

Changes for the Better

Mitsubishi iQ Platform-compatible
FA Integrated Engineering Software
MELSOFT iQ Works



NEW

DVD version also available

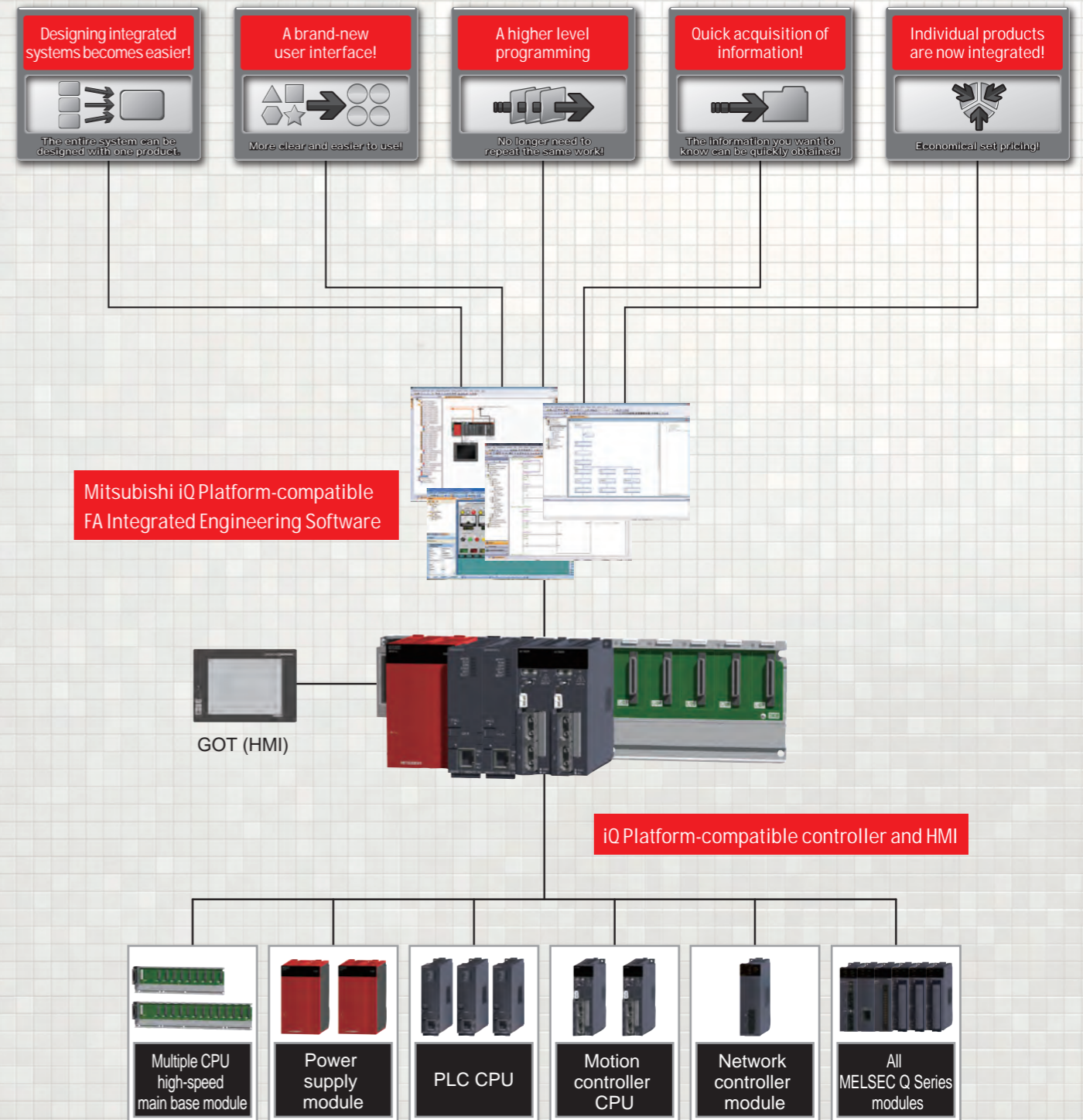
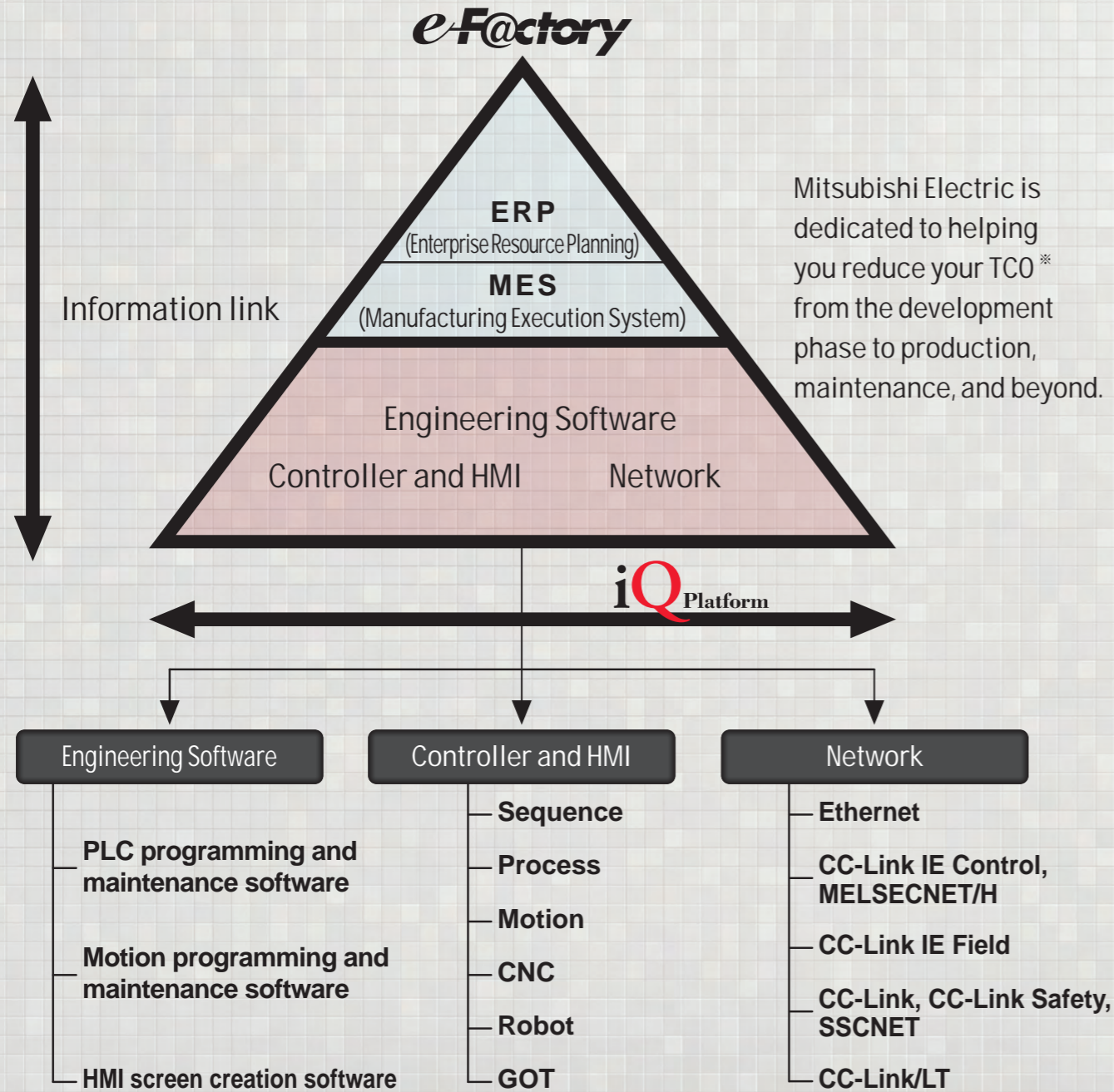
**Empowering
Industries**

Mitsubishi FA Integrated Concept

iQ Platform

iQ Works reduces the TCO with 5 key points.

The iQ Platform writes a new chapter in the book of factory automation (FA).



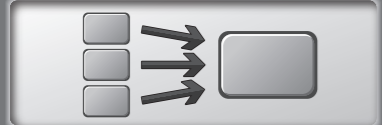
Mitsubishi Electric's "e-F@ctory" FA integrated solution is an evolutionary step in manufacturing which can provide dramatic cost-saving results. Reduce your TCO and stay one step ahead of the competition by using advanced technologies to optimize the entire factory, including the development, production and maintenance phases of operation. The key to this integrated concept is the "iQ Platform." By combining the power of best-in-class components on the same platform, unparalleled levels of performance are possible. In addition, a vast array of communications options ensures connectivity between every element of the production process, from the smallest sensor to the most complicated IT system.

The iQ Platform maximizes the potential performance of each system component.

The iQ Platform is a Mitsubishi FA integration concept.
integrated Q/improved Quality/intelligent&Quick
 *TCO:Total Cost of Ownership

5 key points for TCO reduction with iQ Works

Designing integrated systems becomes easier!



The entire system can be designed with one product.

A brand-new user interface!



More clear and easier to use!

A higher level programming



No longer need to repeat the same work!

Quick acquisition of information!



The information you want to know can be quickly obtained!

Individual products are now integrated!



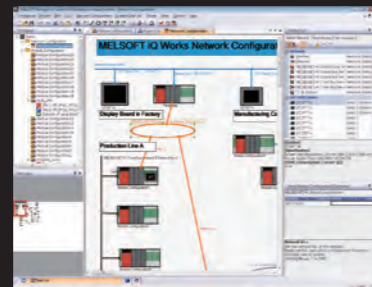
Economical set pricing!

Enhanced Function Linkage and Data Sharing
Designing systems combining Mitsubishi programmable controllers, motion controllers and GOTs became easier.

System Management Software
MELSOFT Navigator

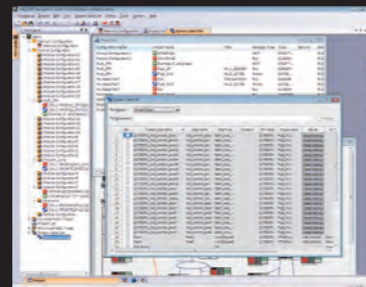


System Configuration Diagram
The visual display of network configuration and unit configuration enables an easy recognition of components.



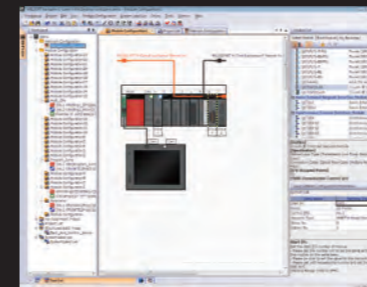
For details, refer to P. 8

Shared labels
Reduce labor and avoid setting mistakes by sharing label definitions.



For details, refer to P. 8

Details/Setting Information Display
The system configuration, I/O assignment settings and network settings can be confirmed in one display.



For details, refer to P. 7

Integration of Software
MELSOFT GX Works2, MELSOFT MT Works2 and MELSOFT GT Works3 were integrated.



For details, refer to P. 7

MELSOFT Navigator

MELSOFT GX Works2

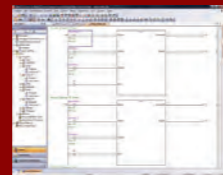
MELSOFT MT Works2

MELSOFT GT Works3

PLC Engineering Software
MELSOFT GX Works2



Sharing User Interface
The tab display and docking windows make the screen use more convenient.



For details, refer to P. 11

Function Blocks and Layers
The status of the whole system can be recognized easily, by managing programs by layers.



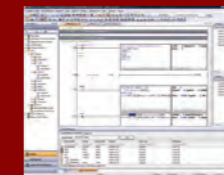
For details, refer to P. 12

System Monitor
The source of the error and its contents can be diagnosed quickly, during an error occurrence.



For details, refer to P. 14

Integration of Components
Software for programming, for simulator and for configurator was integrated.



For details, refer to P. 13

Motion Controller Engineering Software
MELSOFT MT Works2



Sharing User Interface
Common user interface to MELSOFT GX Works2 is adopted.



For details, refer to P. 15

Edit programs by flowcharts
It is possible to write machine operations in flow chart form while monitoring and debugging.



For details, refer to P. 15

Help Function Enhanced
Settings can be configured without having to reference a manual, since explanations of parameters and others are displayed on the screen.



For details, refer to P. 15

Integration of Components
The motion controller debugging can be performed on a personal computer.



For details, refer to P. 17

HMI Screen Creation Software
MELSOFT GT Works3



Sharing User Interface
The software's functionality has been built around the concepts of ease use, simplification and elegance.



For details, refer to P. 19

Library Function Enhanced
Programs can be created easily, by using a large range of sub-programs.



For details, refer to P. 20

Improved visibility of dialog boxes
Display contents, such as ON/Off conditions of switches and lamps, can be confirmed in a list.



For details, refer to P. 20

Integration of Simulators
HMI simulators are combined, and operations can be confirmed easily.



For details, refer to P. 21

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MELSOFT Navigator

MELSOFT GX Works2

MELSOFT MT Works2

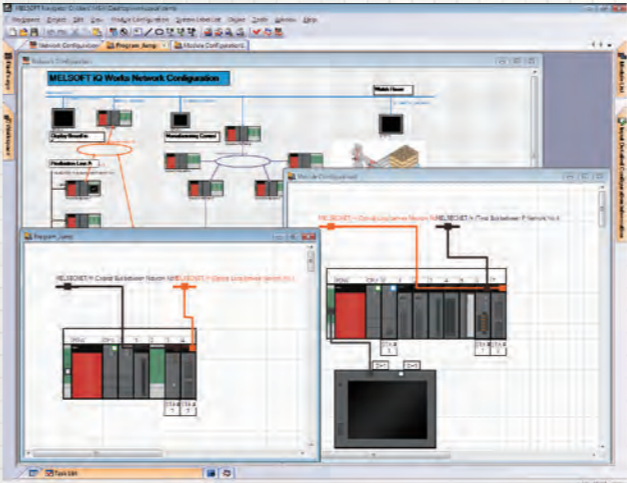
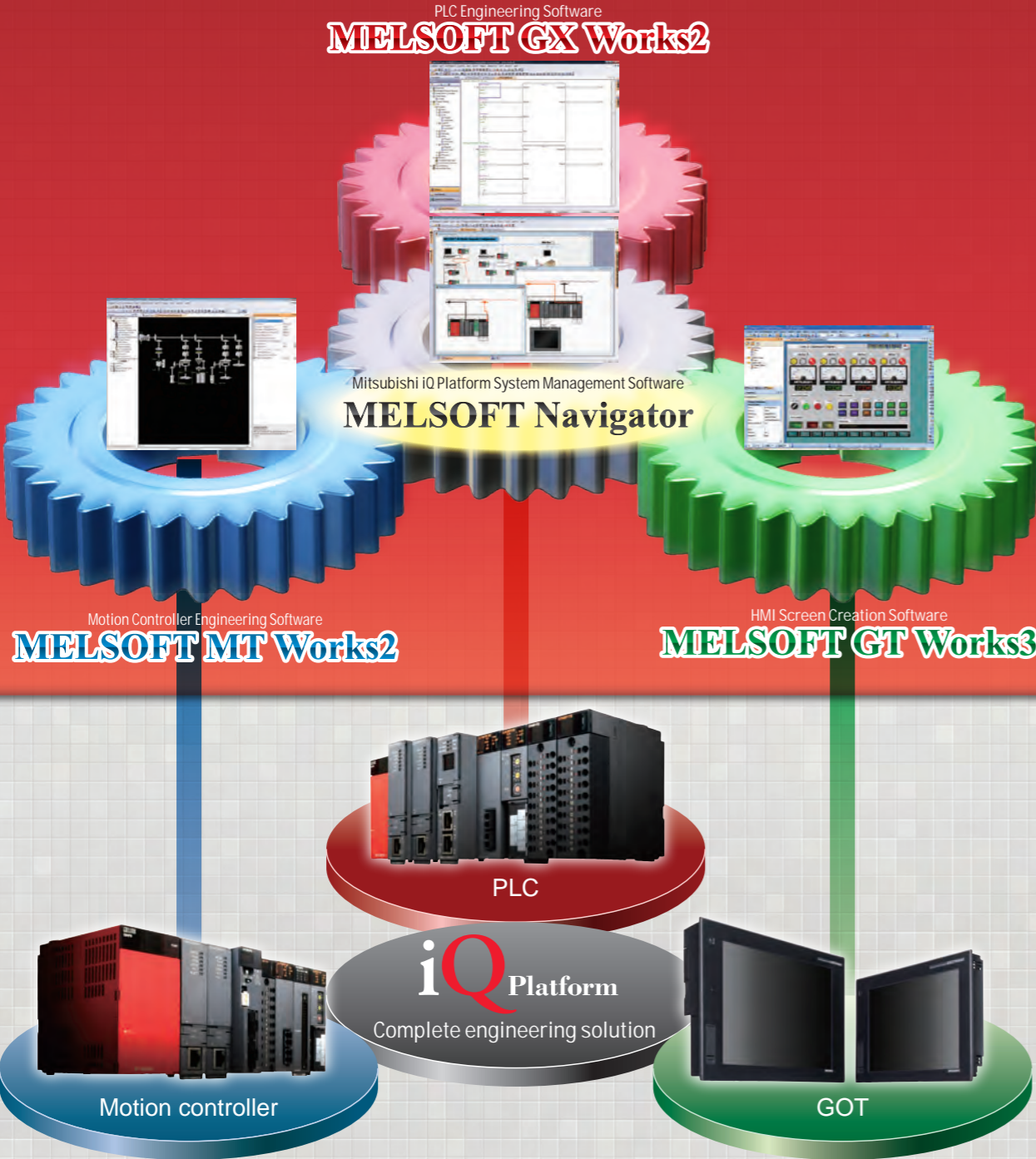
MELSOFT GT Works3

MELSOFT *iQ* Works

MELSOFT *iQ* Works represents a major innovation in systems engineering

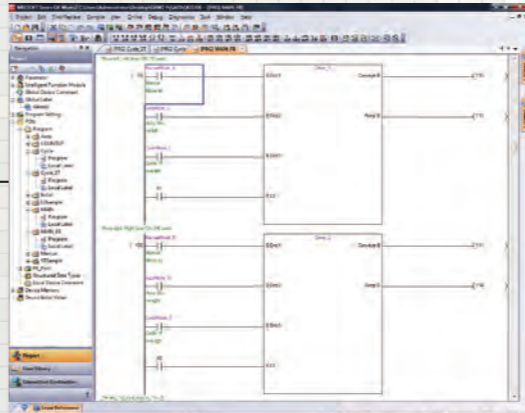
MELSOFT *iQ* Works integrates the various programming and design software for Mitsubishi programmable controllers, motion controllers, and HMIs. The result is one seamless engineering environment.

