

5. If the working range of the remote transmitter falls and/or the LED on the remote dims noticeably when a button is pressed it's likely the remote battery is running low. To access and replace the batteries (two cells of type CR2016, 3V) remove the plastic back cover of the transmitter (via three small cross-head screws), as shown below. Ensure that the new batteries are oriented correctly.



### Troubleshooting

- If the input supply voltage drops below 9V then the receiver will cease to function. Ensure that the power supply (or battery) used can handle the load current and is adequately charged otherwise such a voltage drop may occur.
- If the receiver stops responding to the transmitter it may be out of range or the transmitter battery may be low, try bringing the transmitter closer to the receiver and if that doesn't help try replacing the transmitter battery via removing its back cover (see section 5). Be aware that the effective operation range will be reduced significantly by large metal objects between the transmitter and receiver (as these shield against radio waves).
- Ensure that the input and output leads do not get tugged hard, if this happens the screw terminals that they are connected to on the control board may become loose.

For any product issues or questions not covered in this guide please contact us either by email at [support@gimsonrobotics.com](mailto:support@gimsonrobotics.com) or via the website at [gimsonrobotics.co.uk/p/contact](http://gimsonrobotics.co.uk/p/contact)



# GLA-CU-X2

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## Actuator & DC Motor Remote Control Unit *Set-up Guide*

1. Each GLA-CU-X2 unit is supplied with one small 'key fob' transmitter (the item labelled #2 in the below image) and a rectangular receiver unit (item labelled #1). The remote transmitter is able to send encrypted instructions to the receiver which then decodes them and switches a connected actuator or DC motor in either one direction, the opposite direction, or off. Additional remotes (including wall mount remotes) are available to purchase separately from [gimsonrobotics.co.uk](http://gimsonrobotics.co.uk)

To get started you should connect the two input leads (those with a white tag marked 'INPUT') to a DC (direct current) supply between 12V and 36V (absolute limits 9V to 40V). Ensure that the red lead is connected to the positive (+) of the supply and that the black lead is connected to negative (-). Each unit is supplied with the included key fob remote memorised, meaning that if you press the up and down buttons after having applied power to the receiver you should hear a 'clicking' noise as the internal relay switches are activated. If this is the case you may skip to section 3 of this guide, otherwise use the 'learning' procedure detailed in section 2.

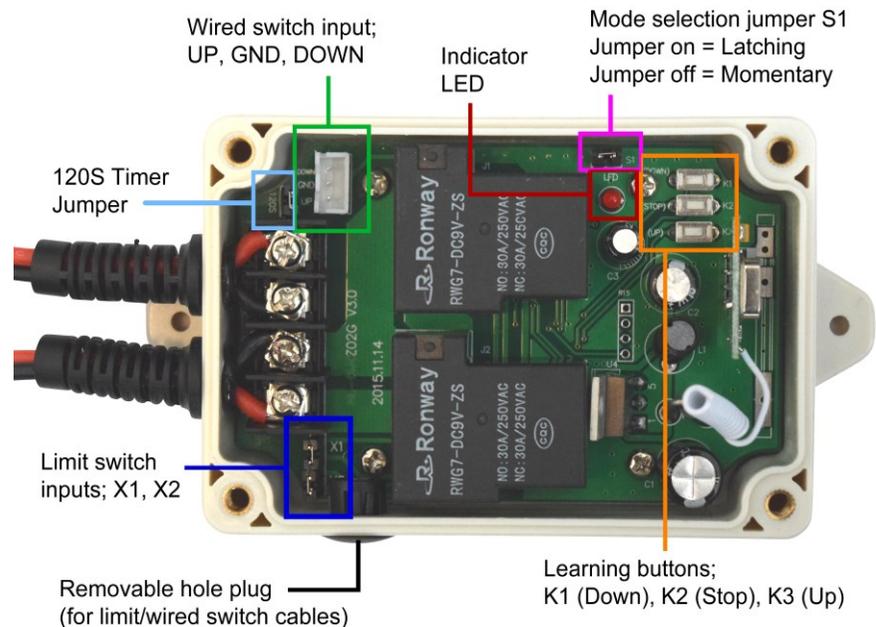
#1 Receiver



#2 Transmitter

**2.** The receiver can selectively memorise which remote transmitters to respond to; in this way one remote may control one or multiple receivers, or one receiver may be controlled by one or multiple remotes (each receiver is able to memorise up to seven separate remotes at once). Multiple (>20) remote and receiver pairs may also be used independently in the same area provided that they are 'learned' separately from one-another. The procedure for 'learning' a remote is as follows:

