



**MITSUBISHI
ELECTRIC**

Changes for the Better

for a greener tomorrow



iQ Platform Compatible Programmable Controller Engineering Software MELSOFT GX Works2



GX Works2

World-Class PLC Engineering Software

compatible with
Windows®7

Mitsubishi FA Integrated Concept

iQ Platform

World-Class PLC Engineering Software

Ultimate evolution of PLC engineering software

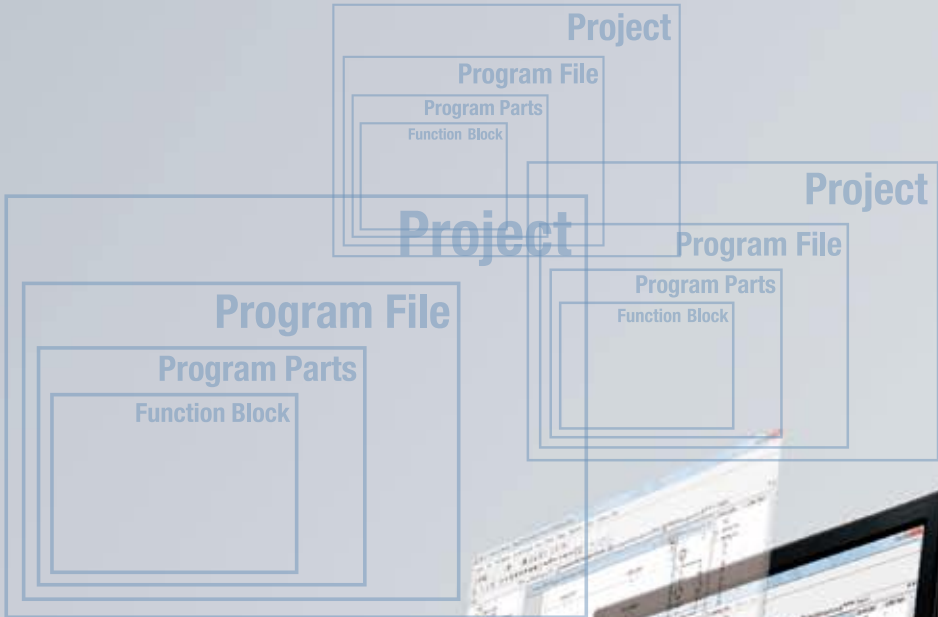
Now an easy-to-use engineering software is no surprise.

In addition to its sophisticated usability, the engineering software GX Works2 deploys the global mainstream concepts of "segmenting" and "structuring" for fundamental improvement of programming efficiency.

The world-standard engineering style begins with GX Works2.



GX Works2



KS2

All-in-one package

All capabilities required for PLC engineering including the configuration function of the intelligent function module and simulation function are integrated in a single package.

The all-in-one GX Works2 package supports entire engineering such as system design, programming, debug and maintenance.



Make full use of MELSEC

GX Works2 enables you to easily make a full use of high-function and high-performance CPUs and modules.

When new modules or functions came up, the update data is readily available from your local Mitsubishi representative to keep GX Works2 up-to-date.



CC-Link IE **field**
CC-Link IE **control**
CC-Link

Inherits customer assets

Your legacy GX Developer programs can be used in GX Works2 without any modification. Also, programs written by GX Works2 to the programmable controller can be read using GX Developer. For example, even if GX Developer is installed in the production site's PC, the data created and read with GX Developer can be used with GX Works2 installed in the development office's PC.



Sophisticated usability

GX Works2 has further improved favorable functions of GX Developer. GX Works2 has also improved performance and each function now responds more quickly.



IEC61131-3 compliant

GX Works2 conforms to the global engineering tool standard IEC61131-3 and supports segmented and structured programming defined by this standard. The languages including SFC, ST(structured text), and ladder can be freely chosen and used in the mix according to the situation and purpose.



Ultimate "Easy-to-use" user interface

The programming tool of GX Works2 is designed for ease-of-use and can program with intuitive operations. Its comfortable operation environment further improves design efficiency.

Ladder display offers much greater visibility P.7

Utilizing sample comment saves time to input comments P.11

Distinguish similar devices without bother P.11

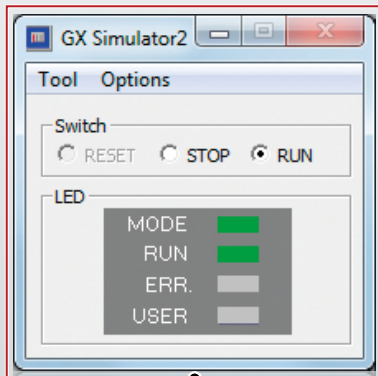
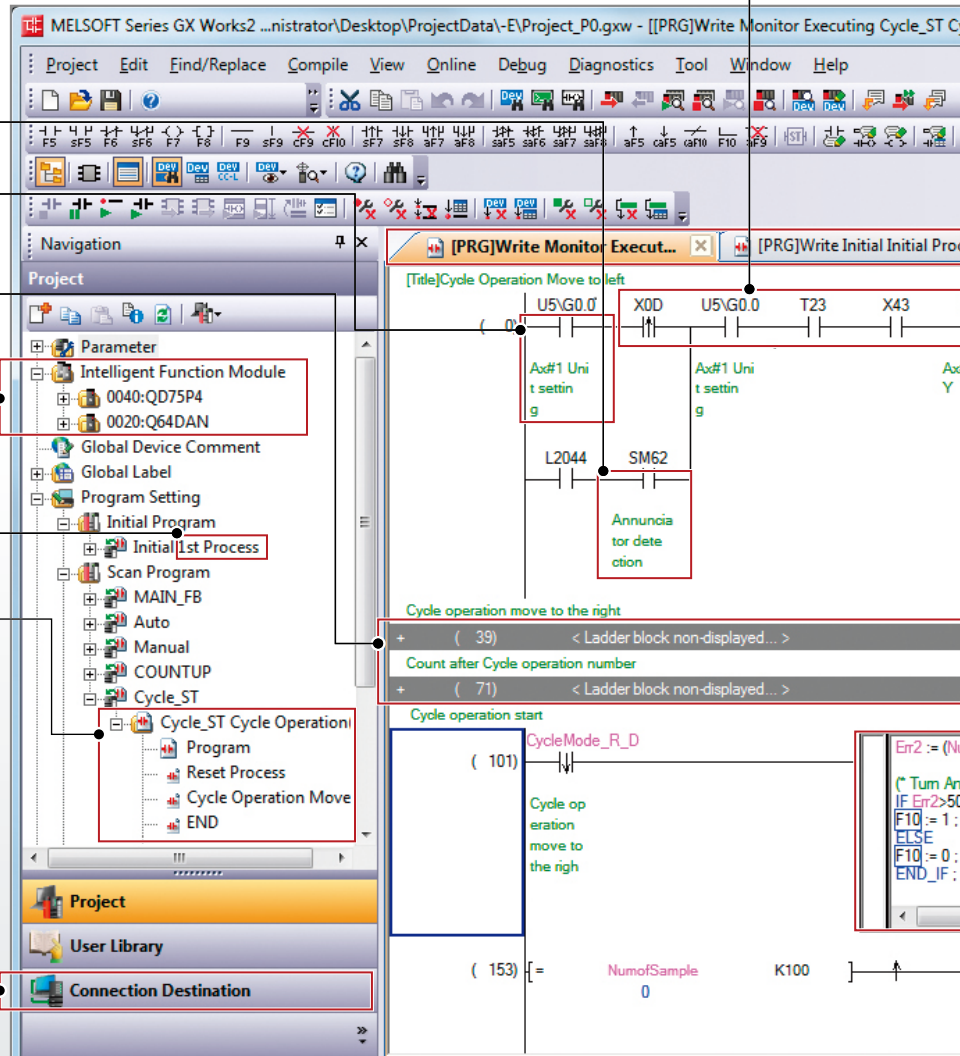
Enhancing program readability with wrapping ladder block function... P.10

Incorporate a useful setting function from GX Configurator P.13

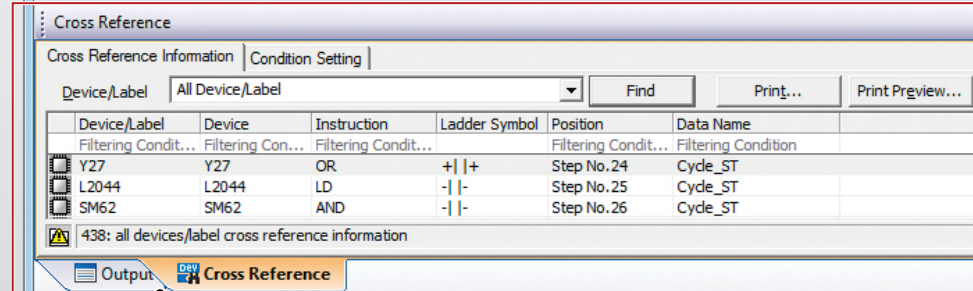
Program title display guides you P.21

Tree view offers easy-to-understand processing flow P.22

Setting connection destinations between multiple settings P.23



Offline debugging without PLC P.15



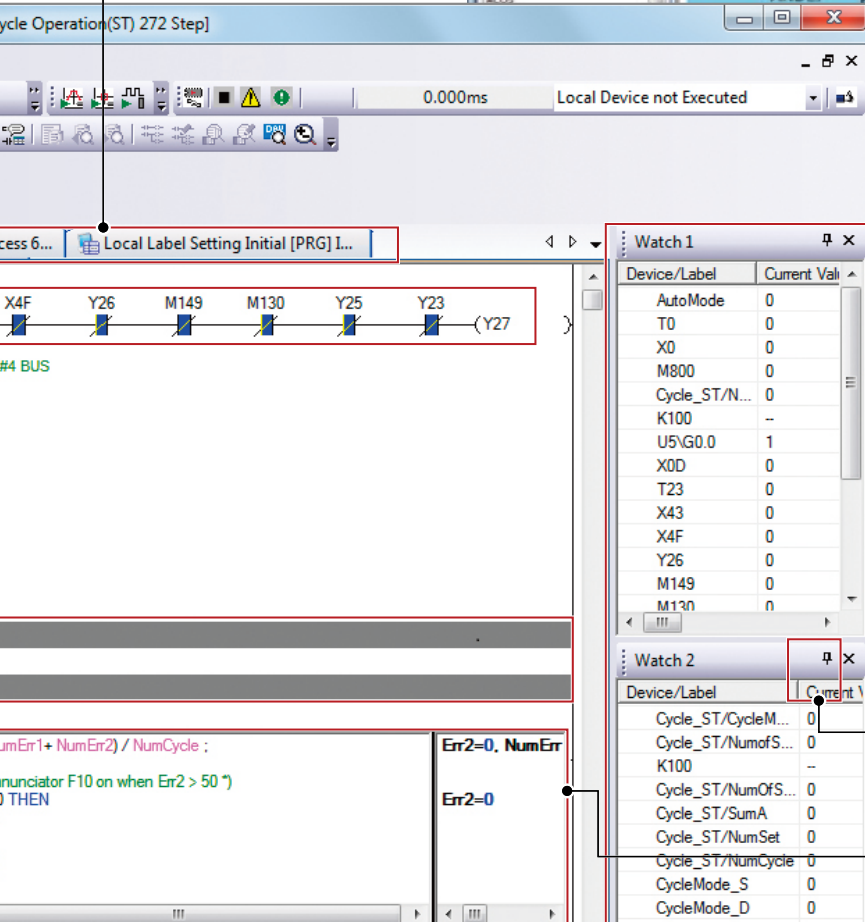
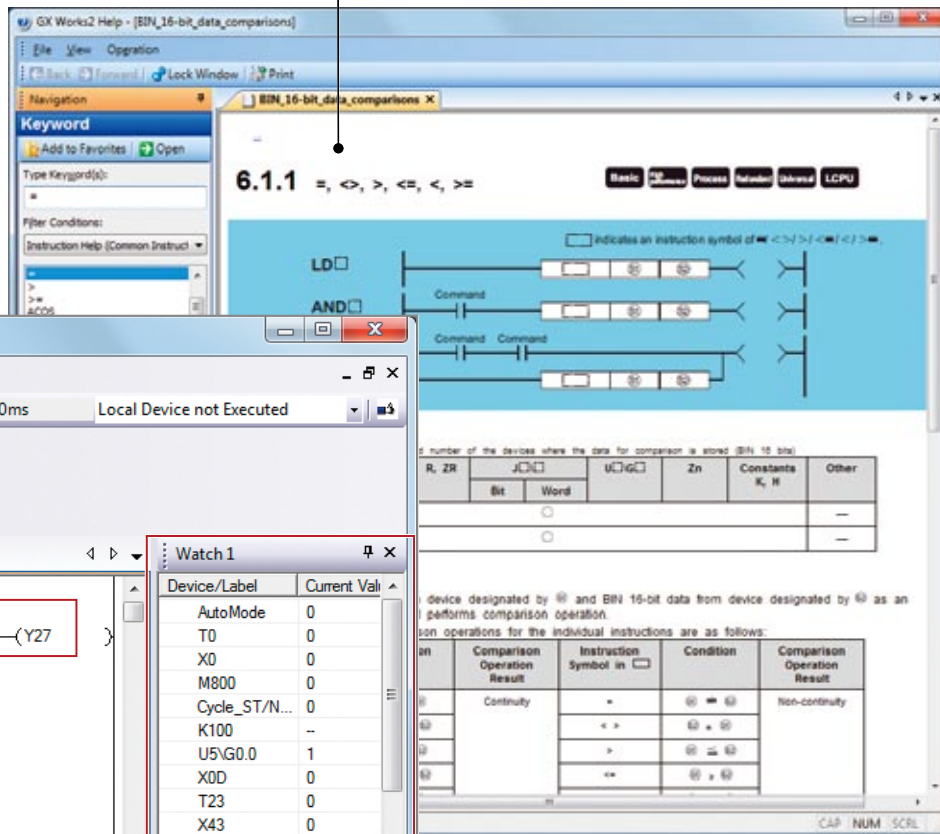
Cross Reference interacts with ladder display P.9

Detailed project security management P.33

Help information guides you operation method with a single key stroke..... P.24

Tab window

Switching between the program editor and parameter setting screen can be easily operated using "tabs".



