

ELECTRONIC CONTROL UNIT LRX 2197

Single-phase electronic control unit for the automation of rolling shutters with incorporated radio receiver.

- Mod. **LG 2197** : Without radio receiver
 - Mod. (**LR 2197**) : 306 Mhz
 - Mod. (**LR 2197 / 330**) : 330 Mhz
 - Mod. (**LR 2197 / 418**) : 418 Mhz
 - Mod. **LRS 2197** : 433.92 Mhz
 - Mod. **LRS 2197 SET** : 433.92 Mhz narrow band
 - Mod. **LRH 2197** : 868.3 Mhz narrow band
- () Product intended for those countries where its use is permitted

TECHNICAL DATA:

- Power supply : 230 V a/c 50-60 Hz 1100 W max.
- Flashing beacon output : 230 V a/c 500 W max.
- Motor output : 230 V a/c 500 W max.
- Photoelectric cells power supply : 24 V a/c 3 W max.
- Low voltage safety features and commands : 24 V c/c
- Operating temperature : -10 to 70 °C
- Radio receiver : see model
- Op. transmitters : 12-18 Bit or Rolling Code
- Max stored TX codes : 75
- Box dimensions : 110 x 121 x 47 mm.
- Container : ABS V-0 (IP54).

TERMINAL BOARD CONNECTIONS:

CN1:

- 1 : 230 V a/c line input (Phase).
- 2 : 230 V a/c 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 : Shared motor output.
- 7 : Closing motor output.

CN2:

- 1 : Photoelectric cell control and power supply (24 V a/c).
- 2 : Photoelectric cell control and power supply (GND).
- 3 : PUL open-close command button input (NA).
- 4 : Shared GND input.
- 5 : DS1 safety device input.
- 6 : DS2 safety device input.
- 7 : Shared GND input.
- 8 : DS3 safety device input.
- 9 : Earth antenna input.
- 10 : Antenna hot pole input.

OPERATIONAL DATA:

Operation with push-button station:

The following operation is obtained using the low voltage push-button station (PUL) to control the shutter: the first press opens the shutter until the end of the motor timer and the second press closes it; if pressed again before the end of the motor time, the control unit **stops** movement whether the shutter is opening or closing. A further command restarts motion in the opposite direction.

Operation using different models of Radio Control:

Different models of radio control may be programmed: by storing a code (1 button) a cyclic step by step operation (Open - Stop - Close) may be achieved, and by storing two different codes (2 buttons) separate commands are created, one for opening and one for closing. Storing three different codes (3

"BeFree" series buttons) produces three distinct commands: the first for Open, the second for Stop and the third for Close.

Operation using a 1-button radio control:

The following type of operation is obtained using a radio control with a single button: the first press controls the opening movement of the shutter until the motor timer stops. The second press controls the closing movement of the shutter. If the button is pressed before the motor stops running, the control unit will stop the shutter moving and the button will need to be pressed again to reactivate the motor in the opposite direction.

Operation using a 2-button radio control:

The following type of operation is obtained using a radio control with 2 buttons: the first button ("Up", corresponding to the opening movement) controls opening until the motor stops running and the second button ("Down", corresponding to the closing movement) controls the Closure of the shutter. If the opening movement is interrupted with another "Up" command, the motor will continue to run in the upward movement direction. If, however, the movement is interrupted with a "Down" command, the control unit will stop the motor. The procedure is the same for the closing movement phase.

Operation using a 3-button radio control (BeFree series):

The following type of operation is obtained using a radio control from the **BeFree** series: the Up button controls the opening movement until the set motor time has elapsed, the Stop button makes the shutter stop and the Down button controls the closure of the shutter. If a stop command is sent during the opening or closing movement, the control unit causes this movement to stop. If a command which is the opposite direction to the current movement is sent during the opening or closing movement, the control unit causes the shutter to change 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.

DS1 safety device:

The DS1 input anticipates the connection of a general safety device with contact (NC). If not used, this input must be bridged. Action is not taken into account during the opening stage but causes inverted motor action during the closing stage. Another safety device operating mode is described in the SEL DS1 Programming section.

