

Common Q+

Safety System Processor Module

Executive Summary

Westinghouse continues to evolve the proven Common Q safety platform under the Common Q+ (CQ+) modernization strategy - preserving licensing foundations while enabling phased upgrades aligned with long-term operation needs. The PM646C processor module addresses component obsolescence and increases computing capacity while maintaining compatibility with the existing Common Q system architecture.

As part of the CQ+ integrated safety system platform story, PM646C provides a drop-in modernization path for existing Common Q processors -supporting lifecycle extension and upgrade planning without forcing disruptive rip-and-replace changes.

PM646C Processor Module

Modernized processor technology that mitigates obsolescence risk and increases computing capacity - while preserving the Common Q application and I/O architecture.

Key Features & Capabilities – PM646C

- **Higher performance processing** to increase capacity while maintaining deterministic behavior.
- **Backward compatible** with existing Common Q applications, AC160 I/O, and communication cards—supporting upgrade planning without rework.
- **Four high-speed serial link ports** to expand connectivity options within the Common Q architecture.

- **Supports simplex or redundant configurations** to match system availability requirements.
- **Fault-tolerant memory design** to support robust operation in safety applications.
- **Enhanced diagnostics** to improve troubleshooting and reduce time to restore.
- **Fault-tolerant onboard memory** to support robust operation in safety applications.
- **Communications expansion** option via a daughter card interface to enable additional protocols for test and future applications.

New Features

- Multi-core processors
- Reuses source code and functions for compatibility
- Four HSL links
- Fault tolerant onboard RAM
- Enhanced diagnostics

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Customer Benefits

- **Mitigates processor obsolescence risk** while protecting existing Common Q investments.
- **Supports phased modernization planning** as part of the CQ+ integrated safety system roadmap.
- **Improves troubleshooting efficiency** and reduces time to restore with enhanced diagnostics.
- **Maintains compatibility** with the existing Common Q system architecture to minimize implementation disruption.



Why Westinghouse

- Largest global deployment of safety platforms
- Comprehensive lifecycle management commitment
- Proven global delivery track record across AP1000, APR1400, OPR1000 and multiple upgrade programs
- Single accountable partner for architecture, licensing, deployment, and long-term modernization



**Common Q+ Delivers
Interconnectivity and
Operability**

Learn more about Westinghouse I&C products and services at:



<https://westinghousenuclear.com/operating-plants/instrumentation-controls-systems/>

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