

NEW CiA MEMBER

## CANopen stepper motor drivers

Auxind (Italy) offers integrated and housed Full Digital (FD) drives for stepper motors. The units support the CiA 402 CANopen device profile for drives and motion control.



FD2 drive applied on NEMA 34 stepper motor (Source: Auxind)

The product family includes FD1, FD2, FD3, FD4, and FD6 drives. These feature an ARM-based 72-MHz micro-controller, a Hall-effect current sensor, and a 12-bit magnetic encoder to verify the correct execution of the ordered steps. The implemented CiA 402 CANopen device profile for drives and motion controllers is internationally standardized in IEC 61800-7-2/-3 and is further developed by CAN in Automation (CiA). Interpolated position mode, profile position mode, profile velocity mode, and homing mode according to CiA 402 are offered. Implementation of customized modes is possible as well. The devices enable 32 programmable cycles and 10 cycle sequences. Pre-defined movements can be selected, started, and stopped using digital inputs. The CAN interface is opto-isolated from the power circuitry. The node-ID can be set via a DIP switch.

The FD2 is a micro-stepper drive with a position resolution of 400 steps to 208 400 steps per revolution. It is designed to be mounted directly on the motor end-shield and is equipped with 6/2 configurable digital I/Os and one analog input. The IP40-protected drive dimensions 86 mm x 99 mm x 25 mm. It supports voltages of 24 V<sub>DC</sub> to 130 V<sub>DC</sub> and motor currents up to 10 A (peak) per phase.

To avoid unwanted heat dissipation FD2 implements the motor torque control, which reduces the current in absence of resistant torque and increases it proportionally with the load till the configured maximum value is reached. The step accumulation function with a programmable alarm limit allows to accumulate the steps, which cannot be executed because of a sudden resistant torque above the maximum motor torque. When the load decreases, the drive recovers the accumulated steps, accelerating and reaching the reference position. The device is (re-)programmable via the CANopen, EIA-232, or EIA-485 interfaces. Alarms for over-temperature (+100 °C), over-voltage, and short-circuit can be set.

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