DS2 safety device:

The DS2 input anticipates the connection of a general safety device with contact (NC). If not used, this input must be bridged. Action is not taken into account during the opening stage but causes inverted motor action during the closing stage. Another safety device operating mode is described in the SEL DS2 Programming section.

DS3 safety device:

The DS3 input anticipates the connection of a general safety device with contact (NC). If not used, this input must be bridged. Action is not taken into account during the opening stage but causes inverted motor action during the closing stage. Another safety device operating mode is described in the SEL DS3 Programming section.

Operation with TIMER:

The control unit may be connected to a timer instead of using the open-close command button (PUL). Example: at 8:00 a.m. the timer closes the contact and the control unit opens the shutter; at 6:00 p.m. the timer opens the contact and the control unit closes the shutter. Between 8:00 a.m. and 6:00 p.m. at the end of the opening phase, the control

unit disables the flashing beacon, the automatic closing stage and the radio controls.

PROGRAMMING:

SEL button: selects the type of function to be stored; selection is indicated by a flashing LED.

The desired function can be selected by pressing the button repeatedly. The selection remains active for 10 seconds (indicated by the flashing LED); after 10 seconds, the control unit returns to its original status.

SET button: programmes the information according to the type of function selected previously using the SEL button.

IMPORTANT: The function of the SET button 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 -----		
Reference LED	LED Off	LED On
1) CODE	No code	Code entered
2) INB.CMD.AP	Disabled	Enabled
3) LAMP/CORT	Flashing	Courtesy light
4) T. MOT. programmed	Automatic motor time	Time
5) T. PAUSA. closing	Without aut. closing	With aut. closing
6) SEL DS1	CH = INV.	AP/CH = BL
7) SEL DS2	CH = INV.	AP/CH = BL+INV.
8) SEL DS3	CH = INV.	AP/CH = BL

1) CODE: (Radio control code)

The control unit can store up to 75 radio controls with different fixed or rolling codes.

Programming using a 1- or 2-button radio control:

To programme the transmission codes in the radio control, proceed as follows: press the SEL button and the CODE LED will begin to flash; at the same time send the first code ("Up", corresponding to the opening movement) on the radio control. At this point the CODE LED will begin to flash quickly. Send the second code ("Down", corresponding to the closing movement) to be stored and the CODE LED will remain lit: programming is now complete. If the second code is not sent within 10 seconds the control unit exits the programming stage, selecting the function using a single button on the radio control.

Programming using a 3 button radio control in the "BeFree Series":

The control unit allows you to store the whole "BeFree" radio-control by programming only the UP button.

To programme the "BeFree" radio-control codes, follow this procedure: press the SEL button; the CODE LED begins to flash. Press the UP button of the desired radio control at the same time; the CODE LED will remain lit and programming will be complete.

Deleting the codes: To delete all transmission codes stored in the memory, proceed as follows: press the SEL button; the CODE LED starts flashing. Then press the SET button; the CODE LED switches off and the procedure is complete.

Maximum number of radio controls which can be stored:

The control unit can store up to 75 radio controls with different fixed or rolling codes. If the maximum number of radio controls has been reached, and a programming process started, the control unit will indicate that the programming process has failed by flashing all the LEDs except the CODE LED, which will remain lit in a constant manner. After 10 seconds the control unit exits the programming mode.

2) 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 time the control unit ignores the commands given by the loop detector, push-button station and radio control. During the closing phase a command sent by the loop detector, push-button station or 1-button radio control will cause the motor direction to be inverted; if operating with a 2-button radio control the button corresponding to opening will cause the motor direction to invert and the closing button is ignored; if operating with a radio control in the BeFree series the opening button causes inversion, the closing button is ignored and the Stop button causes the motor to stop.

The control unit is supplied with the default setting of the command inhibition function during opening and pause time not enabled. To enable the function proceed as follows: use the SEL button to navigate to INB.CMD.AP when the relevant LED is flashing, then press the SET button: the INB.CMD.AP LED lights up and remains constant. Repeat the operation to restore the previous configuration.

