

CAME 

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**CONTROL PANEL
FOR 230 V GEARMOTORS**



ZR24N
INSTALLATION MANUAL

FA00943-EN

CE



EN English



IMPORTANT SAFETY INSTRUCTIONS WHEN INSTALLING

Follow all of these instructions as improper installation may lead to be hazardous to people. Before continuing, also read the general precautions for users.






- This control panel is expressly designed to be assembled to partly-completed machinery or equipment so as to build machinery as regulated by European Directive 2006/42/CE. The final installation must conform to Directive 2006/42/CE and to any harmonized reference standards. Given these considerations, all operations provided in this manual must be performed by skilled, qualified staff.
- This product should only be used for the purpose for which it was explicitly designed. Any other use is dangerous. CAME S.p.A. is not liable for any damage caused by improper, wrongful and unreasonable use.
- Before installing the control panel, make sure that the guided part is in proper mechanical order, that it opens and closes properly and that it is balanced - otherwise, do not continue until you have first complied with all safety provisions.
- Make sure that people cannot be entrapped between the guided and fixed parts, when the guided part is set in motion.
- The control panel cannot automate any guided part that includes a pedestrian gate, unless the latter can be activated only when the pedestrian gate is secured.
- Make sure the anchoring spot is clear of any potential impacts, that the anchoring surfaces are solid, and that suitable screws, wall plugs, and the such are used for the type of surface.
- Laying the cables, installation and testing must follow state-of-the-art procedures as dictated by regulations
- Check that the temperature ranges given and those of the location match.
- Demarcate the entire site to prevent unauthorized personnel to enter;

especially children and minors. • Use proper means of protection to prevent any mechanical hazards from people caught in the movement of the automated operator. Any residual risks must be highlighted by fitting pictograms, in clear view. These must then be explained to the end user of the machinery. • Fit, in plain sight, the machine's ID plate when the installation is complete • All command and control devices must be fitted so that they are clearly visible, at a proper safety distance from the maneuvering guided-part and where they cannot be reached through said guided part. • Unless we are talking about key-pad selectors, key-switch selectors, transponder selectors, and so on, the maintained-action control devices must be fitted at least 1.5 m above ground, where they cannot be reached by the general public. • The manufacturer declines any liability if non-original parts are used. In which case the warranty will cease to be effective. • All maintained-action switches that are connected to the control panel must be positioned so that the maneuvering area is completely visible from the switches, yet far enough away from any moving parts. • Make sure that the operator has been properly adjusted and that any associated safety and protection devices, as well as the gearmotor's manual release, are working properly. • If the power-supply cable is damaged, it must be replaced by the manufacturer or by the licensed technical-assistance center or by duly trained, skilled staff, to prevent any risks. • During all phases of the installation make sure you have cut off the mains power source. • The electrical cables must run through corresponding tubes or conduits to ensure suitable protection against mechanical damage and they must not come into contact with parts that could heat up during use. • Make sure you have set up a suitable dual pole cut off device along the power supply

that is compliant with the installation rules. It should completely cut off the power supply according to category III surcharge conditions. • If the control panel is used for automating guided parts in residential settings, permanently fit the entrapment-hazard-warning signage, so that it is clearly visible or close enough to all command and control devices. After installing, make sure that the operator is properly adjusted and that the guided part, in case it touches any object that is 50 mm high off the ground, inverts its movement or that the object may easily be removed (for operators that have built-in anti-entrapment systems that depend on coming into contact with the lower edge of the guided part). Also make sure that the guided part does not extend onto any public pedestrian passages or onto the street. • Store this manual inside the technical folder, along with the installation manuals of the other devices in the system. Remember to hand over to the end users all the operating manuals of the products that make up the final machinery.

KEY

-  This symbol shows which parts to read carefully.
-  This symbol shows which parts describe safety issues
-  This symbol shows which parts to tell users about.

The measurements, unless otherwise stated, are in millimeters.

