



for a greener tomorrow



**MITSUBISHI
ELECTRIC**

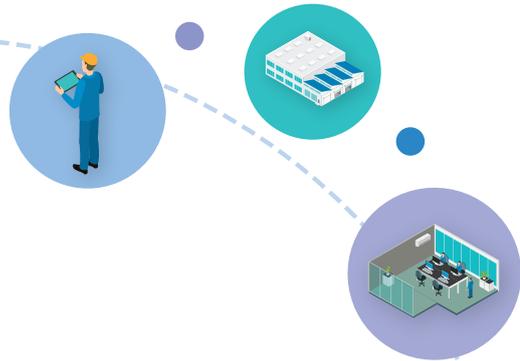
Changes for the Better

FACTORY AUTOMATION

Monitoring Control System Solutions



MC Works⁶⁴

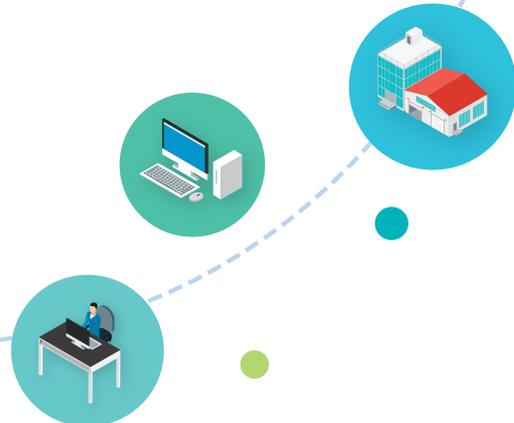


GT SoftGOT2000



GOT2000

Graphic Operation Terminal



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, maximizing 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

Maximizing productivity and efficiency with cutting-edge automation technology.

Mitsubishi Electric Monitoring Control System Solutions

Mitsubishi Electric supports visualization at your worksite and factory.



List of Solutions

01	Monitoring the system status in real-time	6
02	Monitoring the line using a large display screen	7
03	Monitoring the worksite with a tablet or smartphone	8
04	Easily monitoring the worksite from office personal computer	9
05	Easily monitoring multiple lines at a time	10
06	Performing detailed monitoring with graphical screens	11
07	Increasing operation rate	12
08	Effectively using monitor data collected over a long time	13
09	Reducing energy consumption	14
10	Collectively monitoring multiple factories	15

Issues related to monitoring control of manufacturing site

01 Monitoring the system status in real-time

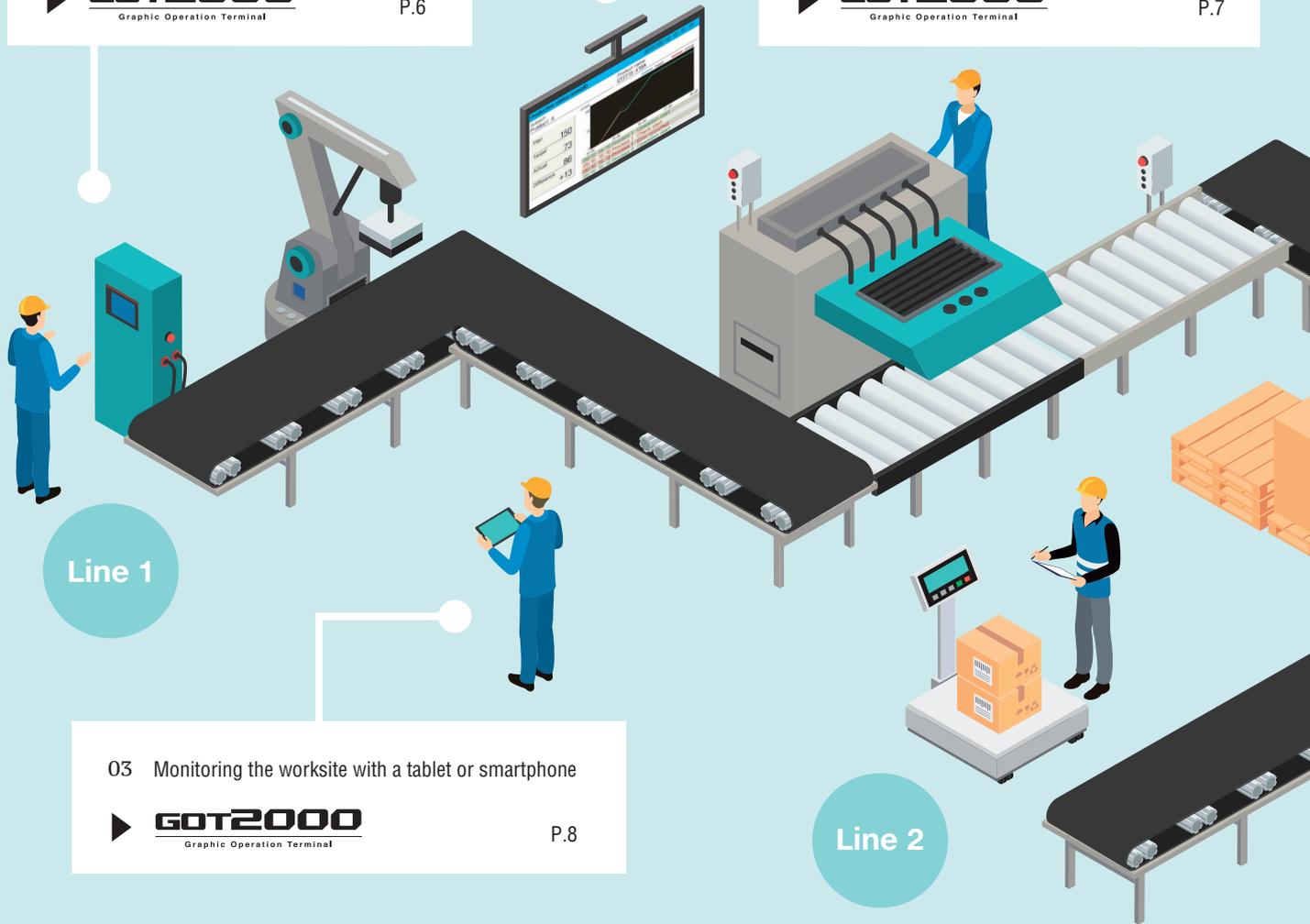


P.6

02 Monitoring the line using a large display screen



P.7



Line 1

03 Monitoring the worksite with a tablet or smartphone



P.8

Line 2

06 Performing detailed monitoring with graphical screens



P.11

08 Effectively using monitor data collected over a long time



P.13



05 Easily monitoring multiple lines at a time

▶ **GT SoftGOT2000** P.10



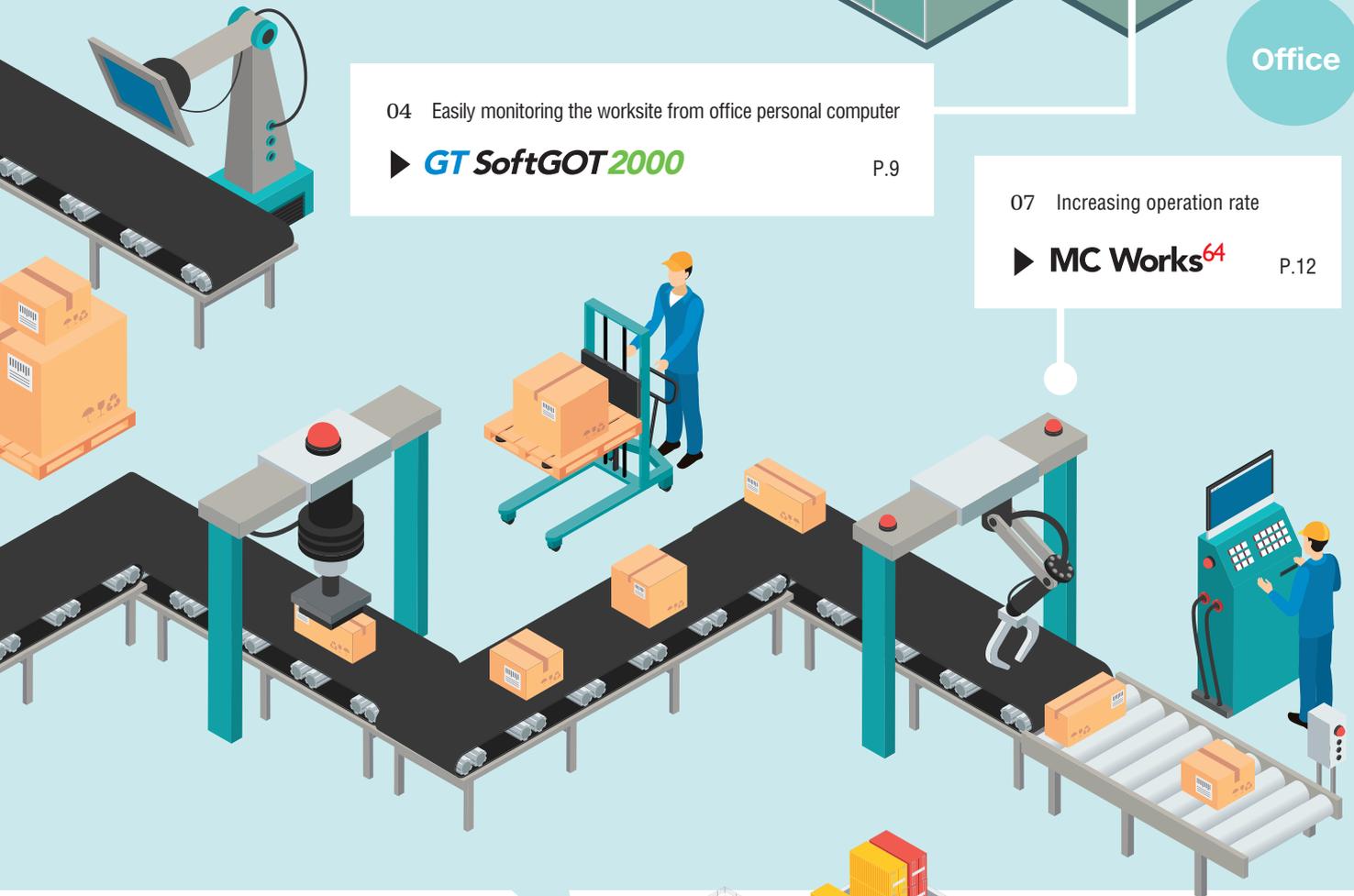
Office

04 Easily monitoring the worksite from office personal computer

▶ **GT SoftGOT2000** P.9

07 Increasing operation rate

▶ **MC Works⁶⁴** P.12



09 Reducing energy consumption

▶ **MC Works⁶⁴** P.14

10 Collectively monitoring multiple factories

▶ **MC Works⁶⁴** P.15



Factory

Monitoring the system status in real-time

Have you ever faced the following issues?

