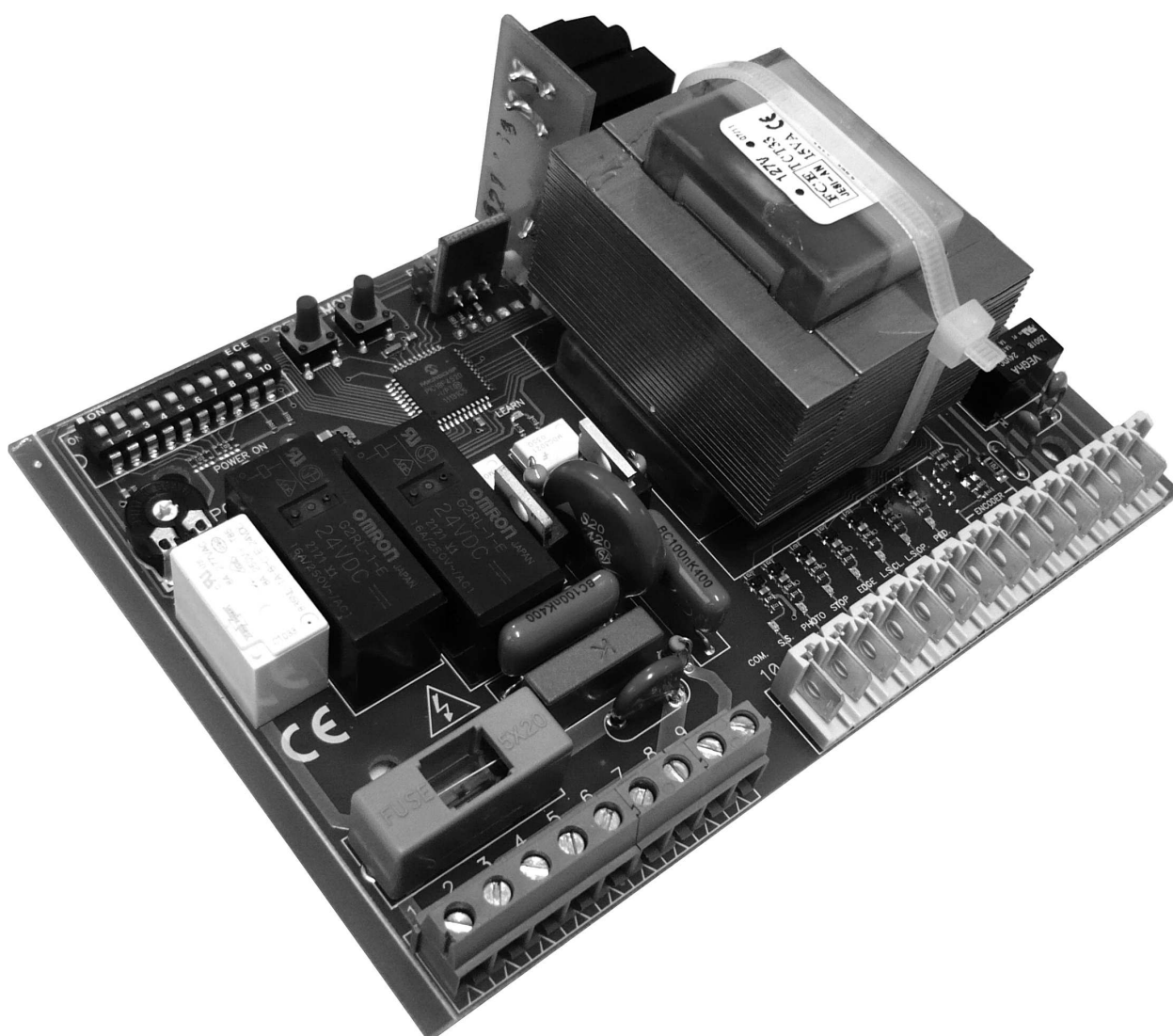


B1EE ERMES2 HR CONTROL UNIT

Programmable control unit for sliding and bascule doors



Manual for installation



The control unit is compatible only
with HR Rolling Code transmitters

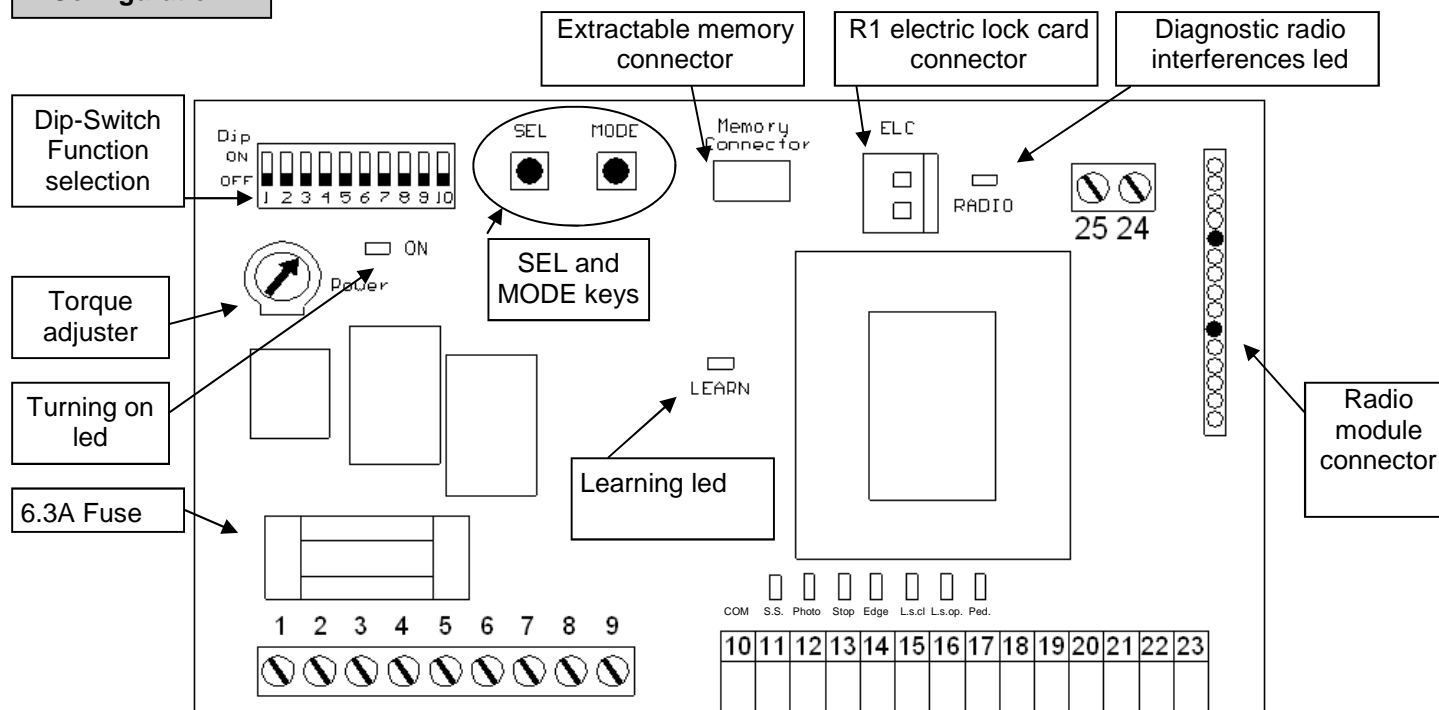


1. Introduction

The B1EE ERMES2 HR control unit is a universal equipment suitable for easily handling the functioning and control of sliding and bascule doors ; it is developed to satisfy all requirements. This product controls 230V motors in alternating current up to 600W of power, both with and without encoder. This control unit can decode the traditional fix code system and the safest and innovative HR Rolling code system through the special receiver selection switch. Each control owns a memory module which allows to memorize up to **1000 different transmitters**, both fix and rolling code.

