CAME

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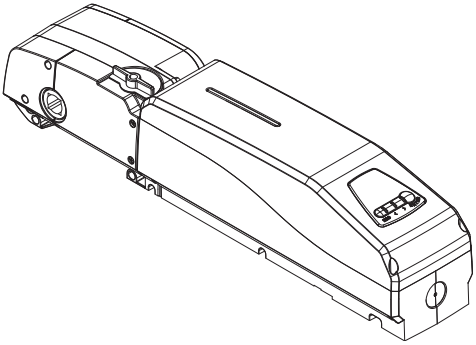
FA01195-EN

# Operator for overhead doors



# EM4024CB

## INSTALLATION MANUAL

EN English

# CAUTION!
# important personal safety instructions:
# READ CAREFULLY!

### Foreword

• This product should only be used for the purpose for which it was explicitly designed. Any other use is considered dangerous. CAME S.p.A.. is not liable for any damage resulting from improper, wrongful or unreasonable use • Keep these warnings with the installation and use manuals issued with the automation system.

### Before installing

*(preliminary check: in case of a negative outcome, do not proceed until you have complied with the safety requirements)*

• Check that the part you intend to automate is in good mechanical condition, balanced and aligned, and that it opens and closes properly. Make sure that proper mechanical stops are already in place • If the operator will be installed at a height of less than 2.5 m from the ground or other access level, check whether you will need any protections and/or warnings • Read all instructions carefully before starting any work; incorrect installation may be lead to hazards and cause damage to persons and things • Any leaves fitted with pedestrian entrances onto which you will install an operator must have a blocking mechanism when the leaf is in motion • Make sure that the opening of the automated leaf is not an entrapment hazard as regards any surrounding fixed parts • Do not mount the operator upside down or onto any elements that may fold under its weight. If necessary, add the appropriate reinforcements to the fixing points • Do not install leafs that are not flush • Check that any irrigation devices are unable to wet the operator from the bottom up • Make sure the temperature of place of installation complies with the range indicated in this manual • Follow all instructions as improper installation can cause serious injury.

### Installation

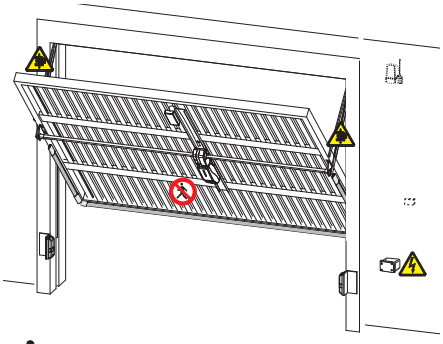
• Carefully section off the entire site to prevent unauthorised access, especially by minors and children • Be careful when handling operators that weigh more than 20 kg. If necessary, make sure to have tools for safe handling • All opening controls (buttons, key switches, magnetic readers, etc..) must be installed at least 1.85 m from the perimeter of the manoeuvring area, or where they cannot be reached from the outside through the operator In addition, the direct controls must be installed at a height of at least 1.5 m and must not be accessible to the public • All 'hold-to-run' commands must be placed where the moving gate leaves, transit areas and driveways are completely visible • If missing, apply a permanent label that shows the position of the release mechanism • Before delivering to the user, check that the system is EN 12453 (impact test) standard compliant. Make sure that the operator has been properly adjusted and that the safety and protection devices as well as the manual release are working properly • Where necessary and in plain sight, apply the Warning Signs (e.g. gate plate) • After installation, make sure that the operating motor prevents or blocks opening when the leaf bears a 20kg load, fixed to the centre of the leaf's bottom edge • Following installation, make sure that leaf parts do not burden roads or public walkways.

### Special instructions and advice for users

• Keep the operator's area of operation clean and clear of any obstacles. Check that there is no vegetation in the area of operation of the photocells and that there are no obstacles in the area of operation of the operator • Do not allow children to play with the fixed command devices, or in the operator's area of operation. Keep any remote control devices (i.e. transmitters) or any control devices away from children as well, to prevent the operator from being activated accidentally • The device is not designed to be used by persons (including children) whose physical, sensorial or mental capacities are limited, or who are lacking in experience or knowledge, unless said persons can be supervised or given instructions regarding using the device by a person responsible for their safety • Frequently check the system, to see whether any anomalies or signs of wear and tear appear on the moving parts, on the operator's components, on the securing points, on the cables and any accessible connections. Keep any joints (i.e. hinges) lubricated and clean, and do the same where friction may occur (i.e. slide rails) • Perform functional tests on photocells and sensitive edges every six months. To check that the photocells work, pass an object in front of them during closing. If the operator reverses the direction of movement or comes to a halt, the photocells work correctly. This is the only maintenance operation that must be carried out while the operator is live. Ensure that the glass on the photocells is kept clean (use a cloth slightly moistened with water; do not use solvents or any other chemicals as these could damage the devices) • If the system requires repairs or modifications, release the operator and do not use it until safety conditions have been restored • Cut off the power supply before releasing the operator for manual openings and before any other operation, to prevent dangerous situations. Read the instructions • If the power cable is damaged, it must be replaced by the manufacturer or the technical assistance service or by a person with a similar qualification so as to prevent any risks •It is STRICTLY FORBIDDEN for users to perform OPERATIONS THEY ARE NOT EXPLICITLY REQUIRED AND ASKED to do in the manuals. For repairs, adjustments and extraordinary maintenance, CONTACT THE SPECIALIST TECHNICAL SERVICE CENTRE • On the periodic maintenance log, note down the checks you have done.

### Further special instructions and advice for all

• Avoid working near the hinges or moving mechanical parts • Stay clear of the operator's area of operation when in motion • Do not resist the direction of movement of the gate; this may present a safety hazard • At all times be extremely careful about dangerous points that must be indicated by proper pictograms and/or black and yellow stripes • When using a selector or command in 'hold-to-run' mode, keep checking that there are no people in the area of operation of the moving parts. Do this until you release the command • The operator may move at any time without warning • Always cut the line voltage when cleaning or performing maintenance • Monitor moving parts and keep area clear of persons until leaf is fully open or closed.



Danger of hand crushing

Danger - live parts

No transit during the manoeuvre

## KEY

🕮 This symbol indicates parts to read carefully.
⚠ This symbol indicates parts about safety.
☞ This symbol tells you what to say to the end users.

## REGULATORY REFERENCES

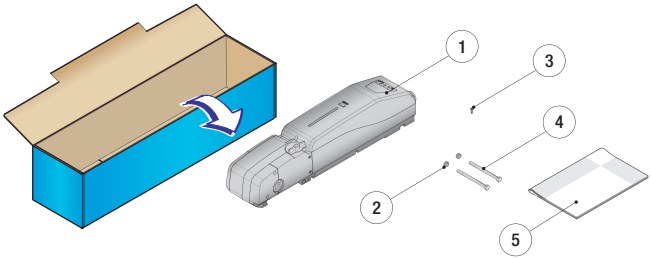
Came is a company with an ISO 9001-certified company quality management system and an ISO 14001-certified environmental management system.
The product in question complies with the regulations referred to in the declaration of conformity.

## DESCRIPTION

The operator consists of two parts:
- two half-shells made of aluminium, inside which is the non-reversible gearmotor with encoder;
- ABS container with control board and cover with programming card and LED control board for courtesy light.

### Packing list

1. 1 x operator
2. 2 x UNI 5588 M8 nuts
3. 1 x UNI 5933 M4 x 12 screw
4. 2 x UNI 5737 M8 x 110 screws
5. 1 x installation manual



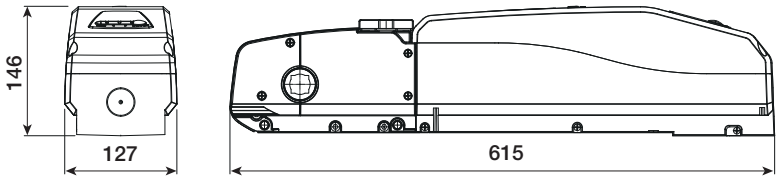

### Intended use

The operator has been designed and built by CAME Cancelli S.p.A.. in compliance with current safety standards to motorise medium and large overhead doors for residential or condominium use with intensive service.
🕮 Any installation and operation that differs from what is set out in this manual is prohibited.

### Limits of use

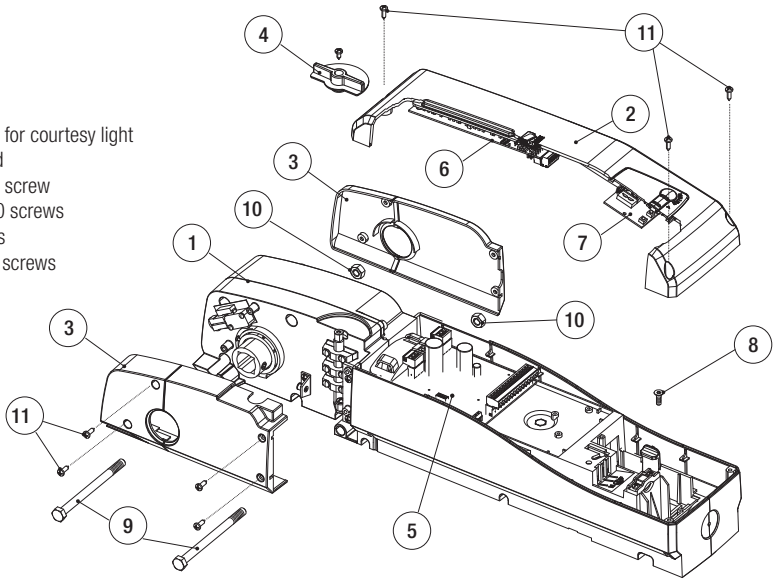
| Type | EM4024CB | EM4024CB + EM4024 |
|---|---|---|
| Door surface ($m^2$) | 9 | 14 |

### Dimensions (mm)



## Description of the components

1. Gearmotor
2. Cover
3. Side casing
4. Release handle
5. Control board
6. LED control board for courtesy light
7. Programming card
8. UNI 5933 M4 x12 screw
9. UNI 5737 M8X110 screws
10. UNI 5588 M8 nuts
11. UNI 6954 3,9X13 screws

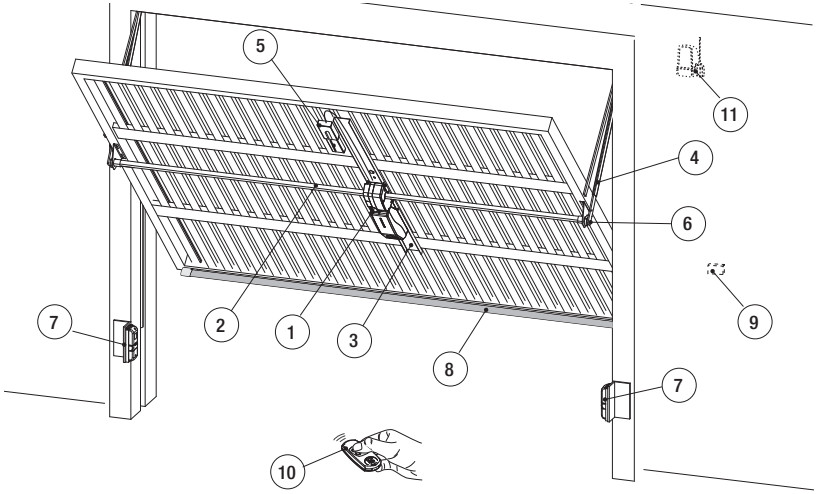



## Technical data

| Type | EM4024CB |
|---|---|
| IP rating | 50 |
| Power supply (V - 50/60 Hz) | 120/230 AC |
| Motor power supply (V - 50/60 Hz) | 24 DC |
| Power draw (A) | 15 max. |
| Power (W) | 170 |
| Torque (Nm) | 320 |
| Opening time to 90° (sec) | adjustable |
| Duty cycle | intensive use |
| Operating temperature (°C) | -20 - +55 |
| Insulation class | I |
| Weight (kg) | 8,8 |

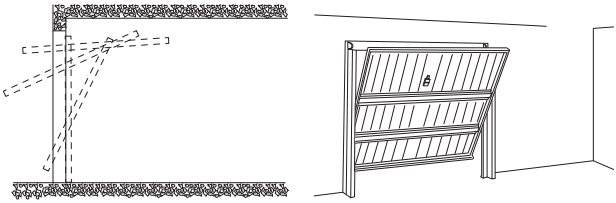
## Example of a system

1. Operator
2. Transmission board tube (001E782A)
3. Fixing base (001E001)
4. Pair of straight telescopic arms with rectangular tube (001E785A)
5. Pull-cord release device
6. Accessories for assembling the lateral transmission (001E781A)
7. Photocells
8. Sensitive edge
9. Key selector
10. Transmitter
11. Flashing light with antenna

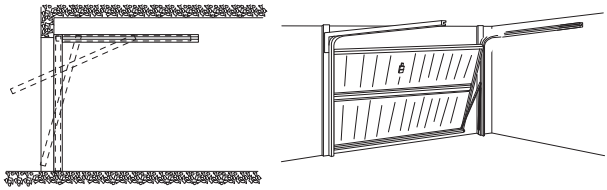



## Examples of use

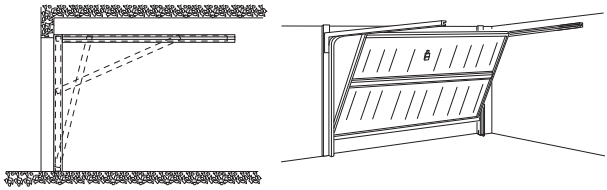
Canopy and spring-balanced overhead doors, with partially retracting movement.



