CAME

CONTROL PANEL
FOR 24 V GEARMOTORS

CE

Official Partner

EXPO

MILANO 2015

FEEDING THE PLANET
ENERGY FOR LIFE

INSTALLATION MANUAL

ZLJ24

EN | English

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.

REFERENCE REGULATIONS

Came S.p.A. is certified for its ISO 9001 quality and ISO 14001 environmental management systems.
This product complies with the current regulations mentioned in the declaration of conformity.

DESCRIPTION

Multifunction control panel for two leaved swing-gates, with graphic programming-display and warning and self-diagnosing safety devices.
The functions on the input and output contacts, the time settings and user management, are set and viewed on the graphic display.
All connections are quick-fuse protected.

Intended use

| Control panel	Gearmotor
ZLJ24	AMICO - AXO - F4000 - FAST - FERNI - FROG - FROG J - MYTO

📖   Any installation and/or use other than that specified in this manual is forbidden.

Technical data

| Type	ZLJ24
Protection rating (IP)	54
Power supply (V - 50/60 Hz)	230 AC
Maximum power (W)	500
Maximum power of the 24 V (W) accessories	50
Stand-by consumption (W)	10
Operating temperature (°C)	-20 ÷ +55
Material	ABS
Insulation class	II

Fuses	ZLJ24
LINE-FUSE - Line	3.15 A-F
CONTROL BOARD - Card	600 mA-F
ACCESSORIES - Accessories	2 A-F
MOTOR 1 / MOTOR 2 - Motor	10 A - 250 V Ø 6.3x22 UFG632310 (Spare parts code 119RIR316)
E.LOCK - Electric lock	3.15 A-F

Dimensions (mm)
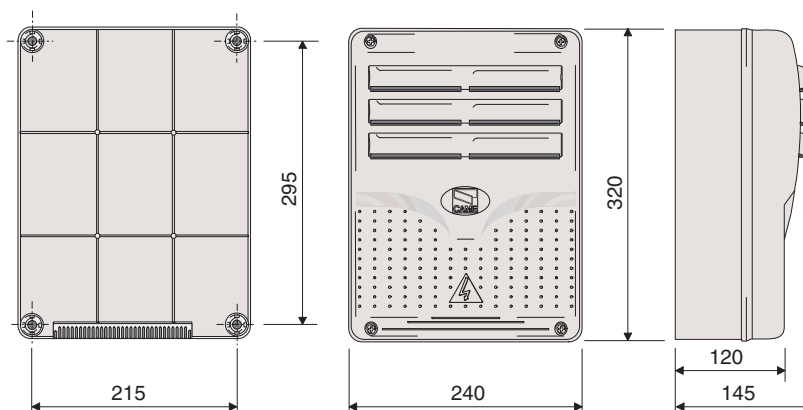
Description of parts

1. Transformer
2. Power supply on warning LED
3. Display
4. Programming buttons
5. Display brightness adjusting trimmer
6. Programming warning LED
7. Memory roll board connector
8. Connector for the R700 card
9. AF card connector
10. Antenna terminal
11. Transponder terminals
12. Endstop terminals
13. Terminals for control and safety devices
14. Terminals for gearmotors
15. Encoder terminals
16. Power supply terminals
17. Line fuse
18. Motor fuse
19. Electric lock fuse
20. Control board fuse
21. Accessories fuse
22. RSE board connector
23. CRP connection terminals
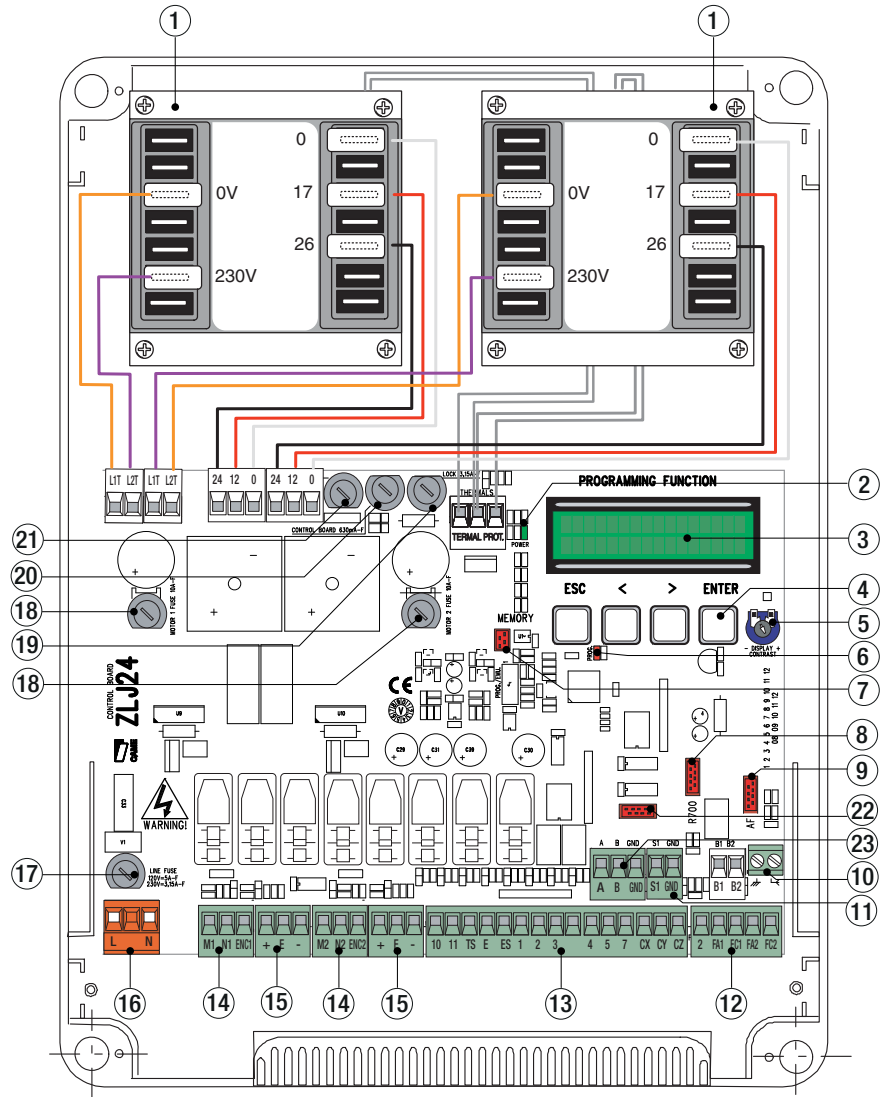
GENERAL INSTRUCTIONS FOR INSTALLING

⚠ Only skilled, qualified staff must install this product.

⚠ Before working on the control panel, cut off the main current supply and, if present, remove any batteries.

Preliminary checks

⚠ Before installing the control panel, it is necessary to:

• make sure that the point where the control panel is fastened is protected from any impacts and that the anchoring surface is solid enough, and that proper tools are used (screws, anchors, etc.); • 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 (that is, with minimum contact openings of 3 mm);

•⏚ Make sure that any connections inside the container (ones that ensure continuity to the protection circuit) are fitted with additional insulation compared to those of other electrical parts inside.

Tools and materials

Make sure you have all the tools and materials you will need for installing in total safety and in compliance with applicable regulations. The figure shows some of the equipment installers will need.

Cable types and minimum thicknesses

Connection	Cable type	Cable length 1 < 10 m	Cable length 10 < 20 m	Cable length 20 < 30 m
Control panel power-supply	FROR CEI 20-22 CEI EN 50267-2-1	2 x 1.5 mm^2	2 x 1.5 mm^2	2 x 2.5 mm^2
Encoder gearmotor power supply*		3 x 1.5 mm^2	3 x 1.5 mm^2	3 x 2.5 mm^2
Power supply to gearmotor**		2 x 1.5 mm^2	2 x 1.5 mm^2	2 x 2.5 mm^2
Flashing light		2 x 0.5 mm^2		
Photocell transmitters		2 x 0.5 mm^2		
Photocell receivers		4 x 0.5 mm^2		
Command and safety device		2 x 0.5 mm^2		
Endstop***		3 x 0.5 mm^2		
Antenna	RG58	max 10 m		
Encoder****	2402C 22AWG	max 30 m		
Paired connection or CRP	UTP CAT5	max 1000 m		

* AXO   ** FROG-A24, F4024, F1024, FROG-A24E, F7024E   *** FROG-A24, F4024, F1024   **** FROG-A24E, F7024E, F4024E

📖 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

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INSTALLATION

Fasten the control panel in a protected area using suitable screws. anchors and braces.
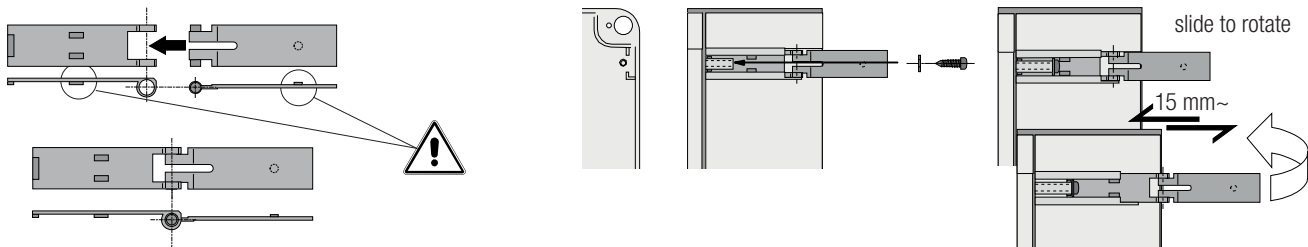Drill through the pre-perforated holes and fit the cable gland with corrugated pipes for passing through the electric cables.
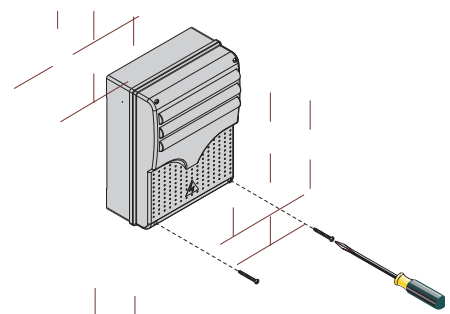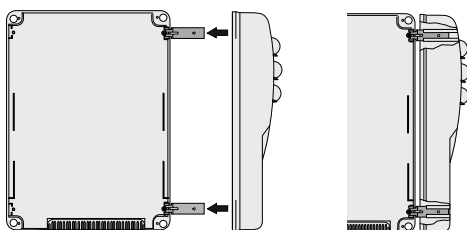📖 Pre-perforated hole diameter: 20 mm.
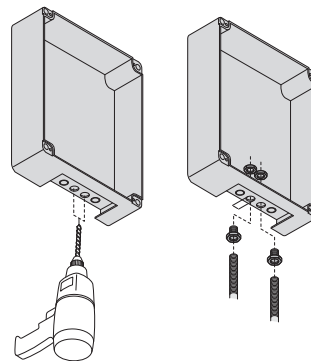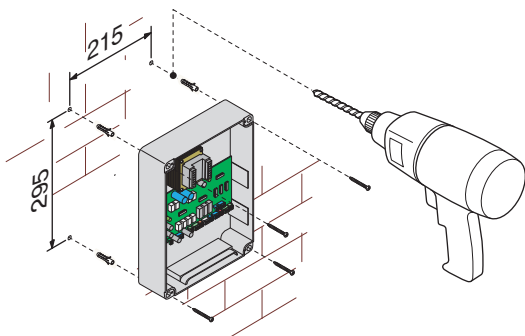
Assemble the pressure hinges.
Fit the hinges into the box (either on the right or left) and fasten them using the supplied screws and washers.

