



CE

119GM02EN

OPERATOR
FOR STREET BARRIERS



G2500 - G2500N

INSTALLATION MANUAL



English

EN




“IMPORTANT SAFETY INSTALLATION INSTRUCTIONS”

“WARNING: IMPROPER INSTALLATION MAY RESULT IN SERIOUS HARM. PLEASE FOLLOW ALL INSTALLATION INSTRUCTIONS”

“THIS MANUAL IS INTENDED ONLY FOR PROFESSIONAL INSTALLERS OR OTHER COMPETENT INDIVIDUALS”




Legend of symbols

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

2 Conditions of use

2.1 Intended use

The GARD automatic barrier is designed to be used in both public and private parking facilities, and in residential settings.

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

2.2 Limitations to use

Passage width up to 2 metres with 5 to 4 seconds opening time.

3 Reference standards

Came Cancelli Automatici employs an ISO 9001:14001 certified quality management system and an ISO 14001 environmental management system. Came entirely engineers and manufactures in Italy.

This product is compliant with: see statement of compliance.

4 Description

4.1 Gearmotor

The GARD operator is designed and built by CAME Cancelli Automatici S.p.A.

G2500/G2500N - Barrier with irreversible, 230V AC gearmotor, galvanised steel cabinet, control panel and internal command.

NB - You must request right or left-side barriers when ordering. In this manual only left-hand barriers are shown.

Required accessories:

G0251 - White varnished, aluminium barrier-arm with 60x40 mm section, L = 2700 mm.

Optional accessories:

G0461 - Package of reflecting red strips;

G0462 - Fixed rest for barrier-arms;

G0257 - Joint for the G0251 (maximum length of the barrier-arm is 2.0 m).

Important! Make sure that the command and safety equipment and accessories are CAME originals; this ensures easy and safe installation and maintenance for your system.

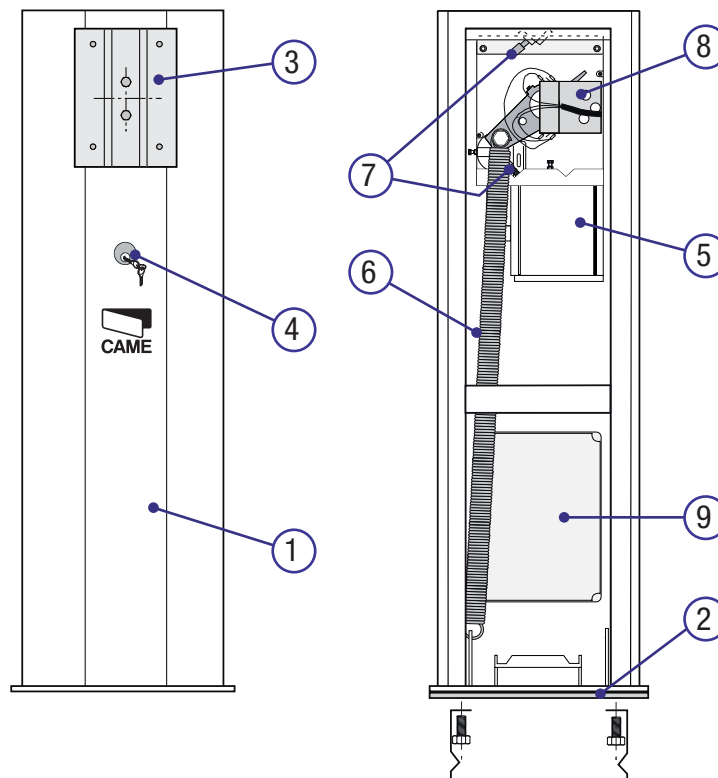
4.2 Technical data

Power supply	230 V AC - 50 / 60 50/60 Hz
Motor power supply	230 V AC - 50 / 60 50/60 Hz
Maximum draw.	1 A
Power rating	120 W
Maximum Torque.	70 Nm
Reduction ratio	1/202
Opening interval	4 s
Duty cycle	30%
Protection rating	IP54
Weight	40 Kg
Working temperature	- 20° / + 55°
Insulation class	□

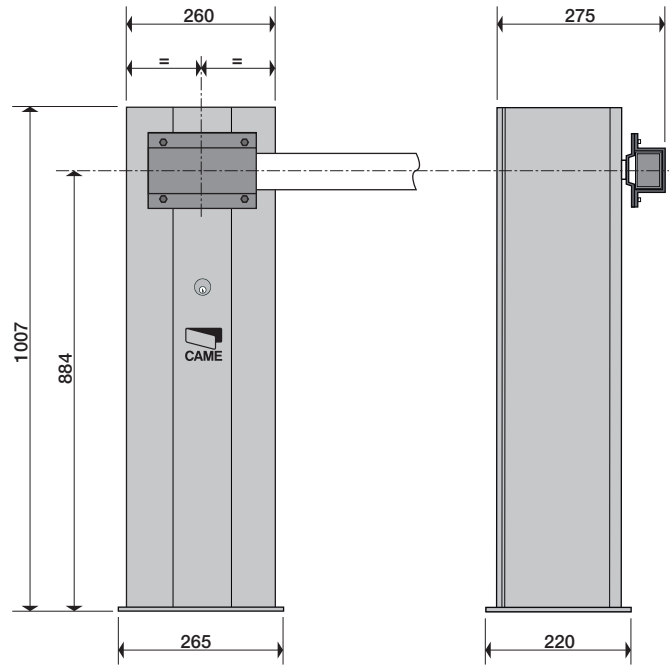
4.3 Technical description

OPERATOR ASSEMBLY UNIT

1. Steelsheeting cabinet, 2mm thick with galvanised finish. Varnished (G2500, RAL2004, G2500N textured grey). Inspection flap with customised key.
2. Galvanised finish, steel anchoring-base complete with four clamps and relative nuts and bolts for fastening the cabinet to the floor.
3. Barrier-arm attachment flange with galvanised finish. for blocking the barrier-arm quickly and safely.
4. - Gearmotor release activated by a customised key.
5. 230VAC powered motor. Irreversible gearmotor with cast aluminium casing, inside of which operates a worm-screw based reduction system with permanent fluid grease lubrication. All rotating elements are fitted on permanently-lubricated ball-bearings or self-lubricating ball-joints.
6. Counter-weight movement balancing spring.
7. Inner mechanical safety stops.
8. Limit-switch assembly.
9. ZC5 Control panel



4.4 Overall dimensions



Measurements in mm

5 Installation

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

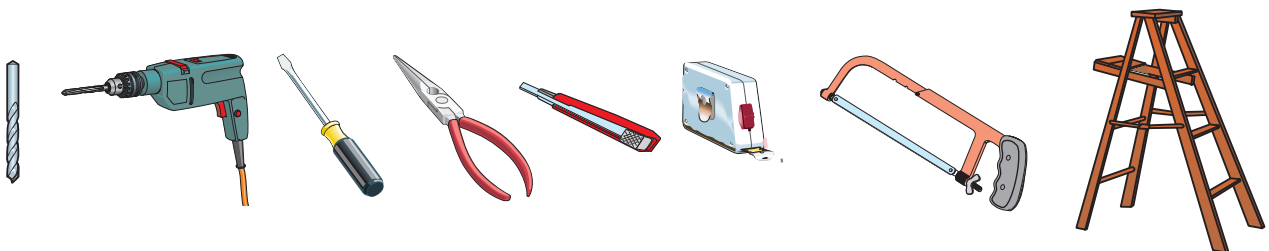
5.1 Preliminary checks

! Before installing the operator, do the following:

- Check that the installing the operator does not create and hazardous situations;
- Set up a suitable omnipolar cut-off device, with distances greater than 3 mm between contacts, with sectioned power supply;
- \oplus Check that any connections inside the container (made for continuity purposes of the protective circuit) be fitted with extra insulation compared to other internal conductive parts;
- Set up proper conduits and electric cable raceways, making sure these are protected from any mechanical damage;

5.2 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.