Spring-balanced overhead door with fully retracting movement.



Canopy overhead door with fully retracting movement and no overhang.



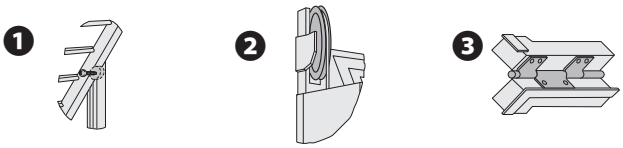
## GENERAL INSTALLATION INSTRUCTIONS

⚠ Installation must be carried out by qualified and experienced personnel in compliance with applicable regulations.

### Preliminary checks

⚠ Before starting installation:

- Provide a suitable single-pole disconnection device, with a maximum of 3 mm between the contacts, to disconnect the power supply;
- Prepare suitable piping and ducts for routing the electrical cables, ensuring protection against mechanical damage;
- ⏚ Make sure that any connections within the container (made to ensure the continuity of the protection circuit) are fitted with additional insulation compared to the other internal conductor parts;
- Check that the door is well-balanced. If it is halted at any intermediate point, it must maintain the position;
- If there is a pedestrian opening in the door, a safety switch must be added, connected to the stop input, in order to prevent the operator from being operated when the pedestrian door is open.
- Check that the movement of the door is uniform along the whole stroke, that there is no friction or gaps between the sliding rails and bearings ❶ and that the pulleys ❷ are in good condition;
- Check that the structure of the door is robust and that the hinges ❸ are efficient.



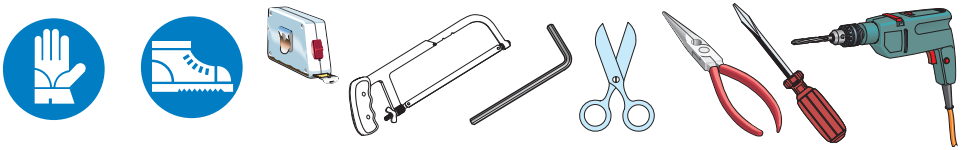

### Types of cables and minimum thicknesses

| Connection | Cable type | Cable length 1 < 10 m | Cable length 10 < 20 m | Cable length 20 < 30 m |
|---|---|---|---|---|
| Board power supply 230 VAC | FROR CEI 20-22 IEC EN 50267-2-1 | 3G x 1.5 mm² | 3G x 2.5 mm² | 3G x 4 mm² |
| 24 VDC motor power supply | | 2 x 1,5 mm² | 2 x 1.5 mm² | 2 x 2.5 mm² |
| Flashing light | | 2 x 0.5 mm² | 2 x 1 mm² | 2 x 1.5 mm² |
| Photocell transmitters | | 2 x 0.5 mm² | 2 x 0.5 mm² | 2 x 0.5 mm² |
| Photocell receivers | | 4 x 0.5 mm² | 4 x 0.5 mm² | 4 x 0.5 mm² |
| Control and safety devices | | 2 x 0.5 mm² | 2 x 0.5 mm² | 2 x 0.5 mm² |
| Antenna | RG58 | max. 10 m | | |
| Encoder | TWISTED | max. 30 m | | |

N.B. If the cables differ in length compared to what is shown in the table, the cable cross-section is determined according to the actual current draw of the devices connected and according to the provisions of the IEC EN 60204-1 standard.
For connections that require several, sequential loads, the sizes given on the table must be re-evaluated based on actual power draw and distances. When connecting products that are not specified in this manual, please refer to the documentation provided with said products.

### Tools and materials

Make sure you have all the tools and materials you will need for the installation at hand to work in total safety and compliance with current standards and regulations. The figure shows some examples of installer's tools.



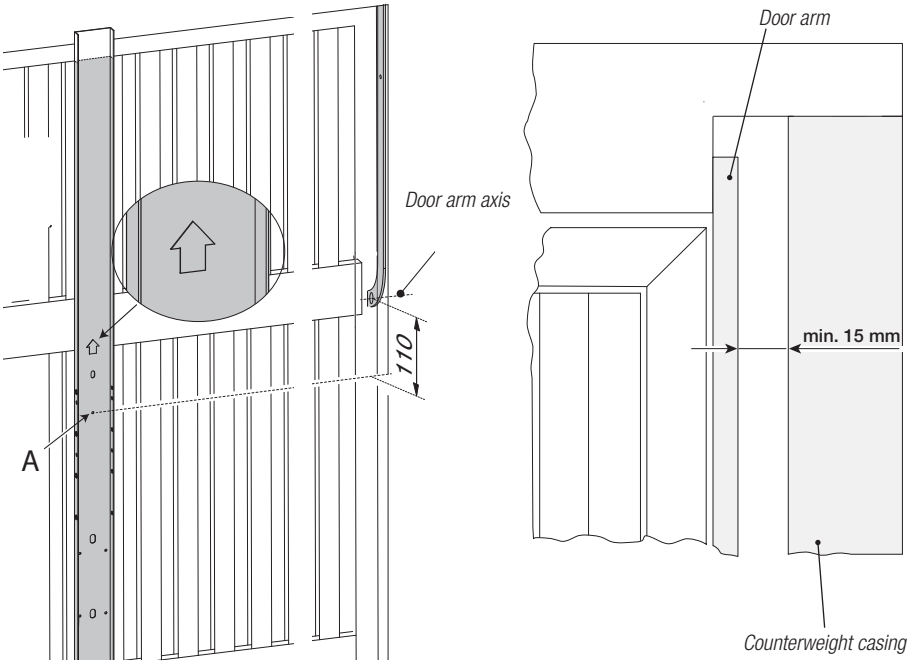
## INSTALLATION

⚠ The following illustrations are only examples and show the most common type of assembly, given that the space for securing the operator and accessories varies depending on the place of installation. The installation technician is responsible for choosing the most suitable solution.

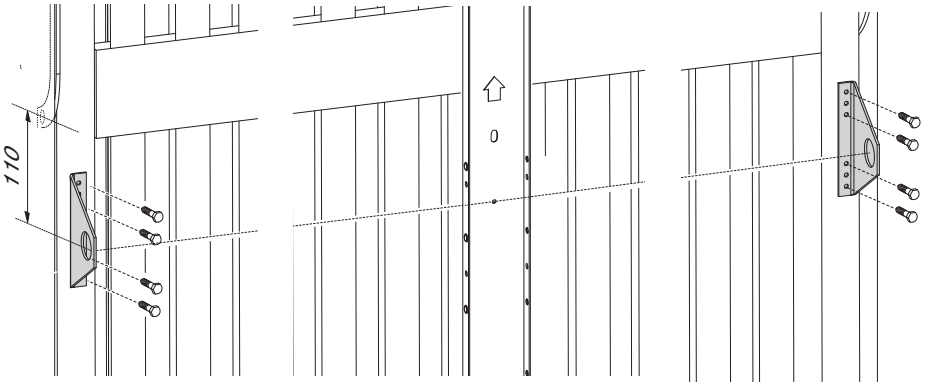
N.B. for special applications, see the EXAMPLES OF APPLICATION FOR DOORS WITH SPECIAL FEATURES chapter.

### Installation on canopy overhead doors with partially retracting movement.

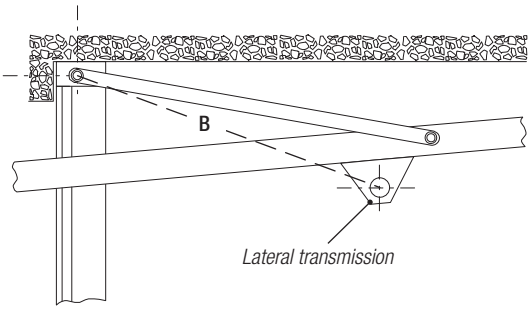
The distance between the arm of the door and the casing of the counterweight must be more than 15 mm.
Position the fixing base in a perfectly upright position and as close as possible to the centre of the door with the arrow pointing upwards. Hole A on the base must be positioned 110 mm from the axis on the door arm pin facing downwards. Secure the base using screws or rivets and cut off any excess base flush with the door.

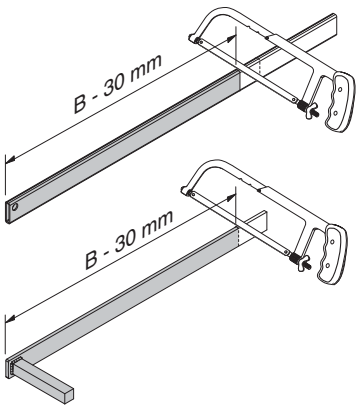



Secure the lateral transmissions using suitable screws or rivets

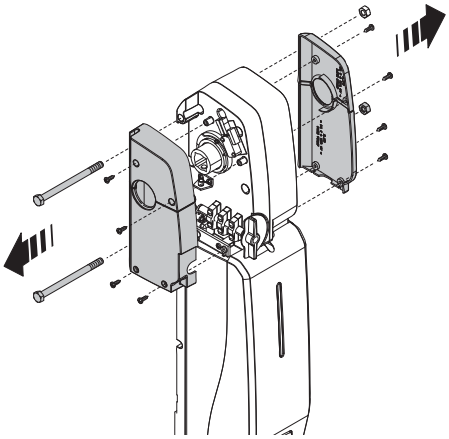


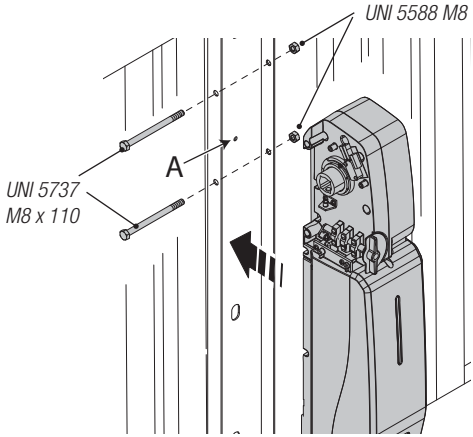
Open the door fully and take measurement B .
Shorten the arms and telescopic tubes.
N.B. For doors of higher than 2400 mm, use the 001E787A tube for telescopic arms.



