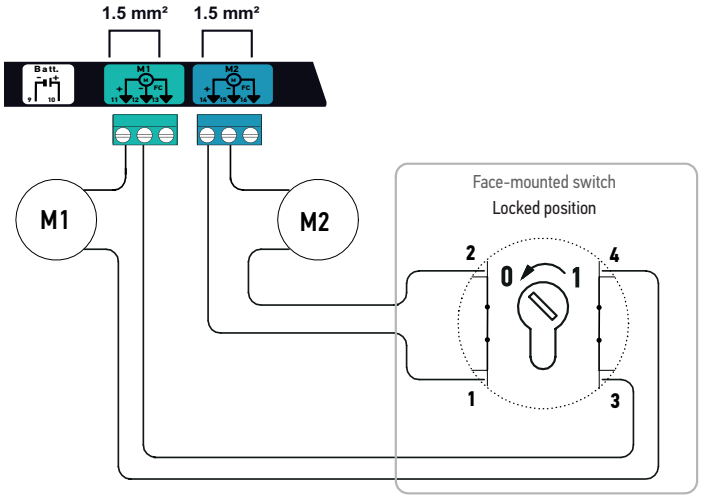

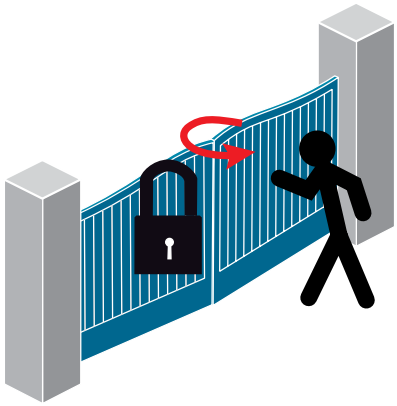

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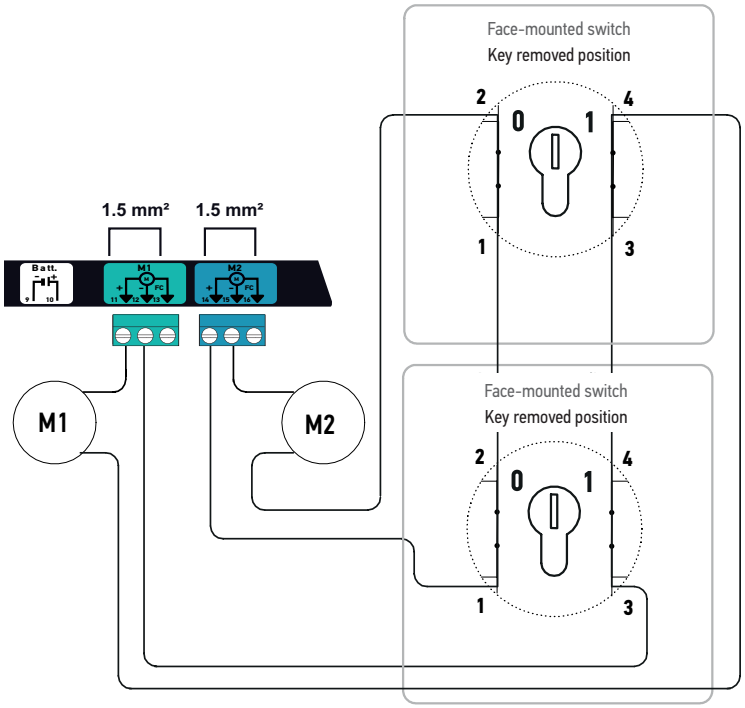

Unlocked position

Locked position

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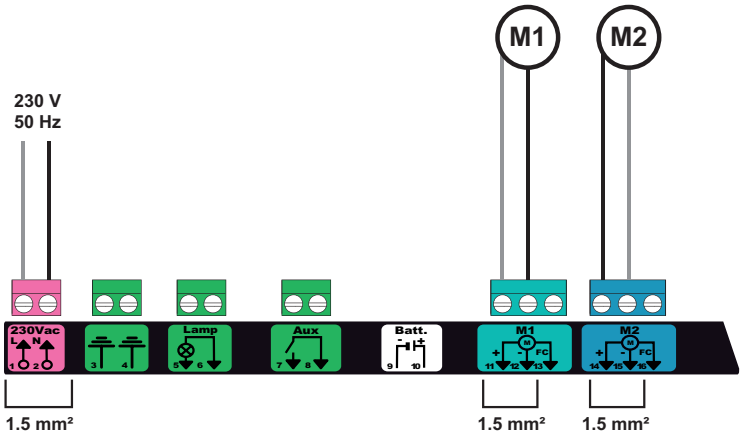
16



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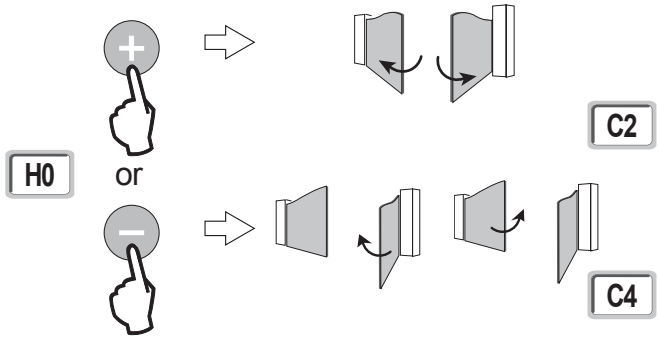

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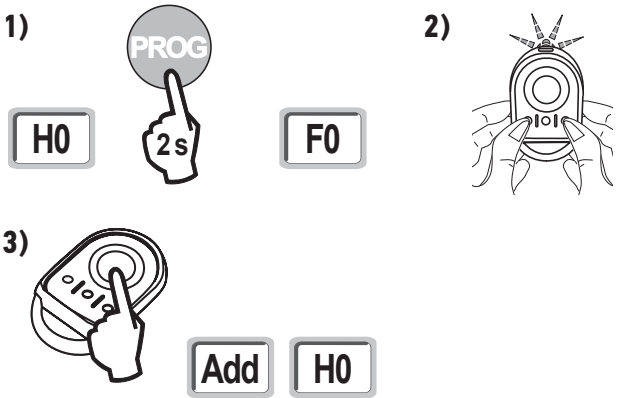

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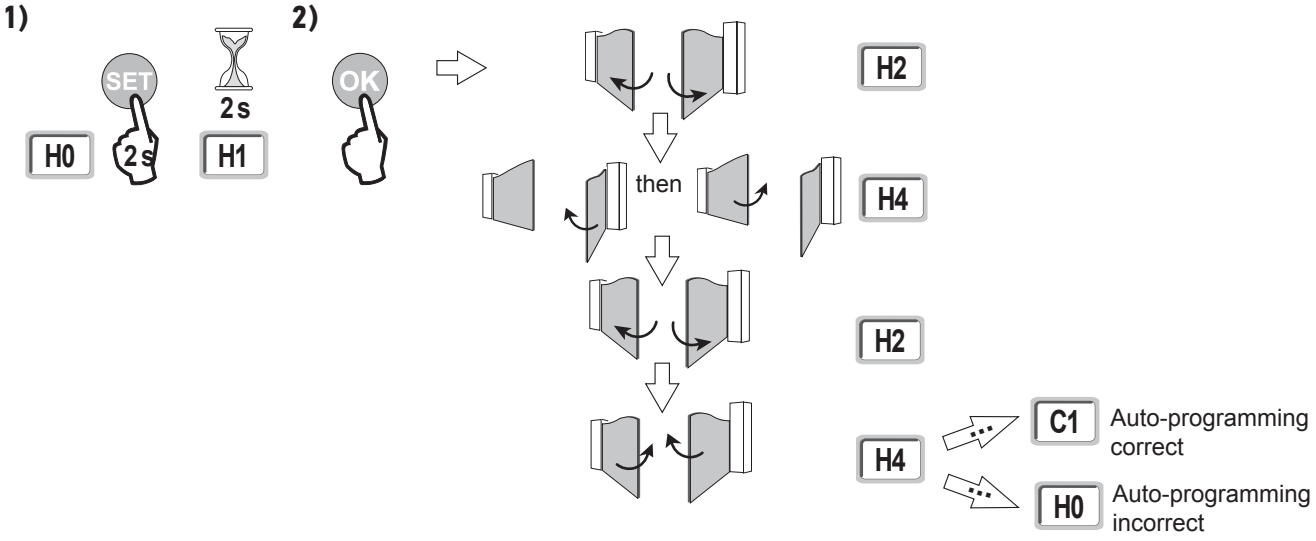

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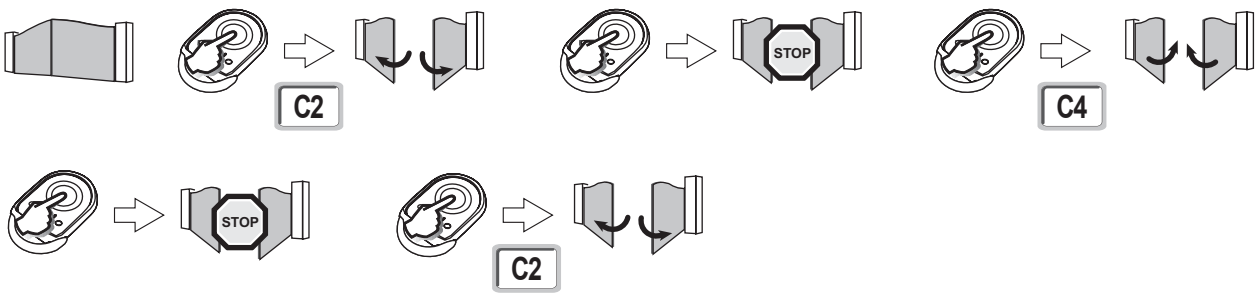

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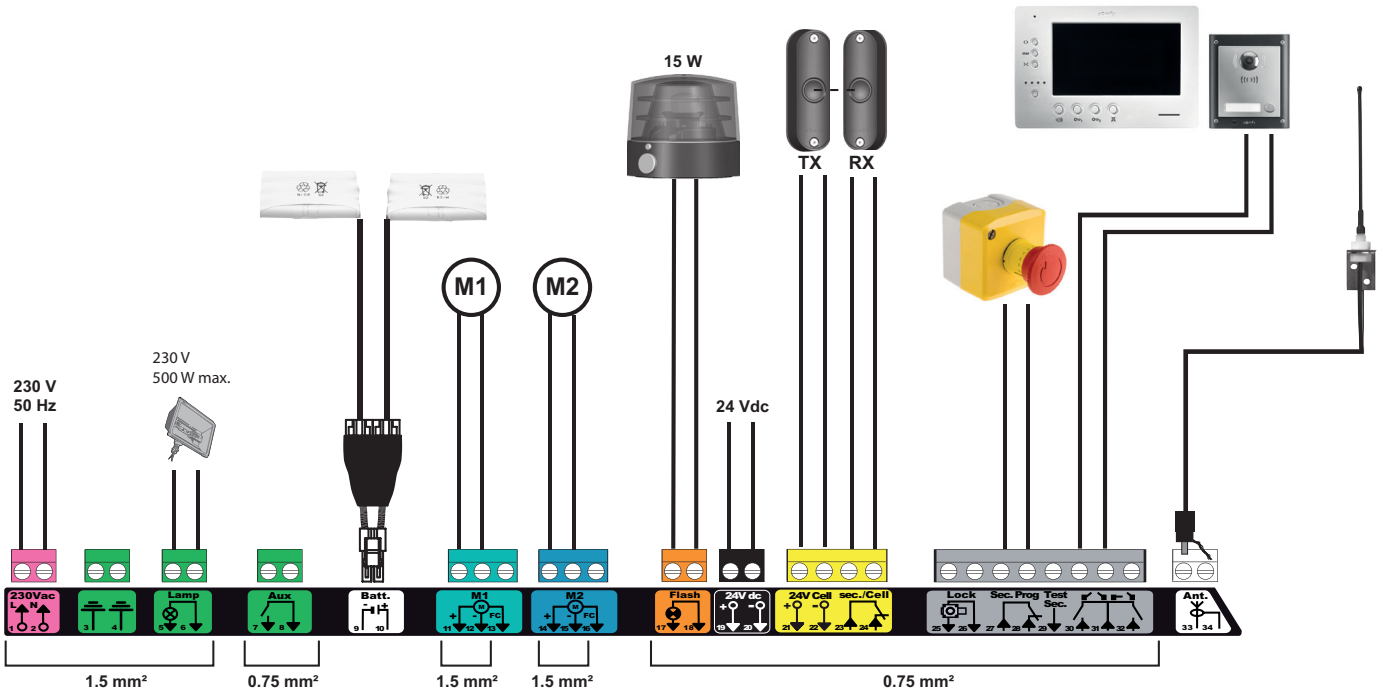

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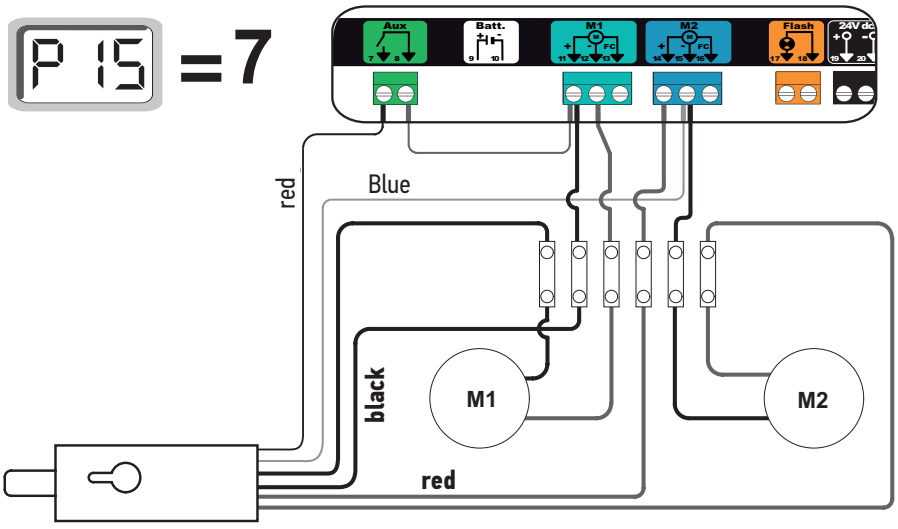

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23

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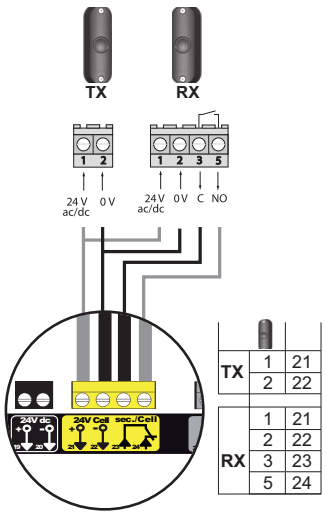

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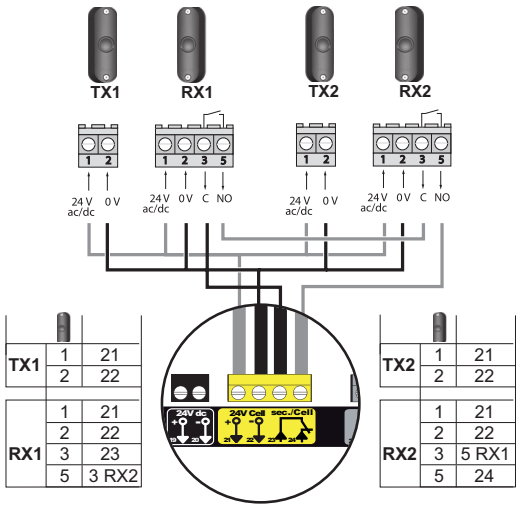
	2	22
RX	1	21
	2	22
	3	23
	5	24



