



The RX-2CH-HCS is a 2-channel receiver controlled by any transmitter with a Microchip HCS Keeloq encoder, programmed with Aurel code. HCS and Keeloq are trademarks of Microchip.

The monostable, bistable and timed modes of the two relay outputs make it ideal as a control element in devices such as gate openers, security systems and generally in applications where channel encoding is required.

The transmitter code is stored via auto-learning (see below).

The device stores up to 500 remote controls.

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

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

Compatible with AUREL transmitters: HCS-TX-1/2/3 (OVO), TX1/2/3-HCS-433 (HCS), TX-2/4/6 M-HCS, TX-12 CH.

Main Features

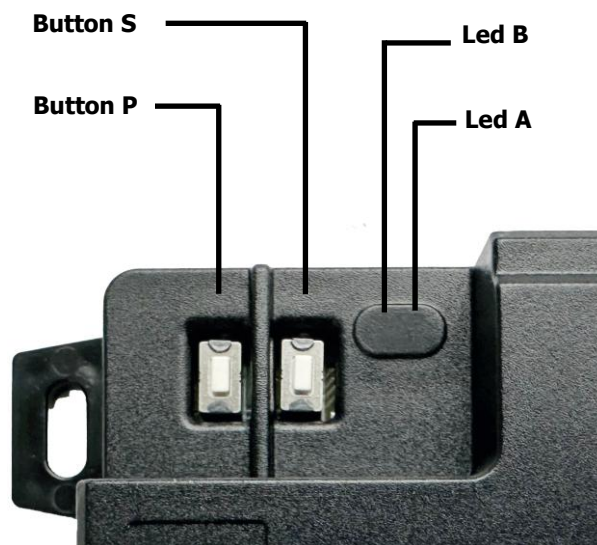
- **RF Sensitivity: -110dBm**
- **500 Transmitters memory capacity**
- **28-bit Serial Identification Code**
- **32-bit Hopping Code**
- **Auto-learning**
- **Bistable/Monostable/Timed programming**
- **Memory deletion**

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.

Connections

| Contact No. | Name | Description |
|-------------|------------------------|--|
| 1 | Positive power supply | Connect to 9-24Vac or 10-33Vdc |
| 2 | Negative power supply | Connect to the negative pole of the power supply or GND |
| 3 | Relay A - N.O. contact | Normally open contact 1A 24Vdc, 0,5A 125Vac |
| 4 | Relay A contact | Contact 1A 24Vdc, 0,5A 125Vac |
| 5 | Relay B – N.O. contact | Normally open contact 1A 24Vdc, 0,5A 125Vac |
| 6 | Relay B contact | Contact 1A 24Vdc, 0,5A 125Vac |
| 7 | Antenna ground | Connect to coaxial cable shield (50Ω) or GND |
| 8 | Antenna | Connect to single pole antenna (50Ω) or coaxial cable center (50Ω) |

Buttons and LEDs



In the upper-left corner of the enclosure, a cavity holds two buttons labelled Button P and Button S, accessible with a fingertip or an insulated tool.

To the right, a transparent section shows two LEDs.

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| Name | Description |
|----------|--|
| 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 S | Remote control pairing and relay selection. More details in the following sections. |
| Button P | Single remote control deletion and relay operation mode selection (pulse, bistable, timer s, timer m). More details in the following sections. |

Operation

Once the board is powered on, LEDs A and Led B light up red for one second.

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 to signal the relay activation:

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

Storing a 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 500.

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, 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 a moment 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.

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, LED-A + LED-B, then back to LED-A).

In this case, it does not matter which option is selected, so it is possible to release the button. If the same button is pressed again, the procedure will be exited.

To activate the deletion process, the **P Button** must be pressed, and the two LEDs on the receiver will light up. Press any button on the remote control until LEDs A and B turn off. This will indicate that the deletion was successful, and from this point, the remote control will no longer be recognized by the receiver.

Note: The deletion of one or more remote controls can only be done if the remote control to be deleted is available. If a remote control is lost and needs to be deleted from memory, the only option is to delete the entire memory.

Cloning an Already Stored Remote or Remote Programming from a Distance

If you want to add a new remote control as a clone of a previously stored one, the procedure is simple and can be done remotely. Take an already stored remote control, press both top buttons simultaneously for more than 2 seconds. At this point, the two LEDs on the receiver will start blinking simultaneously. Press any button on the new remote to be stored until the two LEDs on the receiver turn off. From this moment, the new remote is stored and will activate the receiver's outputs just like the previous one.

Deleting All Remote Controls

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

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 S again. RX-2CH-HCS defaults to pulse mode, with both relays flashing once on first power-up.
2. To change the relay mode, briefly press **button P**. 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 S** for at least 2 seconds. A 30-second timeout is triggered if you don't exit the menu.
4. For the Timer (seconds or minutes) modes, press **button P** to set the timing. 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 |

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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.

Error Messages

The RX-2CH-HCS 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 (500 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) | | 16 | | mA |
| Current consumption with Rele A – B = ON, Led A-B = ON, (+Vs 12V) | | 50 | | mA |
| Max relay contact current | | | 0.5 @ 125Vac, 1@ 24Vdc | A |
| RF Frequency | 433.92 | | | MHz |
| RF Modulation | OOK | | | |
| Receiver Sensitivity | | -110 | | dBm |
| Operating Temperature | -20 | | +70 | °C |
| Storage Temperature | -40 | | +100 | °C |
| Dimensions with connectors | 77x42x18 | | | mm |

Antenna

1. If using a monopole antenna, connect a 16.5 cm long, 1 mm diameter rod to terminal 8, made of brass or copper wire.
2. The body of the antenna must be kept as straight as possible and should be free from other circuits or metallic objects (a minimum distance of 5 cm is recommended).

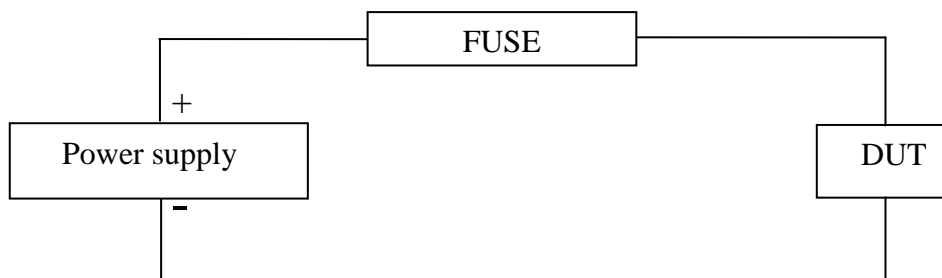
Regulatory Standards

The device complies with the harmonized standards:

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

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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.

Manufacturer's Declaration of Conformity EU

Hereby, Aurel S.p.A. declares that the radio equipment type RX-2CH-HCS 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 433.92MHz (ISM frequency band 433.05 – 434.79 MHz).

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.

WEEE Marking

| | |
|--|---|
| | <p>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.</p> |
|--|---|

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| Release | Main changed | Date |
|----------------|-------------------------------------|-------------|
| 1.0 | First release | 27/11/2024 |
| 1.1 | Inverted function of buttons P to S | 17/01/2025 |

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