3) LAMP/CORT: (Selection of flashing beacon or courtesy light)

The control unit has an output of 230 V a/c 500 W for connection to a flashing beacon or courtesy light.

The control unit is supplied by the manufacturer with the flashing beacon function enabled (even when the unit is paused). To enable the flashing beacon function proceed as follows: use the SEL button to navigate to LAMP/CORT. when the corresponding LED is flashing, then press the SET button: the LAMP/CORT. LED lights up and remains constant.

Repeat the operation to restore the default configuration.

To enable the courtesy light, repeat the operation above, by pressing the SEL button twice (LAMP/CORT LED flashes rapidly) instead of once. Repeat the operation to restore the default configuration.

Flashing beacon function while the unit is paused:

The 230 V a/c output will activate every time automation takes place, for the duration of the motor timer. If the Pause Time is stored, the 230 V a/c output will also be active during the Pause.

Flashing Beacon Operation: The 230 V a/c output will activate every time automation takes place, for the duration of the motor timer.

Courtesy Light Operation: The 230 V a/c output will activate for 3 minutes every time an opening command is given.

4) T. MOT: (Motor operation time of max. 4 minutes)

The control unit is supplied by the manufacturer with the Automatic Motor Timer enabled, this way the control unit removes the power supply from the motor 1 second after it has reached the motor's internal stop limit. If there is an established motor operation time and an Automatic Motor Timer which is disabled, proceed as follows when the shutter is closed to perform the programming process: use the SEL button to reach the stage where the T. MOT LED flashes, then press press the SET button briefly; the Motor will begin the Opening cycle. When the shutter reaches the desired position press the SET button. The motor time is stored and the T. MOT. LED remains lit in a constant manner.

To restore the initial configuration (with the Automatic Motor Timer function enabled) navigate to the stage where the T. MOT. LED is flashing then press the SET button twice within 2 seconds; the LED switches off and the operation is complete.

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

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

The control unit is supplied by the manufacturer without an automatic closing procedure. To enable the automatic closing function proceed as follows: use the SEL button to reach the stage where the T. PAUSA LED is flashing, then press the SET button, wait for the desired pause time, then press the SET

button again for a moment; the automatic closing time is stored and the T. PAUSA LED remains lit in a constant manner.

To restore the initial configuration (without automatic closing) navigate to T.PAUSA when the corresponding LED is flashing then press the SET button twice within 2 seconds; the LED switches off and the operation is complete.

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

6) SEL DS1: (Selection of Safety Device 1)

The control unit is supplied by the manufacturer with the DS1 safety device operating as follows: action is not taken into account during the opening stage but causes inverted motor action during the closing stage. If you wish to make it possible to intervene in the opening or closing process, causing the motor to stop immediately, proceed as follows: use the SEL button to reach the stage where the SEL DS1 LED is flashing and press the SET button: the SEL DS1 LED lights up in a constant manner and programming is completed. Repeat the operation to restore the previous configuration.

7) SEL DS2: (Selection of Safety Device 2)

The control unit is supplied by the manufacturer with the DS2 safety device operating as follows: action is not taken into account during the opening stage but causes inverted motor action during the closing stage. If you wish to make it possible to intervene in the opening or closing process, causing the motor to stop immediately and a brief inversion in the motor direction, proceed as follows: use the SEL button to reach a stage where the SEL DS2 LED is flashing and press the SET button: the SEL DS2 LED lights up in a constant manner and programming is completed. Repeat the operation to restore the previous configuration.

8) SEL DS3: (Selection of Safety Device 3)

The control unit is supplied by the manufacturer with the DS3 safety device operating as follows: action is not taken into account during the opening stage but causes inverted motor action during the closing stage. If you wish to make it possible to intervene in the opening or closing process, causing the motor to stop immediately, proceed as follows: use the SEL button to reach a stage where the SEL DS3 LED is flashing and press the SET button: the SEL DS3 LED lights up in a constant manner and programming is completed. Repeat the operation to restore the previous configuration.

