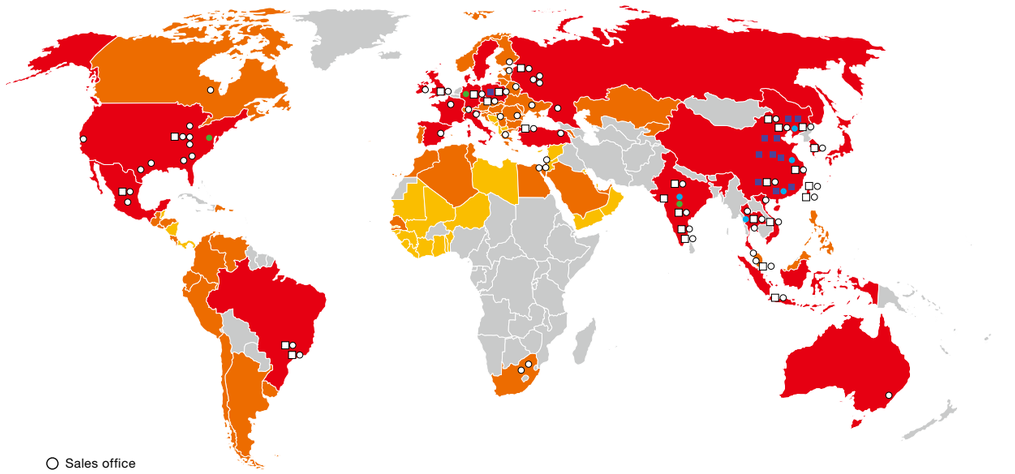
Global Partner. Local Friend.



- Sales office
- FA center
- FA center satellite
- Production center
- R&D center

- Country with a direct Mitsubishi Electric FA office
- Country covered by distributors with “in-country” offices
- Country covered by a sales network

Our service and support concept is ingrained in everything we do

Country/ Region	Sales office	Tel/ Fax
USA	MITSUBISHI ELECTRIC AUTOMATION, INC. 500 Corporate Woods Parkway, Vernon Hills, IL 60061, U.S.A.	Tel : +1-847-478-2100 Fax : +1-847-478-2253
Mexico	MITSUBISHI ELECTRIC AUTOMATION, INC. Mexico Branch Mariano Escobedo #69, Col. Zona Industrial, Tlalnepantla Edo, C.P.54030, Mexico	Tel : +52-55-3067-7500
Brazil	MITSUBISHI ELECTRIC DO BRASIL COMÉRCIO E SERVIÇOS LTDA. Rua Jussara, 1750- Bloco B Anexo, Jardim Santa Cecilia, CEP 06465-070, Barueri - SP, Brasil	Tel : +55-11-4689-3000 Fax : +55-11-4689-3016
Germany	MITSUBISHI ELECTRIC EUROPE B.V. German Branch Gothaer Strasse 8, D-40880 Ratingen, Germany	Tel : +49-2102-486-0 Fax : +49-2102-486-1120
China	MITSUBISHI ELECTRIC AUTOMATION (CHINA) LTD. No.1386 Hongqiao Road, Mitsubishi Electric Automation Center, Shanghai, China	Tel : +86-21-2322-3030 Fax : +86-21-2322-3000
Taiwan	SETSUYO ENTERPRISE CO., LTD. 6F, No.105, Wugong 3rd Road, Wugu District, New Taipei City 24889, Taiwan, R.O.C.	Tel : +886-2-2299-2499 Fax : +886-2-2299-2509
Korea	MITSUBISHI ELECTRIC AUTOMATION KOREA CO., LTD. 7F-9F, Gangseo Hangang Xi-tower A, 401, Yangcheon-ro, Gangseo-Gu, Seoul 157-801, Korea	Tel : +82-2-3660-9530 Fax : +82-2-3664-8372
Singapore	MITSUBISHI ELECTRIC ASIA PTE. LTD. 307, Alexandra Road, Mitsubishi Electric Building, Singapore 159943	Tel : +65-6473-2308 Fax : +65-6476-7439
Thailand	MITSUBISHI ELECTRIC FACTORY AUTOMATION (THAILAND) CO., LTD. 12th Floor, SV.City Building, Office Tower 1, No. 896/19 and 20 Rama 3 Road, Kwaeng Bangpongpang, Khet Yannawa, Bangkok 10120, Thailand	Tel : +66-2682-6522 Fax : +66-2682-6020
Vietnam	MITSUBISHI ELECTRIC VIETNAM COMPANY LIMITED Hanoi Branch 6-Floor, Detech Tower, 8 Ton That Thuyet Street, My Dinh 2 Ward, Nam Tu Liem District, Hanoi, Vietnam	Tel : +84-4-3937-8075 Fax : +84-4-3937-8076
Indonesia	PT. MITSUBISHI ELECTRIC INDONESIA Gedung Jaya 11th Floor, JL. MH. Thamrin No.12, Jakarta Pusat 10340, Indonesia	Tel : +62-21-3192-6461 Fax : +62-21-3192-3942
India	MITSUBISHI ELECTRIC INDIA PVT. LTD. Pune Branch Emerald House, EL -3, J Block, M.I.D.C Bhosari, Pune - 411026, Maharashtra, India	Tel : +91-20-2710-2000 Fax : +91-20-2710-2100
Australia	MITSUBISHI ELECTRIC AUSTRALIA PTY. LTD. 348 Victoria Road, P.O. Box 11, Rydalmere, N.S.W 2116, Australia	Tel : +61-2-9684-7777 Fax : +61-2-9684-7245

