Ethernet RJ 45

Power-LEDs

K-bus

Bus Coupler supply

Input for power contacts

Address selector

Configuration and programming interface

Power contacts

BC9000, BC9050 | Ethernet TCP/IP Bus Terminal Controllers

Ethernet TCP/IP The Bus Terminal Controllers BC90x0 are Bus Couplers with integrated PLC functionality and have a fieldbus interface for Ethernet. They are intelligent slaves that can be used as a non-central intelligence in the Ethernet system. One unit consists of the Bus Terminal Controller, any number of terminals between 1 and 64, and a bus end terminal. The "Compact" BK9050 Bus Terminal Controller is a cost-optimised version with compact housing. With the K-bus extension, up to 255 Bus Terminals can be connected.

The Bus Terminal Controller is programmed using the TwinCAT programming system according to IEC 61131-3. The configuration/programming interface of the BC9000 or BC9050 is used for loading the PLC program. If the software PLC TwinCAT is in use, the PLC program can also be loaded via Ethernet.

In the default setting the inputs and outputs of the connected Bus Terminals are assigned to the controller. Each Bus Terminal can be configured in such a way that it exchanges data directly through the fieldbus with the higher-level automation device.

Controller for distributed signal processing

The BC9000 and BC9050 Bus Terminal Controllers support the operation of all Bus Terminal types. As far as the user is concerned, the inputs and outputs are not handled any differently from the way they are by other coupler series. The information is made available for use as a byte array in the process image of the automation device.

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.

Having the controller (PLC, IPC) carry out the configuration of the Bus Terminals is a further option. The PLC or IPC uses function blocks (FB) to take care of the configuration of all the peripherals during the start-up phase. The controller can, if required, upload the non-centrally generated configuration data in order to manage and store them centrally. This means that it is not necessary to carry out the setting procedure again if a Bus Terminal is exchanged. The controller carries out the desired setting automatically after switching on.

PLC data	Ethernet TCP/IP	BC9000	BC9050
Programming	via TwinCAT and programming interface or Ethernet	
Program memory	64/96 kbytes	48 kbytes
Data memory	64/128 kbytes	32 kbytes
Remanent data	4,080 bytes	2 kbytes
Runtime system	1 PLC task	
PLC cycle time	approx. 1.5 ms for 1,000 instructions (without I/O cycle, K-bus)	
Programming languages	IEC 61131-3 (IL, LD, FBD, SFC, ST)	
Online change	–	yes

Technical data	BC9000	BC9050
Number of Bus Terminals	64	64 (255 with K-bus extension)
Max. number of bytes fieldbus	512 byte input and 512 byte output	
Max. number of bytes process image	512 byte input and 512 byte output	2,048 byte input and 2,048 byte output
Digital peripheral signals	512 inputs/outputs	2,040 inputs/outputs
Analog peripheral signals	128 inputs/outputs	512 inputs/outputs
Protocol	TwinCAT ADS, Modbus TCP	
Configuration possibility	via KS2000 or Ethernet	
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
Protect. class/installation pos.	IP 20/variable	
Approvals	CE, UL, Ex, GL	CE, UL, Ex

Accessories	
KS2000	configuration software for extended parameterisation
TwinCAT PLC	programming system conforms to IEC 61131-3
Cordsets	cordsets and connectors
FC90xx-00xx	PC Fieldbus Cards with PCI interface

Ordering information	Description
BC9000	Ethernet Bus Terminal Controller for up to 64 Bus Terminals
BC9050	Ethernet "Compact" Bus Terminal Controller for up to 64 Bus Terminals (255 with K-bus extension)
BC9020	Ethernet TCP/IP "Economy plus" Bus Terminal Controller 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)
BC9120	Ethernet TCP/IP "Economy plus" Bus Terminal Controller for up to 64 Bus Terminals (255 with K-bus extension, with integrated 2-channel switch)
BX9000	Ethernet Bus Terminal Controller for up to 64 Bus Terminals (255 with K-bus extension)
BK9xx0	Ethernet Bus Coupler
CX8090	Ethernet Embedded PC

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