

**5.** If the working range of the remote transmitter drops and/or the LED on the remote dims when a button is pressed it's likely the remote battery is running low. The standard fob remote supplied (with chrome edging) uses two cells of type CR2016, 3V (two spares of these are included with each receiver set). To replace the batteries, remove the plastic back cover of the transmitter (via three small cross-head screws), as shown below. Slide the old batteries out, ensuring that replacements are installed in the same orientation (positive and negative on the correct side).

For the larger hand-held remotes the battery, an A23 12V size cell, can simply be accessed by a small clip-door on the rear of the remote.



### Troubleshooting

- A. If the response to the transmitter seems to be intermittent, try pressing the buttons a little longer each time (at least 0.5s per press). A signal is only sent for as long as a button is pressed, and it takes a fraction of a second for the controller to validate a signal before switching its output.
- B. If the input supply voltage drops too low then the receiver will turn off. If the output is regularly stuttering, turning quickly off after each operation, then it's likely that the power source (battery or power supply) is not providing sufficient current and should be replaced.
- C. Be aware that the effective operation range will be reduced significantly by metal objects in between the transmitter and receiver (as these tend to absorb or reflect radio waves). The operating range is also a bit better in the default **Latching** control mode versus **Momentary** mode.
- D. If the output stops, but you can still hear the clicking of the internal relays in response to input commands, then check the on-board fuse which may have blown.
- E. If it only works in one direction, check that the limit switches are bridged (if not using switches check that L1 and L2 positions still have black plastic 'jumpers' on them).
- F. If the board is not responding at all, check that, unless you have installed an independent logic power supply, the jumper in position labelled 'V Input' on the PCB is still in place.

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-X3

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

For more information and for spares go to: [gimsonrobotics.co.uk](http://gimsonrobotics.co.uk)

**1.** Each GLA-CU-X3 control unit is supplied with at least one transmitter, this may be a hand-held or a key fob type (key fob option pictured below, item **#2**), and a receiver unit (item labelled **#1**). The remote transmitter sends encrypted instructions to the receiver which decodes them and switches/controls connected actuators or DC motors either one direction, the opposite direction, or off. Additional remotes (compact key fob or longer-range hand-held remotes) are available to purchase 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) power source between **12V to 36V** (*absolute* limits 10V 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 (in the same bag) remote(s) pre-programmed and ready to use. If you have any trouble using the included remote(s), or if you have purchased additional remotes that you also wish to use with the receiver, then please program them to the receiver memory following the steps described in section **2**, otherwise jump to section **3** which describes control options.

