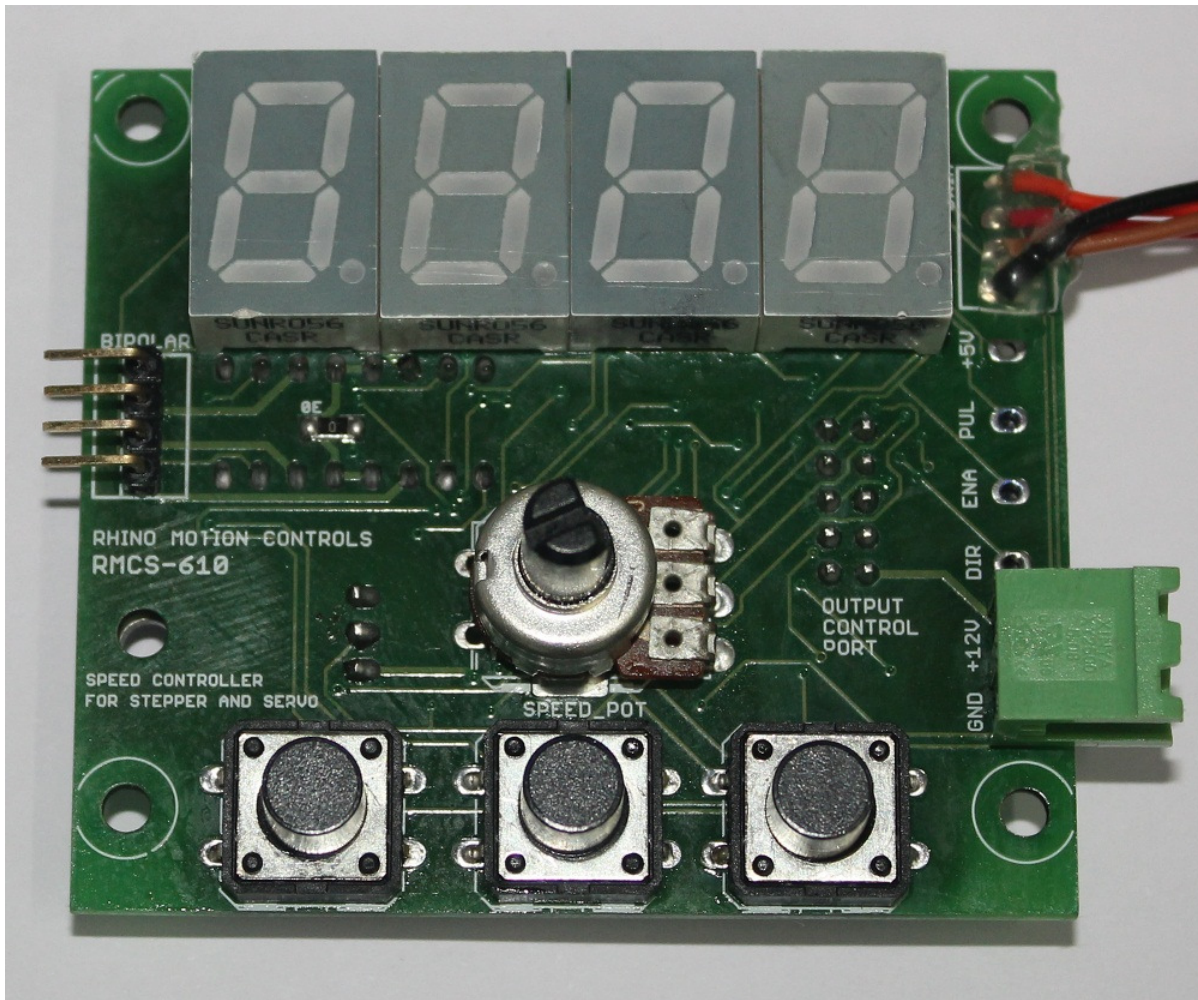


RHINO MOTION CONTROLS

RMCS-6101

12V 0.3A Bipolar/Uni-polar Stepper Speed Controller



Installation Manual and Datasheet

<http://www.rhinomc.com>

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Stepper Speed Controller [RMCS-6101]

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Key Features

- Speed controller for 12V up to 0.3A bipolar stepper motor
- Speed control up to 200RPM
- 12VDC input supply voltage
- L293 based on board drive IC for stepper motor
- Can be controlled by buttons or potentiometer
- Seven segments indication for speed and operation messages
- Smooth slow ramp to desired speed

Description

Thank you for purchasing RMCS-6101, 12V Bipolar Stepper Speed Controller. This simple controller allows you to control the speed and direction of a 12V 0.3A stepper motor.

The RMCS-6101 stepper speed controller is warranted to be free of manufacturing defects for six months from the date of purchase. Please see the section on service, support and warranty at the end of this document.

