

RX-2CH-LORA is a long-range radio transceiver with variable code decoding for controlling 2 relay outputs

and load management in bistable, monostable, and timer modes.

Paired with the TX-2CH-LORA, it allows point-to-point control with the ability to monitor the relay status and radio link quality.

An interesting feature is the state change mode, which can activate the output relays based on the status of the inputs of the TX-2CH-LORA, suitable for applications where a load needs to be controlled via radio for undefined periods, ensuring RF band occupation within the limits imposed by EN 300 220-2.

It can store up to 100 remote controls and manage the deletion of a single remote control or the full memory.

It is housed in a plastic enclosure with wall-mounting capabilities. Two buttons are accessible for programming, and three red LEDs display operating/programming states and power status.

It operates within a range of 8-24Vac, 10-33Vdc, and is compatible for integration as an aftermarket product within major gate opener systems.

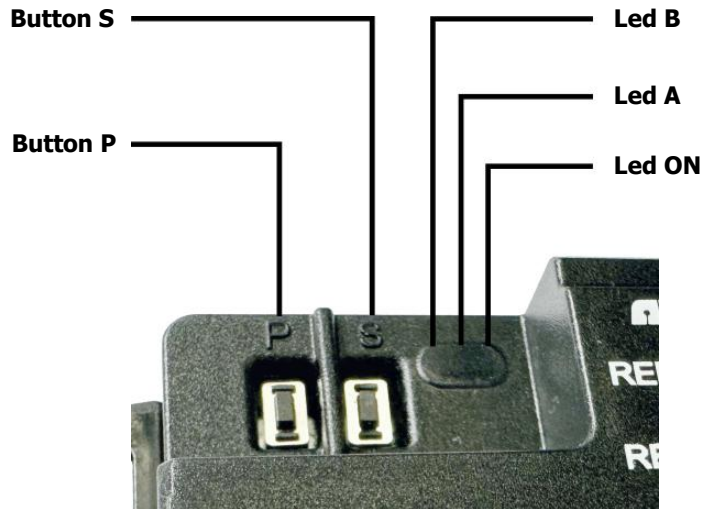
Connections are detachable with terminal blocks, step 3.81mm, and nominal cable section up to 1.5mm².

Connections

Contact No.	Name	Description
1	Positive power supply	Connect to 8-24Vac +10-33Vdc power source
2	Negative power supply	Connect to the negative pole of the power supply or GND
3	Relay B - N.O. contact	Normally open contact 5A 24Vdc, 0.25A 240Vac
4	Relay B contact	5A contact 24Vdc, 0.25A 240Vac
5	Relay A – N.O. contact	Normally open contact 5A 24Vdc, 0.25A 240Vac
6	Relay A contact	5A contact 24Vdc, 0.25A 240Vac
7	Antenna ground	Connect to coaxial cable shield (50Ω) or GND
8	Antenna	Connect to single pole antenna (50Ω) or coaxial cable center (50Ω)

Le caratteristiche tecniche possono subire variazioni senza preavviso. AUR°EL S.p.A. non si assume la responsabilità di danni causati dall'uso improprio del dispositivo.

Buttons and LEDs



In the upper-left corner of the enclosure, a cavity holds two buttons labelled Button S and Button P, accessible with a fingertip or an insulated tool.
To the right, a transparent section shows three LEDs.

Name	Description
Led ON	Red LED: blinks every 2 seconds to indicate the board is ON
Led A	Red LED: Indicates the operation and programming status of Relay A. Refer to the following sections for more details.
Led B	Red LED: Indicates the operation and programming status of Relay B. Refer to the following sections for more details.
Button P	<ul style="list-style-type: none"> Relay selection. Relay operation mode selection (pulse, bistable, timer s, timer m). More details in the following sections
Button S	<ul style="list-style-type: none"> Remote control pairing Single remote control deletion.

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Operation

Once the board is powered on, LEDs A and B light up red for one second. If the board operates correctly, LEDs A and B remain off, while the ON LED blinks every 2 seconds.

Normal Operation:

During normal operation, both LEDs A and B remain off. When a command is received from a stored remote control, the corresponding relay LED lights up red for 1 second to signal the relay activation:

LED A for Relay A,
LED B for Relay B.

Storing the TX-2CH-LORA or Remote Control

As mentioned earlier, LEDs A and B are used in programming to indicate memory assignment for Relay A and Relay B. The maximum number of stored remotes is 100.

To activate the procedure for storing a new remote or changing the function of an already stored one, press **button S** at 2-second intervals. The LEDs will flash in order (LED-A, LED-B, and then repeat starting from LED-A). Once you make your selection, release the button. If you press the same button again, the memory process is exited. You can then press the button on the remote control until LEDs A and B light up for 2 seconds to indicate successful storage.

For example, if a remote control button is stored on LED-A and you want to store another on LED-B, you need to repeat the process from the beginning.

Relay Configuration and Timer Setting

The relay outputs can be individually set to 4 modes (pulse, bistable, timer in seconds, and timer in minutes). By default, the outputs are set to pulse mode.

To change the relay mode:

1. Hold **button P** for more than 2 seconds; LED-A will start flashing, indicating Relay-A's mode. To select Relay-B, briefly press **button P** again. RX-2CH-LORA defaults to pulse mode, with both relays flashing once on first power-up.
2. To change the relay mode, briefly press button **S**. Each short press changes the flashes from 1 to 4, as indicated in the follow table.
3. To exit the Pulse or Bistable menu, hold button **P** for at least 2 seconds. A 30-second timeout is triggered if you don't exit the menu.
4. To set the Timer (seconds or minutes) modes, repeat the point 1 and 2, so keep pressed the button **P** and count the seconds or minutes . Each LED blink corresponds to a second or minute. Release the button to save the timer value.

