



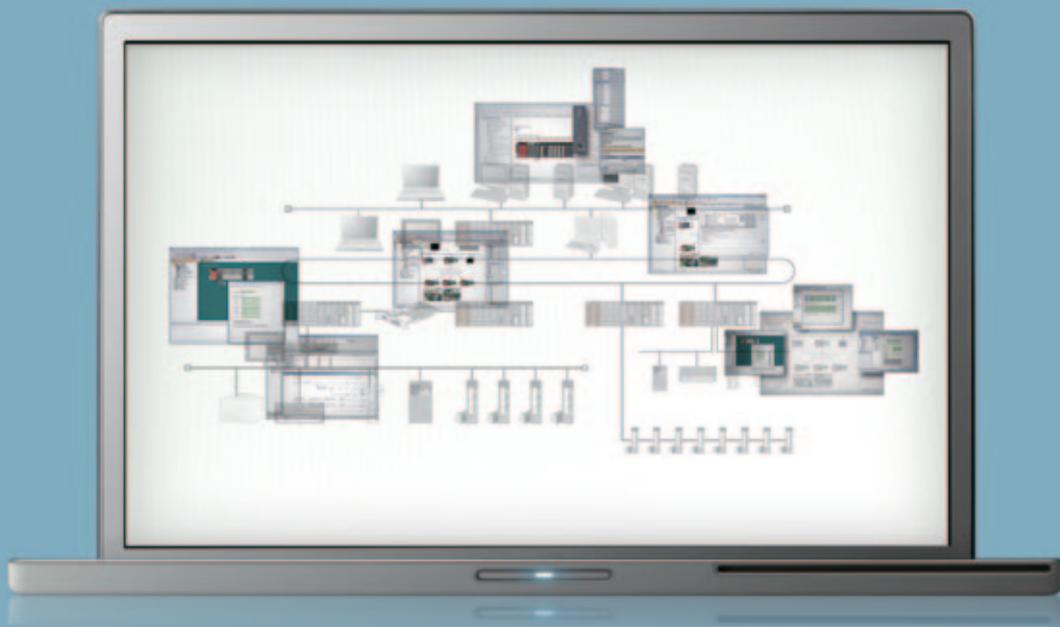
Changes for the Better

for a greener tomorrow



Mitsubishi iQ Platform Compatible
FA Integrated Engineering Software
MELSOFT iQ Works

Introducing
+ MELSOFT Navigator



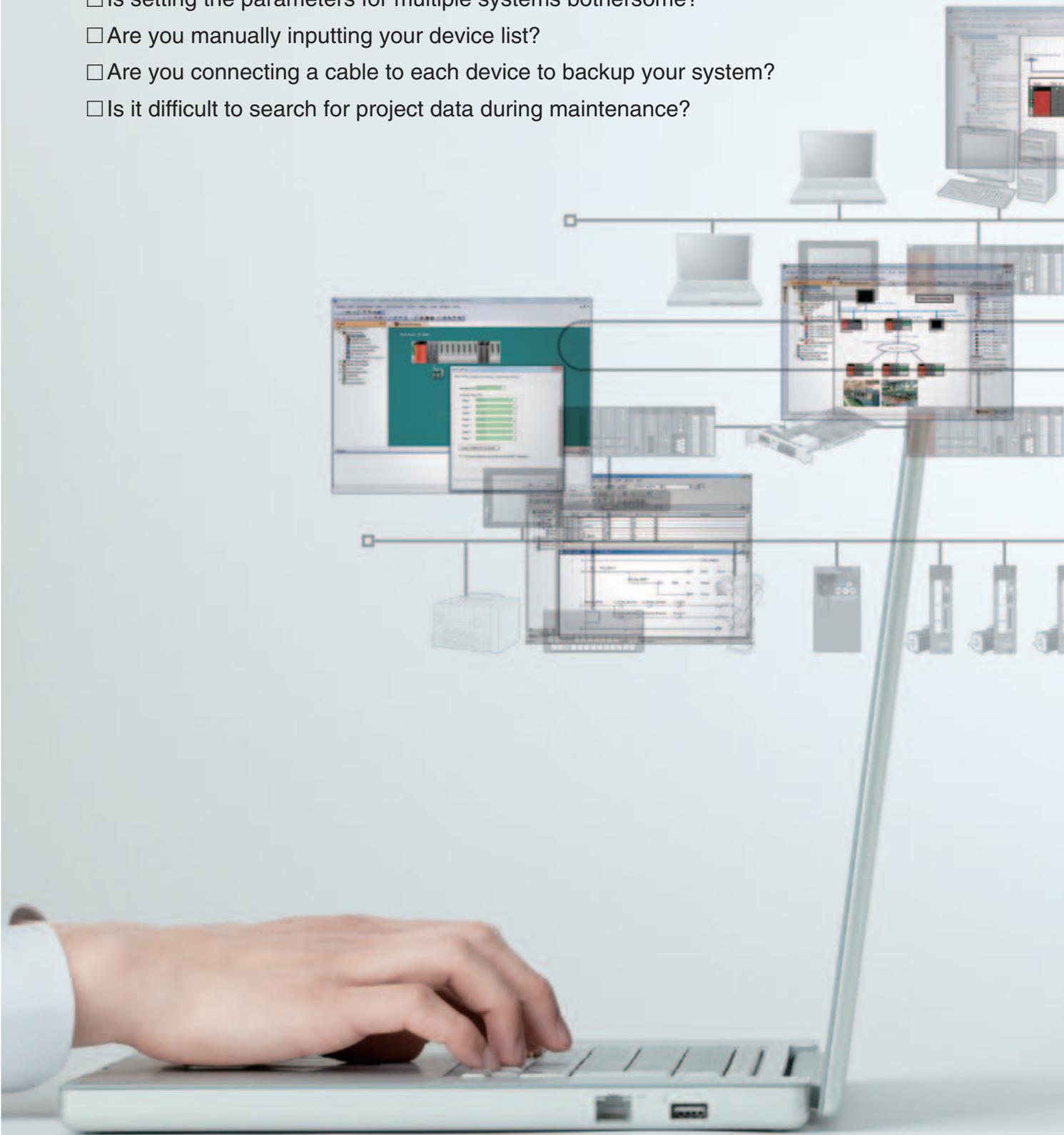
Navigating to an intuitive engineering environment

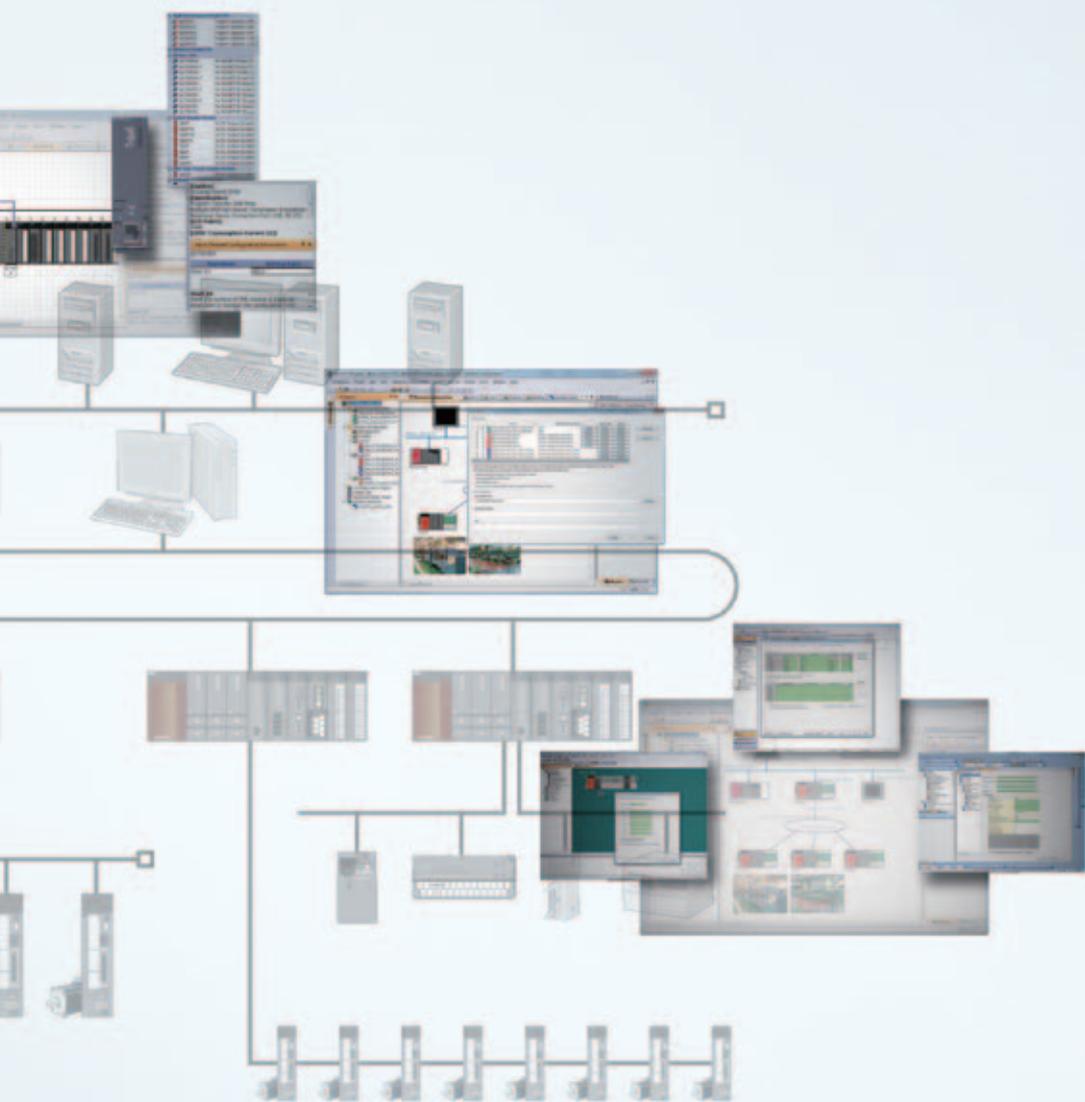
iQ Platform **iQSS**

Mitsubishi Electric FA Integrated Concept

Engineering innovations start from MELSOFT Navigator

- Is selecting modules time consuming?
- Is setting the parameters for multiple systems bothersome?
- Are you manually inputting your device list?
- Are you connecting a cable to each device to backup your system?
- Is it difficult to search for project data during maintenance?





Here's a more interactive and visible engineering style.
Revolutionizing everything from the way you design system specifications
and develop programs, to the way you perform field adjustments,
operations, and maintenance.

