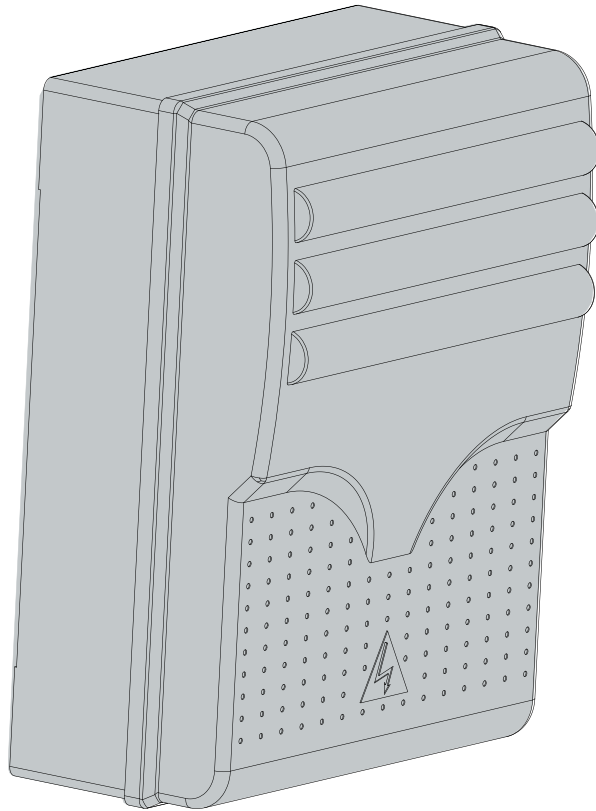





ZT6-ZT6C




1 Symbols legend

-  This symbol denotes parts that require special attention.
-  This symbol denotes parts that concern safety.
-  This symbol denotes notes to communicate to the user.

2 Limits of use and intended use

2.1 Limits of use

The ZT6-ZT6C electrical switchboards, in the version with control and safety block buttons incorporated into the panel, were designed to control BK2200T automations, for moving CBXT and CBYT sliding gates and for controlling drop-curtain doors and sliding and swing gate systems.

 Any use, other than the ones described above, and installations in methods other than those shown in this technical manual are considered prohibited.

WARNING - incorrect installation could cause serious injury. Follow the installation instructions carefully.

2.2 Intended uses

 This manual was written specifically for a professional installer or other specifically trained person.

3 Reference standards

The product in question is subject to the following reference standards: EN 12978, UNI EN 954-1, CEI EN 60335-1, UNI EN 12453.

4 Description

4.1 Three phase/single-phase electrical switchboard

Electrical switchboard for gearmotors with single-phase 230V power supply or three-phase 230/400V power supply; frequency 50÷60 Hz. Fully designed and built by CAME Cancelli Automatici S.p.A. Box equipped with an air recirculation outlet. Guaranteed for 24 months if not tampered with.

4.2 Technical information

- Electrical switchboard
- Supply voltage: 230V / 400V - 60 Hz
- Power rating: 750W
- Absorption at rest: 50 MA
- Maximum power accessories, 24V : 20 W
- Maximum power accessories, 230V : 85 W

Protection level: IP54

Isolation category: II 

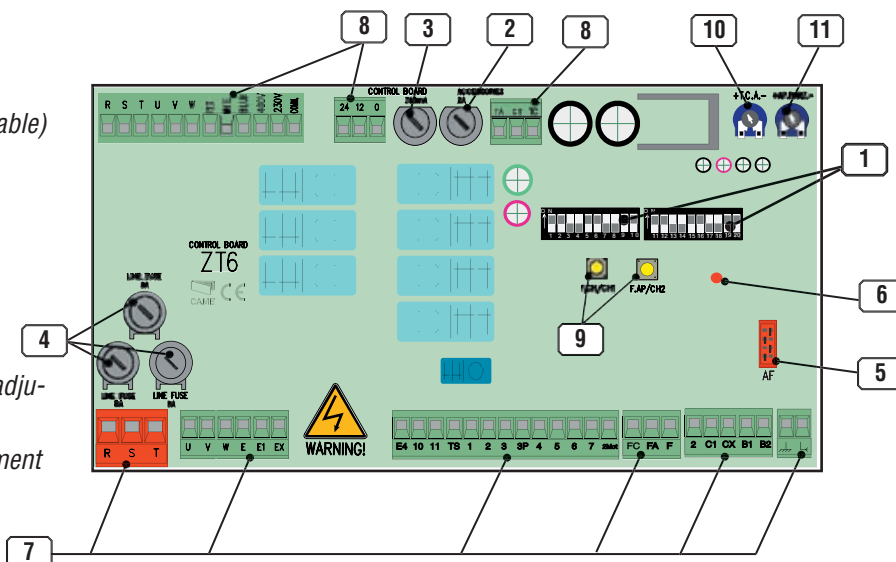
Material: ABS

Operating temperature:



4.3 Primary components

- 1 "Functions selection" Dip switch
- 2 2A F Accessories fuse
- 3 315mA Control unit fuse
- 4 8A F Line fuse
- 5 Radio frequency card connector (see table point 5.10)
- 6 Radio code signal LED
- 7 Connecting terminal boards
- 8 Connecting terminal boards transformer
- 9 Radio code memorizing buttons
- 10 TCA Trimmer: automatic closure time adjustment
- 11 Par. Op. trimmer: partial opening adjustment



All the data and information contained herein is considered subject to change at any time and at our discretion.

