



for a greener tomorrow



**MITSUBISHI
ELECTRIC**

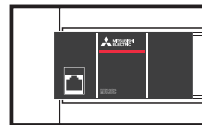
Changes for the Better

FACTORY AUTOMATION

MELSEC iQ-F Series
iQ Platform-compatible PLC

Reborn

MELSEC iQ-F
series



The next level of industry

Reborn into an ideal form.

Reborn

MELSEC iQ-F series



Reborn 1 NEW

More control points per CPU module!

The importance of being system-oriented is growing even for small- and medium- sized facilities. The basic performance has been greatly improved, so a single CPU module can cope with increases in control scale and the number of control devices.

before

Number of input/output points
256 points

new!

Number of input/output points
384 points*1

Built-in CC-Link IE Field Network Basic
6 stations

Built-in CC-Link IE Field Network Basic
16 stations

Reborn 2 NEW

Double the program capacity, and capacity options to fit the control scale!

To support advanced control, the program capacity has been doubled. Furthermore, you can select from 64 k or 128 k steps*2 according to your control scale. The range of control has been expanded to support various uses.

before

Program capacity
64 k steps

new!

Program capacity
128 k steps*2

Reborn 3

Convenient and easy-to-use debugging environment! Quick problem analysis.

Prevent avoidable problems in advance. When a problem does occur, quickly determine its cause. Various functions guard against unexpected problems.

Investigate problem causes



Simulation function

Memory dump function

Quick recovery



Real-time monitoring function

Backup/restore functions

*1: Supported by CPU module firmware version 1.100 or later and product number 17X**** or later.

*2: Supported by CPU module firmware version 1.100 or later and product number 17X**** or later. Some operation restrictions apply when 128 k steps is selected. For details, refer to the manual.

Based on the FX series concept of “simplicity, convenience, and high cost performance”, and while keeping in mind the perspective of our customers, we have reinvented the MELSEC-F series as “iQ-F Reborn”, with the goal of creating products that will continue being used far into the future.

Through the MELSEC iQ-F series, we will contribute to customers by offering an array of functions and services enhanced by IoT.

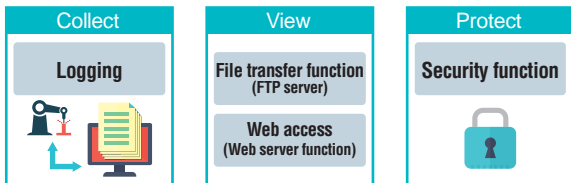
And, as always, we will continue to stand closest to our customers.



Reborn 4

“Functions for IoT” built into CPU modules.
Easily collect and use data!

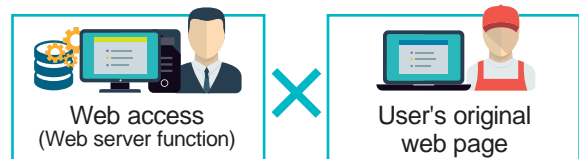
The basis of IoT is to collect the information of devices. Implementing IoT through coordination with the MELSEC iQ-F series is possible not only with the new system, but with an existing FX3 series, too.



Reborn 5 NEW

Create new services that use IoT! From simply “revealed” to purposefully “displayed”.

By accessing devices from a web browser, you can monitor them and change their current values. These values can be displayed on user-created web pages. Create new services that not only reveal the operating status of the system but display it clearly.



Connective MELSEC iQ-F Improved connectivity Enables connection with various devices



*: For details on products by companies other than Mitsubishi Electric, please contact the manufacturer.

Aiming for FA devices that offer solutions to customers' issues

Improved productivity, enhanced security, IoT coordination.

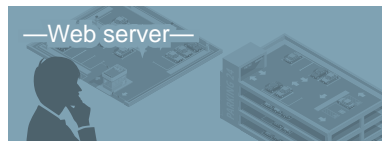
The MELSEC iQ-F series solves various issues experienced on site.



Do you have these issues?

01

We want to easily check and operate devices from a smartphone or tablet.

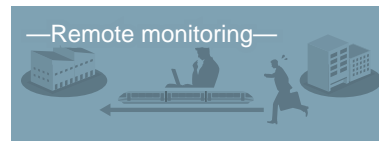


Can device information be easily displayed? We want to improve our utilization rate with the often mentioned IoT.

P5→

02

We want to monitor the status of equipment, even at remote locations.



Every time a trouble occurs, we have to travel to a remote location to investigate the cause and do maintenance. Is there an easier way to check the status of the equipment?

P6→

03

We want to manage information in our production history for quality improvement.



Data collection is essential for traceability. We want to know how to efficiently keep and use logs.

P7→

04

We want to quickly investigate the cause of device problems.

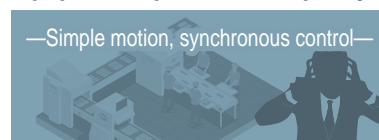


Sudden problems are sometimes inevitable. We want to reduce the time and effort needed for recovery as much as possible.

P8→

05

We want to eliminate unnecessary time loss and increase our equipment's production capacity.



We want to produce more efficiently with synchronous control of driving devices using servomotors. We'd like the system to be easy to introduce.

P9→

06

We want to automate our equipment and improve productivity.



