

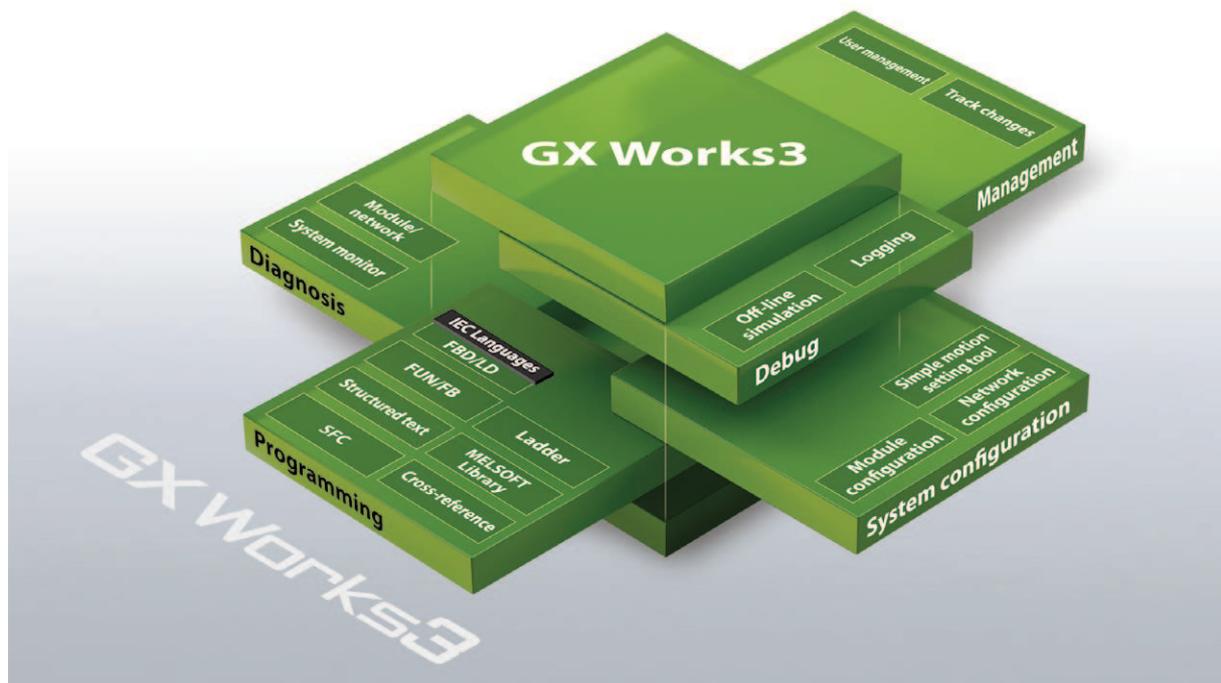
GX Works3

One Software, Many Possibilities



Mitsubishi Electric
MELSOFT GX Works3
Promotion Movie

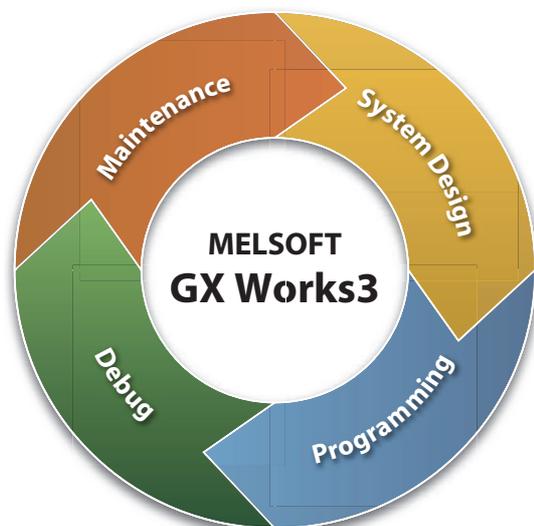
GX Works3 consists of various different components that help to simplify project creation and maintenance tasks. A system design console that enables projects to be created at the system overview stage has been added. Additionally, the main programming languages are supported and their labels (variables) are shared, further simplifying programming. Various debug and maintenance features are also included.