Docking windows allow for making efficient use of the screen P.23

Direct writing of operation processing in ladder with inline structured text P.9

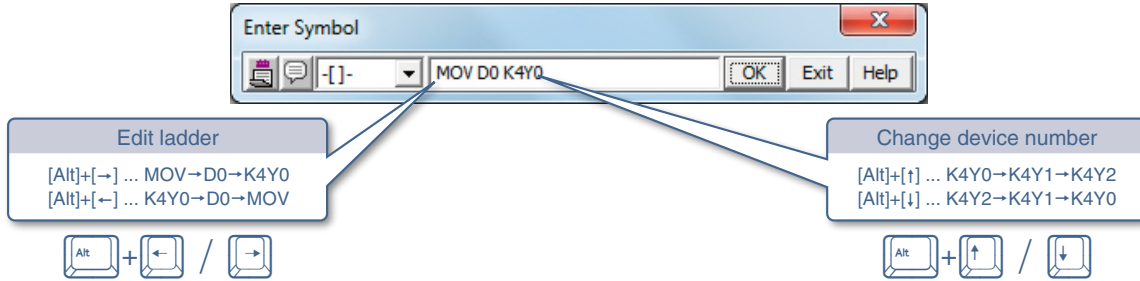
Watch windows for quick monitoring of device/label P.15

Easy continuous device search with familiar-to-use operationP.8

▶ Ladder Input

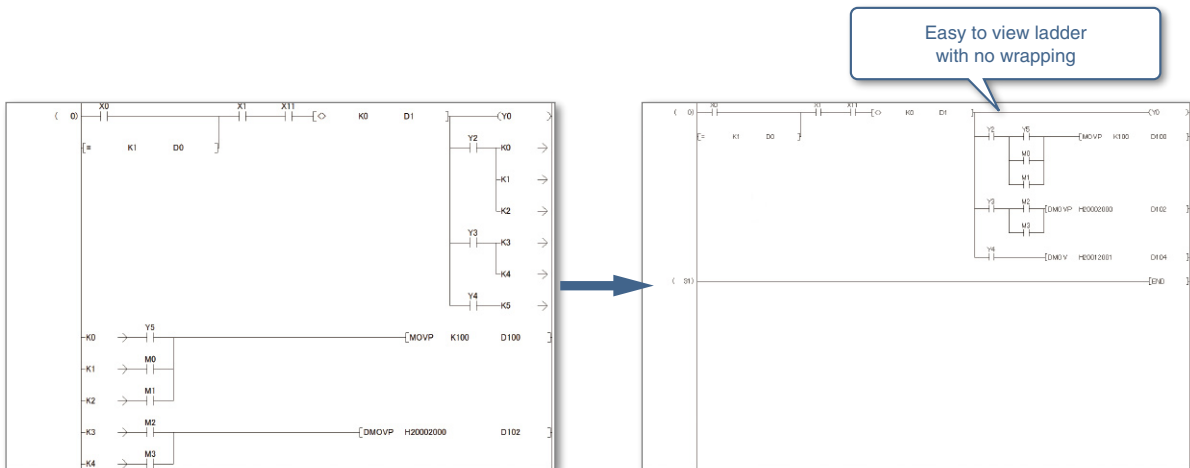
1 Simple key operation makes an easy ladder creation

A ladder can be easily modified and edited with convenient key combinations such as [Alt]+[←]/[→] or [Alt]+[↑]/[↓].



2 Ladder display offers much greater visibility

A greater number of contacts than ever can be displayed in a single line with fewer wrapping, improving visibility of ladders.

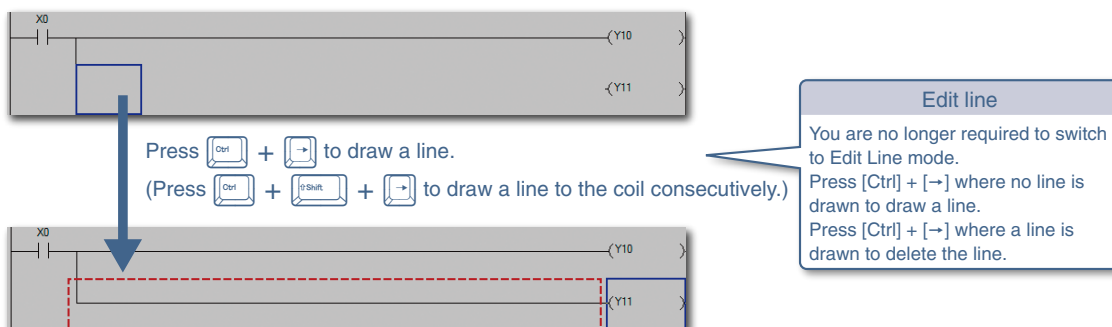


POINT

The number of contacts displayed in a single line can be changed to 9, 11, 13, 17 or 21.

3 Edit lines with simple key operation

Lines can be edited only with the keyboard keys.



4 Easy ladder edit with command/label input support function

Ladders can be easily edited just by choosing from candidates of instructions and labels. The information of arguments are also shown to reduce errors during ladder input.

Explanation of candidate
The details of each instruction can be understood at a glance from explanation of each candidate.

Explanation of argument type
Explanations of arguments are also displayed so that a ladder can be edited without any help.

Automatic display of candidates
Just enter the first character of an instruction to display the instruction candidate list. You do not need to remember all instructions any more.

Explanation of label
Candidates for a label are also given so that a ladder can be edited without remembering all labels.

Message sending instruction to another station [I/1]
G.SEND BIN 16 bit(n) Device name(S) Device name(S) Bit(D)

Enter Symbol
G.SEND h0 d

G SEND Pulse Form:Set
G.SPBUSY Number of Arguments:4
G.SREAD Explanation:Message sending instruction to another station
G.SWRITE

CycleMode
CycleMode_D
CycleMode_L
CycleMode_R
CycleMode_R_D
CycleMode_S

Global Label:GlobalI
Data Type:Bit

POINT

This function saves time to display and confirm help information during command input. Pressing the [F1] key displays the instruction help screen.

5 Easy continuous device search with familiar-to-use operation

By specifying the search option, you can continuously search for the candidates by pressing the Enter key. This is particularly useful when a specified device is used many times in the program.

Search for a label can be conducted by partially entering it.

Pressing **Ctrl** + **F** searches for the first "Auto" candidate.

Continuous search
By specifying the option and pressing the Enter key, search for the specified device can be made continuously.

Pressing Enter key searches for the next "Auto" candidates. (Cursor moves to it.)

Find/Replace
Device | Instruction | String | Open | Close | Contact | Device Batch | Result | Error Log |

Find In (Entire Project) Browse...

Find String Auto Find Next

Replace String All Find

Replace

All Replace

Find Direction
 From Top
 Down
 Up

Option
 Match case
 Match whole word only
 Do not search comments in program
 Consecutive search with enter key

Search/replace with Enter key. The focus does not move to the search target.

AutoMode
Auto Operation M ode

AutoMode_L
Auto Operation_M ove to t he left

AutoMode
Auto Operation M ode

ManualMode_R
Manual O peration _Move to the rig

POINT

Search for devices can also be made in the similar manner by switching the ladder display to the device display.

► Ladder Input

6 Cross Reference interacts with ladder display

Cross Reference function is used to search for devices/labels used in the project. The docking windows enable to display the Cross Reference window and program editor vertically.

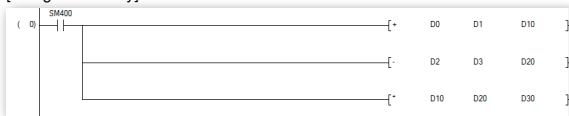
Device/Label	Device	Instruction	Ladder Symbol	Position
CycleMode	M8189	LD	- -	Step No. 323
CycleMode	M8189	LD	- -	Step No. 12
CycleMode	M8189	LD	- -	Step No. 46
CycleMode	M8189	LD	- -	Step No. 76
CycleMode	M8189	LD	- -	Step No. 98
CycleMode	M8189	LD	- -	Step No. 123
CycleMode	M8189	LD	- -	Step No. 151

POINT The used locations of devices or labels in the program can be confirmed with intuitive operation.

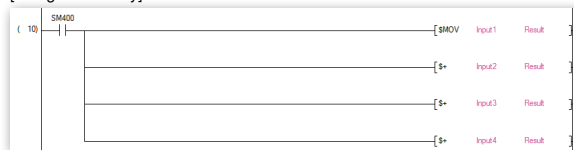
7 Direct writing of operation processing in ladder with inline structured text

Operation processing can be written directly in a ladder. Creation of a multi-line ladder or FB(Function Block) in another program editor is not necessary anymore.

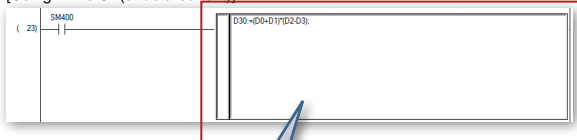
Example of numeric operation
[Using ladder only]



Example of character string processing
[Using ladder only]



[Using Inline ST(structured text)]



ST edit area
The current value can be monitored and changed.

[Using Inline ST(structured text)]

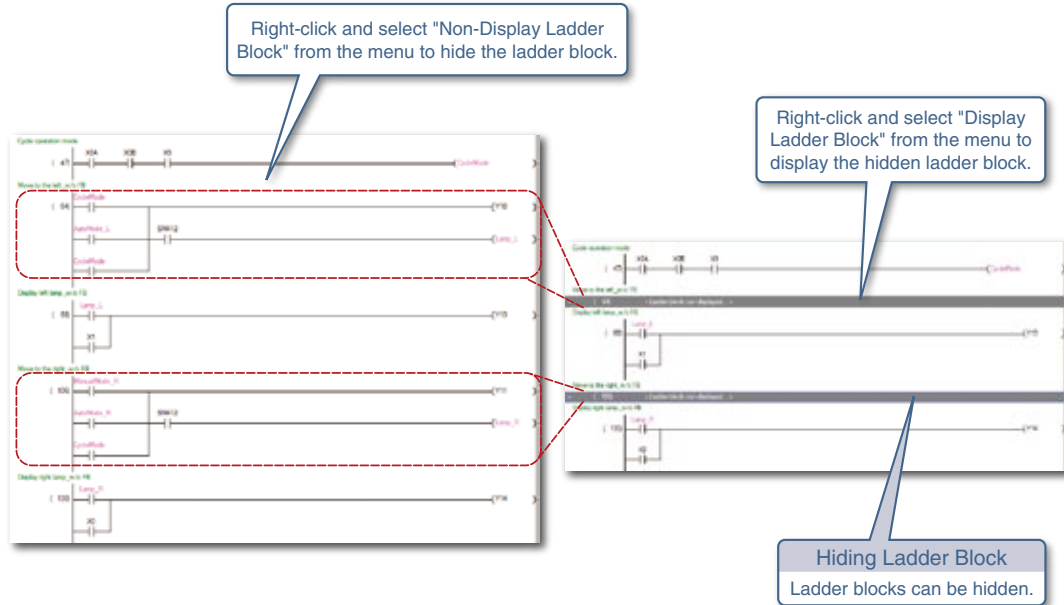


Described program in just one line using Inline ST!

POINT Troublesome numeric operations and character string processing can be described easily.

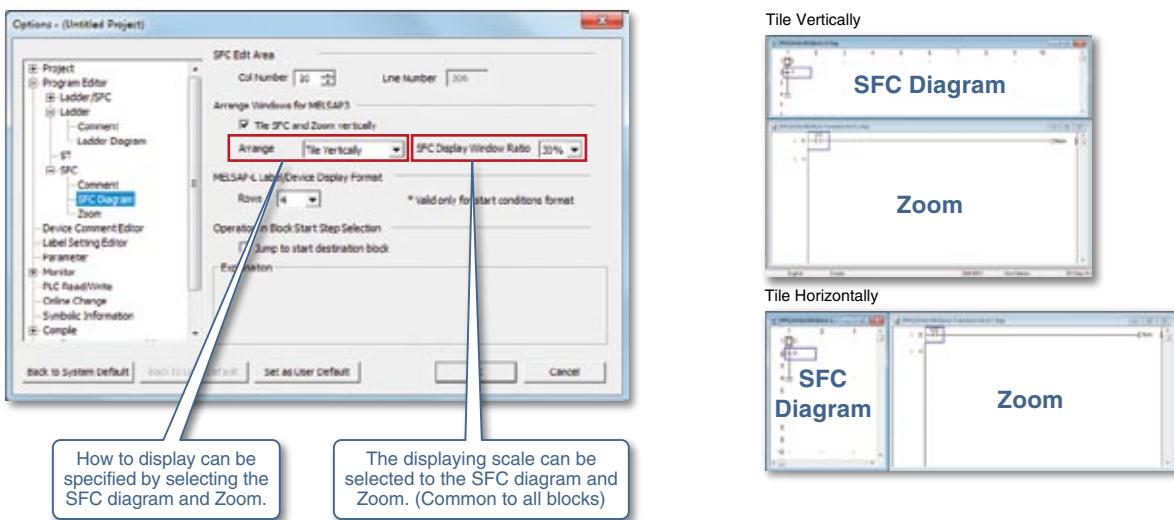
8 Enhancing program readability with wrapping ladder block function

By wrapping a ladder block, a long and hard-to-read ladder program can be displayed in a compact form.



9 Easier to view SFC diagram and Zoom

The scale of the window can be changed to display the SFC diagram and Zoom. Since the changed scale can be retained, the windows can be always displayed with the same layout.