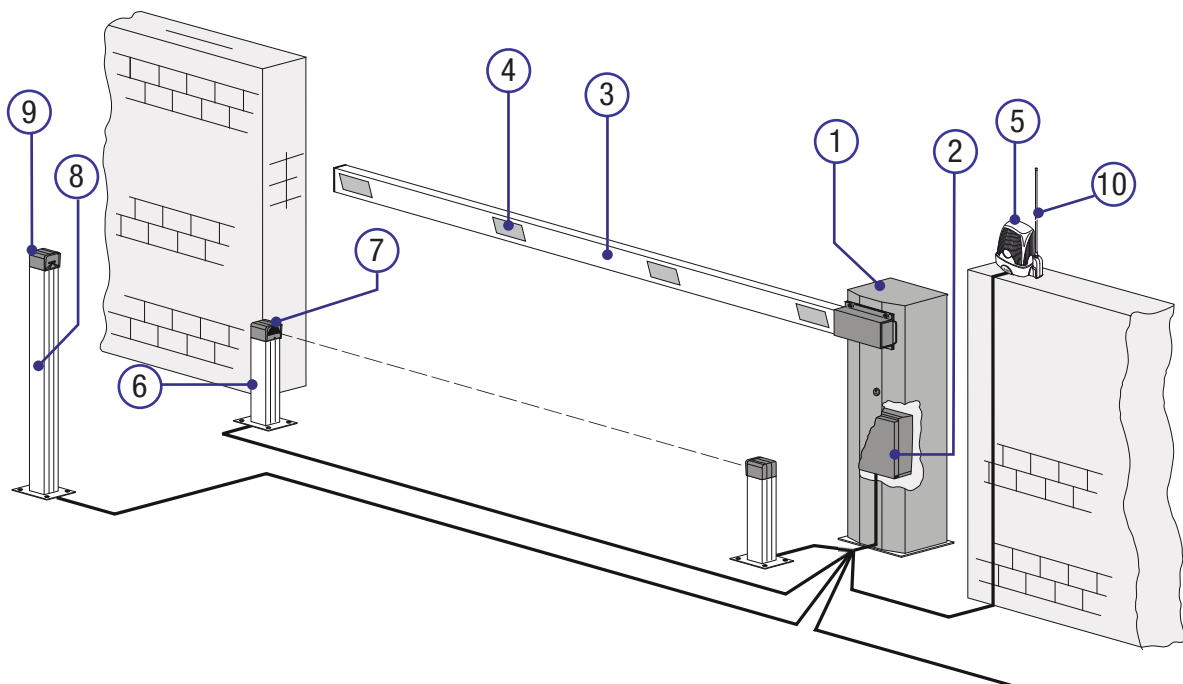
5.3 Type of cable and minimum thicknesses

Connection for	Type of cable	Cable length 1 < 10 m	Cable length 10 < 20 m	Cable length 20 < 30 m
Power supply 230 V 2F	FROR CEI 20-22 CEI EN 50267-2-1	3G x 1.5 mm ²	3G x 2.5 mm ²	3G x 4 mm ²
Photocell transmitters		2 x 0.5 mm ²	2 x 0.5 mm ²	2 x 0.5 mm ²
Photocell receivers		4 x 0.5 mm ²	4 x 0.5 mm ²	4 x 0.5 mm ²
Accessories power supply 24 V DC		2 x 0.5 mm ²	2 x 0.5 mm ²	2 x 1 mm ²
Safety and command devices		2 x 0,5 mm ²	2 x 0.5 mm ²	2 x 0.5 mm ²
Antenna connection	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 CEI EN 60204-1 code of regulations. For connections requiring 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.

5.4 Standard installation

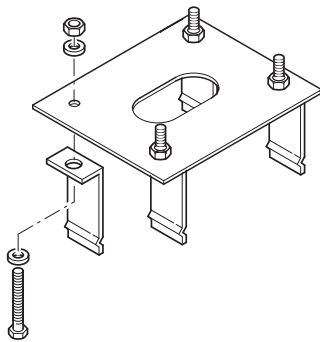
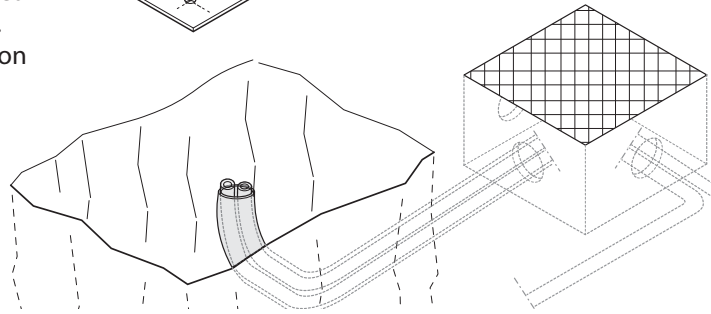
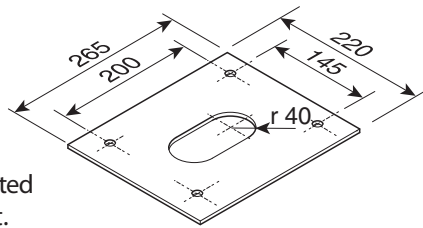
1. GARD unit
2. Control panel
3. Aluminium barrier arm
4. Red reflective strips
5. Movement flashing light
6. Small post for photocells
7. Safety photocells
8. Sensor post
9. Transponder sensor
10. Antenna



5.5 Setting up the operator base

 The following illustrations are just examples, in that the space for securing the operator and accessories depends on the overall measurements. It is up to the installer to choose the most suited solution.