5 Installation

5.1 Preliminary checks

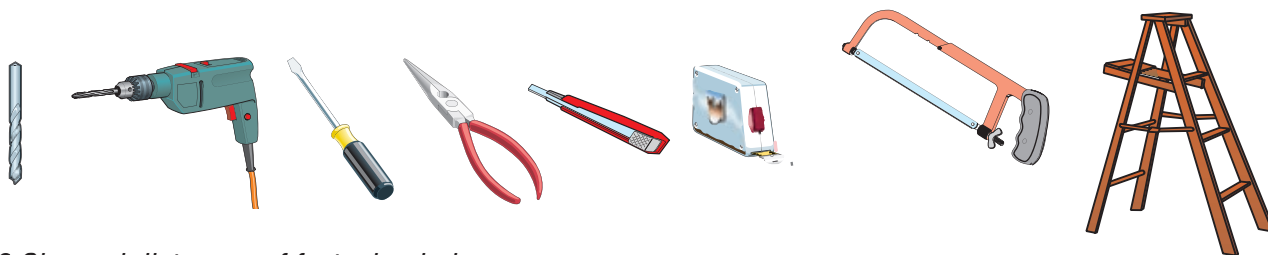


Before proceeding with installation, it is necessary to:

- Check that the point of attachment of the control panel is protected from shocks, the fastening surfaces are solid, and appropriate components (screws, plugs, etc) are used for fastening to the surface.
- Provide for an appropriate omni-polar disconnection device with a distance of more than 3 mm between the contacts, to shunt the power supply
- Ⓧ Check that the connections inside the case executed for continuity of the protection circuit are allowed, provided they have supplementary isolation with respect to the other internal conducting parts.
- Prepare adequate cable troughs and hoses for the electrical wires, to ensure protection against mechanical damage.

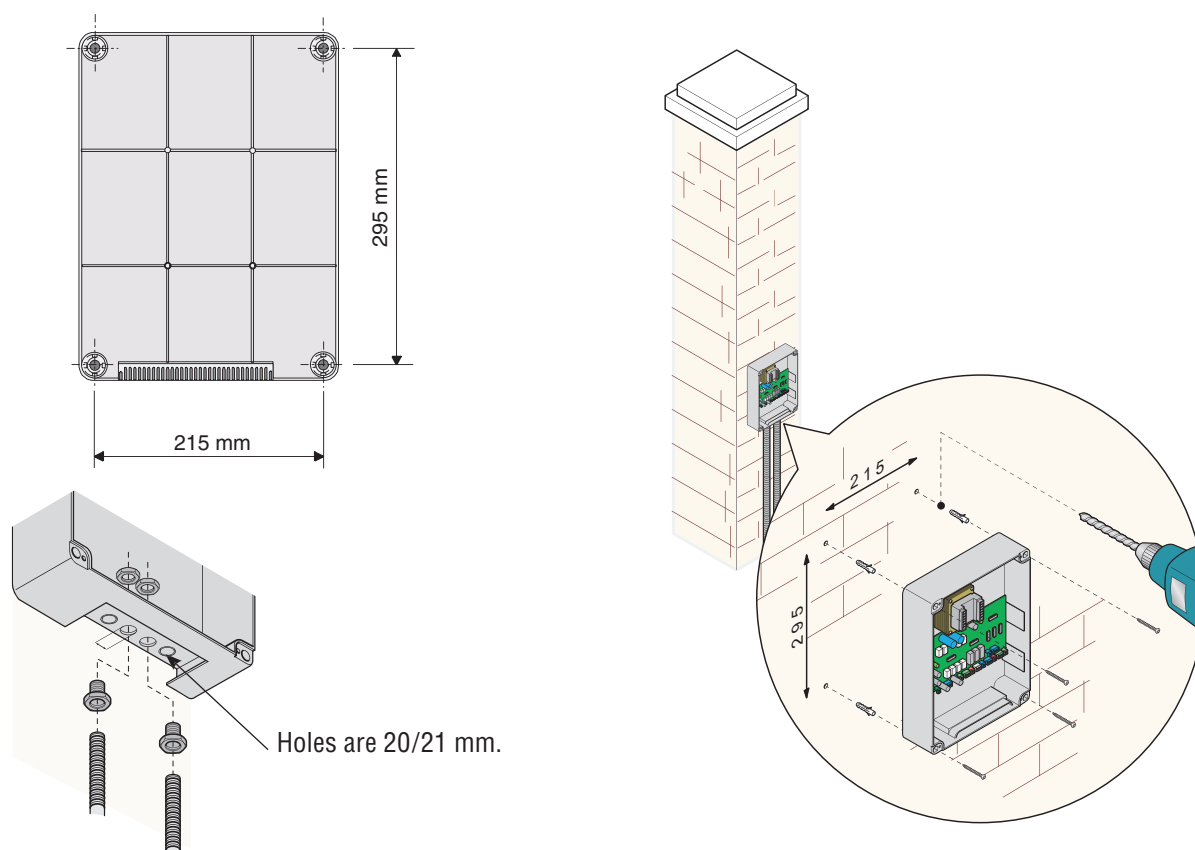
5.2 Equipment and materials

Be sure to have all the instruments and materials necessary to execute installation in utmost safety, in accordance with prevailing standards. Here are a few examples.



5.3 Size and distances of fastening holes

It is best to use a fillister head Phillips screws, maximum diameter of 6 mm.