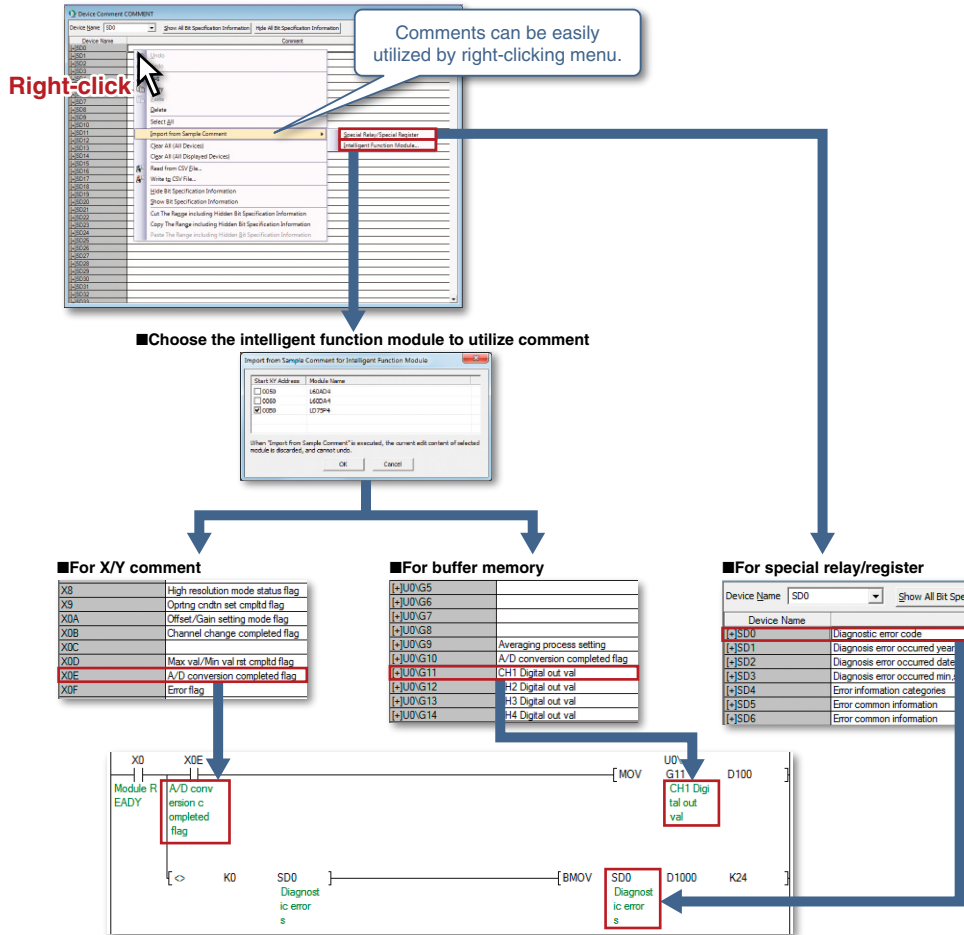


► Comment

1 Utilizing sample comment saves time to input comments

Sample comments are provided for the special relays/registers of the CPU as well as the buffer memory/XY signal of the intelligent function module.

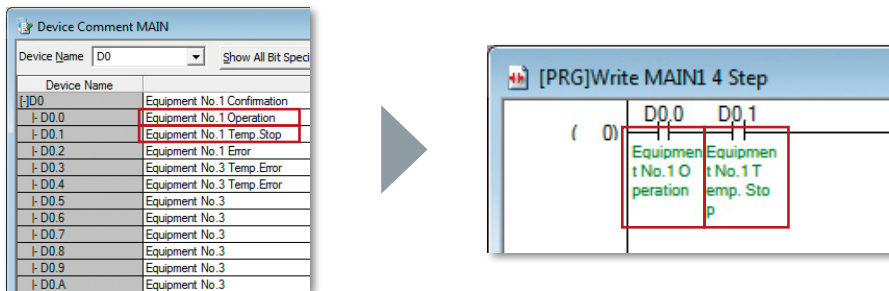
They can be copied as comments for the project and you do not need to enter them from scratch.



POINT Time for entering device comments can be greatly saved by utilizing sample comments.

2 Distinguish similar devices without bother

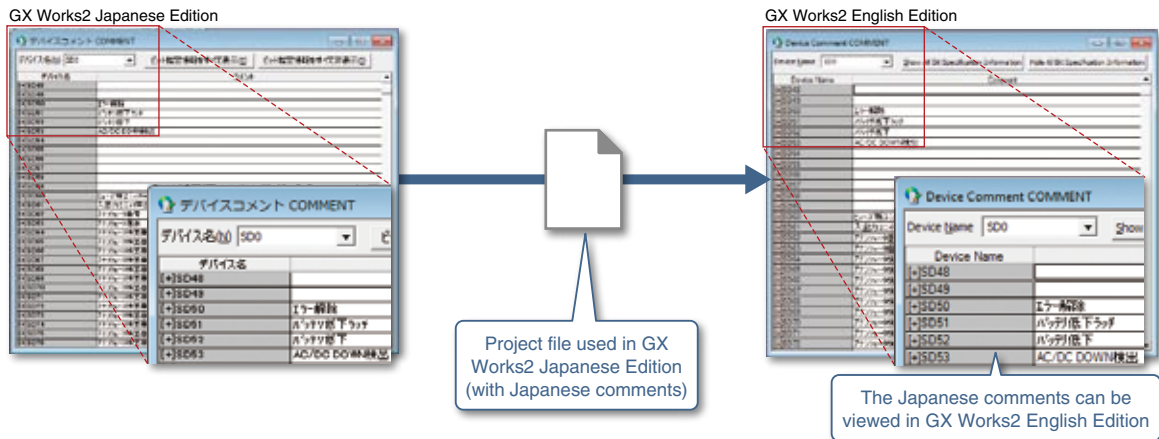
A comment can be set for each bit of a word device and displayed on the ladder.



POINT When a comment for each bit does not created, a comment created for the word device is displayed.

3 Utilize device comments created in other languages

Japanese, Chinese (Simplified and Traditional), and Korean comments can be displayed in GX Works2 English Edition for seamless interoperation with international sites.



▶ Parameter Setting

1 Incorporate a useful setting function from GX Configurator

The setting function of the intelligent function module is now integrated with GX Works2. The intelligent function module settings can be managed in a GX Works2 project.

■ Add new module screen

Also reflected on the I/O assignment parameters.

Module is added to the project tree.

Click

Set the A/D conversion system.

Explanation of item is shown as guidance.

2 Automatically calculates device assignment of CC-Link

An equipment configuration diagram can be created by arranging illustrations with the mouse on the CC-Link Configuration window.

Devices are assigned automatically and listed in an easy-to-view manner.

Start from the toolbar.

The equipment configuration diagram can be created intuitively using the CC-Link Configuration window.

Display the device assignment list. Programming can be made while viewing device assignment.

Station No.	Model Name	Station Type	Version	# of STA. Occupied	Expanded Cycle Setting	Remote Station Points
0/0	Host Station	Host Station				
1/1	RM-A720-0-4K	Remote Device Station	Ver. 1	1 Station Occupied	Single	32 Points
2/2	AJ65BT0U-68ADN	Remote Device Station	Ver. 1	3 Stations Occupied	Single	24 Points
3/3	AJ65BT0U-18D	Remote I/O Station	Ver. 1	1 Station Occupied	Single	32 Points
4/4	AJ65BT0U-18T	Remote I/O Station	Ver. 1	1 Station Occupied	Single	32 Points
5/7	AJ65BT-D62	Remote Device Station	Ver. 1	4 Stations Occupied	Single	128 Points
6/11	AJ65BT-C79P-03	Intelligent Device Station	Ver. 1	4 Stations Occupied	Single	128 Points
7/15	GT2M-K	Intelligent Device Station	Ver. 1	1 Station Occupied	Single	32 Points
8/16	RV-2SD	Intelligent Device Station	Ver. 1	1 Station Occupied	Single	32 Points

Host STA.	Refresh Device	STAB	Link Device	Remote Register(RW#)	Explanation
00			RW0		1 st monitor val
01			RW1		2nd monitor val
02		1	RW2		Reply code
03			RW3		Read data
04			RW4		CH1 digital out
05			RW5		CH2 digital out
06			RW6		CH3 digital out
07			RW7		CH4 digital out
08			RW8		CH5 digital out
09			RW9		CH6 digital out
0A			RW0		CH7 digital out
0B			RW1		CH8 digital out
0C			RW2		CH9 digital out
0D			RW3		CH0 digital out
0E			RW4		error code

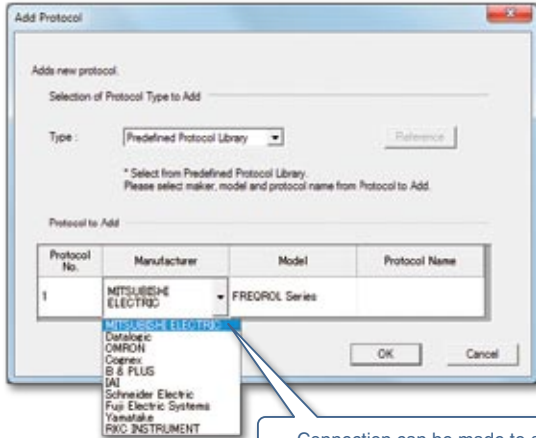
POINT

The device assignment information can be exported to a CSV file and then imported into the global label information, making it easy to utilize the information in label programming.

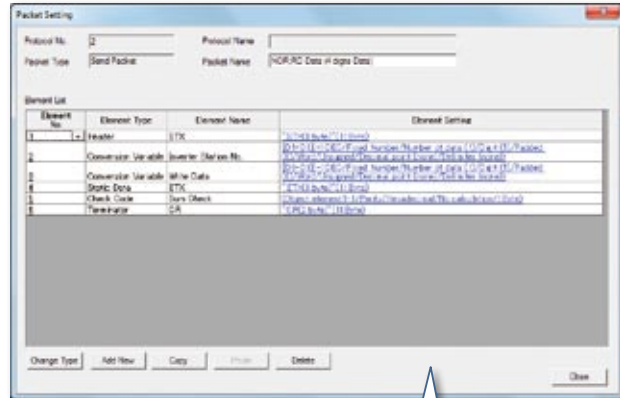
3 Easy connection to serial communication device

Using the predefined protocol function of GX Works2, connection to a device you want to communicate with can be quickly made just by choosing it from the predefined protocol library.

Even if the external devices are not registered in the predefined protocol library, the desired protocol can be easily created.



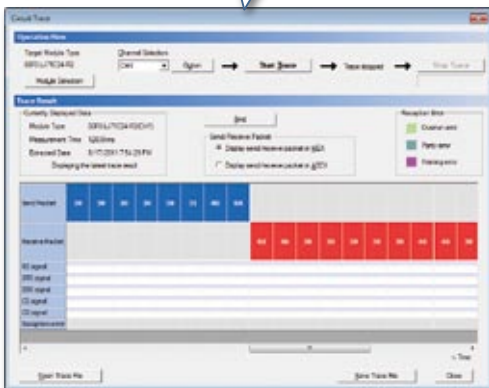
Connection can be made to an equipment to communicate with just by choosing it.



The communication protocol can be easily created.

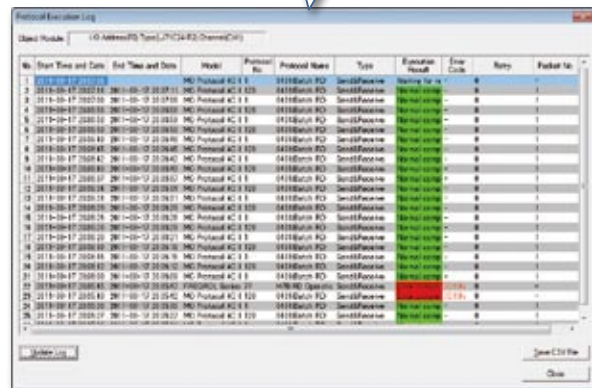
The line data, communication signals, and status monitor can be confirmed even if you do not have a line analyzer, making the debugging process easier.

The line data flowing through the communication line can be saved in the data area of the module. No equipment (e.g., line analyzer) is required.



Circuit Trace

Data including the executed protocol name, start/completion date/time, and execution result can be saved in the buffer memory of the module as history.



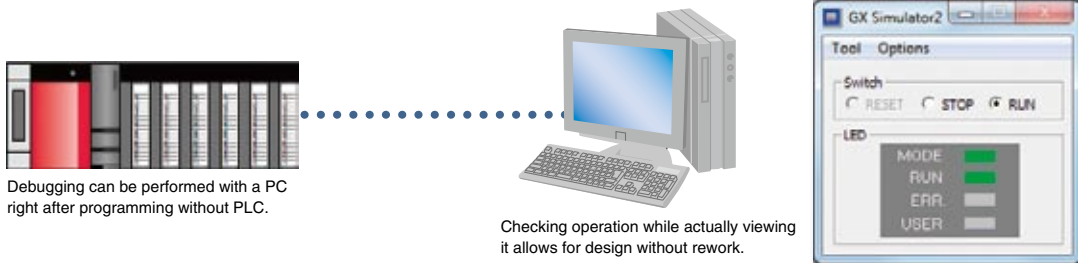
Protocol Executing Log

POINT Circuit trace function gives you a clear view of sent/received data.

▶ Debugging

1 Offline debugging without PLC

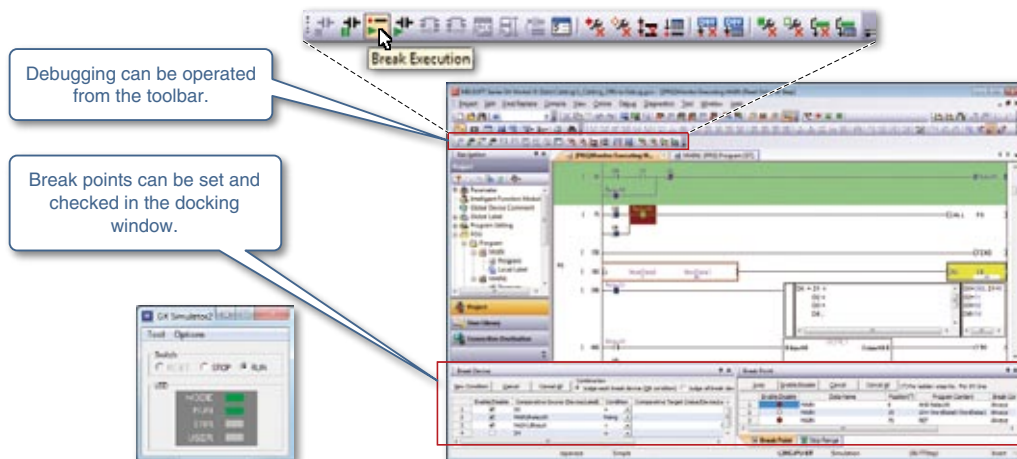
The simulation function is now integrated with GX Works2. The program operation can be easily checked on a personal computer.



POINT Up to 4 GX Works2 projects can be simulated concurrently on a single PC.

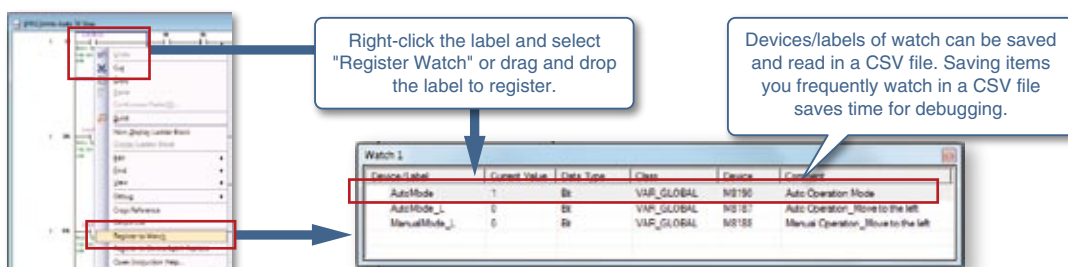
2 Simulation function provides sophisticated program debugging

A program can be executed in a step-by-step method using the simulation function, finding program errors more easily.