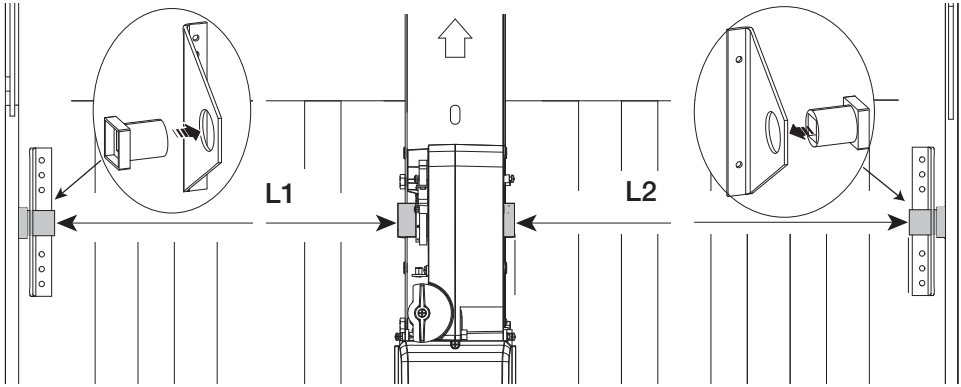




Remove the side casing from the gearmotor.
Secure the gearmotor to the base using the screws and nuts supplied.

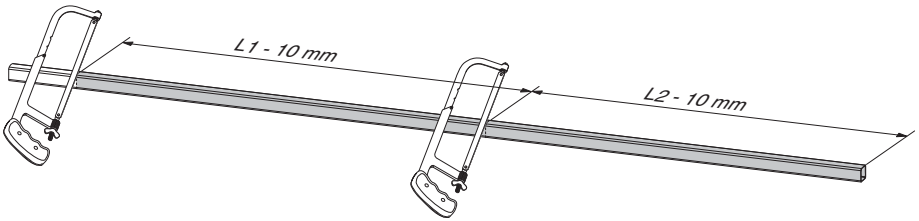




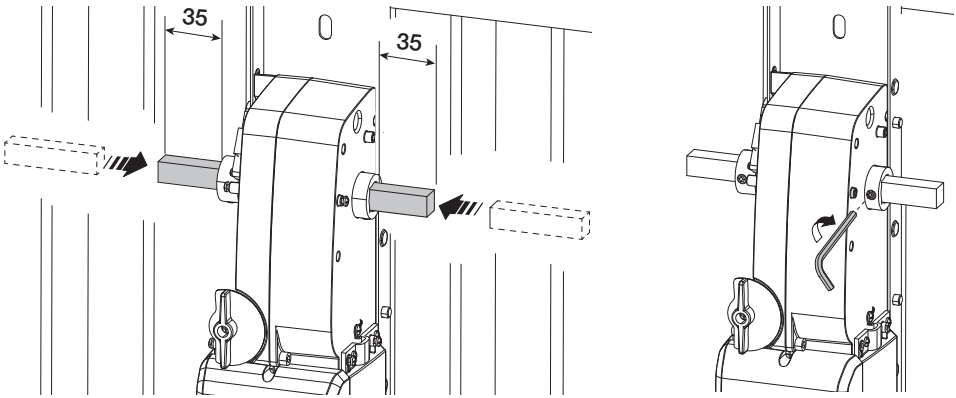

Lubricate the bushings and insert them into the lateral transmissions.
Measure distances L1 and L2.



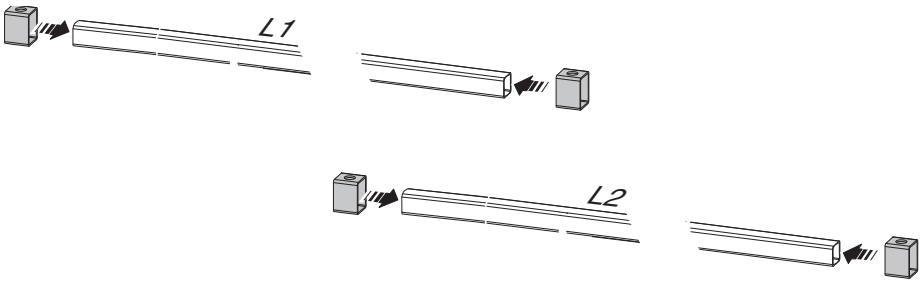
Cut the transmission board tube.



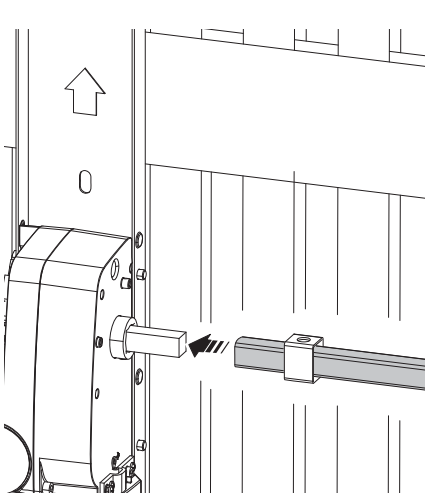

Insert the square shafts in the motor shaft, allowing them to protrude by 35 mm and secure them using the fixing grub screws and release the gearmotor.

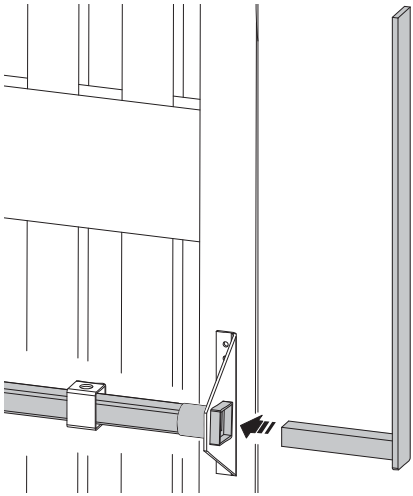



Insert the connecting terminals in the transmission tube.

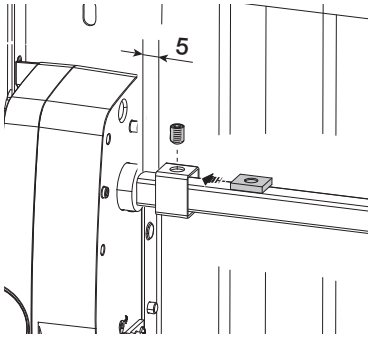


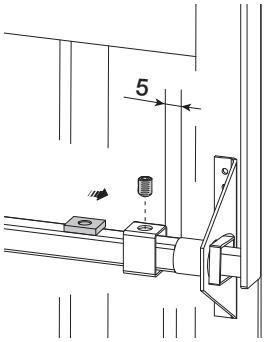
Insert the transmission tube into the square shaft and assemble it with the bushing and the arm.



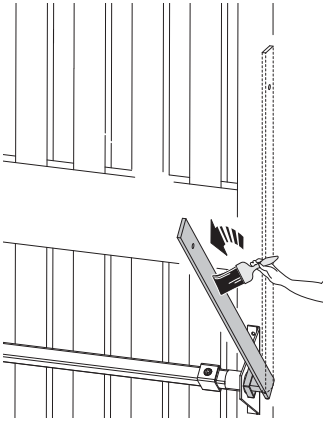


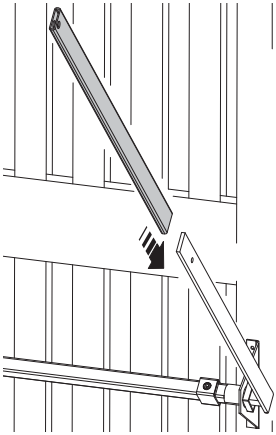
Position the connecting clamps about 5 mm from the ends of the tube and secure them using the plates and fixing grub screws.



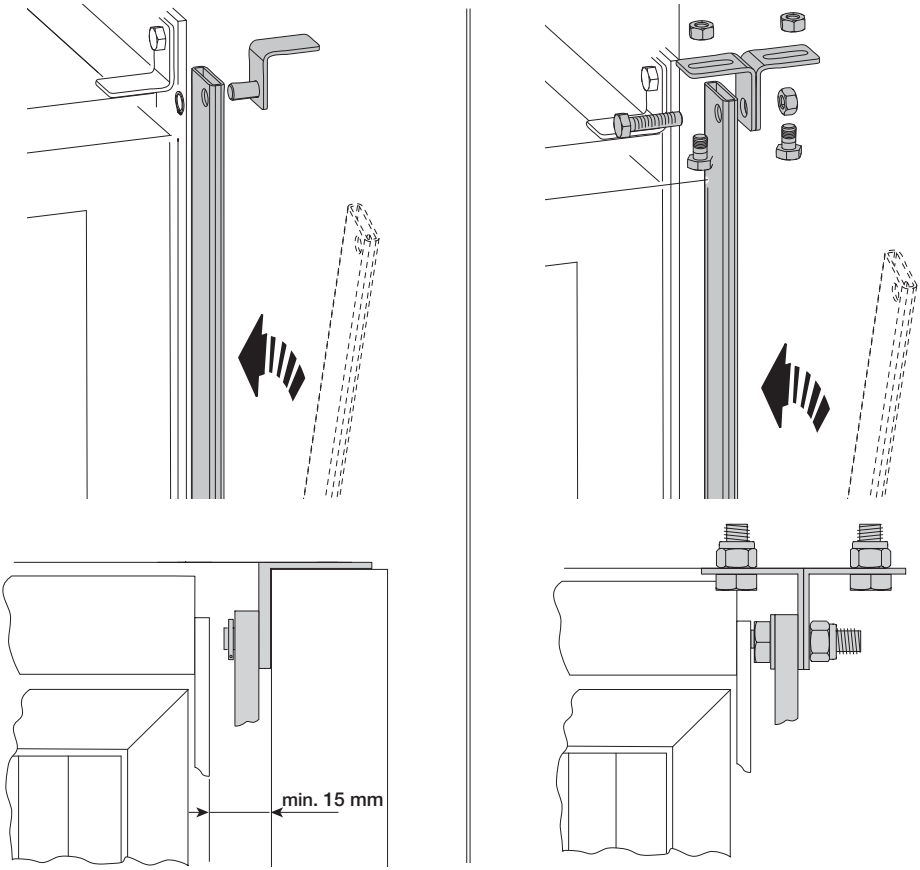




Grease the arm and slide it into the telescopic tube.



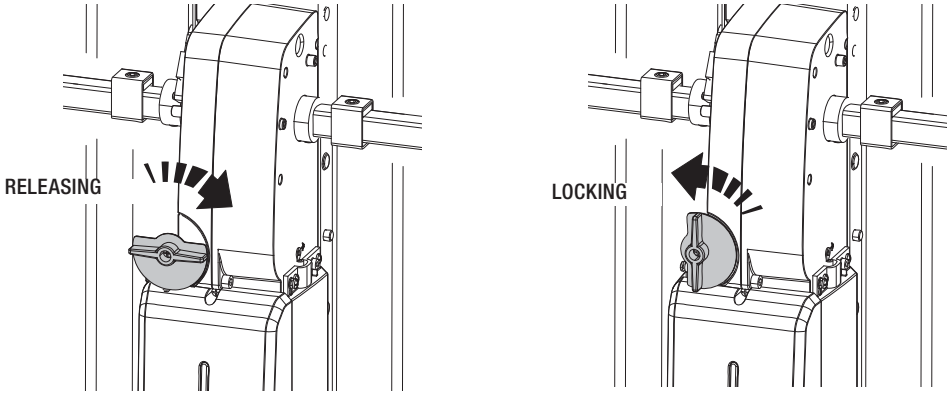


Secure the telescopic tube to the pin, on the connectors on the door or using the angular brackets supplied, securing them as close as possible to the arm of the door.



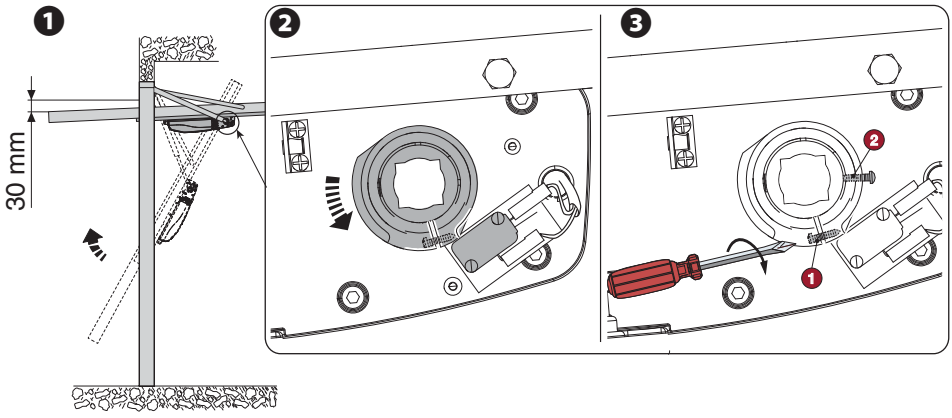

## Manual release of the gearmotor

⚠ Be careful when operating the manual release device as an open leaf may abruptly fall due to weakened or broken springs, or if unbalanced.