TX1	1	21
	2	22
RX1	1	21
	2	22
	3	23
	5	3 RX2

TX2	1	21
	2	22
RX2	1	21
	2	22
	3	5 RX1
	5	24

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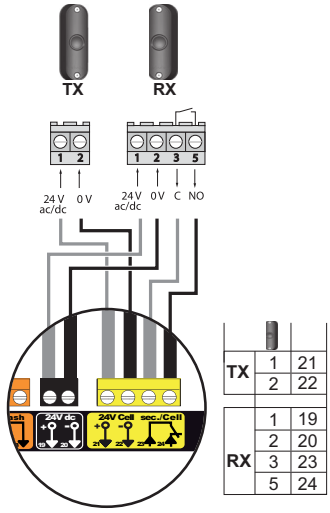

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RX	1	19
	2	20
	3	23
	5	24

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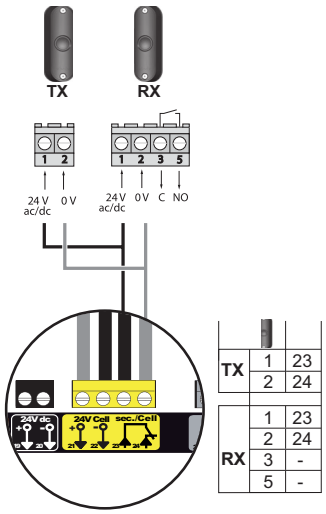

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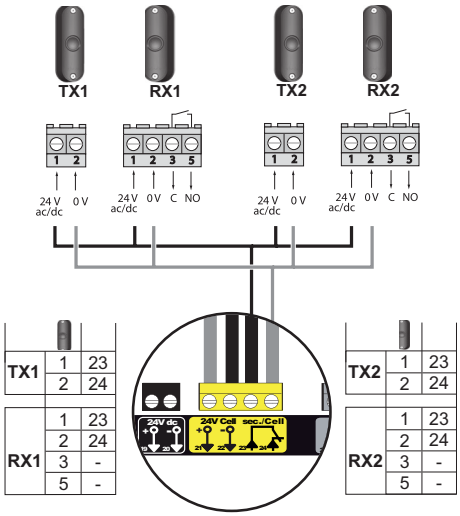
	2	24
RX	1	23
	2	24
	3	-
	5	-

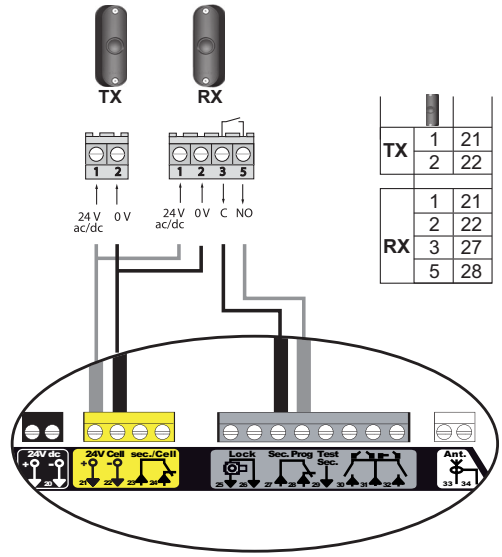


TX1	1	23
	2	24
RX1	1	23
	2	24
	3	-
	5	-

TX2	1	23
	2	24
RX2	1	23
	2	24
	3	-
	5	-

24

P10 = 1 P11 = 0, 1 or 2



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RX	1	21
	2	22
	3	27
	5	28

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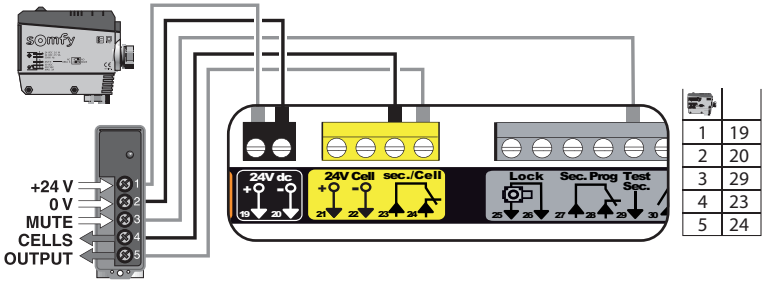
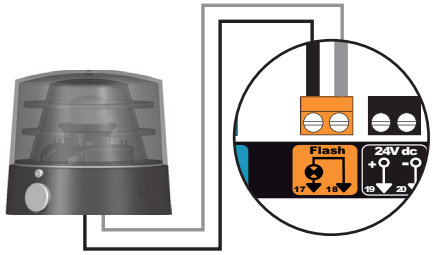


1	19
2	20
3	29
4	23
5	24

26



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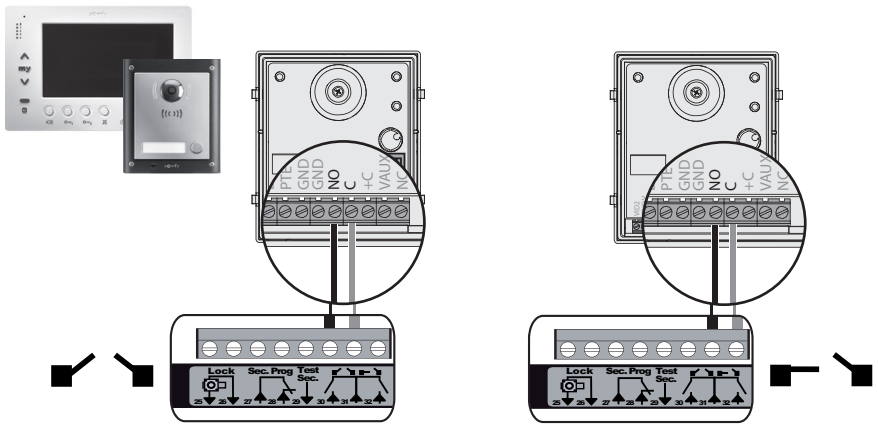
27



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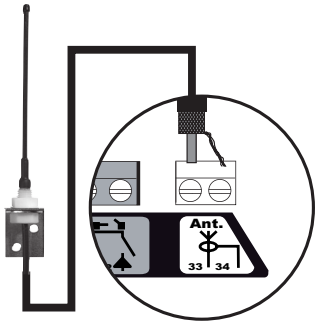

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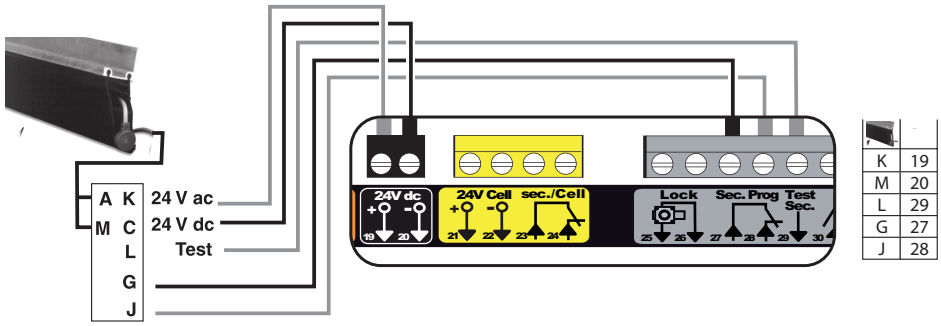

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M	20
L	29
G	27
J	28

30

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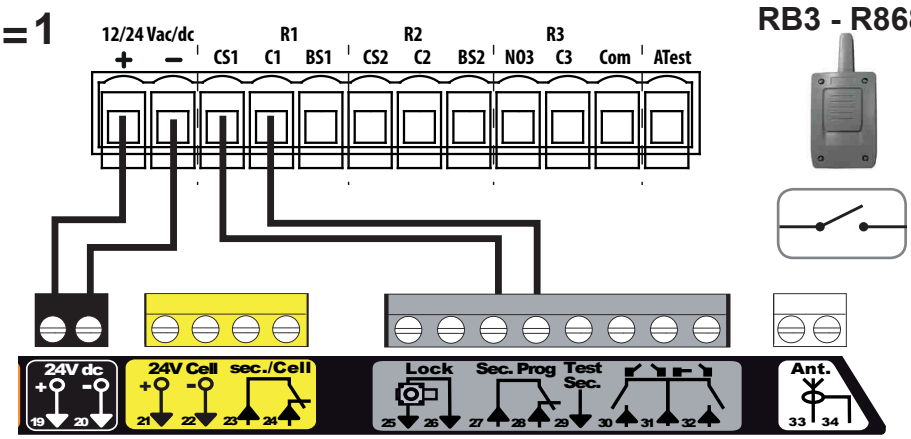
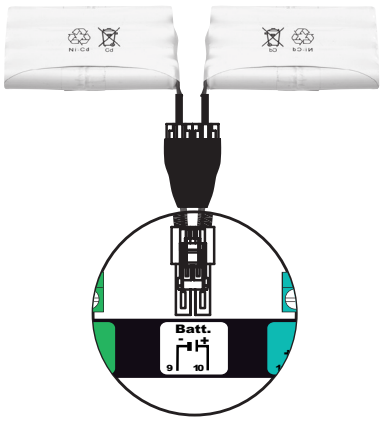


RB3 - R868

31



32

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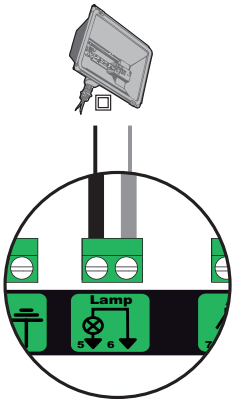

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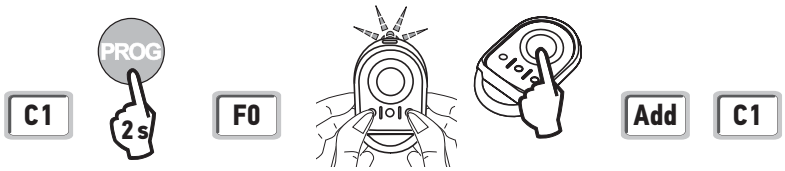
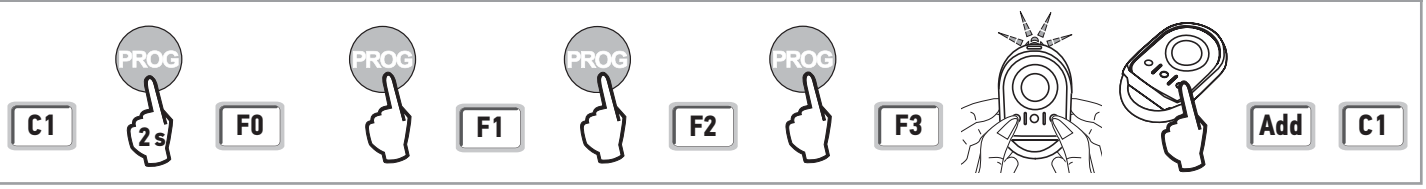
34



35

36

37



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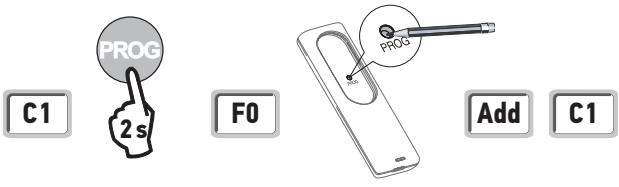

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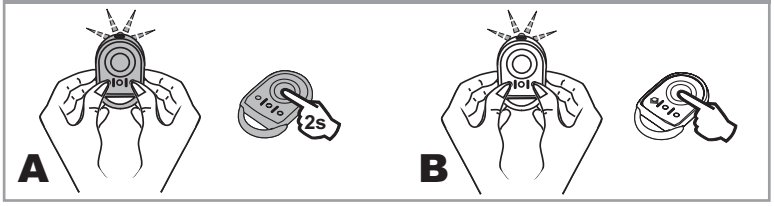

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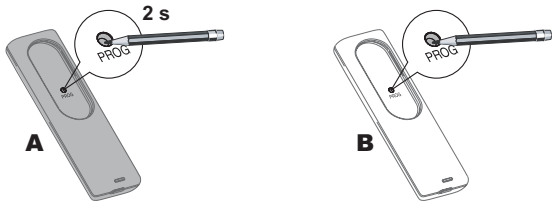

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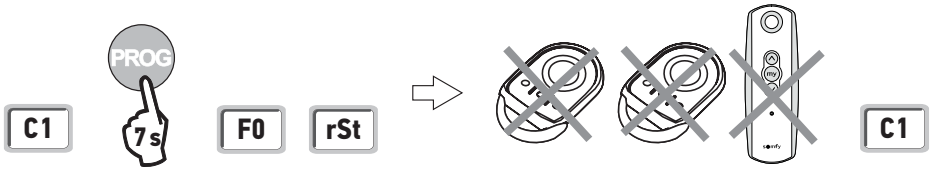
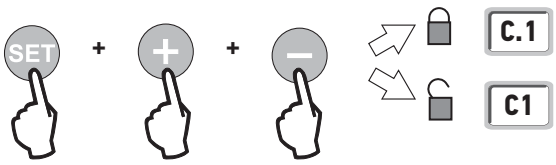


42

43



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TRANSLATED VERSION OF THE GUIDE

CONTENTS

GENERAL INFORMATION

Safety instructions

Danger
Indicates a danger which may result in immediate death or serious injury.

Warning
Indicates a danger which may result in death or serious injury.

Precaution
Indicates a danger which may result in minor or moderate injury.

Attention
Indicates a danger which may result in damage to or destruction of the product.

1.SAFETY INSTRUCTIONS

DANGER

The motorisation must be installed and adjusted by a professional motorisation and home automation installer, in compliance with the regulations of the country in which it is to be used.

Failure to follow these instructions may result in serious injury, e.g. due to crushing by the gate.

1.1.Caution - Important safety instructions

WARNING

For reasons of personal safety, it is important to follow all the instructions, as incorrect installation can lead to serious injury. Retain these instructions.

The installer must train all users to ensure the motorisation is used in complete safety, in accordance with the user manual.

The user manual and installation manual must be given to the end user. The installer must explain clearly to the end user that installation, adjustment and maintenance of the motorisation must be performed by a professional motorisation and home automation installer.

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1.2. Introduction

1.2.1. Important information

This product is a motor for hinged gates, for residential use. To ensure compliance with standard EN 60335-2-103, this product must be installed with a Somfy control box. The assembly is designated as a "motorisation". The main purpose of these instructions is to satisfy the requirements of the aforementioned standard and to ensure the safety of equipment and persons.

⚠ WARNING

Any use of this product outside the scope of application described in these instructions is prohibited (see "Field of application" paragraph in the installation manual).

The use of any accessories or components not recommended by Somfy is prohibited, as personal safety cannot be guaranteed.

Any failure to comply with the instructions given in this manual shall exclude Somfy from all liability and invalidate the Somfy warranty.

