



CE

119DS55EN

SWING GATE OPERATOR

Official Partner



MILANO 2015

FEEDING THE PLANET  
ENERGY FOR LIFE



INSTALLATION MANUAL

**F7000**



English

EN



**WARNING!**  
*important safety instructions for people:*  
**READ CAREFULLY!**



ENGLISH

**Premise**

- Employ this product only for the use for which it was expressly made. Any other use is dangerous. CAME S.p.A. is not liable for any damage caused by improper, wrongful and unreasonable use
- Keep these warnings together with the installation and operation manuals that come with the operator.

**Before installing**

*(checking what's there: if your evaluation is negative, do not proceed before having complied with all safety requirements)*

- Check that the automated parts are in good mechanical order, that the operator is level and aligned, and that it opens and closes properly. Make sure you have suitable mechanical stops
- If the operator is to be installed at a height of over 2.5 m from the ground or other access level, make sure you have any necessary protections and/or warnings in place
- If any pedestrian openings are fitted into the operator, there must also be a system to block their opening while they are moving
- Make sure that the opening automated door or gate cannot entrap people against the fixed parts of the operator
- Do not install the operator upside down or onto elements that could yield and bend. If necessary, add suitable reinforcements to the anchoring points
- Do not install door or gate leaves on tilted surfaces
- Make sure any sprinkler systems cannot wet the operator from the ground up
- Make sure the temperature range shown on the product literature is suitable to the climate where it will be installed
- Follow all instructions as improper installation may result in serious bodily injury
- It is important to follow these instructions for the safety of people. Keep these instructions.

**Installing**

- Suitably section off and demarcate the entire installation site to prevent unauthorized persons from entering the area, especially minors and children
- Be careful when handling operators that weigh over 20 kg. If need be, use proper safety hoisting equipment
- All opening commands (that is, buttons, key switches, magnetic readers, and so on) must be installed at least 1.85 m from the perimeter of the gate's working area, or where they cannot be reached from outside the gate. Also, any direct commands (buttons, touch panels, and so on) must be installed at least 1.5 m from the ground and must not be reachable by unauthorized persons
- All maintained action commands, must be fitted in places from which the moving gate leaves and transit and driving areas are visible
- Apply, if missing, a permanent sign showing the position of the release device
- Before delivering to the users, make sure the system is EN 12453 standard compliant (regarding impact forces), and also make sure the system has been properly adjusted and that any safety, protection and manual release devices are working properly
- Apply Warning Signs (such as the gate's plate) where necessary and in a visible place

**Special user-instructions and recommendations**

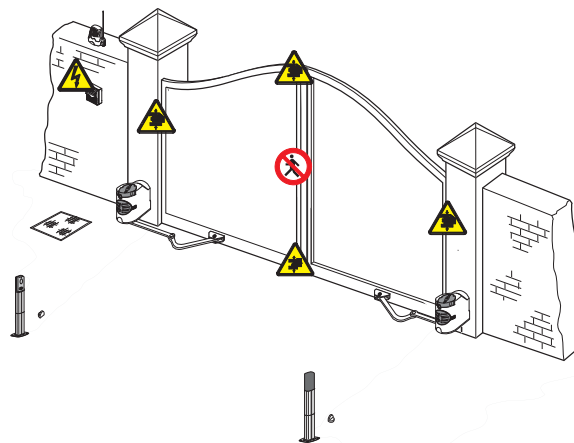
- Keep gate operation areas clean and free of any obstructions. Make sure that the photocells are free of any overgrown vegetation and that the operator's area of operation is free of any obstructions
- Do not allow children to play with fixed commands, or to loiter in the gate's maneuvering area. Keep any remote control transmitters or any other command device away from children, to prevent the operator from being accidentally activated.
- The apparatus may be used by children of eight years and above and by physically, mentally and sensorially challenged people, or even ones without any experience, provided this happens under close supervision or once they have been properly instructed to use the apparatus safely and about the potential hazards involved. Children must not play with the apparatus. Cleaning and maintenance by users must not be done by children, unless properly supervised
- Frequently check the system for any malfunctions or signs of wear and tear or damage to the moving structures, to the component parts, all anchoring points, including cables and any accessible connections. Keep any hinges, moving joints and slide rails properly lubricated
- Perform functional checks on the photocells and sensitive safety edges, every six months. To check whether the photocells

are working, wave an object in front of them while the gate is closing; if the operator inverts its direction of travel or suddenly stops, the photocells are working properly. This is the only maintenance operation to do with the power on. Constantly clean the photocells' glass covers using a slightly water-moistened cloth; do not use any solvents or other chemical products that may ruin the devices

- If repairs or modifications are required to the system, 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 potentially hazardous situations. Read the instructions
- If the power supply cable is damaged, it must be replaced by the manufacturer or authorized technical assistance service, or in any case, by similarly qualified persons, to prevent any risk
- It is FORBIDDEN for users to perform any OPERATIONS THAT ARE NOT EXPRESSLY REQUIRED OF THEM AND WHICH ARE NOT LISTED in the manuals. For any repairs, modifications and adjustments and for extraordinary maintenance, CALL TECHNICAL ASSISTANCE
- Log the job and checks into the periodic maintenance log.

**Additional special recommendations for everyone**

- Keep away from hinges and mechanical moving parts
- Do not enter the operator's area of operation when it is moving
- Do not counter the operator's movement as this could result in dangerous situations
- Always pay special attention to any dangerous points, which have to be labeled with specific pictograms and/or black and yellow stripes
- While using a selector switch or a command in maintained actions, keep checking that there are no persons within the operating range of any moving parts, until the command is released
- The gate may move at any time and without warning
- Always cut off the power supply before performing any maintenance or cleaning.



*Danger of foot crushing*



*Danger of hand crushing*






*Danger! High voltage.*




*No transiting while maneuvering*

## 1 Legend of symbols

-  This symbol highlights parts which must be read with care.
-  This symbol highlights the parts which describe safety issues.
-  This symbol tells you what to tell the end-user.

## 2 Intended use and limits to use

### 2.1 Intended use

-  The F7000 operator is designed and built by CAME S.p.A. in compliance with current safety regulations, to automate residential property and apartment building swing-gates. Any installation and use other than that specified in this manual is forbidden.

### 2.2 Limitations to use

Gate-leaf length	1 m	1.5 m	2 m	2.3 m max
Gate-leaf weight	300 kg max	250 kg	215 kg	200 kg
Opening	110 max			

We suggest you always fit an electrolock onto swing gates for a more reliable closure.

## 3 Reference standards

CAME S.p.A. adopts the ISO 9001 certified quality-management and the ISO 14001 environmental-management systems. Came only designs and manufactures in Italy.

This product is compliant with: *see declaration of conformity.*

## 4 Description

### 4.1 Operator

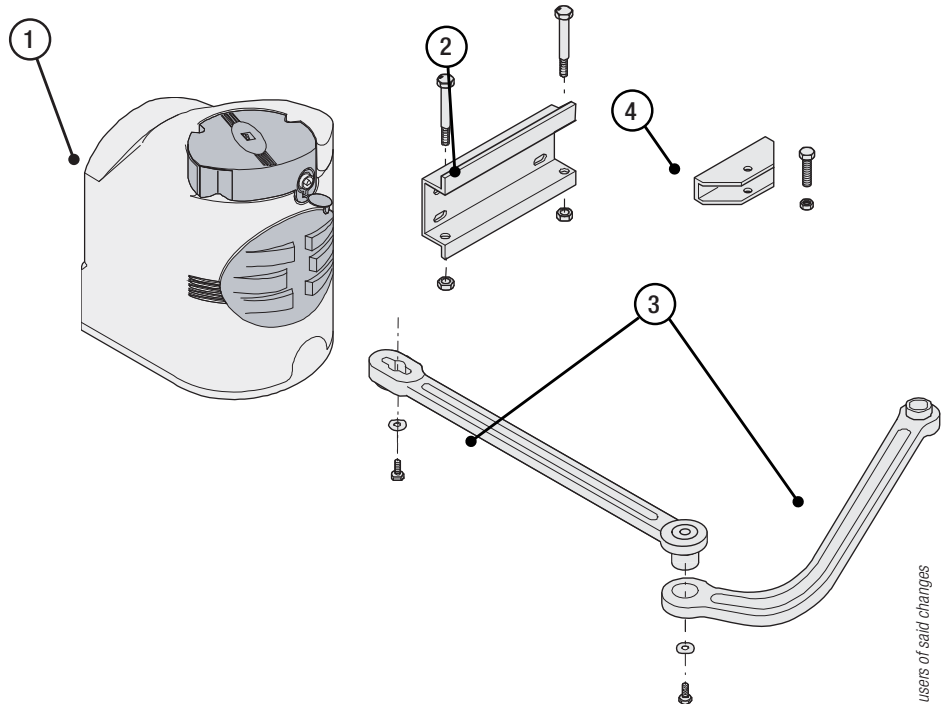
Operator with control board and articulated transmission arm for gate leaves of up to 2.3 m.