Project lifecycle engineering

Various features have been consolidated into an integrated engineering environment that enables easier project creation throughout the engineering process, ensuring consistency through every step.

- System-wide design
 - Easy system configuration with parts library
 - Direct module parameter registration
 - Integrated simple motion module setup
- Multiple programming languages
 - Conforms to IEC 61131-3
 - Supports main programming languages
 - Consistency between different programming tabs
- Simple to debug
 - Various online monitoring
 - Hardware simulator (emulator)
 - Data logging
- Straightforward maintenance
 - System monitoring
 - Module and network diagnostics
 - Multi-language commenting

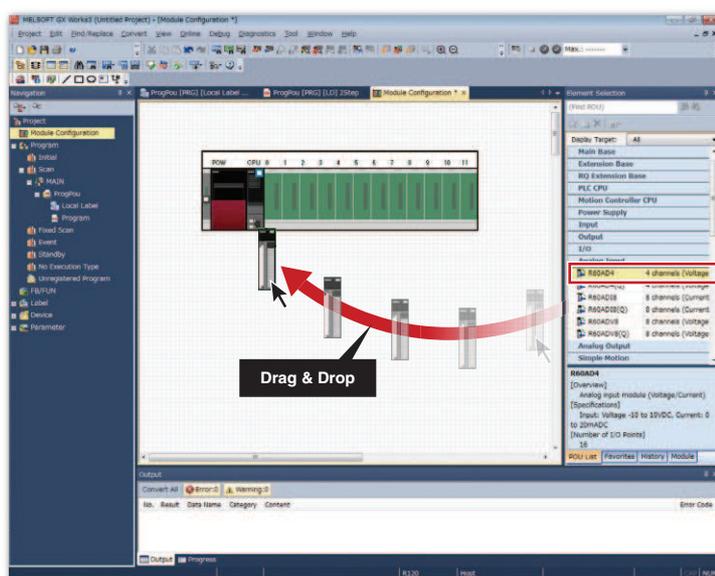




System Design

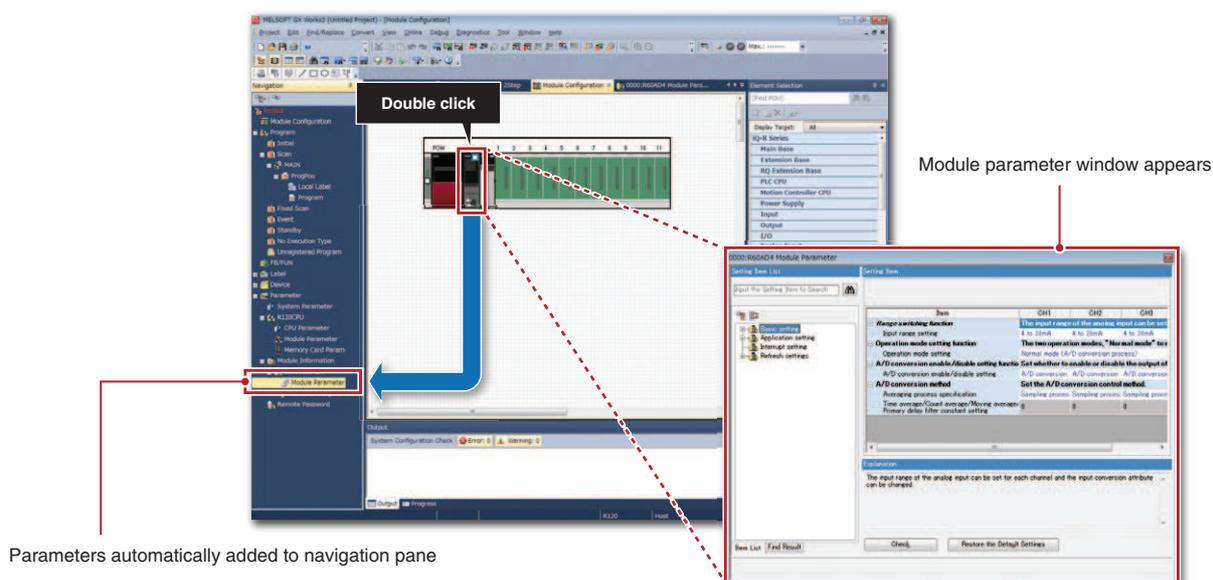
System design with a convenient parts library