If in any doubt when installing the motorisation or to obtain additional information, visit the website www.somfy.com.

The instructions may be modified if and when there is a change in the standards or the motorisation.

1.3. Preliminary checks

1.3.1. Installation environment

⚠ ATTENTION

Do not spray water onto the motorisation.

Do not install the motorisation in an explosive environment.

Check that the temperature range marked on the motorisation is suited to the installation location.

1.3.2. Condition of the gate to be motorised

Do not motorise an incorrectly installed gate.

Before installing the motorisation, check that:
- the gate is in good mechanical condition
- the gate is correctly balanced
- the gate can be correctly opened and closed manually using a force of less than 150 N.
- the gate is not equipped with any manual or electric locking system (unless compatible with the Somfy motorisation)

1.4. Electrical installation

⚠ DANGER

The installation of the power supply must comply with the standards in force in the country in which the motorisation is installed, and must be carried out by qualified personnel.

The electric line must be exclusively reserved for the motorisation and equipped with protection, comprising:
- a 10 A fuse or breaker,
- a differential type device (30 mA).

An all-pole power supply cut-off device must be provided. The switches provided to ensure a cut-out of all poles on fixed appliances must be connected to the power supply terminals and there must a separation between the contacts on all poles to ensure complete disconnection in conditions where category III high impulse voltage is present.

It is recommended that you fit a lightning conductor (mandatory maximum residual voltage 2 kV).

Cable feed

Underground cables must be equipped with a protective sheath with a sufficient diameter to contain the motor cable and the accessories cables.

Low-voltage cables subject to inclement weather must be at least of type H07RN-F.

For overground cables, use a cable grommet that will withstand the weight of vehicles (ref. 2400484).

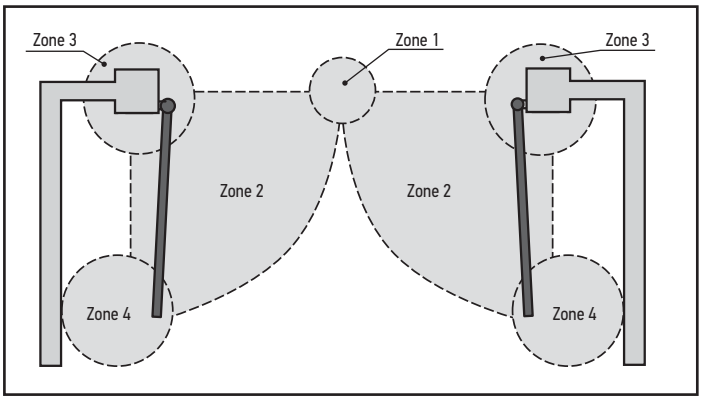
1.5. Risk prevention

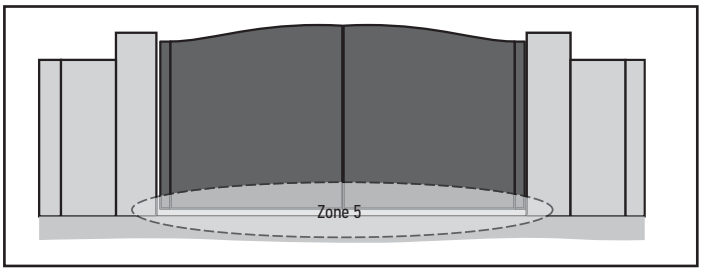
⚠ WARNING

Risk prevention - motorisation of a hinged gate for residential use

Ensure that any danger zones (crushing, cutting, trapping) between the motorised section and the surrounding fixed sections created by the opening of the motorised section are avoided or indicated on the installation.

Permanently affix the crushing warning labels near to any fixed control devices or so that they are clearly visible to the user.





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Risk zones: measures to be taken to eliminate risks.

RISK	SOLUTION
ZONE 1 Risk of crushing during closing	Obstacle detection built into the motorisation. Obstacle detection must be confirmed as being compliant with Appendix A of standard EN 12 453. For operation with automatic closing, install photoelectric cells.
ZONE 2 Risk of cutting or crushing between the gate leaf and any adjoining fixed sections	Obstacle detection built into the motorisation. Obstacle detection must be confirmed as being compliant with Appendix A of standard EN 12 453. Protection via safety distances (see figure 1)
ZONE 3 Risk of crushing with an adjoining fixed part upon opening	Obstacle detection built into the motorisation. Obstacle detection must be confirmed as being compliant with Appendix A of standard EN 12 453. Mechanical protection (see figure 2) Eliminate any gap ≥ 8 mm or ≤ 25 mm
ZONE 4 Risk of jamming between the secondary edges and the adjoining fixed parts	Obstacle detection built into the motorisation. Obstacle detection must be confirmed as being compliant with Appendix A of standard EN 12 453. Eliminate any gap ≥ 8 mm or ≤ 50 mm
ZONE 5 Risk of feet being trapped	If there is a hazardous area where feet could be trapped between the bottom of the gate leaves and the ground, you must leave a distance between the bottom of the gate leaves and the ground of minimum 12 cm or maximum 5 mm.

No protection is required if the gate has continuous control or if the danger zone is more than 2.5 m above ground or any other permanent access level.

Figure 1 - Safety distance

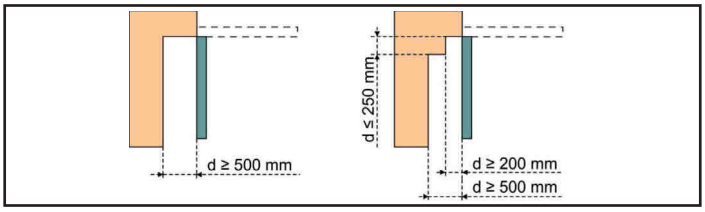
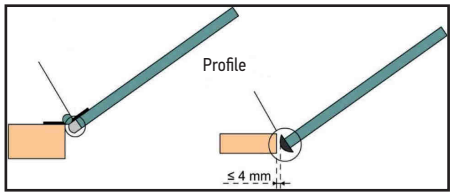


Figure 2 - Mechanical protection

Deformable cover ensuring a safety distance of 25 mm in the compressed position



1.6.Safety instructions relating to installation

⚠ DANGER

Do not connect the motorisation to a power source before installation is complete.

⚠ WARNING

Modifying any of the components in this kit or using additional components not recommended in this manual is strictly prohibited.

Monitor the gate as it moves and keep people away from it until installation is complete.

Do not use adhesive to secure the motorisation.

Manual back release device: see paragraph concerning this device in the user manual for the motorisation.

Permanently affix the label concerning the manual back release device near to its mobile component.

⚠ WARNING

Manual unlocking may result in uncontrolled movement of the gate.

⚠ DANGER

Installation of an active safety edge is compulsory.

⚠ ATTENTION

Install any fixed control device at a height of at least 1.5 m and within sight of the gate, but away from moving parts.

After installation, ensure that:

- the mechanism is correctly adjusted
- the manual back release device is operating correctly
- the motorisation changes direction when the gate encounters an object 50 mm high positioned halfway up the leaf.

⚠ WARNING

For operation in automatic mode or remote control, photoelectric cells must be installed.

In automatic mode, the motorisation operates in at least one direction with no intentional activation by the user.

For operation in automatic mode or if the gate faces a public road, installation of an orange light may be required in accordance with the regulations in the country in which the motorisation is commissioned.

Clothing precautions

Take off any jewellery (bracelet, chain, etc.) during installation.

For manoeuvring, drilling and welding operations, wear appropriate protection (special glasses, gloves, ear protection, etc.).

1.7.Regulations

Somfy declares that, when used in accordance with these instructions, the product described in these instructions complies with the essential requirements of the applicable European directives, and in particular Machinery Directive 2006/42/EC and Radio Equipment Directive 2014/53/EU.

The full text of the EC declaration of conformity is available at the following website: www.somfy.com/ce.

Antoine CREZE, Head of Regulations, Cluses

1.8.Assistance

You may encounter difficulties or have questions when installing your motorisation.

Do not hesitate to contact us; our specialists are on hand to answer all your questions.

Internet: www.somfy.com

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2.PRODUCT DESCRIPTION

2.1.Standard installation - Fig. 1

No.	Description
1	Upper pivot
2	Motor
3	Control box
4	Aluminium profile
5	Lower pivot (Centre plate)
6	Stop block (optional in the case of centre plate with integrated stop block)
7	Shoe

2.2.Field of application

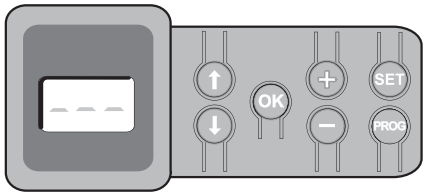
The control box is designed to control one or two Somfy 24 V motors for opening and closing gates.

2.3.Description of the control box - Fig. 2

No.	Description
a	Programming interface
b	Plug-in terminal blocks
c	Cover
d	Cover bolt
e	Keygo io remote controls
f	Cable clamp
g	Cable clamp screw
h	Aerial
i	Fuse (250 V/5 A) for 230 V lighting output
j	Spare fuse (250 V/5 A)

2.4.Dimensions - Fig. 3

2.5.Description of the interface



2.5.1. 3-digit LCD screen

Display of parameters, codes (operation, programming, errors and breakdowns) and memorised data.

Parameter value display:
- fixed = value selected/auto-adjusted
- flashing = value selectable for parameter

2.5.2. Button functions

Button	Function
↑ ↓	Navigate the parameters and codes list: • short press = scroll through individual parameters • press and hold = scroll rapidly through parameters
OK	• Start auto-programming cycle • Confirm parameter selection • Confirm parameter value
+ −	Modify parameter value: • short press = scroll through individual values • press and hold = scroll rapidly through values Using forced operating mode
SET	• Press 0.5 s: access and exit the parameter setting menu • Press 2 s: trigger auto-programming • Press 7 s: clear auto-programming and parameters • Interrupt auto-programming
PROG	• Press 2 s: memorise the remote controls • Press 7 s: clear all remote controls

3.INSTALLATION

3.1.Fitting the pivot to the motor - Fig. 4

The motor is integrated into the gate leaf upright. If the pivot is not pre-fitted to the motor, position the cup (**C**) and the expansion joint (**D**) before positioning and fixing the pivot.

Observe the minimum and maximum distances for clearance between the gate leaf upright and the pillar.

△ ***Attention***

According to the standard 13241-1, the minimum distance required between the pillar and the gate leaf upright is 25 mm.

3.2.Fitting the gate with complete opening - Fig. 5

1) Ensure the pillars are level, measuring at the threshold and also the opening range of the gate.

2) Mark out the location of the gate on the ground and mark the mounting holes for the pivot on the first pillar.

3) Mark out the location for the centre plate holes in line with the pivot axis.

4) Drill the centre plate holes.

5) Position the first gate leaf, taking care to support it so it does not tip over.

6) Check the level of the gate leaf horizontally and vertically.

7) Drill the pivot holes to the correct diameter to enable the pivot to be secured using chemical fixings, compatible with M12 threaded rods. Secure the pivot.

If necessary, loosen the locknut (**E**) using a 52 mm spanner to release the central axis of the pivot then adjust the vertical level of the gate leaf.

8) Repeat these operations for the second gate leaf.

9) Fix the shoe to the ground between the two gate leaves.

10) - Reversible: ensure that the lock is open.
- Irreversible: manually release the pivots (see manually releasing the pivots below).

11) Manually open the gate to the required maximum open position.

12) Position the opening stops and fix them.

13) Close the gate.

14) - Reversible: engage the lock.
- Irreversible: manually engage the pivots (see manually engaging the pivots below).

15) Secure the control box to one of the pillars.

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3.3. Unlocking/locking (irreversible Invisio)

Warning

Manual releasing may result in uncontrolled movement of the gate leaf.

3 types of unlocking are possible:

3.3.1. Lateral unlocking / locking - Fig. 6

1) Remove the cap.

2) Insert the unlocking key (hex key / 5 mm)

3) Turn the key about a quarter turn to unlock the motor.

3.3.2. Unlocking / locking option from the top - Fig. 7

1) Remove the pivot cover.

2) Pull the tab to unlock the motor.

3.3.3. Unlocking / locking the pivots - Fig. 8

Unlocking

1) Undo the lock nut.

2) Undo the screw until the gate is released.

Locking

3) Return the gate leaves to the position they were in before manual release.

4) Tighten the screw.

5) Tighten the lock nut.

Once complete, the distance between the locknut and the screw must be about 2.5 mm. If the distance is greater than this, the gate leaf is not correctly locked.

3.4. Fitting with a bracket against a pillar - Fig. 9

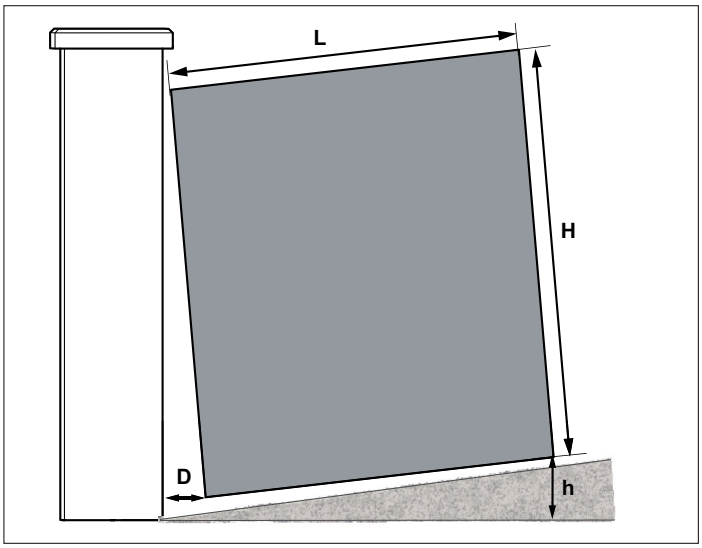
In the event of uneven or soft ground, the bracket allows the gate leaves to be adjusted to the same level.

Ref. 9018299: for standard centre plate and centre plate with gradient of 10%

Ref. 9019546: for centre plate with integrated stop block and centre plate with gradient of 5%

3.5. Installing the gate with a slope lift

1) Calculate the slope gradient.



L = Gate leaf width
H = Gate leaf height
h = height between the end of the gate leaf and the ground for calculating the slope
D = Offset of the gate leaf axis from the rotation point

h (mm) \ L (m)	1.5	1.75	2	2.25	2.5	2.75	3
20	1.3%	1.1%	1.0%	0.9%	0.8%	0.7%	0.7%
40	2.7%	2.3%	2.0%	1.8%	1.6%	1.5%	1.3%
60	4.0%	3.4%	3.0%	2.7%	2.4%	2.2%	2.0%
80	5.3%	4.6%	4.0%	3.6%	3.2%	2.9%	2.7%
100	6.7%	5.7%	5.0%	4.4%	4.0%	3.6%	3.3%
120	8.0%	6.9%	6.0%	5.3%	4.8%	4.4%	4.0%
140	9.3%	8.0%	7.0%	6.2%	5.6%	5.1%	4.7%
160	10.7%	9.1%	8.0%	7.1%	6.4%	5.8%	5.3%
180	12.0%	10.3%	9.0%	8.0%	7.2%	6.5%	6.0%
200	13.3%	11.4%	10.0%	8.9%	8.0%	7.3%	6.7%
220	14.7%	12.6%	11.0%	9.8%	8.8%	8.0%	7.3%
240	16.0%	13.7%	12.0%	10.7%	9.6%	8.7%	8.0%
260	17.3%	14.9%	13.0%	11.6%	10.4%	9.5%	8.7%
280	18.7%	16.0%	14.0%	12.4%	11.2%	10.2%	9.3%
300		17.1%	15.0%	13.3%	12.0%	10.9%	10.0%
320		18.3%	16.0%	14.2%	12.8%	11.6%	10.7%
340			17.0%	15.1%	13.6%	12.4%	11.3%
360			18.0%	16.0%	14.4%	13.1%	12.0%
380				16.9%	15.2%	13.8%	12.7%
400				17.8%	16.0%	14.5%	13.3%
420					16.8%	15.3%	14.0%
440					17.6%	16.0%	14.7%
460						16.7%	15.3%
480						17.5%	16.0%
500							16.7%
520							17.3%
540							18.0%

2) Determine which slope lift kit to use based on the height of the gate leaf (H) and the slope gradient when the gate is opened to 90°.

