Dingo Servo Mounts
RED Single Servo Control Board MK3

Safety Precautions.

Note: All PCB's supplied in Anti-static bags for protection!

Before installing this product, make sure that you have read the full instruction guide and are comfortable with the requirements.

Make sure that all parts, especially plastic packets, are kept away from young children.

Only use certified power supplies for your region and **DO NOT** interfere with the Mains side of the power supply.

If you are unsure as to how to do the electrical connections, please consult with someone who has the required expertise or contact Dingo Servo Mounts for more information.

These units are not toys, but serious modelling parts.

Please Note: that the RED boards contain different firmware to the older green boards and set very differently. Please consult the setting instructions carefully if you have previously used the older boards.

Description and Origin

There are many servo control boards on the market to-day which can be used for model railway point and signal operation.

Most are for multiple servos and offer all sorts of bells and whistles.

There are also a range of excellent kits available to members of the MERG group which offer a variety of control options.

I believe there is a need for a very simple board that offers easy setup and operation for model railway points or semaphore signals.

This is the reason behind the development of this particular board.

The RED Single Servo Control Board is designed for use with standard 9g servos like the TowerPro SG90 Hobby King HK15178 or similar. I have also tried it with the larger waterproof HK15139 units and it works fine. (These servo motors are often used in Garden layouts)

The RED Single Servo Control Board has a preset slow speed to simulate real life point movement and there is no provision for adjusting the speed. (However, they can be supplied with a faster speed on request.)

The two end positions are set very simply by means of a plug-in setting box.

A simple single pole on/off switch is all that is required to move the servo from one position to the other.

Wiring up.

You will need a smoothed and regulated DC power supply of 9 – 12 V DC with a capacity of at least 1Amp for a single board.
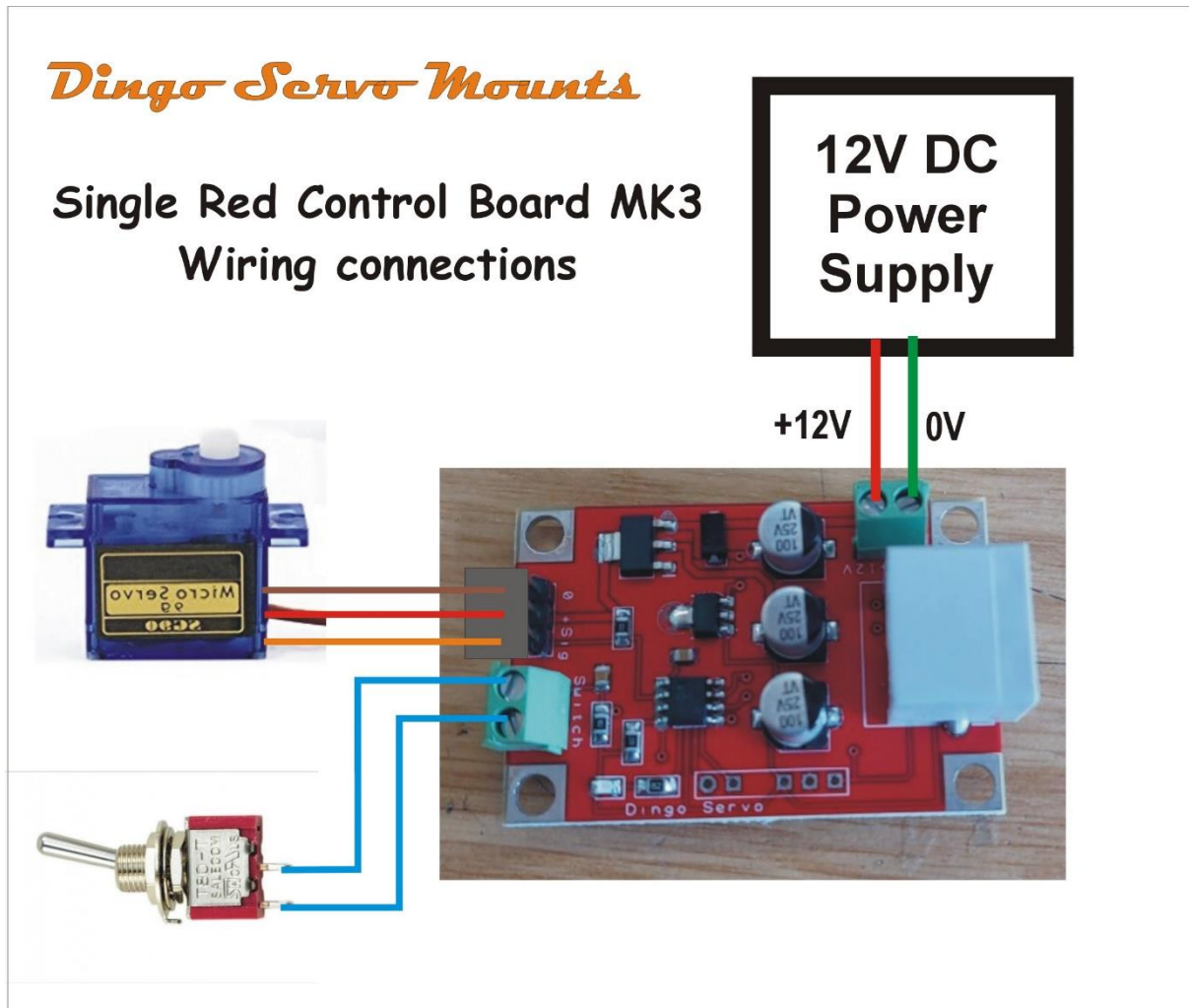
A standard 2A wall wart will be sufficient to drive quite a few boards as long as not more than 2 are actuated at the same time.

