EM-483 Specifications

by **Tumbleweed.** on September 1, 2015

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Intro: EM-483 Specifications

I have seen many people, including myself looking for technical specification for this particular stepper motor stripped from old printers but nothing seems to show up so I decided to share with you some characteristics and the recommended operating parameters I have discovered:

Type: Bipolar Stepper Motor

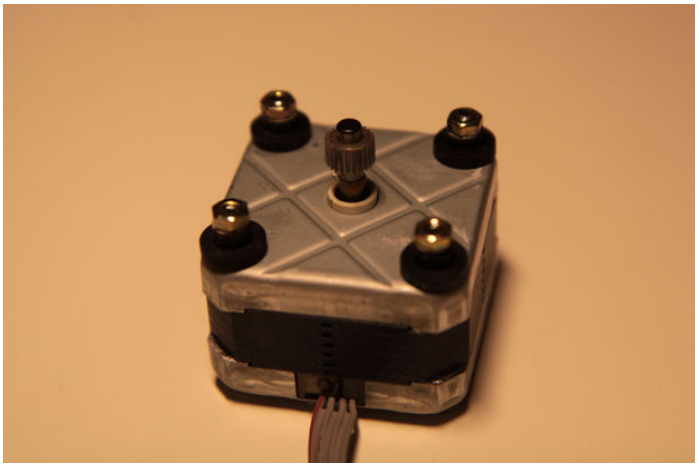
Supply: 5V

Coil Resistance: ~3.6 omhs

Max Current: ~1.4A

Operating frequency: 500Hz

Maximum speed: 150 rot/min



Step 1: Driving algorithm for the stepper motor

I have set the operating frequency at 500Hz because if you go higher the electromagnetic inertia of the of the coils will make it so there is a high danger for the motor to skip steps if put under load. It also gives you nice round numbers when doing the math.

As shown in the picture the algorithm requires the following 8 step sequence applied to both coils for it to work properly. Each sequence takes 8ms and moves the motor 4 steps (7.2 degrees).

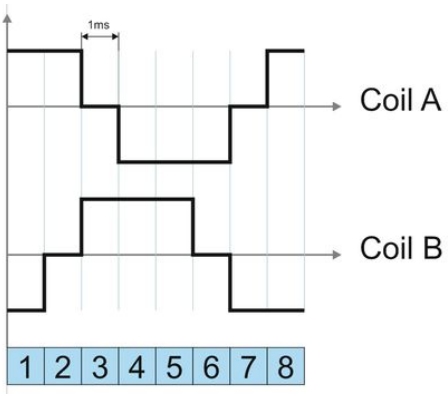
Because the stepper motor has 1.8 degree step it takes 200 steps to make a full rotation, thus we can calculate that a full rotation will be done in 400ms.

And from that you can get the 150rot/min maximum speed.

The 500Hz operating frequency is derived from the fact that you have 4ms pulses for each step (3ms active 1ms pause) but you have 2 coils, so you get a step each 2ms.

1000ms/2ms=500Hz

Correct me if I'm wrong.



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amberrayh says:
This is very helpful. Thank you for sharing!

Sep 1, 2015. 11:44 AM **REPLY**