## Determining the end run points

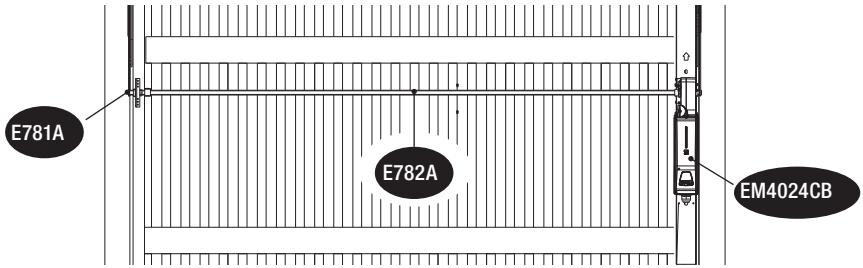
During opening: with the gearmotor released, move the door to about 30 mm from total opening ❶.
Turn the cam anti-clockwise until the microswitch is engaged ❷ and secure it with the screws ❸.




## Side installation of one or two gearmotors

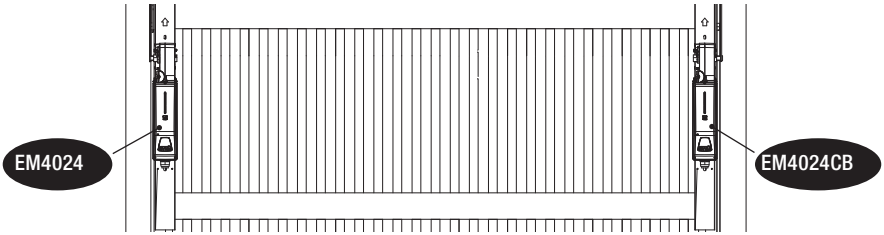
ONE GEARMOTOR

The installation procedure is the same with the following differences:
- secure the base to the edge of the door;
- affix accessory 001E782A and the 001E781A return accessory on the opposite side of the gearmotor.




TWO GEARMOTORS

The installation procedure is the same with the following differences:
- secure the two bases on the two sides of the door.



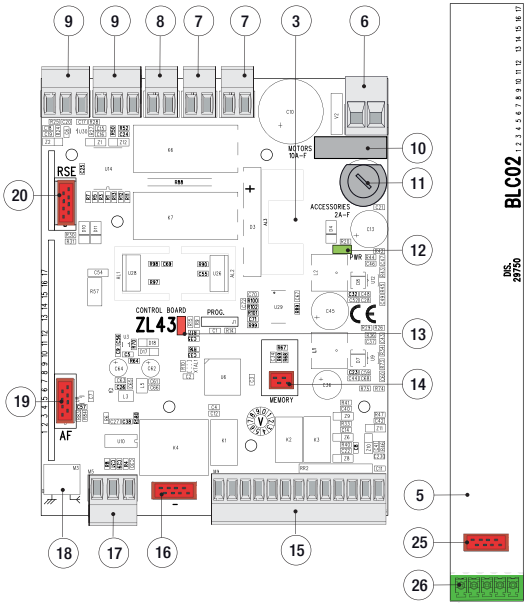
## ELECTRICAL CONNECTIONS AND PROGRAMMING

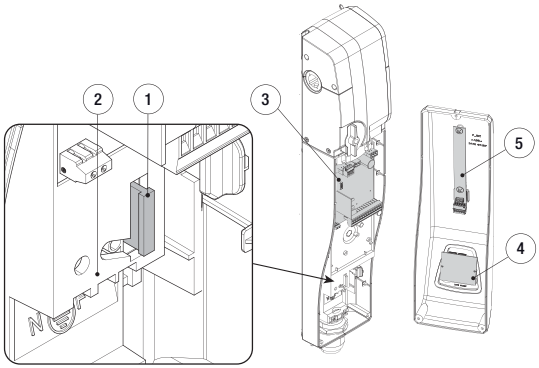
The control board is powered at 24 VAC.
The control devices and accessories are powered at 24 VAC.
⚠ Caution - the total power of the accessories should not exceed 40 W.
The functions on the input and output contacts and the adjustments of the times and management of the users are set and viewed on the display on the programming card managed by a software program.
All the connections are protected by quick fuses.
⚠ *Caution! Before intervening on the control panel, disconnect mains power.*

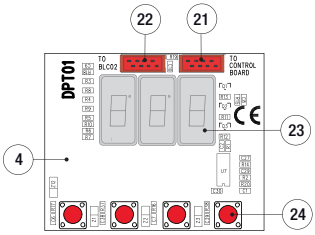
| FUSE TABLE | |
|---|---|
| Line fuse | 2 A-F (230 V)<br>3.15 A-F (120 V) |
| Motor fuse | 15 A-F |
| Accessory fuse | 2 A-F |

### Description of the components

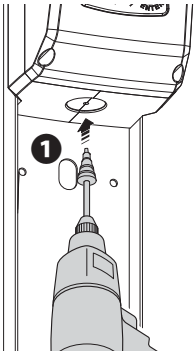
1. Line fuse
2. 120 / 230 VAC power supply terminal block
3. Control board
4. Programming card
5. LED control board for courtesy light
6. 24 V power supply terminal block
7. Gearmotor terminal block
8. Limit switch terminal block
9. Encoder terminal block
10. Motor fuse
11. Accessory fuse
12. Power indicator LED
13. Programming indicator LED
14. Memory roll card connector
15. Terminal block for control and safety devices
16. Connector for programming card
17. Terminal block for CRP connection
18. Antenna terminal block
19. Connector for AF board
20. Connector for RSE board
21. Connector for board connection
22. Connector for LED control board connection
23. Display
24. Programming buttons
25. Connector for programming card connection
26. Terminal block for second LED control board connection

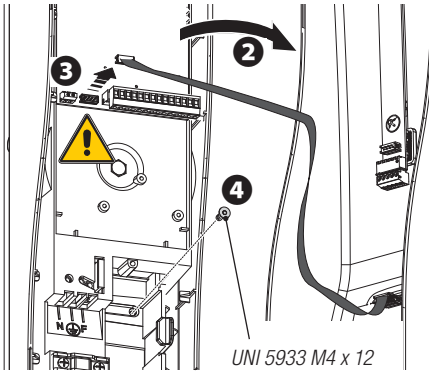


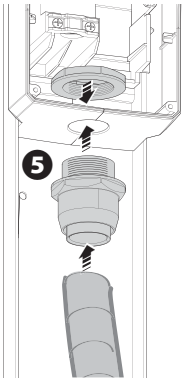





Before proceeding with the electrical connections, drill the pre-made holes carefully ❶.
Remove the cover ❷ and carefully disconnect the flat cable from the control board ❸. Secure the bottom of the control panel container to the base using the screw supplied ❹.
Install the cable gland and the corrugated tube (neither supplied) maintaining IP40 protection rating ❺.

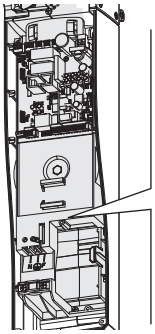


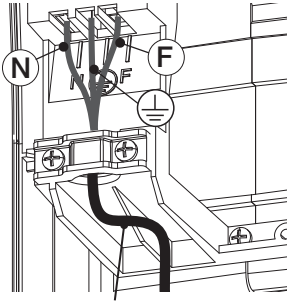




## Power supply

**230 VAC MAINS POWER SUPPLY (Factory settings)**
Connect the power line to the terminal in the card holder.

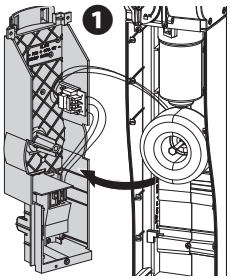


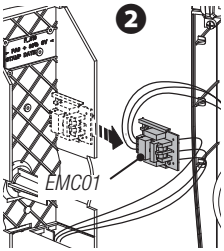


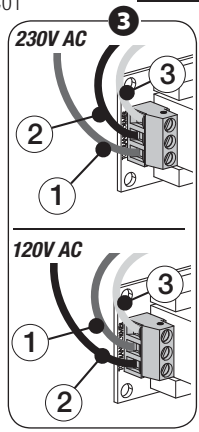
*230 VAC power cable*

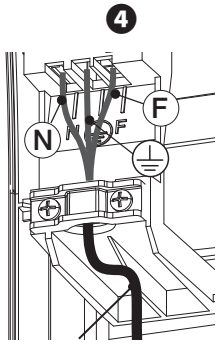
| Ref. | Description |
|---|---|
| Ⓝ | Neutral |
| Ⓕ | Line |
| ⏚ | Earth |
| ① | 230 VAC transformer power supply (red cable) |
| ② | 120 VAC transformer power supply (black cable) |
| ③ | 0 VAC transformer power supply (white cable) |

**120 VAC MAINS POWER SUPPLY**
Remove the card holder from the gearmotor ❶, remove the filter EMC01 from the card holder ❷ and invert cables ① and ② as shown ❸.
Replace the filter EMC01 and the card holder.
Connect the power line to the terminal in the card holder ❹.



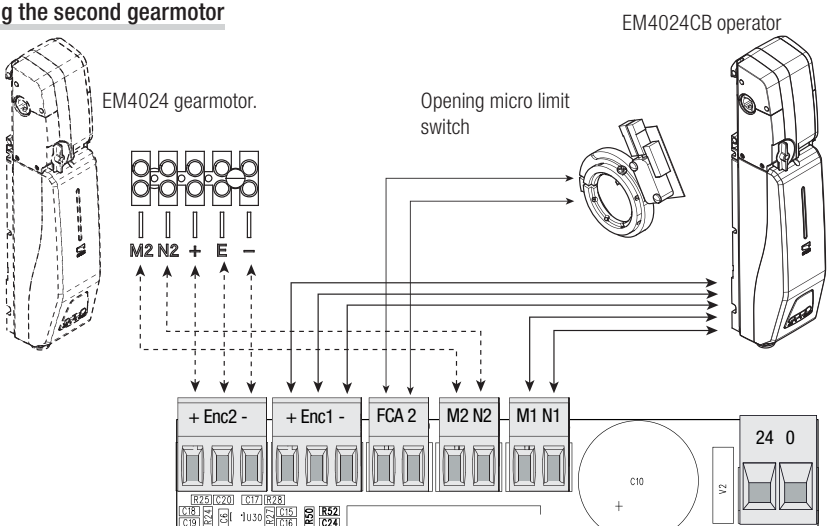



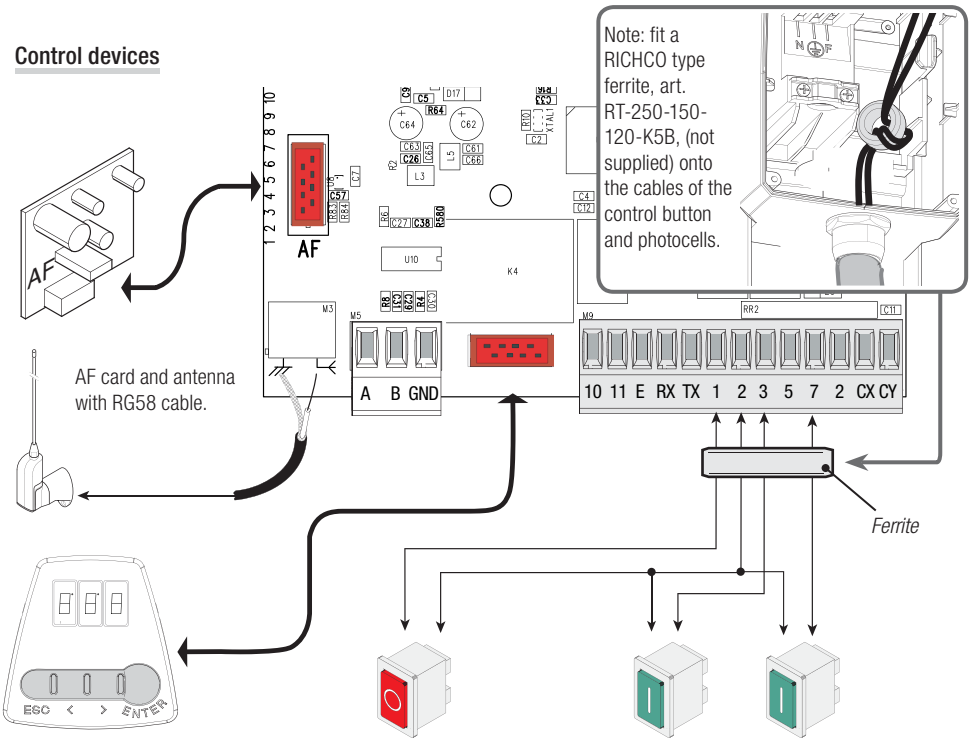



*120 VAC power cable*

## Connecting the second gearmotor




## Control devices



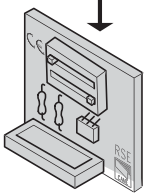

Keys for sequential control (open-stop-close-stop) with any key.

