

Mitsubishi Graphic Operation Terminal Screen Design Software MELSOFT GT Works3



Streamlining workplaces with
a new style of screen design

GOT Screen Design Software
MELSOFT GT Works3^{plus}

Professional designs.

Maximized efficiency.

Intuitive operations.

All made possible by GT Works3.

Whether the goal is to improve design efficiency, create unique screens, or reuse existing ones, MELSOFT GT Works3 is the perfect solution. It offers ready-to-use sample screens and enables reuse of pre-existing designs to accelerate time-to-market.

Additionally, fully integrated with the GOT screen is connectivity to Mitsubishi FA products as well as other applications. And because everything is designed to operate intuitively, first time users do not have to worry about a learning curve. GT Works3 is truly triggering a revolution in screen design.

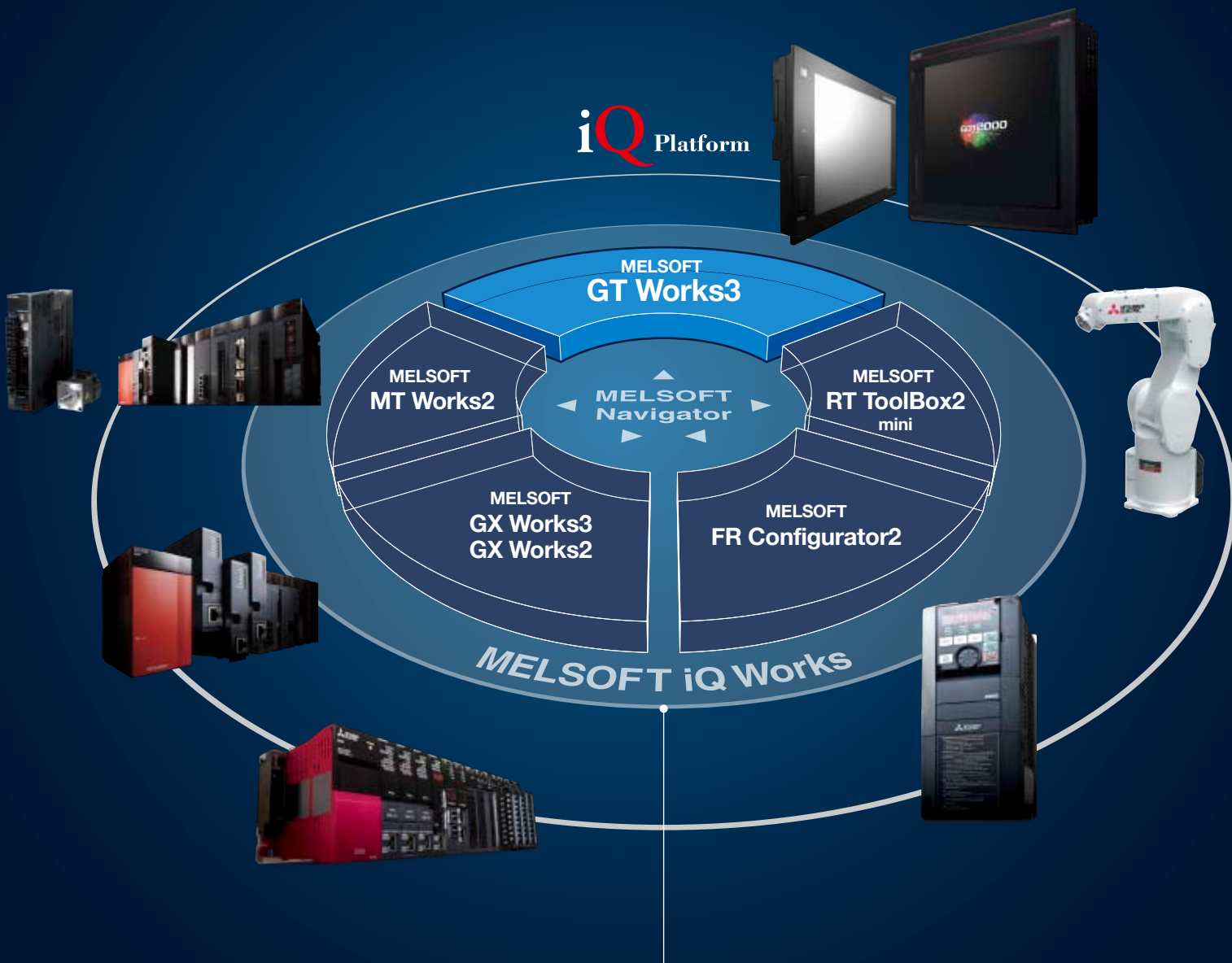
GOT Screen Design Software
MELSOFT GT Works3^{plus}

GOT2000
[Graphic Operation Terminal]

GOT Screen Design Software

MELSOFT GT Works3

This integrated software is used to create professional screen designs for GOTs. Developed with the concepts of “Simplicity”, “Sleekness”, and “User-friendliness” in mind, this is a powerful tool that pushes boundaries and delivers endless design possibilities.

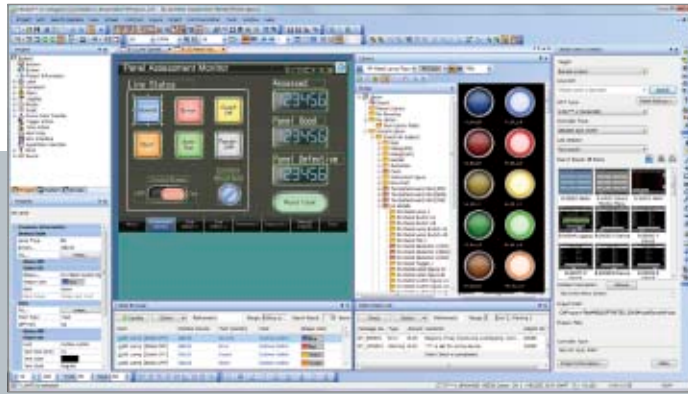


FA Integrated Engineering Software

MELSOFT iQ Works

MELSOFT iQ Works is an integrated software suite consisting of GX Works3, GX Works2, MT Works2, GT Works3, RT Toolbox2 mini and FR Configurator2, which are programming software for each respective product. Integration is further enhanced with MELSOFT Navigator as the central system configuration incorporating an easy-to-use, graphical user interface with additional project-sharing features such as system labels and parameters. The advantages of this powerful integrated software suite are that system design is made much easier with a substantial reduction in repetitious tasks, cutting down on errors while helping to reduce the overall TCO.





System Management Software

MELSOFT Navigator

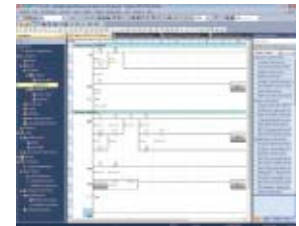
System level graphic-based configuration tool that simplifies the system design by providing a visual representation of the system. System management features such as system-wide parameterization, labels and block reading of project data are also included.



Programmable Controller Engineering Software

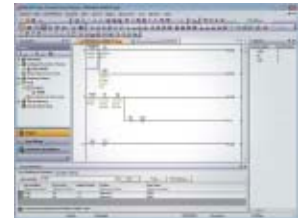
MELSOFT GX Works3

GX Works3 is the latest generation of programming and maintenance software offered by Mitsubishi Electric specifically designed for the MELSEC iQ-R Series control system. It includes many new features such as graphic-based system configuration, integrated motion control setup, multiple language support, providing an intuitive engineering environment solution.



MELSOFT GX Works2

In addition to inheriting program resources created with GX Developer, familiar functions have been refined to provide more intuitive operation and reduce engineering costs.



Motion Controller Engineering Software

MELSOFT MT Works2

This motion control design and maintenance software includes intuitive graphic-based programming together with a digital oscilloscope simulator.



Robot Engineering Software

MELSOFT RT ToolBox2 mini

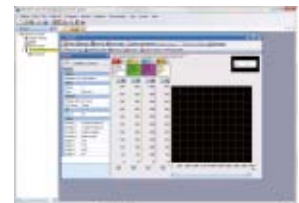
This robot setup software supports various steps from programming, to commissioning, evaluation, and maintenance. In addition, improved preventative maintenance is realized through the use of an integrated 3D robot simulator.



Inverter Setup Software

MELSOFT FR Configurator2

This software simplifies the setup and maintenance of AC Inverters. Parameters can be registered easily and distributed to multiple inverters when replacing, and activation of the PLC function all from one setup screen.



GOT Screen Design Software MELSOFT GT Works3+plus

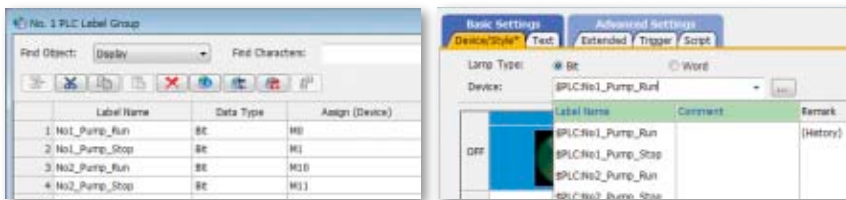
Highly recommended functions to easily design professional screens.

1 Easy screen design by using “Labels” instead of devices

NEW

GOT2000 only

Instead of using controller devices or GOT internal devices, use easy-to-understand names (label names) to create screens. The users can design screens without worrying about actual devices.



➔P.28

2 Easy maintenance abroad with “Multi-language Support”

NEW

GOT2000 only

The display language of the GT Works3 menu bar, dialog, and others can be switched. The users can edit the data smoothly by selecting their preferred language.



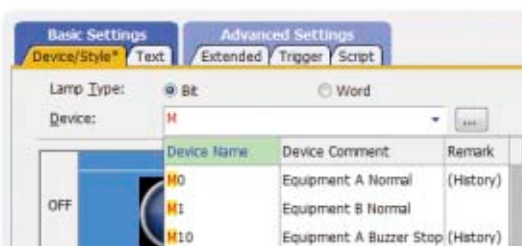
➔P.26

3 Faster device input with “Input Assist”

Upgrade

GOT2000 only

Applicable devices/labels are displayed for fast and easy device/label input.



➔P.14

4 “Templates” simplify screen customization



Register devices and colors for objects and figures as templates to easily change them in a batch.



➔ P.16

<Example of template screens>

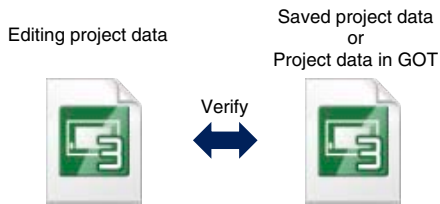


5 “Data Verification” is ever more convenient!

Upgrade



The project data can be verified for each screen/object. The verification results are listed with differences highlighted in different colors.



Verify Result

Pink: Data not matched
Blue: Source only
Green: Destination only



➔ P.26

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● Supported only with GOT2000
● Supported with both GOT2000 and GOT1000

