CAME

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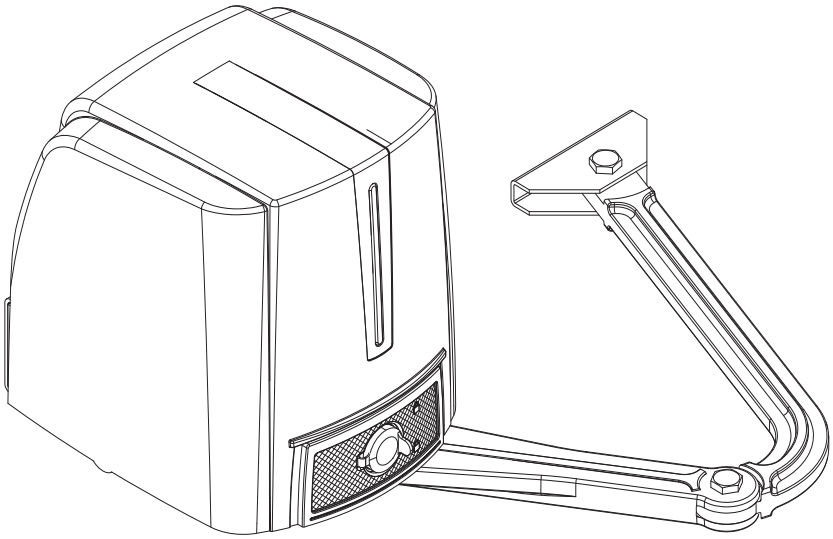
FA02045-EN

CE

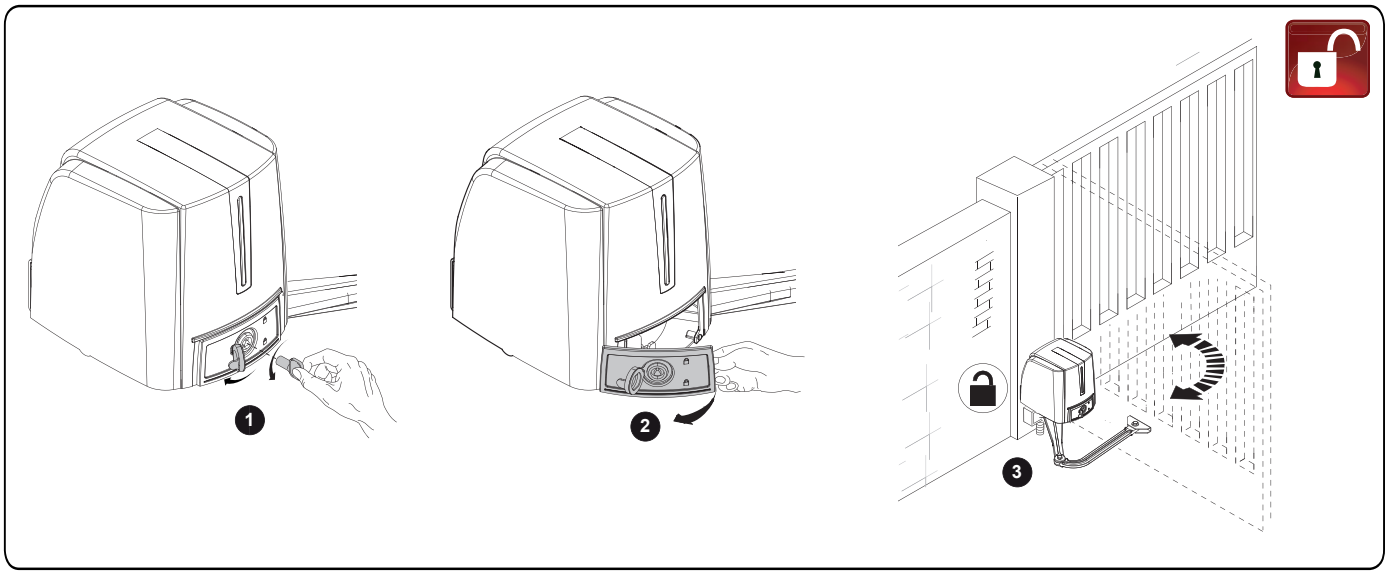
Swing-gate operator



FA7024CB / FST23DLC

INSTALLATION MANUAL

EN English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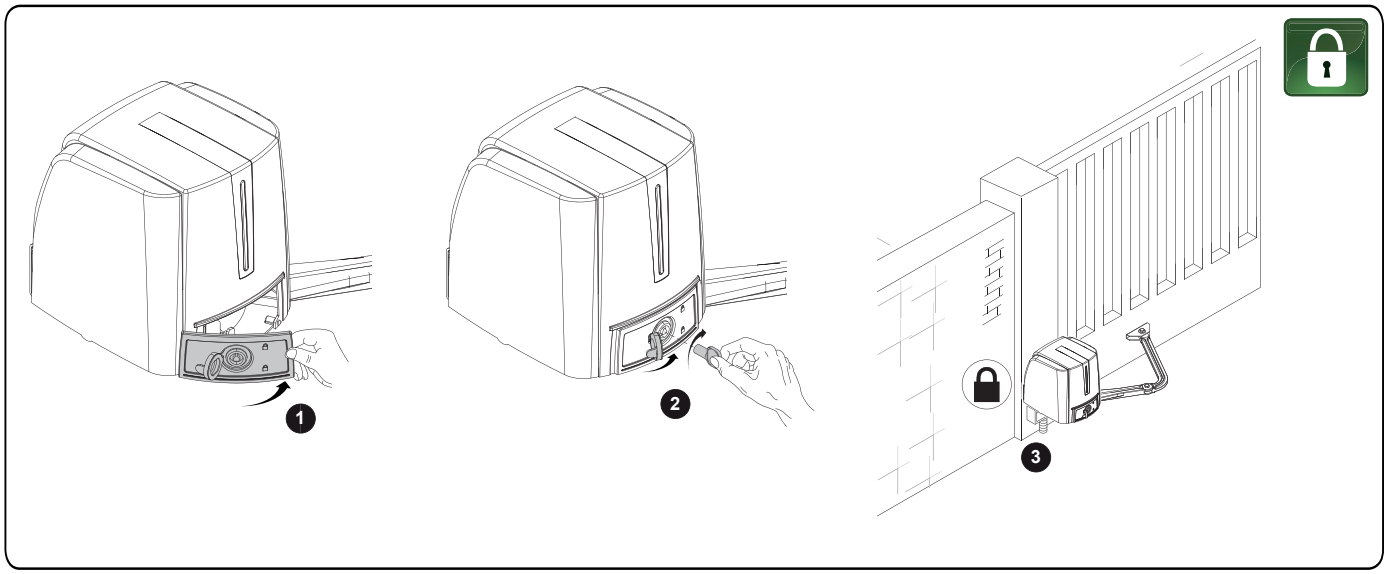
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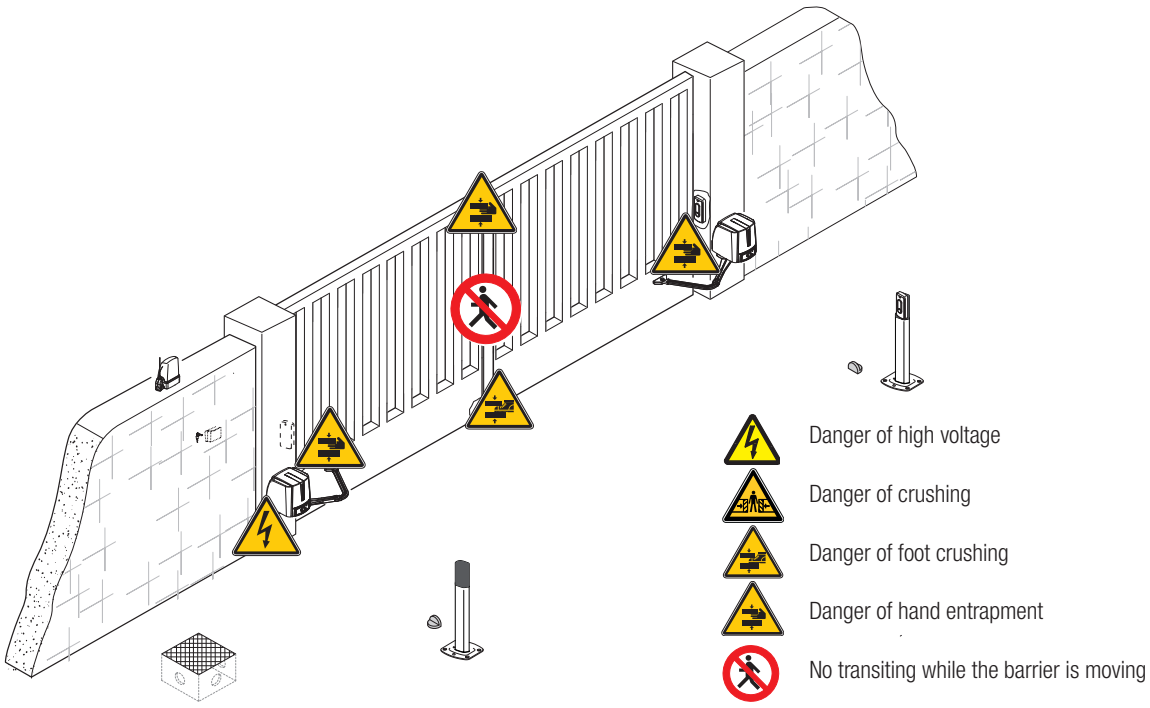
GENERAL PRECAUTIONS FOR INSTALLERS

WARNING! Important safety instructions.
Follow all of these instructions. Improper installation can cause serious bodily harm.
Before continuing, also read the general precautions for users.

Before continuing, also read the general precautions for users. • Use this product only for its specifically intended use. Any other use is hazardous. • The manufacturer can not be held liable for any damage caused by improper, unreasonable, and erroneous use. • This manual's product is defined by the Machinery Directive 2006/42/CE as partly-completed machinery. • Partly-completed machinery is an assembly that almost constitutes a machine, but which, alone, cannot ensure a clearly defined application. • Partly-completed machinery is only destined to be incorporated or assembled to other machinery or other partly-completed machinery or apparatuses to build machinery that is regulated by the Machinery Directive 2006/42/CE. • The final installation must comply with the Machinery Directive 2006/42/CE and with the currently applicable European standards. • All procedures mentioned in this manual must be only be performed by skilled, qualified technicians and in full compliance with current regulations. • Laying the cables, installation and testing must follow state-of-the-art procedures as dictated by applicable standards and laws. • Do not install the operator upside down.
• Do not install the operator or onto elements that could yield and bend. If necessary, add suitable reinforcements to the anchoring points
Do not install door or gate leaves on tilted surfaces. • Check that the temperature ranges given and those of the location match. • Check that no lawn watering devices spray the product with water from the bottom up. • Demarcate the entire site to prevent unauthorized personnel to enter; especially children and minors. • Use suitable protections to prevent any mechanical hazards due to persons loitering within the operating range of the machinery. • Avoid crushing your fingers between the transmission arm and the mechanical stops. • Do not stand between the opening leaf and the fence wall, to avoid crushing. • Any residual risks must be indicated clearly with proper signage affixed in visible areas. All of which must be explained to end users. • Fit, in plain sight, the machine's ID plate when the installation is complete. • Fit cautionary signs, such as the plate, wherever needed and in plain sight. • Install all fixed controls at 1.5 m from the ground, clearly visible, in view of the guided part but far away from moving parts. If there is a maintained action command, it must not be accessible to the public. • The manufacturer declines any liability for using non-original products; which would result in warranty loss • Before handing over to users, check that the system is compliant with the 2006/42/CE uniformed Machinery Directive and with its essential requirements. • Make sure that the operator has been properly adjusted and that the safety and protection devices, and the manual release, are working properly • If the power-supply cable is damaged, it must be immediately replaced by the manufacturer or by an authorized technical assistance center, or in any case, by qualified staff, to prevent any risk • The electrical cables must run through corresponding tubes, conduits and cable glands to ensure suitable protection against mechanical damage and they must not come into contact with parts that could heat up during use (such as motor and transformer). • Make sure the mains power supply is disconnected during all installation procedures • The product cannot automate any guided part that includes a pedestrian gate, unless the latter can be enabled only when the pedestrian gate is secured. • Make sure that people cannot be entrapped between the guided and fixed parts, when the guided part is set in motion. • Before installing the operator, check that the guide part is in proper mechanical condition, that it is properly balanced and that it properly opens and closes: if any of these conditions are not met, do not continue before having met all safety requirements • Make sure that opening and closing limiters are fitted. • Make sure that the operator is installed onto a sturdy surface that is protected from any collisions • Make sure that mechanical stops are already installed. • If the dangerous moving parts of the operator are installed lower than 2.5 from the ground or from any other access level, fit protections and/or signs to prevent hazardous situations.
Make sure you have set up a suitable dual pole cut off device along the power supply that is compliant with the installation rules. It should completely cut off the power supply according to category III surcharge conditions. • If necessary, to pass the collision force test use a suitable sensitive safety-edge (as indicated below in this manual). Install it properly and adjust as needed. • Keep this manual inside the technical folder along with the manuals of all the other devices used for your automation system • Make sure to hand over to the end user, all operating manuals for the products that make up the final machinery. • Avoid crushing your fingers between the transmission arm and the mechanical stops. • Do not stand between the opening leaf and the fence wall, to avoid crushing.



LEGEND

🕮 This symbol shows which parts to read carefully.
⚠ This symbol shows which parts describe safety issues.
☞ This symbol shows which parts to tell users about.
The measurements, unless otherwise stated, are in millimeters.

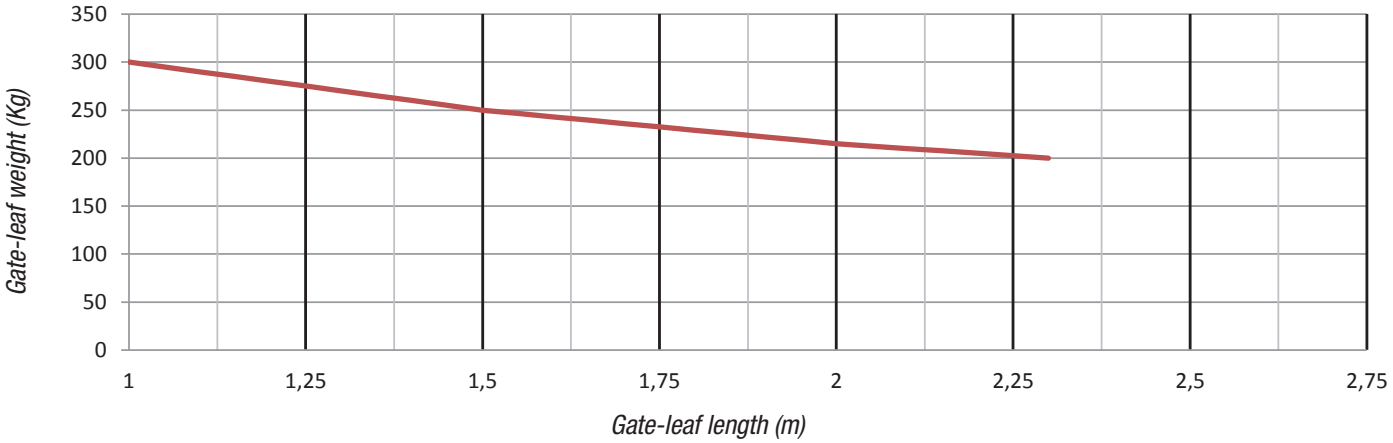
DESCRIPTION

FA7024CB - Irreversible operator featuring a control board with functions display, on-board radio decoding and hinged transmission arm for swing gates with leaves each up to 2.3 m long and C max. 200 mm.
FTS23DLC - Irreversible operator featuring a control board with functions display, on-board radio decoding and hinged transmission arm for swing gates with leaves each up to 2.3 m long and C max. 300 mm.

INTENDED USE

This operator is designed to power swing gates for residential and apartment block use.
🕮 Do not install of use this device in any way, except as specified in this manual.

LIMITS TO USE



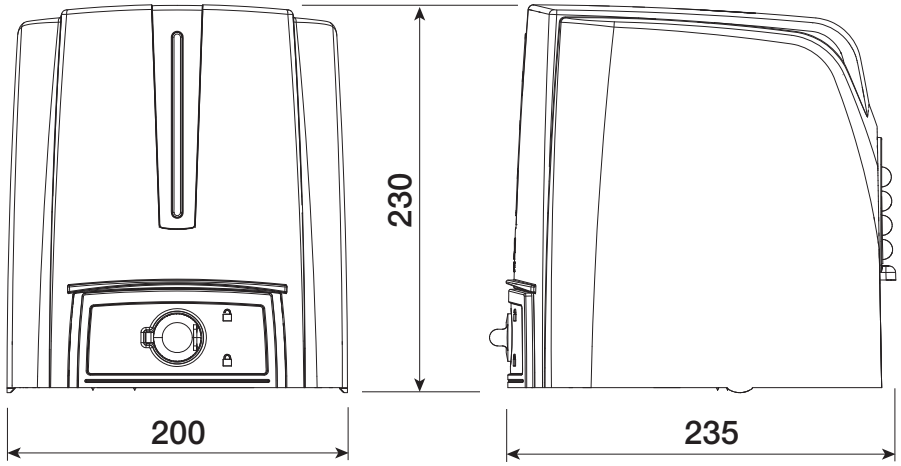
⚠ For swing gates, installing an electric lock is always recommended. This is to ensure the leaves close reliably and to protect the gearmotor parts.
- For reversible gearmotors, electric locks are required to ensure the leaves close. The installer is responsible for installing an electric lock, taking into account the size and type of leaf (e.g. panelled) and the installation area (e.g. windy location).
Some control panels may not have the electric lock function.

