

319U34EN

*CONTROL PANEL
FOR 24V GEARMOTORS*

Z 24
SERIES



INSTALLATION MANUAL

ZL170N

"IMPORTANT INSTALLATION SAFETY 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 ZL170N control panel is engineered to command single 24 V DC powered gearmotors of the FERMI, EMEGA and FROG series.



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

2.2 Application settings

The overall power load of the connected motor must not exceed 180 W.

3 Reference standards

Came Cancelli Automatici employs an ISO 9001:2000 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

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

The control panel should be powered by 230 V AC, at 50/60 Hz frequency.

The command devices and accessories are powered by 24V. Warning! The accessories must not exceed 40 W overall.

All connections are protected by quick fuses, see table.

The transformer is fitted with a protection which, in case overheating, keeps the gate leaf open. Reclosing will happen only after the temperature has dropped below the overload limit.

The card provides and controls the following functions:

- automatic closing after an opening command;
- pre-flashing movement indicator;
- obstacle detections when gate is not moving at any point;
- opening recoil.

The available command modes are:

- opening/closing;
- opening/closing with maintained action;
- open only with radio command;
- total stop.

The photocells, after detecting an obstacle, may trigger:

- the reopening of the closing gate;
- a partial stop if gate is moving;
- a total stop.

The control panel features a safety amperometric sensor (see p. 12).

Special trimmers regulate:

- the working time for automatic closing;
- adjusting amperometric sensitivity during while gate is moving: min/max.

- adjusting amperometric sensitivity during deceleration: min/max

- adjusting the stopping zone final stop (see p. 11)

You can also adjust the gate movement and deceleration speeds (see p. 12).

You can also connect:

- gate open warning-lamp;
- electro lock.
- Movement flashing light.
- courtesy -lamp lighting the parking area for opening/closing cycle.
- LB18 board to power gearmotors via batteries in case of power outages. When power is back on it also recharges them.

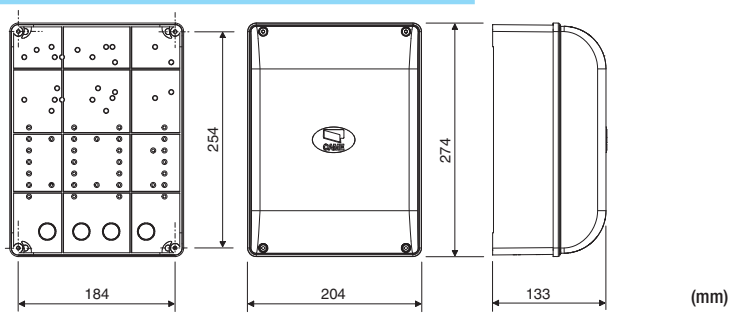
TECHNICAL DATA

line voltage	230V - 50/60Hz
power draw when idle	120 mA
maximum power for 24 V accessories	40 W
circuit insulation class	□
container material	ABS
container protection rating	IP54
working temperature	-20 / +55°C

