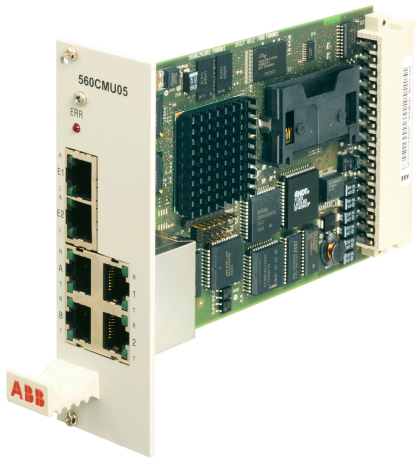# Communication Unit 560CMU05
Data sheet

Application

The 560CMU05 communication unit is one of the CMU modules of the RTU560 product line.

The essential tasks are:
– Managing and controlling of the I/O modules via the interface to the serial I/O bus.
– Reading Process events from the input modules.
– Send commands to the output modules.
– Communicating with control systems and local HMI systems via the serial interfaces (RS232) and the Ethernet 10/100BaseT interfaces.
– Communication with Sub-RTU's, IED's or multimeter devices via the interfaces (RS485) and the Ethernet interfaces.
– Managing the time base for the RTU560 station and synchronizing the I/O modules.
– Handling the dialog between RTU560 and Web-Browser via the LAN interfaces.

Within the RTU560 racks the board occupies two slots. The communication unit is able to handle Ethernet-, UART- and all non UART character based communication protocols.
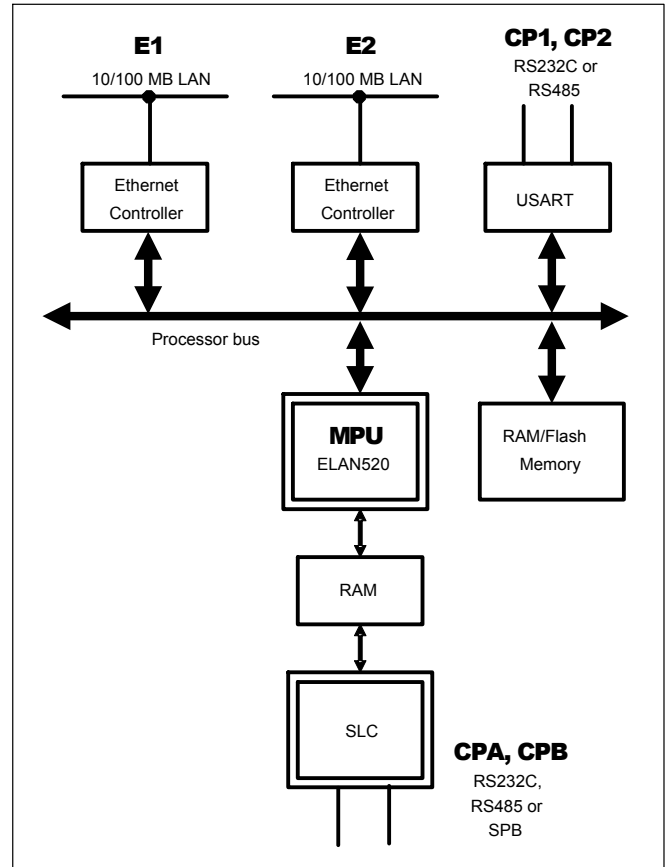

Figure 1: Block diagram 560CMU05

Characteristics

The two microprocessors are the essential hardware parts of the module, which share themselves in the tasks:
– MPU: 32 Bit Main Processing Unit
– SLC: 8 Bit Serial Line Controller

One task of the SLC is to work as master for the SPB I/O bus (serial peripheral bus). In addition the SLC is the time base for the I/O modules and does the periodical time synchronization of the I/O modules. Depending on the configuration also serial protocols can be handled via the SLC.

The MPU is responsible for the other tasks. The MPU handles the absolute time and date for the RTU. The real time clock 560RTC0x can be used for the time reference or the time may be set and synchronized from the central system via the serial lines or via the Ethernet LAN interface. RTU560 synchronizes it-

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self to the time references supplied by 560RTC0x. The time information of the 560RTC0x is provided to the 560CMU05 on the backplane of the sub-rack.