MELSOFT *iQ* Works



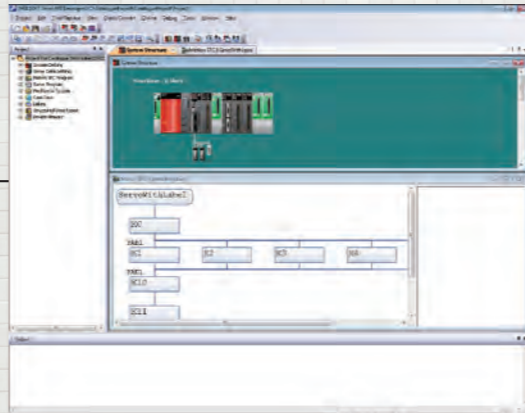
MELSOFT Navigator

is the heart of *iQ* Works. It enables the effortless design of entire upper-level systems and seamlessly integrates the other MELSOFT programs included with *iQ* Works. Functions such as system configuration design, batch parameter setting, system labels, and batch read all help to reduce TCO.



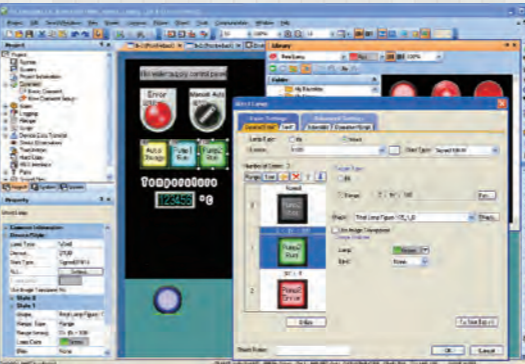
MELSOFT GX Works2

represents the next generation in MELSOFT PLC maintenance and programming software. Its functionality has been inherited from both GX and IEC Developer, with improvements made throughout to increase productivity and drive down engineering costs.



MELSOFT MT Works2

is a comprehensive motion controller maintenance and program design software. Its many useful functions, such as intuitive settings, graphical programming, and digital oscilloscope, simulator all help to reduce the TCO associated with motion systems.



MELSOFT GT Works3

is a complete HMI programming, screen creation, and maintenance software. In order to reduce the labor required to create detailed and impressive applications, the software's functionality has been built around the concepts of ease of use, simplification (without sacrificing functionality), and elegance (in design and screen graphics).

MELSOFT Navigator

MELSOFT GX Works2

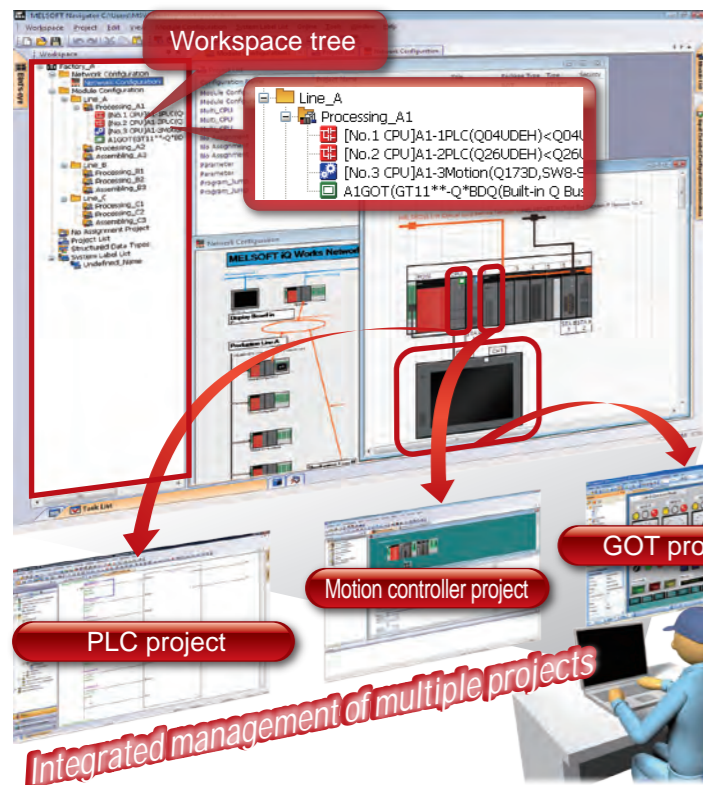
MELSOFT MT Works2

MELSOFT GT Works3



Integrated system management improves efficiency and thereby shortens development and maintenance time

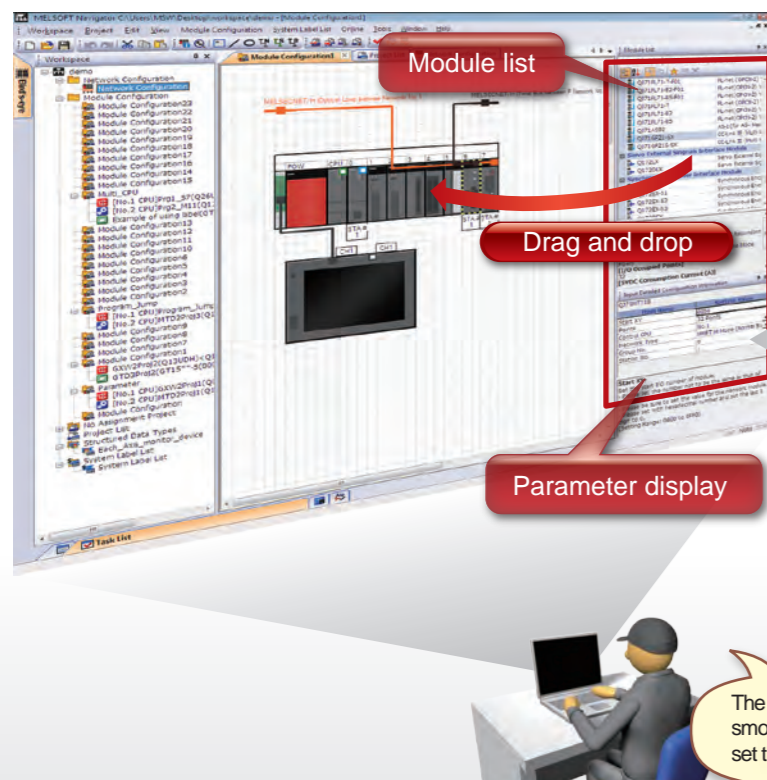
Manage projects in groups



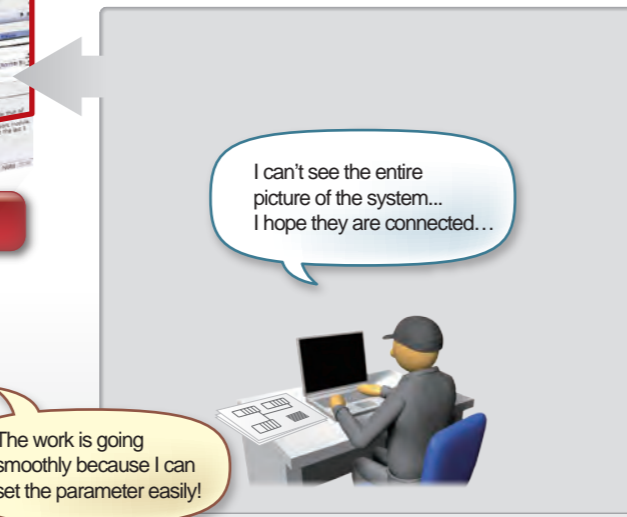
Multiple PLC, motion controller and GOT projects are displayed in the library tree. This enables an easier confirmation of the entire project, because projects can be managed in groups of process, such as factory, line or cell.



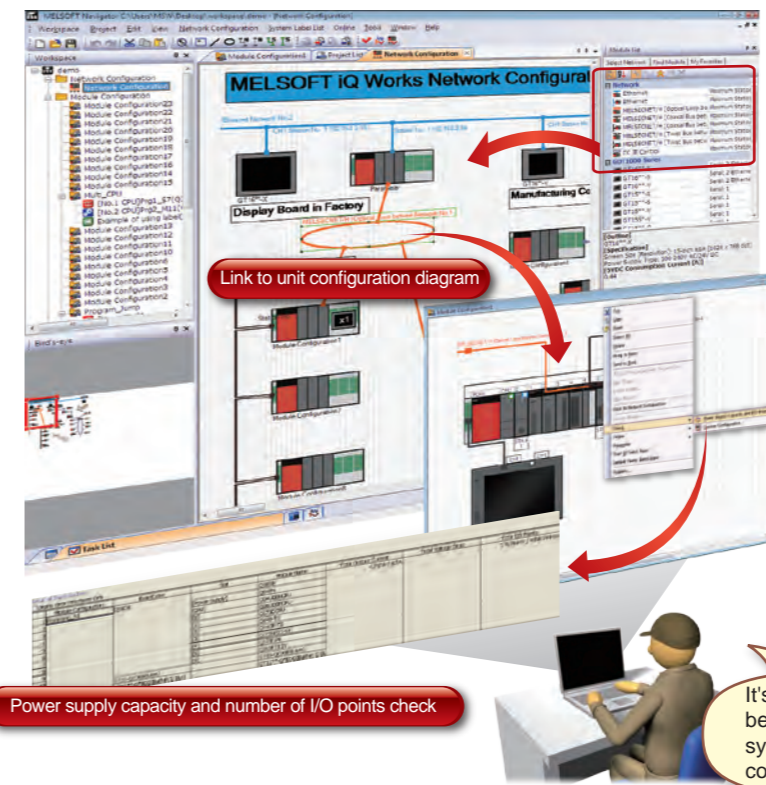
Confirm module configuration and setting easily



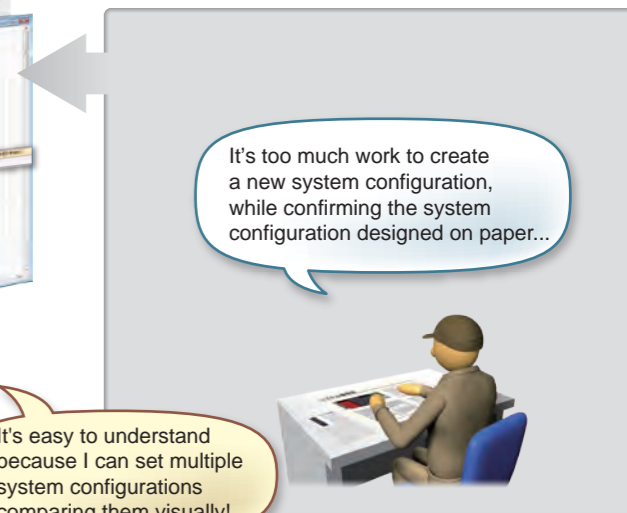
Functions such as program edit, parameter setting and batch reading can be executed intuitively using the graphic interface. In addition, the possibility of making setting errors is minimized because the entire system is immediately visible.



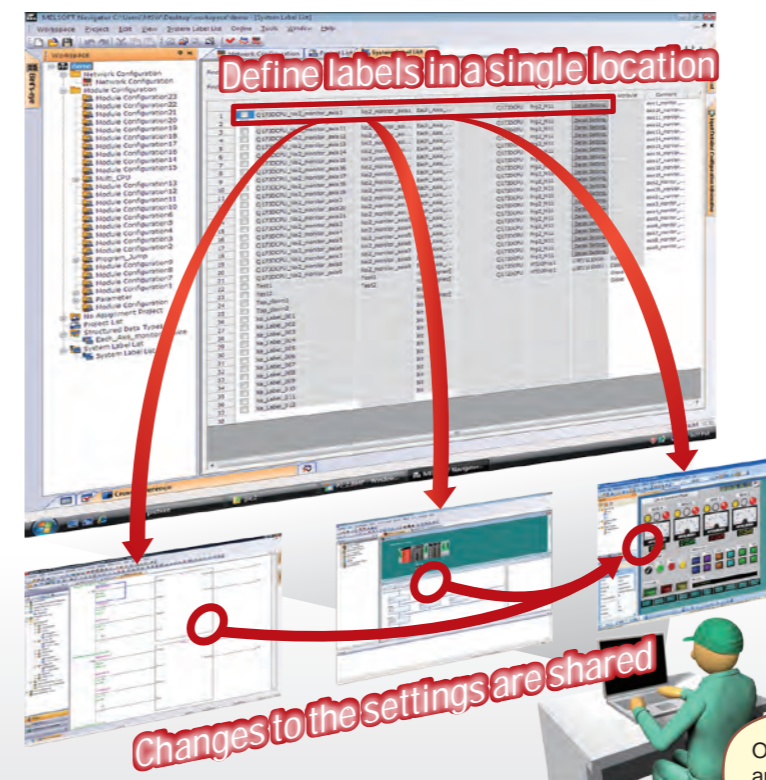
Easy-to-design system configuration



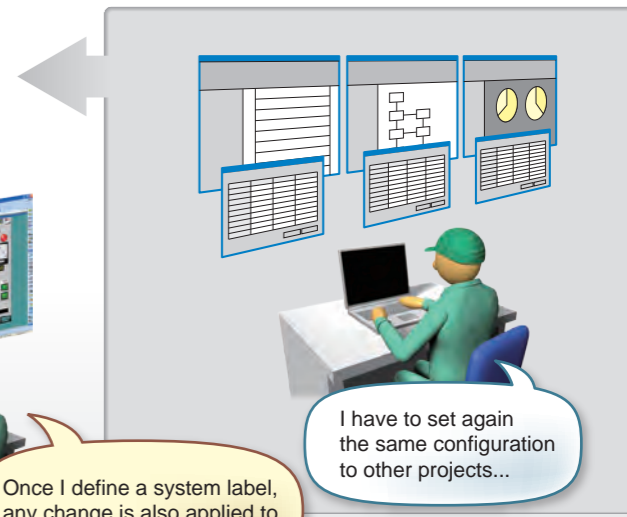
The visual display of network configuration and unit configuration enables an easy recognition of components. On the unit configuration diagram, the power supply capacity and the number of I/O points can be checked.



Shared labels



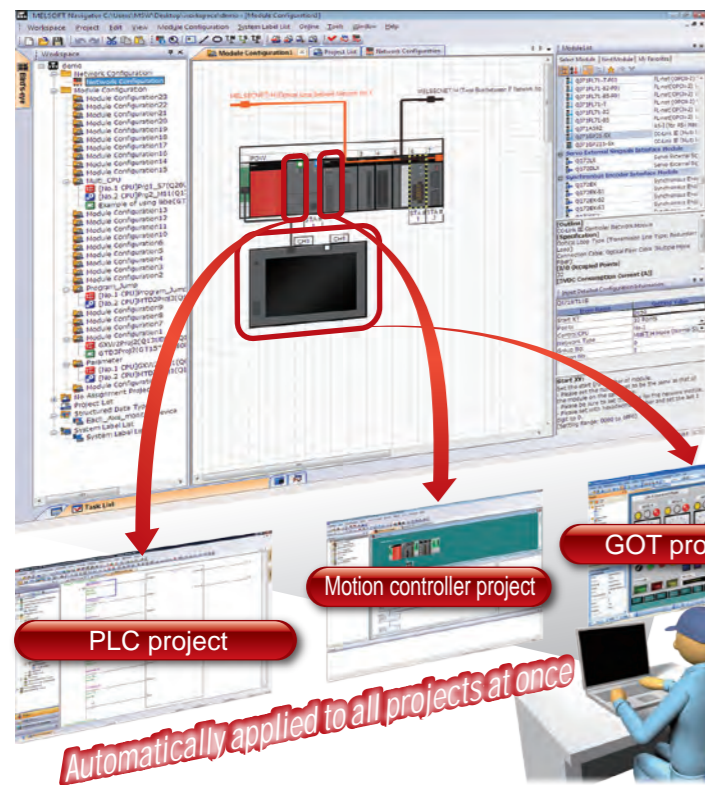
Define a label shared with a PLC, a motion controller, and an HMI with MELSOFT Navigator. Using this shared label, changes are automatically reflected to the motion controller project and the GOT project when some device assignment is changed in the PLC project. This enables a reduction of setting time and avoids setting mistakes.