3 Watch windows for quick monitoring of device/label

Arbitrary devices/labels can be registered to monitor, saving time for debugging. Devices/labels can be registered onto the watch window by right-clicking them on a ladder editor and selecting "Register Watch" or by dragging and dropping them, enabling smoother monitoring.

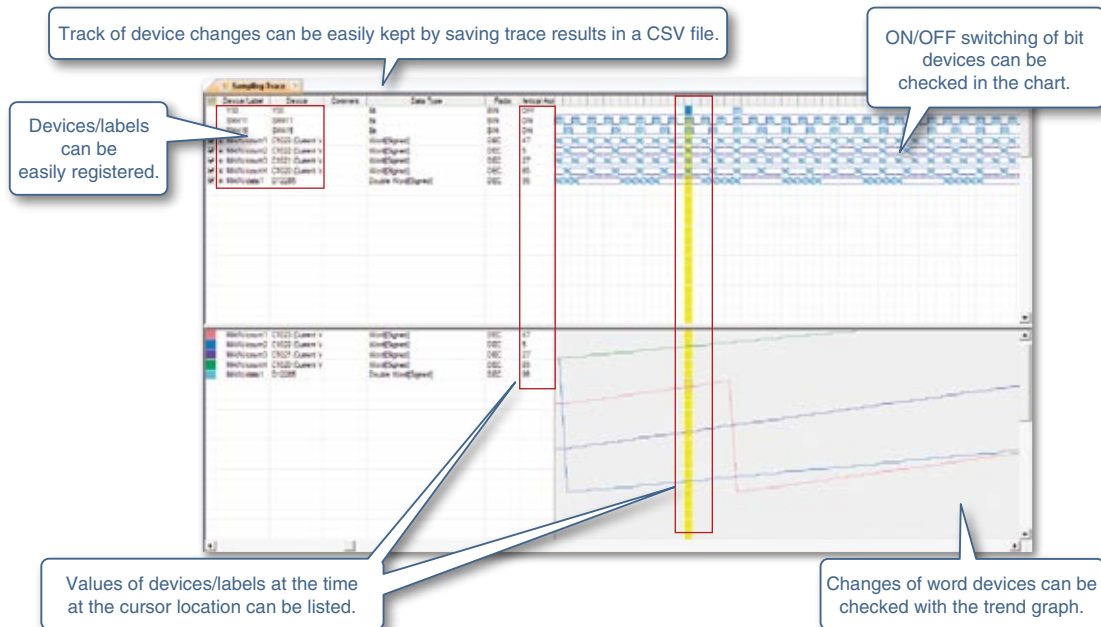


POINT The current value of the device/label can be changed from the watch window.

4 Easier-to-use sampling trace

A device value can be monitored according to a specified condition, and sample values before and after the condition is satisfied can be displayed in a timing chart.

Since word devices can be displayed in the trend graph, the device value changes can be viewed easily.



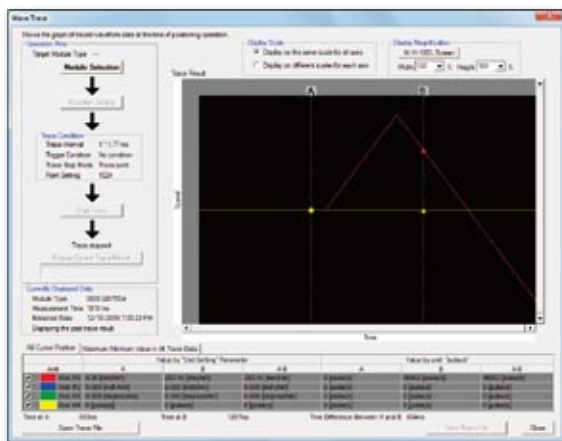
POINT

The sampling trace can be also used in the simulation function.

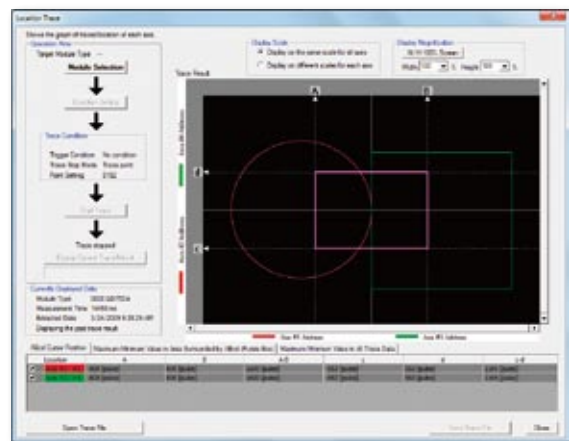
5 Visible positioning trace function

Status of the speed command (axis speed), two-axis interpolation, and simultaneous start (two axes) are traced and displayed in a graph.

The value of each axis can be visually checked during the online operation of the positioning module.



Trace function screen (Wave trace)



Trace function screen (Location trace)

▶ Operation and Maintenance

1 Improved verification function

Verify data of an open project against data of saved project to display the result in an easy-to-view format. The parameters and the programs in the PLC connected to a personal computer also can be verified against the data of an open project.

Verify

Verify Destination Project
 Workspace Location: C:\Users\Administrator\Desktop\ProjectData\EP_17_Verify\
 Workspace Name:
 Project Name: Project_0
 Title:

File Selection: SFC Block

Select All | Select |

Verify Source:

- Program File
- Program
- PB_Fool
- Parameter
- RLC/Network
- Intelligent Function Module(Initial
- Global Device Comment
- Local Device Comment
- Device Memory
- QD75 type Positioning Module>Select c

Verify Destination:

- Program File
- Program
- PB_Fool
- Parameter
- RLC/Network
- Intelligent Function Module(Initial
- Global Device Comment
- Local Device Comment
- Device Memory

Execute | Cancel

Click

Compare a saved project and the project being edited

List matching and mismatching of program files.

Verify Result (Project Verify)

Line No.	Source Name	Destination Name	Verify Result
1	Program File	Program File	Match
2	Program File	Program File	Match
3	Program File	Program File	Match
4	Program File	Program File	Match
5	Program File	Program File	Match
6	Program File	Program File	Match
7	Program File	Program File	Match
8	Program File	Program File	Match
9	Program File	Program File	Match
10	Program File	Program File	Match
11	Program File	Program File	Match
12	Program File	Program File	Match
13	Program File	Program File	Match
14	Program File	Program File	Match
15	Program File	Program File	Match
16	Program File	Program File	Match
17	Program File	Program File	Match
18	Program File	Program File	Match
19	Program File	Program File	Match
20	Program File	Program File	Match
21	Program File	Program File	Match
22	Program File	Program File	Match
23	Program File	Program File	Match
24	Program File	Program File	Match
25	Program File	Program File	Match
26	Program File	Program File	Match
27	Program File	Program File	Match
28	Program File	Program File	Match
29	Program File	Program File	Match
30	Program File	Program File	Match
31	Program File	Program File	Match
32	Program File	Program File	Match
33	Program File	Program File	Match
34	Program File	Program File	Match
35	Program File	Program File	Match
36	Program File	Program File	Match
37	Program File	Program File	Match
38	Program File	Program File	Match
39	Program File	Program File	Match
40	Program File	Program File	Match
41	Program File	Program File	Match
42	Program File	Program File	Match
43	Program File	Program File	Match
44	Program File	Program File	Match
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81	Program File	Program File	Match
82	Program File	Program File	Match
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88	Program File	Program File	Match
89	Program File	Program File	Match
90	Program File	Program File	Match
91	Program File	Program File	Match
92	Program File	Program File	Match
93	Program File	Program File	Match
94	Program File	Program File	Match
95	Program File	Program File	Match
96	Program File	Program File	Match
97	Program File	Program File	Match
98	Program File	Program File	Match
99	Program File	Program File	Match
100	Program File	Program File	Match

There were 0 parts not matched.

Display detailed comparison results of mismatching programs.

Detail Verify Result

Line	Step	Verify Source	Step	Verify Destination
1	0	LD	0	LD
2	0	MOV	0	MOV
3	0	SET	0	SET
4	0	SET	1	SET
5	0	END	5	END

There were 3 parts not matched.

Select mismatching portion.

Verification source (project being edited)

Verification target (saved project)

Show mismatching portion.

POINT The verification result can be saved to a CSV file to facilitate revision of design documents.

2 Prevent edit error by Read and Monitor modes

Erroneous operations in monitoring and searching are eliminated by supporting the Read and Monitor modes similar to GX Developer.

Write mode/monitor (write mode)

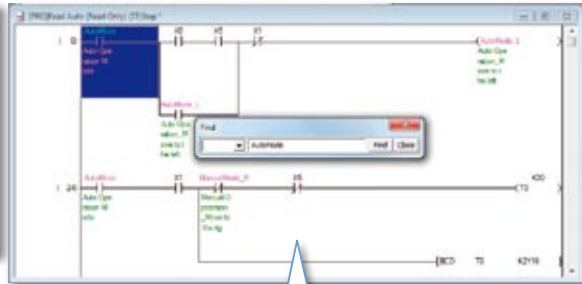
Enter Symbol screen opens by pressing Enter key.



In the Write mode/monitor (write mode), online program change during conversion/compile can be performed to accelerate work.

Read mode/monitor mode

Find screen opens by pressing Enter key.



Mis-editing of ladder can be prevented. Pressing Enter key jumps to the next search candidate one by one.

POINT

The same key operation as GX Developer can be used to switch modes.

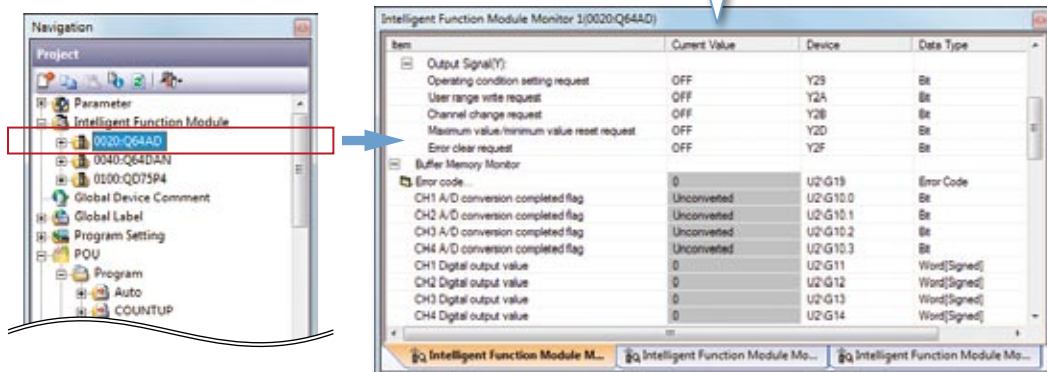
3 Easy-to-see monitor for intelligent function module

While watching the ladder program, the buffer memory of the intelligent function module can be monitored in the docking window.

Since the name of each address in the buffer memory is displayed, it is unnecessary to refer to the manual to see for what the buffer memory is used.

If there are multiple modules to monitor, they can be switched to display by using tabs.

Show the current values in an easy-to-view format.

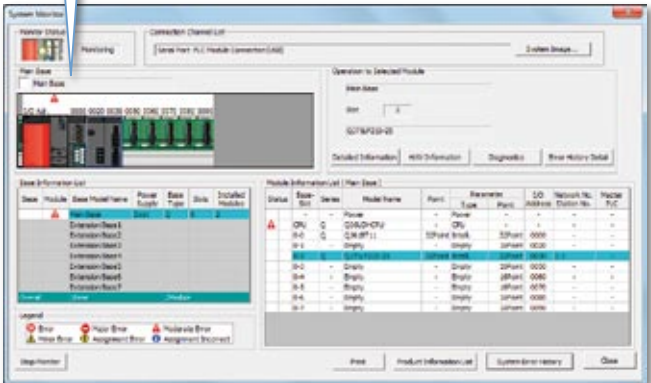


▶ Operation and Maintenance

4 Visible System monitor function and PLC diagnostics

Operation status of the entire programmable controller system is clearly displayed. Faulty modules can be diagnosed and the detailed information can be displayed for the entire system, allowing for quick troubleshooting of errors.

The operation status of each module can be checked at a glance.

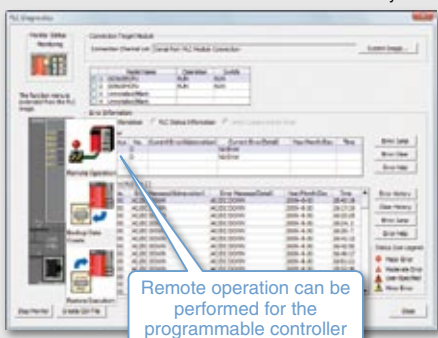


[Module error history collection function]
Error history of PLC and intelligent function module can be viewed in time series.



Error details and solution are displayed to handle troubles without the manual.

[PLC diagnostics]
Error history of PLC can be quickly checked to respond to a failure immediately. Also remote operation can be performed onto the programmable controller CPU to reset it or format its memory.

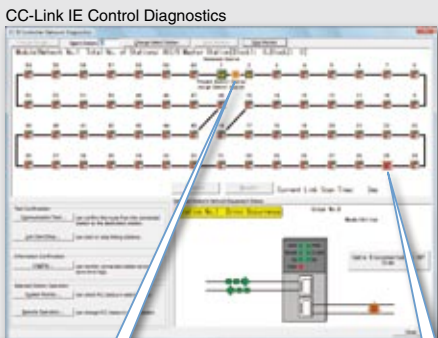


Remote operation can be performed for the programmable controller CPU.

[Module's detailed information]
Display the module status, error details, and solution for the error. Immediate response can be made to a module failure.

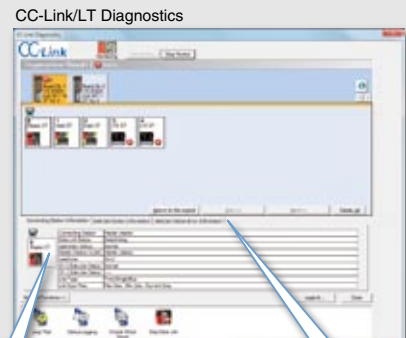


[Network diagnostics]
Display the status of the entire network visually so that a line trouble and module error can be quickly found. Also, system monitoring of the PLC at another station can be started via network.



Disconnection and/or misconnection can be easily found.

A faulty station with a parameter setting error or an erroneous stop can be also easily detected.



The selected module's information can be viewed.

The selected module's error history can be viewed.