Experience the ease-of-use

+ MELSOFT Navigator

Seamless integrated engineering environment to accelerate total cost reduction

MELSOFT iQ Works

System Management Software

MELSOFT Navigator

MELSOFT Navigator, along with GX Works2, MT Works2, GT Works3, and RT ToolBox2, facilitates system level design and acts as the interface between each software. Useful functions include design of system configuration, parameter batch setting, system labels, and batch read.

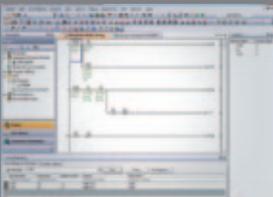


Redefining engineering with

+ MELSOFT Navigator

Programmable Controller
Engineering Software

MELSOFT GX Works2



This is the main programming and maintenance software for the PLC. Incorporating legacy support of programs created with GX Developer, further improving its functionality resulting in reduced engineering costs.

Motion Controller
Engineering Software

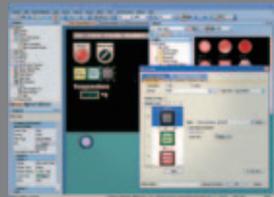
MELSOFT MT Works2



The motion control design and maintenance software includes intuitive graphic based programming together with a digital oscilloscope simulator, further helping to reduce a motion systems TCO.

HMI/GOT
Screen Design Software

MELSOFT GT Works3



The GOT (Graphic Operation Terminal) screen creation software has been designed with 3 main features; Simplicity, Graphic Design, and Easy Usability, further helping to create graphic screens in fewer steps.

Robot Engineering Software

MELSOFT RT ToolBox2



The robot setup software supports various steps from programming, to commissioning, evaluation, and maintenance. In addition to improving preventative maintenance by using the integrated 3D evaluation simulator to visualize parameterization and connected devices.



Ease-of-use at your fingertips

MELSOFT Navigator

System Specifications Design

■ Module Selection Displays available options in a list. Easily arrange suitable modules in the workspace.	05
■ Checking Power Supply Capacity/Number of I/O Points No need to look up manuals. Automatic check is available in module configuration.	06
■ Creating Device List Use CSV files to easily create lists with Microsoft® Excel®.	07
■ Creating System Configuration Directly apply your system designs in different locations.	08
■ Managing reference documentations Manage files in a similar fashion as in Microsoft® Windows® desktop.	09
■ Motion System Templates Templates with preset parameters and labels are available.	10

Program Development

■ Parameter Batch Setting Batch set parameters for multiple systems.	11
■ Sensor Parameter Setting Set parameters for the IQSS compatible sensor from within the same setup screen.	12
■ Parameter Setting Setup of devices on CC-Link/AnyWireASLink network without needing a manual.	13
■ Device Assignment Graphical based device configuration by automatically assigning of devices.	14
■ Label Sharing Changes are automatically reflected in all related projects.	15

Field Adjustments

■ Multiple Device Data Backup Read out project data for multiple devices in batch.	16
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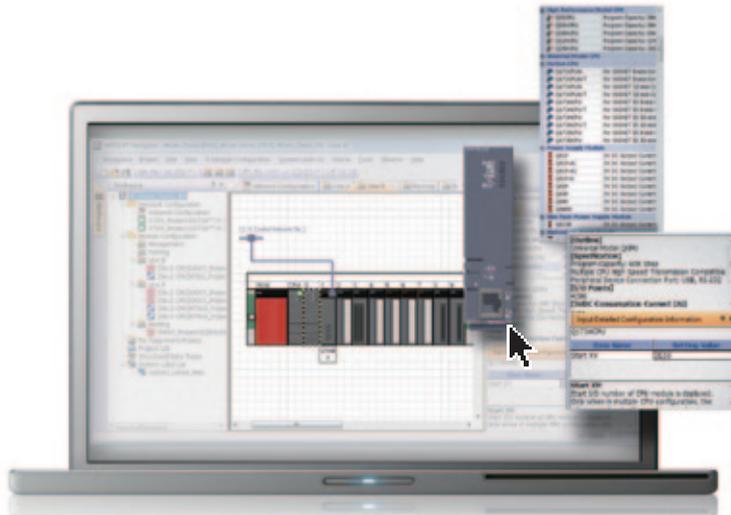
Maintenance

■ Project Data Maintenance Finding required data is a breeze with the workspace management method.	18
■ Maintenance Software Automatic Startup The right software automatically starts up.	20
■ Management of older sequence program Sequence programs for older equipment can be managed together.	21
■ Instruction Manual Management Find target files instantaneously! Quickly and easily manage data.	22

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You'll be amazed at how quickly you can select the most suitable module.

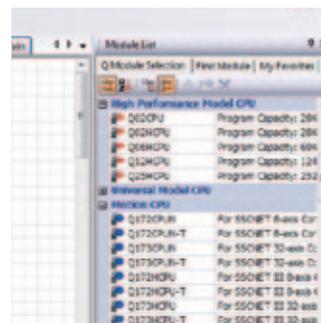
Convenient!



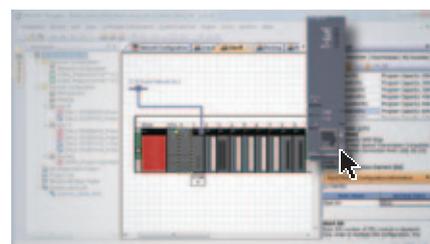
Displays available options in a list. Easily arrange suitable modules in the workspace.

Catalogs to read, web sites to check. The first time-consuming task in designing a system is selecting the modules. With MELSOFT Navigator, all of current available modules are listed, and the specifications of selected modules can be easily confirmed. This simplifies the module selection process. Pick the most suitable module and drag & drop it into the system configuration.

Available modules are listed



Selected module is illustrated

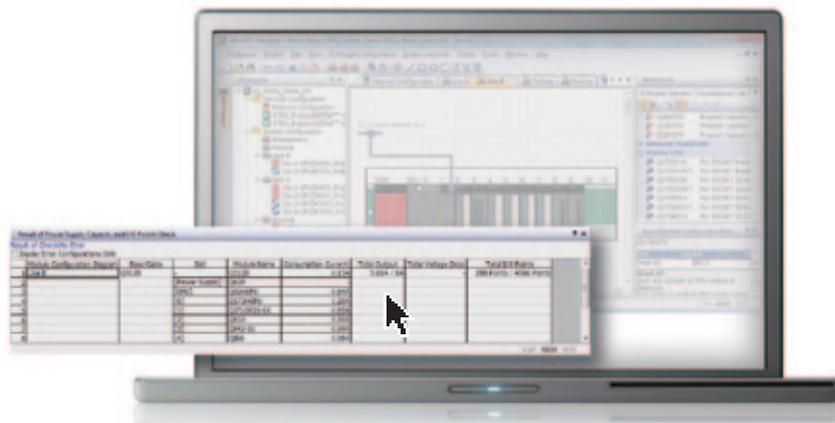


Complete the system configuration just by dragging & dropping modules!

The module list shows all modules including special I/O modules.

The power supply capacity and number of I/O points are automatically checked, so you don't need to rely on the manual!

Time saving!

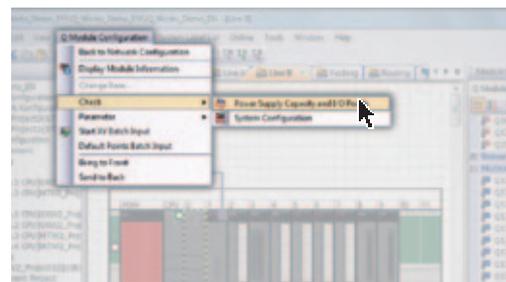


No need to look up manuals. Automatic check is available in module configuration.

Until now, referencing the manual was essential for calculating power supply capacity and looking up number of I/O points. Since making new selections in case of a mistake is bothersome, users often select extra large power supplies and CPU modules.

With MELSOFT Navigator, power supply capacity and number of I/O points of the selected module are automatically checked for the selected module configuration. This makes it easy to change the power supply and CPU modules when necessary.

Module configuration drawing



Automatic check of power supply capacity/Number of I/O points

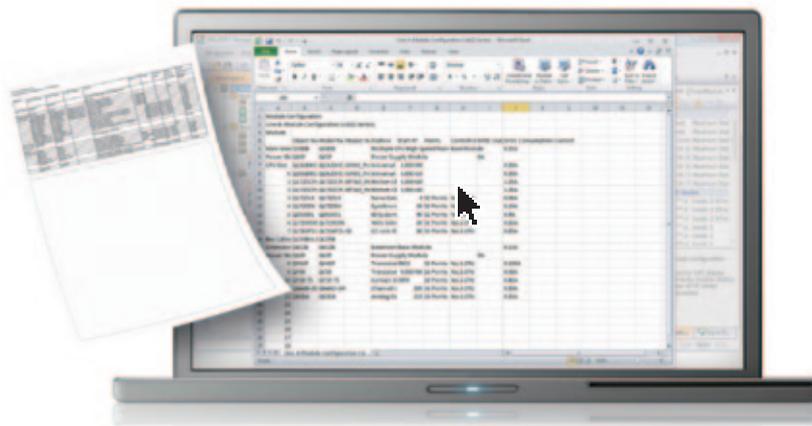


Select the appropriate power supply capacity and number of I/O points!

With automatic check, power supply modules and CPU modules can be re-selected easily.

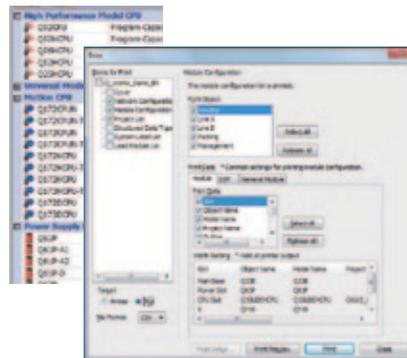
Document your device lists
without having to manually input data!

Easy!

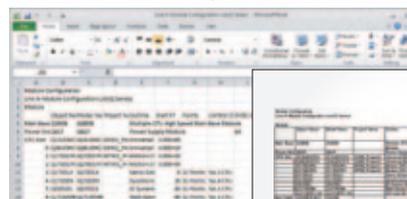


Use CSV files to easily create lists with Microsoft® Excel®.

Manually inputting data into Microsoft® Excel® based on CAD drawings can make it quite time-consuming to prepare device lists for orders. With MELSOFT Navigator, the list of devices in your system configuration drawing can be output as a CSV file which can be used to easily create and output device lists with Microsoft® Excel®.