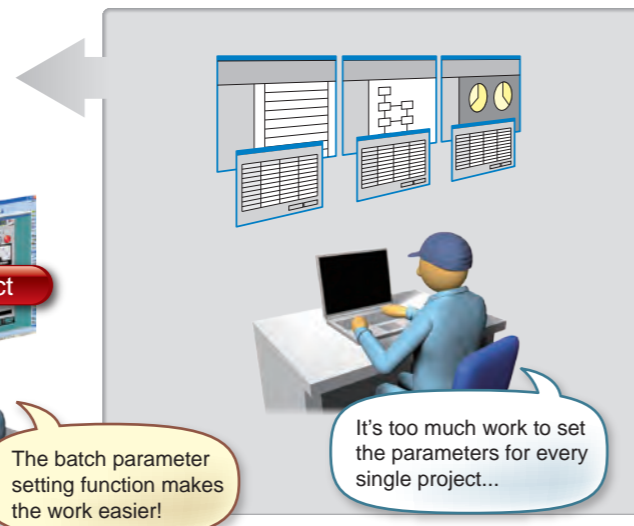


Integrated system management improves efficiency and thereby shortens development and maintenance time

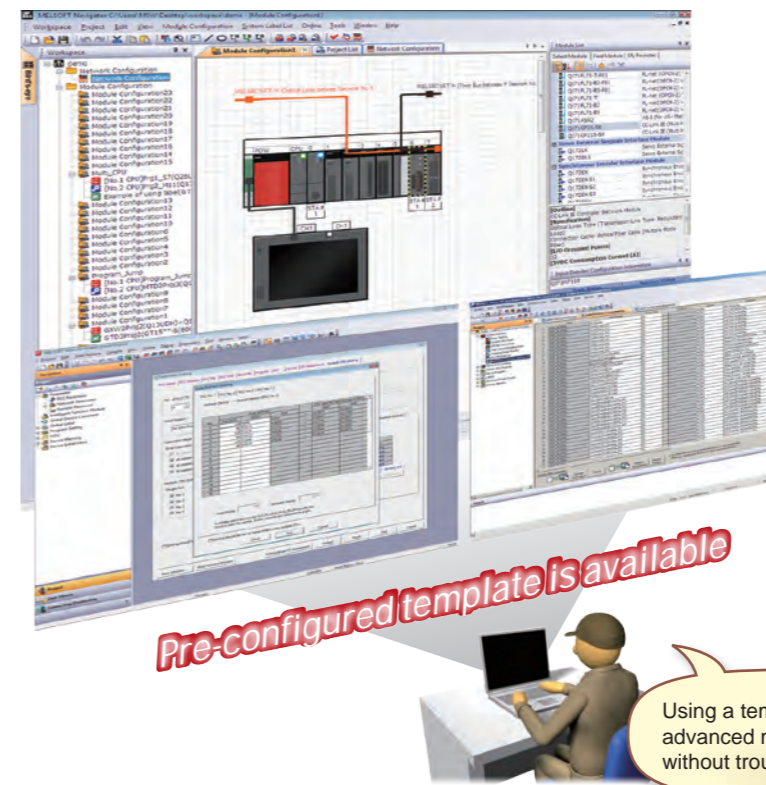
Reflect the system configuration to the parameter setting



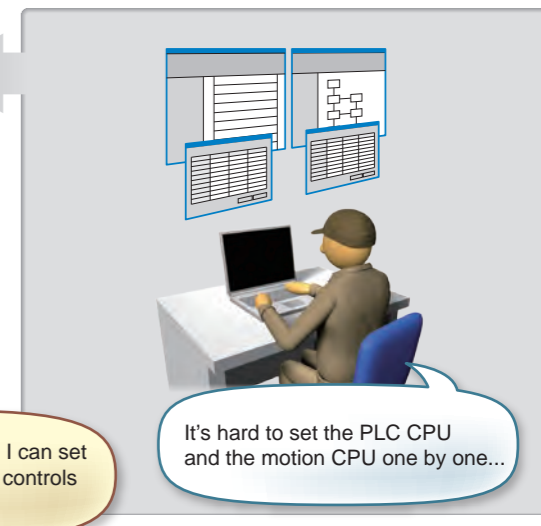
Set parameter settings for networks, I/O assignments, and others, based on the information of the system configuration diagram of MELSOFT Navigator, with one operation. In addition, in the multi-CPU, once parameters are set to a CPU module, the settings can be reflected to other CPU modules easily.



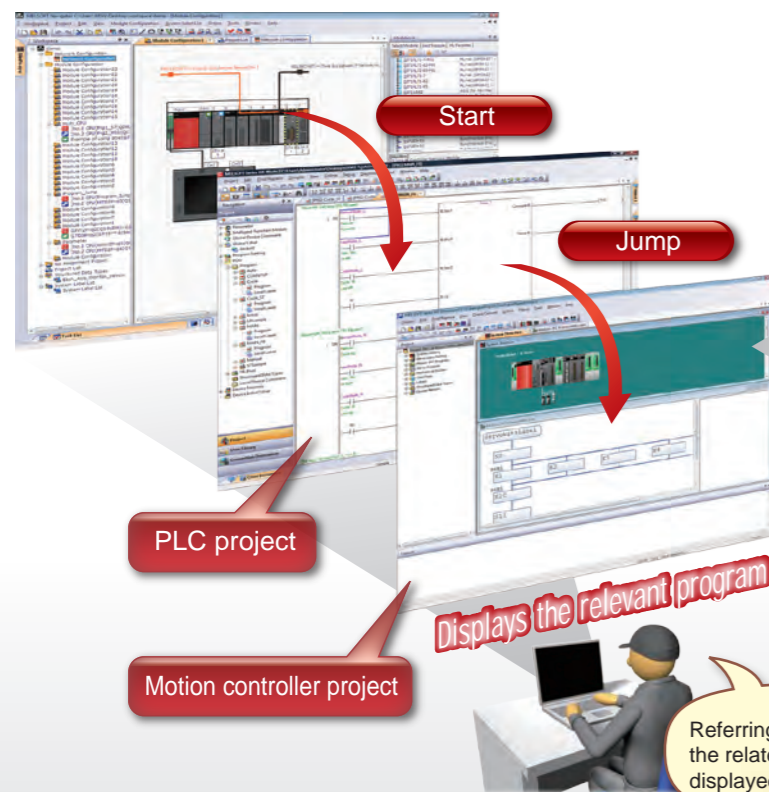
Motion system templates are available



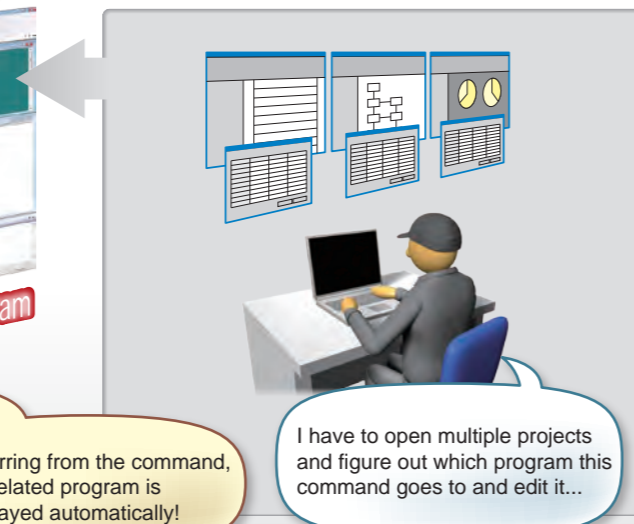
Make use of templates to get started with multi-CPU systems including motion controllers. The hours for programming can be shortened, because templates are pre-configured with parameters and labels.



Display related programs directly



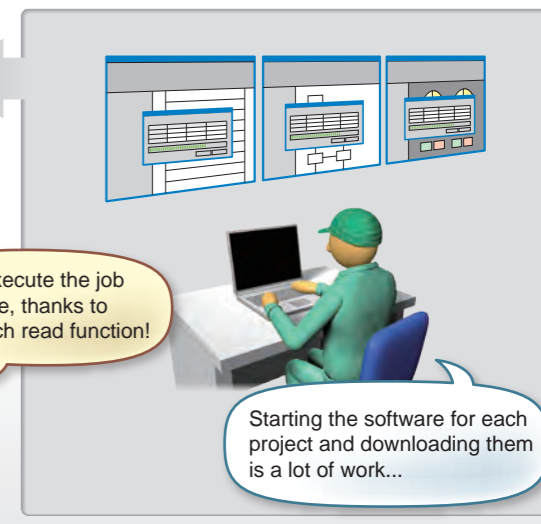
From a specific command in the PLC program, the motion programs related to the command can be directly displayed. This eliminates the need to open each project to search for referenced programs.



Batch read all project data

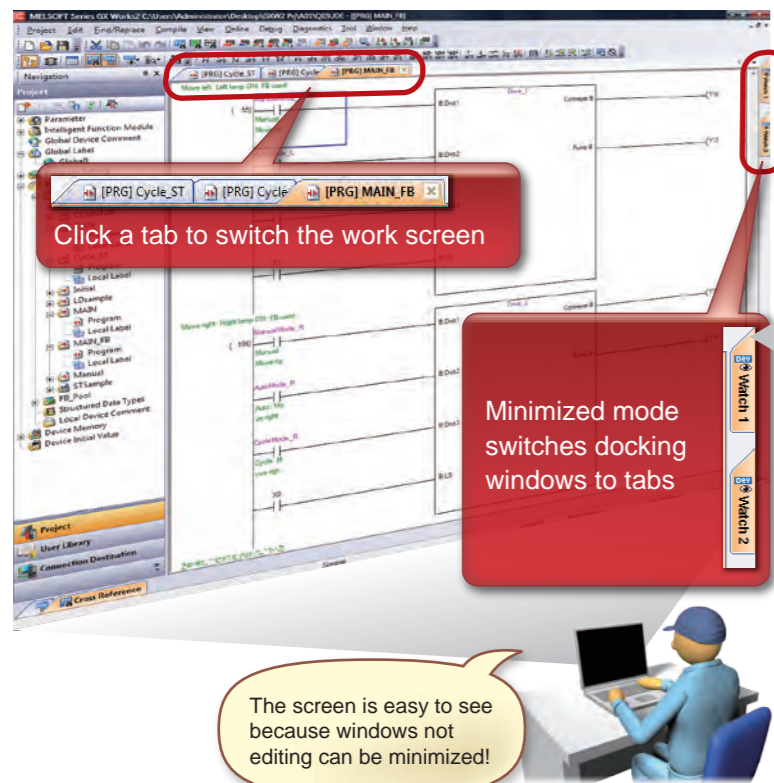


Use the batch read function to download the data of all PLC, motion controller, and GOT with one operation. Consequently, it is not necessary to start software for each device to download these data.

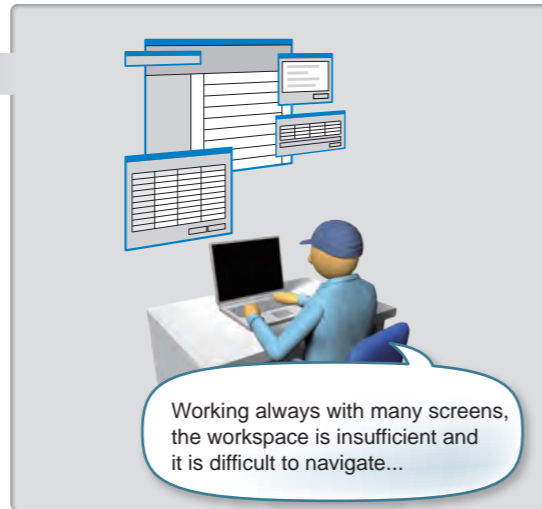


Enhance project development efficiency via the user-friendly interface

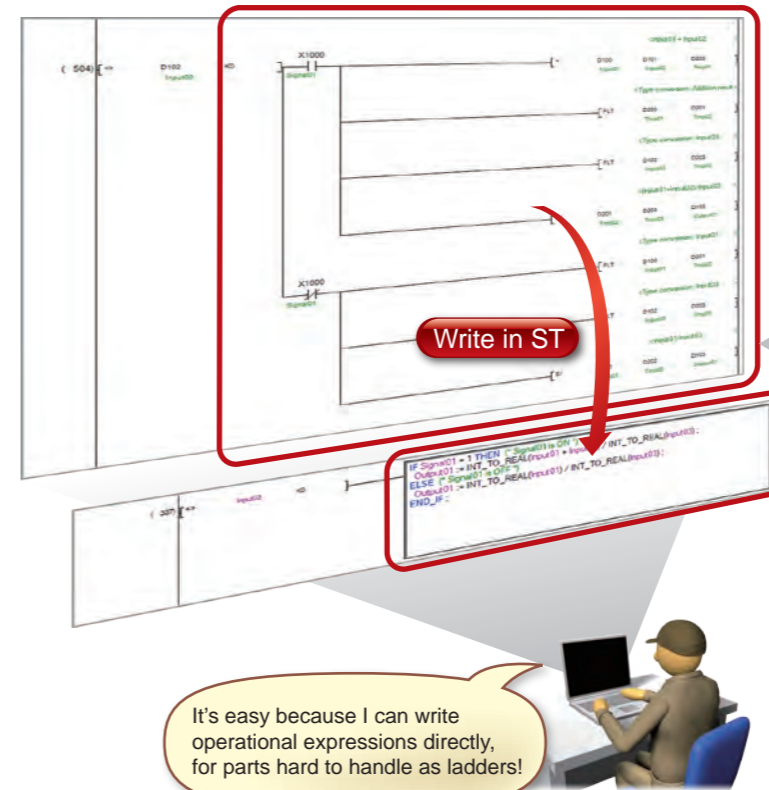
Use the screen display area effectively



Minimize multiple displayed windows in the "Docking window" to tabs when they are not being edited. Likewise in the "Work window", multiple projects can be also changed to tabs. This enables to program efficiently, using the work area effectively.



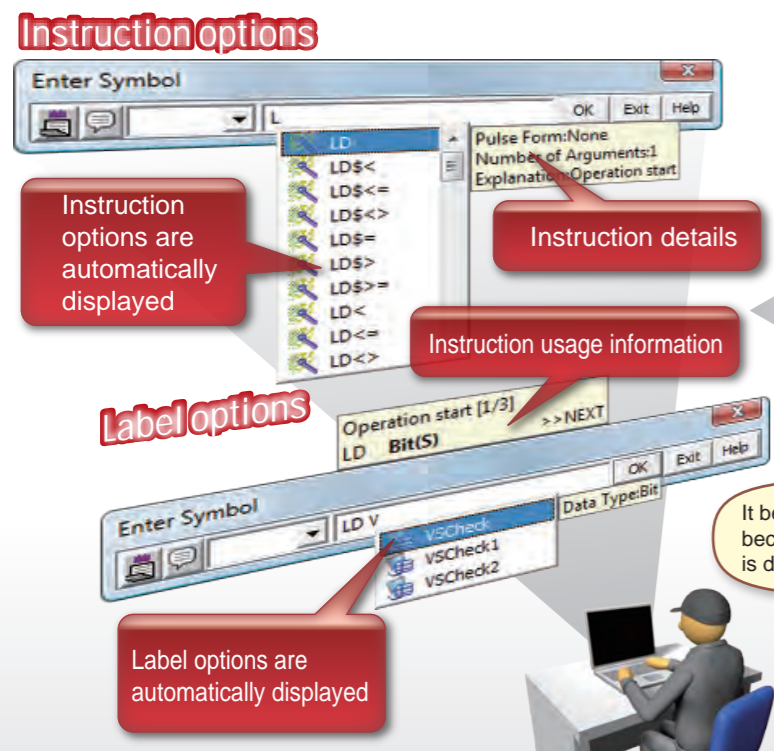
Write equations directly into the ladder



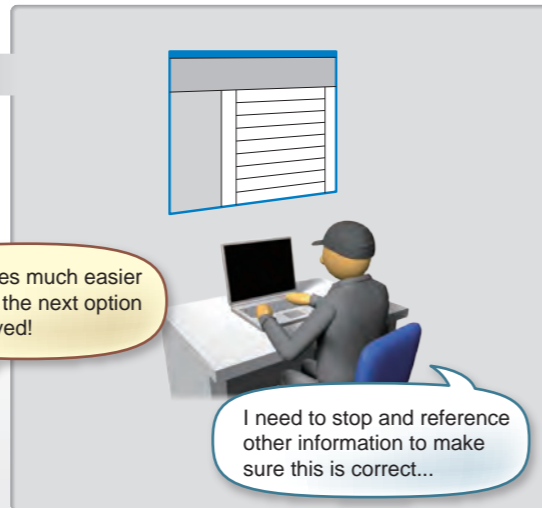
Write descriptions of numerical processes and operational treatments directly into the ladder. This keeps ladders simple, and improves the readability of programs.