### 4.2 Technical data

Power supply	230 V AC
Maximum power rating	160 W
Power draw when idle	A 1.4
Maximum Torque.	180 Nm
Opening time (90°)	18 S
Duty cycle	30%
Weight	11.6 kg
Condenser	10 µF
Protection rating	IP54
Working temperature	- 20 / +55°C

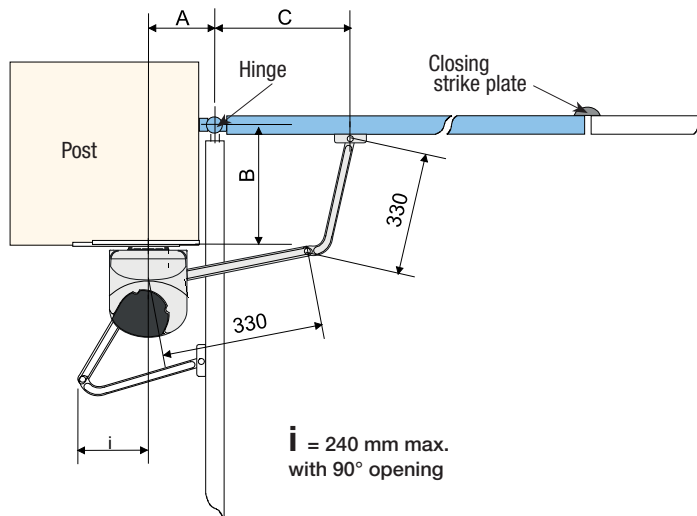
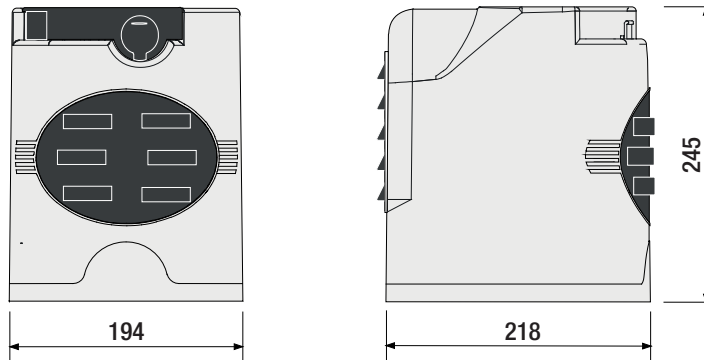
### 4.3 Description of parts

1. Operator
2. Post-fastening bracket
3. Articulated arm
4. Gate-fastening bracket



### 4.4 Dimensions

(mm)




Opening angle	A	B	C
90°	137÷210	0	430
	137÷205	50	430
	137÷200	75	430
	137÷195	100	430
	137÷190	125	430
	137÷185	150	400
	137÷180	175	400
110°	180÷210	0	430
	200÷205	50	430

## 5 Installation

 Installation must be carried out by skilled, qualified technicians in accordance with current regulations.

### 5.1 Preliminary checks

 Before beginning installation, proceed as follows:

- Set up a suitable omnipolar cut-off device, with distances greater than 3 mm between contacts, to disconnect the power supply.
- Set up proper conduits and electric cable raceways, making sure these are protected from any mechanical damage.
-  Check that any connections inside the container (made to ensure continuity in the protective circuit) are fitted with more insulation than other internal conductive parts.
- Make sure the door structure is sturdy enough, that the hinges are efficient and that there is no friction between the fixed and moving parts.
- Make sure there are opening and closing strike plates.

### 5.2 Cable types and minimum thickness

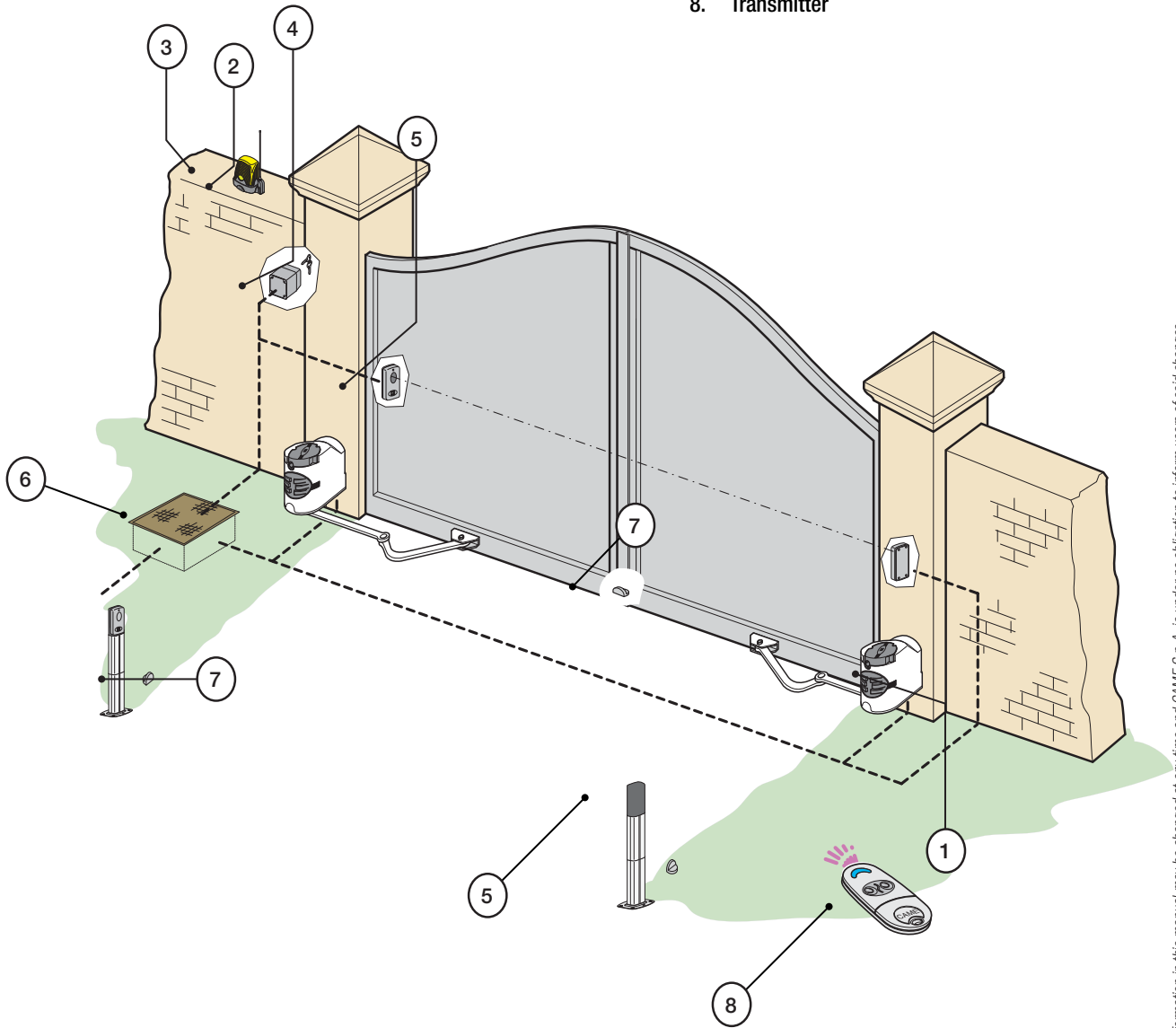
Connection for	Cable type	Cable length 1 < 10 m	Cable length 10 < 20 m	Cable length 20 < 30 m
230 V power supply to control panel	FROR CEI 20-22 CEI EN 50267-2-1	3G x 1.5 mm <sup>2</sup>	3G x 2.5 mm <sup>2</sup>	3G x 4 mm <sup>2</sup>
Motor power supply 230 V		3 x 0.5 mm <sup>2</sup>	3 x 0.5 mm <sup>2</sup>	3 x 0.5 mm <sup>2</sup>
Flashing light		2 x 0.5 mm <sup>2</sup>	2 x 1 mm <sup>2</sup>	2 x 1.5 mm <sup>2</sup>
Photocell transmitters		2 x 0.5 mm <sup>2</sup>	2 x 0.5 mm <sup>2</sup>	2 x 0.5 mm <sup>2</sup>
Photocell receivers		4 x 0.5 mm <sup>2</sup>	4 x 0.5 mm <sup>2</sup>	4 x 0.5 mm <sup>2</sup>
Accessories power source		2 x 0.5 mm <sup>2</sup>	2 x 0.5 mm <sup>2</sup>	2 x 1 mm <sup>2</sup>
Safety and command devices		2 x 0.5 mm <sup>2</sup>	2 x 0.5 mm <sup>2</sup>	2 x 0.5 mm <sup>2</sup>
Antenna	RG58	max. 10 m		

N.B. If cables are of a different length than that shown in the table, determine the cable section based on the actual draw and the number of connected devices and according to what is set forth in the IEC EN 60204-1 code of regulations.

For connections featuring several loads on the same line (i.e. sequential ones), the dimensions shown on the table must be reconsidered according to the total draw and actual distances. When connecting products not featured in this manual, only refer to the literature accompanying such products.

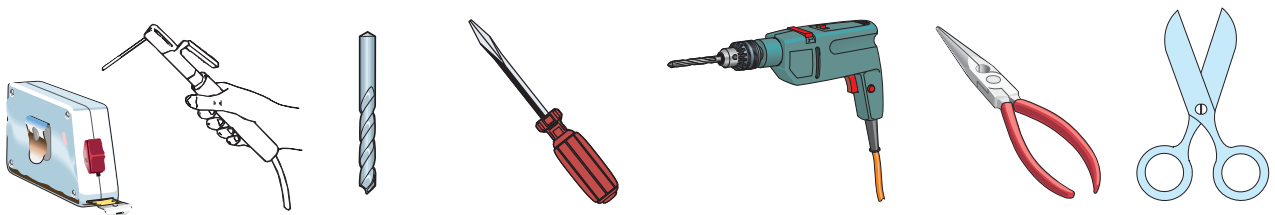
### 5.3 Standard installation

1. Operator
2. Antenna
3. Flashing light
4. Key switch
5. Photocells
6. Connections junction pit
7. Mechanical stop plates
8. Transmitter



