



CE

319U33EN

CONTROL PANEL  
FOR 24V GEARMOTORS

Z CONTROL PANELS



INSTALLATION MANUAL  
**ZL19N**



English

EN

## "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.

## 2.1 Intended use

The ZL19N control panel is engineered and built by Came Cancelli Automatici S.p.A. to command swing gate operators of the FERNI and FROG 24 V DC series.



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

## 3 Reference standards

Came Cancelli Automatici employs an ISO 9001 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

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 overall power of the connected accessories must not exceed 40 W overall load.

The control panel features an amperometric device which constantly controls the motor thrust data.

When the gate runs in to an obstacle, the amperometric sensor detects a thrust overload and inverts the direction of travel of the gate:

- it reopens it when it is closing<sup>(1)</sup>;
- it recloses it when it is opening.

Warning: if it intervenes when the gate is within 5 cm of the closing or opening strike, it stops its movement (see also OP TIME trimmer adjusting on p. 11).

<sup>(1)</sup> Warning: in this case, after 3 consecutive obstacle detections, the gate stops when opening and automatic closing is excluded; for movement to resume press the command button or use the transmitter.

The transformers feature a protection that allows the gate leaves to stay open even in case of heat overload. The gate closes only when the temperature returns below the overload limit.

All connections are protected by quick fuses, see table.

The card provides and controls the following functions:

- automatic closing;
- Preflashing by the flashing light;
- ramming action when closing or opening to ease the release of the electro lock.

Apposite trimmers and faston adjust:

- the travel and slowdown speed.
- the working time for automatic closing;
- the M2 gearmotor closing delay;
- the detection sensitivity of the amperometric device, separately from the travel and for the slowdown.

You can also connect:

- gate open warning-lamp;
- the cycle lamp;
- the electro lock;
- the 002LB18 for emergency operations in case of power outages.

Types of definable commands:

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

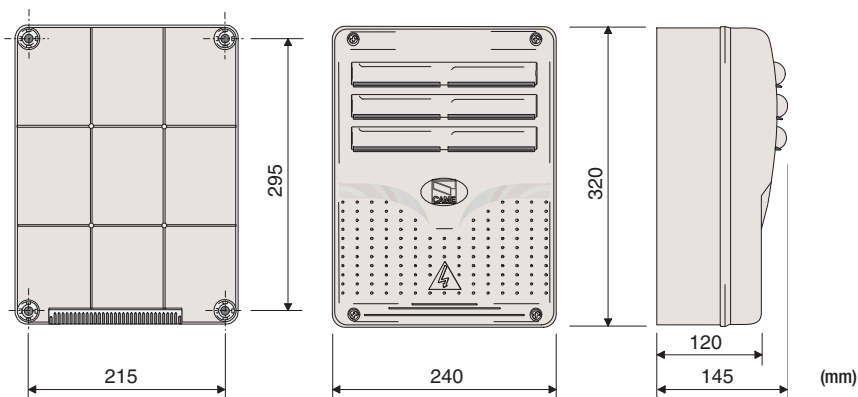
The photocells, after detecting an obstacle, trigger:

- reopening while gate is closing;
- partial stop while gate is opening;

TECHNICAL DATA	
power source	230 V - 50/60 Hz
Maximum allowed power load	730 W
power draw when idle	200 mA
maximum power for 24 V accessories	40 W
circuit insulation class	<input type="checkbox"/>
container material	ABS
container protection rating	IP54
working temperature	-20 / +55°C

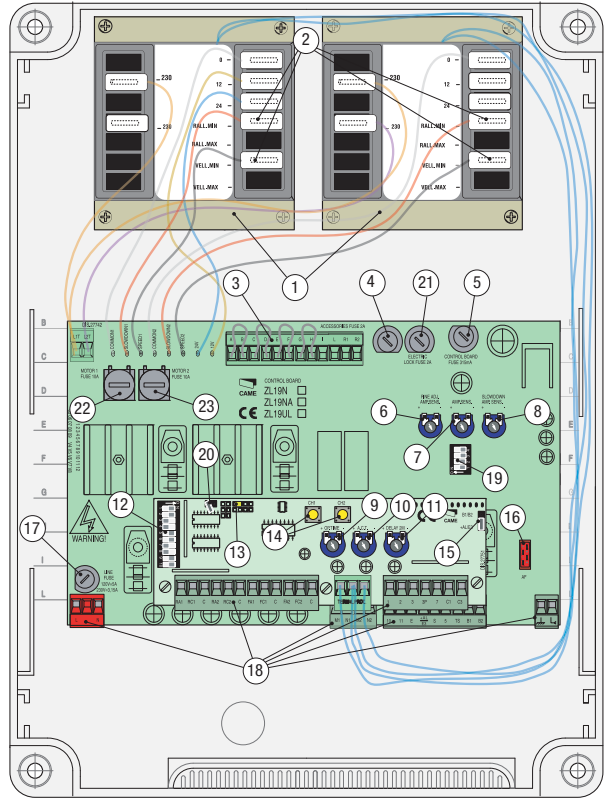
FUSE TABLE	
to protect:	fuses for:
Motor/s	10 A-F
Electronic board (line)	3.15 A-F
Accessories	2 A-F
Command devices (card)	315 mA-F
Electro lock	2 A-F