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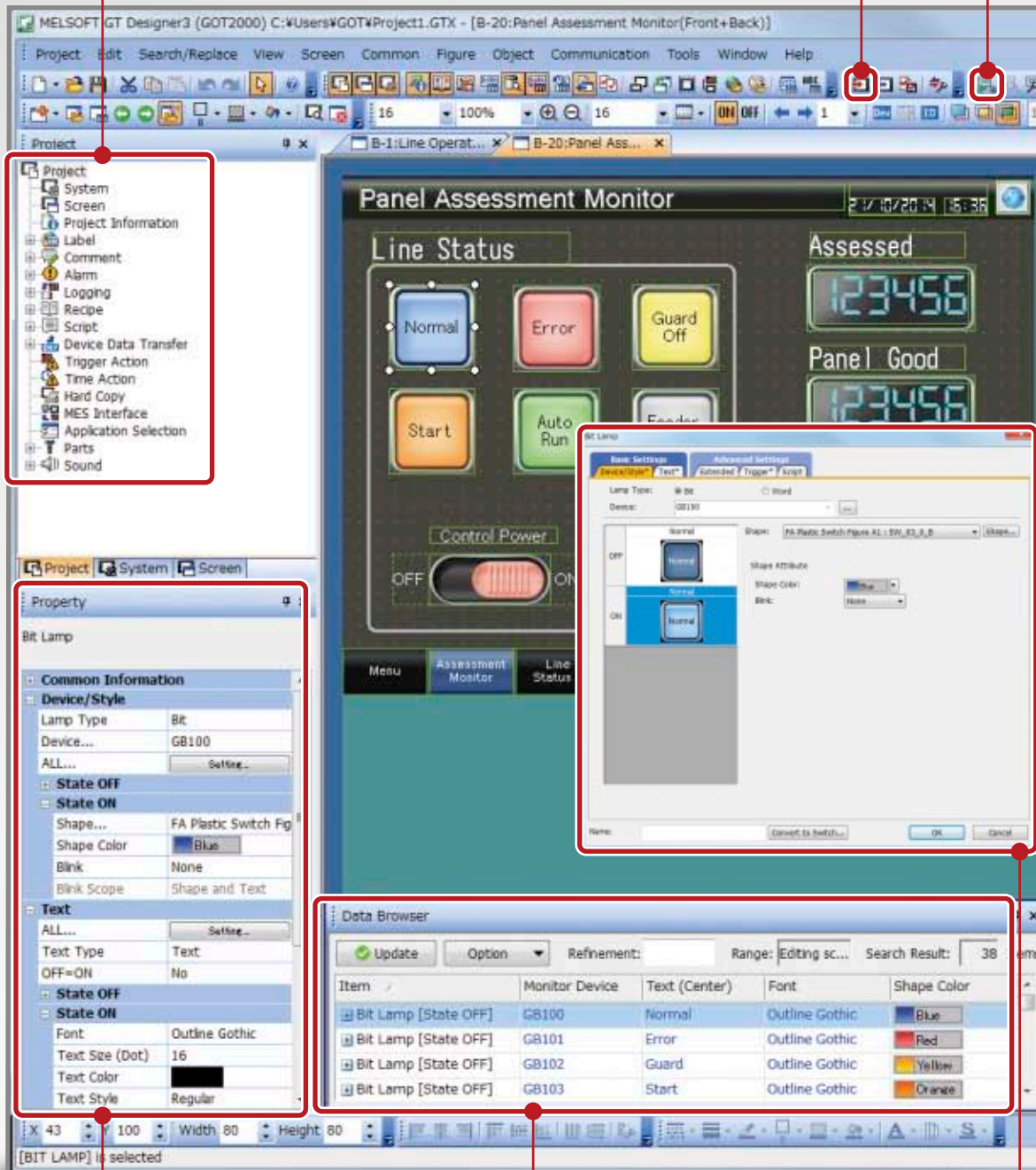
Screen Configuration (GOT2000)

Work Tree P.19 Upgrade

View projects, and easily add or delete screens!

Data Transfer P.23 Upgrade

Transfer data with a single click!



Property Sheet P.19

Setting details are shown as a tree view, and can be changed in a batch!

Recommended!

Data Browser P.18 Upgrade

Settings are listed allowing settings to be confirmed and revised easily!

Dialog Box

The easy-to-see display makes it simple to complete your settings!

Simulator P.25

Check operations with a single click!

Library P.20 Upgrade

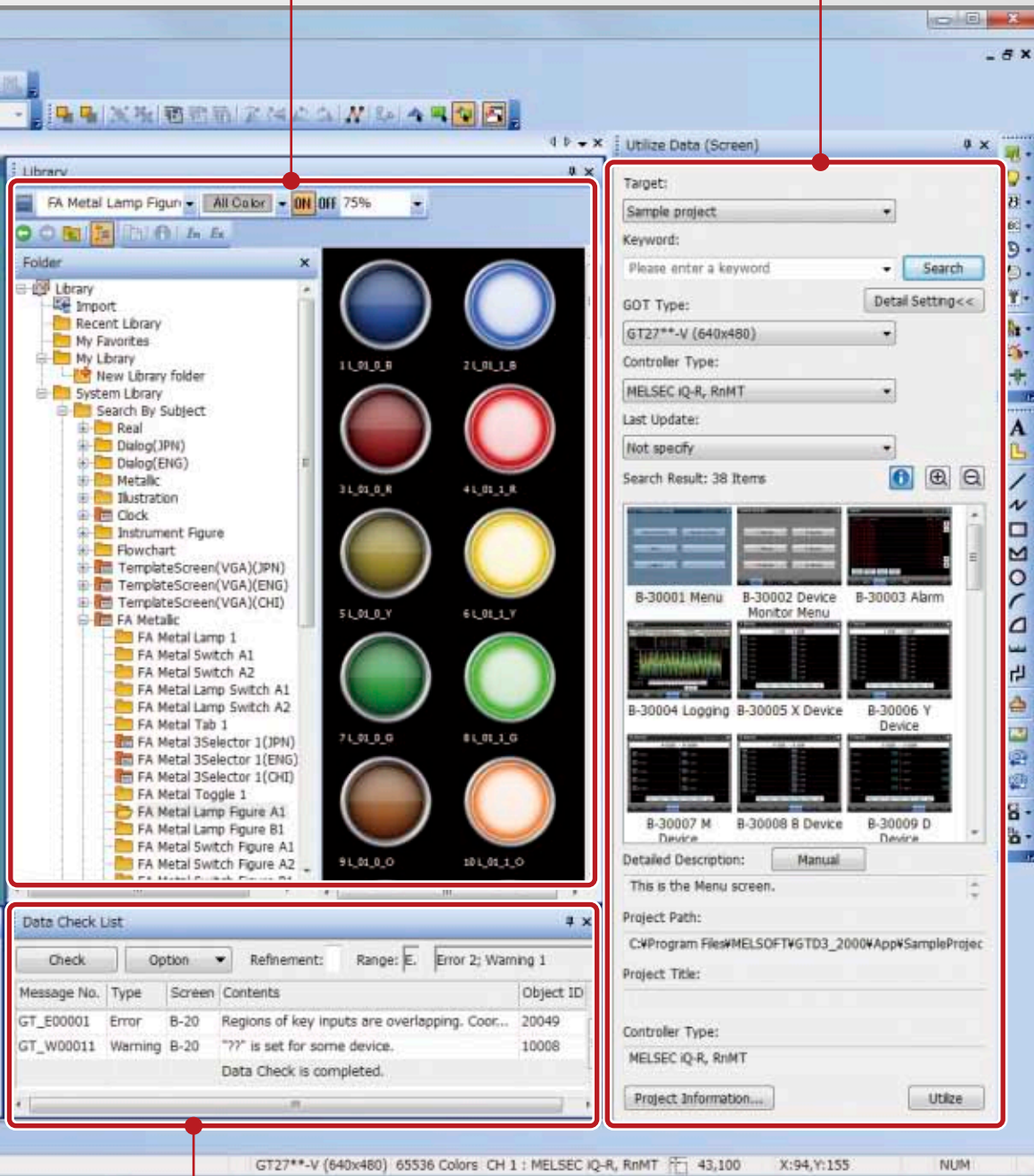
Easily create stylish screens!

Recommended! Utilize Data Function P.10

Search through existing screen assets with keywords and effectively use data!

Sample Projects P.12 Upgrade

A variety of samples are available for use!



Data Check List P.22

Identify errors quickly!



Functions with this mark are supported only with GOT2000.



Functions with this mark are supported with both GOT2000 and GOT1000.

Reuse existing screens to increase efficiency!

Use keywords to search for screens from past projects or provided sample projects. Simply select the applicable data to import and reuse in a new project.



Reuse previous projects

When creating a new project, search through the existing projects to find any existing projects that may be reused. Keyword search helps narrow down the search.

Specify search range
Select "Sample Project" to reuse a sample project

Select or input a keyword
Select a prepared keyword or input an arbitrary keyword

Search results are displayed

Choose the applicable project from the search result.

Procedure: [Project] → [New] → [Utilize Data]

Search target

The search range can be designated.

- Sample project ⇒ P.12
- Recently edited project
- Project folder (Search folders up to three levels below)

Always using the same folder to save GOT projects will make searches easier.

Sample projects are available for use with the utilize data function. See page 12 for more information.

Sample projects

- Alarm-Sort_V_Ver1_E.GTX
- Recipe_V_Ver1_E.GTX
- mitsubishi_FR-A800_V_Ver1_E.GTX



I want to reuse existing screen data to quickly create a screen...

Reuse previous screens

Reuse individual screens from past or sample projects. The settings, such as comments and logging settings, are also applied and reused.

- Procedure: [Screen] → [New] → [Utilize Data]
- Shortcut keys: **Ctrl + Shift + F**

Search keywords

Select a prepared keyword or input an arbitrary keyword to search the data. When utilizing a project, the entered keyword is searched from the file name and project information (project title, detailed description, created by).
 When creating a project, input character strings and explanations that can be used as keywords in the project information. This will make subsequent searches easier!
 When utilizing a screen, the entered keyword is searched from the file name, screen name, detailed description on screen, object name, figure name and template name.

Refined search

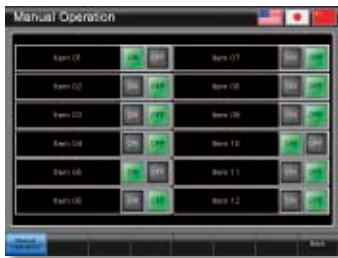
Refine the search by the GOT type, controller type and last update to quickly find the data you want to utilize.

Variety of sample projects available for use with utilize data function

A variety of sample projects are available including standardized projects for frequently used functions, projects for the GOT's various functions, and projects for monitoring connected devices and changing parameters. Easily create project data to match your purpose and application. Sample projects are available in English, Japanese, and Chinese (Simplified).

Standard screen samples: frequently used screens are standardized and grouped into 17 categories by purpose **NEW**

Manual operation (6 patterns)



Counter display (4 patterns)



Home position return (2 patterns)



Function samples: for checking operations of GOT's functions and monitoring network statuses

Alarm



Recipe



Script **NEW**



Device monitor



CC-Link network monitor



AnyWireASLINK network monitor



Connection samples: for monitoring current values of connected devices and setting parameters, etc.

Mitsubishi programmable controller **Added Models**



Mitsubishi temperature controller



Mitsubishi inverter **Added Models**



Sample projects of each language can be installed from the GT Works3 DVD-ROM. For the latest sample projects, please contact your local sales office.

Connection samples: for monitoring current values of connected devices and setting parameters, etc.

Mitsubishi simple motion **Added Screens**



Mitsubishi Q motion



Mitsubishi servo amplifier



Mitsubishi sensorless servo **NEW**



Oriental motor stepping motor **NEW**



SMC controller (LECP6) **NEW**



IAI robot controller (SCON) **NEW**



IAI robot controller (X-SEL) **NEW**

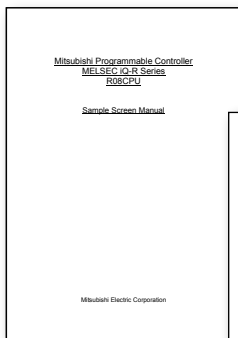


PATLITE network signal tower

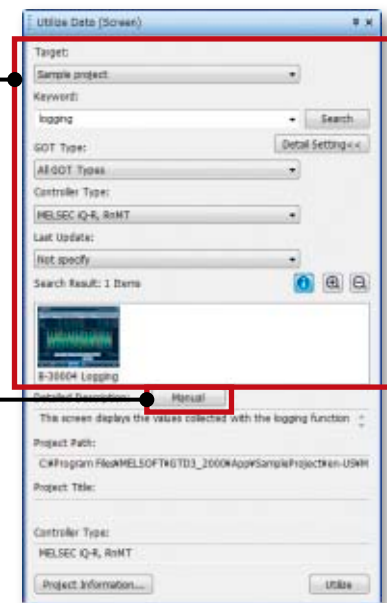
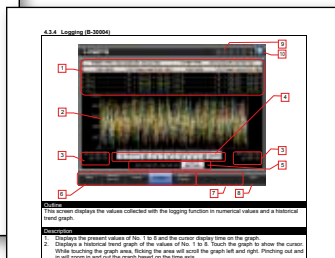


● Using sample projects

- ① Select "Sample Project" as the Target on the Utilize Data screen.
- ② Select or input (arbitrary) a keyword.
- ③ Select from the search results, and press the Utilize button.



The sample project details and usage methods will appear.



Quick and easy device settings!

Upgrade Input Assist

GOT2000 only

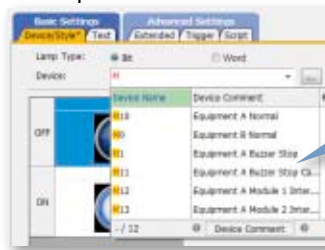
When setting devices/labels, the list of applicable data is displayed from the preset devices/labels or from the device comments, label comments, and device definitions.

Displaying utilizable data from preset devices/labels

The list of applicable devices/labels is displayed when the device/label name is input in the device setting area. <Example of devices>

The device comments, label comments, and device definitions are also displayed, so that this information can be referred to when setting devices/labels.

GOT labels, MELSOFT Navigator system labels, GX Works3 global labels, and MT Works2 labels* are supported. **NEW** * MT Works2 labels will be supported soon.

