

SM812 (HI controllers)

ABB Ability™ System 800xA® hardware selector



The prime function of SM812, is to provide intelligent supervision of a controller during non-SIL and SIL1-2 operations, and together with a PM867 form a 1oo2 diverse structure for SIL3 applications.

For high availability applications it is possible to have redundant SM812's that work together with any of the two redundant CPUs. SM812 has a dedicated synchronization link to synchronize active and redundant SM for hot-insert and online upgrade. It is needed during hot-insert and online upgrade situations to copy data between two SM812s in a redundant setup.

The SM812 has a connector with three digital inputs and two digital outputs that can be used for safety-related digital I/O (not process I/O).

Features and benefits

- MPC866 Microprocessor running at 133 Mhz
- 64 MB RAM
- Provides supervision of the PM857, PM863 and PM867 controller during SIL1-2 operations and together with the PM857, PM863 and PM867 forms a 1oo2 diverse architecture for SIL3 applications
- Over voltage monitoring
- Internal voltage monitoring
- Supports hot swap
- Supports redundancy
- SM Link for synchronization of redundant pair

General info	
Article number	3BSE072270R1
Redundancy	Yes
High Integrity	Yes
Clock Frequency	133 Mhz
Performance	-
Memory	64 MB
RAM available for application	-
Flash memory for storage	No

Detailed data	
Processor type	MPC866
Switch over time in red. conf.	Max 10 ms
Flash PROM for firmware storage	4 MB
Power supply	24 V DC (19.2-30 V DC)
Power consumption +24 V typ/max	160 / 250 mA
Power dissipation	3.8 W

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
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	59 mm (2.9 in.)
Height	186 mm (7.3 in.)
Depth	127.5 (5.0 in.)
Weight (including base)	0.7 kg (1.5 lbs)

solutions.abb/800xA
solutions.abb/controlsystems

800xA and Symphony Plus is a registered 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© 2025 ABB All rights reserved