You will also need a SPST switch to control your board. (This may also be a set of relay contacts or similar from your layout control panel.)
Note a push button switch will not work unless it is self-latching.

Wire up as per this diagram.

Note the polarity of the power supply is important. (If connected the wrong way around, the board will not work but will not be damaged.
Both the 0v and the ground terminal of the switch input have been marked with a black marker
The servo needs to be connected with the black or dark brown lead towards the top end of the board.
The switch simply shorts the two switch contacts together.
Note that the one nearest the servo plug is the 0V contact and the bottom one is "live" terminal. The 0v terminal is connected internally to 0v on the power connector.

It is advisable to test the servo and board before fitting the servo to the layout and advisable to use a setting box as outlined in the following section to centre the servo.
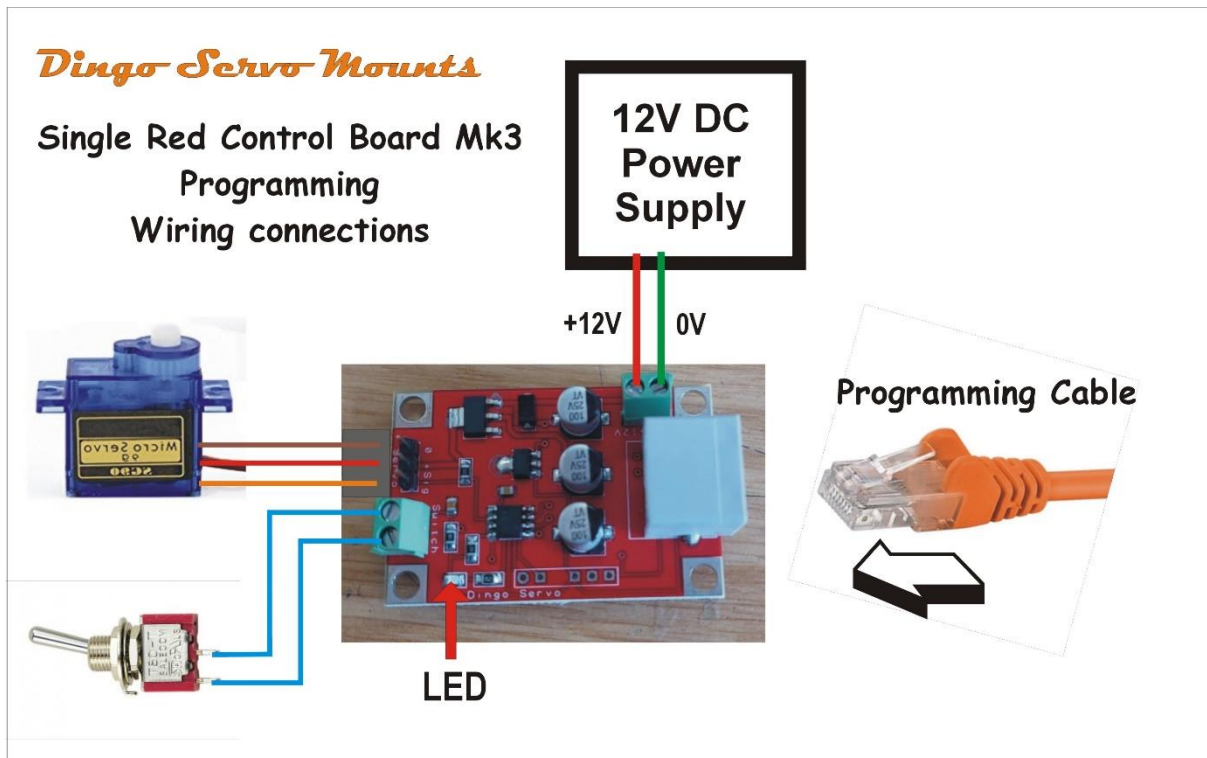
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We always recommend using one of our Dingo Servo Mounts to get optimum performance from your servo on your layout.

Setting up the end positions.

Once the unit is connected as described above, switch on the power and after a second or so the Red LED will light to show that the board is in working order.

Single Red Control Board Mk3
Programming
Wiring connections

12V DC Power Supply

+12V   0V

Programming Cable

LED

Before connecting the setting box make sure that both controls are in the mid position. Arrows or markers pointing straight up.

Setting up the end positions – RED Boards.

Operate the switch to the open position if possible and then plug in the setting box.
Immediately the **RED** LED will flash twice and then go out indicating that the board is now in setting mode.