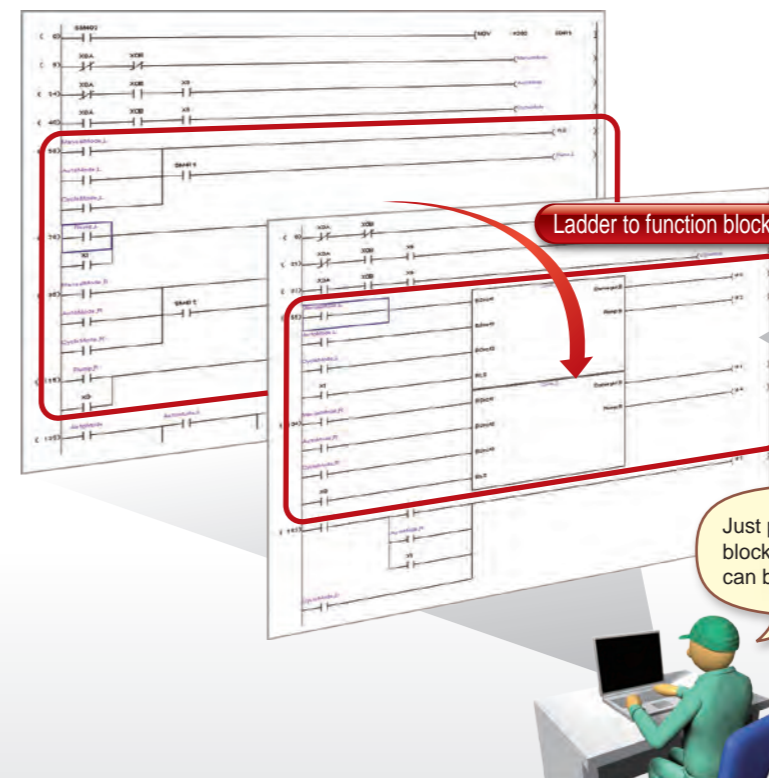
Display instruction or label options



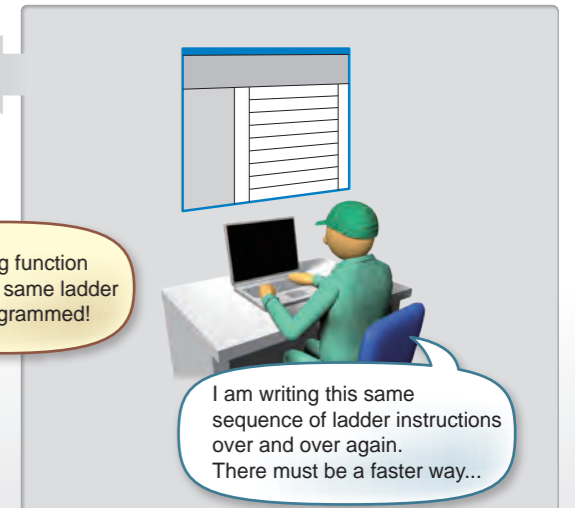
Prevention of coding mistakes saves time with the ability to find an instruction or label even if the entire name is not known. Information about the selected item is automatically displayed insuring the correct choice is made. Instructions include detailed usage information.



Ladder function blocks



Create your own function blocks for easy re-use. They can be utilized easily by dragging and dropping function blocks from the function block selection window into the sequence programs. This improves the development efficiency.

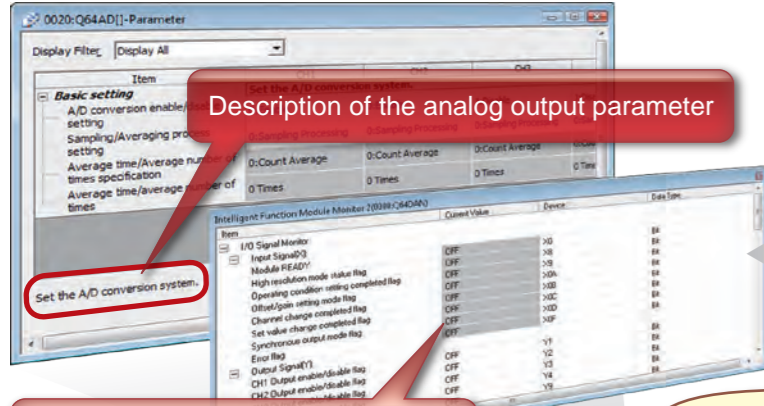


Enhanced security and monitoring features aid start-up and maintenance operations

Configure and monitor intelligent function modules without manuals

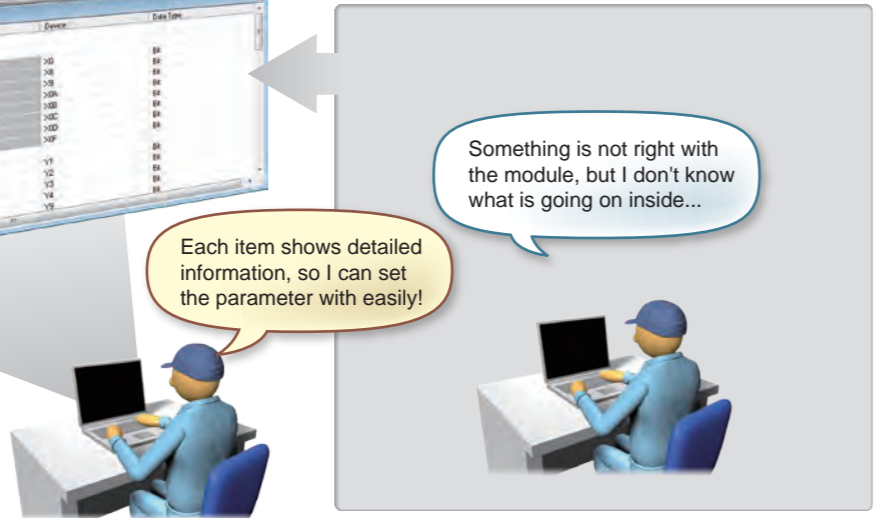


Example: Analog output module

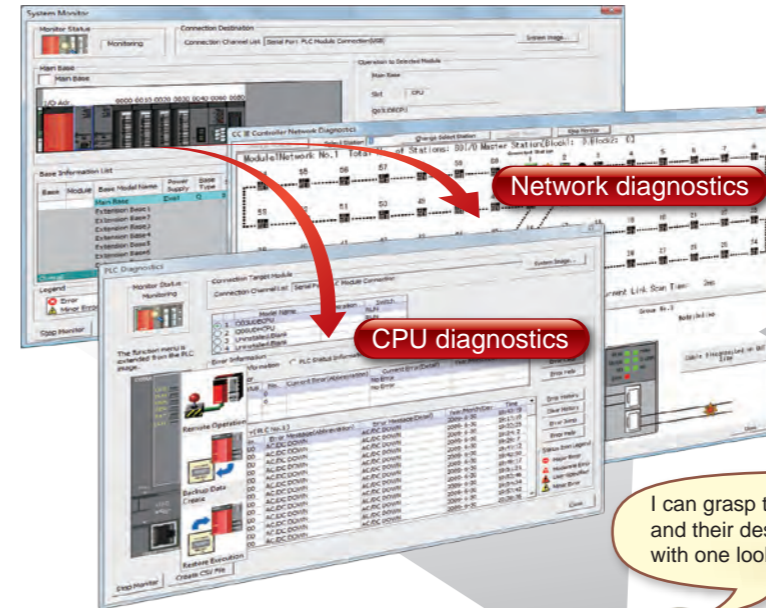


When setting parameters for intelligent function modules, detailed descriptions are given on the screen, making it possible to set up and change the configuration of intelligent function modules without having to reference a manual. Use the intelligent function module batch memory monitor to create a custom list of items to observe and quickly identify problems.

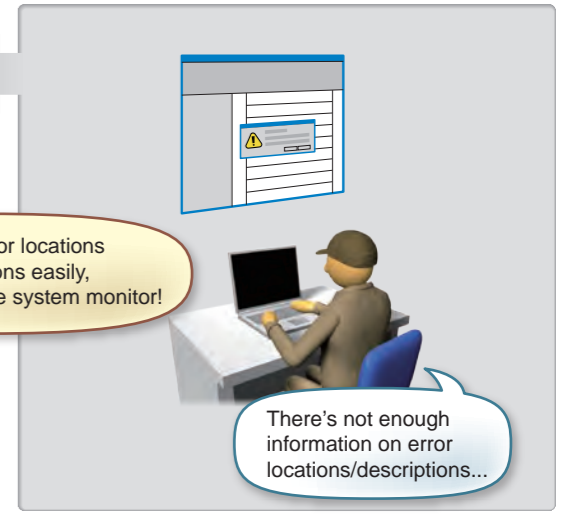
The intelligent function module batch memory monitor lets you view digital values, signal, and status information directly from the software interface.



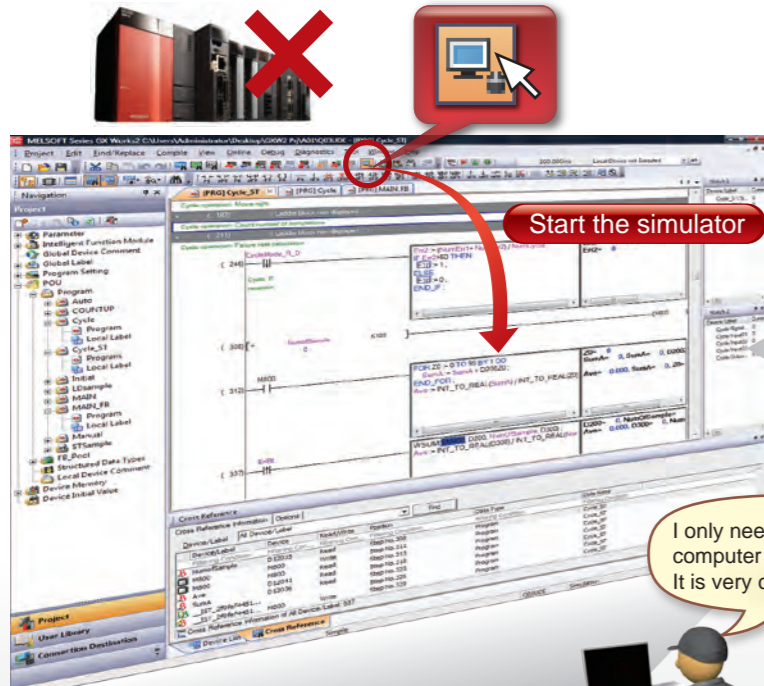
Module and network status diagnosis



System monitor shows the status with simple illustrations. Quickly diagnose network and PLC hardware problems anywhere in the system. This helps to specify error locations and to investigate its causes.

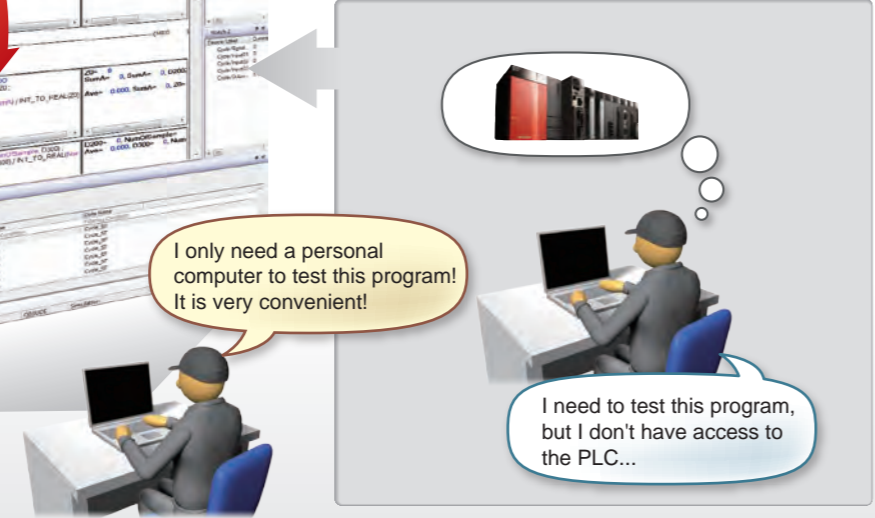


Simulation function available as default

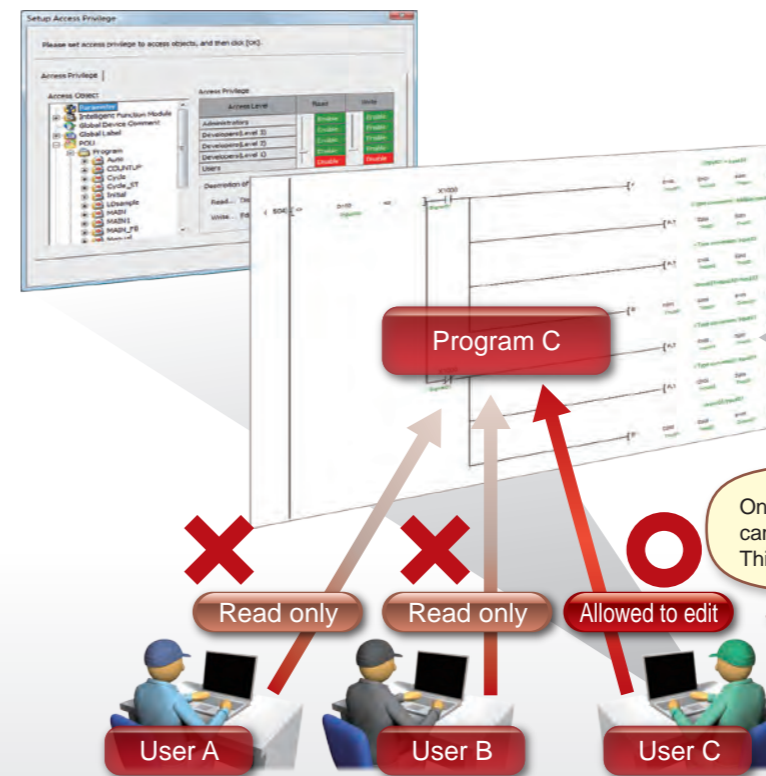


Full simulation capabilities are immediately available with GX Works2. Accomplish debugging tasks more efficiently with the convenience to perform simulation anywhere, without the need for physical hardware.

I only need a personal computer to test this program! It is very convenient!

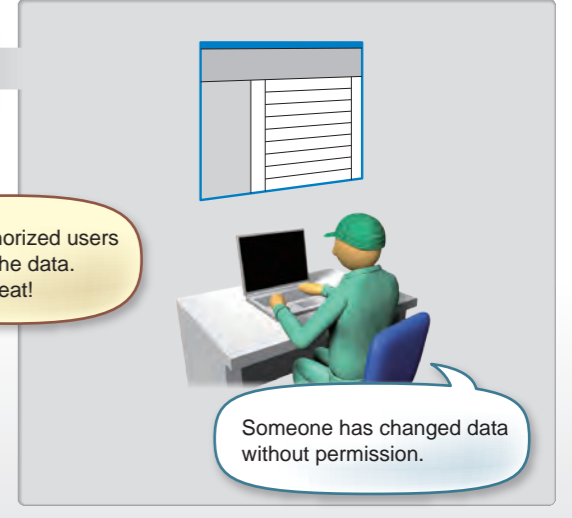


Secure access authority setting



Prevent unauthorized accesses to data by setting access levels for each user. Create a multi-level security scheme to support collaborative development while maintaining data protection.

Only authorized users can edit the data. This is great!