Stop button (NC contact) N.B. if the contact is not used, select 0 using the F 1 function.

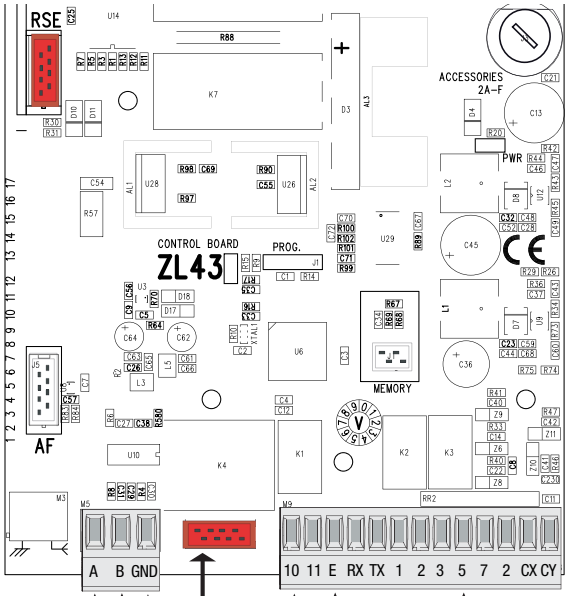
Opening button (NO contact)

Control button (NO contact), step-by-step or sequential, see the F 7 function.

## Indicator and control devices

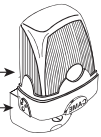


RSE card for function management in CRP mode (home automation control).

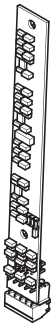



CRP - Came Remote Protocol. Connecting to the home automation system

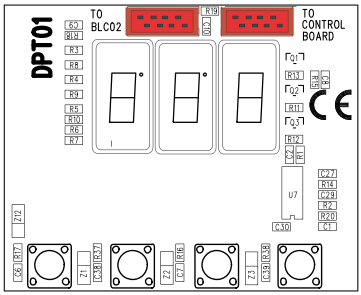

Door open indicator light (Contact capacity: 24 V - 3 W max.). Indicates that the overhead door is open. It goes off when the door is closed.



Flashing light (socket rating: 24 V DC - 25 W max.) – It flashes during opening and closing phases of leaf.



EM4001 - LED control board for courtesy light.



## Safety devices

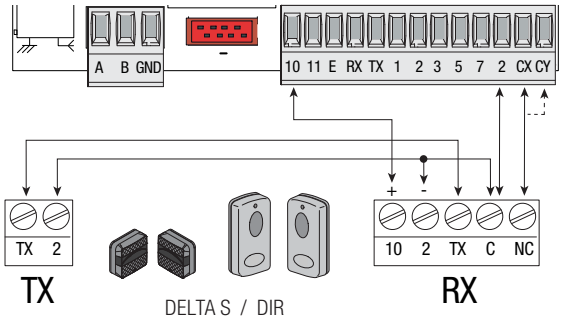
### Photocells

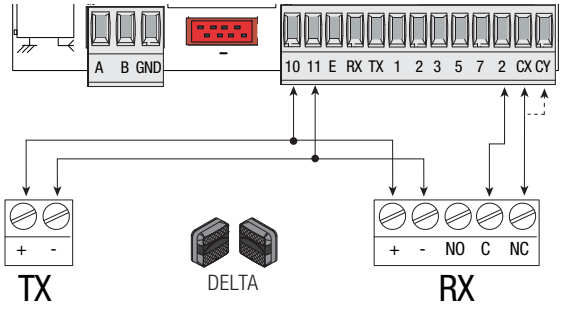
Configure the CX or CY (NC) contact, input for safety devices such as photocells, compliant with the EN 12978 standard.
See CX (F2 function) or CY (F3 function) input functions in:

- C1 reopening during closing. While the door is closing, the opening of the contact causes the reversal of the direction of movement until completely open.

- C4 waiting for obstacle. The door stops if it is moving, and movement is resumed once the obstacle has been removed.

N.B. if the CX and CY contacts are not used contacts CX and CY, they must are disabled in programming.



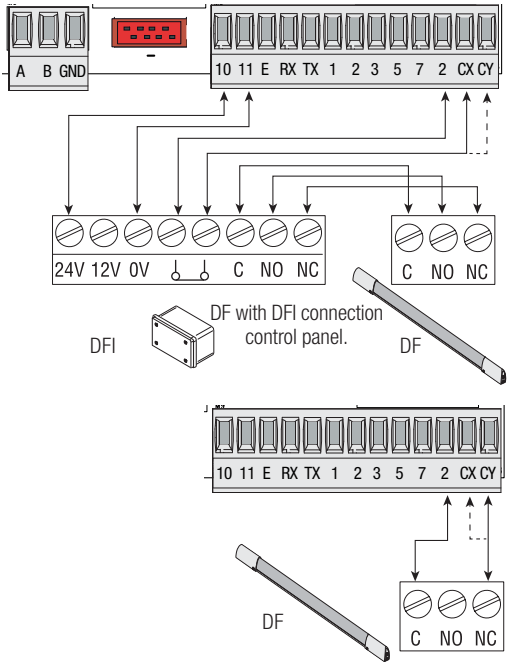




### Sensitive edges

Configure the CX or CY (NC) contact, input for safety devices such as sensitive edges, compliant with the EN 12978 standard. See CX (F2 function) or CY (F3 function) input functions in:

- C7 reopening during closing. While the door is closing, the opening of the contact causes the reversal of the direction of movement until completely open.

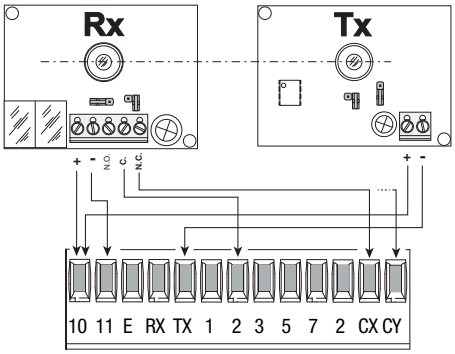
N.B. if the CX and CY contacts are not used contacts CX and CY, they must are disabled in programming.



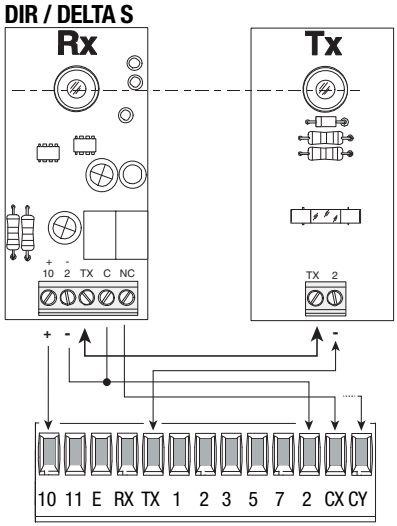
**Photocell safety connection**

With each opening or closing command, the panel checks that the photocells work. Any anomaly inhibits any command.
Use the F 5 function to select on which inputs to activate the link.

**DELTA**



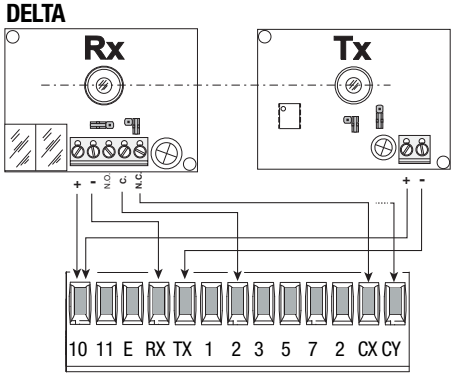

**DIR / DELTA S**



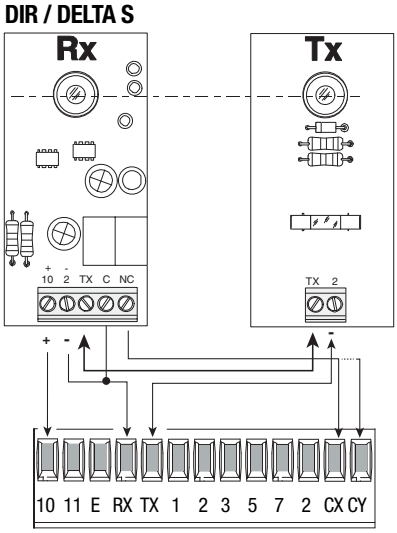

**Sleep Mode**

The Sleep Mode function enables a reduction in photocell power in standby.
Select 1 using function F 60.

**DELTA**

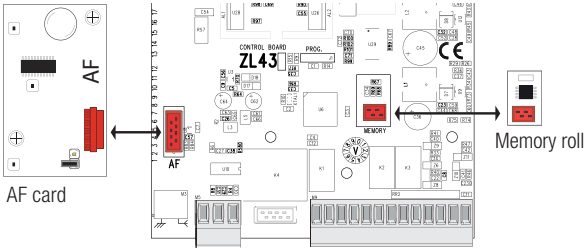



**DIR / DELTA S**

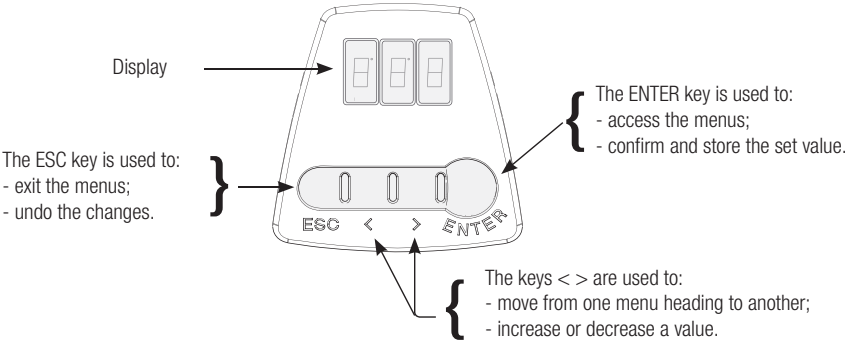


## Memorising data

To enter, modify, and remove users or control the operator via radio, insert the AF card. Insert the memory roll to save and load the settings and registered users on another card.

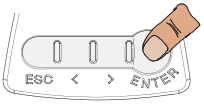



## Description of programming commands

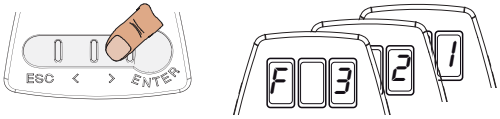



## Menu navigation

To access the menu, hold down the ENTER button for at least five seconds.