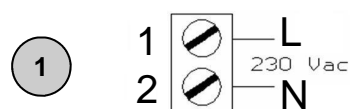
WARNING: DO NOT INSTALL THE CONTROL UNIT WITHOUT READING THE INSTRUCTIONS FIRST!

2. Configuration



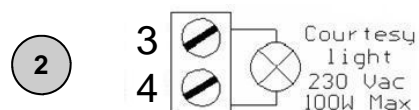
3. Electrical wiring

The control unit is supplied with all normally closed inputs jumpered to the common. Before connecting a safety device to the control unit, you must remove the jumper of the safety device to be wired by leaving untouched all other safety devices.



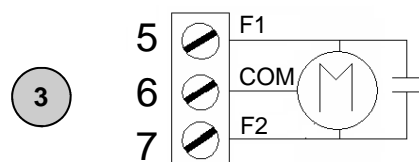
Connect the power supply cable between clamp 1 and 2 of the control unit

Power supply 230 Vac 50 Hz
Do not connect the card directly to the electric network. Put a device which can ensure the disconnection of each pole from the power supply of the control unit.



Connect an eventual courtesy light between clamp 3 and 4 of the control unit.

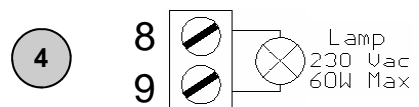
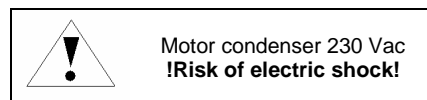
It is possible to light up the action area of the automation during each motions by connecting a charge of max 230Vac 100W. The turning off is timed **1 minute** after the stop of the automation. The courtesy light shortly blinks during the photocell test (if connected).



- Connect the neutral of the motor to clamp 6 of the control unit.
- Connect phase "1" of the motor to clamp 5 of the control unit.
- Connect phase "2" of the motor to clamp 7 of the control unit.

Connect the motor condenser between clamps 5 and 7 of the control unit

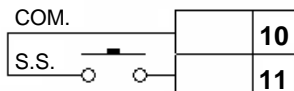
Before programming the strokes, check the correct wiring of the motor and the limit switches that must correspond to the installation manual. Follow the procedures of the **preliminary checks** for doing that.



Connect the flashing light between clamps 8 and 9 of the control unit. The connected flashing light must have a maximum power of 60W at 230 Vac.

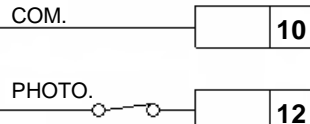
WARNING: connect a B.R.O LIGHT FIX flashing light (without self-flashing card)

5



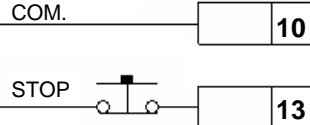
Connect the STEP BY STEP button (SS) between clamps 10 and 11 of the terminal board. **ATTENTION: leave it open if it is not used.**

6



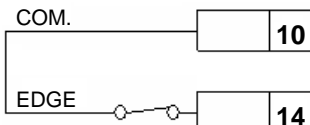
Connect the **NORMALLY CLOSED** contact of the photocells (FOTO) between clamps 10 and 12 of the terminal board. **ATTENTION: Jumper input 10 to input 12 if it is not used.**

7



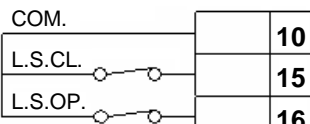
Connect the **NORMALLY CLOSED** STOP contact between clamps 10 and 13 of the terminal board. **ATTENTION: Jumper input 10 to input 13 if it is not used.**

8



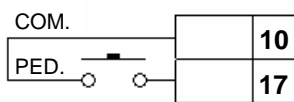
Connect the **NORMALLY CLOSED** FIX EDGE(C.F) contact between clamps 10 and 14 of the terminal board. **ATTENTION: Jumper input 10 to input 14 if it is not used.**

9




Connect the **NORMALLY CLOSED** closing limit switch (FC. A) between clamps 10 and 15 of the terminal board. Connect the **NORMALLY CLOSED** opening limit switch (FC. C) between clamps 10 and 16 of the terminal board. **ATTENTION: Jumper inputs 15 and 16 to input 10 if they are not used.**

10



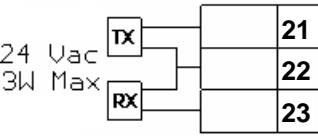
Connect the PEDESTRIAN (PED.) button between clamps 10 and 17 of the terminal board. **Leave it open if it is not used**

11



Connect the encoder's SIGN cable to clamp 18 of the terminal board.
Connect the encoder's GND cable to clamp 19 of the terminal board.
Connect the encoder's +Vdc cable to clamp 20 of the terminal board.
ATTENTION: leave it open if it is not used.

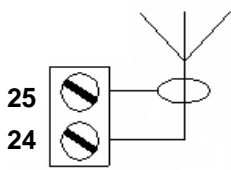
12



24 Vac
3W Max

- Connect **clamp 21** of the control unit to the **first clamp** of power supply for the photocells transmitter.
- Connect **clamp 22** of the control unit to the **second clamp** of power supply for the photocells' receiver and transmitters .
- Connect **clamp 23** of the control unit to the **first clamp** of power supply for the photocells receiver

13



- Connect the aerial's signal cable to **clamp 24** of the terminal board
- Connect the aerial's earth to **clamp 25** of the control unit

The functioning of the STEP BY STEP input (S.S.) can be open-stop-close-stop (dip1 on OFF) or Open-close (dip1 on ON). See 8.1. For time functions see 10.4.

The PHOTOCELLS (FOTO) input can work as a STOP automatism until the obstacle is removed, for then restart opening (dip4 on OFF) or causing the complete opening if the automatism is closing (dip4 on ON). See 8.4

If the STOP input is opened, then this causes an immediate STOP of the automatism until the contact is closed. Once closed, the automation starts to work regularly again.

The activation of the fix edge during the closing or opening phases causes a short inversion of the automatism for approximately 2 seconds and then a stop

The wiring of the limit switches must corresponds to the manual installation; check this before programming the strokes. Follow the procedures of the **preliminary checks** for doing that.

The PEDESTRIAN (PED.) opening allows to partially open the automation.