1 flash	Pulse
2 flashes	Bistable
3 flashes	Timer seconds
4 flashes	Timer minutes

N.B. Value will be stored only in Timer mode and it's allowed a value from **1** to **255**. Value of timer for seconds and minutes cannot be added, so once a mode is selected timer work either in seconds or in minutes.

Deleting a Remote Control

To delete a remote control, hold button **S** at 2-second intervals. The LEDs will flash in sequence (LED-A, LED-B, then back to LED-A). Release the button once you've chosen. To confirm deletion, press button **P**; the receiver's LEDs will light up, then press any button on the remote until LEDs A and B turn off. This confirms deletion.

Note: The deletion of one or more remote controls is only possible if the remote control to be deleted is available. If a remote control is lost and you wish to delete it from the memory of the RX-2CH-LORA, the only option is to clear the entire memory.

Deleting All Remote Controls

Press both buttons **P** and **S** simultaneously on the RX-2CH-LORA. After 10 seconds, LEDs A and B will flash rapidly for 5 seconds. Once the memory is deleted, both LEDs will turn off, and no remote controls will be associated.

Cloning an Already Stored Remote Control or Remote Storage at a Distance

To add a clone remote, press both upper buttons on an already stored remote for more than 2 seconds. The receiver's LEDs will start flashing. Press any button on the new remote until the receiver LEDs turn off, indicating that the new remote has been stored.

Error Messages

The RX-2CH-LORA can display error messages via the LEDs:

- **LED-A on, LED-B blinking:** Remote control code not found.
- **LED-A blinking, LED-B on:** Memory full (100 remotes stored).

Technical Specifications

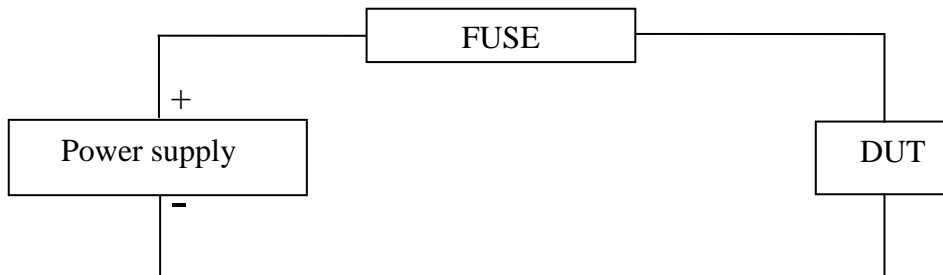
	Min.	Typ	Max.	Unit
DC Supply Voltage	10	12	33	V
AC Supply Voltage	9		24	V
Idle current consumption (+Vs 12V)		95		mA
RF transmission current (+Vs 12V)		55		mA
RF transmission current with relays on		90		mA
Max relay contact current			5A - 24Vdc, 0,25A-240Vac	A
RF Frequency	869.525			MHz
RF Output Power	19		22	dBm
RF Modulation	LORA™			
Receiver Sensitivity			-127	dBm
Operating Temperature	-20		+70	°C
Storage Temperature	-40		+100	°C
Dimensions with connectors	77x42x18			mm

Regulatory Standards

The device complies with the harmonized standards:

- EN 62479
- EN 62368-1
- EN 301 489-3
- EN 300 220-2 Receiver class: **2**

Regarding the electrical safety standard EN 62368-1, the device is considered a subassembly. It is under the responsibility of the assembler to incorporate the device as a component to ensure that the entire equipment is safe. The device is intended to be electrically connected to external circuits classified as ES1 and must be powered by an energy source (battery or power supply) classified as ES1 (Class 1 electrical energy source) in accordance with EN 62368-1 and equipped with protection against short circuits. The protection must be tested throughout the equipment.



Example of short-circuit protection

Furthermore, EN 62368-1 requires that sealed secondary portable cells and batteries (other than button cells) containing alkaline or other non-acidic electrolytes must comply with IEC 62133.

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Manufacturer's Declaration of Conformity EU

Hereby, Aurel S.p.A. declares that the radio equipment type RX-2CH-LORA is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address:

<http://www.aurelwireless.com/declaration-of-conformity/>


The device operates at 869.525MHz (ISM frequency band 869.4 - 869.6 MHz) with maximum radiated power of 20dBm.

The device is a "Class 1" radio equipment as defined in article 1(1) of European Commission Decision No. 2000/299/EC of 06/04/2000. Class 1 radio equipments can be placed on the market and be put into service without restrictions on all EU member states.

Recommendation CEPT 70-03

The device operates in a harmonized frequency band and therefore, in order to comply with current regulations, the device must be used on the time scale with a maximum duty-cycle time of 10% (equivalent to 6 minutes usage on 60).

WEEE Marking

	Once the product life-span has expired, the product must be disposed of in a different way from other wastes. The user must to put the equipment at the collection points for electronic and electrical waste. Illegal disposing of this product, is punishable by law and will be dealt with according to the laws of the individual member nation of EU.
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Release	Main changed	Date
1.1	First release	31/10/2024
1.1	Replace button A to P and Button B to S	12/12/2024