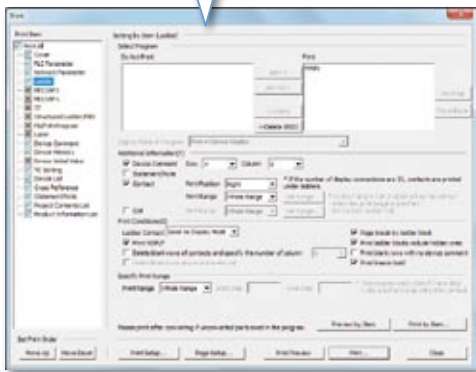
POINT The system can be diagnosed on a graphical screen which gives a feeling as if you are watching actual system and equipment.

5 Rich print functions

Items to print can be specified in details.

Also, multiple programs can be printed in a single operation.

Necessary information in detail
can be easily printed just by
selecting print conditions.



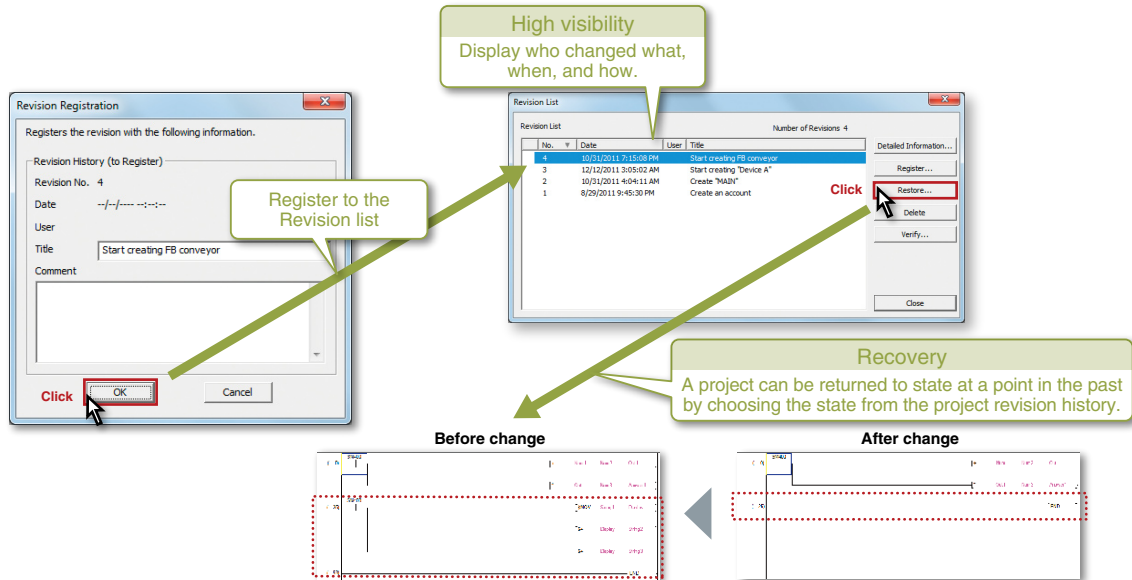
POINT

The print range, contact coil usage, Device list, and Cross reference information also can be printed.

► Project

1 Back up and restore a project easily

By registering project revision history, the project can be recovered easily. Comparisons between projects registered in the history can be made.

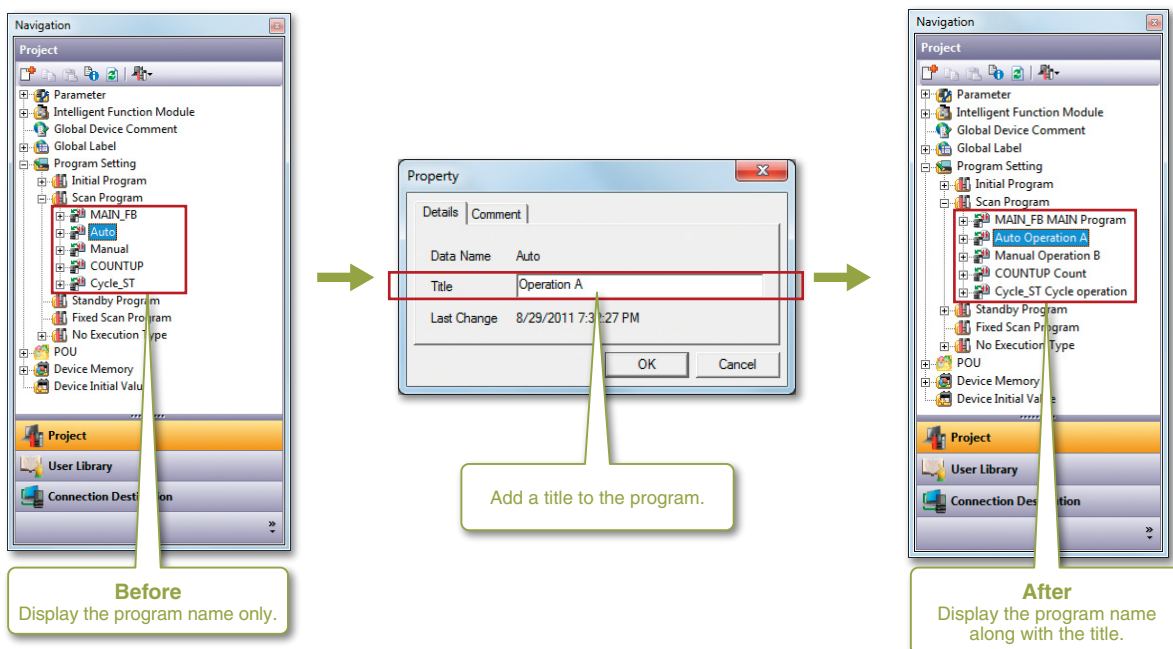


POINT

It is unnecessary to save projects under different names for back up.

2 Program title display guides you

In addition to the program name, the program title is displayed, allowing the program contents to be understood at a glance.

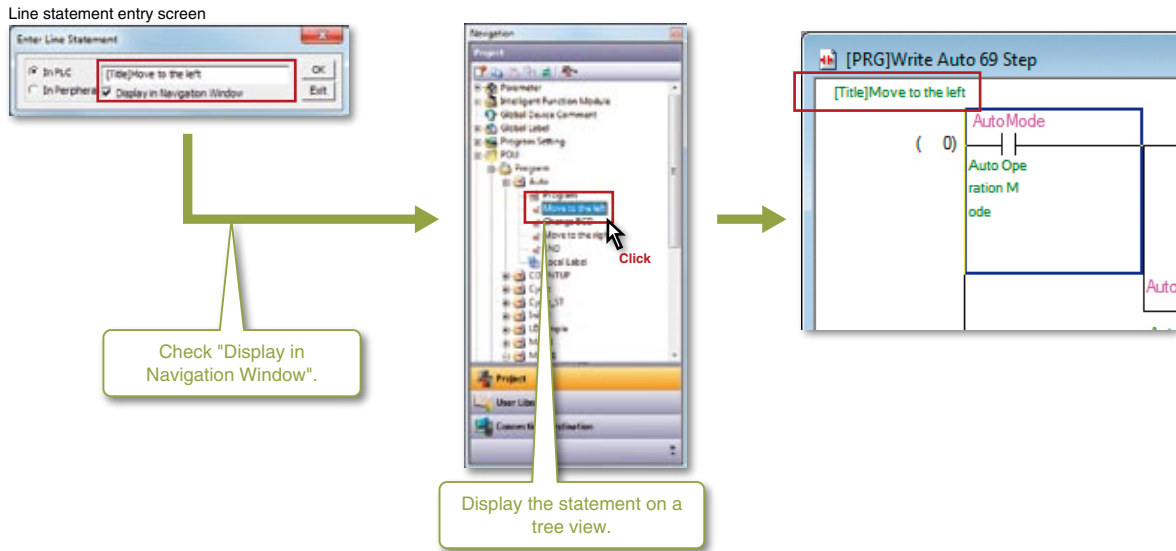


POINT

While the program name is limited to eight characters, up to 32 characters can be entered for the title as supplementary information.

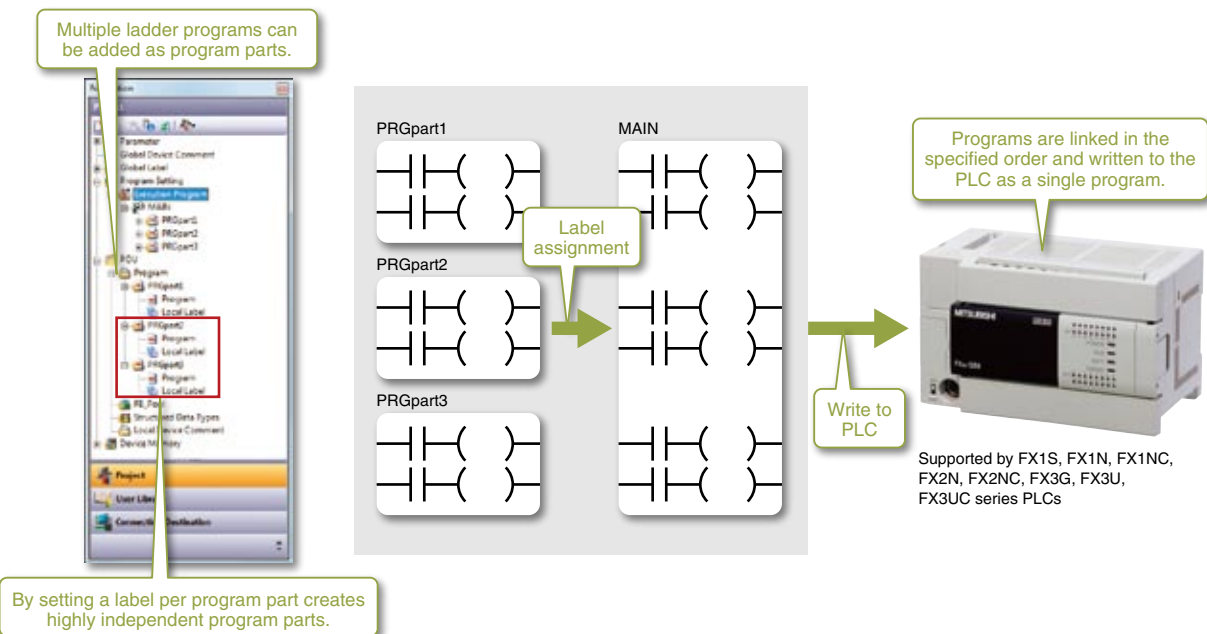
3 Tree view offers easy-to-understand processing flow

The statements appended to program processes can be displayed on a tree view for easy access to them. The processing flow and structure of the program can be easily understood and jump to each process quickly.



4 Handling multiple program parts with FX series CPU

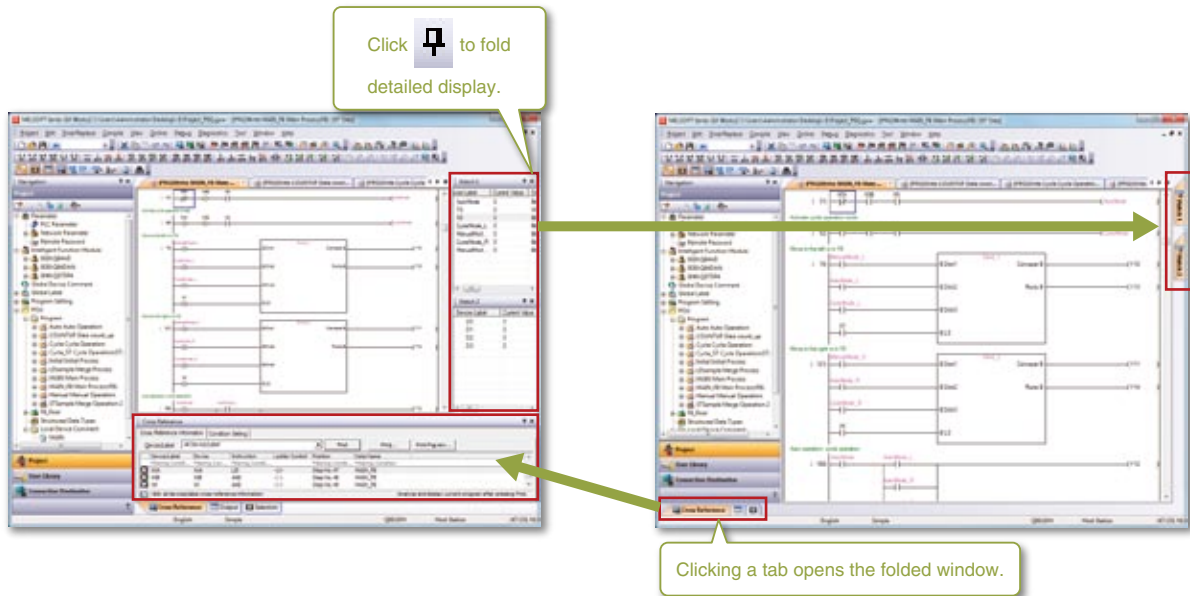
Multiple ladder programs can be added as program parts. By setting a label per program part creates highly independent program parts.



► Project

5 Docking windows allow for making efficient use of the screen

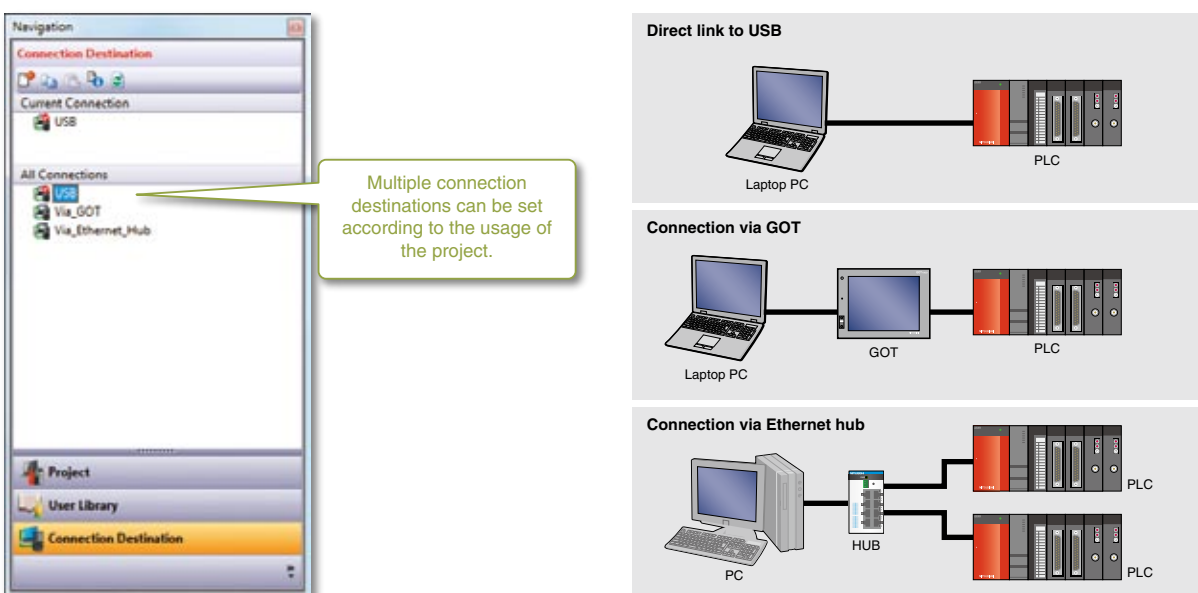
The docking windows can be hidden to use the screen efficiently.



