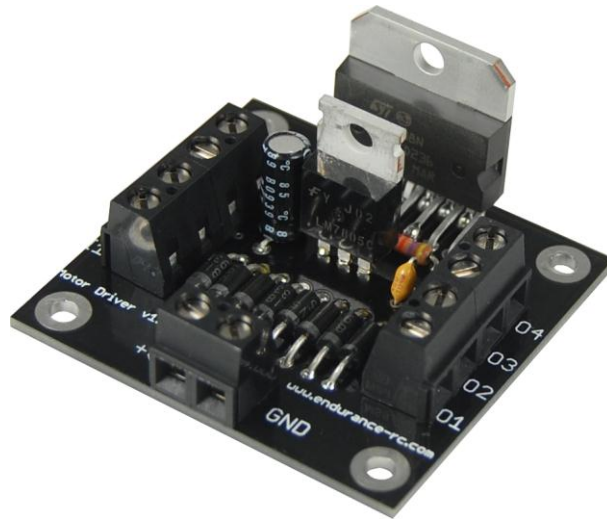


Endurance R/C

4A Motor Driver Instructions



The Endurance R/C 4A Motor Driver allows for the control of either two DC brushed motors or one bi-polar stepper motor. This driver can be combined with a microcontroller to gain full speed and forward and reverse directional control. The controller can be easily integrated into a new or existing project by using anywhere from one to four digital outputs depending on the application. The driver has been specifically designed with minimal components to keep the cost down as well as providing a robust motor control platform.

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Operational Requirements

This motor driver was designed with simplicity in mind. Based on the L298 chip the Endurance R/C 4A Motor Driver allows the user to get up and running quickly requiring only a 6 to 24VDC power requirement; perfect for most users.

Depending on the requirements of the motor being driven, anywhere from one to four digital outputs are needed. The driver operates off normal TTL logic levels. If the motor being driven is a DC brushed motor and only one direction is needed then only one digital output is required. If the motor requires both forward and reverse two outputs are required. The third and fourth output would be required for a second brushed DC motor.

DC stepper motors require all four digital outputs.

DC Brushed Motor Usage

Brushed DC motors can be connected to the outputs labeled O1 through O4. O1 and O2 are associated with the first motor while O3 and O4 are associated with the second.

