How can we move water to where it’s needed more efficiently?

With less energy?

More reliably?

Solutions for the water industry:
Water Distribution & Controls

Answers for the environment.
We keep processes flowing – so that water can flow too

Water – a resource of unique value. Your challenge is to transport it to the consumer reliably, without loss, and energy-efficiently. As experts in drive and automation technology, we help you meet this challenge: from supplying the right electronics and industry-specific systems to operational support to complete lifecycle service. So that water arrives where it’s needed, when it’s needed, and in the right quantity.

SIWA Solutions
Based on Siemens drive and automation technology, Water Distribution & Controls (WDC) develops integrated solutions for water supply and wastewater disposal. Our systems include drives for pumps and fans as well as the necessary energy supply. We also link field devices and actuators with SCADA systems.

SIWA Services
WDC offers services for operational support, especially for the improvement of system availability, safety, and optimization. We also provide services that protect your investment value and ensure the effectiveness of regular maintenance.
SIWA Systems
Using the latest methods and technologies, SIWA Systems give operators the tools for efficient system management. SIWA Systems were developed specifically for the requirements of the water industry.

Modular SIWA Pipeline Management Systems and SIWA Network Management Systems are specific solutions for problems with water transportation and distribution.

50 years of experience, 100% solution
The SIWA portfolio is a modular system we use to solve problems for the water industry. "We" means Water Distribution & Controls from Siemens – and 50 years of international experience in the electrotechnical outfitting of treatment plants, water transportation systems, and distribution networks.

Water Distribution & Controls. Your source for electrotechnical solutions by Siemens.
SIWA Solutions: Thinking beyond the next few years

What’s the best way to utilize your transport network in the coming decades? How can you keep your distribution network transparent and controllable at all times? Drawing on our comprehensive portfolio, we can design the right solution and keep things flowing with professional project implementation.
Major international infrastructure projects for water transportation and distribution place high demands not just on the design of the electrotechnical solutions, but on the performance of the project and service organization entrusted with the implementation.

Experienced Siemens “balance of plant” specialists go on-site to ensure that solution components are properly integrated in accordance with the project requirements. Internationally experienced project managers first do a site survey to create the basis for an engineering plan. The site survey also determines whether service interruptions are included in planning, whether the necessary approvals have been secured, and whether local vendors need to be included – among other issues. To keep engineering quality high and installation time low, SIWA Solutions include work scheduling in coordination with the project partners and materials planning for all the logistical requirements of the defined construction phases.

WDC manages the project, from planning to the successful handover, including delivery of system components to the construction site, installation, commissioning, and testing of the solutions. A team of specialists from Siemens’ regional companies and colleagues from the central expert pool stand ready to assist in all phases of work.

Siemens project managers undergo an international certification program that is uniform throughout the company, ensuring a consistently high quality of management anywhere in the world.
The individual electrotechnical components for pump and pressure regulation stations (including elevated tanks) are integrated into a unified, controllable system using intelligent control technology that assures optimal system performance. The SIWA OPTIM system module is part of the SIWA Pipeline Management Systems, and ensures that all system components like pumps, reservoirs, and valves work at their optimal operating capacity – and this saves you energy. With the SIWA Leak system module for leak monitoring, even small leaks can be reliably detected and located.

Integration of the latest telecommunication technology permits water utility operators to control system infrastructures over distances of several hundred kilometers and to video-monitor very remote stations or system components that are difficult to access. In the event of a malfunction, on-call personnel or emergency services are informed via all available methods of communication, and remote diagnosis can then analyze the malfunction so that the appropriate switching responses or value adjustments can be made.

The result
SIWA Solutions are designed to optimize the performance of water transport systems, allowing system operators to achieve high operational and investment security through:

- Coordinated, standardized, open interfaces of all system components
- Sustained higher-efficiency operation through optimized algorithms and uniform operator interfaces for all functions
- More efficient commissioning and shorter implementation times for subsequent expansions
- Lower energy costs and longer pump life as the result of consistently optimal operating levels
- Reliable detection and location of pipeline leaks

Cost-optimized all the way: SIWA Solutions for water transport systems

Does your system always function at its most effective level of performance? How can you deal with demand variations more efficiently? With a carefully designed solution from Siemens that incorporates advanced measurement, monitoring, and control systems.

The challenge
In the balance between ensuring a constant water supply and ongoing cost optimization, cumulative costs from energy use or water loss are particularly significant when water must travel a long distance from source to consumer. Operators are faced with the challenges of:

- Using existing systems at a level that strikes the optimal balance between high performance, energy efficiency, and low wear
- Accommodating dynamic demand variations at minimal cost through variable drive solutions

The solution
The SIWA Solutions package for water transport systems, including pump stations, manages the monitoring, control, and optimization of water transport from source to consumer. Its modular concept includes all measurement, monitoring, and control functions. The package’s measurement, energy generation, simulation, automation, monitoring, and required communication technologies are designed to be appropriate for your system’s lifecycle.
Processes and costs under control: SIWA Solutions for water distribution networks

What’s happening in your distribution network, and where? What are your system’s performance reserves, and when should you extend them? We offer you certainty by integrating all components for process monitoring, process control, and system optimization.