MELSOFT Navigator

MELSOFT GX Works2

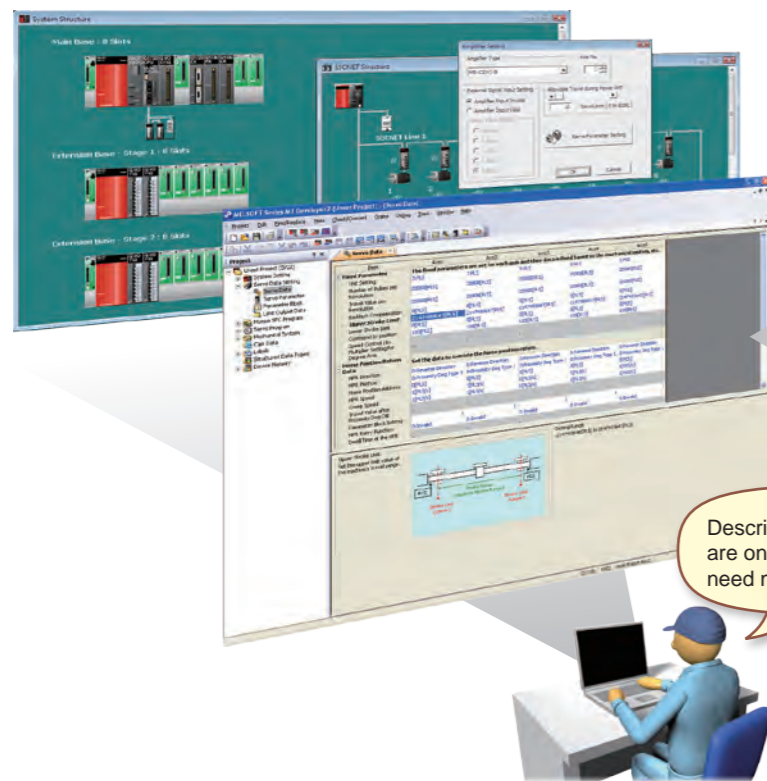
MELSOFT MT Works2

MELSOFT GT Works3



Create advanced motion control systems with ease

Confirm unit configuration and setting easily

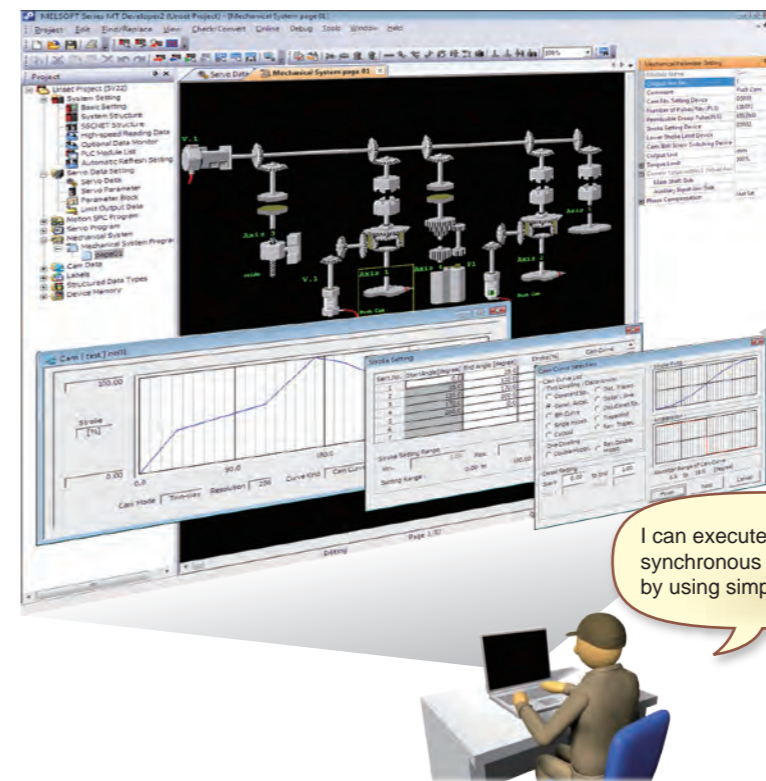


The system setting screen relies largely on illustrations. Easy to set up servo amplifiers and modules for system configuration. The software provides details about the parameters so they can be configured without needing to refer to a manual.

Descriptions to operate are on the screen. I do not need manuals anymore!

Motion systems need a lot of settings...

Easily configure a complex synchronized system

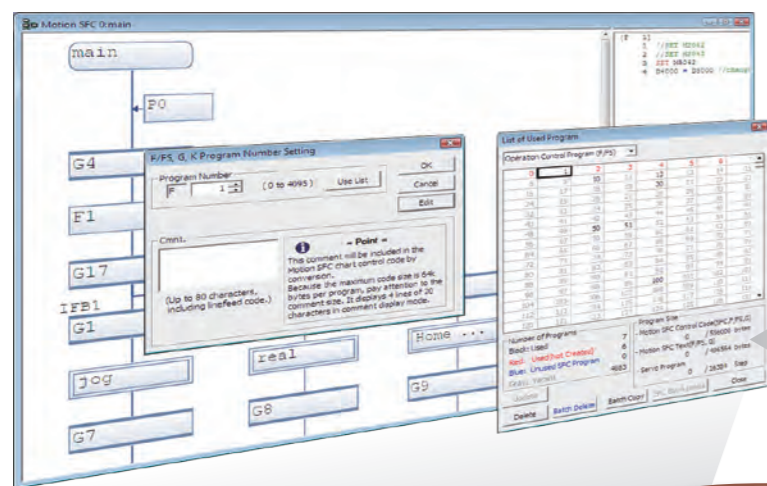


Drag and drop motor- and cam-shaped icons (mechanical modules) to place them in the same configuration as the control target system. Only parameter setting creates complex synchronous control system. Modify CAM patterns visually to further aid the design process.

I want to execute synchronous control on multiple axes, but I don't know how...

I can execute complex synchronous control easily by using simple icons!

Edit programs by flowcharts

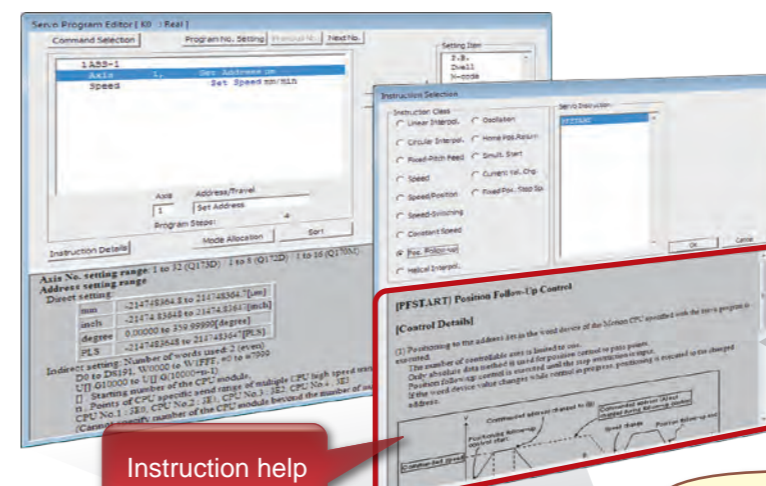


It is possible to write machine operations for the control target in flow chart form while monitoring and debugging. Use the instruction wizard to quickly and easily write programs only by responding the questions appearing on the screen.

Flowcharts help me to understand the entire configuration with ease!

I want to quickly make a motion control program that's easy to understand...

Setting information display for positioning control



Configure advanced motion control programs without the need for a manual. Simply pick the desired servo commands from the instruction list and the help (instruction help) is right there. Follow the help and set items like axis number, positioning address, and positioning speed to complete the configuration.

Instruction help

Indication helps are on the screen. I do not need to refer manuals anymore!

I forgot what page in the manual this instruction was on...

MELSOFT Navigator

MELSOFT GX Works2

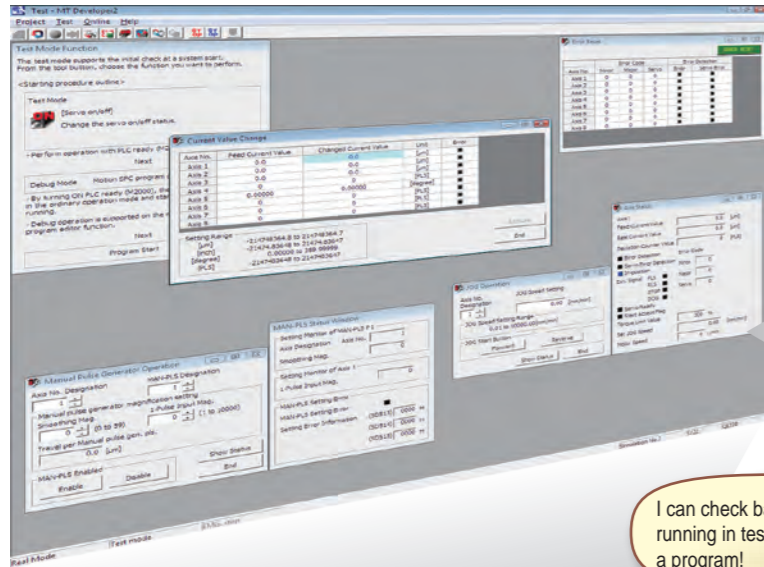
MELSOFT MT Works2

MELSOFT GT Works2

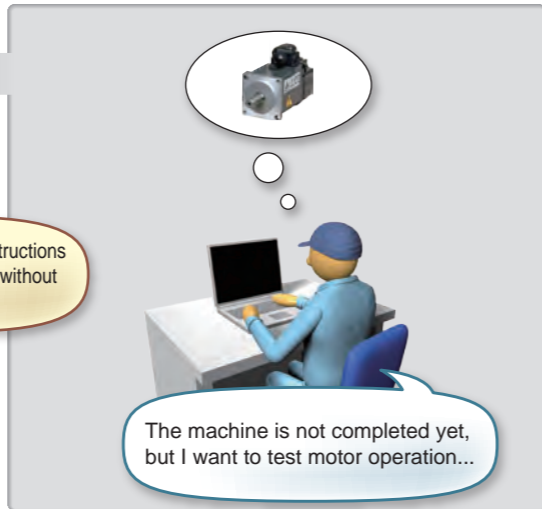


Perform installations and maintenance more efficiently using enhanced debug and monitoring functionality

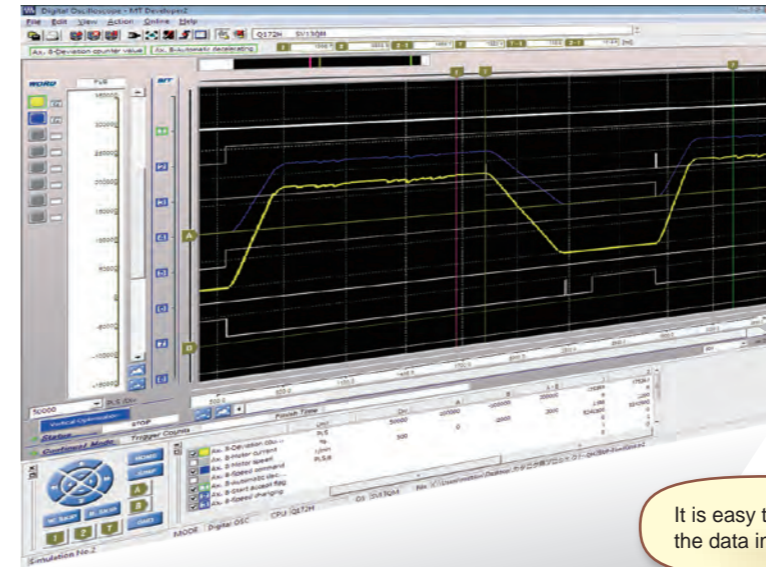
Test drive equipment without a program



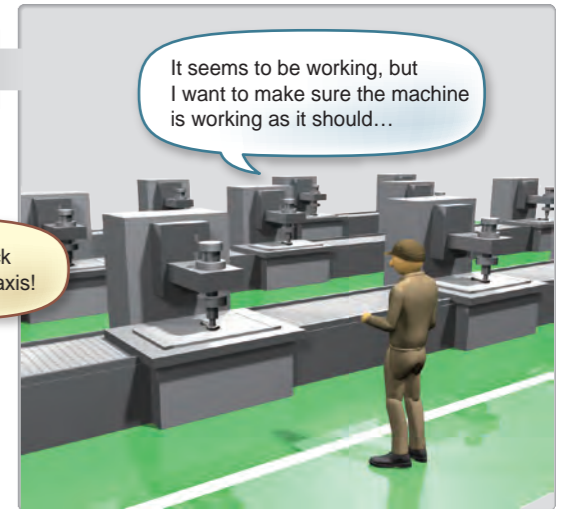
Run basic instructions in test mode without programming. Test a new system with functions like return to home position, JOG, and others with just the click of a mouse.



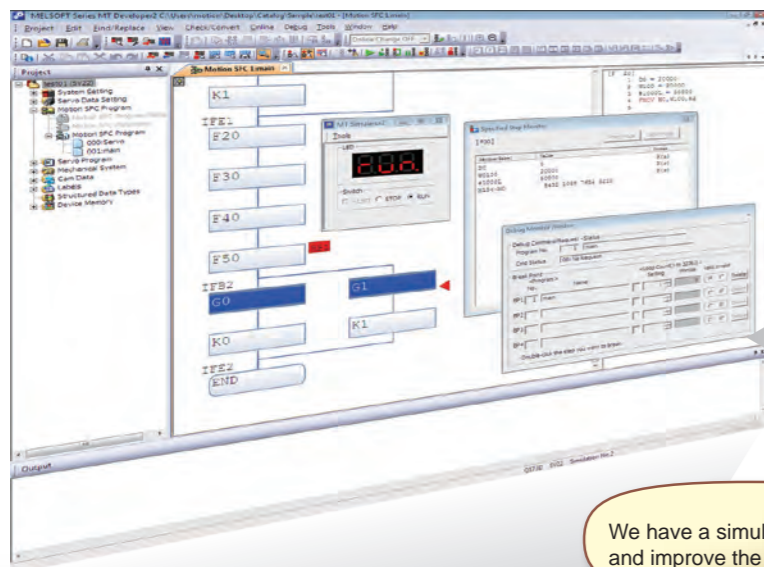
Display operation data with Digital Oscilloscope



Digital oscilloscope plots feedback data synchronized with motion controller data on the same graph to quickly reveal any problems. Using this feature makes start-up and commissioning quick and easy. Also MT Works2 makes it easy to save the collected data in CSV format.



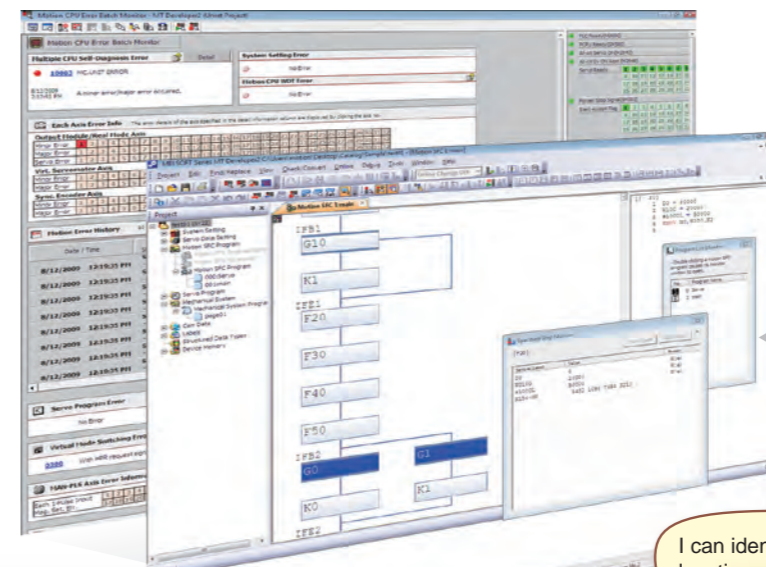
Perform debugging using a simulation



Program debug mode and the digital oscilloscope function allow for easy testing of motion SFC programs, servo programs, and mechanical system programs all without the need for real hardware. Easily recognize the simulator with debug in flow chart form and synchronized data in calculation cycle.



Monitor Function Enhanced



Improve installation and maintenance operation efficiency by using one of the many monitoring tools, monitor the motion controller's status, or batch monitor errors.



MELSOFT Navigator
MELSOFT GX Works2
MELSOFT MT Works2
MELSOFT GT Works3

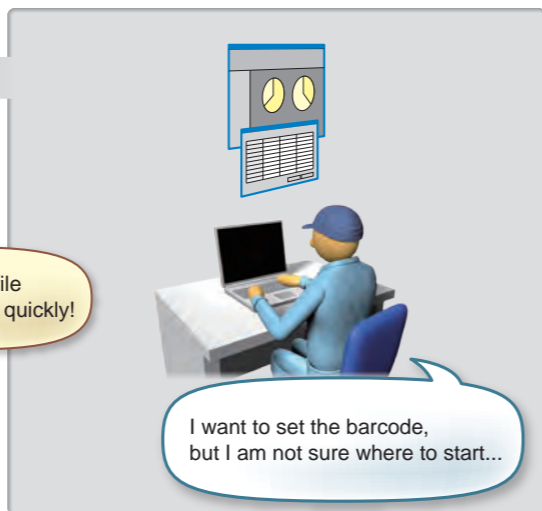


Enhanced user-friendliness makes it easier than ever to get started quickly

Find what you need fast with work tree categories



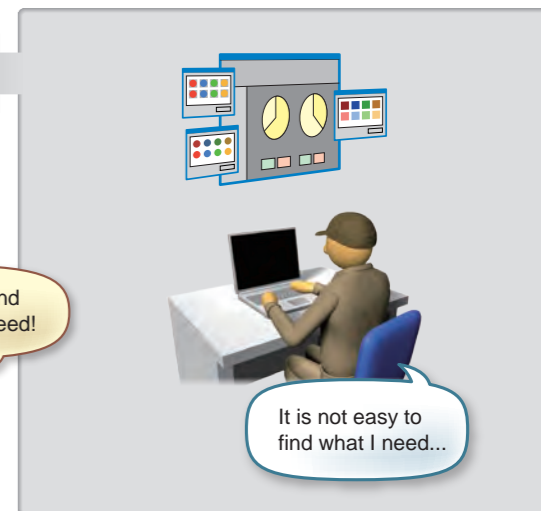
The work tree automatically organizes every piece of your project so it's easy to find later. The files are split among three logical categories: "Project", "System" and "Screen". Then, you know where to look intuitively. Additionally you can now create new screens or comments directly from the work tree by double clicking "New."