DESCRIPTION


Control panel with on-board radio decoding. Set functions by using DIP-switches and adjust them by using the trimmers. All connections are protected by fuses.

Intended use

The ZR24N control panel is designed for controlling gearmotors for CAME, H-series, winding motors for shutters in homes and businesses.

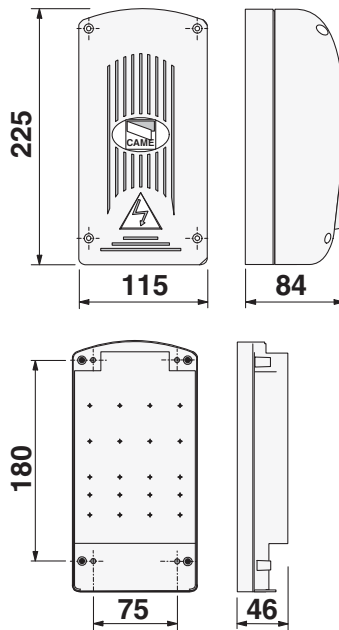
-  Any installation and/or use other than that specified in this manual is forbidden.

Technical data

Type	ZR24N
Protection rating (IP)	54
Power supply (V - 50/60 Hz)	230 AC
Draw when in stand-by (W)	1
Motor power (W)	600
Maximum power of the accessories (W)	3.5
Casing material	ABS
Operating temperature (°C)	-20 to +55
Apparatus class	

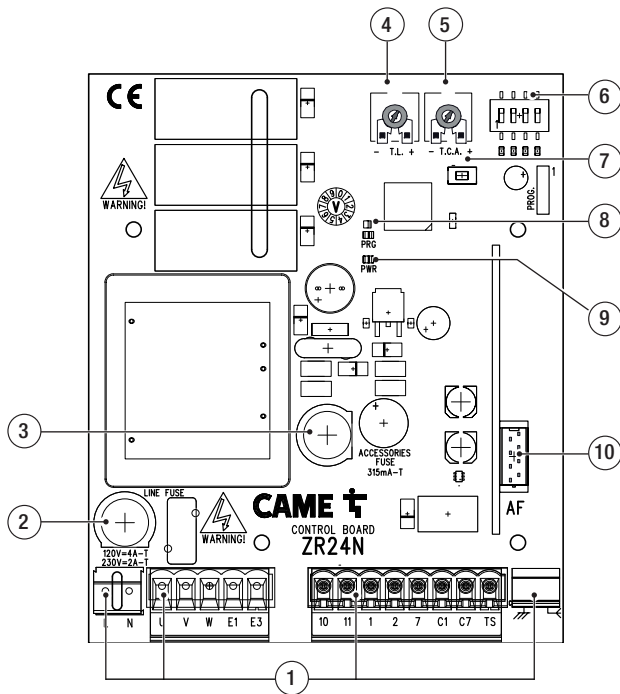
Fuses	Power draw
Line (A)	2 T
Accessories (mA)	315 F

Dimensions



Description of parts

1. Connection terminals
2. Line fuse
3. Devices and accessories fuse.
4. Operating-time adjusting trimmer
5. Automatic closing trimmer
6. Functions selection DIP switches
7. Saving button
8. Programming LED (PRG)
9. Power-supply LED (PWR)
10. AF card connector



INSTALLATION

Cable types and minimum thicknesses

Connection	cable length	
	< 20 m	20 < 30 m
Control panel 120 / 230 V AC (1P+N+PE)	3G x 1.5 mm ²	3G x 2.5 mm ²
Gearmotor 120 / 230 V AC	4G x 1.5 mm ²	4G x 2.5 mm ²
TX Photocells		2 x 0.5 mm ²
RX photocells		4 x 0.5 mm ²
Flashing light		2 x 0.5 mm ²
Command and control devices		2 x 0.5 mm ²
Safety devices		2 x 0.5 mm ²