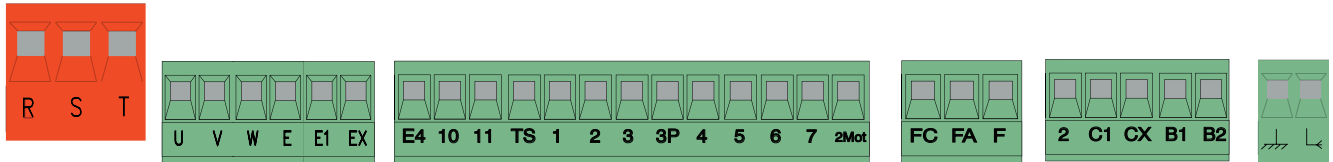
5.4 Minimum thickness and wires

Connections	Cable type	Cable length 1<10 M	Cable length 10<20 M	Cable length 20<30 M
Power supply line, 230/400V 3F	FROR CEI 20-22 CEI EN 50267-2-1	4G 1,5mm ²	4G 2,5mm ²	4G 4mm ²
Power supply line, 230V 2F		3G 1,5mm ²	3G 2,5mm ²	3G 4mm ²
Motors, 230/400V 2F/3F		4G 1mm ²	4G 1,5mm ²	4G 2,5mm ²
Motor, 24V		2 x 1mm ²	2 x 1,5mm ²	2 x 2,5mm ²
Flashing lamp 230V		2 x 0,5mm ²	2 x 1mm ²	2 x 1,5mm ²
Flashing lamp 24V		2 x 0,5mm ²	2 x 1mm ²	2 x 1,5mm ²
Cycle/courtesy lights 230V		3G 0,5mm ²	3G 1mm ²	3G 1,5mm ²
Power supply accessories 24V		2 x 0,5mm ²	2 x 0,5mm ²	2 x 1mm ²
Warning light 24V		2 x 0,5mm ²	2 x 0,5mm ²	2 x 1mm ²
Output 24V "in motion"		2 x 0,5mm ²	2 x 0,5mm ²	2 x 1mm ²
Safety contacts		2 x 0,5mm ²	2 x 0,5mm ²	2 x 0,5mm ²
N.O./N.C. control buttons		2 x 0,5mm ²	2 x 0,5mm ²	2 x 0,5mm ²
End stop		3 x 0,5mm ²	3 x 1mm ²	3 x 1,5mm ²
2nd motor control		1 x 0,5mm ²	1 x 0,5mm ²	1 x 1mm ²
Antenna connection (max 50m)		RG58		
Encoder connection (max 30m)		Insulated cable 2402C 22AWG		

N.B.: The cross section of cables with lengths other than those listed in the table must be evaluated based on the actual absorption of the devices connected, in accordance with the recommendations of the CEI EN 60204-1 standard.

For connections that require several loads on the same line (sequential), the sizes listed in the table must be reconsidered based on the actual absorption and distances.

5.5 ZT6 Electrical connections



R ————○
S ————○ Power supply: 230V (AC) single-phase (220-COM)

R ————○
S ————○ Power supply: 400V (AC) three-phase (380-COM) and 230V (AC) three-phase (220-COM)
T ————○

U ————○
W ————○
V ————○ Single-phase/three-phase motor 230/400V (AC) max.750 W

E ————○
EX ————○ Cycle or courtesy lamp (230V) (Cycle lamp Dip 16 OFF Dip 17 ON)-(Courtesy light Dip 16 ON Dip 17 OFF) max 60 W.

E ————○
E1 ————○ Output 230V (AC) in motion (e.g. flashing lamp - max. 25W)

10 ————○
11 ————○ Power supply accessories 24V (AC) }
10 ————○ Output 24V (AC) in motion } Max.20 W totali
E4 ————○

5 ————○
11 ————○ Warning light (24V-3W max.) "gate open"

6 ————○
11 ————○ Warning light (24V-3W max.) "gate closed"

1 ————○
2 ————○ Stop button (N.C.)

2 ————○
3 ————○ Open button (N.O.)

2 ————○
3P ————○ Button for partial opening (N.O.)

2 ————○
4 ————○ Closure button (N.O.)

2 ————○
7 ————○ Radio contact and/or control button (see dip-switch 2-3 sel.functions)

2 ————○
CX ————○ Contact (N.C.) «Re-closing during opening» *Dip 8 OFF and Dip 9 OFF
Contact (N.C.) partial stop (Dip 8 OFF Dip 9 ON)

2 ————○
C1 ————○ Contact (N.C.) of «Re-opening during closure

F ————○
FC ————○ End stop connection closes

F ————○
FA ————○ End stop connection opens

B1 ————○
B2 ————○ Contact outlet (N.O.) Contact capacity: 5A at 24V (DC)

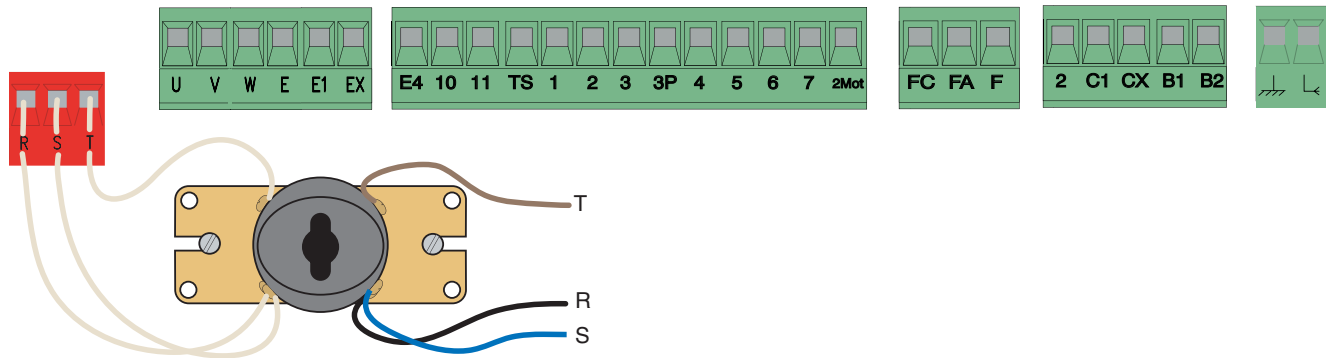
○ ————○
○ ————○ Connection of antenna

2MOT ————○ Output for control of 2 coupled motors

Position the exposed control buttons, located 1.5 m from the ground and distant from mobile parts of the automation

All the data and information contained herein is considered subject to change at any time and at our discretion.

5.6 ZT6C electrical connections



R ————○ Power supply: 230V (AC) single-phase (220-Com)
S ————○

R ————○ Power supply: 400V (AC) three-phase (380-COM) and 230V (AC) three-phase (220-COM)
S ————○
T ————○

U ————○
W ————○
V ————○ Single-phase/three-phase motor 230/400V (AC) max.750 W

E ————○
EX ————○ Cycle or courtesy lamp (230V) (Cycle lamp Dip 16 OFF Dip 17 ON)-(Courtesy light Dip 16 ON Dip 17 OFF) max 60 W.