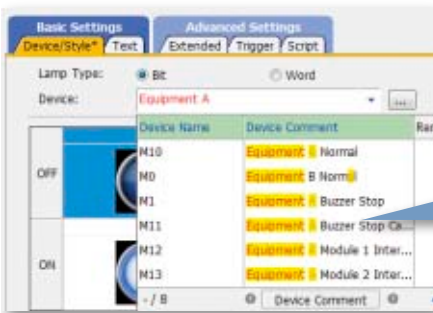


- ① Input device name
- ② Devices corresponding to the input device name are displayed from the device preset in the project or from the history of recently set devices.
- ③ Select a device from the list and set the device.

Displaying utilizable data from device comments, label comments, and device definitions

When a keyword is input in the device setting area, the list of utilizable devices/labels is displayed. Search for and set the devices/labels from the device comments, label comments, and device definitions.

<Example of device comments>



① Import comment files

② Input a keyword

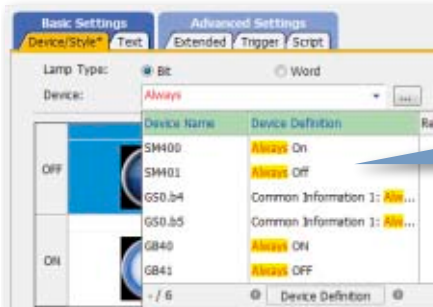
③ Devices corresponding to the input keyword are displayed from the device comments set with GX Works3/GX Works2.

④ Select from the list and set the device

Device comments set with GX Works3/GX Works2/GX Developer



<Example of device definitions>



① Input a keyword

② Devices corresponding to the input keyword are displayed from the GOT internal device function names, the special data of connected devices (programmable controller, servo, inverter, etc.), or parameter names.

③ Select "GB40 Always ON"

④ Device setting is completed!



- **Search target**
Select from "Device Name/Label Name and Comment/Definition", "Device Name/Label Name" or "Comment/Definition".
- **Input keywords**
Separate keywords with a single space to search and refine the data with multiple keywords. Connected channels can be specified with "@n" (n=1 to 4). (For Ch2 M0: @2 M0)

Procedure: Automatically display when inputting devices

Information right at your fingertips!

Upgrade Help

GOT2000
GOT1000

Quickly search for the information you need with the powerful help function.

Various searching methods to match your situation (GOT2000 only)

Search for information with the function name, specifications or with phrases on information you need or are having trouble with.

The screenshot shows the 'GT Designer3 (GOT2000) Help' window. On the left is a table of contents. The main area displays the 'Help Search Menu' with buttons for 'Procedural Steps', 'Things to Do', 'Menus', 'Problems', 'Functions', and 'Specifications'. Below this, a search description reads: 'Search the procedural steps for creating project data'. The 'Procedural steps' section lists:

- 1. Creating or editing a project
 - Check items before drawing
 - Screen configuration of GT Designer3
- 2. Creating, opening, or closing a screen
 - Basic operations on the drawing screen
 - Changing the screen property
 - Copying or deleting a screen

Quickly confirm with F1 key

Press the F1 key and jump to help for the dialog being edited!
 Quickly check setting methods and other information!

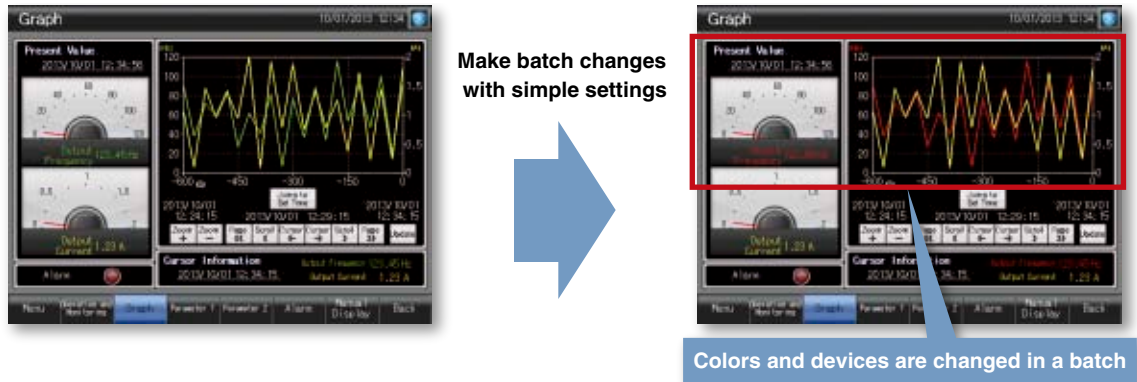
The diagram illustrates the F1 key shortcut. It shows a 'Device' dialog box with 'CH1 MELSEC IQ-R, RnMT' selected. An arrow labeled 'F1' points to a collection of help windows:

- 'Check out operation and setting methods': A window showing a ladder logic diagram with a 'Device range' table.
- 'Check out functions': A window titled '9.1 Collecting Alarms by Monitoring Devices or the System ([Alarm])' with a table of alarm types.
- 'Check out setting devices': A window showing a table of device settings.

Procedure: [Help] → [GT Designer3 Help]
 Shortcut key: F1

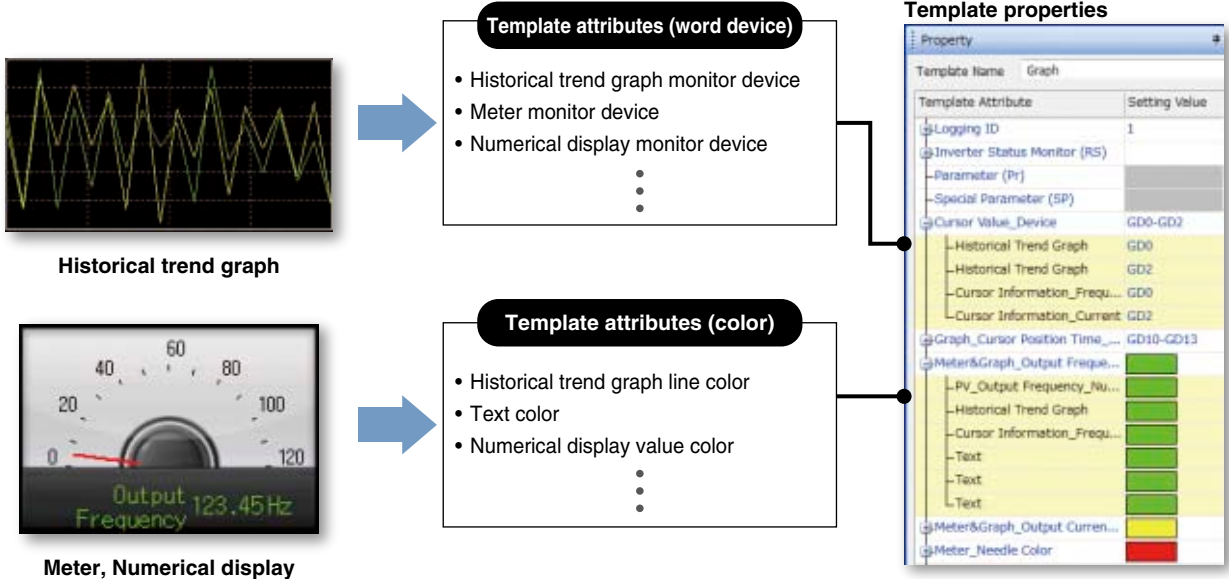
Use templates to greatly reduce your screen creation time!

Customize each template to the desired look-and-feel, ranging from color options to device selection.



What are templates?

Attributes such as devices and colors can be set for each template. You can easily change devices and colors by associating each object with the template's attribute.



Changing devices

Devices can be changed in a batch just by setting the head device.

Change head device from GD0 to D100

Easily change devices in a batch!
 GD0 to GD2
 →D100 to D102

Changing colors

Colors can be changed in a batch.

Change color from green to red

Easily change colors in a batch!

Numerical value, Text, Figure, Font, Text size can also be changed.

- **Items that can be registered in templates**
 Figure, Object
- **Attributes that can be registered and changed in templates**
 Device (Bit, Word), Numerical value, Text, Color, Figure, Font, Text size

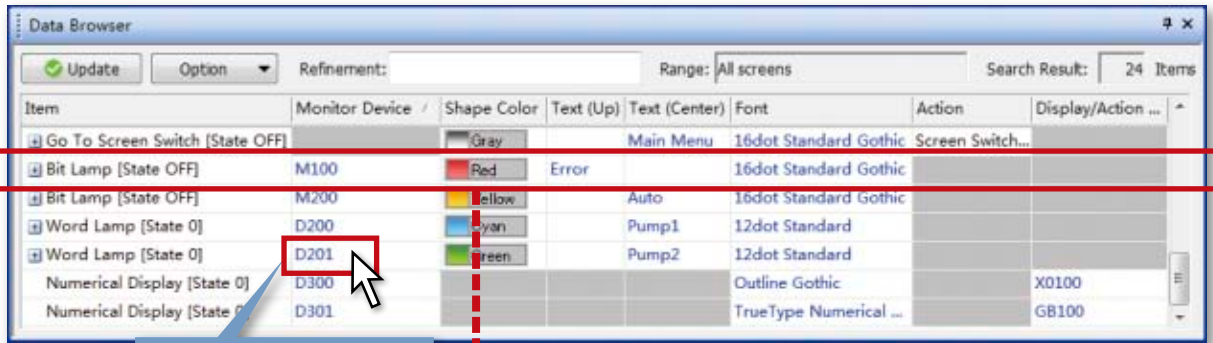
Selecting from library Procedure: [View] → [Docking Window] → [Library List (Template)]
 Shortcut key: Alt + F9

Creating a template Procedure: Select object → Right click → [Template Registration]

Efficiently edit data on multiple screens! Upgrade Data Browser

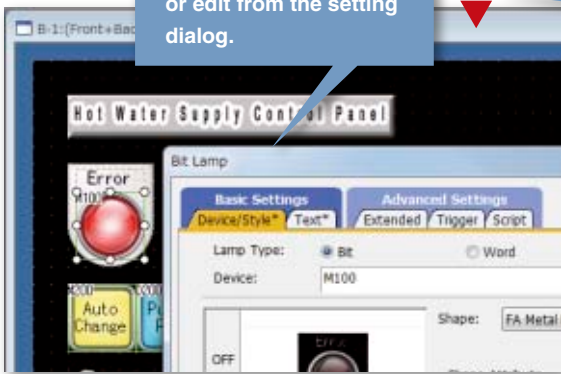
GOT2000
GOT1000

The data browser shows a list of objects used in the project. The settings can be edited directly on the browser or by opening the setting dialog. You can easily identify any duplicate data and no longer have to open multiple screens.

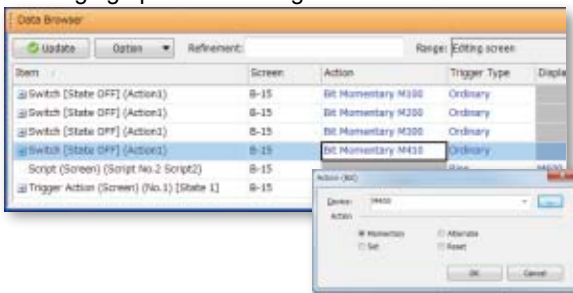


Directly edit on the list, or edit from the setting dialog.

Double-click

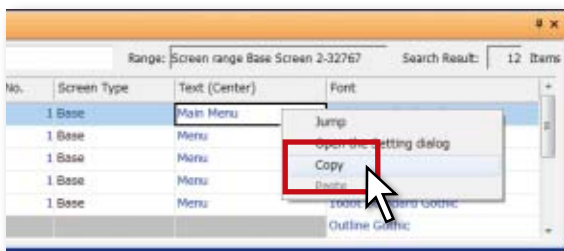


<Changing operation settings>

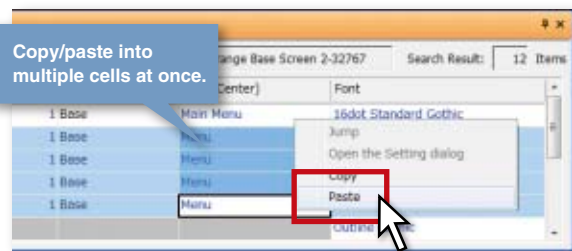


<Copying or pasting multiple cells>

Change names of Go To Screen switches to Main Menu (screen No.1) from "Menu" to "Main Menu" on multiple screens.



Copy/paste into multiple cells at once.