TECHNICAL DATA

Type	FA7024CB - FTS23DLC
Protection rating (IP)	54
Power supply (V - 50/60 Hz)	230 AC
Motor power supply (V)	24 DC
Stand-by consumption (W)	5.5
Stand-by consumption with the RGP1 (W) module	0.5
Power (W)	140
Torque (Nm)	180 max
Opening time at 90° (s)	13 to 30
Cycles/hour (no.)	65
Operating temperature (°C)	-20 to +55
Insulation class	I
Acoustic pressure dB (A)	≤70
Weight (kg)	12

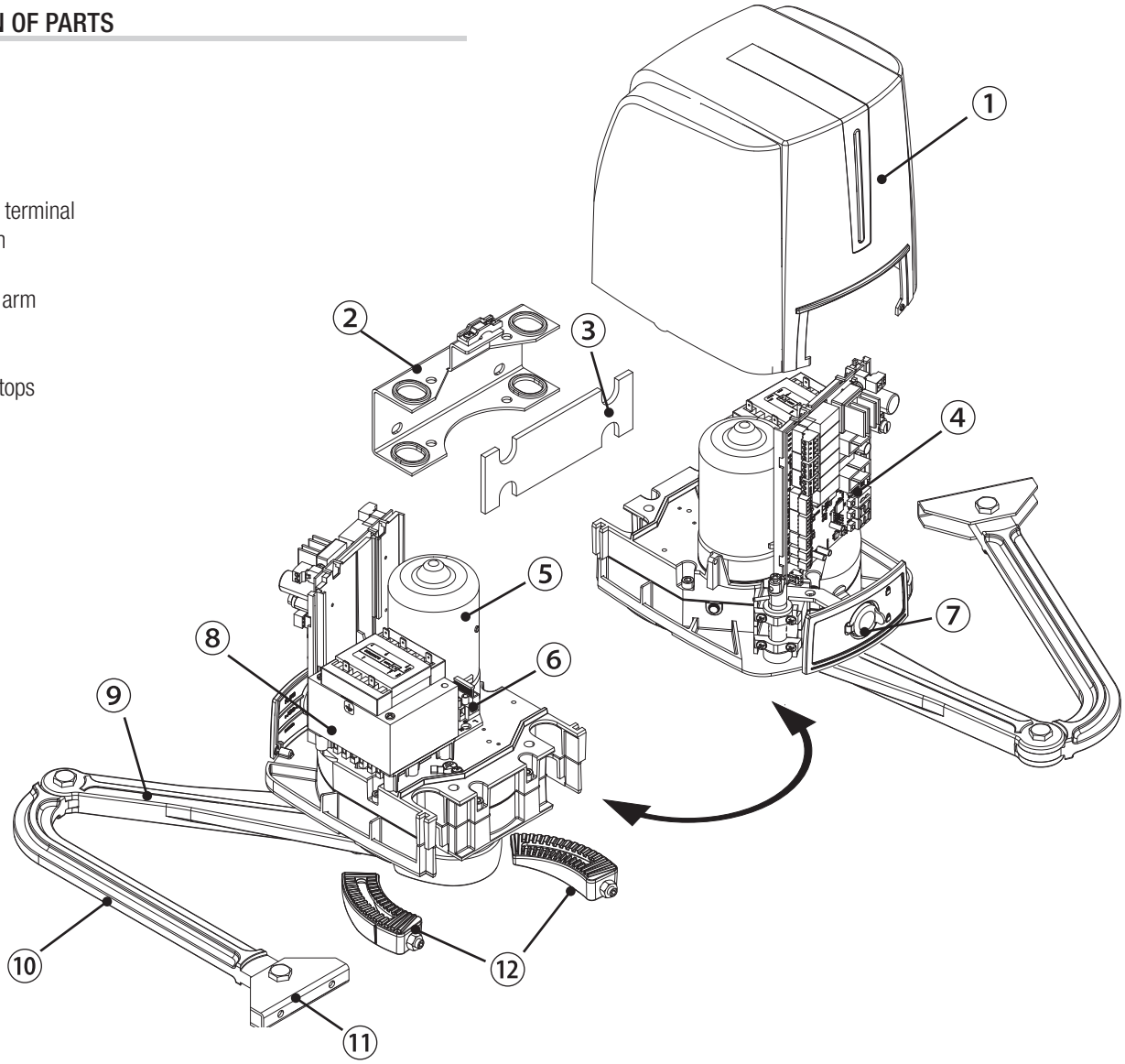
DIMENSIONS

(mm)



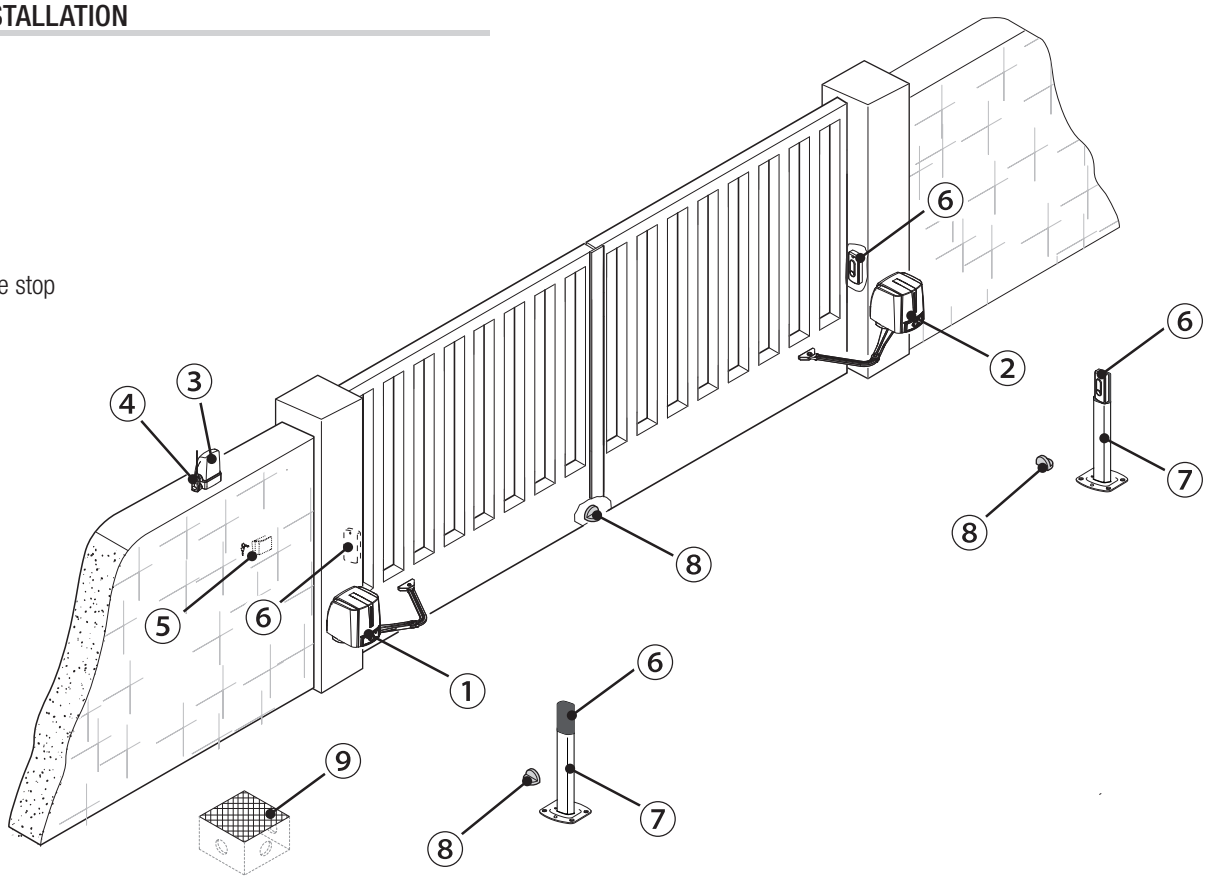
DESCRIPTION OF PARTS

1. Cover
2. Post brace
3. Rubber shim
4. Control board
5. Gear motor
6. Power supply terminal
7. Release hatch
8. Transformer
9. Transmission arm
10. Joint arm
11. Gate brace
12. Mechanical stops

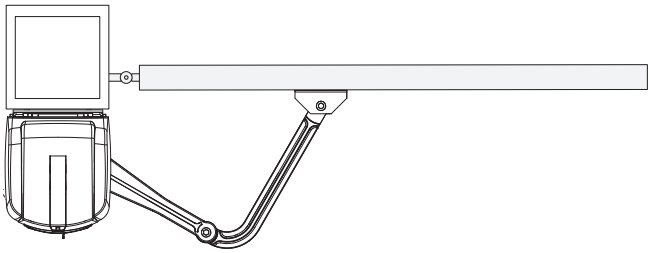


STANDARD INSTALLATION

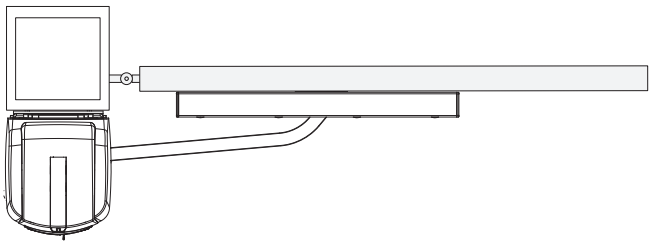
1. Operator
2. Gear motor
3. Flashing light
4. Antenna
5. Control device
6. Photocells
7. Photocells post
8. Mechanical gate stop
9. Junction pit



APPLICATION EXAMPLES



Fitted with standard jointed transmission-arm.



Fitted with the STYLO-BD straight transmission-arm and slide rail.

GENERAL INSTRUCTIONS FOR INSTALLING

PRELIMINARY CHECKS

⚠ Before beginning the installation, do the following:
- check that the bracketsanchoring point is resistant;
- check that there are no obstruction or impediments near the operator;
- set up suitable tubes and conduits for the electric cables to pass through, making sure they are protected from any mechanical damage.

CABLE TYPES AND MINIMUM THICKNESSES

Connection	cable length	
	< 20 m	20 < 30 m
Input voltage for the product 230 V AC (1P+N+PE)	3G x 1.5 mm^2	3G x 2.5 mm^2
24 V DC gearmotor	3 x 1.5 mm^2	3 x 2.5 mm^2
Electric lock	2 x 0.5 mm^2	
Flashing light	2 x 0.5 mm^2	
Command and control devices	2 x 0.5 mm^2	
TX Photocells	2 x 0.5 mm^2	
RX photocells	4 x 0.5 mm^2	

⚠ When operating at 230 V and outdoors, use H05RN-F-type cables that are 60245 IEC 57 (IEC) compliant; whereas indoors, use H05VV-F-type cables that are 60227 IEC 53 (IEC) compliant. For power supplies up to 48 V, you can use FROR 20-22 II-type cables that comply with EN 50267-2-1 (CEI).

🕮 To connect the antenna, use the RG58 (we suggest up to 5 m).

🕮 For combined connection and CRP, use a UTP CAT5-type cable (up to 1,000 m long).

🕮 If cable lengths differ from those specified in the table, establish the cable sections depending on the actual power draw of the connected devices and according to the provisions of regulation CEI EN 60204-1.

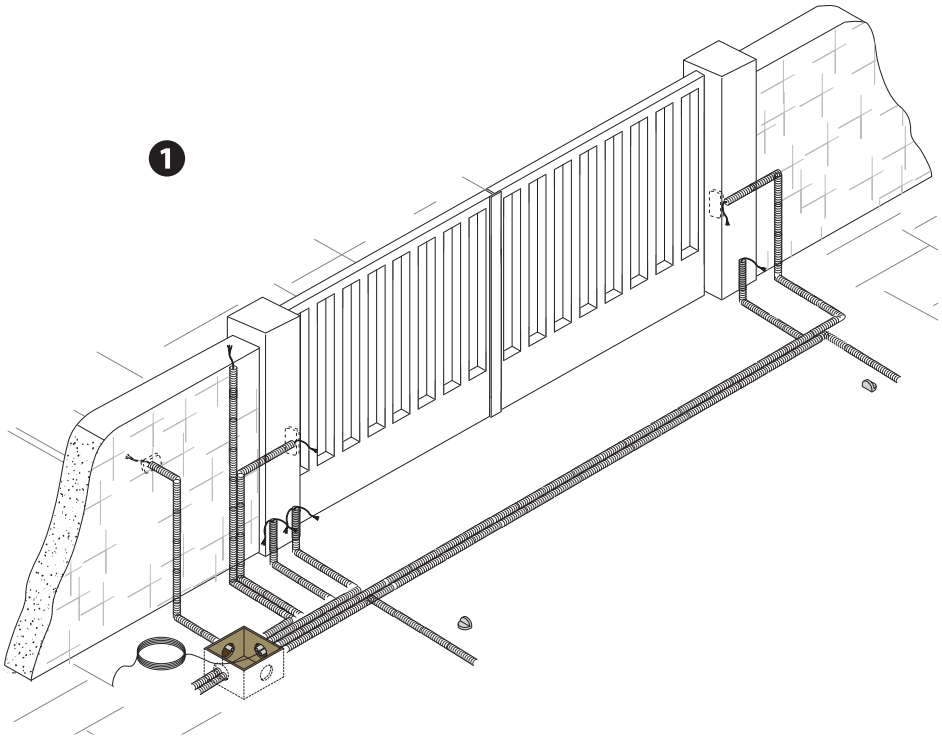
🕮 For multiple, sequential loads along the same line, the dimensions on the table need to be recalculated according to the actual power draw and distances. For connecting products that are not contemplated in this manual, see the literature accompanying said products

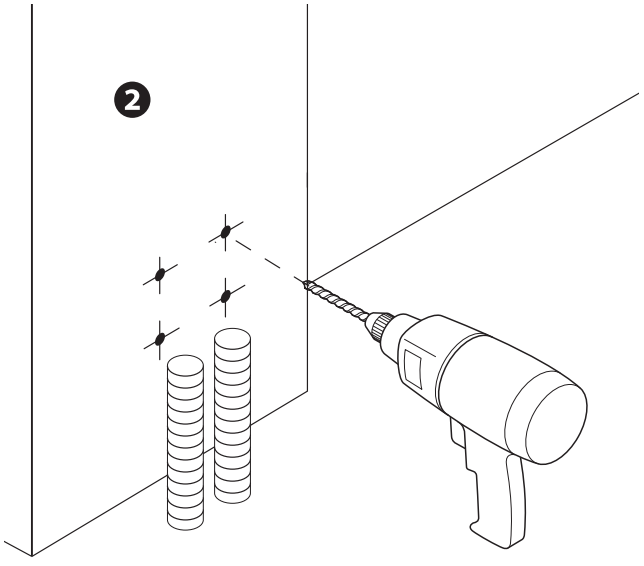
INSTALLING

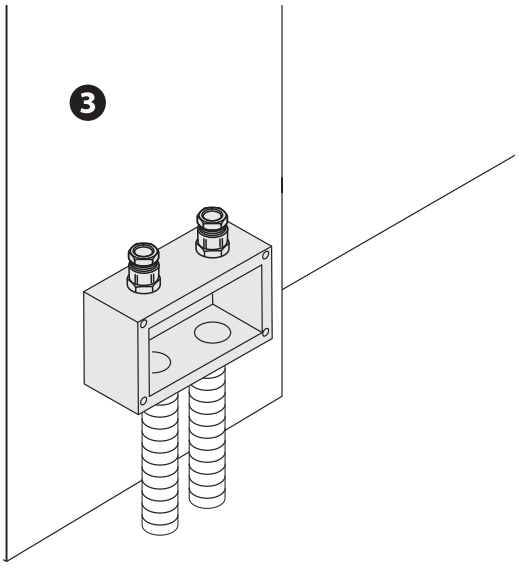
🕮 The following drawings are mere examples in that the space for fastening the operator and accessories varies depending on the installation area. It is up to the installer to find the most suitable solution.
They refer to the assembly of the gearmotor and of the arms on the left and with inwards opening.
🕮 The gearmotor and arms assembly on the right is symmetrical.
🕮 For outward openings, there is a dedicated chapter: OUTWARD OPENING CONNECTIONS AND INSTALLING.

CORRUGATED TUBE LAYING

Fit junction boxes and corrugated tubing needed for the incoming connections from the distribution pit.
🕮 The number of tubes depends on the type of system and the accessories you are going to fit. You will need at least two corrugated tubes where the operator is installed (on the gate leaf that opens first).

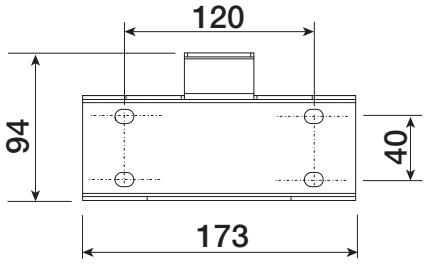


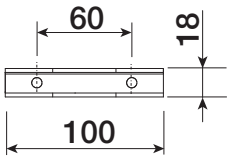




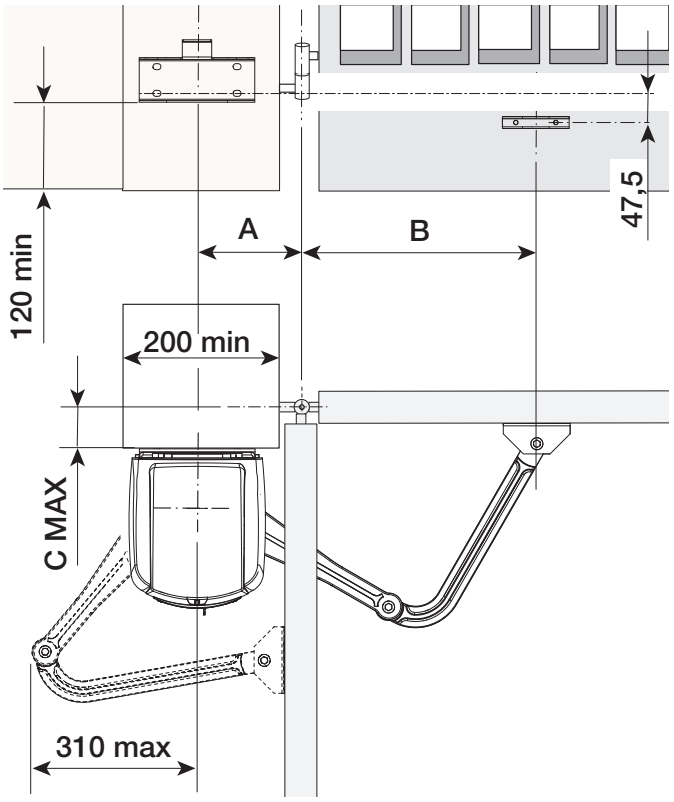
FASTENING THE BRACES

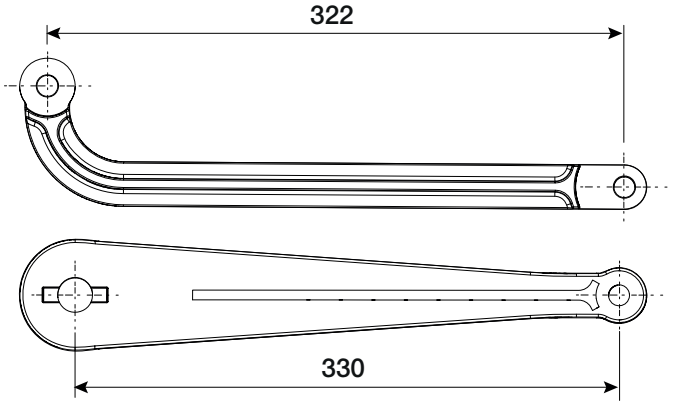
Establish where you will fit the gate brace and measure where the gate-post brace will fit. Make sure to respect the quotas shown in the drawing and table.





