



EtherCAT plug-in modules provide compact drive technology

Efficient I/O and motion solutions for high-volume applications

EJ-series EtherCAT plug-in modules provide an efficient wiring solution for machines built in large and medium-sized production runs. With new motion modules, space-saving compact drive technology from Beckhoff is seamlessly integrated into a plug-in module concept, enabling extremely compact I/O and motion solutions that perfectly match customer requirements.

EJ-series plug-in modules make it easy to implement a platform concept for large-volume production runs without sacrificing customisation capabilities. The modules, with electronics based on the popular EtherCAT I/O system, are directly inserted into an application-specific signal distribution board that transmits signals and power to the individual connectors. Connections via pre-configured cable harnesses replace the expensive installation of individual wires, reducing per-unit costs and minimising the risk of faulty wiring because the EJ components are clearly coded.

Compact drive technology in a new format

Compact drive technology from Beckhoff, already available in a Bus Terminal form factor for years, is now also available as a plug-in module concept. In combination with a broad portfolio of Beckhoff motors and planetary gear units, three new EJ7xxx EtherCAT plug-in modules now enable especially compact and cost-effective drive solutions.

The EJ7047 stepper motor module was designed for applications in the medium performance range. The device features two inputs for limit switches; the second input can alternatively be configured by the user as an output. This makes it possible to install a holding brake, for example. In conjunction with stepper motors from the AS10xx series, the user can optionally implement vector control, delivering enhanced motion dynamics and reduced power consumption.

The EJ7211-0010 servomotor module features high performance in an exceptionally compact design. This is, in large part, enabled by the integrated One Cable Technology (OCT), which combines motor cable and an absolute feedback system into a single cable. The EtherCAT plug-in module seamlessly integrates with motors from the AM8100 series, offering output current up to 4.5 A_{RMS}. Since the system reads the identification plate of the AM81xx motors electronically, wiring and commissioning efforts are minimised. The fast control technology, based on a field-oriented current and PI speed control system, is suitable for demanding, highly dynamic positioning tasks.

The EJ7342 2-channel DC motor output stage is designed for direct operation of two DC motors, and offers galvanic isolation from the E-bus. Speed and position are set by the automation device via a 16-bit value, so a simple servo axis can be implemented by connecting an incremental encoder.

For highly dynamic applications and when feeding multiple axes via a single power supply, integration of the EJ9576 brake chopper module is recommended. This protects the system against damage from overvoltage by absorbing part of the energy. If the voltage exceeds the terminal's capacity, it discharges excess energy via a separate external resistor.

Further information:

www.beckhoff.com/EtherCAT-plug-in-modules