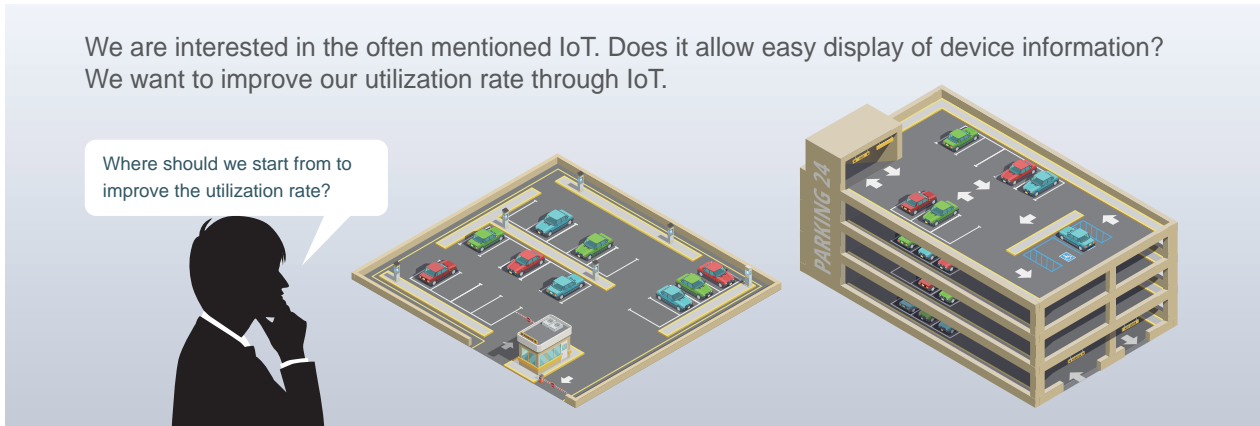
We would like to increase our automated processes, so that we can reduce labor as much as possible. We would also like to introduce robots, to improve quality and productivity.

P10→

For details on the functions introduced in each example, please refer to the respective manual or the MELSEC iQ-F Series General Catalog.

01 We want to easily check and operate devices from a smartphone or tablet

—User web page—



Develop new businesses through purposeful display!

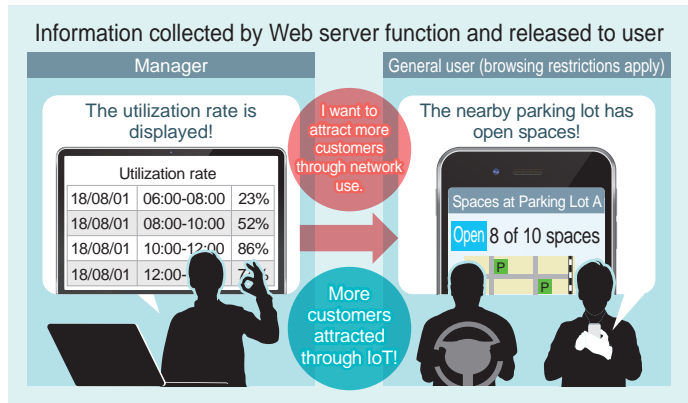
Gathered device information can be displayed on a personal computer or tablet by using the web server function. It can be introduced easily by specifying the network settings and IP addresses without programming. In addition to analyzing the collected operating conditions, you can create new services and businesses by publishing this information on web pages for general users.

Keyword ▶ Web server function*1

Keyword ▶ User web page*2

*1: Supported by CPU module firmware version 1.060 or later.

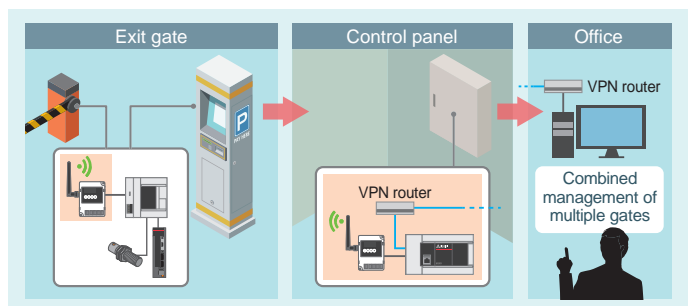
*2: Supported by CPU module firmware version 1.100 or later and product number 17X**** or later.



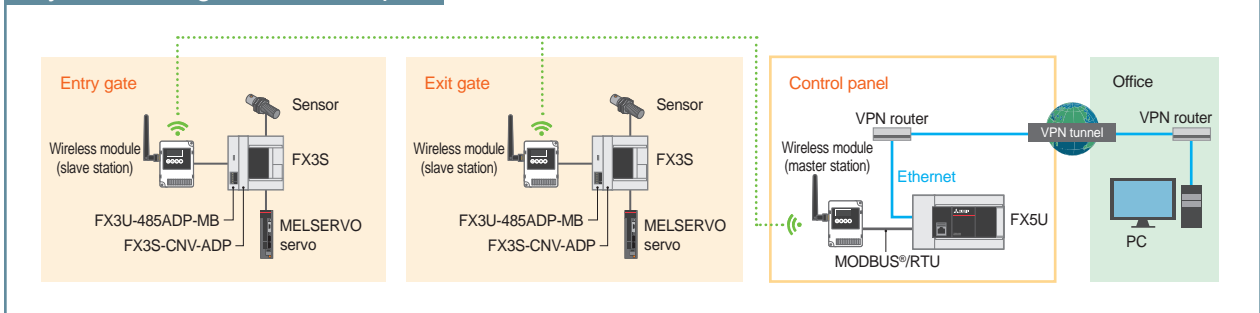
Plus ONE: Let's turn existing devices into IoT devices!

You do not have to give up on IoT just because your existing devices are not connected to a network. By installing wireless modules that do not require wiring, you can "display" your devices without even connecting an Ethernet cable. IoT can be integrated with short lead time and at low cost.

Keyword ▶ Collaboration using wireless modules



System configuration example



01

We want to easily check and operate devices from a smartphone or tablet.

02

We want to monitor the status of our equipment, even at remote locations.

03

We want to manage information in our production history for quality improvement.

04

We want to quickly investigate the cause of device problems.

05

We want to eliminate unnecessary time loss and increase our equipment's production capacity.

06

We want to automate our equipment and improve productivity.

