



for a greener tomorrow



**mitsubishi
electric**

Changes for the Better

FACTORY AUTOMATION

MELViz iQ PlantSuite

DCS Solution for Infrastructure and Process Automation

iQ MELViz
PlantSuite



**Empowering
Industries**

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

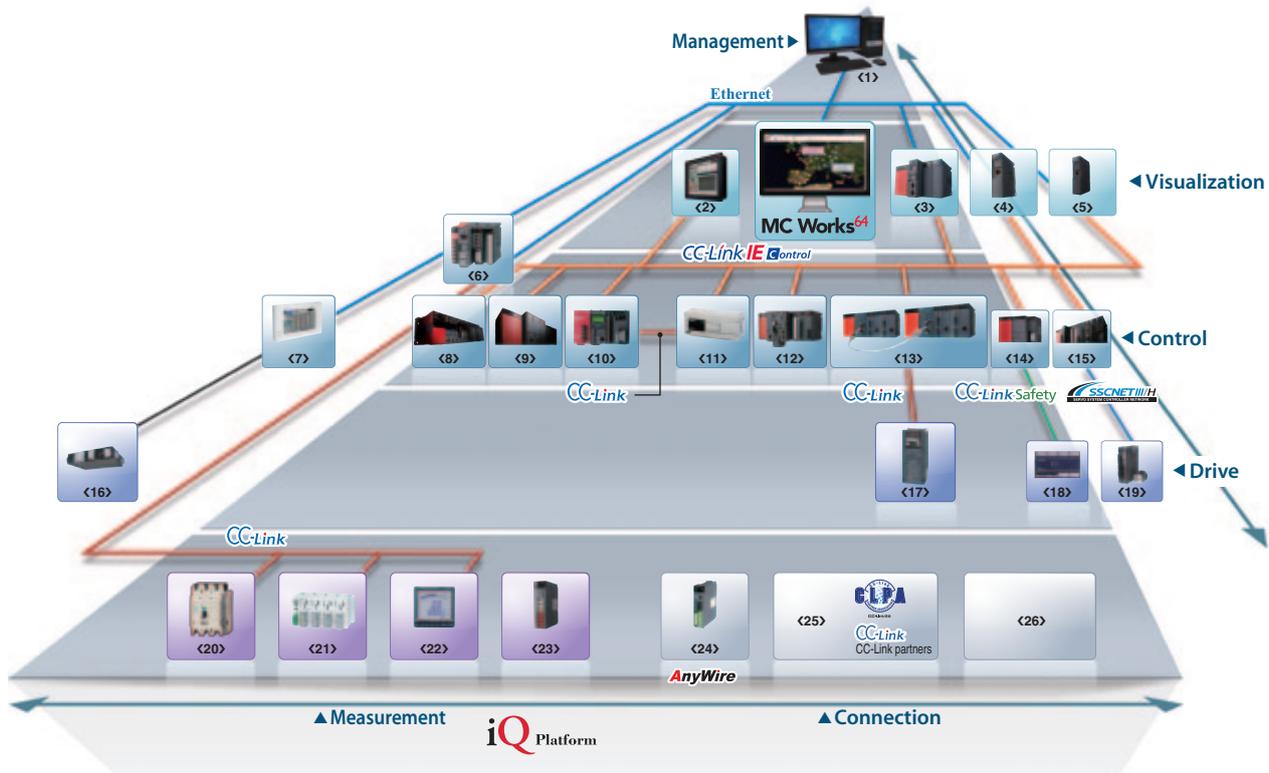
Commercial and consumer-centric equipment, products and systems.

Industrial Automation Systems

Maximising productivity and efficiency with cutting-edge automation technology.

iQ MELVIZ PlantSuite

A total solution for infrastructure that provides all the necessary components including FA products and SCADA.

