

# ELECTRONIC CONTROL UNIT LRX 2150

GB

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

- Mod. **LG 2150** : Without radio receiver
- Mod. ( **LR 2150** ) : 306 Mhz
- Mod. ( **LRS 2150 / 330** ) : 330 Mhz
- Mod. ( **LRS 2150 / 418** ) : 418 Mhz
- Mod. **LRS 2150** : 433.92 Mhz
- Mod. **LRS 2150 SET** : 433.92 Mhz narrow band
- Mod. **LRH 2150** : 868.3 Mhz narrow band

( ) Product intended for those countries where its use is permitted

## TECHNICAL DATA:

- Power supply : 230 Vac 50-60Hz 1600W max.
- Flashing beacon output : 230 Vac 500 W max.
- Motor outputs : 230 Vac 500 W max.
- Electric lock output : 12 Vdc 15 W max.
- Photoelectric cells power supply: 24 Vac 3 W max.
- Low voltage safety features and commands : 24 Vcc
- Operating temperature : -10 ÷ 55° C
- Radio receiver : see model
- Op. transmitters : 12-18 Bit or Rolling Code
- Max TX stored codes : 150 (CODE or CODE PED)
- Container size : 190x140x70 mm.
- Protection degree : IP 56

## TERMINAL BOARD CONNECTIONS:

### CN1:

- 1 : 230 Vac line input (Phase).
- 2 : 230 Vac line input (Neutral).
- 3 : 230 Vac Flashing Beacon output (Neutral).
- 4 : 230 Vac Flashing Beacon output (Phase).
- 5 : Motor 1 opening output.
- 6 : Motor 1 common output.
- 7 : Motor 1 closing output.
- 5 : Motor 2 opening output.
- 6 : Motor 2 common output.
- 7 : Motor 2 closing output.

### CN2:

- 1 : Photoelectric cells control and power supply (24 Vac).
- 2 : Photoelectric cells control and power supply (GND).
- 3 : 12 Vdc 15 W (+12V) electric lock output.
- 4 : 12 Vdc 15 W (GND) electric lock output.
- 5 : PUL open-close command button input (NA).
- 6 : GND common input.
- 7 : PUL PED pedestrian command button input (NA).
- 8 : DS1 safety device input (NC).
- 9 : GND common input.
- 10 : DS2 safety device input (NC).
- 11 : Antenna earth input.
- 12 : Antenna hot pole input.

## FUNCTIONAL DATA:

### Automatic Operation:

Using both the radio control (CODE LED on) and the low voltage push-button station (PUL) to control the shutter, the following operation is obtained:

the first impulse opens the shutter until the end of the motor time, the second impulse closes it; if an impulse arrives before the end of the motor time, the control unit **inverts** motion both during opening and closing.

### Step-by-Step Operation:

Using both the radio control (CODE LED on) and the low voltage push-button station (PUL) to control the shutter, the following operation is obtained:

the first impulse opens the shutter until the end of the motor time, the second impulse closes it; if an impulse arrives before the end of the motor time, the control unit **stops** motion both during opening and closing. An additional command restarts motion in the opposite direction.

### Automatic closing:

The control unit can close the shutter automatically without sending additional commands.

The selection of this operation mode is described in the Pause Time programming mode.

### Pedestrian Passage :

The control unit can operate Motor 1 only both using the radio control (CODE LED on) and the push-button station (PED) for the programmed time (T. MOT. PED. LED).

### Safety device 1 :

The control unit allows for powering and connecting photoelectric cells according to EN 12453.

The action is not considered during opening and causes inverted motion during closing.

The control unit must use photoelectric cells connected to dedicated inputs; otherwise the control unit is not enabled for operation.

### Safety device 2 :

The control unit allows for powering and connecting photoelectric cells according to EN 12453.

The action momentarily stops the shutter during opening; after release, the control unit resumes opening. The action causes inverted motion during closing.

The control unit must use photoelectric cells connected to dedicated inputs; otherwise the control unit is not enabled for operation.

### Initial Pick-up and Motor Power Adjustment:

The electronic control unit is equipped with initial pick-up and motor power adjustment functions that are fully managed by the microprocessor.

The initial pick-up function is used to help the motor during initial motion by powering the motor with maximum power for 2 seconds, also when the motor power adjustment function is enabled.

The motor power adjustment function is used to ensure correct motion and at the same time block the shutter in case of obstacles without causing harm to individuals or properties.

### Deceleration:

The motor deceleration function is used to avoid high-speed closing of swinging gates at the end of opening and closing.

Deceleration can be programmed at the desired points before total opening and closing during Motor Time programming.