See chapter 9

The enabling/disabling of the encoder's functionality is managed by DIP10.
See chapter **8.10**

WARNING: The control unit supplies a voltage of 24 Vac and can supply a maximum power of 3 W

The presence of metal parts or humidity into the walls can influence negatively the range of the system; therefore we recommend to avoid to put the receiver and/or transmitters aerials next to big metal objects, next to or on the floor.

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3 / 16

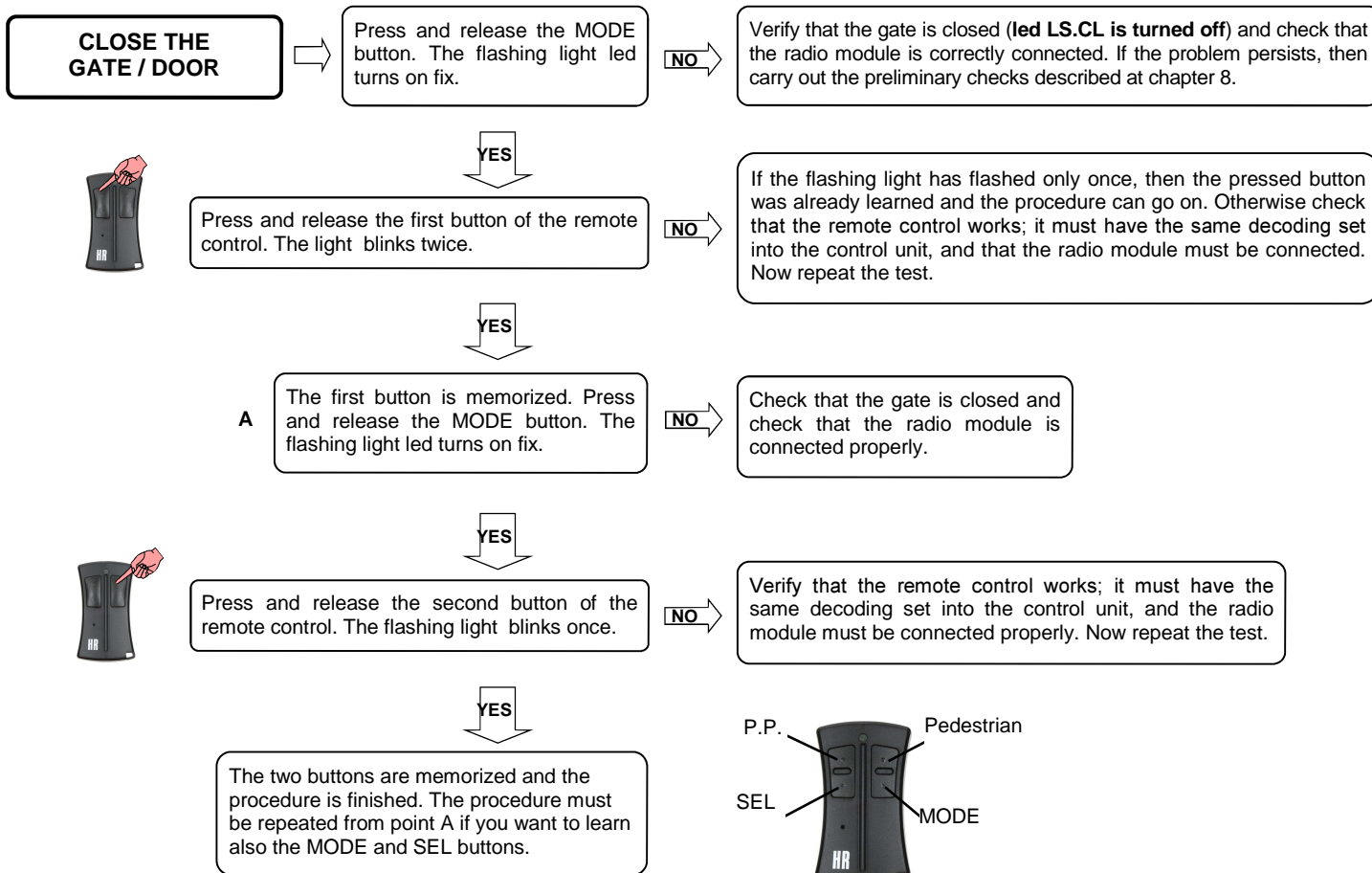
4. Learnings



The control unit is compatible only with HR Rolling Code transmitters

4.1 Transmitter's learning

The learning of each transmitter **must always be done when the automatism is closed.**

