Beckhoff — BK EtherCAT Bus Couplers

BK3500



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The **BK3500** EtherCAT bus coupler is produced by Beckhoff within the BK EtherCAT Bus Couplers series. This unit connects a field EtherCAT segment to a block of modular I/O terminals, allowing PLCs or industrial PCs to command discrete and analog points through the K-bus backplane. By translating high-speed optical-fiber communication into the local terminal format, the coupler serves as the gateway between the network and machine-level sensors, actuators, and process variables.

Communication on the EtherCAT side uses a single optical fiber in a 2 HP Simplex housing, and link traffic is sustained at a line rate of **1.5 Mbaud**. Internally, the device distributes signals to the K-bus, where up to **64 bus terminals** can be attached. The coupler can process **512 digital inputs and outputs** and an additional 64 analog channels without overrun. The power contacts provide up to **24 VDC** for the sensor supply. The power-feed conductors and replaceable protection fuse support a maximum current of **10 A**, matching the load limits of typical terminal blocks. A starting-current factor of 2.5 times the steady-state draw helps protect upstream power supplies during cold starts.

During normal operation, the electronics consume **500 mA** from the supply rail, while the integrated K-bus regulator can provide **1750 mA** to the attached terminals so their logic sections remain powered. Communication with the controller occurs in deterministic frames containing **128 bytes** of process data, in accordance with the limits of the EtherCAT mapping tables. Electrical isolation between the field side and the I/O stack provides 500 V of dielectric strength. The coupler has an **IP20** protection rating and is intended for cabinet installation. It must be mounted in a

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clean, dry enclosure that prevents exposure to moisture, conductive debris, and excessive airborne contamination.

Specifications

Ambient Temperature (operation):	0AC to +55AC	**Ambient Temperature (storage):**	-25AC to +85AC	**Analog Peripheral Signals:**	Max. 64 inputs/outputs
Analog Signals:	64 inputs/outputs	**Baud Rate:**	1.5 Mbaud	**Baud Rates:**	Up to max. 1.5 Mbaud (manual setting)
Bus Connection:	1 x optical fiber, 2 HP Simplex	**Bus Terminals:**	64	**Configuration Software:**	KS2000 or the controller
Dielectric Strength:	500 V	**Digital Peripheral Signals:**	Max. 512 inputs/outputs	**Digital Signals:**	512 inputs/outputs
Fuse Rating:	10 A	**Input Current:**	500 mA	**K-bus Power Supply:**	1750 mA
Max Number Of Bytes (inputs/outputs):	128 bytes	**Number Of Bus Terminals:**	64	**Power Contact Load:**	10 A
Power Contact Voltage:	24 VDC	**Power Supply:**	24 VDC (-15% / +20%)	**Process Data:**	128 bytes
Protection Class:	IP20	**Recommended Fuse:**	Maximum 10 A	**Start Current Factor:**	2.5 x continuous current
Starting Current:	2.5 x continuous current	**Supply Voltage:**	24 VDC	**Weight:**	Approx. 170 g
Last Verified:	11/09/2026 8:25 AM				

Contact Us

1620 Old Apex Road, Cary, NC 27513, USA

Toll Free: 1-888-551-3082

International: 1-919-443-0207

Fax: 1-919-867-6204

Email: sales@wakeindustrial.com

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