

ELECTRONIC CONTROL UNIT LRX 2186

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

- Mod. **LG 2186** : Without radio receiver
- Mod. (**LR 2186**) : 306 Mhz
- Mod. (**LR 2186 / 330**) : 330 Mhz
- Mod. (**LR 2186 / 418**) : 418 Mhz
- Mod. **LRS 2186** : 433.92 Mhz
- Mod. **LRS 2186 SET** : 433.92 Mhz narrow band
- Mod. **LRH 2186** : 868.3 Mhz narrow band

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

TECHNICAL DATA:

- Power supply : 230 Vac 50-60Hz 1100W max.
- Flashing beacon output : 230 Vac 500 W max.
- Motor output : 230 Vac 500 W max.
- Electric lock output : 12 Vdc 15 W max.
- Photoelectric cells power supply : 24 Vac 3 W max.
- Stop limit and low voltage commands : 24 Vcc
- Operating temperature : -10 ÷70 °C
- Radio receiver : see model
- Op. transmitters : 12-18 Bit or Rolling Code
- Max TX stored codes : 150 (CODE or CODE PED)
- Box dimensions : 190x140x70 mm.
- Container: : IP56.

TERMINAL BOARD CONNECTIONS:

CN1:

- 1 : 230 Vac line input (Phase).
- 2 : 230 Vac line input (Neutral).
- 3 : Clean contact output for Flashing Beacon/Courtesy Light.
- 4 : Clean contact output for Flashing Beacon/Courtesy Light.
- 5 : Opening motor output.
- 6 : Common motor output.
- 7 : Closing motor 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 (GNC) electric lock output.
- 5 : PUL open-close command button input (NA).
- 6 : GND common input.
- 7 : PUL PED pedestrian command button input (NA).
- 8 : DS safety device input (NC).
- 9 : GND common input.
- 10 : BL block device input (NC).
- 11 : FCAP opening stop limit input (NC).
- 12 : GND common input.
- 13 : FCCH closing stop limit input (NC).
- 14 : Antenna earth input.
- 15 : Antenna hot pole input.

CN3:

- 1 : Output 1 for connection of Traffic Light Module ML 2192.
- 2 : Output 2 for connection of Traffic Light Module ML 2192.
- 3 : Output 3 for connection of Traffic Light Module ML 2192.

FUNCTIONAL DATA:

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 or until the opening stop limit is reached, the second impulse closes the shutter; if an impulse arrives before the opening stop limit is reached, 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 :

Using both the pedestrian radio control (CODE PED. LED on) and the low voltage push-button station (PED) to control the shutter, the following operation is obtained: the first impulse controls opening for 10 seconds, then the control unit makes a 10-second pause and closes the shutter.

Safety device:

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.

Lock input:

The control unit provides for connection of a lock button (NC). The action in any operation stage stops motion immediately. An additional motion command will be valid as long as the lock input is deactivated, and in any case it will close the gate with 5-second pre-flashing.

If not used, this input must be bridged.

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.

Traffic Light Management:

The control unit can manage two "Green/Red" traffic lights for traffic control before and during the gate automation (by means of connection to CN3 terminal board of optional accessory ML 2192). If selected, (FUNCTION IN/OUT LED on) you can have two opening commands of the gate according to direction (i.e. if you enter or exit). The two commands are obtained by modifying the operation of the inputs (PUL – PUL PED) and (CODE – CODE PED) that become operation commands for the entrance and exit direction.

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) FUN. IN/OUT commands	PUL/PED commands	2 x PUL IN/OUT
2) CODE	No code	Code entered
3) CODE PED.	No code	Code entered
4) INB.CMD.AP	Not enabled	Enabled
5) LAMP/CORT/CO	Flashing beacon	Courtesy Light- Aux Contact
6) THE ARIES EFFECT	Not enabled	Enabled
7) T. MOT.	30 sec. motor time	Programmed time
8) T. PAUSA.	Without aut. closing	With aut. closing

1) IN/OUT FUNCTION:

The control unit is supplied by the manufacturer with the PUL and PEL PED command buttons enabled for standard operation (FUNCTION IN/OUT LED off). If you need to enable an operation mode that can manage a traffic light for traffic control before and after motion (FUNCTION IN/OUT LED on), follow this procedure: with the SEL key go to FUNCTION IN/OUT LED when flashing, then press the SET key: the FUNCTION IN/OUT LED turns on. Both 5-sec pause time and command inhibition during opening are enabled. Repeat the operation to restore the default configuration.

2) CODE : (Radio control code)

The control unit allows for storing 150 radio control 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:(Pedestrian radio control code).

The programming and deleting procedure is the same as the one illustrated above, with reference to the CODE PEDONALE 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 ignores 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 LED turns on. Repeat the operation to restore the previous configuration.