FA7024CB

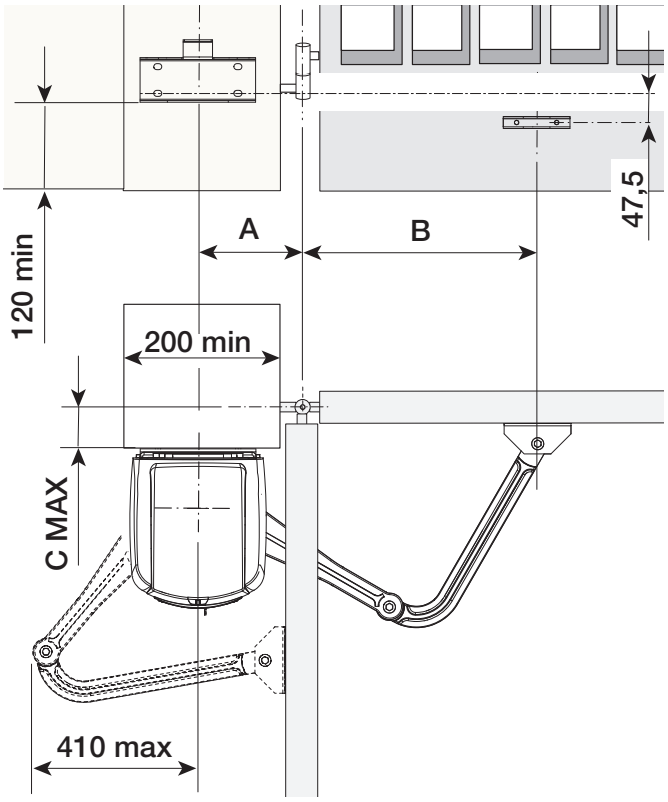


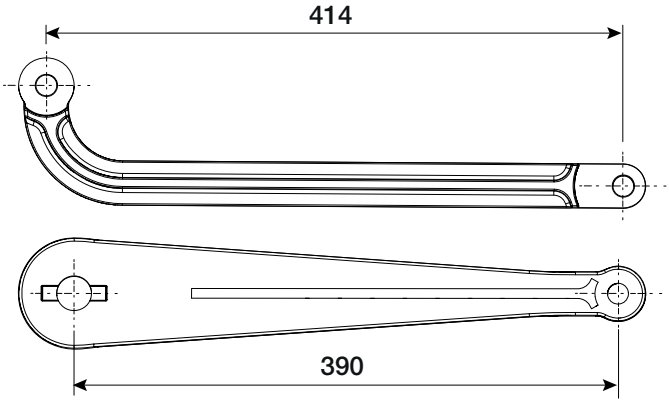


Application dimension (mm)

Leaf opening arc (°)	A	B	C MAX
90°	140	420	0 to 200
90°	160 to 180	380	200
110°	200 to 220	400	0 to 50

FST23DLC



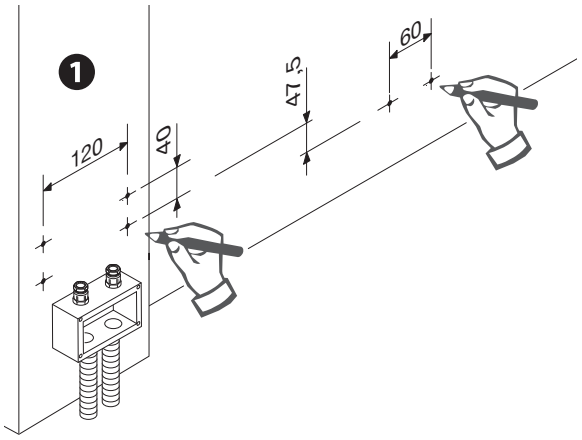


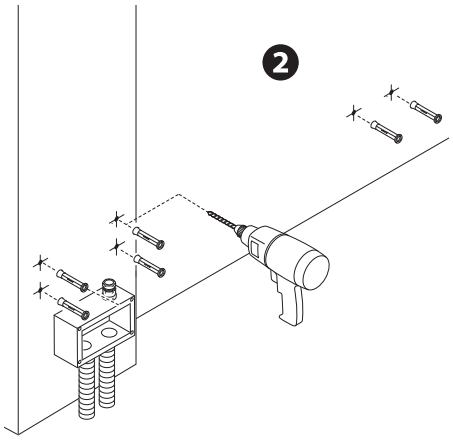
Application dimension (mm)

Leaf opening arc (°)	A	B	C MAX
90°	140	490	0 to 300
90°	160 to 180	460	300
110°	200 to 220	470	0 to 50

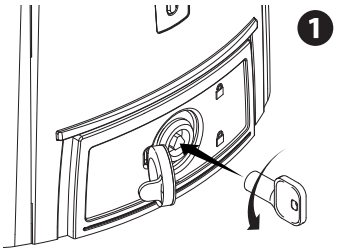
Marked the spots where the gate-post brace and gate brace will be fitted. The center-distances of the holes on the braces are shown in the Application dimensions paragraph.
Drill the anchoring points, fit the dowels or use plugs that will hold fast the screws.

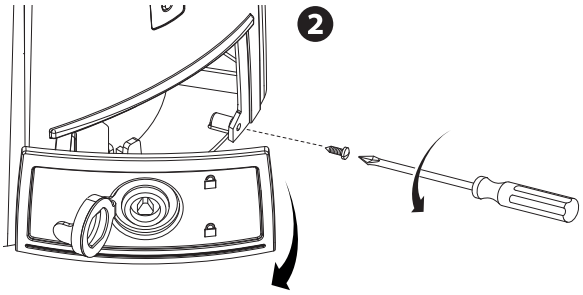
🕮 The drawings are mere examples. Installers should carefully choose the most suitable set up according to the type and thickness of the gate leaf.

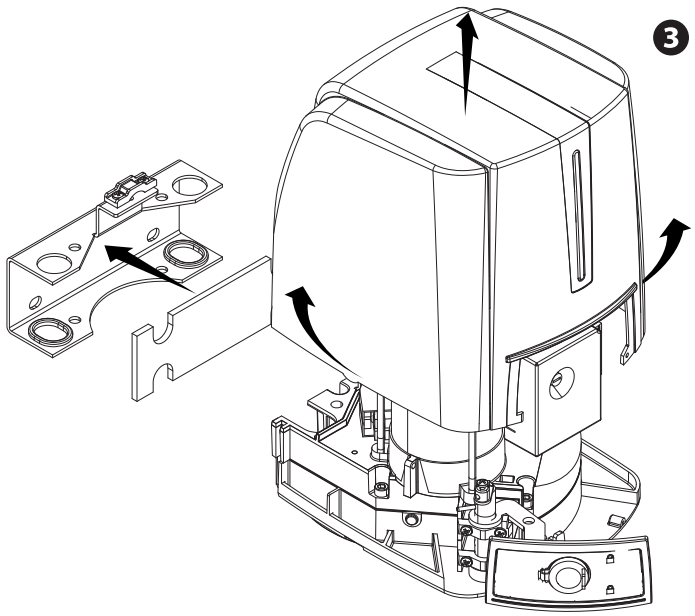




Before installing the operator, remove the cover as described below:
- release the gear motor ❶
- open the hatch door and loosen the screw that fastens the casing to the gearmotor. ❷
- llift the cover by lightly pulling on its sides and pull out the gearmotor's gate-post brace. ❸



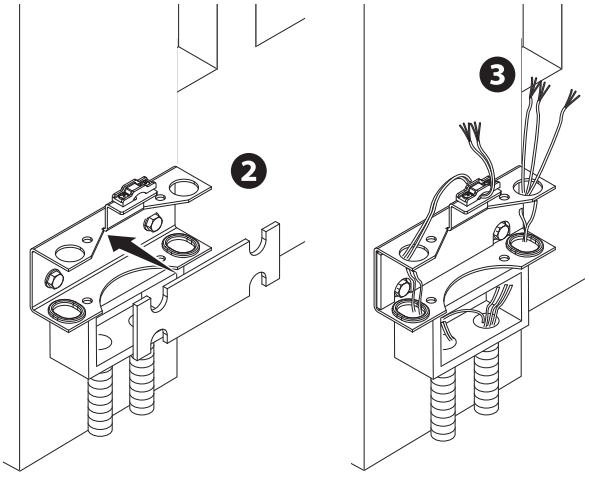




Use suitable screws to fasten the brackets. ❶

Fit the rubber shim into the gate-post brace. ❷

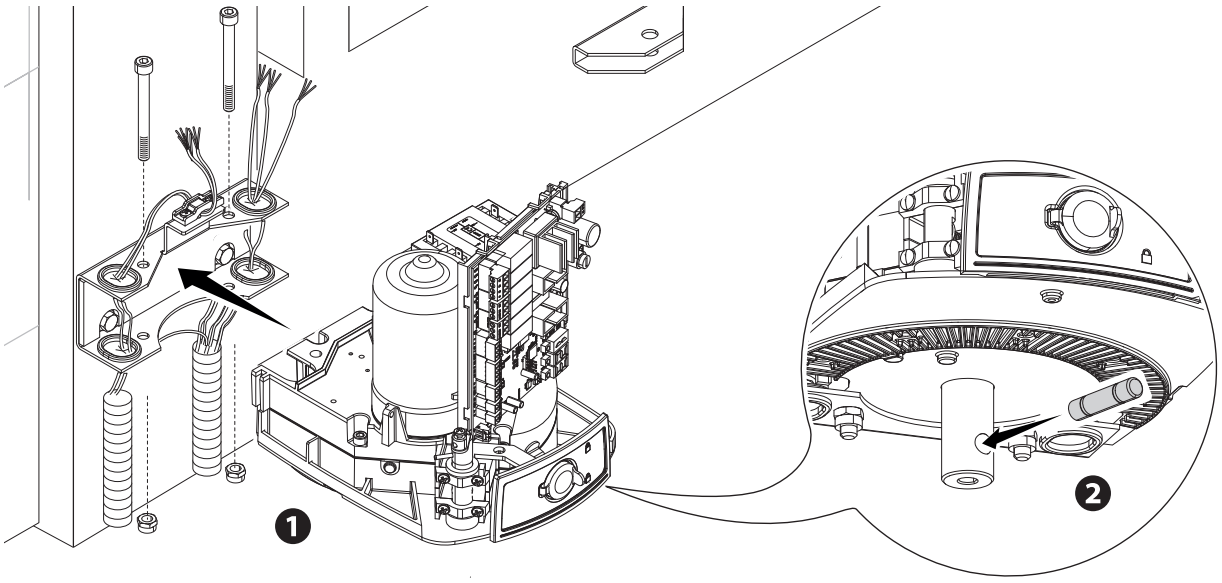
Lay the necessary electrical cables and run them through the cable gland and lock them to the clamp of the post brace. ❸



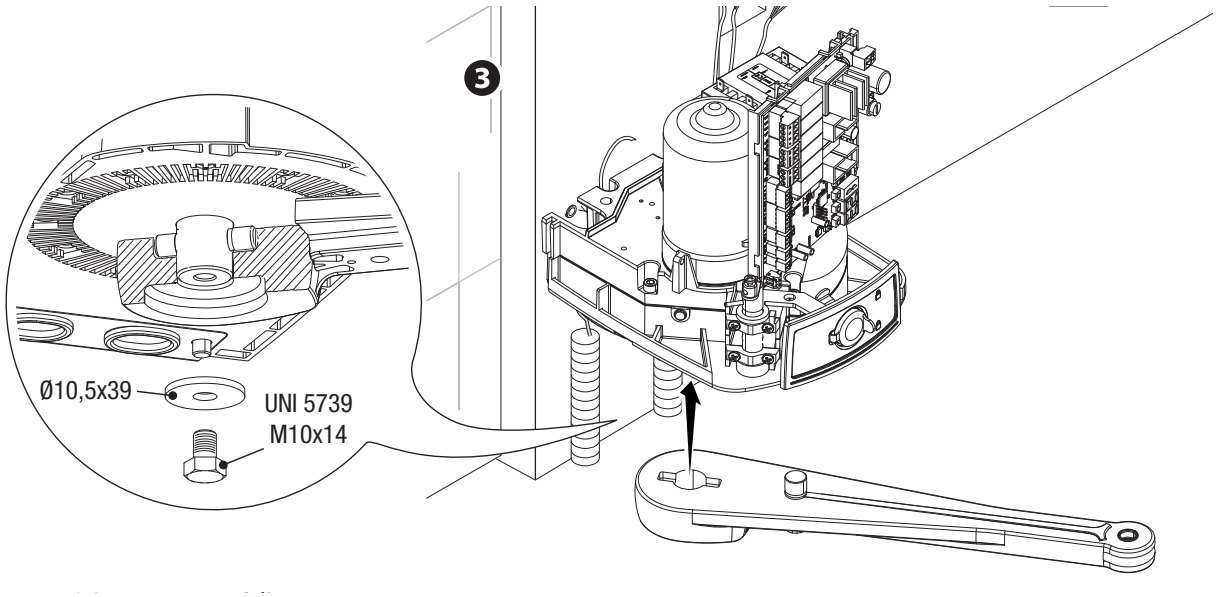
FASTENING THE OPERATOR

Fit the gearmotor into the gate-post brace and tighten the nuts and bolts. ❶

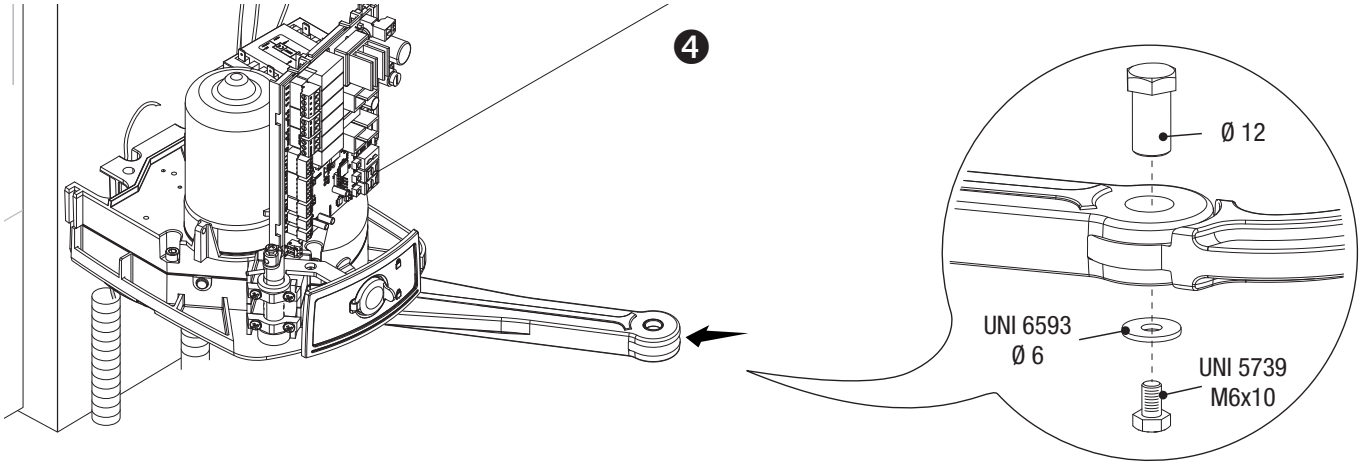
Fit the plug into the socket on the gearmotor drive-shaft. ❷



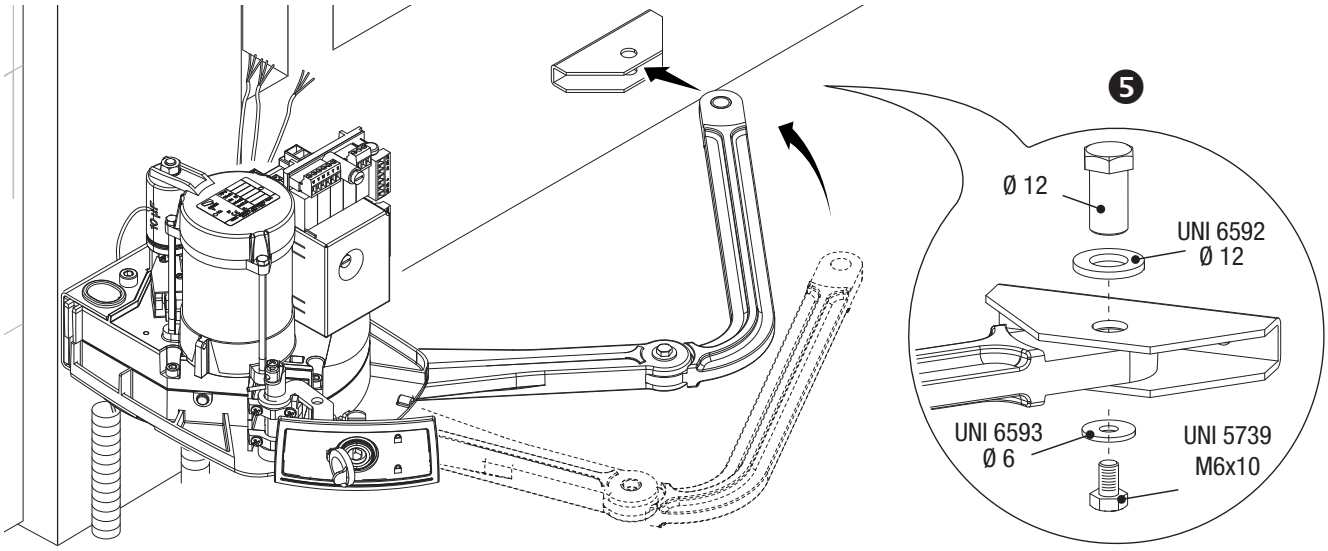
Fasten the transmission arm to the drive-shaft using the slow-shaft washer and bolt. ❸



Pin the driven arm to the transmission arm and tighten the washer and bolt. ❹

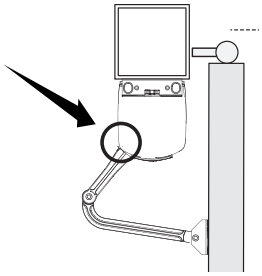


Release the gearmotor (see RELEASING THE GEARMOTOR) and fit the driven arm to the gate brace as shown in the drawing. ❺



⚠ <u>CAUTION! If no gate-leaf stops are in place, you must fit the mechanical stops.</u>

FASTENING THE MECHANICAL STOPS



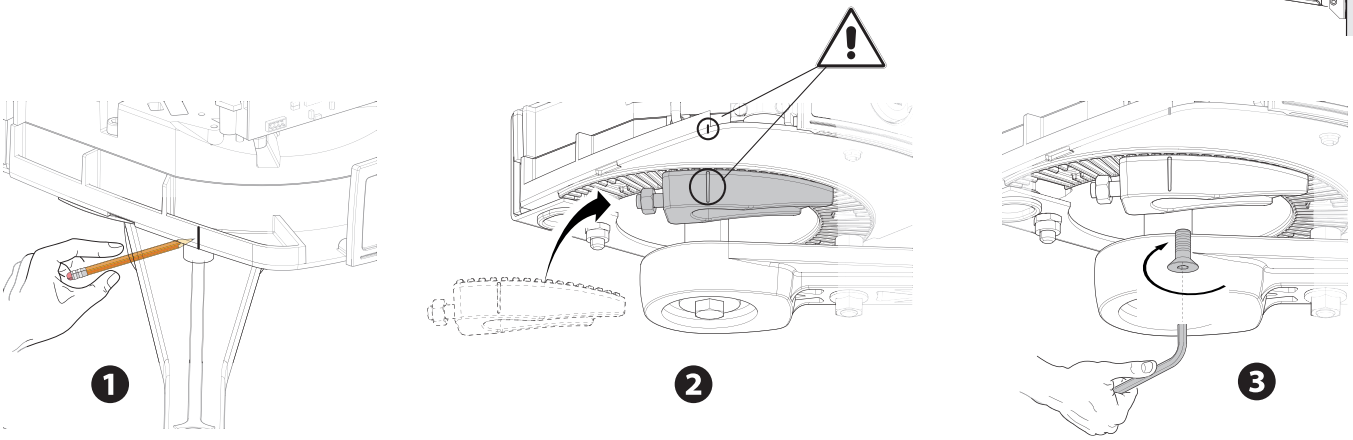
Release the gearmotor.