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eco Changes for a greener tomorrow

MITSUBISHI ELECTRIC
Changes for the Better

FACTORY AUTOMATION

WATER SOLUTIONS

Monitoring & Control Systems

- Best-in-class reliability and durability
- More than 50 years of experience
- High quality automation products and local support

GLOBAL IMPACT OF MITSUBISHI ELECTRIC

Through Mitsubishi Electric's vision, "Changes for the Better" are possible for a brighter future.

Changes for the Better

We bring together the best minds to create the best technologies. At Mitsubishi Electric, we understand that technology is the driving force of change in our lives. By bringing greater comfort to daily life, maximising the efficiency of businesses and keeping things running across society, we integrate technology and innovation to bring changes for the better.

Mitsubishi Electric is involved in many areas including the following

Energy and Electric Systems
A wide range of power and electrical products from generators to large-scale displays.

Electronic Devices
A wide portfolio of cutting-edge semiconductor devices for systems and products.

Home Appliance
Dependable consumer products like air conditioners and home entertainment systems.

Information and Communication Systems
Commercial and consumer-centric equipment, products and systems.

Industrial Automation Systems
Maximising productivity and efficiency with cutting-edge automation technology.

BEST-IN-CLASS RELIABILITY

In Asia, Mitsubishi Electric has long been synonymous with quality automation. Our products enjoy a high share in almost every automation product category. Our reputation for reliability also has driven our rapid advance onto the global stage as a leading company in automation solutions.

For over 50 years, Mitsubishi Electric has provided industry-leading expertise in the field of water treatment automation in Japan. Our long list of achievements includes water and wastewater treatment facilities with the highest processing capacity in Japan. Today we are bringing this same high level of water automation experience and know-how to Europe, Singapore and India.

Among our many achievements, we take a special pride in our role in a growing number of water processing projects around the world. From mid- to large-scale water and wastewater treatment plants to irrigation and industrial water treatment facilities, every project demands the highest reliability. Mitsubishi Electric responds with a lineup of high energy-efficient inverters and Monitoring and Control Systems that can seamlessly integrate high-performance SCADA systems with reliable automation products.

Open networks and high-reliability Controllers & SCADA continue to set our solutions apart. These defining features enable us to deliver integrated, flexible systems with future-proof expandability. They empower you to integrate data collected from the field and upstream systems and then streamline data management, data analysis and energy management. Combining all these advantages, Mitsubishi Electric optimises water treatment facilities by not only minimising the initial deployment costs, but also contributing to more efficient and effective operation.

Recognised by the automation industry for high product quality standards and supporting customers in close cooperation with our globally linked network of System Integrator partners, Mitsubishi Electric is your trusted partner for Water Automation solutions.

YOUR PARTNER EVERY STEP OF THE WAY

Mitsubishi Electric understands that any change to your premises can seem like a daunting task. Whether it is a new project or upgrading an existing one, our team takes the time to fully understand your project requirements and assist in formulating plans and designs long before installation. We support our clients throughout the life of the project, all the way to completion and beyond.