slide to rotate

15 mm~

Snap the cover onto the hinges. Close it and secure it using the supplied screws.
After the settings and adjustments, fasten the cover using the supplied screws.
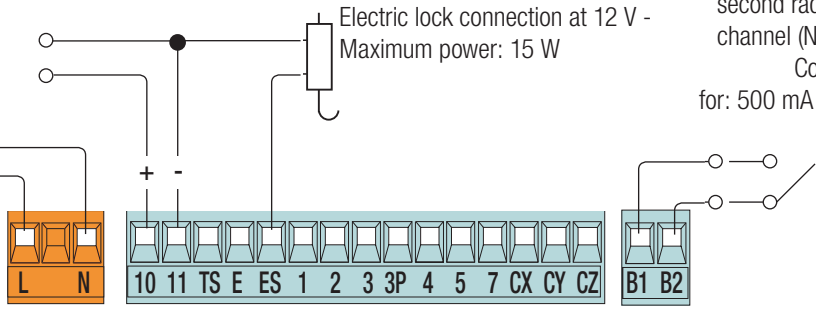
ELECTRICAL CONNECTIONS

Power supply to accessories

Terminal board for 24 V AC / DC accessories - Maximum power: 50 W

⚡ 230 V AC - 50/60 Hz

Electric lock connection at 12 V - Maximum power: 15 W

Possible output of the second radio-receiver channel (NO contact). Contact rated for: 500 mA - 24 V DC.

| L | N | | 10 | 11 | TS | E | ES | 1 | 2 | 3 | 3P | 4 | 5 | 7 | CX | CY | CZ | | B1 | B2 |

Connecting the gearmotors with endstops

M1 - 24 V DC gearmotor with delayed opening.

M2 - 24 V DC gearmotor with delayed closing.

N
M
FC
FA
F

M
N
FA
FC
F

| M1 | N1 | E1 | | M2 | N2 | E2 | | 2 | FA1 | FC1 | FA2 | FC2 |
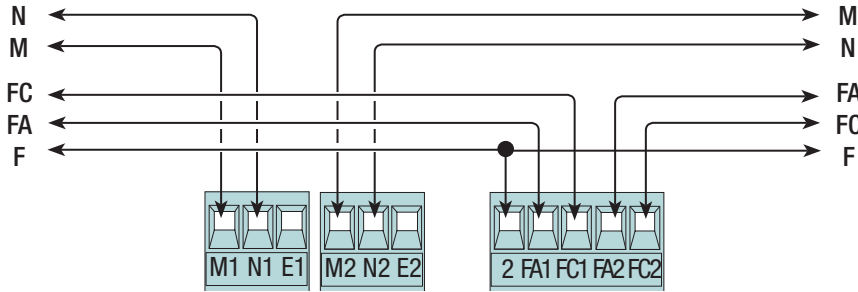
Connecting the encoder gearmotors

M1 - 24 V DC gearmotor with delayed opening.

M2 - 24 V DC gearmotor with delayed closing.

E
N
M

M
N
E

ENCODER A

ENCODER B

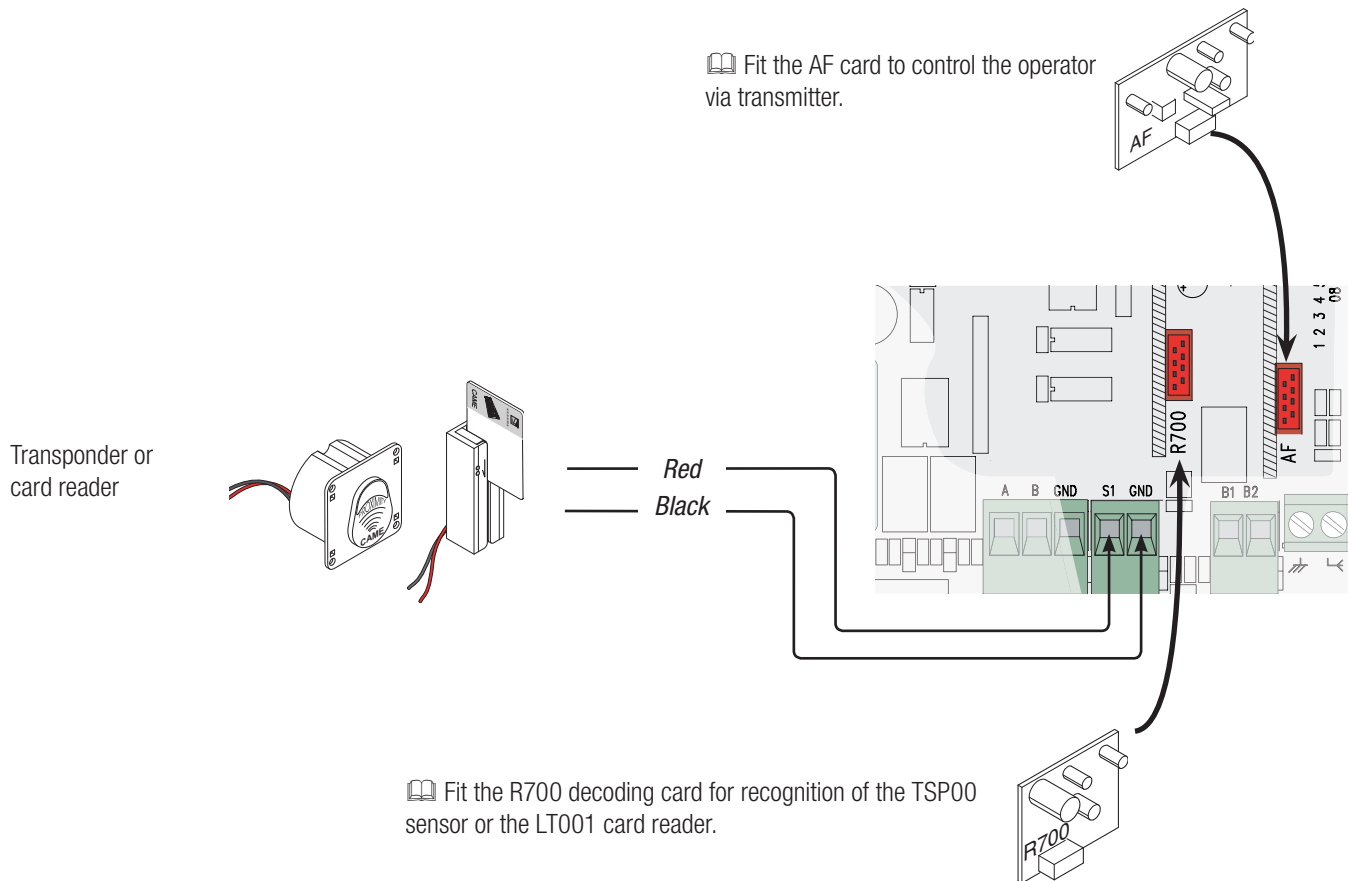| M1 | N1 | E1 | | + | E | - | | M2 | N2 | E2 | | + | E | - |

+ — White
E — Brown
- — Green
M
N

Green — -
Brown — E
White — +

N
M
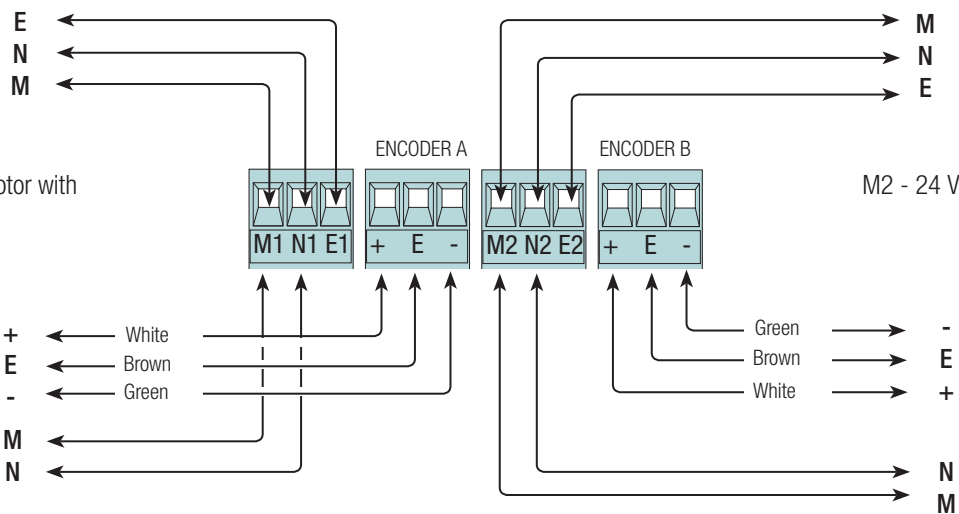
Command and control devices

⚠ Before fitting any snap-in cards (such as the AF or R700), YOU MUST CUT OFF MAINS POWER, and , if present, disconnect the batteries.

📖 Fit the AF card to control the operator via transmitter.

Transponder or card reader

Red

Black

📖 Fit the R700 decoding card for recognition of the TSP00 sensor or the LT001 card reader.

Stop button (NC contact). For stopping the gate leaves while excluding automatic closing. To resume movement press the control button or use another control device.
📖 If unused, select [Disabled] from the [Total Stop] function in the [FUNCTIONS] menu.