#### 4.1 Dimensions, centre distances and anchoring holes



## 4.2 Main components

1. Transformers
2. Speed adjuster connectors
3. Terminal board for connecting the 002LB18 card (if unused, make sure that bridges are connected among A-B; C-D; E-F; G-h)
4. Accessories fuse
5. Card fuse
6. Amperometric sensitivity during travel adjustment trimmer
7. Amperometric sensitivity during travel adjustment trimmer
8. Amperometric sensitivity during slowdown adjustment trimmer
9. Opening / closing strike zone adjustment trimmer
10. Automatic closing adjustmet trimmer
11. M2 closing delay adjstement trimmer
12. 10-Dip switch selector function
13. LED to signal radio code/ ACT counter
14. Code memorising buttons
15. Selection jumper B1-B2 / cycle lamp
16. Radio frequency card socket
17. Line fuse
18. Connection terminals
19. 4-Dip switch function selector
20. Selection jumper for command type for button on 2-7
21. Electro lock fuse
22. M1 motor fuse
23. M2 motor fuse



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

## 5 Installation

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

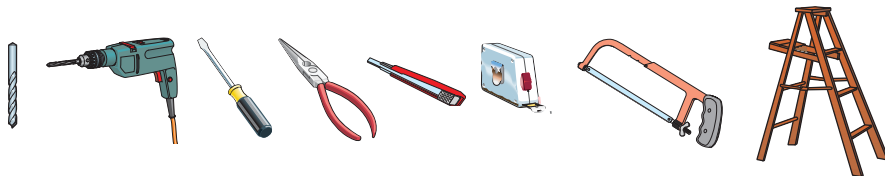
### 5.1 Preliminary checks

**⚠** Before beginning to install, the following is necessary:

- Check that the fastening point of the control panel is protected from accidental impacts, and that the surfaces used for fastening are solid, and that the fastening is done with proper screws, plugs.
- 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.

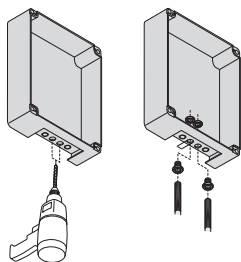
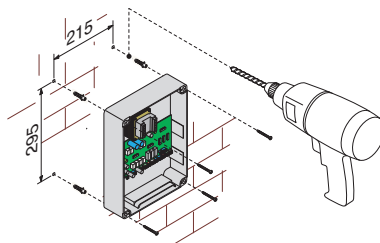
## 5.2 Tools and equipment

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.



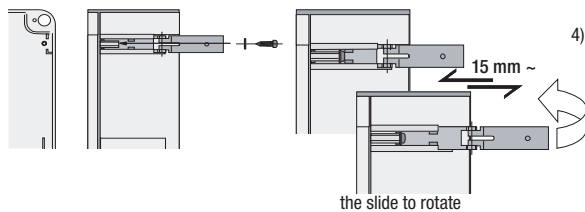
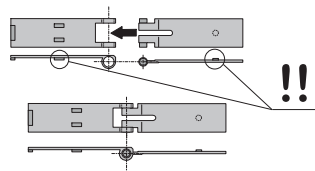
## 5.3 Anchoring and installing the box

- 1) Secure the base of the panel in a safe area; yes max. 6 mm Head with to.



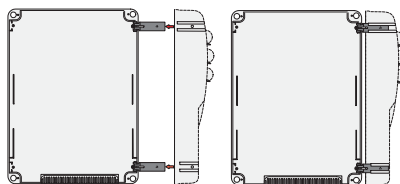
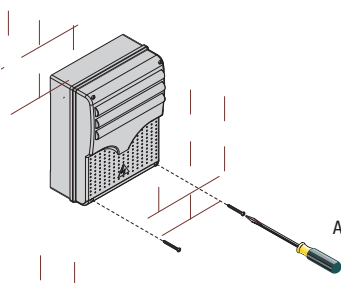
Perforate the marked holes and insert the cable glands with corrugated tubes for the electrical cables to run through.  
**Careful not to damage the electronic board inside the panel!!**

Assemble the pressure hinges.



- 4) insert the hinge into the housing (either left or right) and secure them using the issued screws and washers.