When opening.

Entirely open the gate leaf. Mark the casing where the center of the arm is. ❶

Manually close the gate leaf. Place the mechanical stop under the casing. The mark on the case must match the groove on the stop, as shown. ❷

Fasten the stop using the screw. ❸

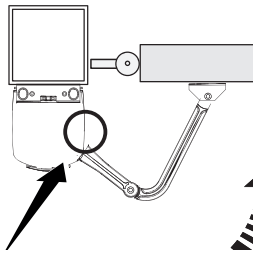


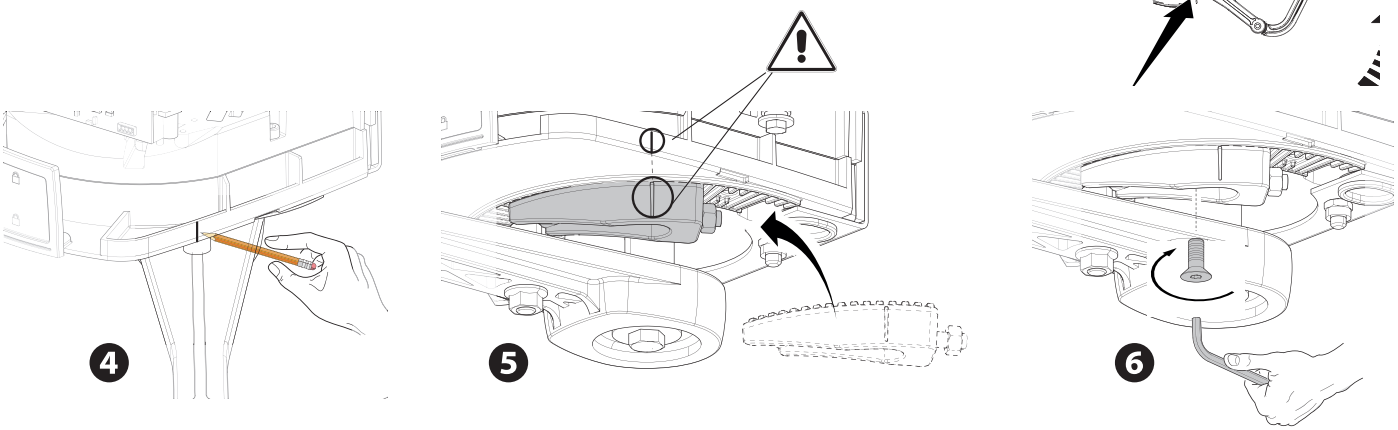
When closing.

Close the leaf. Mark the casing where the center of the arm is. ❹

Manually open the leaf. Place the second mechanical stop against the opposite side of the arm. The mark on the casing must match the groove on the stop. ❺

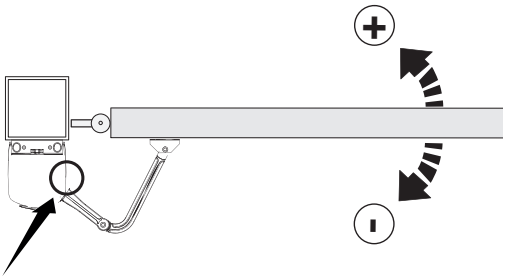
Fasten the stop using the screw. ❻

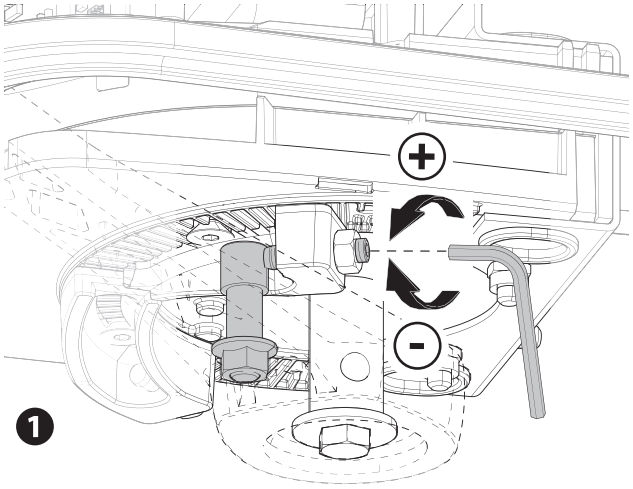


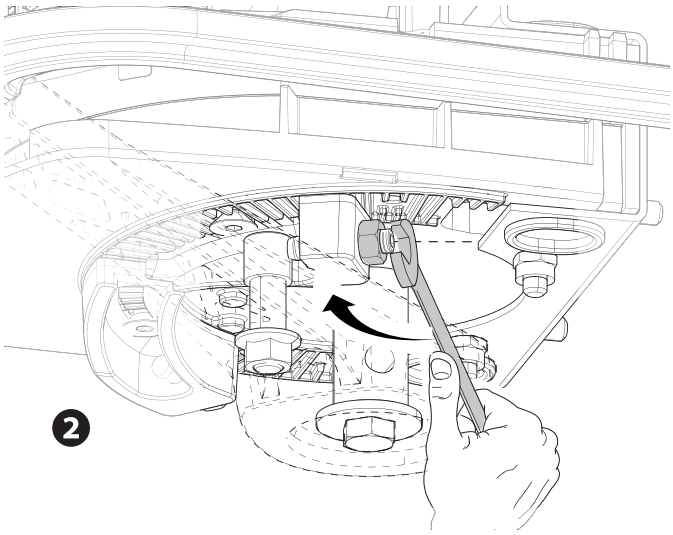


ESTABLISHING THE LIMIT-SWITCH POINTS

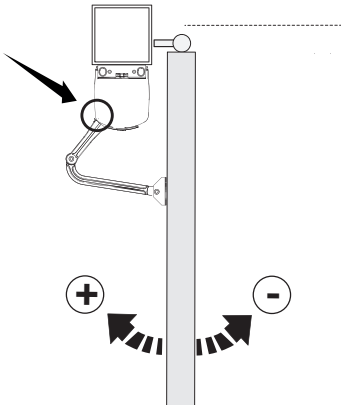
With the gearmotor released and the gate-leaf closed, adjust the closing limit-switch grub screw by turning it clockwise or counterclockwise. ❶
Tighten the nut to fasten the grub-screw. ❷

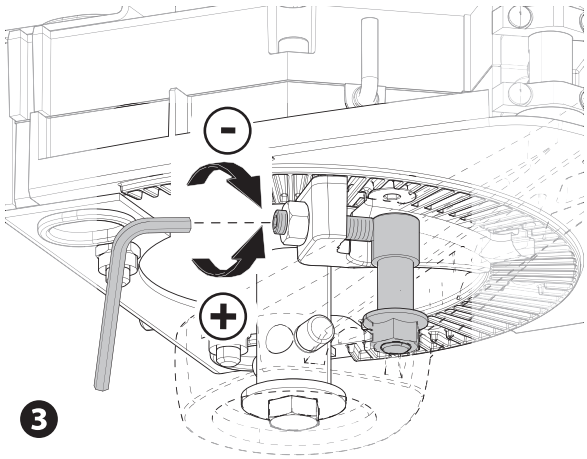


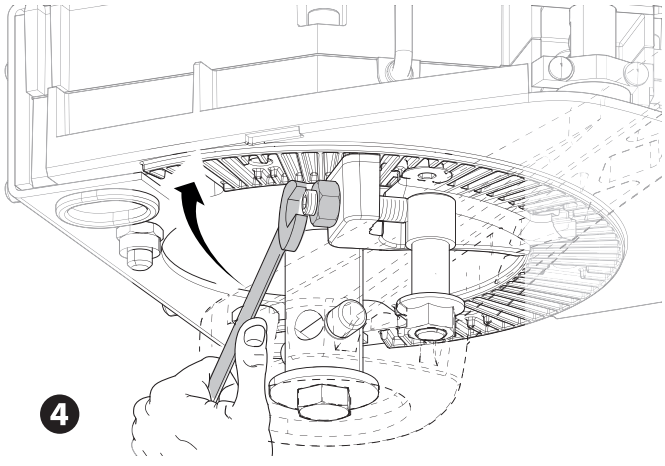




In the same way, set the opening limit-switch on the other stop's grub screw. ❸❹







ELECTRICAL CONNECTIONS AND PROGRAMMING

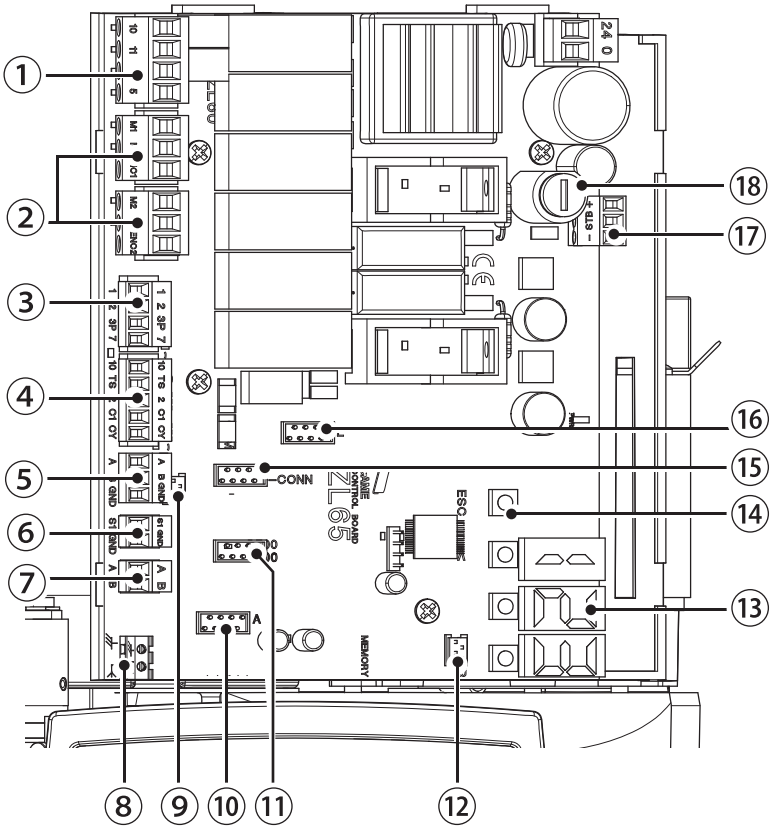
⚠ Caution! Before working on the control panel, cut off the mains power supply and remove any batteries.

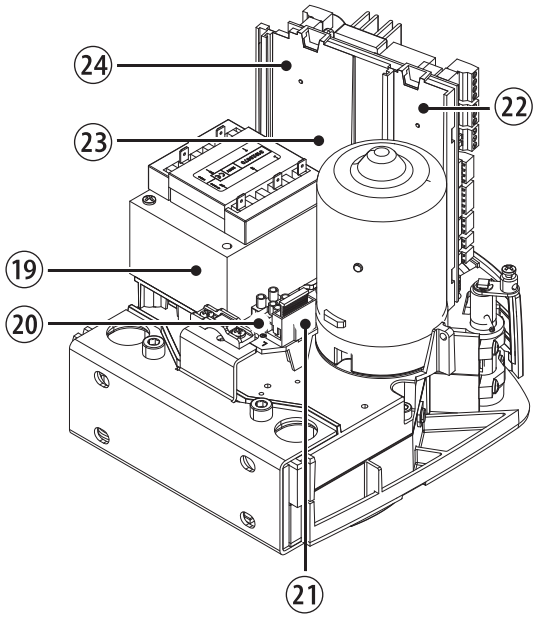
All wiring connections are quick-fuse protected.

FUSES	ZL65
LINE - Line	2 A-F = 230 V
ACCESSORIES - Accessories	2 A-F

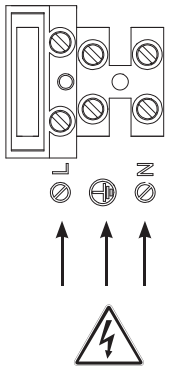
DESCRIPTION OF PARTS

1. Terminals for signaling devices
2. Gearmotors with encoder terminals
3. Control devices terminals
4. Safety devices terminals
5. CRP connection terminals
6. Keypad selector terminal
7. Terminals for transponder devices
8. Antenna terminal
9. CONNECT GW module connector
10. AF card slot
11. R700/R800 card connector
12. Memory Roll card connector
13. Display
14. Programming buttons
15. Connector for the RIO-CONN card
16. RSE card slot
17. Terminals for the RGP1 module
18. Accessories fuse
19. Transformer
20. Power supply terminal board
21. Line fuse
22. Housing for the CONNECT GW module
23. Housing for the RGP1 module
24. Housing for the RLB card

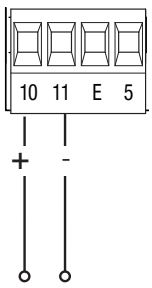




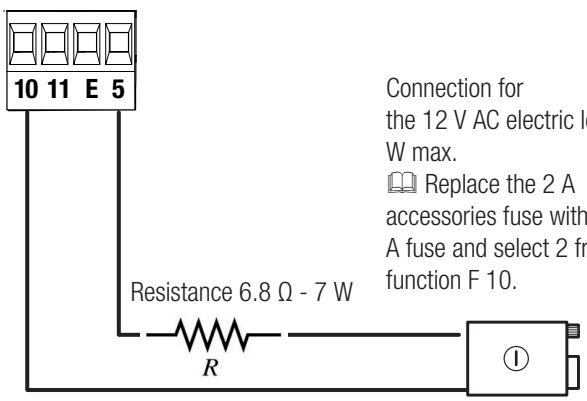
INPUT VOLTAGE



230 V AC - 50/60 Hz



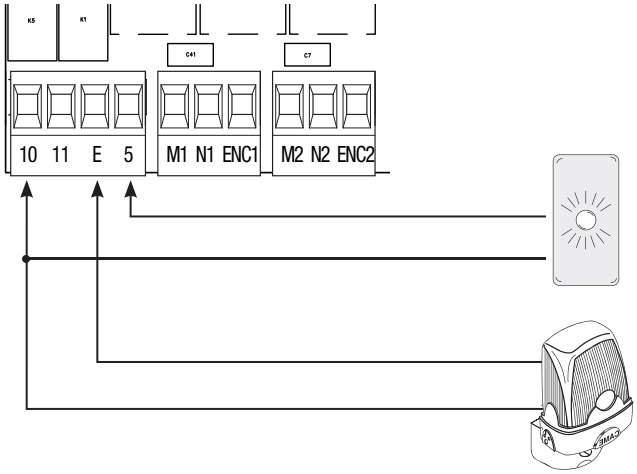
Accessories power supply output 24 V AC/DC, max 25 W



Connection for the 12 V AC electric lock - 15 W max.

📖 Replace the 2 A accessories fuse with a 3.15 A fuse and select 2 from function F 10.

SIGNALING DEVICES



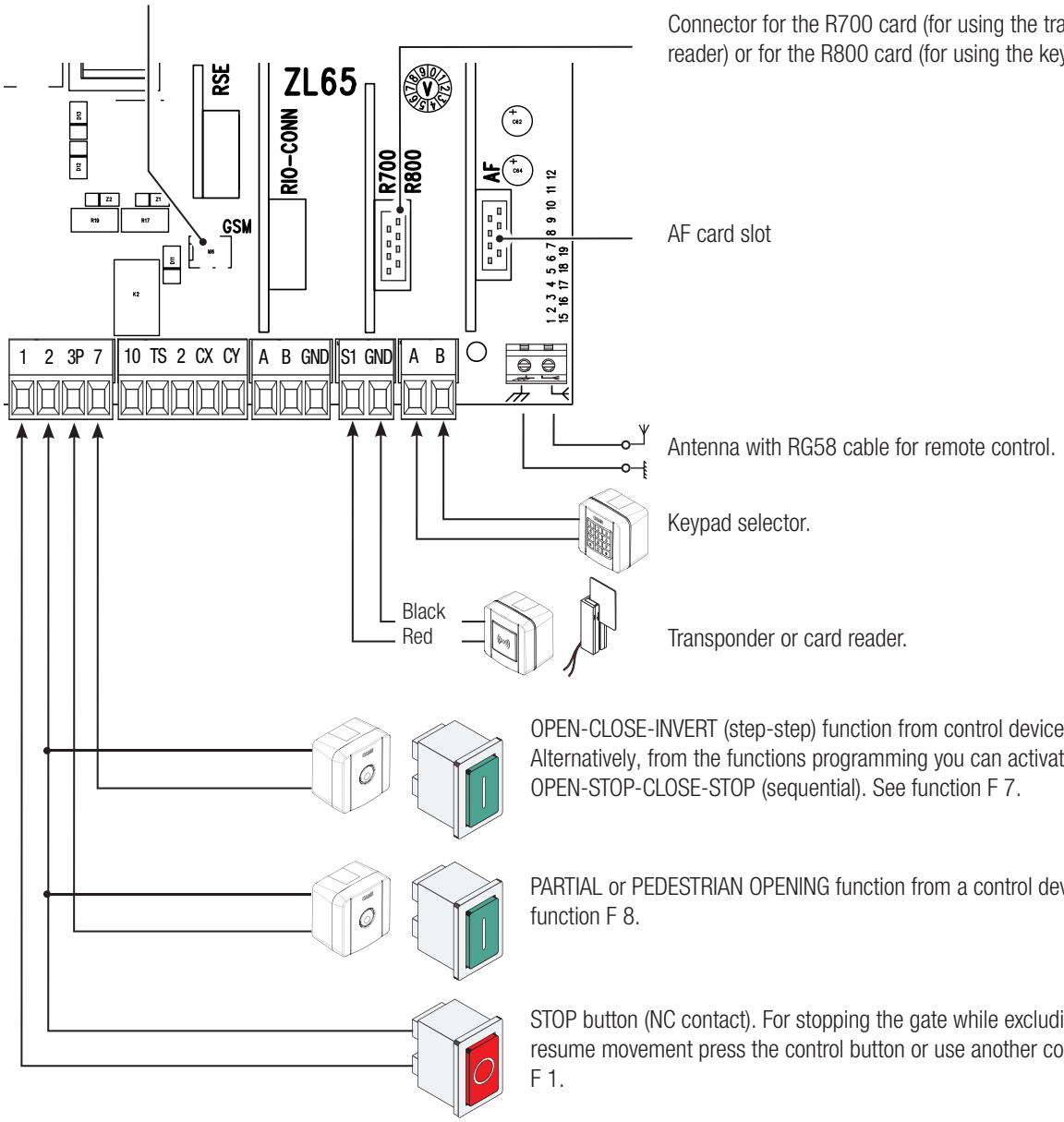
Gate-open signal output.
(Contact rated for: 24 V AC/DC - 3 W max.). See function F 10.

