

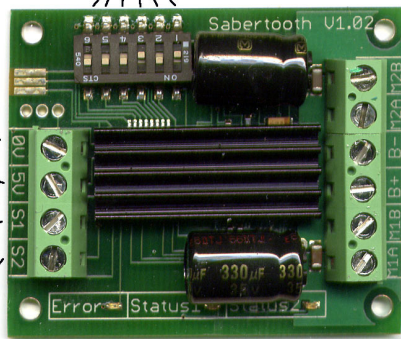


Sabertooth 2X12 Quick Start Guide

November 2010

DimensionEngineering

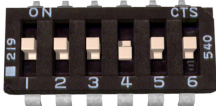
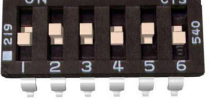
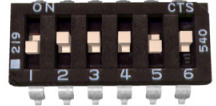
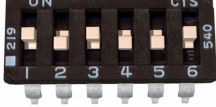
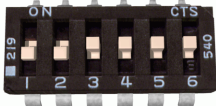
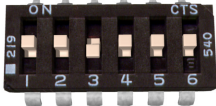
Congratulations on your purchase of a Sabertooth 2X12 regenerative motor driver. Sabertooth 2X12 is one of the most flexible and configurable motor drivers on the market. As a result, it must be set to the correct operating mode before use. Below is a generalized hookup diagram of a Sabertooth 2X12. On the reverse side is a chart of some of the most commonly used operating modes.

<p style="text-align: center;">Sabertooth 2X10 motor driver pinout</p> <p style="text-align: center;">These DIP switches are used to set the operating mode of the driver</p>  <p>0V is internally connected to B-. It provides a circuit ground (GND) for your control circuitry</p> <p>5V is a regulated 5V supply provided by the driver. Drawing more than 10mA can reduce performance of the driver.</p> <p>S1 is the primary signal input. It must always be connected to something e.g. a R/C receiver signal or analog voltage</p> <p>S2 is the secondary signal input, used to control the second motor, or for serial network functionality.</p> <p>M2A and M2B connect to the two wires of your second DC brushed motor</p> <p>B- connects to the negative terminal of your battery. It is internally connected to 0V and can be used as a circuit ground</p> <p>B+ connects to the positive terminal of your battery. The max recommended battery voltage is 24V</p> <p>M1A and M1B connect to the two wires of your first DC brushed motor</p> <p style="text-align: center;">Don't get B+ and B- connected backwards! Make sure you have the DIP switches configured correctly for the mode you are using!</p>	<p>Specs:</p> <p>Input voltage: 6V-24V</p> <p>Output current: 12A</p> <p>Peak Output current: 25A</p> <p>Operating modes: Analog, R/C, Serial</p>
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For full product documentation and manual, please visit <http://www.dimensionengineering.com/Sabertooth2X12.htm>

Sabertooth 2X12

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

	<p>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.</p>
	<p>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.</p>
	<p>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.</p>
	<p>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.</p>
	<p>Packetized Serial, address 128: A TTL level 8N1 serial data stream is connected to terminal S1. Control is via a multi-byte packet.</p>
	<p>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.</p>

Sabertooth features many more operating modes and options not shown here. For the full manual, please visit <http://www.dimensionengineering.com/>