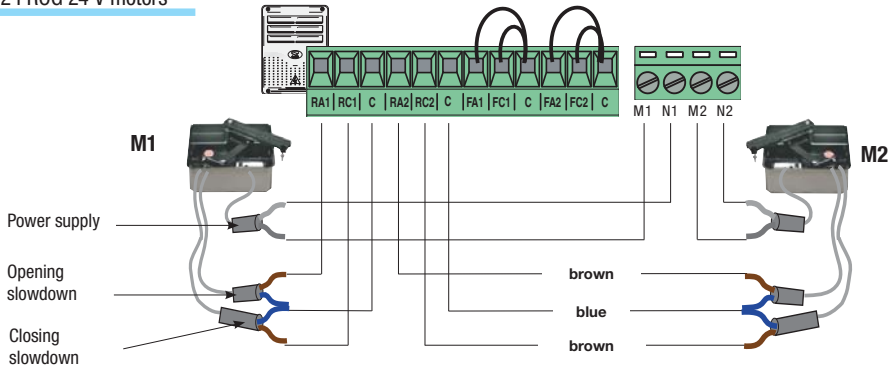
- 5) Snap the cover onto the hinges. Close it and secure it using the issued screws.



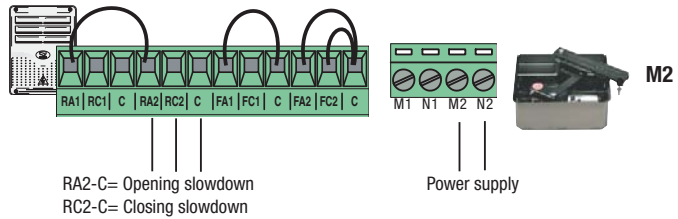
After adjusting and setting, secure the cover using the issued screws.

## 6 Electrical connections

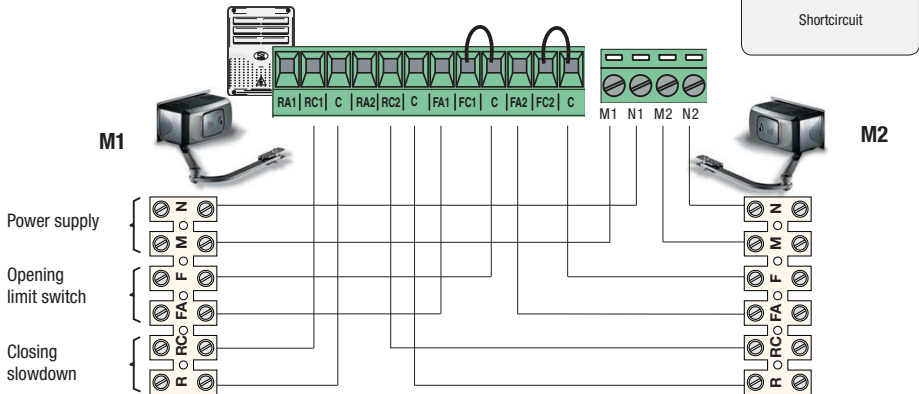
### 2 FROG 24 V motors



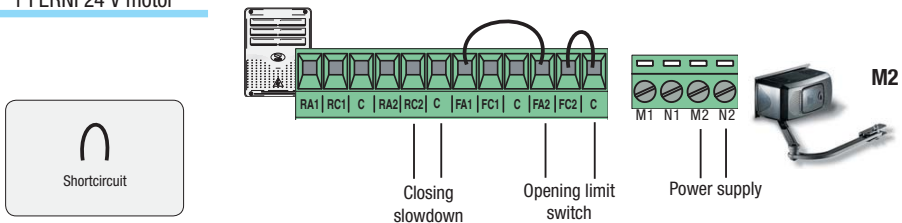
### 1 FROG 24 V motor



### 2 FERNI 24 V motors



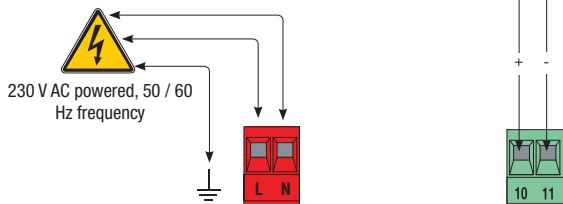
### 1 FERNI 24 V motor



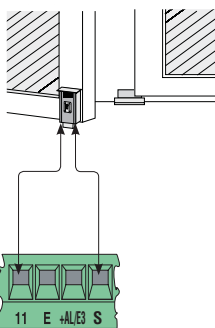
## Accessories power source

Terminals for powering accessories:

- at 24 V (AC) with 230 V (AC)
- at 24 V (DC) with 24 V (DC) Overall allowed power: 40 W



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



## Lighting and warning devices

Flashing-light (contact rated for: 24 V - 25 W max. )

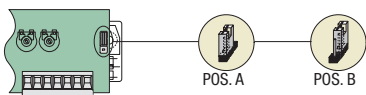
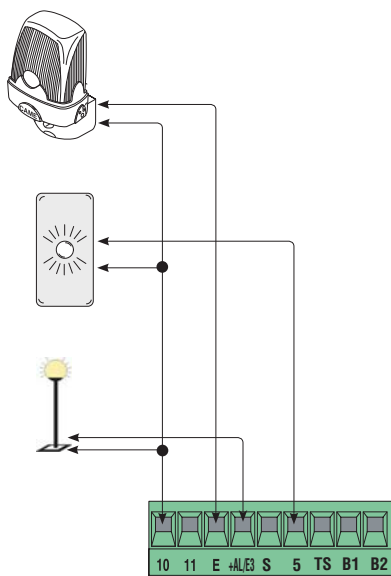
- Flashes while gate opens and closes.

