MITSUBISHI ELECTRIC

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Mitsubishi Graphic Operation Terminal GOT2000 Series Quick Start Guide

Let's start!

Quick Start Guide

FEATURES OF THE GOT

FEATURES OF GT Designer3

PREPARING REQUIRED DEVICES

STEP1 CREATING A PROJECT

STEP2 TRANSFERRING THE PROJECT

STEP3 USING THE GOT

APPENDICES

GOT2000

Graphic Operation Terminal

● SAFETY PRECAUTIONS ●

(Always read these instructions before using this product.)

Before designing a system, make sure to read the relevant manuals carefully and handle the product properly with full attention to safety.

[PRECAUTIONS ON THE PRACTICAL TRAINING IN THIS DOCUMENT]

⚠DANGER

- When power is on, do not touch the terminals not to cause any electric shock accident.
- Before opening the safety cover, power off the system or secure a safe environment.

⚠CAUTION

- When installing or removing a module or unit, power off it in advance.
  Doing so while power is on can cause the module or unit to fail or an electric shock.
- When any error or malfunction occurs, stop using the module or unit immediately.

[GOT2000-RELEVANT MANUALS]

For detailed information, refer to each manual of GOT2000.
The GOT2000-relevant manuals can be downloaded from the MITSUBISHI ELECTRIC FA Global Website (http://www.mitsubishielectric.com/fa/).

* This document uses GT Designer3 (GOT2000) Version 1.117X for explanation.
  Depending on the version used, the display of the menu and screens may differ.

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HOW TO READ MARKS

Refers to information required for operation and precautions.

Refers to useful information.

Introduces reference manuals and pages that describe details.

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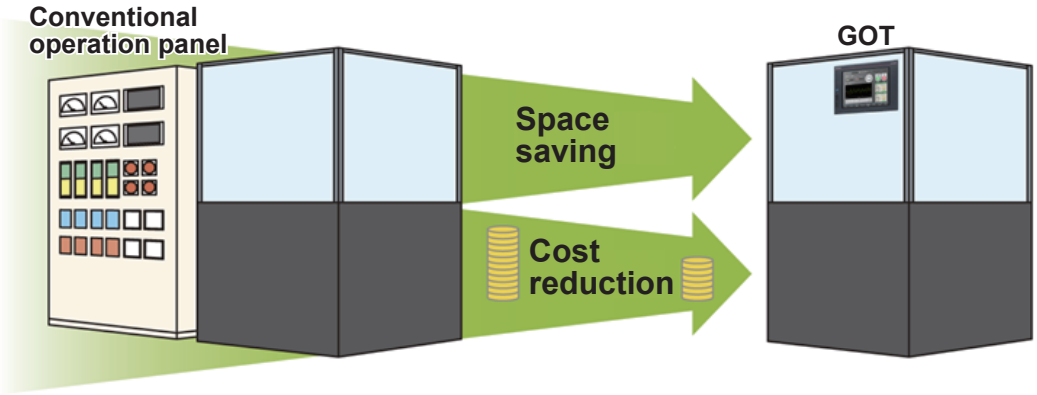
GOT is the abbreviation of "Graphic Operation Terminal".

Switches and lamps had been conventionally attached to an operation panel as hardware. However, by using the screen design software, those can be created, and displayed and operated on the monitor screen of the GOT, the touch-panel HMI.



Advantages of the GOT

(1) Downsizing the operation panel
Since switches and lamps are created using software, the number of components attached to the operation panel as hardware can be reduced and the panel itself can be downsized.

(2) Cutting costs for wiring
Wiring between components inside the operation panel is replaced with screen design by software, eliminating the need for the wiring, which requires a large amount of time and cost.

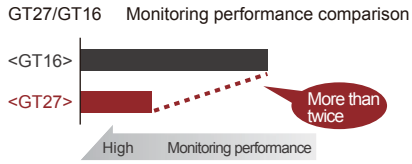
(3) Standardizing operation panels
Even though required specifications changes, you just need to change settings using software. Therefore, operation panels can be standardized.

(4) Adding extra values as an HMI (Human Machine Interface)
The GOT can easily display graphics, text, and alarms in addition to switches and lamps. Therefore, the extra value of your entire equipment can be improved.

The following shows the features of the GOT2000 series.

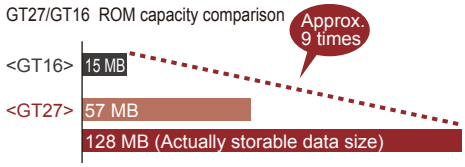
1 High-speed processing

Compared with the GT16 model of the GOT1000 series, the monitoring performance has been improved more than twice.
Even highly-loaded processing including logging, script, alarm, and device data transfer can be operated easily.



2 Increased memory capacity

The project data compression technology allows users to use project data of up to 128 MB without using an SD card.

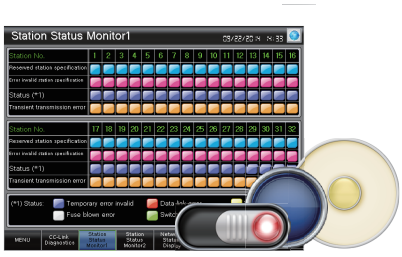


3 Multi-touch gesture function

You can scroll and zoom in and out screens using the gesture function.

4 Clear text and parts

You can create highly-attractive screens with fonts and parts that are clear even when the screen is zoomed in or out.



5 Enhanced lineup

The standard model (black) and the white model are available. You can select the colors for your needs.
Since the white model has no USB interface on the GOT front face, cleaning is easy.
You can select an appropriate model and use it at various situations.

6 GOT's appearance and enhanced interface

The following shows the GOT2000's appearance and its enhanced interface.

