Stepper motor linear actuator can be configured for full step, half step, or microstep

Haydon Kerk Motion Solutions announces the release of the integrated Size 17 “captive” stepper motor linear actuator and DCM4826X microstepping drive module.

The drive can be configured for full step, half step, or microstep (1/4, 1/8, 1/16, 1/32, 1/64 step size). The integrated linear actuator / drive unit is available in both single stack and double stack motor configurations with a wide range of lead screw resolutions.

The system is capable of maximum output force of 220N (50 lbf) in the single stack version and 337N (76 lbf) in the double stack version; linear travel per step of 1.5-127 microns (0.00006-in to 0.005-in) depending on the lead screw pitch and stepper motor step angle.

The drive module is a bipolar 2 phase chopper drive package rated for a 12-48VDC input voltage and a continuous current rating of 2.6A rms (3.68A peak) per phase. The linear actuator and drive system can be ordered with one of 3 standard motor coil voltages: 2.33V, 5V, and 12V.

When supplying power to the drive, optimum performance is achieved using around an 8:1 “drive voltage to motor voltage” ratio. If the power supply voltage to the drive is 40VDC, for example, the motor coils should be configured for 5VDC. Chopper drives are designed to maintain output torque (or force in the case of a

linear actuator) over a relatively wide speed range by regulating the current into the motor coils. A key aspect in achieving this performance is observing the 8:1 drive/motor voltage ratio.

The drive unit can be configured through the Haydon Kerk PDE User Interface via an RS-485 protocol or a computer USB port (USB to RS-485 converter required - Haydon part# UTR4852). The desired values for Run Current, Hold Current, Delay Time, and Step Size can be set through the interface. Once the parameters are programmed, the drive can then accept the pulse, direction, and enable signals from the controller/indexer. The pulse, direction, and enable signals are optically coupled into the drive, providing electrical isolation between the signal and power circuits.

For more information on the new stepper motor linear actuator and drive package as well as a wide variety of other linear motion products from Haydon Kerk Motion Solutions, visit www.HaydonKerk.com.

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