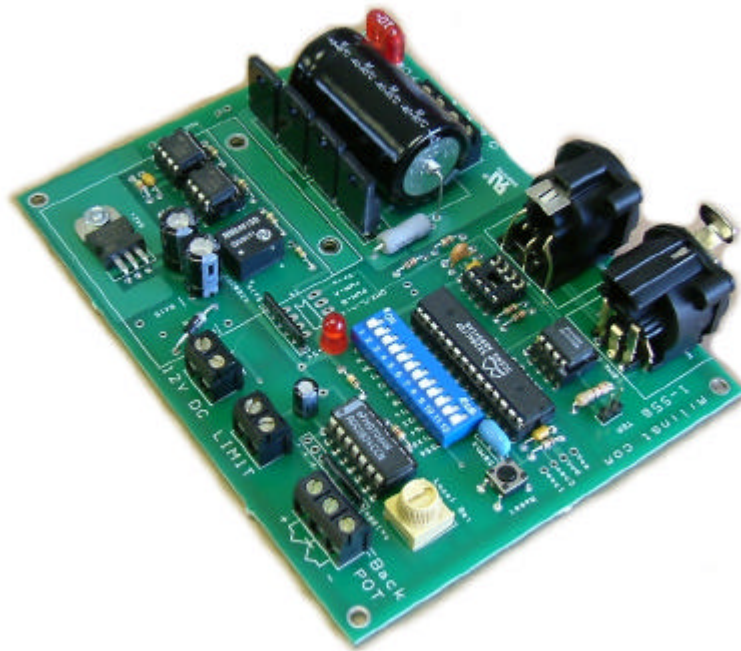


DMX - Motor (Servo) Controller



The DMX- (Servo) Motor controller allows DC motors to be controlled over a standard DMX system. The board may be configured to drive the DC motor simply as a variable speed, reversible motor or with the addition of a position feedback potentiometer, to create a powerful servo motor controller for accurate positioning purposes.

The DMX- (Servo) Motor controller will drive DC motors rated at up to 36V at 5A continuous current. The module requires 2 DMX consecutive channels which may be set using on-board address switches. The module incorporates a 'local' control option for setting up and the facility to include end travel limit switches.

Connections and Controls

DMX IN-OUT

Connection to a standard DMX network via 5-pin XLR connector. A termination resistor is provided on the board (Ter). Insert a jumper over this 2-pin connector if the module is the last module on the network.

Motor Connection (+/-)

Connection to the DC motor.

Motor Supply

Maximum rating is 36V DC at 5A continuous (shipped as standard with a 10A fuse)

Electronics Supply

The electronics power supply **must** be separate from the motor power supply. Requires 9-12V DC at 250mA.

Limit Switches.

If required, connect limit switches to these terminals. The terminals are active when closed and will disable the motor drive amplifier until the short is removed. Connect multiple limit switches in parallel.

FeedBack Potentiometer

For servo use, connect a 10K linear potentiometer to these contacts- centre contact to the potentiometer wiper. The 'Local Set' potentiometer allows the module to be controlled without a DMX signal being present.

Address-Settings Block

Module Address

The DMX base address for the module is set within the range 1 to 511 using the dip switches. Set the appropriate switch to the ON position and add the values to determine the base address. The module expects the two control channels to be at the base address and base address+1 positions in the DMX packet. **The Base address value is only read at power-up.**

M-S switch

Set the switch to the S position for servo action or to the M position for variable speed, reversing motor control operation.

L-R switch

Set to L position for control using the on-board potentiometer and to the R position for control via the DMX network.

DMX Signals

The controller expects to receive 2 consecutive bytes. In Motor mode, the first byte represents the motor speed and direction: 0 would be full speed reverse, 255 full speed forwards and 127 (or thereabouts) no motion.

In Servo mode, byte 1 represents the set position for the servo: 0 fully anticlockwise, 255 fully clockwise.