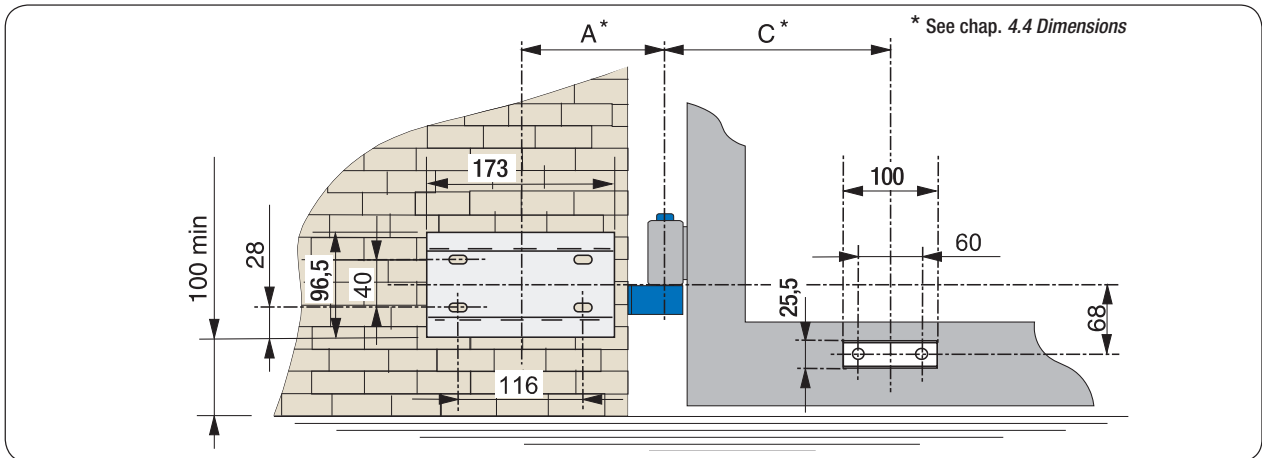
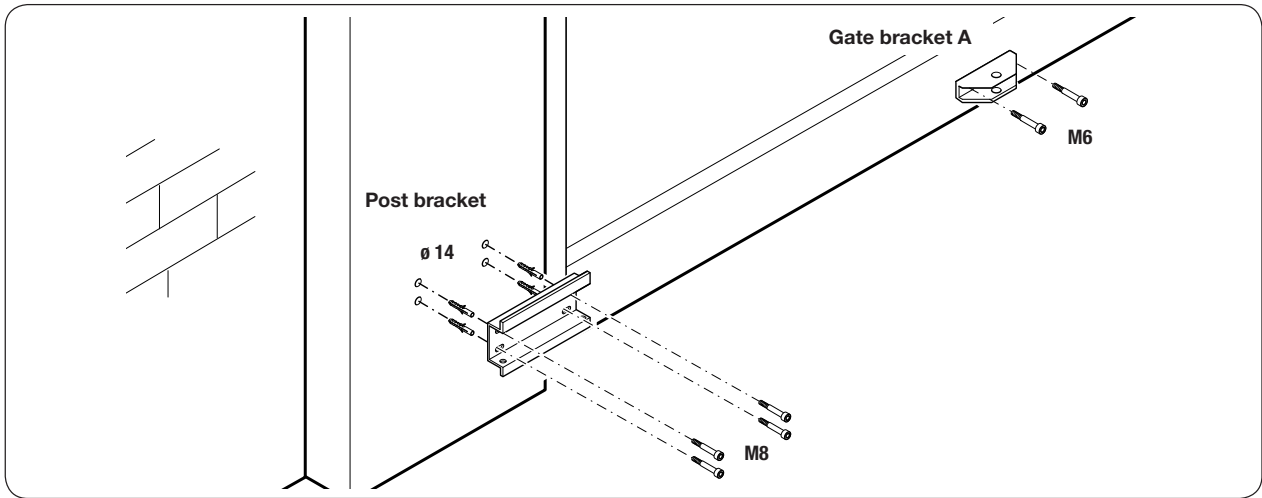
### 5.4 Tools and equipment

Make sure you have all the tools and materials needed to carry out the installation in total safety and in accordance with current regulations. The figure shows some examples of the tools needed by installers.



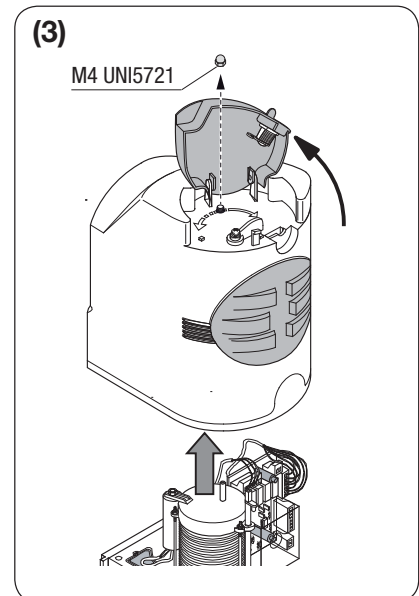
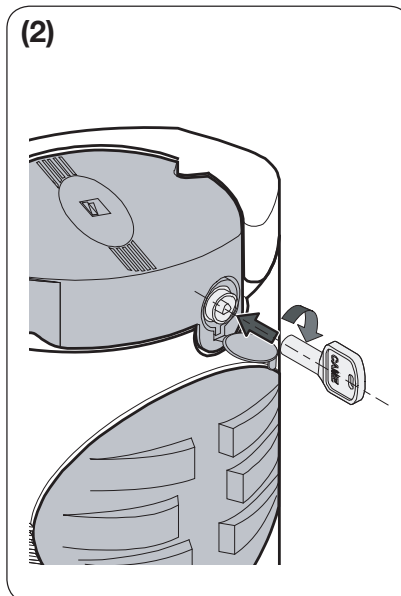
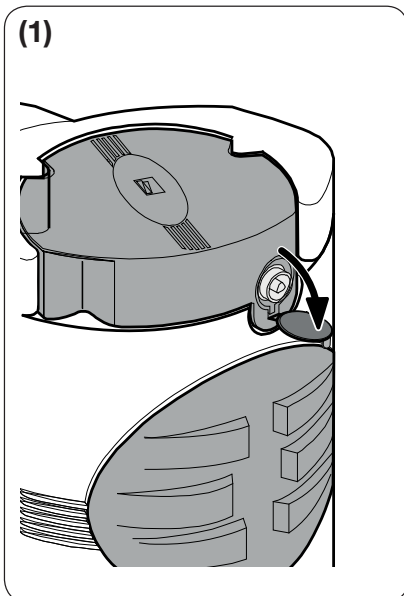
## 5.5 Applying brackets for fastening to the gate post

- Fasten the bracket to the post using M8 screws and  $\varnothing 14$  plugs while respecting the 100 mm minimum distance from the ground.
- Fasten bracket A to the gate leaf by welding it or using M6 screws and respecting the measurements in the table 2.2 *Limitations to use* and the 68 mm level-difference between the two brackets

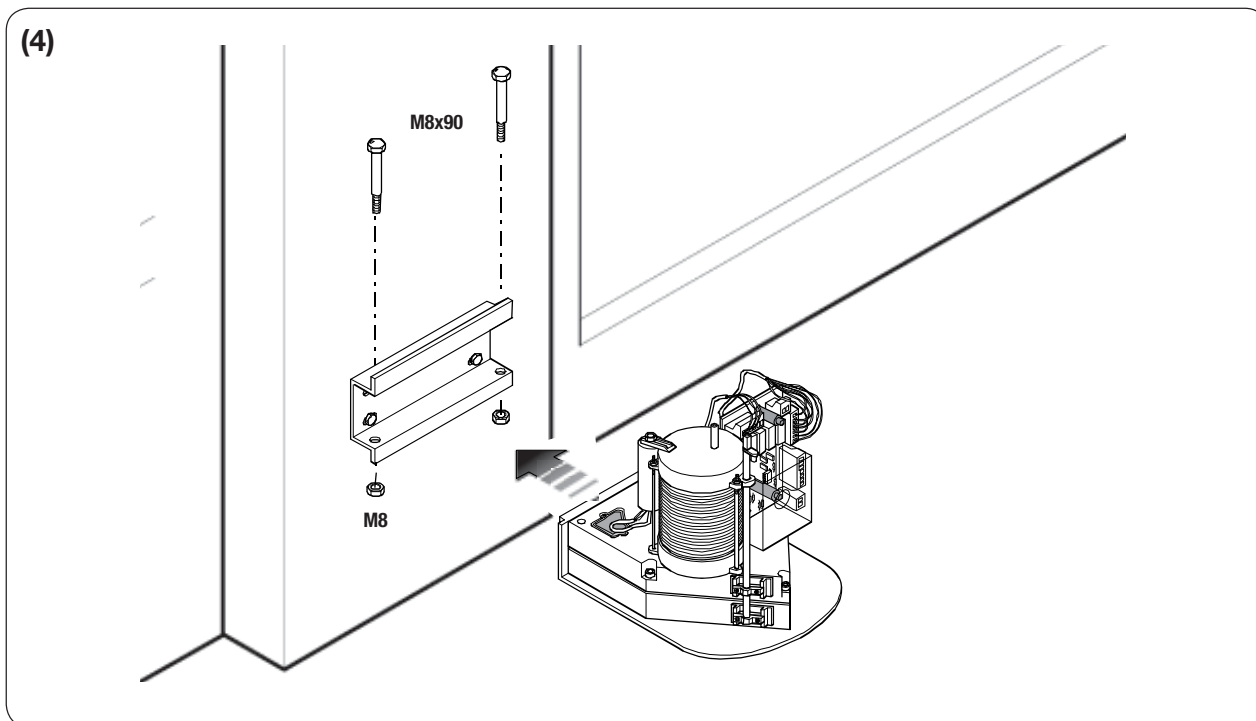


## 5.6 Installing the gearmotor

- Open the lock cover (1).
- Insert the key, push it down and turn it clockwise (2).
- Lift the cover, loosen the M4 hex nut and remove the cover from the gearmotor assembly (3).