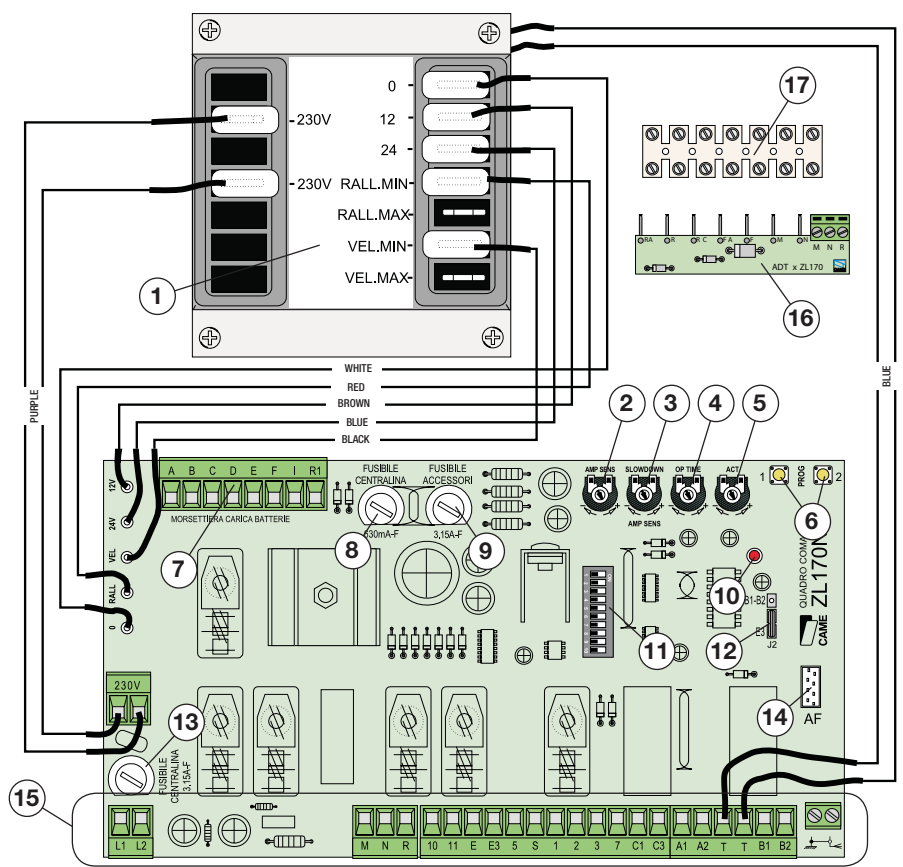
FUSE TABLE

to protect:	fuses for:
Electronic board (line)	3.15 A-F
Command devices (control unit)	630 mA-F
Accessories	3.15 A-F

4.1 Dimensions, centre distances and anchoring holes



4.2 Main components



- | | | |
|--|--|---|
| <ol style="list-style-type: none"> 1. Transformer 2. Amperometric sensivity during travel adjustment trimmer 3. Amperometric sensivity during deceleration adjustment trimmer 4. Opening / closing strike zone adjustment trimmer 5. Automatic closing adjustment trimmer | <ol style="list-style-type: none"> 6. Code memorising button 7. Terminals for connecting to the LB18 battery charger (see p. 9) 8. 630mA-F control unit fuse 9. 3.15F accessories fuse 10. Radio code notification LED light 11. Functions selector 12. Output selector jumper B1-B2/cycle lamp | <ol style="list-style-type: none"> 13. 3.15A-F line fuse 14. Radio frequency card socket 15. Connection terminals 16. ADT card for managing decelerations (see pages 5-6) 17. ADT terminals (use only with Frog 24V, see p. 6) |
|--|--|---|

5 Installation



Warning! Before acting on the equipment, cut off the main power supply and disconnect the emergency batteries (if present).



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


5.1 Preliminary checks



Before beginning to install, the following is necessary:

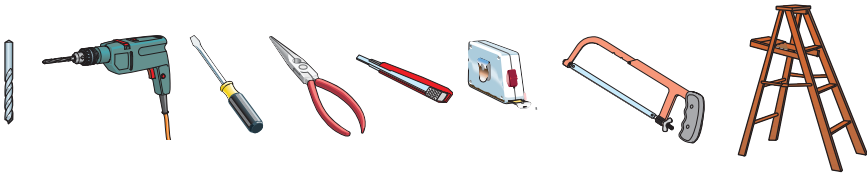
Make sure that the point where the electrical panel is anchored is free from any impacts, and that the surface is solid and that proper tools and materials are used (i.e. screws, wall plugs, etc.).

Set up a suitable omnipolar cut-off device, with distances greater than 3 mm between contacts, with sectioned power source

-  Check that any connections inside the container (made for continuity purposes of the protective circuit) are 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.

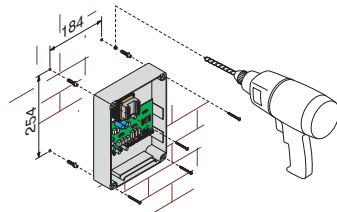
5.2 Tools and equipment

Make sure you have all the tools and materials needed to carry out the installation in total safety and in accordance with current regulations. Here are some examples.



5.3 Anchoring and installing the box

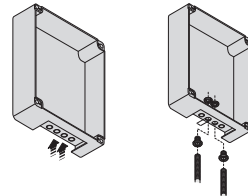
Secure the base of the panel in a safe area; we suggest using bolts with max. diameter of 6 mm Philips rounded heads.



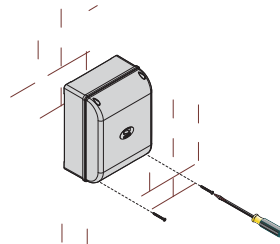
Perforate the marked holes and insert the cable glands with corrugated tubes for the electrical cables to run through.

N.B.: the pre-perforated holes have different diameters: 23, 29 and 37 mm.

Careful not to damage the electronic board inside the panel!!



