DATA SHEET

PM866AK01

ABB Ability™ System 800xA® hardware selector

The CPU board contains the microprocessor and RAM memory, a real-time clock, LED indicators, INIT push button, and a CompactFlash interface.

The base plate of the PM866 / PM866A controller has two RJ45 Ethernet ports (CN1, CN2) for connection to the Control Network, and two RJ45 serial ports (COM3, COM4). One of the serial ports (COM3) is an RS-232C port with modem control signals, whereas the other port (COM4) is isolated and used for the connection of a configuration tool. The controller supports CPU redundancy for higher availability (CPU, CEX-Bus, communication interfaces and S800 I/O).

Simple DIN rail attachment / detachment procedures, using the unique slide & lock mechanism. All base plates are provided with a unique Ethernet address which provides every CPU with a hardware identity. The address can be found on the Ethernet address label attached to the TP830 base plate.

Features and benefits

- ISA Secure certified - Read more
- Reliability and simple fault diagnosis procedures
- Modularity, allowing for step-by-step expansion
- IP20 Class protection without the requirement for enclosures
- The controller can be configured with 800xA control builder
- The controller has full EMC certification
- Sectioned CEX-Bus using a pair of BC810 / BC820
- Hardware based on standards for optimum communication connectivity (Ethernet, PROFIBUS DP, etc.)
- Built-in redundant Ethernet Communication ports

General info	
Article number	3BSE076939R1 (PM866AK01)
Redundancy	No
High Integrity	No
Clock Frequency	133 MHz
Performance, 1000 boolean operations	0.09 ms
Performance	0.09 ms
Memory	64 MB
RAM available for application	51.389 MB
Flash memory for storage	Yes

Detailed data	
Processor type	MPC866
Switch over time in red. conf.	Max 10 ms
No. of applications per controller	32
No. of programs per application	64
No. of diagrams per application	128
No. of tasks per controller	32
Number of different cycle times	32
Cycle time per application programs	Down to 1 ms
Flash PROM for firmware storage	4 MB
Power supply	24 V DC (19.2-30 V DC)
Power consumption +24 V typ/max	210 / 360 mA
Power dissipation	5.1 W (8.6 W max)
Redundant power supply status input	Yes
Built-in back-up battery	Lithium, 3.6 V
Clock synchronization	1 ms between AC 800M controllers by CNCP protocol
Event queue in controller per OPC client	Up to 3000 events
AC 800M transm. speed to OPC server	36-86 events/sec, 113-143 data messages/sec
Comm. modules on CEX bus	12
Supply current on CEX bus	Max 2.4 A
I/O clusters on Modulebus with non-red. CPU	1 electrical + 7 optical
I/O clusters on Modulebus with red. CPU	0 eletrical + 7 optical
I/O capacity on Modulebus	Max 96 (single PM866) or 84 (red. PM866) I/O modules
Modulebus scan rate	0 - 100 ms (actual time depending on number of I/O modules)
Supply current on Electrical Modulebus	24 V : max 1.0 A 5 V : max 1.5 A
Ethernet channels	2
Ethernet interface	Ethernet (IEEE 802.3), 10 Mbit/s, RJ-45, female (8-pole)
Control Network protocol	MMS (Manufacturing Message Service) and IAC (Inter Application Communication)
Recommended Control Network backbone	100 Mbit/s switched Ethernet
Real-time clock stability	100 ppm (approx. 1 h/year)
RS-232C interface	2 (one general, 1 for service tool)
RS-232C interface (COM3) (non red. only)	RS-232C, 75-19 200 baud, RJ-45 female (8-pole), not opto isolated, full RTS-CTS support
RS-232C interface (COM4) (non red. only)	RS-232C, 9 600 baud, RJ-45 female (8-pole), opto isolated, no RTS-CTS support

Environment and certification	
Temperature, Operating	+5 to +55 °C (+41 to +131 °F)
Temperature, Storage	-40 to +70 °C (-40 to +158 °F)
Temperature changes	3 °C/minutes according to IEC/EN 61131-2
Pollution degree	Degree 2 according to IEC/EN 61131-2
Corrosion protection	G3 compliant to ISA 71.04
Relative humidity	5 to 95 %, non-condensing
Emitted noise	< 55 dB (A)
Vibration	10 < f < 50 Hz: 0.0375 mm amplitude, 50 < f < 150 Hz: 0.5 g acceleration, 5 < f < 500 Hz: 0.2 g acceleration
Rated Isolation Voltage	500 V a.c.
Dielectric test voltage	50 V
Protection class	IP20 according to EN 60529, IEC 529
Altitude	2000 m according to IEC/EN 61131-2
Emission & Immunity	EN 61000-6-4, EN 61000-6-2
Environmental conditions	Industrial
CE Mark	Yes
Electrical Safety	EN 50178, IEC 61131-2, UL 61010-1, UL 61010-2-201
Hazardous location	UL 60079-15, cULus Class 1, Zone 2, AEx nA IIC T4, ExnA IIC T4Gc X
ISA Secure certified	Yes
Marine certificates	DNV-GL (currently PM866: ABS, BV, DNV-GL, LR)
TUV Approval	No
RoHS compliance	EN 50581:2012
WEEE compliance	DIRECTIVE/2012/19/EU

Dimensions	
Width	119 mm (4.7 in.)
Height	186 mm (7.3 in.)
Depth	135 mm (5.3 in.)
Weight (including base)	1200 g (2.6 lbs)

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