Not all slope values are listed in the table. If necessary, round up to the greater value.

	H (m) 1	1.25	1.5	1.75	2	2.25	2.5	Slope lift kit	References
Min. slope	7.5%	6%	5%	4.3%	3.75%	3.3%	3%	S	Upper pivot: 9018294 Lower pivot: 9018328
Max. slope	11.7%	9.4%	7.8%	6.7%	5.9%	5.2%	4.7%		
Min. slope	14%	11.2%	9.3%	8%	7%	6.2%	5.6%	L	Upper pivot: 9018295 Lower pivot: 9018327
Max. slope	18.1%	14.5%	12.1%	10.3%	9%	8%	7.2%		

3.5.1. Assembly with a slope lift kit S - Fig. 10

1) Fix the slope lift kit ball joint to the gate leaf at its maximum slope setting.

2) Drill a 25 mm hole in the gate leaf (inner side) through which to feed the cables. Use the supplied cable gland and sheath.

3) Move the gate leaf to the closed position by levelling it horizontally and vertically, then mark the mounting holes for the centre plate and the pivot.

4) Drill the pivot holes to the correct diameter to enable the pivot to be secured using chemical fixings, compatible with M12 threaded rods.

5) Drill the centre plate holes.

6) Secure the gate leaf.

7) Repeat these operations for the second gate leaf.

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3.5.2. Assembly with a slope lift kit L - Fig. 11

1) Fix the shim and centre plate for the slope lift kit at the corner of the pillar.

2) Drill a 25 mm hole in the gate leaf (inner side) through which to feed the cables. Use the supplied cable gland and sheath.

3) Position the ball joint to its minimum slope setting.

ⓘ *Do not fully tighten the ball joint screw to allow subsequent adjustment.*

4) Fix the ball joint connection to the gate leaf at its minimum slope setting.

ⓘ *Do not fully tighten the ball joint connection screws to allow subsequent adjustment.*

5) Place the gate leaf in the closed position.

6) Drill the pivot holes to the correct diameter to enable the pivot to be secured using chemical fixings, compatible with M12 threaded rods.

7) Fix the upper pivot.

8) If required, adjust the slope and then level the gate leaf vertically.

9) Tighten the ball joint and ball joint connection screws.

10) Repeat these operations for the second gate leaf.

3.6. Mounting the control box - Fig. 12

⚠ ***Attention***

The control box must be mounted horizontally.
Do not change the position of the aerial.

- The maximum authorised length of the cables connecting the control box to the motors is 20 m.
- Install the control box at least 40 cm above the ground.
- Use suitable screws for the type of mounting bracket.

1) Use the base of the control box to trace the mounting points on the bracket.

⚠ ***Attention***

check that the control box is level.

2) Drill the bracket.

3) Mount the control box.

⚠ ***Attention***

Before closing the control box, ensure that the seal is correctly fitted.

3.7. Connecting the release switch ref.1841021 (optional) to unlock a reversible motorisation (motor with magnetic braking) - Fig. 13

3.7.1. Disassembly of the release switch

1) Unscrew and remove the aluminium release switch plate.

2) Remove the two seals at the centre of the release switch.

ⓘ *When refitting the release switch, place the foam seal in contact with the aluminium plate.*

3) Unscrew the front face of the release switch.

4) Insert one of the supplied keys and turn an eighth of a turn.

5) Remove the front face of the release switch.

6) Unscrew and then remove the switch bracket.

3.7.2. Release switch wiring - Fig. 14

3.7.3. Wiring for 2 release switches - Fig. 15

3.8. Wiring the motors - Fig. 16

ⓘ *M1 is the motor installed on the gate leaf which opens first and closes last.*

1) Wire the motor of the gate leaf that must open first and close last to connector M1 (terminals 11 and 12).

2) Wire the second motor to connector M2 (terminals 14 and 15).

ⓘ *A step for verifying the motor wiring and the gate leaf opening direction is included at the start of the motorisation commissioning procedure.*

3.9. Connecting to the power supply

⚠ ***Warning***

- *The 230 V power supply cable must be secured using the cable clamps supplied.*
- *- The fuse only protects the 230 V area lighting.*

Connect terminals 1 and 2 of the control box to the 230 V mains power supply.

ⓘ *If class 1 area lighting is to be connected, earth the control box (terminal 3 or 4).*
The earth wire must always be longer than the live and neutral wires in case of detachment.

4. COMMISSIONING

4.1. Checking the motor wiring and the opening direction of the gate leaves - Fig. 17

⚠ ***Warning***

During this operation, secure the area and prevent anyone from entering it.

1) Actuate the motors by pressing and holding the "+" or "-" button.
- "+" opens the gate leaves controlled by M1 and M2.
- "-" closes the gate leaf controlled by M2 then the gate leaf controlled by M1.

2) If the gate leaf movement controlled by M1 and/or M2 is not correct, reverse the M1 wires on terminals 11 and 12 and/or the M2 wires on terminals 14 and 15.

4.2. Programming the remote controls for operation in complete opening mode - Fig. 18

ⓘ *If this procedure is carried out using a channel which has already been memorised, this channel will be cleared.*

1) Press and hold the "PROG" button (2 s).

The screen displays "F0".

2) Press the outer left and right buttons on the remote control together.

The remote control indicator light flashes.

3) Press the button of the remote control that will open the gate fully.

The screen displays "Add".

4.3. Auto-programming

Auto-programming enables the travel, motor torques and gate leaf closing shift to be adjusted.

4.3.1. Starting auto-programming - Fig. 19

ⓘ *The gate leaves must be in the intermediate position.*

1) Press and hold the "SET" button (2 s).

release the button when the screen displays "H1".

2) Press "OK" to start auto-programming.

The gate performs two complete opening and closing cycles.

If auto-programming is correct, the display indicates "C1".

If auto-programming has not completed correctly, the display indicates "H0".

ⓘ *Auto-programming mode is accessible at any time including when the auto-programming cycle has already been completed and the display indicates "C1".*

Auto-programming can be interrupted by:
- activating a safety input (photoelectric cells, etc.)
- the appearance of a technical fault (thermal protection, etc.)
- pressing a control button (control box interface, memorised remote control, wired control point, etc.).

In case of interruption, the display indicates "H0" and the control box returns to "Awaiting setting" mode.

In "Awaiting setting" mode, the radio controls operate and the gate moves very slowly. This mode must only be used during installation. Auto-programming must be successfully performed before the gate can be used normally.

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During auto-programming, if the gate is stationary, pressing "SET" will exit auto-programming mode.

4.4.Installation validation/EN12453

The impact force must be measured at the end of auto-programming.

If the dynamic time Td is too great, reduce the motor torque (parameters P25 to P32).

If the dynamic force Fd is too great, reduce the speed (parameters P19, P20 and/or P40, P41) and/or modify the slowdown zone (parameters P21 and P22). The force must be measured again if these parameters are changed.

If the clearance is less than 500 mm, check compliance with the standard EN 12453. If the force is too great in the clearance area, increase the slow-down distance P22 or reduce the opening speeds P20 and/or P41.

Warning

Once the work being carried out by the professional is complete, the parameters menu must always be locked to ensure the safety of users. Failure to comply with this instruction may render the product dangerous to users.

5.OPERATING TEST

5.1.Using the remote controls - Fig. 20

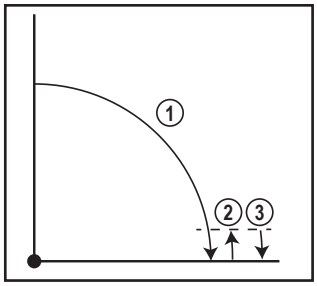
Default sequential operating mode (P01=0)

5.2.Two-stage mode on the shoe when closing

The load on the gate leaves must be taken up at the end of the gate's movement to comply with the standard in force on the risk of trapping (EN 12453). This load take-up phase (a few seconds) is part of the complete movement of the gate.

The movement can be broken down into 3 phases:

1. Closing of the gate leaves to their stops
2. Taking up of the load: the load is taken up for 7 seconds to allow release in the event that someone or something is trapped.
3. Power restored until the gate leaves reach the stops and the orange light goes out, if fitted.



Attention

If a radio command is sent during the load take-up phase, it will be interpreted as a command to stop movement.

5.3.Anti-intrusion mode, wind resistance (gate closed)

Four seconds after the closure movement has stopped, anti-intrusion is operational (the gate leaves are held against the stops).

5.4.Gate open mode

Four seconds after the opening movement has ended, the gate open function is operational.

5.5.Obstacle detection operation

Obstacle detection when opening = stop + partial reversal.

Obstacle detection when closing = stop + complete reopening.

5.6.Operation of the photoelectric cells

With the photoelectric cells connected to the dry contact/Cell (terminals 23-24) and Cell safety input parameter P07 = 1.

- Cells obscured with gate open = the gate cannot be moved until the operating mode changes to deadman operation (after 3 minutes).
- Cells obscured when opening = the state of the cells is not taken into account and the gate continues to move.
- Cells obscured when closing = the gate stops and reopens fully.

5.7.Specific operation

See the user booklet.

5.8.User training

All users must be trained on how to safely use this motorised gate (standard use and unlocking principle) and on the mandatory periodic checks.

6.CONNECTING ADDITIONAL DEVICES

6.1.General wiring diagram - Fig. 21

	Terminals	Connection	Comments
1	L	230 V power supply	
2	N		
3		Earth	
4			
5	N	230 V lighting output	Max. power 500 W
6	L		Protected by 5A time-delay fuse
7	Contact	Auxiliary contact output	Dry contact for 24 V, 2A max, Safety Extra Low Voltage (SELV)
8	Shared		
9	0 V	2 x 9.6 V low-voltage power supply input	At 2 x 9.6 V, degraded operation
10	2 x 9.6 V		
11	+	Motor 1	
12	-		
13	End limit	Not used	
14	+	Motor 2	
15	-		
16	End limit	Not used	
17	24 V - 15 W	24 V - 15 W orange light	
18	0 V		
19	24 V	24 V accessories power supply	1.2 A max for all accessories on all outputs
20	0 V		
21	24 V	Safety device power supply	Permanent if autotest not selected, controlled if autotest selected
22	0 V		
23	Shared	Safety input 1 - Cells	Used to connect RX receiver cell
24	Contact		BUS compatible (see parameter table)
25	+	24 V lock or 12 V lock output	For face-mounted lock
26	-		Programmable (parameter P17)

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	Terminals	Connection	Comments
27	Shared	Safety input 2 - programmable	
28	Contact		
29	Contact	Safety test output	
30	Contact	COMPLETE/OPENING control input	COMPLETE/OPENING cycle programmable
31	Shared		
32	Contact	PEDESTRIAN/CLOSING control input	PEDESTRIAN/CLOSING cycle programmable
33	Conductor	Aerial	Do not change the position of the aerial
34	Braid		

6.2. Description of the various additional devices

Warning

The peripheral cables must be secured using the cable clamps supplied.

6.2.1. 24 V motorised lock - Fig. 22

Programme parameter "P15" = 7

Attention

The AUX output cannot be used if a motorised lock is connected to this output.

Observe the polarity when connecting the motorised lock.

6.2.2. Photoelectric cells active when closing - Fig. 23

Three types of connection are possible:

A: Without autotest: programme parameter "P07" = 1.

B: With autotest: programme parameter "P07" = 3.

Allows an automatic test to be carried out to check the operation of the photoelectric cells each time the gate moves.

If the operating test result is negative, the gate cannot be moved until the operating mode changes to deadman operation (after 3 minutes).

C: BUS: programme parameter “P07” = 4 then perform auto-programming on the gate travel again.

Attention

It is compulsory to install photoelectric cells WITH AUTOTEST P07 = 3 if:

- remote control of the mechanism (gate not visible) is used,

- automatic closing is activated (“P01” = 1, 3 or 4).

6.2.3. Photoelectric cells active when opening - Fig. 24

Programme parameter “P10” = 1.

Programme parameter “P11” = 0, 1 or 2 according to the desired operation (see section 7.3 of this manual)

6.2.4. Reflex photoelectric cell - Fig. 25

Warning

It is compulsory to install photoelectric cells WITH AUTOTEST P07 = 2 if:

- remote control of the mechanism (gate not visible) is used,

- automatic closing is activated (“P01” = 1, 3 or 4).

- Without autotest: programme parameter "P07" = 1.
- With autotest: programme parameter "P07" = 2.

Allows an automatic test to be carried out to check the operation of the photoelectric cell each time the gate moves.

If the operating test result is negative, the gate cannot be moved until the operating mode changes to deadman operation (after 3 minutes).

6.2.5. Orange light - Fig. 26

Programme parameter "P12" according to the required operating mode:

- No warning prior to gate movement: "P12" = 0.
- With 2 s warning prior to gate movement: "P12" = 1.

Connect the aerial cable to terminals 33 (conductor) and 34 (braid).

6.2.6. Videophone - Fig. 27

6.2.7. Antenna - Fig. 28

6.2.8. Wired safety edge - Fig. 29

With autotest: programme parameter "P09" = 2.

Allows an automatic operation test of the safety edge to be conducted every time the door moves.

If the operating test result is negative, the gate cannot be moved until the operating mode changes to deadman operation (after 3 minutes).

6.2.9. Radio safety edge - Fig. 30

6.2.10. Battery - Fig. 31

Degraded operation: speed reduced and constant (no slowdown at end limit), 24 V accessories inactive (including cells). The two gate leaves operate one after the other.

Battery life: 3 cycles/24 hrs

6.2.11. Area lighting - Fig. 32

For class I lighting, connect the earth wire to terminal 3 or 4.

Attention

The earth wire must always be longer than the live and neutral wires in case of detachment.

Several lights may be connected provided the total power does not exceed 500 W (halogen or incandescent only).

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7.ADVANCED PARAMETER SETTING

7.1.Navigating the parameter list

Press ...	to...
SET	Access and exit the parameter setting menu
↑ ↓	Navigate the parameters and codes list: • short press = scroll through individual parameters • press and hold = scroll rapidly through parameters
OK	Confirm: • the parameter selection • the parameter value
+ −	Increase/reduce the parameter value: • short press = scroll through individual values • press and hold = scroll rapidly through values

Press SET to exit the parameter setting menu.

7.2.Displaying the value of the parameters

If the display is **fixed**, the displayed value is the **value selected** for this parameter.

If the display is **flashing**, the displayed value is the **value which can be selected** for this parameter.