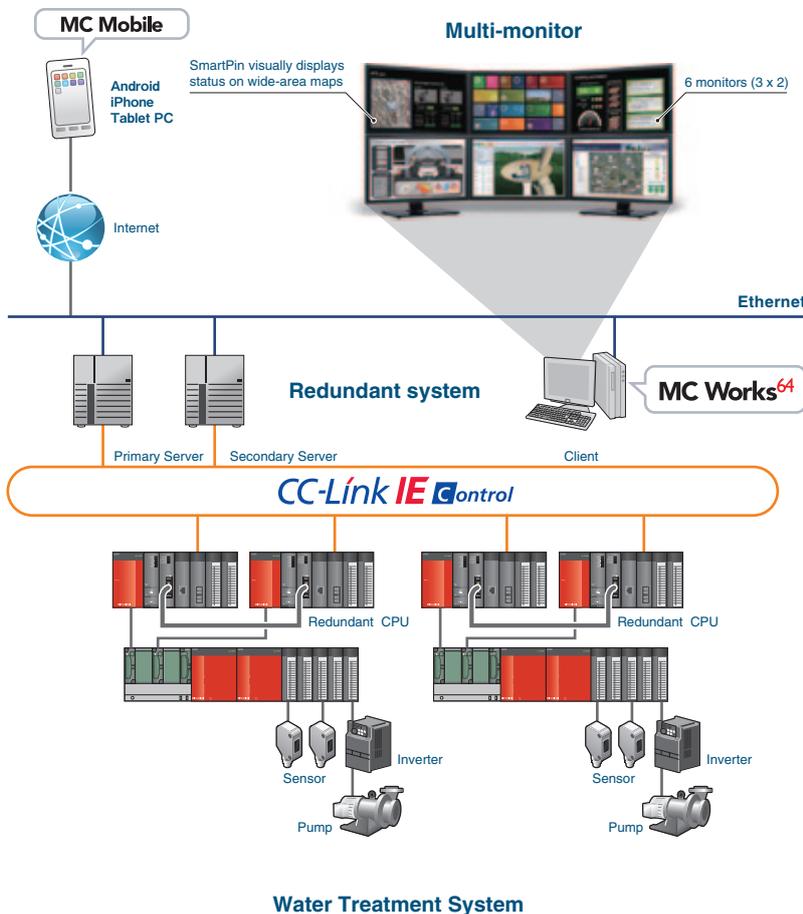


- (1) MES/ERP
- (2) HMI (GOT2000/GOT1000)
- (3) MES interfaceT module
- (4) MES interface module
- (5) High-speed data logger module
- (6) EcoWebServer III
- (7) Central air-conditioning controller
- (8) MELSEC iQ-R Series
- (9) MELSEC-Q Series
- (10) MELSEC-L Series
- (11) MELSEC-F PLC
- (12) C controller

- (13) MELSEC-Q process CPU / redundant CPU
- (14) MELSEC safety PLC
- (15) Motion controller
- (16) Indoor/ Outdoor unit
- (17) FR inverter
- (18) Safety remote I/O
- (19) AC servo MR-J4
- (20) MDU breaker
- (21) EcoMonitorPro energy measuring unit
- (22) Electric multi-measuring instrument

- (23) MELSEC-Q energy measuring module
- (24) AnyWire DB A20 compatible product
- (25) CC-Link IE, CC-Link, CC-Link/LT, CC-Link Safety, SSCNET Partner products
- (26) Compatible with various other networks. Modbus, FL-net, Profibus-DP, DeviceNet, etc.

Solutions



Remote Monitoring Solutions

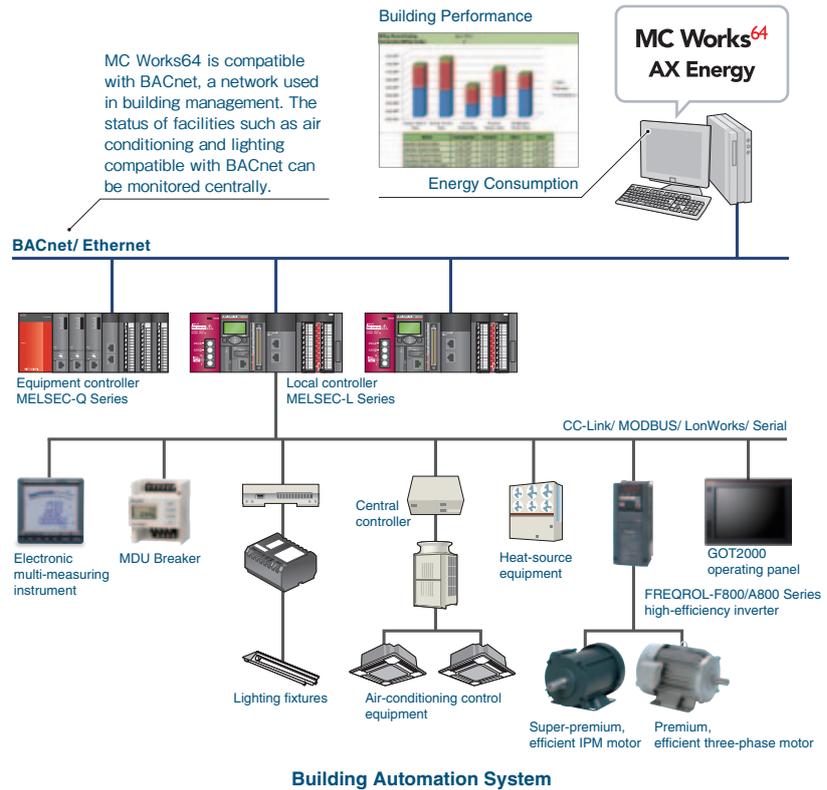
Based on remote monitoring utilizing the latest wide-area maps, web-based HMIs and monitoring via mobile devices, surveillance personnel can be allocated efficiently and monitoring is not restricted by location or time, thus realizing efficient, stable plant operation.

Highly Reliable Solutions

At public facilities such as water-treatment plants, where high reliability is required, redundant configurations combining redundant MELSEC CPUs and MC Works64 can help realize stable operations.

