# EtherCAT (Ethernet for Control Automation Technology) combines the advantages of Ethernet with the simplicity of classic field bus systems. As one of the fastest Industrial Ethernet technologies, it is therefore ideally suited for use in decentralized, intelligent drives. That is why the ECI-80 internal rotor motors in protective extra-low voltage (24/48 VDC) with 80 mm diameter and up to 750 watts of rated power from the modular drive system from ebm-papst are now also available with EtherCAT interface.

**Integrated power electronics and EtherCAT interface**

When it comes to coordinating numerous smaller drives in a system, decentralized drive solutions with electronics integrated in the motor housing have proven themselves in practice. The BLDC internal rotor motor drives of the ECI-80 series from ebm-papst are already equipped with K5 electronics (Figure 1). These offer numerous fixed and freely programmable functions, so that the drives can independently execute program sequences independently of the higher-level control. In addition to control via I/Os or CANopen, the drives can now also be addressed via an EtherCAT interface. To this end, high-performance interface electronics including a multi-protocol chip have been added to the electronics module in addition to the power electronics. The real-time capability and high synchronization accuracy now make it possible to implement decentralized, intelligent drives and thus reliably synchronize several axes.

**Diagnostic interface and practical installation**

The diagnostic interface of the ECI-80 drives allows access to relevant data during network operation. This makes it possible, for example, to read the internal error memory, to query and adjust current characteristics and control times, to modify program sequences and reload them if necessary, to perform firmware updates or to download the electronic data sheet (EDS). In addition, it is possible to define which information the respective drive should transmit to the higher-level PLC or control system via the network. Installation of the drives is simple and practical. All connections are located on one side, making the work of the design engineer considerably easier with regard to cable routing.

**Modular drive system for customized design**

The ECI drives are part of the modular drive system from ebm-papst and can be configured in no time, i.e., combined with gearboxes, encoders and brakes. Various gearbox modules are available to increase the output torque to the level required by the application. If the application requires a holding brake with an emergency stop function, brake modules that work on the same principle as the spring-loaded brakes can be added to the drive unit. All drive units fulfill the requirements of protection class IP54 and are optionally available with IP65.

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# Fig 1: BLDC internal rotor motor of the ECI-80 series with EtherCat

# interface

# Photo ebm-papst

# Characters approx. 2.800 including headings

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# Link <http://www.ebmpapst.com/idt>

**About ebm-papst**

The ebm-papst Group, a family-run company headquartered in Mulfingen, Germany, is the world’s leading manufacturer of fans and motors. Since it was founded in 1963, the technological leader has set international industry standards with its core competencies in motor technology, electronics, digitalization, and aerodynamics. ebm-papst offers sustainable, intelligent, and tailor-made solutions for virtually every requirement in ventilation and heating technology.

In the 2023/24 financial year, the Group generated turnover of EUR 2.408 billion. It employs just under 14,000 people at 30 production sites (including in Germany, China, and the U.S.) and in 50 sales offices worldwide. ebm-papst sets the benchmark in almost all sectors, such as ventilation, air conditioning and refrigeration technology, heating technology, information technology, mechanical engineering, intralogistics, and medical technology.