- **Display targets**
Figures, objects, screen scripts, screen trigger actions
- **Editable details**
Directly edit devices and text, etc.
Change devices, text, colors, and figures **NEW**
in a batch
Change action settings, fonts, and figures **NEW**
Change range settings of numerical displays and other objects **NEW**
Copy/paste multiple cells
Sort and narrow down items by using devices/keywords
Sort with multiple columns
Interchange columns with drag & drop

Procedure: [View] → [Docking Window] → [Data Browser]

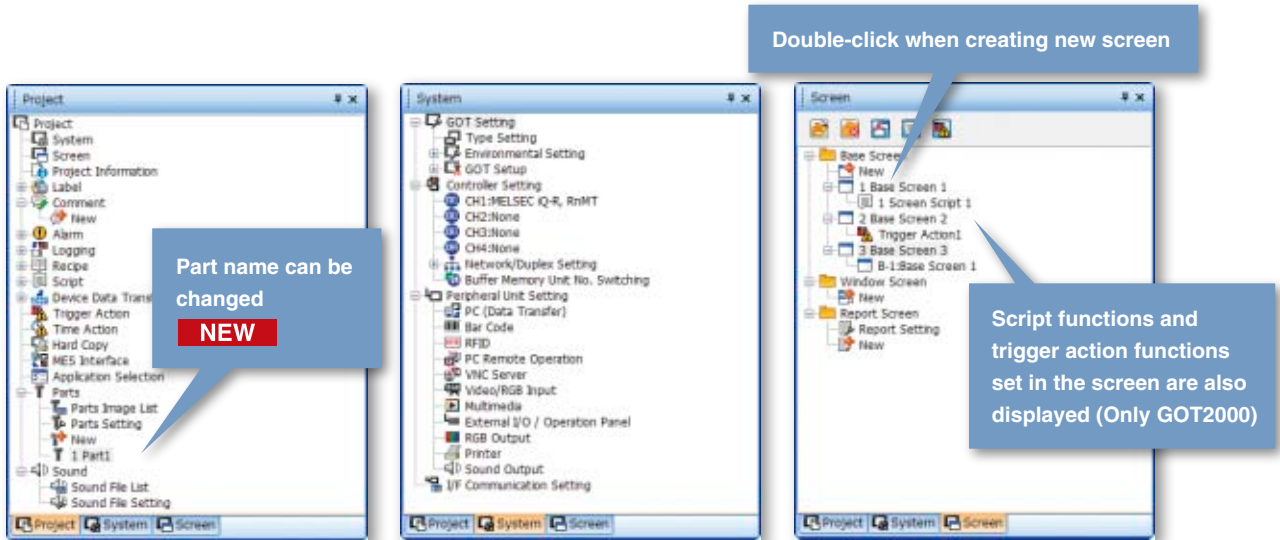
Shortcut key: Ctrl + E

Easy access to setting items!

Upgrade Work Tree

GOT2000
GOT1000

All setting items in the project are categorized into the three groups “Project”, “System” or “Screen”. Find the item you want to set quickly and easily.



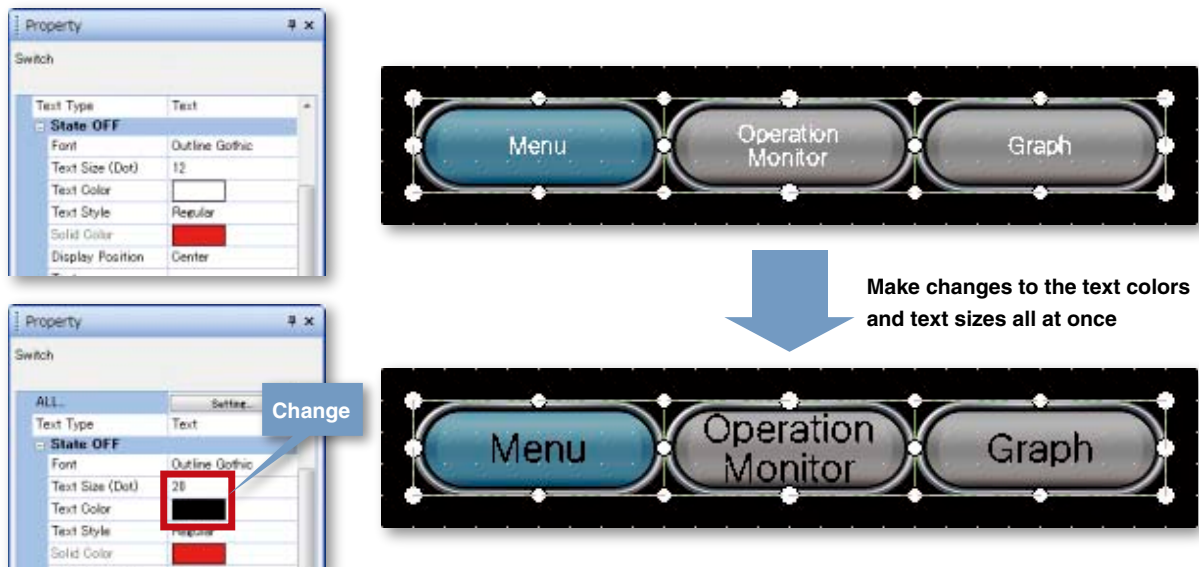
Project tree display Procedures: [View] → [Docking Window] → [Project Tree]
 Shortcut key: Alt + 0

Easily check and make batch changes!

Property Sheet

GOT2000
GOT1000

Once an object or figure is selected, its settings are displayed on the work tree. This eliminates the need to open separate dialogs to set colors, devices, and other settings. These settings can also be changed all at once if multiple objects and figures are selected.



Procedures: [View] → [Docking Window] → [Propertiesheet]
 Shortcut key: Alt + 1

Easily create stylish screens!

Upgrade Library

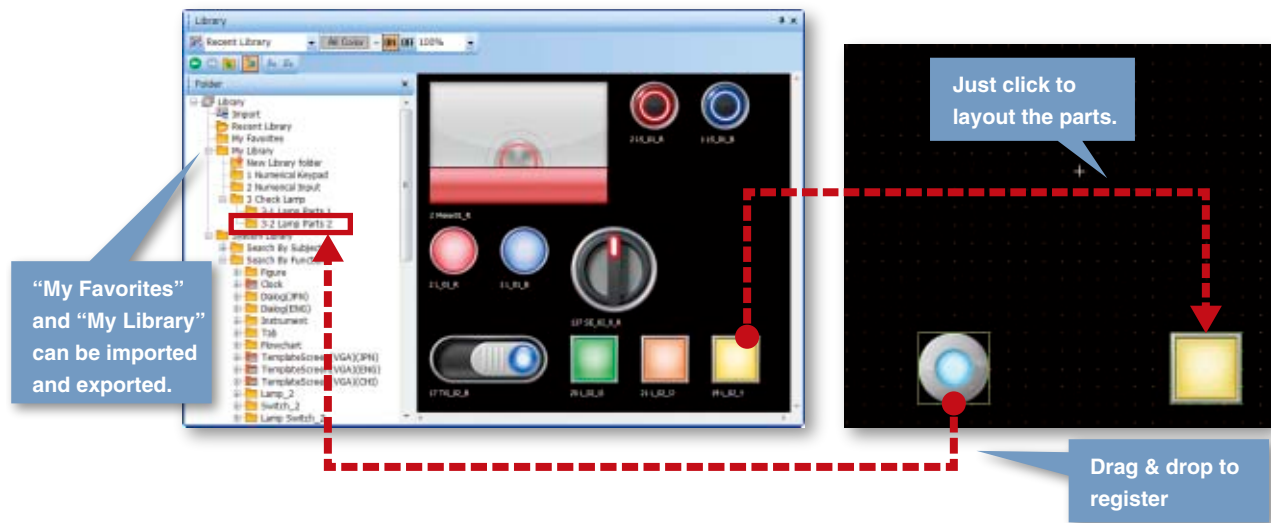
GOT2000
GOT1000

Easily create stylish screens simply by selecting from a wide variety of Library parts.

Quickly find the screens and parts you need!

Use the easy-to-view tree display to select screens and parts from the “Subject”, “Function”, “Recent Library” or “My Favorites”.

User-created parts can be shared on other personal computers allowing screen assets to be used effectively.



Library list display Procedures: [View] → [Docking Window] → [Library List]
 Shortcut key: F9

Library list (template) display Procedures: [View] → [Docking Window] → [Library List (Template)]
 Shortcut key: Alt + F9

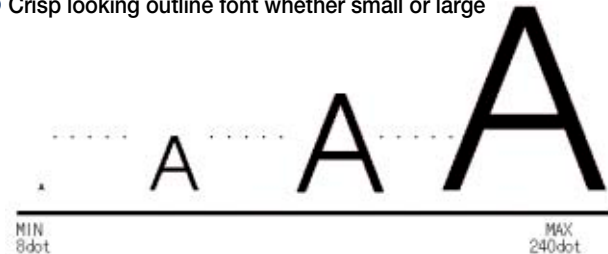
PNG images and outline fonts now supported. A wide variety of stylish parts in the Library. (GOT2000 only)

PNG images have smooth contours even when enlarged, and outline fonts that support 8 dots to 240 dots for professional looking screens.

● PNG image system library



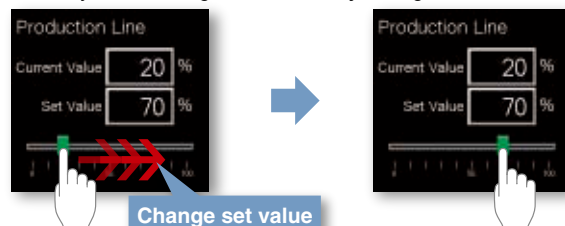
● Crisp looking outline font whether small or large



● Panel meters with flexible angle setting **NEW**



● Slider objects to change their values by sliding the indicator **NEW**

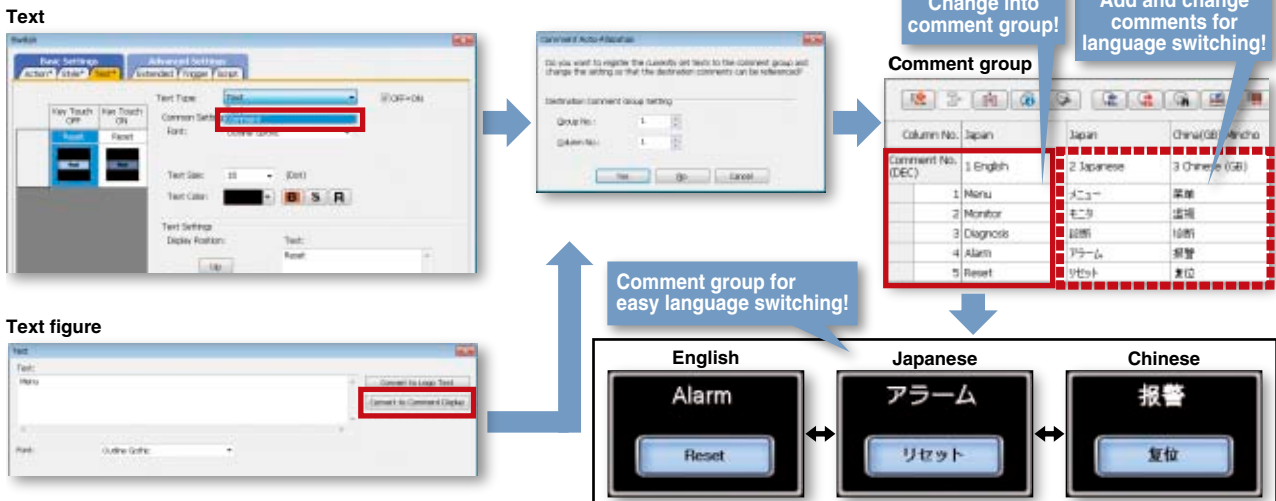


Easily create multi-language screens!

NEW Text Switching

GOT2000
only

The character strings of switches and lamps can easily be converted from the Text or Text Figures into Comments. This makes it easy to upgrade screens to display multiple languages.

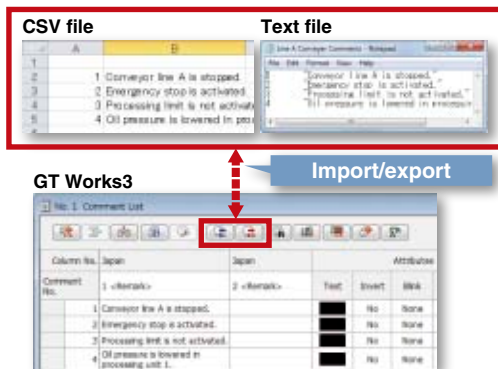


Improve the comment input efficiency!

Interaction with
Other Applications

GOT2000
GOT1000

Interact with other applications and quickly input comments.



