

S+ Applications Steam turbine solutions

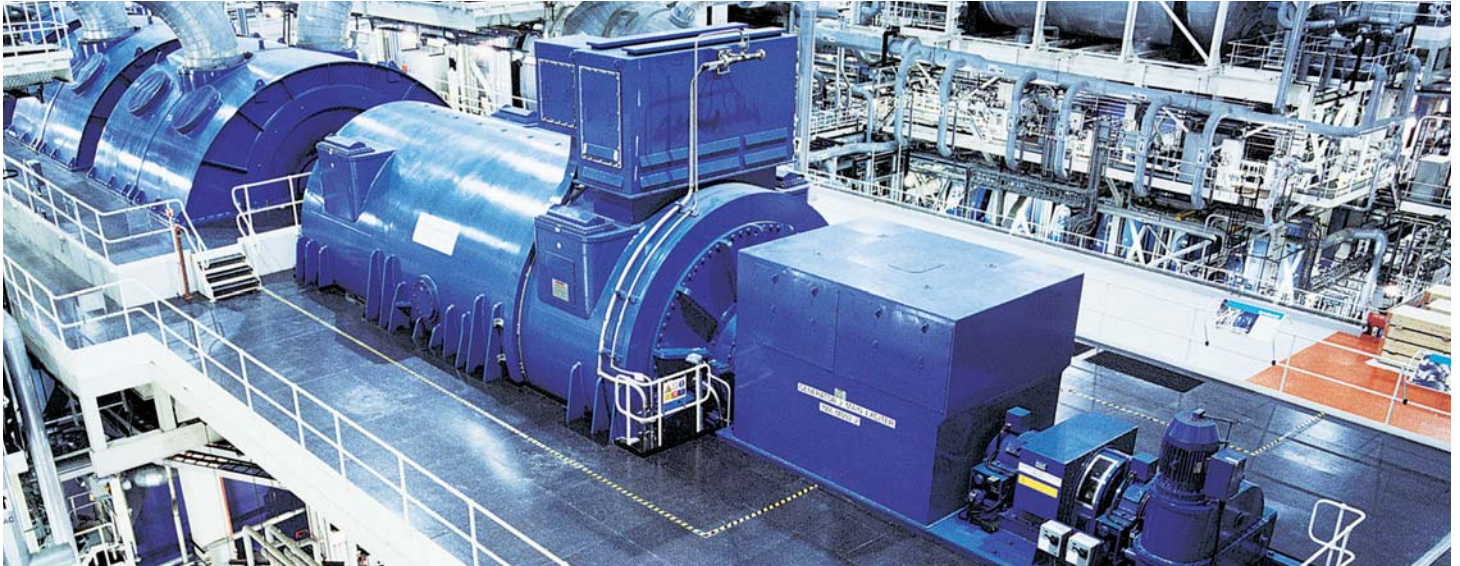


ABB is a global leader in providing steam turbine control systems that deliver cost efficient, technologically advanced solutions for both retrofit and greenfield applications.

Key benefits

- Maximum reliability and availability
- Reduced maintenance costs
- Avoidance of unplanned outages
- Improved turbine response to speed and load demand changes
- Seamless integration and unified interface for control systems
- Scalable solutions, with evolution strategy for existing installations

Overview

ABB offers a comprehensive suite of steam turbine automation solutions, regardless of the turbine OEM, for applications ranging from a 100 KW single stage turbine to a 1200 MW nuclear power plant turbine. Our capability in the areas of mechanical/hydraulic design and condition monitoring complements our vast array of in-house expertise and allows us to provide our customers with complete solutions.

We invest substantial resources in research and development in order to continually provide innovative products and services to our customers, now and in the future. This enables ABB to provide the latest solutions for the complete turbine island.

End to end life cycle support

Your ABB team includes specialists with the technical knowledge and experience needed to provide a point of contact for the entire life cycle of your project. The team develops a strategy to meet your control, protection, schedule and operational needs. In addition, for on-site installation, commissioning, start-up and final tuning, we provide highly experienced field service engineers.

We offer turbine automation audit services to evaluate the status of the existing control system, the mechanical/hydraulic equipment and the associated auxiliary systems. To ensure a long and productive operational life, our comprehensive site assessment and audit report for the plant's turbine equipment identifies areas of concern and highlights opportunities for improvement in operation and maintenance.

Proven products and integrated solutions

By utilizing a fully integrated solution, our customers take advantage of the benefits of a common platform for the turbine functions including: engineering design standards, engineering tools, and operator graphics. A common platform also minimizes the investment needed for back-up hardware, reduces training requirements and eliminates the need for serial interfaces. Additionally, our open architecture allows us to seamlessly interface to any other existing distributed control system (DCS) platform in your plant.

ABB offers total system solutions comprised of proven products and specialized tools that meet your needs for safe, continuous control and monitoring of your steam turbine operations.

Turbine protection and speed control

Utilizing our turbine protection module, we easily implement 2-out-of-3 overspeed trip protection schemes as well as a variety of load loss and trip anticipation functions. These specialty modules have on-board processing capabilities that allow them to execute turbine protection functions independently from the main DCS controller, giving you faster and more reliable protection. Our turbine protection solutions range from base turbine speed protection to multi-function SIL3 rated protection.

Automatic turbine start-up

ABB provides automatic turbine start-up (ATS) sequencing to ensure proper start-up of the turbine from turning gear to full load. This translates into a savings in start-up time, fuel and money. For example, on a 500 MW machine, our ATS solution provided a 2-hour reduction in time to full load from a cold start condition, saving an estimated \$100,000 per year for our customer.

Electro-hydraulic applications

ABB supplies turbine-specific electro-hydraulic products and solutions that are reliably integrated into your DCS system. The addition of advanced turbine automation systems often requires the conversion of mechanical-hydraulic systems into electro-hydraulic systems. This is why ABB offers solutions, design and consulting expertise for virtually all steam turbine systems.

Condition monitoring and assessment

ABB has developed a family of products that provide continuous condition monitoring and assessment, that operate in standalone and fully integrated configurations. ABB also offers a diagnostic vibration software package, Analyst™, which allows the user to perform graphical analysis of rotating machinery data.

Auto synchronization

ABB offers an auto synchronization solution that is fully integrated into the turbine control system. This device provides reliable, efficient and cost-effective solutions for generator to grid synchronization as well as for bus-to-bus (switchyard) synchronization.

Valve position control and feedback

ABB has extensive experience designing products to control the steam valves on turbine inlet and stop valves for all turbine applications. These specialty modules perform control functions separately from the main DCS controller, resulting in faster, more precise and more reliable valve control.

Proven experience

For more than 40 years, ABB has provided control systems for turbine applications. We have provided control systems for all types of rotating machinery including a wide variety of applications for more than 1,200 turbine projects worldwide, representing over 30 different turbine OEMs. Our turbine control experts average 20 years of experience designing and implementing steam turbine control systems.

Symphony Plus, ABB's total plant automation for the power and water industry

With over 125 years of experience, ABB optimizes performance, improves reliability, enhances efficiency and minimizes environmental impact. Combining in-depth process knowledge with an extensive automation and electrical portfolio, this expertise has been successfully deployed in thousands of demanding applications. ABB optimizes your steam turbine application with Symphony™ Plus and our embedded application know-how.

Symphony Plus represents the new generation of the field-proven Symphony family of control systems with over 6,000 systems installed worldwide. Through ABB's "Evolution without obsolescence" life cycle policy, we continue to provide enhancements with graceful evolution to newer technology with power and water specific products and applications.

Symphony Plus – simple, scalable, seamless, secure.

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