

Ease Intrinsic Safety Concerns in Portable Applications with Coreless Motors from Portescap

WEST CHESTER, PA – Portescap announces that the company's family of coreless DC motors satisfies demanding intrinsic safety application requirements with proprietary REE (Reduced Electro Erosion) technology. This capability extends to new Athlonix™ series motors that boast higher power density, increased efficiency (approaching 90 percent) with lighter weight (15-53 grams depending on frame size) than comparable motors.

"DC motor commutation is accomplished via brushes, which leads to electrical arcing during rotation. To reduce electro erosion while extending commutator life, Portescap innovated the proprietary REE coil system to reduce the effective inductivity of brush commutation by optimizing the mutual induction of the coil segments," says Dave Beckstoffer, Project Manager for Strategic Markets. "Portescap conducted tests on motors with and without REE coil optimization and found that commutator surface wear with REE coils showed improvements ranging from 100 to 300 percent."

In addition to the benefits of REE technology, Portescap's brush DC coreless motors incorporate salient features like low moment of inertia, no cogging, low friction and very compact commutation resulting in high acceleration, high efficiency, very low joule losses and higher continuous torque. They deliver maximum continuous torque ranging from 0.66 to 158.6 mNm, no load speed ranging from 11,000 RPM (8mm) to 5,500 RPM (35mm), and a motor regulation factor (R/K2) as low as .3 103/Nms.

Intrinsically safe motor operation is particularly significant in ambulatory applications that are subject to harsh environments and / or extra-ordinary operating conditions. Typical applications include gas analyzers, environmental analyzers and fuel cells. Additionally, miniature pump manufacturers often have to deal with the issue of intrinsic safety in portable applications, and coreless DC motors are an ideal solution due to their high efficiency and light weight.

Miniature pumps are the driving force behind analysis of many types of gas and liquids. The environments where the sampling occurs have become increasingly hazardous, leading to a higher requirement for intrinsically safe pumps. Gases, dust and other flammable items need only a spark to ignite, so the pump OEM must ensure that this does not occur. The key item responsible for the intrinsic safety of



the pump is the motor, which provides the power to draw in the air or liquid sample. Since the majority of these applications require portable devices, DC coreless motors with their light weight and high efficiency are the optimal choice.

Portescap's rapid prototyping and collaborative engineering enables OEMs to get products to market faster. The company's R&D and application engineering teams can adapt brush DC coreless motors with encoders and gearboxes to perform in different configurations, environments or envelopes.

About Portescap

Portescap offers one of the broadest miniature and specialty motor product lines in the industry, encompassing coreless brush DC, brushless DC, stepper can stack, gear heads, digital linear actuators, disc magnet and hybrid technology.

Portescap products have been solving diverse motion control needs in medical, semiconductor, HVAC, aerospace and commercial applications for more than 70 years. Portescap has manufacturing centers in the United States, St. Kitts, Malaysia, and India and utilizes a Global Product Development network with research and development centers in the United States, India, Singapore, and Switzerland.

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