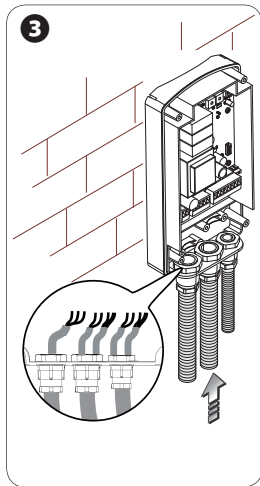
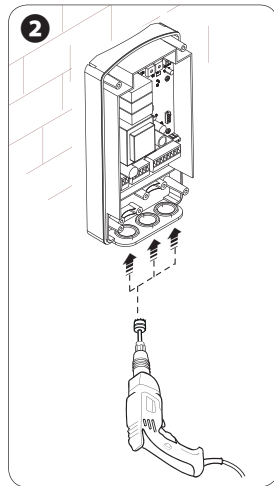
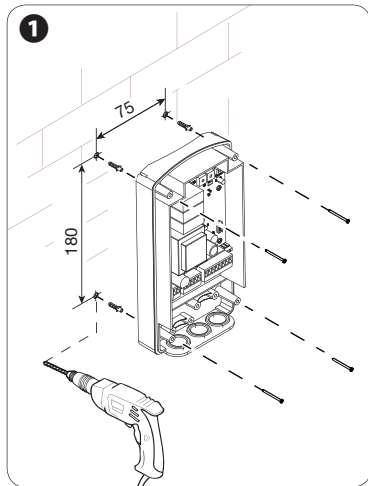
📖 When powered at 120 V or 230 V and used outdoors, use H05RN-F-type cables that comply with 60245 IEC 57 (IEC); whereas indoors, use H05VV-F-type cables that are 60227 IEC 53 (IEC) compliant.

Use RG58 cable up to 10 m long to connect the antenna.

📖 If cable lengths differ from those specified in the table, establish the cable sections depending on the actual power draw of the connected devices and according to the provisions of regulation CEI EN 60204-1.

Fastening the control panel

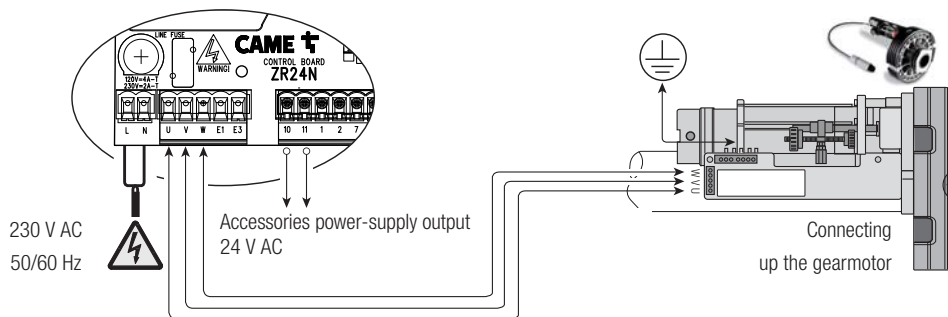
- 1 Fasten the control panel's base so that it is protected, and use suitable wall-plugs and screws.
 - 2 Drill the marked holes beneath the control panel's base.
- △ Keep the control board undamaged, inside the control panel.
- 3 Drill through the pre-perforated holes and fit the cable gland with corrugated pipes for passing through the electric cables.



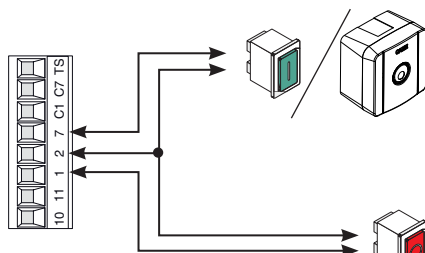
ELECTRICAL CONNECTIONS

Perform the electrical connections in compliance with current provisions of law and use suitable cable glands.

