

DATA SHEET

## PM857K01

## 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 PM857 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).

The high integrity functionality is enabled by the addition of an SM812 module and the SIL-certified software. This enables non-critical control schemes to be upgraded to SIL-certified schemes by the addition of a plug-in SM81x module, plus a selection of the appropriate software. The AC 800M High-Integrity also offers IEC 61508 and TÜV-certified control environment for combining safety and business-critical process control in one controller unit without sacrificing the safety integrity.

The PM857 can handle Max 128 I/O signals. Certified for SIL3. Requires configuration according to Safety Manual.

## Features and benefits

- ISA Secure certified Read more
- AC 800M High up to SIL 3 certified using PM857/SM812, PM863/SM812, PM865/SM811 or PM867/SM812
- Supports S800 I/O High Integrity (PM857, PM863, PM865, PM866A and PM891)
- The controller can be configured with 800xA control builder
- The controller has full EMC certification
- TÜV Certified SIL 2 and SIL 3
- Built-in redundant Ethernet Communication ports

General info		
Article number	3BSE088385R1 (PM857K01)	
Redundancy	No	
High Integrity	Yes	
Clock Frequency	96 Mhz	
Performance, 1000 boolean operations	0.17 ms	
Performance	0.17 ms	
Memory	32 MB	
RAM available for application	22.184 MB	
Flash memory for storage	No	

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	10 ms	
Flash PROM for firmware storage	18 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 PM857) or 84 (red. PM857) I/O modules Max 128 I/O signals in total	
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	0 to +55 °C (+32 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	cULus Class 1, Zone 2, AEx nA IIC T4, ExnA IIC T4Gc X	
ISA Secure certified	Yes	
Marine certificates	ABS, BV, DNV-GL (LR, Lloyd (Pending)	
TUV Approval	Yes	
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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