02 We want to monitor the status of equipment, even at remote locations

—Remote monitoring—

01 We want to easily check and operate devices from a smartphone or tablet.

02 We want to monitor the status of equipment, even at remote locations.

03 We want to manage information in our production history for quality improvement.

04 We want to quickly investigate the cause of device problems.

05 We want to eliminate unnecessary time loss and increase our equipment's production capacity.

06 We want to automate our equipment and improve productivity.

The production site and the office are in different locations. Having to travel to the factory each time maintenance is needed is very burdensome.
Is there a way to check the operating status from a remote office or on the go?

Taking a business trip to check on the status...

It's a long way to the factory... If I leave now, will I be able to finish maintenance by the end of the day?



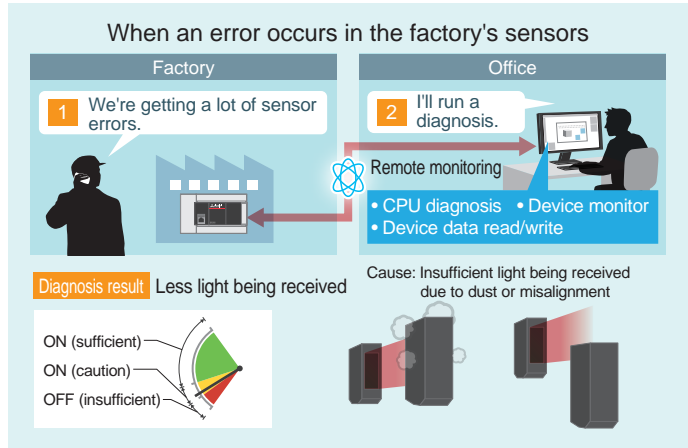
A simple diagnosis of equipment can be done from remote locations!

By connecting to the network using the built-in Ethernet interface on the CPU module, you can check the status of devices at remote locations from the office or on the go, as well as investigate (analyze) problem causes without having to visit the site.

Keyword ▶ Web server function*

Keyword ▶ iQSS sensor link

*: Supported by CPU module firmware version 1.060 or later.

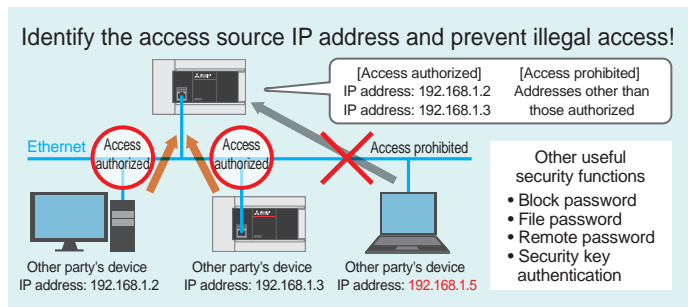


Plus ONE: Block unauthorized access!

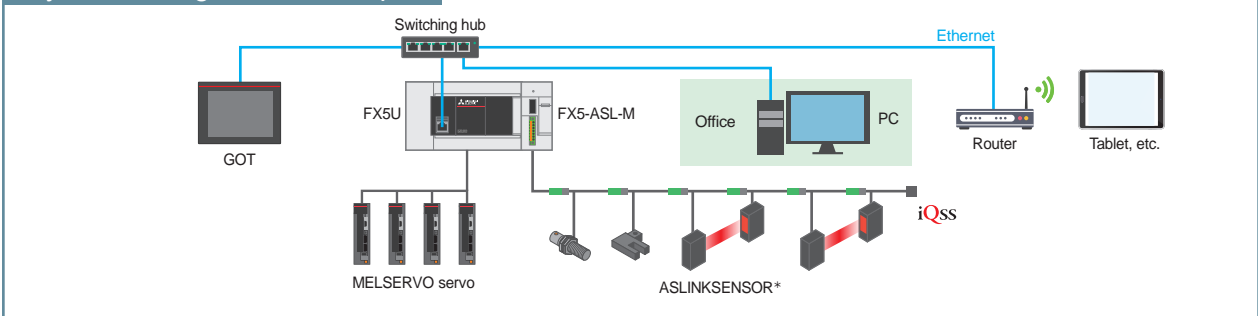
Enhancing security is essential for protecting program assets. Security can be set for each IP address through simple configuration, to prevent unauthorized access from third parties. This also prevents the risk of other designers from accidentally rewriting data.

Keyword ▶ IP filter function*

*: Supported by CPU module firmware version 1.050 or later.



System configuration example

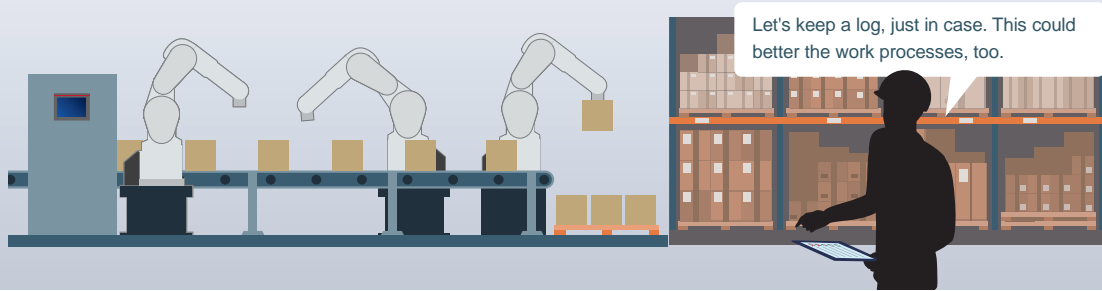


*: Manufactured by Anywire Corporation. For details, please contact the manufacturer.

03 We want to manage information in our production history for quality improvement

—Traceability—

Is there a data collection method that can be introduced immediately to establish traceability? We also want to collect and manage information on the entire process daily, as a preventative measure.