1. Consultation

We know process automation is the answer, but what is the first step in shaping the solution?
Mitsubishi Electric starts off each project by gathering the necessary requirements. We take the time to understand our clients' needs and offer advice on how to deal with the challenges. Our consultants provide insights and work together with clients to plan out the entire process – from design and installation to training, operation and maintenance.

2. Planning & Design

Our in-house staff lacks the planning and design know-how for a project like this. Can Mitsubishi Electric do it all?
Mitsubishi Electric carefully studies the requirements and proposes a solution based on the given budget. We provide estimates on costs, details on the deliverables and come up with a realistic schedule for project execution. Our team also continues to fine tune the proposal by listening to our customers' suggestions and concerns throughout this process.

3. Implementation

Getting it done on time is a top priority. Cost and quality of the finish of deliveries are equally important.
Mitsubishi Electric engineers our stamp of quality into every project. We leverage our process simulation technology and our wealth of experience to stay on time and on target. Our expertise helps us to meet the expectations of each client and to keep the project within budget, while meeting strict deadlines.

4. Support

Looking beyond the completion of the project, what about maintenance or if we need emergency support?
No two projects are alike, and support for the operational needs of each has to be customised. In many countries, our experts are always available 24/7 to respond to emergencies and breakdowns. Confident in the quality and reliability of their Water Automation solution, our clients are free to focus on their core business activities. Furthermore, Mitsubishi Electric solutions can also be designed with predictive maintenance monitoring, alerting system administrators long before a problem arises.

5. Beyond The Project

We are growing and advances in technology are happening at a dizzying pace.
Unlike many providers who offer 'dead-end' solutions, our products are designed to be forward-looking. Product and software upgrades help to guard against obsolescence and allow our clients to enjoy the ongoing benefits of our cutting-edge technology.

WHY MITSUBISHI ELECTRIC?

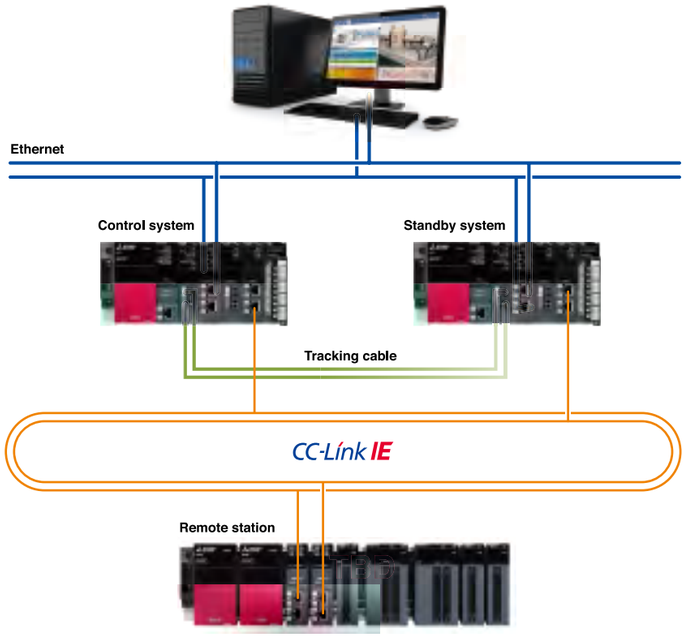
Mitsubishi Electric's Water Processing systems offer unparalleled benefits. These advantages bring to our customers the comfort and ease-of-use, while ensuring the smooth operation of their business.

High Quality System for High Reliability

Viewed from any perspective from their lifeline status and role in flood prevention to preserving the environment and biodiversity, water processing plants are vital social infrastructure. By providing a high redundancy system and network for monitoring and control, Mitsubishi Electric realises "non-stop" facilities. Even if a component fails, operation can continue during repair or replacement. Using an array of engineering tools honed to a cutting edge by our wealth of experience in the design of redundant system architecture, we can easily design and construct a high-reliability system to fit your needs.

Multi-level redundancy ensuring continuous control

Highly reliable control systems can be easily realised minimising the possibility of single-point failure at the visualisation (SCADA), control, and network levels, thereby avoiding system downtime and ensuring continuous control and operation of critical systems.