7.3.Meaning of different parameters

(Text in bold = default values)

P01	Complete cycle operating mode
Values	**0: sequential** 1: sequential + timed close 2: semi-automatic 3: automatic 4: automatic + cell blocking 5: deadman's control (wire)
Comments	P01 =0: Each press on the remote control causes the motor to move (initial position: gate closed) as per the following cycle: open, stop, close, stop, open, etc.
	P01 =1: Operation in automatic closing mode is only authorised if the photoelectric cells are fitted and P07=2 or 3. In sequential mode with automatic timed close: • the gate closes automatically after the time delay programmed in parameter "P02", • pressing a button on the remote control interrupts the movement taking place and the timed close (the gate remains open).
	P01 =2: In semi-automatic mode: • pressing a button on the remote control during opening has no effect, • pressing a button on the remote control during closing causes it to reopen.
	P01 = 3: Operation in automatic closing mode is only authorised if the photoelectric cells are fitted and P07=2 or 3 These operating modes are not compatible with remote control using a TaHoma unit. In automatic closure mode: • the gate closes automatically after the time delay programmed in parameter "P02", • pressing a button on the remote control during opening has no effect, • pressing a button on the remote control during closing causes it to reopen, • pressing a button on the remote control during the closing time delay restarts the time delay (the gate will close when the new time delay has elapsed). If there is an obstacle in the cells' detection zone, the gate will not close. It will close once the obstacle is removed.
	P01 = 4: Operation in automatic closing mode is only authorised if the photoelectric cells are fitted and P07=2 or 3. These operating modes are not compatible with remote control using a TaHoma unit. After the gate is opened, movement in front of the cells (safe closure) will close the gate after a short time delay (fixed at 2 seconds). If there is no movement in front of the cells, the gate will close automatically after the timed close programmed in parameter "P02". If there is an obstacle in the cells' detection zone, the gate will not close. It will close once the obstacle is removed.
	P01 = 5: In wired deadman mode: • the gate can only be controlled by continuous action on a wired control, • the radio controls are inactive.

P02	Complete operating mode automatic timed closing
Values	0 to 30 (value x 10 s = time delay value) **2: 20 s**
Comments	If value 0 is selected, the gate immediately closes automatically.

P03	Pedestrian cycle operating mode
Values	**0: identical to complete cycle operating mode** 1: without automatic closing 2: with automatic closing
Comments	The pedestrian cycle operating mode parameters can only be set if P01 = 0 to 2. The P03 = 2 operating mode is not compatible with remote control using a TaHoma unit.
	P03 =0: Pedestrian cycle operating mode is identical to the complete cycle operating mode selected.
	P03 =1: The gate does not close automatically following a pedestrian opening command.
	P03 = 2: Operation in automatic closing mode is only authorised if the photoelectric cells are fitted. i.e. P07=2 or 3. Irrespective of the value of P01, the gate does not close automatically following a pedestrian opening command. The automatic closing time delay can be programmed in parameter "P04" (short time delay) or parameter "P05" (long time delay).

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P04	Short automatic closing time delay in pedestrian cycle
Values	0 to 30 (value x 10 s = time delay value) **2: 20 s**
Comments	If value 0 is selected, the gate immediately closes automatically.

P05	Long automatic closing time delay in pedestrian cycle
Values	0 to 99 (value x 5 min. = time delay value) **0: 0 s**
Comments	Value 0 must be selected if the short automatic closing time delay in pedestrian cycle is active.

P07	Cell safety input
Values	0: inactive **1: active** 2: active with autotest via test output 3: active with autotest via power supply switching 4: bus cells
Comments	0: the safety input is not taken into account. 1: safety device without auto-test; it is essential to check that it is operating correctly every 6 months. 2: the autotest is run on the device for each operating cycle via the test output, reflex photocell application with autotest. 3: the autotest is run on the device for each operating cycle via power supply switching of the cell power supply output (terminals 21 and 22). 4: bus cells application. Auto-programming must be repeated after the cell BUS has been connected.

P09	Programmable safety input
Values	0: inactive **1: active** 2: active with autotest via test output 3: active with autotest via power supply switching
Comments	0: the safety input is not taken into account. 1: safety device without auto-test. 2: the autotest is run on the device for each operating cycle via the test output. 3: the autotest is run on the device for each operating cycle via power supply switching of the cell power supply output (terminals 21 and 22).

P10	Programmable safety input - function
Values	**0: active closing** 1: active opening 2: active closing + ADMAP 3: all movement disabled
Comments	0: the programmable safety input is only active when closing. 1: the programmable safety input is only active when opening. 2: the programmable safety input is only active when closing and, when activated, the gate cannot be opened. 3: emergency stop application; if the programmable safety input is activated, the gate cannot be moved.

P11	Programmable safety input - action
Values	0: stop 1: stop + partial reversal **2: stop + complete reversal**
Comments	0: emergency stop application, compulsory if P10=3 disabled if a safety edge is connected to the programmable safety input 1: recommended for safety edge application 2: recommended for cell application

P12	Orange warning light
Values	**0: no warning** 1: with 2 s warning prior to movement
Comments	If the gate opens onto a public path, the "with warning" configuration must be selected: P12=1.

P13	Area lighting output
Values	0: inactive 1: controlled operation **2: automatic + controlled operation**
Comments	0: the area lighting output is not taken into account. 1: the area lighting is remotely controlled. 2: the area lighting is remotely controlled when the gate is stationary + the area lighting comes on automatically when the gate is moving, and remains on when it stops moving for the duration of the time delay programmed in parameter "P14". **P13=2 is compulsory for operation in automatic mode.**

P14	Area lighting time delay
Values	0 to 60 value x 10 s = time delay value) **6: 60 s**
Comments	If value 0 is selected, the area lighting goes out as soon as the gate stops moving.

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P15	Auxiliary output
Values	0: inactive 1: automatic: gate open indicator light 2: automatic: timed bistable 3: automatic: one-touch 4: controlled: bistable (ON-OFF) 5: controlled: one-touch **6: controlled: timed bistable** 7: controlled: motorised gate-opener
Comments	0: the auxiliary output is not taken into account. 1: the gate indicator light is off when the gate is closed, flashing when the gate is moving and on when the gate is open. 2: output activated when movement starts, during movement then deactivated at the end of the time delay programmed in parameter "P16". 3: one-touch at contact when movement starts. 4: operation changes as follows each time the memorised button on the radio control point is pressed: ON, OFF, ON, OFF... 5: one-touch at contact by pressing the memorised button on the radio control point. 6: output activated by pressing the memorised button on the radio control point then deactivated at the end of the time delay programmed in parameter "P16". 7: output activated when movement starts with actuation of lock raising and at the end of movement with actuation of lock lowering.

P16	Auxiliary output time delay
Values	0 to 60 value x 10 s = time delay value) **6: 60 s**
Comments	The auxiliary output time delay is only active if the value selected for P15 is 2 or 6.

P17	Lock output
Values	**0: active 24 V one-touch** 1: active 12 V one-touch
Comments	The lock is released at the start of opening.

P18	Lock release
Values	**0: inactive** 1: active
Comments	0: the lock release is inactive. 1: recommended for use with an electric lock.

P19	Closing speed
P20	**Opening speed**
Values	1: slowest speed to 10: fastest speed **Default value: 9**
Comments	***Warning*** *If parameters P19 or P20 are changed, the installer must check that the obstacle detection complies with appendix A of standard EN 12 453.* *Failure to follow this instruction may result in serious injury, e.g. due to crushing by the gate.* *Install a safety edge if measuring forces above the standard, see page 12.*

P21	Closing slowdown zone
P22	**Opening slowdown zone**
Values	0: shortest slowdown zone to 5: longest slowdown zone **Default value: 1**
Comments	***Warning*** *If parameters P21 or P22 are changed, the installer must check that the obstacle detection complies with appendix A of standard EN 12 453.* *Failure to follow this instruction may result in serious injury, e.g. due to crushing by the gate.* *Install a safety edge if measuring forces above the standard, see page 12.*

P23	M1/M2 shift when closing
P24	**M1/M2 shift when opening**
Values	1: minimum shift to 10: maximum shift **Adjusted at the end of auto-programming**
Comments	***Warning*** *If parameters P23 or P24 are changed, the installer must check that the obstacle detection complies with appendix A of standard EN 12 453.* *Failure to follow this instruction may result in serious injury, e.g. due to crushing by the gate.* 1: Minimum shift ensuring the leaves do not cross. Prohibited if hinged gate with 1 "covering" leaf. 10: maximum shift corresponding to the complete movement of one leaf then the other

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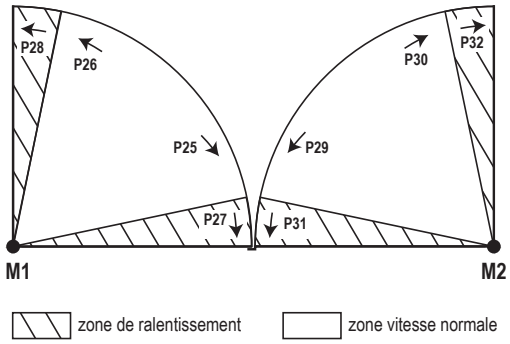
P25	M1 closing torque limitation
P26	M1 opening torque limitation
P27	M1 closing slowdown torque limitation
P28	M1 opening slowdown torque limitation
P29	M2 closing torque limitation
P30	M2 opening torque limitation
P31	M2 closing slowdown torque limitation
P32	M2 opening slowdown torque limitation
Values	1: minimum torque to 20: maximum torque **Adjusted at the end of auto-programming**
Comments	 By adjusting the motor torque, the force applied to the gate leaves is adjusted. If the torque is too low, there may be erratic obstacle detection. If the torque is too high, the installation may not comply with the standard. **Increase P25, P26, P29 and P30 and switch P21 and P22 to 0 to reduce sensitivity (detection, wind).** Even if just one of these parameters is modified, it is essential to perform the force measuring procedure at the end of the installation operation. ***Warning*** *If parameters P25 to P32 are changed, the installer must check that the obstacle detection complies with appendix A of standard EN 12 453.* *Failure to follow this instruction may result in serious injury, e.g. due to crushing by the gate.* *Install a safety edge if measuring forces above the standard, see page 12.* ***Attention*** *Increasing P25, P26, P29 and P30 may cause the motorised product to age more quickly.*

P37	Wired control inputs
Values	**0: complete cycle mode - pedestrian cycle** 1: opening mode - closing
Comments	0: terminal 30 input = complete cycle, terminal 32 input = pedestrian cycle 1: terminal 30 input = opening only, terminal 32 input = closing only

P40	Coupling speed when closing
P41	Coupling speed when opening
Values	1: slowest speed to 4: fastest speed **Default value: 2**
Comments	***Warning*** *If parameters P40 or P41 are changed, the installer must check that the obstacle detection complies with appendix A of standard EN 12 453.* *Failure to follow this instruction may result in serious injury, e.g. due to crushing by the gate.*

8. PROGRAMMING THE REMOTE CONTROLS

8.1. Meaning of displayed codes

Code	Description
Add	Successful memorisation of a remote control
dEL	Delete a previously memorised button
FuL	Memory full

8.2. Memorising 2- or 4-button remote controls via the programming interface

Complete opening control - Fig. 33

Pedestrian opening control - Fig. 34

Lighting control - Fig. 35

Auxiliary output control (P15 = 4, 5 or 6) - Fig. 36

8.3. Programming 3-button remote controls via the programming interface - Fig. 37

1) Press and hold the "PROG" button on the control box (2 s).

The screen displays "F0".

Pressing "PROG" again allows the next function to be memorised.

2) Press "PROG" at the rear of the 3-button remote control to memorise the function.

The screen displays "Add".

Button functions on a 3-button remote control

	^	my	v
F0	Complete opening	Stop	Complete closing
F1	Complete opening	If gate is closed, pedestrian opening Otherwise stop	Complete closing
F2	Lighting ON		Lighting OFF
F3	Aux. output ON		Aux. output OFF

8.4. Memorising the remote controls

Copying the function from a Keygo io remote control button to a button on a new 2- or 4-button remote control - Fig. 38

Copying the function from a 3-button io one-way remote control to a new 3-button op one-way remote control - Fig. 39

Key to the figures

A = "source" remote control already memorised

B = "target" remote control to be memorised

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9.CLEARING THE REMOTE CONTROLS AND ALL SETTINGS

9.1.Clearing remote controls - Fig. 40

Press the “PROG” button until the light flashes (7 s).

Causes all stored remote controls to be cleared.

9.2.Reinitialising all settings - Fig. 41

Press the “SET” button until the light goes out (7 s).

Clears the auto-programming and resets the default values for all parameters.

10. LOCKING THE PROGRAMMING BUTTONS - FIG. 42

Warning

The keypad must be locked to ensure the safety of the users.

Failure to follow this instruction may result in serious injury, e.g. due to crushing by the gate.

Locks the programming (end limits, auto-programming, parameter settings).

Press the “SET” buttons, “+”, “-”:

- - the "SET" button must be pressed first.
- - the "+" and "-" buttons must be pressed simultaneously within 2 seconds.

To access the programming again, repeat the same procedure.

When the programming buttons are locked, a dot appears after the 1st digit.

11. DIAGNOSTICS

11.1. Operating codes display

Code	Description	Comments
C1	Awaiting command	
C2	Gate opening	
C3	Awaiting gate closure	**Automatic closing time delay P02, P04 or P05 in progress.**
C4	Gate closing	
C6	Detection in progress for cell safety	Displayed during a movement request or during movement when the safety input is active. The display is maintained as long as the safety input is active.
C8	Detection in progress for programmable safety	
C9	Detection in progress for emergency stop safety	
C12	Reinjecting power	
C13	Safety device autotest in progress	Displayed while the autotest is running on the safety devices.
C14	Permanent complete opening wire control input	Indicates that the complete opening wire control input is permanently activated (contact closed). Commands coming from the radio remote controls are then disabled.
C15	Permanent pedestrian opening wire control input	Indicates that the pedestrian opening wire control input is permanently activated (contact closed). Commands coming from the remote controls are then disabled.
C16	BUS cell programming refused	Check that the BUS cells (wiring, alignment, etc.) are operating correctly
Cc1	Battery power supply	Displayed during operation with backup battery (2x9.6 V)

11.2. Programming codes display

Code	Description	Comments
H0	Awaiting setting	Pressing and holding the "SET" button for 2 seconds starts auto-programming mode.
Hc1	Awaiting setting + Battery power supply	Displayed during operation with backup battery (2x9.6 V)
H1	Awaiting start of auto-programming	Pressing the "OK" button starts the auto-programming cycle. Pressing the "+" or "-" button allows the motor to be controlled in forced operation mode.
H2	Auto-programming mode - opening	
H4	Auto-programming mode - closing	
F0	Awaiting remote control memorisation for operation in complete opening mode	Pressing a button on the remote control allocates this button to the motor complete opening control. Pressing "PROG" once more switches to "awaiting remote control memorisation for operation in pedestrian opening mode: F1".
F1	Awaiting remote control memorisation for operation in pedestrian opening mode	Pressing a button on the remote control allocates this button to the motor pedestrian opening control. Pressing "PROG" once more switches to "awaiting remote lighting control memorisation: F2".
F2	Awaiting remote control memorisation for remote lighting control	Pressing a button on the remote control allocates this button to the remote lighting control. Pressing "PROG" once more switches to "awaiting auxiliary output control memorisation: F3".
F3	Awaiting remote control memorisation for auxiliary output control	Pressing a button on the remote control allocates this button to the auxiliary output control. Pressing "PROG" once more switches to "awaiting remote control memorisation for operation in complete opening mode: F0".