### Flashing Beacon Operation:

The control unit is equipped with output for 230 Vac flashing beacon. Operation is determined by the motion of the motor and automatic closing that, if enabled, activates the flashing beacon also during the pause.

### Operation with TIMER:

The control unit allows for connecting a timer instead of the open-close command button (PUL).

Example: 8:00 a.m. the timer closes the contact and the control unit commands opening, 6:00 p.m. the timer opens the contact and the control unit commands closing. From 8:00 a.m. to 6:00 p.m. at the end of opening the control unit disables the flashing beacon, the automatic closing and the radio controls.

## PROGRAMMING :

**SEL key:** it selects the type of function to store, selection is indicated by flashing LED.

By pressing the key repeatedly, you can select the desired function. The selection remains active for 10 seconds (flashing LED); after 10 seconds, the control unit returns to the original status.

**SET key :** it programmes the information according to the type of function selected with the SEL key. **IMPORTANT:** The function of the SET key can be replaced with the radio control, if programmed previously (CODE LED on).

## MAIN MENU

The control unit is supplied by the manufacturer with the possibility of selecting some important functions.

----- MAIN MENU -----		
LED status	LED off	LED on
1) AUT / P-P	Automatic	Step-by-Step
2) CODE	No code	Code entered
3) CODE PED.	No code	Code entered
4) INB.CMD.AP	Not enabled	Enabled
5) T. MOT.	30 sec. motor time	Programmed time
6) T.MOT.PED.	10 sec. Mot. Ped. Time	Programmed time
7) T. PAUSA.	Without aut. closing	With aut. closing
8) RIT. ANTE	Without door delay.	Programmed time

### 1) AUTOMATIC / STEP-BY-STEP:

The control unit is supplied by default with the "Automatic" operation feature enabled (AUT/P-P LED off). To enable the "Step-by-Step" operation feature (AUT/P-P LED on) follow this procedure: with the SEL key go to AUT/P-P LED when flashing and press the SET key; the AUT/P-P LED turns on. Repeat the operation to restore the previous configuration.

### 2) CODE : (Radio control code)

The control unit allows for storing 150 radio controls with different code of fixed or rolling type.

#### **Programming.**

To programme the transmission code follow this procedure: with the SEL key go to CODE LED when flashing, send the desired code with the radio control; programming is completed when the CODE LED remains on permanently. If you have stored 150 codes and you repeat the programming operation, all programming LED's start flashing to indicate that no codes can be stored.

#### **Deleting the codes.**

To delete all transmission codes stored in the memory, do as follows: press the SEL key, the CODE LED starts flashing, then press the SET key, the LED CODE turns off and the procedure is completed.

### 3) CODE PED:(Code of Pedestrian / Left Door radio control).

The programming and deleting procedure is the same as the one illustrated above, with reference to the CODE PED. LED.

### 4) INB. 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 the loop detector. During opening or pause the control unit does not detect the commands given by the loop detector at every passage.

The control unit is supplied by default with the command inhibition function during opening and pause time not enabled. To enable the function follow this procedure: with the SEL key go to INB.CMD.AP LED when flashing, then press the SET key; the INB.CMD.AP turns on. Repeat the operation to restore the previous configuration.

### 5) MOTOR TIME and DECELERATION: (Programming motor operation time of max. 4 minutes)

The control unit is supplied by the manufacturer with predefined motor operation time of 30 seconds without deceleration.

To modify the motor operation time, follow this procedure with the shutter closed: with the SEL key go to T.MOT. LED when flashing, then press the SET key rapidly, Motor 1 starts the

opening cycle; when the initial point of deceleration is reached press the SET key again, the motor decelerates until the desired position is reached, press the SET key to complete the opening cycle. The T.MOT. LED starts flashing rapidly, now repeat the programming operation for Motor 2 motor operation time and deceleration. When the motor operation time is programmed for opening, the T.MOT. LED starts flashing rapidly, now repeat the programming operation for closing. To deactivate the deceleration function, during programming, once the opening and closing cycle is completed, press the SET key twice in a sequence.

*During programming the radio control key of the control unit can be used instead of the SET key, if stored previously.*

### 6) T. MOT. PED: (Programming pedestrian operation time of max. 4 minutes)

The control unit is supplied by the manufacturer with predefined operation time of Motor 1 (Pedestrian) of 10 seconds without deceleration.

To modify the pedestrian operation time, follow this procedure with the shutter closed: with the SEL key go to T.MOT.PED. LED when flashing, then press the SET key rapidly, Motor 1 starts the opening cycle; when the initial point of deceleration is reached press the SET key again, the motor decelerates until the desired position is reached, press the SET key to complete the opening cycle. The T.MOT.PED LED starts flashing rapidly, now repeat the programming operation for closing. To deactivate the deceleration function, during programming, once the opening and closing cycle is completed, press the SET key twice in a sequence.

