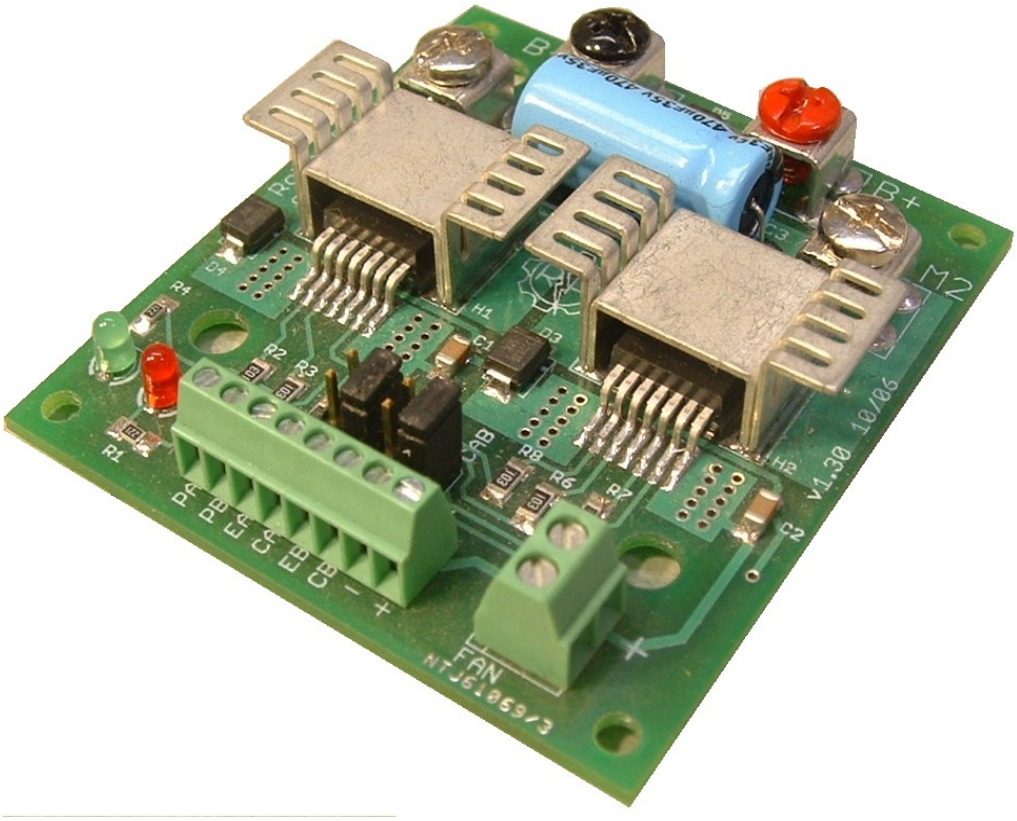
RB-Rop-05
Simple-H 20A, 5V to 28V R/C DC Motor Driver



The Robot Power Simple-H is a low-cost robust H-bridge circuit suitable for use driving DC motors and other DC loads in the ~25A and 24V range or less. A wide range of command sources from switches to 555 timer circuits to microcontrollers and BasicStamps may be used to control the Simple-H.

Unlike many competing products which advertise similar current ratings, the Simple-H ratings are for a period measured in minutes or hours not a few seconds or less. One competitor even advertises a 30A controller where the 30A rating is for "a few milliseconds". With a Simple-H you can be sure if you need 20A of current you can get 20A out of it for as long as you need it.

The Simple-H has the following specifications and features:

Supply voltage	5V to 28V (24V max battery rating)
Output Current (continuous)	20A (25A with fan)
Output Current (surge)	>45A
Weight	1.3 0z
Power chips	2 ea. BTS7960B
On Resistance	.016 ohm max at 25C
PWM Frequency	DC to 20kHz
Cooling	Heatsinks and optional 20 CFM 50mm fan
Logic Interface	3V - 5V , minimum 3 pins required
Current and Temp Limiting	Built in to power chips
Current Sense Outputs	0.0745V per Amp - 2.98V at 40A
Connectors	8-pos 0.1" screw terminal, 2-pos fan terminal 4 each screw terminals for power wires
Enclosure	None

The Simple-H does not have any on-board logic to interpret R/C, serial or other commands. An external signal source is required to translate command inputs into the PWM signals needed to drive the Simple-H power chips. This flexibility allows the Simple-H to be driven from from a signal source as simple as a pushbutton or as complex as a microcontroller or BasicStamp. Even a desktop or laptop PC can be used through the parallel port or via a USB port expander.

Six command/status connections are provided via an 8-position screw terminal on the Simple-H. The hole spacing allows a standard 0.1" pin header to be substituted for the screw terminal if desired. Jumpers allow the user to configure the Simple-H as a single full H-bridge or two independent 1/2 bridge circuits. The 1/2 bridge circuits may be ganged together for increased current handling.

CN1 - Command/Status Connector Pinout	
1	PWM A - A-side 1/2 bridge control input
2	PWM B - B-side 1/2 bridge control input
3	Enable A - A or A&B-side* enable
4	Current A - A or A&B-side** current sense output
5	Enable B - B-side enable
6	Current B - B-side current sense output
7	Battery Negative
8	Battery Positive
* with EA jumper installed in J1 ** with CA jumper installed in J1	