



G723-400-4
NEMA 23 STEP MOTOR DATASHEET

GECKODRIVE, INC.
14662 FRANKLIN AVE
SUITE E
TUSTIN, CA 92780
(714) 832-8874

MODEL:	G723-400-4	PHASE CURRENT:	5A
FRAME SIZE:	NEMA 23	RESISTANCE:	0.58Ω +/- 10%
HOLDING TORQUE:	400 oz.-in.	INDUCTANCE:	2.6mH
FULL STEP ANGLE:	1.8°	VOLTAGE:	2.45V
BODY LENGTH:	3.1" (78mm)	DIELECTRIC STRENGTH:	500V
BEARING TYPE:	ABEC3	AMBIENT OPERATING TEMP:	-20°C to 50°C
ROTOR INERTIA:	2.6 oz.-in. ²	LEAD WIRES:	#22 AWG

Motor Wiring for Geckodrive Motor Controls

G201, G201X, G202, G203V
G210, G210X, G212, G213V

Terminal 3: RED
Terminal 4: BLUE
Terminal 5: GREEN
Terminal 6: BLACK

G251

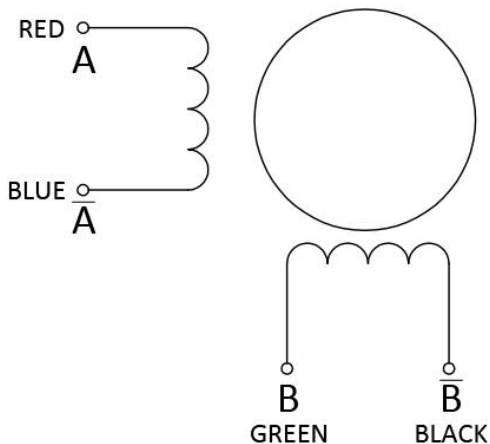
Terminal 5: RED
Terminal 6: BLUE
Terminal 7: GREEN
Terminal 8: BLACK

G250

Pins 9-12: RED
Pins 13-16: BLUE
Pins 17-20: GREEN
Pins 21-24: BLACK

G540

Pin 6: GREEN
Pin 7: BLACK
Pin 8: RED
Pin 9: BLUE



STEP MOTOR FAQ

What is the optimal power supply voltage for my motor?

The power supply voltage for a stepper motor is dependent on the inductance of the motors being run. A voltage higher than the mathematically derived maximum will result in excessive heating due to I^2R losses with very little gain in performance; a lower voltage will result in a proportional loss in speed. To determine the maximum voltage for a motor, take the inductance and insert it in to the following formula:

$$32 * \sqrt{L} = \text{MAXIMUM VOLTAGE}$$

For the G723-400-4 this works out to 52VDC; a 48VDC (the closest common voltage) power supply will work very well and will prevent the motor from overheating.

What size current set resistor should be used?

If the G723-400-4 is to be run with a G540, G250, or G251 then a 3.5K resistor should be used. Because this is not a precision component, the resistor tolerance can be up to +/- 10%; however, this will only allow 70% of the motor's torque to be used.

If the motor will be run with a G201, G202, G203V, G210, G212, or G213V, a 118K resistor should be used. If the G201X or G210X is running the motor set the 10 position DIP switch to the 5A position.

Are stepper motors supposed to get hot?

Step motors by nature get warm and are safe up to 85°C. If a temperature higher than that is measured, it is most likely due to an incorrectly sized current set resistor or excessive power supply voltage.

The motor hums and has no holding torque. Why is it doing this?

The motor is cross-phased, meaning it is wired incorrectly. Please see the diagram on the first page for proper wiring of the motor.

The motor has holding torque but is not moving when commanded. Why is it not working?

If the motor has holding torque then it is doing what it is supposed to do. When a motor is not moving it is generally because it is not receiving commands from the motor control; check your wiring on the drive and verify that the STEP and DIRECTION pins are wired up correctly. If the motor will still not move when commanded, please contact Geckodrive technical support.



G723-400-4

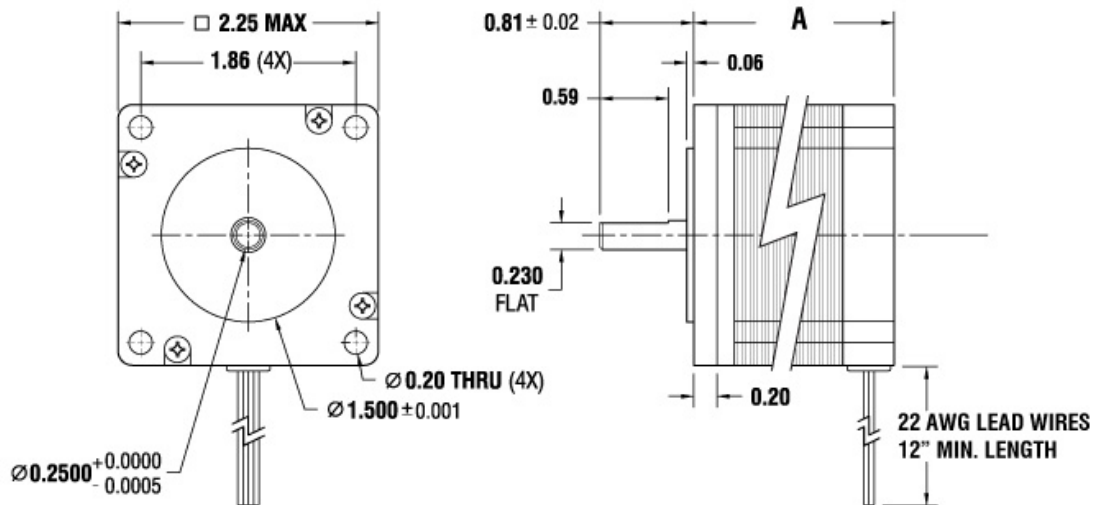
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Support Forum: <http://cnczone.com/forums/forumdisplay.php?f=31>