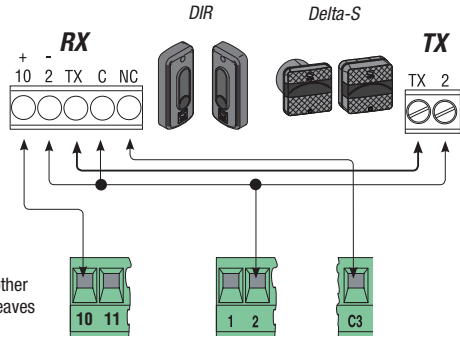
Gate open warning light Contact rated for: 24 V - 3 W Max.

- Warns of open gate position, turns off when gate is closed.

Cycle lamp Contact rated for: 24 V - 25 W Max.) - Lights up the zone of operation and stays on from the moment the gate leaves start opening until they are fully closed. If automatic closing does not activated, the lamp stays on only during movement.

Jumper (p. 4 point 15) in pos. A (Default).



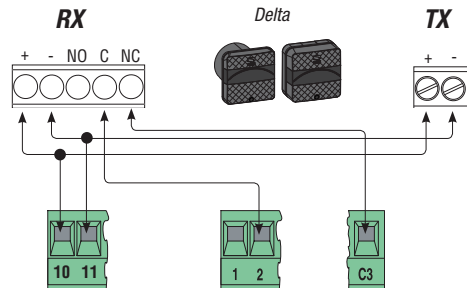


*(N.C.) "partial stop" contact*

Input for safety devices like photocells, sensitive edges and other devices that comply with EN 12978 regulations. Stops gate leaves if they are moving and then automatically closes them. If unused set DIP switch n.8 to ON.

*C1=Reopening when closing (N.C.) Contact»*

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. If unused set DIP switch n.10 to ON.



*(N.C.) "partial stop" contact*

*C1=Reopening when closing (N.C.) Contact»*





**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 n.9 to ON.

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

- Command for gate opening.

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

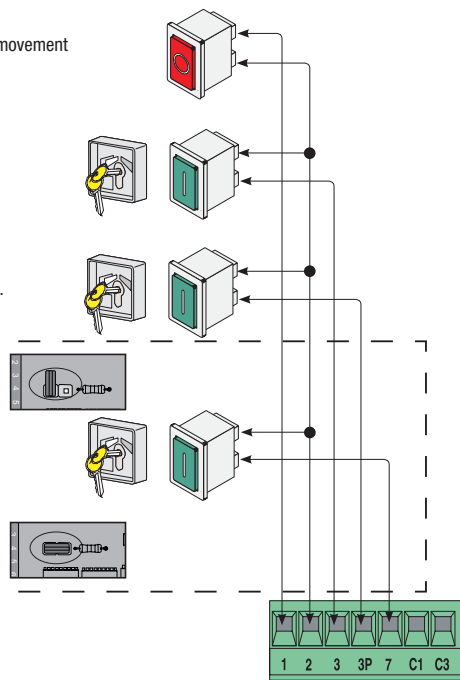
- Opening a gate leaf for pedestrian passage (opening M2 motor).

**Key-switch selector and/or opening 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 2-3) Jumper OFF (p. 4 point 20).

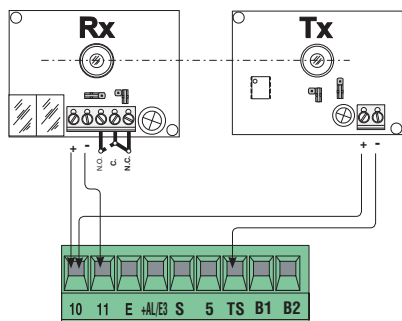
**Key switch selector and/or opening button (N.O. contact)**

- Gate-leaf closing command. Jumper ON (p. 4 point 20).

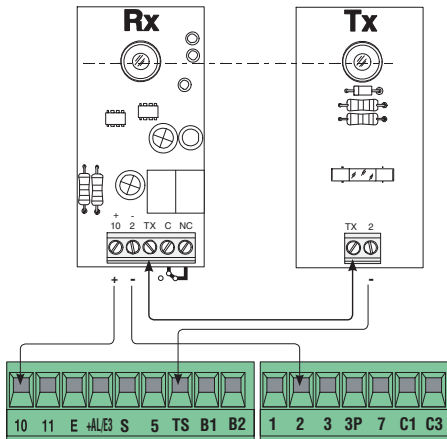


6.1 Electrical connection for photocells functionalities test

**(Delta)**



**(DIR)**



With each opening and closing command, the card checks the efficiency of the safety devices (i.e. photocells). Any anomalies in the photocell is notified by the flashing LED (PROG) on the control panel, and cancels any other command from the transmitter or button.