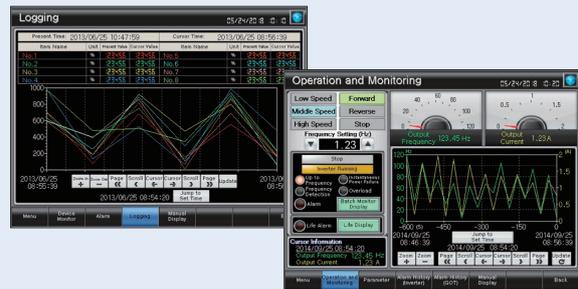
- Issue 1** How can I monitor the state of connected devices?
- Issue 2** How can I easily perform troubleshooting at the worksite?
- Issue 3** How can I prevent sudden failure in the system?



GOT2000 is your solution
Graphic Operation Terminal

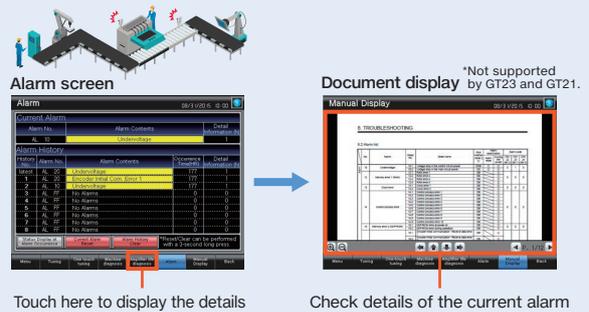
Solution 1 Monitor the device values of connected devices

GOT can monitor the status of connected devices such as the programmable controller, inverter, or servo. Easily create a monitor using the Connection Sample screens.
→Variety of sample screens (see p. 21)



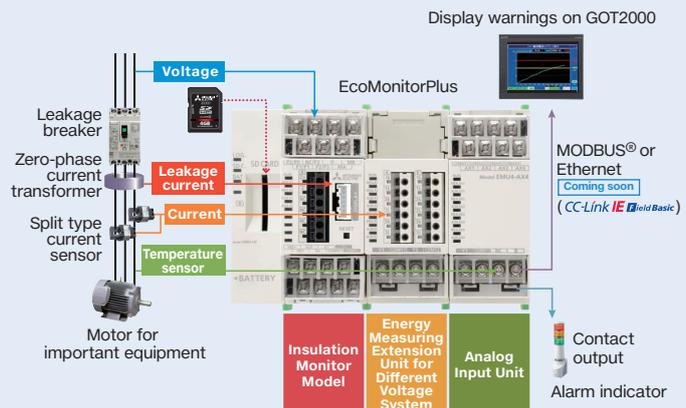
Solution 2 Troubleshoot problems while checking the details of the alarm and referring to the manual

Use the GOT to confirm detailed information on the connected device's alarms. Since the manual can be displayed, you can quickly respond to trouble.
→Alarm function, document display function (see p. 19)



Solution 3 Monitor the system status with the energy measuring unit EcoMonitorPlus

GOT can monitor the leakage current, load current, and temperature trends, etc., collected by the energy measuring unit. Avoid sudden failure by setting a threshold and monitoring the alarms.
→Energy measuring unit EcoMonitorPlus (see p. 30)
Variety of sample screens (see p. 21)



Monitoring the line using a large display screen

Have you ever faced the following issues?

- Issue 1** How can I easily build an ANDON system?
- Issue 2** How can I implement an ANDON system at a low cost?
- Issue 3** How can I display professional screens and improve visibility?

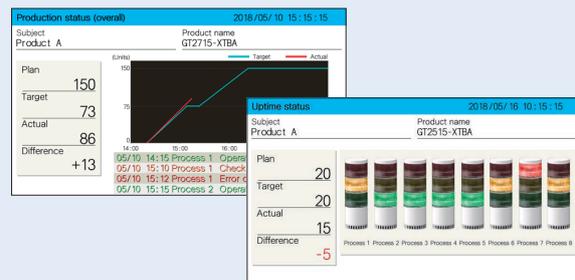


GOT2000 is your solution
Graphic Operation Terminal

Solution 1 Easily build an ANDON system

Easily build an ANDON system with GOT2000 and a personal computer. ANDON screens can be designed with GT Works3, and the sample screens of the GOT Mobile function are available to easily build the ANDON system.

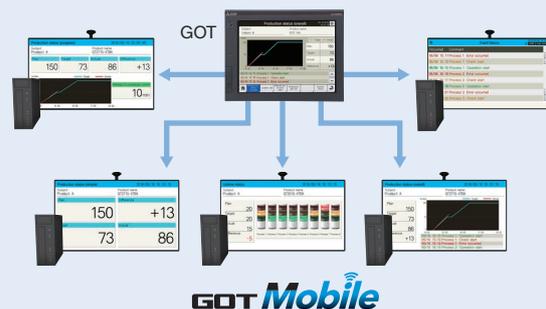
- GOT Mobile function* (see p. 20)
- Sample screens (GOT Mobile function (ANDON/remote control))



Solution 2 Build five ANDON systems with one GOT

Five ANDON systems can be built with one GOT. Different screens can be displayed on each ANDON system.

- GOT Mobile function* (see p. 20)



Solution 3 Display screens with resolutions suited for the monitor unit

Screens are created to match the information device's resolution, so the factory information can be confirmed on easy-to-see screens. Set the screen resolution freely within the range of 2048 × 2048 dots.

- GOT Mobile function* (see p. 20)



Square type

UXGA 1600 × 1200 dots



Wide type

WUXGA 1920 × 1200 dots

* A separate GOT Mobile function license is required to use the GOT Mobile function. (One license is required per GOT unit.)

Monitoring the worksite with a tablet or smartphone

Have you ever faced the following issues?

- Issue 1** How can I check the production site from a remote location?
- Issue 2** How can I check the state of alarm occurring from a remote location?
- Issue 3** How can I use easy-to-read displays even on small screens?

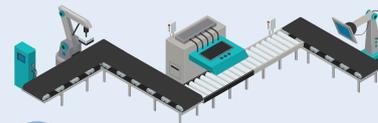


GOT2000 is your solution
Graphic Operation Terminal

Solution 1

Monitor the production site with a tablet or smartphone at a remote location

Use a mobile terminal such as a tablet or smartphone to check the production status from a remote location. There is no need to be stuck out at the worksite.
→GOT Mobile function* (see p. 20)



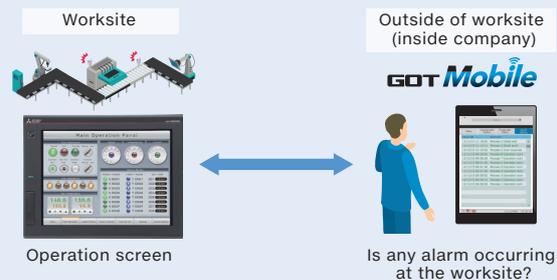
Line 1



Solution 2

Confirm the alarm occurrence state with a tablet or smartphone

Check the details of alarms with a handy mobile terminal without traveling to the place of alarm occurrence. You can reduce downtime by reviewing countermeasures before heading to the worksite.
→GOT Mobile function* (see p. 20)



Solution 3

Set screens that match the tablet or smartphone resolution

The created screens match the resolution of the information device, so professional screens can be read even on a smartphone's small screen. Since information is displayed on the browser, there is no need to install special applications on your tablet or smartphone.
→GOT Mobile function* (see p. 20)



Smartphone size
(1334 × 750 dots)



Tablet size
(1920 × 1200 dots)

Easily monitoring the worksite from office personal computer

Have you ever faced the following issues?

Issue 1 How can I easily build a remote monitoring system?

Issue 2 How can I reduce system implementation costs?

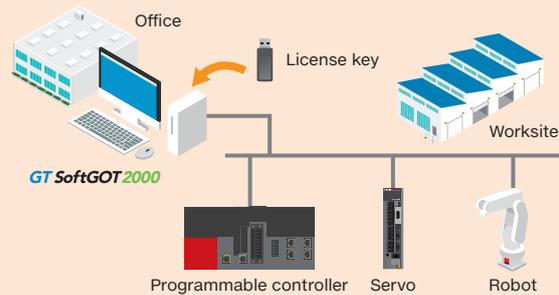


[GT SoftGOT2000 is your solution]

Solution 1

Connect industrial devices and personal computer for easy remote monitoring

Monitor connected industrial devices by installing the GT SoftGOT2000 software in personal computer and attaching the license key. Easily realize a remote monitoring system by creating monitoring screens for the connected devices. There is no need to build a special system.

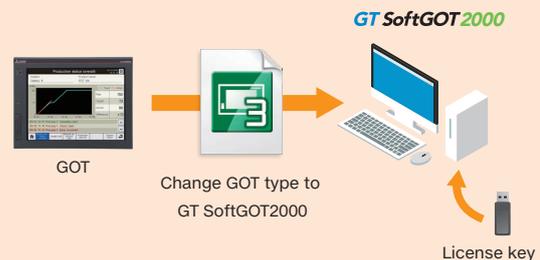


Solution 2

Reduce implementation costs by re-using GOT screens

Remote monitoring using GOT project data

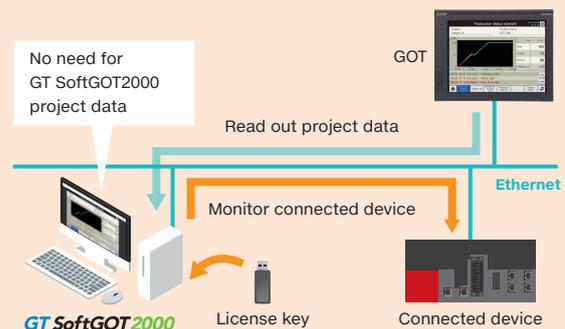
The screen data used with GT SoftGOT2000 is created with GT Designer3, in the same manner as the GOT. The project data of the GOT2000 Series GOT can be utilized without modification just by changing the GOT type to GT SoftGOT2000.