EXTENDED MENU

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

To enable the functions of the extended menu proceed as follows: press and hold the SET button for 5 seconds; the DS2 and DS3 LEDs will start flashing alternately. The user then has 30 seconds in which to select the functions of the extended menu using the SEL and SET buttons, after 30 seconds the control unit returns to the main menu.

----- EXTENDED MENU -----		
Reference LED	LED Off	LED On
A) CODE	remote PGM = OFF	remote PGM = ON
B) INB.CMD.AP.	Test DS1 = OFF	Test DS1 = ON
C) LAMP/CORT	Test DS2 = OFF	Test DS2 = ON
D) T. MOT.	Test DS3 = OFF	Test DS3 = ON
E) T. PAUSA	DS2 intervention = Close	DS2 intervention = Open
F) SEL DS1	DS3 intervention = Close	DS3 intervention = Open
G) SEL DS2	Flashing beacon ON/OFF	
G) SEL DS3	Flashing beacon ON/OFF	

A) CODE

(Remote programming of radio control):

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

To programme the transmission code remotely proceed as follows: send the radio control code continuously for more than 10 seconds; 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 is enabled (DS2 and DS3 LEDs flash alternately), using the "SEL" button navigate to CODE LED when flashing and press the "SET" button: the CODE LED lights up and programming is completed. Repeat the operation to restore the previous configuration.

B) INB.CMD.AP. (Test DS1 safety device):

The control unit allows the photoelectric cells to be powered and connected according to regulation EN 12453 (*please read "Notes for the Installer" carefully*).

The control unit is supplied by the manufacturer with the DS1 safety device disabled. To activate the test in accordance with regulation EN 954-1 cat. 2 relating to protection against failures, proceed as follows: check that the extended menu is enabled (DS2 and DS3 LEDs flash alternately), using the "SEL" button navigate to INB.CMD.AP LED when flashing and press the "SET" button: the INB.CMD.AP LED lights up and programming is completed. In this mode the control unit must use photoelectric cells connected to the DS1 input; otherwise it is not enabled for operation.

Repeat the operation to restore the previous configuration.

C) LAMP/CORT (Test DS2 safety device):

The control unit can be connected to a balanced pneumatic tube (8.2K ohm +/- 10%) in accordance with EN regulation 12453 and EN 60335-2-97 (*please read "Notes for the Installer" carefully*).

The control unit is supplied by the manufacturer with the DS2 safety device disabled. To activate the test in accordance with regulation EN 954-1 cat. 2 relating to protection against failures, proceed as follows: check that the extended menu is enabled (DS2 and DS3 LEDs flash alternately), using the "SEL" button navigate to LAMP/CORT LED when flashing and press the "SET" button: the LAMP/CORT LED lights up and programming is completed.

In this mode the control unit must use the security device connected to the DS2 input; otherwise it is not enabled for operation.

Repeat the operation to restore the previous configuration.

C) T.MOT (Test DS3 safety device):

The control unit can be connected to a balanced pneumatic tube (8.2K ohm +/- 10%) in accordance with EN regulation 12453 and EN 60335-2-97 (*please read "Notes for the Installer" carefully*).

The control unit is supplied by the manufacturer with the DS3 safety device disabled. To activate the test in accordance with regulation EN 954-1 cat. 2 relating to protection against failures, proceed as follows: check that the extended menu is enabled (DS2 and DS3 LEDs flash alternately), using the "SEL" button navigate to T. MOT LED when flashing and press the "SET" button: at that moment the T. MOT LED lights up in a constant manner and programming is completed.

In this mode the control unit must use the security device connected to the DS3 input; otherwise it is not enabled for operation.

Repeat the operation to restore the previous configuration.

E) T. PAUSA (DS2 intervention mode):

The control unit is supplied by the manufacturer with the DS2 safety device intervention mode operating as follows: Input closed = safety device intervention; input = 8K2 Ω, normal safety device operation; input open = error status. If you wish to modify the safety device intervention mode, proceed as follows: check that the extended menu is enabled (DS2 and DS3 LEDs

flash alternatively), using the "SEL" button navigate to PAUSA LED when flashing and press the "SET" button: at that moment the PAUSA LED lights up in a constant manner and programming is completed. In this mode the control unit will modify the safety device intervention as follows: Input closed = error status; input = 8K2 Ω , normal safety device operation; input open = safety device intervention.