Set this position by means of VR1 on the setting box.
Now operate the switch to the "CLOSED" position
Now set the opposite position by means of VR2 on the setting box.
Once this is done remove the setting cable from the board or from the bottom of the setting box and the values will be written to the Chip. If Using the Switched setting box you can just switch to run.
The LED will now come on again showing that the board is in the run mode.
The end positions are now set and the unit should operate when the switch is toggled.

At anytime the settings can be changed by plugging the setting box in again and repeating the above procedure.

NOTE! The unit will not set if the servo is pushing hard against a stop as the board won't be able to reach the setting point and will thus not set. Back off slightly before removing the cable.

The board is now set and should continue to operate to the same endstops until reprogrammed.

NOTE! The unit will not set if the servo is pushing hard against a stop as the board won't be able to reach the setting point and will thus not set.
Overdriving the servo can lead to burnout of the servo or the board.

ONE FINAL NOTE! Sometimes at switch-on the servos my move to the mid position before going back to the set positions. This is a software protection device to make sure that the servos don't go the wrong way with a bad switch on spike or bad shutdown. It is therefore important that the midpoint of travel is within the 2 set points of the servo.

I hope that you will find this unit useful and as always, I welcome any feedback, especially as these boards are still in test production so that I can modify if required to make this a really good servo controller board.

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If you haven't already seen our amazing servo mounts in action, please check out the "Video Links" Page on our website.