Remote monitoring without creating screens

If there is a GOT at the worksite, GT SoftGOT2000 can read the project data from the GOT via Ethernet and use the data to monitor the connected devices. Since there is no need for GT SoftGOT2000 project data, remote monitoring can be started as soon as an Ethernet connection is established with the connected devices.

→SoftGOT-GOT link function (see p. 22)



* A separate GT SoftGOT2000 license key must be installed on the computer to use GT SoftGOT2000.

Easily monitoring multiple lines at a time

Have you ever faced the following issues?

- Issue 1** How can I monitor multiple lines?
- Issue 2** How can I easily build a different network configuration for each line using one computer?

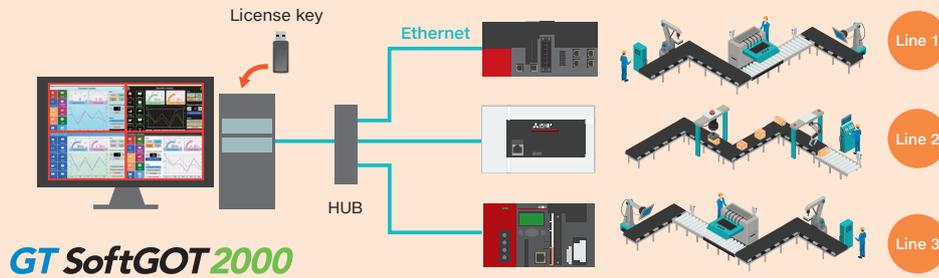


[GT SoftGOT2000 is your solution]

Solution 1 Easily monitor multiple lines with one computer

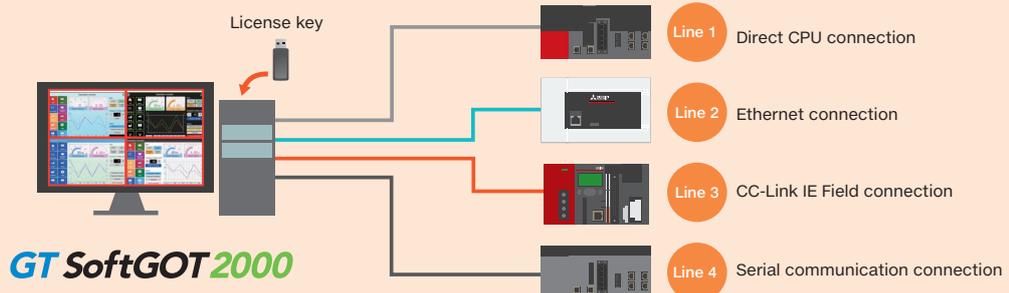
Multiple modules of GT SoftGOT2000 can be started up simultaneously on one computer. Easily implement a system to monitor multiple lines by connecting the industrial devices for each line to the computer.

* Up to 4 modules are recommended when running multiple modules of GT SoftGOT2000 simultaneously.



Solution 2 Lines can be monitored with one computer even if the connection types are different. There is no need to rebuild the network environment.

Different connection types are supported when monitoring multiple lines. Even if each line uses a different network, the system can be implemented right away as there is no need to rebuild the network environment.



Performing detailed monitoring with graphical screens

Have you ever faced the following issues?

- Issue 1** How can I visually understand the state of equipment without visiting the worksite?
- Issue 2** How can I change the screen display according to the viewer?
- Issue 3** How can I easily create a professional and easy to read monitoring screen?



[MC Works⁶⁴ is your solution]

Solution 1 Reproduce the system with 3D monitoring screens

3D graphics allow you to visually and easily monitor the equipment and line without going to the worksite. 3D graphics can be created easily just by importing the CAD data.

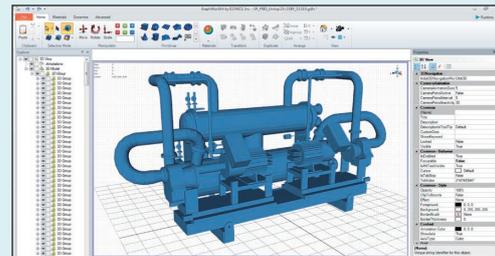
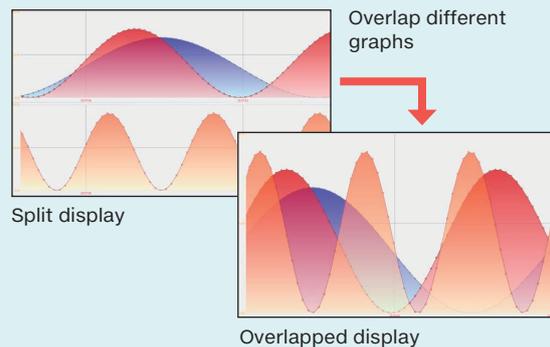


Image of imported CAD data

Solution 2 Set the best display method for each operator

With the graph displays, each operator can set whether to display multiple graphs independently, to partially overlap the graphs, or to overlap the entire graph. When the settings are registered, the same display method can be used when starting up the next time. Display methods customized for each operator will improve the monitoring and analysis work efficiency.



Solution 3 Create professional, easy to view screens

A library with more than 3000 types of parts is available. The parts library includes animations that can be used to create an animated screen that shows changes in devices just by assigning the actual device data.



Increasing operation rate

Have you ever faced the following issues?

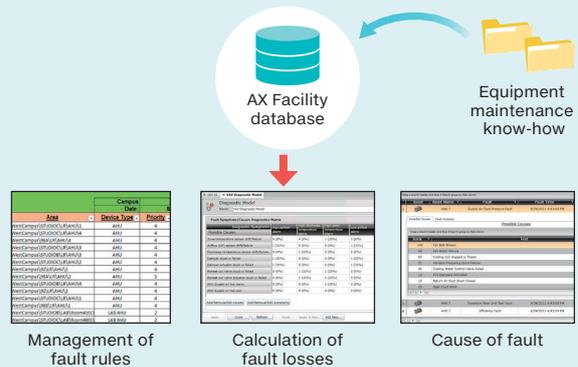
- Issue 1** How can I reduce down time?
- Issue 2** How can I prevent equipment fault before it occurs?
- Issue 3** How can I confirm required information when I need it?



[MC Works⁶⁴ is your solution]

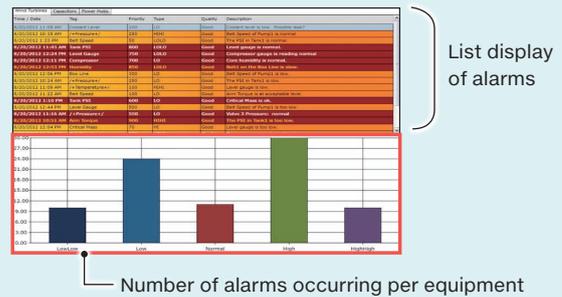
Solution 1 Use equipment maintenance know-how to reduce down time

When the maintenance know-how for your equipment is registered in the database, the AX Facility will analyze and present the causes when an alarm or trouble occurs. Early discovery of causes and application of countermeasures will contribute to a shorter down time.
→AX Facility (see p. 27)



Solution 2 Analyze alarms to prevent problems that can cause equipment stoppage and improve operation rates

In addition to the list format, the number of alarms can be displayed in bar graphs by sorting them by importance of alarms, by equipment, etc. Equipment with a high rate of alarms can be identified quickly and actions can be taken to prevent problems that could cause equipment stoppage.



Solution 3 Easily monitor information on important alarms, etc.

Create instant monitoring screens by pasting display parts into the screen and assigning information (tags) to be confirmed. In addition to using personal computers, by downloading the KPIWorX mobile app on a smartphone, etc., required data can be easily checked without going to the worksite.
→KPIWorX (see p. 25)

(1) Select display part from symbol library and paste it onto the screen

(2) Set tags to assign to the symbols

Effectively using monitor data collected over a long time

Have you ever faced the following issues?

- Issue 1** How can I collect as large volumes of data for a long time?
- Issue 2** How can I effectively use collected data for analysis, etc.?
- Issue 3** How can I improve the data collection and storage reliability?



[MC Works⁶⁴ is your solution]

Solution 1

Log large volumes of data for a long time using data compression and automatic archiving

The data compression function allows a large volume of required data to be logged for a long time. The automatic archive function can be used for long-term saving of data and for creating backups.

→MC Historian (see p. 26)

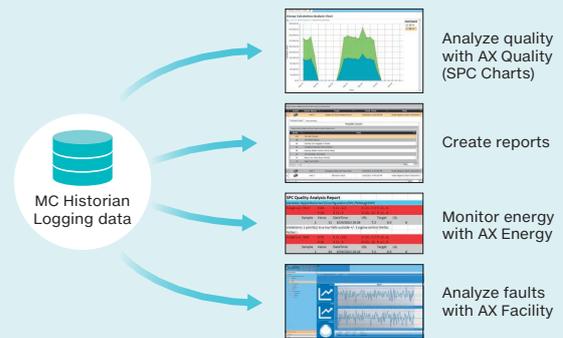


Solution 2

Immediately display the collected data in various formats, and use it for analysis

The collected and accumulated monitoring data can be displayed with the standard trend function, etc. It can also be combined with optional packages and used for preventive maintenance and energy conservation using equipment production information, alarms, fault history, and power usage rates.

→MC Historian (see p. 26) & AX Energy (see p. 26),
AX Facility (see p. 27), AX Quality (see p. 27)

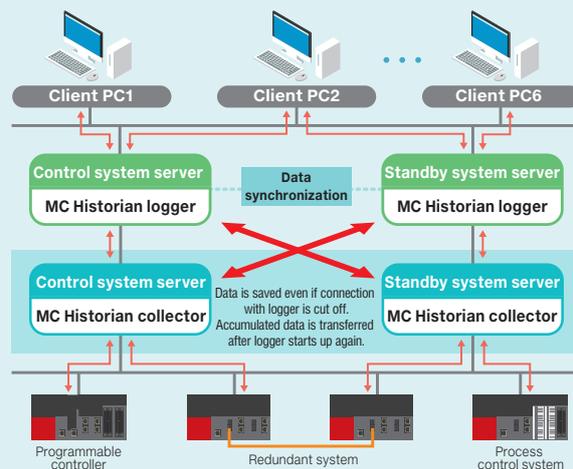


Solution 3

Data collector function and logger function redundancy improve reliability

In addition to a redundant server, the MC Historian's collector function (data collection) and logger function (data storage) can be installed in separate personal computers to provide redundancy. If the logger server fails, the collected data is saved in the collector server for a set period, so important data is not missed.

