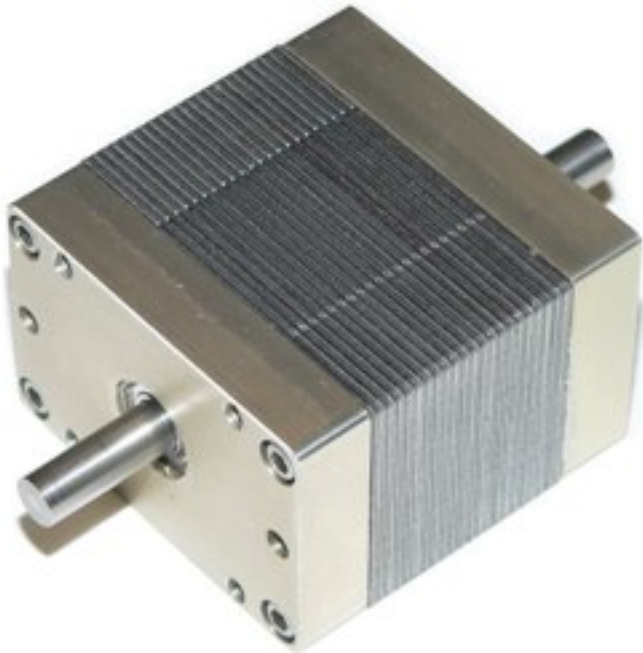


Pangolin Delivers Increased Speed, Rotation, Response, and Control While Reducing Cost by a Third



Long dissatisfied with the speed and control limitations of rotary actuators used in laser scanning and other optical and lighting applications, Pangolin Laser Systems, the world's leading producer of laser show software and control hardware, announced the introduction of a low-power rotary actuator based on an innovative, dual-coil, segmented stator design. The new VRAD-1510 significantly increases the speed, range of rotation, response, and precision of motor shaft movement while reducing the actuator's cost by at least one-third compared to existing devices.

According to Pangolin CTO and co-founder William Benner, the VRAD-1510, while conceived for use in high-speed laser scanning and lighting gear, is sufficiently versatile and low-cost that it can be used across a wide range of electro-mechanical applications, including mechanical and automotive systems, industrial and commercial machinery, robotics, vending, HVAC, valve control, and other uses. Rotary actuators are also commonly referred to as rotary solenoids and torque motors.

"We developed a novel and inexpensive way of producing a segmented stator without air gaps, which interfere with a motor's magnetic field," said Benner. "Additionally, our design employs two, separately-accessible coils and several other innovations and quality features, resulting in a compact, very quiet, very durable, low-power actuator. Its linear angle versus current profile is a major advancement."

According to Benner, the VRAD-1510 (pronounced VEE-rad) employs a magnetic spring and pre-loaded precision ball bearings for extreme durability. The new design

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also precludes the need for mechanical stops on shaft rotation, all but eliminating noise, wear, and vibration, while enabling a wider range of potential applications. The range of shaft rotation is greater than +/- 60 degrees from the neutral position.

The actuator's coils may be driven in series, in parallel, or separately, stated Benner. "This opens up many options in how the device can be employed," he said, "For example, instead of using two coils to produce torque, one can be used for velocity sensing or dynamic breaking."

In another design innovation, Benner said, Pangolin equips the actuator with front and rear shafts, allowing multiple points of attachment or the use of an encoder or position sensor for closed loop operation.

He said the key innovation is Pangolin's patent-pending stator design, which uses a series of asymmetrical, interleaved laminations that are inexpensive to make, easy to assemble, and which fit together in a way that prevents the introduction of air gaps to the motor's magnetic field. "VRAD is a game-changer," said Benner. "By rethinking the stator design, we've developed a more versatile, compact, and durable rotary solenoid that we are manufacturing at much lower cost than competing products."

According to Pangolin, the VRAD-1510 is configurable to customer specifications of all key parameters, including torque factor, magnetic spring stiffness, coil resistance and inductance, shaft diameter and length, bearing pre-load, and temperature operating range. The VRAD-1510 has a rectangular-shaped stator with exterior dimensions of 1.5"w x 1.0"h x 1.5"D.

Pangolin Laser Systems, Inc.

Pangolin.com [1]

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