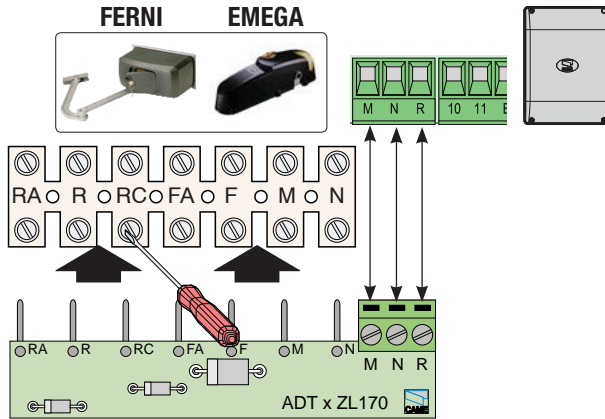
After adjusting and setting, secure the cover using the issued screws.



6 Electrical connections

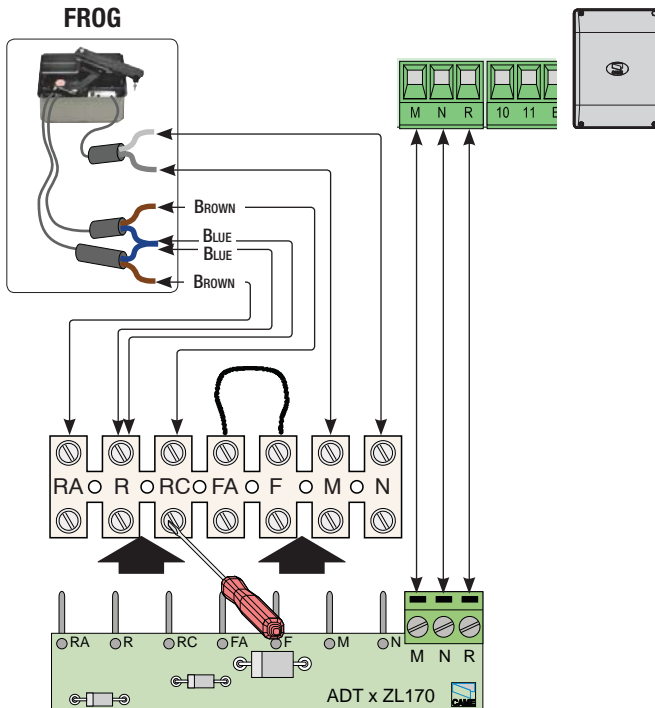
Gearmotor FERNI and EMEGA

The ADT card should be fastened to the gearmotor terminals as shown, and connected to the control panel on terminals M, N and R (the RA terminal is not active on the FERNI and EMEGA models).



FROG Gearmotor

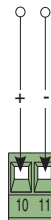
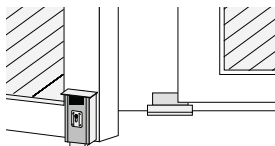
Whereas with Frog, ADT card and terminals, after connecting to the cables coming out of the gearmotor, they can be left inside the control panel or in a similar water-tight box.



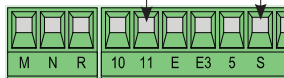
Power supply



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



Terminals for powering accessories:
 - at 24 V (AC) powered with 230 V (AC)
 - at 24 V (AC) powered with 24 V (AC)
 Overall allowed power: 40 W



Electro lock connection (12V-15 W max.) with EMEGA9

Lighting and warning devices



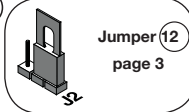
Movement Flasher (contact rated for: 24V AC - 25W Max.) - Flashes while gate opens and closes.



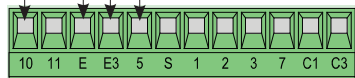
Jumper in position A - Cycle lamp Contact rated for: 24 V - 25 W Max.):

- It lights up the driveway and stays on from the moment the gate leaves start opening until they are fully closed (including the automatic closing time). If automatic closing is not activated, the lamp stays on only during movement.

A



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



Command devices

Stop button ((N.C.) contact)

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

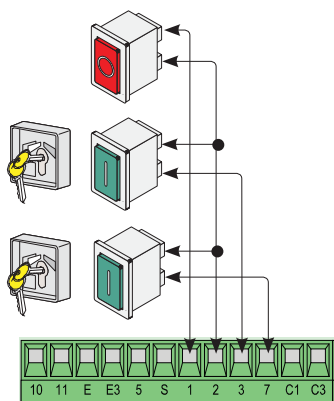
If unused, set DIP-switch 9 to ON.

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

- Command for gate opening.