6 Setting connection destinations between multiple settings

Frequently used multiple connection destinations can be set and switched between them according to the use scenario.

It is unnecessary to save projects for different connection targets.



POINT

The connection destinations can be set from the Navigation window.

7 Customize keyboard key arrangement

Key customization allows you to arrange keys as you like.
Key customization can be saved in a file and reused.

The 'Key Customize' dialog box is shown with the 'Shortcut Key' tab selected. It features a 'Category' dropdown set to 'Common', a 'Command' list with options like Project, Find/Replace, and Compile, and a 'Current Key' field. A 'Template Setting' section at the bottom allows saving the current configuration as a template.

A callout box states: "Any functions can be assigned to the shortcut keys." A thought bubble from a user at a laptop says: "F5 and F6 keys are far and difficult to use." A diagram shows the remapping: F5 is changed to A (labeled 'Open Contact') and F6 is changed to B (labeled 'Close Contact').

POINT

Keys can be assigned to menu items with no shortcut keys assigned but used frequently.

8 Help information guides you operation method with a single keystroke

Displaying Help information makes it easier to confirm the operation.

A circuit diagram shows a component labeled 'BXCH D0010 D033 K82'. A callout box with an arrow points to the 'F1' key, with the text "Display the help screen by pressing F1 key." To the right, a screenshot of the 'Help' window is shown, displaying detailed information for the '6.4.10 BXCH, BXCHP' command, including a ladder logic diagram, a table of settings, and a function description.

Various help information can be displayed in the Help window.

Five icons represent different help categories: CPU Error Help, Special Relay/Register Help, Changes from GX Developer, Instruction Help, and Operating manual (represented by a PDF icon).

POINT

Frequently used help screens can be bookmarked.

► Label Programming/Structured Programming

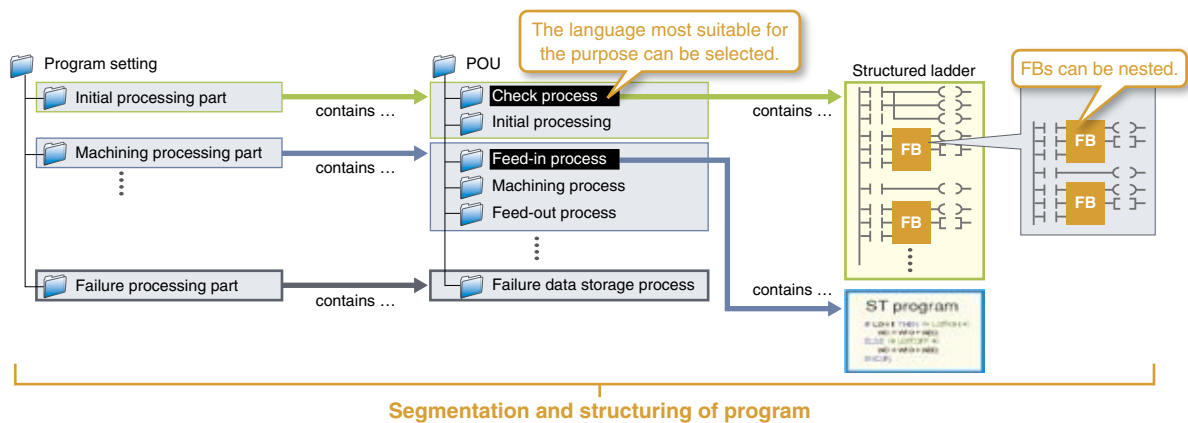
1 Structured programming

[From a roll of ladder program to structured programming]

By using a Structured project in GX Works2, a large and complicated program can be structured and segmented according to the processing details, control details, and functionalities.

A "roll" of ladder program tends to be difficult to view the entire processing. On the contrary, by designing a compact program module for each process in structured programming, coding and debugging will be more efficient and the program quality will be also improved.

It also supports complicated structured programming by allowing for a nesting structure which puts a FB in another FB.



2 Supports IEC61131-3 standard languages

GX Works2 supports languages specified by the IEC61131-3 standard.

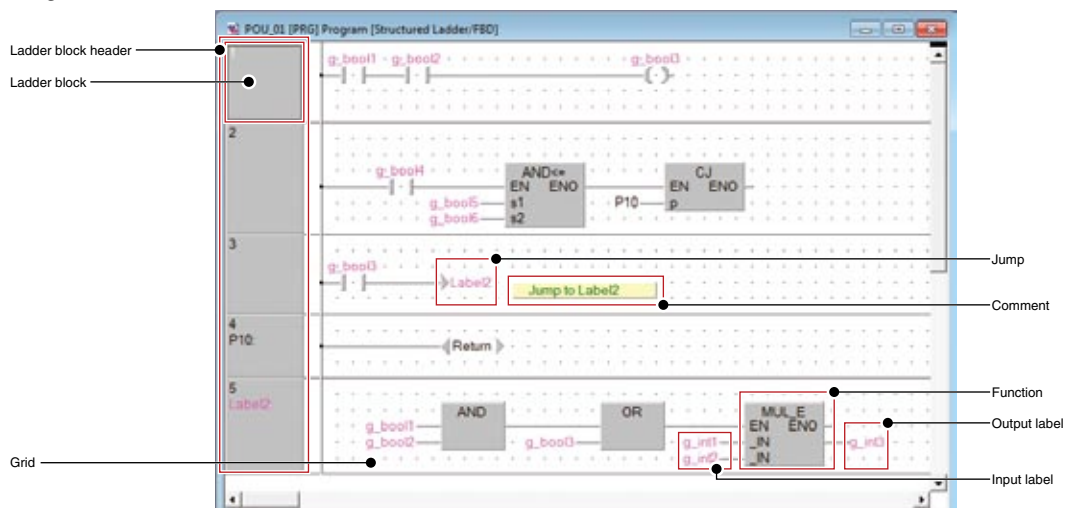
Graphical language

[Ladder language]

This graphical language represents a program as a ladder which consists of contact points and coils, and is used in the same manner as conventional GX Developer.

[Structured ladder/FBD language]

The structured ladder language is a graphical language used according to the design technique of the relay circuit. The structured ladder allows for nesting FBs. The FBD language graphically represents a ladder by connecting functions and/or FBs.

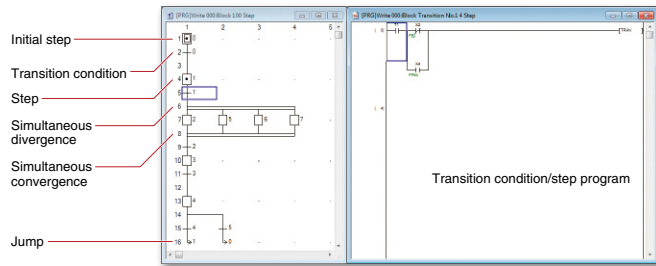


[SFC language]

A graphical language for comprehensively describing sequence control.

This language pairs a step which describes a process with a transition condition to move to the next step.

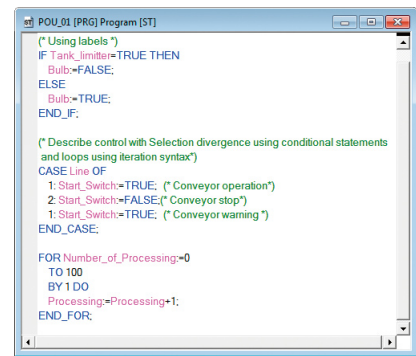
The step and transition condition can be described in the ladder language.



Text language

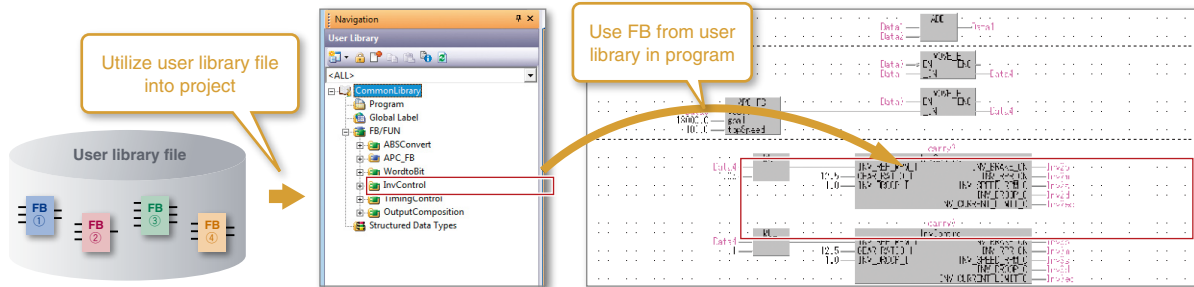
[ST (structured text) language]

The ST language allows for describing control with selection divergence using conditional statements and loops using iteration syntax, similar to high-level languages such as C. This helps creating comprehensive and concise programs.



3 Improve development efficiency using user libraries

For structured projects of GX Works2, frequently-used programs and FBs can be saved in user library files separately from the project. By utilizing the user library files into a new project, it is unnecessary to create the same program from scratch, and therefore improve program development efficiency.



4 Device-unconscious programming

It is not easy to guess device usage from a device name such as "Y10" or "M0".

As the program grows, the number of device types and devices are increased and it will be necessary to program by checking the device assignment with the system specifications, resulting in lower efficiency. Using labels, a self-explaining name such as "Production line start signal" or "Start parts supply" can be given to each device to improve programming efficiency as well as prevent input errors.



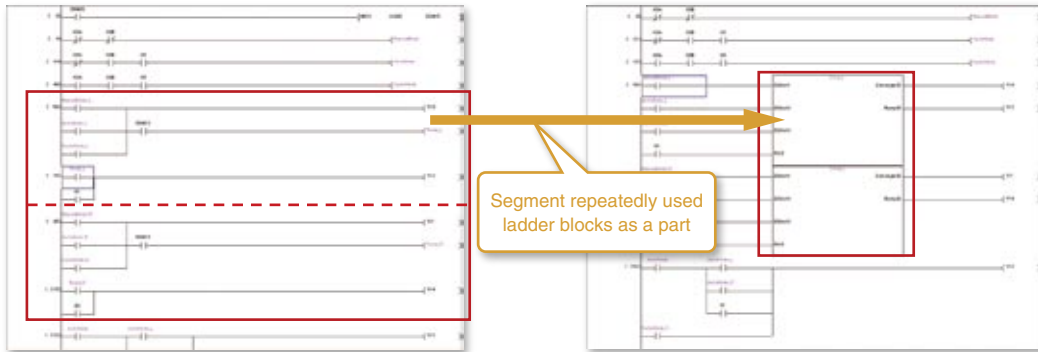
POINT Using labels eliminates device assignment upon system changes.

► Segmentation of Program (FB: Function Block)

1 Make it easy using FB

FB stands for "Function Block" and is a ladder block frequently used in a sequence program and segmented as a part for reuse within the program.

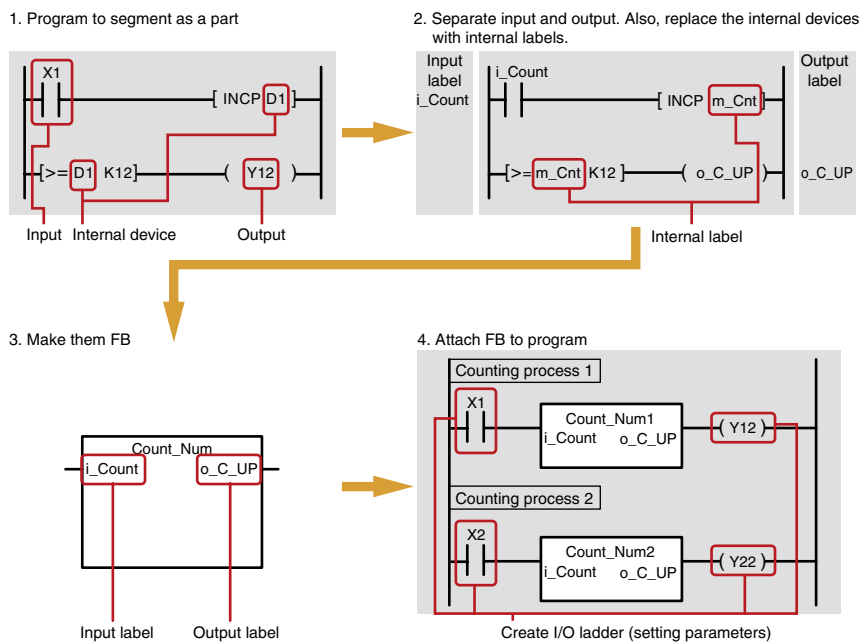
FB improves program development efficiency and reduces programming errors to ensure higher program quality.



[What is program segmentation?]

The following describes the segmentation flow:

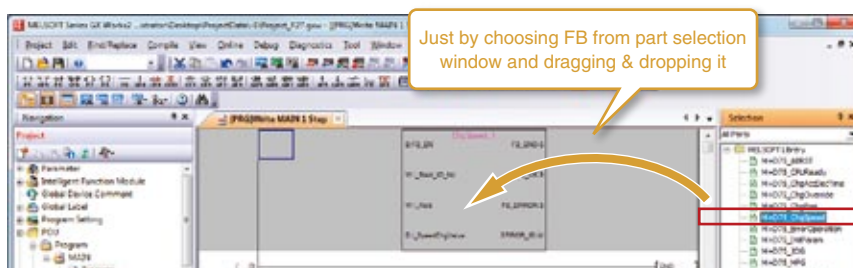
Example) This program turns on the output signal (Y12) after the input signal (X1) turns on for 12 times.



[Advantage 1 of using FB: Easier programming]

A sequence program can be created just by dragging and dropping FBs.

This significantly reduces program development processes.