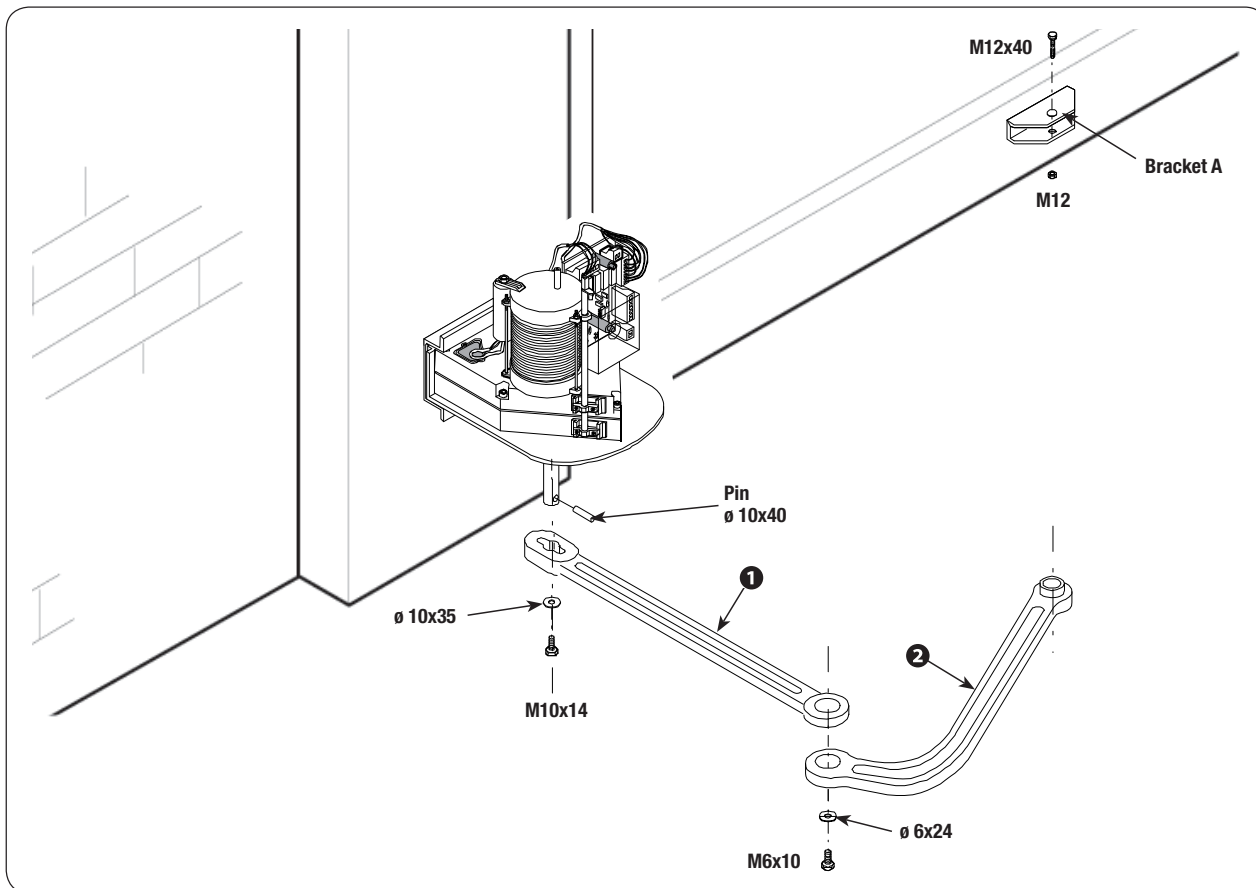


Insert the operator into the post-mounted bracket; match the four holes and fasten it using the two issued M8x90 screws and M8 nuts (4).



### 5.7 Applying the articulated arm

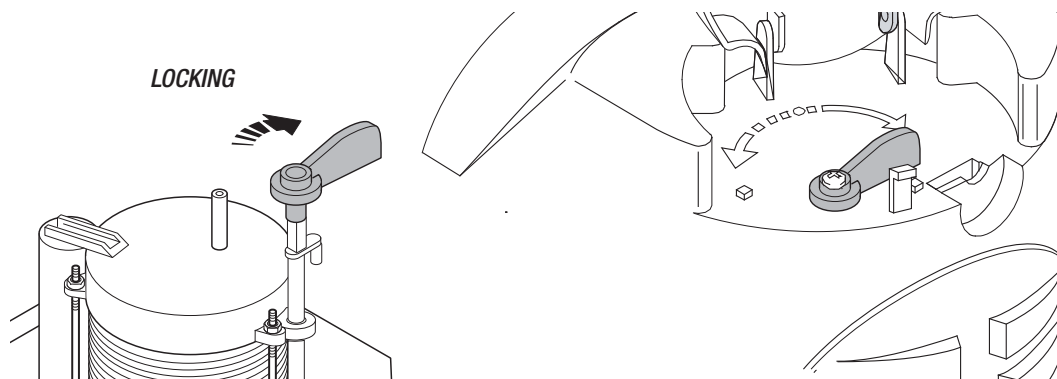
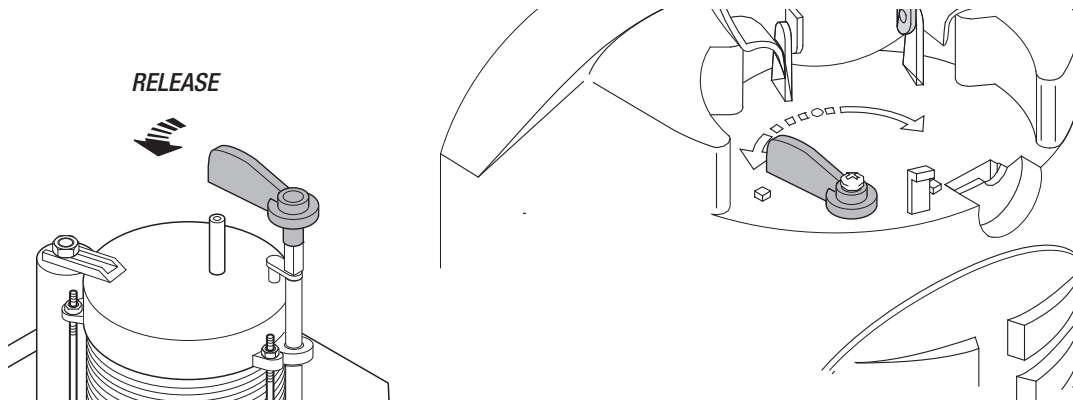
- Insert the  $\varnothing$  10x40 pin and the straight arm ① into the gearmotor shaft and fasten it using an M10x14 screw and  $\varnothing$  10x35 washer. Lubricate the straight arm pin. Join and fasten the two arms ① ② with the M6x10 and the  $\varnothing$  6x24 washer. Release the gearmotor and fasten the curved arm to bracket A using the M12x40 screw and the M12 nut. Make sure the arm slides freely.





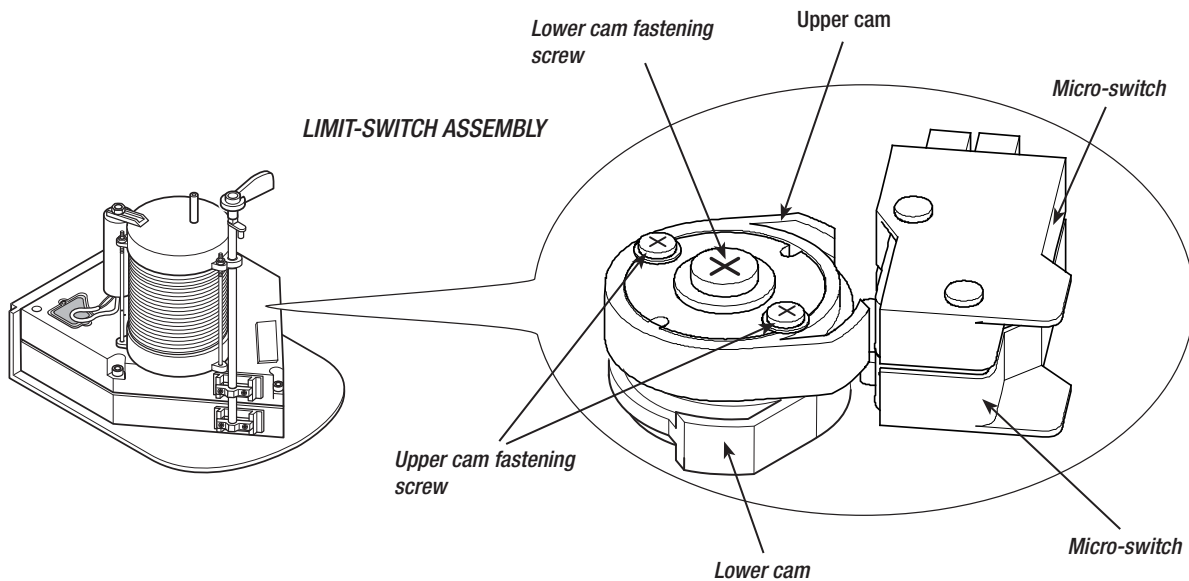
## 5.8 Releasing the gearmotor

To release the gearmotor, used the lever located above the rod.



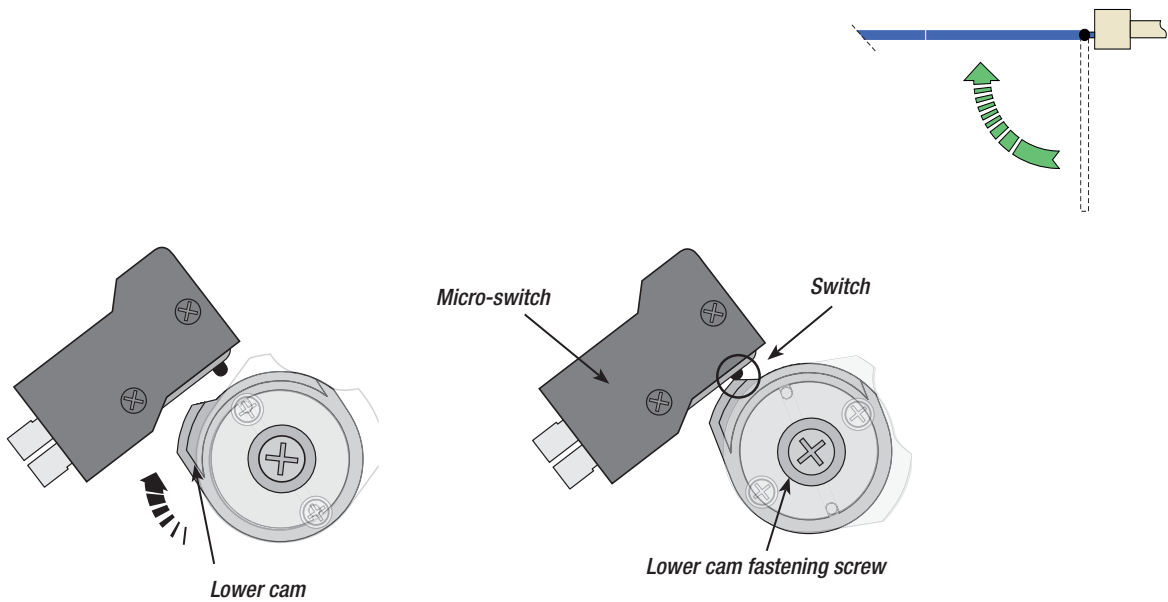
## 5.9 Micro-switch settings

If the system already has mechanical stops, do not lock the cams, otherwise calibrate them in the following way:

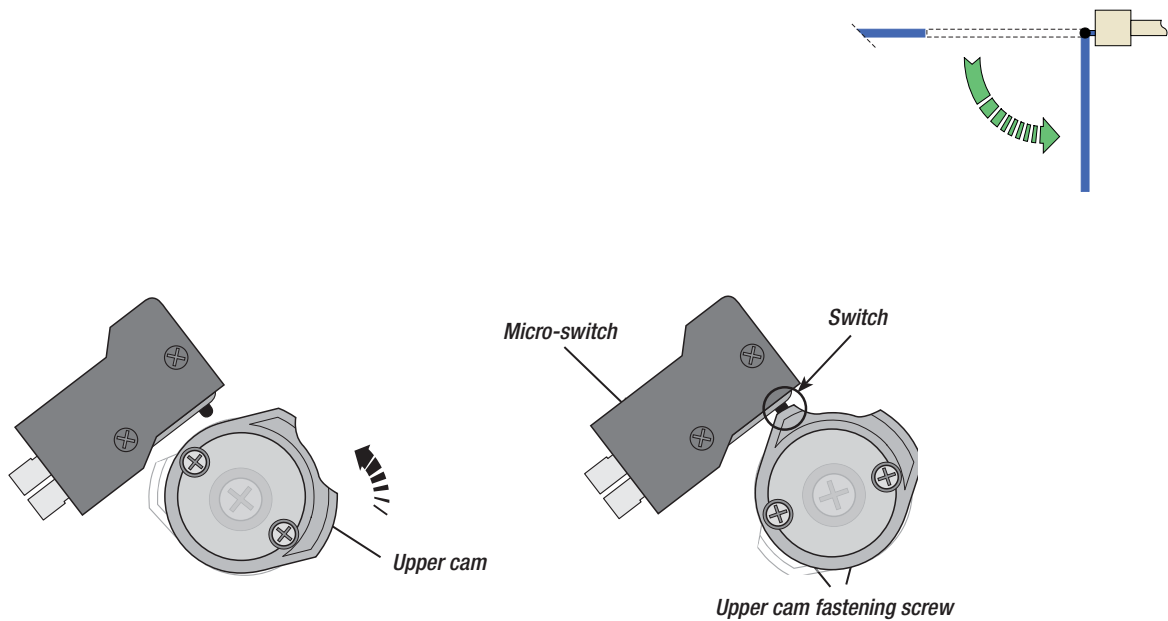


These settings require the gearmotor to be released (see releasing the gearmotor).

Manually close the gate leaf, turn the lower cam clockwise until the micro-switch is activated. Use the central screw to fasten the cam.

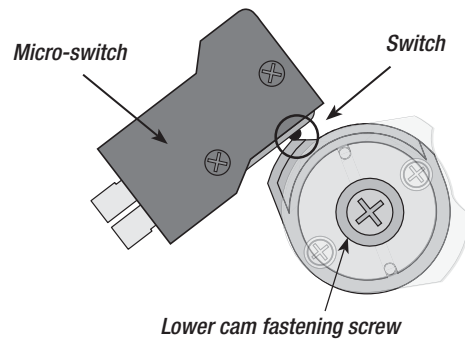
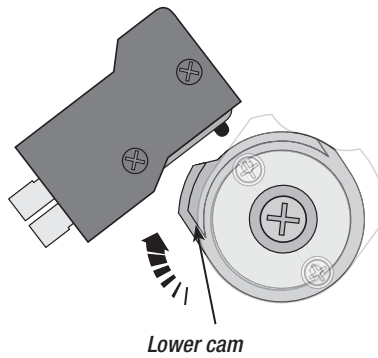
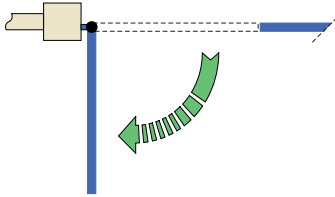


Manually open the gate leaf to max. 110°, turn the upper cam counter clockwise until the micro-switch is activated. Use the lateral screws to fasten the cam.

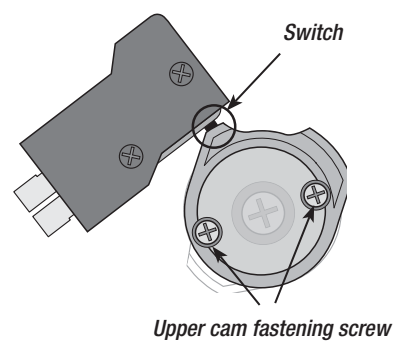
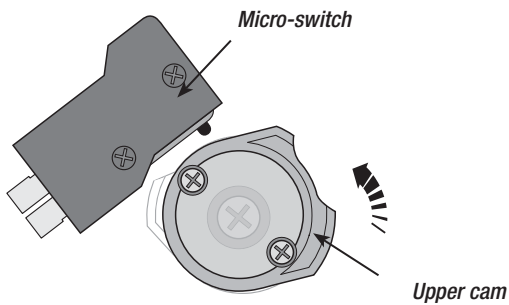
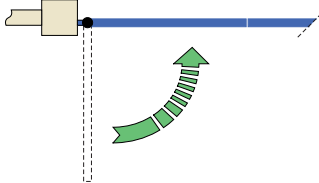


These settings require the gearmotor to be released (see releasing the gearmotor).

Manually open the gate leaf fully (max. 110°). Use the central screw to fasten the cam.



Manually close the gate leaf, turn the lower cam counter clockwise until the micro switch is activated. Use the lateral screws to fasten the cam.