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

- Gate opening and closing commands, pressing the button or turning the key switch selector, the gate inverts its movement or stops depending on selection made on the DIP switches (see selecting functions, DIP switches 1-10)

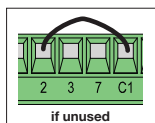


Safety devices

C1 = (N.C.) contact di riapertura durante la chiusura»

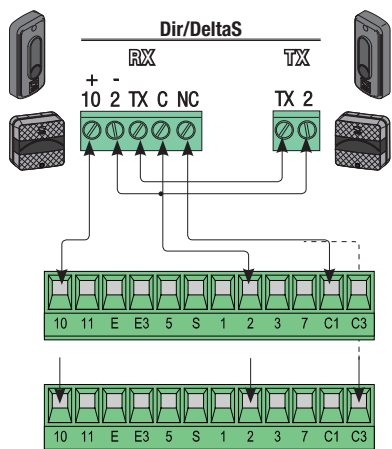
Input for safety devices like photocells, sensitive edges and other devices that comply with EN 12978 regulations. While the gate is closing, opening the contact will invert movement until it is fully openend.

Shortcircuit 2 and C1 if unused

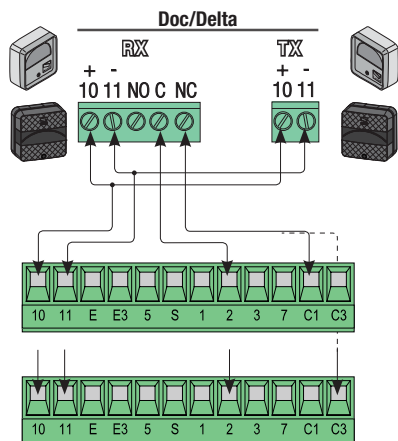


C3 = N.C. "partial stop" contact

Input for safety devices like photocells, sensitive edges and other devices that comply with EN 12978 regulations. Gate stops if moving, triggering automatic closing .



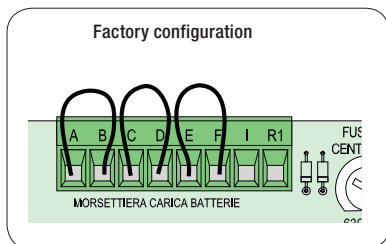
C1 = (N.C.) contact di riapertura durante la chiusura»



C3 = N.C. "partial stop" contact

6.1 Configuring the LB18 terminals

If using the LB18 battery recharger card, remove all bridges and connect the card as shown in the accompanying literature.



Detail of the ZL170N/EMEGA combination with the E881 electro-lock

To power the E881 lock with 24V on terminals 11-S (which are normally at 12V) do the following to the bridges:

fig. A - **WITH** the LB18 card, leave only one bridge on B-D and connect the card as shown in the accompanying literature.

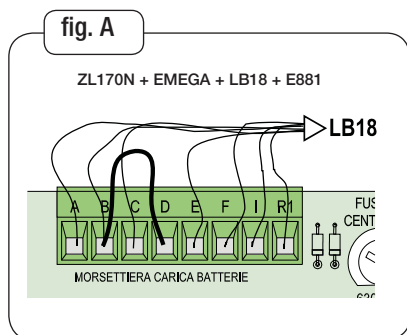
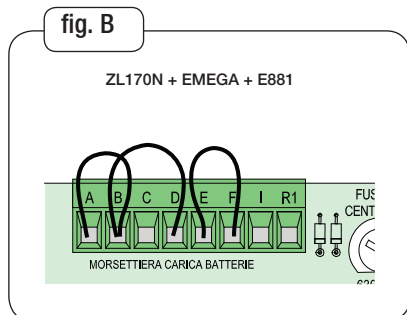
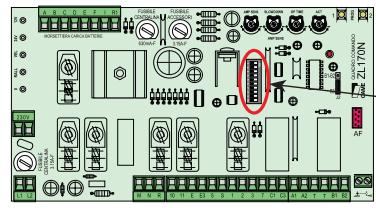


fig. B - **WITHOUT** LB18 card, modify the the C-D bridge into B-D



7 Selecting functions



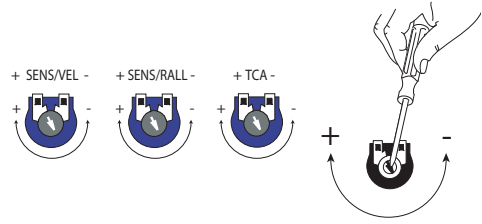
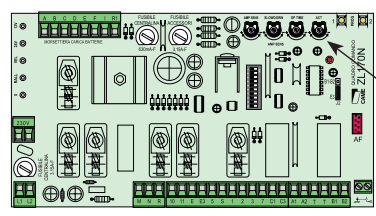
10-WAY DIP-SWITCH OFF ON