→MC Historian (see p. 26)



Reducing energy consumption

Have you ever faced the following issues?

- Issue 1** How can I understand how much energy we are wasting?
- Issue 2** How can I monitor unit consumption, consumption costs, and CO₂ emissions, etc.?

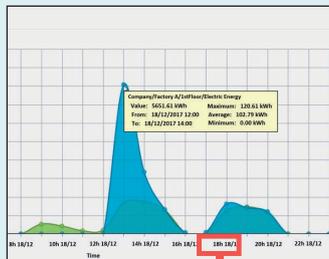


[MC Works⁶⁴ is your solution]

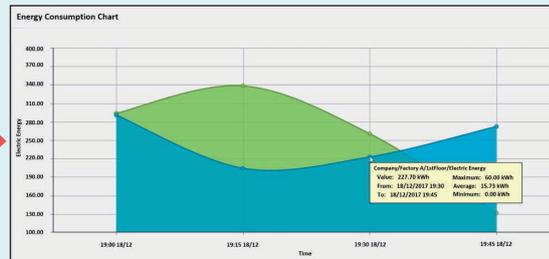
Solution 1 Supporting discovery of wastes using various display patterns suitable for monitoring energy

Data on energy consumption rates collected from the worksite's equipment and lighting fixtures, etc., can be displayed in graphs. By restricting the display pattern to specific places such as entire company → factory → building → line → equipment, or by restricting the period such as month → day → hour, wastes can be pinpointed easily. Restricting and pinpointing the problem is convenient for analysis and improvement.
→AX Energy (see p. 26)

Display in day units



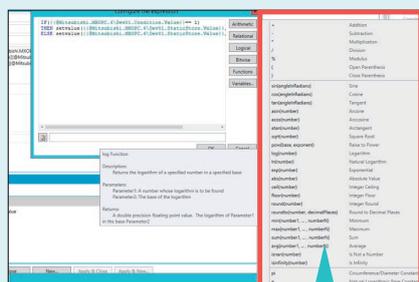
Display in one-hour units



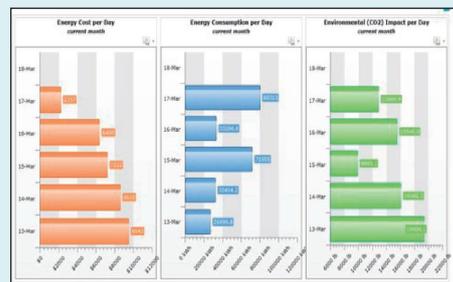
Drill down from day unit graph to one-hour unit graph for specific day

Solution 2 Easily monitor unit consumption, consumption costs, and CO₂ emissions just by selecting formula from properties

Unit consumption, consumption costs, and CO₂ emissions, which are difficult to calculate from raw data, can be easily calculated by selecting the formula from the properties. The calculated data is also logged, and can be confirmed on the monitoring screen.
→AX Energy (see p. 26)



Just select formula from properties



Log with the calculated results and immediately display in graph!

Collectively monitoring multiple factories

Have you ever faced the following issues?

- Issue 1** How can I collectively confirm the state of multiple factories?
- Issue 2** How can I provide effective security for monitoring when using the cloud?
- Issue 3** How can I connect multiple systems without bothersome work?



[MC Works⁶⁴ is your solution]

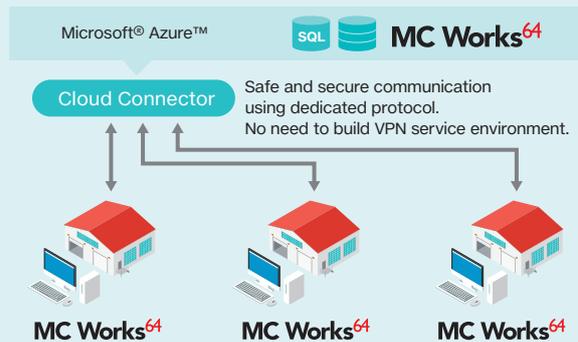
Solution 1 Easily realize visual monitoring using maps

What is happening at each factory can be checked quickly through linkage with general mapping tools such as Google Maps™, and Microsoft® Bing Maps™.



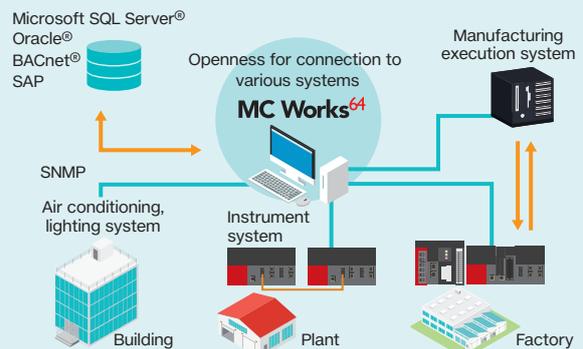
Solution 2 MC Works64 in the cloud allows all data to be monitored securely

Through linkage with the Microsoft® Azure™ cloud, data is communicated over a dedicated protocol using a dedicated connection tool (Cloud Connector). This eliminates the need to create a VPN service environment, and builds a secure system. The customer's important data is protected even during monitoring over a network.



Solution 3 Use open connectability to easily connect to different types of devices

A variety of connection types, including OPC UA, OPC Classic (DA, HDA, A/E), BACnet®, and DataBase, are supported so that devices can be easily connected to existing systems, and monitoring of several factories can be started right away.



Product Guide



GOT2000 Series	18
GT SoftGOT2000	22
MC Works64	24

Comparison of GOT2000 Series, GT SoftGOT2000, and MC Works64 functions

Item		GOT2000* Graphic Operation Terminal	GT SoftGOT2000	MC Works64
Image		 Monitor equipment status in real-time	 Easily monitor from a remote location using personal computer	 Integrated monitoring and analysis using personal computer
Features		<ul style="list-style-type: none"> ● Compact with outstanding environment resistance ● Easy screen operations with finger touches ● Monitor and edit ladder circuits 	<ul style="list-style-type: none"> ● Execute GOT functions on personal computer ● Utilize GOT project data without modification ● Link with worksite GOT to perform remote monitoring with no need to create dedicated screens 	<ul style="list-style-type: none"> ● SCADA software equipped with advanced graphic functions ● In addition to standalone, create flexible system configurations such as server client or redundant configurations ● Create various formats of reports using advanced reporting function ● Cloud compatible
Reliability	Redundancy function	—	—	Redundant data collection (collector) and data save (logger) supported.
	Server and client configuration	Supported (Optional) * Up to five clients	—	Supported (Server redundancy also possible) * Number of clients depends on number of purchased licenses.
Connectability	Number of connectable programmable controllers	Max. 128 units using Ethernet connection (10 units or less recommended)	Max. 128 units using Ethernet connection	Limitless (The communication performance may drop in proportion to the number of connected programmable controllers, so using dispersed layout with one OPC server for every ten programmable controllers is recommended.)
	Number of collectable device points	Limitless	Limitless	1,000,000 points * Follows number of purchased points (Number of tag points).
Monitor screen	Multi-monitor display	Display on one screen	One screen displayed on one module	Display with up to six monitors
	Multi-view display	Display on one screen	Displays for the number of started modules possible * Up to four units recommended.	Multiple windows (alarm, trend, camera image, etc.) can be displayed on one monitor * Number of windows that can be displayed is limitless.
	Schedule management	Automatic operation following a schedule is supported. * Follows programmable controller ladder control or GOT script control	Automatic operation following a schedule is supported. * Follows programmable controller ladder control or GOT script control	Automatic operation following a schedule is supported.
	3D display	—	—	Supported (Graphic screen, trends, alarms, events, etc.) 3D CAD data import supported.
	Trend display	Supported (Real-time trends and historical trends) Multiple trends can be displayed.	Supported (Real-time trends and historical trends) Multiple trends can be displayed.	Supported (Real-time trends and historical trends) Multiple trends can be split up or overlapped and displayed.
Security	Operation history management	Supported (Only for collectable logs)	Supported (Only for collectable logs)	Supported (Operations with MC Works64 are all saved as history.)
	Security management	Access can be limited for each operator. Display and operation can be limited by function or by each object such as button.	Access can be limited for each operator. Display and operation can be limited by function or by each object such as button.	Access can be limited for each operator. Display and operation can be limited by function or by each object such as button.
	FDA 21 CFR Part 11	Conformance with system standards supported by using relevant functions	Conformance with system standards supported by using relevant functions	Conformance with system standards supported by using relevant functions
Serviceability	Alarm monitoring	Supported (Real-time trends and historical alarms) Alarm filtering possible.	Supported (Real-time trends and historical alarms) Alarm filtering possible.	Supported (Real-time trends and historical alarms) Alarm filtering and graph display possible.
	Alarm notification	Supported (E-mail notifications)	Supported (E-mail notifications)	Supported. (E-mail or SMS notification)
Monitoring performance	Data logging cycle	Set between 100 ms and 3600 s	Set between 100 ms and 3600 s	Set between 100 ms and 24 h
System operation	Reporting	Reports can be directly output from printer. (Saving as CSV files, etc., not supported)	Reports can be output as CSV files. (Open file to print)	Variety of report formats supported including batch report and daily report. Microsoft® Excel®, HTML, and PDF save formats supported (Optional)
	Mobile monitoring	Supported (Optional)	—	Supported (Optional)

* Some items may not be supported depending on the GOT2000 Series model. For the details, please refer to the relevant manual of the GOT2000 Series.

