

## ELECTRONIC CONTROL UNIT LRX 2102 NEW

GB

Single-phase electronic control unit for the automation of sliding gates with incorporated radio receiver.

- Mod. **LG 2102R NEW** : Without radio receiver
- Mod. **LRS 2102 NEW** : 433.92 MHz
- Mod. **LRS 2102 NEW SET** : 433.92 MHz "narrow band"
- Mod. **LRH 2102 NEW** : 868.3 MHz "narrow band"

### IMPORTANT FOR THE USER

- The device can be used by children over 8 years of age and persons with reduced physical or psychological abilities or with little knowledge and experience only if supervised or educated in its operation and safe use, in order to also understand the dangers involved in its use.
- these instructions are also available at the website [www.seav.com](http://www.seav.com)
- Do not allow children to play with the device and keep the radio controls away from their reach.
- Frequently examine the system to detect any signs of damage. Do not use the device if it is in need of repair work.
- Always remember to disconnect the power supply before carrying out any cleaning or maintenance.
- Cleaning and maintenance must not be carried out by unsupervised children

- **ATTENTION:** keep this instruction manual safe and observe the important safety requirements contained herein. Failure to comply with the requirements may cause damage and serious accidents.

### IMPORTANT FOR the INSTALLER

- 1) Before automating the gate, check that it is in good conditions, in compliance with the Machinery Directive and with EN 12604.
- 2) Check that the location where the installation is located enables compliance with operating temperature limits specified for the device.
- 3) The safety of the final installation and compliance with all prescribed Standards (EN 12453 - EN 12445) is the responsibility of the person who assembles the various parts to construct a total closing.
- 4) It's recommended to use safety devices with a connection self test.
- 5) Once installation is finished, it is recommended that all necessary checks be performed (appropriate programming of the control panel and correct installation of safety devices) to ensure that compliant installation has been performed.
- 6) Fix the control unit to the wall using the appropriate support. This support should be facing downwards: insert the screws in the spaces provided.
- 7) The control unit does not have any type of isolating device for the 230 Vac line. It is therefore the responsibility of the installer to set up an isolating device inside the system. It is necessary to install an omnipolar switch, surge category III. It must be positioned to provide protection from accidental closing, pursuant to point 5.2.9 of EN 12453.

Cables for power and connection to the motor suitable for insertion in the pg9 cable glands provided must have an outside diameter between 4.5 and 7 mm. The internal conductor wires must have a nominal section of 0.75mm<sup>2</sup>. If a raceway is not used, use H05RR-F cables. Pay careful attention when fastening the cables so that they are anchored in a stable manner. Furthermore, care is required when drilling holes in the outside casing where connecting and power supply cables will pass, and when assembling the cable glands, so that everything is installed so as to maintain the panel's IP protection characteristics.

8) Cables for power and connection to the motor suitable for insertion in the pg9 cable glands provided must have an outside diameter between 4.5 and 7 mm. The internal conductor wires must have a nominal section of 0.75mm<sup>2</sup>. If a raceway is not used, use H05RR-F cables. Pay careful attention when fastening the cables so that they are anchored in a stable manner. Furthermore, care is required when drilling holes in the outside casing where connecting and power supply cables will pass, and when assembling the cable glands, so that everything is installed so as to maintain the panel's IP protection characteristics.

9) The gearmotor used to move the frame must comply with that prescribed at point 5.2.7 of EN 1245

10) In compliance with 5.4.2 of EN 12453, it is recommended to use gearmotors equipped with an electric-mechanical release device, so that the door can be moved manually in case of necessity.

11) In compliance with 5.4.3. of EN 12453, use electric-mechanical release systems or similar devices which stop the door safely in the end run position.

12) The various electrical components external to the control unit must be cabled in accordance with standard EN 60204-1 as amended, and as set forth in point 5.2.7 of EN 12453. Power cables may have a maximum diameter of 14 mm. Power supply and connection cables must be fixed using the cable glands provided.

13) The assembly of a push button panel for manual control must be completed positioning the push button panel in such a way that the user is not placed in a dangerous position.