- 1 ON - Automatic closing activated ;
- 2 ON - Operating the activated "open/close/invert" " button or radio command ;
- 2 OFF - Operating the activated "open/stop/close/stop" " button or radio command ;
- 3 ON - Operating the activated "open only" " radio command ;
- 4 ON - **Preflashing** during opening and closing activated ;
- 5 ON - Obstacle detection **activated** ;
- 6 ON - **Maintained action activated operation** " ; (excludes the radio command function)
- 7 ON - Ramming function activated ; (for easier lock releasing)
- 8 OFF - **Partial stop activated with safety device connected to terminals 2-C3, (if unused, set DIP switch to ON) ;**
- 9 OFF - **"Stop" button activated** ; with safety device connected to terminals 1-C2, (if unused, set DIP switch to ON)
- 10 - 2 - Must stay OFF

8 Settings

8.1 Trimmers

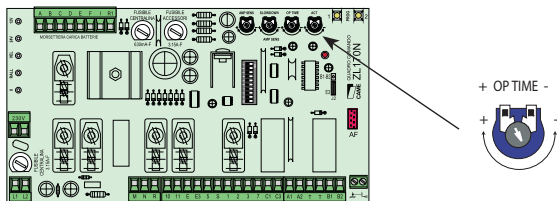


- SPEED/SENS TRIMMER** = Adjustments *adjusting amperometric sensitivity while gate is moving: min/max.*
- DECEL/SENS** = Adjustments *amperometric sensitivity during deceleration: min/max.*
- Trimmer T.C.A.** = Adjustments *automatic closing time from a minimum of 1 seconds to a maximum of 120 seconds".*

8.2 Adjusting the operating time

- To memorise the operator's working time (from when it starts to open to when it is fully closed) you need to:
1. set Dip-switch 6 to ON;
 2. press CH1 until gate is fully opened;
 3. press CH2 and release it when the gate is completely closed;
 4. Set dip-switch 6 back to OFF.

8.3 Opening / closing strike zone adjustment trimmer



After setting up the deceleration spaces (see fig. C) 3) follow the "adjusting micro-switches" procedure in the gearmotor manual, and do the following:

- set up a 60 mm X 30 mm template - keep it pressed against one of the two strike plates as shown in fig. 1 (- it should be adjusted on either the opening or closing strike plate).
- Activate the gate - with a command button or with the transmitter - and turn the OP TIME (TL) trimmer clockwise until the gate-leaf inverts its direction of travel the moment it touches the obstacle/template.
- Then turn the template from the short side (fig. 2) and check that the gate leaf stops by touching the obstacle/template. Otherwise adjust the trimmer counter-clockwise.

fig. 1

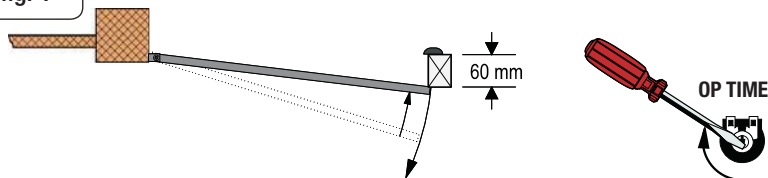


fig. 2

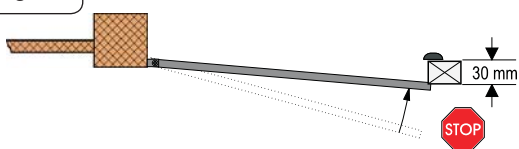
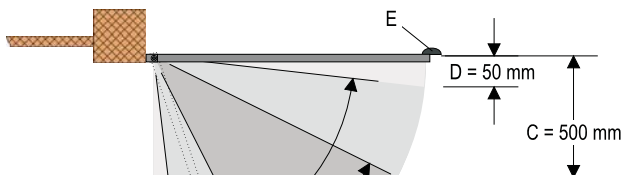


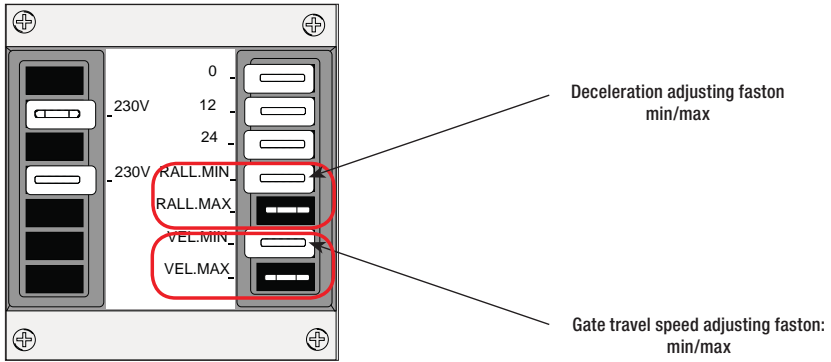
fig. 3



- A = Effective zone of the amperometric sensor with movement inversion
- B = Normal speed travel zone
- C = Decelerated speed travel zone
- D = Effective zone of the amperometric sensor with movement stop
- E = Closing and opening strike plates

8.4 Opening/closing and deceleration speeds

To adjust the travel and deceleration speeds, shift the fastons to the specifically shown transformer connectors.