Most projects start from system design, so having a software application that caters to this initial stage is important. GX Works3 incorporates a system design feature that enables system components to be assembled directly in the programming software. It includes a parts library consisting of MELSEC iQ-R Series modules that can be used to simplify system creation.



Register module parameters on the fly

Another useful feature is the ability to register parameters automatically. Simply double-click on the desired module and the corresponding parameters will be registered in the project. A window with an easy-to-use parameter settings screen opens, enabling module parameters to be modified as needed.



System configuration

CPU

I/O

Analog

Motion, Positioning, Flexible high-speed I/O, High-speed counter

Network

Advanced information

Software

Integrated motion setup tool

GX Works3 is equipped with a special motion setup tool that makes it easy to change simple motion module settings such as module parameters, positioning data and servo parameters. Also, debugging is simplified using the fine-tuning cam data generation feature.

Project window

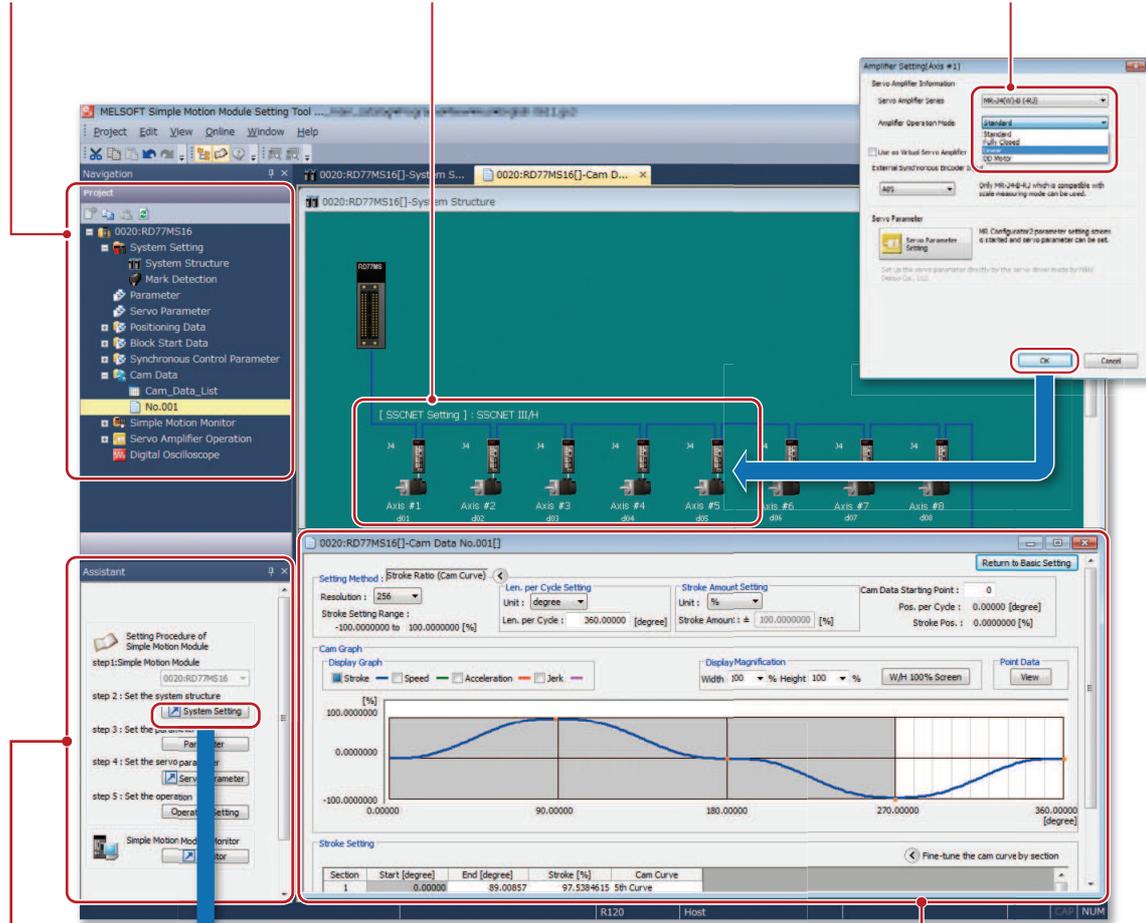
Easy to use navigation pane

Servo amplifier information

Quickly visualize type of servo amplifier and motor model

Servo amplifier setup

Select the servo amplifier and operation mode for each axis.



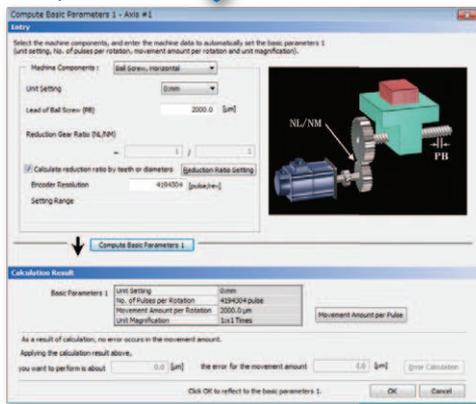
Assistant window

Selective tools further simplifying setup

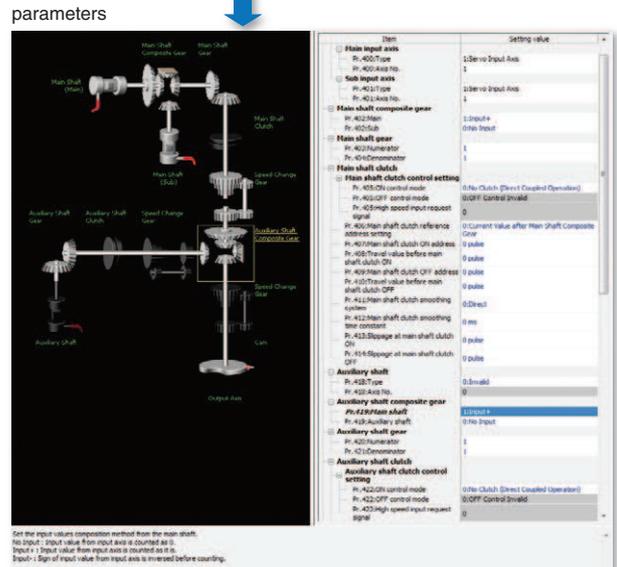
Cam data

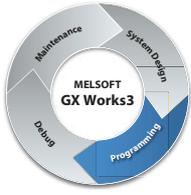
Fine-tune cam curve data

Basic parameters



Synchronous parameters





Programming

Central parts library

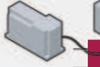
GX Works3 comes with an updated object library pre-installed in the software consisting of a module library with current modules at time of software release although this can be added to as newer modules become available. A variety of other objects are available such as third-party partner function blocks. The library can be fully shared across multiple projects.



