MITSUBISHI ELECTRIC
Changes for the Better

Automating the World

MODERNIZING WATER OPERATIONS TO MINIMIZE COSTS

Increase water quality, availability, and sustainability.

A WORLD OF OPPORTUNITY

LET'S CHANGE THE FUTURE TOGETHER

THERE IS NO FUTURE WITHOUT WATER

Our planet is in a precarious position. It's not something that one person, one company or one country can fix. We must all do our part to enable a sustainable future.

For Mitsubishi Electric, that means sharing know-how and actively collaborating to find new ways of using automation to address today's big problems. Energy consumption. Pollution reduction. Shrinking populations. Sustainable water supply.

Join us.

2.2M people in the U.S. are without running water and basic indoor plumbing.

44M people in the U.S. have inadequate water systems.

$8.6B per year—the cost to the U.S. economy created by the water access gap.

— WORLD ECONOMIC FORUM

AN INDUSTRY IN NEED OF MODERNIZATION

DOING MORE WITH LESS

UNDERFUNDED. UNDERSTAFFED. UNDER PRESSURE.

Higher operating costs, rising consumer scrutiny regarding water quality, and a wave of retirements are cause for concern in the water sector. According to the U.S. EPA (Environmental Protection Agency), roughly one-third of the water sector workforce is eligible to retire by 2030.

Modernizing water operations can address all of these issues, as well as problems with pump clogs, water pressure, rapid leak detection, and equipment breakdowns. The opportunities for modernization are massive. Perhaps the biggest opportunity is the ability to do more with less staff.

DELOITTE RECOMMENDS:

1. Generating operational efficiencies to better use dwindling water, power, and labor resources
2. Prioritizing investments to consider whole life costs versus just CAPEX
3. Improving the quality and speed of decision-making throughout the organization

Drinking water and wastewater plants are typically the largest energy consumers accounting for 35% of typical U.S. municipal energy budgets.

— U.S. ENVIRONMENTAL PROTECTION AGENCY

More than 90% of energy consumed in producing and delivering drinking water is used for pumping.

— FOCUS ON ENERGY

VFDs provide up to 30% overall reduction in energy consumption for significantly lower power bills.

— U.S. DEPARTMENT OF ENERGY

A TRUSTED PROVIDER

MODERNIZE TODAY FOR A BETTER TOMORROW

WE TAKE WATER SECURITY SERIOUSLY

Water insecurity is not just a developing world issue. "Too many Americans face water insecurity due to groundwater exhaustion, infrastructure challenges, climate change conditions, and contamination," says the World Economic Forum.

Water insecurity can be devastating to public health and community prosperity. That's why we're working with water municipalities across the country. By helping them move to more automated, data-driven, and energy-efficient operations, we can help ensure that every community has safe drinking water.

> "Tapping into operational data is the first step toward optimized management of water operations."
>
> — FOCUS ON ENERGY

PROVEN APPLICATIONS FOR VFDs

TAP INTO ONGOING ENERGY SAVINGS

Mitsubishi Electric Series VFDs are used in all aspects of water operations. Energy-saving applications include:

Aeration Blowers
Up to 50% energy savings in discharge pressure by matching air flow to process requirements

Centrifugal Pumps
Up to 50% energy savings in liquid circulation by eliminating the need to throttle valves in the system

Submersible Pumps
Up to 50% energy savings in wastewater transfer by adjusting the lift station pump speed and maintaining a constant pressure

Oxidation Ditch Rotors
Up to 40% energy savings during phosphorus removal by adjusting the speed that mixes wastewater with ferric chloride

Screw Pumps
Up to 15% energy savings by matching the speed of the screw to the wastewater flow

PERFORMANCE & RELIABILITY PEACE OF MIND

OUR VFD QUALITY IS A PROVABLE PROMISE

Legendary quality, performance, and compatibility are the hallmarks of our VFDs. These industry-leading drives have advanced features, which include mechanical failure prevention, drive-to-drive communications, and extra energy cost reduction.