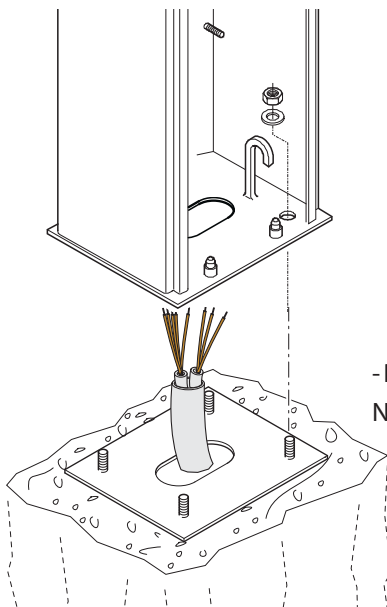
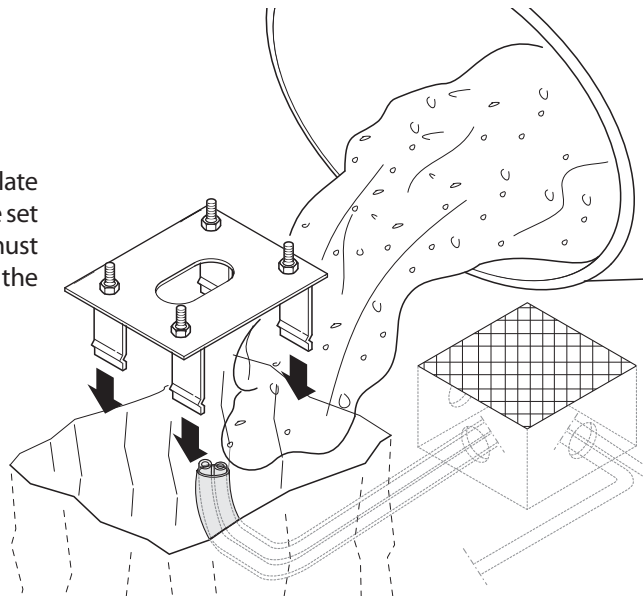
- Dig a pit for the anchoring base and set up the required corrugated tubes for the connections coming out of the junction pit. N.B. the number of tubes depends on the type of installation and accessories used.



- Assemble the four anchoring clamps to the plate.

- Fill the pit with cement and sink the anchoring base (that is, the plate + clamps) making sure the corrugated tubes pass through the hole set up on the plate and that they are not filled with cement. The base must be perfectly level, clean and with the bolt threading completely on the surface.

Wait at least 24 hrs for everything to solidify.



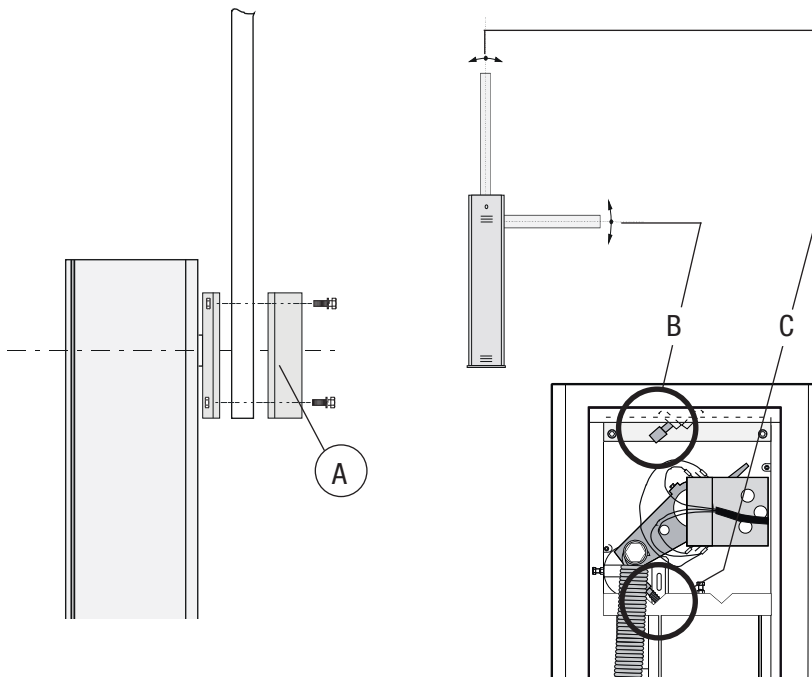
- Remove any protruding nuts or washers, position the cabinet onto the base and fasten it. Note: install the cabinet with the inspection flap facing an easily accessible direction.

5.6 Assembly

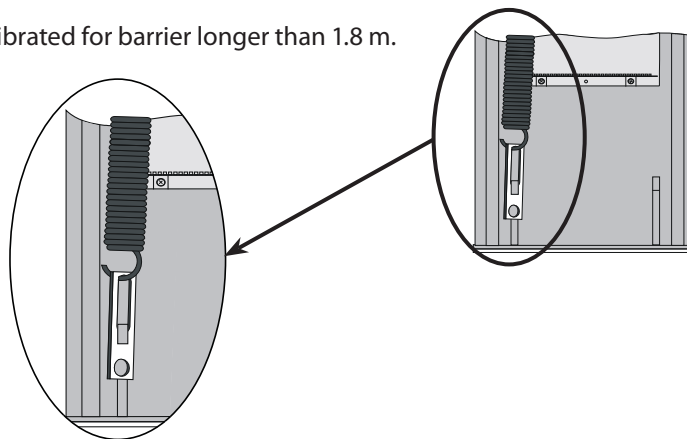
- Proceed with installing the unit: we suggest setting up the cabinets so that the inspection flap points inwards (see p. 8).

Assemble the barrier-arm while calculating the proper length and fasten it to the arm-supporting attachment **A** using the four supplied bolts.

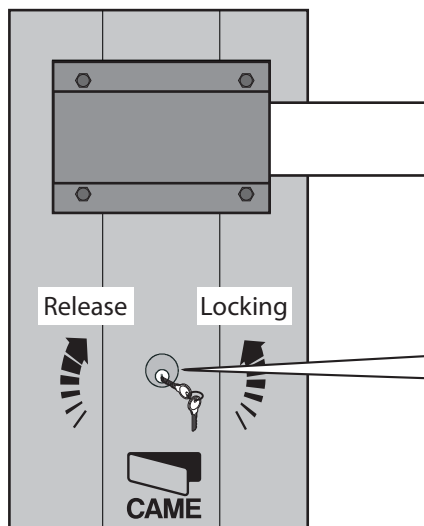
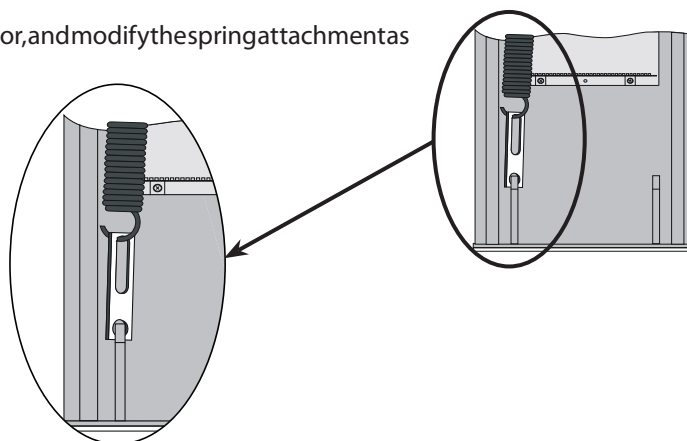
Adjust the barrier vertically and horizontally by using the respective inner **B** and **C** mechanical stops.



The spring supplied with the G2500 barrier is calibrated for barrier longer than 1.8 m.



For barrier-arms less than 1.8m, release the gear motor, and modify the spring attachment as shown in the figure.