E ————○
E1 ————○ Output 230V (AC.) in motion (e.g. flashing lamp - max. 25W)

10 ————○ Power supply accessories 24V (AC)
11 ————○
} Max.20 W totali

10 ————○ Output 24V (AC) in motion
E4 ————○

2 ————○
7 ————○ Radio contact and/or control button (see dip-switch 2-3 sel. functions)

2 ————○ Contact (N.C.) «Re-closing during opening» *Dip 8 OFF and Dip 9 OFF
CX ————○ Contact (N.C.) partial stop (Dip 8 OFF Dip 9 ON)

5 ————○
11 ————○ Warning light (24V-3W max.) "gate open"

2 ————○
C1 ————○ Contact (N.C.) of «Re-opening during closure

6 ————○
11 ————○ Warning light (24V-3W max.) "gate closed"

F ————○
FC ————○ End stop connection closes

1 ————○
2 ————○ Stop button (N.C.) Emergency button already connected, in the event of additions connected in series

F ————○
FA ————○ End stop connection opens

2 ————○
3 ————○ Open button (N.O.) Opening button already connected, in the case of additions to make in parallel.

B1 ————○
B2 ————○ Contact outlet (N.O.) Contact capacity: 5A at 24V (DC)

2 ————○
3P ————○ Button for partial opening (N.O.)

Connection of antenna

2 ————○
4 ————○ Closing button (N.O.) Closing button already connected in the case of additions to make in parallel

2MOT ————○ Output for control of 2 coupled motors

All the data and information contained herein is considered subject to change at any time and at our discretion.

5.7 Dip-Switches and functions

SAFETY

The safety features can be connected and designated for:

- Re-opening during closure (2-C1);
- Re-closing during opening (2-CX, see dip 8-9);
- Partial stop gate stops if in motion with the resulting preparation for automatic closing (2-CX, see dip 8-9);
- Total stop (1-2), gate stop, excluding any automatic closing cycle; to resume movement, you must use the pushbutton panel or transmitter;

NOTE: If an N.C. safety contact (2-C1, 2-CX, 1-2) is opened, the LED will flash to indicate this fact.

- Obstacle detection.

With the motor not running (gate closed, open, or after a total stop command), this feature hinders any movement if the safety devices (e.g. photoelectric cells) detect an obstacle;

- Safety test function.

At every gate opening and closure command, the control unit checks the efficiency of the safety features.

Possible accessories

- Cycle or courtesy lamp (60W);

OTHER SELECTABLE FUNCTIONS

- Automatic closure. The automatic closure timer self-powers at the opening end stop. The modifiable set time is also subject to modifications due to the intervention of possible safety accessories. This does not happen following a complete “stop” command or if power is cut;

- Partial opening. Opening of the gate to allow for pedestrian traffic; activated by connecting to clamps 2-3P and adjusted with the PART. OP. trimmer. With this function, the automatic closing can vary in the following way:

1) Dip 12 set to ON: after a partial opening, the time for automatic closing functions independently of the adjustment of the TCA trimmer and of the position of Dip 1; it is set at 8 seconds.

2) Dip 12 set to OFF: after a partial opening, the time for automatic closing is adjustable only if Dip 1 is set to ON;

- Cycle lamp. A light that illuminates the manoeuvring zone: it remains lit from the moment the doors begin to open until they are completely closed (including the time required for the automatic closure).

If automatic closing is not activated, the lamp remains on only during movement (E-EX);

- Courtesy Light. A light that illuminates the manoeuvring zone: after an opening command, the light remains on for a fixed time of 5 minutes and 30 seconds (E-EX);

- “Maintained Action” function. Gate operation while keeping the pushbutton pressed (excludes the radio-control operation);

- Pre-flashing: 5 seconds pre-flash during both opening and closing of the wing;

- Master function; the panel assumes all the command functions when two paired motors are used (see page 30);

- Slave function; this panel is exclusively controlled by the “MASTER”;

- Enabling functions of partial stop or closure whilst opening, normally-closed contact (2-CX), select one of the two functions by setting Dip

(see Function selections);

- Type of command:

- open-close-reverse by button and transmitter;

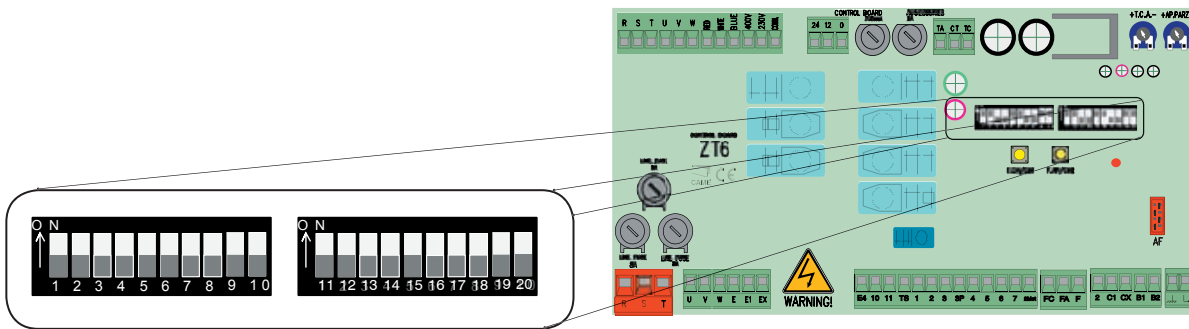
- open-stop-close-stop by button and transmitter;

- open only by transmitter.

ADJUSTMENTS

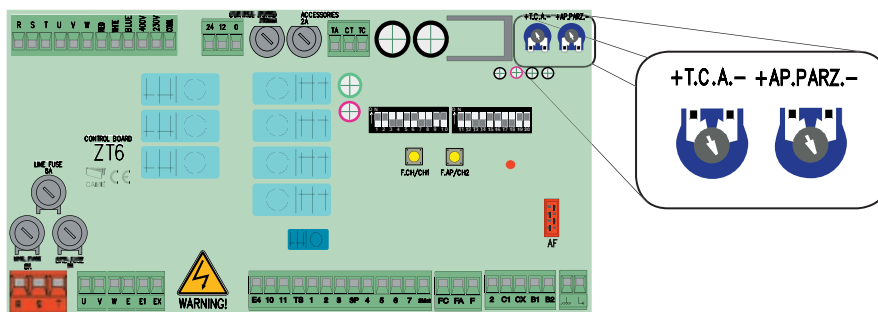
- automatic closing time;

- Partial opening time.



