



BX9000 | Ethernet TCP/IP Bus Terminal Controller

Ethernet TCP/IP The BX9000 Bus Terminal Controller has an Ethernet slave/master interface. The controller has automatic transmission rate detection up to 100 Mbit. The address can optionally be entered via DHCP, BootP, ARP or with the joystick switch. Up to 2 kbytes of input and 2 kbytes of output can be exchanged with the controller. The ModbusTCP and the ADS/TCP and ADS/UDP protocols are implemented.

One unit consists of the BX9000 Bus Terminal Controller with up to 64 Bus Terminals and a bus end terminal. With the terminal bus extension system, the connection of up to 255 Bus Terminals is possible.

The controller is programmed via the COM1 or via the Ethernet interface. In terms of their equipment and performance, the BX series Bus Terminal Controllers are positioned between the BC series Bus Terminal Controllers and the CX series Embedded PCs. The main features distinguishing BC and BX are the larger memory and the expanded interfaces of the BX. Additionally, two serial interfaces are integrated for programming and for the connection of further serial devices. The device itself comprises an illuminated LC display with two lines of 16 characters each, a joystick switch and a real-time clock. Further peripheral devices, e.g. displays, can be connected via the integrated Beckhoff Smart System Bus (SSB).

Controller for distributed signal processing

Like for all other Beckhoff controllers, the TwinCAT automation software is the basis for parameterization and programming. The BX devices are programmed according to the powerful IEC 61131-3 standard in the programming languages IL, FBD, LD, SFC or ST. Users therefore have the familiar TwinCAT tools available, e.g. the PLC programming interface, the System Manager and TwinCAT Scope. Data is exchanged optionally via the serial port (COM1) or via the Ethernet interface.

The configuration is also carried out using TwinCAT. The fieldbus interface, the SSB bus and the real-time clock can be configured and parameterized via the System Manager. The System Manager can read all connected devices and Bus Terminals. After the parameterization, the configuration is saved on the BX via the serial interface and can be accessed again later.

PLC data	Ethernet TCP/IP BX9000
Programming	via TwinCAT and programming interface or Ethernet
Program memory	256 kbytes
Data memory	256 kbytes
Remanent data	2 kbytes
Persistent data	1 kbyte
Runtime system	1 PLC task
PLC cycle time	approx. 1 ms for 1,000 instructions (without I/O cycle, K-bus)
Programming languages	IEC 61131-3 (IL, LD, FBD, SFC, ST)
Online change	yes
Up/down load code	yes/yes

Technical data	BX9000
Number of Bus Terminals	64 (255 with K-bus extension)
Max. number of bytes fieldbus	512 byte input and 512 byte output
Max. number of bytes process image	2048 byte input and 2048 byte output
Digital peripheral signals	2,040 inputs/outputs
Analog peripheral signals	512 inputs/outputs
Protocol	TwinCAT ADS, Modbus TCP
Data transfer rates	10/100 Mbit/s, automatic recognition of the transmission rate
Bus interface	RJ45
Serial interface	COM1: 1 x RS232, COM2: 1 x RS232 or RS485
SSB	CANopen-based subsidiary bus system for the connection of further peripheral devices
Diagnostics LED	2 x power supply, 2 x K-bus
Display	FSTN display with 2 x 16 characters for diagnosis or own texts, illuminated
Switch	joystick switch for parameterisation and diagnosis
Clock	battery-powered real-time clock for time and date
Power supply	24 V DC (-15 %/+20 %)
Input current	140 mA + (total K-bus current)/4, 500 mA max.
Starting current	2.5 x continuous current
Current supply K-bus	1450 mA
Power contacts	max. 24 V DC/max. 10 A
Electrical isolation	500 V (power contact/supply voltage)
Weight	approx. 250 g
Operating/storage temperature	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/markings	CE, UL

Accessories/related products	
Cordsets	cordsets and connectors
TX1200	programming system conforms to IEC 61131-3
FC9001-0010 FC9011	Ethernet PCI fieldbus cards
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)
CX8090	Ethernet Embedded PC

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