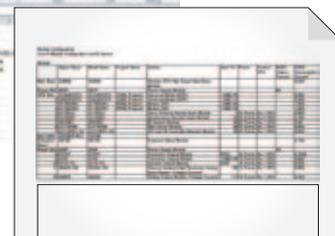


Output CSV file from module list



Create device list with Microsoft® Excel®

Print out the device list



Make it easier to order modules!

No longer create device lists with manual inputs.

Effortlessly create system configurations without using Microsoft® Visio® or Microsoft® Word®!

Convenient!

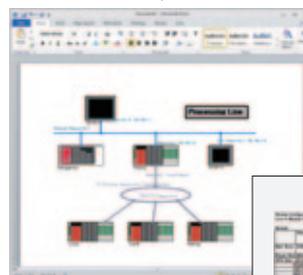
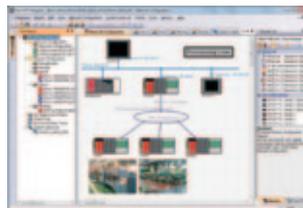


Directly apply your system designs in different locations.

Documenting your system configuration takes time and manpower. Do you still manually input your network configurations, module configurations and parameters settings with Microsoft® Visio® or Microsoft® Word®?

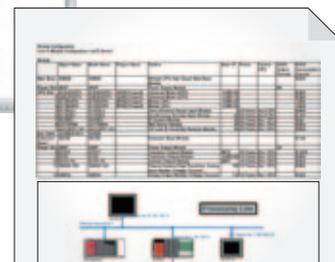
Design your system using MELSOFT Navigator and reuse the design details in other documents. There is no need to start from scratch each time.

System configuration



Paste into Microsoft® Word®

Edit and print with Microsoft® Word®



Incorporate design details into other documents!

Reuse everything from network configurations, module configurations and parameter settings.

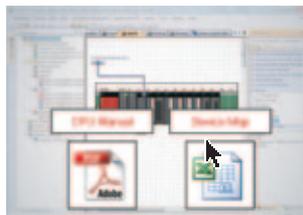
All relevant data are one-click away!

Convenient!

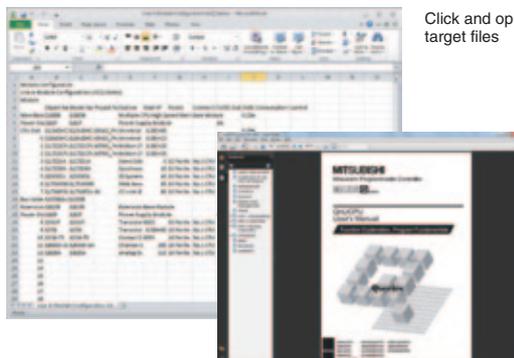


Manage files in a similar fashion as in Microsoft® Windows® desktop.

Saving and managing vast amounts of reference documents used for designing is always a headache. In MELSOFT Navigator, link files to mechanical drawings and past design materials can be pasted into the system configuration. To open the file, just click on the icon as in a Microsoft® Windows® desktop. There is no need to search for each file individually. With link files to design documents readily available, MELSOFT Navigator becomes a convenient portal.



Paste the link file for reference and design documents



Click and open target files

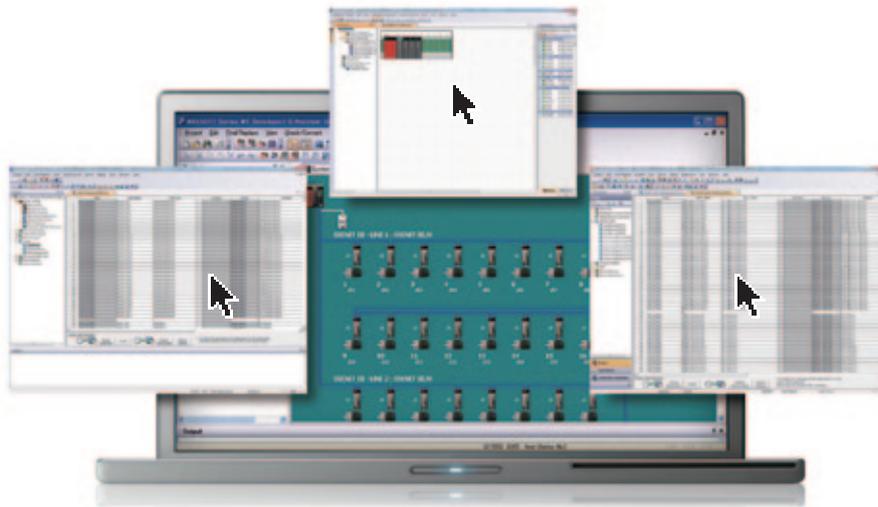


A portal to design documents!

Insert link files to design documentations.

Advanced multi-CPU settings are so easy
when you use templates!

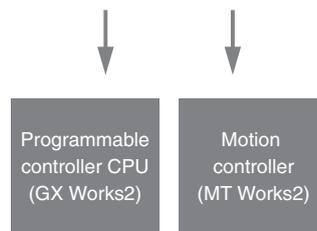
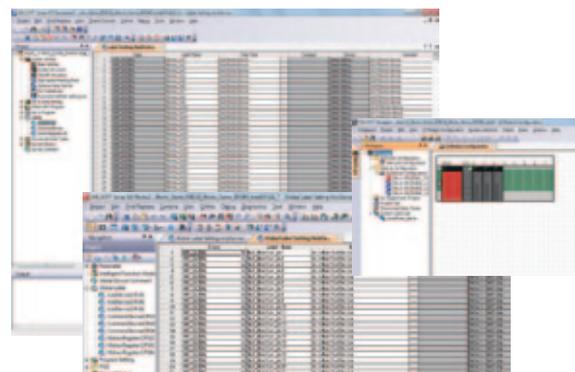
Easy!



Templates with preset parameters and labels are available.

Just as settings for a programmable controller CPU can be complicated, so can settings for a motion controller. MELSOFT Navigator provides multiple templates to facilitate setting up multi-CPU configurations that include a programmable controller CPU and a motion controller. The parameters and labels are preset, allowing you to focus on the programming.

Use templates with preset parameters and labels



Set up a multi-CPU configuration in a short time!

No need to configure motion control from scratch!

Apply parameters from the system configuration to each station's programmable controller/GOT in one shot!

MELSOFT collaboration!

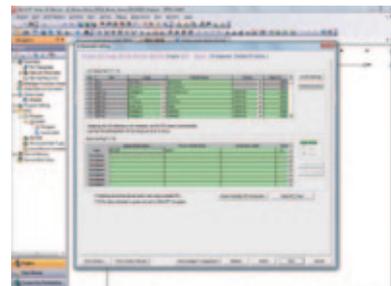


Batch set parameters for multiple systems.

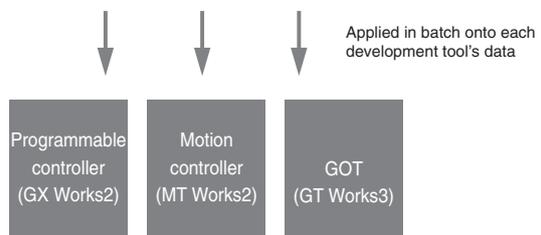
Just when you thought you were finished, you have to set the parameters for the next system... In the programming stage, setting the parameters for multiple systems is bothersome.

With MELSOFT Navigator, the information set in the system configuration is applied in batch onto each GX Works2, MT Works2 or GT Works3 project. There's no need to start each software and check the consistency.

*Detailed parameters must be set with each tool.



Parameter setting information in system configuration



Apply parameters onto each software in batch!

Parameters are automatically generated from network configuration and module configuration.

No need to individually setup each sensor using proprietary setup tools

Convenience!



One Tool to set parameters even between different sensor manufacturers

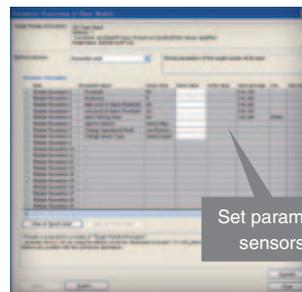
Setting parameters for each sensor can be difficult as setting methods can vary between setup tools. However, by using MELSOFT Navigator and GX Works2, the parameters for different iQSS*1 compatible sensors can be setup all from the same setup screen. There's no need to use a dedicated tool for each sensor, resulting an efficient way of setting various sensors all in one operation. In addition, sensors supporting CC-Link and AnyWireASLINK*2 networks, can be detected automatically within the system configuration diagram.

- *1 Innovative solution for reducing TCO. iQ Sensor Solution
- *2 Sensor network that centrally monitors (visualizes) the sensor statuses from the programmable controller, and contributes to improving operating rates and reducing engineering time.
- *3 Refer to the iQSS catalog for further details. (Sensor Solution iQ Sensor Solution)
- *4 AnyWireASLINK products are not available in some countries. Please consult your local Mitsubishi Electric representative for details.

Automatically generate the system configuration diagram by detecting connected sensors



Select the sensor icon to set with unified operations



Set parameters for different sensors on one screen



Reduce sensor setup time!

Automatic detection of connected sensors within the system configuration diagram.



Can you really set the CC-Link/AnyWireASLINK network without referring to a manual?!

Easy!



More than 400 types of CC-Link remote I/Os, GOTs, inverters and robots are supported!!

Just select the device, ready for the design stage!

MELSOFT Navigator and GX Works2 use drag & drop and graphic based screens to create a intuitive setting environment for the CC-Link / AnyWireASLINK network. Easy operations mean the process from setting the various parameters to automatic calculation of the link scan time can be carried out at once. In addition, the slave station parameters settings can be confirmed and changed when required. New modules can be added to CC-Link by installing the CSP+*1 released from CLPA*2.

- *1 CC-Link Association
- *2 Profile prepared by vendors developing CC-Link family compatible products
- *3 GX Works2 also supports CC-Link IE Field.



Select "Slave station parameter process"

Link Scan Time (Approx.): 3.01 ms

Automatically calculates link scan time

Slave station's parameter setting window opens

Set slave station's parameters!



Easily set the master and slave stations without mistakes!

Set each device without a manual.

No need to consider device addresses!

Easy!



Automatically generate device assignments from the configuration screen.

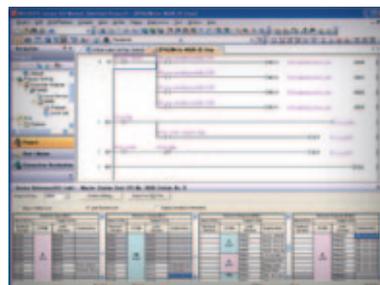
By using the new CC-Link configuration editor as part of the GX Works 2 package, device assignment tasks have been made much simpler. Just rearrange the illustrations on the editor screen using the mouse to complete the device configuration and finish programming. The devices are then automatically assigned and listed in an easy-to-view list. This feature can be easily utilized for label programming.



