Beckhoff — BK EtherCAT Bus Couplers

BK4000



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The **BK4000** is a bus coupler produced by Beckhoff for the BK EtherCAT Bus Couplers series. It links a local stack of Bus Terminals to an EtherCAT network so that I/O data from sensors and actuators can be exchanged with a controller in real time. In an automation cabinet, the unit mounts beside digital and analog terminals, interprets their process images, and forwards the compiled data stream to the fieldbus master. This arrangement provides a compact gateway between discrete machine wiring and high-speed industrial Ethernet while keeping the terminal stack organized within the control enclosure.

The coupler maps each analog channel to a bus image of **2 bytes per channel**, so every variable occupies one word within the process map. Both the analog format and the analog value format use a **signed integer**, and the numerical range has a maximum code of **0x7FFF**. The coupler accepts up to 64 Bus Terminals for local input and output expansion. An internal memory area of **256 words** stores configuration settings and cyclic process data used during communication. Parameter settings and diagnostic information are accessible through an **RS-232 configuration interface** without interrupting the fieldbus connection.

The electronics operate from a control supply of **24 VDC**, which is also forwarded through the power contacts for connected terminals. These power contacts support a continuous load of **10 A**, allowing current to pass through the terminal assembly. The housing measures **50 × 100 × 68 mm** and fits on a 35 mm DIN mounting rail. Spring-loaded terminal connections support direct field wiring and help keep conductors securely attached inside the cabinet. A K-bus extension increases the permissible node size to **255 terminals**, allowing larger terminal

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structures to operate without additional couplers. Data travels along the extended backplane while retaining the same addressing method throughout the connected terminal stack.

Specifications

Analog Bus Image:	2 bytes/channel	**Analog Channel Size:**	2 bytes	**Analog Format:**	SIGNED INTEGER
Analog Max Code:	0x7FFF	**Analog Peripheral Signals:**	32 inputs/outputs	**Analog Value Format:**	Signed Integer
Bus Interface:	2 × D-sub 9-pin (screened with vibration lock)	**Bus Terminals:**	64	**Config Interface:**	RS232
Configuration:	Via KS2000	**Configuration Interface:**	RS232	**Connection Type:**	Spring-Loaded Terminals
Current Supply K-bus:	1750 mA	**Data Transfer Medium:**	LiYCY 3 × 2 × 0.22 mm²	**Data Transfer Rate:**	500 kbaud
Digital Peripheral Signals:	512 inputs/outputs	**Dimensions (w X H X D):**	50 x 100 x 68 mm	**Input Current:**	70 mA + (total K-bus current)/4, max. 500 mA
K-bus Extension:	255	**Max Terminals With K-bus:**	255	**Max. Number of Bytes Fieldbus:**	64 bytes input, 64 bytes output
Memory Area Capacity:	256 words	**Mounting:**	Horizontal or Vertical	**Mounting Rail:**	35 mm
Power Contact Current:	10 A	**Power Contact Load:**	10 A	**Power Contacts:**	Max. 24 V DC / max. 10 A
Power Supply:	24 VDC	**Protection Class:**	IP44	**Supply Voltage:**	24 VDC
Supported Bus Terminals:	64	**Temperature Range:**	-20°C to +60°C	**Last Verified:**	11/09/2026 4:20 PM

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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