- 1 ON Automatic closure activated; (1 OFF-deactivated)
- 2 ON "Open-stop-close-stop" function with button (2-7) and transmitter (AF board inserted) activated;
- 2 OFF -"Open-close" function with button (2-7) and transmitter (AF card inserted) activated;
- 3 ON - "Only opening" function with transmitter (AF card inserted) activated; (3 OFF-deactivated)
- 4 ON -"Maintained Action" function (excludes the function of the transmitter) activated; (4 OFF-deactivated)
- 5 ON "Pre-flashing during opening/closing activated; (5 OFF-deactivated)
- 6 ON -Obstacle detection activated; (6 OFF-deactivated)
- 7 OFF "Re-closing while opening" function (connect the safety device on clamps 2-C1) activated; (7 ON-deactivated)
- 8 OFF/ 9 OFF "Re-closing while opening" function (connect the safety device on clamps 2-CX) activated;
- 8 OFF/ 9 ON "Partial stop" function (connect the safety device on clamps 2-CX) activated; (if the devices on the 2-CX clamps are not used, set Dip 8 to ON)
- 10 OFF Total stop" function (connect the button onto clamps 1-2) activated; (10 ON - deactivated)
- 11 OFF -"Slave" function deactivated (to activate in the event of coupled connection)
- 12 ON "Partial opening" function (automatic closing is fixed at 8 seconds) activated;
- 12 OFF "Partial opening" function (automatic closing is adjusted with the trimmer, if on/inserted) activated;
- 13 ON "Safety test" function to check the efficiency of the photoelectric cells (see page 14) activated; (13 OFF-deactivated)
- 14 OFF -"Master" function deactivated (to activate in the event of coupled connection);
- 15 - Not used, keep the dip switch in the "OFF" position
- 16 ON "Courtesy light function activated"; (16 OFF-deactivated)
- 17 ON "Lamp cycle" activated; (17 OFF-deactivated)
- 18 ON - Activates brake during closure- (CBX, CBXT).
- 19 - Not connected
- 20 - Not connected

5.8 Adjustment Trimmer



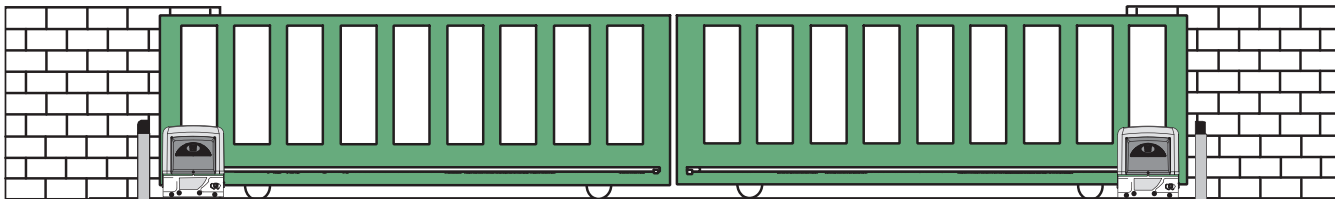
Trimmer T.C.A. = Adjusts automatic closing time from a minimum of 1 sec to a maximum of 120 sec.

Part. Op. Trimmer. = Adjusts automatic opening time from a minimum of 1 sec to a maximum of 14 sec

All the data and information contained herein is considered subject to change at any time and at our discretion.

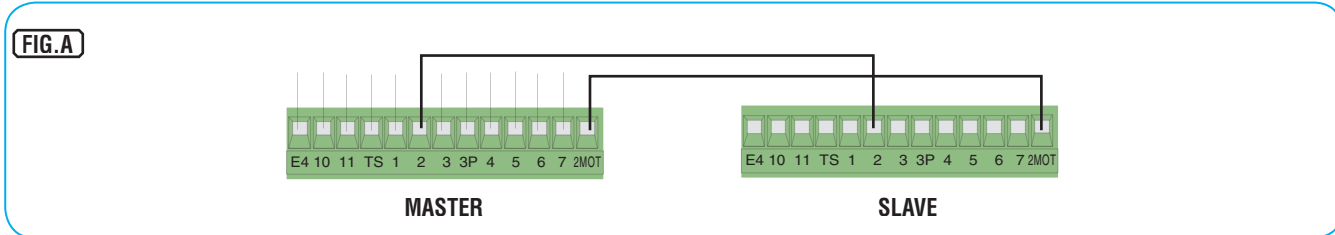
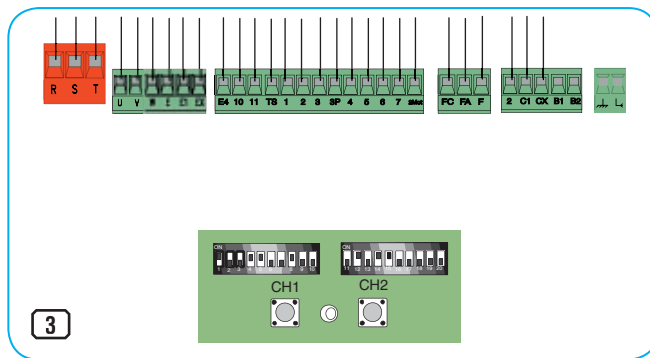
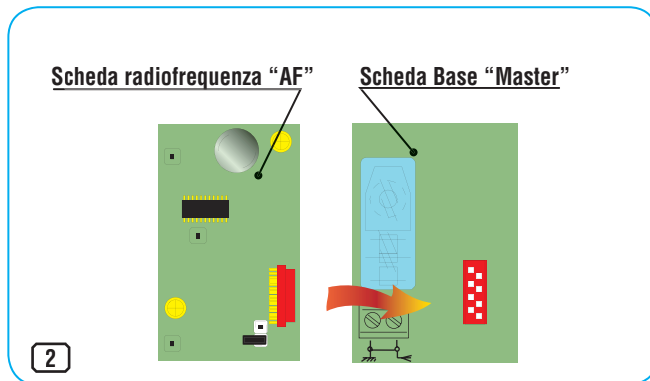
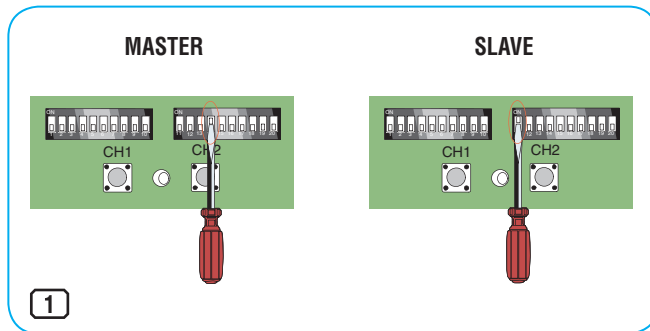
5.9 Connection of two panels for control of coupled motors

