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 the: 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 - Electrolock	3.15 A-F

Dimensions (mm)

295 215 240 320 120 145
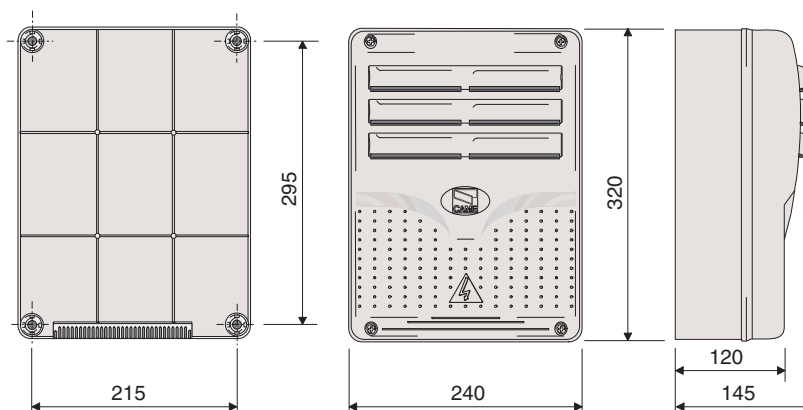
Description of parts

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. Electrolock fuse
20. Control board fuse
21. Accessories fuse
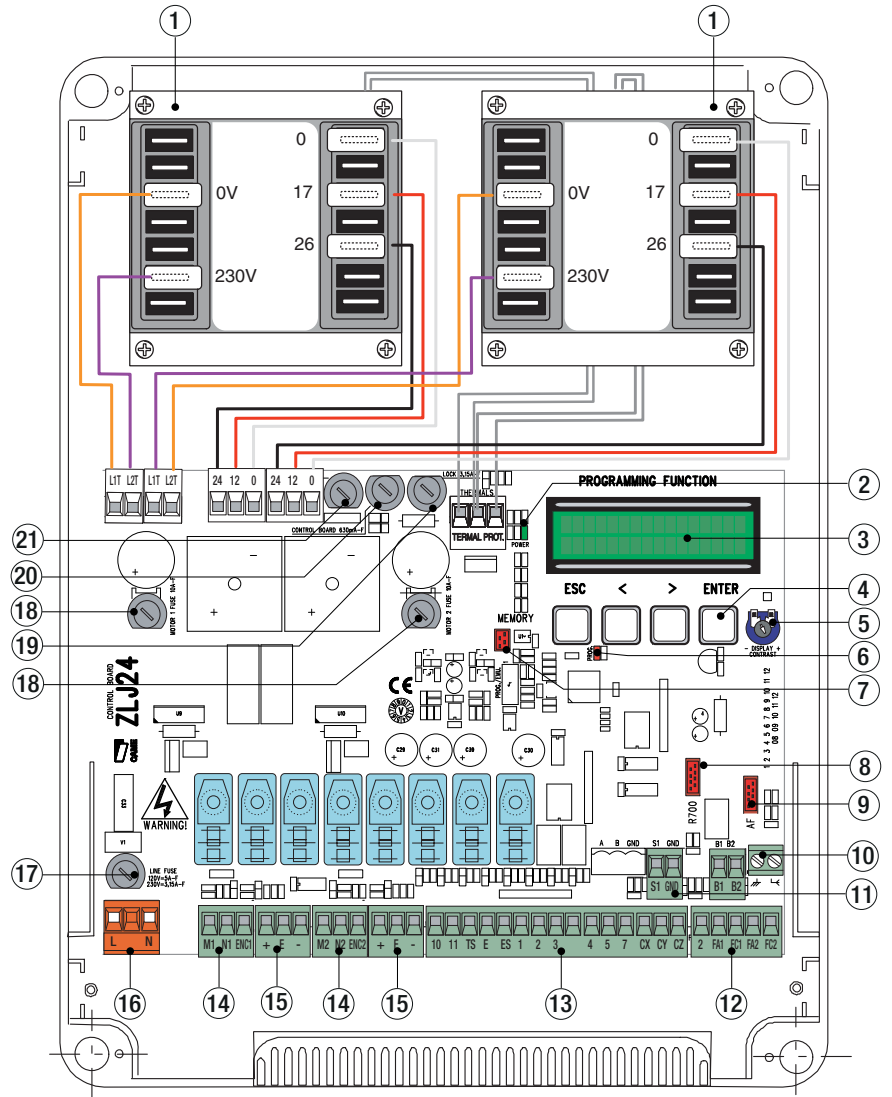
GENERAL INSTRUCTIONS FOR INSTALLING

⚠ 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 (that is, screws, anchors, and so on); • 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 with respect 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	$2 \times 1.5\ mm^2$	$2 \times 1.5\ mm^2$	$2 \times 2.5\ mm^2$
Encoder gearmotor power supply*		$3 \times 1.5\ mm^2$	$3 \times 1.5\ mm^2$	$3 \times 2.5\ mm^2$
Power supply to gearmotor**		$2 \times 1.5\ mm^2$	$2 \times 1.5\ mm^2$	$2 \times 2.5\ mm^2$
Flashing light		$2 \times 0.5\ mm^2$		
Photocell transmitters		$2 \times 0.5\ mm^2$		
Photocell receivers		$4 \times 0.5\ mm^2$		
Command and safety device		$2 \times 0.5\ mm^2$		
Endstop***		$3 \times 0.5\ mm^2$		
Antenna	RG58	max 10 m		
Encoder****	2402C 22AWG	max 30 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

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.
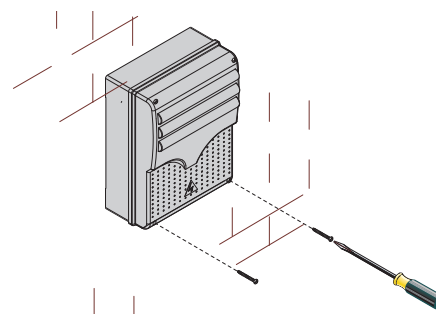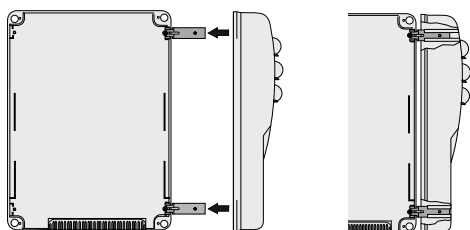📖 Pre-perforated hole diameter: 20 mm.
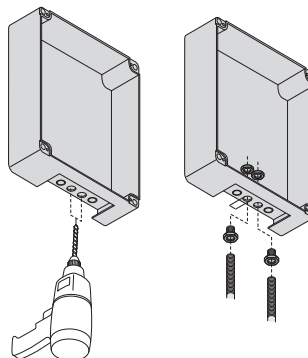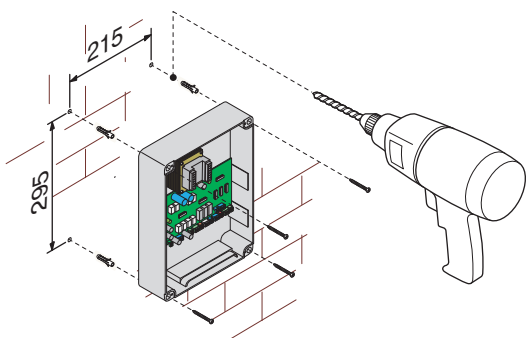
Assemble the pressure hinges.
Fit the hinge into the box (either on the right or left) and fasten them using the supplied screws and washers.
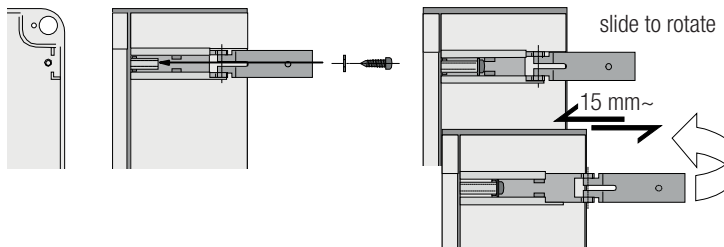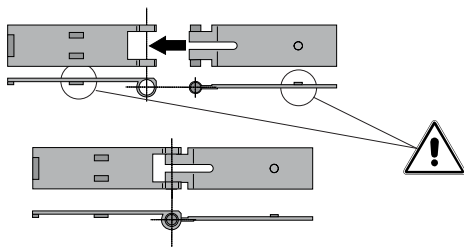
Snap the cover onto the hinges. Close it and secure it using the supplied screws.
After the settings and adjustments, fasten the cover using the supplied screws.
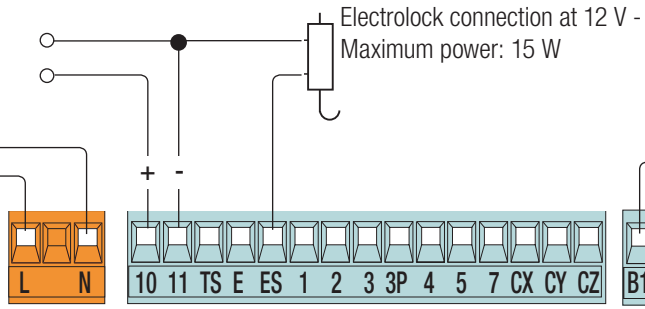
ELECTRICAL CONNECTIONS