Electrical connection to work the photocells safety test:

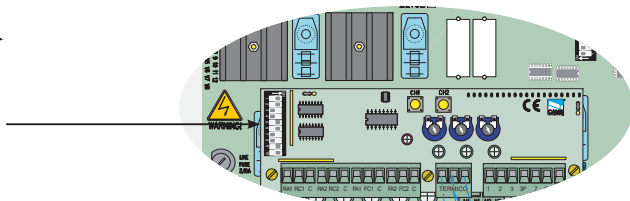
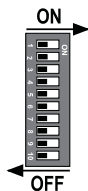
- the transmitter and receiver, must be connected as shown in the diagram;
- Set Dip-switch 3 to ON to activate the test.

**IMPORTANT:**

When you activate the safety test, CHECK that THERE ARE NO JUMPER BRIDGES between contacts 2-C3, 2-C1 and, if the contacts are unused, exclude them via Dip-switch 8 and 10.

## 7 Selecting functions

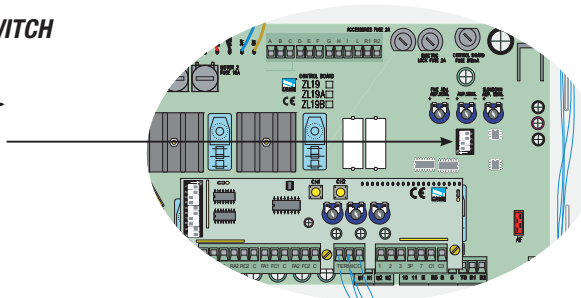
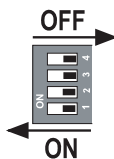
### 10-WAY DIP-SWITCH



DIP POS.	FUNCTION ACTIVATED
----------	--------------------

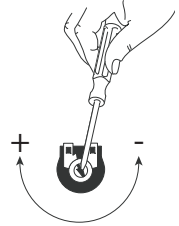
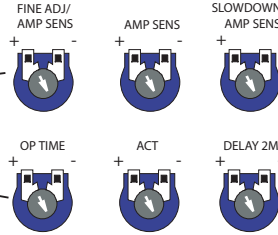
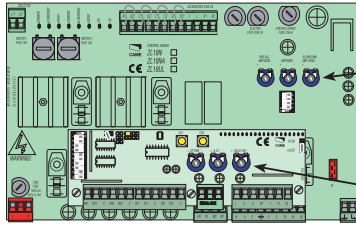
- |          |   |
|----------|---|
| 1 ON -   | Automatic closing - The automatic closing timer activates at the closing endpoint. The preset time can be adjusted, and is anyway conditioned by any triggered safety devices and is not activated after a total safety "stop" or when the power is cut off.  |
| 2 OFF -  | "Open-stop-close-stop" function with (2-7) button and radio transmitter (fitted with radio frequency card activated).   |
| 2 ON -   | "Open-close" function with (2-7) button and radio transmitter (fitted with radio frequency card activated).   |
| 3 ON -   | "Open only" function with transmitter (with radio frequency card activated).  |
| 4 ON -   | Opening and closing preflashing - After either an opening or closing command, the flashing light connected on 10-E, flashes for 5 seconds before beginning to execute the command.  |
| 5 ON -   | Obstacle detection - With motor idle (barrier arm closed, open or after a total stop command), it prevents any movement if the safety devices (e.g. photocells) detect an obstacle.   |
| 6 ON -   | Maintained action - Gate opens and closes only if button is kept pressed.   |
| 7 ON -   | Ramming function activated - At each opening command, the leaves presses against the strike plate for one second, facilitating the release operation for the electro lock connected on terminals 11-S.  |
| 8 OFF -  | Partial stop - Stops gate, if it is moving, and then automatically closes it. Insert the safety device on terminal (2-C3); if unused, set DIP switch to ON.   |
| 9 OFF -  | Total stop - This function stops the gate and then excludes any automatic closing cycle; use either the buttons or transmitter to resume movement. Insert safety device on [1-C2]; if unused, set DIP switch to ON.   |
| 10 OFF - | Reopening during closing - The photocells, detect an obstacle during the closing phase of the gate leaf, triggering an inversion of travel direction, until gate is fully open; insert the safety device on terminal (2-C1); if unused, set DIP switch to ON. |

### 4-WAY DIP-SWITCH



- |        |   |
|--------|---|
| 1 -    | Must stay OFF   |
| 2 -    | Must stay OFF   |
| 3 ON - | Activates the safety tests to check photocell efficiency. |
| 4 -    | Unused  |

## 8 Settings



- END ADJ./SENS.      \* End adjustment of amperometric sensor during travel:min/max.
- AMP SENS.            \* Adjusts the amperometric sensitivity which controls the force developed by the motor during movement; if the force exceeds the adjusted level, the system intervenes and inverts the direction of travel.
- SLOWDOWN/AMP SENS      \* Adjusts the amperometric sensitivity which controls the force developed by the motor during movement; if the force exceeds the adjusted level, the system intervenes and inverts the direction of travel.
- OP TIME                Adjusts the closing strike zone.
- ACT                     Adjusts the waiting time when open. Once this time elapses, automatic closing is triggered. The waiting time can be adjusted to between 2 and 120 seconds.
- DELAY 2M             Adjusting the M2 waiting time for each closing. The waiting time can be adjusted to between 1 and 15 seconds.

