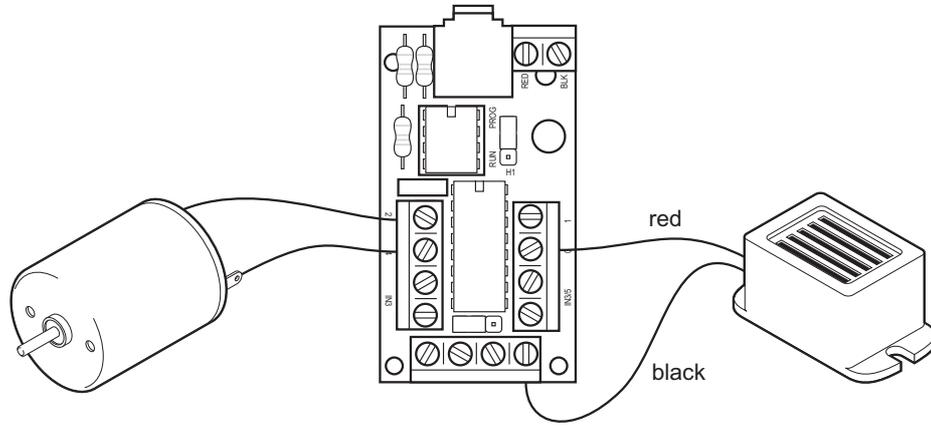


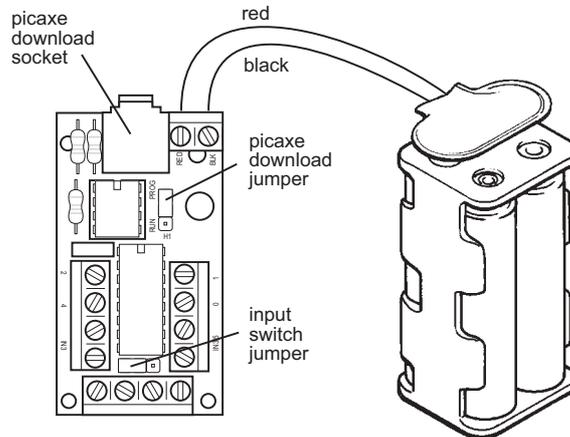
### The PICAXE-08M2 Motor Driver Board (AXE023)

The 8 pin motor driver board provides 4 outputs on pin numbers C.0,C.1,C.2 and C.4. Pin C.3 is used as an input, and C.5 (programming pin) may also be used as an input.



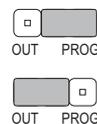
The outputs can be used individually to driver electronic devices such as buzzers and signal lamps. To connect outputs in this way the red wire is connected to the terminal block at the side of the board and the black wire is connected to 0V (G) at the bottom of the board.

The outputs can also be used in pairs to give forward-reverse stop control of motors, so the board will drive up to two motors. To connect motors in this way the two wires from the motors are connected to the pair of outputs (0 & 1 or 2 & 4) at the side of the board.



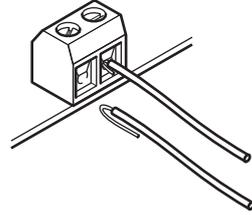
Power should be connected to the board via a battery snap, which can be threaded through the two large holes to create a stronger connection point. The PICAXE-08M2 microcontroller will function at battery voltages between 3 and 5V (do not use a 9V PP3 battery). Most users will use 3xAA alkaline cells (4.5V) or 4xAA rechargeable cells (4.8V).

Note that the jumper must be used to connect the serial output (PROG position) during a download, or the output pin 0 (OUT position) during normal operation, as both functions share the same microcontroller leg.



### Connecting Wires to the Board

To make stronger connections it is suggested that when connecting wires the 'bare end' of the wire is folded back over the insulation so that both the insulation and the bare wire are tightened into the cage of the screw terminal. This makes a stonger joint than just connecting the bare wire alone.



### Controlling Motors.

Motors are controlled by pairs of outputs as shown by the table below.

Note that there is an approximate 1.4V voltage drop within the L293D driver chip and so, for instance, if a 4.8V supply is used the motor voltage will be around 3.4V.

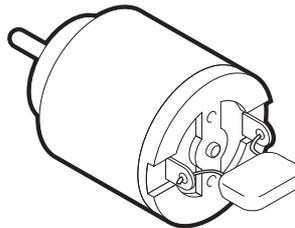
The L293D chip is designed to run warm in use. This is normal for this type of chip. The direction of rotation of the motors is defined as follows:

Pin 0	Pin 1	Motor A	Pin 2	Pin 4	Motor B
off	off	off	off	off	off
on	off	forward	on	off	forward
off	on	reverse	off	on	reverse
on	on	off	on	on	off

The L293D chip can drive up to 1A, but will require a heatsink to be added at larger currents.

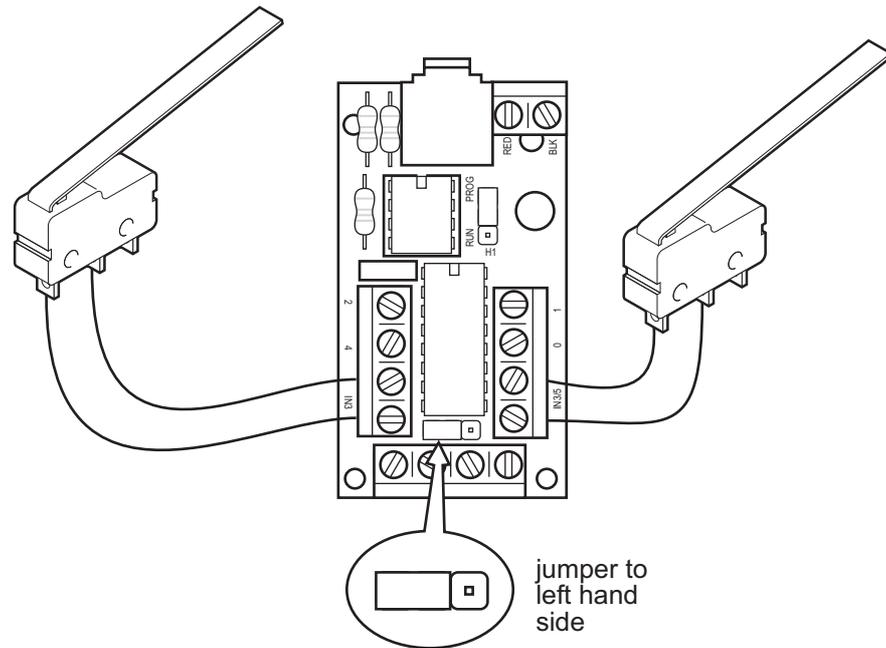
#### Noise Suppresion on motors:

Note that motors should be suppressed by soldering a 220nF polyester capacitor across the motor terminals to prevent electrical noise affecting the circuit.



### Connecting the Input Switches

Pin C.3 can be used as an input with the motor driver board. If the input header (H2) below the L293D chip is in the left hand side position both sides of the PCB connect to input C.3. Therefore two switches may be connected to the board, one either side as shown below. However note that when switches are connected like this they are connected in parallel, so either of the switches can be pressed to activate the input. A 10k pull-down resistor is prefitted.



If the jumper link is moved to the right hand position two inputs are then available, C.3 and C.5. However as pin C.5 on the 08M2 chip is also shared as the serial programming pin you must ensure that the switch is not pressed during programming, or during powerup of the circuit. You must also include a 'disconnect' command at the start of your BASIC program - please see the main PICAXE manual for more details about this configuration and use of the disconnect command.