

OFFICIAL DOCUMENT PACKAGE

Manufacturer's Manual

Amikon cover with selected official ABB technical pages

ABB AC500 communications

CM577-ETH

ETHERNET TCP/IP COMMUNICATION MODULE

Selected official pages retain the original technical tables, ratings, notes and pagination.

OFFICIAL SOURCE

ABB AC500 Hardware V2, 03.2007, CM577-ETH pp.117-120

CM577-ETH purpose, installation, Ethernet interfaces, diagnostics and ordering; original pages 117-120

This technical extract does not replace the complete equipment and system manuals. Check the installed hardware and project before use.

Communication module Ethernet CM577-ETH

- TCP/IP with integrated 2-port switch

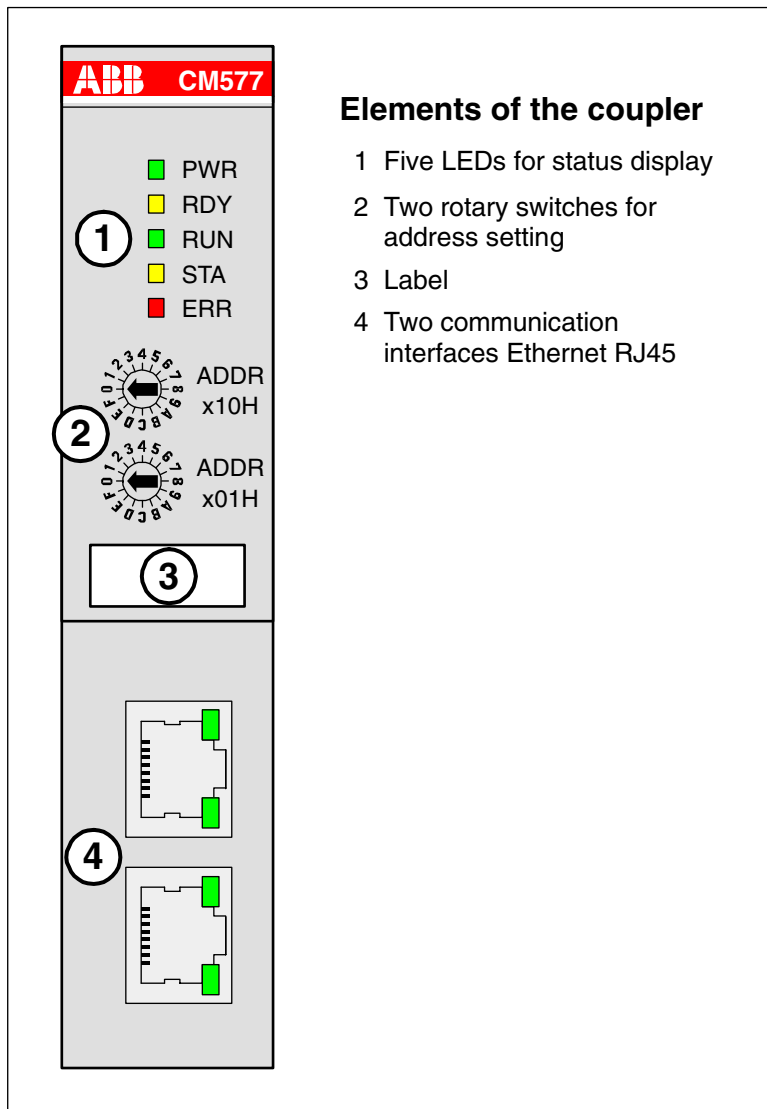


Figure: Communication module Ethernet CM577-ETH

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Purpose

The AC500 communications module CM577-ETH makes a communication over the Ethernet bus possible. The coupler is mounted on the left side of the CPU on the same Terminal Base. The communication between the CPU and the coupler takes place through the coupler bus (coupler interface), which is integrated in the Terminal Base. The data interchange is realized by a dual-port RAM. Depending on the used Terminal Base, 1, 2 or 4 couplers (also different types) can be employed (see also the description of the Terminal Bases).

The Ethernet coupler includes an internal Ethernet switch. The connection to the Ethernet can be established directly to the coupler. An additional switch is not necessary.

The Ethernet coupler is an intelligent 100-Base-T-Ethernet communication interface based on the highly integrated EC1 micro-controller. The coupler supports the complete TCP/IP protocol and the application layers, too.

The user interface is based on a dual-port memory. The coupler meets the PC/104 standard. The Ethernet communication runs via RJ45 interfaces.

The coupler is configured via the dual-port memory, the diagnosis interface or a TCP/IP connection by means of a system configurator. The configuration is saved non-volatile in a Flash EPROM.