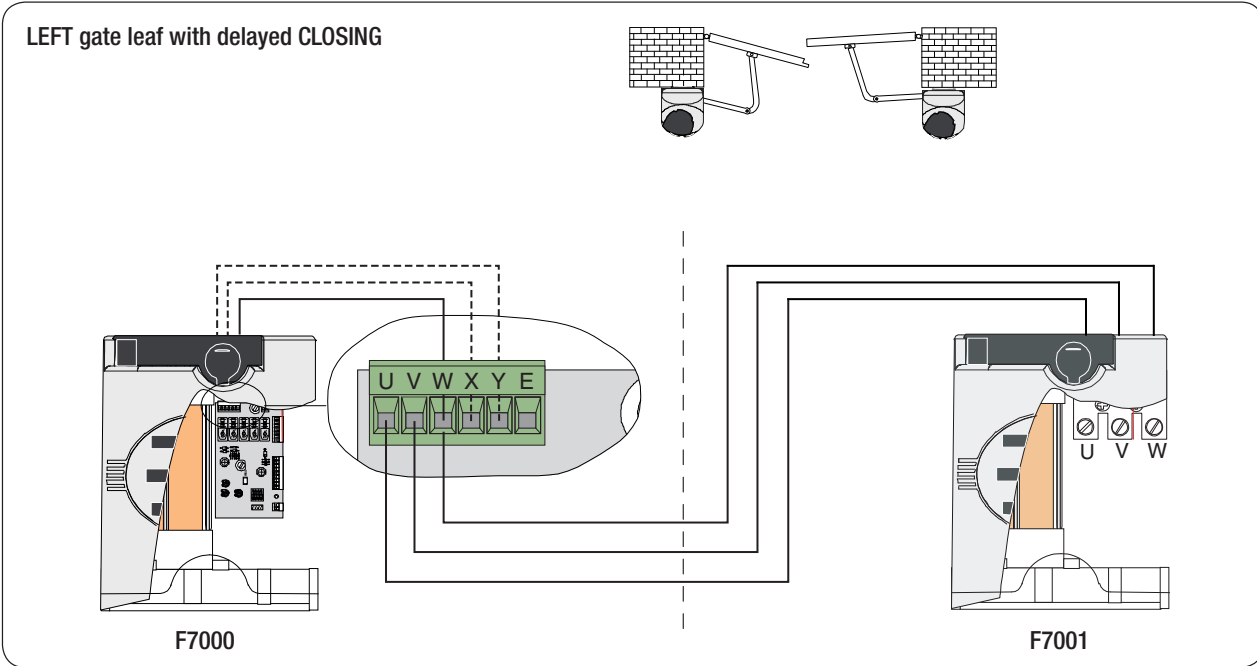
## 5.10 Electrical connections



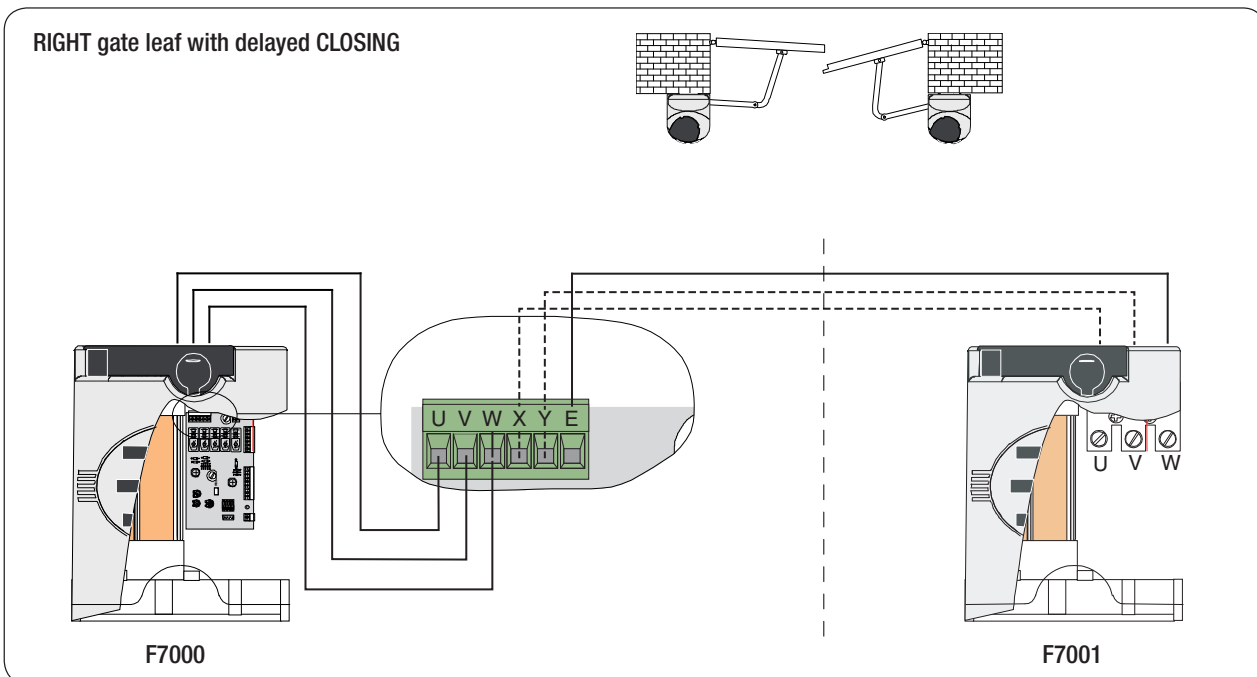
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### 5.10.1 Electrical connections to the on-board control panel with two-leaf swing gates

LEFT gate leaf with delayed CLOSING

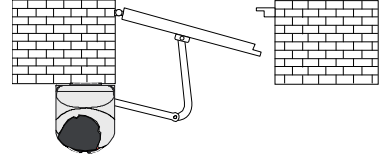
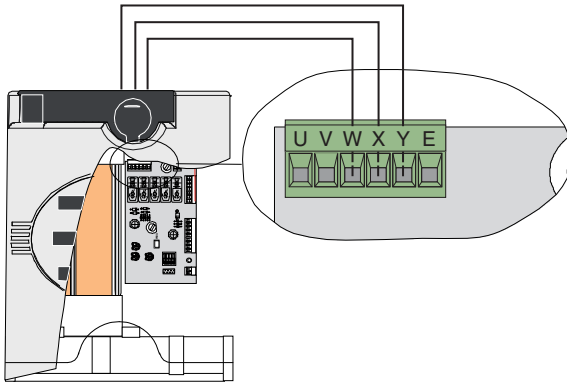


RIGHT gate leaf with delayed CLOSING

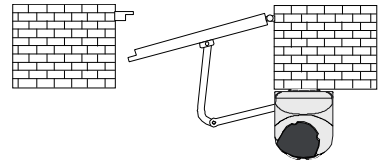
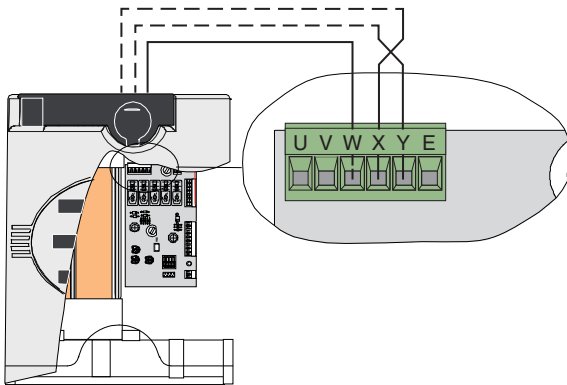


## 5.10.2 Electrical connections to the on-board control panel with two-leaf gates

### LEFT gate leaf

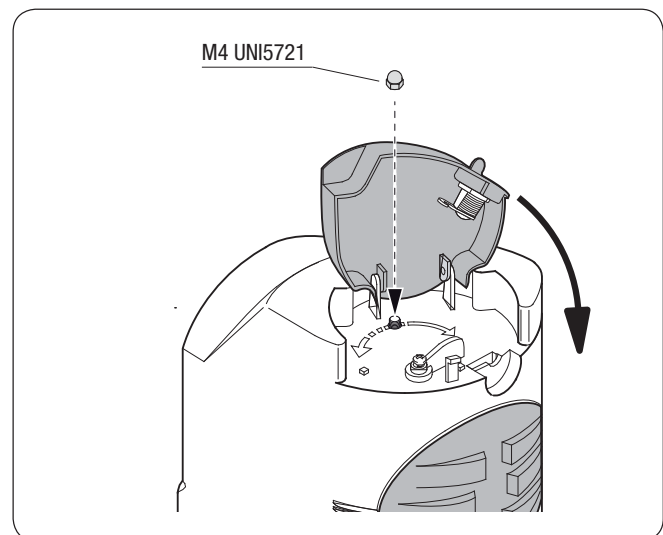


### RIGHT gate leaf



## 5.11 Cover mounting


Once finished with mounting, electrical connections and adjustments, replace the cover and secure it using the hex nut M4. Insert the release handle into the 'LOCK' position and secure it.



## 6 ZF1 control board

### 6.1 Intended use

The ZF1 control board is made for commanding operators for one- or two-leaf swing gates.

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

### 6.2 Description

Designed and built entirely by CAME S.p.A.

Power supply 230 V AC on terminals L1 and L2. The board is protected by a 5 A fuse, while the low voltage accessories (24 V) are protected by a 3.15 A fuse.

**Warning!** The overall power of the 24 V accessories must not exceed 20 W.

All connections are protected by quick fuses, see table.

The board manages and controls the following features:

- automatic closing;
- hold-to-run action.

The available command modes are:

- opening/closing;
- total stop.

The photocells, after detecting an obstacle, may trigger:

- the reopening of the closing gate;
- a total stop.

Specific trimmers regulate:

- the working time for automatic closing;
- the delayed closing time of gearmotor 2;
- the working time.

You can also connect:

- a 12 V electric lock;
- a gate-open signal lamp.

#### TECHNICAL DATA

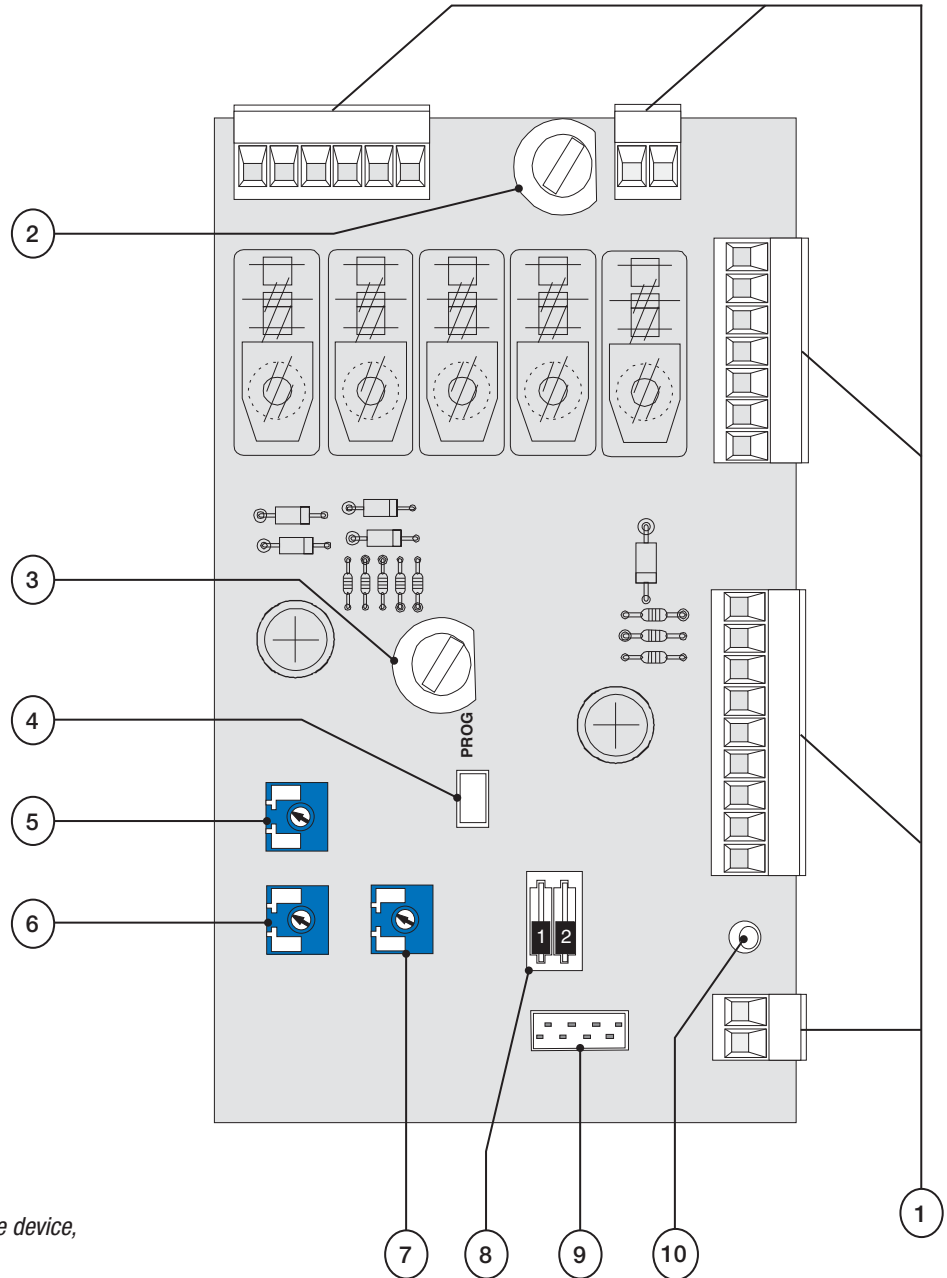
Power supply	230 V - 50/60 Hz
Maximum allowed power load	320 W
Power draw when idle	40 mA
Maximum power for 24 V accessories	20W
Circuit insulation class	□
Container material	ABS
Container protection rating	IP54
Working temperature	- 20 / +55°C