OPEN ONLY function from control device (NO contact).

PARTIAL or PEDESTRIAN OPENING function from a control device (NO contact).
See the [Cmd 2-3P] function in the [FUNCTIONS] menu.

CLOSE ONLY function from control device (NO contact).

OPEN-STOP-CLOSE-STOP sequential function / OPEN-CLOSE-INVERT step-step from a control device (NO contact).
See the [Cmd 2-7] function in the [FUNCTIONS] menu.

Antenna with RG58 cable

10 11 TS E ES 1 2 3 3P 4 5 7 CX CY CZ
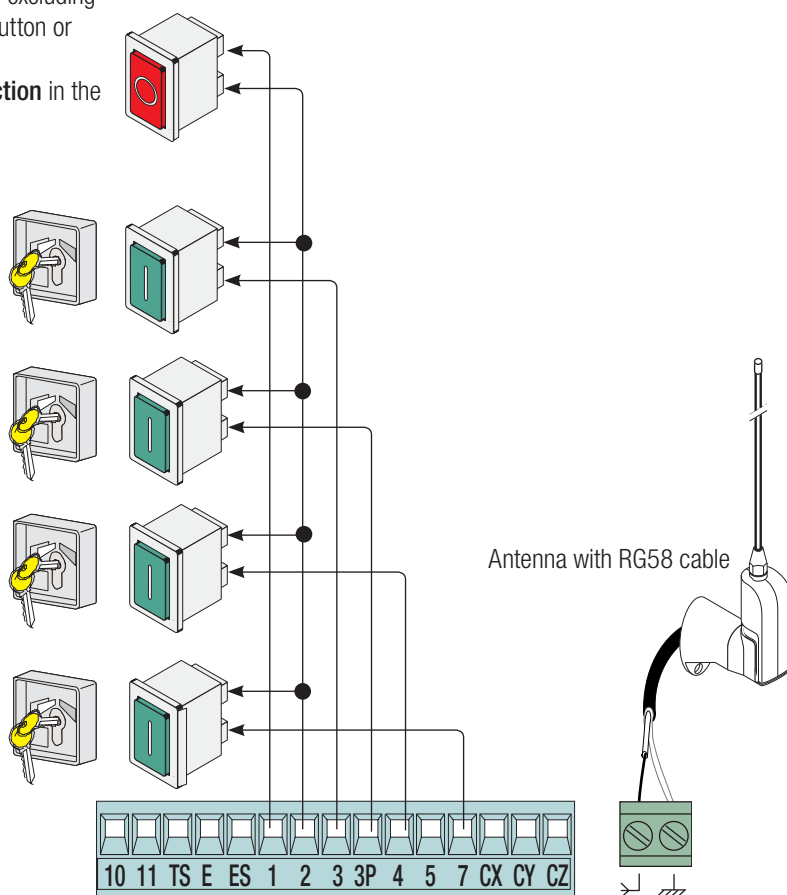
Warning devices

Flashing light (contact rated for: 24 V - 25 W max). Flashes when the gate is opening and closing.
Alternatively, you can connect up a cycle or courtesy light (contact rated for: 24 V - 25 W max).
Auxiliary connection of an outdoor light which can be positioned where you like, to increase lighting in the driveway/parking area.
Cycle: it stays lit from the moment that the gate leaf starts opening until it is completely closed (including the automatic closing time).
Courtesy: it stays on for a fixed time of five minutes.
See the **[Lamp E]** function in the **[FUNCTIONS]** menu.

Gate open warning light
(Contact rated for: 24 V - 3 W max).
To warn that the gate is open.
It switches off when the gate is closed.
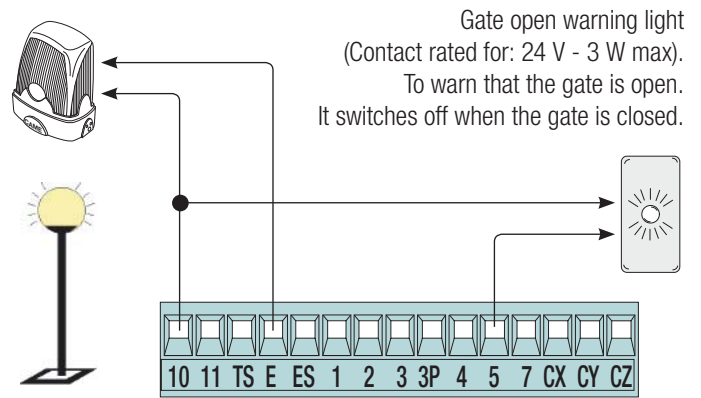
Safety devices

Photocells

Configure contact CX, CY or CZ (NC), input for EN 12978 safety devices like photocells.
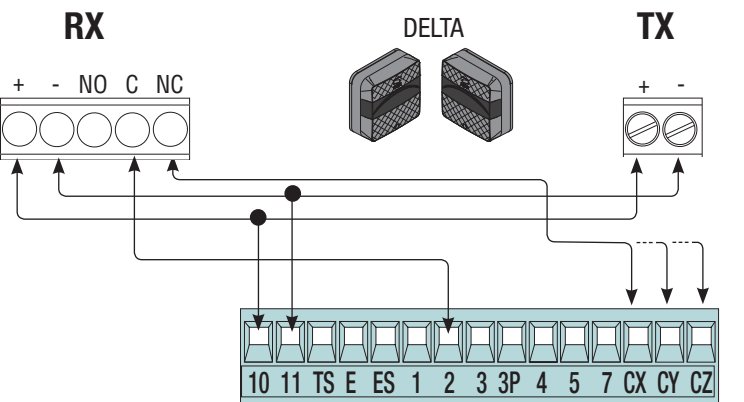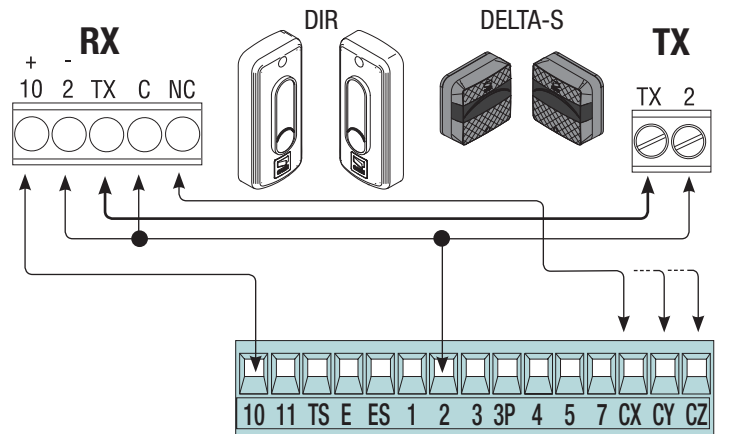See the **[CX input]**, **[CY input]** or **[CZ input]** functions.

- C1 reopening during closing. When the gate leaves are closing, opening the contact causes their movement to invert, until they are fully opened;

- C2 reclosing opening. When the gate leaves are opening, opening the contact causes their movement to invert, until they are fully closed;

- C3 partial stop. Stops the gate leaves, if they are moving, and turns on automatic closing (if the automatic closing function is on);

- C4 obstacle wait. Stops the gate leaves, and resumes their movement once the obstruction is removed.

📖 If unused, contacts CX, CY and CZ should be disabled during programming.

Sensitive Safety Edges

Configure contact CX, CY or CZ (NC), input for EN 12978 safety devices such as sensitive safety-edges.
See the **[CX input]**, **[CY input]** or **[CZ input]** functions.
- C7 reopening during closing. When the gate leaves are closing, opening the contact causes their movement to invert, until they are fully opened;
- C8 reclosing during opening. When the gate leaves are opening, opening the contact inverts their movement until they are fully closed.

📖 If unused, contacts CX, CY and CZ should be disabled during programming.
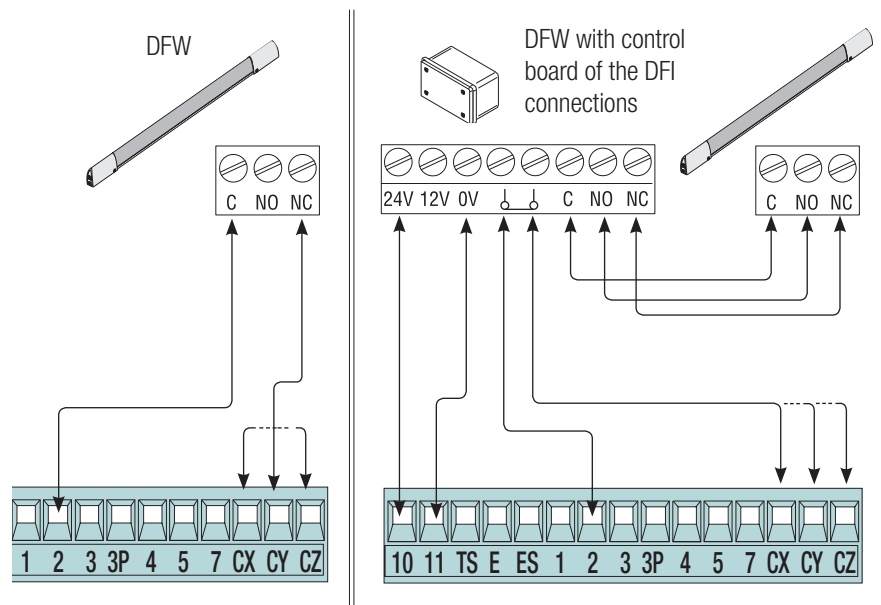
Photocell's safety connection