Byte 2 in both modes enables or disables the motor drive amplifier. Channel 2 must be > 127 to enable the amplifier

Motor Operation

Set the module base address, the M-S switch to M and the L-R switch to R.

Connect to the DMX network and set channel 1 to midway (ie value 127) and channel 2 to a value less than 127.

Switch on the power supplies to the controller- the motor should not move. Increase Channel 2 to 200. The motor should start to hum and maybe rotate very slowly. The speed and direction of rotation of the motor may now be controlled by the value on channel 1.

If the motor does not respond, make sure you have nothing connected across the Limit terminals, there is a valid DMX signal and the base address is set correctly.

For Local operation, any incoming DMX signal is disregarded and the motor speed/direction is controlled solely by the Local potentiometer and Limit switches.

Servo Operation

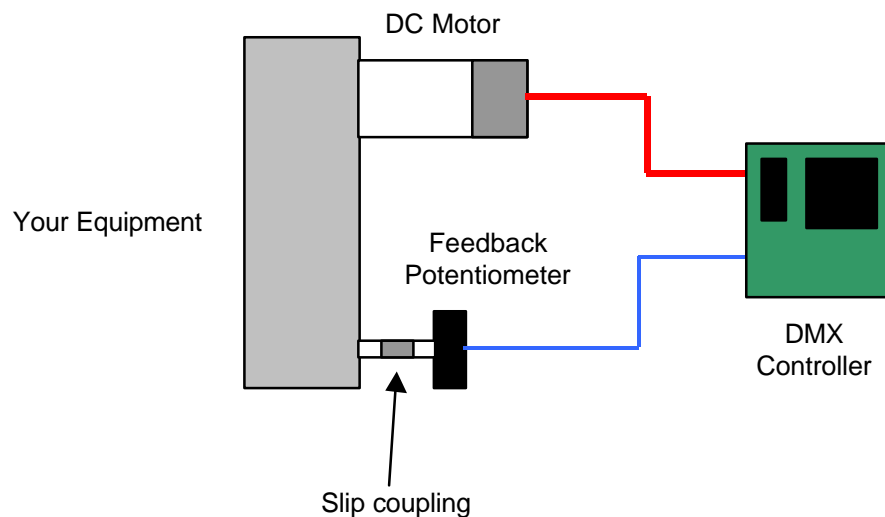
Set the module base address, the M-S switch to S and the L-R switch to R.

Connect to the DMX network and set channel 1 to midway (ie value 127) and channel 2 to a value less than 127.

Connect a feedback potentiometer to the 3-way terminal block. The feedback potentiometer must be physically driven by the mechanism you are controlling and should incorporate a slip coupling in case of over travel.

The servo will give approximately 300 degrees of control- if this is less or more than you require, you will need to include appropriate gearing into your equipment to give this amount of rotation. Linear potentiometers may also be used.

For long term usage, we recommend a high quality feedback potentiometer with a high mechanical cycle rating such as the Spectrol 357-2-0-103 series (with end stops). This particular unit is rated at 10 million cycles and 340 degrees rotation. By comparison, you can expect approximately 25,000 cycles with standard carbon potentiometers.



Connect the electronics power supply.

Before connecting the motor supply, bare in mind you have a 50/50 chance of having the motor connections reversed. Make sure you can disconnect the motor power quickly!

Switch on the power supplies to the controller- the motor should not move. Increase Channel 2 to 200. The motor should start to hum and rotate until the feedback potentiometer value matches the DMX set point value.

If the motor continues to move, switch off the power and reverse the motor connections.

Changing the value of channel 1 should cause the servo motor to follow.

If the motor does not respond, make sure you have nothing connected across the Limit terminals, there is a valid DMX signal and the base address is set correctly.

For Local operation, any incoming DMX signal is disregarded and the servo position is controlled solely by the Local potentiometer and Limit switches.

Board size

The DMX (Servo) Motor controller pcb size is 130 x 99 x 30mm high