



Communication Ethernet

Ethernet

Ethernet operates with a data rate of 10 MBit/s and as Fast-Ethernet with 100 MBit/s. Ethernet utilizes the producer/consumer model. This means that every station possesses equal rights. While it is transmitting, all other stations listen in and accept the data directed to them. Bus access is regulated by the CSMA/CD procedure (Carrier-Sense Multiple-Access with Collision Detection), where each station may autonomously transmit when the bus is free. If a collision occurs, if two stations begin to transmit simultaneously, both of them will stop transmission and wait for a randomly determined time before they transmit again. Ethernet defines the Layers 1 (Physical Link) and 2 (Data Link) of the OSI model.

EtherNet™

The AC500 supports transmission and reception of data using TCP/IP and/or UDP/IP. Further application layers can be implemented by subsequent loading. Simultaneous operation of TCP/IP, UDP/IP and application layer is also assured. The IP, TCP, UDP, ARP, RP, BOOTP, and DHCP protocols are supported as a standard feature, as application layer Modbus/TCP.

Topology

Star- or ring-shaped using Ethernet hub or switch.

Data transmission

Max. 10 MB/s with 10 Base T and max. 100 MB/s with Fast-Ethernet.

Transmission media

Twisted-pair cables with RJ45 connector. The maximum cable length is 100 m for 100 MB/s.

Diagnostics

Detailed diagnostic messages for rapid trouble-shooting are shown on the CPU display. In addition, the device status is indicated at the communication module by four LEDs.