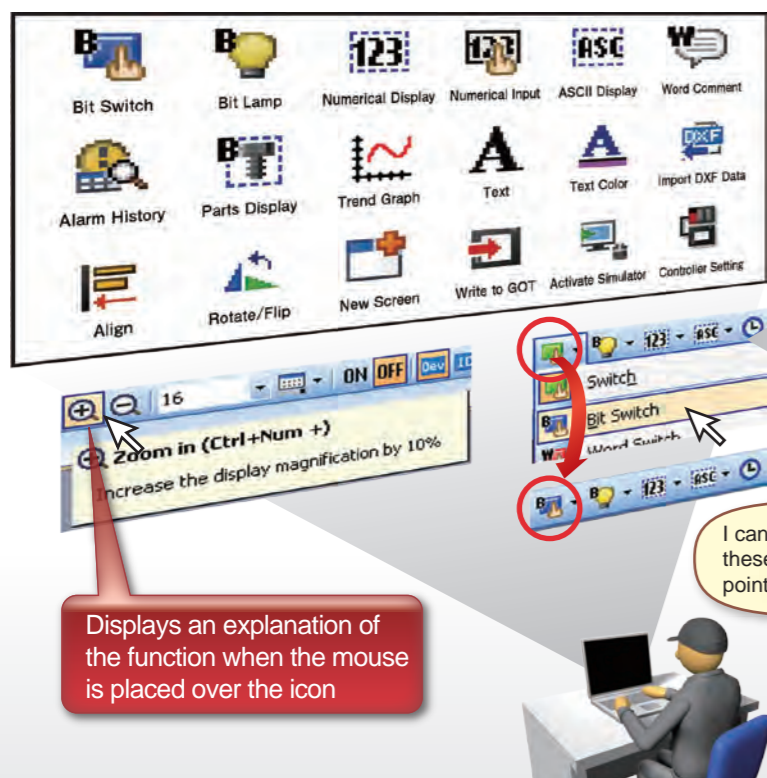
Create striking screen designs using simple operations



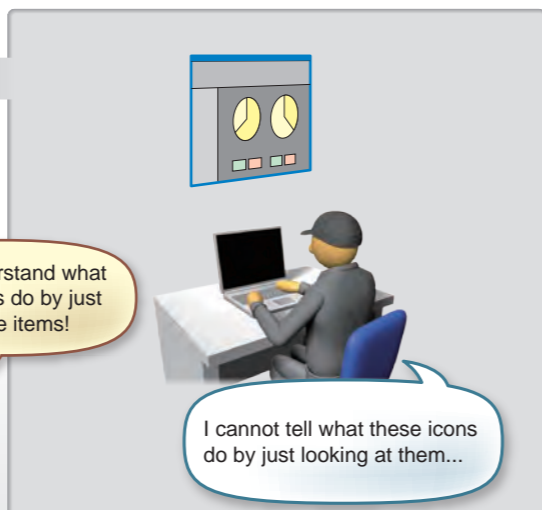
Users just need to choose object data they need, and drag and drop the data to where they want to place. The library tree has been reorganized and sorted to help users find the right element more quickly. For example, it is now possible to jump directly to items based on "appearance" or "function." A feature to select items from a recent history list is also included.



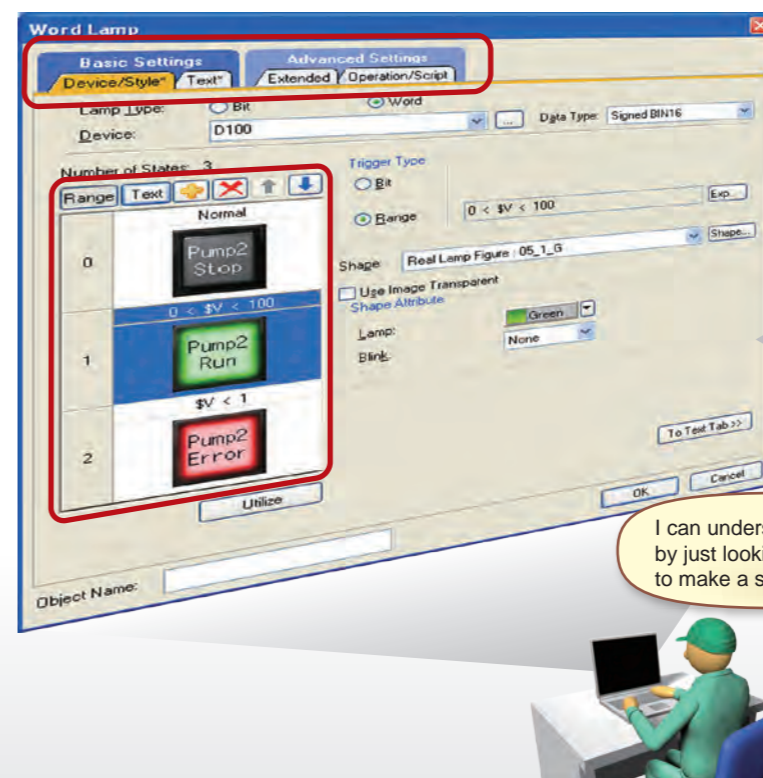
Intelligible icons and toolbar



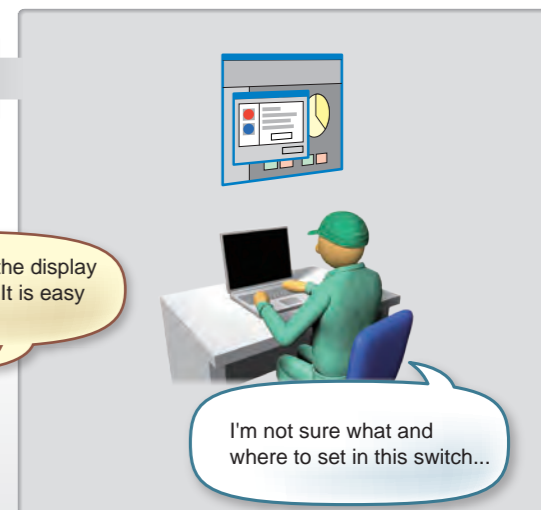
Many icons on toolbar are easily identified. Hovering over icons with the mouse now provides detailed tool-tips. The user tool bar now remembers the last function used to further increase screen design efficiency.



User-friendly dialog box display



Set-up and operation of the system has been simplified by including easy-to-identify tabs. Tabs which have already been configured are noted with asterisk to show designers that object settings have been modified. Arrange On/Off switches and images by variable number range and check them as you configure them.



MELSOFT Navigator

MELSOFT GX Works2

MELSOFT MT Works2

MELSOFT GT Works3

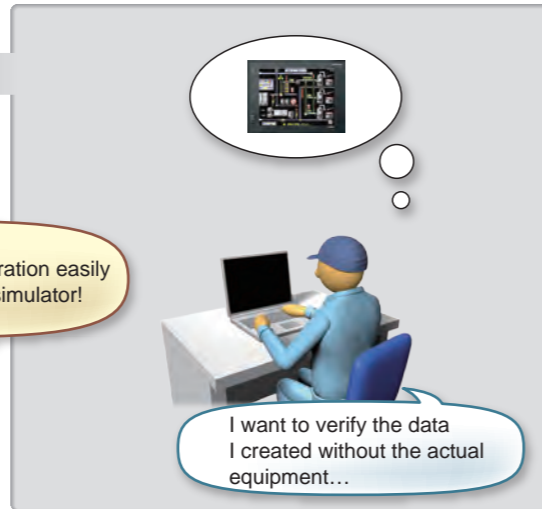


GT Works3 is easier to use, reducing the labor necessary for screen design

One-click simulation



Verify the correct operation of GOT projects on a PC, without the need for GOT or PLC hardware. Check that the system alarms operate, screen transitions are correct, and monitor devices all using the simulator. (Excluding GT10)

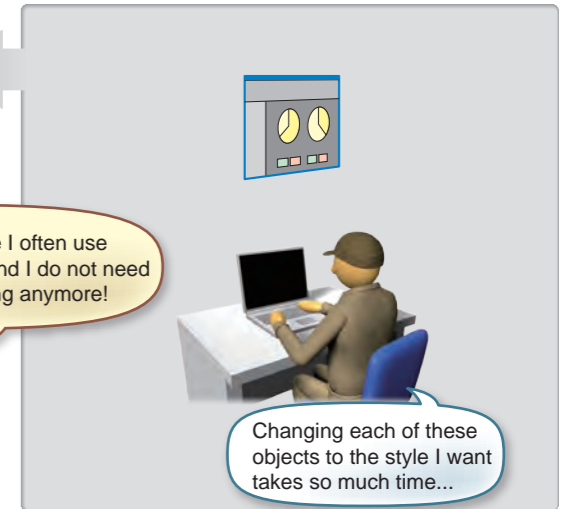


* GX Works2 or GX Simulator is required

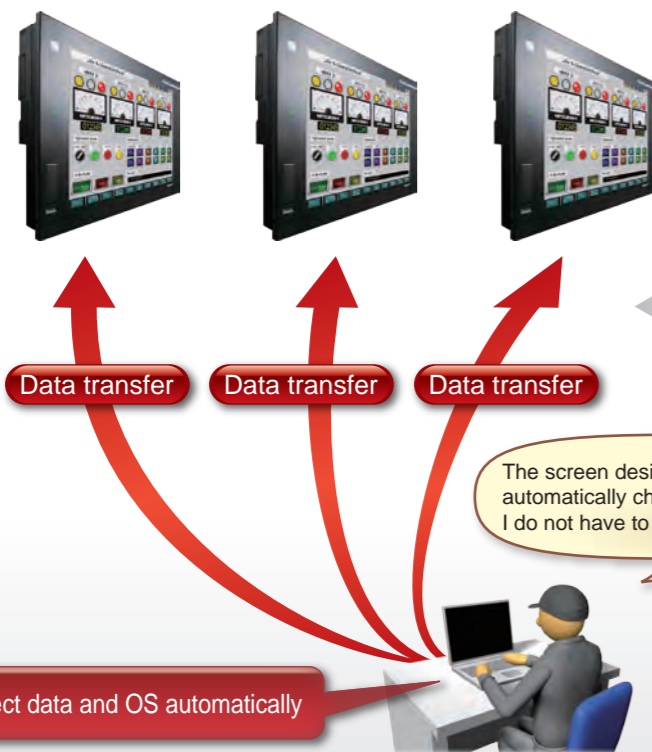
Customizable default settings



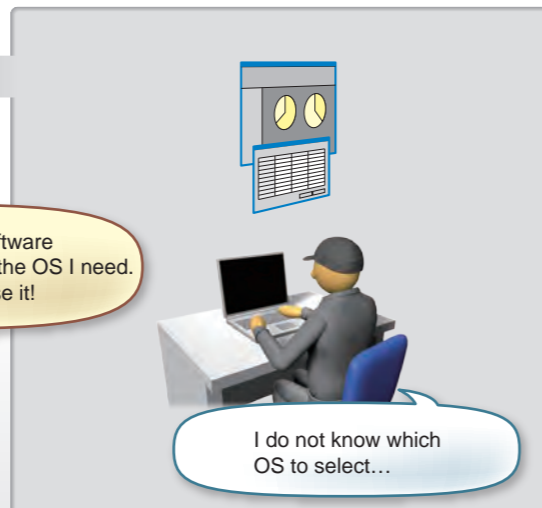
Save time by choosing your own defaults for shapes and objects. Registering the most frequently used settings as defaults saves you the trouble of making the same changes repeatedly to each of those objects.



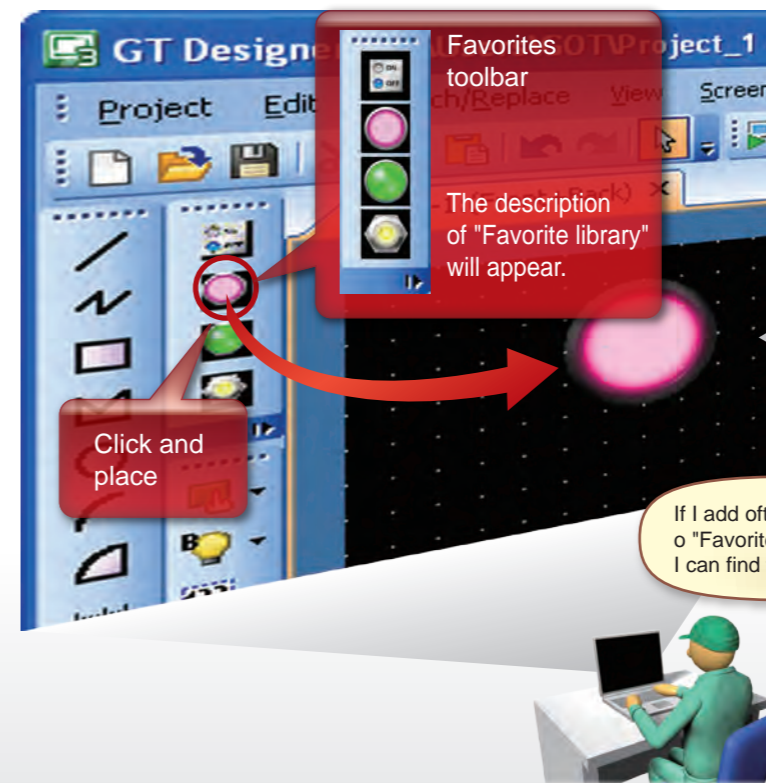
Easy data transfer by OS automatic selection



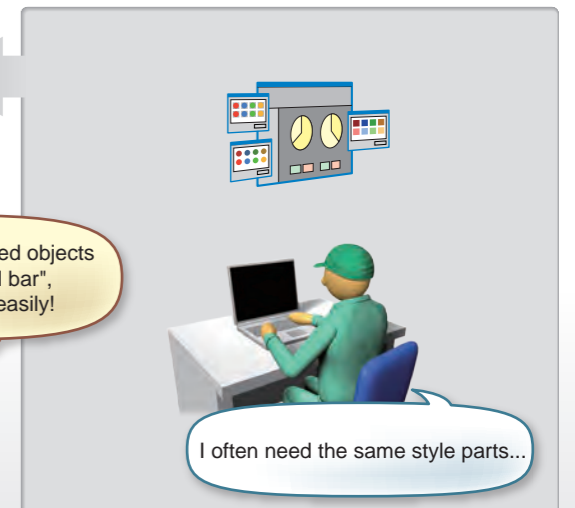
Because different GOT operating systems are required based on the screen data present, the screen design software will automatically choose and upload the correct OS when transferring projects to the GOT. Therefore users do not need to choose the OS manually.



Selecting favorite parts from the toolbar

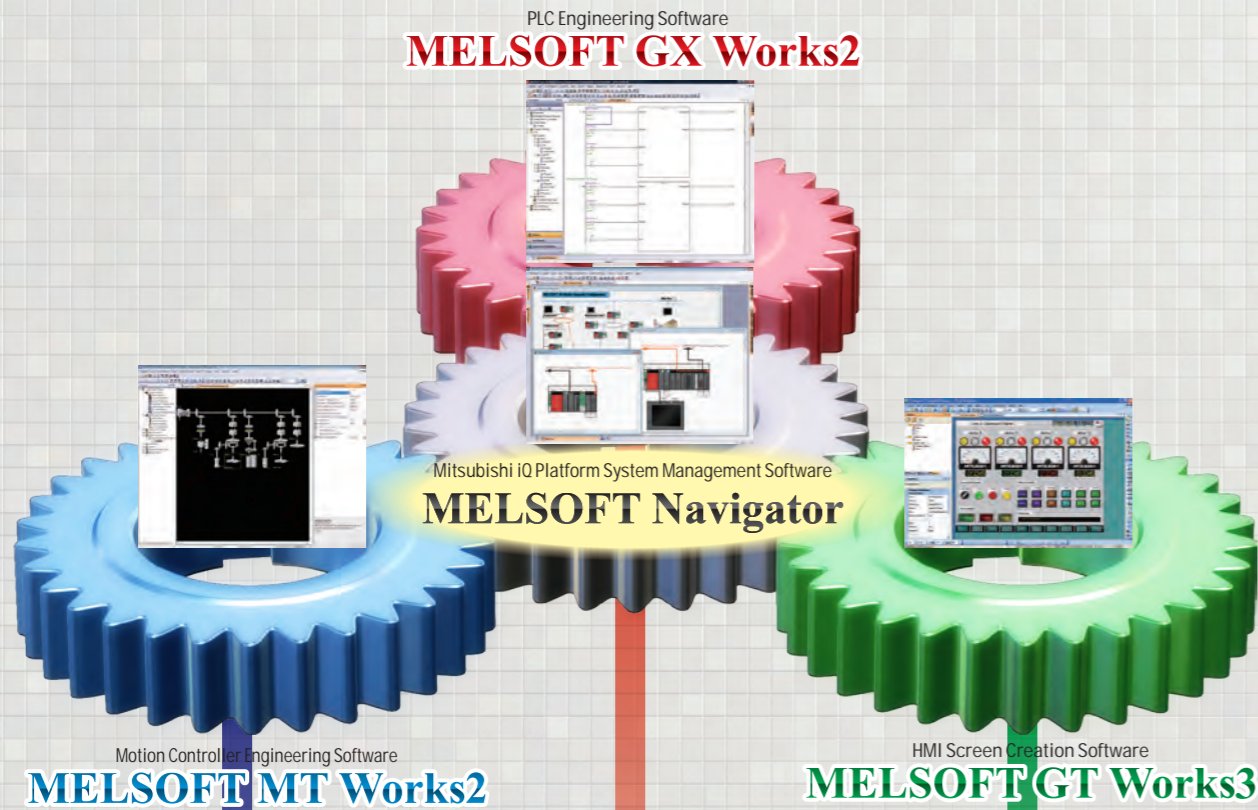


Create a collection of favorite parts to avoid configuring from default every time. Registering the favorite parts to "Favorite library" and the parts appear on "Favorite toolbar". Objects in the "Favorites tool bar" can be picked and placed quickly.