Create the device configuration with the configuration editor



Automatically generate a list of device assignments



Program the ladder diagram while viewing the device assignments.

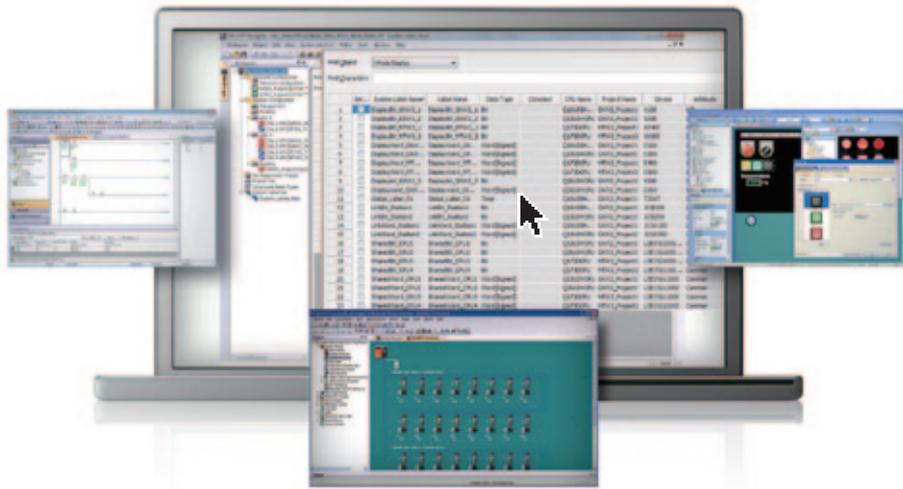


Making programming easier!

Easily and efficiently complete processes from device configuration to programming.

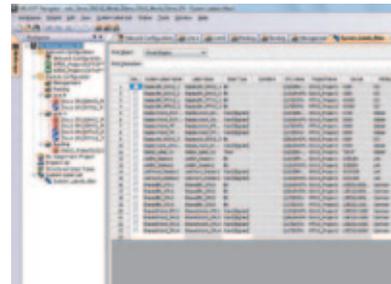
Assign devices for multiple projects just by changing one setting!

MELSOFT collaboration!

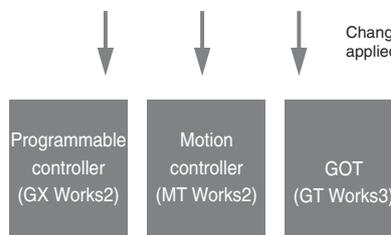


Changes are automatically reflected in all related projects.

In the past, if the device assignments changed, the same corrections had to be made for each of the projects. This problem has been resolved by using MELSOFT Navigator which can share labels between the programmable controller, motion controller and GOT. If, for example, a device assignment is changed in a programmable controller project, those changes are automatically applied on the motion controller and GOT projects. This greatly reduces setting time and setting mistakes.



Define labels from one location



Changes in settings are automatically applied to each project



Greatly reduce man-hours spent changing settings!

Use system labels to efficiently apply changes throughout the entire system.

Can you really backup multiple devices without connecting cables to each one?

MELSOFT collaboration!

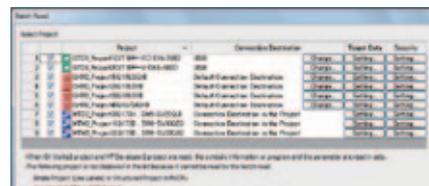


Read out project data for multiple devices in batch.

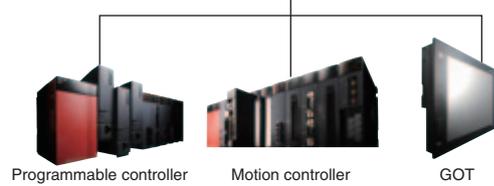
Programmable controller, motion controller and GOT... The more equipment you connect to the system, the longer it takes to read out project data for backup. With MELSOFT Navigator, if a cable is connected to the master station's programmable controller, to which multiple devices are connected via bus or network (MELSECNET/CC-Link IE/Ethernet), the project data for the multiple devices can be read out in batch. It is unnecessary to connect cables to each device.



Cable connection to programmable controller (master station, etc.)



Read project data in batch

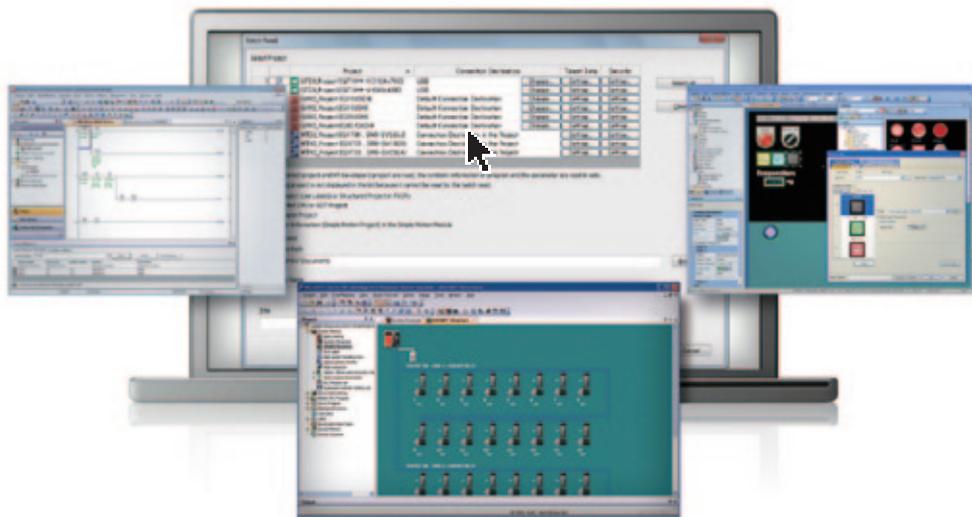


Read from multiple devices with one single cable!

There is no need to individual connect to each device.

No more operation mistakes
or overdue backups!

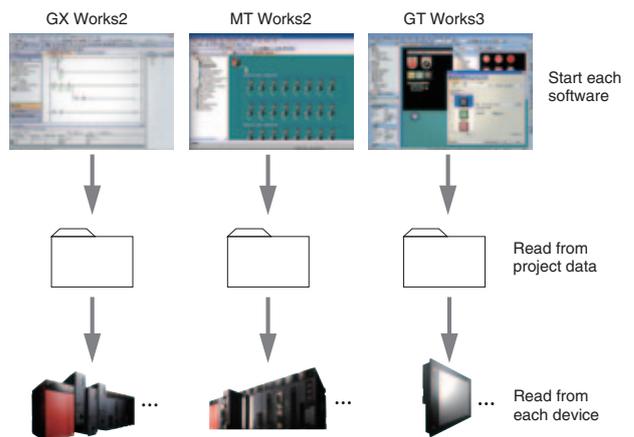
MELSOFT
collaboration!



Read in batch without starting each software.

Previously, to read out each device's project data, the operator had to start up each software (GX Works2, MT Works2, GT Works3), read from the project file, and then read data from the device. This process took several minutes per device. As the number of connected devices increased, the possibility of operation mistakes and overlooked backups increased. Now, with MELSOFT Navigator, after initial connections are defined for each software, data can be batch read without having to start up each software. This dramatically improves the efficiency of periodic backups and prevents data from being missed.

<Conventional>

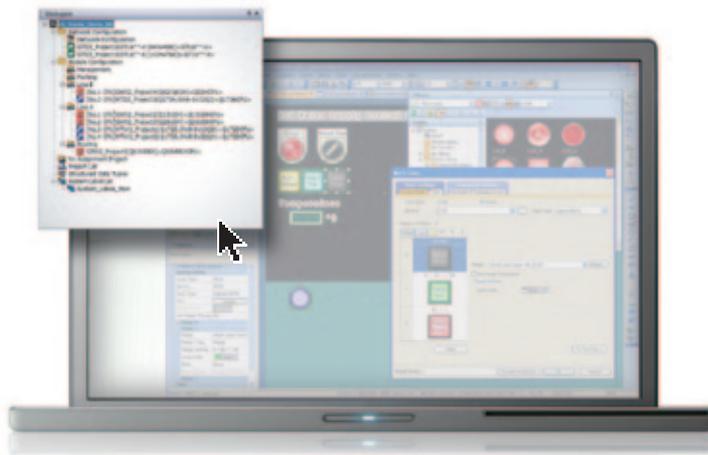


Efficiently backup data periodically with no mistakes!

Batch read project data for multiple devices without complicated procedures.

Find the desired project data at a glance!

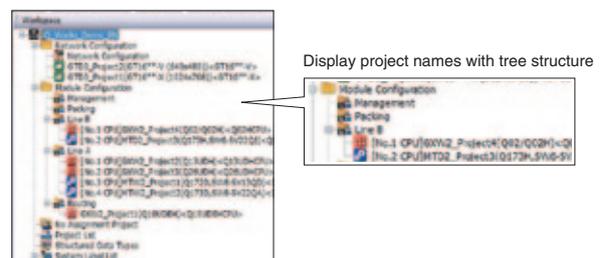
MELSOFT
collaboration!



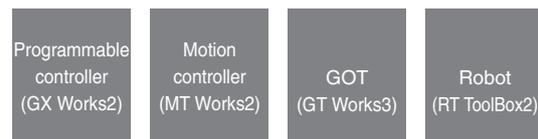
Finding required data is a breeze with the workspace management method.

Have you ever felt that when folders are made for each process and managed in nests, it's still hard to find that project data you want to maintain? Once you find the folder, there are several files, and you don't know which one to open. With MELSOFT Navigator, the project data for several devices such as the programmable controller, motion controller, GOT or robot can be managed as workspaces for a factory or a line. The project names are displayed with a tree structure in the workspace, and you can use Explorer to quickly find the project you need, etc.

Manage project data with workspaces



Search for corresponding project



Click to read data



No longer manage with project names!

As easy as searching for the project name in the workspace!

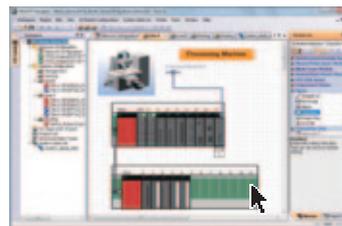
Illustration of the system expedites finding the device you need!

MELSOFT collaboration!



Click on the illustration to read its device data.

In MELSOFT Navigator, you can insert bitmap images to facilitate visualization of the system, and text boxes to write comments. The illustrations make searching for the desired device intuitive and fast. Reading project data is also made easy by simply clicking on the illustration.



