

PM865K02

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 PM865 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 a SM81x 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 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.

Package including:

- 2 pcs PM865K01, Processor unit
- 1 pcs TK850, CEX-bus expansion cable
- 1 pcs TK851, RCU-Link cable

Features and benefits

- AC 800M High SIL 2 certified using PM865/SM810/SM811 or PM867/SM812
- AC 800M High SIL 3 certified using PM865/SM811 or PM867/SM812
- Supports S800 I/O High Integrity (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	3BSE031150R1 (PM865K02)
Redundancy	Yes
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	MPC862P
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 d.c. (19.2-30 V d.c.)
Power consumption +24V typ/max	287 / 487 mA
Power dissipation typ.	6.9 W (11.4 W max)
Redundant power supply status input	Yes
Built-in back-up battery	Lithium, 3.6 V
Real-time clock stability	100 ppm (approx. 1 h/year)
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 electrical + 7 optical
I/O capacity on Modulebus	Max 96 (single PM865) or 84 (red. PM865) 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	MMS (Manufacturing Message Service) and IAC (Inter Application Communication)
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

Environmental 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
Altitude	2000 m 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
Emission & Immunity	EN 61000-6-4, EN 61000-6-2
Environmental conditions	Industrial
CE-marking	Yes
Electrical Safety	EN 50178, IEC 61131-2, UL 508
Hazardous location	cULus Class 1, Zone 2, AEx nA IIC T4, ExnA IIC T4Gc X
Marine certificates	ABS, BV, DNV-GL, LR, RS, CCS
TUV Approval	Yes
RoHS compliance	-
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	K01 1200 g (2.6 lbs) / K02 2300 g (5.1 lbs)

solutions.abb/800xA
solutions.abb/controlsystems

800xA is a registered or pending trademark of ABB. All rights to other trademarks reside with their respective owners.

We reserve the right to make technical changes to the products or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not assume any responsibility for any errors or incomplete information in this document.

We reserve all rights to this document and the items and images it contains. The reproduction, disclosure to third parties or the use of the content of this document – including parts thereof – are prohibited without ABB's prior written permission.

Copyright© 2020 ABB All rights reserved