- △ Use a cable gland only for the 230 V AC power supply cable.
- △ Connect the system's protective grounding to the motor's ground terminal.
- △ Use electrical bands or tape to keep separate the 230 V ac cables from the VERY-LOW tension ones.
- △ The electrical cables must not touch any parts that may overheat during use (such as the motor).



Command and control devices

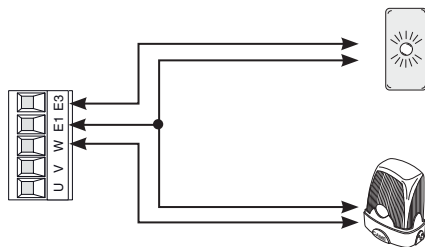


OPEN - CLOSE - INVERT function (step-step) from control device (NO contact). Alternatively, by setting DIP-switch 2 to ON, you can activate the OPEN-STOP-CLOSE-STOP sequential command.

STOP button (NC contact). For stopping the shutter while excluding the automatic closing. To resume movement press the control button or use another control device.

 **IF UNUSED, SHORT-CIRCUIT CONTACT (1-2).**

Signaling devices



Courtesy light.
It stays on for 180 seconds at the end of each maneuver.
(contact rated for: 230 V AC – max 25 W).

Flashing light (contact rated for: 230 V AC – max 25 W).
It flashes when the shutter is opening and closing.


Safety devices

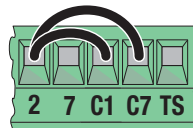
Photocells


Input for safety devices such as photocells.

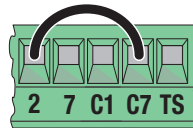
C1 REOPENING DURING CLOSING: when the shutter is closing, opening the contact triggers an inversion of movement, until it is completely open again.


C7 REOPENING DURING CLOSING: when the shutter is opening, opening the contact triggers a quick inversion of movement, until it is completely open again.

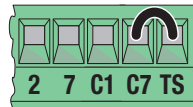
 When the safety devices are not used, leave the safety test deactivated and bridge (2-C1) and (2-C7).

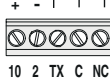
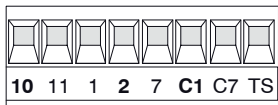


 When using only one photocell or a sensitive safety-edge with the safety test deactivated, bridge - the unused one - with contact (2-C7).

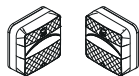


 When using only one photocell or a sensitive safety-edge with the safety test deactivated, bridge - the unused one - with contact (C7-TS).





RX



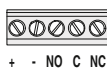
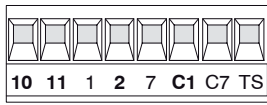
DELTA-S



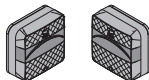
TX



DIR



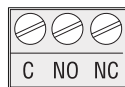
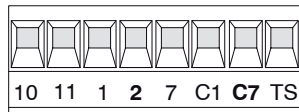
RX



DELTA



TX



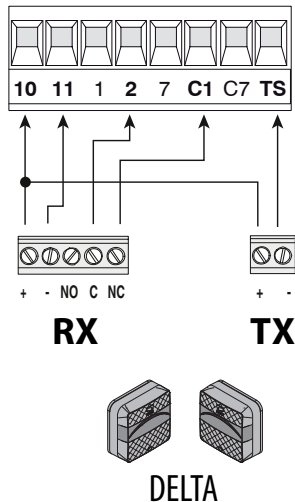
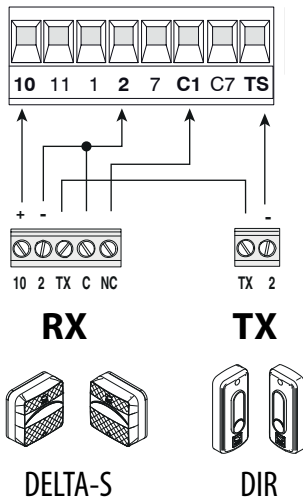
DFWN



Connecting the safety devices (i.e. the safety test)

At each opening and closing command, the control board checks the efficacy of the safety devices (such as, photocells). Any anomalies will inhibit all commands.