Easy log collection using parameters only

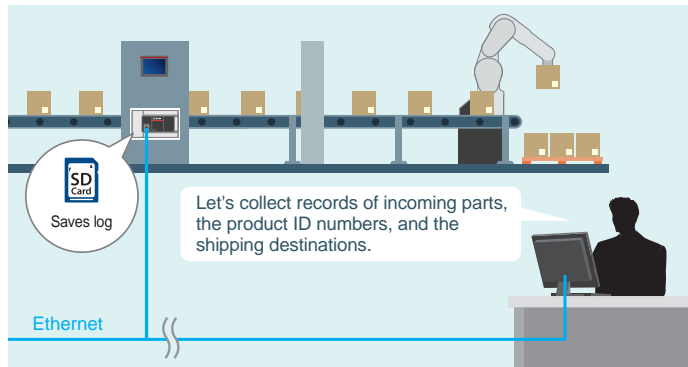
Data can be collected by just setting the parameters, and programming is not required. Efficient data collection focused on only the desired data is possible. For example, specifying the time interval and trigger. The collected data can be used for troubleshooting problem causes.

[Data collection example]

- ID number of product read from barcode
- Daily production/quality control information, etc.

Keyword ▶ Data logging function*

*: Supported by CPU module firmware version 1.040 or later and product number 16Y**** or later.

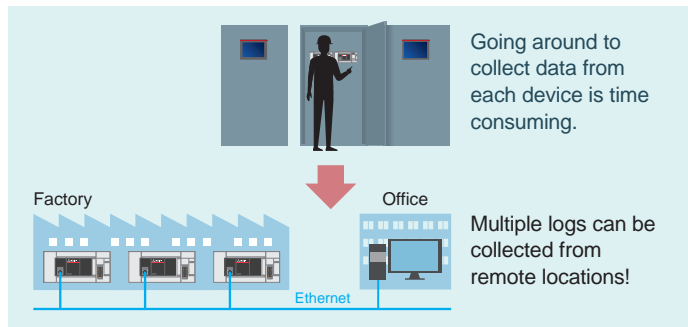


Collect all of the factory's logs at once from your office!

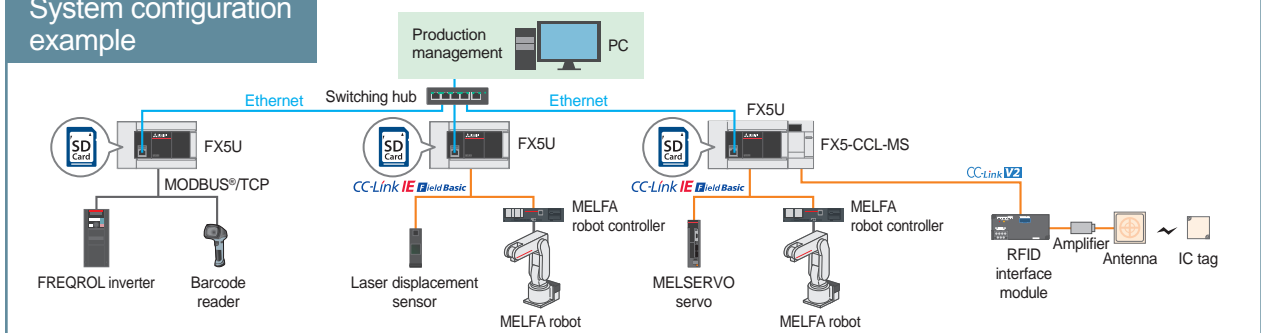
Collecting logs from each device at the site is a burden! Multiple logging files can be managed collectively from an office computer, reducing management and maintenance work.

Keyword ▶ FTP server function*

*: Supported by CPU module product number 16Y****. Reading of logging data is supported by CPU module firmware version 1.040 or later, and file writing/deleting, etc. is supported by CPU module firmware version 1.050 or later.



System configuration example



01

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02

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06

We want to automate our equipment and improve productivity.

04 We want to quickly investigate the cause of device problems

—Troubleshooting—

01 We want to easily check and operate devices from a smartphone or tablet.

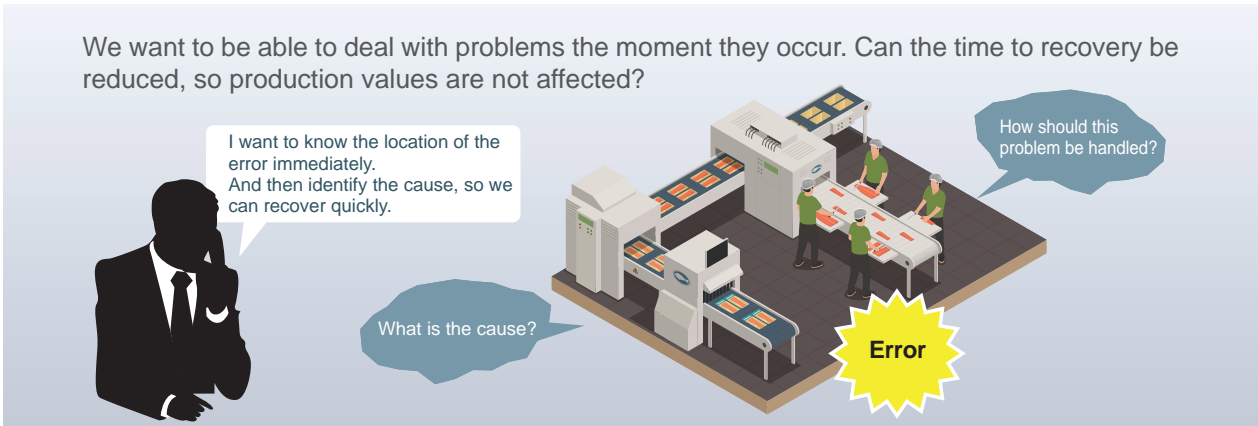
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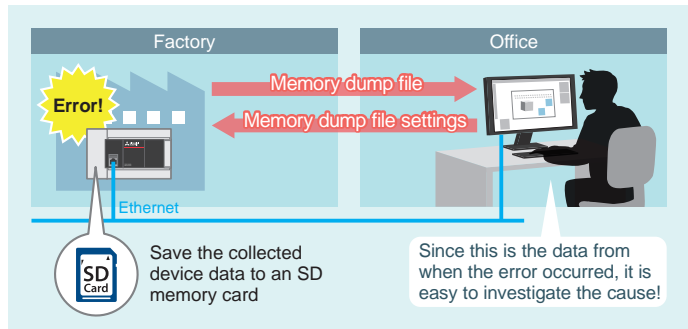


Save the data at the moment the error occurs!