Output for connecting either flashing or cycle light.
(Contact rated for: 24 V AC/DC - 25 W max). See function F 18.

COMMAND AND CONTROL DEVICES

WARNING! YOU MUST CUT OFF THE MAINS POWER SUPPLY and remove the batteries - if present, before fitting any plug-in card (such as AF, R800).

Connector for the CONNECT GW module.
🕮 CONNECT GW does not work if it is connected to the RGP1 module or the RSE card.



Connector for the R700 card (for using the transponder or the card reader) or for the R800 card (for using the keypad selector).

AF card slot

Antenna with RG58 cable for remote control.

Keypad selector.

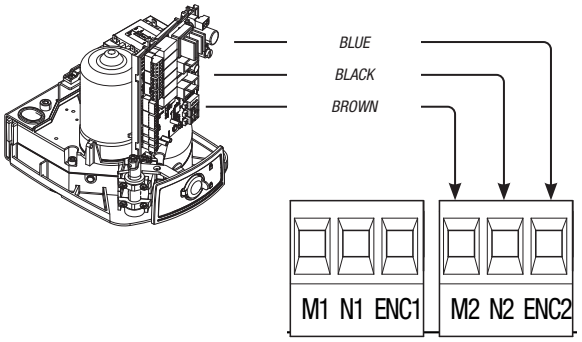
Transponder or card reader.

OPEN-CLOSE-INVERT (step-step) function from control device (NO contact). Alternatively, from the functions programming you can activate the single command OPEN-STOP-CLOSE-STOP (sequential). See function F 7.

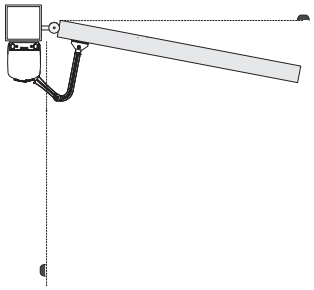
PARTIAL or PEDESTRIAN OPENING function from a control device (NO contact). See function F 8.

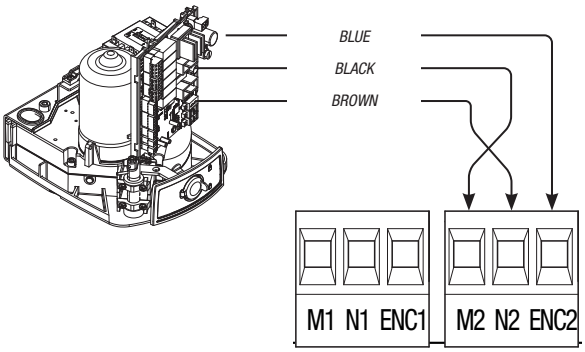
STOP button (NC contact). For stopping the gate while excluding automatic closing. To resume movement press the control button or use another control device. See function F 1.

CONNECTING THE OPERATOR

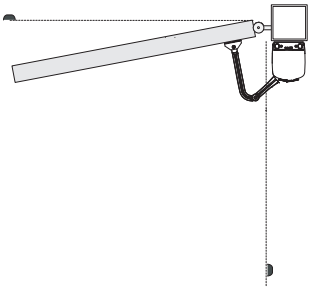


Operator installed on the left (outer view).
(Default setting)

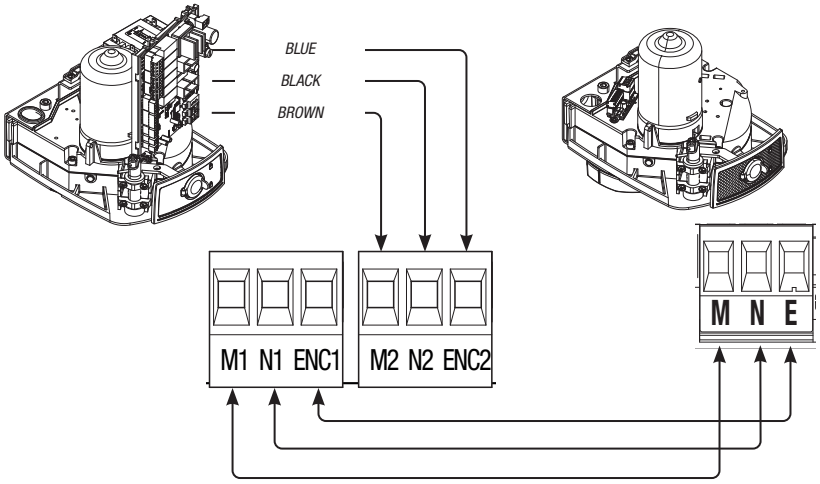




Operator installed on the right (inner view).

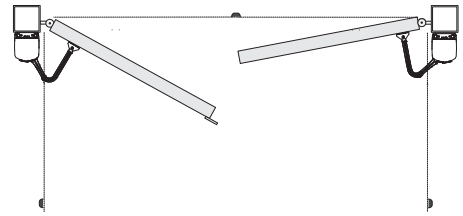


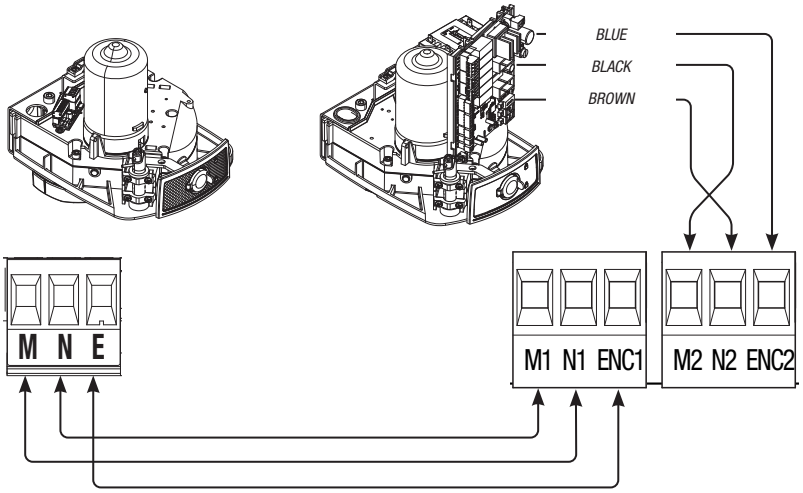
CONNECTING THE OPERATOR AND GEARMOTOR



Operator installed on the left and gearmotor installed on the right (inner view) with operator delayed when closing.
(Default setting)

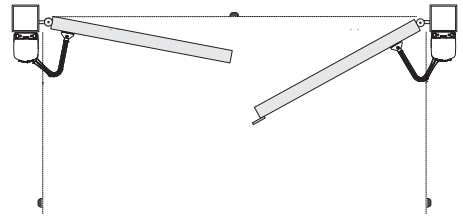
FA7024CB / FST23DLC **FA7024 / FST23DLS**





Operator fitted to the right and gearmotor to the left (inner view) with operator delayed when opening.

FA7024 / FST23DLS **FA7024CB / FST23DLC**



Photocells

Configure contact CX or CY (NC), safety input for photocells.

See CX input functions (Function F2) or CY (Function F3) in:

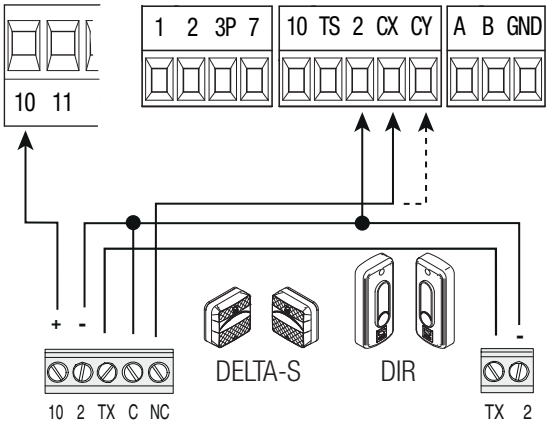
- C1 reopening during closing. When the gate is closing, opening the contact triggers the inversion of movement until the gate is fully open again;

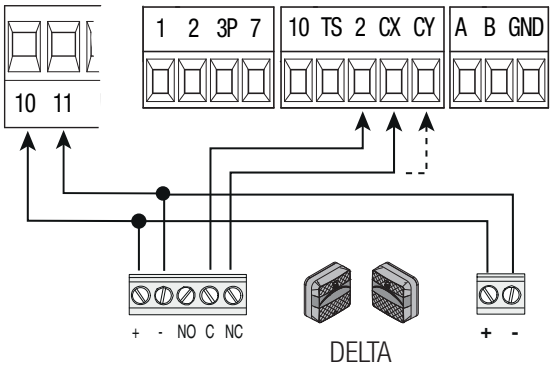
- C2 reclosing during opening. When the gate is opening, opening the contact triggers the inversion of movement until the gate is completely closed.

- C3 partial stop. Stopping of the gate, if it is moving, with consequent automatic closing (if the automatic closing function has been entered);

- C4 obstruction wait. Gate stops, if it is moving, and once the obstruction is removed, it resumes its movement.

🕮 If contacts CX and CY are not used they should be deactivated during programming.





Sensitive Safety Edges

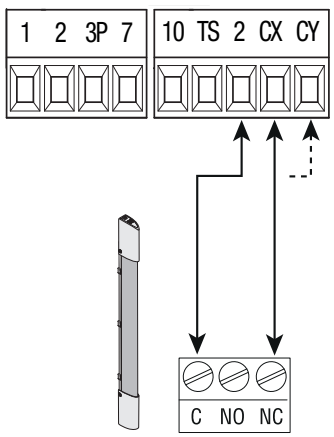
Configure contact CX or CY (NC), safety input for sensitive safety-edges.

See CX input functions (Function F2) or CY (Function F3) in:

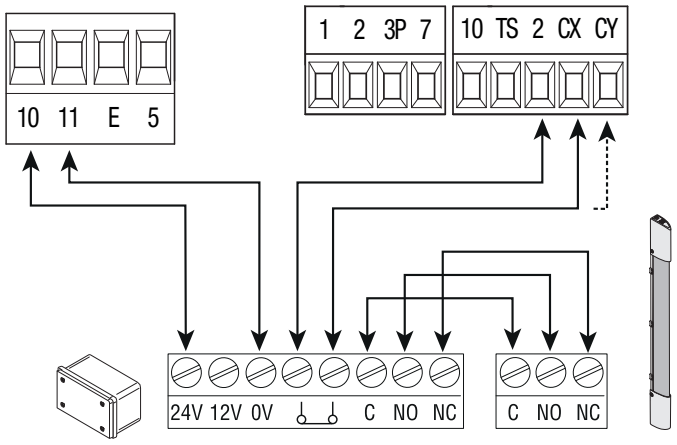
- C7 reopening during closing. When the gate is closing, opening the contact triggers the inversion of movement until the gate is fully open again;

- C8 reclosing during opening. When the gate is opening, opening the contact triggers the inversion of movement until the gate is fully closed.

🕮 If contacts CX and CY are not used they should be deactivated during programming.



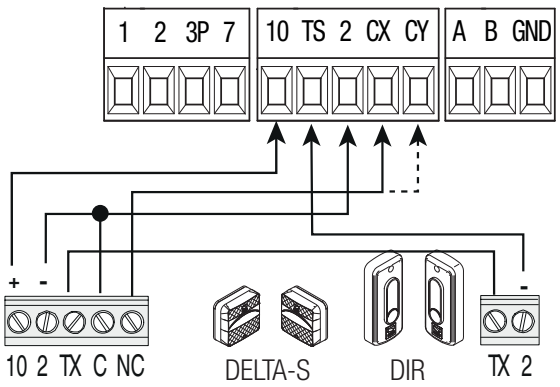
DFWN

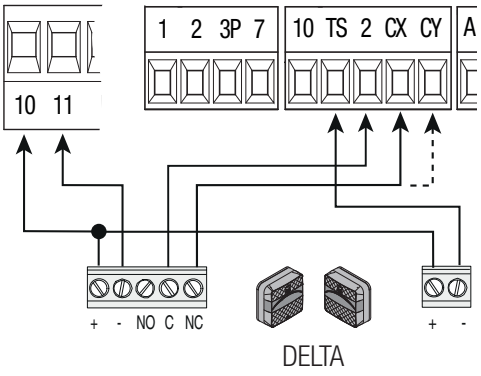


DFWN with DFI card for controlling the connections

Connecting the safety devices (i.e. the safety test)

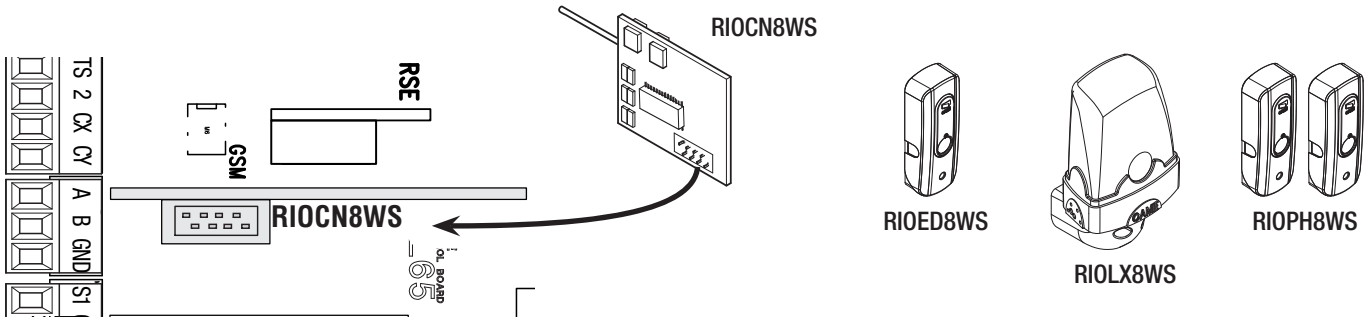
At each opening and closing command, the control board checks the efficacy of the safety devices (such as photocells).
Any malfunction will inhibit any command and E 4 will appear on the display.
For this type of connection, enable function F 5.





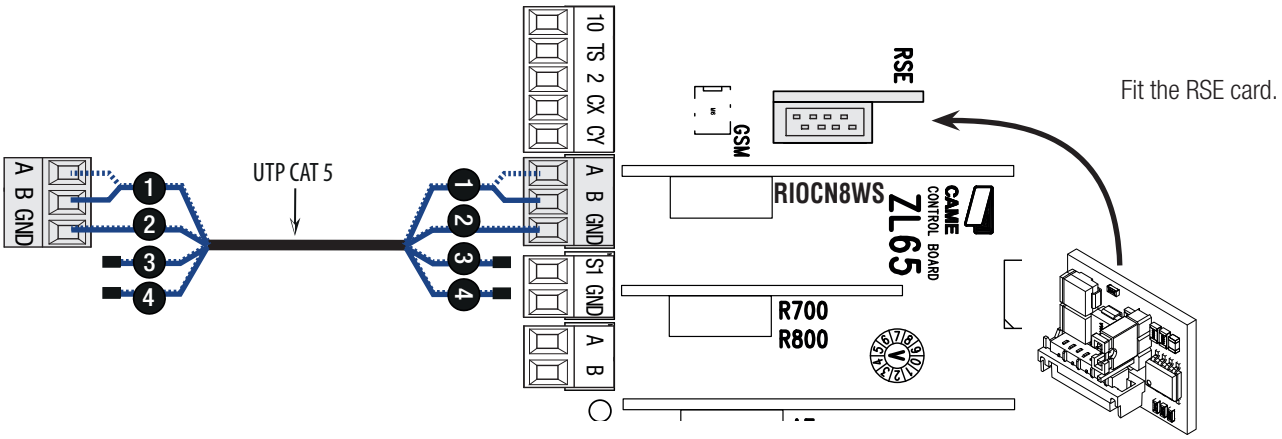
WIRELESS DEVICES

Plug the RIOCN8WS card into its corresponding connector on the control board.
Set the function which is to be associated with the wireless device (F 65, F66, F 67 and F 68).
Configure the wireless accessories (see the folder of the accessory you want to configure).
📖 If the devices are not configured with the RIOCN8WS card, the E 18 error message is displayed.
⚠ If the system has radiofrequency interferences, the wireless system will inhibit the operator's normal operating mode and the E 17 error message is displayed.