Applications:

- TCP/IP for PC/Control Builder (programming)
- UDP (communication via the function blocks ETH_UDP_SEND and ETH_UDP_REC)
- Modbus on TCP/IP (Modbus on TCP/IP, master and slave)

Functionality

Coupler CM577-ETH	
Protocol	Ethernet TCP/IP, UDP/IP, Modbus TCP
Usable CPUs	PM571-xxx, PM581-xxx, PM591-xxx
Usable Terminal Bases	all
Field bus connector	2 x RJ45, with integrated 2-port switch
Internal power supply	via the coupler interface of the Terminal Base

Mounting and electrical connection

The coupler is mounted on the left side of the CPU on the same Terminal Base. The electrical connection is established automatically when mounting the coupler.



Note: Mounting, disassembling, electrical connection and dimensioned drawings for the Terminal Bases, CPUs, communication modules, I/O Terminal Units and the I/O expansion modules are described in detail in the AC500 system data chapters.



CAUTION: Removal of energized modules is not permitted. All power sources (supply and process voltages) must be switched off while working on any AC500 system.

Field bus interfaces

The Ethernet coupler has 2 RJ45 interfaces with the following pin assignment:

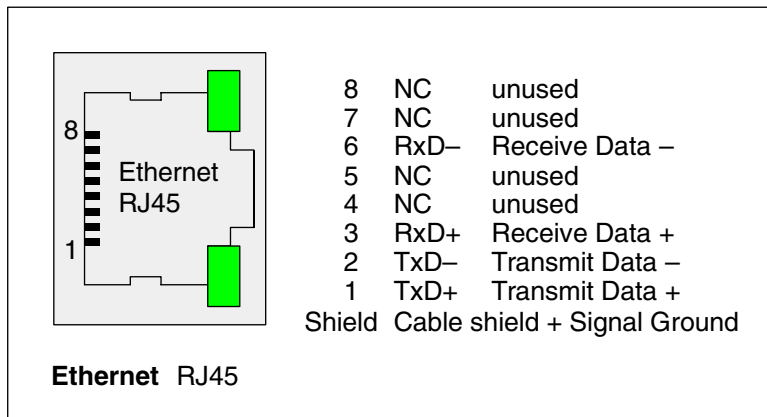
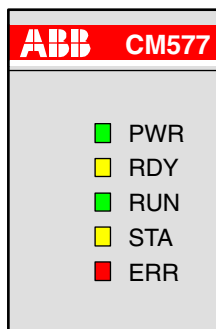


Figure: Pin assignment of the Ethernet interfaces RJ45

LED status displays

The status of the Ethernet coupler is displayed by means of 5 status LEDs. The following figure shows the positions of the LEDs. The table after that shows the LED statuses and their meanings.



LED	Color	Status	Meaning
PWR	green	ON (light)	Voltage is present
		OFF (dark)	Voltage is missing
RDY	yellow	ON	Coupler is ready
		flashes cyclic	Bootstrap Loader is active
		flashes non-cyclic	Hardware or system error
		OFF	defective hardware
RUN	green	ON	Communication is running
		flashes cyclic	Ready for communication
		flashes non-cyclic	Parameterization error
		OFF	No communication
STA	yellow	flashes	Ethernet Frame detected on the network
ERR	red	ON	Error
		OFF	No error

Technical data

The system data of AC500 and S500 are valid here. Only additional details are therefore documented below.

Coupler CM577-ETH	
Field bus	2 x Ethernet
Transmission rate	10 MBit/s or 100 MBit/s
Protocol	Ethernet TCP/IP, UDP/IP, Modbus TCP
Field bus connectors	2 x RJ45, with integrated 2-port switch
Processor	EC1, 160 pins
Clock frequency	48 MHz
Usable CPUs	PM571-xxx, PM581-xxx, PM591-xxx
Usable Terminal Bases	all
Ambient temperature	0 °C...60 °C
Coupler interface	Dual-port memory, 8 kByte
Current consumption over the coupler bus	typ. 420 mA
Internal RAM memory (EC1)	256 kByte
External RAM memory	2 x 128 kByte (for webserver option)
External Flash memory	512 kByte (firmware), 2 MByte (for webserver option)
Status display	PWR, RDY, RUN, STA, ERR, 2 x LINK, 2 x ACT
Weight	ca. 150 g

Ordering data

Order No.	Scope of delivery
1SAP 170 700 R0001	CM577-ETH, Communication module Ethernet TCP/IP with integrated 2-port switch
Link to other ordering data	see Overview of the AC500 communication modules