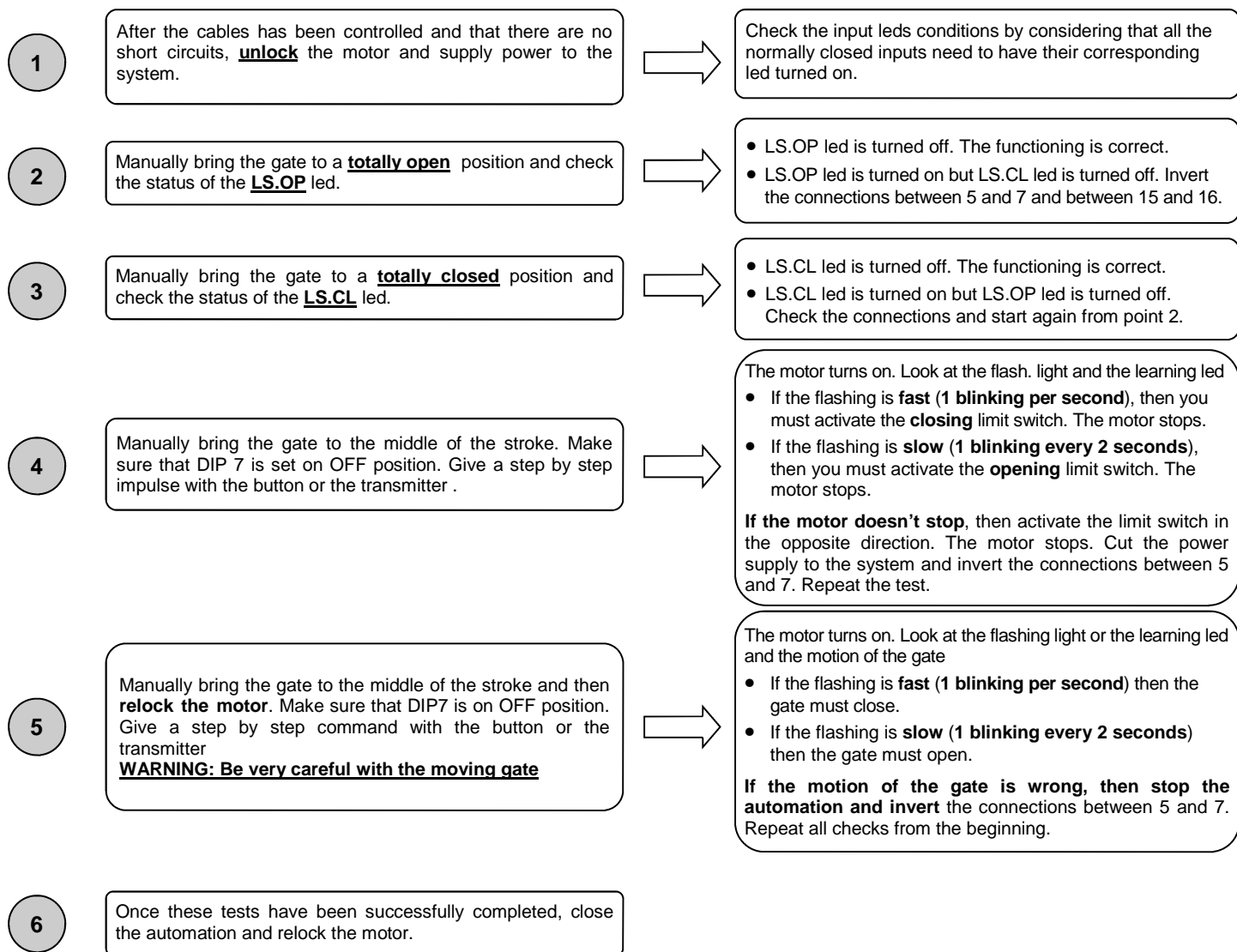


4.2 With the hidden key of a transmitter already learned (only for rolling code HR models)

With the automation closed, help you with a little clip to press the hidden button of a previously learned transmitter. The start of learning is signaled by the turning on of the flashing light. Push the button of the transmitter which you want to memorize, then the light flashes once (twice if the code is new, once if the code was already learned). The control unit returns to its normal working and the new transmitter can run the motor.

5. Preliminary checks

The preliminary checks need to be carried out only by professionals paying maximum attention. The correct wiring of the motor and the limit switches is very important for the correct working of the automatism.

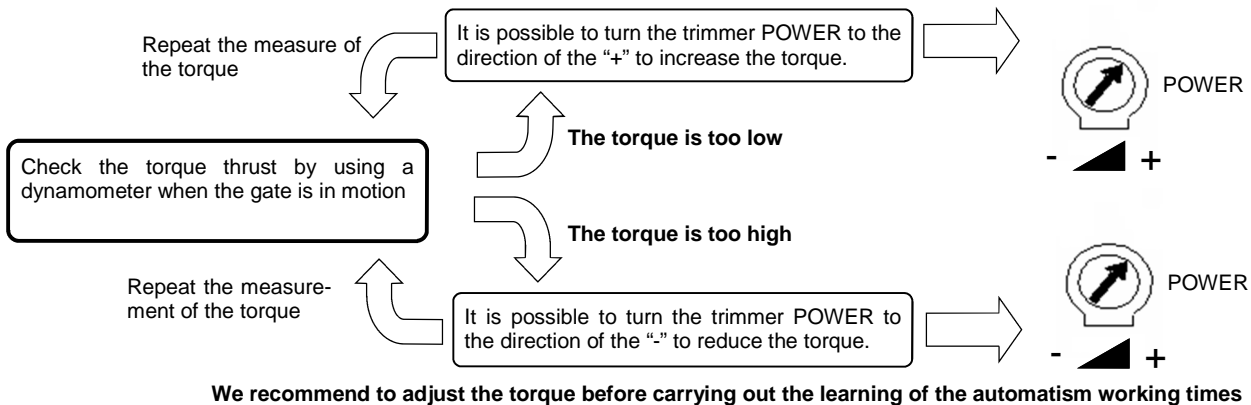


WARNINGS:

- In case the position is not known when the control unit is turned on (i.e. it is not on a limit switch), the control unit makes the first motion slowly until the gate reaches a switch limit (**if the slowdowns are disconnected, then the stroke is carried out at a normal speed**)
- If both limit switches are enabled when they receive an impulse, then the control unit indicates the anomaly and does not make a move.
- If the gate is not on a limit switch when the control unit is turned on, then it puts itself at the closing position. It is possible to carry out the learning operations and modify the parameters as far as no maneuver is executed.

6. Torque adjustment

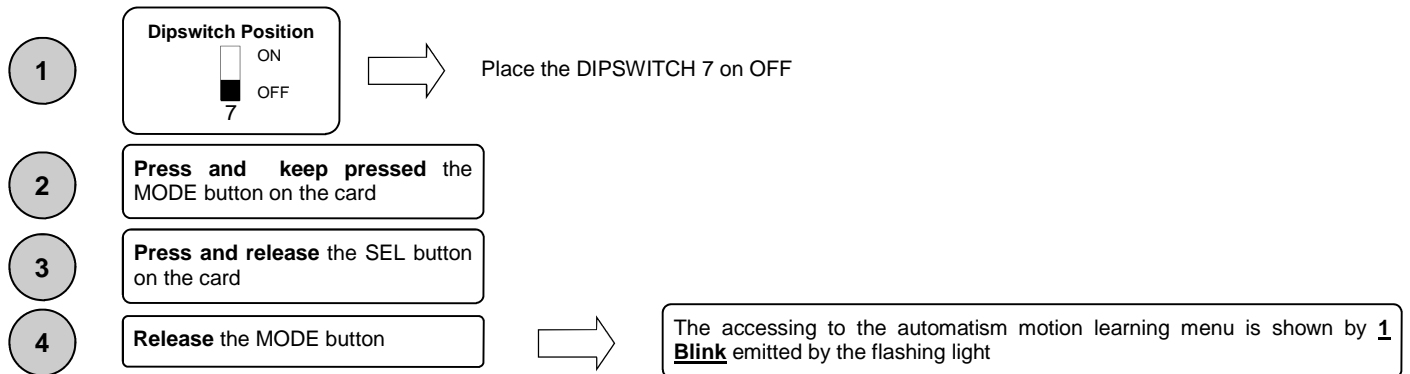
This procedure needs to be carried out **ONLY** by the installer and **ONLY** during the installation of the system. Always bring the gate to a totally closed position before making any changes for a correct programming. The torque is fix during the slowdowns and does not depend on the position of the "POWER" trimmer.