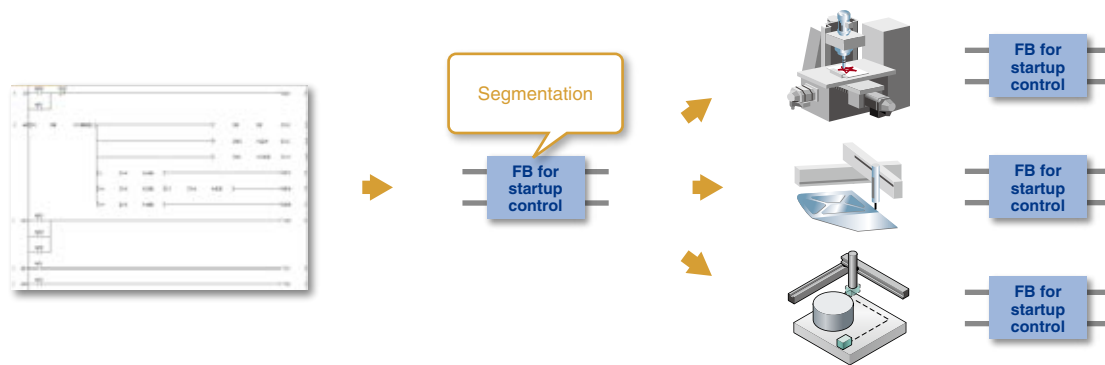
[Advantage 2 of using FB: Improved readability]

Using FBs in a sequence program improves its readability because the program only consists of "boxes" (FBs), inputs, and outputs.



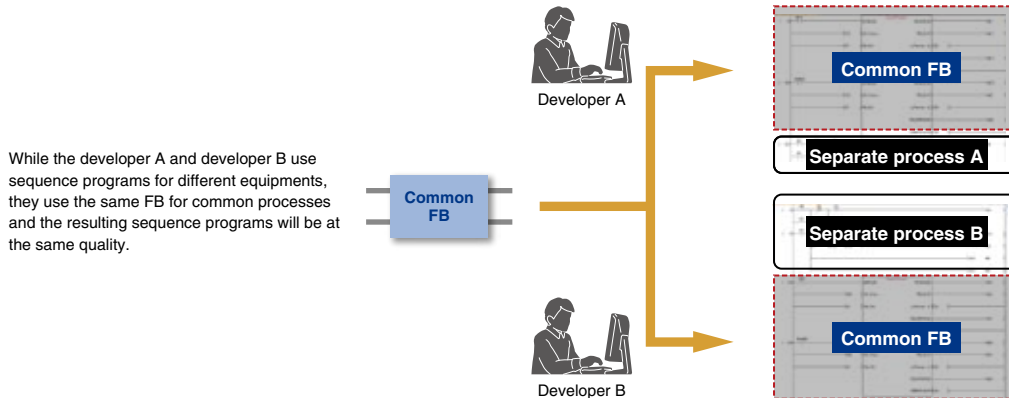
[Advantage 3 of using FB: Reusability]

By segmenting standard programs as parts, they can be reused as many times as required. You are no longer required to copy an existing program and then modify devices.



[Advantage 4 of using FB: Higher quality]

By segmenting standard programs as parts (FBs) and reusing them, program quality will be uniform and independent from the skill levels of the developers.



[Advantage 5 of using FB: Asset preservation]

By segmenting an important sequence program involving technology expertise as a part (FB) and protecting it with a password, it will be protected from leakage.



► Segmentation of Program (FB: Function Block)

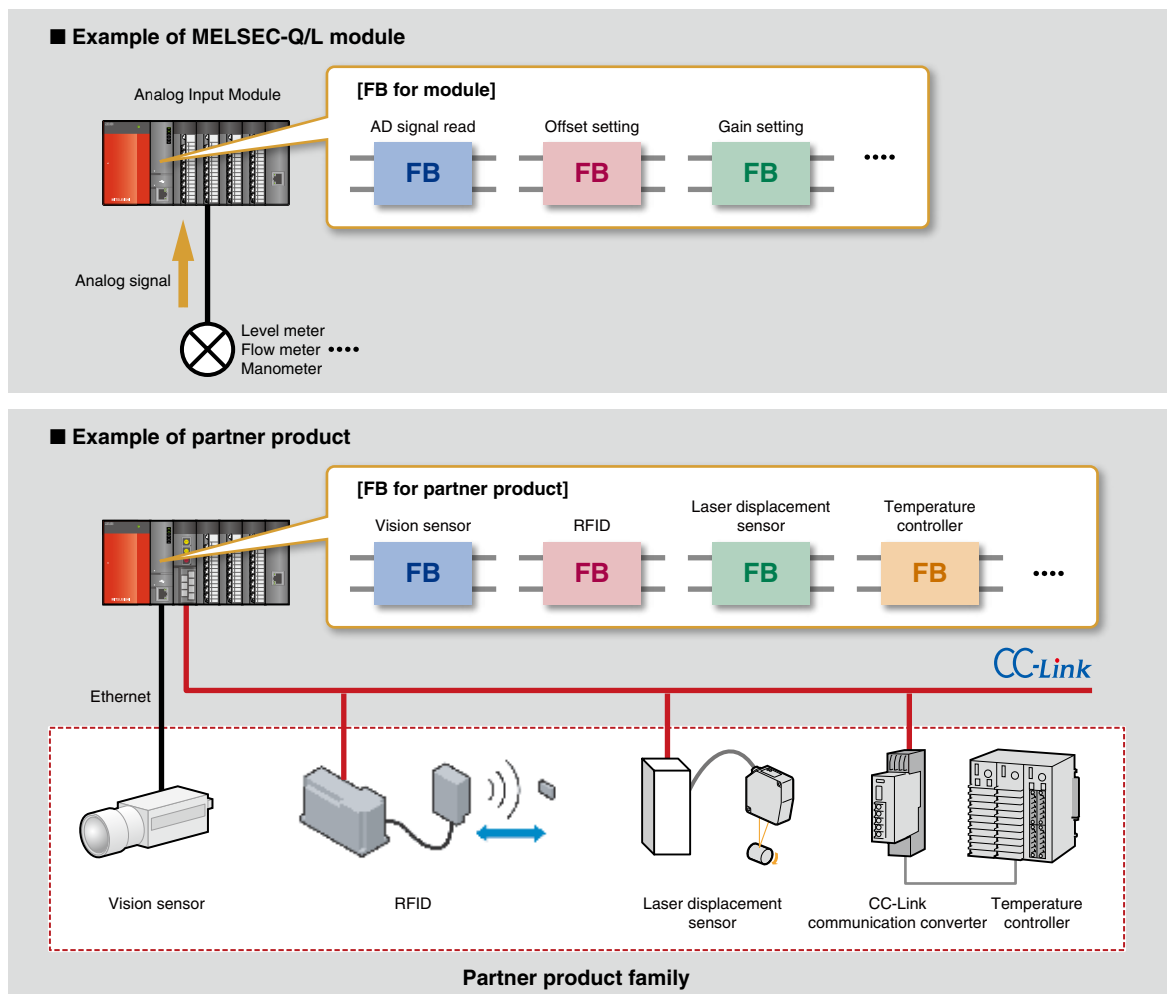
2 Useful FB libraries supplied by vendors

In addition to the custom FBs, useful FB libraries supplied by our partners are available. For the acquisition of FB libraries, please contact your local Mitsubishi representative.

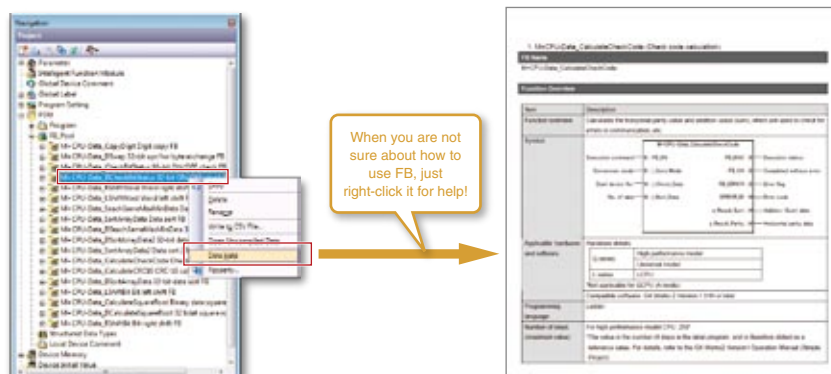
[What is FB library?]

An FB library is a collection of FB parts which can be used in simple projects of GX Works2.

By using these FBs, settings and operation of the MELSEC-Q/L modules as well as partner products can be configured.



When how to use an FB is not certain, right-click it on the FB Selection Window to display the help information.



► Interaction with iQ Works

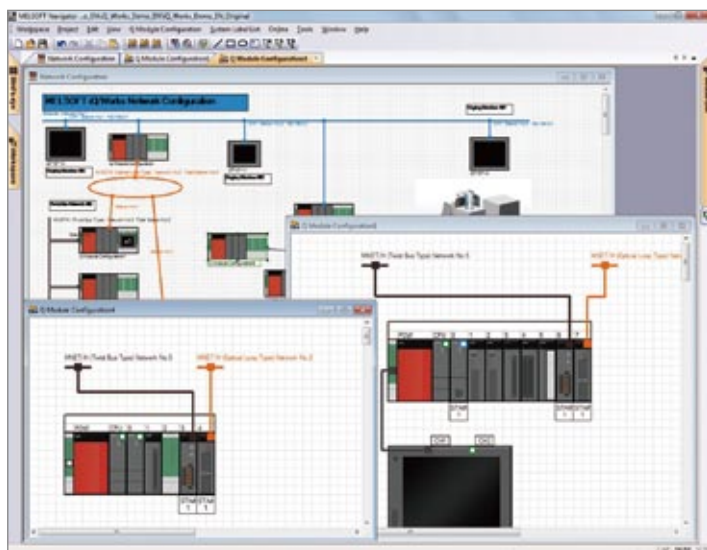
1 Implements a seamless engineering environment

MELSOFT iQ Works is an integrated engineering software product, composing of GX Works2, MT Works2, GT Works3, and RT ToolBox2. By sharing information such as system designs and programming as the entire control system, the system design and programming efficiency are improved and total cost reduction is achieved.

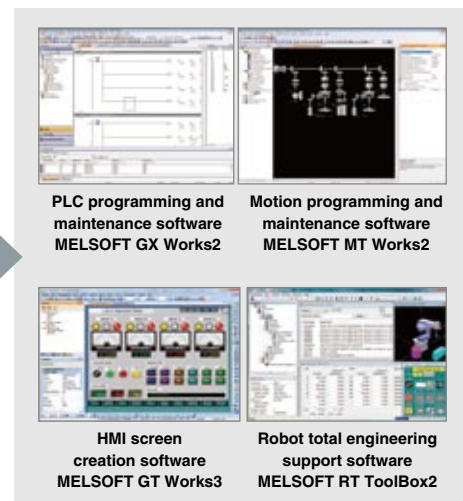
[MELSOFT Navigator]

In combination with GX Works2, MT Works2, GT Works3, and RT ToolBox2, this software performs upstream system design and inter-software operation.

It provides such convenient functions as system configuration design, batch setting of parameters, system labeling, and batch reading.



MELSOFT Navigator



PLC programming and maintenance software
MELSOFT GX Works2

Motion programming and maintenance software
MELSOFT MT Works2

HMI screen creation software
MELSOFT GT Works3

Robot total engineering support software
MELSOFT RT ToolBox2

■ Workspace management

Multiple project data (programmable controller projects, motion controller projects, GOT projects, and robot controller projects) can be managed totally using a workspace.

• System configuration diagram

Graphically represents the entire system as "network configuration" + "multi module configuration" + "CC-Link configuration".

The diagram can be easily created by dragging and dropping the modules, and various checks such as power supply capacity check are also performed.

• System label

To reduce processes and prevent setting errors, the system labels are centrally defined and shared among all the projects.

2 Parameter settings for individual tools are no longer required

After finishing parameter setting for one system, another parameter setting for another system is waiting for you ...

Parameter settings for multiple systems are particularly troublesome when implementing a program. MELSOFT Navigator reflects information defined in the system configuration diagram on all the projects in GX Works2, MT Works2 and GT Works3. You no longer need to launch each software and check for integrity. *1

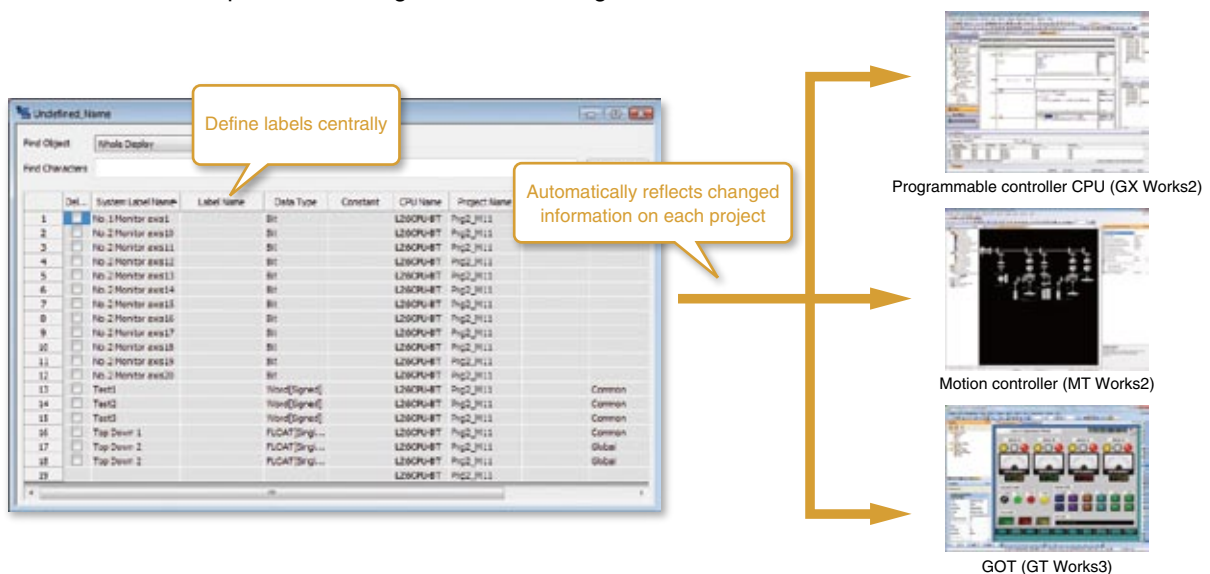
*1 You are still required to set detailed parameters in each tool.