9 Amperometric Sensor

The control panel features an *amperometric motor sensor* that is triggered when an obstacle blocks its movement when opening or closing.

It normally inverts the direction of travel, but if it is triggered when the gate is 5 cm from the closing strike plate or opening stop, it completely stops the gate movement (see also adjusting the OP TIME trimmer on p. 11).

The device's sensitivity is adjustable via trimmers (p. 10).

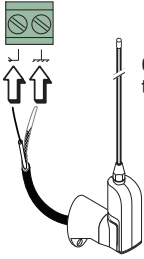
Warning! If an obstacle is detected twice consecutively while closing (and with the Automatic Closing function activated), the operator will respond in the following way:

- 1) by inverting the movement, and fully opening the gate;
- 2) by deactivating the Automatic Closing;
- 3) by blocking any of the control panel functions;

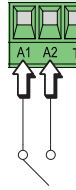
To reactivate the operator you must issue a command using the transmitter or the buttons connected on 2-3 and 2-7.

10 Activating the radio command

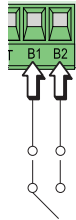
Antenna



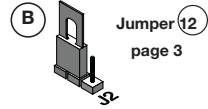
Connect antenna cable to the apposite terminals.



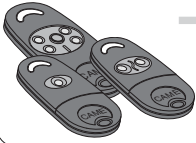
N.O. contact output: it closes for 3 seconds every time an opening command is given
Contact rated for: 5A-250V a..C



Jumper in position B - Radio receiver's second channel output (N.O.) contact rated: 1A-24V d.c.



Trasmettitori



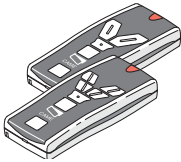
ATOMO
AT01 • AT02
AT04

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

see instructions on box

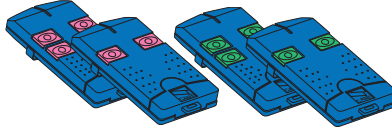
TOUCH

TCH 4024 • TCH 4048



TOP

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



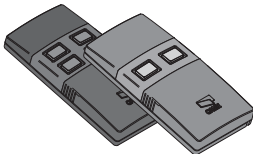
TOP

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



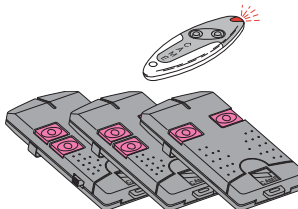
TWIN

TWIN2 • TWIN4



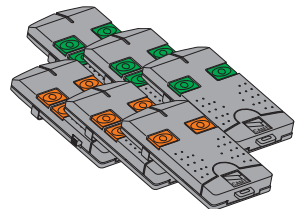
TAM

T432 • T434 • T438
TAM-432SA



TFM

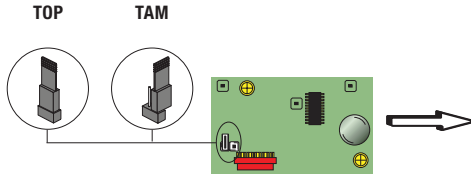
T132 • T134 • T138
T152 • T154 • T158



Radio frequency card

Only for the AF43S / radio-frequency cards:

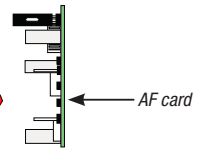
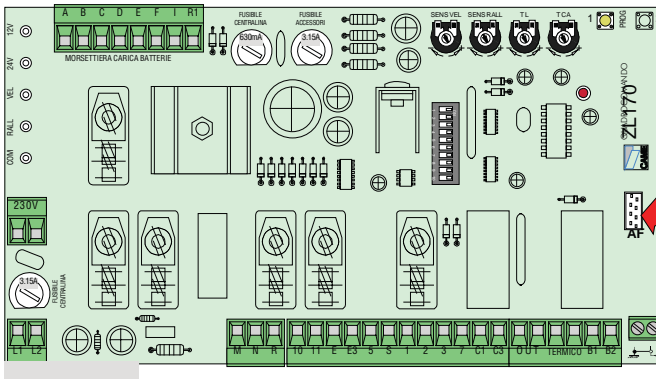
- position jumper as shown depending on the series of transmitters you are using.