14) The safety function ensured by the control unit is active only during closing, therefore, protection on opening must be ensured in the installation phase with measures (guards or safety distances) independent of the control circuit.

15) For proper functioning of the radio receiver, if using one or more control units, the installation at a minimum distance of at least 3 metres one from the other is recommended.

The below products:

### Electronic Control Unit:

**LG 2102 NEW - LRS 2102 NEW**

**LRS 2102 NEW SET - LRH 2102 NEW**

comply with the requirements of Directives  
R&TTE 99/5/EC, EMC 2004/108/EC, LVD  
2006/95/EC.



## TECHNICAL DATA:

- Power supply : 230 Vac 50/60Hz 900W(4A) max.
- Flashing beacon output : 230 Vac 50/60Hz  
100W Resistive Load max.  
50W Inductive Load max.
- Motor output : 230 Vac 50/60Hz 750 W max.
- Auxiliary power output : 24 Vac 3 W max.
- Stop limit and low voltage commands : 24 Vcc
- Working temperature : -10 ÷ 55 °C
- Radio receiver : see model
- Op. transmitters : 12-18 Bit or Rolling Code
- Max stored TX codes : 120(CODE + CODE PED)
- Box dimensions : 110x121x47 mm.
- Container : ABS V-0 (IP54).

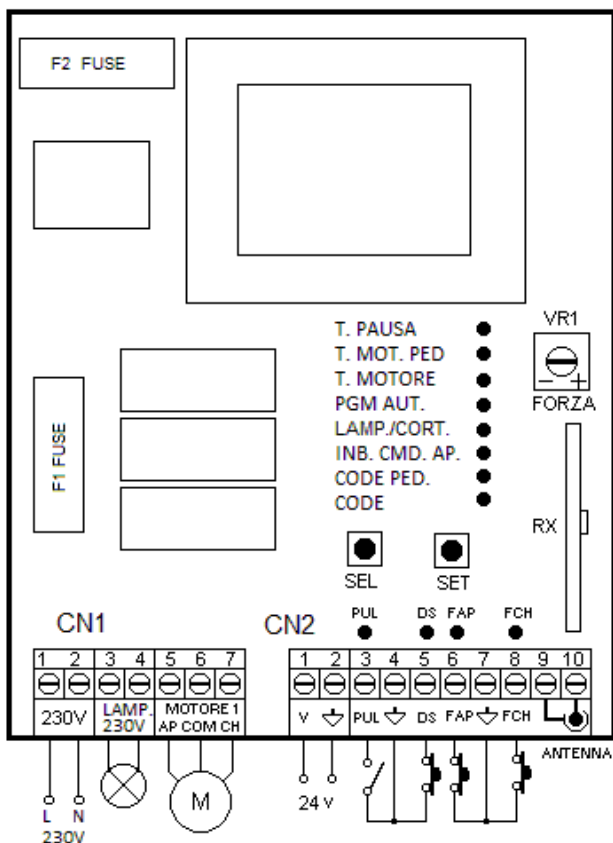
## TERMINAL BOARD CONNECTIONS:

### CN1:

- 1 : 230 V ac line input (Phase).
- 2 : 230 V ac line input (Neutral).
- 3 : 230 V ac flashing line input (Neutral).
- 4 : 230 V ac flashing line input (Phase).
- 5 : Opening motor output.
- 6 : Common motor output.
- 7 : Closing motor output.

### CN2:

- 1 : Service power supply output 24Vac 6 W.
- 2 : Service power supply output GND.
- 3 : Open-close command button input (NA).
- 4 : Common GND input.
- 5 : Safety device input (NC).
- 6 : Opening stop limit input (NC).
- 7 : Common GND input.
- 8 : Closing stop limit input (NC).
- 9 : Earth antenna input.
- 10: Antenna hot pole input.