The challenge
The secure, efficient operation of water networks requires complete transparency of all system components as well as their operating status. A comprehensive automation solution prevents interface problems and provides the central linkage of all system components to a control system. This provides the basis for:

- Targeted performance improvement of existing systems
- Need-based planning of system extensions
- Efficient personnel planning for system control and maintenance

The solution
SIWA Solutions for water supply networks provide a comprehensive overview of all water supply and wastewater disposal facilities and systems. The intelligent linkage of automation, IT infrastructure, measurement and control technology, and the integration of management systems creates the foundation for the centralized monitoring and control of all operational processes – as well as the optimization of your system.

A uniform user interface offers direct access to all relevant parameters of each individual system component. This not only boosts the safety and reliability of the system, it also minimizes the risk of operating errors. The solution builds on Siemens’ instrumentation, control, and drive technologies, but can also be integrated into existing systems and facilities.

The result
The benefits of the SIWA Solutions package for water distribution networks can be summarized as:

- Better visualization and monitoring of all systems through the consistent capture and evaluation of operating data
- Sustained cost reduction through optimized operation
- Centralized operation, with standardized user interface
- Uniform automation concept for the entire water supply or disposal network
- Future-proof system with modular structure for easy migration
- Consistent interface concept across all system components, taking into account international standards and interfaces
SIWA Services:
For the lifelong service of your system

The requirements for your system are constantly in flux: new laws, changes in demand, technology innovations. Get lasting value and performance from your system with our modular suite of lifecycle services.
SIWA Services – an overview

With SIWA Services, WDC provides services covering the entire lifecycle of water transport and distribution systems.

The challenge
For water system operators, a dependable supply and efficient, sustainable operating processes are decisive success factors.

The requirements on system operators continue to grow due to changing external conditions, including new laws and guidelines, growing environmental consciousness, increasingly complex equipment, and cost pressures, to name just a few. To keep up with these developments, preferred external suppliers can be an attractive option.

The solution
To maintain your system’s investment value, optimize processes, and reduce your operating costs, WDC offers system operators SIWA Services, a flexible service suite made up of Basic, Advanced, and Value Added Services.

Depending upon the scope and requirements of your system, services or individual service elements can be provided individually, within the framework of a service agreement, or on a project basis.

A four-stage service model offers customers transparency of results, a platform for reassessing problems, and suitable measures to address them. This phase model basically consists of an analysis of potential, a technical detail analysis, a feasibility study, and finally an implementation designed to secure the sustainability of the measures taken.
Value Added Services

With Value Added Services, WDC addresses the trends shaping the industry today.

Reliability-centered Maintenance supports facility operators in improving the efficiency of their maintenance processes. Specifically, Condition Monitoring Service evaluates the condition of drives and pumps and identifies potentials for improvements in energy efficiency. Measures derived from this analysis are then integrated into the maintenance process.

In order to meet the growing security needs of water supply systems, WDC offers consulting services to examine the IT, communication, access and monitoring systems, authentication solutions, and data interfaces in automated systems with an emphasis on potential hazards, and then designs a plan of action together with the customer.

WDC also offers various services for operator support, system diagnosis, and fault elimination to ensure uninterrupted operation. All of these services can be sourced from a reliable, standards-compliant Remote Service Platform.

In addition to Remote Services, the Field and OnCall Services offer a methodical approach to optimizing spare part stocks with the Asset Optimization Program. With Technical Consulting & Training, WDC provides support for questions related to system expansion and modernization.
Advanced Services

Through a step-by-step system modernization approach, WDC helps your system retain its investment value and operational reliability. Special migration and modernization solutions, backed by feasibility studies and scenario simulations, ensure the seamless integration of new automation, process control, and drive systems. To prevent or remedy malfunctions due to contamination of electrotechnical components, WDC also offers a professional cleaning service.

In order to meet diverse operational requirements, WDC offers service maintenance contracts with customized scope of service and level of service (reaction time).

Basic Services

As part of its classic product support, WDC also offers repair and calibration services, either for cyclical revisions or in the context of troubleshooting.

The result

SIWA Services assist facility operators to improve process quality, plant safety, and cost efficiency.

Specifically, SIWA Services offer the following benefits:

- Higher productivity through, for example, optimization and modernization
- Higher reliability, for example, as an outcome of improved maintenance processes
- Lower risk of system downtime and damage minimization thanks to fast reaction times or continuous monitoring via a remote platform
- Sustained reduction in energy costs, for example, through energy optimization of pump drives
- Plannable budgets and cost transparency
- Cost savings due to minimized downtime, dedicated WDC experts, and optimized spare parts stocking
SIWA management systems: The modern way to manage water supply

Do your processes run as energy-efficiently as they can? Do you get leaks under control quickly? Our management systems help you control every aspect of your operation – and improve it from both a business and a technological standpoint.
The SIWA Pipeline Management Systems and SIWA Network Management Systems are specifically designed to meet the requirements of the water industry. They help operators of water supply and wastewater disposal networks improve their balance sheets and optimize their technologies, resulting in higher energy efficiency and reliability.