● Paste-able bitmap and text box



● Visually search for the desired device

Read data by clicking the device illustration

▼	▼	▼	▼
Programmable controller (GX Works2)	Motion controller (MT Works2)	GOT (GT Works3)	Robot (RT ToolBox2)



Perform intuitive searches with illustrations!

Paste bitmaps and text boxes into system configuration.

How easy! Click on the corresponding project
to start up the right software!

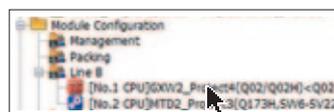
MELSOFT
collaboration!



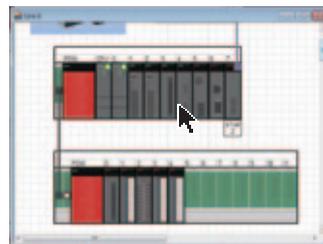
The right software automatically starts up.

Various software, including GX Developer, GX Works2, MT Works2, GT Works3 and RT ToolBox2, are used to edit project data used in a factory or line. It is often hard to know which software to start up. With MELSOFT Navigator, clicking on a project listed in the system configuration or workspace tree, starts up its corresponding software. The MELSOFT iQ Works Suite includes the license for these tools so you no longer need to manage licenses.

Click on a project in the workspace tree



Click on a device in the system configuration



Software for
corresponding
device automatically
starts up

GX Works2

MT Works2

GT Works3

RT ToolBox2

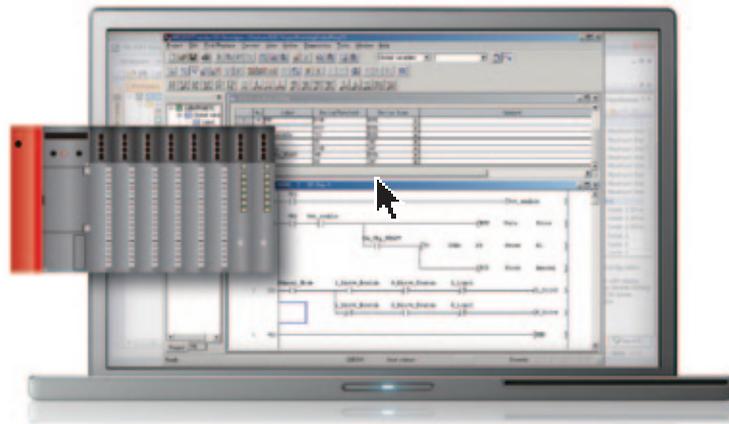


Maintain your devices without worrying about software!

The correct software automatically starts up.

Hassle-free management covers programs even for older equipment.

MELSOFT collaboration!



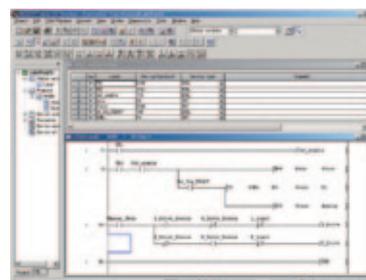
Sequence programs for older equipment can be managed together.

Are you having trouble managing your sequence programs for older equipment? With MELSOFT Navigator, you can work with GX Developer which is capable of editing A Series* sequence programs. Even when using systems consisting of older and newer programmable controllers, the project data for each programmable controller can be managed together with MELSOFT Navigator.

*Excludes some modules.



Start GX Developer from workspace tree



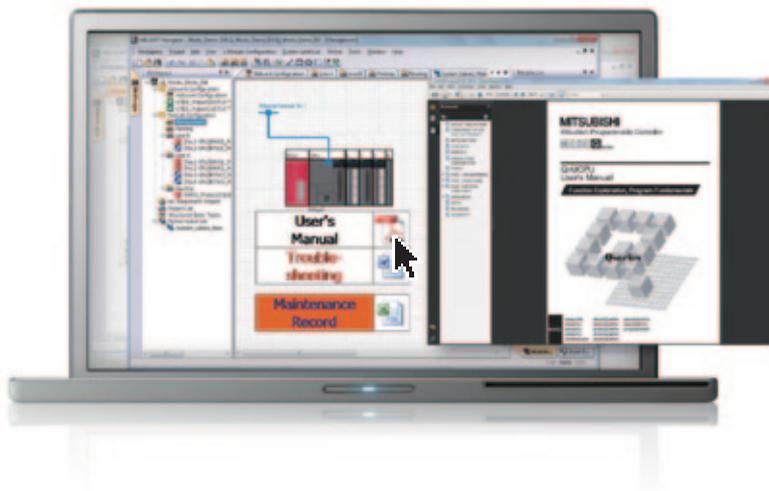
Manage data for equipment using older A Series



Compatible with GX Developer!

Use GX Developer to edit A Series* sequence programs.

From now on, find the target
instruction manual at a glance!

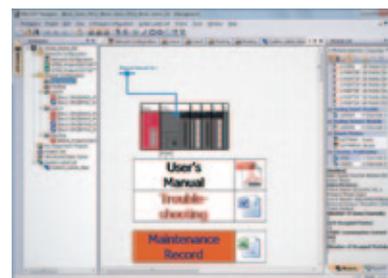


Find target files instantaneously! Quickly and easily manage data.

It's hard to find the equipment's instruction manual file when you need it most. MELSOFT Navigator manages GX Developer, GX Works2, MT Works2, GT Works3 and RT ToolBox2 project, and allows document files created with tools such as Microsoft® Word®, Microsoft® Excel® or PDF to be pasted into the system configuration.

This ease-of-use is just like a portal tool for equipment related documents. Greatly improve the efficiency of design document and instruction manual data management.

Insert link files to documents and data
(Microsoft® Word®, Microsoft® Excel® and PDF, etc.)



Create a portal site of equipment-related documents

Click to display the target instruction file

Microsoft® Word®
file

Microsoft® Excel®
file

PDF
file



Handy tool for operators!

Equipment related documents including instruction manuals can be easily searched and referred to by anyone.

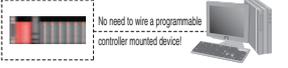
Programmable Controller Engineering Software
MELSOFT GX Works2

Completely updated user interface improves your design efficiency.

Integrating simulation functions with configuration functions! No need to purchase GX Simulator and GX Configurator separately.

In addition to programmable controller programming, GX Works2 integrates simulation and various intelligent module setting functions.

[Integration of simulation function]
The simulator can be started easily with a single button allowing debugging in the same circumstances as online even without an actual machine.



No need to wire a programmable controller mounted device.

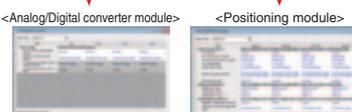
Debugging can be started with a personal computer immediately after designing even without wiring a programmable controller.

Operations can be confirmed while viewing movements on a personal computer so designs can be completed without reworking.

[Integration of configuration function]
By opening the setting screen from the project window, the parameters for each module can be set easily on the screen.

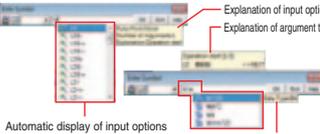
<Analog/Digital converter module>

<Positioning module>




Reduce operation steps and input mistakes with candidate displays!

Input options are automatically listed during command and label inputs. When inputting in an inline ST, label and command options are displayed.



Explanation of input options

Explanation of argument type

Automatic display of input options

Explanation of label

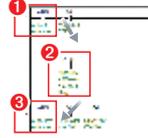
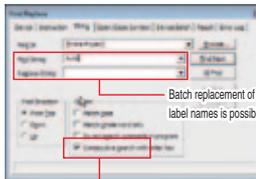
Directly write operations into ladders with inline ST!

Operation processes can be written directly in the ladder program. There's no need to add multiple lines of ladders or function blocks.



Easily perform continuous searches of devices with user-friendly operations!

Read mode supports quick searches. Perform a continuous search by pressing the Enter key.

Batch replacement of label names is possible

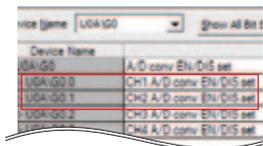
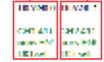
Continuous search function

Press **Ctrl + F** keys to search the first "Auto" When the search option is designated, a continuous search is made each time the **Enter** key is pressed.

Identify similar devices in a glance!

Comments can be set for each bit and for word devices.

A comment can be set for a bit-specified word device and displayed on the ladder circuit.

Quickly find where the device is being used!

Cross reference information for the device pinpointed with the cursor is automatically displayed.

<Cross reference>



Double click to jump to where the device is used in another program

One-touch displayable help function!

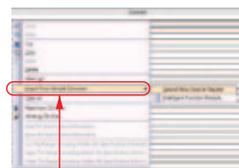
Help for the selected command is displayed immediately when the **F1** key is pressed.



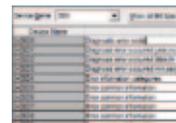
Help display

PRESS! / **F1**

Making it easier to use intelligent function modules through buffer memory and I/O signal comments!

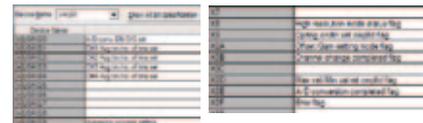


For special relays and special registers



For intelligent function module

The intelligent function's buffer memory and X/Y comments are supported.



Easily apply predefined comments from the right-click menu.

▶▶▶ Refer to the GX Works2 Catalog <L(NA)08122E> for details.

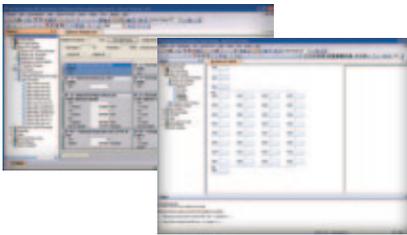
Intuitive operations on graphical screens. Smoothly set even large-scale programs.

Motion Controller Engineering Software
MELSOFT MT Works2

Programming

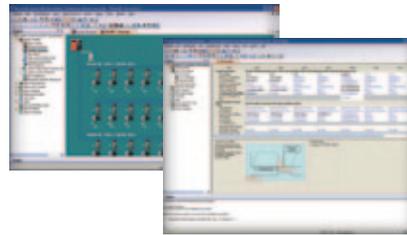
Motion controller programming is supported with various convenient functions.

- Graphical motion SFC program and mechanical system program
- Label, device comment and cross-reference
- Command wizard and Instruction help allow you to program without a manual.



System Design

Easily set servo amplifiers and modules on the graphical system setting screen. Parameters also can be set quickly without a manual by checking One-point help.