At each opening and closing, the card checks whether the photocells are working. Any anomalies will inhibit all commands.
Select from the **[Safety Test]** function which of inputs CX, CY or CZ to turn on.
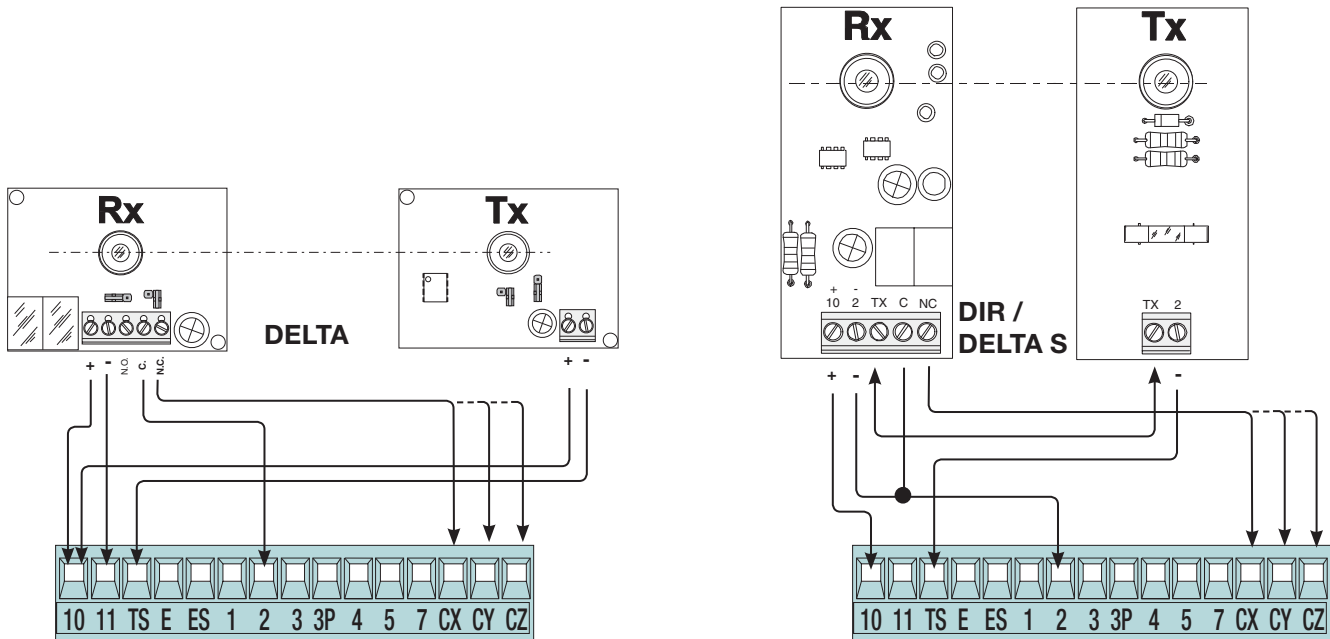
Connection with Came Remote Protocol (CRP)

Fit the RSE card.

UTP CAT 5 →

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

Description of programming commands

the <-----> signs on the display are for:
- showing the currently selected item
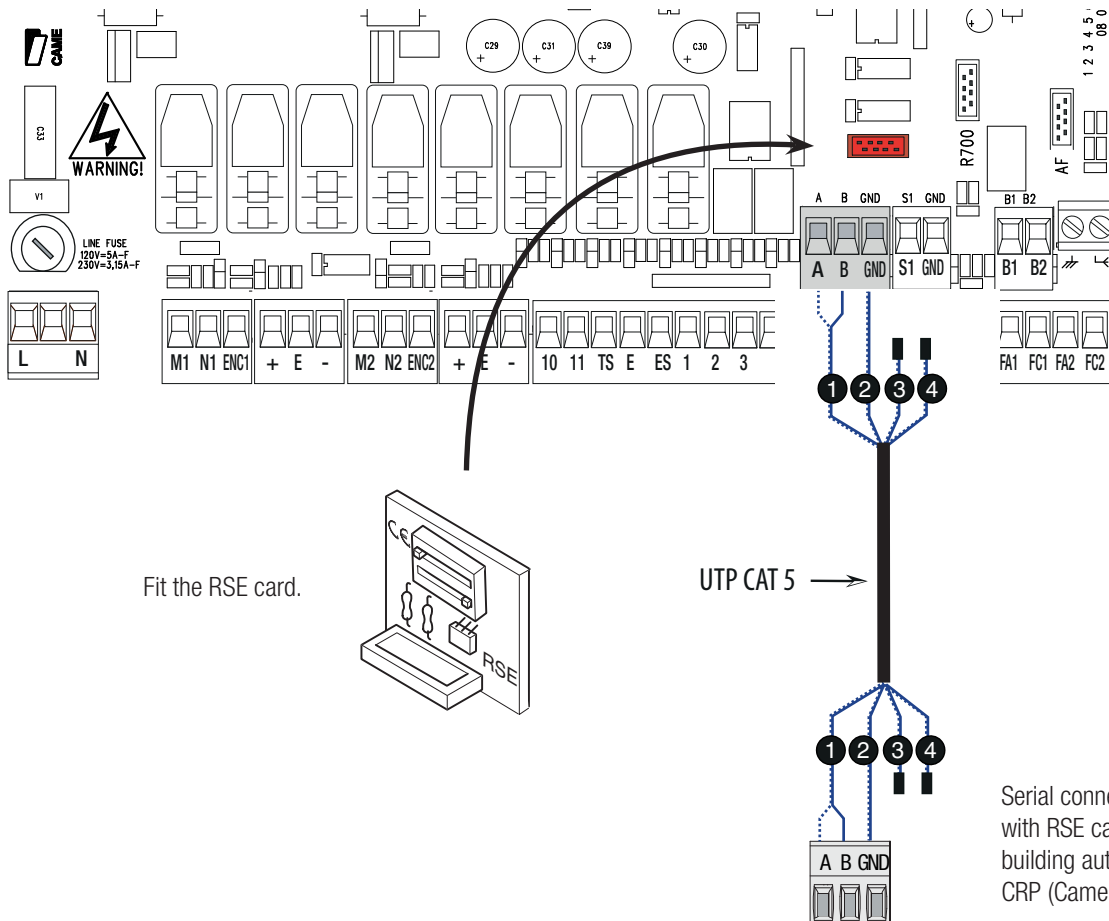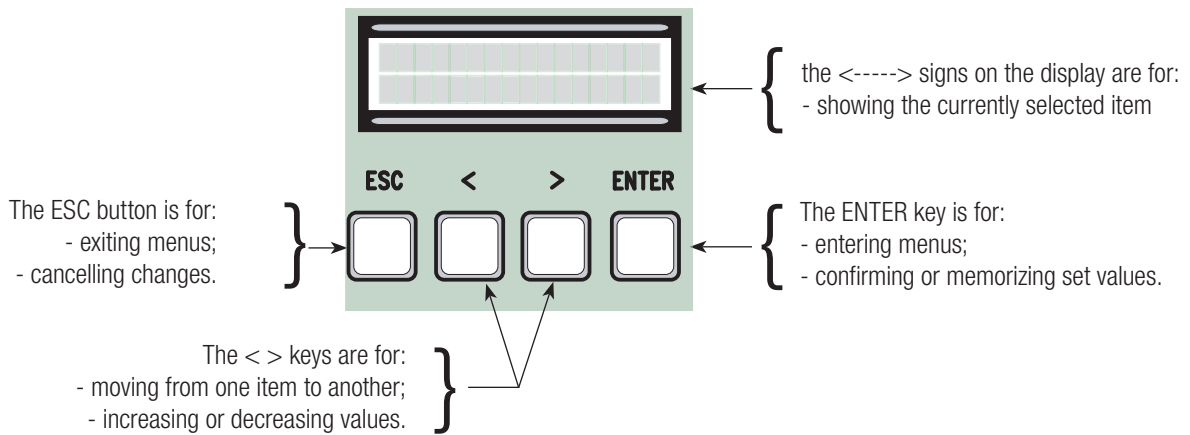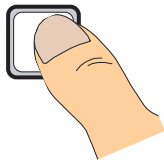
The ESC button is for:
- exiting menus;
- cancelling changes.

The ENTER key is for:
- entering menus;
- confirming or memorizing set values.

The < > keys are for:
- moving from one item to another;
- increasing or decreasing values.

ENTER

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

LANGUAGE
< English >

< >
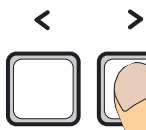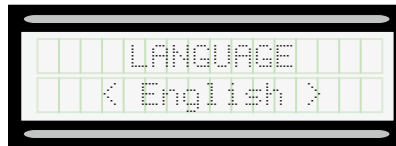
To select menu items, use the arrow keys ...

FUNCTIONS

Imp. Run

< TIMING ADJ >
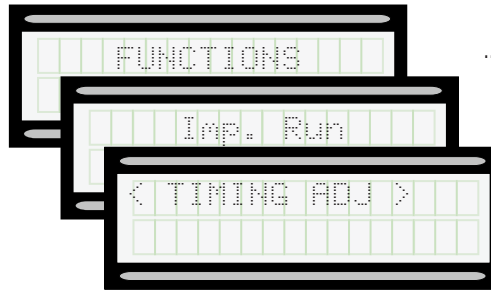
.. then press ENTER

ENTER

< >
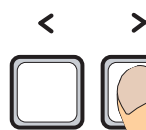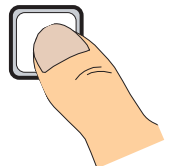
also for the submenus, use the arrow keys to select ...

< A.C.T. >

< Cycle Time >
90s.
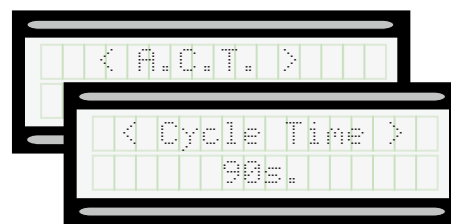
.. then press ENTER

ENTER
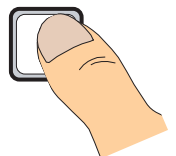
Cycle Time
<   90s.   >

If the < > arrows are set to the [Cycle Time], you may edit their value.

< >

To increase or reduce the value use the arrows...

Cycle Time
<   100s.   >

... the press ENTER to confirm ...

ENTER

... to exit the menu, wait 30 seconds, or press ESC, until the start up screen appears.