QUALITY YOU CAN TRUST

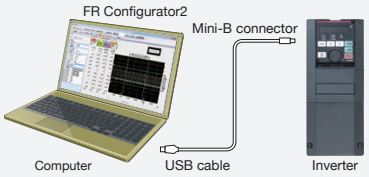
- **Failure rate of 0.0001% (100ppm)**
- **Industry's best warranty**
- **Engineered for every environment**

FR-F800 PUMP AND FAN CONTROL VFD

- **BUILT-IN 6K STEP PLC**
- **ADVANCED DUAL PID**
- **RELIABLE ANTI-CLOGGING**
- **WATER HAMMERING AVOIDANCE**
- **DRY RUN MONITORING**
- **CAVITATION AVOIDANCE**
- **SMART MULTI-PUMP CONTROL**

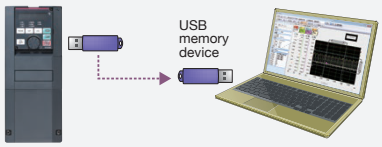
EASY CONNECTION WITH USB CABLE

Specify settings on your computer.



WORK AWAY FROM THE EQUIPMENT

Load trace data and parameter settings on USB memory device.



TAKE WATER OPERATIONS TO THE NEXT LEVEL

TURN ON OPERATIONAL INTELLIGENCE

GET REAL VALUE FROM DATA

GENESIS software enables rapid connectivity of VFDs and other supervisory control and data acquisition (SCADA) systems. Collect, visualize, analyze, and optimize data, from a single piece of equipment up to multiple facilities. Once connected, the software unifies the data and increases the value you can derive from it.

- **Real-time visibility**
- **Secure remote management**
- **Role-specific visualization**
- **Automated decision making**

Learn more.
iconics.com/industries/water-and-wastewater

"We immediately realized the benefits of GENESIS, because we achieved improved secure visualization of water and sewer levels, as well as monitoring and control of potable water and wastewater, elevation, PSI, intrusion pumps, pump monitors/ controls, pump failure status, and temperature."

— LAKE CITIES MUNICIPAL UTILITY AUTHORITY

CYBER SECURITY

Implementing cybersecurity best practices is critical for the water and wastewater sector to minimize risk of service disruptions and to protect against threats to public health. Put remote access, access control, and data protection policies into place for the entire team without compromising operational productivity.

ENGINEERED SOLUTIONS

SOLUTIONS THAT MEET THE MOST EXACTING SPECIFICATIONS

READY FOR ANY CHALLENGE

Mitsubishi Electric engineered solutions can provide build-to-spec services to an existing design or engineer a completely new design.

Configured Drives

General-Duty Applications — flexible for a wide range of applications without limiting performance

Heavy-Duty Applications — designed for challenging applications where overloads are the norm

- **Low cost**
- **Pre-engineered**
- **Quick delivery**

Custom Panels

Fully customized, ranging from a single enclosure to a complete shipping container full of pre-commissioned control equipment

- **Made to U.S. or global requirements**
- **Every package fully documented**
- **Backed by a comprehensive 2-year warranty**

A FULL RANGE OF SMART WATER SOLUTIONS

MAKING AUTOMATION WORK FOR MODERN UTILITIES

LET'S TALK

If you're ready to modernize water operations, we're ready to help. We're committed to achieving sustainable water supplies, reducing energy consumption, and enabling more efficient and profitable water management operations.

Let's change the future together.

Schedule a meeting.

Visit our website to learn more about **modernizing *your* water operations.**

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e-F@ctory

e-F@ctory Alliance

Mitsubishi Electric's e-F@ctory concept utilizes both FA and IT technologies, through collaboration with e-F@ctory Alliance Partners, to reduce the total cost of development, production, and maintenance, with the aim of achieving manufacturing that is a "step ahead of the times".

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