GOT2000 Series

Lineup

GT27

Model with multi-touch gesture functions



GT25

High performance, cost efficient, mid-range model



GT25 Wide

GOT2000 widescreen expands your view



GT25 Open Frame

A new style of GOT2000 suitable for various applications

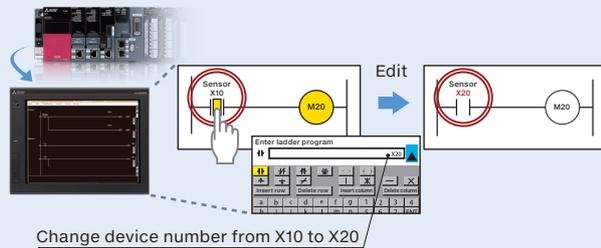


Basic functions

Sequence program monitor (Ladder)

GT27 GT25 GT23 GT21

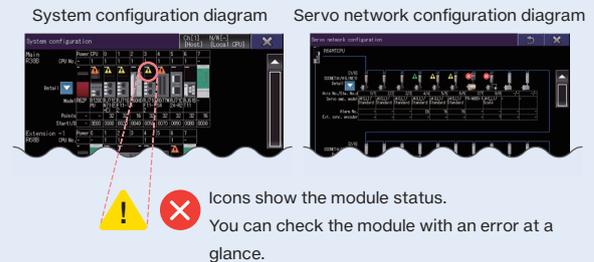
GOT can monitor and edit a sequence program in a controller in the ladder format, and also can change current values of devices. When an error occurs, monitor the ladder program and identify the cause of error. There is no need for a personal computer on the production floor.



System launcher/system launcher (servo network)*1

GT27 GT25 GT23 GT21

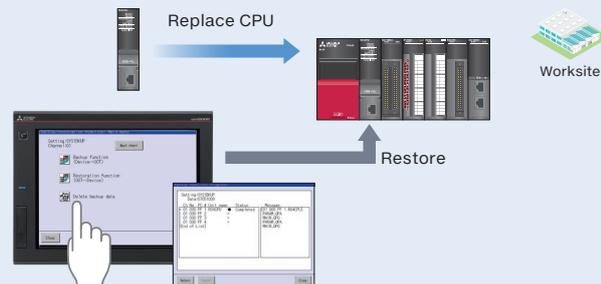
A graphical configuration diagram indicates the statuses of programmable controller and servo amplifier systems. The statuses of modules can be checked on the GOT.



Backup/restoration function*2*3

GT27 GT25 GT23 GT21

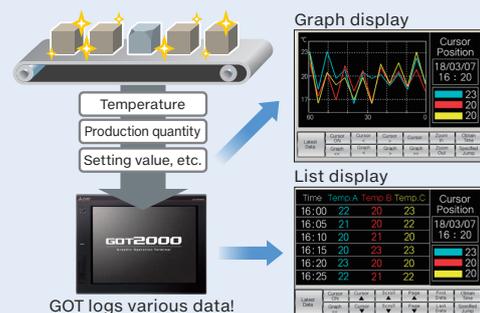
The programs and parameters of Mitsubishi Electric programmable controller CPUs or other devices can be backed up or restored to or from the GOT's SD memory card or USB memory. When the data is backed up in the GOT, there is no need to use personal computer when replacing industrial devices such as the programmable controller CPU. All replacement and restoration can be completed with just the GOT.



Logging function*3 & graph/list

GT27 GT25 GT23 GT21

GOT collects*3 the data from programmable controllers and temperature controllers, and displays the collected data in a graph and list. Data collected when an error occurred can be checked and used to identify and analyze the cause of the error.



*1 System launcher (servo network) is not supported by GT23.

*2 Separate SD memory card or USB memory is required.

*3 Excluding GT2103-PMBLS.

GT25 Handy GOT

HMI functionality in the palm of your hand



GT23

Unchallenged cost performance



GT21

Compact models with basic functions



GT21 Wide

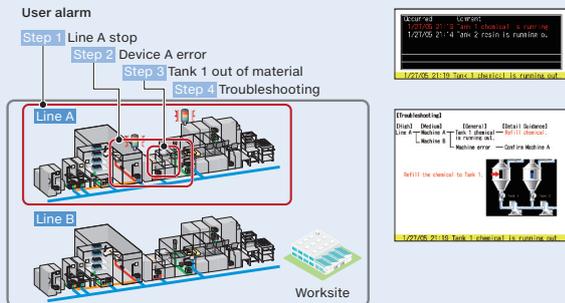
Large amounts of information in the wide display area



Alarm function

GT27 GT25 GT23 GT21

Alarms are displayed with a station No. and CPU No. in the list grouped by system or level. It helps you to identify the location where the error occurred in a large system, leading to quick troubleshooting.



Document display function*4

GT27 GT25 GT23 GT21

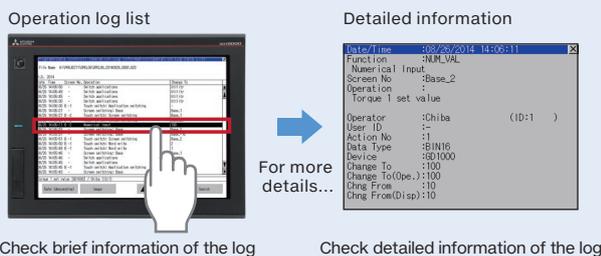
GOT displays various kinds of documents such as manuals. You can switch between pages, scroll, zoom in/out a page, and display documents covering several pages. When displaying PDF files, you can use keyword search or bookmark display to quickly access the data you need.



Operation log function*5

GT27 GT25 GT23 GT21

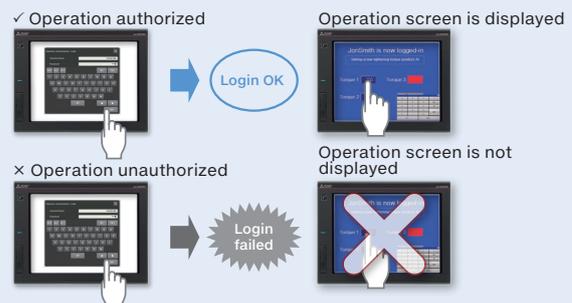
GOT records the information such as “what, when, and how” of an operation performed by operators in chronological order on the SD memory or USB memory. These records can be confirmed immediately on the GOT. When used in combination with the operator authentication function, you can also record “who” performed the operation and quickly identify the problem cause.



Operator authentication function

GT27 GT25 GT23 GT21

Increase system security and manage user-specific access by setting the GOT operation and browsing restrictions for each operator. When used in combination with the operation log function, you can check the “who, what, when, and how” of an operation performed.



*4 Separate SD memory card is required.

*5 Separate SD memory card or USB memory is required.

GOT2000 Series



Use with options to increase usage possibilities

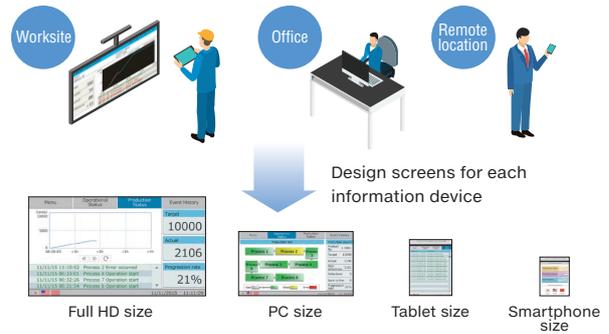
▶ Checking equipment statuses away from the worksite

GOT Mobile function license

GT27 GT25 GT23 GT21

Check the equipment status using a web browser on tablets from a remote location. Up to five information devices can simultaneously access a single GOT so that you can view and operate a different screen on each device.

- * Up to five clients can connect to one GOT at the same time.
- * Client must be equipped with browser (Google Chrome or Safari).



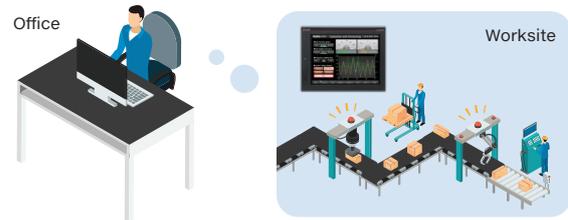
▶ Troubleshoot problem at a remote location while viewing the worksite's GOT screen

VNC server function license

GT27 GT25 GT23 GT21*1

The worksite GOT screens can be viewed and operated on an information device such as personal computer or tablet without visiting the worksite. There is no need to create dedicated screens.

- *1 Supported by GT2107-W only among GT21 models.



▶ Create wireless link between GOT and personal computer

Wireless LAN communication unit

GT27 GT25 GT23 GT21

Establish a wireless LAN connection between the computer and GOT. You can transfer project data, and use the FA transparent function, GOT mobile function, and other functions.

- * Excluding GT2505-VTBD, GT2506HS-VTBD, and GT2505HS-VTBD.
- * Access points are supported with GT Works3 Ver. 1.144A and higher. GOT can directly communicate with mobile devices even without a separate access point.
- * The unit may not be used in some countries.



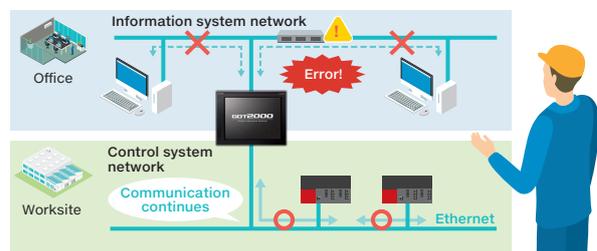
▶ Separating the information system and control system networks

Ethernet communication unit

GT27 GT25 GT23 GT21

Create a safe and secure network configuration by using two Ethernet ports (using one built-in Ethernet port) to physically separate the information system network in the office from the control system network at the production site.

- * Excluding GT2505-VTBD, GT2506HS-VTBD, and GT2505HS-VTBD.
- * GT25 wide models have two standard ports so that the Ethernet communication unit is not required.



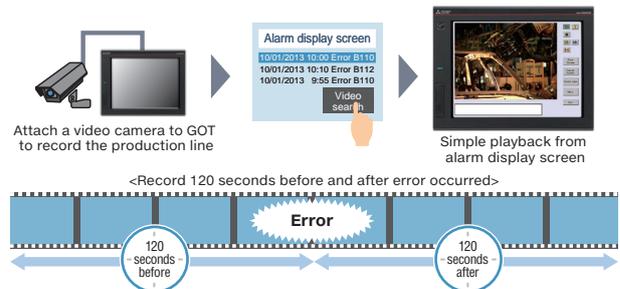
▶ Display video camera images on GOT

Multimedia unit

GT27 GT25 GT23 GT21

GOT displays and records the image taken by a video camera connected to the multimedia unit and plays back the saved video image. The operational status on the production line can be recorded and played back, and visual clarity of the image helps you to analyze the cause of the error.

* Excluding GT2705-VTBD.