Identifying the location of an error is difficult after the problem has occurred. Because the device values can be saved automatically when an error occurs, the location of the error can be easily identified, and the recovery time can be shortened. Measures against recurrence can also be taken by analyzing the data.

Keyword ▶ Memory dump function*

*: Supported by CPU module firmware version 1.050 or later and product number 16Y**** or later.

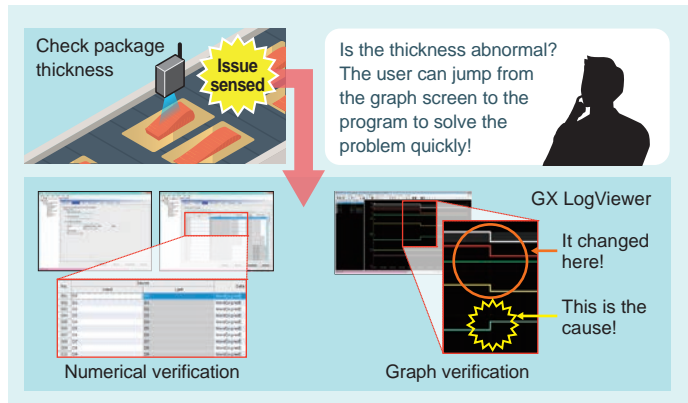


Check the situation while watching the movement of the device!

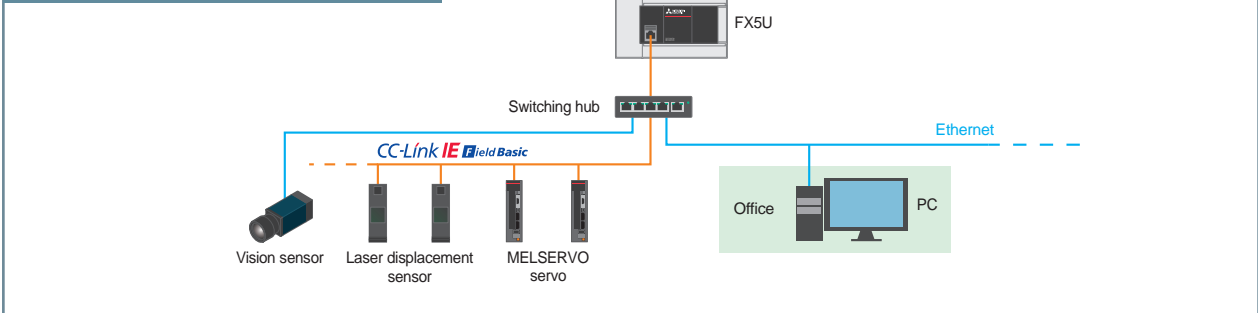
The operation of the device can be displayed as numerical values and graphs. By displaying changes in the measured data in graph form, the parts where changes occurred are readily identifiable. The cause of a problem can be immediately investigated while looking at the graph.

Keyword ▶ Real-time monitoring function*

*: Supported by CPU module firmware version 1.060 or later.



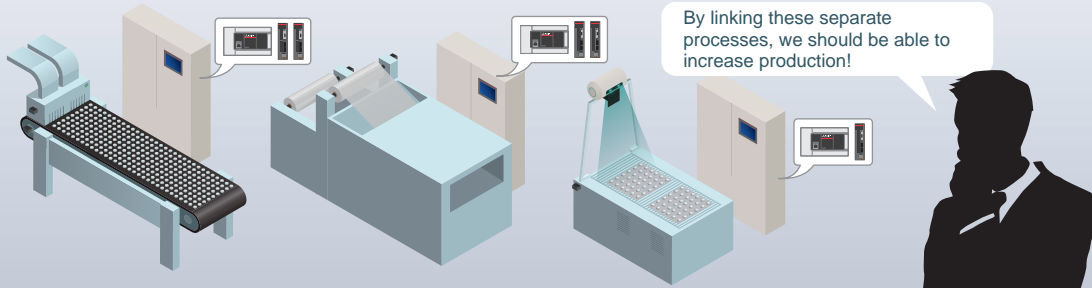
System configuration example



05 We want to eliminate unnecessary time loss and increase our equipment's production capacity

—Simple motion, synchronous control—

We aim to shorten tact time to raise production values. Because there is no space to expand the line, we want sophisticated control with a compact footprint.



Achieve stable, high-speed and high-precision positioning!

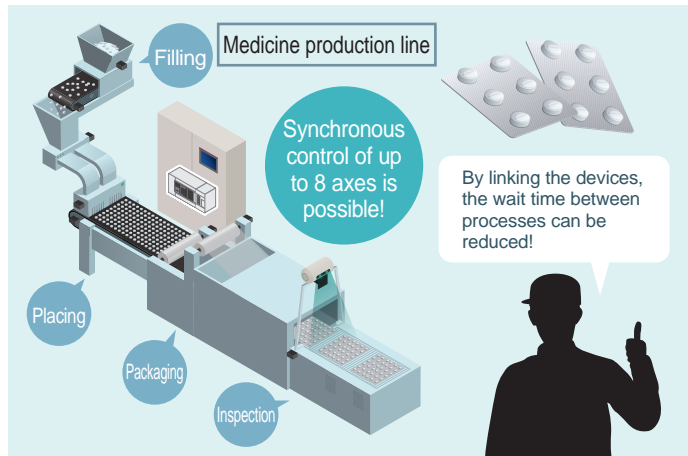
The FX5-80SSC-S offers synchronous control and an 8-axis servo amplifier all in one unit, for use in various applications.

