Ethernet RJ 45

Address selector

Configuration interface

Power-LEDs

K-bus

Bus Coupler supply

Input for power contacts

Power contacts

+60 °C
−25 °C

BK9000, BK9050 | Ethernet TCP/IP Bus Couplers

Ethernet TCP/IP The BK90x0 Bus Couplers connect Ethernet with the modular, extendable electronic terminal blocks. One unit consists of one Bus Coupler, any number from 1 to 64 terminals and one end terminal. The "Compact" BK9050 Bus Coupler is a cost-optimised version with compact housing. With the K-bus extension, up to 255 Bus Terminals can be connected.

The Bus Couplers recognise the terminals to which they are connected, and perform the assignment of the inputs and outputs to the words of the process image automatically. The BK9000 and BK9050 Bus Couplers support 10 Mbit/s and 100 Mbit/s Ethernet. Connection is through normal RJ 45 connectors. The IP address is set on the DIP switch (offset to a freely selectable start address). In networks with DHCP (a service for the allocation of the logical IP address to the physical node address [MAC-ID]) the Bus Coupler obtains its IP address from the DHCP server.

The BK9000 and BK9050 Bus Couplers support ADS TwinCAT system communication. TwinCAT I/O makes available configuration tools and Windows NT/2000/XP drivers for programs in any desired high-level language (DLLs) and for Visual Basic applications (ActiveX). Applications with OPC interfaces can access ADS (and therefore the BK9000 or BK9050) via an OPC server. In addition to ADS the Bus Coupler supports Open Modbus (Modbus TCP), a simple, widespread master/slave protocol based on TCP/IP.

Complex signal processing for analog I/Os, position measurement, …

The BK9000 and BK9050 Bus Couplers support the operation of all Bus Terminal types.

The analog and multi-functional Bus Terminals can be adapted to each specific application using the KS2000 configuration set. Depending on the type, the analog Bus Terminals' registers contain temperature ranges, gain values and linearisation characteristics. With the KS2000, the required parameters can be set on a PC. The Bus Terminals store settings permanently and in a fail-safe manner.

Optionally, the Bus Terminals can also be controlled by the control system. Via function blocks (FBs), the programmable logic controller (PLC) or the Industrial PC (IPC) handles configuration of the complete periphery during the start-up phase. If required, the controller can upload the decentrally created configuration data in order to centrally manage and store this data. Therefore, new adjustments are not necessary in the event of replacement of a Bus Terminal. The controller carries out the desired setting automatically after switching on.

System data	Ethernet TCP/IP	BK9000, BK9050
Number of I/O stations	only limited by IP addresses
Number of I/O points	depending on controller
Data transfer medium	4 x 2 twisted pair copper cable; category 3 (10 Mbaud), category 5 (100 Mbaud)
Distance between stations	100 m between hub/switch and Bus Coupler
Data transfer rates	10/100 Mbaud
Topology	star wiring

Technical data	BK9000	BK9050
Number of Bus Terminals	64	64 (255 with K-bus extension)
Max. number of bytes fieldbus	512 byte input and 512 byte output	
Digital peripheral signals	512 inputs/outputs	1,020 inputs/outputs
Analog peripheral signals	128 inputs/outputs	
Protocol	TwinCAT ADS, Modbus TCP, Beckhoff real-time Ethernet	
Configuration possibility	via KS2000	
Data transfer rates	10/100 Mbaud, automatic recognition of the transmission rate	
Bus interface	1 x RJ 45	
Power supply	24 V DC (-15 %/+20 %)	
Input current	70 mA + (total K-bus current)/4, 500 mA max.	320 mA max.
Starting current	2.5 x continuous current	
Recommended fuse	≤ 10 A	
Current supply K-bus	1,750 mA	1,000 mA
Power contacts	24 V DC max./10 A max.	
Electrical isolation	500 V (power contact/supply voltage/fieldbus)	
Weight	approx. 170 g	approx. 100 g
Operating/storage temperature	-25…+60 °C/-40…+85 °C	0…+55 °C/-25…+85 °C
Relative humidity	95 %, no condensation	
Vibration/shock resistance	conforms to EN 60068-2-6/EN 60068-2-27	
EMC immunity/emission	conforms to EN 61000-6-2/EN 61000-6-4	
Protect. class/installation pos.	IP 20/variable	
Approvals	CE, UL, Ex, GL	

Accessories	
KS2000	configuration software for extended parameterisation
Cordsets	cordsets and connectors
FC90xx-00xx	PC Fieldbus Cards with PCI interface

Ordering information	Description
BK9000	Ethernet TCP/IP Bus Coupler for up to 64 Bus Terminals
BK9050	Ethernet TCP/IP "Compact" Bus Coupler for up to 64 Bus Terminals (255 with K-bus extension)
BK9100	Ethernet TCP/IP Bus Coupler for up to 64 Bus Terminals (with integrated 2-channel switch)
BC9xxx, BX9000	Ethernet TCP/IP Bus Terminal Controller
CX8090	Ethernet Embedded PC

System	
Ethernet TCP/IP	For further Ethernet TCP/IP products please see the system overview