CAN Newsletter Online

DRIVE CONTROLLER

Four-axis unit for stepper motors

The Stepnet SP4 by Copley Controls (USA) can control the position and velocity of DC-powered stepper motors. The provided CANopen interface complies with CiA 402.

THE FOUR-AXIS CONTROLLER PROVIDES position, velocity, and interpolated position modes as well as homing mode as defined in CiA 402. The CANopen node-ID is programmable or selectable by means of four digital inputs. The CAN interface uses a 9-pin D-sub connector with the pinning as defined in CiA 303-1. The PDOs containing command and status word plus target values respectively current values support synchronized transmission and reception.

The Stepnet SP4 uses FPGAs and comes with an optically isolated CANopen interface (Photo: Copley Controls)

In the micro-stepping mode, command pulses and master-encoder for camming or gearing is supported. The product has 24 digital inputs with programmable functions. There are also eight 24-V Mosfet outputs. The programmable one input and four outputs of the SPI port can be used for generic functions, if not needed for the SPI communication. The EIA 232 port is used for commissioning, configuration, and downloading purposes. The company provides the related CME2 software package.

When operated as a CANopen node, the drive unit is used for programming before and after installation in a CAN network. It can also be controlled via CME 2, while it is in place as a CAN node. During this process, drive operation as a CAN node is suspended. When adjustments are complete, CME 2 relinquishes control of the drive and returns it to the CAN node state. Multiple drives can communicate over a single EIA 232 port by daisy-chaining the master drive to other drives using CAN cables. The master drive does the EIA 232 communication with the system and echoes the commands to the other drives over the CAN network.