ABB PM851AK01 3BSE066485R1

Processor Unit



AC 800M processor for process control. ABB PM851AK01 3BSE066485R1 is an AC 800M processor-unit package for executing the configured control application within an ABB control system. The PM851A CPU works with its TP830 baseplate and the selected communication and I/O modules to process signals and coordinate control functions. System 800xA Control Builder or Compact Control Builder provides the engineering environment. This model supports a single controller and one active Ethernet channel; CPU redundancy and High Integrity functionality are not part of the PM851AK01 specification. Its processing capacity and connected I/O requirements therefore define the appropriate application.

Technical Specifications

Product Identity	
Manufacturer / ordering code	ABB / PM851AK01 3BSE066485R1
Platform / function	AC 800M / processor unit
Dimensions / weight with base	119 × 186 × 135 mm (W × H × D) / 1100 g
Functional Configuration	
CPU redundancy / High Integrity	No / No
Application RAM	6.253 MB from System 800xA 5.1 FP4
Typical logic performance	0.46 ms per 1000 boolean operations
Ethernet	One active channel: CN1; 10 Mbit/s
Serial interfaces	COM3: RS-232C with modem signals; COM4: isolated service-tool port
CEX expansion	Maximum one communication module
Performance & Power	
Clock frequency	24 MHz, as listed for the exact ordering code
Memory	12 MB from System 800xA 5.1 FP4
Supply	24 V DC; permitted range 19.2–30 V DC
Typical / maximum current	180 / 300 mA at 24 V DC
ModuleBus capacity	Maximum 24 I/O modules; one electrical and one optical cluster
Environment	
Operating temperature	0 to +55 °C
Storage / humidity	–40 to +70 °C / 5–95% RH, non-condensing
Protection	IP20

Selected original manufacturer material follows on page 3.

Compatibility & Selection Guide

Engineer for the installed system. Control Builder is used to load the applicable control software and build the application. The AC 800M platform supports stand-alone process control or local control within a larger control network. Match the installed System 800xA release, firmware, libraries and I/O configuration when replacing a unit; do not assume a shared baseplate makes a different CPU interchangeable.

Wiring & Installation Reference

Connections for this processor

Supply · 24 V DC · Check polarity and 19.2–30 V range

CN1 · Control Network Ethernet · Use the single supported channel

CN2 · Present on TP830 · Not a redundant Ethernet channel for PM851A

COM3 / COM4 · Serial communication / service tool · Use the correct cable and interface configuration

CEX / ModuleBus · Communication / I/O expansion · Check module limits and required terminations

Replacement and commissioning

1. Preserve the application Back up the project, record the system release and confirm the complete CPU/baseplate identity.

2. Check the configuration Verify communication modules, I/O clusters, power and bus termination against the applicable ABB installation instructions.

3. Restore and verify Load the approved firmware and application with Control Builder, then verify communications and process interlocks before service.

Installation precautions

Do not treat this non-redundant processor as a live standby replacement.

Keep the installation within its temperature and humidity limits, with suitable ventilation.

Confirm the supplied battery, bus terminations, memory card, engineering cable and software entitlement separately.

The INIT control can affect the running application; establish its effect before operating it.

Manufacturer reference 1

DATA SHEET

Controllers - AC 800M Controllers
ABB Ability™ System 800xA® hardware selector

AC 800M is a family of rail-mounted modules, consisting of CPUs, communication modules, power supply modules, and various accessories. There are several CPU modules to choose from, ranging from single units with medium processing power and memory to fully redundant units with high processing power. To download a PDF OUTLINE of all modules in this section, or to COMPARE several items, use the options in the upper-right corner of the page.

For updated information regarding System 800xA please visit our 800xA Hardware Selector. In the HW-selector, you can compare different communication modules, AC 800M controllers, S800 I/O modules, S900 I/O modules, Select I/O modules, module termination units, networks equipment, panels, power supplies, and voters, and also print your PDF files or save an outline of all modules in the product area.

Below is an outline of the range of different AC 800M controllers available.






Specific feature [1]	PM851AK01	PM856AK01	PM857K01	PM857K02
General info				
Article number	3BSE066485R1 (PM851AK01)	3BSE066490R1 (PM856AK01)	3BSE088385R1 (PM857K01)	3BSE088386R1 (PM857K02)
Redundancy	No			Yes
High Integrity	No		Yes	
Clock Frequency	24 MHz		96 Mhz	
Performance, 1000 boolean operations	0.46 ms		0.17 ms	
Performance	0.46 ms		0.17 ms	
Memory	12 MB (from 800xA 5.1 FP4)	16 MB (from 800xA 5.1 FP4)	32 MB	
RAM available for application	6.253 MB (from 800xA 5.1 FP4)	10.337 MB (from 800xA 5.1 FP4)	22.184 MB	
Flash memory for storage	Yes		No	
Dimensions				
Width	119 mm			
Height	186 mm			
Depth	135 mm			
Weight (including base)	1100 g		1200 g	2700 g
Environment and certification				
RoHS compliance	EU RoHS, UAE RoHS, CN RoHS			
WEEE compliance	DIRECTIVE/2012/19/EU			

[1] For detailed information on each module, please visit: **800xahardwareselector.automation.abb.com**