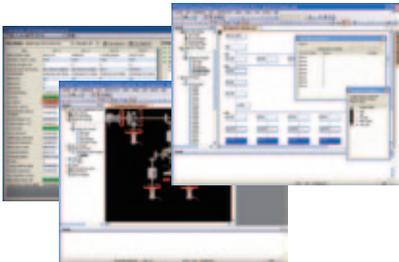


Startup and Adjustment

Supporting startup of the servo system with diverse functions.

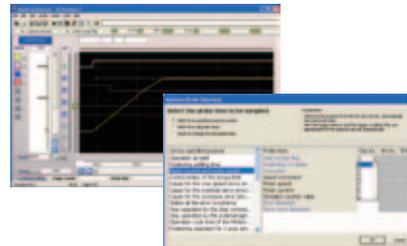
■ Variety of monitor function

A vast array of monitor functions allow the operation status of the motion controller to be confirmed easily.



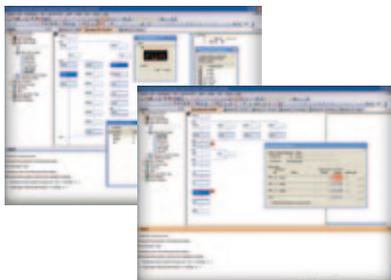
■ Digital oscillation function

Data which is synchronized with the motion operation cycle can be collected and displayed. It is possible to set the requested data simply with specified purpose probe setting. Collected data can be saved in CSV format and analyzed with other tools.



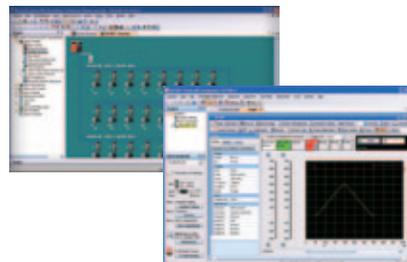
■ Various test operation functions

In the test mode, basic startup can be confirmed without a program. Using the simulator function, theoretical debugging can be performed without an actual machine. In addition, the debug function is capable of step execution and break point settings.



■ Collaboration with MR Configurator2

Use the servo setup software "MR Configurator2", filled with Mitsubishi Electric's servo knowhow, to adjust your servo system effortlessly. Multi-axes servo system can also be adjusted via motion controller from PC.



Such easy steps from “New Screen” to “Transfer to GOT”.

Screen Creation

■ “Templates” reduce screen creation steps

Common screens and parts have been prepared as templates. Adjust these templates to quickly and easily create screens to match your target and applications with fewer screen creation steps.

<Changing the color>

All colors for template attribute “No. 1 color” are changed in batch!

Template attribute “No. 1 color” includes:

- Historical trend graph line colors
- Numerical display value colors
- Character colors

Change color

<Device monitor (bit)>

<Historical (graph + list)>

■ “Data Browser” simplifies setting confirmation and revisions

The settings for graphics used in the project are all listed.

Edit directly in the list or edit from a setting dialog.

Double-click

■ “Help Function” shows the information you need

When the F1 key is pressed, help for the currently active dialog opens immediately! Easily check the information you need.

When the (F1) key is pressed on the Lamp Setting screen

Setting method is displayed

When the (F1) key is pressed on the Lamp Setting screen

The device list for the connected devices being set is displayed. There's no need to open your manual!

Table of Contents is displayed

Search the information you need from the Table of Contents or keyword

Related items are also displayed

Security Control

■ The User (OEM/End User) Security Function prevents your valuable data from being leaked or changed!

Protect your project data by setting access authority (availability of displaying and editing a project) with a five-stage access level not only for the project but also for screens. When the several people are involved in designing the screen, a specific screen can be protected by setting different access authority for each screen. The availability of displaying or editing the project can be confirmed with the work tree or the screen image list.

1. Set different access authority for each screen

Setting for base screen 2

Setting for base screen 3

2. Login with a user whose access level is Developers (Level 1)

3. Base screen 2: Display permitted, editing prohibited
Base screen 3: Display prohibited, editing prohibited

Editing prohibited screen

Display prohibited screen

If the access level of the logged-in user is Developers (Level 2), base screens 2 and 3 can be displayed and edited.

Simulation

■ Confirm operations with a single click

Screen data movements (alarm confirmations, screen transitions and device monitoring, etc.) can be confirmed on your personal computer. Efficiently debug while correcting your screen.

Communication/Monitor

GT Works3 Simulation function

Execute designated program

1 Start simulator

2 Click with mouse to touch

3 Device values and ON/OFF states can be changed.

When the screen has been revised, just click “Update”!

■ Simple simulation with “Screen Preview”

Simple simulations and screen changeovers can be confirmed with screen preview. A specific switch display can be turned ON and OFF, device values can be input, and random screen images can be printed and saved, making it easy to prepare specifications and operation procedures.

<Confirming screen change switch>

Screens can be changed on the screen preview. The editing screen can be opened in sequence with the preview screen so corrections can be made quickly while confirming on the preview screen.

Screen changes when the screen change switch is clicked.

▶▶▶ Refer to the GT Works3 Catalog <L(NA)08170ENG> for details.

Robot Engineering Software

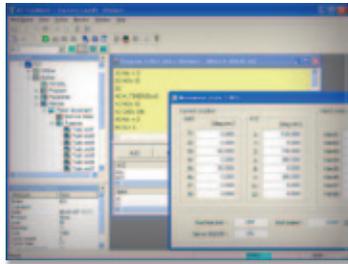
MELSOFT RT ToolBox2

Total support from program creation, to start up, adjustment and maintenance.

Programming

■ Program editing

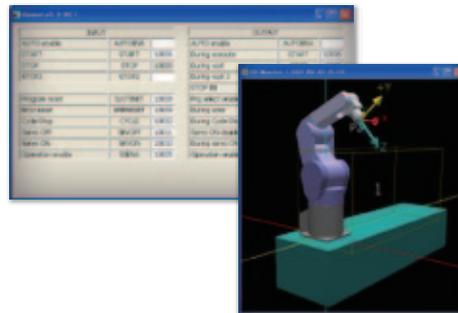
- Create programs with MELFABASIC IV, V or Movemaster languages.
- Efficiently perform work with multi-window method.
- With instruction templates and help functions, there's no need to refer to manuals.



Setting

■ 3D Viewer

Visually confirm the limit values for the user defined areas, etc., with 3D Viewer.



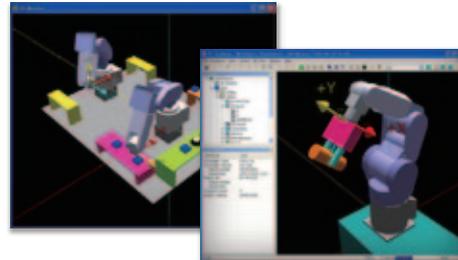
Startup and Adjustment

■ Debugging function

A variety of convenient functions make it easy to confirm operations such as program step execution, break point setting and direct execution.

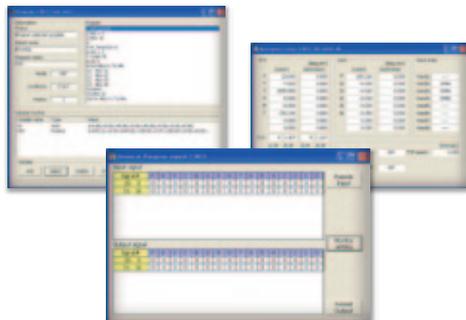


Use 3D Viewer to confirm the robot's posture and motions, and to virtually arrange the peripheral devices with basic objects.



■ Monitor function

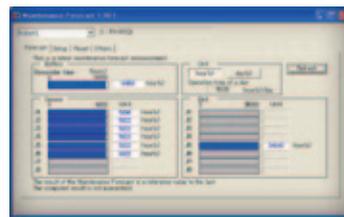
Monitor the program execution state, variables and input/output signals, etc. In addition, monitor the servo statuses such as the axis load status and current value.



Maintenance

■ Maintenance function

- Various maintenance functions include the maintenance forecast function that notifies operators of the robot grease up timing and battery consumption time, etc., and functions to restore the position in the event of trouble. These functions are effective for preventive maintenance and for shortening the recovery time.
- The entire system can be backed up in a batch using the project unit data control.



Contact information

Q Who do we consult with to make a purchase?

A Contact your nearest Mitsubishi Electric branch office or dealer.

Q Who do we contact for information on the product technology?

A Contact your nearest Mitsubishi Electric branch office or dealer.

Please see the back cover for contact information.

Lineup

Q Our personal computers use DVD. Is MELSOFT iQ Works available on DVD?

A MELSOFT iQ Works is available on CD and DVD. Select the medium which works on your system.

List of Software Functions

		Model	Outline
iQ Platform compatible FA Integrated Engineering Software	MELSOFT iQ Works	SW1DNC-IQWK-E	Mitsubishi Electric iQ Platform compatible FA Integrated Engineering Software suite with Additional Integrated Functions, CD-ROM Version Mitsubishi Electric iQ Platform compatible System Management Software [MELSOFT Navigator] + Mitsubishi Electric iQ Platform compatible Programmable Controller Engineering Software [MELSOFT GX Works2] + Mitsubishi Electric iQ Platform compatible Motion Controller Engineering Software [MELSOFT MT Works2] + Mitsubishi Electric iQ Platform compatible Screen Design Software [MELSOFT GT Works 3] + Mitsubishi Electric iQ Platform compatible Robot Engineering Software [MELSOFT RT ToolBox2 mini]
		SW1DND-IQWK-E	Mitsubishi Electric iQ Platform compatible FA Integrated Engineering Software suite with Additional Integrated Functions, DVD-ROM Version Mitsubishi Electric iQ Platform compatible System Management Software [MELSOFT Navigator] + Mitsubishi Electric iQ Platform compatible Programmable Controller Engineering Software [MELSOFT GX Works2] + Mitsubishi Electric iQ Platform compatible Motion Controller Engineering Software [MELSOFT MT Works2] + Mitsubishi Electric iQ Platform compatible Screen Design Software [MELSOFT GT Works 3] + Mitsubishi Electric iQ Platform compatible Robot Engineering Software [MELSOFT RT ToolBox2 mini]
	MELSOFT GX Works2	SW1DNC-GXW2-E	MELSEC Programmable Controller Programming SW Programming Function + Intelligent Module Function + Simulator Function
	MELSOFT MT Works2	SW1DNC-MTW2-E	Mitsubishi Electric iQ Platform compatible Motion Controller Engineering Software
	MELSOFT GT Works3	SW1DNC-GTWK3-E	Screen Design Software for GOT + Simple Data Conversion Function + GT SoftGOT 1000 Function + Simulator Function
	MELSOFT RT ToolBox2	3D-11C-WINE	Robot Engineering Software with Simulation Function CD-ROM Version
		3D-12C-WINE	Robot Engineering Software mini Simple Version CD-ROM Version

MELSOFT iQ Works operation environment

	Details	
OS *	Microsoft® Windows® 2000 Professional Service Pack4 Microsoft® Windows® XP Professional Service Pack2,3 Microsoft® Windows® XP Home Edition Service Pack2,3 Microsoft® Windows® Vista® Home Basic Service Pack1,2 Microsoft® Windows® Vista® Home Premium Service Pack1,2 Microsoft® Windows® Vista® Ultimate Service Pack1,2 Microsoft® Windows® Vista® Business Service Pack1,2 Microsoft® Windows® Vista® Enterprise Service Pack1,2	Microsoft® Windows® 7 Ultimate Service Pack1 Microsoft® Windows® 7 Enterprise Service Pack1 Microsoft® Windows® 7 Professional Service Pack1 Microsoft® Windows® 7 Home Premium Service Pack1 Microsoft® Windows® 7 Starter Service Pack1 Microsoft® Windows® 8 Microsoft® Windows® 8 Pro Microsoft® Windows® 8 Enterprise
CPU	Desktop: Celeron 2.8 GHz or more recommended	Laptop personal computer: PentiumM 1.7 GHz or more recommended
Memory	1 GB or more recommended	
Display	XGA (1024x768) or more	
Free space	At installation: HD1GB (+ 390MB when installing manual)	During operation: 512 MB of free virtual memory

* 32-bit OS supported. Microsoft® Windows® 7 and Microsoft® Windows® 8 supported with 64-bit version.

