DATA SHEET

PM863K01

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 PM863 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.

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, PM66A 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	3BSE088381R1 (PM863K01)
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 PM863) or 84 (red. PM863) 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	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)

solutions.abb/800xA
solutions.abb/controlsystems