

Rolled-coil motor eliminates windings

A US start-up company has developed a slotless brushed DC motor that does away with the bulky iron core of conventional motors, making low-density wire windings obsolete. The armature coil of the ThinGap TG3300 motor is produced using a rolling process which is said to result in a machine with an extremely narrow airgap which eliminates iron and hysteresis losses and cogging torque, and has a high efficiency over a wide speed range.

A 1hp (0.746kW) version of the permanent magnet motor weighs less than 1kg and can deliver a maximum continuous torque of 80 oz-in at 10,000 rpm, when operating from an input voltage of 24V DC and drawing a current of 27.5A. The 95mm long and 51mm diameter motor represents an "industry-leading power-to-weight ratio", according to the company.

The ThinGap motor is designed for applications where acceleration, smooth operation, high power and light weight are important. Examples include robotics, materials handling, and packaging. The motor operates at 160°C with a claimed efficiency of 89%, making it suitable for battery-powered operation.