Mobile Monitoring & Operation

The lifeline status of water processing facilities elevates the importance of the role played by monitoring and control systems. Previously this demanded the midnight and holiday shifts of staff in the control room. Mitsubishi Electric's monitoring and control solutions are changing this model. Depending on the system settings, it is possible to monitor and operate systems from a PC in a remote office or even a mobile terminal. By tapping the power of the cloud, there is no need to construct and maintain the corresponding IT assets in your own company or organisation.

Energy Savings (Energy Monitoring + Inverter)

Equipment operation in water processing facilities is long or uninterrupted; therefore, energy savings have a tremendous impact on the reduction of not only electricity costs but also CO_2 emissions. Mitsubishi Electric solutions enable you to visualise your energy usage. The amount and cost of energy consumed by pumps or other components can be analysed and results can be expressed in any unit desired, for example, energy per cubic meter of irrigation water. Instant production of charts and tables can aid identification of ways to save energy. Optimally controlling voltage, current and frequency for fans, pumps and blowers and other equipment, our wide lineup of robust inverters are the main key to reducing electric power consumption at water processing facilities around the world.

Easy System Construction and Maintenance Plus Security

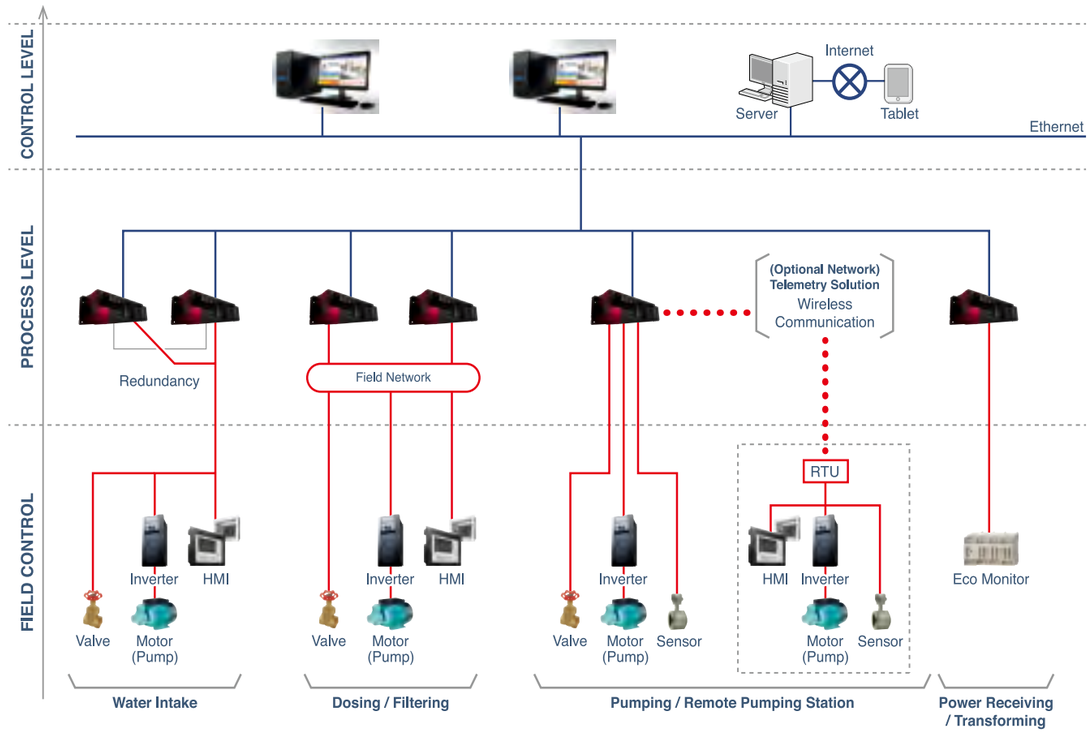
The choice of customers around the world, Mitsubishi Electric products boast general versatility to facilitate easy system configuration. Our Control and Monitoring System can be combined with a broad range of third-party vendor equipment and are designed for maximum flexibility and expandability to respond to evolving needs. Beyond the reliability, our global network of support and partner system integrators ensures a swift response if any problem occurs or spare parts are required. Another Mitsubishi Electric advantage is the robust security functionality we build into our solutions – a very important consideration for lifeline infrastructure like water processing plants. Security measures guard systems and equipment from unauthorised access and protect data integrity.