## OPERATING FEATURES:

### Step-by-step operation:

By using either the radio-control ( CODE led on ) or the low voltage buttons to activate the gate, you obtain the following action:

the first impulse activates the opening mechanism until the motor time expires or the opening limit switch is reached, the second impulse closes the gate. If an impulse is sent before the motor time expires or one of the two end runs are reached, the control unit will **stop** both opening and closing movements. An additional control re-starts motion in the opposite direction.

### Automatic closing :

The control unit closes the gate automatically without sending additional commands.

The choice of this operating mode is described in the instructions for setting the delay period.

### Pedestrian Passage:

The control unit allows, using either the radio-control ( CODE PED led on) or the Pedestrian button, the Motor to run for a programmable amount of time.

### Photocells:

The control unit allows Photocells to be powered and connected in accordance with directive EN 12453.

#### - DS Input (NC)

Photocell operation is ignored during opening, whereas during closing they will reverse the direction of movement.

### Opening and Closing Limit Switch:

The control unit allows the Opening and Closing Limit Switch connection (NC). When it is triggered during the respective operating phases, movement stops immediately. If not used, this input must be bridged.

### Motor Power and Speed adjustment:

The electronic control unit is equipped with a VR1 trimmer to adjust motor Power and Speed, fully managed by the microprocessor. The adjustment can be made within a range of 50% and 100% of the Maximum Power.

Nevertheless, every movement has an initial surge, powering the motor for 2 seconds at the maximum power even if motor power adjustment is enabled.

**Attention:** You will need to repeat the teach-in phase if you wish to adjust the VR1 trimmer as operation and deceleration times may be affected.

### Deceleration:

The motor deceleration function is used on the gates to stop them from reaching their final position at a high speed in the opening and closing phases.

The control unit allows deceleration to be programmed for the desired points (before the gates are completely open or closed) during Motor Timer programming (see Main menu).

If you are using the "Automatic programming" function (see menu 2) it is also possible to include a deceleration phase (see Main menu).

### Operation with TIMER:

The control unit can have a timer set up instead of an open-close control button.

Example: at 08:00 the timer closes the contact and the control unit opens the gate. At 18:00 the timer opens the contact and the control unit closes the gate. During the interval between 08:00 and 18:00, at the end of the opening phase, the control unit disables the flashing beacon, automatic closing and radio controls.

## PROGRAMMING :

**The SEL key:** this selects the type of function to be memorised, which is indicated by a flashing Led.

Repeatedly press the key to select the desired function. The selection will remain active for 10 seconds, indicated by a flashing Led. If no other operations are carried out during this time, the control board will return to its previous state.

**The SET key:** this programs the information according to the type of function previously selected with the SEL button.  
**IMPORTANT:** The SET key function can also be replaced by the radio-control, if previously programmed (CODE led on).

## MAIN MENU

The control unit is provided by the manufacturer with the possibility of selecting a number of important functions.

----- MAIN MENU -----		
Led Reference	Led off	Led On
1) CODE	No code	Code entered
2) CODE PED.	No code	Code entered
3) IN.CMD.AP.	Disabled	Enabled
4) LAMP/CORT	Flashing	Courtesy Light
5) PGM. AUT	PGM Automatic=OFF	PGM Automatic=ON
6) T. MOT.	Motor time 30 sec.	Programmed time
7) T.MOT.PED	Mot. Time Ped. 10 sec.	Programmed time
8) T. PAUSA	No auto close	With auto close

### 1) CODE: (Radio-control code)

The control unit allows up to 120 radio-controls to be memorised with different types of fixed or rolling codes.

#### Programming.

The transmission code is programmed in the following way: use the SEL key to move to the flashing CODE LED, at the same time send the pre-selected code from the radio-control you wish to use; when the CODE LED stays on steadily, programming is finished. *If all 120 available codes have been memorised, by repeating the programming operation, all programming LEDs will start to flash, indicating that it is not possible to memorise any more codes.*

#### Deletion.

Memorised codes can be deleted in the following way: press the SEL key, the CODE LED will start flashing, then press the SET key, the CODE LED will switch off and the procedure is finished.