\* Warning!: *minimum sensitivity = maximum power*

### Adjusting the closing strike zone

After setting the slowdowns (fig. 3) with the "micro-switch adjusting" illustrated in the gearmotor manual ...

... prepare a 60 x 30 mm template and keep it rested against one of the two strike plates, as shown in fig. 1 (you can adjust it either on the closing or opening strike plates).

Activate the gate - with a command button or with the transmitter - and turn the OP TIME 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 turn the trimmer counter-clockwise.

If you have a two-leaf gate, carry out the procedure on both gate leaves.

fig. 1

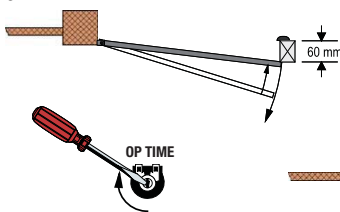


fig. 2

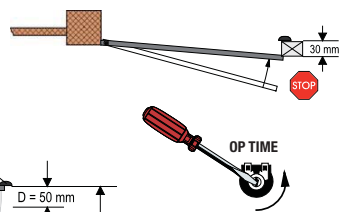
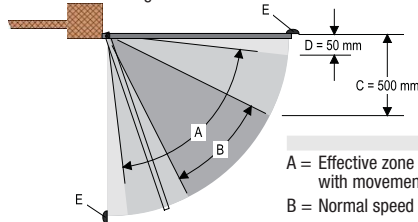


fig. 3



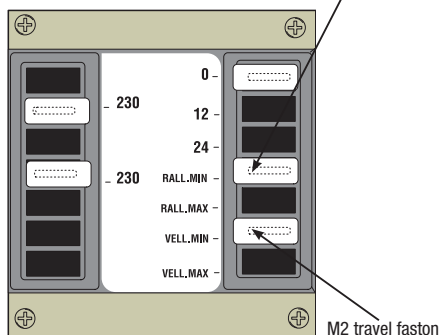
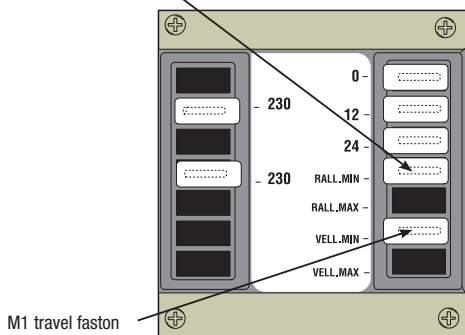
- A = Effective zone of the amperometric sensor with movement inversion
- B = Normal speed travel zone
- C = Decelerated speed travel zone
- D = Effective zone of the amperometric sensor with movement stop
- E = Closing and opening strike plates

## Adjusting travel and slowdown speeds

For adjusting the travel and slowdown speeds, move the fastons

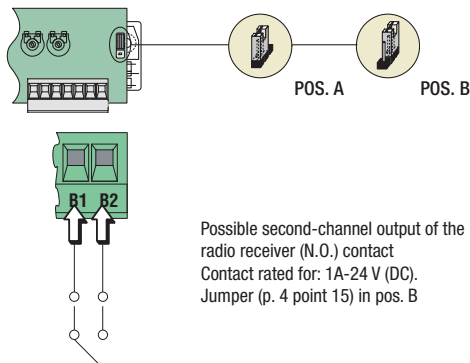
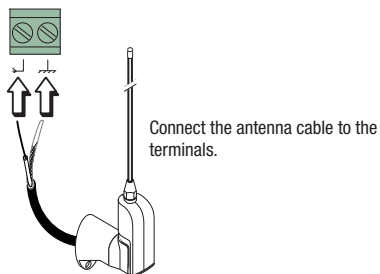
M1 slowdown faston

M2 slowdown faston



## 9 Activating the radio command

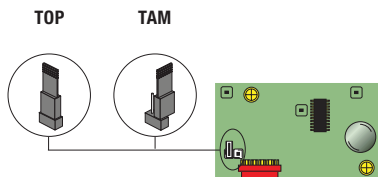
Antenna



Radio frequency card

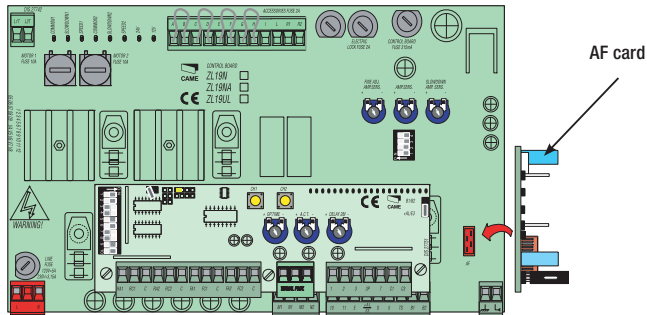
Only for the AF43S / AF43SM radi-frequency cards.