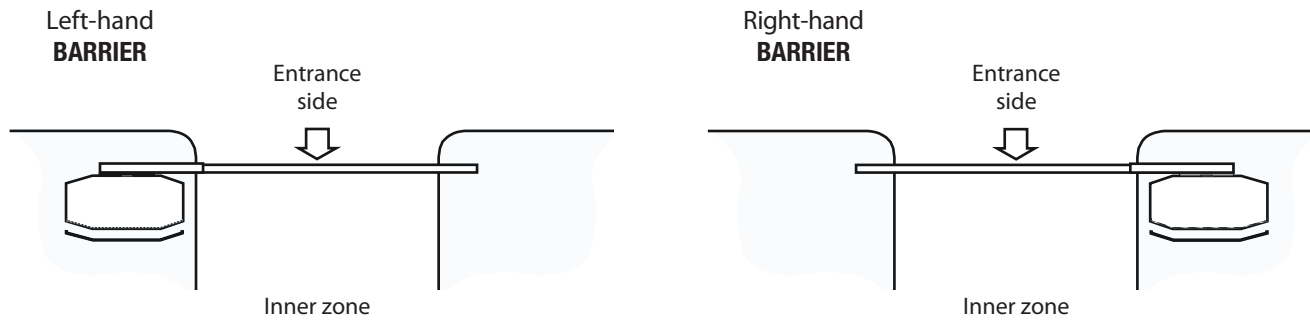


⚠ WARNING!

The release action may result in danger for the user, when, for whatever reason - the arm is improperly fixed to the pin during mounting, the arm is broken or cracked during an accident, etc! This may result in sudden rotating movements of the arm attachment and/or of the arm itself.

5.7 R/L barrier

To change sense of rotation, request documentation from your local dealer or contact CAME in your country (see last page, otherwise go to www.came.com).



6 Description of the control panel

Engineered and built entirely by Came Cancelli Automatici S.p.A.

The control panel is powered at 230V a.c., with 50/60Hz of maximum frequency.

The command devices and accessories are powered by 24V. *Warning!The accessories must not exceed 20 W overall.*

All connections are protected by quick fuses, see table.

The card provides and controls the following functions:

- automatic closing after an opening command;
- Reopening while closing

The available command modes are:

- opening/closing;
- opening/closing with maintained action;
- total stop.

Special trimmers regulate:

- the working time for automatic closing;
- the working time;

Optional accessories:

- barrier open warning-light, when barrier-arm is raised;
- barrier closed warning-light, when barrier-arm is lowered.



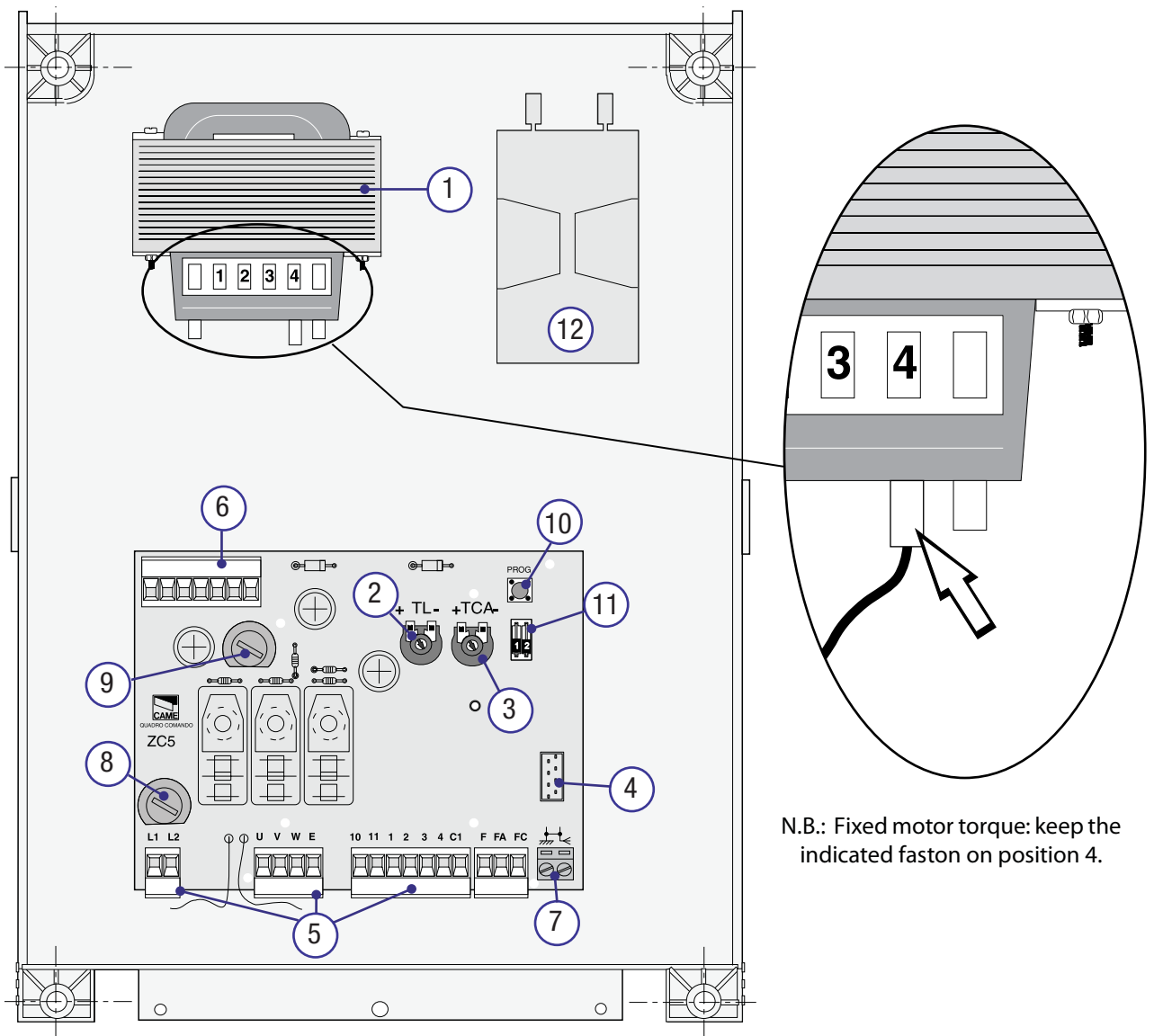
WARNING: Cut off the main power before acting inside the equipment.