Power supply to accessories

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

⚡

230 V AC - 50/60 Hz

Electrolock 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**
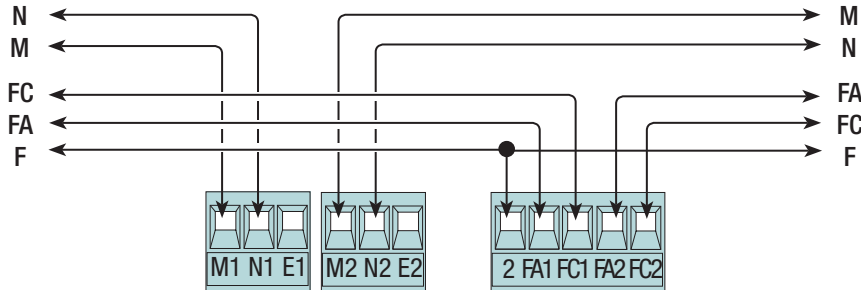
Connecting the encoder gearmotors

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

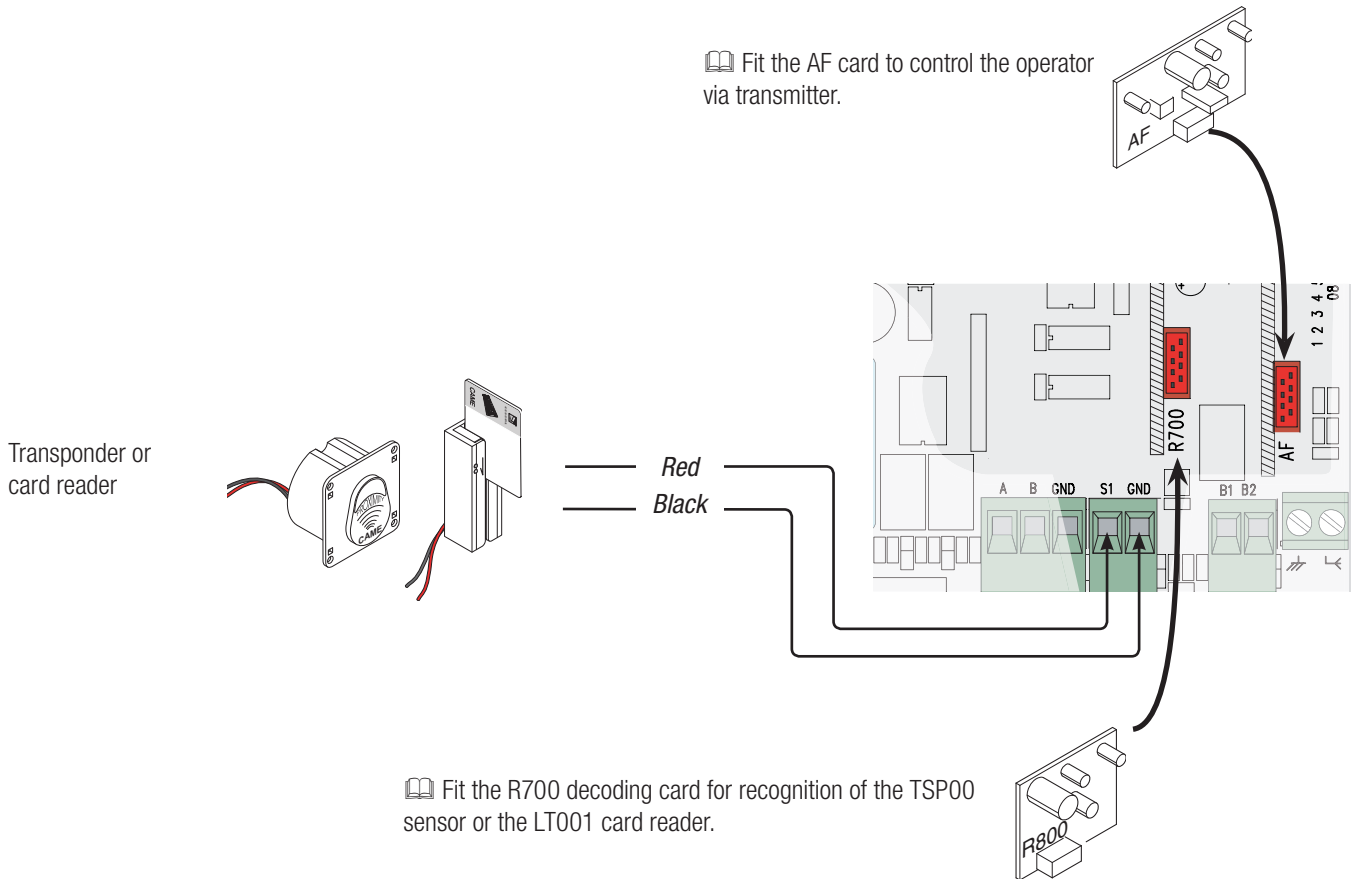**M1 N1 E1**   **+ E -**   **M2 N2 E2**   **+ E -**

+ ← White
E ← Brown
- ← Green
M
N

Green → -
Brown → E
White → +

N
M
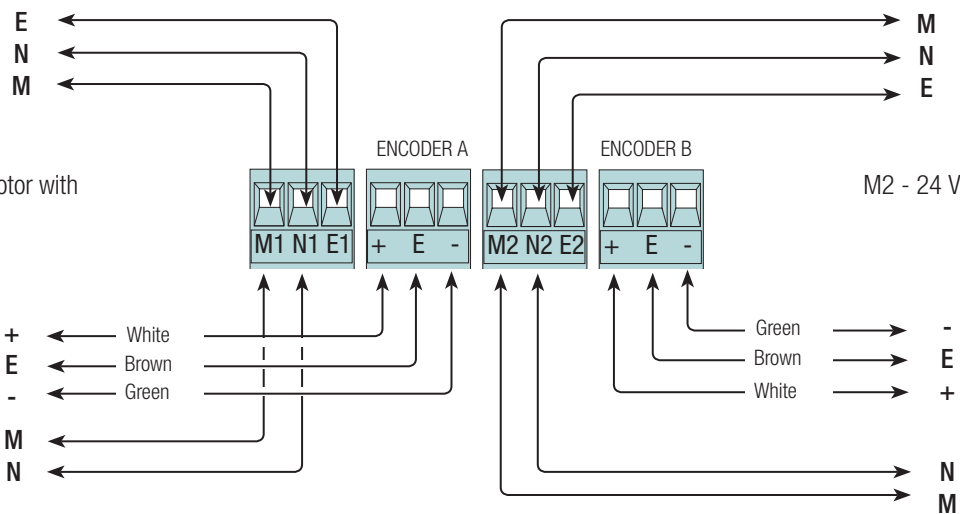
Command and control devices

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

📖 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 with NO contact.