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

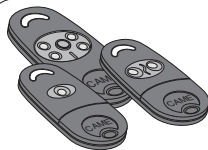


Frequency MHz	Radio-frequency card	Series transmitters
FM 26.995	AF130	TFM
FM 30.900	AF150	TFM
AM 26.995	AF26	TOP
AM 30.900	AF30	TOP
AM 433.92	AF43S / AF43SM	TAM / TOP
AM 433.92	AF43TW	TWIN (KeyBlock)
AM 433.92	AF43SR	ATOMO
AM 40.685	AF40	TOUCH
AM 863.35	AF868	TOP

CUT THE MAIN POWER SUPPLY (and/or disconnect the batteries) and snap in the radio-frequency card into the electronic card.  
 N.B.: The electronic card recognises the radio-frequency card only when it is powered up.



## Transmitters



### ATOMO

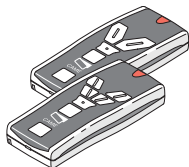
AT01 • AT02  
 AT03  
 AT04

*See instructions sheet in the package of the AF43SR radiofrequency card*

*see instructions on box*

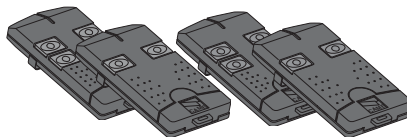
### TOUCH

TCH 4024 • TCH 4048



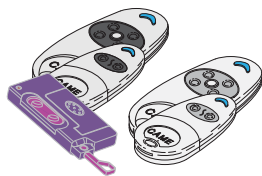
### TOP

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



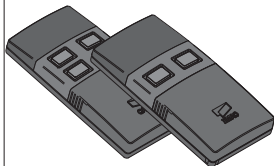
### TOP

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



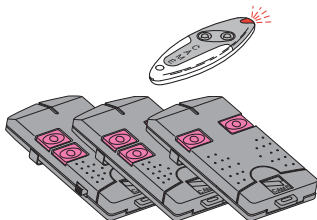
### TWIN

TWIN 2 • TWIN 4



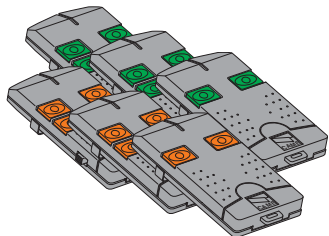
### TAM

T432 • T434 • T438  
 TAM-432SA



### TFM

T132 • T134 • T138  
 T152 • T154 • T158

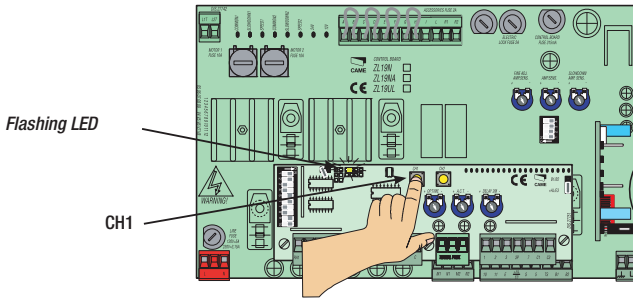


### Memorisation

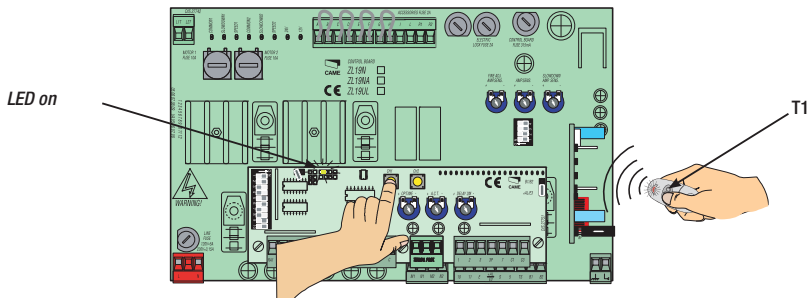
**CH1** = Channel for direct function command to gearmotor control panel ("open only" command / "open-close-invert" command o "open-stop-close-stop", depending on selection made on DIP switches 2 and 3).

**CH2** = Channel for direct commands to an accessory device connected on B1-B2.

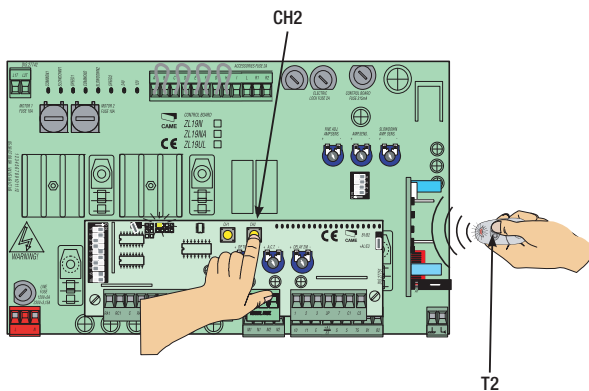
1) Keep CH1 button pressed on the electronic card. The LED flashes ON and OFF.




