

# S+ Applications

## Pumping station solutions



**With a global presence in more than 100 countries, ABB is a leader in providing power and automation solutions that improve the efficiency, reliability and performance of pumping stations.**

### Key benefits

- Enhanced plant performance, efficiency and reliability
- Reduced development costs from an integrated solution
- Improved scheduling and prioritization of maintenance activities
- Reduced risk with proven products

### Overview

Nearly twenty percent of the world's energy is used for pumping systems, including water. Overall challenges for the global water pumping infrastructure include increased energy efficiency and productivity, higher reliability and lower life cycle cost. ABB supports to meet these challenges with a portfolio covering the entire electrical and automation scope for pumping station projects.

ABB provides engineered packages as well as turnkey pumping stations, including electrical and mechanical balance of plant. We are uniquely able to offer our pumping station customers a single source for design, engineering, supply, installation, commissioning, testing and maintenance, reducing the cost of ownership. Our experience and innovation is at work in pumping stations worldwide with a series of successfully implemented projects.

### Proven products and integrated solutions

ABB offers a comprehensive range of proven products, as well as the technology ownership behind these products, for pumping stations. As the ideal partner for water transfer projects, ABB takes the responsibility for building complete solutions, including pumping stations, electrical substations, pipeline control systems and the related communication networks. We serve not only end users, but also EPC contractors and pump OEMs. By serving as a single interface for the project, ABB reduces costs significantly.

### Integrated instrumentation, control and electrical solutions

Our unique single-source capability enables ABB to provide complete engineered packages such as electrical balance of plant (eBoP) and instrumentation, control and electrical (ICE) solutions. The benefit of a fully integrated ICE solution is a single interface that saves time, reduces cost and manages risk.

**ABB has met the challenge of pumping station plant development and operation at numerous project sites throughout the world. ABB has excellent project management expertise in large scale, complex projects.**

## Electrical balance of plant

Electrical balance of plant covers electrical equipment and systems from pump level to grid connection, ensuring the pumping station runs efficiently, safely and reliably. ABB offers integrated electrical balance of plant solutions for pumping stations. We have the knowledge to assess the degree of customization required, and we have the electrical products and services to create a fully integrated solution.

## Integrated instrumentation and control solutions

ABB's distributed control systems (DCS) and programmable logic controllers (PLC) platforms provide innovative, consistent and flexible control solutions for small to large size pumping stations. The DCS handles all plant operations as well as information management. ABB's instrumentation portfolio includes flow, pressure and level measurement, recorders and quality analyzers. Optional added-value applications such as Pump Efficiency Monitoring System and Water Leakage Management are tools that enable management to further increase the efficiency and performance of the pumping station.

## Motors and drives

Motors and drives play a significant role in pumping operations and drastically affect the long-term management of pumping stations. ABB is a leader in high-efficiency motors, with advanced technology providing energy savings up to 20%. Our variable speed drives are used to control the motor speeds of pumps, providing a guaranteed 30% to 60% energy savings, and reducing mechanical and electrical stress on pump components.

## Total plant optimization

A single pumping station is often part of a complex water network. To manage cascaded pumping stations and complex transmission and distribution schemes, ABB developed a suite of dedicated software applications. These solutions address the challenge of short-term and long-term operation planning by providing tools for load scheduling, performance monitoring, performance optimization, network management, water management, pressure management, simulation, vibration monitoring and pump efficiency.

## An ideal partner

Combining our in-house technology and extensive process expertise, ABB is a tested and proven partner for the pumping station industry. Our experience covers the spectrum from the reliable transport and distribution of fresh water for human consumption, to water for industrial and agricultural production, to waste water discharge. ABB meets these challenges every day, and on a global basis, with solutions that deliver energy efficiency, productivity, reliability and optimized life cycle costs for both new infrastructures as well as the modernization of existing ones.

## 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 pumping station project 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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