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

ONLY CLOSE 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 [Command 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
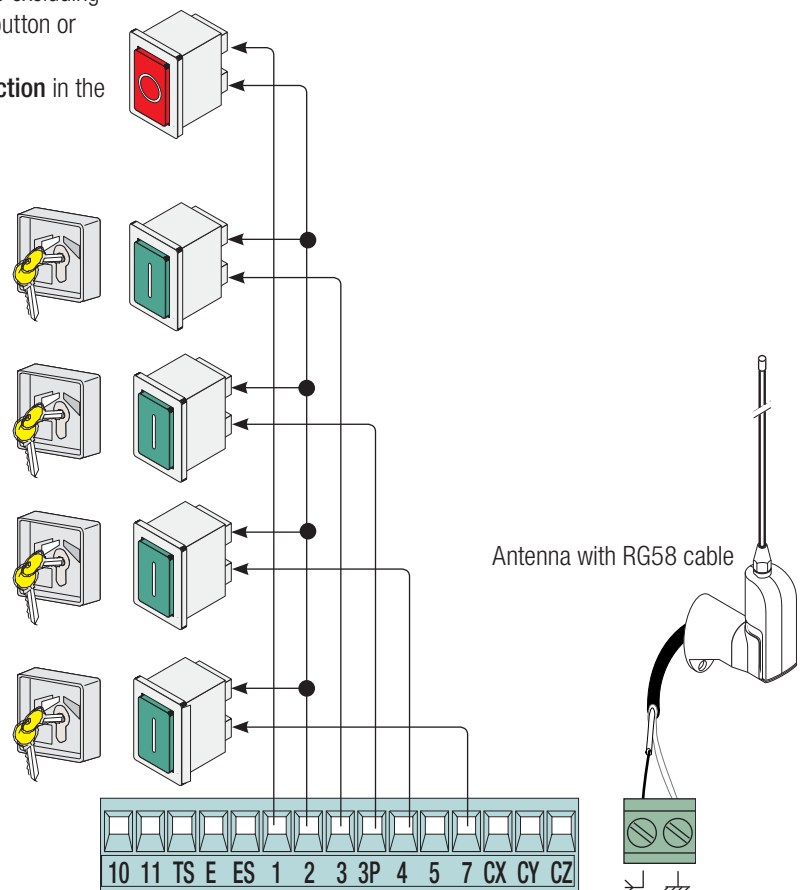
Warning devices

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).
Auxiliaryconnection 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 **[Light 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.
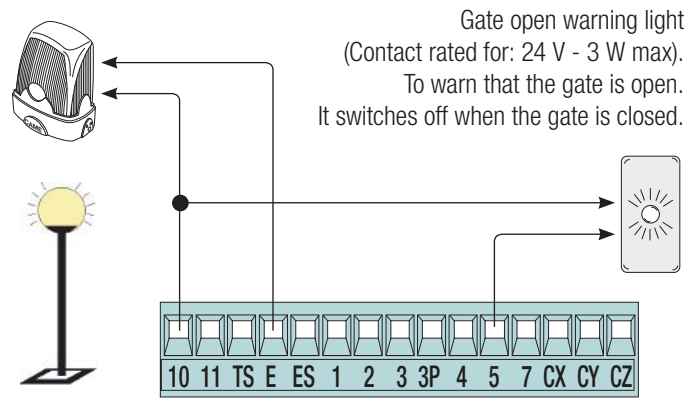
Safety devices

Photocells

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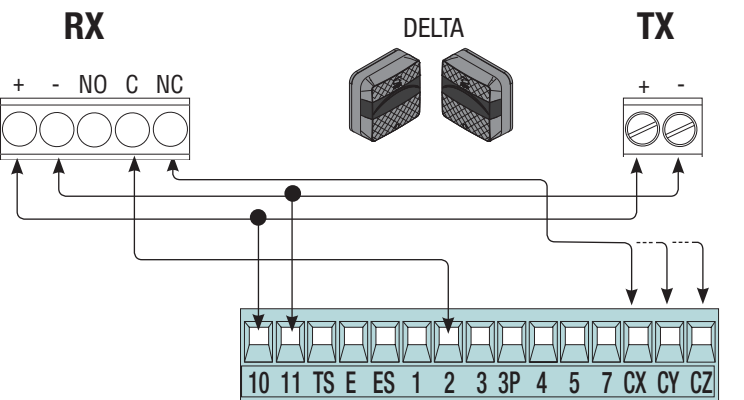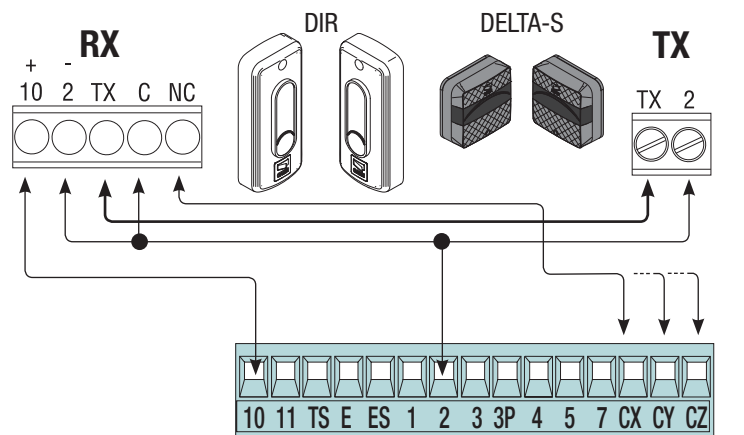See functions **[input CX]**, **[input CY]** or **[input CZ]**.