F) SEL DS1 (DS3 intervention operating mode):

The control unit is supplied by the manufacturer with the DS3 safety device intervention mode operating as follows: Input closed = safety device intervention; input = 8K2 Ω , normal safety device operation; input open = error status. If you wish to modify the safety device intervention mode, proceed as follows: check that the extended menu is enabled (DS2 and DS3 LEDs flash alternatively), using the "SEL" button navigate to PAUSA LED when flashing and press the "SET" button: at that moment the PAUSA LED lights up in a constant manner and programming is completed. In this mode the control unit will modify the safety device intervention as follows: Input closed = error status; input = 8K2 Ω , normal safety device operation; input open = safety device intervention.

RESET:

To restore the default configuration, press the SEL and SET buttons simultaneously, all **RED** LEDs will light up and then switch off.

ERROR INDICATION:

The control unit enables errors or malfunctions to be identified using Software tests. If there are errors or malfunctions on the Input/Output devices, the control unit will indicate the status by alternately activating and deactivating (for 5 seconds a time, and for a maximum period of 1 minute) the 230 V a/c 500 W output for the connection of the flashing beacon or the courtesy light.

This guarantees monitoring of breakdowns which complies with Category 2 of EN 954-1. Whenever one of these malfunctions occurs a qualified professional should be called to fix it.

Test Driver Motor:

The control unit is fitted with two drivers used to control the motor. If there is a malfunction, the control unit will not enable motion of the shutter and will indicate the test failure visually through the simultaneous flashing of all LEDs except the T. MOT LED; which will remain lit in a constant manner. We recommend a qualified technician is contacted immediately in order to resolve the problem. Once the correct operating conditions are restored the control unit may be switched on again. The error status is reset and the control unit is ready to operate normally.

DS1 - DS2 - DS3 safety device test:

The control unit is designed for connection to safety devices (see *Notes for the Installer* section) which comply with point 5.1.1.6 of regulation EN 12453. If there is no connection and/or no operation, the control unit will not enable motion and will indicate the test failure visually through the simultaneous flashing of all LEDs except the DS1, DS2 or DS3 LED, depending on which device generated the breakdown indication.

After the malfunction has been identified, the control unit makes it possible to monitor only the opening movements when a user is present, either using the push-button station or the radio control (when operating via 2-button radio control the button corresponding to the closing movement is disabled and when operating via 3-button radio control the closing movement and Stop buttons are disabled). We recommend a qualified technician is contacted immediately in order to resolve the problem. Once the correct operating conditions are restored the

control unit may be switched on again. The error status is reset and the control unit is ready to operate normally.

HARDWARE DIAGNOSTICS:

PUL command test:

The control unit is fitted with a Red LED for every low voltage PUL command so that its status may be monitored quickly.

Operation principle: LED on = input closed, LED off = input open.

DS1 safety device test:

The control unit is fitted with a Red LED which corresponds to the low voltage DS1 safety device input, so that its status may be monitored quickly. Operation principle: LED on = input closed, LED off = input open.

DS2 - DS3 safety device test:

The control unit is fitted with two indicator LEDs (Red and Green) which correspond to the low voltage DS2 and DS3 safety device inputs, so that their status may be monitored quickly. Operation principle: Red LED illuminated input closed, Green LED illuminated input closed with balanced device (8.2K ohm type), Red and Green LEDs switched off input open.

NOTES FOR THE INSTALLER

The control unit was designed to facilitate the task of automating closure while respecting the guidelines set out in the Machines Directive and the CPD.

The safety of the final installation site and adherence to all current legislation is, nevertheless, the responsibility of the individual assembling the various parts to construct a complete closure device.