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11.3. Error and breakdown code display

Code	Description	Comments	Solution?
E1	Cell safety autotest fault	The cell autotest is not satisfactory.	Check that "P07" is correctly configured. Check the wiring of the cells.
E2	Programmable safety autotest fault	The programmable safety input autotest is not satisfactory.	Check that "P09" is correctly configured. Check the programmable safety input wiring.
E4	Obstacle detection when opening		
E5	Obstacle detection when closing		
E6	Cell safety fault	Detection in progress on safety input for longer than 3 minutes.	Check that no obstacles are causing the cells or safety edge to detect. Check that "P07 or P09" is correctly configured in relation to the device connected to the safety input. Check the safety device wiring. Check that the photoelectric cells are correctly aligned.
E8	Programmable safety fault		
E9	Thermal protection	Thermal protection is correct	
E10	Motor short circuit protection		Check the motor wiring.
E11	24 V power supply short protection	Short circuit protection for input/outputs: product and additional devices connected to terminals 21 to 26 (orange light, photoelectric cells (except BUS), code keypad) not operating	Check the wiring, then disconnect the power supply for 10 seconds. N.B.: maximum accessories consumption = 1.2 A
E12	Hardware fault	The hardware autotests are not satisfactory	Request a gate movement. If the fault is still present, contact Somfy.
E13	Accessories power supply fault	The accessories power supply cuts out following an overload (excessive consumption)	N.B.: maximum accessories consumption = 1.2 A Check the consumption of the connected accessories. If P07 = 4, check that the bridge between terminals 23 and 24 is removed.
E14	Intrusion detection	Current reinjection function	Normal operation (attempted intrusion, current reinjection)
E15	Fault when the control box supplied by the backup battery is first switched on		Disconnect the backup battery and connect the control box to the mains to switch it on for the first time.

For all other fault and breakdown codes, please contact Somfy.

11.4. Access to memorised data

To access memorised data, select parameter "Ud" then press "OK".

Code	Description	
U0 to U1	Complete opening cycle counter	global [Hundred thousands - ten thousands - thousands] [hundreds - tens - units]
U2 to U3		since last auto-programming [Hundred thousands - ten thousands - thousands] [hundreds - tens - units]
U6 to U7	Cycle counter with obstacle detection	global [Hundred thousands - ten thousands - thousands] [hundreds - tens - units]
U8 to U9		since last auto-programming [Hundred thousands - ten thousands - thousands] [hundreds - tens - units]
U12 to U13	Pedestrian opening cycle counter	
U14 to U15	Reset movement counter	
U20	Number of remote controls memorised for complete opening control	
U21	Number of remote controls memorised for pedestrian opening control	
U22	Number of remote controls memorised for remote lighting control	
U23	Number of remote controls memorised for auxiliary output control	
d0 to d9	Log of the last 10 faults (d0 most recent - d9 oldest)	
dd	To clear the fault log: press and hold "OK" for 7 s.	

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12. TECHNICAL DATA

GENERAL SPECIFICATIONS		
Power supply		220-230 V - 50/60 Hz
Max. power consumption		800 W (with 500 W remote lighting)
Programming interface		7 buttons - 3-character LCD screen
Climatic operating conditions		- 20°C/+ 60°C - IP 44
Radio frequency		868 - 870MHz < 25 mW
Number of channels that can be memorised (io one-way remote controls):		Complete/pedestrian opening: 30 Lighting: 4 Auxiliary output: 4
CONNECTIONS		
Safety input	Type	Dry contact: NF
	Compatibility	TX/RX photoelectric cells - Bus cells - Reflex photocell - Dry contact output safety edge
Wired control input		Dry contact: NO
Remote lighting output		230 V - 500 W (Halogen or incandescent only)
Orange light output		24 V - 15 W with integrated flashing management
Controlled 24 V power supply output		Yes: for possible TX/RX photoelectric cells auto-test
Safety input test output		Yes: for possible autotest on reflex cell or safety edge
Accessories power supply output		24 V - 1.2 A max
Offset aerial input		Yes
Backup battery input	Battery life	24 hours; 3 cycles
	Charge time	48 hours
OPERATION		
Forced operating mode		Pressing the motor control button
Independent lighting control		Yes
Timed lighting (after movement)		Programmable: 0 to 600 s
Automatic closing mode		Yes: programmable reclosing time delay from 0 to 255 min
Orange light warning		Programmable: without or without warning (fixed duration of 2 s)
Security entry operation	When closing	Programmable: stop - partial re-opening - total re-opening
	Before opening (dangerous moving area accessible to public)	Programmable: without effect of movement refused
Partial opening control		Yes: complete opening of motorised gate leaf by M1
Gradual starting		Yes
Opening speed		Programmable: 10 possible values
Closing speed		Programmable: 10 possible values
Coupling speed when closing		Programmable: 5 possible values
Lock release - electric lock release		Programmable: active - inactive
Holding gate in open/closed position		By power reinjection in case of detection when opening/closing, for reversible motorisation only
Gate leaf shift		Programmable
Diagnostics		Saving and consulting data: cycle counter, cycle counter with obstacle detection, number of radio channels memorised, history of last 10 faults recorded

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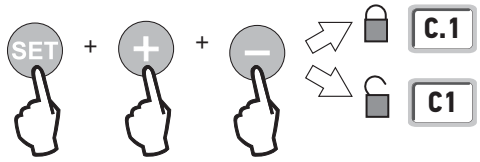
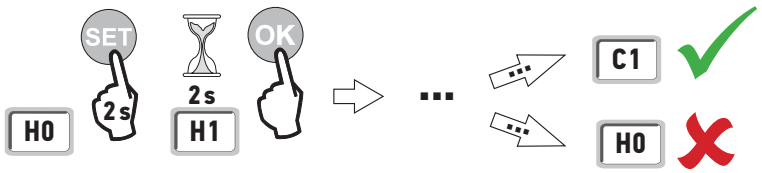
INVISIO 3S io GUIDE

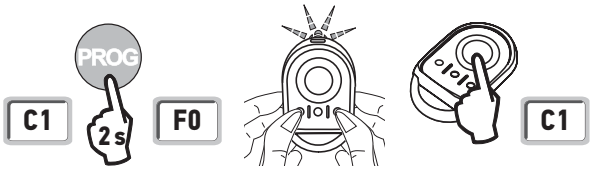
Unlocking the programming buttons



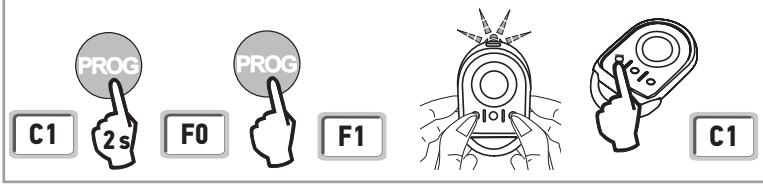
Auto-programming



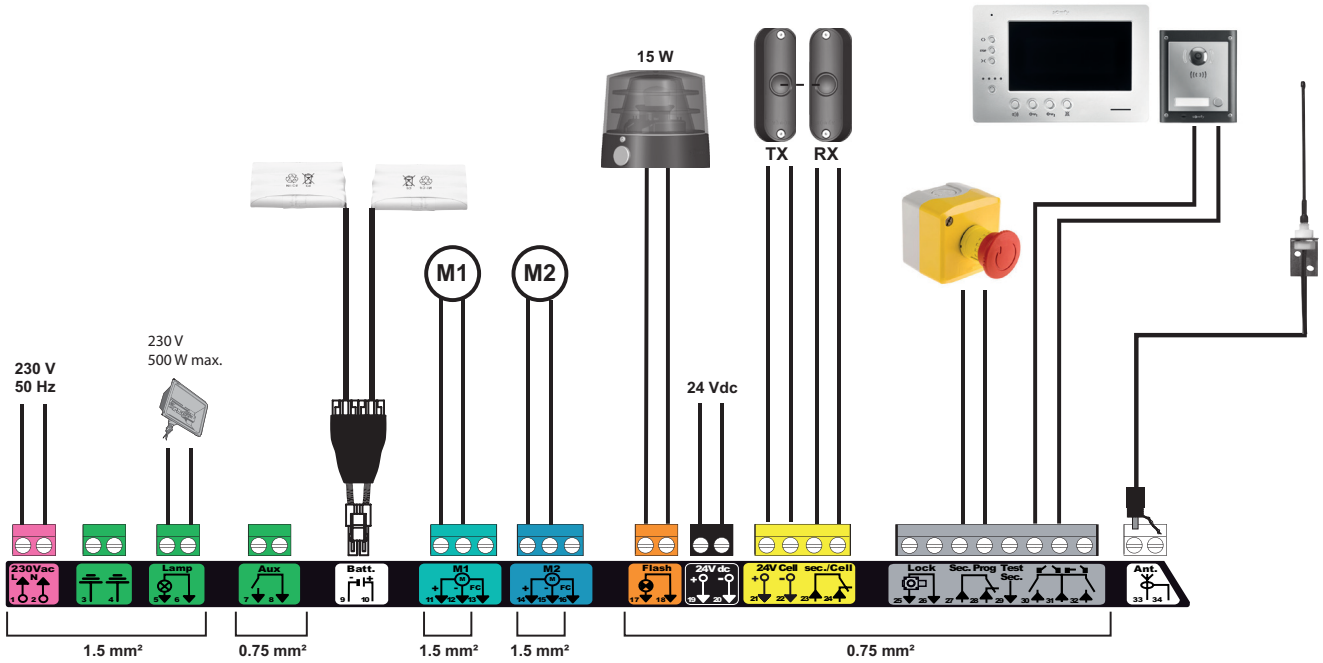
Memorising remote controls - COMPLETE opening control



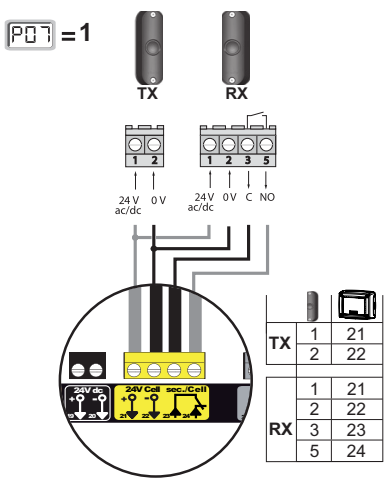
Memorising remote controls - PEDESTRIAN opening control



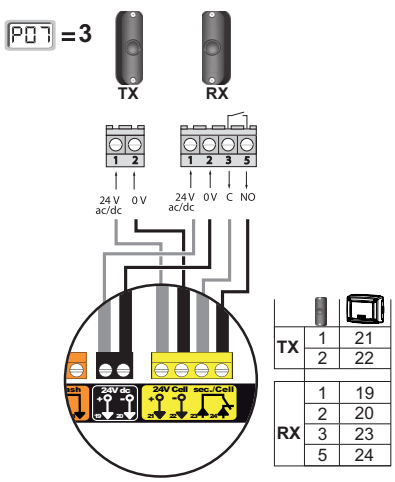
General wiring diagram



Photoelectric cells - without autotest



Photoelectric cells - with autotest



To be cut out and kept in the control box

PARAMETERS

Code	Description	Values (bold = default)	Setting
P01	Complete cycle operating mode	**0: sequential** 1: sequential + timed close 2: semi-automatic 3: automatic 4: automatic + cell blocking 5: deadman's control (wire)	
P02	Complete operating mode automatic timed closing	0 to 30 (time delay value = value x 10 s) **2: 20 s**	
P03	Pedestrian cycle operating mode	**0: identical to complete cycle operating mode** 1: without automatic closing 2: with automatic closing	
P04	Short automatic closing time delay in pedestrian cycle	0 to 30 value x 10 s = time delay value) **2: 20 s**	
P05	Long automatic closing time delay in pedestrian cycle	0 to 99 (value x 5 min. = time delay value) **0: 0 s**	
P07	Cell safety input	0: inactive **1: active** 2: active with autotest via test output 3: active with autotest via power supply switching 4: bus cells (perform auto-programming again)	
P09	Programmable safety input	0: inactive **1: active** 2: active with autotest via test output 3: active with autotest via power supply switching	
P10	Programmable safety input - function	**0: active closing** 1: active opening 2: active closing + ADMAP 3: all movement disabled	
P11	Programmable safety input - action	0: stop 1: stop + partial reversal **2: stop + complete reversal**	
P12	Orange warning light	**0: no warning** 1: with 2 s warning prior to movement	
P13	Area lighting output	0: inactive 1: controlled operation **2: automatic + controlled operation**	
P14	Area lighting time delay	0 to 60 value x 10 s = time delay value) **6: 60 s**	
P15	Auxiliary output	0: inactive 1: automatic: gate open indicator light 2: automatic: timed bistable 3: automatic: one-touch 4: controlled: bistable (ON-OFF) 5: controlled: one-touch **6: controlled: timed bistable** 7: controlled: motorised gate-opener	
P17	Lock output	**0: active 24 V one-touch** 1: active 12 V one-touch	
P18	Lock release	**0: inactive** 1: active	
P19	Closing speed	1: slowest speed 10: fastest speed **Default value: 9**	
P20	Opening speed		
P21	Closing slowdown zone	0: shortest slowdown zone 5: longest slowdown zone **Default value: 1**	
P22	Opening slowdown zone		
P23	M1/M2 shift when closing	1: minimum shift 10: maximum shift **Adjusted at the end of auto-programming**	
P24	M1/M2 shift when opening		
P25	M1 closing torque limitation	1: minimum torque 20: maximum torque **Adjusted at the end of auto-programming**	
P26	M1 opening torque limitation		
P27	M1 closing slowdown torque limitation		
P28	M1 opening slowdown torque limitation		
P29	M2 closing torque limitation		
P30	M2 opening torque limitation		
P31	M2 closing slowdown torque limitation		
P32	M2 opening slowdown torque limitation		
P37	Wired control inputs	**0: complete cycle mode - pedestrian cycle** 1: opening mode - closing	
P40	Coupling speed when closing	1: slowest speed 4: fastest speed **Default value: 2**	
P41	Coupling speed when opening		

OPERATING CODES

Code	Description	Code	Description
C1	Awaiting command	C12	Current reinjection in progress (Control Box 3S Axovia only)
C2	Gate opening	C13	Safety device autotest in progress
C3	Awaiting gate closure	C14	Permanent complete opening wire control input
C4	Gate closing	C15	Permanent pedestrian opening wire control input
C6	Detection in progress for cell safety	C16	BUS cell programming refused
C8	Detection in progress for programmable safety	Cc1	Battery power supply (2x9.6 V)
C9	Detection in progress for emergency stop safety		

PROGRAMMING CODES

Code	Description
H0	Awaiting setting
Hc1	Awaiting setting + battery power supply (2x9.6 V)
H1	Awaiting start of auto-programming
H2	Auto-programming mode - opening
H4	Auto-programming mode - closing
F0	Awaiting remote control memorisation for operation in complete opening mode
F1	Awaiting remote control memorisation for operation in pedestrian opening mode
F2	Awaiting remote control memorisation for remote lighting control
F3	Awaiting remote control memorisation for auxiliary output control