Connecting to the servo amplifier is as easy as simply inserting a fiber-optic cable, which saves wiring and labor.* An added benefit is high noise immunity, which reduces malfunctions due to disturbances.*

[Supported control methods]

Positioning control, advanced synchronous control, cam control, speed-torque control, etc.

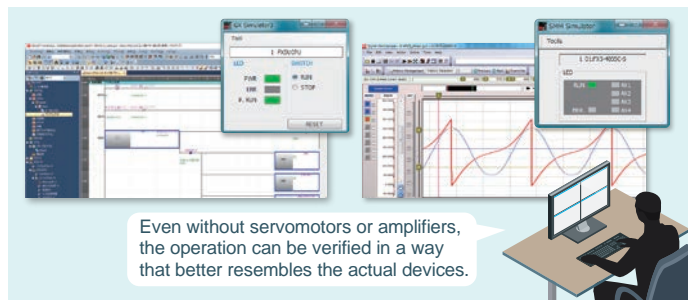
*: SSCNET III/H is supported.



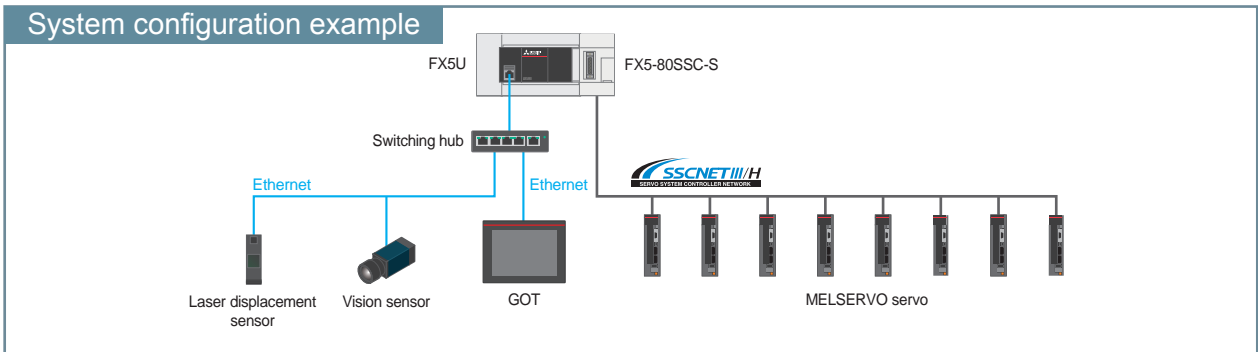
Keyword ▶ Simple motion module 8-axis control module

Plus ONE: GX Works3 simulation function

Even without the actual device, you can check the operation of the program on a personal computer. Because the operation can be checked while watching the movement on the PC, designs can be made without reworking. Simulation using the Simple motion module is also possible.



System configuration example



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We want to automate our equipment and improve productivity.

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—Automation and reducing labor—

01 We want to easily check and operate devices from a smartphone or tablet.

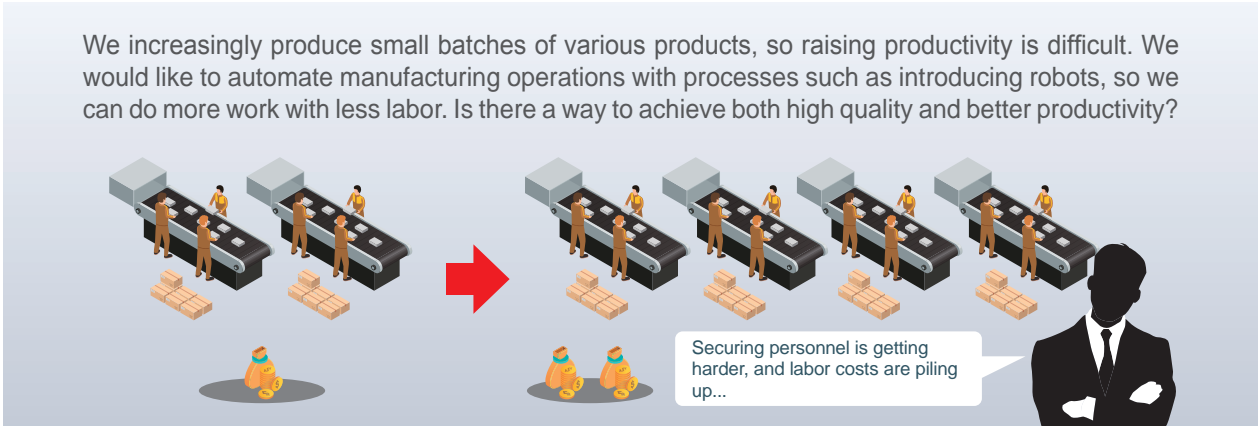
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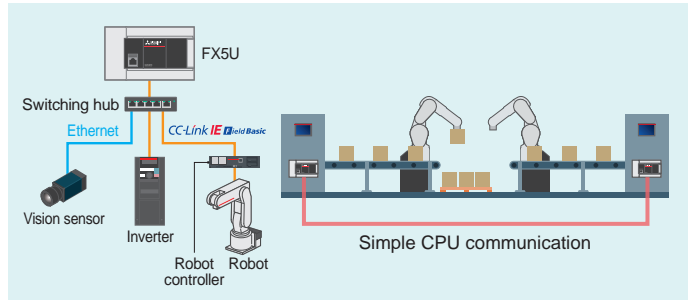


Increase process automation and reduce labor costs by introducing robots!

