Gearing offers high torque, low output speed gearmotors

To meet requirements in solar tracking, medical diagnostic and motion control applications for high torque, low output speed gearmotors with self-locking capability without sacrificing energy efficiency, Dunkermotor, part of Ametek Precision Motion Control, has added its unique Wormetary gearing to its complete line of intelligent servo and brushless dc motors. The intelligent servo motors feature integral control capabilities ranging from 4-quadrant digital speed or positioning to master electronics, including CANopen, Profibus and EtherCAT fieldbus connectivity.

The new Dunkermotor brushless Wormetary gearmotors combine right angle worm gearing to turn the corner with an efficient planetary gearbox for reduction ratios up to 35,000:1 and peak torque capability up to 320 N-m (2,832 in-lbs). Compared to worm gearing alone, at an overall ratio of 80:1 the new configuration is 2.5 times more energy efficient.

The Wormetary gearing can be configured as either backdrivable or non-backdrivable. With planetary gearing in its output stage, the load is spread over many contact points around each gear, thus offering much greater protection from shock loading than helical gears used in other high efficiency right angle gearmotors.

"The Wormetary gearing offers the high reduction ratios needed for solar trackers' very low speed operation. Their high torque output matches the PV array hardware load and the non-backdrivable feature and resistance to shock loads are needed to

resist wind loads," said John Morehead, Dunkermotor vice president, business development. "We believe our intelligent brushless WormetaryTM gearmotors are ideally suited for solar tracking applications, while many of these benefits, including the motors' integral, networkable intelligence position them ideally for a variety of medical applications."

The low voltage (12-42 volt) brushless motors are available in 42, 44, 45, 65 and 75 mm frame sizes, with power up to 530 Watts (0.71 hp) and are part of a modular system that includes not only gearing, controls and fieldbus interfaces, but also encoders and brakes.

Dunkermotor's WormetaryTM gearmotors can be provided with environmental protection up to IP65. To meet customers' international use requirements, Dunkermotor's brushless DC and Intelligent Brushless DC, iBLDCTM, motors (as well as brushed DC motors) have received not only UL and cUL certifications for the U.S. and Canada but also CE and CCC certifications for the European and Chinese markets.

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