"Zero downtime" Through Preventative Maintenance

In recent years, facility management has moved away from a reactive model to problems, and adopted a predictive model that pre-empts problems before they occur. Water processing is not an exception to this trend. While incorporating the user's facility management knowhow, our system supports not only preventative maintenance, but also analysis of the cause of failure. Autonomous diagnostic functions enable alarms in advance of trouble and other features that ensure non-stop plant operation.

MITSUBISHI ELECTRIC
CONTROL & MONITORING SYSTEMS

Mitsubishi Electric's automation strategy has been developed from our own global manufacturing expertise. At the core is the world's first automation platform combining all key automation types on one controller. Mitsubishi Electric solutions streamline system integration and avoid wasting valuable engineering resources trying to make different vendor systems working together. Our extensive array of controllers can seamlessly operate together on the same backplane, letting your engineering staff concentrate on the demands of the application itself right from the beginning.



Life cycle management

Savings between 25% and 50% and less engineering effort through:

- Scalable and flexible system architectures
- Seamless integration into existing architectures
- Process control solutions from SCADA to fully integrated control systems
- Condition Monitoring: Intelligent real-time monitoring of processes for up to 30% reduction in maintenance costs
- Backwards compatibility

Data transparency

Collect the actual data required, turn it into information and present it to the right people at the right time.

- Remote plant control and data access over large distances via RTU
- Enhanced data logging function
- High integrity systems: cyber security as core design basis
- High speed open network
- Network options include all common open network standards including CC-Link IE Control and CC-Link IE Field high performance networks (1GB)

CONTROLLER

Meeting performance requirements from compact to large-scale systems, our extensive controller lineup is a vital key to optimum automation. High-performance redundancy functions like instantaneous master-slave switching enable the design and configuration of a solution with reliability far beyond conventional systems. And if trouble occurs, it is possible to install replacements parts without taking this vital facility off line. The high quality and proven reliability of our controllers is the product of decades of experience and countless successful projects. Easy-to-use engineering tools with multi-language compatibility contribute to reduced programming work while CC-Link and other Open Network features enhance system building flexibility including the utilisation of existing equipment in the expansion of the facility.

SCADA

Delivering superior visualisation solutions for automation, MC Works supports high-definition multi-monitor and 3D graphics. From compact to large-scale systems, this PC-based control and data acquisition suite is scalable to needs of any facility. By adopting a redundant server configuration, users can further improve system reliability. The software can produce acquired data in a variety of easy-to-view daily, weekly and monthly formats for trend identification, and with the energy visualisation application, users can achieve new energy savings. The suite also includes preventative maintenance and fault prediction applications. With the mobile monitoring function, remote monitoring and operation from a mobile terminal or a station PC is possible. By adopting the cloud-based model, the hassles and costs of server PC management can be significantly reduced. MC Works64 supports the connection for equipment including programmable controllers via OPC servers, Ethernet and other networks. Engineering tools and features like the Symbol Library (a set of pre-made symbols) reduce the man-hours required for creating scripts.

INVERTERS

Incorporating long-life cooling fans and long-life condensers, Mitsubishi Electric inverters boast an extended design life, contributing to lower operating costs over the life of the facility. The extensive lineup permits the selection of the optimum inverter for the scale and demands of each application, further saving energy. Easy maintenance such as one-touch replacement of cooling fans is another advantage designed into every inverter. Attention to details like harmonics control and EMC filters to reduce electromagnetic noise reflect consideration for the impact of our products on people and the environment. Operation is simple thanks to the intuitive user interface. Models with a built-in PID controller eliminate the need for an external PID controller for the control of pumps and other equipment, reducing total system costs. When a back flush does not pose a problem, foreign matter on the impellers or fans of pumps can be removed by repeating forward/reverse rotation and stopping of the motor.

HMI

Featuring a wide selection of screen sizes and functionality, Mitsubishi Electric's HMI (GOT) lineup offers a perfect fit for every processing site need. Downsizing of the operation panel and reduced wiring costs contribute to overall cost reductions, plus remote operation from other PCs in the facility and even mobile terminals introduce new flexibility. With the GOT's PC remote function, it is also possible to operate PCs at remote sites and confirm drawings and refer to manuals stored on the PC. For harsher industrial environments, models featuring waterproof and dustproof design are also available. Using the special engineering tools, production of clear, attractive screens is simple.