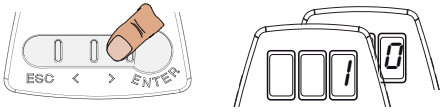



To choose the menu heading, move using the arrows...



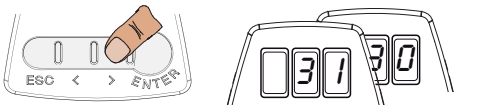

... then press ENTER

navigate the “sub-menus” using the arrows as well...




... then press ENTER

To increase or decrease the value, use the arrows...




...to exit the menu, wait 10 seconds or press ESC.

☞ N.B. when the menu is active, the system cannot be used.

## Menu mapping

| | |
|---|---|
| F 1 | Total stop function (1-2) |
| F 2 | Function associated with the 2-CX input |
| F 3 | Function associated with the 2-CY input |
| F 5 | Safety test function |
| F 6 | Hold-to-run function |
| F 7 | Command mode on 2-7 |
| F 8 | Command mode on 2-3 / 2-3P |
| F 9 | Obstacle detection with motor at standstill function |
| F 11 | Encoder disabled |
| F 13 | Thrust during closing |
| F 18 | LED lamp |
| F 19 | Automatic closing time |
| F 21 | Pre-flashing time |
| F 22 | Working time |
| F 25 | LED lamp time in courtesy mode |
| F 28 | Speed adjustment during opening |
| F 29 | Speed adjustment during closing |
| F 30 | Slowdown speed adjustment during opening |
| F 31 | Slowdown speed adjustment during closing |
| F 33 | Calibration speed adjustment |
| F 34 | Sensitivity during movement |
| F 35 | Sensitivity during slowdown |
| F 36 | Partial opening adjustment |
| F 37 | Initial slowdown point adjustment during motor opening |
| F 38 | Initial slowdown point adjustment during motor closing |
| F 40 | Initial approach point adjustment during motor closing |
| F 46 | Setting number of motors |
| F 47 | Slowed start during closing |
| F 50 | Saving data in the memory roll |
| F 51 | Reading data from the memory roll |
| F 60 | Sleep Mode function |
| | |
| U 1 | Inserting a new user |
| U 2 | Deleting a single user |
| U 3 | Deleting all users |
| | |
| A 2 | Motor test |
| A 3 | Run calibration |
| A 4 | Reset parameters |
| A 5 | Number of manoeuvres |
| | |
| H 1 | Software version |

## Motor test and calibration menu

**Important! Start programming, performing these operations first:**
**1 Motor test;**
**2 Run calibration.**

| | | |
|---|---|---|
| **A2** | **Motor test** | 0 = Disabled / 1 = Enabled |
| Check the operation of the gearmotor and the correct direction of rotation(see motor test paragraph) | | |
| **A3** | **Run calibration** | 0 = Disabled / 1 = Enabled |
| Automatic door run calibration operation (see run calibration paragraph). | | |
| **A4** | **Reset parameters** | 0 = Disabled / 1 = Enabled |
| **Caution! If necessary, you can restore the default parameters with the following function:** Data reset operation data (default settings) and run calibration deletion. | | |
| **A5** | **Number of manoeuvres** | 1 = 1000 manoeuvres; 100 = 100000 manoeuvres; 1.0 = over one million manoeuvres |
| View the number of manoeuvres of the overhead door. | | |

## Function menu

| | | |
|---|---|---|
| **F1** | **Total stop [1-2]** | 0 = Disabled (default) / 1 = Enabled |
| NC input - The door is stopped and any automatic closing is disabled. To resume movement, use the control device. The safety device must be inserted on [1-2]. | | |
| **F2** | **Input [2-CX]** | 0 = Disabled (default) / 1 = C1 / 4 = C4 / 7 = C7 |
| NC input - Possibility of associating: C1 = reopening during closing for photocells, C4 = obstacle wait, C7 = reopening during closing for sensitive edges. | | |
| **F3** | **Input [2-CY]** | 0 = Disabled (default) / 1 = C1 / 4 = C4 / 7 = C7 |
| NC input - Possibility of associating: C1 = reopening during closing for photocells, C4 = obstacle wait, C7 = reopening during closing for sensitive edges. | | |
| **F5** | **Safety test** | 0 = Disabled (default) / 1 = CX / 2 = CY / 3 = CX+CY |
| After each opening or closing command, the panel checks that the photocells work. | | |
| **F6** | **Hold-to-run** | 0 = Disabled (default) / 1 = Enabled |
| The door opens and closes when a button is pressed. Button to open the contact [2-3] and button to close the contact [2-4]. All other control devices, also radio, are disabled. | | |
| **F7** | **Command [2-7]** | 0 = step-by-step (default) / 1 = sequential |
| Step-by-step = open-close, sequential = open-stop-close-stop. | | |
| **F8** | **Command [2-3]** | 0 = opening (default) / 1 = partial opening |
| Opening (opening of the door) or partial opening (partial opening of the door: the degree of opening depends on the percentage of the stroke adjustment set with F36). | | |
| **F9** | **Obstacle detection with the motor at a standstill** | 0 = Disabled (default) / 1 = Enabled |
| With the door closed, open or after a total stop, the motor remains at a standstill if the safety devices (photocells or sensitive edges) detect an obstacle. | | |
| **F11** | **Encoder disabling** | 0 = encoder enabled (default) / 1 = encoder disabled |
| Excludes management of slowdowns, obstacle detection and sensitivity. | | |
| **F13** | **Closing thrust** | 0 = Disabled (default) / 1 = minimum thrust / 2 = medium thrust / 3 = maximum thrust |
| At the end of the closing run, the gearmotor performs a short thrust to the end. | | |
| **F18** | **LED lamp** | 0 = Lamp / 1 = Cycle / 2 = Courtesy (default) |
| In lamp mode, it only remains on during door opening and closing movements.<br>In cycle mode, it remains on from the start of opening to complete closing, including the wait time before automatic closing.<br>In courtesy mode, it remains on from when the command is sent to the operator for a settable time, see F25. | | |
| **F19** | **Automatic closing time** | 0 = Disabled (default) / 1 = 1 s / 2 = 2 s / … / 180 = 180 s |
| The wait before automatic closing starts from reaching the end run point for a time that can be set between 1 and 180 seconds. Automatic closing is not activated in the event the safety devices intervene after detecting an obstacle, after a total stop or in the event of a power failure. | | |
| **F21** | **Pre-flashing time** | 0 = Disabled (default) / 1 = 1 s / 2 = 2 s / … / 5 = 5 s |
| When an opening or closing command is sent, the flashing light on [10-E] flashes before starting the manoeuvre. The flashing time can be adjusted from 1 s to 5 s. | | |
| **F22** | **Working time** | 5 = 5 s / 6 = 6 s / … / 120 = 120 s (default) |
| Motor operating time, during opening and closing. This can be set between 5 and 120 seconds. | | |
| **F25** | **Courtesy lamp time** | 60 = 60 s (default) / 61 = 61 s / … / 250 = 250 s |
| LED lamp, remains on for a time necessary during door opening/closing manoeuvres.<br>This can be set between 60 and 250 seconds. | | |

| | |
|---|---|
| **F28** | **Open motor speed** 50 = Minimum speed /… / 70 = Speed (default) /… / 100 = Maximum speed |
| To set the gearmotor speed during the opening manoeuvres. | |
| **F29** | **Close motor speed** 20 = Minimum speed /… / 50 = Speed (default) /… / 100 = Maximum speed |
| To set the gearmotor speed during the closing manoeuvres. | |
| **F30** | **Open slowdown speed** 30 = Minimum speed (default) / … / 60 = Maximum speed |
| To set the gearmotor speed during the opening slowdown. | |
| **F31** | **Close slowdown speed** 10 = Minimum speed /… / 30 = Speed (default) /… / 50 = Maximum speed |
| To set the gearmotor speed during the closing slowdown. | |
| **F33** | **Calibration adjustment** 20 = 20% of the motor speed / … / 40 = 40% of the motor speed (default) |
| To adjust the speed of the gearmotor during the calibration phase. | |
| **F34** | **Run sensitivity** 0 = Disabled sensitivity 10 = maximum sensitivity / … / 100 = minimum sensitivity (default) |
| To adjust the sensitivity of obstacle detection during the run. | |
| **F35** | **Slowdown sensitivity** 0 = Disabled sensitivity 10 = maximum sensitivity / … / 100 = minimum sensitivity (default) |
| To adjust the sensitivity of obstacle detection during the slowdown phase. | |
| **F36** | **Partial opening adjustment** 10 = 10% of the run / … / 50 = 50% of the run (default) / … / 80 = 80% of the run |
| To adjust door opening as a percentage of the total run. | |
| **F37** | **Opening slowdown point** 10 = 10% of the run / … / 20 = 20% of the run (default) / … / 70 = 70% of the run |
| To adjust the slowdown start point during opening as a percentage of the total run. | |
| **F38** | **Closing slowdown point** 10 = 10% of the run / … / 50 = 50% of the run (default) / … / 70 = 70% of the run |
| To adjust the slowdown start point during closing as a percentage of the total run. | |
| **F40** | **Closing approach point** 1 = 1% of the run / … / 20 = 20% of the run (default) |
| To adjust the approach phase start point during closing as a percentage of the total run. | |
| **F46** | **Number of motors** 0 = M1 and M2 / 1 = M1 (default) |
| To set the number of motors connected to the control panel. | |
| **F47** | **Closing slowdown start** 0 = Disabled / 1 = 1% of the run (minimum) / … / 10 = 10% of the run (default) / … / 25 = 25% of the run (maximum) |
| To adjust the slowdown speed start during closing as a percentage of the total run. | |
| **F50** | **Data saving** 0 = Disabled (default) / 1 = Activated |
| To save the users and memorised settings in the memory roll.<br>N.B. this function appears only if a memory roll has been inserted in the control panel. | |
| **F51** | **Data reading** 0 = Disabled (default) / 1 = Enabled |
| To load the data saved into the memory roll on the control panel.<br>N.B. this function appears only if a memory roll has been inserted in the control panel. | |
| **F60** | **Sleep Mode** 0 = Disabled (default) / 1 = Enabled |
| To enable a reduction in photocell power in standby. | |

## User menu

| | |
|---|---|
| **U 1** | **Adding a user** 1 = Step-by-step command (open-close) / 2 = Sequential command (open-stop-close-stop) / 3 = Open only command / 4 = Pedestrian/partial command |
| Adding a user (max. 25 users) associated with a command via the transmitter or other device (see adding a user with associated command paragraph). | |
| **U 2** | **Deleting a user** |
| Deleting a single user (see deleting a single user paragraph). | |
| **U 3** | **Deleting a user** 0 = Disabled / 1 = Deleting all users |
| Deleting all users. | |

## Info menu

| | |
|---|---|
| **H 1** | **Version** |
| Shows the software version. | |

## Adding a user with associated command

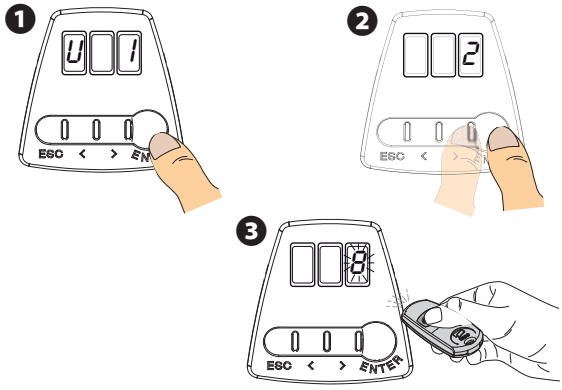
***N.B. when adding/deleting users, the numbers displayed flashing are numbers that are available and can be used for users to be added (max. 25 users).***

***Caution! Before adding users, remove the memory roll board if present.***

Select U 1. Press ENTER to confirm ❶.

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

An available number between 1 and 25 will flash for a few seconds.
This number will be allocated to the user after sending the code with the transmitter ❸.