### 2) CODE PED:(Code for the Ped./ S Door radio-control)

The programming and deleting procedure is the same as the one illustrated above except that the selected Led should be for PEDESTRIAN CODE.

### 3) IN. CMD. AP.: (Command inhibition during opening and pause time, if entered)

The command inhibition function during opening and pause time, if entered, is used when automation includes a loop detector. During the opening or pause phase the control unit does not consider the commands sent by the loop detector with every passage.

The factory settings of the control unit have disabled command inhibition during opening and pause time. If it is necessary to enable it, do the following: use the SEL key to move to the flashing IN.CMD.AP LED then press the SET key. The IN.CMD.AP LED will light up steady. Repeat the procedure if you wish to restore the previous configuration.

### 4) LAMP/CORT. : (Selection of the flashing light or the courtesy light)

The control unit has a 230 Vac output, for connection to a flashing light or a courtesy light.

The control unit is supplied by the manufacturer with the Flashing function enabled. If you wish to enable the flashing

beacon function, including during pauses, proceed as follows: using the SEL key to move to the LAMP/CORT flashing LED then press the SET key, and the LAMP/CORT flashing LED will switch on steady.

Repeat the operation if you wish to restore the factory setting.

If you wish to enable the courtesy light, repeat the operation described above, pressing the SEL button twice instead of once (making the LAMP/CORT LED flash rapidly). Repeat the operation if you wish to restore the factory setting.

### 5) PGM. AUT. : (Automatic Programming):

With this control unit it is possible to carry out Automatic Programming (SIMPLIFIED).

First, move the gates to their half-way position, press the SEL button until the PGM. AUT. LED flashes and then press and hold the SET button down. The control unit completes the Auto programming phase by executing a complete opening and closing phase (hold the SET key down until Auto Programming is finished). At the same time, the Deceleration cycle is automatically configured at 15% of the complete cycle.

*During Automatic Programming, you can use the radio-control key on the control unit instead of the SET key, only if previously memorised.*

### 6) T. MOT and DECELERATION: (Programming a motor operation time of max 4 minutes)

The control unit is factory supplied with a predefined motor operating time of 30 sec. without deceleration.

If it is necessary to modify the motor operating time, programming must be carried out when the gate is closed, as follows: use the SEL key to move to the flashing T.MOT LED, then press the SET key briefly. The Motor will begin its opening cycle. When it starts the initial point of deceleration, press the SET key again. At the same time, the motor will decelerate until it reaches the required position. Press the SET key to finish the opening cycle. The T. MOT LED will then start flashing quickly. Now repeat motor time programming and the deceleration operation for the closing cycle. If you do not want the control unit to decelerate, when the opening and closing phase is finished, press the SET key twice during programming, instead of just once.

*During programming it is possible to use the radio-control key located on the control unit, instead of the SET key, only if previously memorised.*

### 7) T. MOT. PED: (Programming a pedestrian operating time of 4 minutes max.)

The control unit is factory supplied with a predefined Pedestrian Motor operating time of 10 sec. without deceleration.

If it is necessary to modify the pedestrian operating time, programming must be carried out when the gate is closed, as follows: use the SEL key to move to the flashing T.MOT PED. LED, then press the SET key briefly. The Motor will start the Opening cycle; press the SET key again at the point where you wish to start deceleration: the T. MOT. PED. LED will start flashing at a slower rate and the Motor will decelerate; when it reaches the required point, press the SET key to finish the Opening cycle. At this point the T. MOT PED. LED will start flashing at its standard pace again and the Motor will begin the Closing phase; repeat the above operations for the Closing phase.

If you do not want the control unit to decelerate, when the opening and closing phase is finished, press the SET key twice during programming, instead of just once.

*During programming it is possible to use the radio-control key located on the control unit, instead of the SET key, only if previously memorised.*

### 8) T. PAUSA : (Automatic closing time programming max. 4 minutes)

The control unit is factory supplied without automatic closing. If you wish to enable automatic closing, proceed as follows: using the SEL key to move to the flashing T. PAUSA LED, press the SET key briefly, then wait for the amount

of time you wish to set for automatic closing; briefly press the SET key again, and in that moment the automatic closing time will be memorised and the T. PAUSA LED will stay on steady. If you wish to restore the initial condition (without automatic closing), move to the flashing T. PAUSA LED, then press the SET key twice within 2 seconds. The Led will switch off and the operation will be finished.

