ECP/ENP hybrid connectors for One Cable Automation

Toward a scalable industry standard through international standardization

With the publication of IEC 61076-2-118, Edition 1, Beckhoff's hybrid connector interface has become an internationally standardized benchmark. For machine and system engineering companies, this means manufacturer-spanning compatibility, more second-source options, and long-term investment security when implementing One Cable Automation (OCA).

IEC 61076-2-118 specifies shielded and unshielded circular connectors with bayonet locking in sizes B12, B17, B23, and B40. The basic principle is to combine power, signal communication, and data communication in a single connector. This saves space, time, and costs, as cutting down on cable routes also significantly reduces the complexity of the entire cabling process.

The 2- to 7-pole contacts provided in the power range support voltages up to 630 V AC or 850 V DC and currents from 10 to 64 A. The Beckhoff portfolio utilizes this framework across the entire power range and includes data modules with two, four, or eight poles and/or a dummy module. They are suitable, for example, for data transmission using HIPERFACE DSL®, EtherCAT P (ECP), and EtherCAT/Ethernet (ENP).

The focus is on consistent modularization: The connectors are made up of just a few individual components and can be assembled according to the poka-yoke principle. All four sizes use a standardized, separately shielded, trapezoidal data module – only the power section scales. The mechanical and visual coding reliably prevents incorrect insertion, while

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the bayonet lock allows for quick, tool-free locking. In the locked state, the connector satisfies the IP65/IP67 protection rating.

The more than 400,000 ECP and ENP interfaces already installed in the field demonstrate the outstanding practicality of modular hybrid connectors as the foundation for efficient and scalable One Cable Automation. With standardization, the interface is now being opened up to additional markets and manufacturers. The resulting increase in product availability boosts acceptance and broadens its range of applications. Users benefit from robust supply chains, defined reliability, and verified compatibility between the device, cable, and connector.

➔ www.beckhoff.com/oca

Press picture:



Picture caption:
Beckhoff's hybrid connectors transmit power, signals, and data through a single interface – now internationally standardized according to IEC 61076-2-118.

Press kit:
www.beckhoff.com/media/downloads/press/2026/pr342026_beckhoff.zip

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