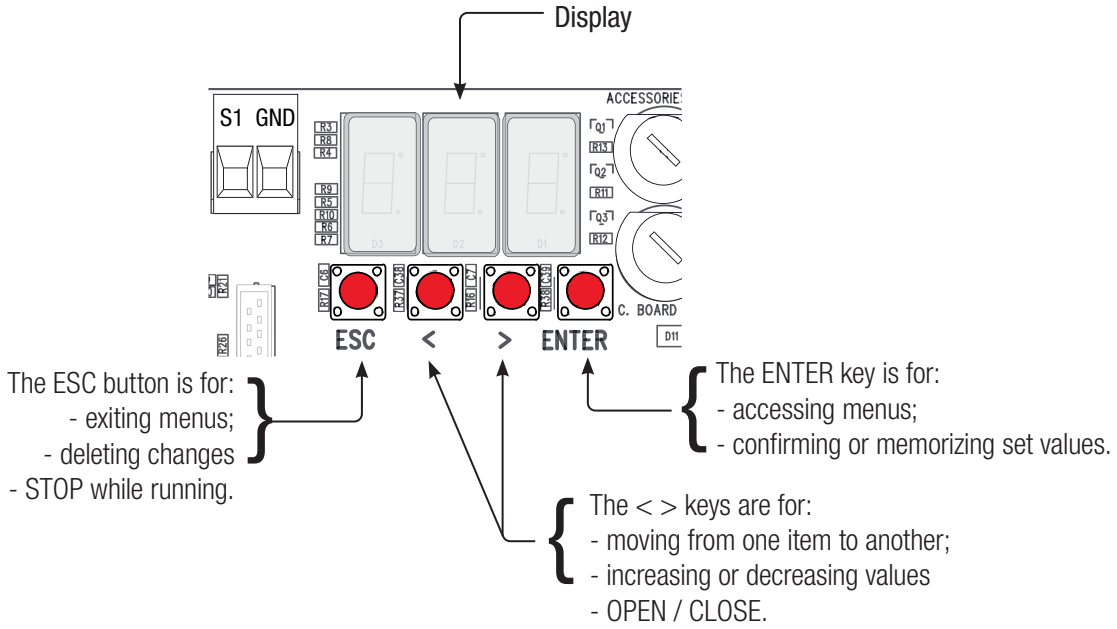


CONNECTION WITH CAME REMOTE PROTOCOL (CRP)

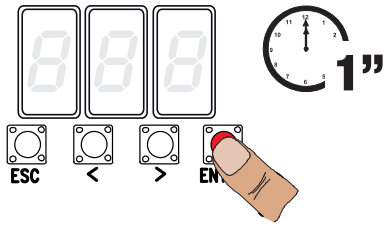
Serial connection of the RS485 with RSE card to the home & building automation system via CRP (Came Remote Protocol).



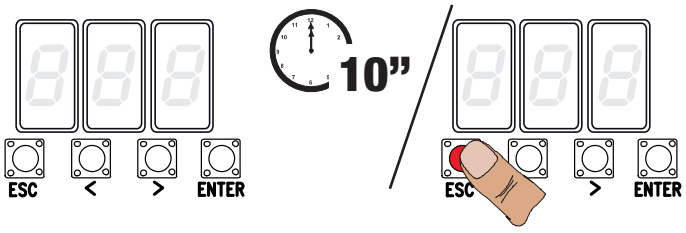
DESCRIPTION OF THE PROGRAMMING COMMANDS



📖 To enter the menu, keep the ENTER button pressed for at least one second.



📖 To exit the menu, wait 10 seconds or press ESC.



FUNCTIONS MENU

⚠ **When programming, the operator needs to be in stop mode.**

F1	**Total stop [1-2]**	NC input – Gate stop that excludes any automatic closing; to resume movement, use the control device. The safety device should be fitted into 1-2. If unused, select OFF. ***OFF (default) / ON***
F2	**Input [2-CX]**	Input NC - Can associate: C1 = reopening during closing by photocells, C2 = reclosing during opening by photocells, C3 = partial stop, C4 = obstruction wait, C7 = reopening during closing by sensitive safety-edges (with clean contact), C8 = reclosing during opening by sensitive safety-edges (with clean contact). 📖 The C3 Partial stop function only appears if the F 19 Automatic closing time function is activated. ***OFF (default) / C1 / C2 / C3 / C4 / C7 / C8***
F3	**Input [2-CY]**	Input NC - Can associate: C1 = reopening during closing by photocells, C2 = reclosing during opening by photocells, C3 = partial stop, C4 = obstruction wait, C7 = reopening during closing by sensitive safety-edges (with clean contact), C8 = reclosing during opening by sensitive safety-edges (with clean contact). 📖 The C3 Partial stop function only appears if the F 19 Automatic closing time function is activated. ***OFF (default) / C1 / C2 / C3 / C4 / C7 / C8***
F5	**Safety test**	After every opening or closing command, the board will check whether the photocells are working properly. 📖 The safety test is always active for wireless devices. ***OFF (default) / 1** = CX / **2** = CY / **4** = CX+CY*
F6	**Maintained action**	The gate opens and closes by keeping the button pressed. Opening button on contact 2-3P and closing button on contact 2-7. All other control devices, even radio-based ones, are excluded. ***OFF (default) / ON***

F7	Command [2-7]	From the control device connected to 2-7 it performs the step-step (open-close-invert) or sequential (open-stop-close-stop) command. ***0** = Step-step (**default**) / **1** = Sequential / **2** = Open / **3** = Close*
F8	Command [2-3P]	From the control device connected to 2-3P it executes the pedestrian opening (completely opens the M2 gate leaf) or partial opening (it partially opens the M2 gate leaf: the opening arc depends on the percentage of travel set up with F36). ***0** = Pedestrian opening **(default) / 1** = Partial opening / **2** = Open*
F9	Obstruction detection with motor stopped	With the gate closed, opened or totally stopped, the gearmotor stays idle if the safety devices, that is, photocells or sensitive safety-edges detect an obstruction. ***OFF (default) / ON***
F10	Output for gate open or for enabling the electric lock	It signals the gate status. The signaling device is connected to 10-5 or, alternatively, it enables the electric lock connected to the 17 V output of the transformer and to terminal 5. ***0** = on when the barrier is open and moving (**default**) / **1** = during openings it flashes intermittently each half second, and during closings it flashes intermittently each second. It stays on steadily when the barrier is open, off or when it s closed / **2** = electric lock is enabled*
F11	Encoder	Managing slow-downs, obstruction detections and sensitivity. 📖 With this function deactivated, adjust the working time of function F22, in this way, the gearmotor perform maneuvers at slower speeds. ***OFF / ON (default)***
F12	Soft start	With each opening and closing command, the gate starts moving slowly for a few seconds. ***OFF (default) / ON***
F13	Closing thrust	At the closing limit switch, the gearmotors make the leaves perform a brief closing thrust. ***OFF (default) / 1** = minimum thrust / **2** = medium thrust / **3** = maximum thrust*
F14	Sensor type	Setting the type of accessory for controlling the operator. ***0** = command with transponder sensor or magnetic card reader / **1** = command with keypad selector (**default**)*
F16	Stop Jolt	Before every opening or closing maneuver, the leaves thrust inwards to release the electric lock. The thrust time, is set with F 26. ***OFF (default) / ON***
F18	Additional light	Output for connecting the additional light onto 10-E. Flashing light: it flashes when the gate is opening and closing. Cycle light: additional external light for increasing illumination in the drive way. It stays on from the moment the leaf starts opening until it again closes completely - including the waiting time before the automatic-closing time. ***0** = Flashing light (**default**) / **1 =** Cycle*
F19	Automatic Closing Time	The automatic-closing wait starts when the opening limit switch point is reached and can be set to between 1 and 180 seconds. The automatic closing does not work if any of the safety devices trigger when an obstruction is detected, or after a total stop, or during a power outage. ***OFF (default) / 1** = 1 second /... / **180** = 180 seconds*
F20	Automatic closing time after pedestrian or partial openings	The wait before the automatic closing starts after a partial opening command for an adjustable time of between 1 s and 180 s. The automatic closing does not work if any of the safety devices trigger when an obstruction is detected, or after a total stop, or during a power outage. ***OFF (default) / 1** = 1 second /... / **180** = 180 seconds*
F21	Pre-flashing time	Adjusting the pre-flashing time for the flashing light connected to 10-E before each maneuver. The flashing time is adjustable from 1 to 10 seconds. ***OFF (default) / 1** = 1 second /... / **10** = 10 seconds*
F22	Operating time	Motors working time, when opening and closing. Adjustable between 5 and 180 seconds. ***5** = 5 seconds /.../ **120** = 120 seconds (**default**) /.../ **180** = 180 seconds*
F23	Delay in opening time	After an opening command, the M1 gearmotor starts delayed. The delay time is settable between one and ten seconds. ***0** = Deactivated /.../ **2** = 2 seconds (**default**) /.../ **10** = 10 seconds*
F24	Closing delay time	After either a closing command or an automatic closing, the M2 gearmotor starts delayed. The delay time is adjustable between one and five seconds. ***0** = Deactivated /.../ **5** = 5 seconds (**default**) /.../ **25** = 25 seconds*
F26	Closing thrust time	After an opening or closing command, the gearmotor thrusts inward for an adjustable time between one and two seconds. ***1** = 1 second (**default**) / **2** = 2 seconds*

F27	**Lock time**	After an opening or closing command, the electric lock releases for an adjustable time between one and four seconds. ***1** = 1 second (**default**) /.../ **4** = 4 seconds*
F28	**Gate travel speed**	Setting the gate's opening and closing speeds, calculated as a percentage. ***60** = 60% of the maximum speed /…/ **100** = 100% of the maximum speed (**default**)* 📖 For FA7024CB gearmotors, the minimum speed is 50.
F30	**Slow-down speed**	Setting the gate's opening and closing slow-down speed, calculated as a percentage. ***10** = 10% of the maximum speed /…/ **50** = 50% of the maximum speed (**default**) /.../ **60** = 60% of the maximum speed* 📖 For FA7024CB gearmotors, the minimum speed is 30.
F33	**Calibration speed**	Setting the gearmotors' speeds during calibration, calculated as a percentage. ***20** = 20% of the maximum speed /… / **50** = 50% of the maximum speed (**default**) /.../ **60** = 60% of the maximum speed*
F34	**Travel sensitivity**	Adjusting obstruction detection sensitivity during gate travel. ***10** = Maximum sensitivity /…/ **100** = Minimum sensitivity (**default**)*
F35	**Slow-down sensitivity**	Adjusting obstruction detection sensitivity during slow-down. ***10** = Maximum sensitivity /…/ **100** = Minimum sensitivity (**default**)*
F36	**Adjusting the partial opening**	Adjustment as a percentage of total travel, during gate opening. ***10** = 10% of the travel /…/ **40** = 40% of the travel (**default**) /... / **80** = 80% of the travel*
F37	**Opening slow-down point for the M1 motor**	Adjustment as a percentage of total travel, of the beginning slow-down point of gearmotor M1 during opening. 📖 This function only appears if the Encoder function is activated. ***1** = 1% of the travel /…/ **25** = 25% of the travel (**default**) /…/ **60** = 60% of the travel*
F38	**Closing slow-down point of the M1 motor**	Adjustment as a percentage of total travel, of the beginning slow-down point of gearmotor M1 during closing. 📖 This function only appears if the Encoder function is activated. ***1** = 1% of the travel /…/ **25** = 25% of the travel (**default**) /…/ **60** = 60% of the travel*
F39	**Opening approach point of the M1 motor**	Adjusting as a percentage of the total travel, the gearmotor M1 opening approach starting point. 📖 This function only appears if the Encoder function is activated. ***1** = 1% of the travel /…/ **10** = 10% of the travel (**default**)*
F40	**Closing approach point for motor M1**	Adjusting as a percentage of the total travel, the gearmotor M1 closing approach starting point. 📖 This function only appears if the Encoder function is activated. ***1** = 1% of the travel /…/ **10** = 10% of the travel (**default**)*
F41	**Opening slow-down point for the M2 motor**	Adjustment as a percentage of total travel, of the beginning slow-down point of gearmotor M2 during opening. 📖 This function only appears if the Encoder function is activated. ***1** = 1% of the travel /…/ **25** = 25% of the travel (**default**) /…/ **60** = 60% of the travel*
F42	**Closing slow-down point of the M2 motor**	Adjustment as a percentage of total travel, of the beginning slow-down point of gearmotor M2 during closing. 📖 This function only appears if the Encoder function is activated. ***1** = 1% of the travel /…/ **25** = 25% of the travel (**default**) /…/ **60** = 60% of the travel*
F43	**Opening approach point of the M2 motor**	Adjusting as a percentage of the total travel, the gearmotor M2 opening approach starting point. 📖 This function only appears if the Encoder function is activated. ***1** = 1% of the travel /…/ **10** = 10% of the travel (**default**)*
F44	**Closing approach point for motor M2**	Adjusting as a percentage of the total travel, the gearmotor M2 closing approach starting point. 📖 This function only appears if the Encoder function is activated. ***1** = 1% of the travel /…/ **10** = 10% of the travel (**default**)*
F46	**Number of motors**	Set the number of motors that control the gate. 📖 Value 1 indicates that the M2 motor is being used. 2 (Default) / 1
F49	**Managing the serial connection**	For enabling the CRP (Came Remote Protocol). ***OFF** / **3** = CRP (**default**)*
F50	**Saving data**	Saving users and saved settings in memory roll. 📖 This function only appears if a memory roll has been fitted into the control board. ***OFF** (**default**) / **ON***
F51	**Reading data**	Uploading data saved in memory roll. 📖 This function only appears if a memory roll has been fitted into the control board. ***OFF** (**default**) / **ON***

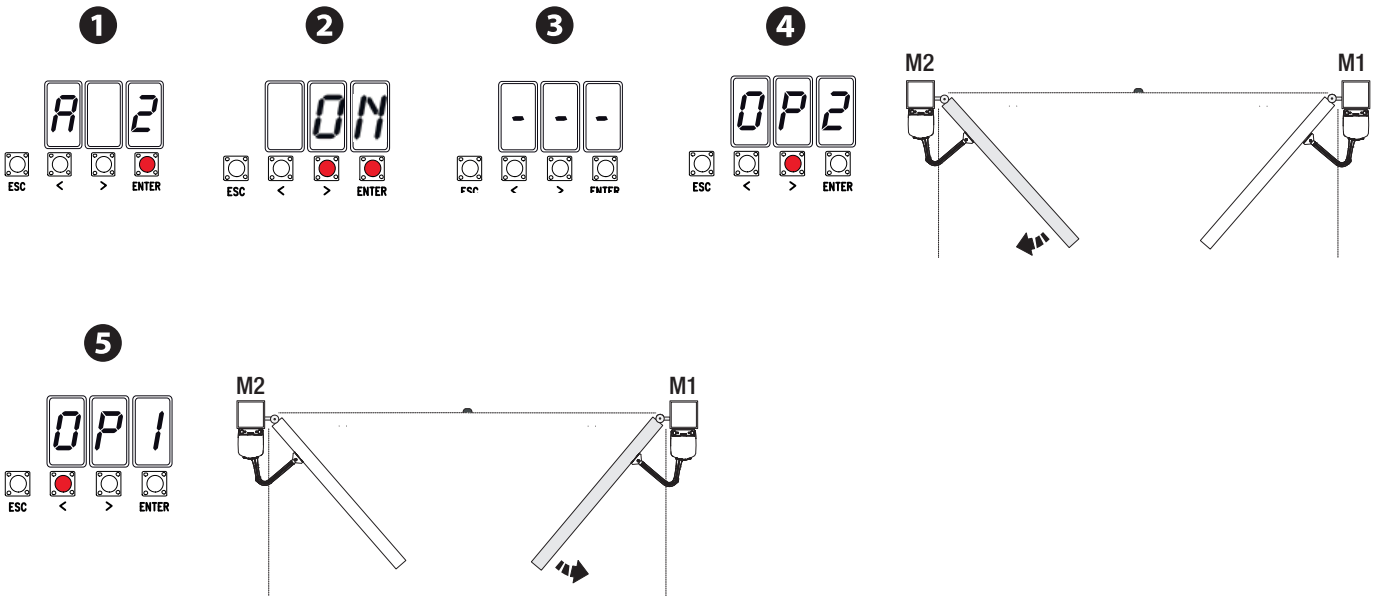
F56	**Peripheral number**	To set the peripheral's number from 1 to 255 for each control board when you have a system with several operators. ***1 ----> 255***
F63	**COM speed**	For setting the communication speed used in the CRP (Came Remote Protocol) connection system. ***0** = 1200 Baud / **1** = 2400 Baud / **2** = 4800 Baud / **3** = 9600 Baud / **4** = 14400 Baud / **5** = 19200 Baud / **6** = 38400 Baud (**default**) / **7** = 57600 Baud / **8** = 115200 Baud*
F65	**RIO-EDGE wireless input [T1]**	RIO-EDGE wireless safety-device to associate to one of the available functions: P0 = TOTAL STOP, P7 = reopening during closing, P8 = reclosing during opening. To program, see the instructions enclosed with the accessory. 📖 This function only appears is the control board has been fitted with a RIO-CONN card. ***OFF (default) / P0 / P7 / P8***
F66	**RIO-EDGE wireless input [T2]**	RIO-EDGE wireless safety-device to associate to one of the available functions: P0 = TOTAL STOP, P7 = reopening during closing, P8 = reclosing during opening. To program, see the instructions enclosed with the accessory. 📖 This function only appears is the control board has been fitted with a RIO-CONN card. ***OFF (default) / P0 / P7 / P8***
F67	**RIO-CELL wireless input [T1]**	RIO-CELL is associated to one of the available functions: P1 = reopening during closing; P2 = reclosing during opening; P3 = partial stop; P4 = obstruction wait. To program, see the instructions enclosed with the accessory. 📖 This function only appears is the control board has been fitted with a RIO-CONN card. ***OFF (default) / P1 / P2 / P3 / P4***
F68	**RIO-CELL wireless input [T2]**	RIO-CELL is associated to one of the available functions: P1 = reopening during closing; P2 = reclosing during opening; P3 = partial stop; P4 = obstruction wait. To program, see the instructions enclosed with the accessory. 📖 This function only appears is the control board has been fitted with a RIO-CONN card. ***OFF (default) / P1 / P2 / P3 / P4***
U1	**Entering users**	Up to a maximum of 250 users can be entered and each can be associated to a function of choice among those available. Add users via a transmitter or other control device (see the paragraph called ADDING USERS WITH AN ASSOCIATED COMMAND). ***1** = Step-step command (open-close) **/ 2** = Sequential command (open-stop-close-stop) **/ 3** = Only open command **/ 4** = Partial command*
U2	**Deleting users**	Deleting single users (see paragraph called DELETING SINGLE USERS). ***OFF / ON** = Enabling the deletion of single users.*
U3	**Deleting users**	Deleting all users. ***OFF / ON** = Delete all users*
U4	**Decoding the code**	Select the type of transmitter radio coding that you wish to save on the control board. ⚠ When you select a radio coding, all saved transmitters will automatically be deleted. 📖 The TWIN coding lets you save multiple users with the same key (Key block). ***1** = all (**default**) / **2** = Rolling Code / **3** = TWIN*
A1	**Motor type**	*Set the type of gearmotor installed on M1 and M2.* *1 = SVN20-25 / 2 = FA7024CB / 3 = FTX20DGC / 4 = ATS-AXO / 5 = ATI-F7024N*
A2	**Motors test**	Test for checking the gearmotors' proper rotating directions (see the MOTORS TEST paragraph). ***OFF / ON***
A3	**Gate-travel calibration**	Calibrating the gate travel (see the paragraph called CALIBRATING THE GATE TRAVEL). 📖 This function appears only is the Encoder function is activated. ***OFF / ON***
A4	**Resetting parameters**	Caution! The default settings are restored. ***OFF / ON***
A5	**Maneuver count**	For either viewing the number of maneuvers made or deleting them (001 = 100 maneuvers; 010 = 1000 maneuvers; 100 = 10000 maneuvers; 999 = 99900 maneuvers; CSI = maintenance job)
H1	**Version**	View the firmware version.