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

- C2 closing during 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 functions **[input CX]**, **[input CY]** or **[input CZ]**.- 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.
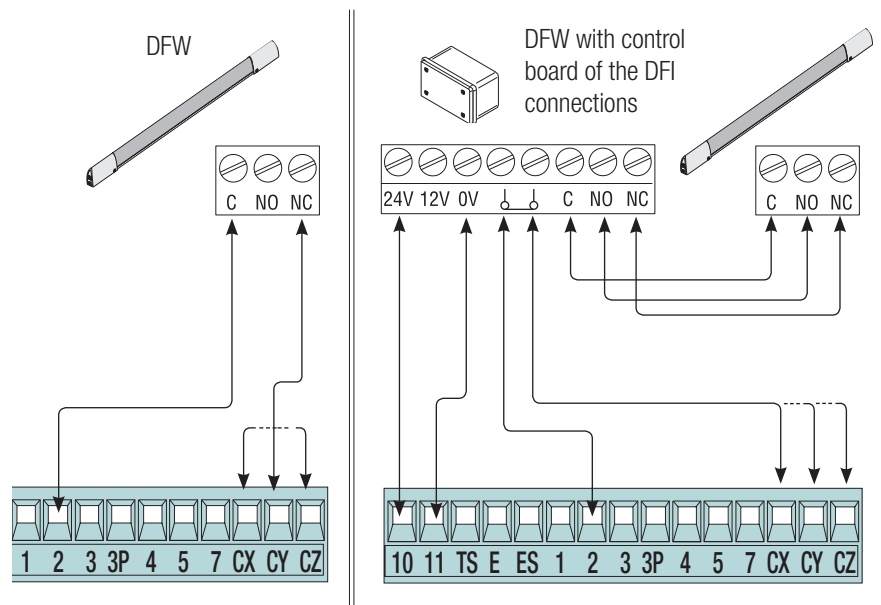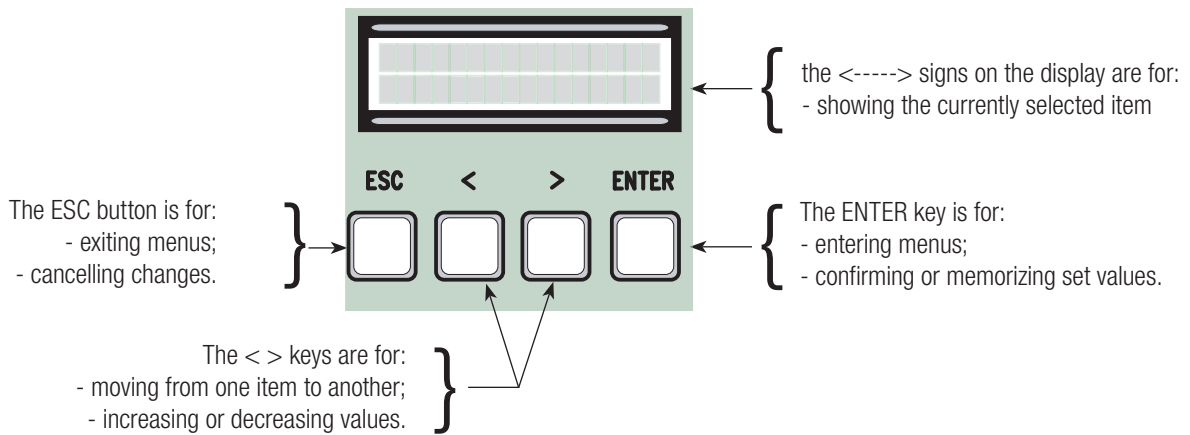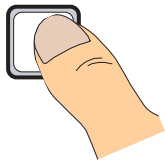
Photocell's safety connection

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.
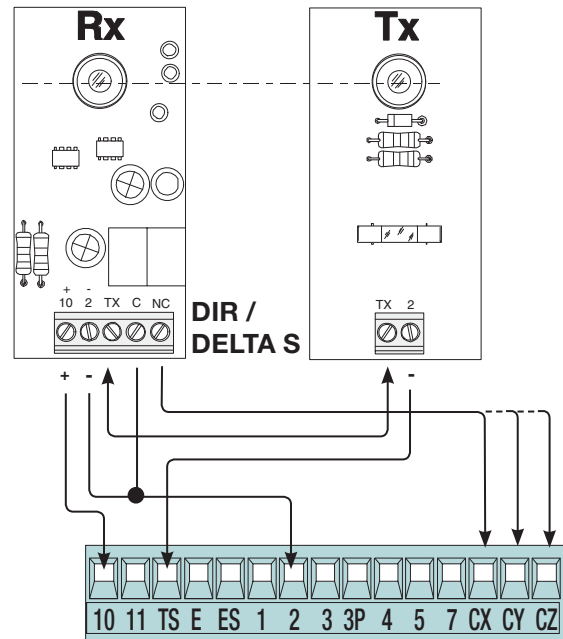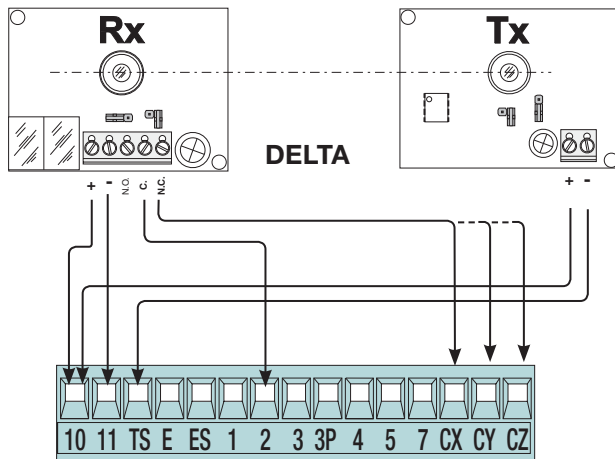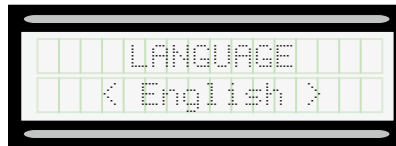
Description of programming commands

The ESC button is for:
- exiting menus;
- cancelling changes.

ESC   <   >   ENTER

the <-----> signs on the display are for:
- showing the currently selected item

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 >
```

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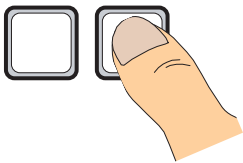
To select menu items, use the arrow keys ...

```
   FUNCTIONS
```
```
    Imp. Run
```
```
  < TIMING ADJ >
```
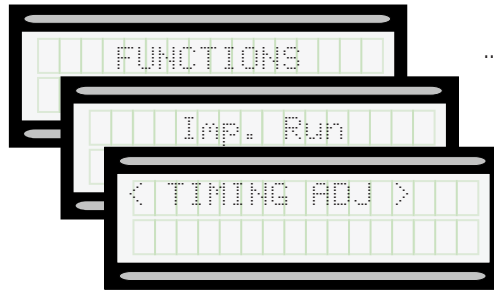
.. then press ENTER

ENTER

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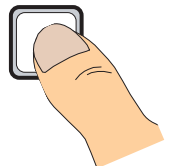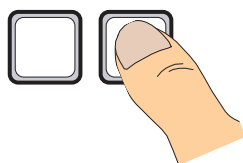
also for the submenus, use the arrow keys to select ...

```
  < A.C.T. >
```
```
  < Cycle Time >
        90s.
```

.. then press ENTER

ENTER

```
   Cycle Time
  <     90s.     >
```
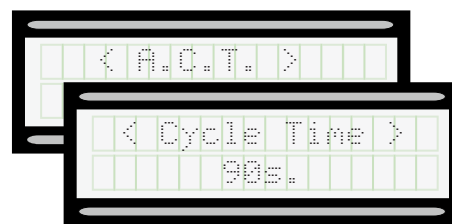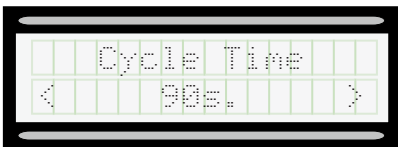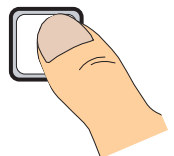
If the < > arrows are set to the **[Working Time]**, you may edit their value.

< >

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