ESC

Meaning of the menu items abbreviations

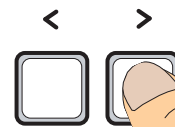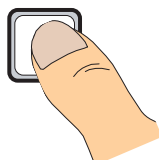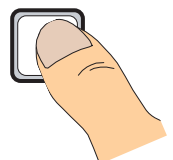|	
[Run Amperom]	Gate Run Sensitivity
[Ped. opening]	Partial Opening
[Maintained Act]	Maintained Action
[Autoclose]	Automatic Closing
[Config]	Configuration
[Related Func.]	Related Function
[Imp.Run]	Set gate run
[M1 Appr. AP %]	M1 Opening approach as a percentage
[M1 Appr. CH %]	M1 Closing approach as a percentage
[M1 Slow.AP %]	M1 Opening slowdown as a percentage
[M1 Slow.CH %]	M1 Closing slowdown as a percentage
[M2 Appr. AP %]	M2 Opening approach as a percentage
[M2 Appr. CH %]	M2 Closing approach as a percentage
[M2 Slow. AP %]	M2 Opening slowdown as a percentage
[M2 Slow.CH %]	M2 Closing slowdown as a percentage
[Mod Code]	Modify code
[Standby Msg]	Standby message
[No. Motors]	Number of motors
[Soft Start]	Soft Start
[Slow run Enc]	Opening and closing slow-downs with ENCODER
[Obstacle Det]	Obstacle Detection
[Remove Usr.]	Remove User
[Op. Delay M1]	M1 Opening Delay
[Cl. Delay M2]	M2 Closing Delay
[Sens.Amperom]	Amperometric Sensitivity
[Run Amperom]	Run Sensitivity
[Dec. Amperom]	Slowdown sensitivity
[Cl. Thrust]	Closing thrust
[Ram hit time]	Ram-jolt Time
[Preflashing T.]	Preflashing Time
[Slow down time]	Slow-down Time
[Lock time]	Lock Time
[A.C.T.]	Automatic Closing Time
[Pedestrian ACT]	Pedestrian Automatic Closing Time
[Slow Down Spd.]	Slowdown Speed
[High speed %]	Gate run speed

Menu map

[LANGUAGE]	Default
[Italiano] / [English] / [Français] / [Deutsch] / [Español] / [Portugues euro]/[Portugues bras]	English

[FUNCTIONS]		Default
[AutoClose]	[Disabled] / [Turn on]	[Turn on]
[Maintained Act]	[Disabled] / [Turn on] / [When closing]	[Disabled]
[Obstacle Det]	[Disabled] / [Turn on]	[Disabled]
[Safety Test]	[Disabled] / [CX] / [CY] / [CZ] / [CX+CY] / [CX+CZ] / [CY+CZ] / [CX+CY+CZ]	[Disabled]
[Pre-flashing]	[Disabled] / [Turn on]	[Disabled]
[Ram hit funct]	[Disabled] / [Closing] / [Opening] / [Open-Close]	[Disabled]
[Total Stop]	[Disabled] / [Turn on]	[Turn on]
[CX input]	[Disabled] / [C1] / [C2] / [C2] / [C4] / [C7] / [C8]	[C1]
[CY input]	[Disabled] / [C1] / [C2] / [C2] / [C4] / [C7] / [C8]	[C3]
[CZ input]	[Disabled] / [C1] / [C2] / [C2] / [C4] / [C7] / [C8]	[Disabled]
[Cl. Thrust]	[Disabled] / [Turn on]	[Disabled]
[Lock]	[Disabled] / [Closing] / [Opening] / [Open-Close]	[Disabled]
[Config]	[Time of Run] / [Endstop] / [Slow run] / [Fcap-RallCh] / [ENCODER]	[ENCODER]
[Endstop]	[N.C. / N.O.]	[N.C.]
[Cmd 2-7]	[Open-Close] / [Op-Stop-Cl.]	[Open-Close]
[Cmd 2-3P]	[Partial] / [Pedestrian]	[Pedestrian]
[Lamp E]	[Fl. light] / [Courtesy] / [Cycle]	[Fl. light]
[Output B1-B2]	[Bistable] / [Monostable]	[Bistable]
[CRP address]	[1] ⇨ [32]	
[CRP baudrate]	[1200] / [2400] / [4800] / [9600] / [19200] / [38400] / [57600] / [115200]	[38400]

[IMP.RUN]		Default
[No. Motors]	[M1+M2] / [M2];	[M1+M2]
[Motor Type]	[FROG-F4024E] / [FROG J] / [FROG-FL] / [AMICO] / [MYTO] / [AXO] / [FAST] / [FERNI]	[FROG-F4024E]
[High speed %]	[20%] ⇨ [100%]	[100%]
[Slow Down Spd. %]	[5%] ⇨ [80%]	[80%]
[Soft Start]	[Turn on] / [Disabled]	[Disabled]
[Sens.Amperom]*	[Turn on] / [Disabled]	[Turn on]
[Run Amperom]*		[-●●●●●●○○○○○○ ∘ +]
[Slow down time]**	[0 s] ⇨ [30 s]	[20 s]

*This function does not appear if [**ENCODER**] is selected from the [**Config**] function.
This function only appears if [Slow run**] or [**Fcap-RallCh**] are selected from the [**Config**] function.

[ENCODER]   **Default**

[Sensibility]	[Turn on] / [Disabled]	[Turn on]
[Sensib. Run]		[-● ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ +]
[Sensib. Decel]		[-● ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ +]
[Slow run Enc]	[ON] / [OFF]	[ON]
[M1 Slow.AP %]	[1%] ⇨ [60%]	[10%]
[M1 Slow.CH %]	[1%] ⇨ [60%]	[10%]
[M2 Slow.AP %]	[1%] ⇨ [60%]	[10%]
[M2 Slow.CH %]	[1%] ⇨ [60%]	[10%]
[M1 Appr. CH %]	[1%] ⇨ [15%]	[15%]
[M2 Appr. CH %]	[1%] ⇨ [15%]	[15%]
[M1 Appr. AP %]	[1%] ⇨ [15%]	[15%]
[M2 Appr. AP %]	[1%] ⇨ [15%]	[15%]
[Set Encoder]	[Confirm? (no)] / [Confirm? (yes)]	

[TIMING ADJ   **Default**

[A.C.T.]	[0 s] ⇨ [300 s]	[10 s]
[Pedestrian ACT]	[0 s] ⇨ [300 s]	[10 s]
[Cycle Time]	[10 s] ⇨ [150 s]	[90 s]
[Op. Delay M1]	[0 s] ⇨ [10 s]	[2 s]
[Cl. Delay M2]	[0 s] ⇨ [60 s]	[2 s]
[Preflashing T]	[1 s] ⇨ [60 s]	[5 s]
[Lock time]	[1 s] ⇨ [5 s]	[2 s]
[Ram hit time]	[1 s] ⇨ [3 s]	[1 s]
[Ped.opening]	[5 s] ⇨ [60 s]	[10 s]

[USERS]

[Add User] (250 max)
[Mod. name]
[Mod. Code]
[Related Func.]   [2-7] / [Open] / [B1-B2] / [2-3P] / [Disabled];
[Remove Usr]
[Delete all Usr]   [Confirm? (no)] / [Confirm? (yes)]
[Backup data]   [Confirm? (no)] / [Confirm? (yes)]
[Restore backup]   [Confirm? (no)] / [Confirm? (yes)]

[INFO]

[Version] / [No. of Runs] / [Standby msg.] / [System Reset]

[MOT TEST]

[<=M1 M2=>]

📖 **IMPORTANT! Start programming by first executing the following functions [MOTOR TYPE][NO. MOTORS], [TOTAL STOP] and [SET ENCODER] function.**

Language menu

[LANGUAGE] — ENTER ☐

↓

[Italiano] / [English] / [Français] / [Deutsch] / [Español] / [Portugues euro] / [Portugues bras]
Select one of the available languages

Functions menu

[FUNCTIONS] — ENTER ☐

↓

[Autoclose]	[Disabled] / [Turn on]
The first automatic closing wait starts when the opening endstop point is reached and can be set to between 0 and 300 s. The automatic closing does not turn on if any of the safety devices trigger when an obstruction is detected, after a total stop or during a power outage.	
[Maintained Act]	[Disabled] / [Turn on] / [Closing]
The gate leaves close by keeping a button pressed. Opening button on contact 2-3 and closing button on contact 2-4. All other control devices, even radio-based ones, are excluded.	

[Obstacle Det]	[Disabled] / [Turn on]
With the gate leaves are closed, open or after a total stop, the operator stays idle if the safety devices (photocells and sensitive safety-edges) detect an obstruction.	

[Safety Test]	[Disabled] / [CX] / [CY] / [CZ] / [CX+CY] / [CX+CZ] / [CY+CZ] / [CX+CY+CZ]
After every opening or closing command, the board will check whether the photocells are working properly.	

[Preflashing]	[Disabled] / [Turn on]
After an opening or closing command, the flashing light connected to 10-E, flashes before the maneuver starts. To set the time, see [Preflashing T] in the [TIMING ADJ] menu.	

[Ram hit funct]	[Disabled] / [Closing] / [Opening] / [Open-Close]
Before any opening and closing maneuver, the gate leaves thrust inward to help release the electric lock. To adjust this thrust time, select [Ram hit time] in the [TIMING ADJ] menu.	

[Total Stop]	[Turn on] / [Disabled]
NC input - Gate- leaves stop with automatic closing excluded; to resume movement, use the control device. The safety device must be enabled on [1-2].	

[CX Input]	[Disabled] / [C1] / [C2] / [C3] / [C4] / [C7] / [C8]
NC input – 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, C8 = reclosing during opening by sensitive safety-edges.	

[CY input]	[Disabled] / [C1] / [C2] / [C3] / [C4] / [C7] / [C8]
NC input – 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, C8 = reclosing during opening by sensitive safety-edges.	

[CZ input]	[Disabled] / [C1] / [C2] / [C3] / [C4] / [C7] / [C8]
NC input – 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, C8 = reclosing during opening by sensitive safety-edges.	

[Cl. Thrust]	[Disabled] / [Turn on]
When the run reaches the endstop, the operator performs a closing thrust for a few seconds.	

[Lock]	[Disabled] / [Closing] / [Opening] / [Open-Close]
Set the electric lock, for blocking the gate leaves, from one of the available functions.	

[Config]	[Slow run] / [Fcap-RallCh] / [ENCODER] / [Time of Run] / [Endstop]
Configuring the opening and closing slowdowns	
[Slow run]* ➡ opening and closing slowdowns. [Fcap-RallCh]* ➡ opening endstop and closing slowdown. [ENCODER] ➡ slowdown management, obstruction detection and sensitivity. menu ➡ timed endstop. [Time of Run] ➡ opening and closing endstop. [End Stop] *slowdowns configurable with the [Slow down time] function in the [Imp. Run]	

[Endstop]	[N.C] / [N.O]
Configuring the endstops as normally opened or closed contacts. 📖 This function only appears if an option is selected from [Endstop], [Fcap-RallCh.] or [Slow run] from the [Config] function.	

[Cmd 2-7]	[Open-Close] / [Op.-Stop-Cl]
Configuring contacts 2-7 in step-step (open-close) or sequential (open-stop-close-stop) mode.	