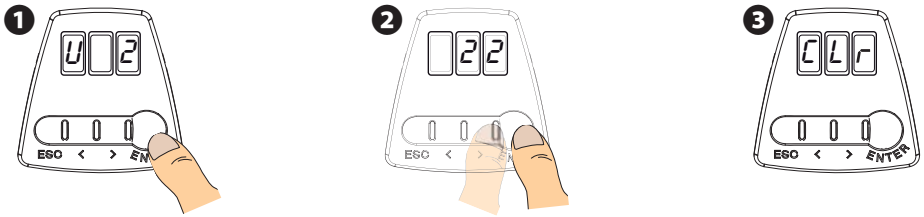

| User | Associated command |
|---|---|
| 1 - | |
| 2 - | |
| 3 - | |
| 4 - | |
| 5 - | |
| 6 - | |
| 7 - | |
| 8 - | |
| 9 - | |
| 10 - | |
| 11 - | |
| 12 - | |
| 13 - | |
| 14 - | |
| 15 - | |
| 16 - | |
| 17 - | |
| 18 - | |
| 19 - | |
| 20 - | |
| 21 - | |
| 22 - | |
| 23 - | |
| 24 - | |
| 25 - | |

## Deleting a single user

Select U 2. Press ENTER to confirm ❶.

Choose the number of the user to delete using the keys marked with arrows. Press ENTER to confirm ❷.

Clr appears to confirm the deletion ❸ .




## Motor test

Select A 2. Press ENTER to confirm ❶.

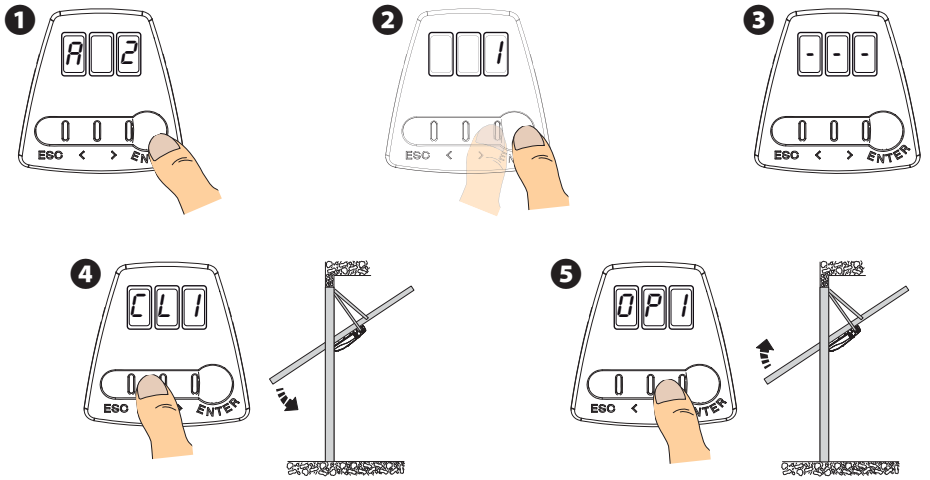
Select 1 to activate the test. Press ENTER to confirm ❷.

"---" appears while waiting for the command ❸.

Hold down the key marked with the arrow < and check that the door performs a closing manoeuvre ❹.

Perform the same procedure with the key marked with the arrow > to check that the door performs an opening manoeuvre ❺.

Otherwise, invert the phases of the M1-N1 gearmotor.



## Run calibration

***N.B. before calibrating the run, check that the manoeuvre area is free from any obstacle.***
***Important! During calibration, all safety devices will be disabled except for the TOTAL STOP device.***

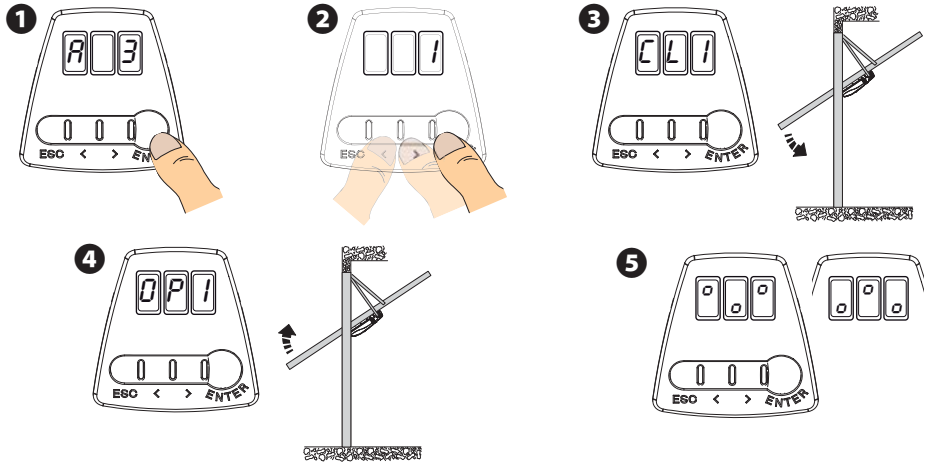
Select A 3. Press ENTER to confirm ❶.

Select 1 and press ENTER to confirm ❷.

The door will perform a closing manoeuvre until reaching the mechanical stop ❸.

Subsequently, the door will perform an opening movement until the microswitch is engaged ❹.

Wait a few seconds to enable the calibration to be recorded and shown in the display ❺.

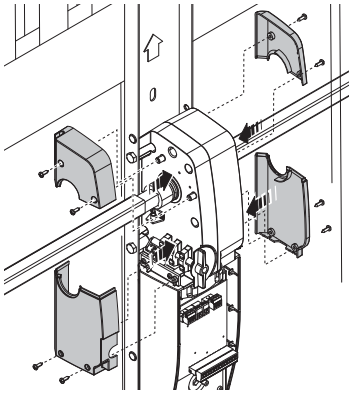


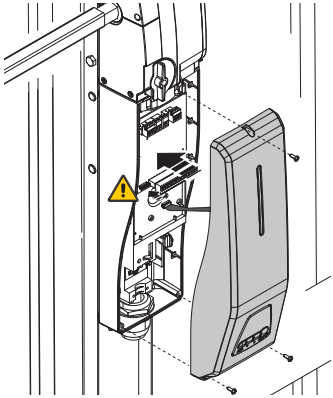

## FINAL OPERATIONS

When the motor is released, check that the overhead door is balanced in every position. If necessary, intervene as follows:
- with the gearmotor in the central position, the weight of the gearmotor must be distributed equally between the two counterweights.
- with the gearmotor on the side, the weight of the gearmotor must be distributed for 1/3 on the counterweight on the side of the gearmotor and 2/3 on the opposite side.
- with two gearmotors on the side, the weight of the gearmotor must be distributed in relation to the weight of each gearmotor.

For spring-balanced overhead doors, move the connection point of the spring to the most suitable hole.

Once the electrical connections and commissioning are complete, secure the side casing and the cover, check that the flat cable on the programming card is connected to the control panel.



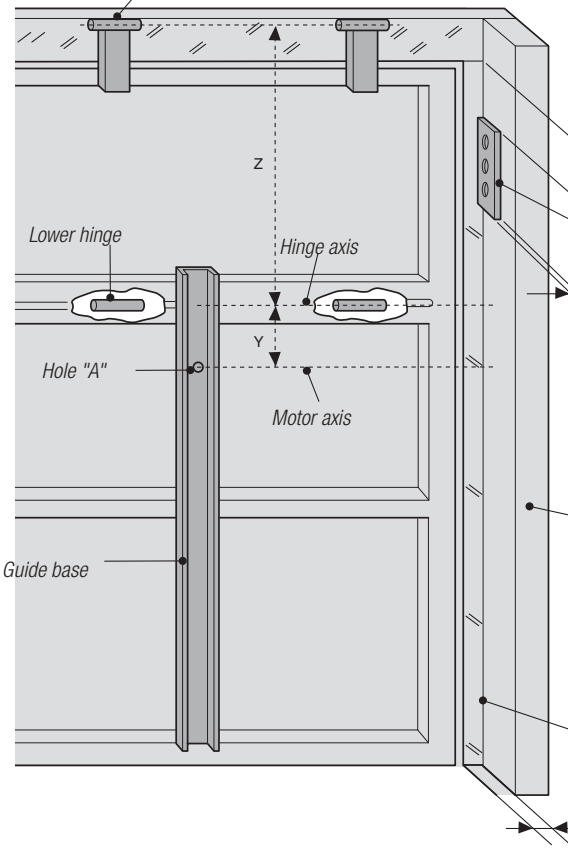


## EXAMPLES OF APPLICATION ON DOORS WITH SPECIAL CHARACTERISTICS.

### Hinged canopy or spring-balanced overhead door with minimum 25 mm bearing guide and gearmotor applied centrally

Apply the guide-base (001E001) and the anchoring bracket as shown in figure 1 according to the dimensions, see table. Assemble the articulated arms (001E783) as shown in figure 2 to proceed with the installation of the gearmotor, returns and the transmission tube using the procedure described in the previous paragraphs.

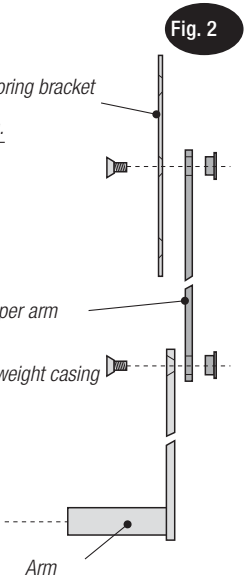
Fig. 1



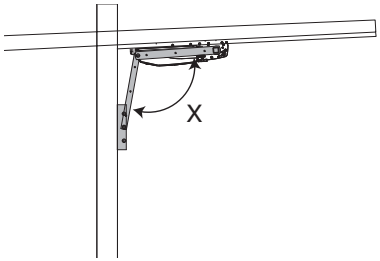

| Z (mm) | X (mm) | Y (mm) | ARM |
|---|---|---|---|
| 800 - 1000 | 500 | 410 | E783 + E784* |
| < 800 | 190 | 200 | E783 |

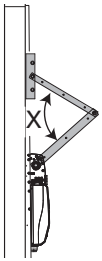
**If Z=800, E784 must be shortened to 400 mm*

Fig. 2




N.B. check that, while the door is opening and closing, the angle X formed by the arms does not exceed 130°. Otherwise, position the upper arm in the most suitable hole on the connection bracket.