```
   Cycle Time
  <    100s.     >
```

... the press ENTER to confirm ...

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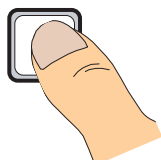
... to exit the menu wait 30 seconds, or press ESC, until the start up screen appears.

ESC

Meaning of the menu items abbreviations

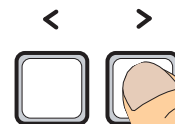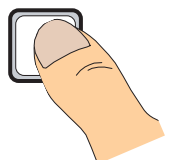|	
[Run Amperom]	Gate Run Sensibility
[Partial Op.]	Partial Opening
[Maintained Act]	Maintained Action
[Automatic Cl.]	AutoClose
[Config]	Configuration
[Associated Func.]	Associated Feature
[Set Gate Travel]	Set gate run
[M1 OP. Appr. %]	M1 Opening approach as a percentage
[M1 CL. Slwdwn %]	M1 Closing approach as a percentage
[M1 Appr.AP %]	M1 Opening slow-down as a percentage
[M1 Appr.CH %]	M1 Closing slow-down as a percentage
[M2 OP. Rest. %]	M2 Opening approachas a percentage
[M2 CL. Appr. %]	M2 Closing approach as a percentage
[M2 Slow. AP %]	M2 Opening slowdown as a percentage
[M2 Slow.CH %]	M2's Closing Slowdown as a percentage
[Edit. Code]	Mod. name
[Standby Msg]	Starting message
[Motor Num.]	Motor number
[Soft Start]	Soft Start
[Slow run Enc]	Opening and closing slow-downs with ENCODER
[Obstacle Det]	Obstacle Detection
[Remove Usr.]	Remove User
[M1 Op. Dly.]	Closing Delay M1
[Cl. Delay M2]	M2 Closing Delay
[Amperon. Sens.]	Amperom Sens
[Sensib. Run]	Sensib. Run
[Sensib. Decel]	Sensib. Decel
[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.]	Slow-down Speed
[Highspeed %]	Gate run speed

Menu map

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

[FUNCTIONS]		Default
[Autom. Closing]	[Disabled] / [Activated]	[Activated]
[Maintained Act]	[Disabled] / [Activated] / [When closing]	[Disabled]
[Obstacle Det]	[Disabled] / [Activated]	[Disabled]
[Safety Test]	[Disabled] / [CX] / [CY] / [CZ] / [CX+CY] / [CX+CZ] / [CY+CZ] / [CX+CY+CZ]	[Disabled]
[Pre-flashing]	[Disabled] / [Activated]	[Disabled]
[Ram hit funct]	[Disabled] / [Closing] / [Opening] / [Open-Close]	[Disabled]
[Total Stop]	[Disabled] / [Activated]	[Activated]
[input CX]	[Disabled] / [C1] / [C2] / [C2] / [C4] / [C7] / [C8]	[C1]
[Input CY]	[Disabled] / [C1] / [C2] / [C2] / [C4] / [C7] / [C8]	[C3]
[Input CZ]	[Disabled] / [C1] / [C2] / [C2] / [C4] / [C7] / [C8]	[Disabled]
[Cl. Thrust]	[Disabled] / [Activated]	[Disabled]
[Lock]	[Disabled] / [Closing] / [Opening] / [Open-Close]	[Disabled]
[Config]	[Time of Run] / [Endstop] / [Slwdwn] / [Lscl-ClSlwdwn] / [ENCODER]	[ENCODER]
[Endstop]	[N.C. / N.O.]	[N.C.]
[Command 2-7]	[Open-Close] / [Op. Stop Cl.]	[Open-Close]
[Command 2-3P]	[Partial] / [Pedestrian]	[Pedestrian]
[Light E]	[Fl. light] / [Courtesy] / [Cycle]	[Fl. light]
[Output B1-B2]	[Bistable] / [Monostable]	[Bistable]

[SET TRAVEL]		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]	[Activated] / [Disabled]	[Disabled]
[Sens.Amperom]*	[Activated] / [Disabled]	[Activated]
[Run Amperom]*		[-●●●●●●○○○○○ ° +]
[Slow down time]**	[0 s] ⇨ [30 s]	[20 s]

*This function does not appear if [ENCODER] from the [Config] function.
**This function only appears if [Slwdwn.] or [Lsop-Clslwdwn] from the [Config] function.

[ENCODER] | Default

		Default
[Sensibility]	[Activated] / [Disabled]	[Activated]
[Travel Sens.]		[-●○○○○○○○○○○○ ○ +]
[Slwdwn Sens.]		[-●○○○○○○○○○○○ ○ +]
[Slow run Enc]	[ON] / [OFF]	[ON]
[M1 Appr.CH %]	[1%] ⇨ [60%]	[10%]
[M1 Slow.CH %]	[1%] ⇨ [60%]	[10%]
[M2 Slow.AP %]	[1%] ⇨ [60%]	[10%]
[M2 Slow.CH %]	[1%] ⇨ [60%]	[10%]
[M1 CL. Slwdwn %]	[1%] ⇨ [15%]	[15%]
[M2 Appr. CL %]	[1%] ⇨ [15%]	[15%]
[M1 Appr. OP %]	[1%] ⇨ [15%]	[15%]
[M2 Appr. OP %]	[1%] ⇨ [15%]	[15%]
[Gate Travel Calibration]	[Confirm? (no)] / [Confirm? (yes)]	

[TIMING ADJ | Default

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

[USERS]

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

[INFO]

[Version] / [Number of Runs] / [Standby msg.] / [System Reset]

[MOT TEST]

[<=M1 M2=>]

🕮 **IMPORTANT! Start programming by first executing the following functions [MOTOR TYPE][MOTOR NUMBER], [TOTAL STOP] and [RUN CALIBRATION] function.**
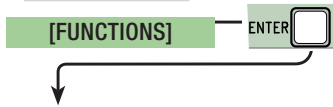
Language menu

[LANGUAGE] — ENTER

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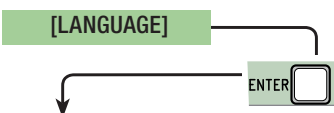
[Italiano] / [English] / [Français] / [Deutsch] / [Español] / [Portugues euro] / [Portugues bras]
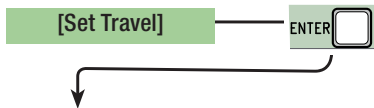
Select one of the available languages

Functions menu

[FUNCTIONS] — ENTER

[Automatic Cl.]	[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 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] function	[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 [ADJUST TIMES] menu.

[Ram hit funct]	[Disabled] / [Closing] / [Opening] / [Open-Close]

Before any opening and closing maneuver, the gate leaves thrust inward to help release the electro-lock. To adjust this thrust time, select [Ram hit time] in the [ADJUST TIMES] menu.

[Total Stop] function	[Turn on] / [Disabled]

NC input - Gate-leaves stop with automatic closing excluded; to resume movement, use the control device. The safety device is inserted into [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 some seconds.

[Lock]	[Disabled] / [Closing] / [Opening] / [Open-Close]

Set the electro-lock, for blocking the gate leaves, among one of the chosen available functions.

[Config]	[Slwdwn.] / [Lsop-Clslwdwn] / [ENCODER] / [Time of Run] / [Endstop]

Configuring the opening and closing slow-downs

[Slw. Dwn.]*	➡ opening and closing slow-downs.
[Lsop-Clos. Slw]*	➡ opening endstop and closing slow-down.