SIWA Management Systems for water supply and wastewater disposal networks are based on system modules, and provide all key management functions including optimization, simulation, prognosis, and leak monitoring. The system modules are designed to work together, and their consistent design makes them easy to operate. Your facility layout is imaged using predefined technology building blocks.

### Optimize operations with SIWA OPTIM

Energy- and cost-optimized operation: SIWA OPTIM helps you operate pumps efficiently and run your facility at its optimal level under a wide variety of conditions.

#### The challenge

Economical water supply operations depend on keeping the pumps running efficiently and controlling the entire system effectively.

#### The solution

SIWA OPTIM uses mathematical processes to keep pumps and pipeline pumping stations within their optimal operational parameters.

To further improve tank management, SIWA OPTIM calculates the most economical pump, well, and cistern schedules, taking into account technical and operational parameters like energy rates, outside water supply rates, and water dwell times in pipe sections. Security of supply is fully ensured at all times.

Optimal pump, well, and cistern schedules not only help save energy, they also reduce the need for maintenance and repair, which in turn increases supply security.

#### The result

SIWA OPTIM increases cost efficiency by:

- Calculating the optimal operating schedules while ensuring operational reliability and a secure supply
- Reducing energy consumption and operating costs by optimizing the efficiency of pump operation
Everything under control – with SIWA Leak and SIWA LeakControl

Don’t let your money trickle away. Our systems help you quickly detect and localize leaks and prevent further damage.

The challenge
The efficiency and cost-effectiveness of water transportation and distribution systems are crucially dependent on the fast and reliable detection and localizing of leaks. The time it takes to track down a leak is a critical factor in limiting damage, especially from undermined structures. Leaks don’t just mean a loss of drinking water and the effort that went into treating it, but also potential serious financial loss.

The solution
With SIWA Leak, WDC offers a system for detecting large as well as trickle leaks in water lines. SIWA Leak supplements your existing control and automation systems by supplying operating personnel with continuous information on the condition of pipeline systems, so that in the event of a leak there is an accurate basis for decisions on the proper remedial measures.

The efficiency of many existing municipal water distribution infrastructures is also affected by an increasing number of leaks. Corrosion and ground movements give rise to large and small leaks, which can remain undetected for extended periods.

Permanent monitoring can detect these leaks early so that they can be eliminated sooner and the financial consequences reduced.

SIWA LeakControl gives operators the ability to detect new and existing leaks, localize them, and – depending on the severity or risk potential – either repair them immediately or include them in regular pipeline replacement plans.

SIWA LeakControl is based on a three-phase process. In the first step, measures are implemented for continuous, fully automatic leak detection. Water inflow and outflow are captured successively in virtual and fixed assigned zones (DMAs) and storage tanks. The captured measurement values are sent to the appropriate SIWA LeakControl SW module for statistical and model-based evaluation.

In the second step, the approximate location of the leak is determined by means of temporary acoustic sensors, or by noting the changes in flow rates from opening and closing valves. In the third and final step, leaks are located to the nearest meter through pinpointing and the use of a correlator.

The result
SIWA Leak and SIWA LeakControl help water transportation and distribution system operators to:

- Reduce leakage times through permanent monitoring
- Reduce damage caused by undermining of structural foundations and other effects
- Minimize water loss
- Boost efficiency and reduce costs for operation and maintenance
The challenge
In order to ensure water supplies even in extreme situations, operating personnel must have a thorough understanding of the way the system behaves. A realistic simulation tool can enable them to gain experience with a variety of scenarios so that they are prepared for any eventuality.

The solution
SIWA SIM simulates the hydraulic behavior of water supply networks and pipelines. It is superimposed on the process model that describes the automation and hydraulics of your system and then replicates the system. In addition to pipelines and tanks, SIWA SIM images pumps and pumping stations, valves, feed-ins, and consumers. The SIWA SIM training simulator allows operating personnel to practice control of pipelines and networks with SCADA (Supervisory Control and Data Acquisition) systems.

The result
SIWA SIM helps to:
- Optimize operating processes while the system is running
- Simulate operating forms, fault states, and structural alternatives for optimizing system operation
- Test automation functions and interactions between system components without risk
- Illustrate complex relationships and procedures for training purposes
- Increase operating and supply reliability through realistic, scenario-based training

Understand and master your system – with SIWA SIM
Simulate scenarios, and react with confidence: Prepare your personnel for daily situations and unusual events. Simulations also allow you to test interactions between system components without risk.
For further information please contact:

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