All the data and information contained herein is considered subject to change at any time and at our discretion.



- Coordinate the direction of the "A" and "B" gearmotors, modifying the rotation of motor "B" (see end stop connection on the motor manual);
- Set the master (or pilot) motor between A and B by setting dip-switch 14 to ON on the control board. The "master" designation means that the motor that controls both gates, while on the control board of the 2nd motor, set the dip 11 on ON to make it inoperable (slave) (1).
- Make sure that the radiofrequency card is only inserted on the MASTER board (2);
- make the electrical connections and the normally used selections only on the MASTER terminal board (3);
- Execute the connections between the clamps as shown in Fig. A;
- Make sure that all the dipswitches on the board of the 2nd motor are OFF, except for dip 11 (4).

▲ NOTE: if the two coupled gates are of different sizes, the master function must be inserted in the motor control board installed on the longer door.

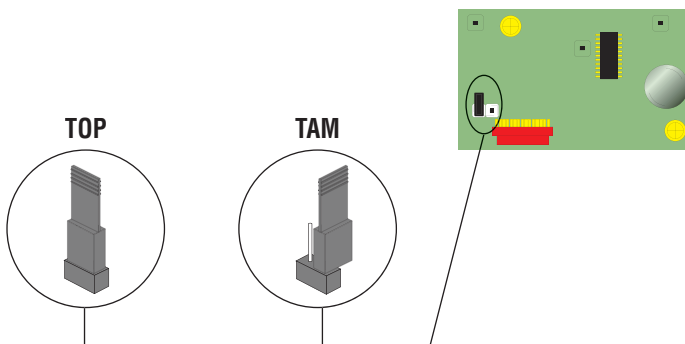


5.10 Installation of radio-controls

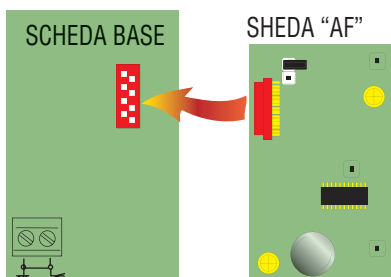
A- INSERT AN AF CARD **. B - ENCODE TRANSMITTER/S. C - STORE CODE IN THE BASE CARD.

(A) AF BOARD INSERTION

Frequency / MHz	board	Transmitter
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	AF43SR	ATOMO
AM 40.685	AF40	TOUCH



(**) For transmitters with 433.92 Supereterendina frequency (TOP and TAM series), position the jumper as illustrated on the respective AF 43S card



! The AF board should ALWAYS be inserted when the power is off because the motherboard only recognises it when it is powered

(B) TRANSMITTER ENCODING



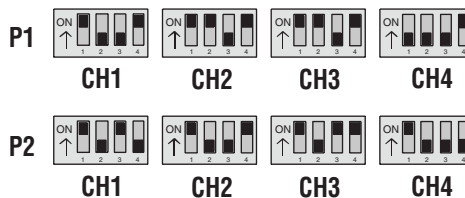
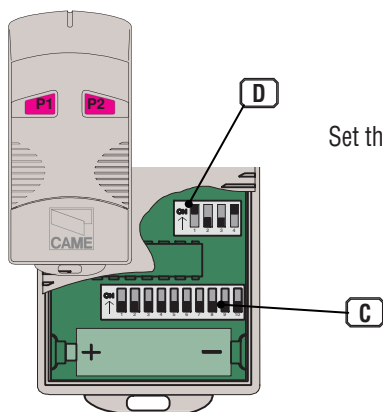
ATOMO
AT01 - AT02 - AT04

see instruction sheet inside the package of the AF43R



TOP
T432M - T312M

Set the code to dip-switch C and channel to D (P1=CH1 and P2=CH2, default setting)



(B) TRANSMITTER ENCODING

TOP
T434M - T314M

Set code only
 P1 = CH1
 P2 = CH2
 P3 = CH3
 P4 = CH4

TOP
432S - 434MA - 432NA

See instruction sheet inside the package

TAM
T432 - T434 - T438

See instruction sheet inside the package

TFM
T132 - T134 - T138
T152 - T154 - T158

See instruction sheet inside the package

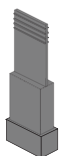
TOP QUARZATI

STANDARD ENCODING PROCEDURE

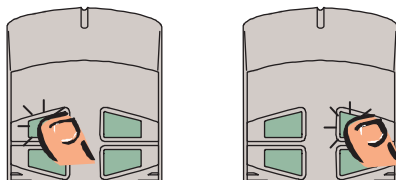
1. assign a code (also for records)

P1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF
P2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ON
	1	2	3	4	5	6	7	8	9	10	

2. insert jumper code J

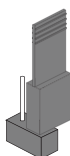


3. save it



Press P1 or P2 in sequence in order to register the code; at the tenth pulse, a double beep will confirm that the code is saved.