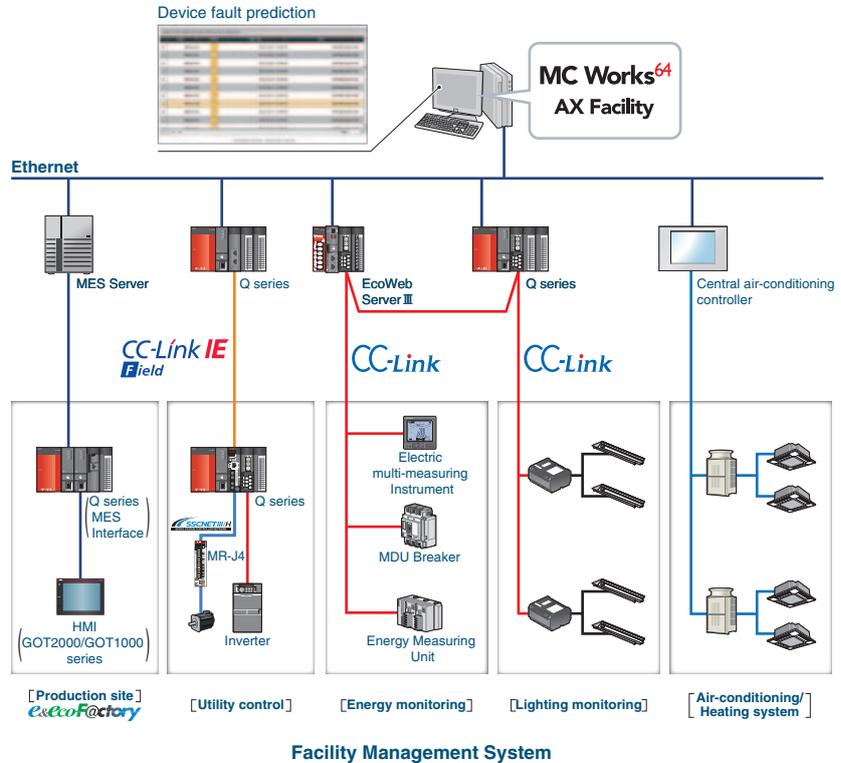
Energy Saving Solutions

Wasted energy can be visualized through hierarchical management of the facilities to be monitored. Functions can then be used to display energy consumed over defined time periods for each area and even converted into equivalent CO₂ emissions, all helping to support energy-saving operations.



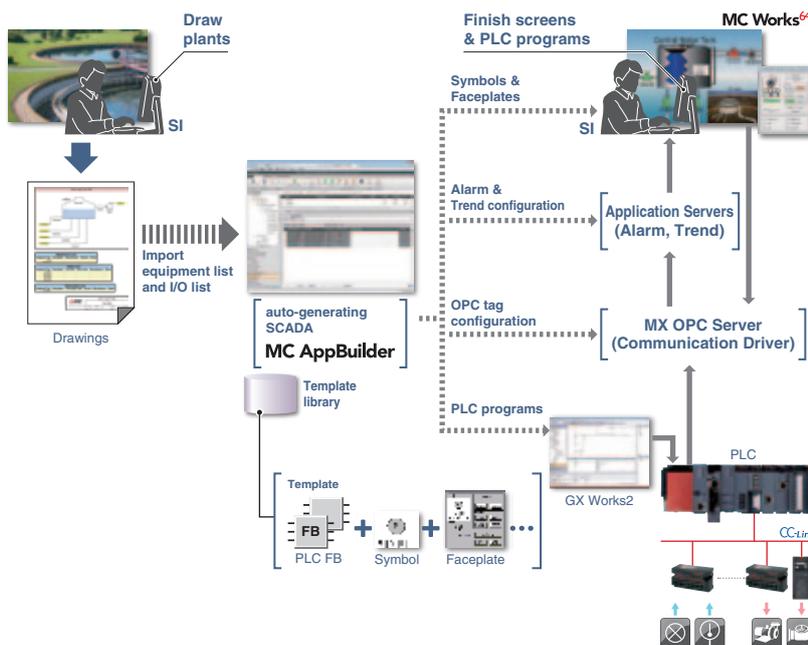
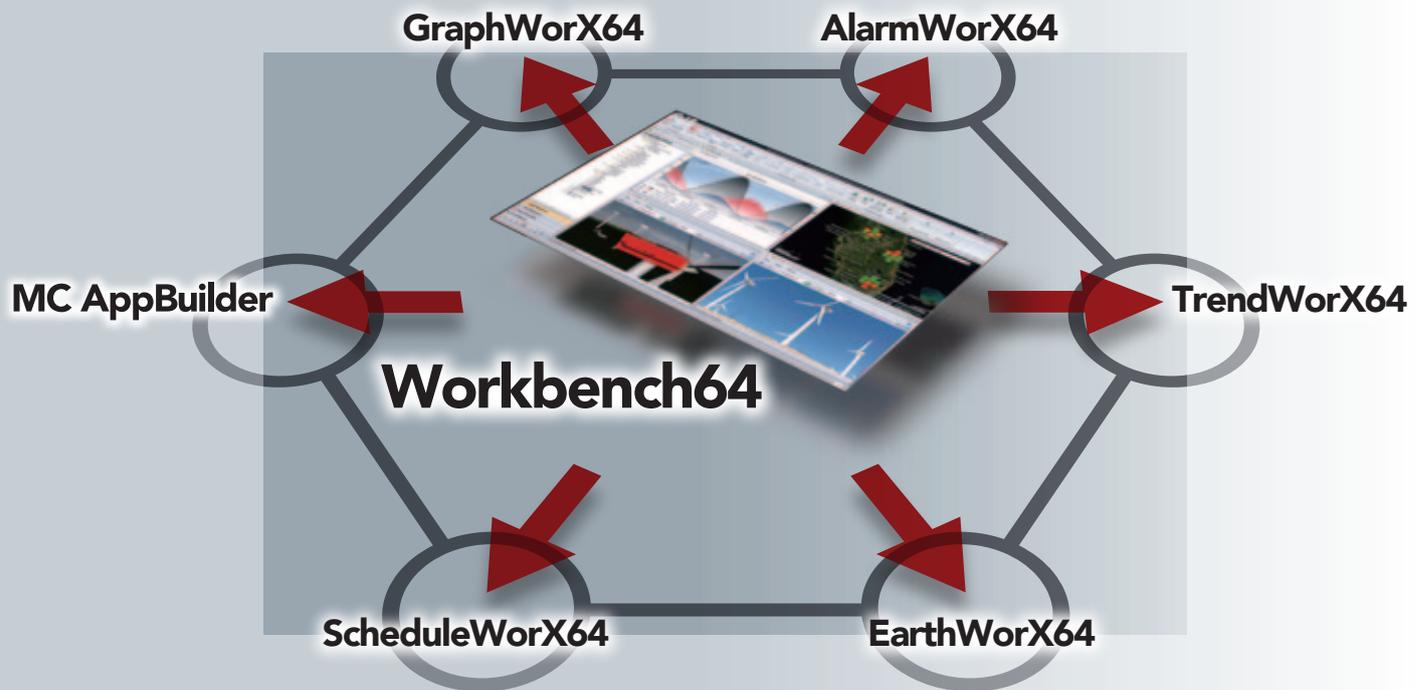
Asset Management Solutions