## Canopy or spring-balanced overhead door with minimum 25 mm bearing guide and gearmotor applied centrally

Apply the guide-base (001E001) and the anchoring bracket as shown in figure 1 according to the dimensions, see table. Assemble the articulated arms (001E783) as shown in figure 2 to proceed with the installation of the gearmotor, returns and the transmission tube using the procedure described in the previous paragraphs.

| H (mm) | X (mm) | Y (mm) | ARM |
|---|---|---|---|
| 2400 | 190 | 200 | E783 |
| 2400 - 2700 | 190 | 200 | E783 + E784 |
| > 2700 | 500 | 0 | E783 + E784 |

Fig. 1

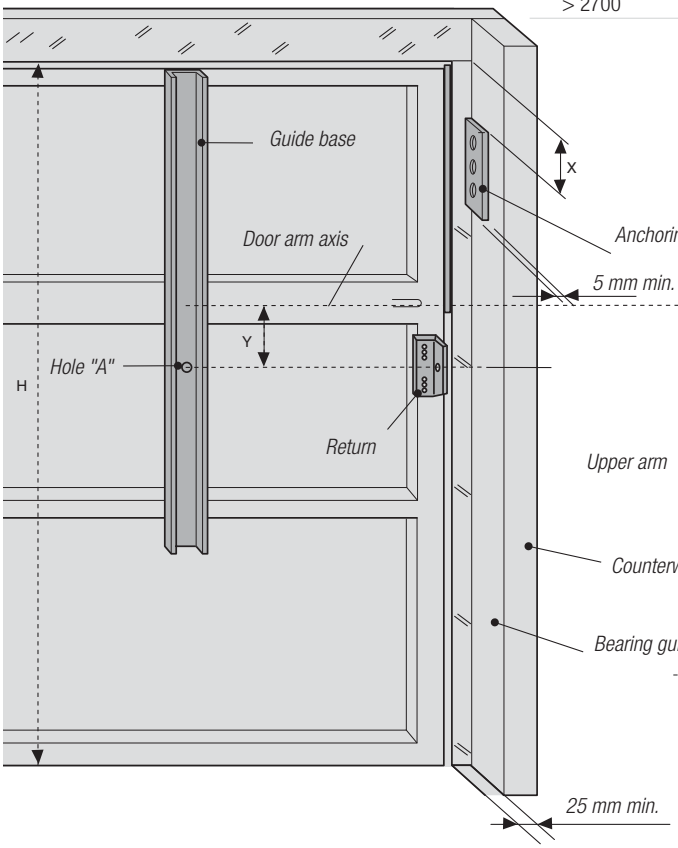
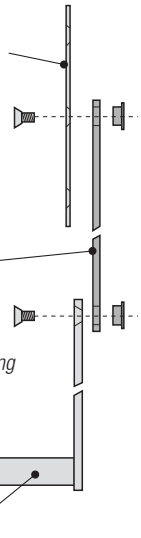
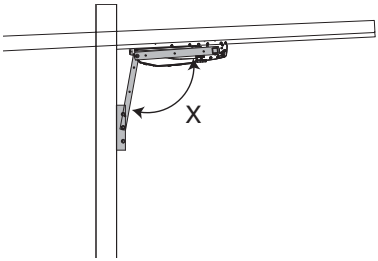
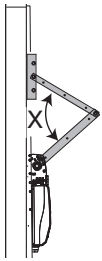



Fig. 2



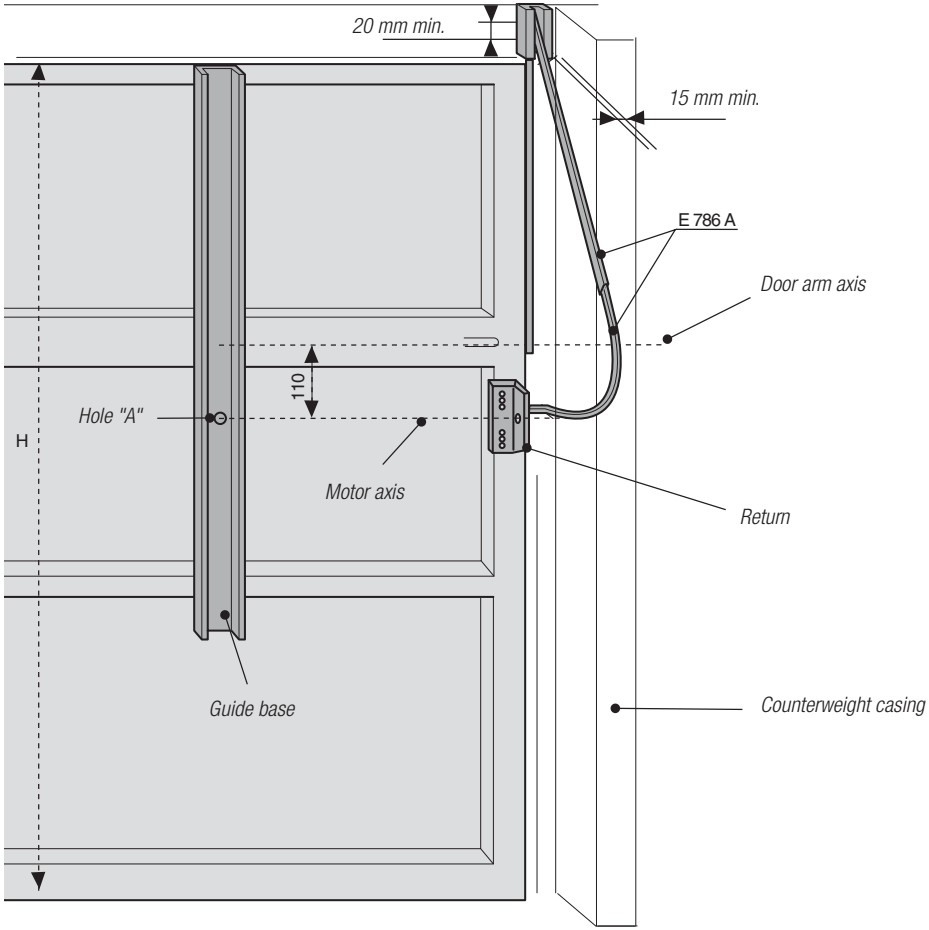

N.B. check that, while the door is opening and closing, the angle X formed by the arms does not exceed 130°. Otherwise, position the upper arm in the most suitable hole on the connection bracket.



## Canopy or spring-balanced overhead door without bearing guide and clearance between the door frame and counterweight casing of not less than 15 mm with gearmotor applied centrally.

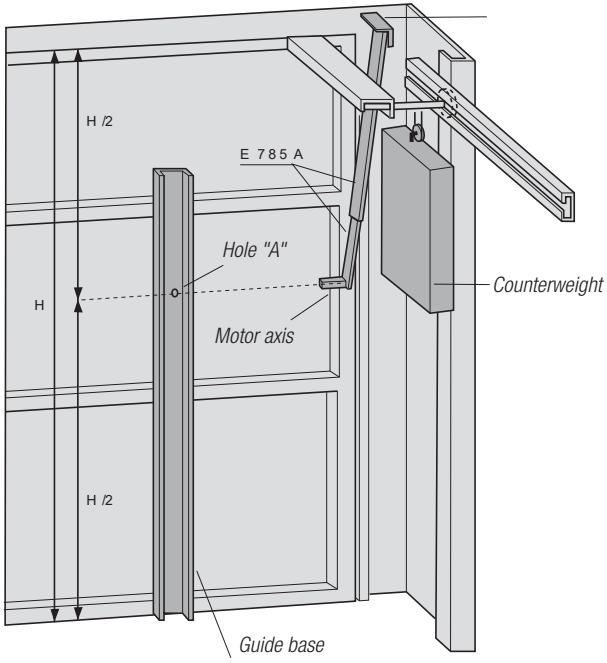
Apply the guide-base (001E001) and the anchoring bracket as shown in the figure according to the dimensions, see table. Apply the curved telescopic arms (001E786A) and proceed with the installation of the gearmotor, returns and the transmission tube following the procedure set out in the previous paragraphs.




| H (mm) | ARM |
|---|---|
| 2400 | E786A |
| 2400 - 2700 | E786A + E787A |

## Non-protruding counter-weighted overhead garage-door with gearmotor fitted centrally.

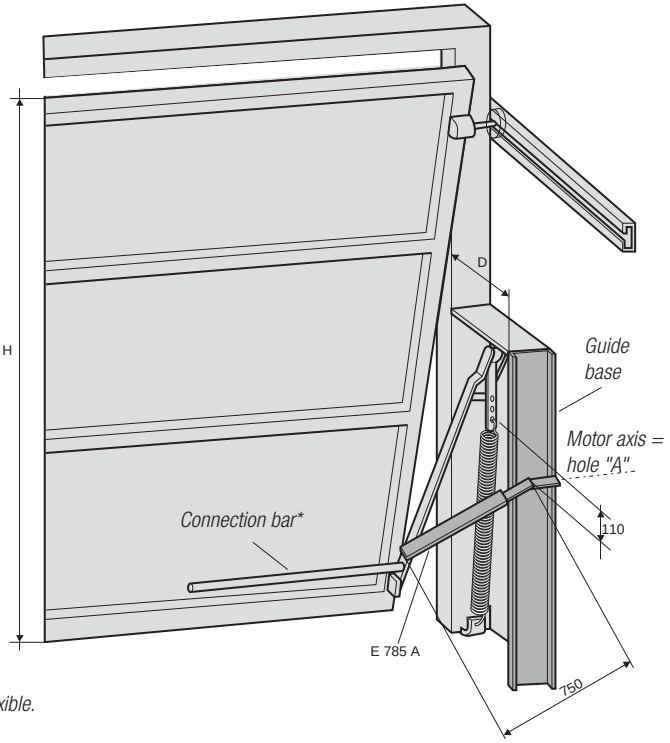
Apply the guide-base (001E001) and the anchoring bracket as shown in the figure according to the dimensions, see table. Assemble the straight telescopic arms (001E785A) and proceed with the installation of the gearmotor, returns and the transmission tube following the procedure set out in the previous paragraphs.




| H (mm) | ARM |
|---|---|
| 2000 - 2700 | E785A + E787A |

## Spring-loaded fully-retracting protruding overhead garage-door with gearmotor fitted laterally.

Apply the guide-base (001E001) and the anchoring bracket as shown in the figure according to the dimensions, see table.
Assemble the straight telescopic arms (001E785A) and proceed with the installation of the gearmotor, returns and the transmission tube following the procedure set out in the previous paragraphs.




| H (mm) | ARM |
|---|---|
| 2000 - 2400 | E785A |
| 2400 - 2700 | E785A + E787A |

** To be welded if the door is too flexible.*

## MAINTENANCE

### Periodic maintenance

☞ Before any maintenance, disconnect power to prevent any possible dangerous situations that can be caused by accidental movement of the device.

***Periodic maintenance log to be completed by the user (every six months)***

| Date | Notes | Signature |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

### Extraordinary maintenance

⚠ The table below is used to note any extraordinary maintenance, repairs or improvements carried out by specialist companies.

N.B. Extraordinary maintenance must be carried out by specialist technicians.

***Extraordinary maintenance log***

| | |
|---|---|
| Installation technician stamp | Operator name |
| | Date of intervention |
| | Technician signature |
| | Customer signature |
| Intervention carried out _____ | |

| | |
|---|---|
| Installation technician stamp | Operator name |
| | Date of intervention |
| | Technician signature |
| | Customer signature |
| Intervention carried out _____ | |

| | |
|---|---|
| Installation technician stamp | Operator name |
| | Date of intervention |
| | Technician signature |
| | Customer signature |
| Intervention carried out _____ | |

## ERRORS MESSAGES AND WARNINGS

Er1: motor calibration interrupted; check correct motor connection and operation.
Er3: encoder broken; contact service.
Er4: service test error; check the correct connection and operation of the safety devices.
Er5: insufficient work time; check the set time. This may be insufficient to complete the working cycle.
Er6: maximum number of obstacles detected.
Er7: overheating of the transformer. At the first opening command, the operator will perform an opening manoeuvre and remain open until it is reset.
C0: contact 1-2 (stop) not used and not disabled.
C1, C4 and C7: contacts CX and/or CY not used and not disabled.
Flashing red programming indicator LED: control panel not yet calibrated for the run.
Flashing red LEDs 1 and 2 on the control panel for courtesy lights: indicates that there is a malfunctioning of the encode. Contact service.
Flashing red LEDs 1, 2, 3 and 4 on the control panel for courtesy lights: indicates that there the normally closed (NC) contacts are open (e.g. photocells, stop button).

## DISMANTLING AND DISPOSAL

☞ **CAME S.p.A.** implements an EN ISO 14001 certified and compliant Environmental Management System at its plants, to ensure environmental protection.
Please continue our efforts to protect the environment, something that CAME considers to be one of the foundations in developing its business and market strategies, simply by observing brief recommendations as regards disposal:

**DISPOSAL OF PACKAGING**
Packaging components (cardboard, plastic etc.) can be disposed of together with normal household waste without any difficulty, by simply separating the different types of waste and recycling them.
Before proceeding, it is always advisable to check specific regulations in force in the place of installation.
**DISPOSE OF PROPERLY!**

**DISPOSAL OF THE PRODUCT**
Our products are made with different materials. Most of them (aluminium, plastic, iron, electrical cables) can be disposed of together with normal household waste. They can be recycled if collected,
sorted and sent to authorised centres.
Other components (circuit boards, remote control batteries etc.), on the other hand, may contain pollutants.
They should therefore be removed and handed over to companies authorised to recover and recycle them.
Before proceeding, it is always advisable to check specific regulations in force in the place of disposal.
**DISPOSE OF PROPERLY!**

## REFERENCE REGULATIONS

The product complies to the reference regulations in effect.

CAME

CAME.COM

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