[Cmd 2-3P]	[Pedestrian] / [Partial]
Configuring contact 2-3P for pedestrian opening (total opening of the second gate- leaf) or partial opening (partial opening of the second gate leaf) depending on the time set on [Ped. opening] in the [TIMING ADJ] menu.	

[Lamp E]	[Courtesy] / [Cycle] / [Fl. light]
Configuring the light connected to 10-E: - courtesy: freely positionable outdoor light, for increasing lighting in driveway/parking area. It stays on for a preset five minutes; - cycle: freely positionable outdoor light for increasing lighting in the driveway/parking area. It stays lit from the moment that the gate leaf starts opening until it is completely closed (including the automatic closing time). If automatic closing is off, it stays on during gate leaf movement only. - flashing: it warns that the gate- leaves are moving to open or close.	

[Output B1-B2]	[Monostable] / [Bistable]
Configuring contact B1-B2 in Monostable or Bistable mode (switch).	

| [CRP address]	[1] ⇨ [32]
With systems fitted with several operators and the CRP (Came Remote Protocol) system connection, set an address between 1 and 32 for each control panel.	
[CRP baudrate]	[1200] / [2400] / [4800] / [9600] / [19200] / [38400] / [57600] / [115200]
Setting the communication speed used in the CRP (Came Remote Protocol) connection system.	

Gate run setting menu

[Imp. Run] ──── ENTER

[No. Motors]	[M1+M2] / [M2]
Setting the number of motors from one to two depending on how many gate- leaves the system has.	
[Motor Type]	[FROG-F4024E] / [FROG-J] / [FROG-FL] / [AMICO] / [MYTO] / [AXO] / [FAST] / [FERNI] / [ATI]
Setting the type of operator for the swing gates on the system.	
[High speed %]	[20%] ⇨ [100%]
Adjusting the maneuvering speed, calculated as a percentage.	
[Slow Down Spd. %]	[5%] ⇨ [80%]
Adjusting the slow-down speed, calculated as a percentage.	
[Soft Start]	[Disabled] / [Turn on]
After each opening and closing command, the leaves start at a slowed down speed for a few seconds.	
[Sens.Amperom]	[Disabled] / [Turn on]
Obstruction detection sensitivity. 📖 This function does not appear if [Encoder] is set in the [Config] function. When an obstruction is met, the function intervenes in the following way: - [Time of Run] it stops the gate leaves during a maneuver; - [Endstop] it inverts the gate leaves during a maneuver; - [Slow run] it inverts the gate leaf movement during a maneuver and stop the movement during a slow down. - [Fcap-RallCh.] it inverts the gate leaves during a maneuver and stops them only during the closing slow-down. When the function is disabled, it stops the gate leaves when the maximum voltage threshold is exceeded.	
[Run Amperom]	[-●●●●●●○○○○○ ○ +]
Adjusting the amperometric sensitivity. 📖 You need to turn on the [Sens.Amperom] in the [Imp.Run] menu.	
[Slow down time]	[OFF] ⇨ [30 s]
Slow-down time of the gate leaves before every endstop. The time can be set to between zero and 30 s. 📖 This function only appears if [Slow run] or [Fcap-RallCh] are set from the [Config] function.	

ENCODER menu

📖 The [ENCODER] menu only appears when [Config] is selected in the [FUNCTIONS] menu.

[ENCODER] menu ──── ENTER
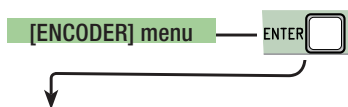
[Sensibility]	[Turn on] / [Disabled]
Obstruction detection sensitivity.	
[Sensib. Run]	[-●○○○○○○○○○○ ○ +]
Obstruction detection sensitivity during gate run (both opening and closing). 📖 You need to turn on [Sensitivity] in the [ENCODER] menu.	
[Sensib. Decel]	[-●○○○○○○○○○○ ○ +]
Obstruction detection sensitivity during slow-down (both opening and closing). 📖 You need to turn on [Sensitivity] in the [ENCODER] menu.	
[Slow run Enc]	[ON] / [OFF]
Activating the opening and closing slowdown starting points.	

[M1 Slow.AP %]	[1%] ⇨ [60%]
Adjusting the M1 slowdown starting point before the opening endstop. The slowdown starting point is calculated as a percentage (from 1% to 60% of the complete gate leaf run). 📖 This function only appears if the **[Slow run Enc]** function is selected in the **[ENCODER]** menu.	
[M1 Slow. CH %]	[1%] ⇨ [60%]
Adjusting the M1 slowdown starting point before the closing endstop. The slowdown starting point is calculated as a percentage (from 1% to 60% of the complete gate leaf run). 📖 This function only appears if the **[Enc. Slwdn.] function** in the **[ENCODER] menu**.	
[M2 Appr. AP %]	[1%] ⇨ [60%]
Adjusting the M2 slowdown starting point before the opening endstop. The slowdown starting point is calculated as a percentage (from 1% to 60% of the complete gate leaf run). 📖 This function only appears if the **[Enc. Slwdn.] function** in the **[ENCODER] menu**.	
[M2 Slow. CH %]	[1%] ⇨ [60%]
Adjusting the M2 slowdown starting point before the closing endstop. The slowdown starting point is calculated as a percentage (from 1% to 60% of the complete gate leaf run). 📖 This function only appears if the **[Enc. Slwdn.] function** in the **[ENCODER] menu**.	
[M1 Appr. CH %]	[1%] ⇨ [15%]
The M1 approach starting point is calculated as a percentage (from 1% to 15% of the complete gate leaf run) before the closing endstop.	
[M2 Appr. CH %]	[1%] ⇨ [15%]
The M2 resting starting point is calculated as a percentage (from 1% to 15% of the complete gate-leaf run) before the closing endstop.	
[M1 Appr. AP %]	[1%] ⇨ [15%]
The M1 approach starting point is calculated as a percentage (from 1% to 15% of the complete gate-leaf run) before the opening endstop.	
[M2 Appr. AP %]	[1%] ⇨ [15%]
The M2 approach starting point is calculated as a percentage (from 1% to 15% of the complete gate-leaf run) before the opening endstop.	
[Set Encoder]	
Automatic calibration of the gate leaf run (see the CALIBRATING GATE LEAF RUN paragraph).	

Time settings menu

[TIMING ADJ] — ENTER ▢

[A.C.T]	[0 s] ⇨ [300 s]
The first automatic closing wait starts when the opening endstop point is reached and can be set to between 0 and 300 s. The automatic closing does not turn on if any of the safety devices trigger when an obstruction is detected, after a total stop or during a power outage.	
[Pedestrian ACT]	[0 s] ⇨ [300 s]
Waiting time of the second M2 leaf in the open position. Once this time elapses, a closing maneuver is automatically performed. The waiting time can be set to between 0 and 300 seconds.	
[Cycle Time]	[10 s] ⇨ [150 s]
Gearmotor working time during opening and closing. The working time can be set to between 10 and 150 seconds.	
[Op. Delay M1]	[0 s] ⇨ [10 s]
M1 opening delay in relation to M2 opening after each opening command. The waiting time can be set to between 0 and 10 seconds.	
[Cl. Delay M2]	[0 s] ⇨ [60 s]
M2 closing delay in relation to M1 closing after each closing command. The waiting time can be set to between 0 and 60 seconds.	
[Preflashing T]	[1 s] ⇨ [60 s]
After an opening or closing command, the flashing light connected on 10-E, flashes between one and sixty seconds before starting the maneuver.	
[Lock time]	[1 s] ⇨ [5 s]
Intervention time for the electric lock to release after each opening command. The intervention time can be adjusted to between one second and five seconds.	
[Ram hit time]	[1 s] ⇨ [3 s]
The closing and opening jolt thrust time of the geartmotors after each command. The thrust time can be set to between one and three seconds.	

[Ped.opening]	[5 s] ⇨ [60 s]

M2 opening time. The time can be adjusted to between five seconds and 60 seconds.

Users Menu

[USERS] — ENTER

[Add User]

Entering up to 250 users and associating a function from those available with each one. The entering must be done via transmitter or other control device (see paragraph on ENTERING NEW USERS).

[Mod. name]

For modifying the user number or name

[Mod. Code]

To modify the command code that is associated to a user.

[Related Func]

[2-7]	➡ Step-step command (open-close) or sequential command (open-stop-close-stop)
[Opens]	➡ Open only command
[2-3P]	➡ Pedestrian or partial opening
[B1-B2]	➡ Contact B1-B2 output

[Remove Usr]

To remove a user. Confirm removal with ENTER.

[Delete all Usr]

To remove all users. Confirm removal with ENTER.

[Backup data]

To save system users and settings in memory roll. Confirm saving with ENTER.

[Restore backup]

For uploading the data saved in the memory roll onto the electronic board.
📖 If the boards feature different versions, you may only upload the users.

Info menu

[INFO] — ENTER

[Version]

View software version.

[No. of Runs]

View the number of completed maneuvers.

[Standby Msg.]

View standby message. To edit the text, press ENTER. Use ENTER to move the cursor forward, ESC for moving the cursor backward and < > to select the letter or figure. Confirm text by pressing the ENTER key for some seconds.

[System Reset]

To restore the initial settings. Press ENTER to confirm the reset.