TECHNICAL DATA	
line voltage	230 V - 50/60 Hz
Maximum allowed power load	500W
power draw	1A max
circuit insulation class	□
container material	ABS

FUSE TABLE	
to protect:	fuses for:
Electronic board (line)	5 A-F
Accessories	1 A-F

6.1 Main components

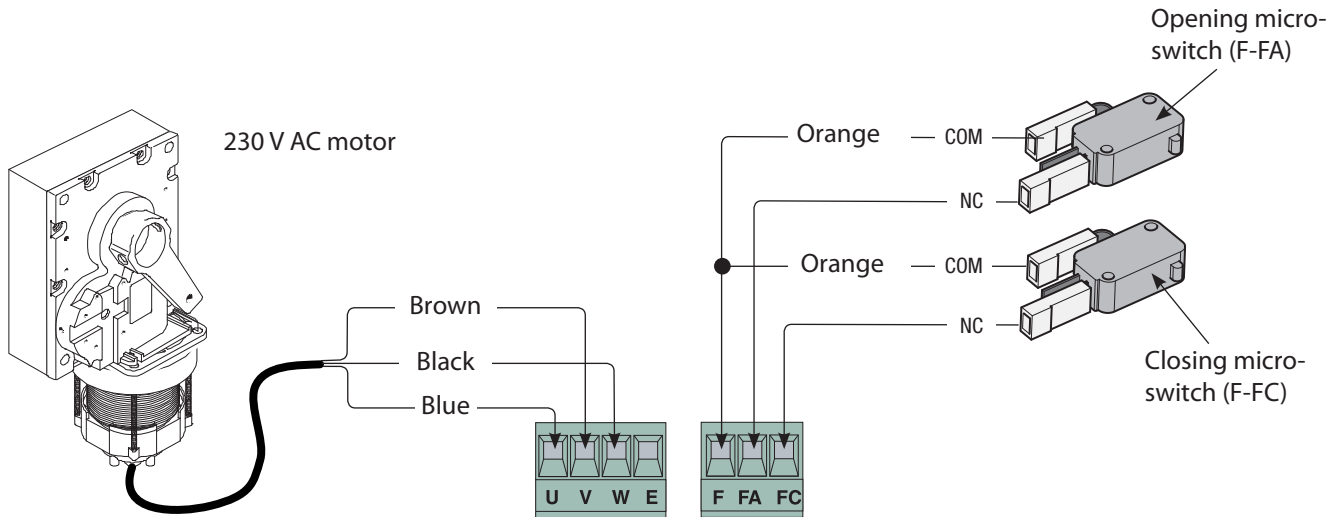
1. Transformer
2. Working time adjuster trimmer
3. Automatic closing time adjuster trimmer
4. Radio frequency card socket
5. Connecting terminals
6. Transformer terminals
7. Antenna connection terminals
8. Line fuse
9. Accessories fuse
10. Code memorising button
11. "Feature selection" Dip-switch
12. Condenser



6.2 Electrical connections

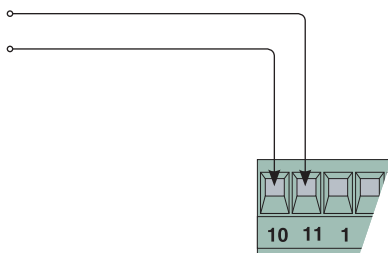
Gearmotor, limit switch

The swing-joint in the picture (which is factory made) is for a left-hand barrier (see par. 5.7).

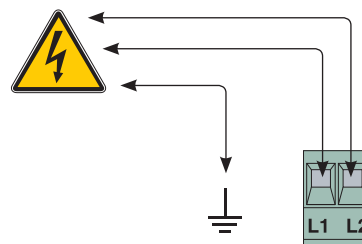


Accessories power supply

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



Power supply at 230 V AC, Frequency 50 / 60 Hz

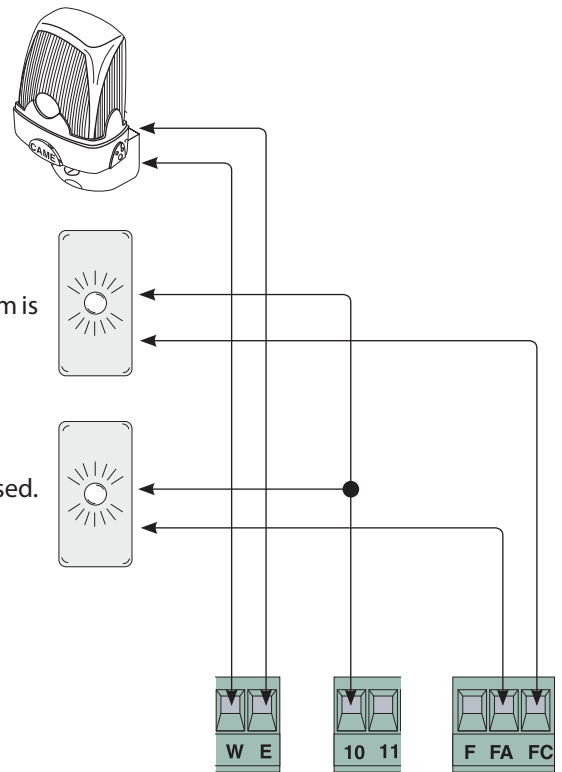


Warning devices

230 V AC output for flashing light:
- Flashes while barrier opens and closes.

Barrier raised/open warning-light Contact rated for: 24 V - 3 W Max.
- Signals that barrier-arm is raised, and switches off when the barrier-arm is lowered.

Barrier down/closed warning light Contact rated for: 24 V - 3 W Max.
- Notifies that the barrier is lowered. It turns off when the barrier is raised.



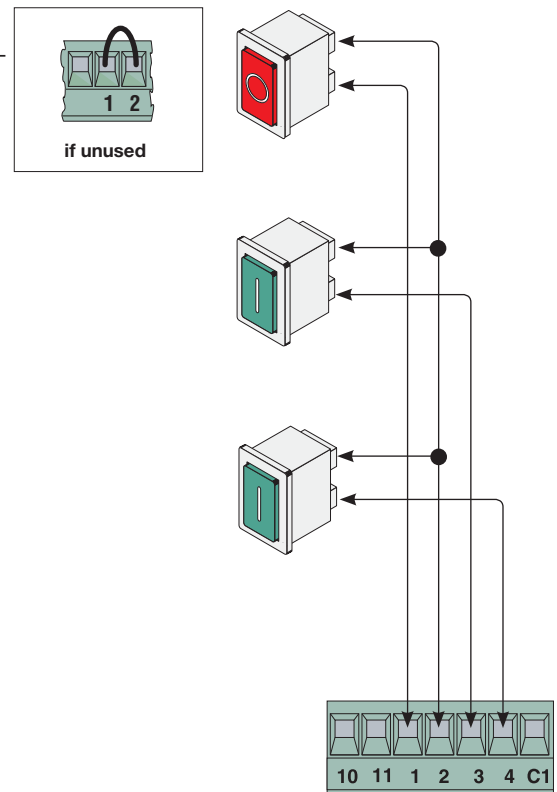
Command devices

Stop button (**(N.C.) contact**)
- Button to stop barrier arm. Excludes automatic closing. To resume movement press the command button or transmitter key.

If unused, short-circuit contact 1-2.

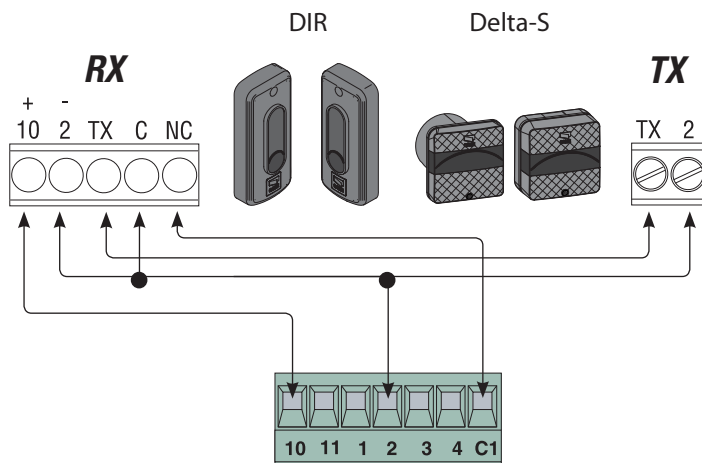
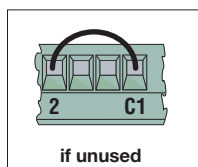
Opening button (**(N.O.) contact**)
- Barrier-arm opening command.