MELSOFT iQ Works compatible version

	Details
MELSOFT GX Works2	Version 1.492N and higher
MELSOFT MT Works2	Version 1.62Q and higher
MELSOFT GT Works3	Version 1.74C and higher
MELSOFT RT ToolBox2	Version 2.50C and higher

MELSOFT Navigator Compatible Module List

Compatible Networks

Ethernet
MELSECNET/H
CC-Link IE Controller Network
CC-Link IE Field Network
CC-Link
AnyWire ASLINK

Compatible Programmable Controller (MELSEC-Q Series)

Category		Model	
CPU	Basic model QCPU	Q00JCPU	
		Q00CPU	
		Q01CPU	
	High-performance model QCPU	Q02CPU	
		Q02HCPU	
		Q06HCPU	
		Q12HCPU	
		Q25HCPU	
	Universal model QCPU	Q00UJCPU	
		Q00UCPU	
		Q01UCPU	
		Q02UCPU	
		Q03UDCPU	
		Q03UDECPU	
		Q03UDVCPU	
		Q04UDHCPU	
		Q04UDEHCPU	
		Q04UDVCPU	
		Q06UDHCPU	
		Q06UDEHCPU	
		Q06UDVCPU	
		Q10UDHCPU	
		Q10UDEHCPU	
		Q13UDHCPU	
		Q13UDEHCPU	
		Q13UDVCPU	
		Q20UDHCPU	
		Q20UDEHCPU	
		Q26UDHCPU	
		Q26UDEHCPU	
		Q26UDVCPU	
		Q50UDEHCPU	
		Q100UDEHCPU	
		Motion CPU	Q172CPUN
			Q172CPUN-T
			Q173CPUN
			Q173CPUN-T
			Q172HCPU
			Q172HCPU-T
			Q173HCPU
			Q173HCPU-T
	Q172DCPU		
	Q173DCPU		
	Q172DSCPU		
	Q173DSCPU		
	C Controller CPU		Q06CCPU-V
		Q12DCCPU-V	
	Base module	Main base	Q33B
			Q35B
			Q38B
			Q312B
			Q35DB

Category		Model	
Base module	Main base	Q38DB	
		Q312DB	
	Slim type main base	Q32SB	
		Q33SB	
		Q35SB	
	Redundant power supply main base	Q38RB	
	Extension base	Q63B	
		Q65B	
		Q68B	
		Q612B	
Q52B			
Redundant power supply extension base	Q68RB		
Power supply module	Power supply module	Q61P	
		Q61P-A1	
		Q61P-A2	
		Q61P-D	
		Q62P	
		Q63P	
		Q64P	
		Q64PN	
	Slim type power supply	Q61SP	
	Redundant power supply	Q63RP	
		Q64RP	
	I/O module	Input	QX10
			QX10-TS
QX28			
QX40			
QX40-TS			
QX40-S1			
QX40H			
QX41			
QX41-S1			
QX41-S2			
Output		QX42	
		QX42-S1	
		QX50	
		QX70	
		QX70H	
		QX71	
		QX72	
		QX80	
		QX80-TS	
		QX80H	
QX81			
QX81-S2			
QX82			
QX82-S1			
QX90H			
QY10			
QY10-TS			
QY18A			
QY22			
QY40P			
QY40P-TS			
QY41H			
QY41P			
QY42P			
QY50			
QY68A			
QY70			
QY71			
QY80			

* Above listed modules are compatible with MELSOFT Navigator (Ver. 1.62Q).
 These modules differ from the MELSOFT GX Works2, MELSOFT MT Works2, MELSOFT GT Works3 and MELSOFT RT ToolBox2 compatible modules.

Compatible Programmable Controller (MELSEC-Q Series)

Category		Model	
I/O module	Output	QY80-TS	
		QY81P	
		QY82P	
	I/O	QH42P	
QX48Y57			
QX41Y41P			
Interrupt input	QI60		
Analog I/O module	Analog input	Q68ADV	
		Q62AD-DGH	
		Q68ADI	
		Q64AD	
		Q64ADH	
		Q64AD-GH	
		Q64AD2DA	
		Q68AD-G	
		Q66AD-DG	
		Q61LD	
		Q68DAVN	
		Q68DAV	
		Q68DAIN	
		Q68DAI	
	Q62DAN		
	Analog output	Q62DA	
		Q62DA-FG	
		Q64DAN	
		Q64DA	
		Q64DAH	
		Q66DA-G	
		Temperature input	Q64RD
			Q64RD-G
			Q68RD3-G
			Q64TD
	Q64TDV-GH		
	Q68TD-G-H01		
	Q68TD-G-H02		
	Temperature control	Q64TCRT	
		Q64TCRTBW	
		Q64TCTT	
		Q64TCTTBW	
		Q64TCRTN	
		Q64TCRTBWN	
		Q64TCTTN	
	Q64TCTTBWN		
	Loop control	Q62HLC	
		Q68CT	
	Simple motion	With SSCNET III/H connectivity	QD77MS2
			QD77MS4
			QD77MS16
			QD72P3C3
	Positioning	QD73A1	
		QD75P1	
		QD75P2	
		QD75P4	
		QD70P4	
QD70P8			
QD75D1			
QD75D2			
QD75D4			
QD70D4			
QD70D8			
QD75M1			
QD75MH1			

Category		Model
Positioning		QD75M2
		QD75MH2
		QD75M4
		QD75MH4
		QD74MH8
		QD74MH16
High-speed counter		QD62
		QD62-H01
		QD62-H02
		QD62D
		QD62E
		QD63P6
		QD64D2
Channel isolated pulse input		QD65PD2
Energy Measuring		QD60P8-G
		QE81WH
		QE81WH4W
		QE83WH4W
Isolation monitoring		QE84WH
Web Server		QE82LG
MES interface		QJ71WS96
High-speed data logger		QJ71MES96
Ethernet		QD81DL96
		QJ71E71-100
		QJ71E71-B2
Serial communication		QJ71E71-B5
		QJ71C24N
		QJ71C24N-R2
Intelligent communication		QJ71C24N-R4
		QD51
MELSECNET/H	Optical loop (SI)	QD51-R24
		QJ71LP21-25
	Optical loop (GI)	QJ71LP21S-25
		Coaxial bus
Twisted bus	QJ71BR11	
	QJ71NT11B	
CC-Link		QJ61BT11N
CC-Link/LT		QJ61CL12
FL-net (OPCN-2)	Ver. 2.00	QJ71FL71-T-F01
		QJ71FL71-B2-F01
	Ver. 1.00	QJ71FL71-B5-F01
		QJ71FL71-T
AS-i		QJ71FL71-B2
		QJ71FL71-B5
AS-i		QJ71AS92
CC-Link IE Controller Network		QJ71GP21-SX
CC-Link IE Field Network		QJ71GP21S-SX
AnyWireASLINK		QJ71GF11-T2
Motion module	Servo external signal input	QJ51AW12AL
		Q172LX
	Synchronous encoder input (synchronization between master/slave)	Q172DLX
		Q172EX
		Q172EX-S1
		Q172EX-S2
		Q172EX-S3
	Manual pulse generator input	Q172DEX
		Q173PX
		Q173PX-S1
Partner products	Displacement sensor control	Q173DPX
		UQ1-01
		UQ1-02

* Above listed modules are compatible with MELSOFT Navigator (Ver. 1.62Q).
 These modules differ from the MELSOFT GX Works2, MELSOFT MT Works2, MELSOFT GT Works3 and MELSOFT RT ToolBox2 compatible modules.

MELSOFT Navigator Compatible Module List

Compatible Programmable Controller (MELSEC-L Series)

Category		Model		
CPU		L02SCPU		
		L02SCPU-P		
		L02CPU		
		L02CPU-P		
		L06CPU		
		L06CPU-P		
		L26CPU		
		L26CPU-P		
		L26CPU-BT		
		L26CPU-PBT		
Branch / Extension module		L6EXB		
		L6EXE		
Power supply		L61P		
		L63P		
RS-232 adaptor		L6ADP-R2		
End cover		L6EC		
I/O module	With error terminal	L6EC-ET		
	Input	LX10		
		LX28		
		LX40C6		
		LX41C4		
		LX42C4		
	Output	LY10R2		
		LY20S6		
		LY41NT1P		
		LY42NT1P		
		LY40NT5P		
		LY40PT5P		
		LY41PT1P		
		LY42PT1P		
		Analog I/O		L60AD4
				L60AD4-2GH
				L60DA4
		Temperature Control		L60TCRT
				L60TCRTBW
		L60TCTT		
		L60TCTTBW		
Simple motion		LD77MH4		
		LD77MH16		
Positioning		LD75P1		
		LD75P2		
		LD75P4		
		LD75D1		
		LD75D2		
		LD75D4		
High-speed counter		LD62		
		LD62D		
Network	CC-Link IE Field Network	LJ71GF11-T2		
	CC-Link	LJ61BT11		
	CC-Link/LT	LJ61CL12		
	Ethernet interface	LJ71E71-100		
	Serial communication		LJ71C24	
		LJ71C24-R2		
AnyWireASLINK		LJ51AW12AL		

Compatible Programmable Controller (MELSEC-FX Series)

Category		Model
CPU	FX3G Series CPU	FX3G-***M
	FX3U Series CPU	FX3U-***M
	FX3UC Series CPU	FX3UC-***M
Special block	Ethernet block	FX3U-ENET*

Compatible display

Category	Model
GOT 1000 Series	GT16**-X
	GT16**-S
	GT16**-V
	GT165*-V
	GT15**-X
	GT15**-S
	GT15**-V
	GT155*-V
	GT15**-Q
	GT14**-Q*BD
	GT14**-Q*BDE (Ethernet built-in)
	GT12**-V
	GT11**-Q
	GT11**-Q*BDQ (Q bus built-in)
	GT11**-Q*BDA (A bus built-in)
	GT10**-Q
	GT1030
GT1020	

* Above listed modules are compatible with MELSOFT Navigator (Ver. 1.62Q).