MELSOFT Navigator
MELSOFT GX Works2
MELSOFT MT Works2
MELSOFT GT Works3

MELSOFT iQ Works



Motion Controller Engineering Software
MELSOFT MT Works2

HMI Screen Creation Software
MELSOFT GT Works3

PLC

Motion controller

GOT

iQ Platform
Industrial automation, evolved.

Factory Automation has made an evolutionary leap thanks to Mitsubishi Electric's combination of several leading-edge technologies. With a high-speed, high-capacity PLC, and a high-speed, high-accuracy motion, these iQ Platform-compatible controllers unleash unprecedented performance using advanced multiple CPU high-speed communication.



PLC

The iQ Platform excels in bringing superior performance to multiple CPU systems. The key is the redesigned back-plane which allows for vastly increased CPU-to-CPU transfer speeds while maintaining full backward compatibility with Q Series hardware. The PLC CPUs have an increased memory sharing capacity and operation speeds in the nanosecond range which further helps to reduce takt time of production machines and manufacturing devices.

PLC



Motion controller

The motion controller CPUs realize high accuracy, synchronous, speed/position control by executing communications with servo amplifiers in as little as a 0.44ms. Customize your motion solution by taking advantage of motion control functions such as multi-axis interpolation, speed control, electronic cam, tracking control, and more. In addition, the MELSOFT MT Works2 engineering environment has been optimized to substantially reduce program development and debugging times.

Motion controller



GOT

With the introduction of system labels, the labor required for system development has been greatly reduced. There is no longer a need to memorize devices as they can be easily searched. And now, configuring connected devices and drivers has never been easier. Using the batch parameter setting function in MELSOFT Navigator, it is easy to create parameters for all connected devices, drivers, and interfaces.

GOT



The results of a quest for the highest performance and operating speeds approaching the lower boundary of the nanosecond scale

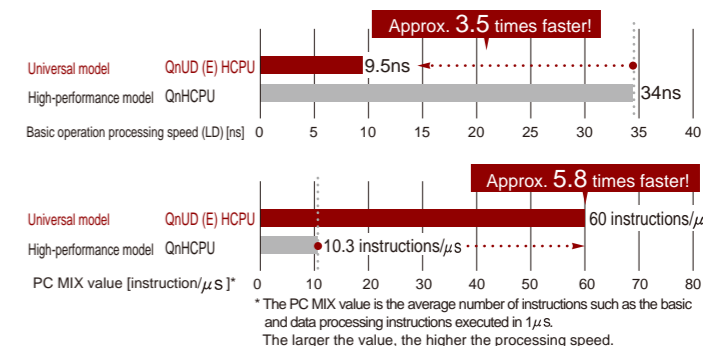


speeds approaching the lower boundary of the nanosecond scale

Increase the production rate with ultrahigh-speed processing

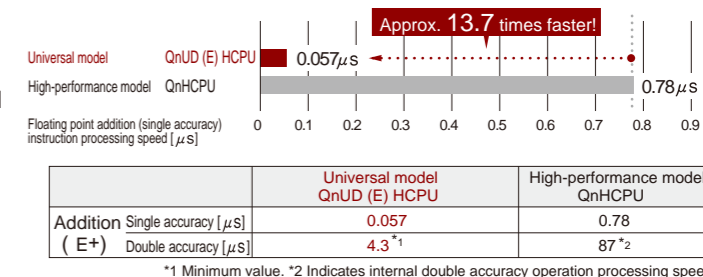
Major improvements in operational performance

- New CPU models offer ultrahigh-speed basic operation performance, (LD) of 9.5ns, in response to building demands for increased system production rates.
- With the increased speed of basic operation processing comes scan time reductions, and improvements in processing accuracy. High-speed control (previously only supported by micro-computer boards) using these PLC CPUs has become a viable solution.



High-speed, high-accuracy real data processing

- In order to speed up production data calculations, the floating point addition instruction's processing time has been reduced to 0.057μs.
- Calculation errors of complex equations can be reduced using the newly added double accuracy operation.

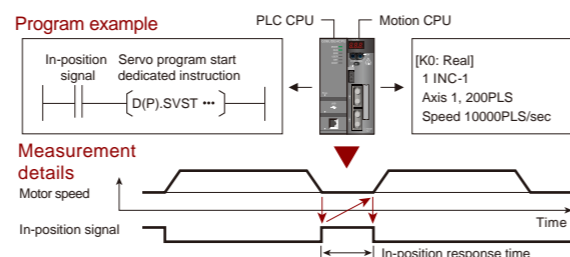


Universal model	QnUD (E) HCPU	Q04/ 06/ 10/ 13/ 20/ 26UDHCPU, Q04/ 06/ 10/ 13/ 20/ 26/ 50/ 100UDEHCPU
High-performance model	QnHCPU	Q02/ 06/ 12/ 25HCPU

High-speed and high-accuracy machine control made possible with multiple CPUs

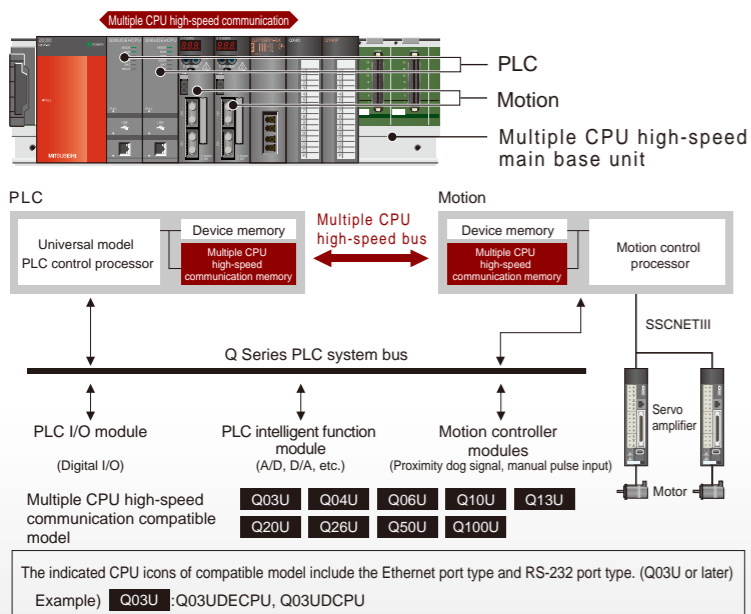
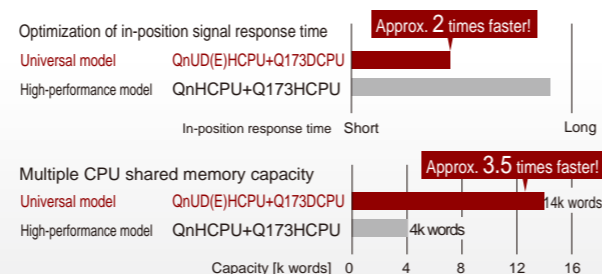
Multiple CPU high-speed communication

- Each programmable controller CPU in the multiple CPU configuration is capable of simultaneously processing multiple CPU high-speed communication (14k words/ 0.88ms), executing a sequence, process or motion program, and performing high-speed machine control. In motion applications, the motion control operations are synchronized using multiple CPU high-speed communications.



<In-position response time>

In a multiple CPU system (a PLC and a motion controller), with the in-position signal from the servo amplifier of the first axis (used by motion controller) as the trigger, the PLC sends a start command to the servo amplifier of the second axis. The time it takes for the servo amplifier of the second axis to output the speed command is called the in-position response time, and this time is a good indicator of CPU-to-CPU data transfer speed.



Increased program capacity

Efficient management by structuring programs into individual routines

- Programs are divided into 124 (max.) sub-programs according to categories such as product and process. This facilitates structuring programs into individual routines. Such structured programs can be highly specialized to enhance visibility for detailed program management. In addition, standard ROM (4MB max. capacity) enables the storage of device labels and comments for function block and sequence programs to be stored in the PLC CPU.

CPU	Q00UJ	Q00U	Q01U	Q02U	iQ Platform									
					Q03UDE	Q04UDEH	Q06UDEH	Q10UDEH	Q13UDEH	Q20UDEH	Q26UDEH	Q50UDEH	Q100UDEH	
Program memory	Program capacity (Step)	10k	15k	20k	30k	40k	60k	100k	130k	200k	260k	500k	1000k	
	No. of programs	32			64	124						124		
Standard ROM capacity (flash ROM)	256KB		512KB		1MB		2MB		4MB		4MB			

Large-capacity memory for large-volume data

- The capacity of standard RAM, which can be used as file register, has been increased to store larger amounts of production and quality data. Additionally, large-capacity SRAM cards are now supported. An 8MB SRAM card can be used as file register for 4086k words (max.) to handle large volumes of data.

Standard RAM capacity (file register capacity)

Q00UJ	Q00U	Q01U	Q02U	iQ Platform									
				Q03UDE	Q04UDEH	Q06UDEH	Q10UDEH	Q13UDEH	Q20UDEH	Q26UDEH	Q50UDEH	Q100UDEH	
				128KB (64k words)	192KB (96k words)	256KB (128k words)	768KB (384k words)	1024KB (512k words)	1280KB (640k words)	1536KB (768k words)	1792KB (896k words)		

Memory card (SRAM)

Model	Q2MEM-1MBS	Q2MEM-2MBS	Q3MEM-4MBS	Q3MEM-8MBS
Capacity	1MB	2MB	4MB	8MB
File register capacity *	505k words	1017k words	2039k words	4086k words

* Maximum capacity when the memory card is used as file register. Memory card cannot be used for Q00UJ, Q00U, and Q01UCPU.



New algorithms result in high-speed and high-accuracy solutions

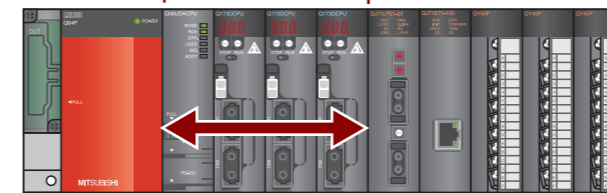


Optimal system construction

- Up to 4 CPU modules can be freely selected in the multiple CPU system (one PLC CPU required).
- An optimum decentralized control system can be constructed using multiple CPUs. Control is optimized by dispersing processing across the multiple CPUs with the PLC handling general machine control and the motion controller handling servo control tasks. System expandability is accomplished with ease due to the availability of over 100 different types of MELSEC Q Series modules.
- Up to 96 axis per system can be controlled using multiple motion CPUs (three Q173DCPU modules).
- SSCNETIII based MR-J3 servo amplifiers deliver a high-speed, high-accuracy solution.

SSCNET (Servo System Controller NETWORK)

Multiple CPU high-speed data transfer



The multiple high-speed transmission cycle is the same as the motion control cycle time.



Increased controllability

Shared memory capacity



PLC program interrupt for multiple CPU synchronization

- Using the new PLC interrupt function synchronized with the motion operation cycle (0.88ms), it is possible to achieve real-time processing of ladder programs.

[Application Example]

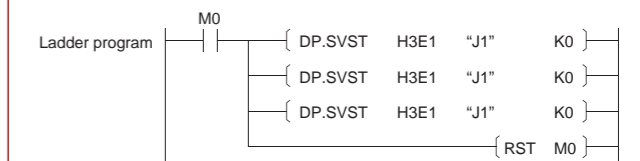
1. A motor real-time value can be compared against a specific point, and if this point is overrun, the PLC can turn on an output signal. (Variation of comparison processing does not have an influence on the scan time of the ladder which is processed within 0.88ms.)
2. Multiple motion controllers can be started simultaneously.

Motion-dedicated PLC instruction

- Motion-dedicated PLC instructions have become easier to use.

Issue multiple instructions at the same time

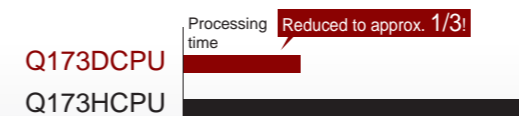
Example: Execution of three motion-dedicated SVST instructions at the same time



Large reduction in programming read/write time

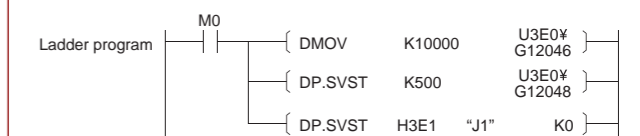
- Substantial shortening of communication time when reading and writing to the motion controller (Q173DCPU/Q172DCPU use).

Motion CPU communication time
Servo program read time



Indirectly set data and execute instructions at the same time

Example: Indirect data setting of speed and position plus execution of the motion-dedicated SVST instructions all at the same time



```

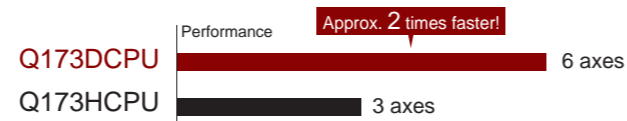
Servo program
[KO: Real]
1 INC-1
Axis 1.U3E0YG12046 PLS
Speed U3E0YG12048 PLS/s
  
```

Motion processing acceleration

- Twice the motion operational performance (0.44ms/6axis) as previously possible has resulted in increased production rates.
- Extremely accurate synchronous control and speed/position control realized thanks to the increased speed of the axial control cycle.
- A motion control-specific processor (high-performance 64bitRISC) and a proprietary acceleration algorithm ASIC improve hardware efficiency.
- Using the MELSEC Q Series universal model CPU, sequence processing is also accelerated. (Using the Q06UDHCPU, the PLC basic instruction time is 9.5ns.)
- Equipped with various motion control functions such as multi-axis interpolation, speed control, electronic cam and tracking control.
- Reduce variations in response time by using motion SFC programming.

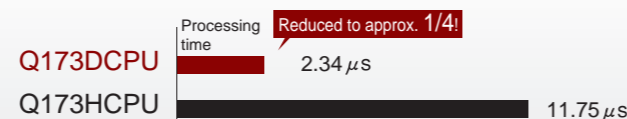
Approximately double the basic motion performance

Basic motion performance
(With 0.44ms operation cycle time)
In case of SV13



1/4 the Motion SFC processing time

Motion SFC processing time
Process time for D800L = D802L + D804L





Improve production site efficiency with the integration of HMI and iQ Platform-compatible products



Backup/Restore function

- Various data such as the PLC CPU program, motion controller program and parameters can be backed up to the CF card in the GOT.
- Users can perform batch operations to restore the data to the PLC CPU or motion controller.

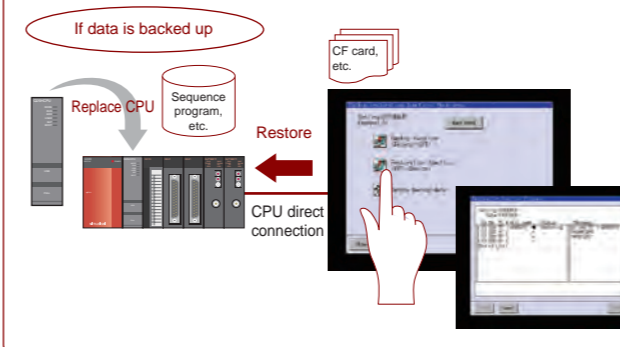
<Supported data> Programs, parameters, device comments, device default data, file registers, etc.

<Supported models> MELSEC Q Series (excluding Q12PRH/Q25PRHCPU), MELSEC L Series, Q Series motion controllers (SV13/SV22 only), CNC C70, Robot controller

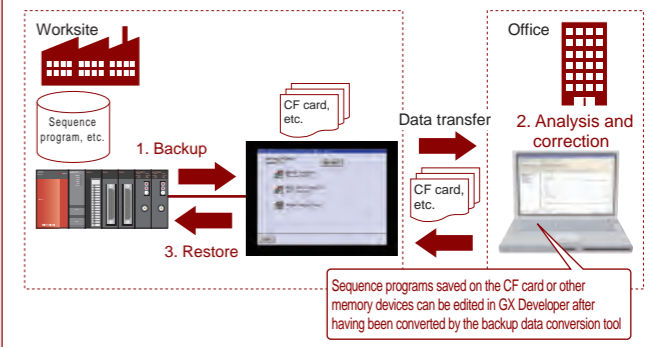
<Supported connection type> Bus connection, CPU direct connection, computer link connection, Ethernet connection (host only)

The backup data conversion tool is shipped with GT Works2/GT Designer2

Make a data back up in case of PLC or CPU failure or a dead battery, and quickly replace the faulty device and restore the system using the backup.



When a problem occurs, or when the PLC CPU program is updated, the sequence program data can be transferred, analyzed, and corrected without requiring an experienced engineer, increasing time and cost efficiency.



PLC CPU programs can be easily changed without a personal computer at the worksite or any previous GX Developer knowledge

An optional device may be necessary

*: When replacing the PLC CPU, the restore function may not be available depending on the system configuration and connection type.

