ABB PM864AK02 3BSE018164R1

01 Redundant Processor Kit / system role

Product function and operating context

ABB PM864AK02 3BSE018164R1 maintains a paired controller arrangement in which the backup processor is coordinated with the primary through a dedicated redundancy connection.

The PM864A architecture uses an MPC862 processor at 96 MHz with 32 MB SDRAM and 2 MB flash for firmware. Those capacities describe the controller hardware rather than the entire amount available to a user application.

Functional path

Process application	Primary PM864A	RCU coordinated backup	Communication and I/O

Architecture	Paired PM864A controllers
Processing	MPC862 at 96 MHz
Expansion	Ethernet, serial and CEX-Bus interfaces

Each TP830 baseplate provides CN1 and CN2 Ethernet connections plus COM3 and COM4 serial ports. COM3 is RS-232C with modem-control signals; COM4 is an isolated service/configuration connection. CEX-Bus interfaces extend communication beyond the built-in ports.

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02 Technical operating envelope

Processor architecture	MPC862
CPU clock	96 MHz
SDRAM	32 MB per processor
Firmware flash	2 MB per processor
Control-network ports	2 × RJ45 Ethernet per TP830

Serial interfaces	COM3 RS-232C; isolated COM4 configuration port
COM3 data rate	Up to 19,200 baud
COM4 data rate	9,600 baud
Communication expansion	CEX-Bus
CPU arrangement	Redundant primary/backup pair

PM864A controller architecture and the PM864AK02 redundant-kit identity apply. CPU memory and performance must be matched to the installed firmware and application configuration.

Operating interpretation

The processor clock and raw memory capacity do not specify a guaranteed control-task cycle time; that depends on the configured application and communication load.

Configuration boundary

Retain CPU firmware, application compatibility, TP830 network identities, RCU connectivity and the engineered I/O topology as one replacement boundary.

Can PM864AK02 3BSE018164R1 use the same direct electrical ModuleBus arrangement as a single CPU?

Do not assume so. The direct electrical ModuleBus connection is specified for a single CPU arrangement; redundant CPU I/O topology needs its corresponding supported configuration.

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03 System integration and applications

Redundant process control

Use paired processors where the control application requires an engineered backup CPU.

Control-network integration

Connect the TP830 Ethernet ports to the designed AC 800M network arrangement.

Communication expansion

Attach supported interfaces through the CEX-Bus and preserve its power and termination plan.

Installed-system maintenance

Replace a processor within the existing redundancy architecture while retaining the application and firmware pairing.

System and supply context

ABB PM864AK02 3BSE018164R1 operates within the following defined system context. Match the complete kit number and identify both processor/baseplate assemblies.

Application boundary

The applications below describe its technical role. Select associated hardware and configuration for the actual installation.

What connects the paired processors in PM864AK02 3BSE018164R1?

The redundant arrangement uses an RCU link between the processors in addition to the engineered CEX-Bus and control-network connections.

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04 Engineering selection decisions

Is the 32 MB memory of PM864AK02 3BSE018164R1 entirely available for application code?

No. It is the SDRAM hardware capacity per processor. Firmware, runtime data and the configured application share the available memory resources.

How do COM3 and COM4 differ on PM864AK02 3BSE018164R1?

COM3 supports RS-232C communication with modem-control signals. COM4 is isolated and serves the configuration connection at 9,600 baud.

Does fitting a second CPU alone complete the redundancy of PM864AK02 3BSE018164R1?

No. Processor pairing, the RCU link, power, firmware and application configuration must all form a valid redundant system.

Why should the firmware of both CPUs in PM864AK02 3BSE018164R1 be checked together?

The pair must operate with a compatible firmware and application arrangement. Hardware identity alone does not demonstrate that the backup can take over the configured control task.

Test the planned transfer	Use the site's controlled redundancy test to assess transfer of the control task. Observe process continuity, communication quality and application alarms rather than relying only on a green indicator.
Retain the redundancy results	Save the tested CPU states, application backup, firmware identities, RCU/CEX layout and communication results. Release the system only when both normal operation and the intended backup behavior are established.

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05 Configuration boundary and references

Lifecycle and support

The current manufacturing and factory-support phase of PM864AK02 3BSE018164R1 is unconfirmed. Apter Power availability is assessed separately from manufacturer lifecycle status.

Replacement assessment

Retain CPU firmware, application compatibility, TP830 network identities, RCU connectivity and the engineered I/O topology as one replacement boundary.

Document roles

Use the original manufacturer excerpt for its preserved technical tables and drawings. This product brief explains selection and system context. The separate installation guide covers preparation, connection, tests and handover; use it together with the applicable manufacturer instructions.

Technical basis

ABB AC 800M 5.1 Controller Hardware Product Guide, 3BSE036352-510 A.

Related product navigation

ABB CPM810

ABB PM860K01 3BSE018100R1

These are related references, not confirmed substitutes or an automatically approved assembly.

Product enquiries