

STEPPER MOTORS

With integrated CANopen drive functions

JVL (Denmark) offers the Servostep integrated stepper motors with an updated implementation of the CANopen protocol.



The stepper motors integrate an encoder, driver electronics, and controller electronics with an ePLC (Source: JVL)

The stepper motors with a resolution of 409 600 steps per revolution provide holding torques of 0,36 Nm to 25 Nm. They integrate an incremental or absolute multiturn encoder, driver electronics, and controller electronics with an ePLC. Also included are eight I/O points, which can be individually configured as digital input, digital output, or analog input. The CANopen circuit includes transceivers and two 5-pin M12 connectors for daisy-chaining of cables from motor to motor. Optionally, the motors are available with a double shaft and electro-mechanical brake. Additionally, the STO (safe torque off) function according to SIL 3 (safety integrity level) can be provided.

The manufacturer has also developed a motor-follower mode, which does not comply with the CANopen specification. With this mode no external commander is required. One of the networked motors is used as a commander and the other motors as followers. Thus, up to eight motors can run synchronized.

Connected via CAN, the motors support selectable bit-rates up to 1 Mbit/s. The CANopen interface accords to the CiA 301 CANopen application layer and communication profile. Implemented motion control functions include profile position mode, velocity mode, homing mode (zero search), as well as the interpolated position mode as specified in CiA 402. The latter is a CANopen device profile for drives and motion controllers and is internationally standardized in IEC 61800-7-2/-3.

Monitoring and debugging of the motors are possible using the company's Mactalk software. Configuration, SDO (service data object) test, and PDO (process data object) test is done via the JVL CAN Explorer running on a PC. The devices support up to 24 programmable TPDOs (transmit PDOs) and up to 24 programmable RPDOs (receive PDOs). Read and write access to 512 motor registers is provided.



Two M12 connectors allow for daisy-chaining of cables from motor to motor (Source: JVL)

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