Ladder monitor function

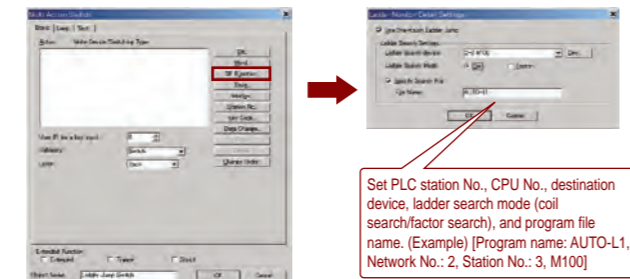
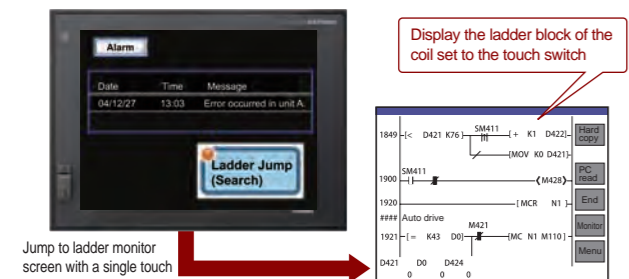
This function monitors Mitsubishi Q/QS/QnA/A/FX Series PLC sequence programs using a circuit diagram (ladder format).

- *: Compatible with XGA/SVGA/VGA model.
- *: The QS Series can only monitor with the Q/QnA ladder monitor function. You cannot change device values.
- *: FX3GCPU is not supported.

Troubleshoot with the one-touch ladder jump function (Q/QnA ladder monitor)

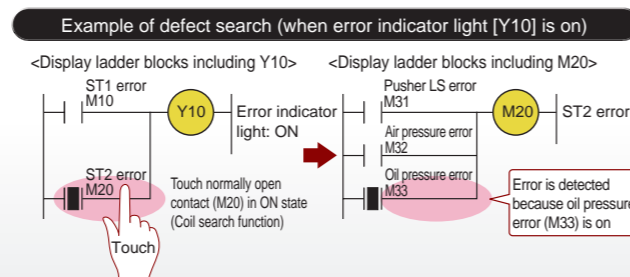
- By setting a program name and coil number of the PLC to a touch switch, the desired ladder circuit block can be displayed directly.

- Select "SP Function" → "Ladder Monitor" from the touch switch property dialog box.



Improve maintenance work efficiency with a wide monitoring range of useful functions

- In addition to the PLC connected to the GOT, other stations including multi CPUs can be monitored. Multiple programs and local devices in every CPU can be monitored.
- Save sequence program comments to the CF card in the GOT (Q/QA ladder monitor).
- Device values and timer (T)/counter (C) set values can be changed.
- Execute a coil search or contact point search simply by touching the (Q/QnA) ladder monitor screen. **<Touch search>**
- When an alarm occurs, perform a back-tracking ladder search to find the contact that triggered the alarm. **<Defect search>**



Find the root cause of problems quickly, right from the machine.

An optional device may be necessary

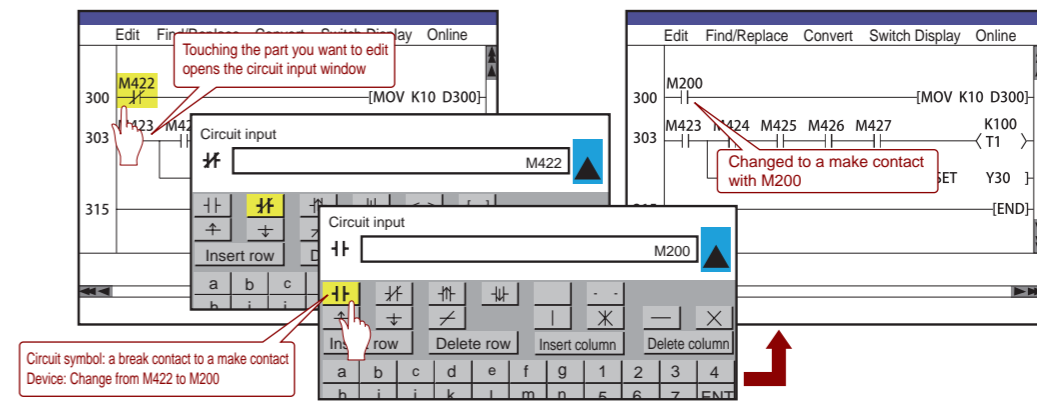
Ladder edit function

Mitsubishi Q Series (Q mode) and CNC C70 PLC programs can be edited in ladder format.

- *: Supports the SVGA/SVGA/VGA model except 5.7 model.
- *: QnPHCPU/QnPRHCPU are not supported.

Easy ladder editing with GOT at your worksite

- Simply by touching the part in the ladder program you want to edit, such as a contact point or a line, you can input, change or delete circuit symbols and devices. You can also insert or delete vertical and horizontal lines, and insert or delete rows and columns.
- You can also find and replace a device. Not only it is easy to find each place to edit, but it is also easy to correct multiple places in a batch.



Writing to the PLC

- After you edit the program, you can "stop" it remotely from GOT to write it, and then "run" it remotely.

An optional device may be necessary

Monitor, search and test the ladder program

- You can display the current value, search and execute device test on the ladder program. Testing the edited program can be executed immediately.

Wide range of access

- In addition to the PLC connected to the GOT, you can access other stations (PLCs) in the network including multiple CPUs. You can edit multiple programs in every CPU.

Software model list

		Model name	Contents
iQ Platform-compatible FA integrated engineering software	MELSOFT iQ Works	SW1DNC-IQWK-E	Mitsubishi iQ Platform-compatible FA integrated engineering software suite with additional integrated functions CD-ROM version Mitsubishi iQ Platform-compatible system management software [MELSOFT Navigator] (English version) +Mitsubishi iQ Platform-compatible PLC engineering software [MELSOFT GX Works2] (English version) +Mitsubishi iQ Platform-compatible motion controller engineering software [MELSOFT MT Works2] (English version) +Mitsubishi iQ Platform-compatible HMI screen design software [MELSOFT GT Works3] (English version)
	MELSOFT iQ Works	SW1DND-IQWK-E	Mitsubishi iQ Platform-compatible FA integrated engineering software suite with additional integrated functions DVD-ROM version Mitsubishi iQ Platform-compatible system management software [MELSOFT Navigator] (English version) +Mitsubishi iQ Platform-compatible PLC engineering software [MELSOFT GX Works2] (English version) +Mitsubishi iQ Platform-compatible motion controller engineering software [MELSOFT MT Works2] (English version) +Mitsubishi iQ Platform-compatible HMI screen design software [MELSOFT GT Works3] (English version)
	MELSOFT GX Works2	SW1DNC-GXW2-E	MELSEC PLC programming SW programming function + intelligent unit function + simulator function (English version)
	MELSOFT MT Works2	SW1DNC-MTW2-E	Mitsubishi iQ Platform-compatible motion controller engineering software (English version)
	MELSOFT GT Works3	SW1DNC-GTWK3-E	Screen design software for GOT + simple data conversion function + GT SoftGOT1000 function + simulator function (English version)

* : Please contact your nearest sales office or distributor for details of multiple license versions.

MELSOFT iQ Works system requirements

		Contents
OS(Only 32 bit OS)		Windows2000 Professional, Service Pack 4 WindowsXP Professional, Service Pack 2,3 WindowsXP HomeEdition, Service Pack 2,3 Windows Vista Home Basic, Service Pack 1,2 Windows Vista Home Premium, Service Pack 1,2 Windows Vista Ultimate, Service Pack 1,2 Windows Vista Business, Service Pack 1,2 Windows Vista Enterprise, Service Pack 1,2
CPU		Desktop: Celeron 2.8 GHz or faster Laptop: PentiumM 1.7 GHz or faster
Memory		1GB or more
Display		XGA (1024 × 768) or higher
Available space		For installation: 3 GB of hard disk space For operation: 512MB virtual memory available

MELSOFT iQ Works compatible version

		Contents
MELSOFT GX Works2		Version 1.30G or later
MELSOFT MT Works2		Version 1.09K or later
MELSOFT GT Works3		Version 1.14Q or later

iQ Platform-compatible controller model list

		Model name	Contents
iQ Platform-compatible controller	PLC	Q03UDCPU	No. of I/O points: 4096 points, no. of I/O device points: 8192 points, program capacity: 30k steps basic operation processing speed (LD instruction): 20ns, program memory capacity: 120kb, multiple CPU high-speed communication peripheral connection ports: USB and RS232, with memory card I/F
		Q04UDHCPU	No. of I/O points: 4096 points, no. of I/O device points: 8192 points, program capacity: 40k steps basic operation processing speed (LD instruction): 9.5ns, program memory capacity: 160kb, multiple CPU high-speed communication peripheral connection ports: USB and RS232, with memory card I/F
		Q06UDHCPU	No. of I/O points: 4096 points, no. of I/O device points: 8192 points, program capacity: 60k steps basic operation processing speed (LD instruction): 9.5ns, program memory capacity: 240kb, multiple CPU high-speed communication peripheral connection ports: USB and RS232, with memory card I/F
		Q13UDHCPU	No. of I/O points: 4096 points, no. of I/O device points: 8192 points, program capacity: 130k steps basic operation processing speed (LD instruction): 9.5ns, program memory capacity: 520kb, multiple CPU high-speed communication peripheral connection ports: USB and RS232, with memory card I/F
		Q26UDHCPU	No. of I/O points: 4096 points, no. of I/O device points: 8192 points, program capacity: 260k steps basic operation processing speed (LD instruction): 9.5ns, program memory capacity: 1040kb, multiple CPU high-speed communication peripheral connection ports: USB and RS232, with memory card I/F
		Q03UDECPU	No. of I/O points: 4096 points, no. of I/O device points: 8192 points, program capacity: 30k steps basic operation processing speed (LD instruction): 20ns, program memory capacity: 120kb, multiple CPU high-speed communication peripheral connection ports: USB and Ethernet, with memory card I/F
		Q04UDEHCPU	No. of I/O points: 4096 points, no. of I/O device points: 8192 points, program capacity: 40k steps basic operation processing speed (LD instruction): 9.5ns, program memory capacity: 160kb, multiple CPU high-speed communication peripheral connection ports: USB and Ethernet, with memory card I/F
		Q06UDEHCPU	No. of I/O points: 4096 points, no. of I/O device points: 8192 points, program capacity: 60k steps basic operation processing speed (LD instruction): 9.5ns, program memory capacity: 240kb, multiple CPU high-speed communication peripheral connection ports: USB and Ethernet, with memory card I/F
		Q13UDEHCPU	No. of I/O points: 4096 points, no. of I/O device points: 8192 points, program capacity: 130k steps basic operation processing speed (LD instruction): 9.5ns, program memory capacity: 520kb, multiple CPU high-speed communication peripheral connection ports: USB and Ethernet, with memory card I/F
		Q26UDEHCPU	No. of I/O points: 4096 points, no. of I/O device points: 8192 points, program capacity: 260k steps basic operation processing speed (LD instruction): 9.5ns, program memory capacity: 1040kb, multiple CPU high-speed communication peripheral connection ports: USB and Ethernet, with memory card I/F
	Q50UDEHCPU	No. of I/O points: 4096 points, no. of I/O device points: 8192 points, program capacity: 500k steps basic operation processing speed (LD instruction): 9.5ns, program memory capacity: 2000kb, multiple CPU high-speed communication peripheral connection ports: USB and Ethernet, with memory card I/F	
	Q100UDEHCPU	No. of I/O points: 4096 points, no. of I/O device points: 8192 points, program capacity: 1000k steps basic operation processing speed (LD instruction): 9.5ns, program memory capacity: 4000kb, multiple CPU high-speed communication peripheral connection ports: USB and Ethernet, with memory card I/F	
	C language CPU	Q12DCCPU-V	No. of I/O points: 4096 points, endian type: little endian, CF card: available OS: VxWorks Version 6.4
	Motion	Q172DCPU	No. of control axes: 8 axes/operation cycle: 0.44ms to SSCNETIII: 1ch
	Main base unit	Q38DB	8 slots for installing Q Series module
Q312DB		12 slots for installing Q Series module	

MELSOFT Navigator compatible module list (Version 1.10Z)

Category	Model name
Universal model CPU	Q00UJCPU
	Q00UCPU
	Q01UCPU
	Q02UCPU
	Q03UDCPU
	Q03UDECPU
	Q04UDHCPU
	Q04UDEHCPU
	Q06UDHCPU
	Q06UDEHCPU
	Q10UDHCPU
	Q10UDEHCPU
	Q13UDHCPU
	Q13UDEHCPU
	Q20UDHCPU
	Q20UDEHCPU
	Q26UDHCPU
	Q26UDEHCPU
	Q50UDEHCPU
	Q100UDEHCPU
Basic model CPU	Q00JCPU
	Q00CPU
	Q01CPU
High-performance model CPU	Q02CPU
	Q02HCPU
	Q06HCPU
	Q12HCPU
Main base unit	Q25HCPU
	Q33B
	Q35B
	Q38B
	Q312B
Multiple CPU high-speed main base module	Q38DB
	Q312DB
Slim type main base module	Q32SB
	Q33SB
	Q35SB
Redundant power supply extension base module	Q38RB
	Q63B
Extension base module	Q65B
	Q68B
	Q612B
	Q52B
	Q55B
Redundant power supply extension base	Q68RB
	Q61P
Power supply	Q61P-A1
	Q61P-A2
	Q62P
	Q63P
	Q64P
	Q64PN
Life detection power supply	Q61P-D
Slim type power supply	Q61SP
Redundant power supply	Q63RP
	Q64RP

This is the MELSOFT Navigator compatible module list.
This list does not cover the compatible modules of MELSOFT GX Works2, MELSOFT MT Works2, and MELSOFT GT Works3.

Category	Model name
Input module	QX10
	QX10-TS
	QX28
	QX40
	QX40-TS
	QX40-S1
	QX40H
	QX41
	QX41-S1
	QX41-S2
	QX42
	QX42-S1
	QX50
	QX70
	QX70H
	QX71
	QX72
	QX80
	QX80-TS
	QX80H
Output module	QX81
	QX81-S2
	QX82
	QX82-S1
	QX90H
	QY10
	QY10-TS
	QY18A
	QY22
	QY40P
	QY40P-TS
	QY41P
	QY42P
	QY50
	QY68A
QY70	
QY71	
QY80	
QY80-TS	
QY81P	
I/O module	QH42P
	QX48Y57
Interrupt input	QX41Y41P
	QI60
Analog input	Q68ADV
	Q62AD-DGH
	Q68ADI
	Q64AD
	Q64AD-GH
	Q64AD2DA
	Q68AD-G
	Q66AD-DG
	Q61LD
	Q68DAVN
Analog output	Q68DAV
	Q68DAIN
	Q68DAI
	Q62DAN
	Q62DA
	Q62DA-FG
	Q64DAN
	Q64DA
	Q66DA-G
	Q64RD
Temperature input	Q64RD-G
	Q68RD3-G
	Q64TD
	Q64TDV-GH
	Q68TD-G-H02
Temperature control	Q68TD-G-H01
	Q64TCRT
	Q64TCRTBW
	Q64TCTT
Loop control	Q64TCTTBW
	Q62HLC

MELSOFT Navigator compatible module list (Version 1.10Z)

Category	Model name
Pulse I/O, positioning	QD60P8-G
	QD62
	QD62-H01
	QD62-H02
	QD62D
	QD62E
	QD63P6
	QD64D2
	QD72P3C3
	QD75P1
	QD75P2
	QD75P4
	QD70P4
	QD70P8
	QD75D1
	QD75D2
	QD75D4
	QD70D4
	QD70D8
	QD75M1
	QD75MH1
	QD75M2
	QD75MH2
QD75M4	
QD75MH4	
QD74MH8	
QD74MH16	
Information module	QJ71WS96
	QJ71MES96
	QD81DL96
	QJ71E71-100
	QJ71E71-B2
	QJ71E71-B5
	QJ71C24N
	QJ71C24N-R2
	QJ71C24N-R4
	QJ71CMO
	QJ71CMON
	QD51
	QD51-R24
Network module	QJ71LP21-25
	QJ71LP21S-25
	QJ71LP21G
	QJ71BR11
	QJ71NT11B
	QJ61BT11N
	QJ61CL12
	QJ71FL71-T-F01
	QJ71FL71-B2-F01
	QJ71FL71-B5-F01
	QJ71FL71-T
	QJ71FL71-B2
	QJ71FL71-B5
	QJ71AS92
	QJ71GP21-SX
	QJ71GP21S-SX
	ID interface module
QD35ID2	
Blank cover module	QG60

This is the MELSOFT Navigator compatible module list.
 This list does not cover the compatible modules of MELSOFT GX Works2,
 MELSOFT MT Works2, and MELSOFT GT Works3.

Category	Model name
Motion controller	Q172CPUN
	Q172CPUN-T
	Q173CPUN
	Q173CPUN-T
	Q172HCPU
	Q172HCPU-T
	Q173HCPU
	Q173HCPU-T
	Q172DCPU
Servo external signal input module	Q172LX
	Q172DLX
Synchronous encoder input module	Q172EX
	Q172EX-S1
	Q172EX-S2
	Q172EX-S3
Manual pulse input module	Q172DEX
	Q173PX
	Q173PX-S1
GOT1000 series	Q173DPX
	GT16**-X
	GT16**-S
	GT16**-V
	GT15**-X
	GT15**-S
	GT15**-V
	GT155*-V
	GT15**-Q
	GT11**-Q
	GT11**-Q*BDQ (Built-in Q Bus)
	GT11**-Q*BDA (Built-in A Bus)
	GT10**-Q
GT1030	
GT1020	
Network	Ethernet
	CC-Link IE Control
	MELSECNET/H (between PCs)

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