Beckhoff — BK EtherCAT Bus Couplers

BK3100



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The **BK3100** is a bus coupler produced by Beckhoff for the BK Bus Couplers series. It connects a PROFIBUS fieldbus line to modular K-bus I/O terminals, providing the point where network frames are converted into backplane signals for local input and output modules. In machine control systems, the unit allows a PLC to collect sensor data and set actuator states through one gateway instead of relying on separate proprietary interfaces. Its modular design supports centralized communication with distributed terminals mounted together on a DIN rail.

The coupler handles up to **512 digital inputs and outputs** and an additional **128 analog inputs and outputs** for measurement and control signals. The PROFIBUS connection supports transmission rates up to **12 Mbaud**, enabling frequent data updates across the attached terminal set. The K-bus can supply up to **1750 mA** to the terminal electronics and supports configurations containing as many as 64 terminals. Network wiring uses **one shielded 9-pin D-sub plug**, which provides a secure, strain-relieved connection inside a control cabinet. The maximum process image is 128 bytes in DP-only operation or 64 bytes when DP and FMS services are combined, allowing the controller's memory area to be allocated according to the selected communication mode.

The control side operates from a **24 VDC power supply** that also feeds the power contacts used by downstream terminals. These contacts can carry application currents up to **10 A**, allowing connected I/O modules to power devices such as relays and solenoids without separate supply wiring for each terminal. The enclosure has an **IP20 protection rating**, making it suitable for installation inside a protected electrical cabinet. Galvanic isolation between the field side and the logic side withstands 500 V, reducing the transfer of electrical interference between

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the network and local electronics. The plastic housing measures 100 mm in height, 50 mm in width, and **68 mm in depth**. Its compact dimensions allow the coupler to share a standard DIN-rail row with other automation components while preserving access to the fieldbus connector, power contacts, and attached terminals.

Specifications

Analog Peripheral Signals:	128 inputs/outputs	**Bus Connection:**	1 x D-sub plug, 9-pin, shielded	**Bus Interface:**	1 x D-sub 9-pin socket, shielded
Configuration:	via KS2000 or controller	**Data Transfer Medium:**	shielded copper cable, 2 x 0.25 mm²	**Data Transfer Rates:**	automatic detection up to 12 Mbaud
Depth:	68 mm	**Dielectric Strength:**	500 V	**Digital Peripheral Signals:**	512 inputs/outputs
Fieldbus Bytes (DP and FMS):	64 byte input, 64 byte output	**Fieldbus Bytes (DP only):**	128 byte input, 128 byte output	**Height:**	100 mm
Input Current:	70 mA + (total K-bus current)/4, 500 mA max.	**K-bus Current:**	1750 mA	**K-bus Current Supply:**	1750 mA
Max Baud Rate:	12 Mbaud	**Max Process Data (dp Only):**	128 bytes	**Max Process Data (dp/fms):**	64 bytes
Number of Bus Terminals:	64	**Power Contact Load:**	10 A	**Power Contact Voltage:**	24 VDC
Power Contacts:	max. 24 V DC, max. 10 A	**Power Supply:**	24 VDC	**Protection Class:**	IP20
Recommended Fuse:	<= 10 A	**Starting Current:**	2.5 x continuous current	**Weight:**	approx. 170 g
Width:	50 mm	**Last Verified:**	11/09/2026 11:37 AM		

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