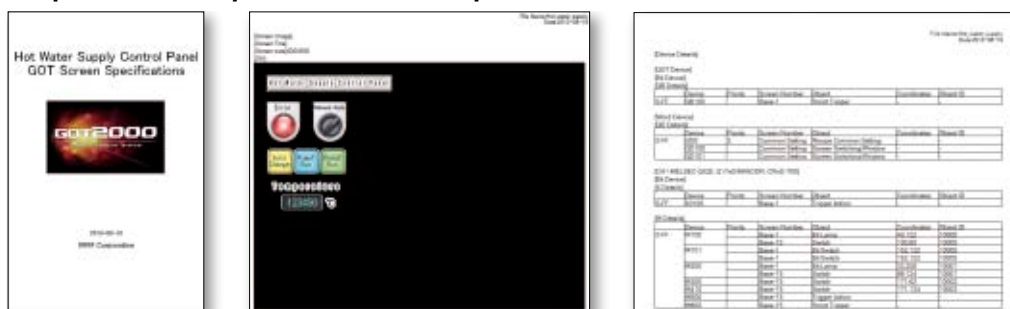
- Import/export CSV/Unicode® text file format data
- Copy & paste from Microsoft® Excel®, GX Works3, or GX Works2 to GT Works3

Easily create specifications!

Printing Function

GOT2000
GOT1000

The cover, screen images and the list of set devices, etc., can be printed or output to a file making it simple to create specifications and operation manuals.



- 🕒 Procedure: [Project] ➔ [Print]
- 🗂️ Shortcut key: Ctrl + P

Identify errors quickly!

Data Check List

GOT2000
only

The touch switch quantity and overlapping state, object quantity and illegal devices are checked and the results are displayed as a list.

Double-click on an error or warning line to jump to the corresponding object.

Quickly identify errors and warning objects.



Procedure: [View] → [Docking Window] → [Data Check List]

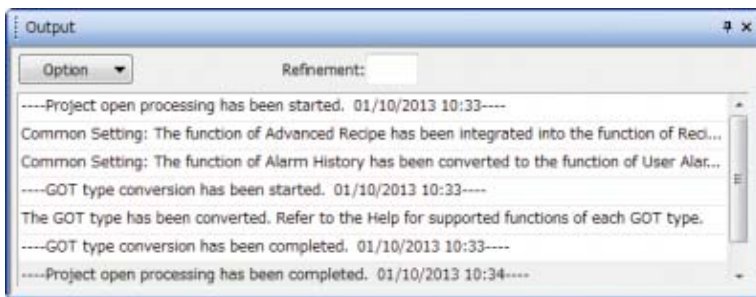
Notify the data processing state and errors

Output Window

GOT2000
only

Messages indicating the progress of processes such as the GOT type conversion and utilizing other projects, errors and warnings are displayed as a list.

Any incompatible functions found are displayed as warnings when opening the project data edited with a newer version of screen design software with an older version software.



Procedure: [View] → [Docking Window] → [Output]

Easy simulations!

Screen Preview



Use the screen preview function to check the state of screen switching and the display status of lamps and switches, etc.

Screen images can be printed or saved as bitmaps, making it easy to create specifications and operation manuals.

<Confirming Go To Screen switches>



<Switching lamp/switch display (ON/OFF)>

OFF

ON



Alt key + click (next State) or Shift key + click (previous State) can also be used to change the State.

<Switching lamp/switch display (states)>

State 0

State 1

State 2



<Changing numerical display/input preview value>



🕒 Procedure: [View] ➔ [Preview]

🗂️ Shortcut key: Ctrl + I

Check operations with a single click!

Simulator

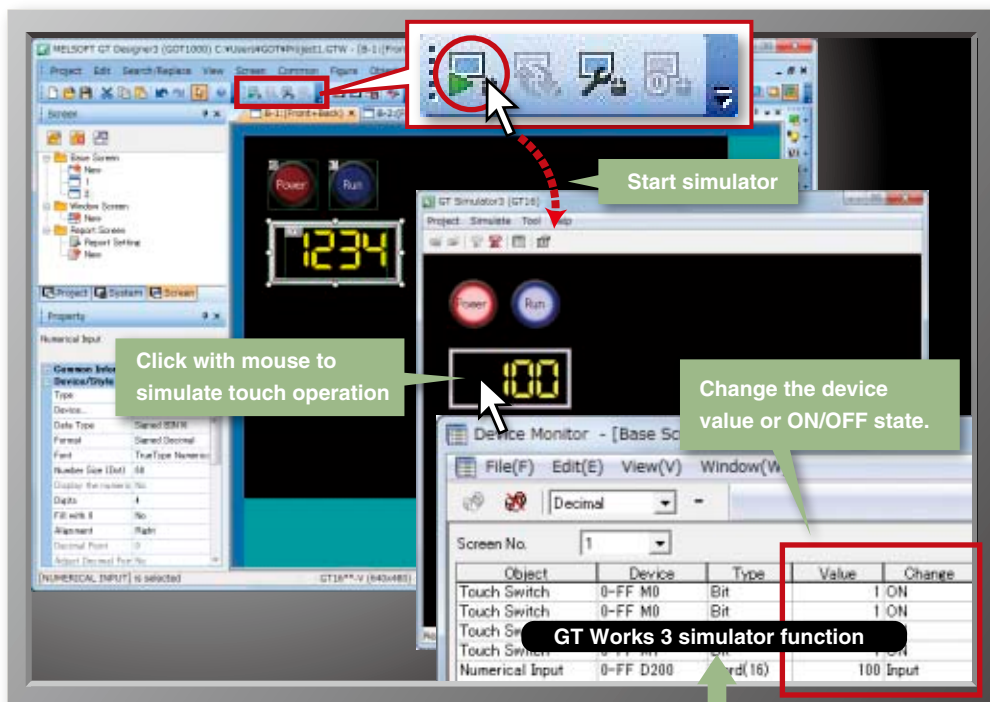
GOT2000
 GOT1000

Since the operation of the project data can be confirmed on the personal computer, the program can be efficiently debugged while making changes on the screen.

Even if hardware is not available, the operations can be confirmed with a personal computer and sequence programs.

The screen images can be printed and saved, and easily used when creating specifications and operation manuals.

- * GX Works3 (coming soon), GX Works2, GX Simulator, or MT Works2 is required separately. (It varies depending on the CPU to simulate.)
- * The GOT2000 device monitor is coming soon.



Start simulator

Click with mouse to simulate touch operation

Change the device value or ON/OFF state.

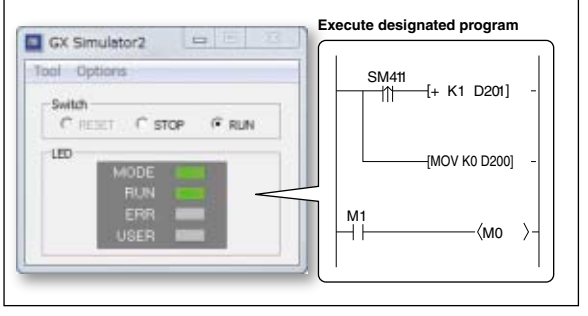
GT Works 3 simulator function

Communication/monitor



Just click "Update" after modifying the screen!

GX Works2 simulator (virtual programmable controller)



- Procedures: [Tools] ➔ [Simulator] ➔ [Activate]
- Shortcut key: Ctrl + F10

View data differences at a glance!

Upgrade Data Verification

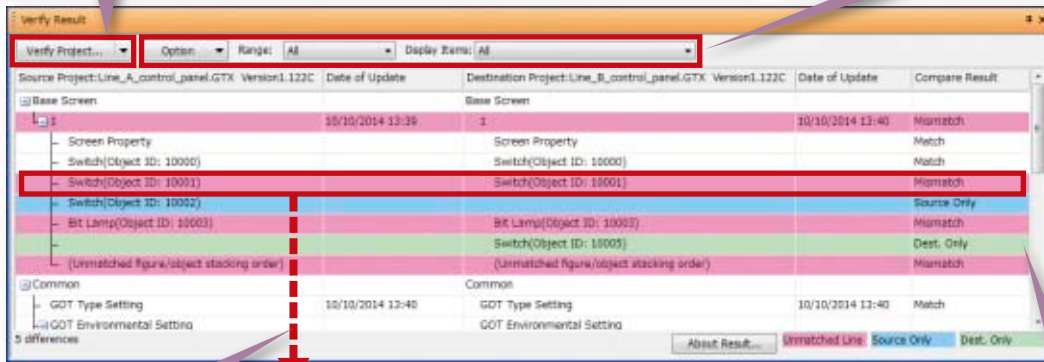
GOT2000 only

Verify the project data and check the results for each screen/object **NEW** ^{*1}

From the Verify Result window, you can jump to the target object or can narrow down results by items such as the screen type. This function enables you to check differences and modify the data quickly even if the project data includes many screens. **NEW**

Verify Project (verifying the project being edited against one in a personal computer) and GOT Verification (verifying the project being edited against one in the GOT) are available

Export of Verify results and refinement by items such as screen type are possible



Double-click



The background color of a row varies according to the type of difference.
 Pink: The item exists in both projects and the data are not matched.
 Blue: The item exists only in the source project.
 Green: The item exists only in the destination project.

Project verification Procedure: [Project] → [Verify Data]

Verification with GOT Procedure: [Communication] → [Verify GOT] ^{*2}

*1. In the GOT1000 series, verify the project data and check the results for each screen.

*2. In the Verify Result dialog, select [Output to Verify Result (window)] to display the above Verify Result window.

Useful for maintenance abroad!

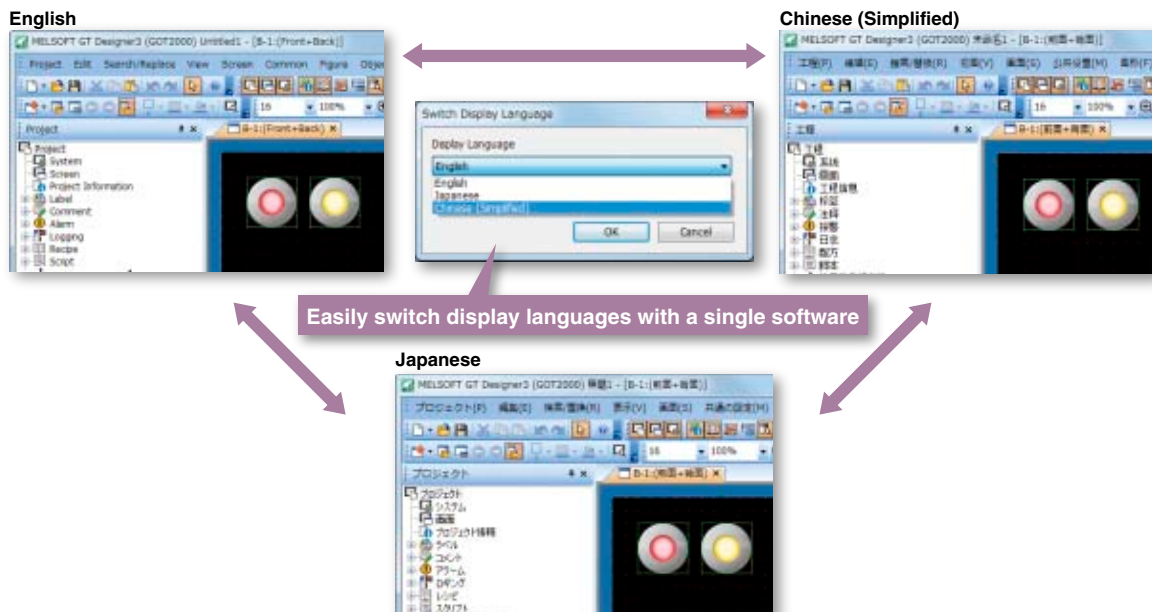
NEW Multi-language Support

GOT2000 only

The display language of the GT Works3 menu bar, dialog, and others can be switched.

When maintaining the data abroad, away from where you created the data, the data editing work can be done smoothly by selecting a preferred language by the user.

*The GOT1000 series does not support multiple languages. It is recommended to purchase GT Works3 of the language to be used.



Easily switch display languages with a single software

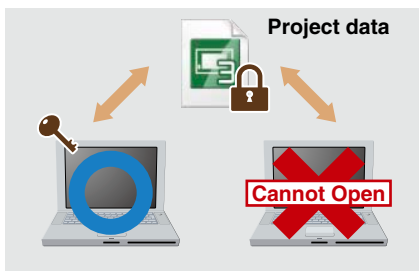
Procedure: [View] → [Switch Display Language]

Protect your data from being leaked or copied! **NEW** Security Key Authentication

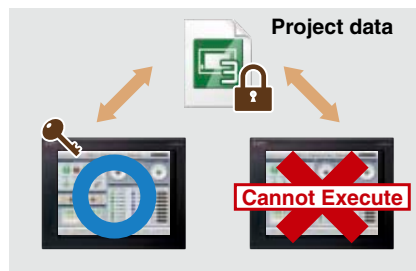
GOT2000 only

With the security key authentication function, computers without registered security keys can't open project data. As well, because GOTs without registered security keys can't execute project data, your techniques (know-how) are protected from information leaks.