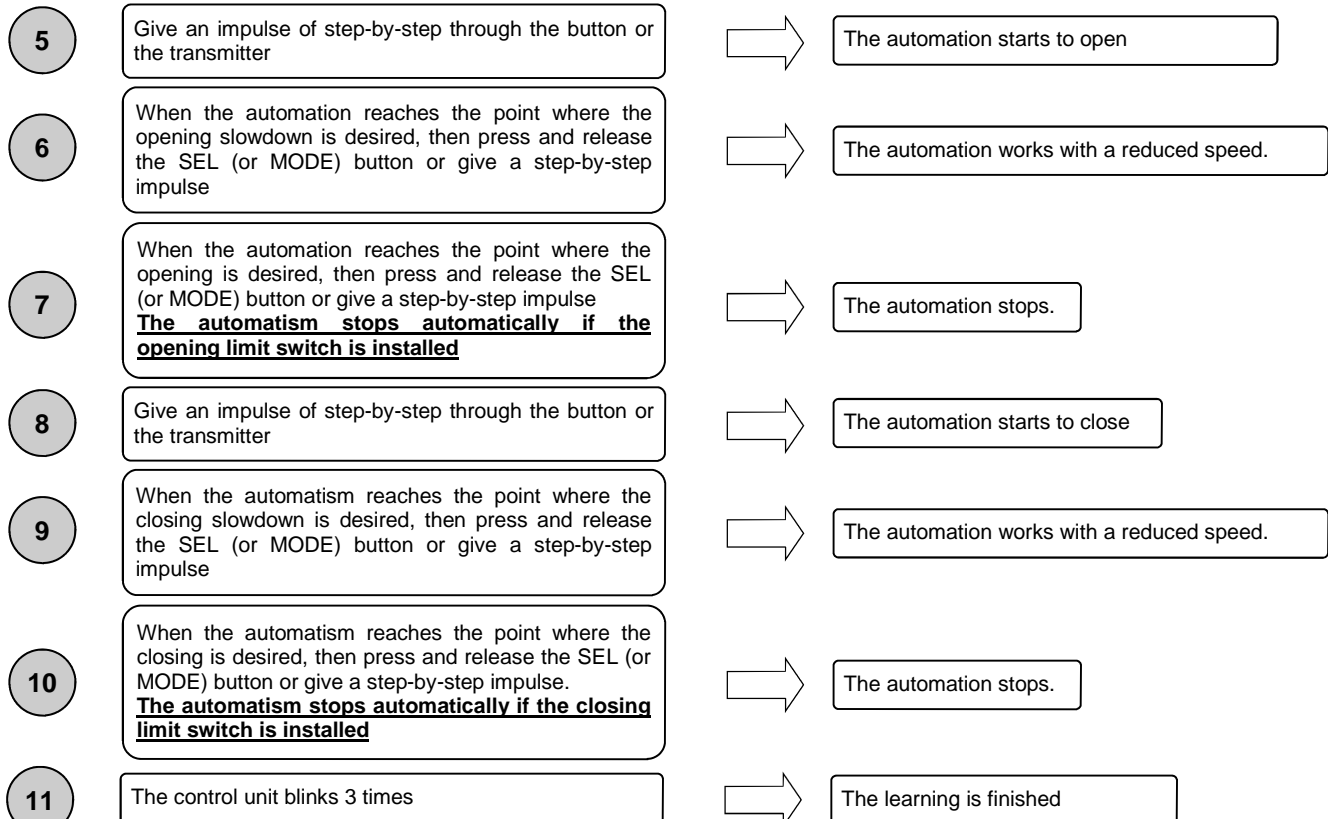
7. Learning the strokes

7.1 For applications of motors with and without limit switches (DIP 7 on OFF)

This procedure must be carried out **ONLY** by the installer and **ONLY** during the installation of the system. **Always bring the gate to a totally closed position** before making any changes for a correct programming. During the learning phase you must decide if and where the gate needs to start the slowdown phase.

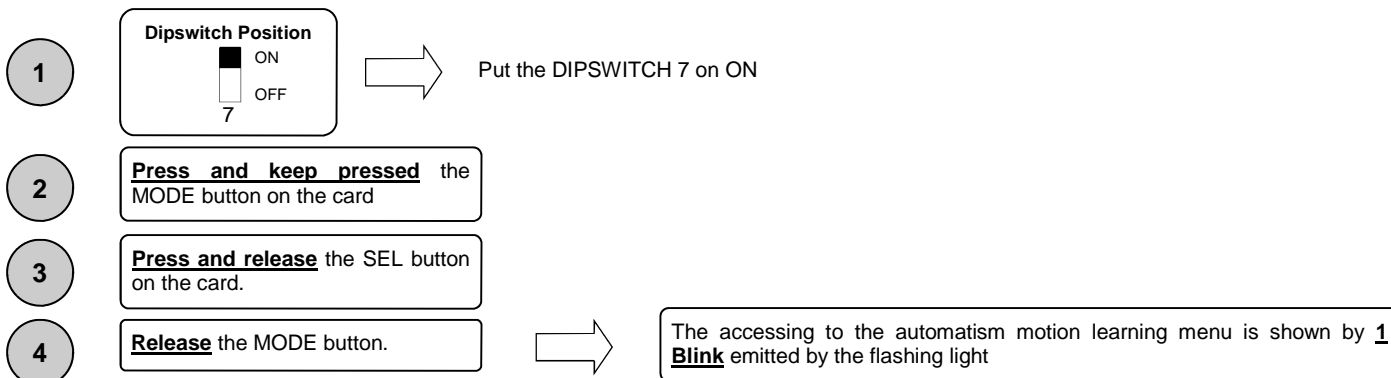


The learning is cancelled if a safety device (photocell, edge, stop) is activated during the learning phase
Follow these instructions once entered the motion's learning:

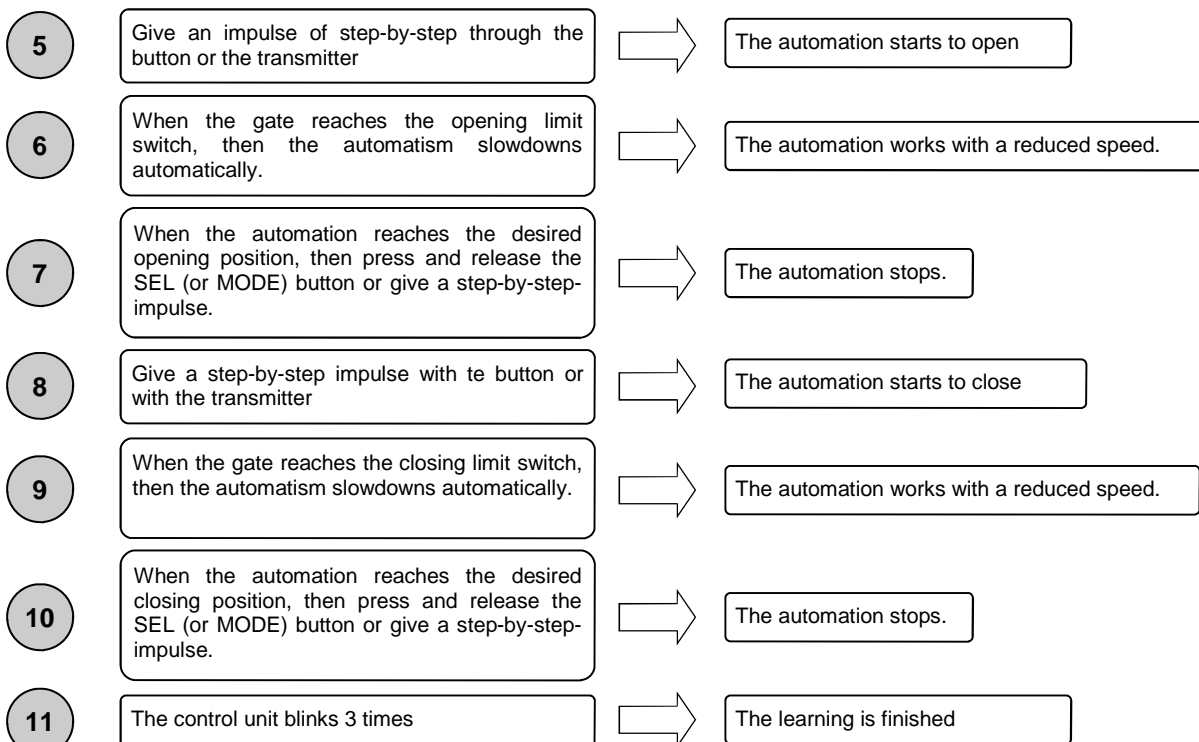


7.2 For applications of motors with limit switches controlling the start of the slowdowns (DIP 7 on ON)

This procedure must be carried out **ONLY** by the installer and **ONLY** during the installation of the system. **Always bring the gate to a totally closed position** before making any changes for a correct programming. During the learning phase the limit switches decide where the gate starts the slowdown phase.