▶ Receive audio notifications on events from GOT

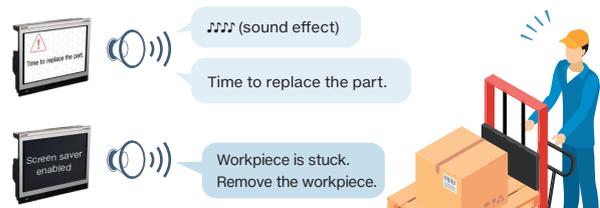
Sound output unit + amplifier built-in speaker

GT27 GT25 GT23 GT21

GOT can be used to output sound data. Outputting a notification sound can reliably convey the information to the operators who are working away from the GOT. Sound notifications can also be output while screen saver is active.

* Excluding GT2505-VTBD, GT2506HS-VTBD, and GT2505HS-VTBD.

* GT25 wide models have a built-in sound output interface so that a sound output unit is not required.



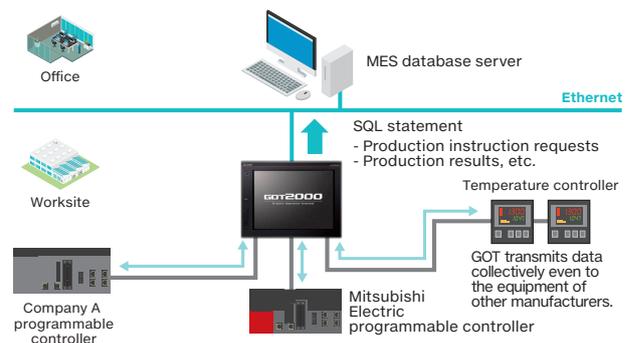
▶ Easily link GOT and database

MES interface function license

GT27 GT25 GT23 GT21

GOT uses SQL statements*1 to transmit data from connected industrial devices to the database in the server personal computer.

*1 SQL is a language used to operate the database.



Startup easily with ready-to-use sample screens

GOT is equipped with a variety of VGA (resolution) sample screens that can be used just by changing the GOT type. Use these sample screens to reduce time for screen design.



Programmable controller connection sample

Use this sample screen when connecting a MELSEC programmable controller, and using the various functions and device monitor.



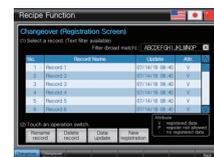
Inverter connection sample

Use this sample screen when connecting various inverters, and changing the operation speed/rotation direction issued to the inverter, or monitoring the output frequency or output current, etc.



Energy measuring unit connection sample

Use this sample screen to monitor the current, power, and electric energy, etc., when connecting the energy measuring unit with MODBUS®/RTU (RS-485).



Function sample, standard screen sample

These sample screens can reproduce the GOT functions just by changing the GOT type in the variety of GOT2000 series samples available.

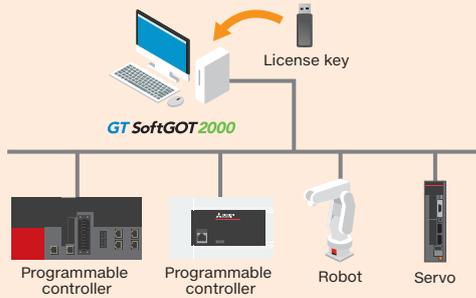
GT SoftGOT2000



Basic functions

Turn personal computer into a GOT

GT SoftGOT2000 is the software that has the same monitoring functions as the GOT2000 Series and is used on personal computers and panel computers by connecting to various industrial devices.



Reusing GOT2000 Series project data

The project data of GT SoftGOT2000 is created with GT Designer3 in the same way as GOT. By converting the GOT type to GT SoftGOT2000, the project data for GOT2000 can be used without modification.



Applied functions

► Easily monitor the worksite from a remote location without creating screens

SoftGOT-GOT link function

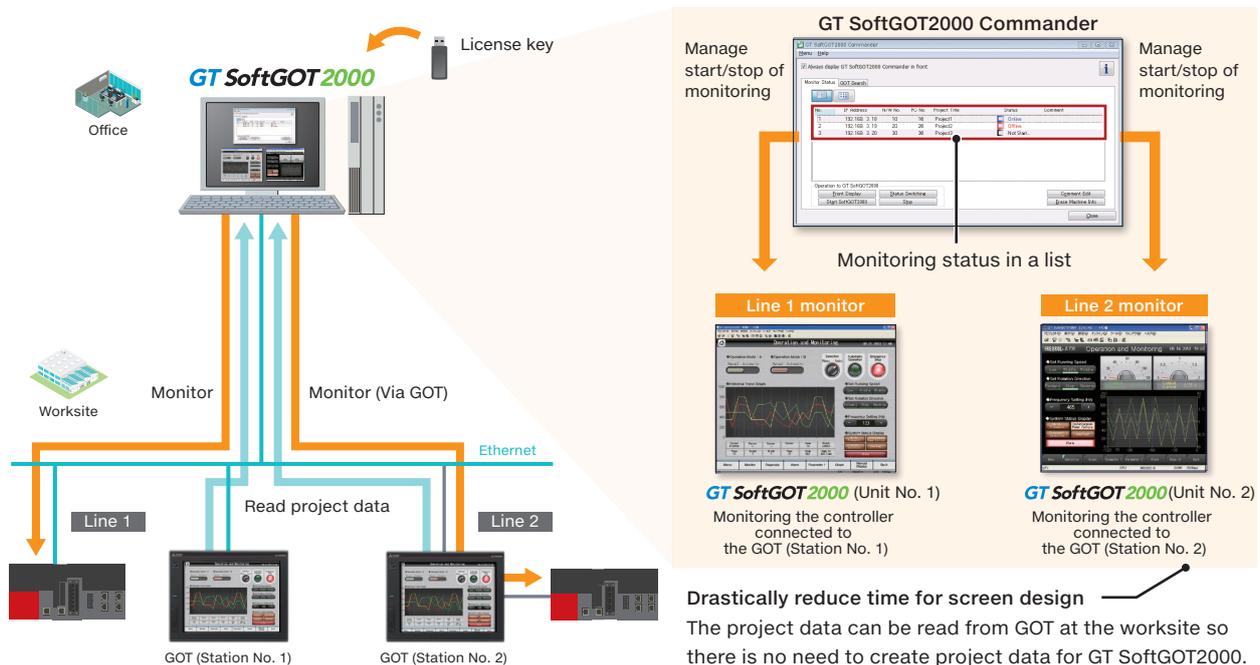
GT SoftGOT2000 reads project data from on-site GOT via Ethernet, and uses the project data to monitor connected devices. GT SoftGOT2000 can also display different screens from those on GOT. Since GT SoftGOT2000 displays the GOT screen on the computer, the processing load on the GOT is reduced.

* Not supported by GT23 and GT21.

GT SoftGOT2000 Commander

By using GT SoftGOT2000 Commander, multiple GT SoftGOT2000 modules using the SoftGOT-GOT link function can be managed. On GT SoftGOT2000 Commander, you can check the monitoring status of GT SoftGOT2000 modules, and start or stop monitoring on the modules.

* Not supported by GT23 and GT21.



GT SoftGOT2000

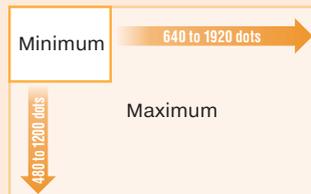
Flexibly support various resolutions

Screen sizes can be changed according to the application by designating the resolution, which can be set with fixed values or freely specified by the user.

Fixed resolution

Horizontal (X): 640, 800, 1024, 1280, 1600, 1920 dots

Vertical (Y): 480, 600, 768,
1024, 1200 dots



Resolution specification
(1-dot unit)

Horizontal (X): 640 to

1920 dots

Vertical (Y): 480 to 1200 dots

Monitoring multiple lines from a remote location

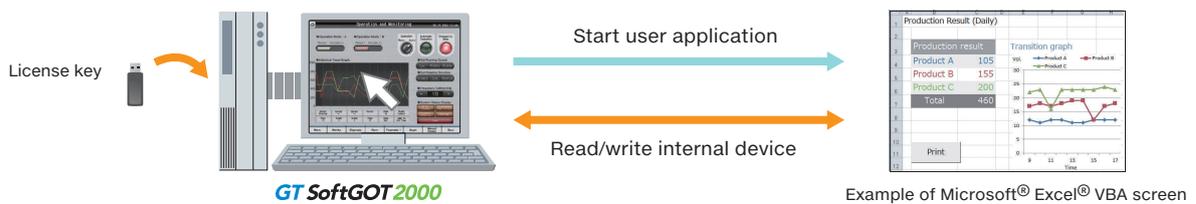
Multiple lines can be monitored by starting up multiple modules (up to four modules recommended) of GT SoftGOT2000 simultaneously with one computer.



Interaction with other applications

Application startup

The GT SoftGOT2000 internal devices can be read and written from the user created application. By arranging touch switches for starting applications on the GT SoftGOT2000 screen, other applications (Microsoft® Excel®, etc.) can be started while monitoring GT SoftGOT2000. Create an advanced system by linking data with the user created application.

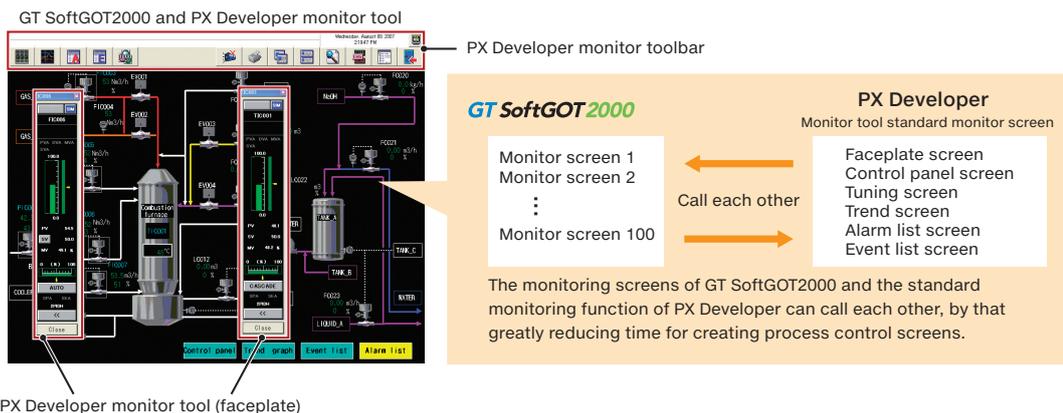


Example of Microsoft® Excel® VBA screen

Engage with MELSEC process control

Interaction with PX Developer

Simplify design and maintenance of a process control system by connecting PX Developer's monitor tool (standard monitoring screens) with GT SoftGOT2000. This process control monitoring system can be easily used in various process control applications.