Restricts computers opening project data



Restricts GOTs executing project data



Procedure: [Project] → [Security] → [Security Key Management]

Restrict users to prevent alteration of your data! User Management

GOT2000
GOT1000

Users having access to project data can be restricted. Prevent illegal editing of project data by setting access authority (display/edit) for each user. Access authority can be set for each project or each screen.

* Project data having security set with GT Works3 Version 1.45X or later cannot be handled with a version older than GT Works3 Version 1.45X.

Maintenance personnel (Administrators)

This data is too important to be changed needlessly.

Open project

Edit project

Screen designer (Developers (Level2))

This data can be confirmed.

Open project

✗ Edit project

User (Users)

This data cannot be confirmed.

✗ Open project

✗ Edit project

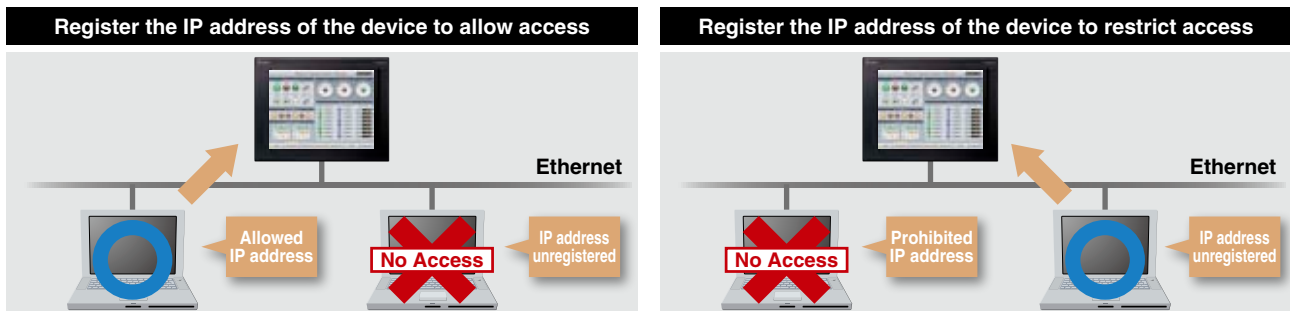
* A password for transferring data with the GOT can also be set.

Procedure: [Project] → [Security] → [User Management]

Reduce risk of unauthorized access through networks! **NEW** IP Filter

GOT2000 only

By registering the IP addresses of devices which can access the GOT or which are prohibited to access the GOT, access from devices without permission can be prevented.



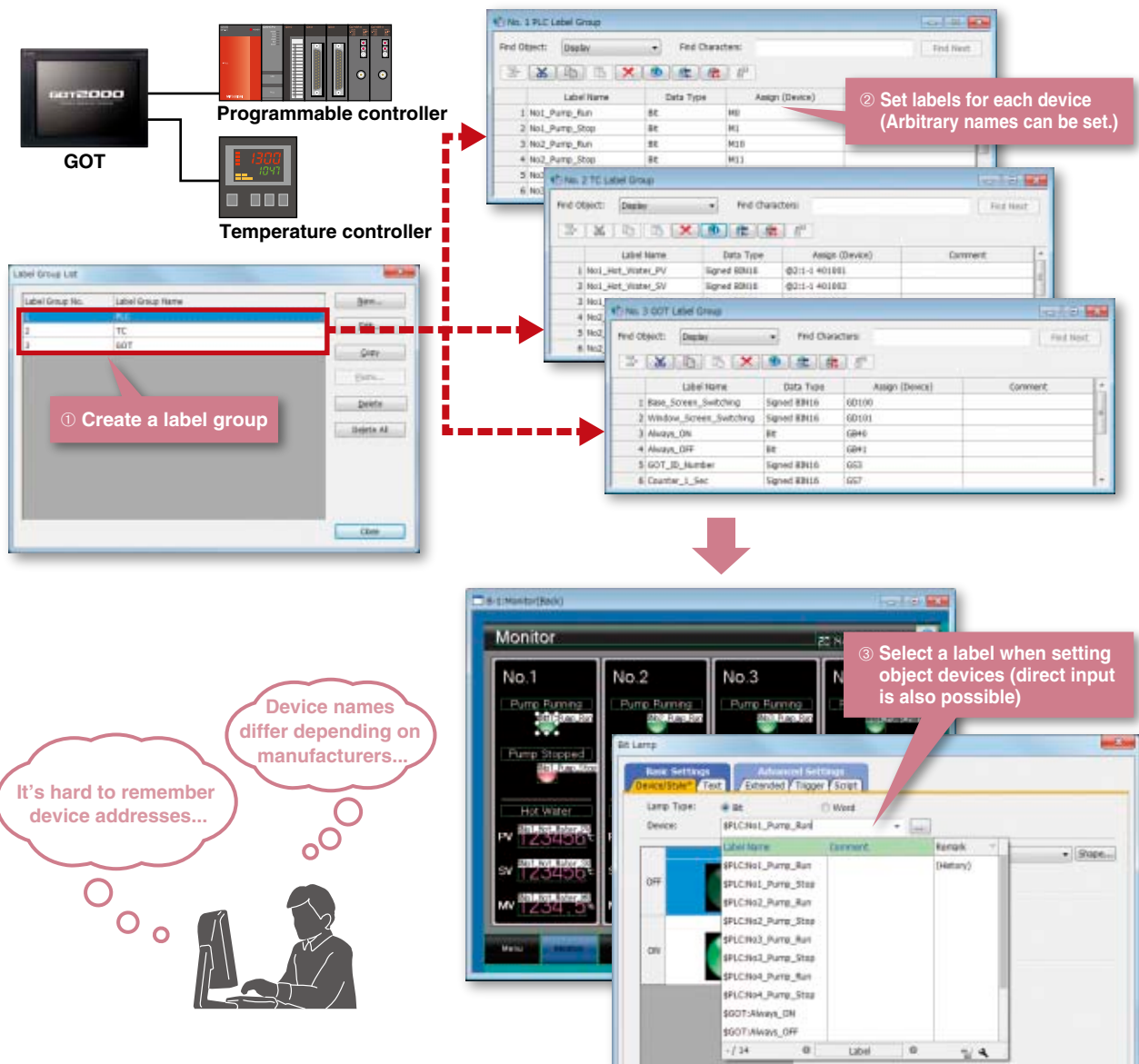
Procedure: [Common] → [Controller Setting] * When using Ethernet connection

Design screens without worrying about actual devices

Instead of using controller devices or GOT internal devices, use easy-to-understand names (label names) to create screens. The users can design screens without worrying about actual devices. Devices assigned to labels can easily be changed so that it is easy to utilize existing screen assets and to standardize projects.

Design screens without worrying about actual devices

Instead of using devices, use easy-to-understand names (label names) to create screens. Not only Mitsubishi programmable controller devices, but also third party controller devices and GOT internal devices can be assigned to labels. The labels can easily be managed by defining label groups for each controller and screen.

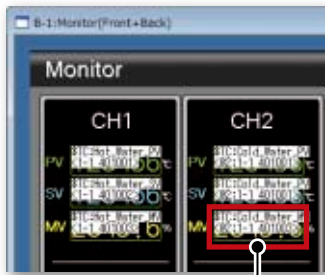


Procedure: [Common] → [Label] → [New Label Group]

Easily change screens!

To change controllers, all you have to do is to correct label definitions (device assignment) so that device settings of all screens can efficiently be corrected in one place. Label definitions can be imported/exported in CSV/Unicode® text file format and they can easily be edited using standard software such as Microsoft Excel®.

Company A temperature controller project data



Monitor device: 1-1 401003

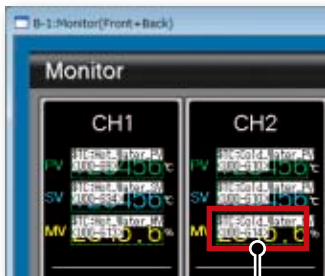
<Label definitions>

Label Name	Data Type	Assign (Device)	Comment
1 Hot_Water_FV	Signed BIN16	1-1 401001	
2 Hot_Water_SV	Signed BIN16	1-1 401002	
3 Hot_Water_MV	Signed BIN16	1-1 401003	
4 Cold_Water_FV	Signed BIN16	@2-1-1 401001	
5 Cold_Water_SV	Signed BIN16	@2-1-1 401002	
6 Cold_Water_MV	Signed BIN16	@2-1-1 401003	

① Export label definitions



Mitsubishi temperature module project data



Monitor device: U00-G14

<Label definitions>

Label Name	Data Type	Assign (Device)	Comment
1 Hot_Water_FV	Signed BIN16	U00-G9	
2 Hot_Water_SV	Signed BIN16	U00-G34	
3 Hot_Water_MV	Signed BIN16	U00-G13	
4 Cold_Water_FV	Signed BIN16	U00-G10	
5 Cold_Water_SV	Signed BIN16	U00-G66	
6 Cold_Water_MV	Signed BIN16	U00-G14	

② Change assigned devices in a CSV/Unicode® text file

③ Change controller type and import the file

By creating a base project in advance, I can quickly change it for another controller!

Label definitions can also be changed directly in the Label Group window. Even if one device is used in multiple screens, the device setting in all screens can be changed by correcting the device assignment in the Label Group window.



- About GOT labels
 GOT labels can be used in GOT only.
 Up to 204800 labels in total can be set.

Label group

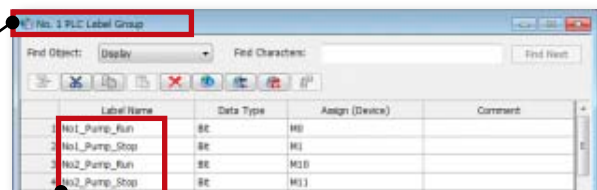
Up to 200 label groups can be used. Arbitrary names can be set for label group names (up to 32 characters). Labels can be set for each controller, line, screen, or area so that they can be managed easily.

Label name

Up to 256 characters can be set. (same for both one-byte and two-byte characters)
 Arbitrary names can be set.

Display on screen

On an editor screen or when setting devices, [\${Label group name: label name}] is shown.



Further reduce total costs

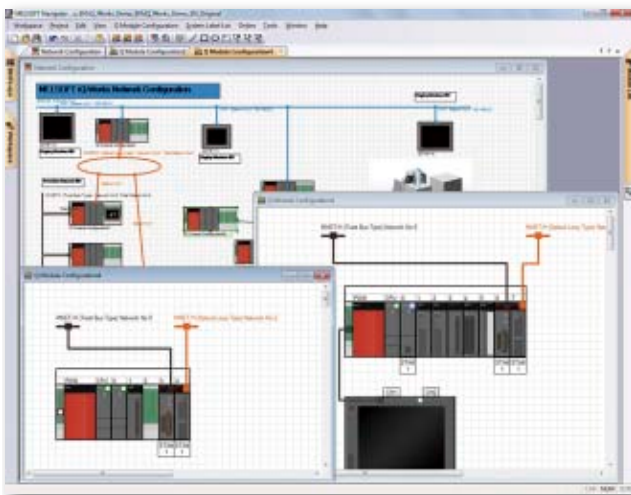
MELSOFT iQ Works

GOT2000
GOT1000

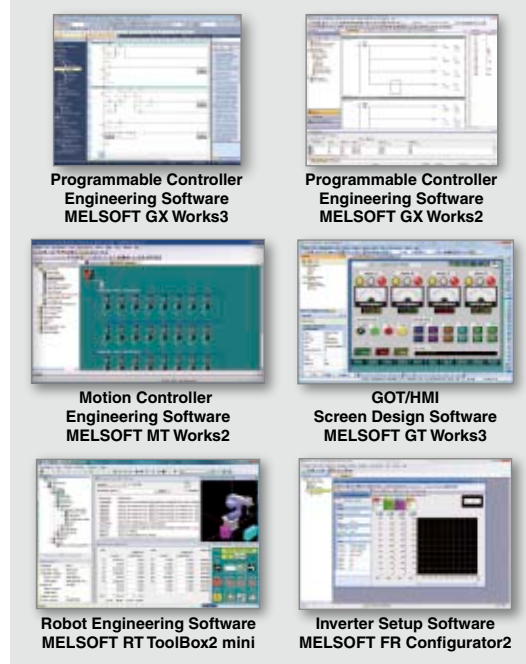
MELSOFT iQ Works suite integrates the engineering software (GX Works3, GX Works2, MT Works2, GT Works3, RT ToolBox2 mini, FR Configurator2). The system designing efficiency and programming efficiency are improved and total costs are reduced by sharing the designing information, including system design and programming, for the entire control system.