The learning is cancelled if one safety device (photocell, edge, stop) is activated during the learning phase
Follow these instructions once entered into the movement learning:



8. Functions selectable by dip-switch



It is important to change the configuration of the dip-switches only when the card is turned off!
Remove the power supply during the configuration changing.

Default settings

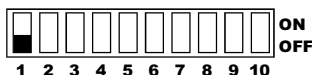
The control board is supplied with the dip-switches set as listed below. The functions selectable by dip-switch are summarized into the following table.

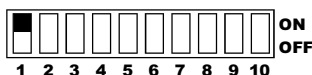


N° dip	Function	Dip OFF	Dip ON
1	Step-by-step	Open-stop-close	Open-close
2	Photocells test	Active	Not active
3	Automatic reclosing	Not active	Active
4	Photocells functioning	Motion stop	Stop and reversal motion
5	Pre-blinking	Not active	Active
6	Condominium function (Always Opens)	Not active	Active
7	Limit switch operating mode	Door stop	Door Slowing down
8	Reception mode	Rolling code	Fixed code
9	Torque and slowdowns speed	Normal	Maximum
10	Encoder	Not active	Active

8.1 Step by step function:

You can set the answer of the control unit to subsequential commands given by transmitter or by the step-by-step button:

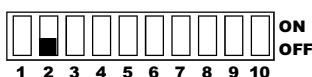
 **ON**
OFF The automation carries out the open-stop-close-stop sequence.

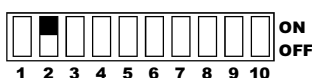
 **ON**
OFF The automation carries out an open-close-open-close sequence.

The step-by-step impulse may be given both by a special input (see step-by-step button on the terminal board), or by pushing the first key of a memorized transmitter (see learning transmitter paragraph).

8.2 Photocells test:

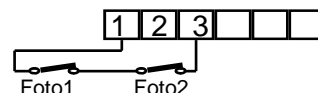
This control unit is supplied with a system which allows to carry out a test on the functioning of photocell before each operation of the motor. This operation increases the security system in case a photocell is damaged (for example if the output relay get stuck) or in case of a short circuit in the photocell's input. This test is carried out after the control unit has received an impulse to move (closing or opening), and it gives power to the motor.

 **ON**
OFF Photocells test enabled. The order is not executed in case the photocells are damaged.

 **ON**
OFF Photocells test disabled.

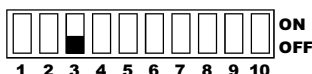
NOTE: If the photocells test is enabled, then the motor's start is delayed by approximately one second from when the input is received.

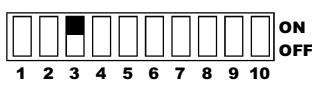
The control unit is settled for a single photocell input. However it is possible to connect up to 2 couples of photocells: in this case the Normally Closed contacts must be put in series as shown here on the right:



8.3 Automatic re-closing:

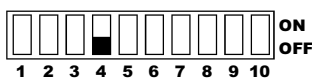
If the automatic re-closing function is enabled, then it closes the automatism after a preset period of time.


 **ON**
OFF Automatic re-closing not active. The automatism closes only with a closing impulse given by a step-by-step input or by a recorded transmitter.

 **ON**
OFF After the opening of the automatism, when the pause time expires, the door closes automatically. The preset standard time is 10 seconds. The function can be temporarily disconnected by stopping it with a step-by-step command. See chapter 10.1 in order to change the time of automatic reclosing.

8.4 Safety photocells:

When the beam between the transmitter's photocells and the receiver ones is interrupted, then the these last change the behavior of the control unit according to the following modalities:

 **ON**
OFF **Automatism during the opening and closing cycle:**
If the photocells detect an obstacle, then the control unit stops the automatism's motion. When the obstacle is removed, then the motion starts again in **OPENING** until the end of its cycle.


 **ON**
OFF **A) Automatism during the opening cycle:**
If the photocells detect an obstacle, then the control unit does not stop the automatism's motion.

B) Automatism during the closing cycle:
If the photocells detect an obstacle, then the control unit stops and inverts the motion by opening completely the automatism.

8.5 Pre-blinking function:

The flashing lights shows with a slow blinking (approximately 1 every 2 seconds) the opening of the automatism, and with a faster one (approximately 1 per second) the closing.

 **ON**
OFF Pre-flashing disabled

 **ON**
OFF Pre-flashing enabled. A pre-flashing has the aim to indicate to the user that the automatism is going to move, and this is why it comes before the automatism's motion. The time of the pre-flashing is set to 3 seconds.

8.6 Condominium function:



Condominium function disabled



Condominium function enabled. Every impulse given by radio or by a step-by-step and/or pedestrian button causes only the opening of the automatism. The closing is carried out by the automatic reclosing function (Dip 3 on ON), which must be enabled as every other closing impulse is ignored. We recommend to enable also the open-close function with the dip 1 ON.

8.7 Modo di funzionamento dei finecorsa:



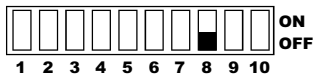
The intervention of limit switches causes the stopping of the automation.



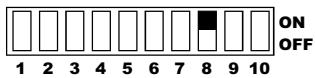
The intervention of limit switches causes the slowdown of the automation. This setting is recommended in case the automatism has mechanical limit switches.

8.8 Reception type selection:

The control unit was realized for the combined use of two types of transmitters: the fix code ones and the rolling code ones of the *Biorol®* series.



If you are using transmitters of the **fix code** series, then set the dip 8 on ON position and RESET the memory.

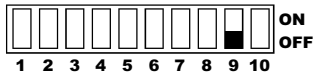


With a rolling code transmission you must set the dip 8 on OFF position and RESET the memory.

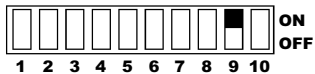
NOTE: You must RESET the memory (see paragraph 10.2) every time that a different codifying is selected. If the LEARN led blinks as soon as the power is given to the control unit, then it means that no memory was entered or the memory and the dip 8 position (reception type selection) do not correspond. It is not possible to memorize into the same memory both transmitters with fix code and transmitters with rolling code. We remind to cut the power supply before connecting or disconnecting the memory.

