

Effective control of water distribution networks and processing facilities

IFAT 2018, 14th –18th May 2018, Munich, Hall C1 / Stand 440,

Since incomes for operating companies and government authorities in the water industry are either fixed or hard to change, reducing costs is a strong driving force behind any investment. At the IFAT exhibition 2018, Mitsubishi Electric is presenting its life-cycle management solutions that can support overall efficiency by reducing management complexity.

Kilometres of pipes used to be the only thing connecting multiple control valves, pumping stations and processing facilities. This poses a big challenge when operators need to harmonise system pressure to avoid leakage, and make sure each station is working as energy efficiently as possible. Rising energy prices and the increasing cost of maintenance work constantly force water and waste water companies to find new solutions that do not drain financial, personnel and material resources. An operator must be able to see an asset whether that is a pump system, a distribution network, or an entire processing facility to benchmark performance and then start to make measurable improvements.

Scalable water management systems

Achieving effective control over water supply and distribution networks can be achieved by making use of a data-based approach: Mitsubishi Electric will be illustrating this with its main exhibit [Aquatoria®](#), a software

solution that can optimize the energy usage of a complete water distribution network. The network can then be visualised, allowing every asset to be precisely monitored and controlled. By making use of software functions based on artificial intelligence, multiple assets can be optimised and managed simultaneously which eliminates the instance of leakage due to pressure fluctuations. Maintenance callouts and costs are reduced by lowering the stress on assets and protects them from damage.

Many applications may require a process management system with comprehensive visualisation capabilities. The [PMSX®pro](#) Decentralised Control System (DCS) enables control via Mitsubishi Electric PLC platforms and combines this with equally advanced visualisation capabilities. This is ideal for upgrading control systems, for example at water management and treatment facilities. New options such as topological line colouring (TLC) allow users to create system plan diagrams with dynamic on-screen functions which are easy to understand and convey visual information quickly. Operators have precise control with a clear process overview. This provides live status for fast maintenance and management decisions, increased plant up-time and more efficient operations.

Smart inverters increase OEE

Capital expenditure on automation equipment can also be reduced by using the [FR-F800](#) series of inverters with integrated Ethernet which are used to improve performance of pumps or motors by utilising built in PLC software. Having PLC functionality on-board means the inverter can control and co-ordinate a complete process without having to purchase an additional physical PLC controller. Direct Human Machine Interface

(HMI) compatibility and flexible networking options add to the system-building potential. The FR-F800 inverter also offers energy saving features which combined with the system capability delivers an all-round package of process optimisation and cost reduction.

Predictive maintenance to reduce unscheduled downtime

Visualising an entire plant in real-time is very effective for controlling costs but seeing into the future is even better. Using predictive maintenance techniques, operators responsible for improving the availability of equipment such as pumps and other rotating equipment can minimise unscheduled downtime. Reducing downtime helps control costs and ensure customer service targets for water availability are met. The [Smart Condition Monitoring](#) (SCM) kits from Mitsubishi Electric provide an integrated approach for monitoring the condition of individual assets that enables service requirements to be accurately predicted and made as necessary. This means no equipment is over-serviced and any emergency breakdowns are avoided, and maintenance is more easily planned.

Further to the above, visitors to the booth can explore several case studies showing how these and other solutions have been proven in customer applications - visit hall C1, stand 440.

Note:

See how Mitsubishi Electric is able to address today's water management challenges:

eu3a.mitsubishielectric.com/fa/en/solutions/industries/water

Download the full Mitsubishi Electric IFAT 2018 press pack here:

www.dmaeuropagroup.com/ME_IFAT_2018

Image captions:



Image 1:

Cost reductions for water supply and distribution networks can be achieved by making use of Mitsubishi Electric's Aquatoria® software solution for more efficient control.

[Source: Mitsubishi Electric Europe B.V.]



Image 2: Water and wastewater processing plants can minimise emergency breakdowns for pumps and other rotating equipment by upgrading with the Smart Condition Monitoring (SCM) solution from Mitsubishi Electric for predictive maintenance.

[Source: Mitsubishi Electric Europe B.V.]



Image 3: Rising energy prices and the increasing cost of maintenance work constantly force water and wastewater companies to find new

solutions that do not drain financial, personnel and material resources.

[Source: Mitsubishi Electric Europe B.V.]

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About Mitsubishi Electric

With over 95 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation is a recognised world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, as well as in products for the energy sector, transportation and building equipment.

With around 142,340 employees the company recorded consolidated group sales of Yen 4,431.1 billion (\$ 41,8 billion*) in the fiscal year that ended on March 31, 2018.

Our sales offices, research & development centres and manufacturing plants are located in over 30 countries.

Factory Automation – European Business Group

Mitsubishi Electric Europe B.V., Factory Automation - European Business Group (FA-EBG) has its European headquarters in Ratingen near Dusseldorf, Germany. It is a part of Mitsubishi Electric Europe B.V., a wholly owned subsidiary of Mitsubishi Electric Corporation, Japan.

The role of FA-EBG is to manage sales, service and support across its network of local branches and distributors throughout the EMEA region.

*Exchange rate 106 Yen = 1 US Dollars, last updated 31.03.2018 (Source: Tokyo Foreign Exchange Market)

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