	➡ slow-down management, obstruction detection and sensitivity.
[ENCODER] menu	➡ timed endstop.
	➡ opening and closing endstop.
[Time of Run]	*slowdowns configurable with the [Slow down time] function in the [Imp. Run]
[End Stop]	

[Endstop]	[N.C] / [N.O]

Configuring the endstops as normally opened or closed contacts.
📖 This function only appears if option is selected between [Endstop], [Lsop-Clos. Slw] or [Slw. Dwn.] from the [Config] function.

[Command 2-7] function	[Open-Close] / [Op. Stop Cl]

Configuration contact 2-7 in step-step (open-close) or sequential (open-stop-close-stop).

[Command 2-3P] function	[Pedestrian] / [Partial]

Configuring contact 2-3P to pedestrian opening (total opening of the second gate-leaf) or partial (partial opening of the second gate leaf) depending on the time set on [Partial Op.] in the [ADJUST TIMES] menu.

| [Light E] function	[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). In case the automatic closing is off, it stays on only during the gate-leaves' movement. - 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).	

Gate run setting menu

[Set Travel]	ENTER

[Motor Number]	[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 slowed down speed for a few seconds.	
[Amperom. Sens.]	[Disabled] / [Turn on]
Obstruction detection sensitivity. 📖 This function does not appear if [Encoder] **is** set in the function **[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; - **[Slw. Dwn.]** it inverts the gate leaf movement during a maneuver and stop the movement during a slow down. - **[Lsop-Clos. Slw]** 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.	
[Amperom Run]	[- ● ● ● ● ● ● ○ ○ ○ ○ ○ ○ +]
Adjusting the Amperometric sensibility. 📖 You need to turn on the **[Sens.Amperom]** in the **[Set Travel]**.	
[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 the **[Slw. Dwn.]** or **[Lsop-Clos. Slw]** from the **[Config] function**.	

ENCODER menu

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

[ENCODER] menu	ESC
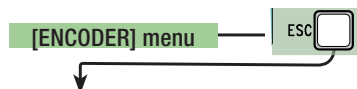
[Sensibility]	[Turn on] / [Disabled]
Obstruction detection sensibility.	
[Trav. Sens.]	[- ● ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ +]
Obstruction detection sensitivity during gate run (both opening and closing). 📖 You need to turn on the **[Sensitivity]** in the **[ENCODER] menu**.	
[Slwdwn. Sens.]	[- ● ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ +]
Obstruction detection sensitivity during slow-down (both opening and closing). 📖 You need to turn on the **[Sensitivity]** in the **[ENCODER] menu**.	
[Enc. Slwdwn.]	[ON] / [OFF]
Activating the opening and closing slow-down starting points.	

[M1 Slow.AP %]	[1%] ⇨ [60%]
Adjusting M1's slow-down starting point before the opening endstop. The slow-down 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 Slow. CH %]	**[1%] ⇨ [60%]**
Adjusting M1's slow-down starting point before the closing endstop. The slow-down 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 M2's slow-down starting point before the opening endstop. The slow-down 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 M2's slow-down starting point before the closing endstop. The slow-down 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 CL. Appr. %]	**[1%] ⇨ [15%]**
M1's approach starting point is calculated as a percentage (from 1% to 15% of the complete gate-leaf run) before the closing endstop.	
[M2 CL. Appr. %]	**[1%] ⇨ [15%]**
M2's resting starting point is calculated as a percentage (from 1% to 15% of the complete gate-leaf run) before the closing endstop.	
[M1 Appr.CH %]	**[1%] ⇨ [15%]**
M1's approach starting point is calculated as a percentage (from 1% to 15% of the complete gate-leaf run) before the closing endstop.	
[M2 OP. Appr. %]	**[1%] ⇨ [15%]**
M2's approach starting point is calculated as a percentage (from 1% to 15% of the complete gate-leaf run) before the opening endstop.	
[Run Calibration]	
Automatic calibration of the gate-leaf run (see the CALIBRATING GATE-LEAF RUN paragraph).	

Time settings menu

[SET TIMES] — 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 M2's second 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.	
[Working Time] function	**[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 with respect to M2 after each opening command. The waiting time can be set to between 0 and 10 seconds.	
[Cl. Delay M2]	**[0 s] ⇨ [60 s]**
M2's closing delay with respect to M1's 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 electrolock 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's 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 to each one a function of choice among those included. The entering must be done via transmitter or other control device (see paragraph on ENTERING NEW USERS).

[Mod. name]

Formodifying 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.

[Number of Runs]

View the number of completed maneuvers.

[Open. Msg.]

View opening 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 of figure. Confirm text by pressing the ENTER key for some seconds.

[Reset System]

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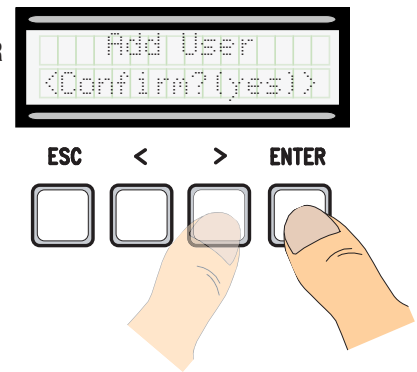Keep the > key pressed for some seconds and check that M2's leaf has opened. If the rotation direction is wrong, invert the motor's phases.
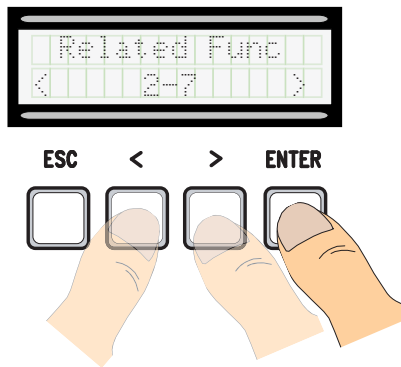
Entering a new user

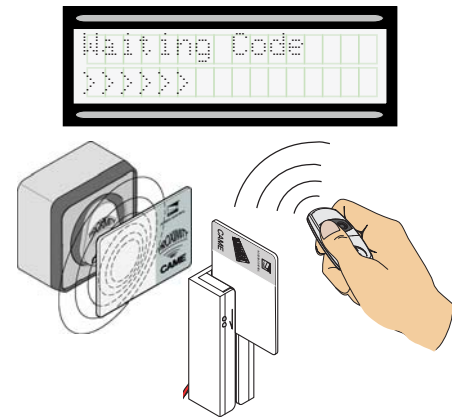1. From the **[USERS]**, select **[Add User]** **function.** Press ENTER to confirm.