1. Remove the lid from the receiver casing (via four cross-head screws). You should then be able to see three small white push-buttons on the board labelled DOWN (K1), STOP (K2) and UP (K3) as shown below:



2. Connect the unit INPUT lead to a DC power source between 12-36V, do not have the OUTPUT connected to a device at this point (and do not allow the ends of the OUTPUT leads to touch one-another). Be sure not to expose the board to any metal objects (such as loose screws) while the cover is removed.
3. Check that when you briefly press one of the white push-buttons the LED on the board lights up, if it does then the receiver should be on. Have the remote you wish to program to-hand and then press the 'UP' button on the receiver board momentarily, release, then quickly press the up arrow on the remote. After pressing the remote button the LED on the board should flash and then turn off.
4. Repeat step three with the white button labelled STOP and the stop button on the remote to calibrate this button.
5. Repeat step three with the button DOWN and the down-arrow remote button.
6. The board should now have learned the remote and the next time you press an up or down button (with the board powered) a relay should 'click' meaning the controller is switching the output current (provided that X1 and X2 are bridged).

If you wish to reverse the remote operation (so that the travel of the controlled device is reversed for a given command) then follow the previous learning steps but in the opposite order (UP to remote down button, DOWN to up button).

To erase the memory of previously learnt remotes press and hold any white button on the board for a long time (around 10 seconds), the red LED should turn on initially and then after a long pause turn off which signifies that the memory is now clear, you can then release the button.

**3.** Using the receiver with a DC motor or actuator is simple, just connect the two output leads (labelled 'OUTPUT') to the two leads of the device to be operated, then when a DC source is connected to the 'INPUT' you should be ready to go. Pressing the up button on the remote should cause the device to travel in one direction and pressing the down button should reverse the direction of the output current and the reverse the motor or actuator travel.

**Control modes:** Two operating modes may be selected, either **Latching** (a single press of a remote leads to a constantly-on output, only turning off when a different button is pressed) or **Momentary** (the output will only stay on for as long as a remote button is held, and the 'stop' button becomes redundant). Latching is the default operating mode, to change to momentary remove the black jumper cap from position S1 on the receiver board (and keep the jumper safe in case you wish to change modes back again later).

**Wired switch input:** A SPDT rocker-switch or two push-buttons may be used to operate the receiver via the white connector labelled 'UP, GND, DOWN'. If 'UP' and 'GND' are connected to one-another then the receiver will change the output to 'UP', if 'DOWN' and 'GND' are connected then the output will change to the opposite direction. Any wired inputs supplied to the board here will *override instructions given by remote transmitters* to the receiver. A lead with three-way (white plastic) connector is included, to match the connector on the board.

**Automatic-off Timer:** The receiver has an optional timer function (enabled by default), which automatically switches off the output in latching mode if no new control instruction has been received within 120 seconds. This feature can help to save energy by minimising the time that a relay is being powered (whereas otherwise the relay would continue to operate until a 'stop' button were pressed). To disable the timer remove the black plastic jumper from the position marked '120S' on the PCB (by the wired-switch input connector).

**4.** The receiver features inputs for limit switches (*if you are using a device with built-in limit switches or one that does not need them you may disregard this section*). There are four contacts on the board, in two pairs labelled X1 and X2 (bottom-left of diagram in section 2.), these are supplied with two black jumpers bridging each contact pair but if these jumpers are removed you may put Normally-Closed switches in their place to serve as limit switches. Each time a switch were pressed (and went open-circuit) the receiver would prevent the output from switching in a one direction. In this way you can mount switches on the device you are controlling that will automatically stop movement when an end position (as determined by a limit switch trigger position) is reached.