*During programming it is possible to use the radio-control key located on the control unit, instead of the SET key, only if previously memorised.*

## EXTENDED MENU 1

The control unit is supplied by the manufacturer with the possibility of directly selecting the main menu functions only. If you wish to enable the functions described in Extended Menu 1, proceed as follows: press and hold the SET button for 5 seconds, after which amount of time the T. MOT. PED and T. PAUSA LEDs will start flashing alternately. The user then has 30 seconds to select the functions for Extended Menu 1 from the SEL and SET buttons. After another 30 seconds the control unit will go back to the main menu.

----- EXTENDED MENU 1 -----		
Led Reference	Led Off	Led On
A) CODE	Step-by-Step	Inverting
B) CODE PED	Electronic Brake = OFF	Electronic Brake= ON
C) IN.CMD.AP.	Dead man=OFF	Dead man APCH or CH=ON
D) LAMP/CORT	Deceleration = OFF	Deceleration = ON
E) PGM. AUT	Follow Me = OFF	Follow Me = ON
F) T.MOT	Remote PGM = OFF	Remote PGM = ON
G) T. MOT.PED	Alternate ON/OFF flashing light	
H) T. PAUSA	Alternate ON/OFF flashing light	

### A) CODE ( Step-by-Step / Automatic Operation ) :

The control unit is supplied by the manufacturer with Automatic mode disabled. If you wish to enable the function, proceed as follows: make sure that you have enabled extended menu 1 (reported by alternately flashing T. MOT PED Leds and T. PAUSA Led), by using the SEL key to select the flashing CODE LED, and then press the SET key. At this point the CODE LED lights up steady and programming is finished.

Accordingly, using either the radio-control or the low voltage push button panel to operate the gate, you will obtain the following function: the first impulse controls opening until the motor time expires, the second impulse controls gate closing. If an impulse is sent before the motor time expires, the control unit changes the direction of motion in the opening and closing phases. Repeat the procedure if you wish to restore the previous configuration.

### B) CODE PED ( Electronic Brake ) :

The control unit is supplied by the manufacturer with the electronic brake function disabled. If you wish to enable the function, proceed as follows: check that Extended Menu 1 is enabled (T. MOT. PED and T. PAUSA LEDs start flashing alternately), use the SEL button to move to the flashing PED CODE LED then press the SET key: at that point the PED CODE LED will light up steady and programming is complete.

Accordingly, the control unit slows down gate advancement by inertia, when there is a stop or command to change the direction of motion. Repeat the procedure if you wish to restore the previous configuration.

### C) IN. CMD. AP. ( Anti-collision Function ) :

The control unit is supplied by the manufacturer with the Anti-collision (pedestrian) Function disabled. If you wish to enable the function, proceed as follows: check that Extended Menu 1 is enabled (T. MOT. PED and T. PAUSA Leds flash simultaneously), use the SEL button to move to the flashing IN. CMD. AP. LED and then press the SET button. At this point

the IN. CMD. AP. LED will light up steady and programming is complete. The control unit will now operate in Anti-Collision (pedestrian) mode.

If you wish to enable the Anti-Collision (pedestrian) function for the closing phase only, repeat the operation described above, pressing the SEL key twice (making the IN.CMD.AP. LED flash quickly). Repeat the procedure if you wish to restore the previous configuration.