By accumulating knowledge during equipment maintenance, it is possible to detect equipment abnormalities before a problem occurs and prevent malfunctions without having to rely on experienced maintenance technicians. If mobile monitoring is used, experienced maintenance technicians can check the problem and proper work instructions.



MC Works64

MC Works64 is an integrated software providing a variety of functions and refined user interfaces suitable for diverse infrastructure applications. Apply this software to comprehend the plant operation state and monitor plant-wide operation to support efficient plant operations.



Workbench64

Web Based Centralized Project Manager.
Development & Runtime Environment.
Centralized management of multiple applications such as GraphWorX64, and save as a single project.

MC AppBuilder

Reduce engineering time and cost when implementing SCADA systems. Easily build a plant system that MC Works64 and Mitsubishi PLC are used.

GraphWorX64

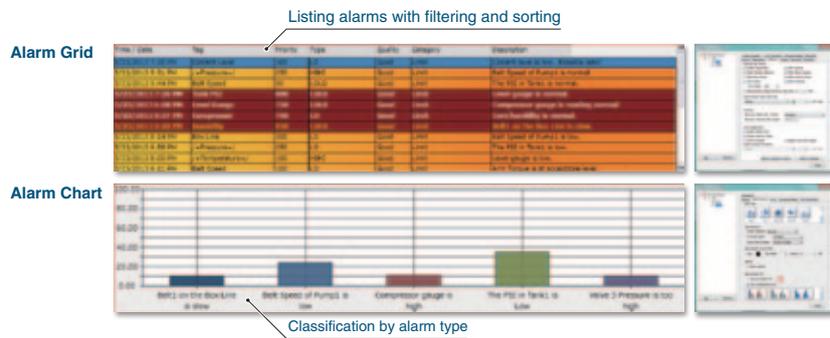
Advanced 2D & 3D Visualization Tool

3D graphic enables equipment monitoring without blind spot. A rich variety of 2D and 3D graphic symbols over 1,000 enables screen design time to be reduced.



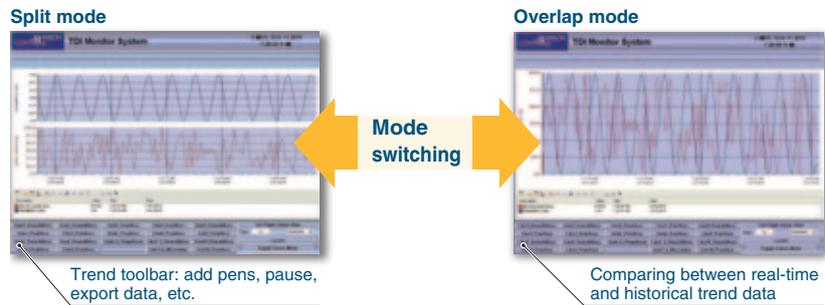
AlarmWorX64

Smart alarm management with Alarm Grid and Chart displays. Display the real-time and historical alarm in graphic screens. Filtering alarms in online is possible.