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



3) Repeat the procedure for point 1 and 2 for button "CH2" associating it with the other transmitter button.



## 10 Dismantling and disposal

 **CAME cancelli automatici s.p.a.** 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 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!**

## 11 COMPLIANCE STATEMENT



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

### MANUFACTURER'S STATEMENT

*Pursuant to attachment II A of the Directive 2006/95/CE*

--- REGULATIONS ---  
EN 60335-1  
EN 60335-2-103  
EN 13241-1  
EN 61000-6-2  
EN 61000-6-3

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

**ZL19N**

*...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 EN Z002**



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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><b>CAME France S.a.</b> 7, Rue Des Haras Z.I. Des Hautes Patures 92737 <b>Nanterre Cedex</b> ☎ (+33) 0 825 825 874 ☎ (+33) 1 46 13 05 00</p>	FRANCE	GERMANY	<p><b>CAME Gmbh Seefeld</b> Akazienstrasse, 9 16356 <b>Seefeld</b> Bei Berlin ☎ (+49) 33 3988390 ☎ (+49) 33 39883985</p>
<p><b>CAME Automatismes S.a.</b> 3, Rue Odette Jasse 13015 <b>Marseille</b> ☎ (+33) 0 825 825 874 ☎ (+33) 4 91 60 69 05</p>	FRANCE	U.A.E.	<p><b>CAME Gulf Fze</b> Office No: S10122a2o210 P.O. Box 262853 Jebel Ali Free Zone - <b>Dubai</b> ☎ (+971) 4 8860046 ☎ (+971) 4 8860048</p>
<p><b>CAME Automatismes S.a.</b> C/juan De Mariana, N. 17-local 28045 <b>Madrid</b> ☎ (+34) 91 52 85 009 ☎ (+34) 91 46 85 442</p>	SPAIN	RUSSIA	<p><b>CAME Rus Umc Rus Lic</b> Ul. Otradnaya D. 2b, Str. 2, office 219 127273, <b>Moscow</b> ☎ (+7) 495 739 00 69 ☎ (+7) 495 739 00 69 (ext. 226)</p>
<p><b>CAME United Kingdom Ltd.</b> Unit 3 Orchard Business Park Town Street, Sandiacre <b>Nottingham - Ng10 5bp</b> ☎ (+44) 115 9210430 ☎ (+44) 115 9210431</p>	GREAT BRITAIN	PORTUGAL	<p><b>CAME Portugal Ucj Portugal Unipessoal Lda</b> Rua Liebig, nº 23 2830-141 <b>Barreiro</b> ☎ (+351) 21 207 39 67 ☎ (+351) 21 207 39 65</p>
<p><b>CAME Group Benelux S.a.</b> Zoning Ouest 7 7860 <b>Lossines</b> ☎ (+32) 68 333014 ☎ (+32) 68 338019</p>	BELGIUM	INDIA	<p><b>CAME India Automation Solutions Pvt. Ltd</b> A - 10, Green Park 110016 - <b>New Delhi</b> ☎ (+91) 11 64640255/256 ☎ (+91) 2678 3510</p>
<p><b>CAME Americas Automation Lic</b> 11345 NW 122nd St. <b>Medley, FL 33178</b> ☎ (+1) 305 433 3307 ☎ (+1) 305 396 3331</p>	U.S.A	ASIA	<p><b>CAME Asia Pacific</b> 60 Alexandra Terrace #09-09 Block C, The ComTech 118 502 <b>Singapore</b> ☎ (+65) 6275 8426 ☎ (+65) 6275 5451</p>
<p><b>CAME Gmbh</b> Kornwestheimer Str. 37 70825 <b>Kornthal</b> Munchingen Bei Stuttgart ☎ (+49) 71 5037830 ☎ (+49) 71 50378383</p>	GERMANY		
<p><b>CAME Cancelli Automatici S.p.a.</b> Via Martiri Della Libert�, 15 31030 <b>Dosson Di Casler</b> (Tv) ☎ (+39) 0422 4940 ☎ (+39) 0422 4941 Informazioni Commerciali 800 848095</p>	ITALY	ITALY	<p><b>CAME Sud s.r.l.</b> Via F. Imperato, 198 Centro Mercato 2, Lotto A/7 80146 <b>Napoli</b> ☎ (+39) 081 7524455 ☎ (+39) 081 7529190</p>
<p><b>CAME Service Italia S.r.l.</b> Via Della Pace, 28 31030 <b>Dosson Di Casler</b> (Tv) ☎ (+39) 0422 383532 ☎ (+39) 0422 490044 <b>Assistenza Tecnica 800 295830</b></p>	ITALY	ITALY	<p><b>CAME Global Utilities s.r.l.</b> Via E. Fermi, 31 20060 <b>Gessate</b> (Mi) ☎ (+39) 02 95380366 ☎ (+39) 02 95380224</p>

