



Sabertooth 2X5 Quick Start Guide

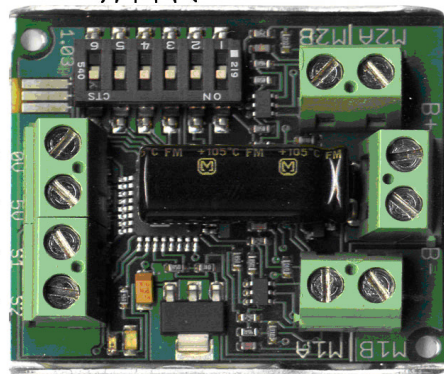
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DimensionEngineering

Congratulations on your purchase of a Sabertooth 2X5 regenerative motor driver. Sabertooth 2X5 is one of the most flexible and configurable motor drivers on the market. As a result, it must be set to the correct operating mode before use. Below is a generalized hookup diagram of a Sabertooth 2X5. On the reverse side is a chart of some of the most commonly used operating modes.

Sabertooth 2X5 motor driver pinout

These DIP switches are used to set the operating mode of the driver



0V is internally connected to B-. It provides a circuit ground (GND) for your control circuitry

5V is a regulated 5V supply provided by the driver. Drawing more than 10mA can reduce performance of the driver.

S1 is the primary signal input. It must always be connected to something e.g. a R/C receiver signal or analog voltage

S2 is the secondary signal input, used to control the second motor, or for serial network functionality.

M2A and M2B connect to the two wires of your second DC brushed motor

B+ connects to the positive terminal of your battery.

B- connects to the negative terminal of your battery. It is internally connected to 0V and can be used as a circuit ground

M1A and M1B connect to the two wires of your first DC brushed motor

Don't get B+ and B- connected backwards!

Make sure you have the DIP switches configured correctly for the mode you are using!

Specs:

Input voltage:
6V-18V

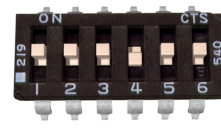
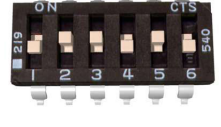
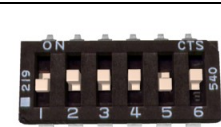
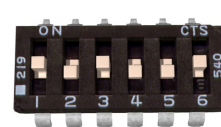
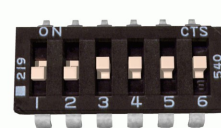
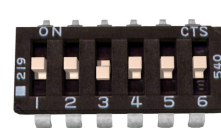
Output current:
5A

Peak Output
current:
10A

Operating
modes:
Analog, R/C,
Serial

Sabertooth 2X5

Operating mode quick reference chart All options are set via the switches

	Analog control, linear, independent: a 0V to 5V analog input is connected to terminals S1 and S2. 0V is full reverse, 5V is full forward, 2.5V is stop.
	Microcontroller pulses, independent linear control: An R/C servo signal is connected to terminals S1 and S2. A 1000us – 2000us pulse controls speed and direction. 1500us is stop.
	Radio control, differential drive, exponential: An R/C servo signal is connected to terminals S1 and S2. The Sabertooth will autocalibrate the center and endpoints of the signal.
	Simplified Serial, 38400 Baud: A TTL level 8N1 serial data stream is connected to terminal S1. Control is with single byte commands. Motor 1: 1 is full reverse, 64 is stop and 127 is full forward. Motor 2: 128 is full reverse, 192 is stop and 255 is full forward.
	Packetized Serial, address 128: A TTL level 8N1 serial data stream is connected to terminal S1. Control is via a multi-byte packet.
	Lithium cutoff option: When switch 3 is in the down position (in any operating mode) the Sabertooth will shut down at 3.0V per cell. This protects lithium batteries from damage.

Sabertooth features many more operating modes and options not shown here. See full manual for details.