TrendWorX64

Flexible trend charting helps you efficiently understand your plants behavior. Real-time trend and historical trend display, split and superposition display is possible.



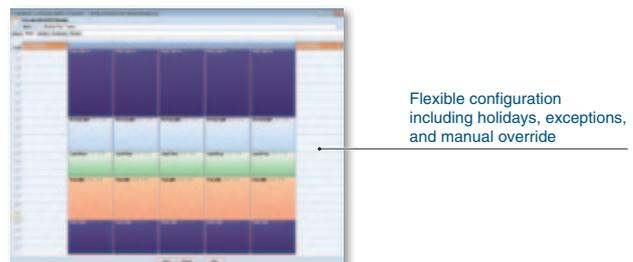
EarthWorX64

Wide-area monitoring for distributed assets with geographical info. Using the map information, such as BingMaps on the Internet.



ScheduleWorX64

Premeditated and lean operation of maintained equipment is possible. Automatically operate lighting and air conditioning of building, factory equipment, etc. according to the schedule.



for Remote Monitoring



MC Mobile*1

MC Works64 allows you to use your tablet or smart phone to continue monitoring or executing control while on the move.

Monitor/ Operate remotely on the smart device's screen anytime and anywhere. Reduce business trip costs and Stable operation of system by remote supervisory control.

Compatible devices and OS to remotely operate and monitor

iOS: iPhone®, iPad®/ Android™ platform, Windows® 8 Surface/ Windows Phone® 8

smartRTU (Wide-area Monitoring)

Device is connected to sensors installed over a wide area and transmits signals to a monitoring control system (SCADA).

Features

Small (only 90 x 90 x 90 mm), Low power (only 12W)*3.

Handles main SCADA protocols: DNP3, IEC 60870-5.

Supports all needed field protocols: IEC 61850, Modbus, Profibus-DP, CC-Link, DeviceNet, .etc.



ME-RTU Gateway

AX Portal*1

Real-time collaboration and visualization dashboards.

Support to create web analysis screen.

Helps to solve problems quickly by displaying consolidated information in multiple tools.

*2 This image is an independent publication and has not been authorized, sponsored, or otherwise approved by Apple Inc.

*3 In smallest configuration

for High Reliability



Redundant CPU

The standby system continues the system operation by taking over the control from the previous control system in which an error occurs.

The broken system can be replaced during the operation.

Possible to change modules on the Remote I/O station and on the extension base online without stopping the CPU.

MC Works64 Compatible with Server Redundancy

Server redundancy enables continuous monitoring by automatically switching to a connected server when the server computer malfunctions.

No loss of historical trend or alarm log data.

Fast, highly reliable CC-Link IE controller network

Reliability guaranteed 1 Gbps high-speed communication.

Network diagnosis function to realize swiftly troubleshooting in the event of trouble.

The optical dual loop transmission

method maintains communication with the loop back function even if the cable is broken or the power fails.

MC Historian*1

High-performance and high-reliability data logger

MC Historian can collect up to 50,000 points of logging data per second where MC Works64 is 20,000.

Long-term storage, create a backup file by automatic archiving.

for Saving Energy

AX Energy*1

Energy consumption rate visualization and analysis tool for system and device levels.

Energy consumption visualization and analysis tool.

Visualization of energy consumption and CO₂ emissions for the whole system and device levels.

Cost control by detecting energy waste.

FREQROL-F800 Series: Energy-saving inverter for fans and pumps

Equipped with advanced optimum excitation control to realize both a high-torque when starting and energy-saving operation during steady operation.

FREQROL-A800 Series: High-functionality, high-performance inverter

Realize even higher responsiveness during real sensor-less vector control or vector control, and achieve faster operating frequencies.

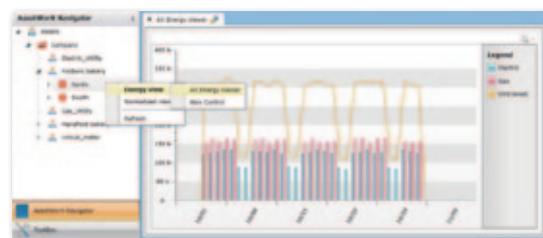
Electronic multi-measuring instrument : ME96 Series

Extensive functions and ease of use support energy-saving measurement monitoring.

Further expanded functions for measurement monitoring, display, output, communications and operation.

This meter has functions beyond those of a regular meter, and is still easy to use.

Advanced functions and ease of use support all kinds of measurement monitoring systems and energy-saving measurement monitoring systems.



FREQROL-F800 Series FREQROL-A800 Series



ME96 Series

for Asset Management

AX Facility*1

Device fault detection and analysis tool.

Tool to analyze cause of equipment failure.

Restoration at early stage of equipment failure by user's analysis expertise.

Prevention of equipment failure by tendency analysis of equipment failure.