MELSOFT Navigator

MELSOFT Navigator, along with GX Works3, GX Works2, MT Works2, GT Works3, RT ToolBox2 mini, and FR Configurator2, 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.



MELSOFT Navigator



No need to set parameters for each tool

The information set in the system configuration diagram can be applied in a batch to each program in GX Works3, GX Works2, MT Works2, and GT Works3. ^{*1}

There is no more need to start up each software and check the consistency.

*1. Detailed parameters must be set with each tool.

Share labels and automatically change related projects

With MELSOFT Navigator, labels can be shared between the programmable controller, motion controller and GOT. For example, if the device assignment is changed in the programmable controller project, the changes are automatically applied to the motion controller and GOT project.

Mitsubishi FA Integration Concept



Solution for radically resolving various FA challenges from a point of TCO*...

That is "iQ Platform". Advanced technologies are integrated, optimized and innovated to reduce costs in development, production and maintenance.

* TCO: Total Cost of Ownership

improved Quality / intelligent & Quick / innovation & Quest

Utilize labels and device comments **NEW** GX Works3, GX Works2, MT Works2 Interaction

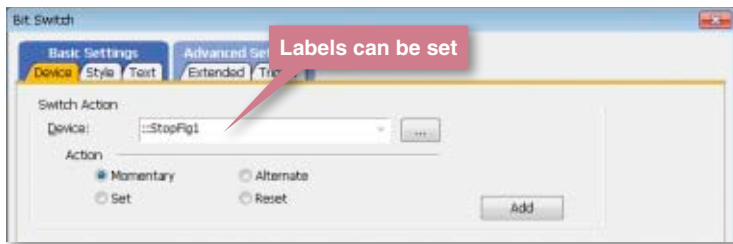


Efficiently design screens by interacting with Programmable Controller Engineering Software GX Works3, GX Works2 and Motion Controller Engineering Software MT Works2.

Use GX Works3 and MT Works2 labels when entering a device

When you enter a device, GX Works3 global labels and MT Works2 labels* can be specified so you can create screens without sparing a thought for actual device addresses. (When using MELSEC iQ-R Series and motion controllers [MELSEC iQ-R Series] only)

* MT Works2 labels will be supported soon.



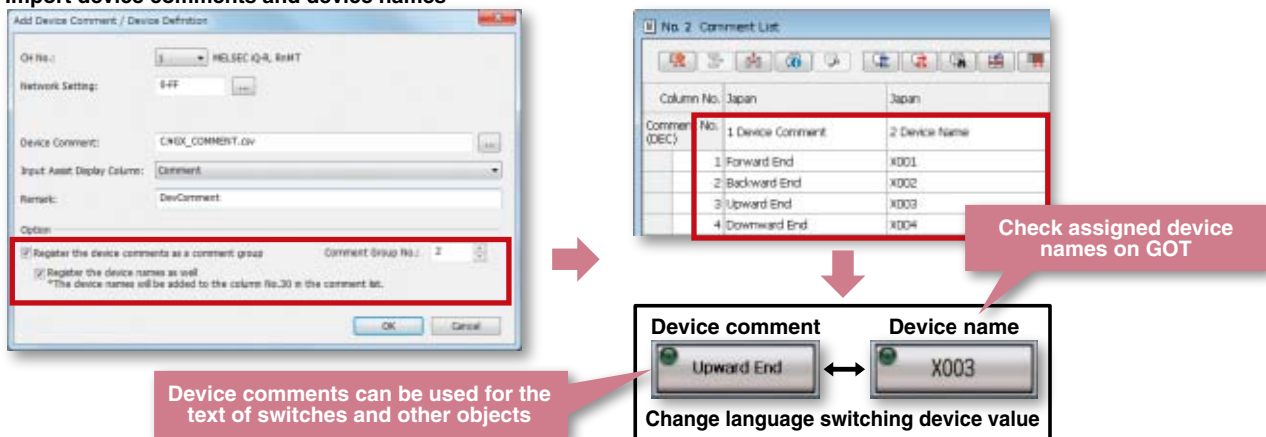
Label assignment information auto acquisition

When the screen was created by using GX Works3 global labels or MT Works2 labels, the GOT automatically acquires the assignment information. It's unnecessary to correct or transfer the GT Works3 project data even if device assignments are changed.

Convenient import function for device comments

By importing GX Works3, GX Works2, or MT Works2 device comments, you can enter devices while confirming device comments during screen design, or you can use the device comments for the text of switches and other objects. In addition, device names can also be imported to comment groups so that it is easy to check names of the devices that are assigned to switches and lamps on GOT screens.

Import device comments and device names



Programmable Controller Engineering Software
GX Works3

GX Works3 consists of various different components that help to simplify creation and maintenance tasks. Global variables (labels) are supported providing an easy way to share device names across multiple projects and other MELSOFT software.

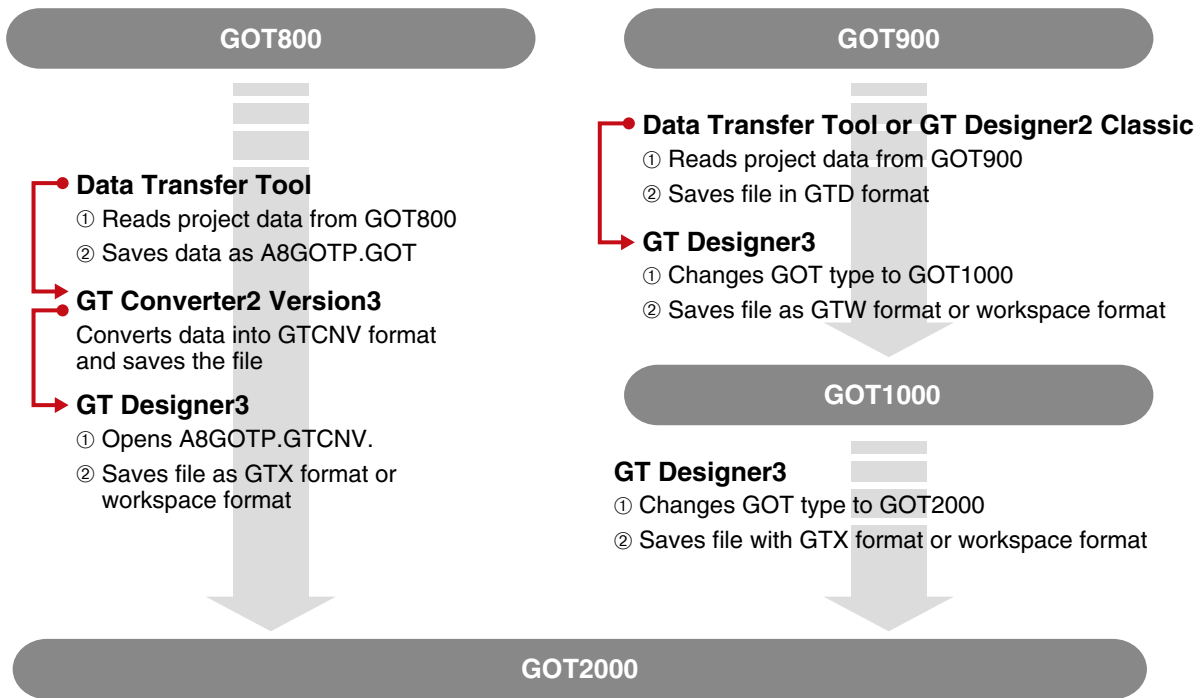
Motion Controller Engineering Software
MT Works2

Motion SFC programming, parameter setting, and the digital oscilloscope function, etc. are available. With these various features, this software supports all necessary steps including system configuration, programming, debugging, and maintenance of motion controllers. Variables (labels) are supported providing an easy way to share device names across multiple projects and other MELSOFT software.

Effectively use existing screen assets! Project Data Utilization



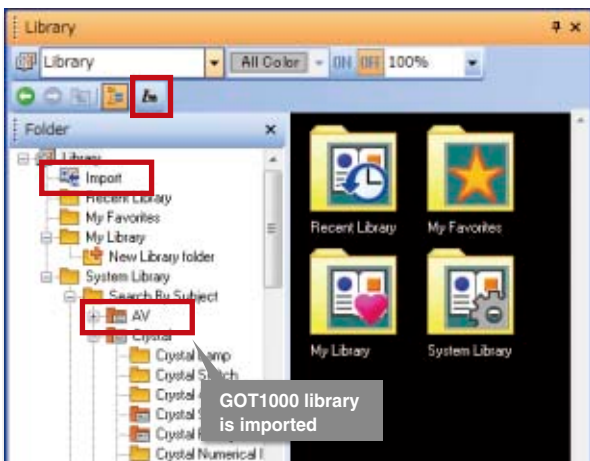
Existing project data can be utilized allowing your valuable screen assets to be used effectively.



Utilize library data used with GOT1000! Library Data Utilization



Library data and template data for GOT1000 can be imported into the GOT2000's system library. Design new screens for GOT2000 while inheriting the screen images for existing models.



GOT1000 library

AV	Crystal
Soft	Retro
Real (with plate)	Plastic

- **GOT1000 library storage location**
MELSOFT (installation folder) \GTD3_2000\App\LibraryData
- **File type**
Import library file (*.il2, *.ilb)

Easily transfer data from existing models! Data Transfer Tool



Project data can be transferred from a personal computer that does not have the screen design software installed. (The tool is included with GT Works3.)



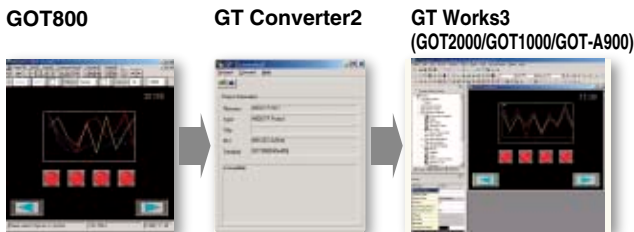
*1. GOT2000 and GOT1000 only
 *2. GOT2000 and GOT1000 (GT16/GT15/GT14) only
 *3. Supported by GOT2000 only. Installation of the wireless LAN communication unit (GT25-WLAN) is required on the GOT.
 Data transfer in wireless LAN communication may not be as stable as that in cable communication. A packet loss may occur depending on the surrounding environment and the installation location. Be sure to perform a confirmation of operation before using this product.
 The product with hardware version A can be used only in Japan.
 The product with hardware version B or later can be used in Japan (Japan Radio Law), the United States (FCC), the EU member states, Switzerland, Norway, Iceland, and Liechtenstein (R&TTE).

- **Target GOT**
 GOT2000, GOT1000, GOT900, GOT800
- **Target data**
 Package data (GOT2000 only)
 Project data (GOT1000, GOT900, GOT800 only)
 Resource data (GOT2000, GOT1000 only)
- **Compatible OS**
 Microsoft® Windows® 8.1, Microsoft® Windows® 8,
 Microsoft® Windows® 7, Microsoft® Windows Vista®,
 Microsoft® Windows® XP

Effectively use existing screen assets!

GT Converter2

Convert GOT800 Series project data into GT Works3 compatible data. (Included with GT Works3)



- **Supported screen design software**
 GOT800 Series screen design software (SW3NIW-A8GOTP)
 Digital Electronics Corporation screen design software (GP-PRO/PB III Series)
- * There are some data and functions that cannot be converted.

GOT900 Series screen design software

GT Designer2 Classic

Read, write and edit the GOT900 Series project data.