Closing button (**(N.O.) contact**)
- Barrier-arm closing command.



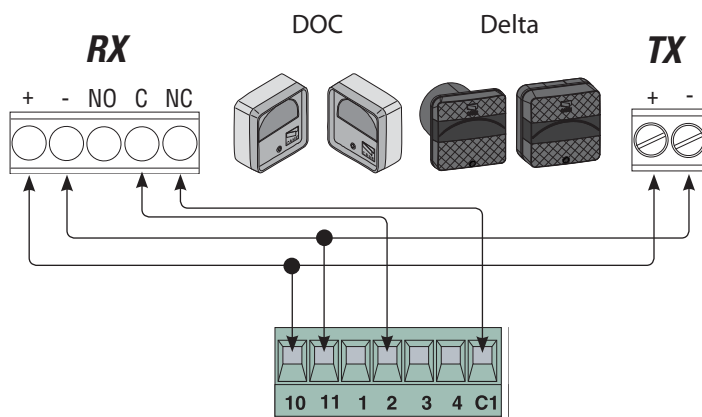
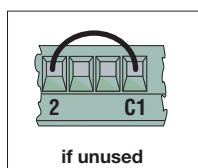
"Reopening when closing (N.C.) Contact»
 - Input for safety devices like photocells, compliant with law EN 12978. While the barrier is lowering, opening the contact will invert movement until it is fully raised.

if unused, short-circuit contact 2-C1.

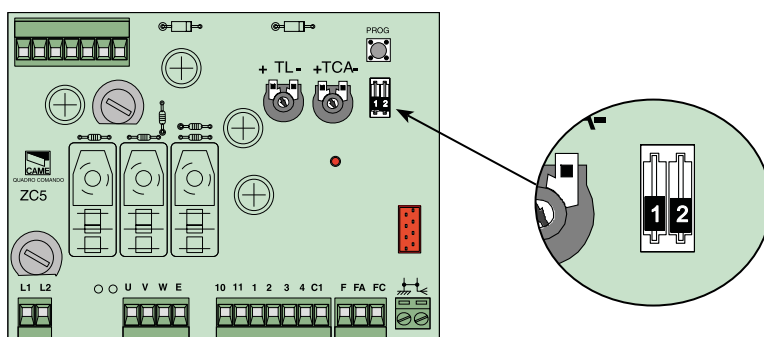


"Reopening when closing (N.C.) Contact»

if unused, short-circuit contact 2-C1.



6.3 Selecting functions

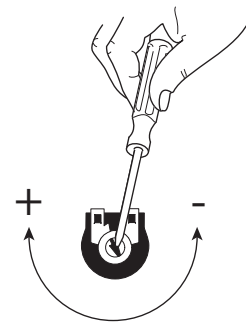
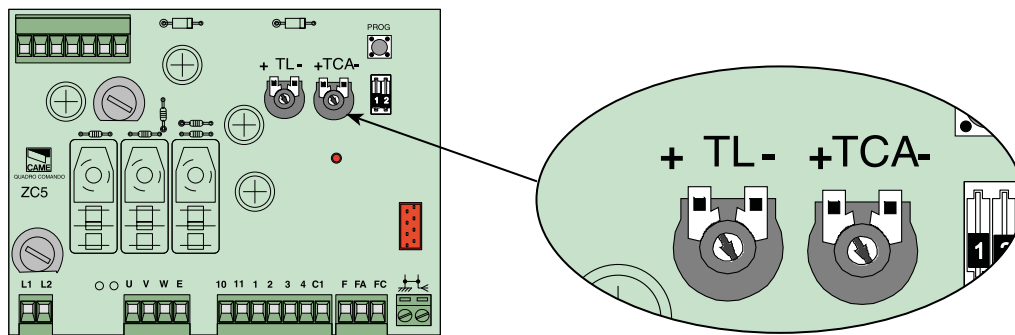


- 1 ON - Automatic closing activated; (1OFF - deactivated)
- 2 - Unused, keep DIP switch on OFF

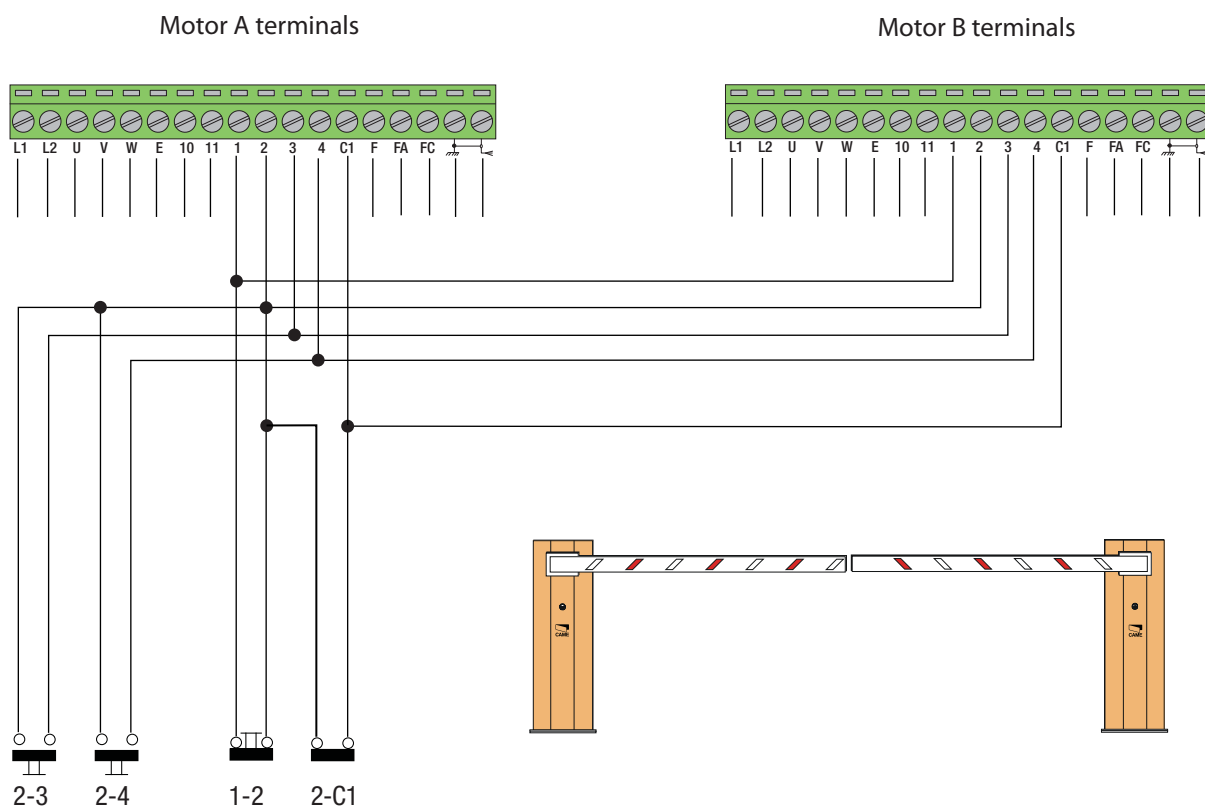
6.4 Settings

TCA Trimmer = Adjusting automatic closing time, from a minimum of 5 seconds to a maximum of 60 seconds.

