

Motor Speed Control Cards

Instech's motor control circuit cards regulate the speed of small DC permanent-magnet brush motors. A family of four cards covers a range of motors up to 24V at 2A. These small boards are easy to integrate into a larger system; in the simplest configuration they require only an external potentiometer for speed control, a single power supply, and a motor.



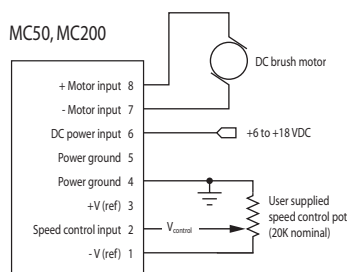
MC200



MC50

Sample Application

Uni-directional potentiometer control



Features

Precise bi-directional speed control. Without a speed controller, your motor may slow significantly when a load is placed on it during operation. With a speed controller, you set the motor speed with a control voltage and it holds that speed constant over a wide range of torque. The speed control will also cause your motor to start predictably at low speeds.

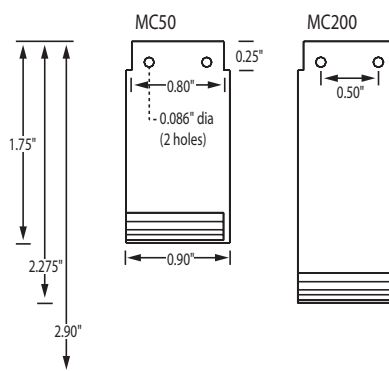
Pseudo-tachometer feedback circuit. All of Instech's control cards feature a fast feedback circuit which extracts the back EMF of the motor to regulate its speed. The circuit does not require a tachometer or encoder; it uses only the two motor wires.

Active braking. Setting the control voltage to zero will cause the controller to drive the motor in the opposite direction, bringing it to a stop much faster than if the power were simply turned off. It will also actively prevent the motor from turning once it has stopped.

Low EMI. The cards' all-analog designs minimize electromagnetic emissions.

Board Dimensions

Inches



Specifications

	MC50	MC200	MC500*	MC2000*
Rated output load current	50mA	200mA	500mA	2A
Supply voltage range	+6 to 18 VDC	+8 to 18 VDC	+8 to 30 VDC	+8 to 30 VDC
Maximum quiescent current	4mA @ 15 VDC	15mA @ 18 VDC	40mA @ 28 VDC	90mA @ 28VDC
On-board reference voltages	+1.25/-1.25 VDC	+1.25/-1.25 VDC	+1.25/-1.25 VDC	+1.25/-1.25 VDC
Fuse protection	No	No	Yes	Yes
Power input diode protection	Yes	Yes	Yes	Yes
Additional speed bias input	No	No	Yes	Yes
Control voltage for full speed	Variable	Variable	Variable	Variable
Heat sink thermal resistance	n/a	n/a	6.8 °C/W	6.8 °C/W
Terminal barrier block type	8 pin screw / 2.5mm	8 pin screw / 2.5mm	10 pin screw / 3.5mm	8 pin screw / 3.5mm

* The MC500 and MC2000 have been **DISCONTINUED**. Call for information on replacements.

For prices see <http://www.instechlabs.com/OEM/controlcards/>