*During programming the radio control key of the control unit can be used instead of the SET key, if stored previously.*

### 7) T. PAUSA: (Programming of aut. closing time of max. 4 min.)

The control unit is supplied by the manufacturer without automatic closing. To enable the automatic closing function follow this procedure: with the SEL key go to T.PAUSA when flashing, then press the SET key, wait for the desired interval of time, then press the SET key again; the automatic closing time is stored and the T.PAUSA LED is on. To restore the initial configuration (without automatic closing) go to the T.PAUSA LED when flashing then press the SET key twice within 2 seconds; the LED goes off and the operation is completed.

*During programming the radio control key of the control unit can be used instead of the SET key, if stored previously.*

### 8) T. RIT. ANTE : (Programming door delay of max. 15 sec.)

The control unit is supplied by the manufacturer without door delay during opening and closing. To programme the door delay time, follow this procedure with the shutter closed: with the SEL key to the RIT.ANTE LED when flashing, press the SET key, wait for the desired interval of time, then press the SET key again; the fixed door delay time of 2 seconds during opening is stored, the door delay time during closing is stored for the programmed time and the RIT.ANTE LED is on.

To restore the initial configuration (without door delay) go to the RIT.ANTE LED when flashing then press the SET key twice within 2 seconds; the LED goes off and the operation is completed.

## EXTENDED MENU

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

To enable the functions of the extended menu follow this procedure: hold the SET key pressed for 5 seconds; the T.PAUSA and RIT.ANTE LED's start flashing alternatively; the user has 30 seconds time to select the functions of the extended menu with the SEL and SET keys, after 30 seconds the control unit returns to the main menu.

----- EXTENDED MENU -----		
LED status	LED off	LED on
A) AUT / P-P	remote PGM = OFF	remote PGM = ON
B) CODE	Photoelectric cells test = ON	Photoelectric cells test =

OFF		
C) CODE PED.	Pressure Maint. = OFF	Pressure Maint. = ON
D) INB.CMD.AP	The aries effect = OFF	The aries effect = ON
E) T. MOT.	Closure Strike = OFF	Closure Strike = ON
F) T.MOT.PED.	Safety device 2	Stop input
G) T. PAUSA	Flashing beacon ON/OFF	
H) RIT. ANTE	Flashing beacon ON/OFF	

#### A) AUT / P-P (Remote programming of radio control) :

The control unit allows for programming the transmission code from remote, without using the SEL key.

To programme the transmission code from remote follow this procedure: send the radio control code continuously for more than 10 seconds, the control unit enters the programming mode as illustrated above for the CODE LED in the main menu.

The control unit is supplied by the manufacturer with the remote programming of the transmission code not enabled; to enable the function follow this procedure: check that the extended menu is enabled (T. PAUSA and RIT. ANTE LED's flashing alternatively), with the SEL key go to AUT/P-P LED when flashing and press the SET key: the AUT/P-P LED turns on and programming is completed. Repeat the operation to restore the previous configuration.

#### B) CODE (Photoelectric Cells Test):

The control unit is supplied by the manufacturer with the photoelectric cells test enabled (in compliance with EN 12453); to disable the function follow this procedure: check that the extended menu is enabled (T. PAUSA and RIT. ANTE LED's flashing alternatively), with the SEL key go to CODE LED when flashing and press the SET key: the CODE LED turns on and programming is completed. The photoelectric cells test is not performed; also if they are not connected (DS1 and DS2 inputs must be bridged) the control unit is enabled for operation. Repeat the operation to restore the previous configuration.

#### C) CODE PED: (Maintenance of Hydraulic Motor Pressure):

The control unit is supplied by the manufacturer with the maintenance of hydraulic motor pressure not enabled. To enable the function follow this procedure: check that the extended menu is enabled (T. PAUSA and RIT. ANTE LED's flashing alternatively), with the SEL key go to CODE PED LED when flashing and press the SET key: the CODE PED LED turns on and programming is completed. In this way the control unit will send a closing command to the motor every 2 hours for 2 seconds. Repeat the operation to restore the previous configuration.

#### D) INB. CMD. AP (The aries (ramming) effect) :

The control unit is supplied by the manufacturer with the aries (ramming) effect function not enabled. To enable the function follow this procedure: check that the extended menu is enabled (T. PAUSA and RIT. ANTE LED's flashing alternatively), with the SEL key go to INB. CMD. AP. LED when flashing and press the SET key: the INB. CMD. AP. LED turns on and programming is completed. In this way the lock can be unlocked and the opening operation can be performed correctly. Before starting opening the control unit will send a closing command for 2 seconds. Repeat the operation to restore the previous configuration.