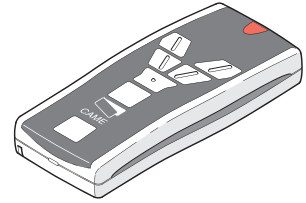
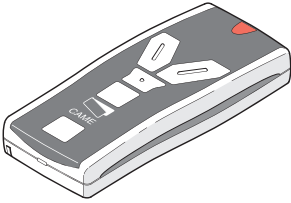
4. disconnect jumper J



All the data and information contained herein is considered subject to change at any time and at our discretion.

TCH 4024 - TCH 4048

See instruction sheet inside the package



TOP
T262M - T302M

The first encoding operation must be carried out whilst keeping the jumpers positioned for channels 1 and 2 as per fig. A; see fig. B for any subsequent settings on different channels.

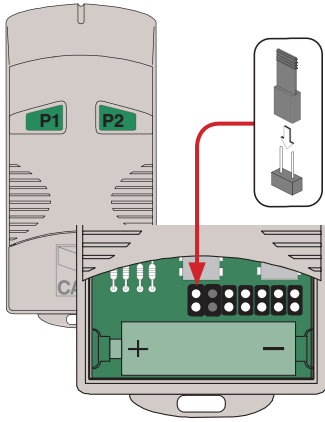


FIG.A

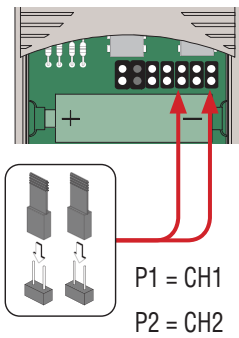
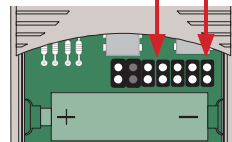
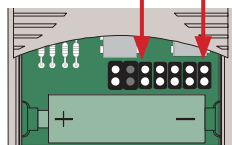


FIG.B

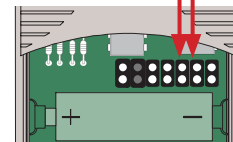
P1 = CH1 - P2 = CH3



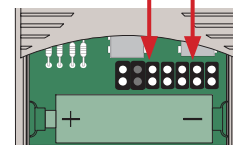
P1 = CH1 - P2 = CH4



P1 = CH3 - P2 = CH2

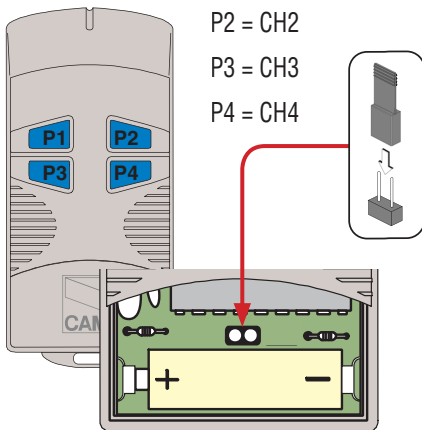


P1 = CH3 - P2 = CH4



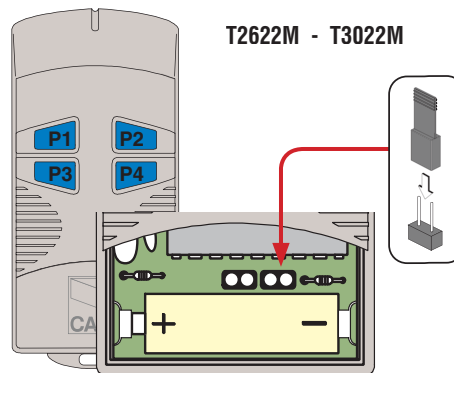
T264M - T304M

P1 = CH1
P2 = CH2
P3 = CH3
P4 = CH4



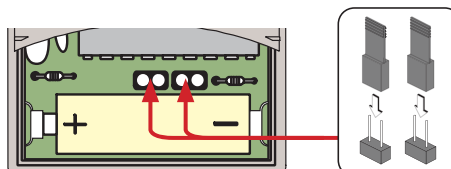
T2622M - T3022M

1° Codice
P1 = CH1
P2 = CH2



P1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF
P2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ON
	1	2	3	4	5	6	7	8	9	10

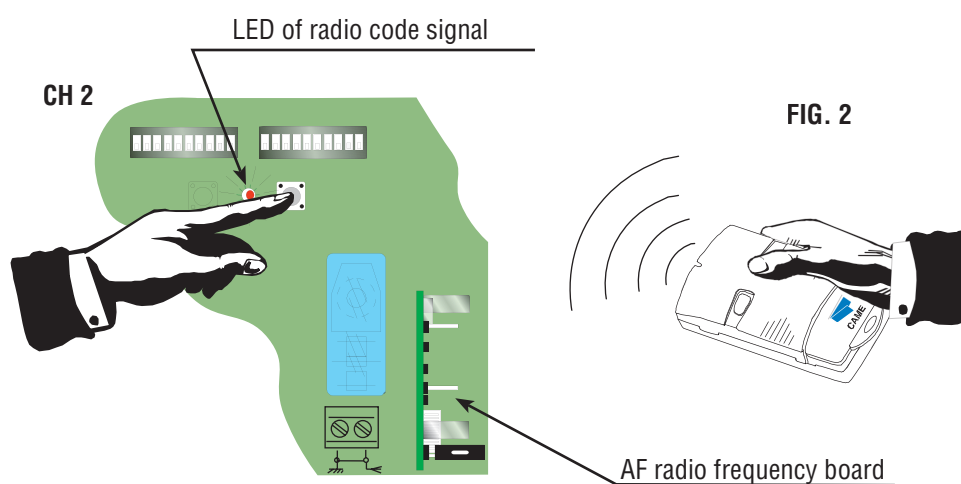
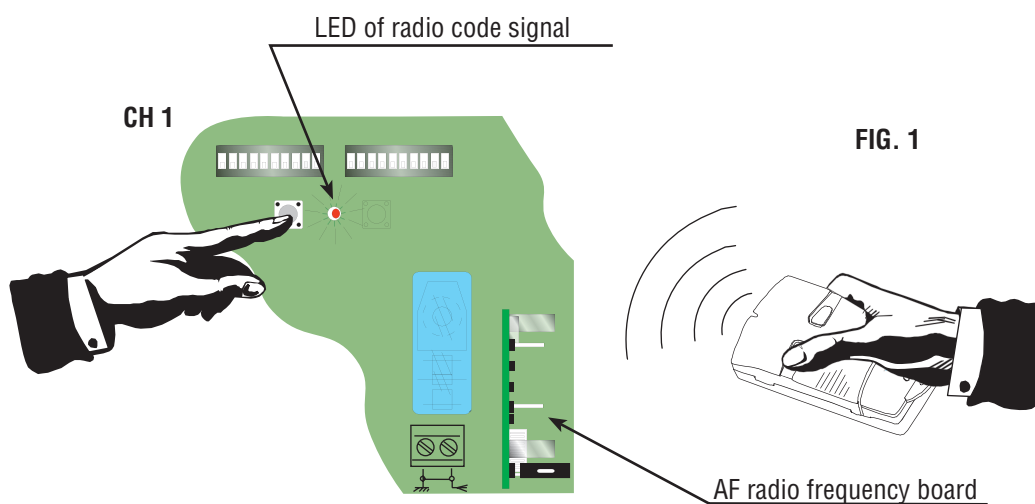
2° Codice
P3 = CH1
P4 = CH2