8.9 Slowdown type selection:

The control unit can carry out two different types of slowdown:



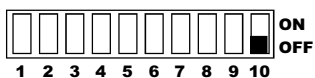
This is the classic slowdown with reduction of torque.



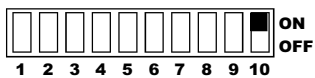
The slowdown is carried out with double speed and higher torque. This is recommended for the moving of particularly heavy doors and gates. By enabling this function we recommend to have a wide area for the slowdown as the position where the slowdown begins can slightly change from one motion to the next one.

8.10 Enabling / disabling the Encoder

The control unit was thought for being used with two motors equipped with encoder. It is possible to enable and disable the Encoder



ENCODER disabled



ENCODER enabled. With the encoder enabled the unit controls the progress of the gate and inverts the run in case an obstacle is hit

NOTE: the encoder do not control the position of the gate. It is exclusively used for the detection of obstacles. We recommend to correctly adjust the torque by combining it with the encoder in order to have an optimal functioning.

9. Learning the pedestrian opening

This procedure must be carried out **ONLY** by the installer and **ONLY** during the installation of the system. **Always bring the gate to a totally closed position** before making any changes for a correct programming.

METHOD 1

- 1 **Learn the second button of a remote control already learned**
 - 2 **Press and keep pressed** the MODE button on the card
 - 3 **Press and release** the SEL button on the card
 - 4 **Release** the MODE button
- The accessing to the automatism's motion learning menu is shown by **1 Blink** emitted by the flashing light

The learning is cancelled if a safety device (photocell, edge, stop) is activated during the learning phase
Follow these instructions once entered the movement learning:

- 5 Give a **pedestrian** impulse by the button or with a remote control (second key learned). → The automation starts to open
- 6 When the automation reaches the desired pedestrian opening position, then press and let go the wired PEDESTRIAN button or the remote control key. → The automation stops.
- 7 Give a **pedestrian** impulse by button or with a remote control (second key learned). → The automation closes

NOTE: You need to learn the second key of a 2 or 4 keys already learned transmitter in order to command the pedestrian opening. After the RESET of the memory, the pedestrian opening position is brought back to the default value.

METHOD 2

- 1 **Learn the second button of an already learned remote control**
- 2 Give a pedestrian impulse with the 2nd button just learned. → The automation starts to open
- 3 When the automatism's reaches the desired pedestrian opening position, then you must activate the **OPENING** limit switch. → The automation stops.
- 4 Give a **step by step** command for closing the automation. → The automation closes

NOTE: You need to learn the second key of a 2 or 4 keys already learned transmitter in order to command the pedestrian opening. After the RESET of the memory, the pedestrian opening position is brought back to the default value, that a the completely open automation.

10. Advanced settings

10.1 Changing the automatic reclosing time

In case you want to enable this function, then put the dip-switch 3 on ON. The enabling sequence of this learning menu is the following:

1. Press the **MODE** button and keep it pressed
2. Press and release the **SEL** button twice, and then release the **MODE** button. The accessing to the learning menu of the pause time is shown by 2 closed blinks of the flashing light.
3. By pressing the **MODE** button you increase the reclosing time of about 10 seconds each time you press it, while by pressing the **SEL** button you decrease the time of automatic reclosing by about 10 seconds each time your press it.

The factory value for the automatic closing time is approximately 10 seconds.

You must give a step-by-step impulse for leaving the learning phase.

10.2 Changing the water hammer activation of the electrical lock

The water hammer is disabled as default setting. The enabling sequence of this learning menu is the following:

1. Close the automation with a step-by-step command
2. Press the **MODE** button and keep it pressed while the automatism and the flashing lights are turned off
3. Press the **SEL** button three times
4. Release the **MODE** button
5. The accessing to the learning menu of the water hammer is shown by 3 closed blinks of the flashing light.
6. By pressing the **MODE** button you increase the water hammer time of about 0,1 seconds each time you press it, while by pressing the **SEL** button you decrease the time of the water hammer by about 0,1 seconds each time your press it, until the default value is reached.
7. You must give a step-by-step impulse for leaving the learning phase.

The use of water hammer is not recommended for sliding and bascule gates.

Set a minimum time of 0,3 seconds for enabling the water hammer in closing.

10.3 Changing the over-stroke time in opening and in closing

The time of over-stroke is the extension of the working time in opening and closing.

The enabling sequence of this learning menu is the following:

1. Press the **MODE** button and keep it pressed.
2. Press and release 4 times the **SEL** button.
3. Release the **MODE** button. The accessing to the learning menu of the stroke time is shown by 4 closed blinks of the flashing light.
4. By pressing the **MODE** button you increase the over-stroke time by about 10 seconds each time you press it, while by pressing the **SEL** button you decrease the over-stroke by about 10 seconds each time your press it.

The factory value for the over-stroke time is set at about 4 seconds.

You must give a step-by-step impulse for leaving the learning phase.

10.4 Inversion time at the end of the motion

The inversion time at the end of the movement beyond the opening or closing limit switch, is a time where the control unit makes a short inversion for relaxing the mechanics.

The enabling sequence of this learning menu is the following:

1. Press the **MODE** button and keep it pressed
2. Press and release 5 times the **SEL** button.
3. Release the **MODE** button. The accessing to the learning menu of the inversion time is shown by 5 closed blinks of the flashing light.
4. By pressing the **MODE** button you increase the inversion time by about 0,1 seconds each time you press it (the first pressing of the **MODE** key sets an increase of the inversion time by 0,02 seconds), while by pressing the **SEL** button you decrease the inversion time by about 0,1 seconds each time your press it (the first pressing of the **SEL** key sets a decrease of the inversion time by 0,02 seconds).

The inversion at the end of the motion is disabled as factory default and after each reset of the control unit.

You must give a step-by-step impulse for leaving the learning phase.

NOTE: The activation of the inversion function disables the water hammer in closing

10.5 Enabling/Disabling the clock function

The clock function allows to open and to keep the gate open for a period of time. The gate automatically closes at the end of this period. The enabling sequence of this learning menu is the following:

1. Press the **MODE** button and keep it pressed
2. Press and release 6 times the **SEL** button
3. Release the **MODE** button. The accessing to the learning menu of the clock function is shown by 6 closed blinks of the flashing light
4. Press the **MODE** or **SEL** for enabling/disabling this function. The **LEARN** led and the flashing light show that the function is enabled when they are both ON FIX. If the led and flashing light are OFF, this means that the function is disabled.

You must give a step-by-step impulse for leaving the learning phase

Connect the clock contact to the step-by-step input of the control unit. This function is enabled if the contact remains closed for more than 15 seconds. Once the function is active, every other impulse is ignored. The control unit leaves automatically the function and closes the gate when the contact opens. The **STOP** intervention or another safety operation block the gate motion, and the control unit exits the clock modality.