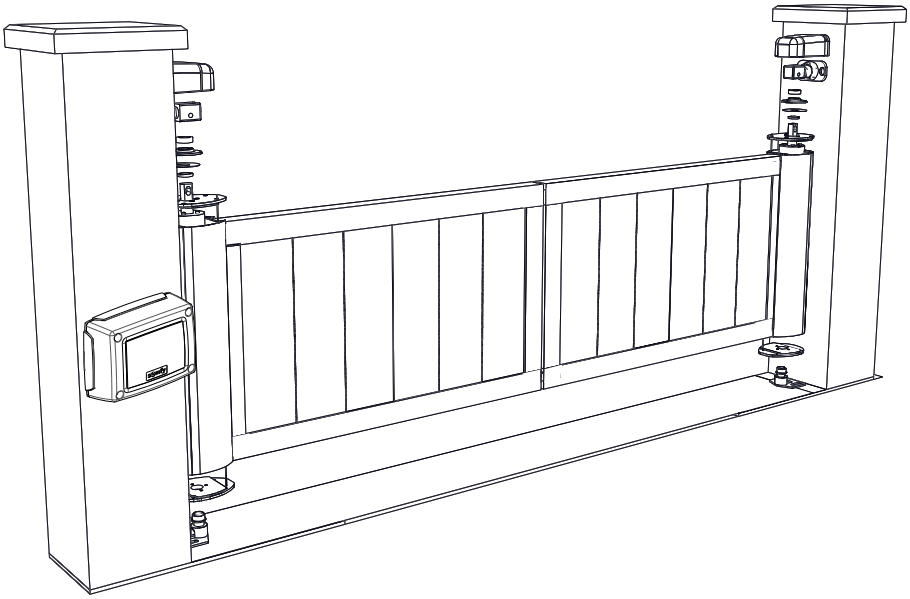
ERROR AND BREAKDOWN CODES

Code	Description	Solution?
E1	Cell safety autotest fault	Check the "P07" parameter setting. Check the wiring of the cells.
E2	Programmable safety autotest fault	Check the "P09" parameter setting. Check the programmable safety input wiring.
E4	Obstacle detection when opening	
E5	Obstacle detection when closing	
E6	Cell safety fault	Check that no obstacles are causing the cells or safety edge to detect. Check that "P2" is correctly configured in relation to the device connected to the safety input.
E8	Programmable safety fault	Check the safety device wiring. Check that the photoelectric cells are correctly aligned.
E9	Thermal protection	
E10	Motor short circuit protection	Check the motor wiring.
E11	24 V power supply short protection	Check the wiring of the peripherals connected to terminals 21 to 26 then disconnect the power supply for 10 seconds. N.B.: maximum accessories consumption = 1.2 A
E12	Hardware fault	Request a gate movement. If the fault is still present, contact Somfy.
E13	Accessories power supply fault	N.B.: maximum accessories consumption = 1.2 A Check the consumption of the connected accessories.
E14	Intrusion detection	Normal operation (attempted intrusion, current reinjection activated, etc.)
E15	Fault when the control box supplied by the backup battery is first switched on	Disconnect the backup battery and connect the control box to the mains to switch it on for the first time.

ACCESSING MEMORISED DATA

To access memorised data, select parameter "Ud" then press "OK".

Data	Description
U0 to U1	Overall complete opening cycle counter
U2 to U3	Complete opening cycle counter since last auto-programming
U6 to U7	Cycle counter with overall obstacle detection
U8 to U9	Cycle counter with obstacle detection since the last auto-programming
U12 to U13	Partial opening cycle counter
U14 to U15	Reset movement counter
U20	Number of remote controls memorised for complete opening control
U21	Number of remote controls memorised for pedestrian opening control
U22	Number of remote controls memorised for remote lighting control
U23	Number of remote controls memorised for auxiliary output control
d0 to d9	Log of the last 10 faults (d0 most recent - d9 oldest)
dd	To clear the fault log: press and hold "OK" for 7 s.



INVISIO 3S io

EN User's manual

TRANSLATED VERSION OF THE GUIDE

CONTENTS

GENERAL INFORMATION

Safety instructions

Danger

Indicates a danger which may result in immediate death or serious injury.

Warning

Indicates a danger which may result in death or serious injury.

Precaution

Indicates a danger which may result in minor or moderate injury.

Attention

Indicates a danger which may result in damage to or destruction of the product.

1.SAFETY INSTRUCTIONS

DANGER

The motorisation must be installed and adjusted by a professional motorisation and home automation installer, in compliance with the regulations of the country in which it is to be used.

Failure to follow these instructions may result in serious injury, e.g. due to crushing by the gate.

1.1.Caution – Important safety instructions

WARNING

For reasons of personal safety, it is important to follow all the instructions, as incorrect use can lead to serious injury. Retain these instructions.

Any failure to comply with the instructions given in this manual shall exclude Somfy from all liability and invalidate the Somfy warranty.

1.2.Introduction

1.2.1. Important information

This product is a control box for hinged gates, for residential use as defined in standard EN 60335-2-103, with which it complies. The main purpose of these instructions is to satisfy the requirements of the aforementioned standard and to ensure the safety of equipment and persons. To ensure compliance with the standard EN 60335-2-103, this product must be installed with a Somfy motor. The assembly is designated as a “motorisation”.

WARNING

It is strictly prohibited to use this product on any other gate than the original.

The addition or use of any accessories or components not recommended by Somfy is prohibited, as personal safety cannot be guaranteed.

Somfy cannot be held liable for any damage resulting from failure to follow the instructions in this manual.

The instructions may be modified if and when there is a change in the standards or the motorisation.

DANGER

The keypad for setting the parameters is locked to ensure the safety of the users. The parameters must only be unlocked and adjusted by a professional motorisation and home automation installer.

Making any changes which do not comply with these instructions could risk personal injury or damage to property.

DANGER

If one of the power supply cables is damaged, it must be replaced by the installer, its after-sales service or an individual with similar qualifications, to prevent any danger.

1.3.Safety instructions relating to use

WARNING

This motorisation may be used by children aged 8 and over and by persons whose physical, sensory or mental capacity is impaired, or persons with little experience or knowledge, as long as they are under supervision or have received instructions on safe use of the motorisation and fully understand the associated risks.

Do not allow children to play with the gate control devices. Keep remote controls out of the reach of children.

Children must not be allowed to clean or maintain the unit.

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The sound pressure level of the motorisation is less than or equal to 70 dB(A). The noise emitted by the structure to which the motorisation will be connected is not taken into account.

⚠ WARNING

Any potential users must be shown how to use the motorisation by the installer, applying all the recommendations in this manual. It is essential to ensure that no untrained persons are able to put the gate into motion.

The user must monitor the gate each time it moves and keep people away from it until it is completely open or closed.

Do not deliberately prevent the gate from moving.

△ ATTENTION

Do not try to open the gate manually if the motorisation has not been unlocked.

⚠ WARNING

In the event of a malfunction, cut the power supply and disconnect the battery and/or the solar kit and immediately unlock the motorisation to facilitate access.

Contact a motorisation and home automation professional immediately.

Manual unlocking may result in uncontrolled movement of the gate.

⚠ DANGER

The motorisation must be disconnected from any power supply during cleaning and maintenance and when parts are replaced.

Ensure that no natural obstacles (branches, stones, tall grasses, etc.) are able to obstruct the movement of the gate.

If the installation is equipped with photoelectric cells and/or an orange light, regularly clean the photoelectric cell optical units and the orange light.

Have the motorisation checked every year by a qualified technician.

⚠ WARNING

Every month, check:

- the installation, looking for any signs of wear or damage to the cables and assembly.
- that the motorisation changes direction when the gate encounters an object measuring 50 mm positioned halfway up the leaf.

If this is not the case, contact a professional motorisation and home automation installer immediately.

Do not use the motorisation if it needs repairing or adjusting. Gates in poor condition must be repaired, reinforced or even replaced.

1.4. About the batteries

⚠ DANGER

Do not leave batteries of any kind within reach of children. Keep them somewhere children cannot access. There is a risk that they could be swallowed by children or pets. Danger of death!

If this does occur, seek medical advice immediately or go to hospital.

Ensure that the batteries are not short-circuited, thrown in the fire or recharged. There is a risk of explosion.

1.5.Recycling and disposal

If installed, the battery must be removed from the motorisation before the latter is disposed of. Do not dispose of used remote control or other batteries with household waste. They must be taken to the relevant recycling points.

Do not dispose of the motorisation with household waste at the end of its life. Return the motorisation to its distributor or use your local authority's special waste collection services.

2.PRODUCT DESCRIPTION

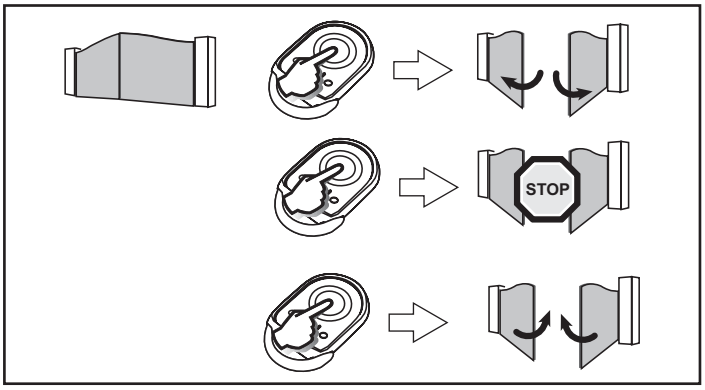
The control box is designed to control one or two Somfy 24 V motors for opening and closing gates.

3.USE AND OPERATION

3.1.Normal operation

3.1.1.Total opening with a 2 or 4-button remote control

Press the programmed button to open the gate fully.



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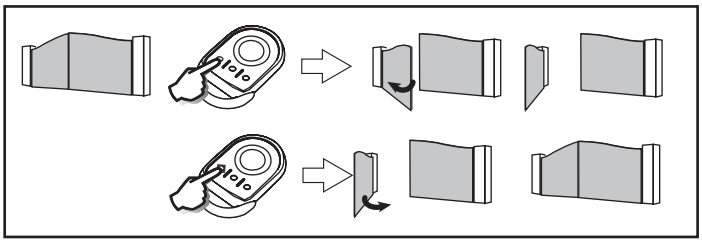
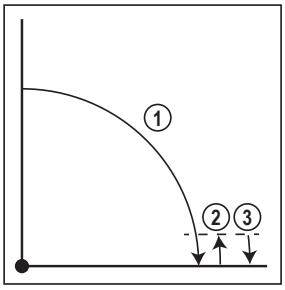
3.1.2. Pedestrian opening with a 2 or 4-button remote control

Press the programmed button to open the gate in pedestrian mode.



3.1.3. Two-stage mode on the shoe when closing

The load on the gate leaves must be taken up at the end of the gate's movement to comply with the standard in force on the risk of trapping (EN 12453). This load take-up phase (a few seconds) is part of the complete movement of the gate.



The movement can be broken down into 3 phases:

1. Closing of the gate leaves to their stops
2. Taking up of the load: the load is taken up for 7 seconds to allow release in the event that someone or something is trapped.
3. Power restored until the gate leaves reach the stops and the orange light goes out, if fitted.

Attention

If a radio command is sent during the load take-up phase, it will be interpreted as a command to stop movement.

3.1.4. Obstacle detection operation

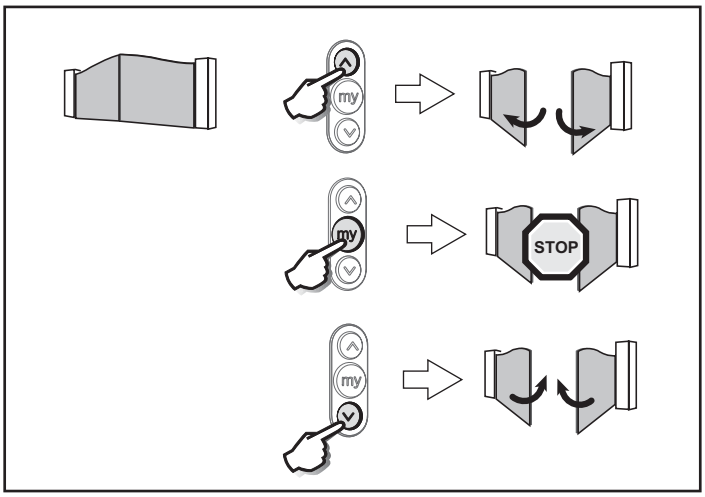
When an obstacle is detected during opening, the gate will stop then close again.

If an obstacle is detected during closing, the gate will stop then open again.

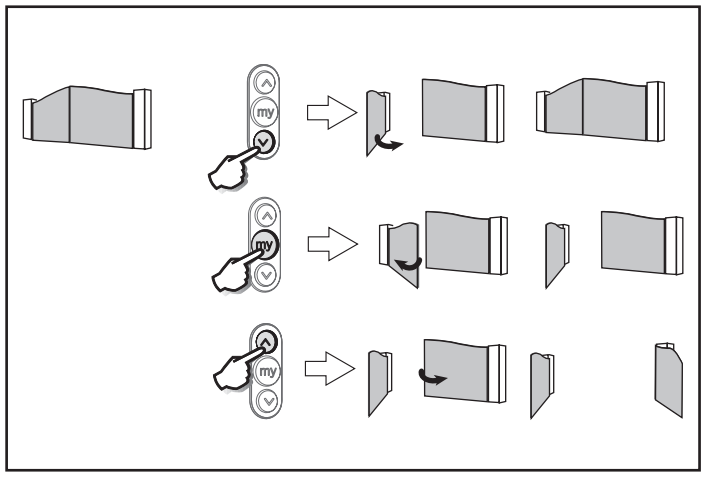
3.2. Specific operation

Depending on the additional devices installed and the operating options programmed by your installer, the motorisation may operate in the following specific ways:

3.2.1. Total opening with a 3-button remote control



3.2.2. Pedestrian opening with a 3-button remote control



3.2.3. Operation with safety cells

An obstacle placed between the cells will prevent the gate from closing.

If an obstacle is detected when the gate is closing, the gate will stop then open again completely or partially depending on the option programmed during installation.

If the cells are blocked for 3 minutes or more, the system switches to the "wired dead man" operating mode. In this mode, a command via the wired input causes the gate to move at reduced speed. The movement lasts as long as the command is maintained and stops as soon as the button is released. The system switches back to normal mode as soon as the cells are no longer blocked.

Attention

the "wired dead man" mode requires the use of a safety contact (e.g. keyed reversing switch ref. 1841036).

Operation with orange flashing light

The orange light is activated during any gate movement.

A 2-second pre-warning signal before movement starts may be programmed during installation.

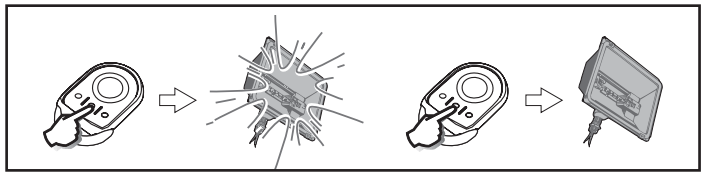
3.2.4. Operation of the integrated lighting

Depending on the programming performed during installation, the lighting comes on each time the motorisation is started and remains on when it stops for the duration of the programmed time delay.