TL Trimmer = Adjusting working time from a minimum of 15 seconds to a maximum of 120 seconds.



Connecting two barriers joined by a single command

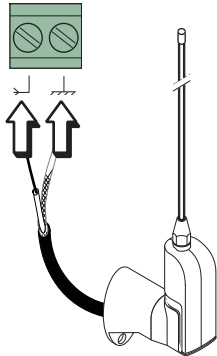


Make the connections on terminals A, then connect the 2 terminals as shown.

7 Activating the radio command

Antenna

Connect RG58 antenna cable to the apposite terminals.



Radio frequency card

Only for the AF43S / AF43SM radio-frequency cards.

- position jumper as shown depending on the series of transmitters you are using.

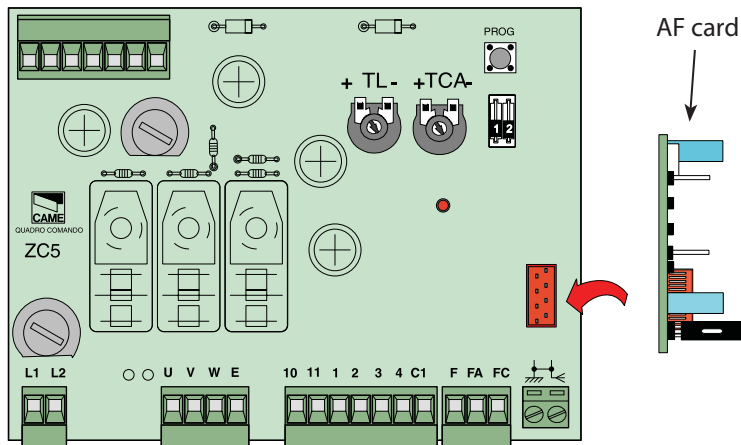
TOP

TAM / TWIN

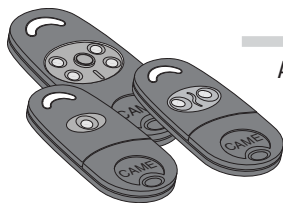
Frequency MHz	Card Radio-frequency	Series transmitters
FM 26,995	AF130	TFM
FM 30.900	AF150	TFM
AM 26.995	AF26	TOP
AM 30.900	AF30	TOP
AM 433.92	AF43S / AF43SM	TAM / TOP
AM 433.92	AF43TW	TWIN (KeyBlock)
AM 433.92	AF43SR	ATOMO
AM 40.685	AF40	TOUCH
AM 863.35	AF868	TOP

Fit the radio-frequency card into the electronic board only AFTER CUTTING OFF THE POWER SUPPLY.

N.B.: The electronic card recognises the radio-frequency card only when it is powered up.



Transmitters



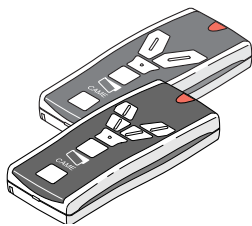
ATOMO

AT01 • AT02
AT04

see instruction sheet in the packaging
of the AF43SR radio-frequency card

TOUCH

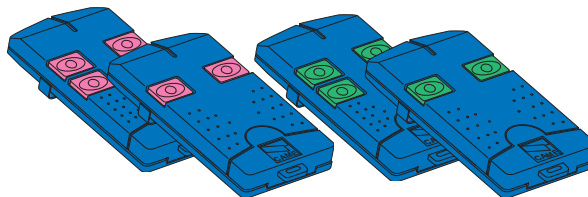
TCH 4024 • TCH 4048



see instructions on box

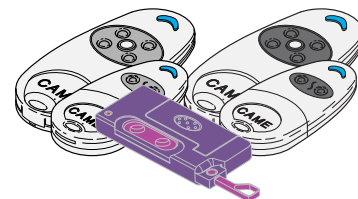
TOP

TOP-432A • TOP-434A
TOP-302A • TOP-304A



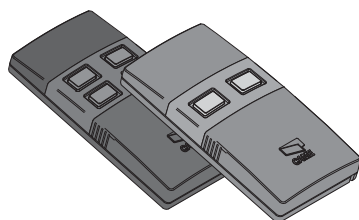
TOP

TOP-432NA • TOP-434NA
TOP-862NA • TOP-864NA
TOP-432S



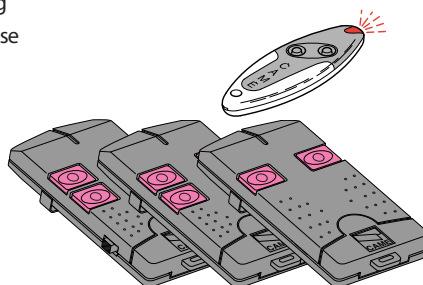
TWIN

TWIN 2 • TWIN 4



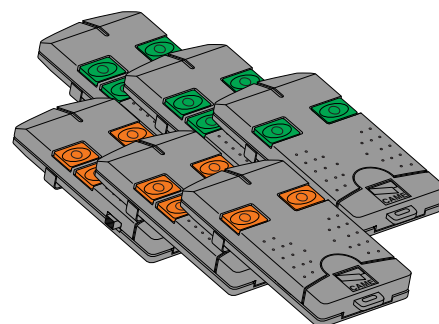
TAM

T432 • T434 • T438
TAM-432SA



TFM

T132 • T134 • T138
T152 • T154 • T158



Each coding is identified by a different way of flashing:

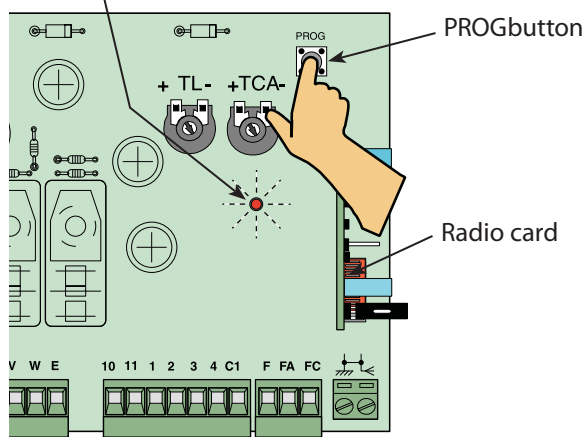
- 1- In TAM mode coding - two flashes plus one pause
- 2- In TOP mode coding - continuous flashing
- 3- Key-Block mode coding - three flashes plus one pause

Memorisation

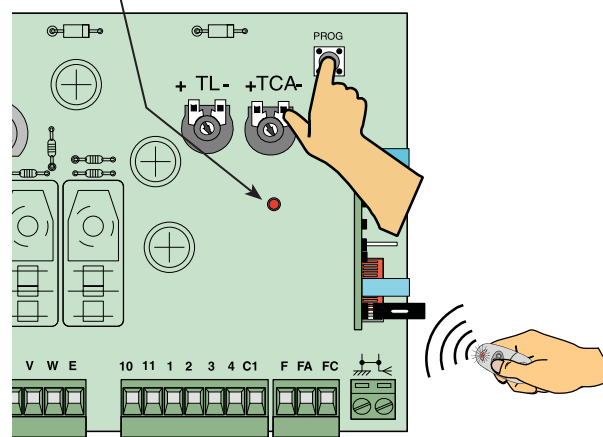
- Keep button pressed **PROG** button on the electronic card. The LED flashes ON and OFF.