11. Operations on the memory

11.1 Erasing the working times

For erasing the parameters related to the automatism motions (times, delays, regulations) and set again the basic ones, do as follows:

1. Take off the power supply from the control unit; then press one of the two buttons (SEL or MODE) and keep it pressed.
2. Supply power to the control unit
3. The flashing light turns on for some seconds and then it turns off
4. Release the button: in this moment the factory parameters are set into the memory modules

If you release the button at the first step (when the flashing light is still turned on) then the operation is quitted and the parameters are not cancelled.

11.2 Total erasing of the memory

For erasing the parameters related to the automation motions (times, delays, regulations) and all the learned transmitters, do as follows:

1. Take off the power supply from the control unit; then press both buttons (SEL or MODE) and keep them pressed.
2. Supply power to the control unit.
3. The flashing light turns on for some seconds and then it turns off
4. Release the buttons; the memory is cancelled when the flashing light turns off. The basic parameters related to the bascule motion are set, and all the previously memorized transmitters are cancelled from the memory module.

If you release the button at the first step (when the flashing light is still turned on) then the operation is quitted and the parameters are not cancelled.

Factory parameters

The control unit is supplied with default settings. These settings are listed here below:

1. Total working time (slowdowns included) = 20 seconds in opening, 23 seconds in closing
2. Slowing down time = 9 seconds in closing and opening
3. Courtesy light time = 1 minute
4. Pre-flashing time (if connected) = 2 seconds
5. Automatic reclosing time (if connected) = 10 seconds
6. Torque adjuster time: adjusted by trimmer from 70 % up to 100 %
7. Selection of the reception type: Rolling code

The functions can be changed by operating the 10 ways Dip Switches. The working times of the automatism can be changed in all his running phases by pressing the SEL and MODE buttons which are located next to the 10 ways Dip Switches. These times can be changed also at a distance by using a 4 buttons transmitter with all 4 buttons memorized into the memory module.

12. Additional devices and accessories

12.1 Fix edge function

If the fix edge are operated during a closing or an opening, then this causes a short inversion of the automation motion for approximately 2 seconds and then its stop. If you want to use this function, then connect the fix edge at the input marked with *fix edge* (see drawing at page 2), otherwise this input must be short circuited to the common.

12.2 Flashing light output

The control board is equipped with a flashing light circuit; for this reason you can externally connect only one flashing light with a fix light (FIX model) with a bulb whose power do not exceed 60 W and 230 V.

12.3 Input signaling led

The control unit is equipped with a LED signal indicating the status of the inputs in order to simplify the installation and the tests in case of fault to the installation. The meaning of the leds is shown in the following picture, where the term "normally turned on" means that the led must be turned on when the related input is circuited (NC input).

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- S.S.
- PHOTO
- STOP
- EDGE
- L.S.CL.
- L.S.OP.
- PED.

- S.S. = Step by step (normally turned off)
- PHOTO = Photocells (normally turned on)
- STOP = Stop (normally turned on)
- EDGE = Fix Edge (normally turned on)
- L.S.CL. = Closing limit switch (normally turned on)
- L.S.OP. = Opening limit switch (normally turned on)
- PED. = Pedestrian (normally turned off)

12.4 Electrical lock output (you can have this option only by using an additional R1 card)

It is possible to connect the electrical lock directly on the control unit. A normally open contact is available on the output of the electrical lock for its activation. The contact closes when an opening impulse is given.

12.5 Courtesy Light

The output for the courtesy light is supplied with the control unit. It is possible to light up the operation area of the automatism during each motion by connecting a charge of 230 Vac 100W MAX. The turning off is timed **1 minute** after the stop of the automatism or until the end of its automatic re-closing (if enabled). During the photocells test (if enabled) the courtesy light blinks shortly.

12.6 Diagnosis of radio signal

The control unit is equipped with a led for the diagnosis of the radio: the installer can immediately find if there are radio troubles which influence negatively the correct functioning of the device.

- Led turned off = no troubles
- Led flashing = light troubles
- Led turned on permanently = heavy troubles

WARNING AND ADVICES

Avoid putting the connection cables of buttons, security devices and inputs close to those of the power supply of the control unit and of the motor. Some parts of the control unit are subject to dangerous voltage. The control unit must be installed and programmed only by qualified professionals. Always use a device that ensures the disconnection of all poles of the control unit's power supply .

This device can be a switch (connected directly to the power supply terminals) with a contact's minimum distance of 3 mm for each pole, or it can be a device connected to the power network;

For connecting the card and the motors we recommend to use cables with double isolation as imposed by the laws in force; the minimum cross section of the single conductor must not be less than 1mm² and not more than 2.5mm².

The presence of a dampness or metal parts in the walls nearby may negatively influence the capacity the system; it is therefore important to carefully put the aerial and the transmitters away from walls and/or metal structures, away from the ground and not on the ground.

A tuned aerial is needed to maximize the performances in terms of the range; the range would only be a few meters without it.

If the cable supplied is too short, then do not join an extension to it , but replace the whole cable with one of the right length whose impedance is 50 Ohm (RG 58 type). The cable should never be longer than 10 meters. This control unit has a photocells test circuit.

ERMES2 HR Technical features

ERMES2 HR Technical features	
Power voltage (terminals n.1, 2)	230 Vac +15%, -15% ; 50Hz
Absorption	5W MAX (except for accessory and utilities)
Photocells power supply (terminals 21, 22, 23)	24 Vac 3 MAX
Photocells' transmitters power supply (terminals 21,22)	24Vac 1,5W MAX
Photocells' receivers power supply (terminals n.22, 23)	24Vac 1,5W MAX
Motor output (terminals n.5, 6, 7)	230Vac 600W MAX cosj > 0.8
Flashing light exit (terminals n.8, 9)	230 Vac 60W MAX (for fixilight without blinking circuit)
Courtesy light exit (terminals n.3, 4)	230Vac 100W MAX
Electrical lock (only with R1 card). Clean contact output NOT supplied with power	24 Vac 0.5A MAX (12W MAX)
Functioning temperature	-10°C ... +60°C
Courtesy light time	1 minute
Frequency	433.92 MHz Super-reactive broad band (ERMES2 433) ; Super-reactive narrow band (ERMES2 433/S)
Available reception	Fix code HR Rolling code
Maximum range (with tuned aerial and under optimal conditions)	40 - 60 m (433) 60-100 m (433/S)
Aerial impedance	50 Ω (tuned aerial)
Number of codes available	4096 (FIXED CODE reception) 18 billion of billions (ROLLING CODE reception)
Recordable transmitters	1000 with B.RO 1000 memory module (ROLLING CODE)

GUARANTEE - In compliance with legislation, the manufacturer's guarantee is valid from the date stamped on the product and is restricted to the repair or free replacement of the parts accepted by the manufacturer as being defective due to poor quality materials or manufacturing defects. The guarantee does not cover damage or defects caused by external agents, faulty maintenance, overloading, natural wear and tear, choice of incorrect product, assembly errors, or any other cause not imputable to the manufacturer. Products that have been misused will not be guaranteed or repaired. Printed specifications are only indicative. The manufacturer does not accept any responsibility for range reductions or malfunctions caused by environmental interference. The manufacturer's responsibility for damage caused to persons resulting from accidents of any nature caused by our defective products, are only those responsibilities that come under Italian law.



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