All the data and information contained herein is considered subject to change at any time and at our discretion.

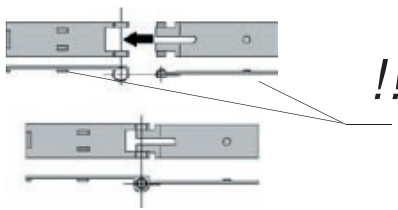
(C) CODE STORAGE

- Keep the "CH1" key pressed on the base card and after the LED signal lights up, send a command using the transmitter key. The LED will flash briefly to signal that the code has been memorized (see fig. 1).
 - Perform the same procedure with the "CH2" key, associating it with another transmitter key (fig. 2).
- CH1 = Channel for direct commands to a control panel function ("open only" / "open-close-reverse" or "open-stop-close-stop", depending on the positions set for dip-switches 2 and 3).
- CH2 = Channel for direct commands to an auxiliary device connected to B1-B2.

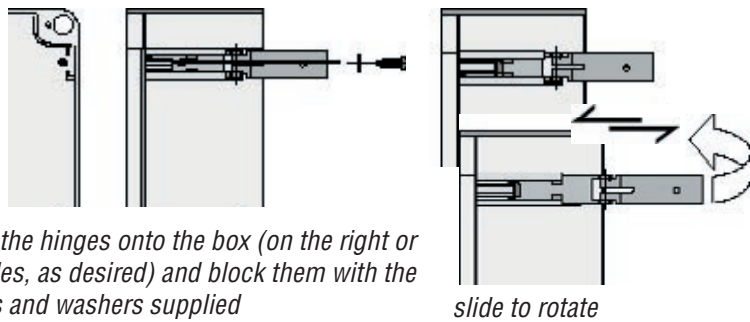


N.B.: if the code needs to be changed, repeat the sequence described above

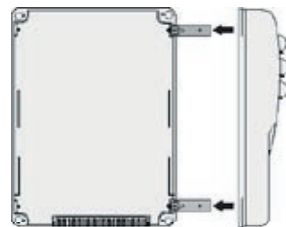
6 Mounting the box hinges




1
Assemble the spring-type hinges



2
Install the hinges onto the box (on the right or left sides, as desired) and block them with the screws and washers supplied
slide to rotate



3
Snap the cover onto the hinges and secure using the screws supplied



7 Disposal



This product, including the packaging, is made up of several types of materials that can be recycled. Investigate the recycling or disposal systems of the product, complying with prevailing local legislation.

Some electronic components may contain polluting substances. Do not litter.

8 Maker's statement



MANUFACTURER'S DECLARATION

As per Enclosure II B of Machinery Directive 98/37/CE

Enclosed with the technical documentation (the original copy of the Declaration is available on request)

Date of the present declaration 07/12/2001

The representatives of

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

Hereby declare, under their own responsibility, that the product/s called ...

ZT6 - ZT6C

Also, they furthermore represent and warrant that the product/s that are the subject of the present Declaration are manufactured in the respect of the following main harmonized provisions:

- | | |
|---------------------|--|
| EN 292 PART 1 AND 2 | MACHINERY SAFETY. |
| EN 12453 | INDUSTRIAL, COMMERCIAL AND OTHER CLOSING MECHANISMS. |
| EN 12445 | INDUSTRIAL, COMMERCIAL AND OTHER CLOSING MECHANISMS. |
| EN 12978 | SAFETY DEVICES FOR POWER OPERATED DOORS AND GATES |
| EN 60335 - 1 | SAFETY IN APPARATUS FOR HOME USE. |
| EN 60204 - 1 | MACHINERY SAFETY. |
| EN 61000 - 6 - 2 | ELECTROMAGNETIC COMPATIBILITY. |
| EN 61000 - 4 - 4 | ELECTROMAGNETIC COMPATIBILITY. |
| EN 61000 - 4 - 5 | ELECTROMAGNETIC COMPATIBILITY. |

IMPORTANT CAUTION!

It is forbidden to market/use product/s that are the subject of this declaration before completing and/or incorporating them in total compliance with the provisions of Machinery Directive 98/37/CE

Signatures of the Representatives

TECHNICAL MANAGER
Mr. Gianni Michielan

MANAGING DIRECTOR
Mr. Paolo Menuzzo

MACHINERY DIRECTIVE 98/37/CE
LOW VOLTAGE DIRECTIVE 73/23/EEC - 93/68/EEC
ELECTROMAGNETIC COMPATIBILITY DIRECTIVE 89/336/EEC - 92/31/EEC
R&TTE DIRECTIVE 1999/5/CE

... comply with the Italian National Legal Provisions that transpose the following Community Directives (where specifically applicable):

All the data and information contained herein is considered subject to change at any time and at our discretion.

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