WATER TREATMENT & DISTRIBUTION

Water treatment and distribution are the most vital of our lifelines. Advanced control and management is the key to ensuring uninterrupted supply. While the requirements for a water automation solution appear to be essentially the same anywhere, the actual needs of customers in long-developed regions like Europe differ from those of the rapidly growing countries of Asia. In both cases, they turn to Mitsubishi Electric for the answer.

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Keeping Pace with Blistering Growth

In the booming region of Southeast Asia, cities are constantly expanding and upgrading facilities to meet the needs of their growing population. Here Mitsubishi Electric works in close cooperation with local leading system integrators to provide solutions that answer both current needs and future expectations. While projects are commonly new facilities to respond to increased demand, there are already many that aim at upgrading control and management. In just a few short years, we have already demonstrated the advantages of the proven reliability of our products, systems and solutions in a variety of projects. Starting with an upgrade to an ozone generation control system in 2009, Mitsubishi Electric worked hand-in-hand with a leading system integrator partner to win projects of various scale from long established competitors including the automation upgrade of a water treatment plant with a capacity of 135 million liters per day in Singapore. Full-scale operations in the Indian market commenced in 2015. Since then in a very short time, Mitsubishi Electric has already provided Water Solutions for the country's most urgent needs including a large-scale project that is currently underway to secure the supply of 74 million liters per day of safe drinking water to the people of Rajasthan. In price-sensitive public works projects like these, trust is a key factor. Our selection was based on our success in numerous previous small projects and our reputation for reliability backed by superior redundancy in engineering.

Meeting Every Challenge with Ideal Solutions

On the other side of the world, Mitsubishi Electric meets multi-region needs spanning Europe to the Middle East and Africa. From modernising giant facilities to providing solutions for new facilities from the ground up, we continue to win new and repeat customers with the simple formula of providing the best solution for each customer and then supporting it with expert maintenance. For example, in the Isle of Man, we not only provided a complete process control, automation and drive systems for the supply of fresh water, but also met the challenge of designing and engineering a solution with the responsiveness, performance and efficiency to respond to a near doubling of demand during three weeks of the year when a major annual event brings tens of thousands of visitors to the island.

Only Mitsubishi Electric

One other factor in customers choosing Mitsubishi Electric stands out – our ability to offer a total single source solution. For instance, in the case of Singapore, only Mitsubishi Electric with its broad product offering could offer a total solution including large-scale video walls for control rooms.

"The support we have received from Mitsubishi is second to none."

Mechanical and Electrical Manager

WASTEWATER TREATMENT

Wastewater treatment is an extremely complex and energy-intensive process. Mitsubishi Electric wastewater treatment solutions not only optimise and maintain the uninterrupted flow of operations with acclaimed reliability, but also contribute to improved efficiency in every area from man-hours to energy savings.

© HAMBURG WASSER

Trusted Technology, Trusted People

Our delivery of real value with significant impact on operational performance and profitability – this is the key to customer trust in Mitsubishi Electric wastewater treatment automation. We begin by designing a solution that optimises productivity and efficiency and produces water quality in full compliance with regulatory standards, and then provide them with service and support that anticipates their needs and reduce their risk and costs. Our focus on the total life cycle costs of the application and process quality ensures the highest possible plant availability for secure water treatment all year round.

Any Scale, Any Place in the World

From renovating existing wastewater treatment plants in Western Europe and building new small, medium and large-scale plants in Africa and the Middle East to upgrading facilities to meet the demands of the booming economies of Asia, Mitsubishi Electric is the trusted choice. The modernisation of a plant usually focuses on the total replacement of controllers. In one of Germany's largest wastewater treatment plants, our world's first automation platform solution of 149 controllers plus 56 process servers including 32 for redundancy and a control room equipped with 12 large-scale monitor screens was installed under operating conditions. At another large-scale plant in Germany, we again replaced process control architecture without interrupting operations and met their unique multi-power source utilisation (wind, gas, steam turbine) requirements with a highly flexible network structure and freely expandable system architecture – another optimum solution for a challenging project.