* A separate GT SoftGOT2000 license key must be installed on the computer to use the GT SoftGOT2000.

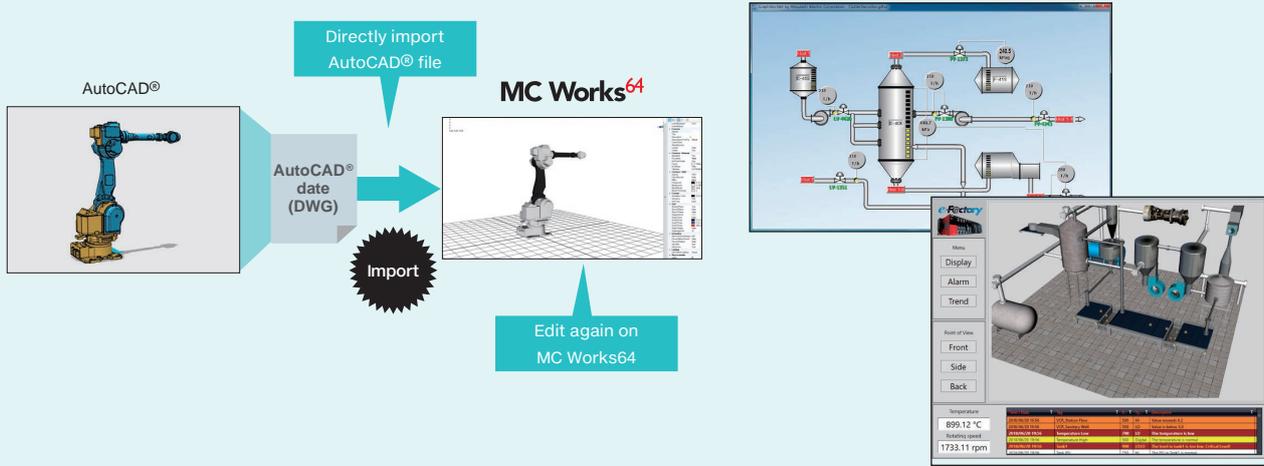
MC Works64

Basic functions



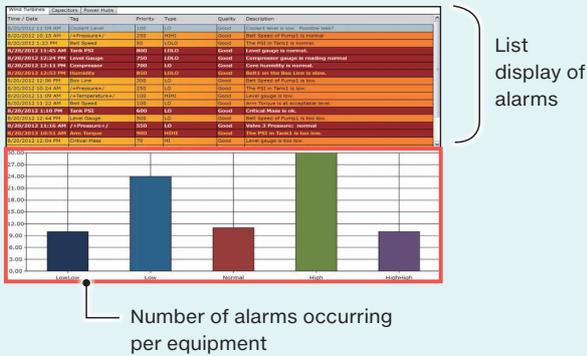
Advanced graphic screens

With flat 2D graphics, it may be difficult to monitor the devices. On the other hand, 3D graphics can enhance the visibility with stereoscopic displays. 3D graphics allow the device to be rotated 360° and viewed from various angles, so you can accurately and intuitively monitor and control the device status. The graphic screens are created by importing the 2D and 3D CAD data, by that greatly reducing the screen designing time.



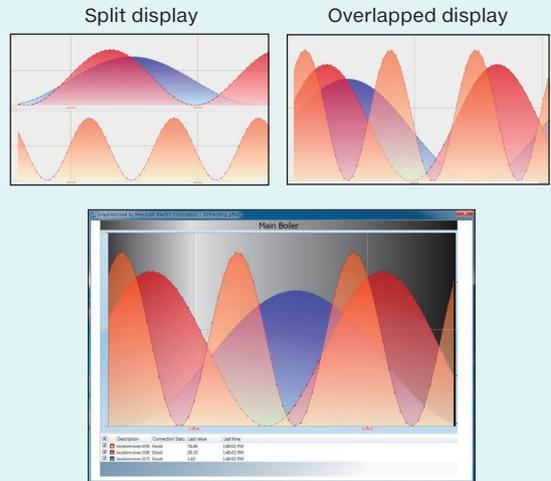
Easy to read alarm displays

The real-time alarms and alarm history can be displayed as lists. With charts prepared for each alarm type (serious/moderate/minor faults), you can see the number of current faults, pinpoint the problem points, and take actions by that improving the operation rate.



Trend displays

Display real-time trends or historical trends. Multiple data can be displayed in a single trend display, which can also be split or overlapped and displayed. You can also pause the trend display, add display data, or change the display scale.



MC Works⁶⁴

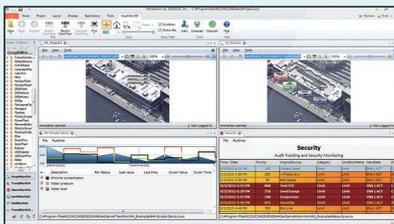
Multi-monitor and multi-view screen display

The various monitoring screens provided with MC Works64 including the 3D graphic screen, map monitoring screen, alarms, and trends can be displayed at once using the multi-monitor or multi-view screen display.

Multi-monitor screen display

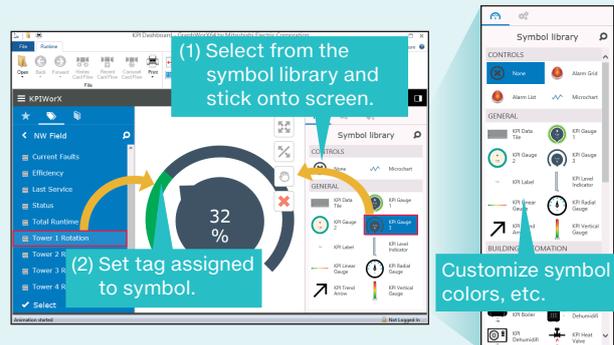


Multi-view screen display



Create customized monitor screens

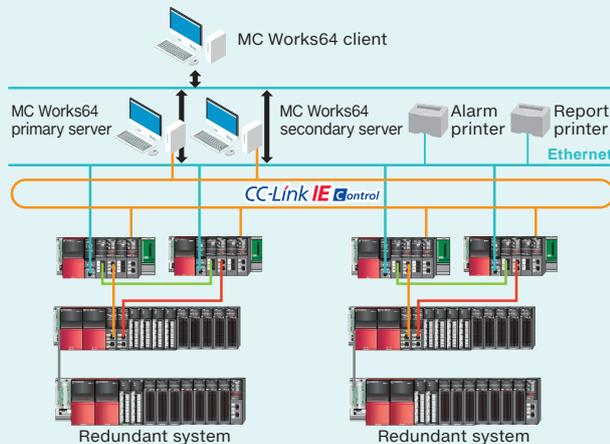
While the system is running, you can freely arrange symbols such as instruments, alarms, or trends on the screen to create a customized monitoring screen. Personalized monitor screens can be saved, and called out later for further customization. (KPIWorX)



Compatible with MC Mobile

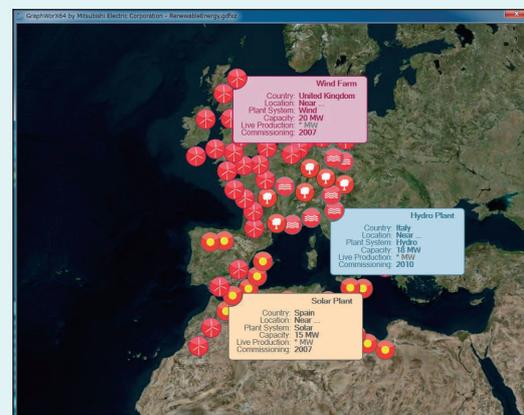
Server and client configuration

With MC Works64, you can construct redundant server systems and server-and-client systems. A system consisting of a control server and standby server can be configured with two servers, to enhance the reliability of the system, and reduce the communication load on the network. Realize configurations suitable for the system scale from large-scale systems to standalone systems.



Using maps to monitor wide areas

You can use Microsoft® Bing Maps™ and other map systems via the Internet to display geographical information for wide area monitoring. You can monitor business bases and factories distributed around the world on a single map. In addition, when you use a pin, you can view detailed information and alarm statuses. You can also use GPS data for monitoring.



MC Works64



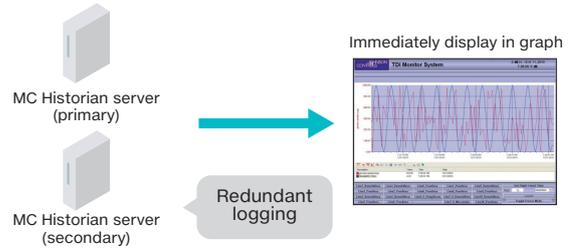
Use with options to increase usage possibilities

► Effective logging to increase data reliability

MC Historian

This high performance and high reliability data logger can collect 100,000 points per second*, and is capable of logging the operation results using formulas. The high compression logging function enables long-term logging. A highly reliable system can be constructed during a redundant server and distributed processing.

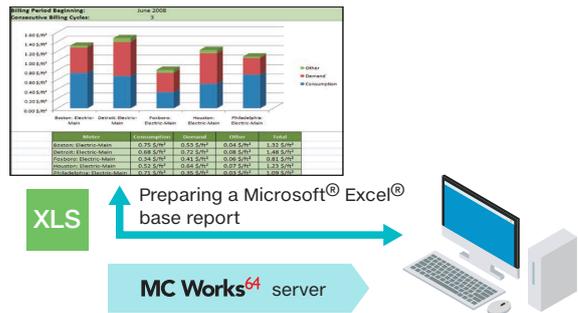
* Depends on system configuration.



► Simplify report preparation

ReportWorX Lite

A variety of reports, including daily, weekly, monthly, and yearly reports can be created from the database. Reports are created with Microsoft® Excel®, and can be saved with HTML or PDF formats. Templates for several report formats can also be registered.