To facilitate the fulfilment of the obligations relating to regulations (EN 12453 - EN 12445 - EN 60335-2-103), the control unit is designed to operate in conjunction with various safety devices, namely:

- Sensitive tubes for fixing to cabinet edges (to enable force limitation), monitor in compliance with category 2 of EN 954-1, according to provisions made in point 5.1.1.6 of EN12453; after installation the effective force limitation must be checked using the methods detailed in regulations EN 12453, EN 12445 and EN 60335-2-103.
- Photoelectric cells monitored in compliance with category 2 of EN 954-1, according to the provisions made by point 5.1.1.6 of EN 12453.

It is, however, the installer's responsibility to ensure that the minimum protection level of the main closure edge is achieved.

By programming the control unit suitably and installing the safety devices correctly, the installer is able to guarantee the minimum level of protection in accordance with the provisions made in paragraph 5.5 of standard EN 12453.

If a safety device fault is detected (5.1.1.6 EN 12453) the control unit automatically changes to a non self-holding control. In accordance with points 5.1.1.4 of regulation EN 12453 and 4.1.1.4 of EN 12445, it is necessary to check that the primary edge speed is < 0.5 m/s and that the stopping distances respect the values indicated by the legislation (after the command is sent the stopping distance should not be > 50 mm for spaces < 500 mm and > 100 mm for spaces > 100 mm).

In accordance with point 4.1.2 of regulation EN 12445 it is necessary to check that:

- the door is not capable of lifting a mass of 20 kg (or 40 kg for doors installed in areas which are not accessible to the public) from its closed position. The mass must be attached to the door at the least favourable position. The maximum size of the mass should be 300 mm in any direction, or
- when the door is capable of lifting a mass of 20 kg (or 40 kg), it must stop before the lifted body reaches the lintel or other fixed parts of the building.

The regulation enables an alternative safeguard against the risk of lifting to be achieved through the installation of closure systems which are not fitted with hooks, openings or protruding parts where an individual may become entangled, so that it is impossible for anyone to be pushed or lifted by the door.

Do not use the control unit in conjunction with exit door sites or emergency exit routes.

We advise that you also take note of the following recommendations:

- Before shutter automation, it is necessary to check the product is in good condition and that it complies with EN 12604 and the Machines Directive.
- The wiring of external electrical components must comply with EN 60204-1 as amended in section 5.2.7 of EN 12453. Power supply leads and connection cables must be secured through the use of cable clamps, which are supplied with the product.
- The motor reducer used to move the shutter must comply with section 5.2.7. of EN 12453.
- If present, the push-button station for manual control must be mounted in such a way that the user is not placed in a dangerous situation, in compliance with point 5.2.8 of EN 12453.
- The control unit is not equipped with a 230 V a/c electric line sectioning device. The installer is responsible for installing a sectioning device in the system. An omnipolar switch with overheating category III must be installed. The sectioning device must be positioned so that it is protected against accidental closure, in compliance with section 5.2.9 of standard EN 12453.
- In compliance with EN 12453 it is recommended that motor reducers fitted with an electromechanical unlocking device are used, so that the door can be moved manually if necessary.
- In compliance with point 5.4.3 of EN 12453 electromechanical unlocking systems or similar devices should be used as these allow the door to stop safely at its stop limit.
- Power supply and motor connection cables which are suitable for use in conjunction with the pg9 cable clamps provided must have an external diameter which measures between 4.5 and 7 mm. The internal conductor wires must have a nominal cross-section of 0.75 mm². If a channel is not used, we recommend that cables in H05RR-F material are used.
- The D.S. Power Supply output must be dedicated to the powering of photoelectric cells. It must not be used for other purposes.
- The safety devices connected to DS1 must be powered using the D.S. Power Supply output. If several of the devices mentioned above are used, they must be connected in series.
- For the radio receiver to operate correctly when two or more control units are used, we recommend that you install the devices at least 3 metres away from each other.

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 (re-programming, repairs or site modifications), please contact the technical assistance service.

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.

The below products:

Electronic Control Unit:

LG 2197 - LRS 2197 - LRS 2197 SET - LRH 2197
conform to the specifications in the Directives
R&TTE 99/5/EC, EMC 2004/108/EC, LVD 2006/95/EC.



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