SETTING UP

Once the connections are all set, have skilled, qualified staff commission the barrier into service.
Before continuing, make sure that the way is clear from any obstruction.
Power up and begin configuring the system. **Important!** Start programming by first doing the following functions:
- MOTOR TYPE (A 1);
- NUMBER OF MOTORS (F 46);
- TRAVEL CALIBRATION (A 3).

MOTORS TEST

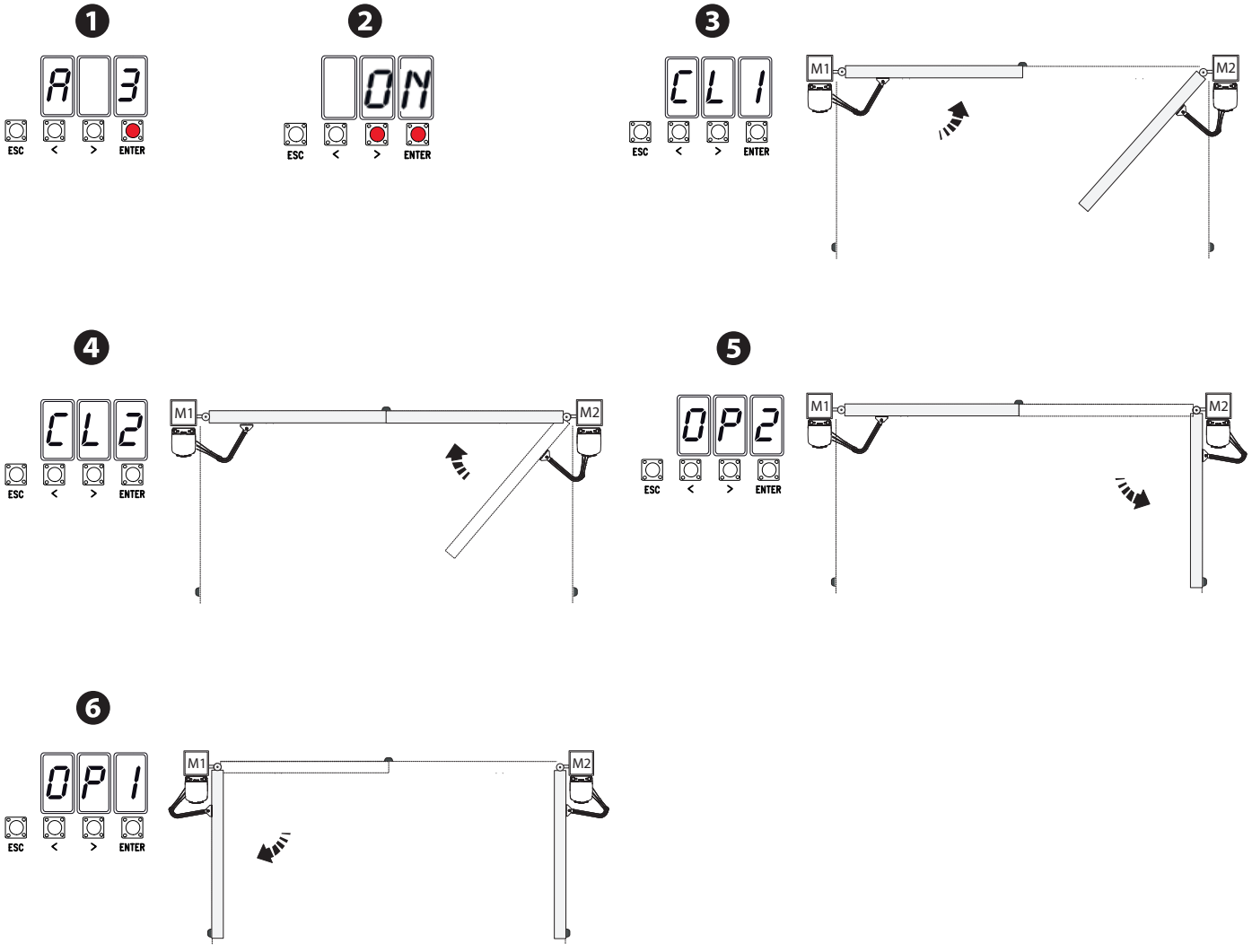
❶ Select A 2. Press ENTER to confirm.
❷ Select ON and press ENTER to confirm the motors test procedure.
❸ The following [---] characters will be displayed while waiting for a command.
❹ Keep pressed the > key and check whether the second gearmotor's leaf (M2) will perform an opening maneuver.
❺ Perform the same procedure with the < key to check the first gearmotor leaf (M1).
🕮 If the leaf performs an opening maneuver, invert the motor's phases.



GATE-TRAVEL CALIBRATION

📖 Before calibrating the gate travel, position the gate half-way, check that the maneuvering area is clear of any obstruction and check that there are mechanical opening and closing stops.
⚠ The mechanical gate-stops are obligatory.
Important! During calibration, all safety devices will be disabled.

❶ Select A 3 and press ENTER to confirm.
❷ Select ON and press ENTER to confirm the automatic travel calibration operation.
❸ The first gearmotor leaf will perform a closing maneuver until the closing strike...
❹ ... then, the second gearmotor leaf will perform the same maneuver...
❺ ...the second gearmotor's leaf will perform an opening maneuver until the closing strike...
❻ ... the first gearmotor's leaf will perform the same maneuver.



MANAGING USERS

📖 When adding and deleting users, the flashing numbers appearing are those numbers that are available and usable to assign to a new user (max. 250 users).
📖 Before registering the users, make sure the AF radio-frequency card is fitted into the connector (see paragraph called CONTROL DEVICES).

ENTERING A USER WITH AN ASSOCIATED COMMAND

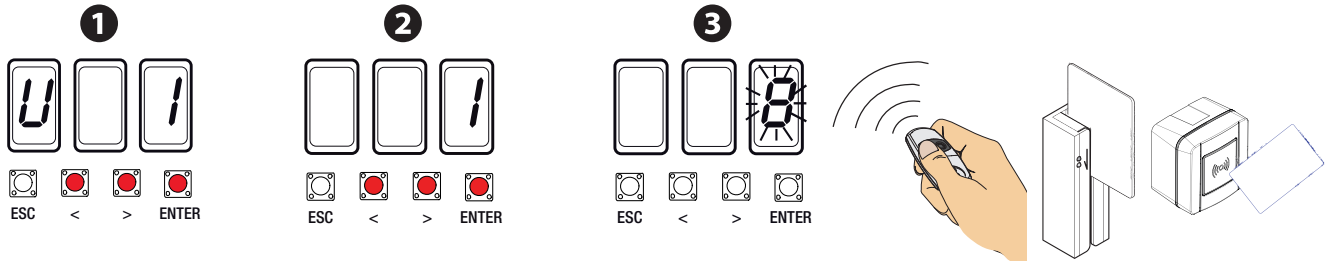
❶ Select **U1.** Press ENTER to confirm.

❷ Select a command to associate to the user. The commands are:
- step-step (open-close) = 1;
- sequential (open-stop-close-stop) = 2;
- open = 3;
- partial opening/pedestrian = 4.

Press ENTER to confirm...

❸ ... a number between 1 and 250 will start flashing for a few seconds. Send the code from the transmitter or other control device such as a sensor, card reader or keypad selector.

🕮 If you want to add another command on the same transmitter, repeat the procedure and associated it on another button.



🕮 Register the users in the REGISTERED USERS list.

LIST OF REGISTERED USERS.

🕮 Download the LIST OF REGISTERED USERS form from the portal docs.came.com Enter **L20180423.**

DELETING SINGLE USERS

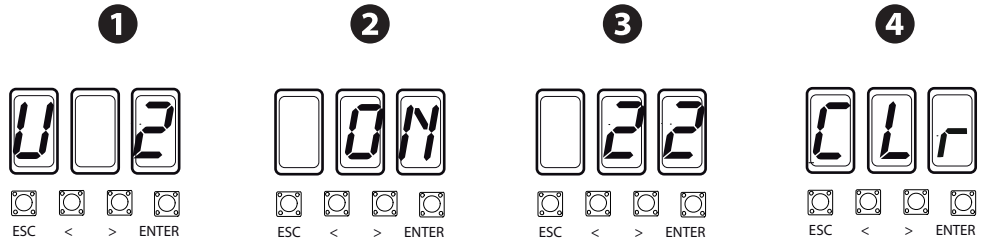
❶ Select**U2**. Press ENTER to confirm.

❷ Select **ON**. Press ENTER to confirm the deletion procedure.

Use the arrow keys select the number of the user you wish to delete.

❸ Press ENTER to confirm.

❹ ... **CLr** will appear on the screen to confirm deletion.



SAVING AND UPLOADING DATA USING THE MEMORY ROLL

For saving user and system configuration data with the Memory Roll, and for then reusing them on another control board, even on fitted into another system.

Caution! Fitting and extracting the Memory Roll must be done with the mains power disconnected.

❶ Fit the Memory Roll into the its corresponding connector on the control board.

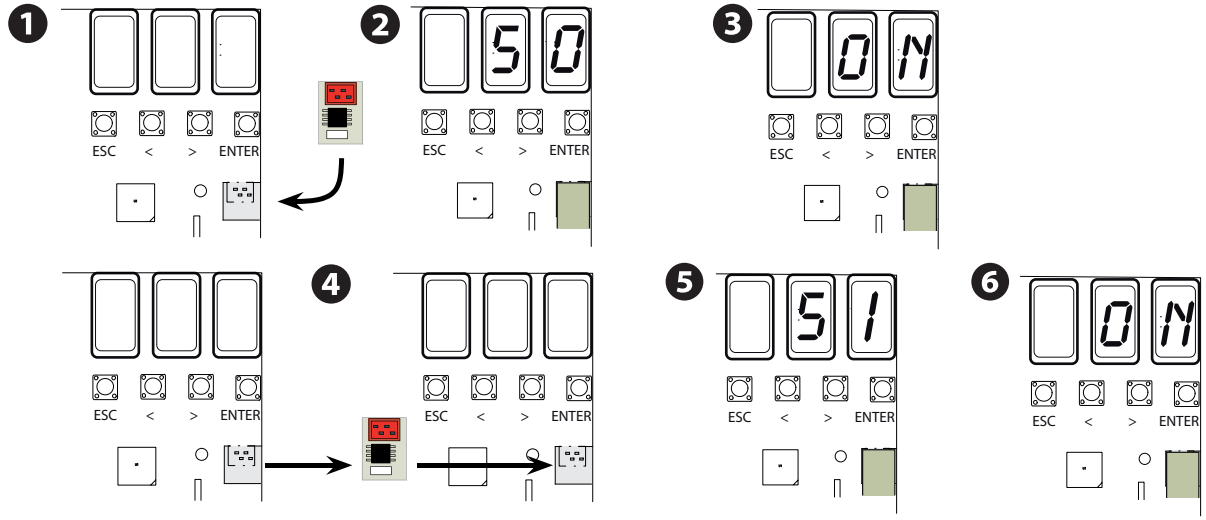
❷ Select **F50**. Press ENTER to confirm.

❸ Select **ON**. Press ENTER to confirm the data saving procedure.

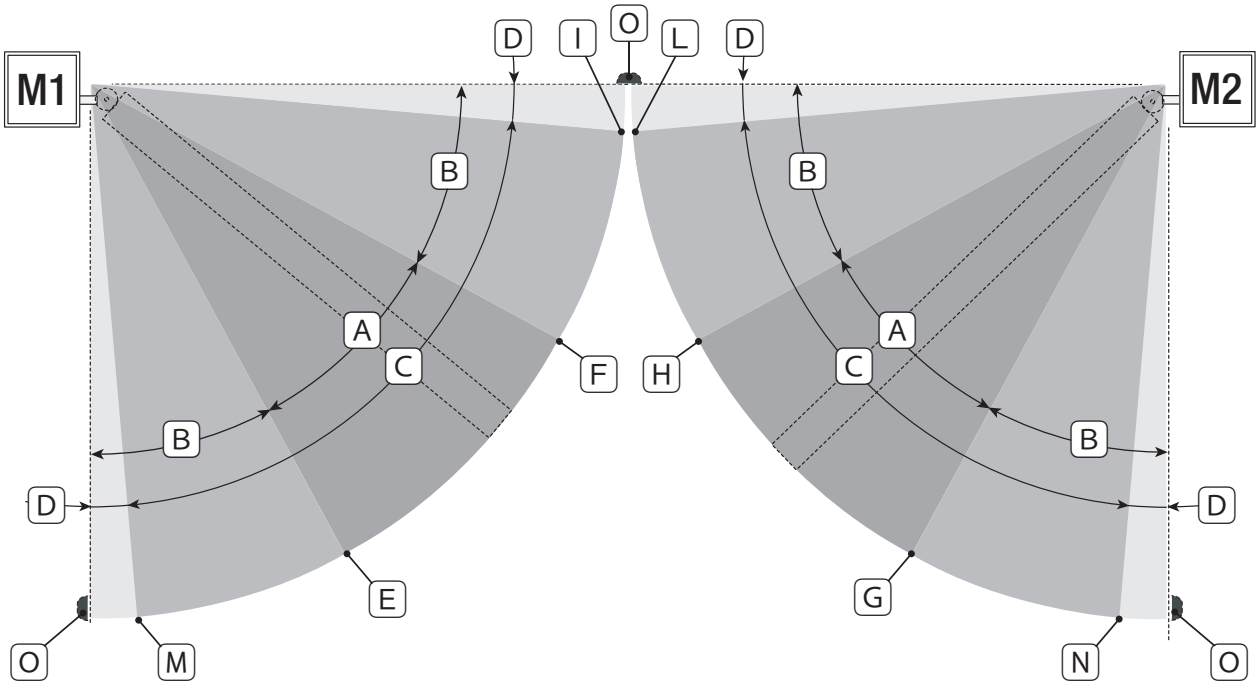
❹ Extract the Memory roll and fit it into the connector of another control board.

❺ Select F51. Press ENTER to confirm.

❻ Select **ON**. Press ENTER to confirm the data uploading procedure.



SLOW-DOWN POINTS AND END-STROKE AREAS



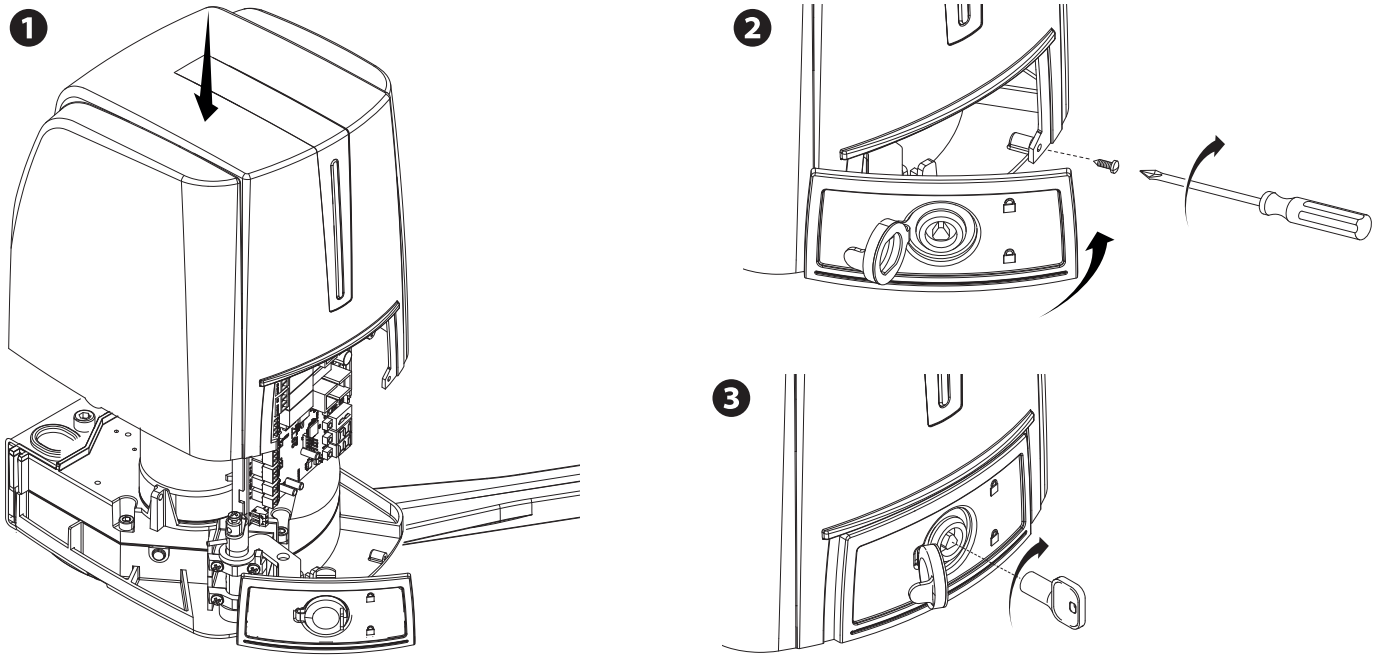
A = Movement area at normal speed.
B* = Movement area at slowed-down speed.
C = Encoder intervention zone with movement inversion.
D = Encoder intervention zone with movement stopped.
E = Opening slow-down starting point for M1.
F = Closing slow-down starting point for M1.
G = Opening slow-down starting point for M2.
H = Closing slow-down starting point for M2.
I** = Closing approach starting point for M1.
L** = Closing approach starting point for M2.
M** = Opening slow-down starting point for M1.
N** = Opening approach starting point for M2.
O = Strike plates..

* Minimum 600 mm from the strike plate.

** Set the closing-rest percentage for function F 39 - F 40 for the first motor (M1) and F43 - F44 for the second motor (M2) so as to achieve a distance of less than 50 mm from the strike plate.

FINAL OPERATIONS

Once you have finished with the connections and started up the operator, fit the casing over the gearmotor ❶.
Fit the casing over the gearmotor and close the hatch ❷.
Lock the gearmotor using the key and fit the protection cap ❸.



ERROR MESSAGE

📖 The error messages appear on the display.

