

Modular drive systems from ebm-papst Intelligent drives with EtherCAT interface

EtherCAT (Ethernet for Control Automation Technology) combines the advantages of Ethernet with the simplicity of classic fieldbus systems. As probably one of the fastest industrial Ethernet technologies, this makes it ideal for use in decentralized, intelligent drives. And this is why the ECI-63 internal rotor motors from ebm-papst's modular drive system are now also available with an EtherCAT interface.

Integrated power electronics and EtherCAT interface

When it comes to coordinating numerous smaller drives in a system, decentralized drive solutions with integrated electronics in the motor housing have become established in practice. The BLDC internal rotor drives in the ECI-63 series from ebm-papst are already equipped with K5 electronics offering many fixed and freely programmable functions – meaning that the drives can execute program sequences independently of the higher-level control system. In addition to being controlled using I/Os or CANopen, the drives can now also be operated via an EtherCAT interface. To achieve this, a high-performance interface electronics system including a multiprotocol chip has been installed in the electronics module alongside the power electronics. Its real-time capability and high synchronization accuracy now make it possible to implement decentralized, intelligent drives and so reliably synchronize multiple axes.

Diagnostic interface and practical assembly

The diagnostic interface of the ECI-63 drives enables relevant data to be accessed while network operation is running. For example, internal fault memories can be read out, current characteristics and control times can be queried and adapted, program sequences can be modified and reloaded if necessary, firmware updates can be performed, or the electronic data sheet (EDS) can be downloaded. It is also possible to specify which information of the respective drive is to be transferred to the higher-level PLC or the control system via the network. Installation of the drives is simple and practical. All connections are positioned on one side, making cable routing much easier for the design engineer.

Modular drive system for individual design

The ECI drives are part of ebm-papst's modular drive system and can be configured within a short time, i.e. combined with transmissions, encoders, and brakes. Various transmission modules are available to raise the output torque to the level required by an application. If the application requires a holding brake with emergency stop function, brake modules based on the principle of spring-applied brakes can be added to the drive unit. All drives meet the requirements of degree of protection IP54, and optionally also IP65.

Pascal Schöpf
Trade press coordinator
Phone: +49 7938 81-7006
Fax: +49 7938 81-97006
pascal.schoepf@de.ebmpapst.com

Corinna Schittenhelm
Trade press coordinator
Phone: +49 7938 81-8125
Fax: +49 7938 81-98125
Corinna.Schittenhelm@de.ebmpapst.com

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Press office contact
ebm-papst Group
Phone +49 7938 81-7105

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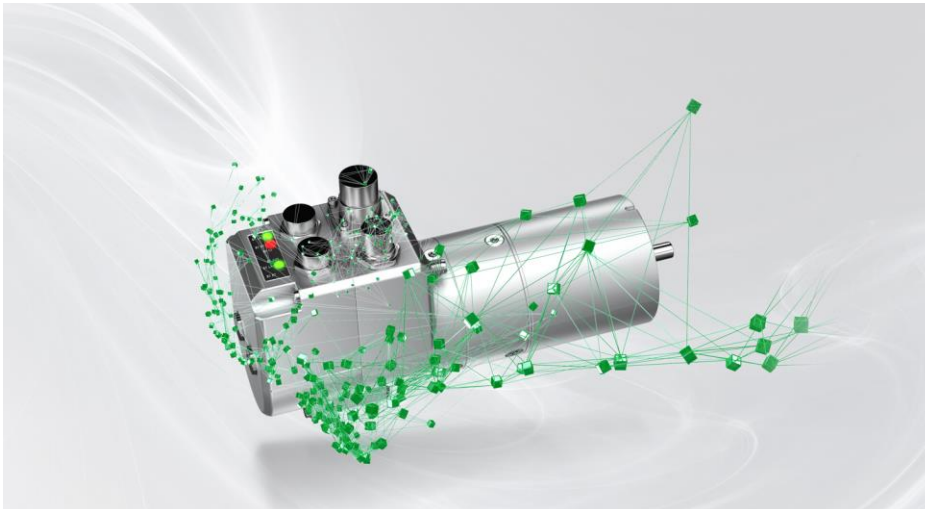


Photo: BLDC internal rotor drive in the ECI-63 series with EtherCAT interface

Photo ebm-papst
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About ebm-papst

The ebm-papst Group, a family-run company headquartered in Mulfingen/Germany, is the world's leading manufacturer of fans and drives. Since the technology company was founded in 1963, it has continuously set the global industry standard with its core competences in motor technology, electronics, digitization and aerodynamics. With over 20,000 products in its portfolio, ebm-papst provides the best energy-efficient, intelligent solution for virtually every ventilation or drive-engineering task.

In fiscal year 2021/22, the "hidden champion" generated revenues of € 2.288 billion. The group employs roughly 15,000 people at 29 production sites (in Germany, China and the USA, to name but a few) and in 51 sales offices worldwide. ebm-papst sets the benchmark with their fan and drive solutions which are used in almost all industries, such as ventilation, air conditioning and refrigeration, heating, automotive, information technology, mechanical engineering, household appliances, intralogistics and medical engineering.

Pascal Schöpf
Trade press coordinator
Phone: +49 7938 81-7006
Fax: +49 7938 81-97006
pascal.schoepf@de.ebmpapst.com

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