- Press the button on the transmitter to be memorised. The LED will stay ON to confirm memorisation is OK.

Flashing LED



LED on

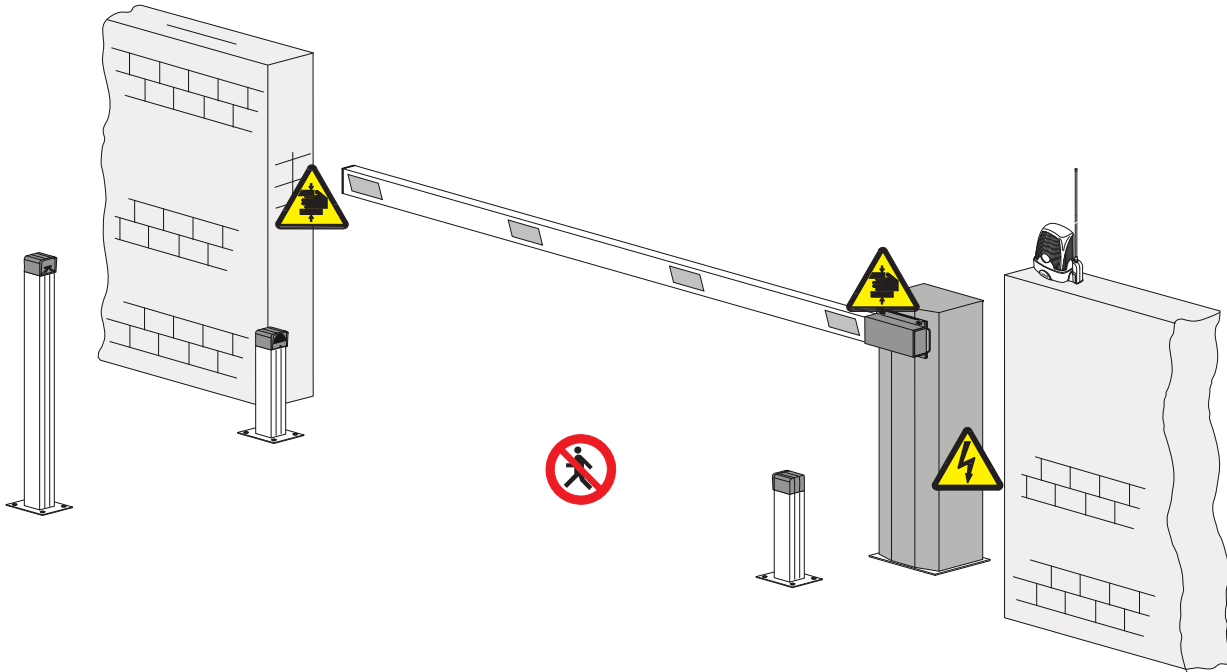


N.B.: if you later wish to change code, just repeat the above sequence.

8 Safety instructions

Important general safety instructions

This product is only intended to be used for the purpose it was designed. Any other use is therefore improper and dangerous. The manufacturer is not liable for any damage caused by improper, wrongful or unreasonable use. Stay away from working mechanical parts. Stay out of the working range of the moving operator. Do not oppose the movement of the operator as this may result in danger.



Do not allow children to play or loiter within the working range of the operator. Keep transmitters and any other command devices away from children, to prevent the operator from being activated by mistake. Immediately stop using the operator if any anomaly is manifested.



Danger of hand crushing




Danger high voltage



Transit forbidden during operation

9 Maintenance

9.1 Periodic maintenance

 Periodic servicing **performed by end-user** are wiping clean the photocell's glass front pieces and checking for proper working state of safety devices and that the operator is free of any obstacles. We also suggest to periodically check the state of lubrication and tightness of screws on the operator.

To check the efficiency of the safety devices, wave an object in front of the photocells during closing cycle, if the operator inverts or halts its movement, the photocells are working properly. This is the only maintenance job that can be done with the spring-tension of the barrier loaded.

Before performing any job we highly recommend to cut off the main power, to prevent any dangerous situations from possible accidental movements by the barrier.

-To wipe clean the photocell glass, use a slightly damp cloth, and do not use any solvents or other chemical products that may ruin the device.

-Check that the photocells are free of any vegetation blocking them, and that there are no obstacles to the free movement of the arm.

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 _____ _____ _____	

9.3 Troubleshooting

PROBLEM	REF.	CHECK
The operator neither opens nor closes	1-2-3-4-6-8-18	1 - Lock the inspection hatch using the key and check the release lock
The operator opens but does not shut.	4-7-10	2 - Deactivate the "maintained action" function via Dip-switch
The operator closes but does not open	4-7-9	3 - Check power supply and fuses
The operator does not carry out the automatic closing	11-12-13	4 - The N.C. safety contacts are open
The radio-control does not work	2-14-16	6 - Deactivate the master-slave function
The operator inverts the direction of travel	7-18	7 - Check balancing and taughtness of springs
Only one radio-control works.	22	8 -Deactivate the obstacle detection function via dip switch
The photocell does not work	12-23-24	9- Check opening limit-switch
The led warning light flashes quickly	4	10- Check closing limit-switch
The led warning light stays lit.	13	11- Activate "automatic closing" via the Dip-switch
The operator does not fully complete cycle	7	12 - Check for the proper direction of travel
Cannot balance the arm	7-15	13 - Check the command devices
The operator does not decelerate	7-15	14 - Cut off and bring back power to card or check the TOP/TAM jumper on the AF43S card
The operator does not run on the emergency batteries	8-25-26	15 - Check the Arm length/applied accessories ratio"
The operator is slow when starting	7	Memorise the radio code again
		18 - Adjust sensitivity
		22 - Enter or duplicate the same code in all transmitters
		23 - Activate the photocell via Dip-switch
		24 - Connect the photocells in series and not in parallel fashion
		25 - Check the batteries
		26 - Respect the polarities when powering up the photocells

10 Dismantling and disposal



On its premises, CAME Cancelli Automatici 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 market operations and development strategies. Just follow these short disposal instructions:



DISPOSING OF THE PACKAGING

The components of the packaging (i.e. cardboard, plastic, etc.) are solid urban 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.

DO NOT DISPOSE OF IN NATURE!



PRODUCT DISPOSAL

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

Other components (i.e. electronic cards, remote control batteries, etc.) may contain hazardous substances.

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

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

DO NOT DISPOSE OF IN NATURE!



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