System relevant configuration files are stored in the non-volatile flash memory card in order to guarantee a valid system configuration after Power on Reset (PoR).

The communication unit provides the following interfaces:
– Communication Port 1 and 2 (CP1 & CP2): serial interfaces according RS232C or RS485 with RJ45 connectors.
– Communication Port A and B (CPA & CPB): serial interfaces according RS232C or RS485 with RJ45 connectors. If configured as SPB I/O bus the interface CPB is connected to the front side and parallel to the backplane connector.
– Ethernet Interface 1 and 2 (E1 & E2) Ethernet interface 10/100BaseT with RJ45 connector.

Technical data

In addition to the RTU500 series general technical data, the following applies:

Main Processing Unit MPU

CPU	ELAN520 @ 133 MHz (incorporating an Intel® 586TM class 32 bit processor)
RAM	64 MByte

Serial Line Controller SLC

CPU	80C251
RAM	32 kByte
Dual ported RAM	16 kByte

CompactFlash card

Connector	CompactFlash card slot
Type	CF-Typ I (36,4 mm × 42,8 mm × 3,3 mm)
Capacity	128 MByte

Serial interfaces CP1 and CP2

Connector	RJ45	
Type	RS232C or RS485	
RS232C:		
Bit rate	50 bit/s - 38.4 kbit/s	
Signal lines	GND	E2/102
	TxD	D1/103
	RxD	D2/104
	RTS	S2/105
	CTS	M2/106
	DTR	S1.2/108
	DCD	M5/109
Level	typical: ± 6V	
RS485:		
Bit rate	50 bit/s - 38.4 kbit/s	
Level	typical: ± 6V	

Serial interfaces CPA and CPA

Connector	RJ45
Type	RS232C or RS485
RS232C:	
Bit rate	600 bit/s - 38.4 kbit/s

Serial interfaces CPA and CPA

Signal lines	GND	E2/102
	TxD	D1/103
	RxD	D2/104
	RTS	S2/105
	CTS	M2/106
	DTR	S1.2/108
	DCD	M5/109
Level	typical: ± 6V	
RS485:		
Bit rate	600 bit/s - 38.4 kbit/s	
Level	typical: ± 6V	

Ethernet interface E1 and E2

Connector	RJ45
Type	IEEE 802.3, 10/100BaseT

Current consumption for power supplied via RTU560 backplane

5 V DC	1060 mA
24 V DC	

Signaling by LEDs

ERR (red)	ON: RTU in error state Flashing: RTU in warning state For more details see RTU500 series Function Description
Tx (green)	Transmit data on serial communication ports CP
Rx (green)	Receive data on serial communication ports CP
A (green)	Activity on Ethernet interface E
L (green)	Link up on Ethernet interface E

Mechanical layout

Dimensions	160 mm x 100 mm, 3HE euro card format 8R (40 mm) front panel
Housing type	Printed circuit board
Mounting	for mounting in RTU560 racks
Weight	0.3 kg

Connection type

RTU560 backplane connector	48 pole type F DIN 41612

Immunity test

Electrostatic discharge IEC 61000-4-2	8 kV air (level 3) / 4 kV contact (level 2) Performance criteria A

Immunity test

Radiated Radio-Frequency Electro-magnetic Field IEC 61000-4-3	10 V/m (level 3) Performance criteria A
Electrical Fast Transient / Burst IEC 61000-4-4	2 kV (level 3) Performance criteria A
Surge IEC 61000-4-5	2 kV (level 3) Performance criteria A
Conducted Disturbances, induced by Radio-Frequency Fields IEC 61000-4-6	10 V (level 3) Performance criteria A

Environmental conditions

Nominal operating temperature range: EN 60068-2-1, -2-2, -2-14	-25°C... 70°C
Relative humidity EN 60068-2-30	5 ... 95 % (non condensing)

Ordering information

560CMU05 R0002	1KGT012700R0002

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