```
< Add User >
```
ESC   <   >   ENTER

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

```
Add User
<Confirm?(yes)>
```
ESC   <   >   ENTER
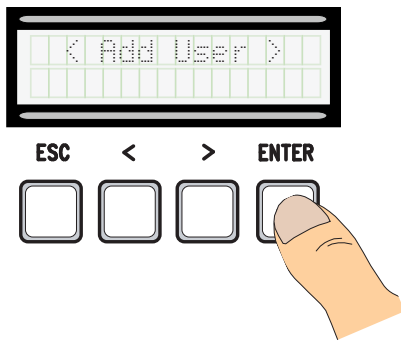
3. Select the function to associate to users. Press ENTER to confirm...

```
Related Func
<        2-7        >
```
ESC   <   >   ENTER

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

```
Waiting Code
>>>>>
```

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

```
--001--
Radio
```
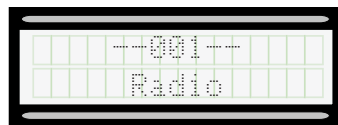
6. ... or, if the code is already entered, then **[Code exist] will appear**.

```
Code exist
001:  --U001--
```
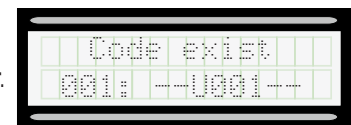
Modify user name

1. From the **[USERS]**, select **[Mod. name]**. Press ENTER to confirm

```
< Mod. name >
```
ESC   <   >   ENTER
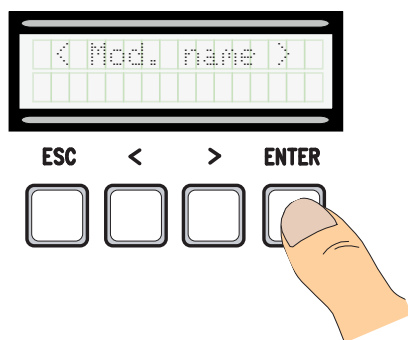
2. Select the user number or name to edit and press ENTER to confirm.

```
Choose User
< 001:  --U001--  >
```
ESC   <   >   ENTER
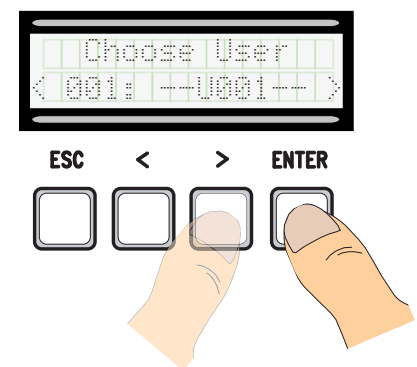
3. Use ENTER to move the cursor forward, ESC for moving the cursor backward and < > to select the letter of figure.

```
Mod. name
--001--
```
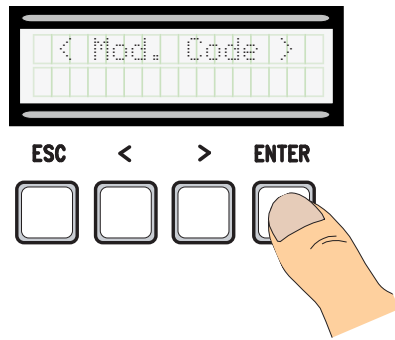ESC   <   >   ENTER

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

```
Mod. name
JOHN----
```
ESC   <   >   ENTER
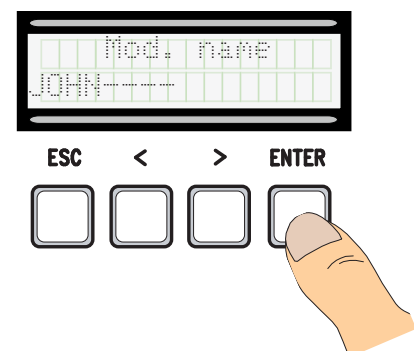
Modify code
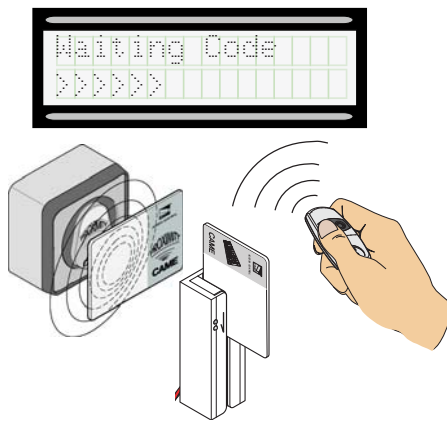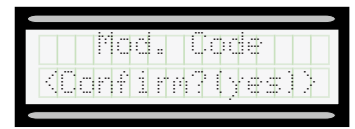
1. From the **[USERS]**, select **[Mod. Code]**. Press ENTER to confirm

```
< Mod. Code >
```

ESC   <   >   ENTER

2. Select the user name of which you want to edit the code and press ENTER to confirm.

```
Mod. Code
Mod. Code
< 002: --U002-- >
```

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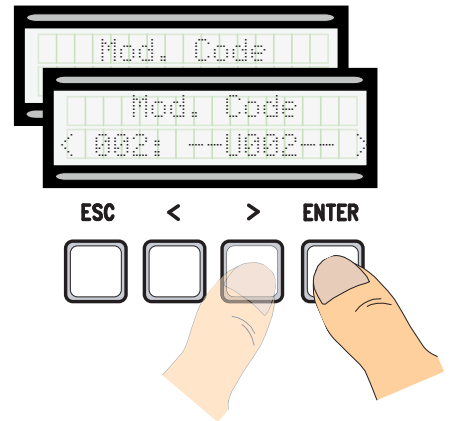
3. ... a code to enter will be requested. Send the code from the transmitter, with the swipe card or transponder.

```
Waiting 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.

```
Mod. Code
<Confirm?(yes)>
```

Function related to the user

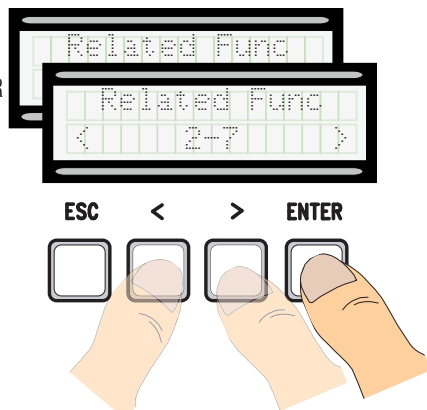1. From the **[USERS]**, select **[Related Func]**. Press ENTER to confirm

```
<Related Func>
```

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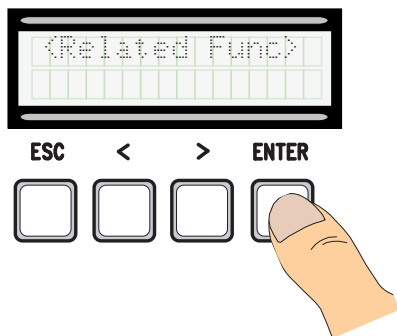
2. Select the user name for which you want to change the function and press ENTER to confirm.

```
Choose User
Choose User
< 002: --U002-- >
```

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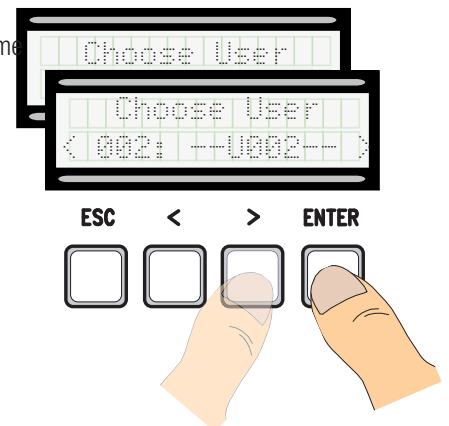
3. Select the new function to relate to the user. Press ENTER to confirm.

```
Related Func
Related Func
< 2-7 >
```

ESC   <   >   ENTER

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

```
Related Func
<Confirm?(yes)>
```

ESC   <   >   ENTER
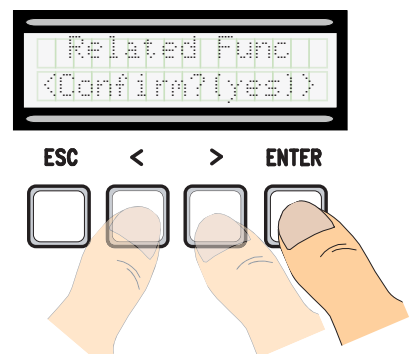
Travel calibration

⚠ 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.
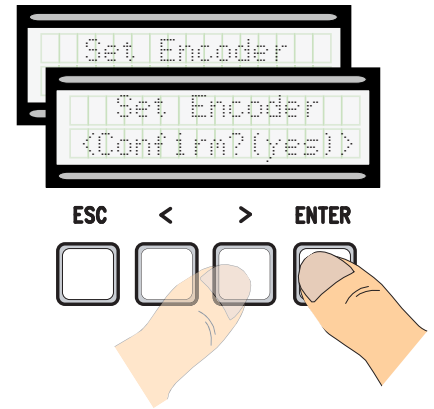
⚠ The mechanical end-stops are obligatory.