MELSOFT Library

■ 3rd party partner FBs


Vision sensor


RFID

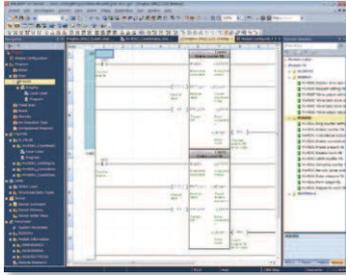

Laser displacement sensor

■ Module FBs (Mitsubishi Electric products)

Module Label

Module FB

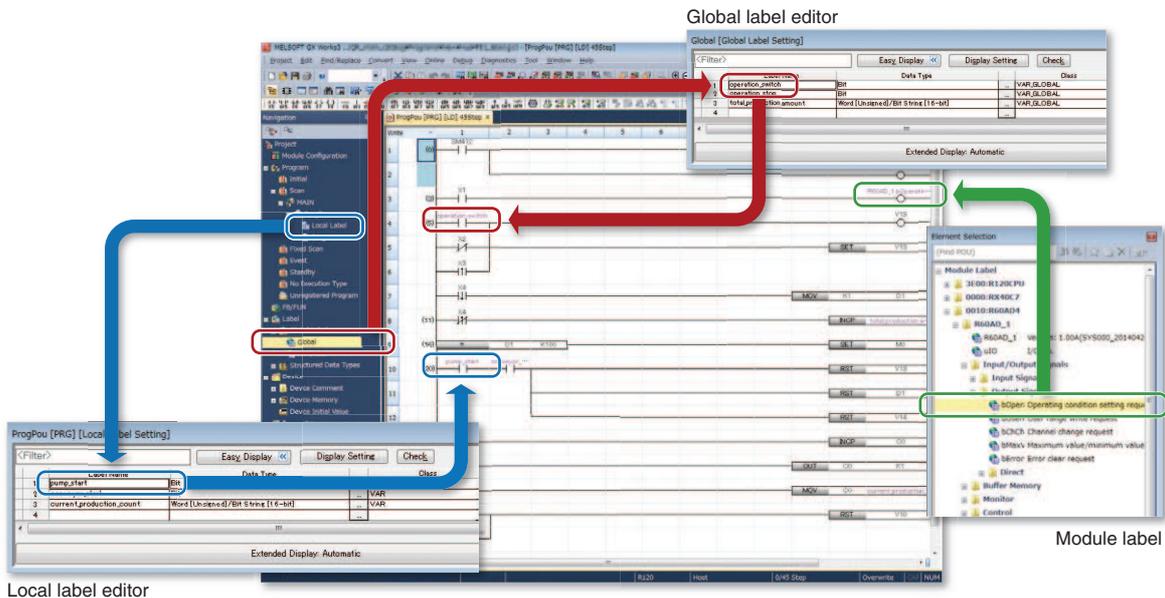
- ▶ R120CPU
- ▶ R60DA4
- ▶ M+R60C Monitor error and r
- ▶ M+R60C Request setting FB
- ▶ M+R60C Wave output setti



Just "select" to create a program

Reduce repetitive program tasks

Global and local variables (labels) are supported providing an easy way to share device names across multiple projects, other MELSOFT software and third party SCADA. The variables can be registered into either the current program, function block as a local variable or within the project as a global variable to share across multiple programs within the same project. Variables specific to a particular module are also available, and can be used immediately, further reducing engineering time and cost.



The image shows three overlapping windows in the GX Works3 software:

- Global label editor:** A window titled "Global [Global Label Setting]" with a table of global variables.

No.	Label Name	Data Type	Class
1	operation_switch	Bit	VAR_GLOBAL
2	operation_time	Bit	VAR_GLOBAL
3	total_production_count	Word (Unsigned/Bit Stride [16-32])	VAR_GLOBAL
4
- Local label editor:** A window titled "ProgPou [PRG] [Local Label Setting]" with a table of local variables.

No.	Label Name	Data Type	Class
1	pump_start	Bit	VAR
3	current_production_count	Word (Unsigned/Bit Stride [16-32])	VAR
4
- Module label editor:** A window titled "Module Selection" showing a list of module-specific labels.