5) LAMP/CORT/CO: (Selection of flashing beacon, courtesy light or auxiliary contact)

The control unit is provided with a clean relay contact output to connect a flashing beacon, courtesy light or auxiliary contact (i.e. for garage light command).

The control unit is supplied by the manufacturer with the flashing beacon function enabled. To enable the courtesy light follow this procedure: with the SEL key go to LAMP/CORT/CO when flashing, then press the SET key: the LAMP/CORT/CO LED turns on. To enable the auxiliary contact, repeat the operation above, by pressing the SEL key twice (LAMP/CORT/CO LED flashes rapidly) instead of once.

Flashing Beacon Operation: The clean relay contact output will activate every time automation moves for the motor time. If the Pause Time is stored, the relay contact will be active also during the Pause.

Courtesy Light Operation: The clean relay contact output will activate for 3 minutes every time an opening command is given.

Auxiliary Contact Operation: The clean relay contact output will activate for 1 second every time an opening command is given.

6) THE ARIES (RAMMING) EFFECT :

The aries (ramming) effect function is used in gates with electric locks to unlock the lock and permit the correct execution of the opening operation. Before starting opening, the control unit will send a closing command for 2 seconds.

The control unit is supplied by the manufacturer with the aries (ramming) effect function not enabled. To enable the function follow this procedure: with the SEL key go to C. ARIETE LED when flashing, then press the SET key: the C. ARIETE turns on. Repeat the operation to restore the previous configuration.

7) 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, the Motor 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 of motor time and deceleration for the closing cycle. 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.

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

The control unit is supplied by the manufacturer without automatic closing. To enable automatic closing follow this procedure: with the SEL key go to T. PAUSA when flashing, then press the SET key, wait for the desired pause time, then press the SET key again for a second; 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.

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: press the SET key continuously for 5 seconds, the T. MOT. and T. PAUSA LED's flash alternatively and 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) FUN. IN/OUT	remote PGM = OFF	remote PGM = ON
B) CODE	Photoelectric cells test = ON	Photoelectric cells test = OFF
C) CODE PED. Maint. = ON	Pressure Maint. = OFF	Pressure
D) INB.CMD.AP	Electronic brake = OFF	Electronic brake = ON
E) LAMP/CORT/CO	Closure strike = OFF	Colpo chiusura = ON
F) THE ARIES EFFECT	Not used	
G) T. MOT.	Flashing beacon ON/OFF	
H) T. PAUSA.	Flashing beacon ON/OFF	

A) FUNCTION IN/OUT

(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. MOT. and T. PAUSA LED's start flashing alternatively), with the SEL key go to FUNCTION IN/OUT LED when flashing and press the SET key: the FUNCTION IN/OUT 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 is enabled (in compliance with EN 12453); to disable the function follow this procedure: check that the extended menu is enabled (T. MOT. and T. PAUSA LED's start flashing alternatively), with the "SEL" key go to CODE LED when flashing and press the "SET" key: the CODE turns on and programming is completed. In this way the photoelectric cells test is not performed; also if they are not connected (if not used, DS2 input 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. MOT. and T. PAUSA LED's start 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 (Electronic Brake):

The control unit is supplied by the manufacturer with the electronic brake function not enabled. To enable the function follow this procedure: check that the extended menu is enabled (T. MOT. and T. PAUSA LED's start flashing alternatively), with the SEL key go to INB. CMD. AP. LED when flashing and press the SET key: the INB. CMD. AP. turns on and programming is completed. The control unit reduces the forward motion of the gate due to inertia in the presence of a stop or inversion command. Repeat the operation to restore the previous configuration.

E) LAMP/CORT/CO (Closure Strike) :

The control unit is supplied with the closure strike function not enabled. To enable the function follow this procedure: check that the extended menu is enabled (T. MOT. and T. PAUSA LED's start flashing alternatively), with the SEL key go to LAMP/CORT/CO LED when flashing and press the SET key: the LAMP/CORT/CO LED turns on and programming is completed. If programmed with deceleration during closing, the control unit will add a 1-second time at maximum power (after completing the decelerated closing operation) to overcome the lock, if any. Repeat the operation to restore the previous configuration.

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 movement 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.

Command 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 INSTALLER - IMPORTANT

- Before 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.
- 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 cell 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-compression devices of Category 2 in compliance with section 5.1.1.6 of EN 12453. Therefore, if safety devices are not connected and/or operated, the control unit is not enabled for operation.
- The safety function guaranteed by the control unit is only active during closing; therefore protection during opening must be guaranteed during installation with measurements (shelters or safety distances) that are independent from the control circuit.
- 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 2186 - LRS 2186 - LRS 2186 SET - LRH 2186
complies with requirements of Directives R&TTE 99/5/EC,
EMC 2004/108/EC, LVD 2006/95/EC.



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