These modules differ from the MELSOFT GX Works2, MELSOFT MT Works2, MELSOFT GT Works3 and MELSOFT RT ToolBox2 compatible modules.

Robot

	Category	Model
Robot	SD Series	RV-2SD
		RV-3SD Series
		RV-6SD Series
		RV-12SD Series
		RH-SDH Series
	SQ Series	RV-2SQ
		RV-3SQ Series
		RV-6SQ Series
		RV-12SQ Series
		RH-SQH Series
	Ceiling mount type	RH-3SDHR/3SQHR
	RP Series	RP Series
	RV-TH/THL Series	RV-TH/THL Series

AnyWireASLINK equipment (Anywire Corporation)

	Category	Model
ASLINKER	Input	B280SB-02U-C1220
		B280SB-02US-C1220
		B281SB-02U-CC20
		B281SB-02US-CC20
		B298SB-02U-M12
		B298SB-02US-M12
		BL287SB-02F-CC20
		BL287SB-02FS-CC20
		B280PB-02U-C1220
		B280PB-02US-C1220
	Output	B281PB-02U-CC20
		B281PB-02US-CC20
		B298PB-02U-M12
		B298PB-02US-M12
		BL287PB-02F-CC20
		BL287PB-02FS-CC20
		B280XB-02U-C1220
		B280XB-02US-C1220
		B281XB-02U-CC20
		B281XB-02US-CC20
	I/O	B298XB-02U-M12
		B298XB-02US-M12
		BL287XB-02F-CC20
		BL287XB-02FS-CC20
		B289SB-01AF-CAM20
		B289SB-01AF-CAS
		B289SB-01AP-CAM20
B289SB-01AP-CAS		
ASLINKAMP	Input	B283SB-01-1KC
	Output	B283SB-01-1KP
ASLINKSENSOR	Input	BL296SB-08F-20
	Output	BL296PB-08F-20
ASLINKTERMINAL	Input	BL296SB-08F-20
		BL296PB-08F-20
	Output	BL296PB-08F-20
		BL296XB-08F-20
I/O	BL296XB-08F-20	
	BL296XB-08FS-20	

* AnyWireASLINK products are not available in some countries.
Please consult your local Mitsubishi Electric representative for details.

* Above listed modules are compatible with MELSOFT Navigator (Ver. 1.62Q).
These modules differ from the MELSOFT GX Works2, MELSOFT MT Works2, MELSOFT GT Works3 and MELSOFT RT ToolBox2 compatible modules.

Automation related products

PLC | MELSEC-Q Series Universal Model



Introducing the high-speed QCPU (QnUDVCP) for faster processing of large data volumes.

- ◎Realize high-speed, high-accuracy machine control with various iQ Platform compatible controllers and multiple CPUs.
- ◎Easily connect to GOTs and Programming tools using built-in Ethernet port.
- ◎25 models from 10 k step small capacity to 1000 k step large capacity, are available.
- ◎Seamless communication and flexible integration at any network level.

Product Specifications

Program capacity	10k steps to 1000k steps
Number of I/O points [X/Y], number of I/O device points [X/Y]	256 points to 4096 points/8192 points
Basic instruction processing speed (LD instruction)	120ns to 1.9ns
External connection interface	USB (all models equipped), Ethernet, RS-232, memory card, extended SRAM cassette
Function module	I/O, analog, high-speed counter, positioning, simple motion, temperature input, temperature control, network module
Module extension style	Building block type
Network	Ethernet, CC-Link IE controller network, CC-Link IE field network, CC-Link, CC-Link/LT, MELSECNET/H, SSCNETIII (H), AnyWire, RS-232, RS-422

Programmable Controller | MELSEC-L Series



“Light & Flexible” condensing various functions easily and flexibly.

- ◎CPU equipped as a standard with various functions including counter, positioning and CC-Link.
- ◎The base-less structure with high degree of freedom saves space in the control panel.
- ◎Easily confirm the system status and change the settings with the display unit.
- ◎Seven models are available in program capacities from 20 k steps to 260 k steps.

Product specifications

Program capacity	20 k steps/60 k steps/260 k steps
Number of input/output points [X/Y]	1024 points/4096 points
Number of input/output device points [X/Y]	8192 points
Basic instruction processing speed (LD instruction)	60 ns/ 40 ns/ 9.5 ns
External connection interface	USB, Ethernet, RS-232, SD memory card, CC-Link (L26CPU-BT/PBT)
Function modules	I/O, analog, high-speed counter, positioning, simple motion, temperature control, network module
Unit expansion style	Base-less structure
Network	Ethernet, CC-Link IE Field network, CC-Link, CC-Link/LT, SSCNETIII(H), RS-232, RS-422

HMI | Graphic Operation Terminal GOT1000 Series GT16 Model



Full-flat face body integrating all the functions required of a HMI.

- ◎All models are equipped with Ethernet, RS-422/485 and RS-232 interfaces enabling a diverse range of communications.
- ◎A multimedia unit and a video/RGB unit (optional) are supported for smooth recording and playback of moving images.
- ◎USB host and device ports are provided as a standard on the front panel. Easily connect to a personal computer for data exchange.
- ◎Large 15MB memory capacity allows you to use optional functions and real parts, etc., without worrying about memory space.

Product Specifications

Screen size	15", 12.1", 10.4", 8.4", 5.7"
Resolution	XGA, SVGA, VGA
Intensity adjustment	8-step or 4-step adjustment
Touch panel type	Analog resistive film
Built-in interface	RS-232, RS-422/485, Ethernet, USB, CF card
Applicable software	GT Works3
Input power supply voltage	100 to 240VAC (+10%, -15%), 24VDC (+25%, -20%)



Industry-leading level of high performance servo

- ◎ Industry-leading level of basic performance: Speed frequency response (2.5kHz), 4,000,000 (4,194,304p/rev) encoder
- ◎ Advanced one-touch tuning function achieves the one-touch adjustment of advanced vibration suppression control II, etc.
- ◎ Equipped with large capacity drive recorder and machine diagnosis function for easy maintenance.
- ◎ 2-axis and 3-axis servo amplifiers are available for energy-conservative, space-saving, and low-cost machines.

Product Specifications

Power supply specifications	1-phase/3-phase 200V AC, 3-phase 400V AC
Command interface	SSCNET III/H, SSCNET III (compatible in J3 compatibility mode), CC-Link IE Field Network interface with Motion, pulse train, analog
Control mode	Position/Speed/Torque/Fully closed loop
Speed frequency response	2.5kHz
Tuning function	Advanced one-touch tuning, advanced vibration suppression control II, robust filter, etc.
Safety function	STO, SS1 SS2, SOS, SLS, SBC, SSM (compatible when combined with motion controller)
Compatible servo motor	Rotary servo motor (rated output: 0.05 to 22kW), linear servo motor (continuous thrust 50 to 3000N), direct drive motor (rated torque: 2 to 240N·m)



High-function, high-performance inverter

- ◎ High-accuracy, high-response speed control using real sensor-less vector control is possible with a general-purpose inverter having no PLG (encoder) (200% torque/0.3 Hz (3.7 K or less)).
- ◎ Full-scale vector control is possible when used in combination with a motor with PLG (when using option).
- ◎ The built-in noise filter (EMC filter) helps reduce noise generated from the inverter.
- ◎ This series supports IPM motor operation. Use auto tuning to operate with the optimum motor characteristics.

Product Specifications

Inverter capacity	200V class: 0.4kW to 90kW, 400V class: 0.4kW to 500kW
Control method	IPM control, Soft-PWM control, high-carrier frequency PWM control (Select from V/F, advanced flux vector, or real sensor-less vector), vector control (when using options)
Output frequency range	0.2 to 400Hz (real sensor-less vector, upper frequency during vector control is 120Hz)
PM offline auto tuning	When using the MM-CF Series, the motor constants, etc., are automatically measured for operation with the optimum motor characteristics (IPM motors other than the MM-CF Series, and other IPM motor brands are also supported)
Starting torque	200% 0.3Hz (3.7K or less), 150% 0.3Hz (5.5K or more) (when using real sensor-less vector, vector control)



High speed, high precision and high reliability industrial robot

- ◎ Compact body and slim arm design, allowing operating area to be expanded and load capacity increased.
- ◎ The fastest in its class using high performance motors and unique driver control technology.
- ◎ Improved flexibility for robot layout design considerations.
- ◎ Optimal motor control tuning set automatically based on operating position, posture, and load conditions.

Product Specifications

Degrees of freedom	Vertical:6 Horizontal:4
Installation	Vertical:Floor-mount, ceiling mount, wall mount (Range of motion for J1 is limited) Horizontal:Floor-mount
Maximum load capacity	Vertical:2-20kg Horizontal:3-20kg
Maximum reach radius	Vertical:504-1503mm Horizontal:350-1,000mm

Mitsubishi iQ Platform Compatible FA Integrated Engineering Software MELSOFT iQ Works

Precautions before use

This publication explains the typical features and functions of the products herein and does not provide restrictions and other information related to usage and module combinations. Before using the products, always read the product user manuals. Mitsubishi Electric will not be held liable for damage caused by factors found not to be the cause of Mitsubishi Electric; opportunity loss or lost profits caused by faults in Mitsubishi Electric products; damage, secondary damage, or accident compensation, whether foreseeable or not, caused by special factors; damage to products other than Mitsubishi Electric products; and to other duties.

For safe use

- To use the products given in this publication properly, always read the relevant manuals before use.
- The products have been manufactured as general-purpose parts for general industries, and have not been designed or manufactured to be incorporated in a device or system used in purposes related to human life.
- Before using the products for special purposes such as nuclear power, electric power, aerospace, medicine or passenger movement vehicles, consult with Mitsubishi Electric.
- The products have been manufactured under strict quality control. However, when installing the products where major accidents or losses could occur if the products fail, install appropriate backup or fail-safe functions in the system.

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