AX Quality*1

A complete quality analysis solution providing SPC/ SQC data analysis.

Real-time statistical quality control and analysis tool.

Save time and cost for site operators

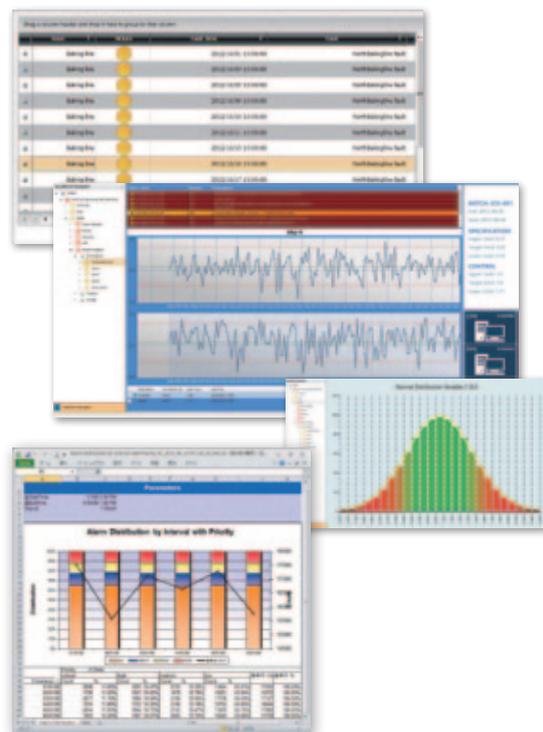
and managers by various control charts that can control quality and analyze process capability.

Statistical Process/ Quality Control (SPC/ SQC) Control techniques to ensure consistent production of high-quality products. Large amounts of data relating to production and quality are accumulated, processed and analyzed using statistical methods such as control diagrams.

ReportWorX Lite*1

Built-in report creation function

MC Works64 has a function for outputting reports in Excel® on demand. Linked with Excel®, data collected can be reported quickly and easily.



*1 SCADA option package

Product list

Basic set parts

PRODUCT NAME	MODEL	TAG	PRODUCT OUTLINE (PLEASE SEE FUNCTION LIST BELOW FOR DETAILS.)
MC Works64 DV	SW2DND-MCWDV-ET	75, 150, 500, 1500, 5k, 15k, 50k, 100k, 250k	HMI/ alarm/ trend (Development Version)
MC Works64 RT	SW2DND-MCWRT-ET	75, 150, 500, 1500, 5k, 15k, 50k, 100k, 250k	HMI/ alarm/ trend (Runtime Version)
MC Works64 LT	SW2DND-MCWL-ET	75, 150, 500, 1500	HMI/ alarm/ trend (Runtime Simple Version)
MC Graph64 DV	SW2DND-MCGDV-ET	75, 150, 500, 1500, 5k, 15k, 50k, 100k, 250k	HMI (Development Version)
MC Graph64 RT	SW2DND-MCGRT-ET	75, 150, 500, 1500, 5k, 15k, 50k, 100k, 250k	HMI (Runtime Version)
MC Alarm64 DV	SW2DND-MCADV-ET	75, 150, 500, 1500, 5k, 15k, 50k, 100k, 250k	Alarm (Development Version)
MC Alarm64 RT	SW2DND-MCART-ET	75, 150, 500, 1500, 5k, 15k, 50k, 100k, 250k	Alarm (Runtime Version)
MC Historian SD	SW2DND-MCHSD-ET	75, 150, 500, 1500, 5k, 15k, 50k, 100k, 250k, 500k, 1M	High-speed data collection (Standard Version)
MC Historian ET	SW2DND-MCHET-ET	75, 150, 500, 1500, 5k, 15k, 50k, 100k, 250k, 500k, 1M	High-speed data collection (Extended Version)
MC Historian R	SW2DND-MCHR-ET	75, 150, 500, 1500, 5k, 15k, 50k, 100k, 250k, 500k, 1M	MC Historian redundant version (2 MC Historian ET added to redundant configuration MC Works64/ GraphWorX64/ AlarmWorX64)
MC Historian C	SW2DND-MCHC-E	—	Remote collector license for MC Historian (Dispersed type collection server added to MC Historian ET) (Remote collector is usable only with enterprise version)
MC Historian CR	SW2DND-MCHCR-E	—	Remote collector license for MC Historian R (Dispersed type collection server added to MC Historian ET redundant configuration)
MC Works64 CL RT	SW2DND-MCWCLRT-E	—	1 client license
	SW2DND-MCWCLRT-EK	—	5, 25 client license
MC Works64 CL DV	SW2DND-MCWCLDV-E	—	1 development client license
	SW2DND-MCWCLDV-EK	—	5, 25 development client license
MC Works64 CL R	SW2DND-MCWCLR-E	—	1 client license for redundant configuration
	SW2DND-MCWCLR-EK	—	5, 25 client license for redundant configuration
MC Mobile SV	SW2DND-MCMSV-E	—	Monitor/ operate remotely with mobile and tablet devices +2 MC Mobile CL(MC Works64 license required)
MC Mobile LT	SW2DND-MCMLT-E	—	Monitor/ operate remotely with mobile and tablet devices +MC Works64 DV(75tag)+MC Mobile CL(2 client license)
MC Mobile SD	SW2DND-MCMSD-E	—	Monitor/ operate remotely with mobile and tablet devices +MC Works64 DV(5k tag)+MC Mobile CL(25 client license)
MC Mobile ET	SW2DND-MCMET-E	—	Monitor/ operate remotely with mobile and tablet devices +MC Works64 DV(100k tag)+MC Mobile CL(500 client license)
MC Mobile CL	SW2DND-MCMCL-E	—	1 client license (MC Mobile license required)
	SW2DND-MCMCL-EK	—	5, 25, 100, 500 client license (MC Mobile license required)
MC Mobile RO	SW2DND-MCMRO-E	—	1 read-only client license (MC Mobile license required)
MC Works USB Key	NZ2HK-IPS	—	USB license key
BridgeWorX Lite	SW1DND-BWLT-E	—	Enable 5 transactions
ReportWorX Lite	SW1DND-RWLT-E	—	Enable 5 active reports