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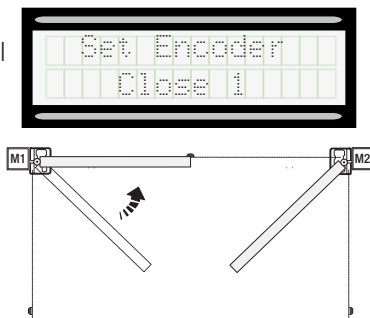
1. From the **[ENCODER] menu**, select **[Travel Calibration]**. Press ENTER to confirm
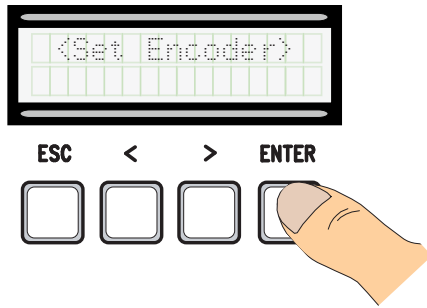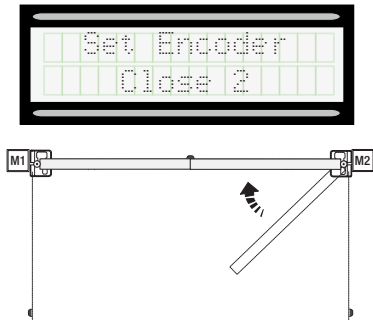

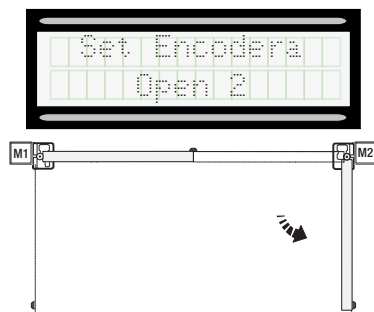2. Select **[confirm (yes)]** and press ENTER to confirm.

3. M1's gate leaf will perform a new closing until it completely stops...
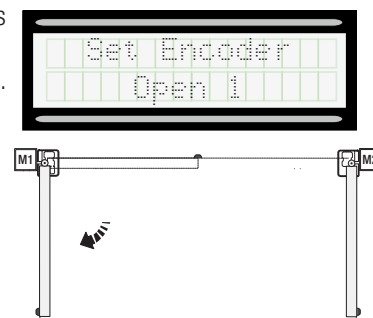

4. ...then, M2's gate leaf will perform the same closing...

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

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

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

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
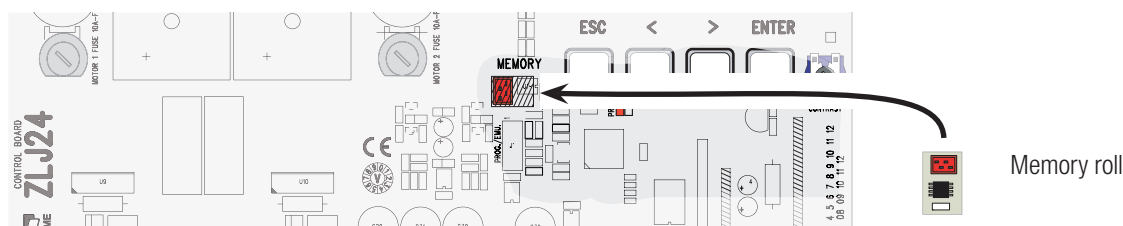
ERROR MESSAGE

📖 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
[Working Time - ERROR]	Insufficient working time
[Safety - STOP], [C1], [C3], [C4], [C7] or [C8]	Malfunctioning safety devices or wrong connection

DIAGRAM OF THE SLOW-DOWN AND FINAL APPROACH POINTS AND FOR THE ENCODER DEVICE

📖 The run area and slow down 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.
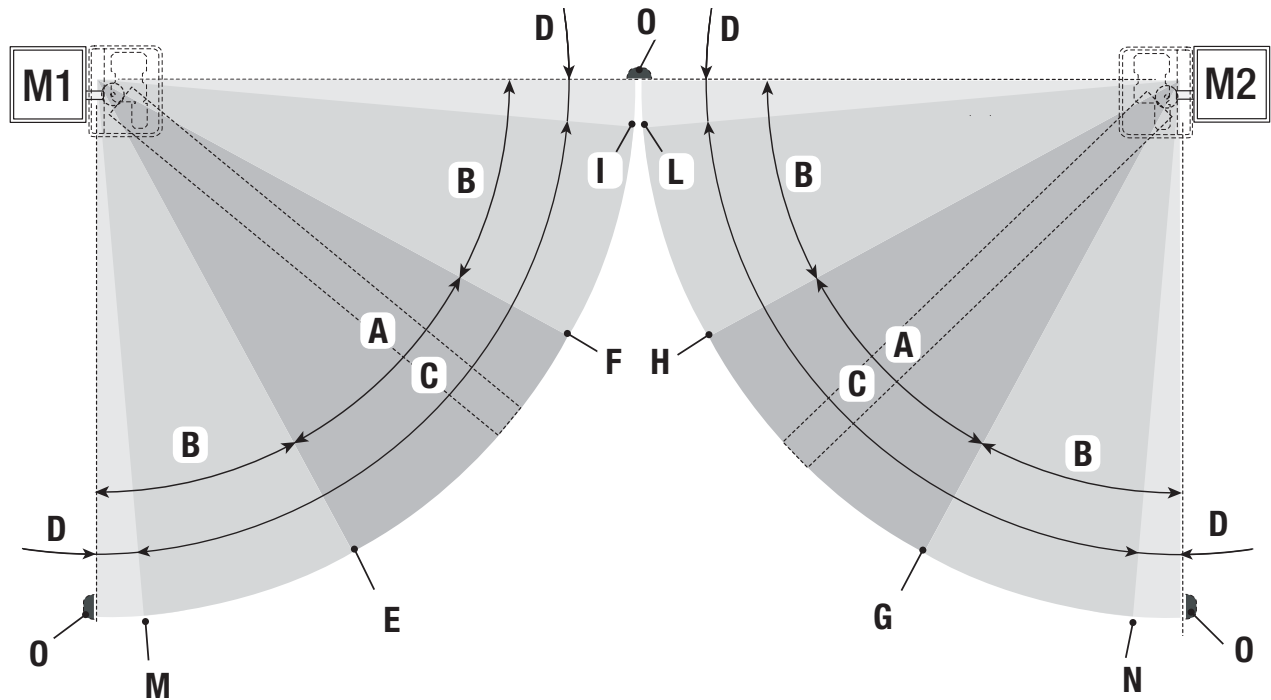
A = Normal speed
B* = Slowed-down speed
C = Encoder intervention zone with movement inversion
D = Encoder intervention zone with movement stopped
E = Opening slow-down starting point **[M1 Appr.AP %]**
F = Closing slow-down starting point **[M1 Slow.CH%]**
G = Opening slow-down starting point **[M2 Slow. AP %]**
H = Closing slow-down starting point **[M2 Slow. CH%]**
I** = Closing approach starting point **[M1 CL. Appr. %]**
L** = Closing approach starting point **[M2 CL. Appr. %]**
M = Opening slow-down starting point **[M1 OP. Appr. %]**
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 function **[M1 CL. Appr. %]** for M1 and **[M2 CL. Appr. %]** 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.
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.

DO NOT DISPOSE OF IN NATURE!

DECLARATION OF CONFORMITY

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

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

Came S.p.A.

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