The MELSEC iQ-F series also enables automation by introducing robots. With the Mitsubishi Electric Industrial Robot MELFA, CC-Link IE Field Network Basic connection is possible. Through simple CPU communication, control between manufacturing processes using robots can be easily coordinated. The entire facility can be smoothly automated.

- Keyword** ▶ CC-Link IE Field Network Basic*
- Keyword** ▶ Simple CPU communication

*: Supported by CPU module firmware version 1.040 or later.

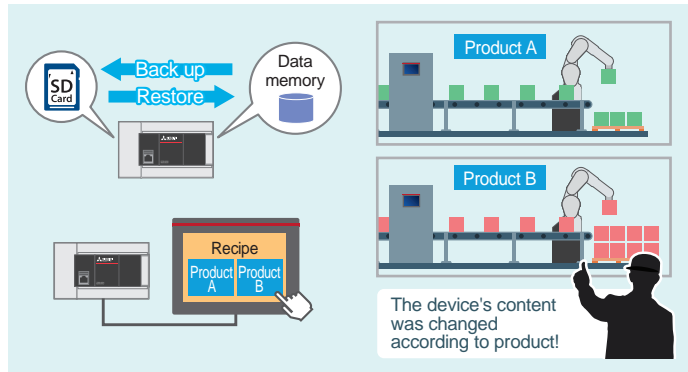


04 Minimize the time required for setting up product changes!

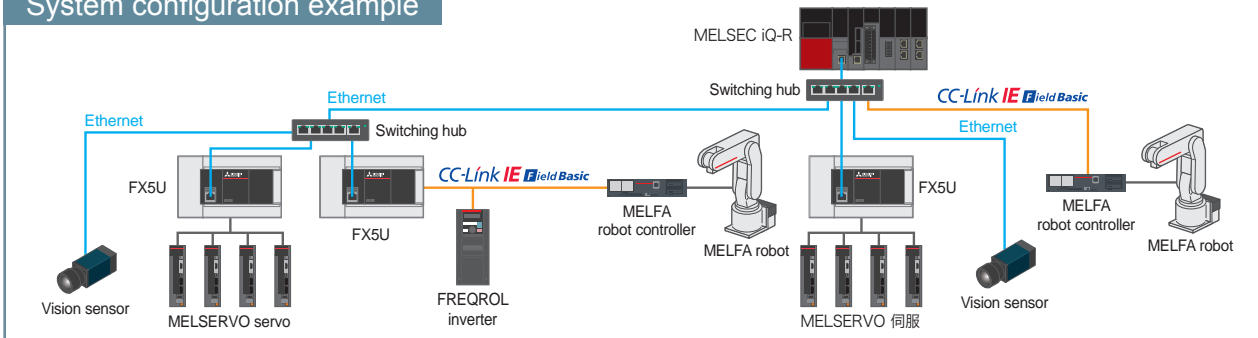
By placing the data memory on an SD memory card, the memory can be restored to the device just by turning on the power supply, so the production line gets a quick start. Because multiple data memories can be backed up to an SD memory card, creating setup recipes in coordination with GOT simplifies the changeovers, resulting in higher productivity.

- Keyword** ▶ Backup/restore functions*

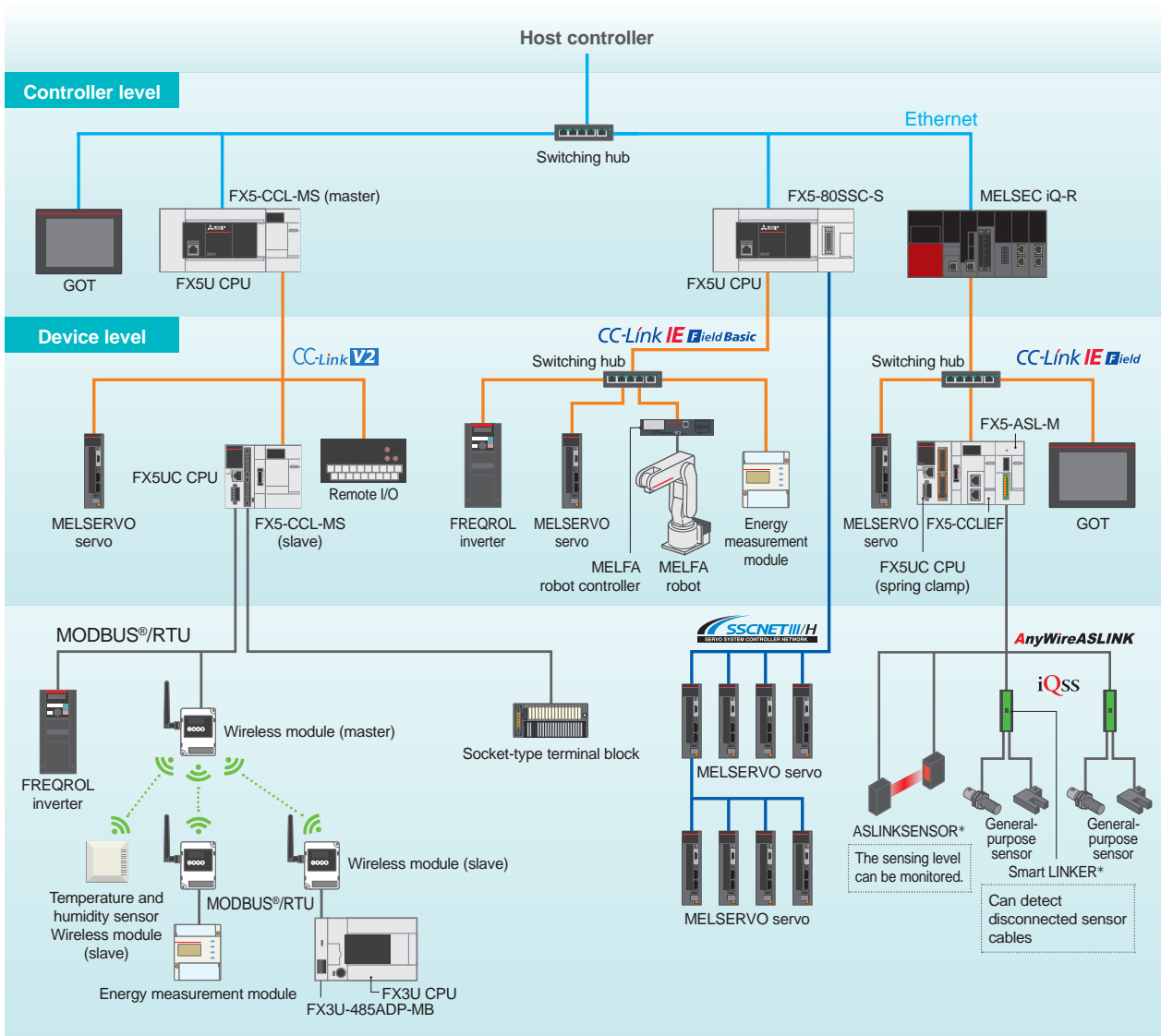
*: Supported by CPU module product number 16Y**** or later. Data memory backup/restore is supported by CPU module firmware version 1.050 or later.