* Version without MX OPC Server enclosed is also available. Contact your sales representative for details.

AnalytiX® set parts

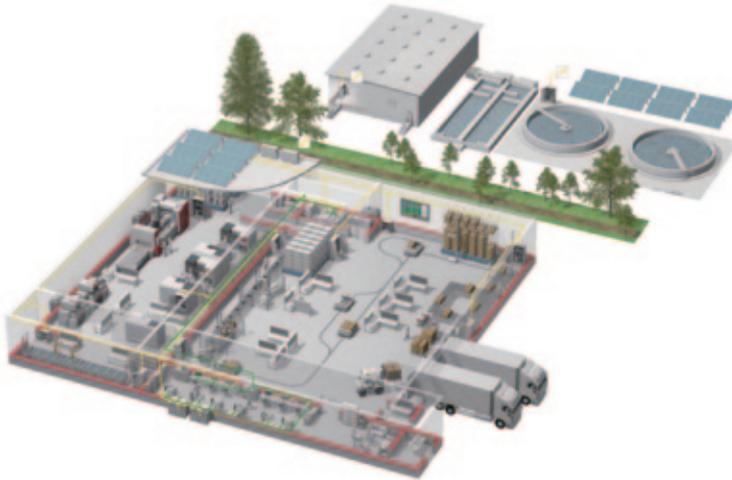
PRODUCT NAME	MODEL	ASSET *1	PRODUCT OUTLINE
AX Energy SV	SW2DND-AXESV-ET	5	Energy consumption rate analysis +MC Historian SD (5tag) +ReportWorX(1 report)(MC Works64 license required)
AX Energy *2	SW2DND-AXE-ET	5	Energy consumption rate analysis +MC Works64 DV (75tag)+MC Historian SD (5tag)+1MC Works64 CL RT +ReportWorX(1 report)
AX Energy AS	SW2DND-AXEAS-E	—	10 tag added to MC Works64+MC Historian(1tag) +1 asset added to AX Energy *(MC Works64 license required)
	SW2DND-AXEAS-ET	—	1k tag added to MC Works64+MC Historian(100tag) +100 asset added to AX Energy *(MC Works64 license required)
AX Facility *2	SW2DND-AXF-ET	5	Error detection/ analysis +MC Works64 DV (75tag)+1MC Works64 CL RT+ReportWorX(1 report)
AX Facility AS	SW2DND-AXFAS-E	—	10 tag added to MC Works64+1 asset added to AX Facility *1 (MC Works64 license required)
	SW2DND-AXFAS-ET	—	1k tag added to MC Works64+100 asset added to AX Facility *1 (MC Works64 license required)
AX Quality SV	SW2DND-AXQSV-E	—	Statistical process control analysis (MC Works64 license and MC Historian required) *3
AX Quality *2	SW2DND-AXQ-E	—	Statistical process control analysis +MC Works64 (150tag)+MC Historian (150tag) *3
AX Portal SV	SW2DND-AXPSV-E	—	Web analysis screen preparation support server HMI application for SharePoint+1AX Portal CL(MC Works64 license required)
AX Portal ET *2	SW2DND-AXPET-E	—	Web analysis screen preparation support server HMI application for SharePoint+MC Works64 DV (15k tag)+25 AX Portal CL
AX Portal CL	SW2DND-AXPCL-E	—	1 AX Portal client license
	SW2DND-AXPCL-EK	—	5, 25 AX Portal client license
AX Client	SW2DND-AXC-E	—	1 AX Energy, AX Facility client license (MC Works64 license required)
	SW2DND-AXC-EK	—	5, 25 AX Energy, AX Facility client license (MC Works64 license required)

*1: AX Energy/ Facility is licensed in number of analysis (asset) units instead of number of tags.

*2: Version without MX OPC Server enclosed is also available. Contact your sales representative for details.

