Beckhoff — EK EtherCAT Couplers

EK1000



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The **EK1000** coupler is produced by Beckhoff and belongs to the EK EtherCAT Couplers series. It links a standard Ethernet Time-Sensitive Networking line to a modular stack of EtherCAT I/O terminals, translating incoming frames into the fieldbus protocol used on the E-bus backplane. Within automated machinery, the unit anchors distributed I/O so a PLC can gather sensor data and issue actuator commands through a single network connection.

Port X001 uses an **RJ45 100 Mbit/s Ethernet (TSN)** interface, providing deterministic TSN ingress for the coupler, while port X002 provides an RJ45 EtherCAT outlet that propagates frames to downstream terminals. The internal connection uses the 100BASE-TX copper medium for data transfer. Up to **65,535 EtherCAT terminals** can be addressed, providing extensive logical capacity for digital and analog modules. The E-bus backplane supplies a continuous **2 A** to power the electronic sections of the connected terminals without external feeders. The network segment between the controller and the coupler can reach **100 m** when Category 5e cabling is used. Configuration requires at least **TwinCAT version 3.1.4024.32** so the software can recognize the device profile and provide the appropriate settings.

Control voltage is delivered to the head station at **24 VDC**. The power contacts integrated into the terminal bus can carry up to **10 A** for field devices that require a separate load supply. The compact housing measures **71 × 100 × 73 mm**, allowing dense installation on a DIN rail, while its mass of **218 g** keeps enclosure loads low. EtherCAT Open Mode is supported, allowing masters to forward process data without distributed clocks when that topology is preferred. The coupler mounts directly beside compatible EtherCAT terminals, creating a continuous backplane

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connection without separate internal network cables.

Specifications

Bus Interface X001:	RJ45 100 Mbit/s Ethernet (TSN)	**Bus Interface X002:**	RJ45 100 Mbit/s EtherCAT	**Data Rate:**	100 Mbit/s
Data Transfer Medium:	Ethernet 100BASE-TX	**Dimensions (w X H X D):**	71 x 100 x 73 mm	**E-bus Supply:**	2 A
Max Cable Length:	100 m	**Max Ethercat Terminals:**	65535	**Min Twincat Version:**	v3.1.4024.32
Power Contact Current:	10 A	**Power Contact Voltage:**	24 VDC	**Power Supply:**	24 VDC
Protocol:	EtherCAT Open Mode	**Required Supply Output:**	4 A At 24 V	**Weight:**	218 g
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