



GeckoMotion Stepper Controls

Advanced medium power stepper drive with a full motion controller



GM215

- Next generation GeckoMotion step motor drive
- Midband resonance compensation
- Motor smoothness, ARC Damping and VCO trimpots
- 5mm 12-position terminal block for 12-26 ga. wire
- Full motion controller with non-volatile memory
- Capable of running as a standalone solution
- External adjustment header option in lieu of trimpots
- Small footprint of 2.5" x 2.5" x 0.85"
- Hard anodized electrically isolated heatsink
- Maximum power dissipation of 13W
- Recommended for NEMA 17 - 42 size motors
- DIP switch settable current and option adjust
- Custom covers available*

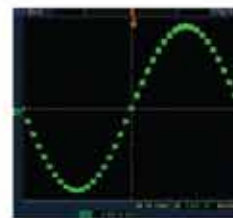
Proprietary ARC Damping: A Primer

Any time a stepper motor is run there are inherent resonant frequencies that will cause erratic movement at certain speeds. These are colloquially known as the first harmonic, second harmonic and the third harmonic and occur at 30RPM, 90RPM and 120RPM respectively. The majority of motor controls can very easily reduce the effects of the first and second harmonics without much effort, while the third harmonic is still present.

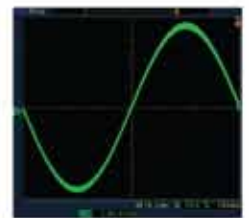
The GM215 has proprietary Advanced Resonance Compensation (ARC) Damping that allows it to run a motor as smoothly as possible regardless of resonant speeds. The way this is accomplished is twofold: The GM215 has intelligent mathematics built in that can modify the motor's waveform in real time and has a settable motor profile adjustment that will warp the waveform according to user settings.

What does this mean for your application? It means the smoothest possible motion from a stepper motor and unsurpassed compensation for motor non-linearity. This can be the difference between your machine and your competition, giving you the edge in functional performance.

*ARC Damping: Perfectly synchronous motion,
regardless of motor nonlinearity.*



Standard 10 microstep



GM215 with Sub-Microstepping

Exclusive Sub-Microstepping

A standard stepper drive has either a fixed resolution or a fixed set of resolutions where each full step location of the motor is chopped to a smaller set of steps, known as microsteps. This means that a motor with a step angle of 1.8 degrees will have 2000 stopping locations with most ten microstep drives and will have noticeable pulsing at low speed. If a motor is being run at high speed this will not make a difference, but it can make or break a design at low speed.

The GM215 is different; every single microstep is further broken up into a further 16 Sub-Microsteps. This gives a step motor the smoothness of a servo with an 8000 line encoder on it while operating off of the same input frequency of a normal 10 microstep drive. Low speed jittering is nonexistent with the GM215 which, when combined with high speed full step morphing, will result in the smoothest motor movement possible with no sacrifice in motor torque.

*Minimum order quantity of at least 1000 per annum