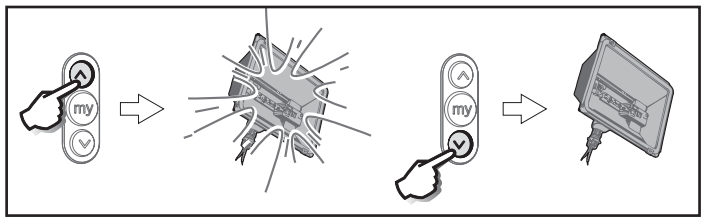
If a remote control is programmed for the remote lighting, operation is as follows:

With a 2 or 4 button remote control

Press the programmed button to operate the lighting.



With a 3-button remote control



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3.2.5. Operation in sequential mode with automatic closing after a time-delay

The gate is automatically closed after a time-delay programmed during installation.

A new command sent during this time-delay cancels automatic closing and the gate remains open.

The subsequent command causes the gate to close.

3.2.6. Operation using the backup battery

If a backup battery is installed, the motorisation will work even during a power outage.

Operation is then activated under the following conditions:

- Reduced speed.
- The additional devices (photoelectric cells, orange light, wired code keypad, etc.) do not operate.

Battery specifications:

- Battery life: 24 hrs; 3 operating cycles depending on the weight of the gate.
- Recharging time: 48 hours
- Service life before replacement: Approximately 3 years.

For optimum battery life, it is recommended that the main power supply be switched off and the motor operated using the battery for several cycles, three times a year.

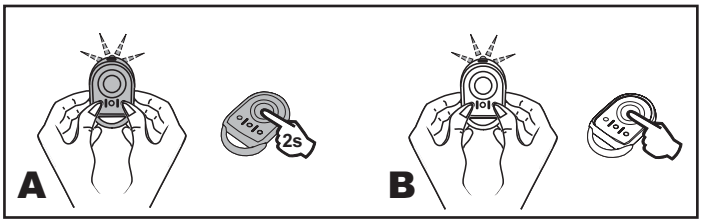
3.3. Adding remote controls

Remote control "A" = "source" remote control already memorised

Remote control "B" = "target" remote control to be memorised

3.3.1. 2- or 4-button remote controls

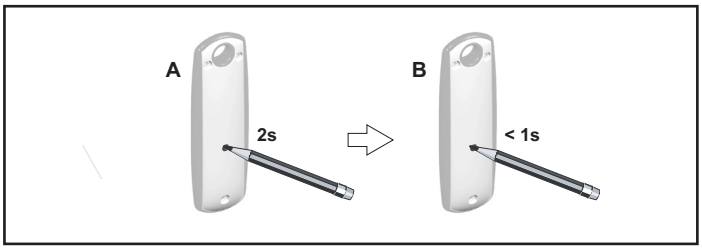
Copying the function from a memorised button on a 2- or 4-button remote control to a button on a new 2- or 4-button remote control:



For example, if the button on remote control A opens the gate fully, the button on the new remote control B will also open the gate fully.

3.3.2. 3-button remote controls

Copying the function from a memorised button on a 3-button remote control to a new 3-button remote control:



For example, if remote control A operates the gate's remote lighting, the new remote control B will also operate the gate's remote lighting.

4. MANUAL RELEASING OF THE GATE

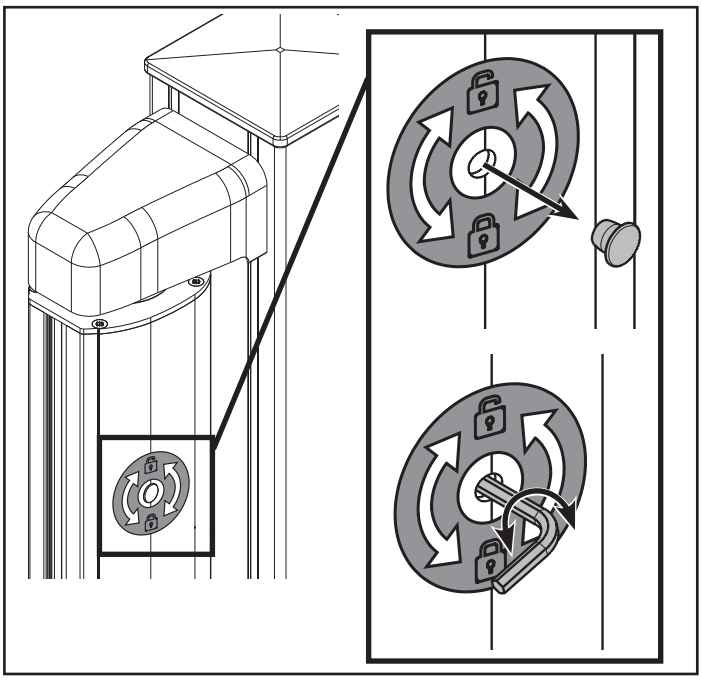
In case there is no electrical supply or a major power cut, the gate can be manually operated by releasing the motor.

Your motorisation can be fitted with a manual release system with or without a key. Follow the relevant instructions for the manual release system that relates to your motorisation.

4.1. Releasing without a key

3 types of unlocking are possible:

4.1.1. Lateral unlocking / locking

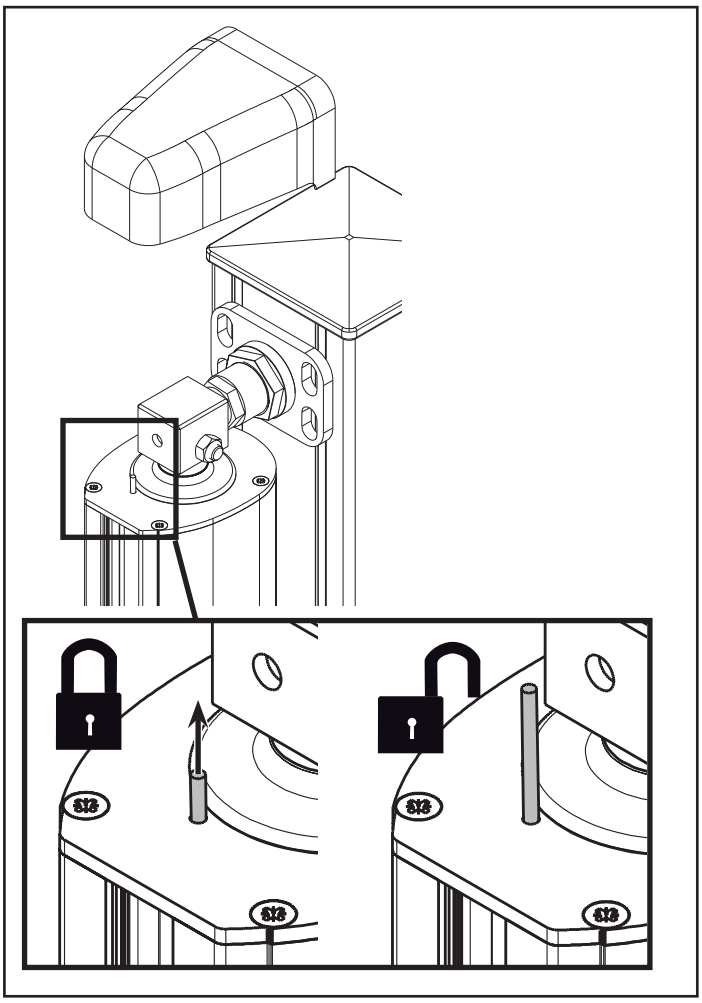


1) Remove the cap.

2) Insert the unlocking key (hex key / 5 mm)

3) Turn the key about a quarter turn to unlock the motor.

4.1.2. Unlocking / locking option from the top



1) Remove the pivot cover.

2) Pull the tab to unlock the motor.

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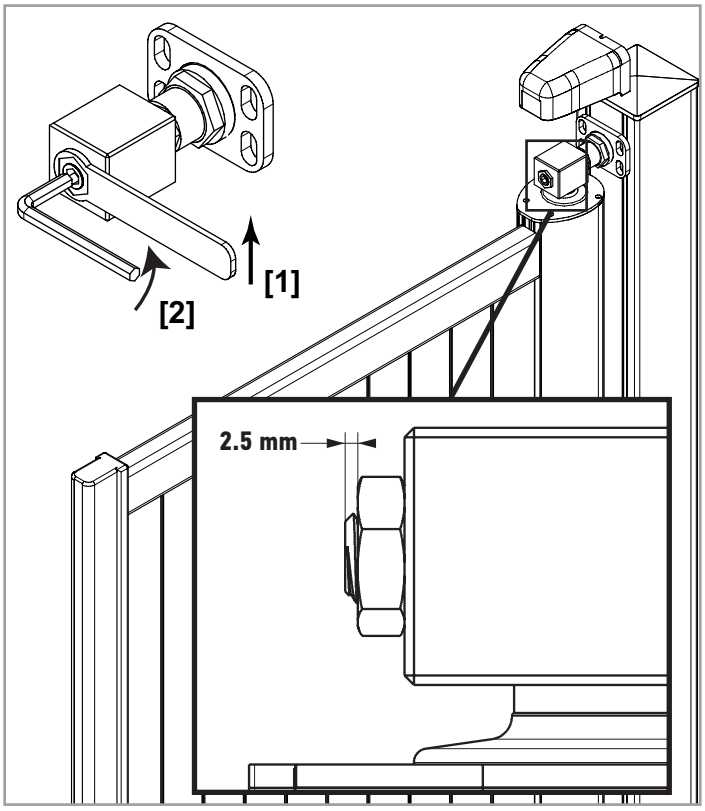
4.1.3. Unlocking / locking the pivots



Unlocking

1) Undo the lock nut.

2) Undo the screw until the gate is released.

Locking

3) Return the gate leaves to the position they were in before manual release.

4) Tighten the screw.

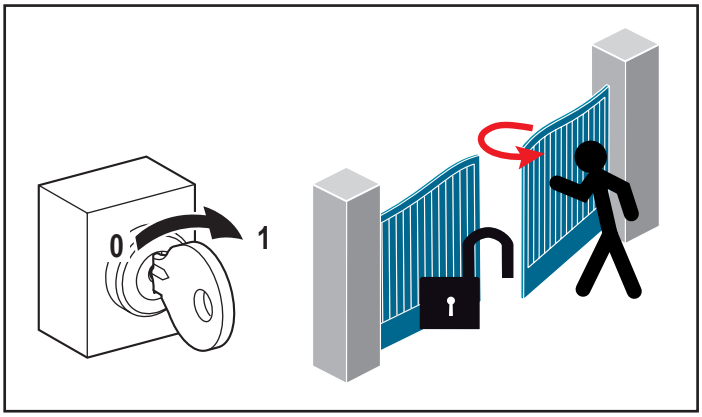
5) Tighten the lock nut.

Once complete, the distance between the locknut and the screw must be about 2.5 mm. If the distance is greater than this, the gate leaf is not correctly locked.

4.2. Releasing with a key

4.2.1. Releasing the motors

To release the motors, turn the key to the right to release the magnetic brake on the motor.

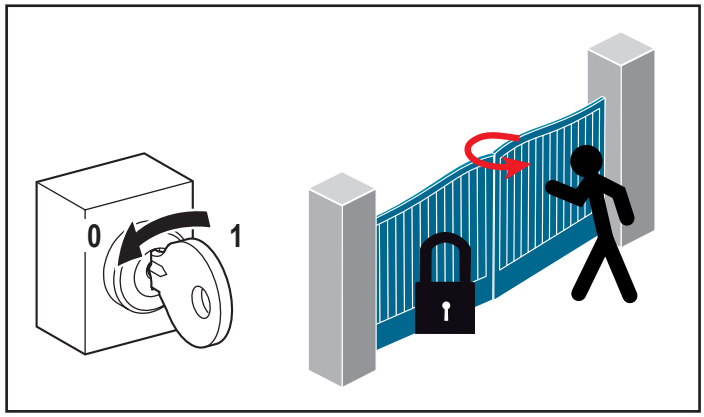


4.2.2. Engaging the motors

Attention

Before engaging the motors, it is essential to manually close the gate to ensure correct operation when the power supply is restored.

To lock the motors, turn the key to the left to reactivate the magnetic brake on the motor.



5. DIAGNOSTICS

The motor does not start

- Check the motor power supply.
- The remote control indicator light remains off; the battery is flat, replace it.
- Check that the motorisation has not been disengaged; re-engage it.
- Check that the photoelectric cells are neither obstructed nor dirty.
- This type of motorisation is unsuitable for intensive use. The thermal protection may have been activated.

If the problem cannot be fixed, please contact the motorisation installer.

6. MAINTENANCE

6.1. Checks

6.1.1. Safety devices (cells, safety edge)

Check for correct operation every 6 months.

6.1.2. Backup battery

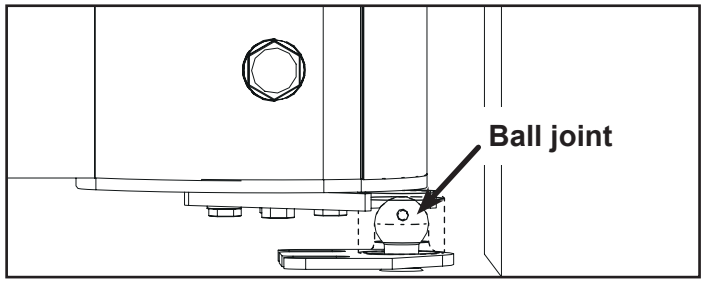
For optimum battery life, it is recommended that the main power supply be switched off and the motor operated using the battery for several cycles, three times a year. Contact a qualified person (installer) to have the backup battery replaced.

6.1.3. Mechanical tightness

To ensure correct operation of the gate, have the tightness of all mechanical fixings checked by your installer (pivot connection, irreversible motorisation release system, etc.)

6.1.4. Ball joint greasing

If your gate is equipped with a slope lift kit, grease the ball joints of each gate leaf at least once a year with mechanical grease for outdoor use.



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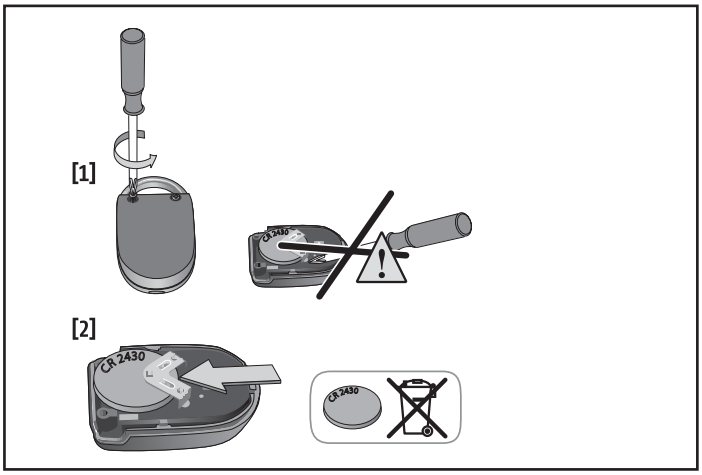
6.2.Replacing the battery - Keygo io



7.TECHNICAL DATA

Power supply	220-230 V - 50/60 Hz
Max. power consumption	800 W (with 500 W remote lighting)
Climatic operating conditions	- 20°C/+ 60°C - IP 44
Radio frequency	868 - 870MHz < 25 mW
Number of channels that can be memorised	Complete/pedestrian opening: 30 Lighting: 4 Auxiliary output: 4
Remote lighting output	230 V - 500 W (Halogen or incandescent only)

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