Motors Test menu

[TEST MOT] — ENTER
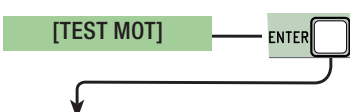
[<= M1 M2=>]

For checking the proper rotation direction of the gearmotors.
Keep the < key pressed for some seconds and check that the M1 leaf has opened. If the rotation direction is wrong, invert the motor's phases.
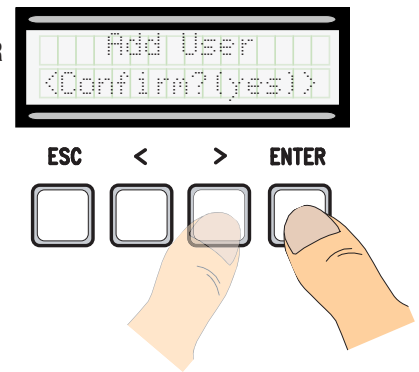Keep the > key pressed for some seconds and check that the M2 leaf has opened. If the rotation direction is wrong, invert the motor's phases.
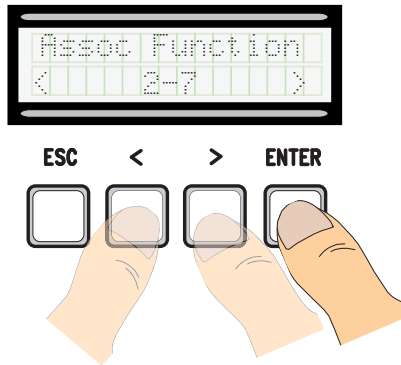
Entering a new user

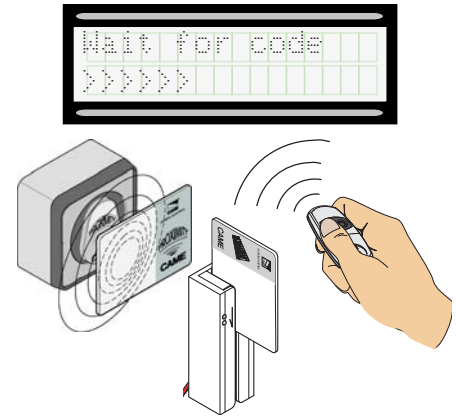1. From the **[USERS]** menu, select the **[Add User]** function. Press ENTER to confirm.

```
< Add User >
```

ESC   <   >   ENTER

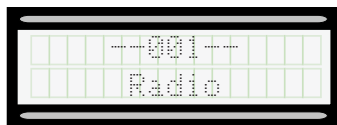2. Select **[confirm (yes)]** and press ENTER to confirm.

```
     Add User
<Confirm?(yes)>
```

ESC   <   >   ENTER
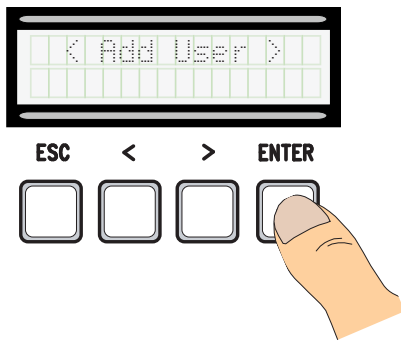
3. Select the function to associate to users. Press ENTER to confirm...

```
Assoc Function
<      2-7      >
```

ESC   <   >   ENTER

4. ... a code to enter will be requested. Send the code from the transmitter, with the swipe card or transponder.

```
Wait for code
>>>>>>
```

5. Once the code is entered, the user number will appear with the memorized number ...

```
    --001--
    Radio
```

6. ... or, if the code is already entered, then **[Code exist]** will appear.

```
    Code exist
001:  --U001--
```

Modify user name

1. From the **[USERS]** menu, select **[Change Name]**. Press ENTER to confirm

```
< Change Name >
```

ESC   <   >   ENTER
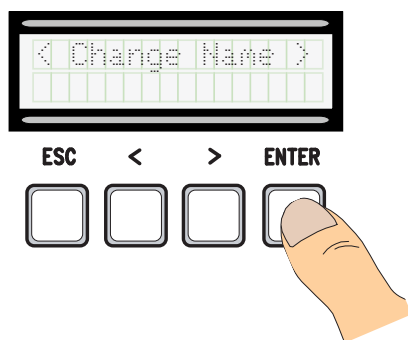
2. Select the user number or name to edit and press ENTER to confirm.
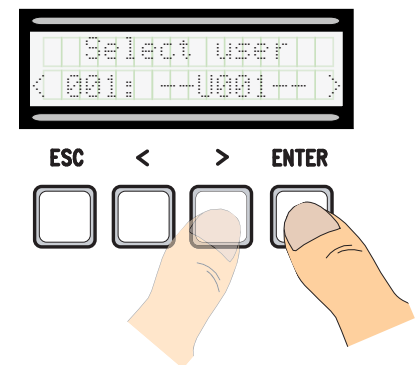
```
    Select user
<  001:  --U001--  >
```

ESC   <   >   ENTER

3. Use ENTER to move the cursor forward, ESC for moving the cursor backward and < > to select the letter or figure.
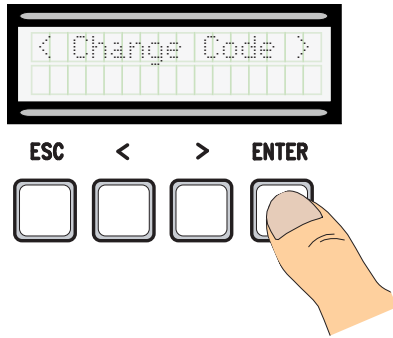
```
    Change Name
--001--
```

ESC   <   >   ENTER
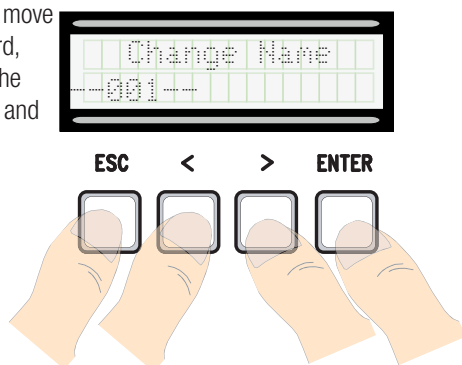
4. Press ENTER for a few seconds to confirm the text.

```
    Change Name
JOHN----
```

ESC   <   >   ENTER
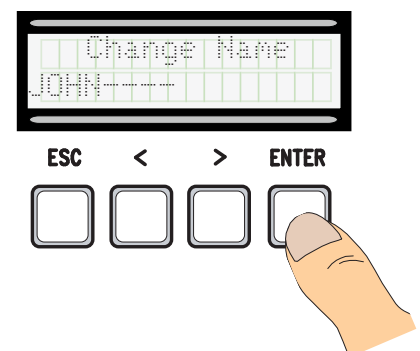
Modify code

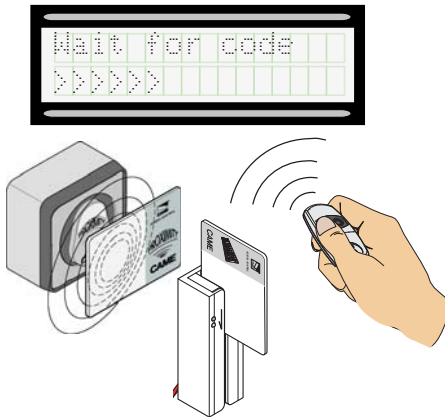1. From the **[USERS]** menu, select **[Change Code]**. Press ENTER to confirm

```
< Change Code >
```

ESC < > ENTER

2. Select the user name whose code you want to modify and press ENTER to confirm.

```
Change Code
```
```
Change Code
< 002:  --U002-- >
```

ESC < > ENTER
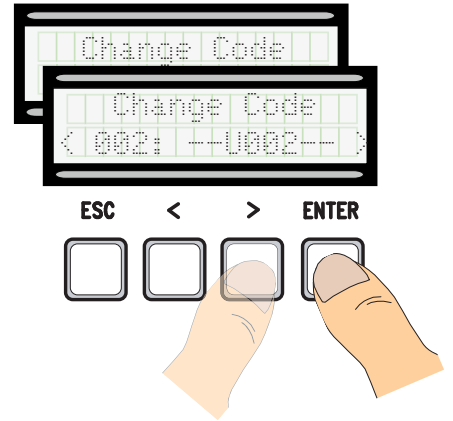
3. ... a code to enter will be requested. Send the code from the transmitter, with the swipe card or transponder.

```
Wait for code
>>>>>
```

4. ... once the code is entered, the user number and type of memorized command will appear...

```
002
Radio
```
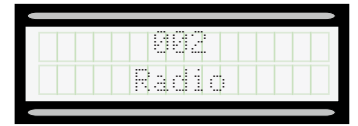
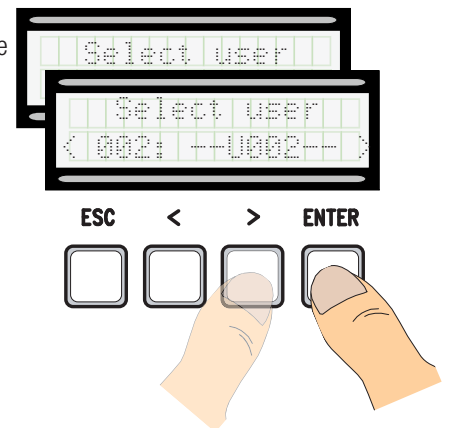5. Select **[confirm (yes)]** and press ENTER to confirm.

```
Change Code
<Confirm?(yes)>
```
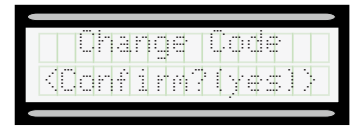
Function related to the user
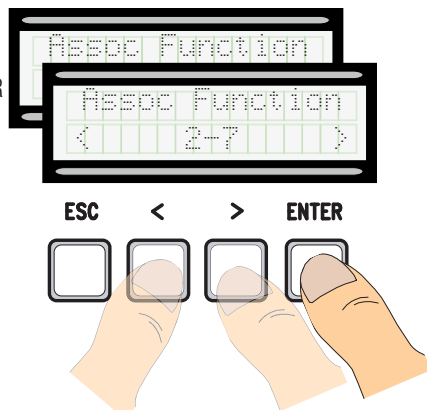
1. From the **[USERS]** menu, select **[Assoc Function]**. Press ENTER to confirm

```
<Assoc Function>
```

ESC < > ENTER
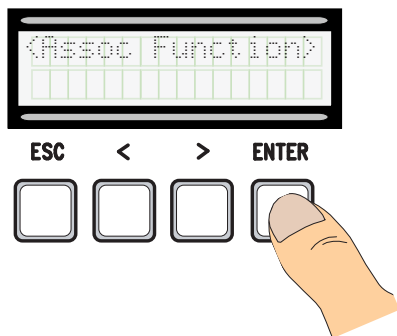
2. Select the user name for which you want to change the function and press ENTER to confirm.

```
Select user
```
```
Select user
< 002:  --U002-- >
```

ESC < > ENTER

3. Select the new function to relate to the user. Press ENTER to confirm.

```
Assoc Function
```
```
Assoc Function
<     2-7     >
```

ESC < > ENTER

4. Select **[confirm (yes)]** and press ENTER to confirm.

```
Assoc Function
<Confirm?(yes)>
```

ESC < > ENTER
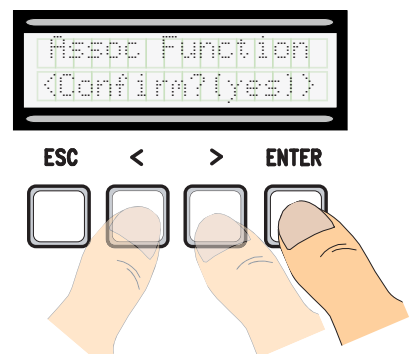
Travel calibration

⚠ Before calibrating the gate run, check that the maneuvering area is free from any obstruction and that there are both opening and closing mechanical stops.
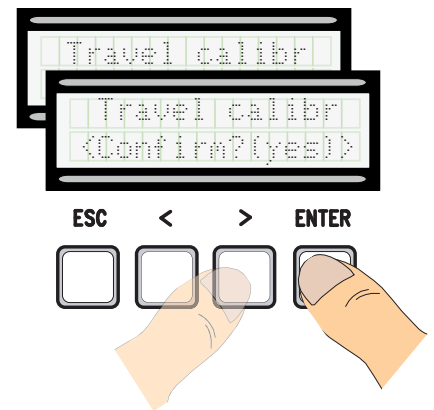
⚠ The mechanical end-stops are obligatory.