Module Label	Address	Data Type	Class
3E00:R120CPU	0000:R390C.7	Word (Unsigned/Bit Stride [16-32])	VAR_GLOBAL
0010:R60DA4	0010:R60AD.1	Word (Unsigned/Bit Stride [16-32])	VAR_GLOBAL
R60AD_1	1.00A(\$Y5000_20540)

Red arrows indicate the flow of data from the Global label editor to the ladder logic diagram. Blue arrows show the flow from the Local label editor to the diagram. Green arrows show the flow from the Module label editor to the diagram.

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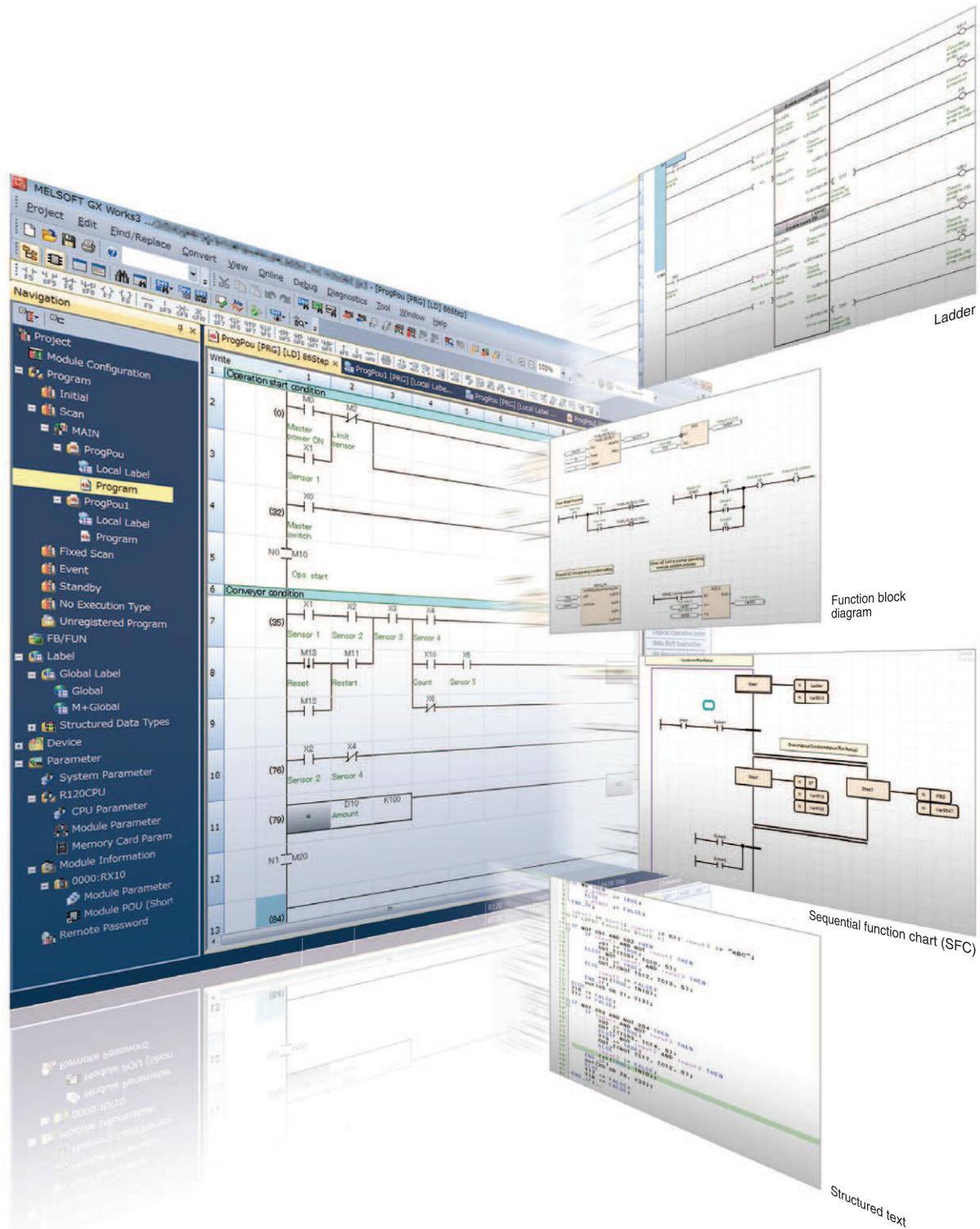
Network