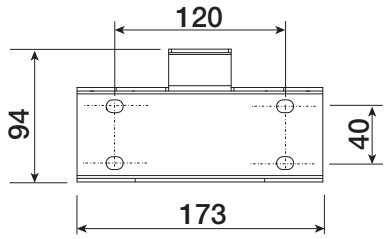
E 1	The travel calibration was interrupted when the STOP button was activated
E 2	Calibrating the incomplete travel
E 3	Encoder broken
E 4	Services test error
E 7	Insufficient operating time
E 9	Closing obstruction
E 10	Opening obstruction
E 11	Maximum number of detected obstructions
E 14	Serial communication error
E 15	Non compatible transmitters.
E 17	Wireless system error
E 18	The wireless system hasn't been configured.

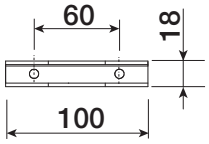
INSTALLING AND CONNECTIONS FOR OUTER OPENING

Below you can find the only procedures that vary from the standard installation.

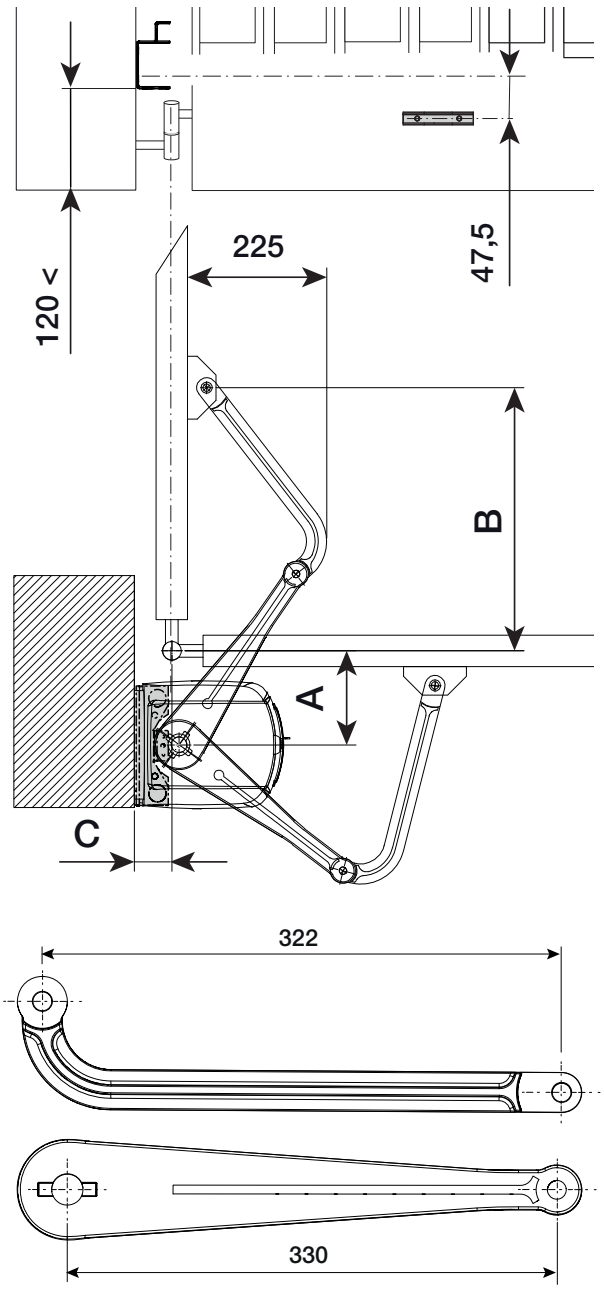
Fastening the braces

Establish where you will fit the gate brace and measure where the gate-post brace will fit. Make sure to respect the quotas shown in the drawing and table.





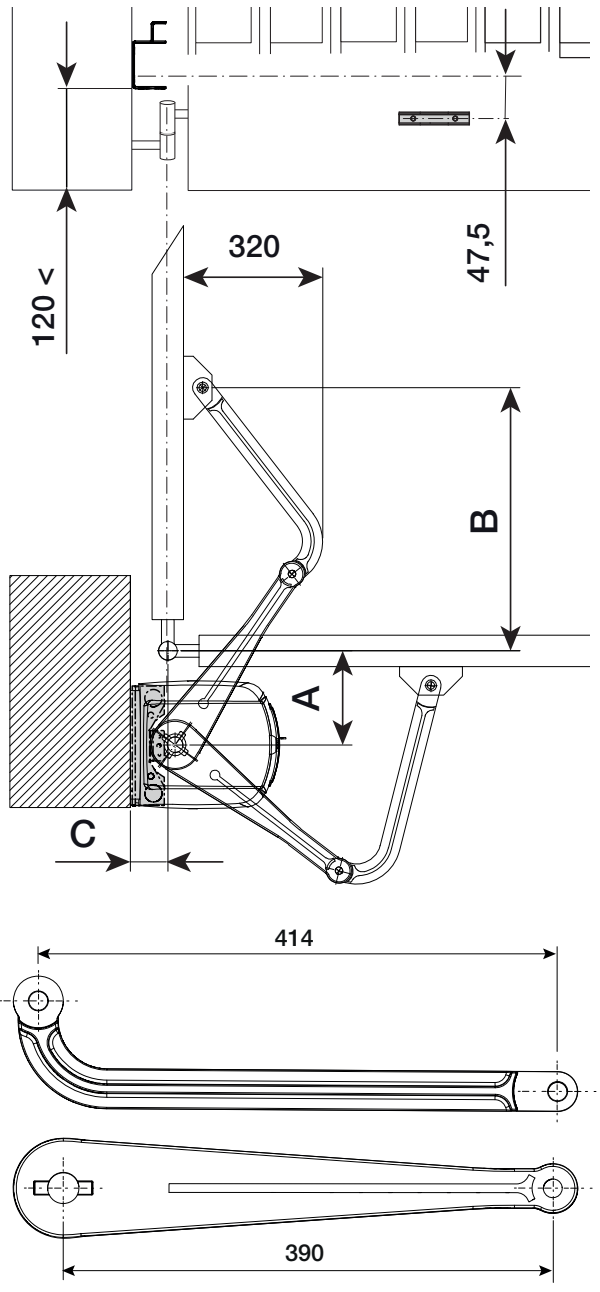
FA7024CB



Application dimension (mm)

Leaf opening arc (°)	A	B	C MAX
90°	150 series	420 series	60 series
110°	150 series	380 series	60 series

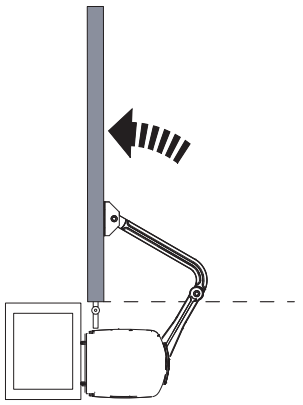
FST23DLC



Application dimension (mm)

Leaf opening arc (°)	A	B	C MAX
90° - 110°	150 series	490 series	0 - 60

Fastening the mechanical stops



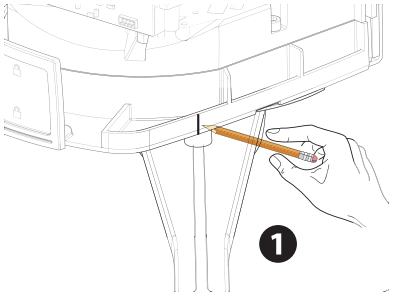
Release the gearmotor.

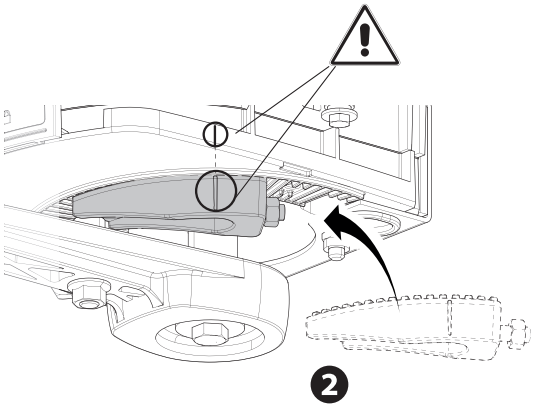
When opening.

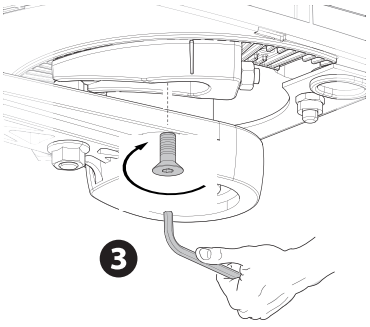
Entirely open the gate leaf. Mark the casing where the center of the arm is. ❶

Manually close the gate leaf. Place the mechanical stop under the casing. The mark on the case must match the groove on the stop, as shown. ❷

Fasten the stop using the screw. ❸







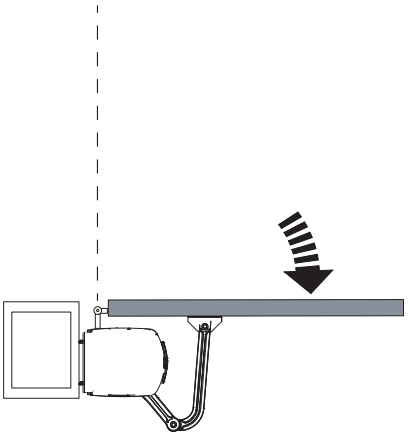
When closing.

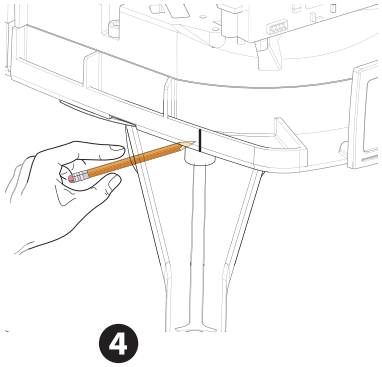
Close the leaf. Mark the casing where the center of the arm is. ❹

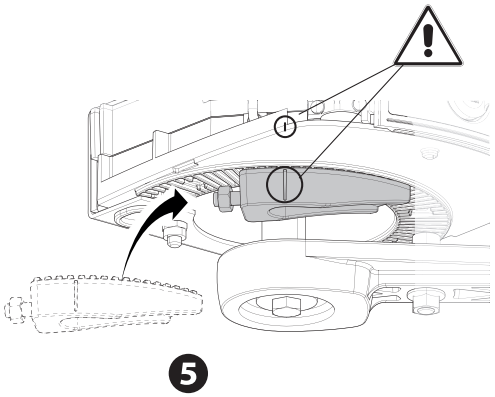
Manually open the leaf. Place the second mechanical stop against the opposite side of the arm.

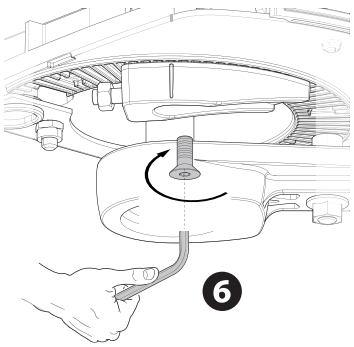
The mark on the casing must match the groove on the stop. ❺

Fasten the stop using the screw. ❻





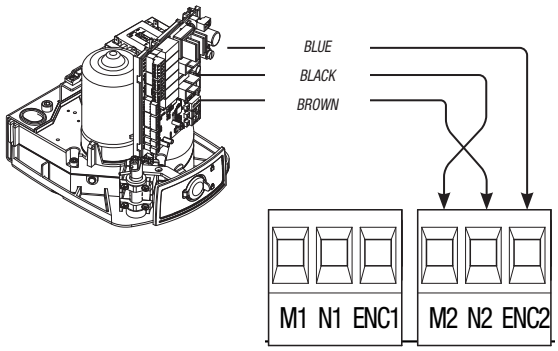




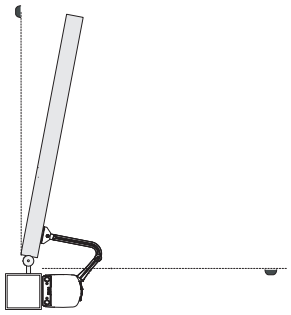
Establishing the limit-switch points

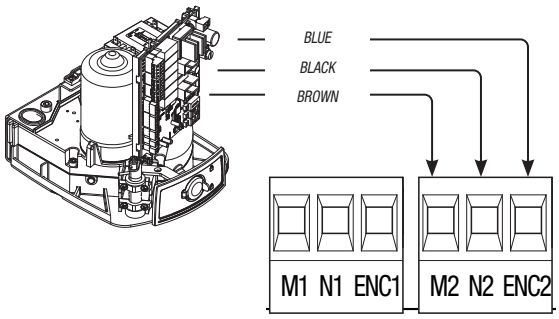
Please refer to the chapter on opening inwards.

Connecting the operator

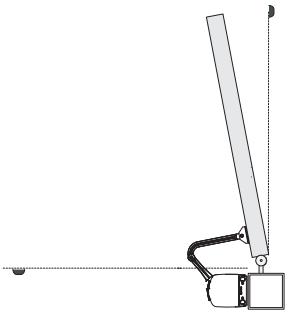


Operator installed on the left (outer view).

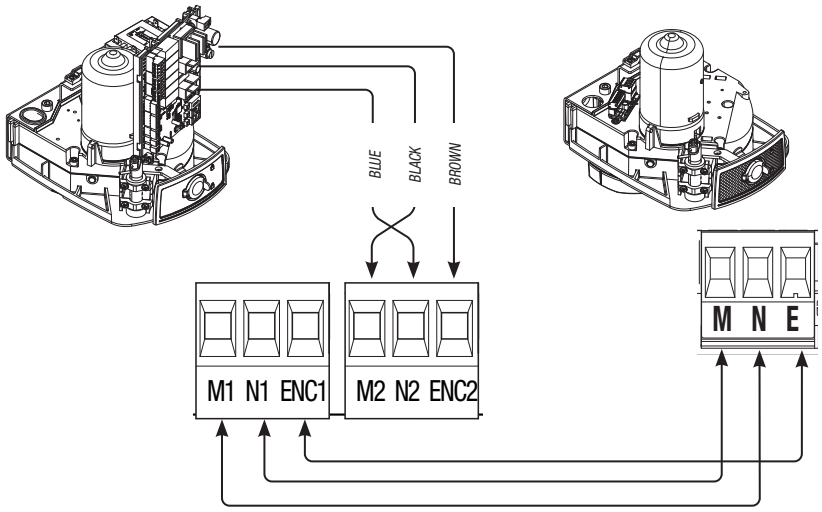




Operator installed on the right (inner view).

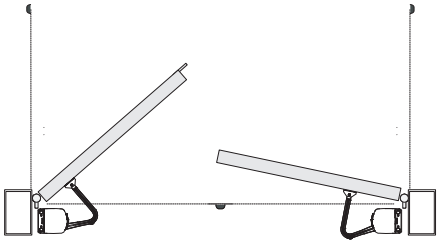


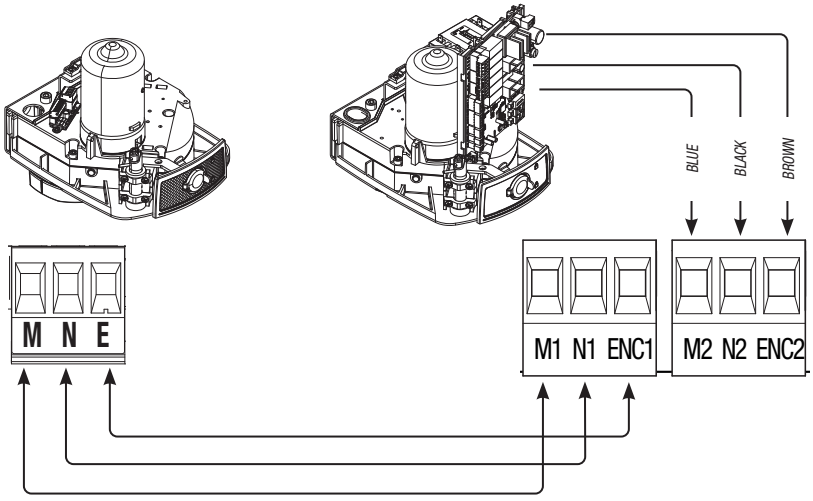
Connecting the operator and gearmotor



Operator installed on the left and gearmotor installed on the right (inner view) with operator delayed when closing.

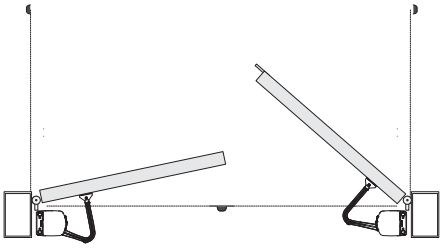
FA7024CB / FST23DLC **FA7024 / FST23DLS**





Operator fitted to the right and gearmotor to the left (inner view) with operator delayed when opening.

FA7024 / FST23DLS **FA7024CB / FST23DLC**



WHAT TO DO IF ...

ISSUES	POSSIBLE CAUSES	POSSIBLE FIXES
It neither opens nor closes	• Power supply missing • The gear motor is stuck • The transmitter emits a weak signal or no signal • The buttons or selectors are jammed	• Check main power supply • Lock the gearmotor • Replace the batteries • Check the state of all devices
The gate opens but does not close	• The photocells are working	• Check that there are no obstructions in the photocells' area of operation

⚠ ***If the problem cannot be solved by following the fixes in the table or if any malfunctions, anomalies, noises, vibrations or suspicious and unexpected behavior is experienced on the system, call for qualified assistance.***

DISMANTLING AND DISPOSAL

☞ CAME S.p.A. employs an Environmental Management System at its premises. This system is certified and compliant with the UNI EN ISO 14001 regulation standard to ensure that the environment is respected and safeguarded.
Please continue safeguarding the environment. At CAME we consider it one of the fundamentals of our operating and market strategies. Simply follow these brief disposal guidelines:
DISPOSING OF THE PACKAGING
The packaging materials (cardboard, plastic, and so on) should be disposed of as solid household waste, and simply separated from other waste for recycling.
Always make sure you comply with local laws before dismantling and disposing of the product.
DISPOSE OF RESPONSIBLY!
DISPOSING OF THE PRODUCT
Our products are made of various materials. Most of these (aluminum, plastic, iron, electrical cables) are classified as solid household waste. They can be recycled by separating them before dumping at authorized city plants.
Whereas other components (control boards, batteries, transmitters, and so on) may contain hazardous pollutants.
These must therefore be disposed of by authorized, certified professional services.
Before disposing, it is always advisable to check with the specific laws that apply in your area.
DISPOSE OF RESPONSIBLY!

⚠

AFFIX THE PRODUCT LABEL FROM THE BOX HERE

CAME

CAME.COM

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