Caution

- Read this document carefully before installing and using your controller
- Inputs voltage to the controller must not exceed the maximum of 12VDC or it may damage the controller
- Reversing polarity power supplied to the controller may damage the controller or power supply
- Connecting the power supply wires to the terminals outputs of the motor coils will damage the controller
- Short-circuiting the motor terminals to +Ve power or to GND or to each other may damage the controller

Power and Motor Terminal Assignments

Terminal No.	Terminal Name	Description
Terminal 1	A+	Motor Coil Phase A+
Terminal 2	A-	Motor Coil Phase A-
Terminal 3	B+	Motor Coil Phase B+
Terminal 4	B-	Motor Coil Phase B-

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Power Terminal Assignments

Terminal No.	Terminal Name	Description
Terminal 1	GND	Power Ground or Power -Ve
Terminal 2	+12V	Power +Ve

Power Supply

A 12VDC regulated power supply with a good low-ESR decoupling capacitors at its output is recommended for best performance of this controller.

Display Status, Keypad and pot

There are four seven segments on this controller for displaying speed and operation status messages. To control the speed and direction there are three keypad switches and a potentiometer as shown in the image below. The operation of this controller divided into multiple states and is described below.

Segment Status	Message
OFF	The motor is in stand-still state
Pot	The motor is controlled by Potentiometer
Play	The motor is start to running
Stop	The motor is stopped

Pot	Message
Clockwise	Motor rotates clockwise and displays its speed
Anti-clockwise	Motor rotates anti-clockwise and displays its speed
Middle state	Motor is not running and display shows 0

Keypad	Message
Left Switch	Decrement the number which displays on 7-segments
Middle Switch	Gives Start and Stop Signals to motor
Right Switch	Increment the number which displays on 7-segments.

RHINO MOTION CONTROLS

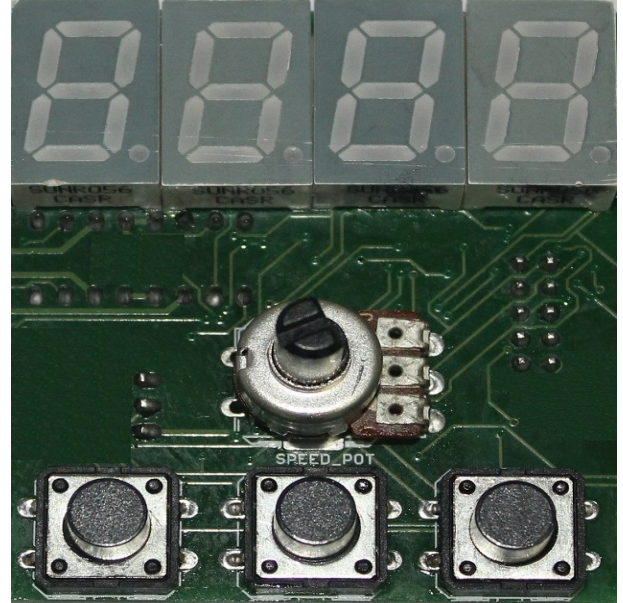
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Operation

- On giving the supply to controller, the display shows "OFF" state
- Press the center switch and hold it down for >3sec and release, "POT" is showed on display, Pressing right switch increments the "POT" variable by 1, which is initially at zero, this enables "POT" function.
- Press the center switch twice until the "POT" value is displayed on the segment.
- Rotating the "POT", will alter the number displayed on the segment which indicates the speed of motor.
- Set the speed of motor according to the value displayed.
- When display shows zero, motor stops and the "POT" is at middle state.
- By rotating "POT" clockwise/anticlockwise from middle state, the motor also rotates clockwise/anticlockwise.
- Even on power failure the controller stays in "POT" state.
- We can also change the speed of motor while it's in running mode.
- Again Press the center switch and holding it down for >3sec and release, "POT" is showed on the display, Pressing left switch decrements the "POT" variable to 0, which was initially at 1, this disables "POT" function.
- Press the center switch twice, OFF will be displayed on the segment and the motor stops.



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Service and Support

Service and support for this product are available from the Rhino Motion Controls Web site (<http://www.rhinomc.com>) and our customer service email: info@rhinomc.com

Six-Month Warranty

Rhino Motion Controls (rhinomc.com) warrants its products against defects in materials and workmanship for a period of 6 months from shipment delivery. During the warranty period, Rhino Motion Controls will either, at its option, repair or replace products which proved to be defective.

Exclusions

The above warranty does not extend to any product damaged by reasons of improper or inadequate handlings by customer, improper or inadequate customer wirings, unauthorized modification or misuse, or operation beyond the electrical specifications of the product and/or operation beyond environmental specifications for the product.

Obtaining Warranty Service

To obtain warranty service, please contact our customer service department at info@rhinomc.com before returning product for service. Please make sure that you have gone through this entire installation manual and datasheet before deciding that your product is liable for replacement or repair under this 6-month warranty. Customer shall prepay shipping charges for products returned to Rhino Motion Controls for warranty service, and Rhino Motion Controls shall pay for return of products to customer.

Warranty Limitations

Rhino Motion Controls makes no other warranty, either expressed or implied, with respect to the product. Rhino Motion Controls specifically disclaims the implied warranties of merchantability and fitness for a particular purpose. Some jurisdictions do not allow limitations on how long and implied warranty lasts, so the above limitation or exclusion may not apply to you. However, any implied warranty of merchantability or fitness is limited to the 6-month duration of this written warranty.

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