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

Plug in the radio-frequency card onto the electronic board **AFTER CUTTING OFF THE MAIN POWER SUPPLY** (or disconnecting the emergency batteries).

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



Memorisation

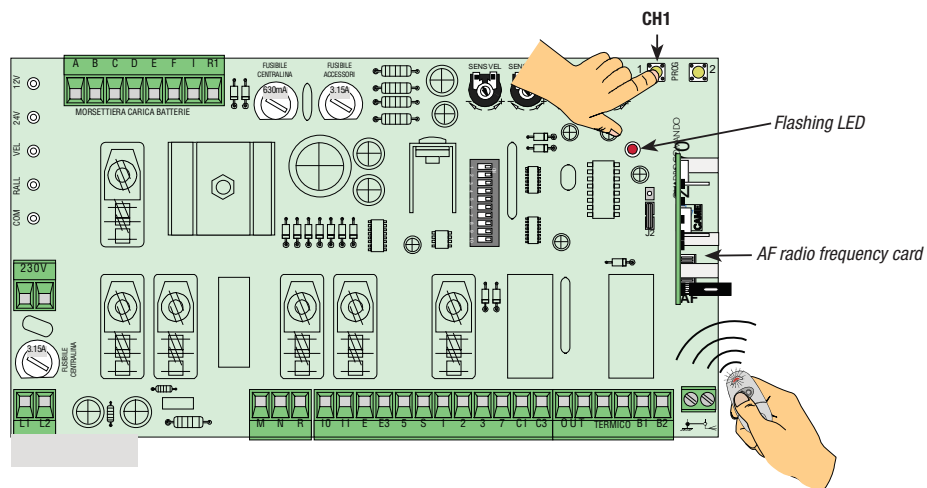
CH1 = Channel for direct commands to a gearmotor card's function (for the command type see DIP-switches 2 and 3).

CH2 = Channel for direct commands to a accessory device connected to B1-B2 (can be activated via jumper, see p. 13).

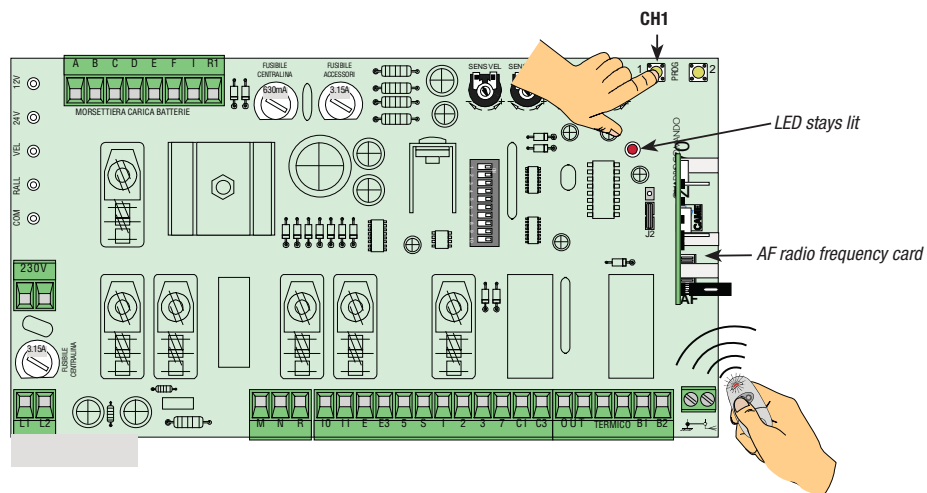
N.B.: If you later wish to change code, just repeat the above sequence.

Memorise the code onto the card, as follows:

Keep button pressed "CH1" on the electronic card (the LED notification light flashes).



2) The transmitter button sends the code, and the LED will stay on to signal that memorisation was successful.



3) Perform the same procedure with the "CH2" button, associating it to another transmitter button.

11 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 in its 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 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!

12 Statement



MANUFACTURER'S STATEMENT

Pursuant to attachment II B of the Machines Directive 98/37/CE



CAME Cancelli Automatici S.p.A.
via Martiri della Libertà, 15
31030 Dossan di Casier - Treviso - ITALY
tel (+39) 0422 4940 - fax (+39) 0422 4941
internet: www.came.it - e-mail: info@came.it

--- REGULATIONS ---
EN 60335-1 EN 61000-6
EN 60335-2 EN 61000-6
EN 13241-1

Declares under law that the following garage door and gate automation products called:

ZL170N

...comply with the essential requirements and pertinent provisions, established by the following Directives and also comply with the applicable parts of the reference Regulation standards listed below.