#### FUSE TABLE

to protect:	fuses for:
Electronic board (line)	A 5
Command devices and accessories	3.15A

## 6.3 Main components

1. Connecting terminals
2. Line fuse
3. Accessories fuse
4. Buttons to memorise radio code
5. Trimmer for adjusting the delay of gearmotor 2
6. Working time adjuster trimmer
7. Automatic closing time adjuster trimmer
8. Features selector
9. Radio frequency card socket
10. LED



**⚠ Warning!** Before acting on the device, cut off the mains power supply.

**⚠** Connect the wires coming out of the board to the condenser connectors.

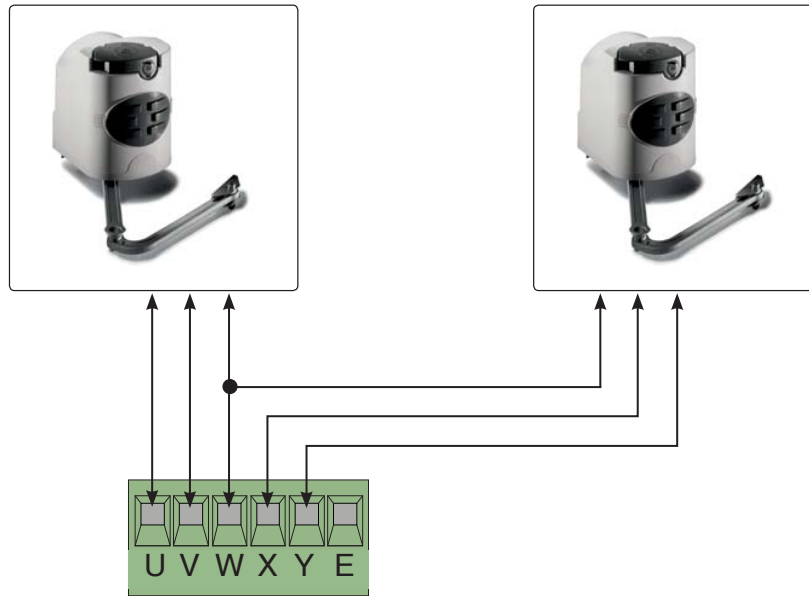
## 6.4 Electrical connections

### Gearmotor

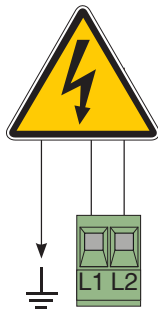
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Gearmotor 1 *delayed when opening*

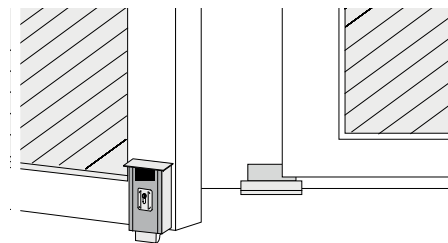
Gearmotor 2 *delayed when closing*



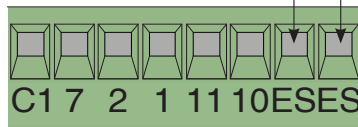
### Power supply



Power supply to the  
230V AC 50/60 Hz  
control panel



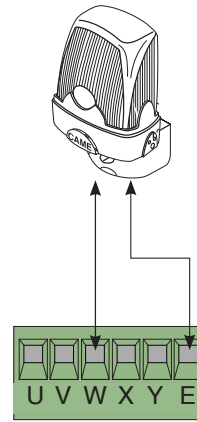
Terminals for powering the  
24V AC accessories. Overall  
allowed power: 20W



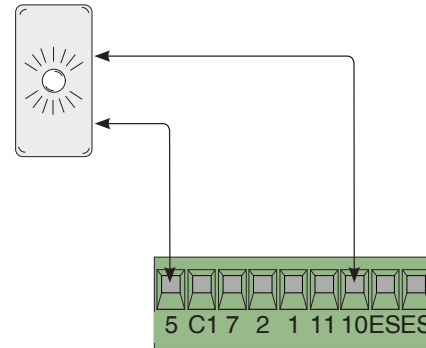
Connection for the 12 V - 15W max electric lock



Flashing light (contact rated for: 230V AC - 25W Max) Flashes while gate opens and closes.



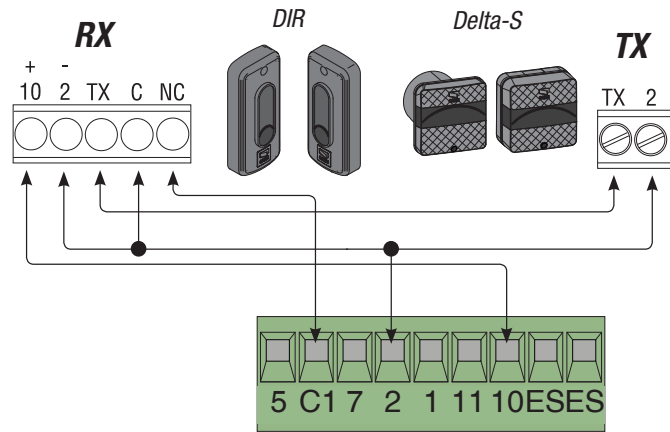
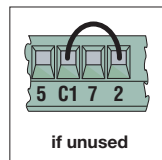
Gate open warning light (contact rated for: 24 V - 3 W Max) Warns of open gate position, turns off when gate is closed.



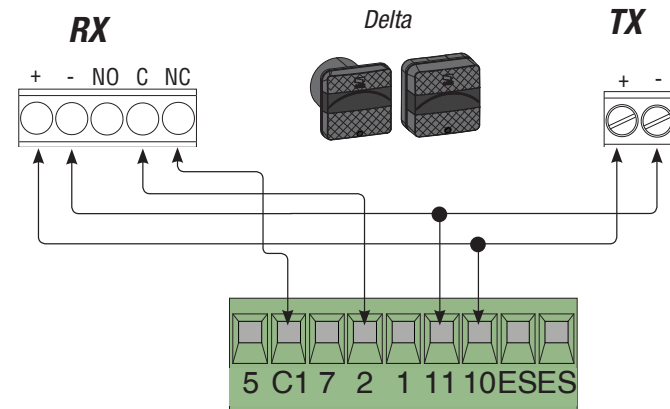
Safety devices

**C1 = (N.C.) contact for reopening while closing**  
 Input for safety devices like photocells, sensitive edges and other devices that comply with EN 12978 regulations. While the door is closing, opening the contact will invert movement until it is fully opened.

If unused, short-circuit the contact 2 = C1.



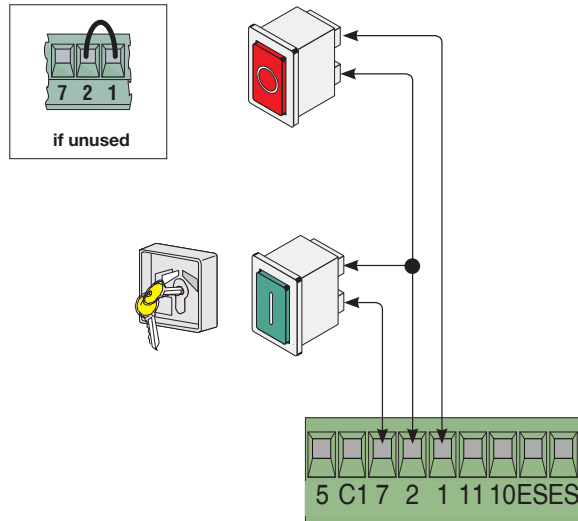
**C1 = (N.C. contact) for reopening while closing**



**Stop button (N.C. contact)**

Gate stop button with exclusion of automatic closing - to resume movement press command button or transmitter button.

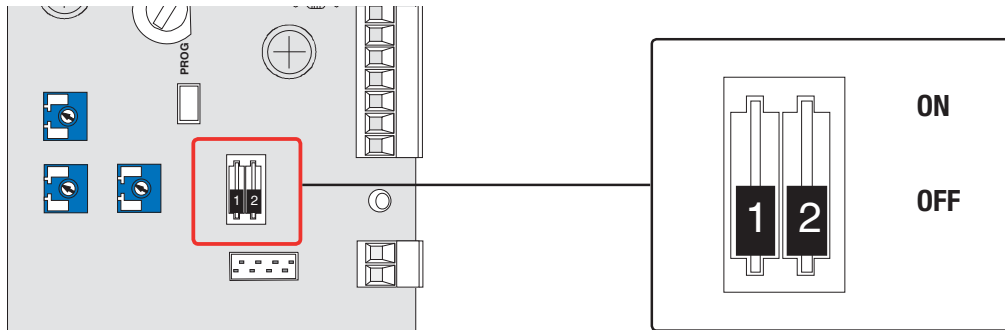
If unused, short-circuit contact 1-2.



**Key selector switch and/or command button (N.O. contact)**

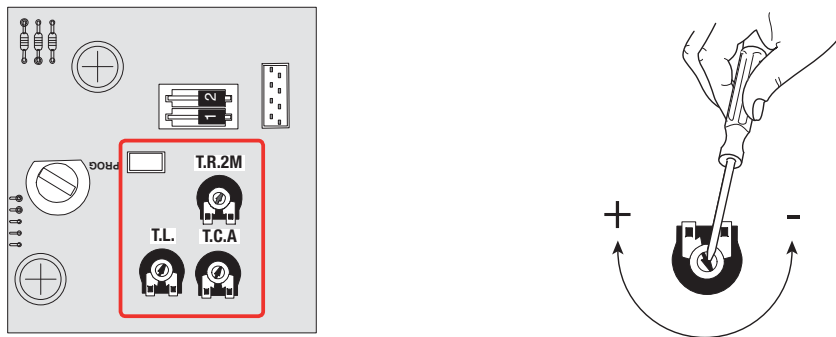
Commands for opening and closing, by pressing the button or turning the selector switch key.