Advanced information

Software

Main programming languages supported

The main IEC languages are supported by GX Works3. Various different programming languages can be used within the same project simultaneously and can be viewed easily via the menu tab. The variables and devices used in each program can be shared across multiple platforms, with user defined function blocks supported.



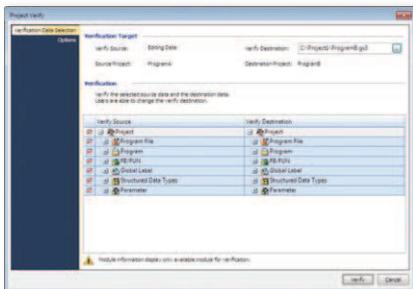


Debug

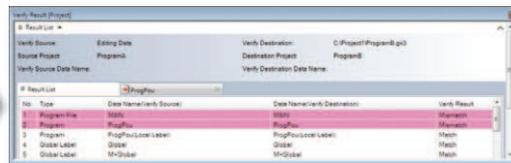
Easy version management

Being able to visually see and manage different versions of the same project can help to reduce debugging processes. Even with a number of engineers are working on the same project, changes made are easily recognized directly from the program or as an automatically generated verification results list. This feature is available for locally stored projects on the computer, and between the program stored in the programmable controller CPU.

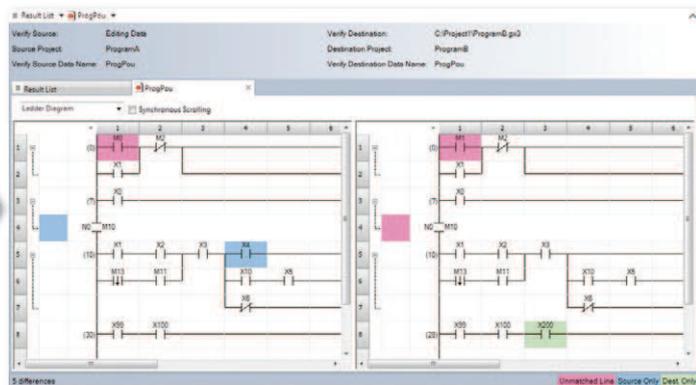
Online data operation



Verification results



Graphical representation of differences

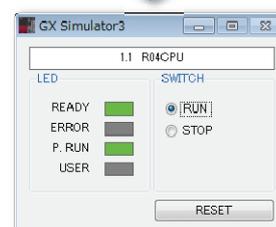
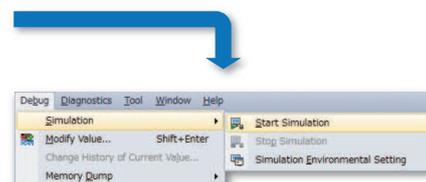
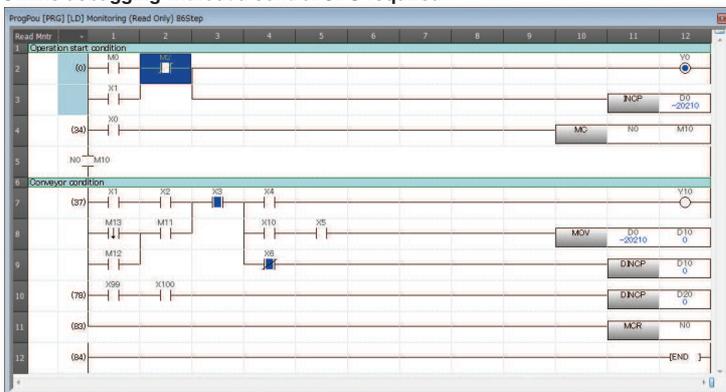


■ : Unmatched Line ■ : Source Only ■ : Dest. Only

Hardware simulation

GX Works3 features an integrated simulator which helps to visualize the operation of the program during the debugging process. Motion control CPU hardware can be simulated as well.