### D) LAMP/CORT ( Deceleration ) :

As mentioned above, it is possible to programme a deceleration phase on the control unit for opening or closing, whereas deceleration is automatically enabled with the Automatic Programming function. If you do not wish to implement any deceleration, it can be excluded: therefore, if you are using Automatic Programming, the Deceleration phase will not be enabled, whereas if you are using Motor Time Programming, as you are programming you will not be given the possibility of programming deceleration during the opening and closing phases. If, prior to excluding deceleration, it was programmed from the Motor Time Programming function, it will be necessary to repeat programming all over again. If you wish to exclude deceleration, proceed as follows: make sure Extended Menu 1 is enabled (reported by T.MOT.PED and T. PAUSA Leds flashing alternately). Using the SEL key, move to the flashing LAMP/CORT. LED and then press the SET key: the LAMP/CORT. will turn off definitely and programming will be complete. Repeat the procedure if you wish to restore the previous configuration.

### E) PGM. AUT ( Follow Me ) :

It is possible to set the "Follow Me" function on the control unit: this function can only be programmed if a Pause Time has already been programmed, and it is used to shorten the Pause time to 5 sec after the photocell disengages, i.e. the gate closes 5 seconds after the user has passed through. If you wish to enable the function, proceed as follows: check that Extended Menu 1 is enabled (T. MOT. PED and T. PAUSA Leds flash simultaneously), use the SEL button to move to the flashing PGM. AUT. LED and then press the SET key: the PGM. AUT. LED will light up steady and programming is complete. Repeat the procedure if you wish to restore the previous configuration.

### F) T. MOT (Remote programming of radio control):

The control unit allows the transmission code to be programmed by remote, without using the SEL key.

To programme the transmission code from remote proceed as follows: send the radio control code continuously for more than 10 seconds and the control unit will enter the programming mode as described above for the CODE LED in the main menu. The control unit is supplied by the manufacturer with remote programming of the transmission code not enabled; to enable the function proceed as follows: check that the extended menu 1 is enabled (the T. MOT. PED and T. PAUSA LEDs start flashing alternatively), use the SEL key to navigate to the .T:MOT LED when the corresponding LED is flashing and press the SET key: the T.MOT LED is enabled and programming is complete. Repeat the operation to restore the previous configuration.

## EXTENDED MENU 2

The control unit is supplied by the manufacturer with the possibility of directly selecting the main menu functions only.

If you wish to enable the programming of the deceleration power carried out by the control unit, proceed as follows: access Extended Menu 1 (as described in the relative paragraph), then press and hold the SET button down again for 5 seconds, after which amount of time the T. MOT. PED and T. PAUSA LEDs will flash simultaneously. The user then has 30 seconds to select the deceleration power using the SEL and SET buttons. After, another 30 seconds the control unit will go back to the main menu.

----- EXTENDED MENU 2 -----	
Level	Leds On
1	CODE
2	CODE – CODE PED.
3	CODE – CODE PED – IN.CMD.AP.
4	CODE – CODE PED – IN.CMD.AP. – LAMP/CORT
5	CODE – CODE PED – IN.CMD.AP. – LAMP/CORT – PGM.AUT
6	CODE – CODE PED– IN.CMD.AP. – LAMP/CORT – PGM.AUT – T.MOT

### Deceleration Programming

The control unit allows you to programme the power used to carry out the deceleration phase.

It is possible to choose between 6 different levels of power: every combination of lit Leds corresponds to a level according to the table above; in other words, starting from the lowest led (LED CODE) and moving upwards, each Led corresponds to a higher power level. Using the SEL key it is possible to scroll through the different power levels; for every selected power level, the highest respective Led will flash (for example, if level 4 is selected the CODE, CODE PED. and IN.CMD.AP. leds light up steady, whereas the LAMP/CORT led will flash); press SET to confirm.

Level 3 is selected in the default configuration.

### RESET :

To reset the default configuration of the control unit, press the SEL and SET buttons simultaneously; all **RED** signal Leds will switch on and then immediately off again.

### DIAGNOSTICS :

#### Control input test:

On each low voltage control input, the control unit uses a LED signal to make the status readily known.

Operating logic: when a LED is on it means the input is closed, when a LED is off it means the input is open.

### LED MANAGEMENT :

After 3 minutes of inactivity in the programming procedure, there is the automatic shutdown of the Leds for energy savings. A single press of the SEL or SET key, or a movement command will activate the LED light up according to settings programmed previously.