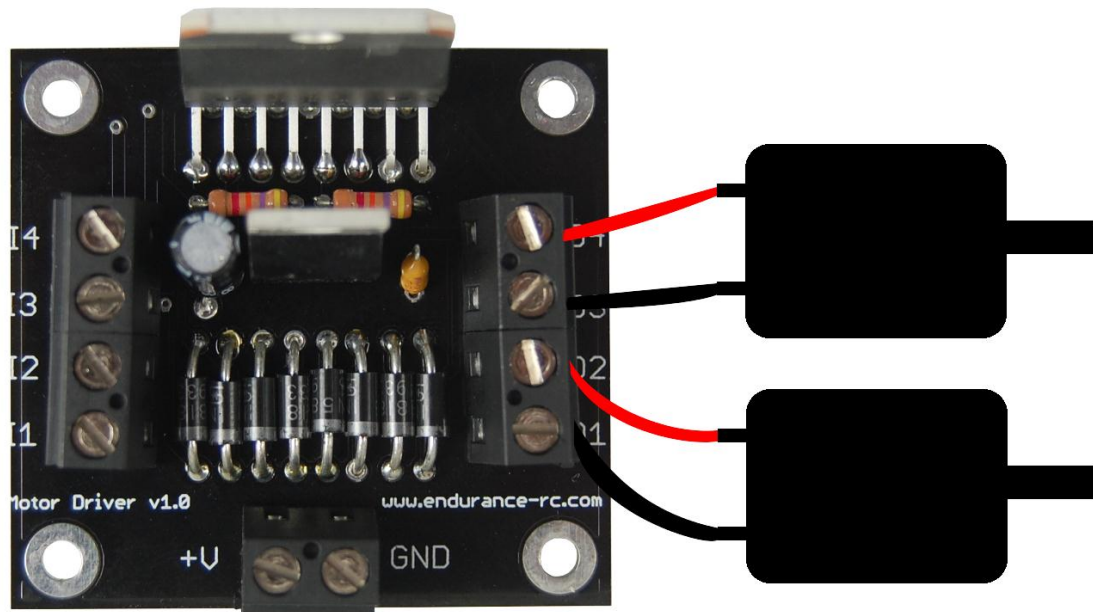


Figure 1. Dual Brushed DC motor usage

In order to discover what input will turn your motor in one direction start off by connecting a motor to O1 and O2 and power to +V and GND. Be sure to check with the motor documentation to obtain the proper voltage. Next connect I1 to a +5V source. The motor should spin in one direction. Next disconnect I1 and connect I2 to a +5V source and the motor should spin in the opposite direction. The same procedure can be applied to I3 and I4 for the second motor.

DC Stepper Motor Usage

DC stepper motors should be connected to the outputs labeled O1 through O4. This controller is capable of driving bipolar stepper motors however unipolar motors can be driven by the controller by not connecting the center tap of the coil.

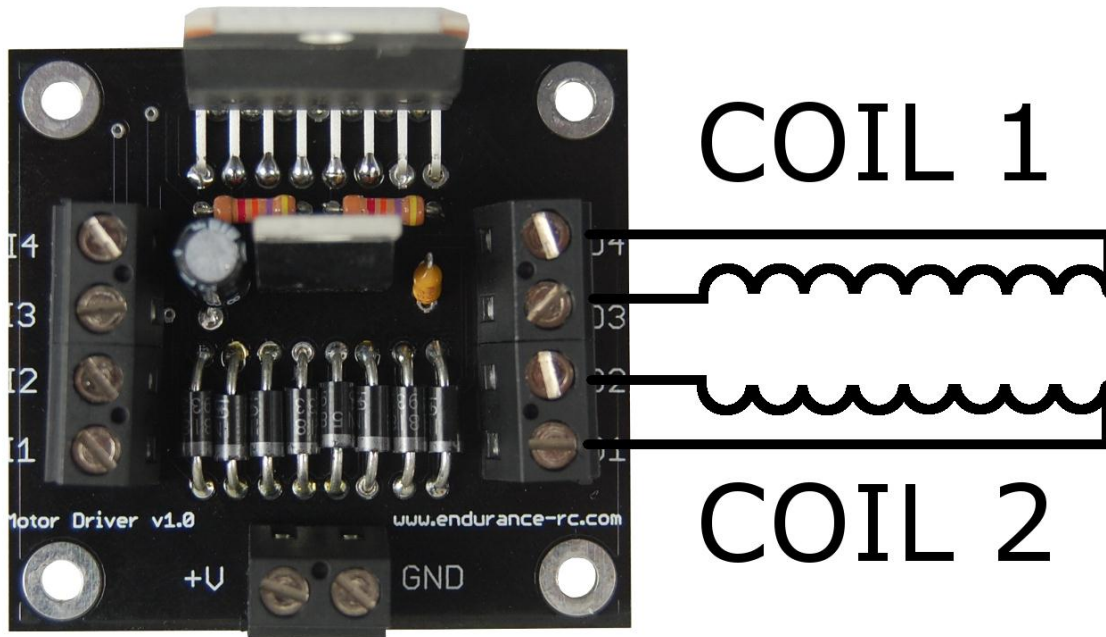


Figure 2. DC stepper motor usage

Refer to your stepper motors manual to determine which wires belong to which coils.

Driving a stepper motor will require a microcontroller or other circuitry capable of activating the input lines in a certain pattern. There are many ways of driving a stepper motor including wave drive, full step drive, half stepping and microstepping. Wikipedia has great information on the differences and pros and cons of each method.