*3: Applying the function of AX Quality to all MC Historian tag becomes possible.

YOUR SOLUTION PARTNER



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

A NAME TO TRUST

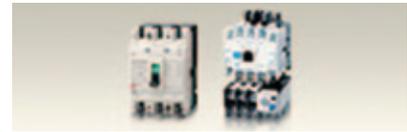
Since its beginnings in 1870, some 45 companies use the Mitsubishi name, covering a spectrum of finance, commerce and industry.

The Mitsubishi brand name is recognized 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.



Low voltage: MCCB, MCB, ACB



Medium voltage: VCB, VCC



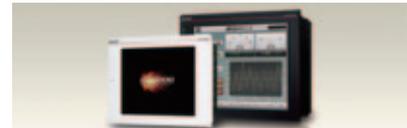
Power monitoring, energy management



Compact and Modular Controllers



Inverters, Servos and Motors



Visualisation: HMIs, Software, MES connectivity



Numerical Control (NC)



Robots: SCARA, Articulated arm



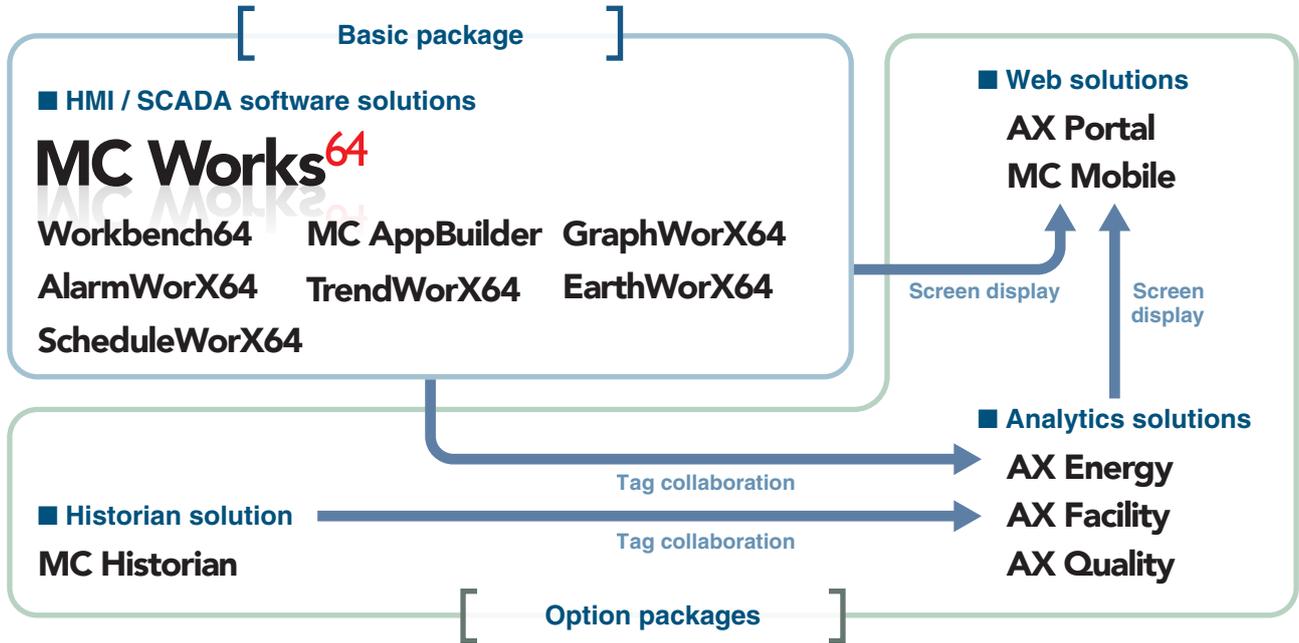
Processing machines: EDM, Lasers, IDS



Airconditioning, Photovoltaic, EDS

SCADA Product Line-up

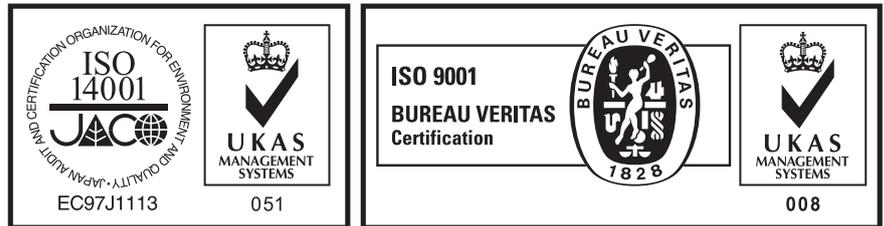
Line-up » Basic package (MC Works64) and option packages that can be selected depending on the application.



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Mexico	MITSUBISHI ELECTRIC AUTOMATION, INC. Mexico Branch Mariano Escobedo #69, Col. Zona Industrial, Tlalnepanitla Edo, C.P.54030, Mexico	Tel : +52-55-3067-7500	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 Bangpongpan, Khet Yannawa, Bangkok 10120, Thailand	Tel : +66-2682-6522 Fax : +66-2682-6020
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