#### E) T. MOT. (Closure Strike) :

The control unit is supplied by the manufacturer with the closure strike function not enabled. To enable the function follow this procedure: check that the extended menu is enabled (T. PAUSA and RIT. ANTE LED's flashing alternatively), with the SEL key go to T. MOT. LED when flashing and press the SET key: the T. MOT. LED turns on and programming is complete. If Deceleration during closing is programmed, the control unit will add 1-sec time at maximum power (after completing the decelerated closing operation) in order to overcome the lock, if present. Repeat the operation to restore the previous configuration.

#### F) T. MOT. PED. ( Safety device 2 / Stop input ):

The control unit is supplied by the manufacturer with the safety Stop input function disabled. To enable the function follow this procedure: check that the extended menu is enabled (T. PAUSA and RIT. ANTE LED's flashing alternatively), with the SEL key go to T. MOT. PED. LED when flashing and press the SET key: the T. MOT. PED. LED turns on and programming is complete. In this way, the control unit changes the operation of Safety Device 2 ( CN2 no. 9-10 ) to the safety Stop input operation, as following: acting on any stage of the operation stops motion immediately. An additional motion command will be valid as long as the Stop input is deactivated, and in any case it will close the gate with 5-second pre-flashing.

#### RESET :

To reset the default configuration, press the SEL and SET keys simultaneously, all RED LED's will turn on and then off.

#### DIAGNOSTICS:

#### Photoelectric Cells Test:

The control unit is set for the connection of safety devices compliant with 5.1.1.6 section of EN 12453. The operation test of connected photoelectric cells is performed at each manoeuvring cycle. In case of no connection and/or no operation, the control unit will not enable motion and will visually indicate the test failure with simultaneous flashing of all LED's. Once the correct operation of the photoelectric cells has been restored, the control unit is ready for operation. This guarantees monitoring against failures in compliance with Category 2 of EN 954-1.

#### Commands input test:

The control unit is provided with a LED for each low voltage command input to monitor the status immediately. Operation principle: LED on = input closed, LED off = input open.

#### FOR THE USER - IMPORTANT

- *The device should not be used by children or by individuals with reduced physical or psychological abilities unless supervision is provided or instruction given on how to operate it.*
- *Do not let children play with the device; keep radio controls out of their reach.*
- *CAUTION: Keep this instruction manual in a safe place and adhere to the important safety instructions contained within it. Non-adherence to these instructions may lead to property damage and serious accidents.*
- *Examine the system frequently to check for any signs of damage. Do not use the device if it needs to be repaired.*

#### Warning

*All operations which require the casing to be opened (such as wire connection, programming, etc.) must be carried out during installation, by skilled staff only.  
For any other procedure which requires the casing to be opened again (programming, repairs or site modifications), please contact the technical assistance service.*

### FOR THE INSTALLER - IMPORTANT

- Before the gate automation, it is necessary to check the good condition of the gate and its compliance with EN 12604 with respect to directive on machines.
- The control unit is not equipped with 230 Vac electric line sectioning device. The installer is responsible for installing a sectioning device in the system. The sectioning device must be protected against accidental closing in compliance with 5.2.9 section of EN 12453.
- Wiring of external electrical components must comply with EN 60204-1 as amended in section 5.2.7 of EN 12453. The fixing of power supply leads and connection cables must be secured through the use of cable clamps supplied on demand.
- When drilling holes in the outer casing for the power supply and connection wiring, and when fitting the cable clamps, make sure everything is installed so as to maintain the IP protection degree features as fully as possible.  
Please also make sure that the cables are fixed in place securely.
- The rear casing is designed for wall installation (it is designed to have holes so that it may be installed using rawl plugs, or so that it can be fixed in place using screws). Plan and apply all the details necessary for the IP degree to remain unaltered after installation.
- If present, the push-button station for manual control must be mounted in such a way that the user is not in a dangerous position.
- The motor reducer used to move the gate must comply with section 5.2.7. of EN 12453.
- The D.S. Power Supply output must be dedicated to photoelectric cells power supply. It must not be used for other applications.
- The control unit tests the operation of photoelectric cells at every manoeuvring cycle to guarantee protection against failures of anti-crushing devices of Category 2 in compliance with section 5.1.1.6 of EN 12453. Therefore, if the safety devices are not connected and/or operated, the control unit is not enabled for operation.
- For the correct operation of the radio receiver, if two or more control units are used, we recommend you to install the devices at least 3 metres away from each other.

SEAV s.r.l. hereby declares that the products below:  
**Electronic Control Unit:**

**LG 2150 - LRS 2150 - LRS 2150 SET - LRH 2150**

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



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