Offline debugging without a control CPU required



Directly debugging on the computer

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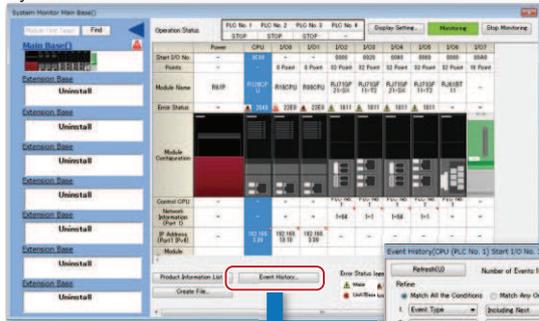


Maintenance

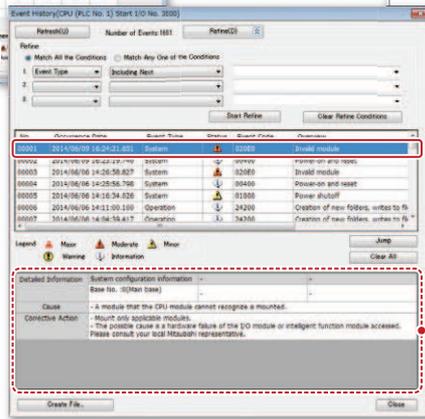
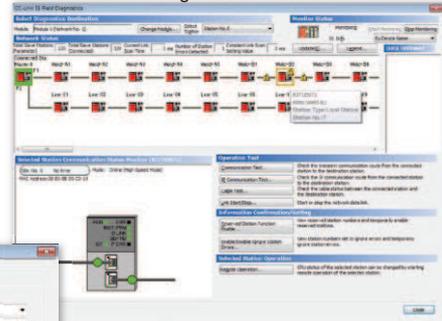
Simplified troubleshooting reduces downtime even further

GX Works3 incorporates various maintenance features helping to reduce downtime and keep productivity high. Various levels of maintenance are possible, from system-wide monitoring of errors and module status to monitoring at the network level; for example, detailed operations that show where programs or parameters have been changed in the CPU and the monitoring of system events, which also includes a useful historical function that can be exported as a CSV file.

System monitor



CC-Link IE Field diagnosis window

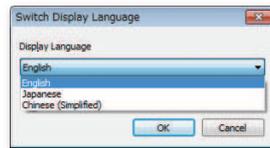
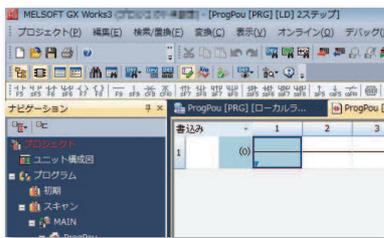


Detailed information including the cause and respective countermeasures are shown here

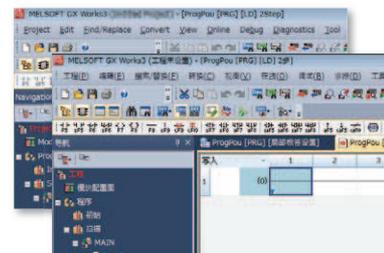
Event history

Multi-language menu, ideal for global support

The menu system can be switched between various languages, enabling different locations to work on the same project with the same programming software version. In addition, device comments within the project can be switched between various languages without having to create multiple copies of the same project to support the comments in different languages.



Menu language switch



Language version of comments being switched