System configuration example



Connective MELSEC iQ-F Improved connectivity (System configuration example)



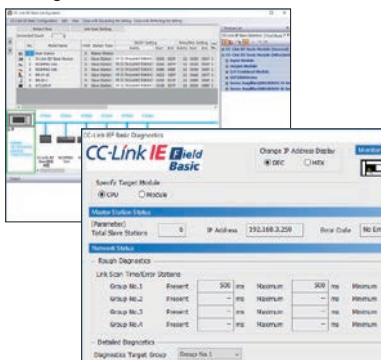
*: Manufactured by Anywire Corporation

Display the entire network with GX Works3

The operation status of not only the driving devices connected to the network, but everything including the sensors, can be easily displayed. The ability to quickly identify problem areas allows you to shorten the time to recovery and improve production efficiency.

• Network setting screen (CC-Link IE Field Basic)

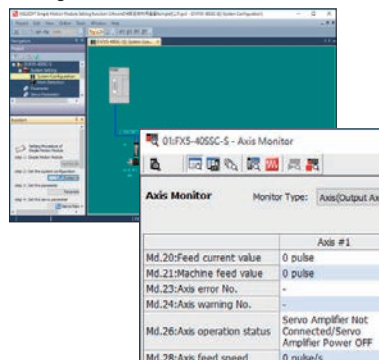
Setting screen



Diagnosis screen

• Simple motion

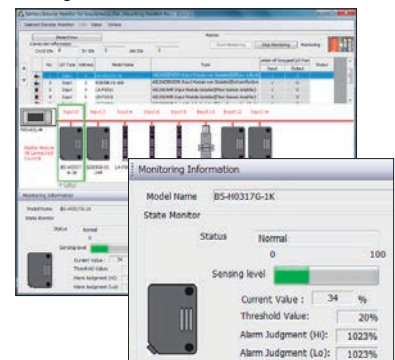
Setting screen



Monitor screen

• iQSS sensor/device monitor

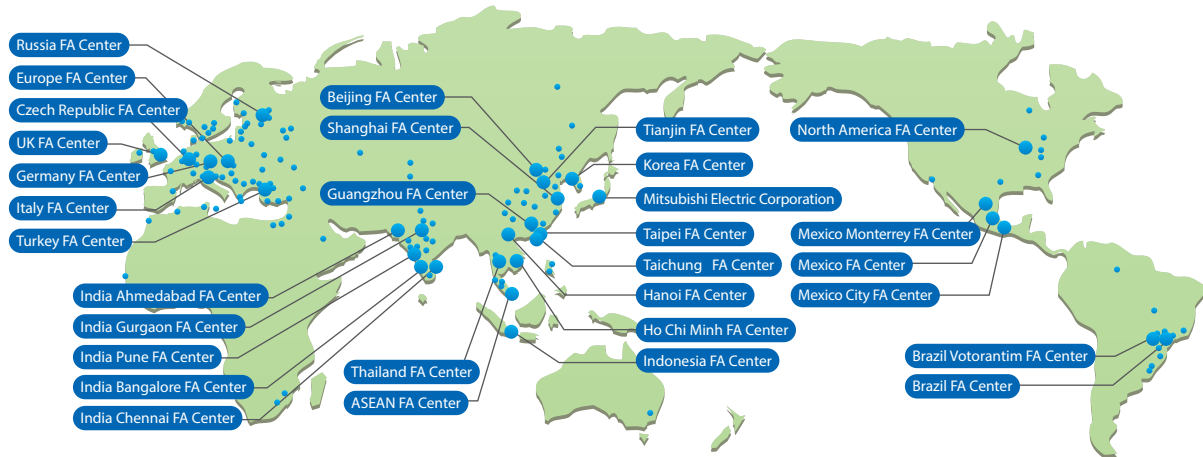
Setting screen



Monitor screen

PROGRAMMABLE CONTROLLERS

MELSEC iQ-F Series



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Japan (Tokyo)	Asian Business Development Department	(TEL:+81-3-3218-6284)
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China (Tianjin)	Mitsubishi Electric Automation (China) Ltd. Tianjin Branch	(TEL:+86-22-2813-1015)
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Indonesia	PT. Mitsubishi Electric Indonesia Cikarang Office	(TEL:+62-21-2961-7797)
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The inquiry of the product of mention concerned performs wish to this leaflet at the following.

Anywire Anywire Corporation.

URL: <http://www.anywire.jp> E-mail: info_e@anywire.jp

⚠ Safety Warning

To ensure proper use of the products in this document, please be sure to read the instruction manual prior to use.

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- MODBUS is a registered trademark of Schneider Electric SA.
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