6.5 Selecting features



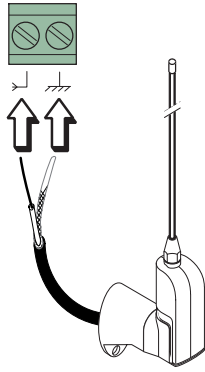
- 1 ON - Automatic closing activated; (1 OFF - deactivated)
- 2 ON - Open-stop-close-stop with button (2-7) and radio transmitter;
- 2 OFF - Open-close with button (2-7) and radio transmitter activated.

6.6 Settings



Trimmer T.R.2M.	Adjusting the delay of gearmotor 2 from 1 second to 10 seconds.
Trimmer T.L.	Adjusting the working time from 15 seconds to 120 seconds. <i>(Note: adjusting the working time to the minimum will activate the hold-to-run feature).</i>
Trimmer T.C.A.	Adjusting automatic opening and closing times from 0 seconds to 120 seconds

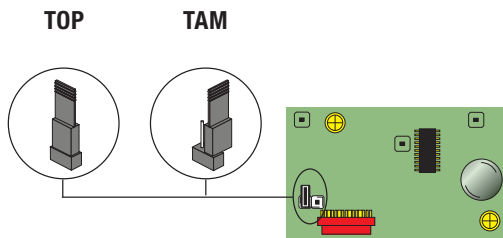
## 6.7 Activating the radio command



Connect the RG58 antenna cable to the corresponding terminals.

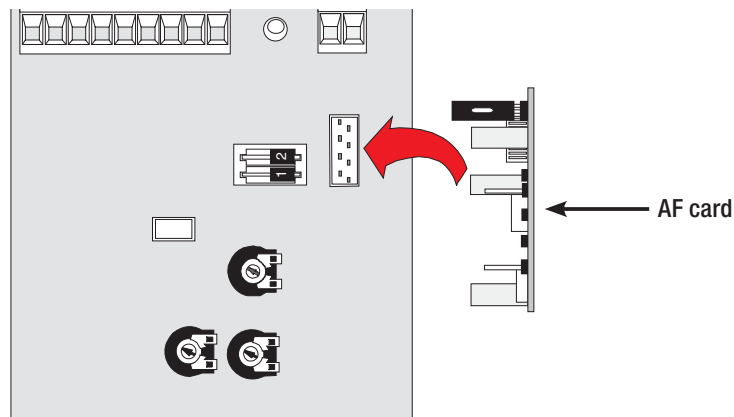
ENGLISH

Only for the AF43S / AF43SM radio-frequency cards:  
position jumper as shown depending on the series of transmitters you are using.

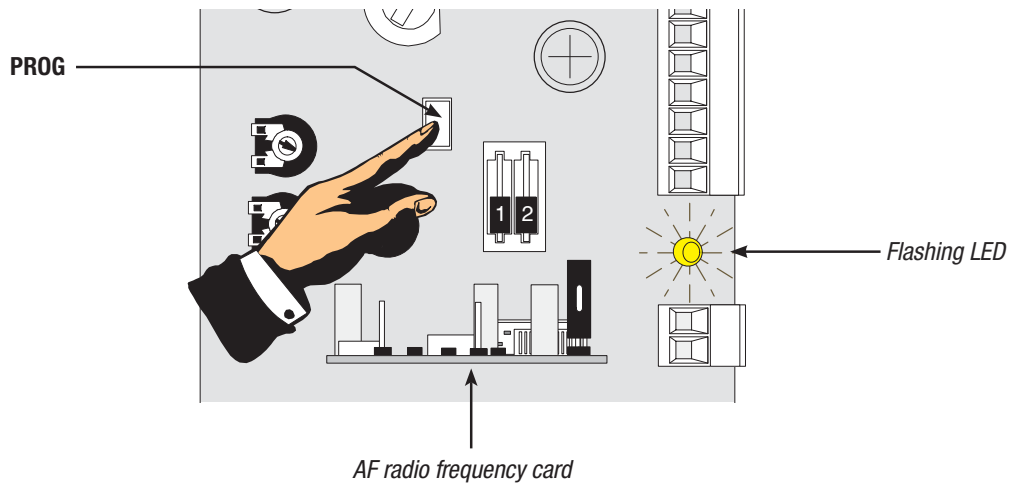


Plug the radio-frequency card into the control board **AFTER CUTTING OFF THE MAINS POWER SUPPLY** (and disconnecting the batteries, if any).

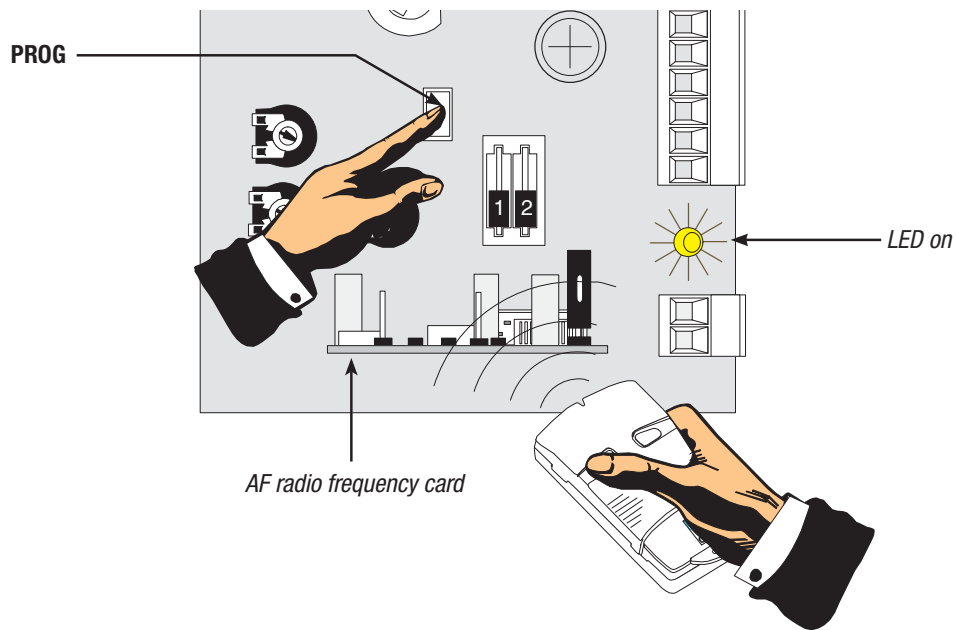
**N.B.:** The control board only recognises the radio-frequency card when it is powered.



1. Hold down the "PROG" button on the CONTROL BOARD (the LED flashes).



2. A transmitter button sends the code, and the LED stays lit to show that memorisation has been successful.



N.B.: if you later wish to change code, repeat the described sequence.

## 9.3 Maintenance

### Periodic maintenance

☞ Before doing any maintenance, cut off the power supply, to prevent any hazardous situations caused by accidentally activating the operator.

#### **Periodic maintenance log kept by users (every six months)**

Date	Notes	Signature

ENGLISH

## 9.4 Extraordinary maintenance

△ The following table is for logging any extraordinary maintenance jobs, repairs and improvements performed by specialized contractors.  
📖 Any extraordinary maintenance jobs must be done only by specialized technicians.

#### **Extraordinary maintenance log**

Installer's stamp	Product name
	Date of job
	Technician's signature
	Customer's signature
Job carried out _____ _____ _____	

Installer's stamp	Product name
	Date of job
	Technician's signature
	Customer's signature
Job carried out _____ _____ _____	

Installer's stamp	Product name
	Date of job
	Technician's signature
	Customer's signature
Job carried out _____	
_____	
_____	

Installer's stamp	Product name
	Date of job
	Technician's signature
	Customer's signature
Job carried out _____	
_____	
_____	

Installer's stamp	Product name
	Date of job
	Technician's signature
	Customer's signature
Job carried out _____	
_____	
_____	

## 9.2 Troubleshooting

MALFUNCTIONS	POSSIBLE CAUSES	CHECKS AND FIXES
The gate neither opens nor closes	No power supply The gearmotor is released The transmitter battery is run down The transmitter is out of order • The stop button is stuck or broken The opening/closing button or key selector switch are broken.	<ul style="list-style-type: none"> <li>• Check if network is up</li> <li>• Call for assistance</li> <li>• Replace the batteries</li> <li>• Call for assistance</li> <li>• Call for assistance</li> <li>• Call for assistance</li> </ul>
The gate opens but does not close	The photocells are engaged	<ul style="list-style-type: none"> <li>• Check that photocells are clean and in proper working order</li> <li>• Call for assistance</li> </ul>
The flashing light does not work	The light bulb is burned out	<ul style="list-style-type: none"> <li>• Call for assistance</li> </ul>



On its premises, CAME S.p.A. implements a certified Environmental Management System in compliance with the UNI EN ISO 14001 standard to ensure environmental protection.

Please help us to safeguard the environment. At CAME we believe this to be one of the fundamentals of our operational and market development strategies. Just follow these short disposal instructions:



### DISPOSING OF THE PACKAGING

The components of the packaging (i.e. cardboard, plastic, etc.) are household waste and may be disposed of without much trouble, simply by separating them for recycling.

Before proceeding it is always a good idea to check your local legislation on the matter.

**DISPOSE OF CAREFULLY!**



### PRODUCT DISPOSAL

Our products are made up of various materials. Most of these (aluminium, plastic, iron, electric cables) are household waste. These can be disposed of at local household waste management dumps or recycling plants.

Other components (i.e. control boards, transmitter batteries, etc.) may contain hazardous substances.

These must therefore be handed over to specially authorised disposal firms.

Before proceeding it is always a good idea to check your local legislation on the matter.

**DISPOSE OF CAREFULLY!**

## DECLARATION OF CONFORMITY

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

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



English - Manual code: **119DS55EN** ver. 4 01/2015 © CAME S.p.A.  
The data and information in this manual may be changed at any time and CAME S.p.A. is under no obligation to inform users of said changes.

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