

DATA SHEET

PM866AK01

Compact Product Suite 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	

Processor type MPCB66 Switch over time in red. conf. Max 10 ms No. of applications per controller No. of programs per application No. of diagrams per application No. of tasks per controller 32 Number of different cycle times Cycle time per application programs Down to 1 ms Plash PROM for firmware storage 4 MB Power supply 24 V DC (19.2-30 V DC) Power consumption +24 V typ/max 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 Lithium, 3.6 V Clock synchronization Lithium, 3.6 V South 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 Vax 24 A 1/O clusters on Modulebus with non-red. CPU 1 electrical + 7 optical 1/O clusters on Modulebus with red. CPU 0 eletrical + 7 optical 1/O clusters on Modulebus with red. CPU 0 eletrical + 7 optical 1/O clusters on Modulebus with red. CPU 0 eletrical + 7 optical 0 -100 ms (actual time depending on number of I/O modules) 24 V : max 1.0 A 5 V : max 1.5 A Ethernet channels 2 Ethernet channels Ethernet channels Ethernet channels Ethernet (IEEE 802.3), 10 Mbit/s, R3-45, female (8-pole) MMS (Mannfacturing Message Service) and IAC (Inter Application Communication) MMS (Mannfacturing Message Service) and IAC (Inter Application Communication) MS (20 one general, I for service tool) 85-222 - 75-18-190 Journ 18 14-65 female (8-pole) not not stolated full RTS-CTS 85-222 - (Tot-18) Journ 18 14-65 female (8-pole) not not stolated full RTS-CTS	Detailed data		
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No. of tasks per controller Number of different cycle times 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 Wes 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 with red. CPU 0 eletrical +7 optical I/O capacity on Modulebus Max 96 (single PM866) or 84 (red. PM866) I/O modules) Supply current on Electrical Modulebus 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 100 ppm (approx. 1 h/year) 85-232C interface 2 (one general, 1 for service tool) RS-232C interface 2 (one general, 1 for service tool) RS-232C interface (COM3) (non red. only)	No. of programs per application	64	
Number of different cycle times 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 S.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 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 1 oletrical +7 optical Modulebus scan rate 0 -100 ms (actual time depending on number of I/O modules) Supply current on Electrical Modulebus Ethernet channels Ethernet channels Ethernet (IEEE 80.2.3), 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 BR-232C interface 2 (one general, I for service tool) RS-232C interface COM3) (non red. only)	No. of diagrams per application	128	
Cycle time per application programs Down to 1 ms	No. of tasks per controller	32	
Flash PROM for firmware storage 4 MB 24 V DC (19,2-30 V DC) Power consumption +24 V typ/max 210 / 360 mA 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 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 capacity on Modulebus with red. CPU O eletrical + 7 optical I/O capacity on Modulebus Modulebus scan rate 0 - 100 ms (actual time depending on number of I/O modules) 24 V : max 1.0 A 5 V : max 1.0 A 5 V : max 1.5 A Ethernet channels Ethernet channels Ethernet frace Ethernet (IEEE 802.3), 10 Mbit/s, R3-45, female (8-pole) MMS (Manufacturing Message Service) and IAC (Inter Application Communication) Recommended Control Network backbone Real-time clock stability 100 ppm (approx. 1 h/year) 85-232C interface 2 (one general, 1 for service tool) RS-232C, 75-19 200 baud, R3-45 female (8-pole), not opto isolated, full RTS-CTS	Number of different cycle times	32	
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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 Holder of the supply current on CEX bus Max 2.4 A Holder of the supply current 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 channels 2 Ethernet interface Ethernet (IEEE 802.3), 10 Mbit/s, RJ-45, female (8-pole) Control Network protocol Msi (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, 75-19 200 baud, RJ-45 female (8-pole), not opto isolated, full RTS-CTS	Power supply	24 V DC (19.2-30 V DC)	
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No clusters on Modulebus with red. CPU	Supply current on CEX bus	Max 2.4 A	
Modulebus scan rate O - 100 ms (actual time depending on number of I/O modules) 24 V: max 1.0 A 5 V: max 1.5 A Ethernet channels Ethernet interface Control Network protocol Recommended Control Network backbone Real-time clock stability RS-232C interface Max 96 (single PM866) or 84 (red. PM866) I/O modules 0 - 100 ms (actual time depending on number of I/O modules) 24 V: max 1.0 A 5 V: max 1.5 A Ethernet interface Ethernet (IEEE 802.3), 10 Mbit/s, RJ-45, female (8-pole) MMS (Manufacturing Message Service) and IAC (Inter Application Communication) Recommended Control Network backbone 100 Mbit/s switched Ethernet 100 ppm (approx. 1 h/year) 2 (one general, 1 for service tool) RS-232C interface (COM3) (non red. only)	I/O clusters on Modulebus with non-red. CPU	1 electrical + 7 optical	
Modulebus scan rate 0 - 100 ms (actual time depending on number of I/O modules) 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)	I/O clusters on Modulebus with red. CPU	0 eletrical + 7 optical	
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Supply current on Electrical Modulebus 5 V : max 1.5 A Ethernet channels 2 Ethernet interface Ethernet (IEEE 802.3), 10 Mbit/s, RJ-45, female (8-pole) MMS (Manufacturing Message Service) and IAC (Inter Application Communication) Recommended Control Network backbone 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)	Modulebus scan rate	0 - 100 ms (actual time depending on number of I/O modules)	
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Communication) Recommended Control Network backbone Real-time clock stability RS-232C interface (COM3) (non red. only) Communication) 100 Mbit/s switched Ethernet 100 ppm (approx. 1 h/year) 2 (one general, 1 for service tool) RS-232C, 75-19 200 baud, RJ-45 female (8-pole), not opto isolated, full RTS-CTS	Ethernet interface	Ethernet (IEEE 802.3), 10 Mbit/s, RJ-45, female (8-pole)	
Real-time clock stability 100 ppm (approx. 1 h/year) 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	Control Network protocol		
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	Recommended Control Network backbone	100 Mbit/s switched Ethernet	
RS-232C interface (COM3) (non red. only) RS-232C interface (COM3) (non red. only)	Real-time clock stability	100 ppm (approx. 1 h/year)	
RS-232C Intertace (COM3) (non red. only)	RS-232C interface	2 (one general, 1 for service tool)	
	RS-232C interface (COM3) (non red. only)		
RS-232C interface (COM4) (non red. only) RS-232C, 9 600 baud, RJ-45 female (8-pole), opto isolated, no 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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