For this type of connection, enable the function by setting DIP-switch 3 to ON.



FUNCTIONS AND SETTINGS

⚠ Perform all settings only when the shutter is not moving and completely stopped.

Functions DIP-SWITCH



AUTOMATIC CLOSING

Automatic closing active (1 OFF - Deactivated)



OPEN-STOP-CLOSE-STOP

OPEN-STOP-CLOSE-STOP (sequential) function from control device (NO contact) and from radio transmitter fitted with AF card.



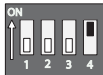
OPEN-CLOSE-INVERT

OPEN-CLOSE-INVERT (step-step) function from control device (NO contact) and from radio transmitter fitted with AF card.



SAFETY TEST

At each open and close command, the control board checks that the safety systems are properly working (3 OFF - Deactivated)



DELETING USERS

Deleting one or more users (4 OFF - Deactivated)

Adjusting TRIMMER



+ TL -

OPERATING TIME

This sets the gearmotors' operating time. The operating time can be adjusted to between 10 and 120 seconds.

📖 Setting the time to its minimum engages the maintained action function and disengages the transmitters.



+ TCA -

AUTOMATIC CLOSING TIME

For setting the shutter's waiting-time when up and open. Once this time elapses, the shutter automatically closes. The waiting time can be adjusted to between 1 and 120 seconds.


⚠ The automatic closing does not activate if the safety devices are triggered due to obstacle detection, after a total Stop or if the current is missing.

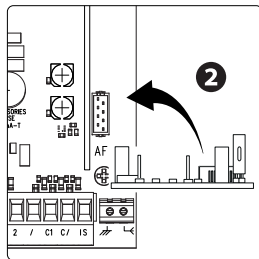
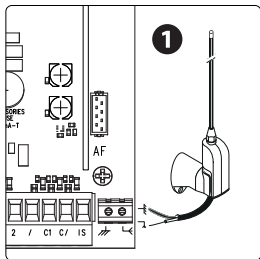
MANAGING USERS BY RADIO CONTROL

Description of the warnings of the PRG button's LED.

- Quick flashing to warn that there is an obstruction in front of the photocells.
- Flashing every second for the entire automatic-closing time - if it is activated, that is, when there are obstructions in front of the photocells during the automatic-closing time, the LED stays on steady until the obstruction is removed, after which, the count for the automatic closing restarts from zero and the LED flashes.
- Quick flashing when attempting to save more than 50 users.

Preliminary operations

- 1 Connect the RG58 antenna-cable to the corresponding terminals.
 - 2 Fit the AF card into the connector on the control board.
-  Before fitting the AF card, you MUST CUT OFF THE MAINS POWER SUPPLY.

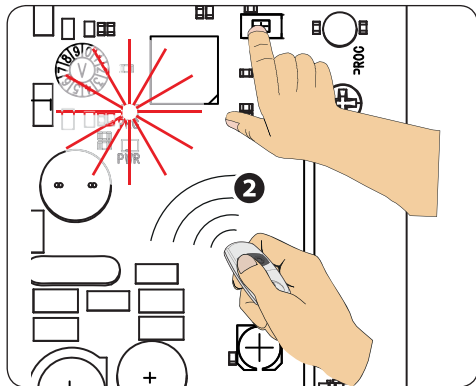
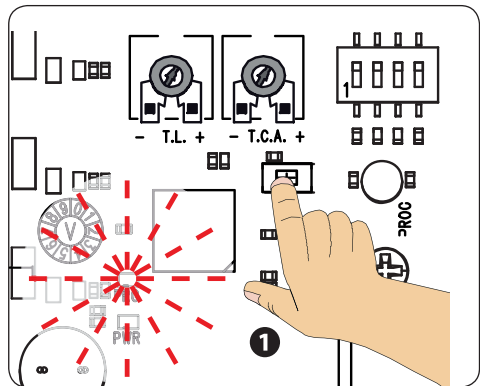


Adding a user

You can register up to 50 users; over 50, the PRG LED will flash quickly and any additional users will not be saved.