---DIRECTIVES---
2006/95/CE
2004/108/CE

Low Voltage Directive
ELECTROMAGNETIC COMPATIBILITY DIRECTIVE

MANAGING DIRECTOR
Mr Gianni Michielan

Reference code to request an original copy: **DDC L IT Z002g**



English - Manual code **319U34** ver. **1.0** 09/2011 © CAME cancelli automatici S.p.a.
The data and information in this manual may be changed at any time and without obligation on the part of CAME Cancelli Automatici S.p.a. to notify said changes.

<p>CAME France S.a. 7, Rue Des Haras Z.i. Des Hautes Patures 92737 Nanterre Cedex ☎ (+33) 0 825 825 874 ☎ (+33) 1 46 13 05 00</p>	FRANCE	GERMANY	<p>CAME Gmbh Seefeld Akazienstrasse, 9 16356 Seefeld Bei Berlin ☎ (+49) 33 3988390 ☎ (+49) 33 39883985</p>
<p>CAME Automatismes S.a. 3, Rue Odette Jasse 13015 Marseille ☎ (+33) 0 825 825 874 ☎ (+33) 4 91 60 69 05</p>	FRANCE	U.A.E.	<p>CAME Gulf Fze Office No: S10122a2o210 P.O. Box 262853 Jebel Ali Free Zone - Dubai ☎ (+971) 4 8860046 ☎ (+971) 4 8860048</p>
<p>CAME Automatismos S.a. C/Juan De Mariana, N. 17-local 28045 Madrid ☎ (+34) 91 52 85 009 ☎ (+34) 91 46 85 442</p>	SPAIN	RUSSIA	<p>CAME Rus Umc Rus Llc Ul. Otradnaya D. 2b, Str. 2, office 219 127273, Moscow ☎ (+7) 495 739 00 69 ☎ (+7) 495 739 00 69 (ext. 226)</p>
<p>CAME United Kingdom Ltd. Unit 3 Orchard Business Park Town Street, Sandiacre Nottingham - Ng10 5bp ☎ (+44) 115 9210430 ☎ (+44) 115 9210431</p>	GREAT BRITAIN	PORTUGAL	<p>CAME Portugal Ucj Portugal Unipessoal Lda Rua Liebig, nº 23 2830-141 Barreiro ☎ (+351) 21 207 39 67 ☎ (+351) 21 207 39 65</p>
<p>CAME Group Benelux S.a. Zoning Ouest 7 7860 Lessines ☎ (+32) 68 333014 ☎ (+32) 68 338019</p>	BELGIUM	INDIA	<p>CAME India Automation Solutions Pvt. Ltd A - 10, Green Park 110016 - New Delhi ☎ (+91) 11 64640255/256 ☎ (+91) 2678 3510</p>
<p>CAME Americas Automation Lic 11345 NW 122nd St. Medley, FL 33178 ☎ (+1) 305 433 3307 ☎ (+1) 305 396 3331</p>	U.S.A	ASIA	<p>CAME Asia Pacific 60 Alexandra Terrace #09-09 Block C, The ComTech 118 502 Singapore ☎ (+65) 6275 0249 ☎ (+65) 6274 8426</p>
<p>CAME Gmbh Kornwestheimer Str. 37 70825 Korntal Munchingen Bei Stuttgart ☎ (+49) 71 5037830 ☎ (+49) 71 50378383</p>	GERMANY		
<p>CAME Cancelli Automatici S.p.a. Via Martiri Della Libertà, 15 31030 Dossou DI Casler (Tv) ☎ (+39) 0422 4940 ☎ (+39) 0422 4941 Informazioni Commerciali 800 848095</p>	ITALY	ITALY	<p>CAME Sud s.r.l. Via F. Imparato, 198 Centro Mercato 2, Lotto A/7 80146 Napoli ☎ (+39) 081 7524455 ☎ (+39) 081 7529190</p>
<p>CAME Service Italia S.r.l. Via Della Pace, 28 31030 Dossou DI Casler (Tv) ☎ (+39) 0422 383532 ☎ (+39) 0422 490044 Assistenza Tecnica 800 295830</p>	ITALY	ITALY	<p>CAME Global Utilities s.r.l. Via E. Fermi, 31 20060 Gessate (Mi) ☎ (+39) 02 95380366 ☎ (+39) 02 95380224</p>

