BK9100 | Ethernet TCP/IP Bus Coupler

Ethernet TCP/IP　　The BK9100 Bus Coupler connects 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. 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 BK9100 Bus Coupler supports 10 Mbit/s and 100 Mbit/s Ethernet. Connection is through normal RJ45 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.

Unlike the BK9000, the BK9100 has an additional RJ45 port. Both Ethernet ports operate as 2-channel switches. The I/O stations can thus be configured with a line topology, instead of the classic star topology. In many applications this significantly reduces the wiring effort and the cabling costs. The maximum distance between two couplers is 100 m. Up to 20 BK9100 Bus Couplers are cascadable, so that a maximum line length of 2 km can be achieved.

The BK9100 supports 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 BK9100 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.

System data	Ethernet TCP/IP	BK9100
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 Mbit/s), category 5 (100 Mbit/s)
Distance between stations	100 m between hub/switch and Bus Coupler or between Bus Coupler and Bus Coupler
Data transfer rates	100 Mbit/s
Topology	line or star wiring
Cascading	up to 20 BK9100 or max. line length 2 km

Technical data	BK9100
Number of Bus Terminals	64 (255 with K-bus extension)
Max. number of bytes fieldbus	512 byte input and 512 byte output
Digital peripheral signals	512 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 Mbit/s, automatic recognition of the transmission rate
Bus interface	2 x RJ45 (2-channel switch)
Topology	line or star wiring
Power supply	24 V DC (-15 %/+20 %)
Input current	70 mA + (total K-bus current)/4, 500 mA max.
Starting current	2.5 x continuous current
Recommended fuse	≤ 10 A
Current supply K-bus	1750 mA
Power contacts	max. 24 V DC/max. 10 A

Electrical isolation	500 V (power contact/supply voltage/fieldbus)
Weight	approx. 170 g
Operating/storage temperature	-25…+60 °C/-40…+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/Markings	CE, UL, ATEX, GL

Accessories	
KS2000	configuration software for extended parameterisation
Cordsets	cordsets and connectors
**FC9001-0010	FC9011**	Ethernet PCI fieldbus cards

Related products	
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)
BC9100	Ethernet TCP/IP Bus Terminal Controller for up to 64 Bus Terminals (with integrated 2-channel switch)
CX8090	Ethernet Embedded PC

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