

Limited Angle Torque Motor Features Zero Cogging for Smooth Operation



Precision positioning and actuation applications require exceptionally smooth motor operation without disruption from cogging. To meet these highly specialized demands, BEI Kimco Magnetics, a brand of Custom Sensors & Technologies, has introduced the new BLDC Limited Angle Torque Motor Model LAT40-48. The LAT40-48 Motor meets market demand for a zero cogging motor with high peak force in a small form factor package.

The LAT40-48 motor is a limited angle torque motor. The rotor of this motor has no preferred position. These design elements combine to provide a motor that completely eliminates cogging. The result is consistent, extremely smooth performance critical to applications that depend on uninterrupted operation, such as stabilization platforms, scanning and beam steering.

"The beauty of this limited angle torquer is that it has absolutely zero cogging or detent which makes it ideal for stabilization applications," says Jim McNamara, BEI Kimco's Senior Applications Engineer. "To have that kind of torque without cogging is quite unique to the market."

The new motor also features a single phase winding that provides easy control - a 30 degree excursion is accomplished with no commutation. Use of rare earth, high energy magnets creates a power density of 10.08 oz-in Watt. Other important performance characteristics include +/- 15 degree stroke, a peak torque of 21.5 Nm, and single phase winding. These high level functions are all packed in a compact 100.0 mm diameter by 100.0 mm stack length size.

As a Brushless DC Motors (BLDC) with fixed magnets, the LAT40-48 offers all the

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Published on Electronic Component News (<http://www.ecnmag.com>)

inherent advantages over brushed DC motors, including more torque per weight, more torque per watt (increased efficiency), increased reliability, reduced noise, longer lifetime (no brush and commutator erosion) and overall reduction of electromagnetic interference.

"While many companies make full rotation motors and even custom full rotation motors, not many companies offer custom limited angle torque motors" explains McNamara. "When you can't find what you're looking for in an off-the-shelf product, BEI can provide the solution - we use state of the art materials and design processes to provide custom products to meet extreme requirements."

BEI Kimco products have been used successfully in countless applications from high-end Industrial to Military and Aerospace to Medical applications. The ability to provide high performance solutions tailored to the specific needs of the customer has allowed BEI Kimco to fulfill many challenging requirements.

For further information contact BEI Kimco Magnetics, 1499 Poinsettia Ave., Suite 160, Vista, CA 92081, USA, Tel: (760) 597-7042; Toll-free: (800) 572-7560; Fax: (760) 597-6320; email: sales@beikimco.com [1]; www.beikimco.com [2].

Source URL (retrieved on 10/25/2014 - 8:01am):

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