Operating Environment/Product List

MELSOFT GT Works3 Version1 (English Version) operating environment

Item	Description
Personal computer	Personal computer that Windows® runs on.
OS (English, Simplified Chinese, Traditional Chinese, Korean, or German version)	Microsoft® Windows® 8.1 (Enterprise, Pro) (64 bit/32 bit) ^{*1 *2 *4 *5 *6} Microsoft® Windows® 8.1 (64 bit/32 bit) ^{*1 *2 *4 *5} Microsoft® Windows® 8 (Enterprise, Pro) (64 bit/32 bit) ^{*1 *2 *4 *5 *6} Microsoft® Windows® 8 (64 bit/32 bit) ^{*1 *2 *4 *5} Microsoft® Windows® 7 (Ultimate, Enterprise, Professional) (64 bit/32 bit) ^{*1 *2 *3 *4} Microsoft® Windows® 7 (Home Premium) (64 bit/32 bit) ^{*1 *2 *4} Microsoft® Windows® 7 (Starter) (32 bit) ^{*1 *2} Microsoft® Windows Vista® (Ultimate, Enterprise, Business, Home Premium, Home Basic) (32 bit) Service Pack1 or later ^{*1 *2} Microsoft® Windows® XP (Professional, Home Edition) (32 bit) Service Pack3 or later ^{*1 *2}
CPU	1GHz or faster recommended
Memory	For Windows® 8.1 (64 bit), Windows® 8 (64 bit), Windows® 7 (64 bit): 2GB or more recommended For Windows® 8.1 (32 bit), Windows® 8 (32 bit), Windows® 7 (32 bit), Windows Vista® (32 bit): 1GB or more recommended For Windows® XP: 512MB or more recommended
Display	Resolution XGA (1024 × 768 dots) or higher
Hard disk space	For installation: 2GB or more recommended For execution: 512MB or more recommended
Display color	High Color (16 bit) or higher
Other hardware	Use the hardware compatible with the above OS. • For installation: mouse, keyboard, DVD-ROM drive • For execution: mouse, keyboard • For printing: printer Use the following hardware when required. • For simulation (only when outputting the buzzer sound): sound card, speaker
Compatible GOT	GOT2000 series, GOT1000 series
Applicable software version	GT Works3 Version1.122C or later

- ^{*1} For installation, the administrator authority is required.
 For Windows® 8.1, Windows® 8, Windows® 7 and Windows Vista®, the standard user or administrator account is required.
 To interact GT Designer3 with other MELSOFT applications which are used under the administrator authority, use GT Designer3 under the administrator authority.
- ^{*2} The following functions are not supported.
 • Application start in Windows compatibility mode • Fast user switching • Change your desktop themes (fonts) • Remote desktop
 • DPI setting other than the normal size (For Windows® XP and Windows Vista®)
 • Setting the size of text and illustrations on the screen to any size other than [Small-100%] (For Windows® 8.1, Windows® 8, and Windows® 7)
- ^{*3} Windows XP Mode is not supported.
^{*4} Windows Touch or Touch is not supported.
^{*5} Modern UI Style is not supported.
^{*6} Hyper-V is not supported.

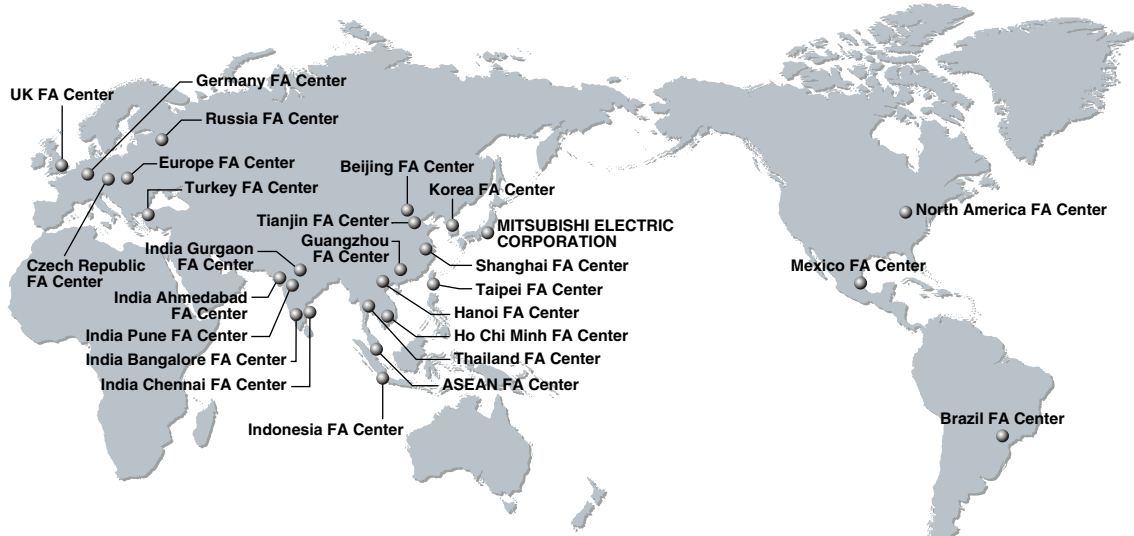
Product list

Software

Product name	Model name		Contents	
HMI/GOT Screen Design Software MELSOFT GT Works3	SW1DND-GTWK3-E	English Version	Standard license product	DVD-ROM
	SW1DND-GTWK3-EA		Volume license product ^{*1}	
	SW1DND-GTWK3-EAZ		Additional license product ^{*1 *4}	
FA Integrated Engineering Software MELSOFT iQ Works ^{*2 *3}	SW2DND-IQWK-E NEW	English Version	Standard license product	DVD-ROM

- ^{*1} The desired number of licenses (2 or more) can be purchased. For details, please contact your local sales office.
^{*2} Volume license product and additional license product are also available. For more details, please refer to the MELSOFT iQ Works catalog (L(NA)08232ENG).
^{*3} The product includes the following software.
 • System Management Software [MELSOFT Navigator] • Programmable Controller Engineering Software [MELSOFT GX Works3, GX Works2, GX Developer]
 • Motion Controller Engineering Software [MELSOFT MT Works2] • HMI/GOT Screen Design Software [MELSOFT GT Works3]
 • Robot Engineering Software [MELSOFT RT ToolBox2 mini] • Inverter Setup Software [MELSOFT FR Configurator2]
- ^{*4} This product does not include the DVD-ROM. Only the license certificate with the product ID No. is issued.

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PLC

MELSEC iQ-R Series



Revolutionary, next generation controllers building a new era in automation

- ◎High-speed, high-accuracy multiple CPU control system based on the iQ Platform
- ◎New high-speed system bus and inter-module sync realizes improved productivity and reduced TCO*
- ◎Reducing development costs through intuitive engineering (GX Works3)
- ◎Robust security features (such as security key authentication, IP filter)

Product Specifications

Program capacity	40K steps to 1200K steps
LD instruction speed	0.98 ns
Available modules	I/O, analog, high-speed counter, positioning, simple motion, network module
Control system architecture	Rack-mounted modular based system
Supported networks	Ethernet, CC-Link IE Control Network, CC-Link IE Field Network, CC-Link, RS-232, RS-422/485

*Total Cost of Ownership

PLC

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.
- ◎Ten 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

PLC

MELSEC-F Series



All-in-One Micro Programmable Controller equipped with all necessary functions in a compact body

- ◎Supporting small-scale control from 10 points to 384 points (using CC-Link) with an outstanding cost performance.
- ◎Wide range of options available for additional functions required by your system.
- ◎Easy to use and highly reliable. More than 12 million units have shipped worldwide. (April 2013)
- ◎Small-scale control is available in various networks such as CC-Link, Ethernet, and MODBUS.

Product specifications

Program capacity	16k steps (FX3S) to 64 k steps (FX3U/FX3UC)
Number of input/output points	10 points (FX3S) to 384 points (FX3U/FX3UC with CC-Link)
Basic instruction processing speed	0.21 μs (FX3S) to 65 ns (FX3U/FX3UC)
External connection interface	RS-422, USB (FX3S/FX3G/FX3GC/FX3GE only), Ethernet (FX3GE only), CC-Link/LT (FX3UC-32MT-LT(-2) only)
Built-in functions	I/O, high-speed counter input, positioning pulse output, analog (FX3GE only)
Extended functions	I/O, analog, temperature control, high-speed counter, positioning, network
Unit expansion style	Backplane-less design
Network	Ethernet, CC-Link, CC-Link/LT, SSCNETIII, CANOpen, J1939, RS-232C, RS-422, RS-485, MODBUS

AC Servo

Mitsubishi General-Purpose AC Servo MELSERVO-J4 Series



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, 1-phase 100V 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/Positioning function/Fully closed loop
Speed frequency response	2.5kHz
Tuning function	Advanced one-touch tuning, advanced vibration suppression control II, robust filter, etc.
Functional safety	Conforms to functions of IEC/EN 61800-5-2, STO: Category 3 PL d, SIL 2 Conforms to Category 4 PL e, SIL 3 by a combination with MR-D30 functional safety unit
Compatible servo motor	Rotary servo motor (rated output: 0.05 to 55kW), linear servo motor (continuous thrust 50 to 3000N), direct drive motor (rated torque: 2 to 240N·m)

Inverter

FR-A800 Series



High-functionality, high-performance inverter

- ◎ Realize even higher responsiveness during real sensor-less vector control or vector control, and achieve faster operating frequencies.
- ◎ The latest automatic tuning function supports various induction motors and also sensor-less PM motors.
- ◎ The standard model is compatible with EU Safety Standards STO (PLd, SIL2). Add options to support higher level safety standards.
- ◎ Control and monitor inverters via CC-Link/CC-Link IE Field Network (option interface).

Product Specifications

Inverter capacity	200V class: 0.4kW to 90kW, 400V class: 0.4kW to 500kW
Control method	High-carrier frequency PWM control (Select from V/F, advanced magnetic flux vector, real sensorless vector or PM sensorless vector control), vector control (when using options)
Output frequency range	0.2 to 590Hz (upper limit is 400Hz when using advanced magnetic flux vector control, real sensorless vector control, vector control or PM sensorless vector control)
Regenerative braking torque (Maximum allowable duty)	200V class: 0.4K to 1.5K (150% at 3%ED) 2.2K/3.7K (100% at 3%ED) 5.5K/7.5K (100% at 2%ED) 11K to 55K (20% continuous) 75K or more (10% continuous), 400V class: 0.4K to 7.5K (100% at 2%ED) 11K to 55K (20% continuous) 75K or more (10% continuous)
Starting torque	200% 0.3Hz (3.7K or less), 150% 0.3Hz (5.5K or more) (when using real sensorless vector, vector control)



Robot

MELFA F Series



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

Shortcut Keys

Shortcut keys

Shortcut key	Operation	Icon	Tool bar	Menu
Ctrl + N	Create a new project		Main	Project
Ctrl + O	Open an existing project		Main	Project
Ctrl + S	Overwrite the current project		Main	Project
Ctrl + P	Display the print setting dialog		Main	Project
F1	Display GT Designer3 Help			
Ctrl + Z	Cancel the last action		Edit	Edit
Ctrl + X	Cut		Edit	Edit
Ctrl + C	Copy		Edit	Edit
Ctrl + V	Paste		Edit	Edit
Ctrl + D	Duplicate		Edit	Edit
Ctrl + G	Group		Edit	Edit
Ctrl + U	Ungroup		Edit	Edit
Ctrl + L	Rotate the selected data by 90 degrees to the left		Edit	Edit - Rotate/Flip
Ctrl + R	Rotate the selected data by 90 degrees to the right		Edit	Edit - Rotate/Flip
(With figure/object selected) Alt + ←→↑↓	Move 1 dot			
Tab	Select the next object/figure			
Shift + Tab	Select the previous object/figure			
Ctrl + Alt + P	Open the previous screen		Screen	Screen
Ctrl + Alt + N	Open the next screen		Screen	Screen
Ctrl + W	Close the current screen		Screen	
(With figure/object selected) Alt + Enter	Open the setting dialog of the selected data		Edit	Edit
(Over dialog) Ctrl + Page Up	Switch to the left tab			
(Over dialog) Ctrl + Page Down	Switch to the right tab			
(Over comment list) Alt + N	Add a comment line			
(Over screen editor) Ctrl + I	Show the screen preview		View	
F7	Display ON/OFF-state of editor screen		View	
Alt + 0(zero)	Display/hide Project tree		View	
Alt + 1(one)	Display/hide Property sheet		View	
F9	Display/hide Library List		View	
Ctrl + Shift + F	Display/hide Utilize Data (Screen)		View	View
Ctrl + F10	Activate simulator		Simulator	Tools - Simulator

Inquiry

Q Where should we contact if we are interested in purchasing the software or need technical information?

A Please contact your local sales office for any inquiries about the product.

Products

Q We are currently using the GOT1000 Series screen design software GT Works3.
Do we need to purchase new screen design software to design screen data for the GOT2000 Series?

A The GOT2000 Series screen data can be designed with GT Works3 Version 1.100E or later.
If your version of GT Works3 is older than Version1.100E, there is no need to purchase the new version.
For more details, please contact your local sales office.

Q What language is available?

A GT Works3 is available in English, Japanese, and Chinese.

Q Can the GOT1000 Series screen data be used with the GOT2000 Series?

A The GOT1000 Series screen data can be used with the GOT2000 Series just by changing the GOT type.

Q Can the GOT2000 Series screen data be used with the GOT1000 Series?

A The GOT2000 Series screen data cannot be converted into the GOT1000 Series screen data,
and thus cannot be used with the GOT1000 Series.

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The actual color may differ slightly from the pictures in this catalog.
The actual display may differ from what are shown on GOT screen images.

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- The products have been manufactured as general-purpose parts for general industries, and are not 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-carrying 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.

Mitsubishi Graphic Operation Terminal Screen Design Software

MELSOFT GT Works3

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