► Smart monitoring from mobile application

MC Mobile

MC Mobile software monitors important applications for buildings and factories. Important data can be accessed and monitored from a variety of mobile terminals when needed. Microsoft® (Windows Phone®, Surface®), Apple® (iPhone®, iPad®), Android® (Phone, Tablet) and HTML5 compatible mobile terminals are supported.



► Efficiently conserve energy

AX Energy

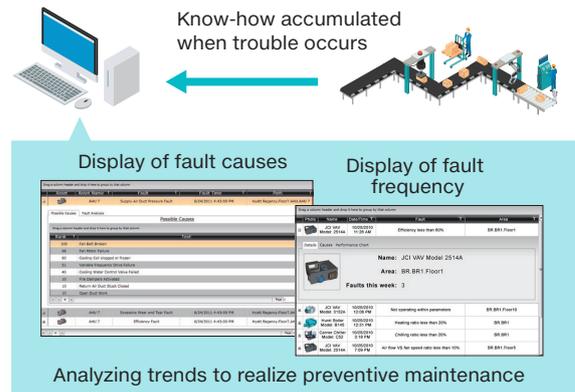
With AX Energy, you can visualize and analyze the factory and equipment energy consumption rates (electricity, gas, etc.) and the CO2 emissions, and can reduce costs by suppressing needless energy consumption. Daily and monthly energy consumption rates can be displayed in graphs.



▶ Preventive maintenance and fault analysis

AX Facility

Your accumulated troubleshooting know-how can be set and used to support early recovery from trouble. The causes of equipment faults and the frequency of occurrence are analyzed to identify trends and realize preventive maintenance.



▶ Statistical process control (SQC/SPC)

AX Quality

AX Quality creates management charts for the analysis of quality control and process capacity, reducing the labor of onsite operators and managers. In addition to analyzing SQC/APC data, AX Quality provides SQC charts and reports.

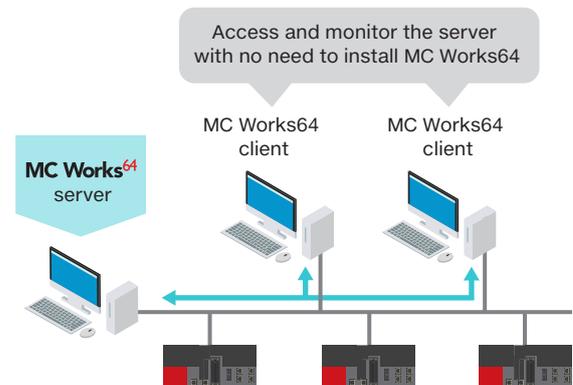


Variation in production line data is displayed. If the variation is high, an alarm is issued to notify the operator that the quality may be affected.

▶ Simultaneous monitoring with two or more personal computers

WebHMI

WebHMI uses your MC Works64 server as a web server. This allows operators to access and monitor important data in the web server from a random web client on the web. Most of the MC Works64 functions can be used without installing MC Works64 in the client.



Creating an information society with e-F@ctory to optimize the entire factory.

The FA integrated solution “e-F@ctory” uses FA technology and IT technology to reduce total costs for development, production, and maintenance. e-F@ctory supports the user’s continued improvement activities, and proposes solutions for advanced manufacturing. Total cost reductions are realized with the following four points.

Reduction of energy costs

Energy saving solution

As users seek ways to reduce energy used in the factory, Mitsubishi Electric’s energy saving technology provides a way to comprehensively visualize energy, reduce consumption rates, and increase productivity.

Reduction of FA-IT integration costs

Edge-computing (FA-IT information connection)

FA-IT integration costs are reduced by directly connecting the production site to IT system without a gateway computer such as personal computer. The integrated data is used to improve productivity and realize traceability, etc.

Reduction of costs from development, production to maintenance

iQ Platform

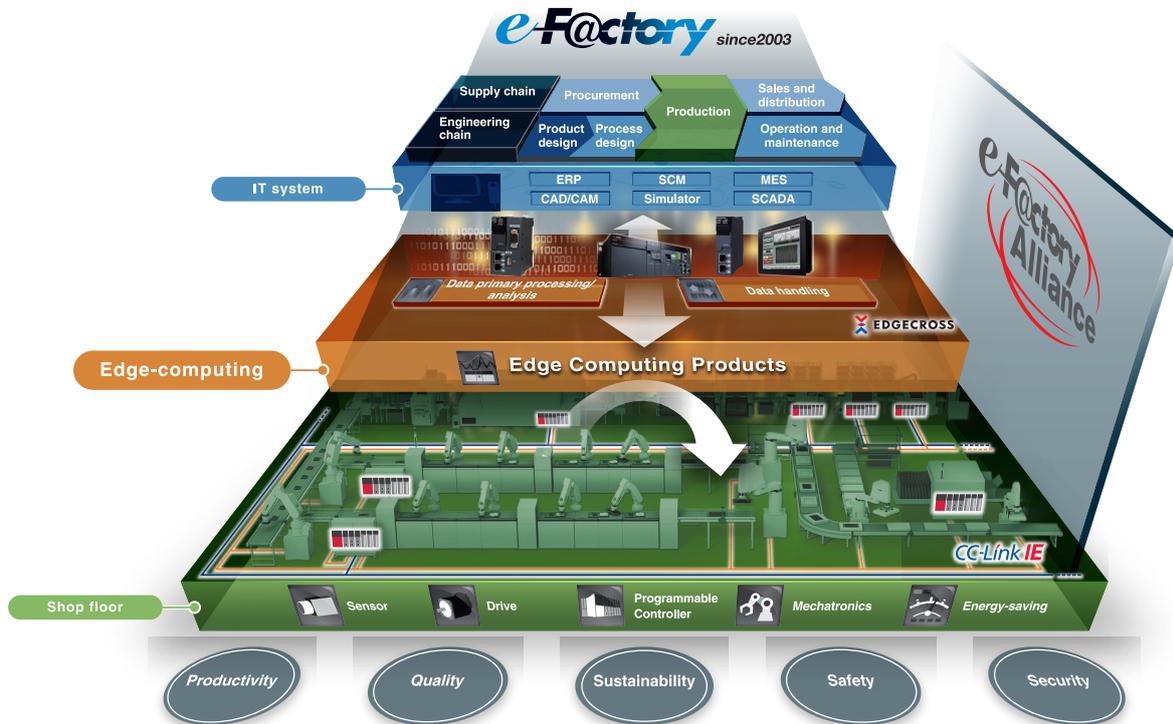
iQ Platform integrates and connects the controller HMI that control the production system, the engineering network, and the network. Costs can be reduced in all phases from user design, startup, operation and maintenance.



Reduction of sensor setting and maintenance costs

iQ Sensor Solution

Setting and maintenance of various sensors in the production line are realized with one tool. The iQSS compatible partner sensors can be collectively set and managed, by that reducing system design, startup, and maintenance costs.



Best-in-class solutions across the ecosystem

e-F@ctory Alliance

The e-F@ctory Alliance is an ecosystem offering best-in-class solutions by combining products between Mitsubishi Electric and its various partners. Close collaboration with such partners broaden the choices for the customer and realize the best solution possible.



GOT2000 Series



GOT2000
Graphic Operation Terminal

GT SoftGOT2000

The Mitsubishi Electric Graphic Operation Terminal GOT2000 Series continues to impress with solutions that fulfill all demands

The GOT2000 boasts advanced functionality, acts as a seamless gateway to other industrial automation devices, all while increasing productivity and efficiency. The high quality display is designed to optimize operator control and monitoring of device and line statuses. If you are looking for an intuitive operation terminal, the new tablet-like operability and the higher functionality of operation terminal makes the GOT2000 the ideal choice.



For the details about the GOT2000 Series, please refer to the Graphic Operation Terminal GOT2000 Series Catalog (L(NA)08270ENG).

MC Works64



MC Works⁶⁴

Realizing advanced integrated monitoring systems.

MC Works64 SCADA software for e-F@ctory

MC Works64 is compatible with a variety of industrial devices and is equipped with versatile functions to realize a highly functional reliable monitoring control system. MC Works64 provides solutions for various needs related to integrated monitoring and analysis.



For the details about the MC Works64, please refer to the Mitsubishi Electric SCADA software MC Works64 Catalog (L(NA) 08380ENG).

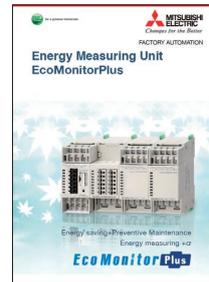
Energy Measuring Unit



EcoMonitorPlus

Supplementing power monitoring with energy saving and preventive maintenance. Mitsubishi Electric Energy Measuring Unit EcoMonitorPlus

Select a combination of units with various measuring instruments and functions according to your needs. Use the EcoMonitorPlus energy measuring unit to create additional value through "power monitoring", "construction of a visualization system", "preventive maintenance and safe operation of production facilities", and "improved productivity".



For the details about the EcoMonitorPlus, please refer to the Energy Measuring Unit EcoMonitorPlus Catalog (Y-0753).

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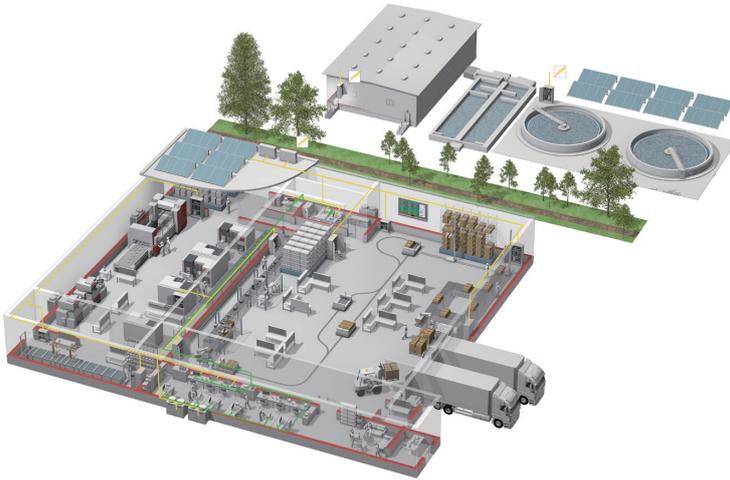
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YOUR SOLUTION PARTNER



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

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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



Numerical Control (NC)



Robots: SCARA, Articulated arm



Processing machines: EDM, Lasers, IDS



Transformers, Air conditioning, Photovoltaic systems

* Not all products are available in all countries.

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