Parameter setting information in system configuration diagram



3 Shares labels and automatically changes all related projects

Previously, when device assignment was changed, it was necessary to repeat the same modification work for the number of projects for all equipments. MELSOFT Navigator eliminates such repetition by allowing the PLC, motion controller, and GOT to share the labels. For example, when device assignment is changed in a PLC project, the change is automatically reflected on the motion controller and GOT projects. This greatly reduces the time required for setting as well as setting errors.



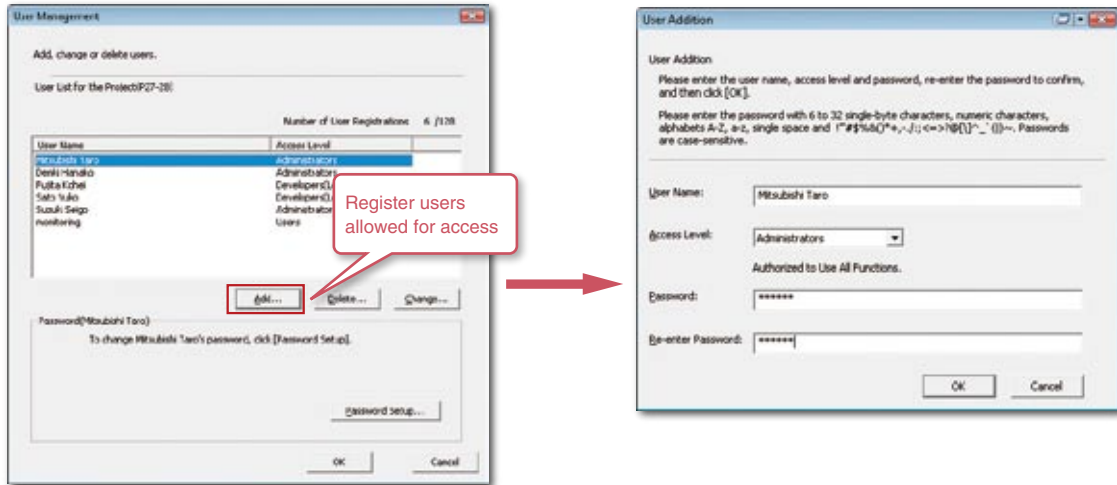
► Security

1 Detailed project security management

Project safety can be maintained by limiting user access for each program and parameter.

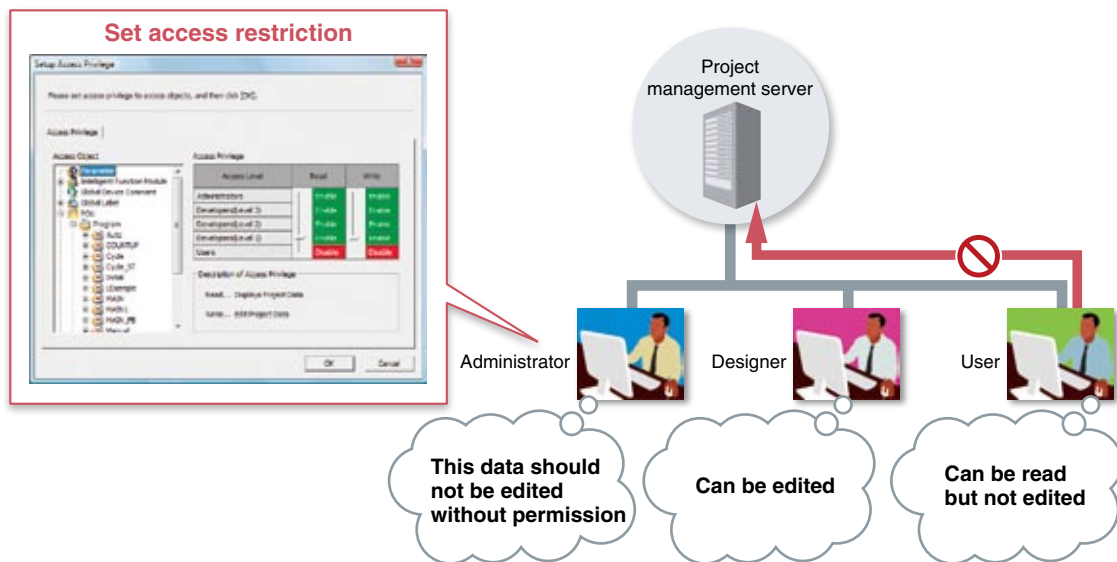
[User registration (addition, change, and deletion)]

The access level can be managed for each user.



[Access restriction]

Setting security not only restricts an access to projects but also prevents the data created by the user from erroneous modification and/or disclosure to unauthorized users.



POINT When multiple persons take charge in the same project, unauthorized changes to the project data can be prevented.

2 Protects the program

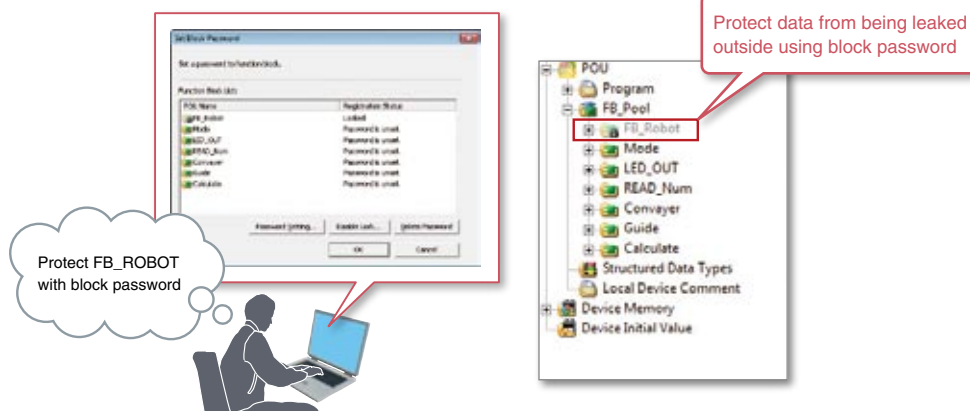
[Password registration]

By setting a password for a program in the programmable controller CPU, the program can be protected from unauthorized change and leakage.



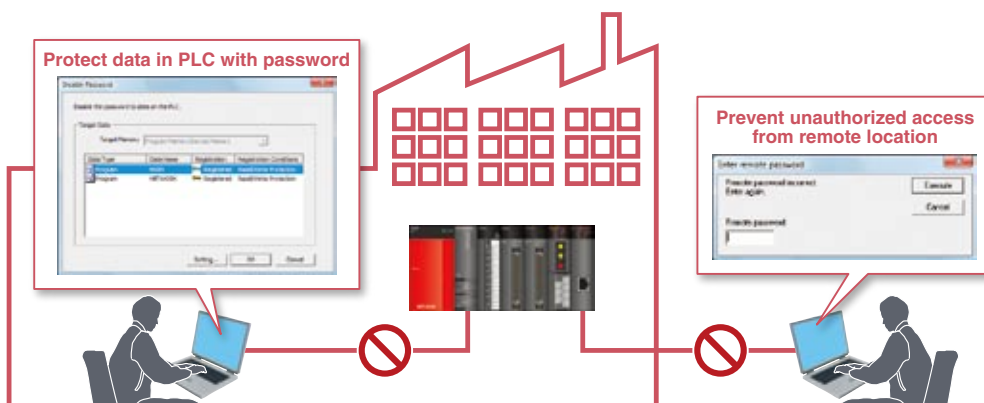
[Block password setting]

By setting a block password, the FBs within a project which contains in-house software expertise can be protected from theft and leakage.



3 Prevents unauthorized access

By setting a remote password, an unauthorized access from a remote site via Ethernet or a public line can be prevented.



Operating Environment

Item		Contents	
Personal computer	OS	Microsoft® Windows® 7 Starter Operating System*1	Microsoft® Windows Vista® Business Operating System
		Microsoft® Windows® 7 Home Premium Operating System*1	Microsoft® Windows Vista® Ultimate Operating System
	Microsoft® Windows® 7 Professional Operating System*1	Microsoft® Windows Vista® Enterprise Operating System	
	Microsoft® Windows® 7 Ultimate Operating System*1	Microsoft® Windows® XP Professional, Service Pack 2 or later	
	CPU	Intel®Core™2 Duo Processor 2GHz or more	Microsoft® Windows® XP Home Edition, Service Pack 2 or later
	Required memory	Recommended 1GB or more	Microsoft® Windows® 2000 Professional, Service Pack 4 or later
Available hard disk capacity		When installing GX Works2: HDD available capacity is 2.5GB or more. When operating GX Works2: Virtual memory available capacity is 512MB or more.	
Disk drive		CD-ROM supported disk drive	
Monitor		Resolution 1024 x 768 pixels or higher	

*1 64-bit edition supported

Supported Programmable Controller CPU

Series name	Model
MELSEC-Q series	Basic model QCPU (Q00J, Q00, Q01)
	High Performance model QCPU (Q02, Q02H, Q06H, Q12H, Q25H)
	Universal model QCPU (Q00UJ, Q00U, Q01U, Q02U, Q03UD, Q03UDE, Q04UDH, Q04UDEH, Q06UDH, Q06UDEH, Q10UDH, Q10UDEH, Q13UDH, Q13UDEH, Q20UDH, Q20UDEH, Q26UDH, Q26UDEH, Q50UDEH, Q100UDEH)
	Remote I/O module (QJ72LP25, QJ72BR15)
MELSEC-L series	L02, L02-P, L26-BT, L26-PBT, LJ72GF15-T2
MELSEC-F series	FX0, FX0S, FX0N, FX1, FX2, FX2C, FX1S, FX1N, FX1NC, FX2N, FX2NC, FX3G, FX3U, FX3UC

These CPU modules below are supported with using GX Developer which is included on the CD-ROM.

Series name	Model
QCPU(Q mode)	Process CPU (Q02PH, Q06PH, Q12PH, Q25PH)
	Redundant CPU (Q12PRH, Q25PRH)
QCPU(A mode)	All types
QSCPU	All types
QnACPU	All types
ACPU	All types
Motion controller (SCPU)	All types
CNC (M6, M7)	All types

Product Information

[Single license product]

Product name	Model	Model code
GX Works2 Version1 (CD-ROM) Single license product	SW1DNC-GXW2-E	13PG71

[Volume license product]

Product name	Model
GX Works2 Version1 (CD-ROM) Volume license product	SW1DNC-GXW2-EA

[Additional license product]

Product name	Model	Remarks
GX Works2 Version1 Additional license product	SW1DNC-GXW2-EAZ	This product does not include CD-ROM. Only license certificate with the product ID number will be issued.

Manuals

[Operating manual*1]

Manual name	Supply status	IB/SH No.	Model code
GX Works2 Version1 Operating Manual (Common) Explains the system configuration of GX Works2 and the functions common to a Simple project and Structured project such as parameter setting, operation method for the online function.	Sold separately	SH-080779ENG	13JU63
GX Works2 Version1 Operating Manual (Simple Project) Explains methods for such as creating and monitoring programs in Simple project of GX Works2.	Sold separately	SH-080780ENG	13JU64
GX Works2 Version1 Operating Manual (Simple Project, Function Block) Explains methods for such as creating function blocks, pasting function blocks to sequence programs, and operating FB library in Simple project of GX Works2.	Sold separately	SH-080984ENG	13JU72
GX Works2 Version1 Operating Manual (Structured Project) Explains methods for such as creating and monitoring programs in Structured project of GX Works2.	Sold separately	SH-080781ENG	13JU65
GX Works2 Beginner's Manual (Simple Project) Explains fundamental methods for such as creating, editing, and monitoring programs in Simple project for users inexperienced with GX Works2.	Sold separately	SH-080787ENG	13JZ22
GX Works2 Beginner's Manual (Structured Project) Explains fundamental methods for such as creating, editing, and monitoring programs in Structured project for users inexperienced with GX Works2.	Sold separately	SH-080788ENG	13JZ23

*1 The operating manuals are included on the CD-ROM with the software package.
Manuals in printed form are sold separately for single purchase.
Order a manual by quoting the manual number (model code) listed in the upper table.

MEMO

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Mitsubishi Electric Corporation Nagoya Works is a factory certified for ISO14001 (standards for environmental management systems) and ISO9001 (standards for quality assurance management systems)



iQ Platform Compatible Programmable Controller Engineering Software MELSOFT GX Works2

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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.
- 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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Brazil	MELCO-TEC Rep. Com.e Assessoria Tecnica Ltda. Av Paulista, 1439-Cj. 72 Cerqueira Cesar CEP 01311-200, Sao Paulo, SP, CEP:01311-200, Brazil	Tel : +55-11-3146-2200 Fax : +55-11-3146-2217
Germany	Mitsubishi Electric Europe B.V. German Branch Gothaer Strasse 8 D-40880 Ratingen, Germany	Tel : +49-2102-486-0 Fax : +49-2102-486-1120
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Czech Republic	Mitsubishi Electric Europe B.V.-o.s.-Czech office Avenir Business Park, Radlická 714/113a CZ-158 00 Praha 5	Tel : +420-251-551-470 Fax : +420-251-551-471
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China	Mitsubishi Electric Automaiton (China) Ltd. No.1386 Hongqiao Road,Mitsubishi Electric Automation Center Shanghai China	Tel : +86-21-2322-3030 Fax : +86-21-2322-3000
Taiwan	Setsuyo Enterprise Co., Ltd. 6F., No.105, Wugong 3rd, Wugu Dist, New Taipei City 24889, Taiwan, R.O.C.	Tel : +886-2-2299-2499 Fax : +886-2-2299-2509
Korea	Mitsubishi Electric Automation Korea Co., Ltd. 1480-6, Gayang-dong, Gangseo-ku Seoul 157-200, Korea	Tel : +82-2-3660-9530 Fax : +82-2-3664-8372
Singapore	Mitsubishi Electric Asia Pte, Ltd. 307 Alexandra Road #05-01/02, Mitsubishi Electric Bulding Singapore 159943	Tel : +65-6470-2480 Fax : +65-6476-7439
Thailand	Mitsubishi Electric Automation (Thailand) Co., Ltd. Bang-Chan Industrial Estate No.111 Soi Serithai 54, T.Kannayao, A.Kannayao, Bangkok 10230 Thailand	Tel : +66-2-906-3238 Fax : +66-2-906-3239
Indonesia	P.T. Autoteknindo Sumber Makmur Muara Karang Selatan Block A/Utara No.1 Kav. No.11 Kawasan Industri/Pergudangan Jakarta-Utara 14440, P.O Box5045 Jakarta 11050, Indonesia	Tel : +62-21-663-0833 Fax : +62-21-663-0832
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