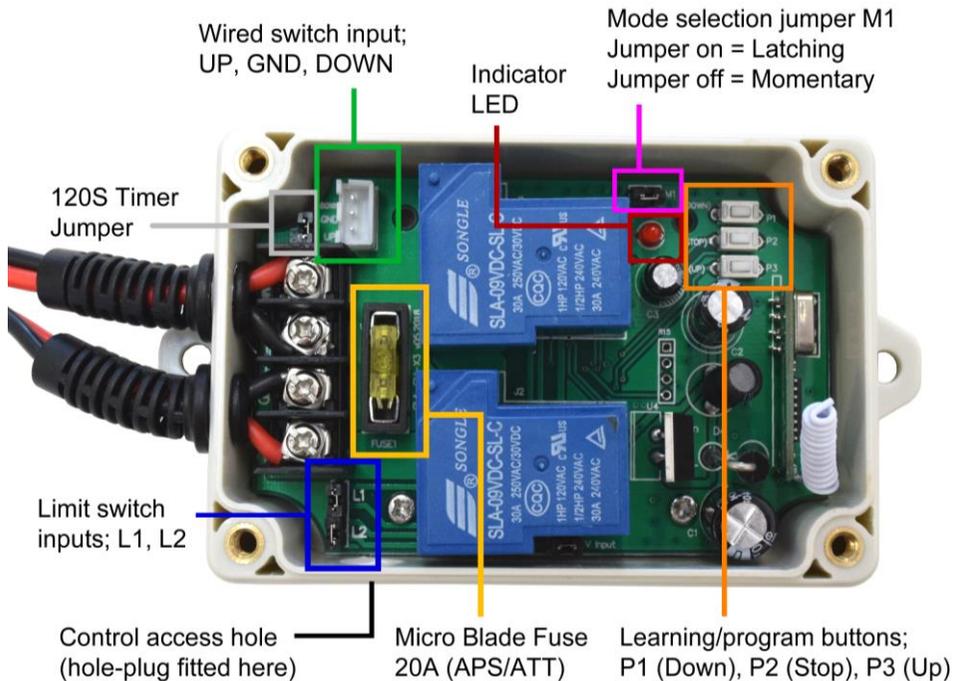
### #1 Receiver



#2 Transmitter

**2.** The receiver can selectively memorise which remote transmitters to respond to; in this way a single remote may control one or multiple receivers, or one receiver may be controlled by one or multiple remotes. Each receiver can store in memory up to 24 separate remotes at once. Many separate remote and receiver pairs may also be used independently in the same area provided that they are programmed separately from one-another (and provided that the remotes aren't pressed at exactly the same time, which could cause them to interfere with one-another). To program remotes follow steps below:

1. Remove the lid from the receiver casing (via four cross-head screws). You will then be able to see three small white push-buttons on the circuit board labelled P1 (DOWN), P2 (STOP) and P3 (UP) as shown circled in **ORANGE** below:



2. Protect the board from any loose metal objects and ensure that the OUTPUT leads are not touching one-another and are not connected to a device. Connect the unit INPUT lead to a DC power source between 12-36V.
3. Briefly press then release one of the white push-buttons on the circuit board, if the LED (shown circled in red above) lights up that indicates that the receiver is on. Have the remote you wish to program ready.
4. Press the 'P3 (UP)' button on the receiver board momentarily, release, and then quickly press the up arrow on the remote. After pressing the button on the remote the red LED on the board should flash and then turn off.
5. Repeat step three with the white button labelled P2 (STOP) and the remote stop button.
6. Repeat step three with the button P1 (DOWN) and the down-arrow remote button.
7. The board should now have learned the remote and the next time you press to change direction (with the board powered) a relay should 'click' meaning the receiver is switching the output current (provided that limits L1 and L2 are bridged).

If you wish to reverse the remote operation (so that the travel of the connected motor or actuator is reversed for a given command) then follow the previous learning steps but in the opposite order (P3 UP to remote down button, P1 DOWN to up button).

To erase the memory of all previously programmed remotes press and hold any of the white buttons on the board for around 10 seconds. The red LED should turn on initially as you press and then after a long pause turn off which signifies that the memory has been cleared and you can then release the button. Check that the memory is erased by attempting to use any previously programmed remotes before re-programming them.

**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 a connected device to travel in one direction and pressing the down button should invert the output current and reverse the direction of the motor or actuator travel.

**Control modes:** One of two operating modes can be selected, either **Latching** (where a single press of a remote leads to a constantly-on output, only turning off when a different button is pressed) or **Momentary** (also called 'while pressed', the output will only stay on for as long as a remote button, up or down, is held). Latching is the default operating mode. To change to momentary mode remove the 'jumper' from position **M1** (shown circled in **PINK** on the diagram to the left). Keep the jumper safe in case you wish to change modes back again later. Bear in mind that the remote operating range and battery life performance is better in latching mode than in momentary mode.

**Wired switch input:** A SPDT (single pole double throw) rocker-switch or two push-buttons may be used to operate the receiver via the white connector labelled 'UP, GND, DOWN' (shown highlighted in **GREEN** in the left-hand diagram). 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. This input is always in a momentary ('while pressed') control mode.

**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 the 'stop' button is pressed). To disable the timer remove the black plastic jumper from the position marked '**120S**' on the PCB (shown circled in **GREY** in the left-hand diagram).

**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 contact pins on the board, in two pairs labelled **L1** and **L2** (circled in **BLUE** to the left), these are supplied with a jumper bridging each contact pair (2). If these jumpers are removed you may replace them with Normally-Closed (NC) switches to serve as limit switches. Each time a switch is pressed (and goes open-circuit) the receiver will prevent the output from switching in one direction. These limit switches may be added to the assembly that you are controlling to automatically stop movement when an end position is reached.