Bringing Japanese and Global Standards and Know-how to Every Project

Though a relative newcomer to India, Mitsubishi Electric is rapidly establishing a reputation as a leading company in wastewater and sewage treatment automation. Our ability to draw on our experience in Japan and Europe combined with highly reliable automation products is reflected in solutions that provide lower total cost of ownership, efficient plant performance and water quality management. In several ongoing sewage treatment plant projects, Mitsubishi Electric is supplying a complete controller and SCADA system together with IT hardware and the communication system. In a Singapore wastewater treatment project, the priority was stability, safety and flexibility. Mitsubishi Electric upgraded the 55 million liter-per-day plant with a solution of highly reliable controllers and SCADA featuring a redundant configuration provided by the Hot-Standby CPUs & dual I/O Servers.

Our Trusted Advantage

No matter the country or the challenge, our high performance, high level of diagnostics and ease of maintenance coupled with significant energy cost reductions and a global reputation for reliability and service are the Mitsubishi Electric edge.

"Using Mitsubishi Electric's function block approach, we met all our programming objectives with ease and speed."

Project Manager

IRRIGATION

As the global population continues to grow, water is becoming an increasingly precious resource – not only for drinking, but also for irrigating the farms that produce our food. The delivery of water is a complex challenge involving tremendous distances and travel time from the source through canals and pipelines all the way to agricultural end-users. The convergence of Mitsubishi Electric technology provides automation solutions that deliver water where and when it is needed in the correct quantities with minimal loss.

Instruments of Change

In India where a large canal network can be as long as 75,000km and provide irrigation to over a million farmers, modernisation of the system can have a tremendous impact. Solutions must focus on maximising the source water by monitoring and controlling excess supply at the source to prevent water loss. In several irrigation projects, Mitsubishi Electric Control & Instrumentation has been critical to success. In a lift irrigation scheme in India, our automation solution monitors and controls 24 pumps to divert water from the Godavari River to the Krishna River via a canal, preventing flow waste into the Bay of Bengal. Completed in record time, this project is already benefitting farmers who suffered from inadequate water supply.
Flood mitigation plays a dual role of preventing damage and potential loss of life and preserving a sufficient water supply for municipal, industrial and irrigation usage. In Malaysia, Mitsubishi Electric supplied and installed controllers for a new barrage and flood control gates.

Downstream Productivity and Efficiency

In large-scale agriculture, automation can have a huge impact on conserving water, energy and labor. Prior to automation, farmers may have to travel huge distances to manually open and close valves during the day when power costs are high and large amounts of water are lost to evaporation. Mitsubishi Electric's irrigation control solutions enable automatic monitoring and control of remote valves during ideal night conditions, saving water, energy and valuable man-hours.

Synergy of Solutions

Mitsubishi Electric is a one-stop automation solution source. By selecting the ideal combination of our proprietary technologies, we can craft the ideal solution for any irrigation project of any scale from automating the control of rivers to optimal irrigation of a vineyard.

"Mitsubishi Electric's 'out of the box' usability was a major contributor to the success of the project."

Principal Engineer

YOUR SOLUTION PARTNER

Mitsubishi Electric offers a wide range of automation equipment from PLCs and HMIs to CNC and EDM machines.

Low voltage: MCCB, MCB, ACB

Medium voltage: VCB, VCC

Power monitoring, energy management

Compact and Modular Controllers

Inverters, Servos and Motors

Visualisation: HMIs

Numerical Control (NC)

Robots: SCARA, Articulated arm

Processing machines: EDM, Lasers, IDS

Transformers, Air conditioning, Photovoltaic systems

A NAME TO TRUST

Since its beginnings in 1870, some 45 companies use the Mitsubishi name, covering a spectrum of finance, commerce and industry.

The Mitsubishi brand name is recognised around the world as a symbol of premium quality.

Mitsubishi Electric Corporation is active in space development, transportation, semi-conductors, energy systems, communications and information processing, audio visual equipment and home electronics, building and energy management and automation systems, and has 237 factories and laboratories worldwide in over 121 countries.

This is why you can rely on Mitsubishi Electric automation solution - because we know first hand about the need for reliable, efficient, easy-to-use automation and control in our own factories.

As one of the world's leading companies with a global turnover of over 4 trillion Yen (over $40 billion), employing over 100,000 people, Mitsubishi Electric has the resource and the commitment to deliver the ultimate in service and support as well as the best products.

* Not all products are available in all countries.