Important! During the calibration, all safety devices will be disabled except for the PARTIAL STOP one.
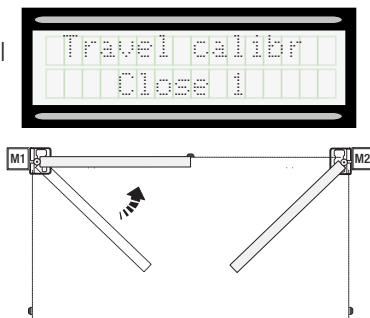
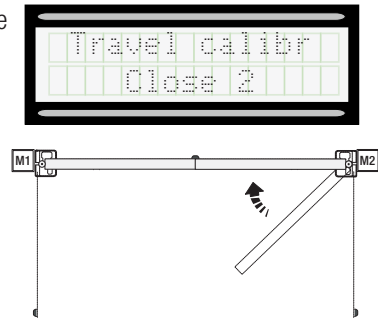1. From the **[ENCODER]** menu, select **[Travel calibr]**. Press ENTER to confirm

<Travel calibr>

ESC   <   >   ENTER

2. Select **[confirm (yes)]** and press ENTER to confirm.

Travel calibr

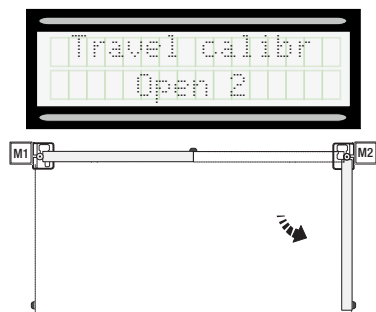Travel calibr
<Confirm?(yes)>

ESC   <   >   ENTER
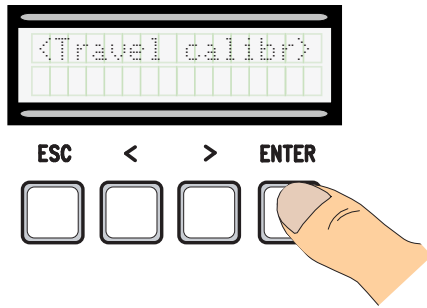
3. The M1 gate leaf will perform a new closing until it completely stops...
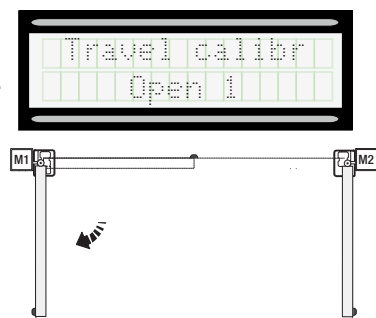
Travel calibr
Close 1

4. ...then, the M2 gate leaf will perform the same closing...

Travel calibr
Close 2

5. ... and then the M2 gate leaf will perform a full opening...

Travel calibr
Open 2

6. ... after which, the M1 gate leaf will also perform a full opening.

Travel calibr
Open 1

7. Once the procedure is completed, the display will read **[Travel calibr OK]** for a few seconds.

Travel calibr
OK

Memory Roll Card

For memorizing user and system configuration data, then using them on another control board.

📖   After memorizing the data, it is best to remove the Memory Roll card while the control board is in operation.

Memory roll
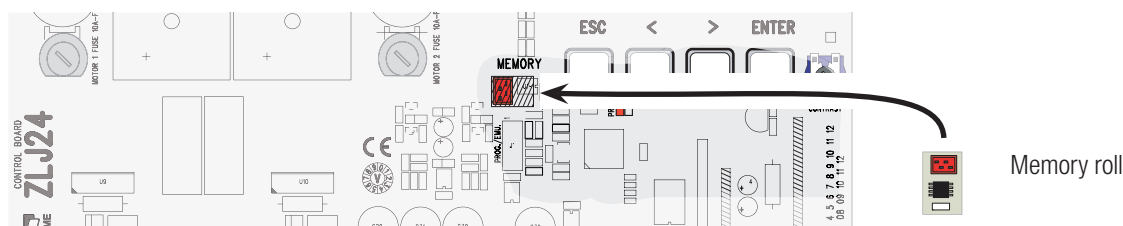
ERROR MESSAGE

📖   Error messages appear on the display.

[Encoder - ERROR], [Error!]	Broken encoder or wrong connection.
[Safety test - ERROR]	Safety devices malfunctioning.
[Endstop - ERROR]	Malfunctioning endstop contacts
[Cycle Time - ERROR]	Insufficient working time
[Safety - STOP], [C1], [C3], [C4], [C7] or [C8]	Malfunctioning safety devices or wrong connection

DIAGRAM OF THE SLOWDOWN AND FINAL APPROACH POINTS AND FOR THE ENCODER DEVICE

📖 The run area and slowdown and approach points are tested according to the parameters set forth by Technical Standards EN 12455 and EN 12453 for compliance with the impact forces generated by the running leaves.
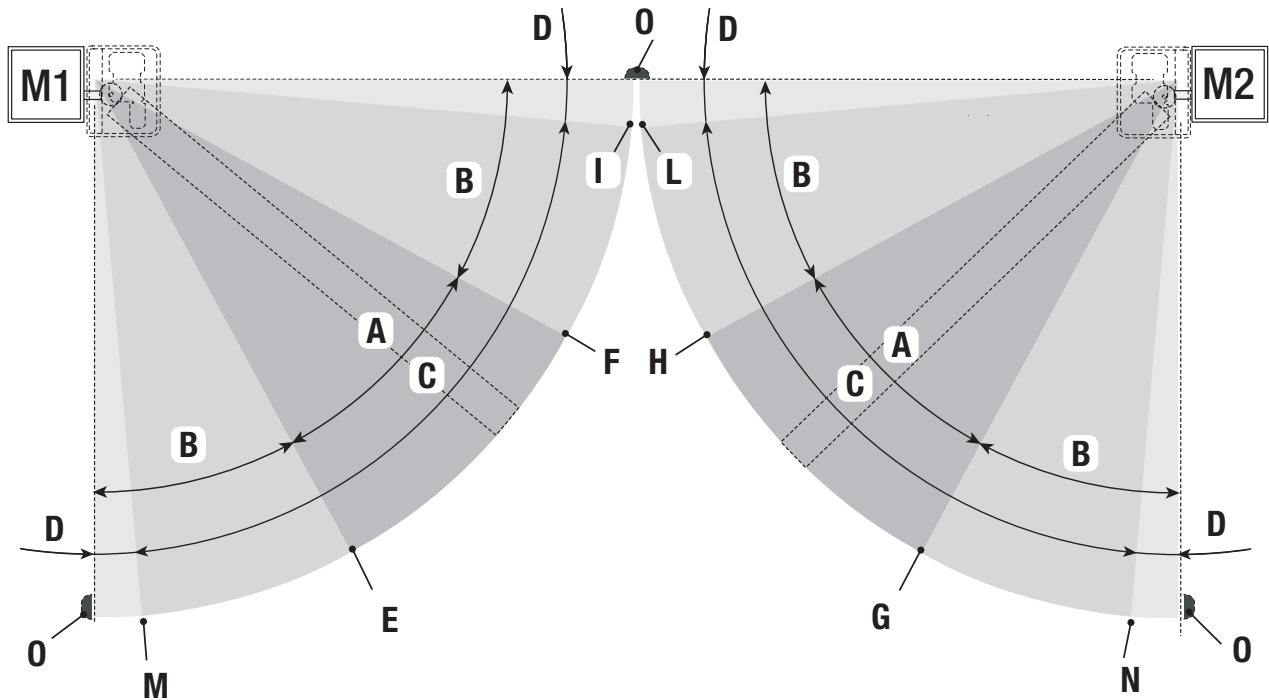
A = Normal speed
B* = Slowed-down speed
C = Encoder intervention zone with movement inversion
D = Encoder intervention zone with movement stopped
E = Opening slow-down starting point **[M1 Appr.AP %]**
F = Closing slow-down starting point **[M1 Slow.CH%]**
G = Opening slow-down starting point **[M2 Slow. AP %]**
H = Closing slow-down starting point **[M2 Slow. CH%]**
I** = Closing approach starting point **[M1 Appr.CH %]**
L** = Closing approach starting point **[M2 Appr.CH %]**
M = Opening slow-down starting point **[M1 Appr. AP %]**
N = Opening slow-down starting point **[M2 Appr. AP %**]
O = Strike plates

* Minimum 600 mm from the strike plate.
** Set the final approach percentage for the **[M1 Appr.CH %]** function for M1 and **[M2 Appr.CH %]** for M2 from the **[ENCODER]** menu so as to obtain a distance of between 1 and 50 mm maximum from the final strike plate point.

DISMANTLING AND DISPOSAL

Always make sure you comply with local laws before dismantling and disposing of the product. The packaging materials (cardboard, plastic, and so on) should be disposed of as solid urban waste, and simply separated from other waste for recycling.
Other components (control boards, batteries, transmitters, and so on) may contain hazardous pollutants. These must therefore be disposed of by authorized, certified professional services.
DISPOSE OF PROPERLY!

DECLARATION OF CONFORMITY

CE **Declaration** - Came S.p.A. declares that this device conforms to the essential, pertinent requirements provided by directives 2004/108/EC and 2006/42/EC.

An original copy of the declaration of conformity is available on request.

CAME
s a f e t y & c o m f o r t

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parkare   DOMITICLED   go

Came S.p.A.

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