- 1 Keep pressed the PROG button on the control board. The LED flashes quickly.
- 2 Press any key on the transmitter you want to memorize. The LED stays on to indicate that the saving is complete.

Release the PROG button. Repeat the procedure for adding additional users. Dip-switch 4 must be set to OFF.

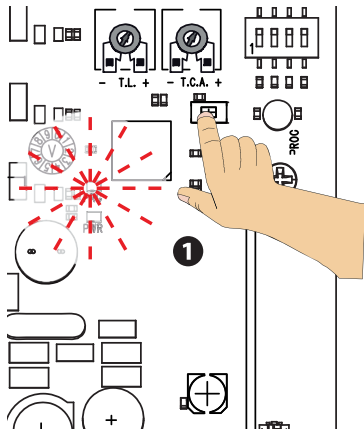


Deleting single users that have been previously saved.

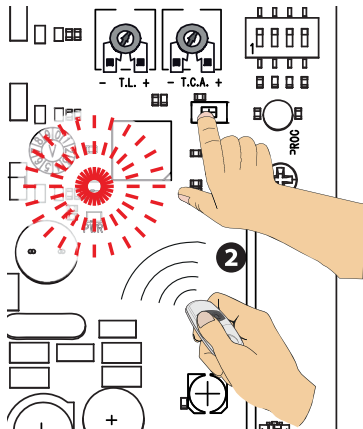
Set DIP-switch 4 to ON.

- ➊ Keep pressed the PROG button on the control board. The programming LED flashes.
- ➋ Within five seconds, press the button on the transmitter of the user you wish to delete. The LED will flash quickly for one second to signal that the user has been deleted, and then it will switch off.

Reset DIP-switch 4 to OFF.



5"
max

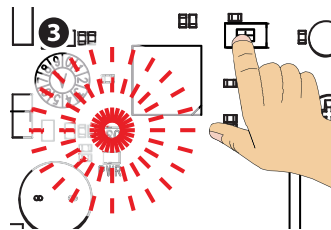
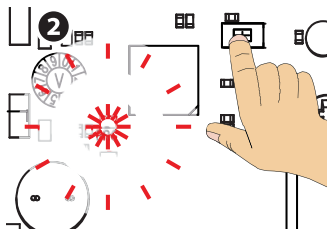
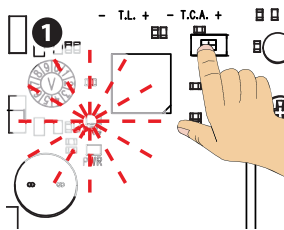


Deleting all users

Set DIP-switch 4 to ON.

Keep pressed for about 10 seconds the PROG button on the control board. The programming LED will perform a series of flashes until shut down.

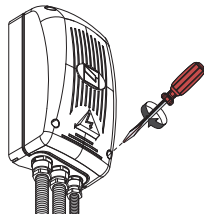
Reset DIP-switch 4 to OFF.



FINAL OPERATIONS

Fastening the cover

Once finished with the electrical connections and powering up, fit the cover and secure it using the supplied screws.



DISMANTLING AND DISPOSAL

Always make sure you comply with local laws before dismantling and disposing of the product. The packaging materials (cardboard, plastic, and so on) should be disposed of as solid household waste, and simply separated from other waste for recycling.

Whereas other components (control boards, batteries, transmitters, and so on) may contain hazardous pollutants. These must therefore be disposed of by authorized, certified professional services.

DISPOSE OF RESPONSIBLY!

REFERENCE REGULATIONS

CAME SpA declares that this product complies with the current directives at the time it is manufactured.

The contents of this manual may change, at any time, and without notice.

CAME 

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