[Front face]

Human sensor

The GOT detects an operator and displays its screen automatically. When no one is around, the backlight turns off to save energy.

* GT27 (15" and 12.1" only)

USB device

Data can be transferred without opening the cabinet.

* The USB device is on the rear face for the white model and GT21.

USB host

Screen data can be transferred and data in the GOT can be retrieved using a USB memory. A USB mouse and keyboard can be connected.

* GT27 and GT25 only. The USB host is on the rear face for the white model.

Simple design

The stylish and simple design with a linear motif is sleek and complements any machine design.

iF Design Award 2014

product design award 2014

LED backlight

The long life cycle minimizes maintenance and replacement costs.

[Rear face]

Extension interface

Communication and option units can be mounted.

* GT27 and GT25 only

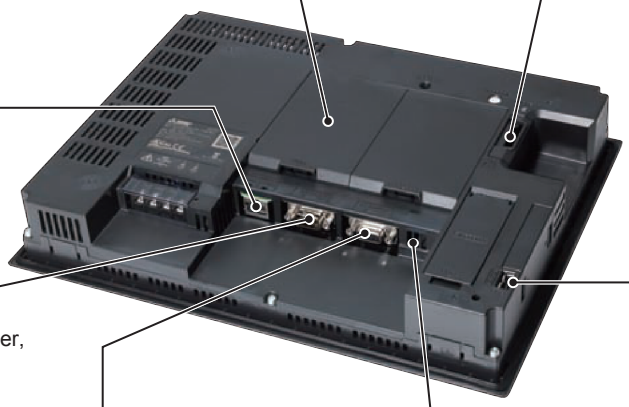
Ethernet

Up to four types of PLCs from different manufacturers* can be connected simultaneously by Ethernet.

* Up to two types of PLCs for GT21

RS-232

Various FA devices, barcode reader, serial printer can be connected.



* This image is GT2712.

SD card slot

A large amount of data including alarms and logging data can be saved.

USB host

A USB memory can be mounted to save alarms and logging data. A USB mouse and keyboard can be connected.

* GT27 and GT25 only

RS-422/485

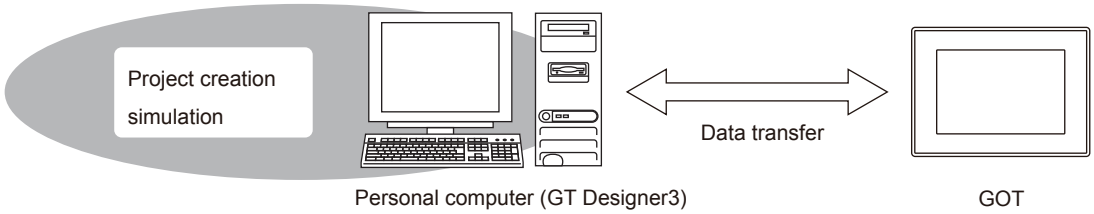
Various FA devices can be connected.

USB device

The GOT can be connected to a personal computer to transfer data.

* White model only

GT Designer3 is the software to create screens for the GOT2000 series and the GOT1000 series. This software enables you to create and simulate a project, and transfer data between the GOT and a personal computer.

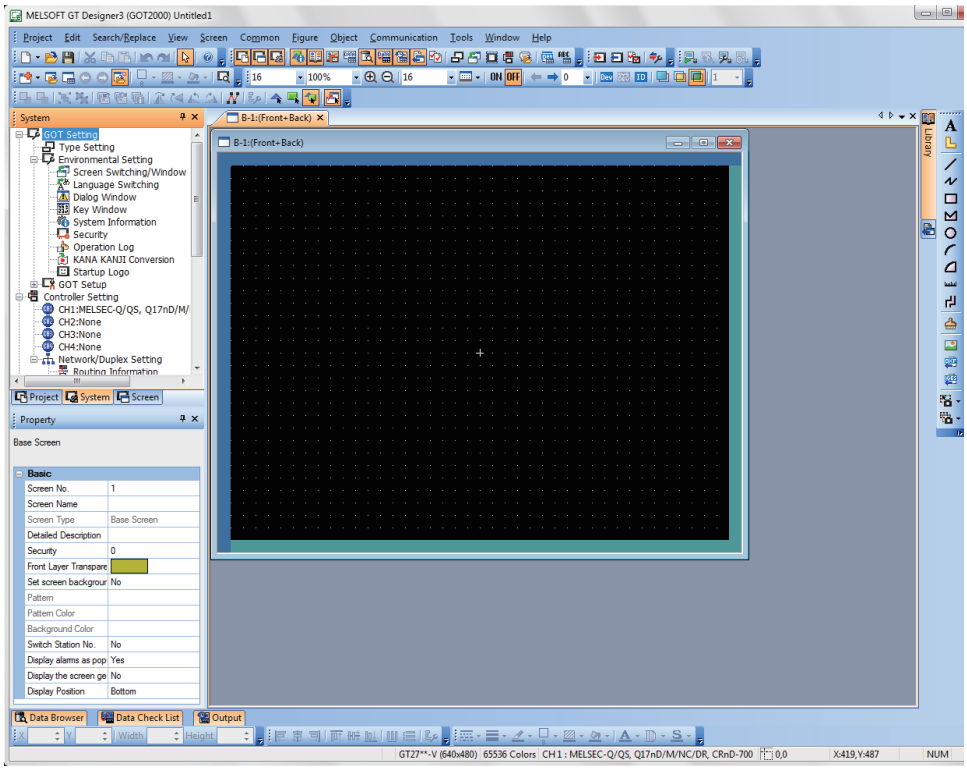


GT Designer3 consists of the following screen design software.

- GT Designer3 (GOT2000): Screen design software for GOT2000 series
- GT Designer3 (GOT1000): Screen design software for GOT1000 series

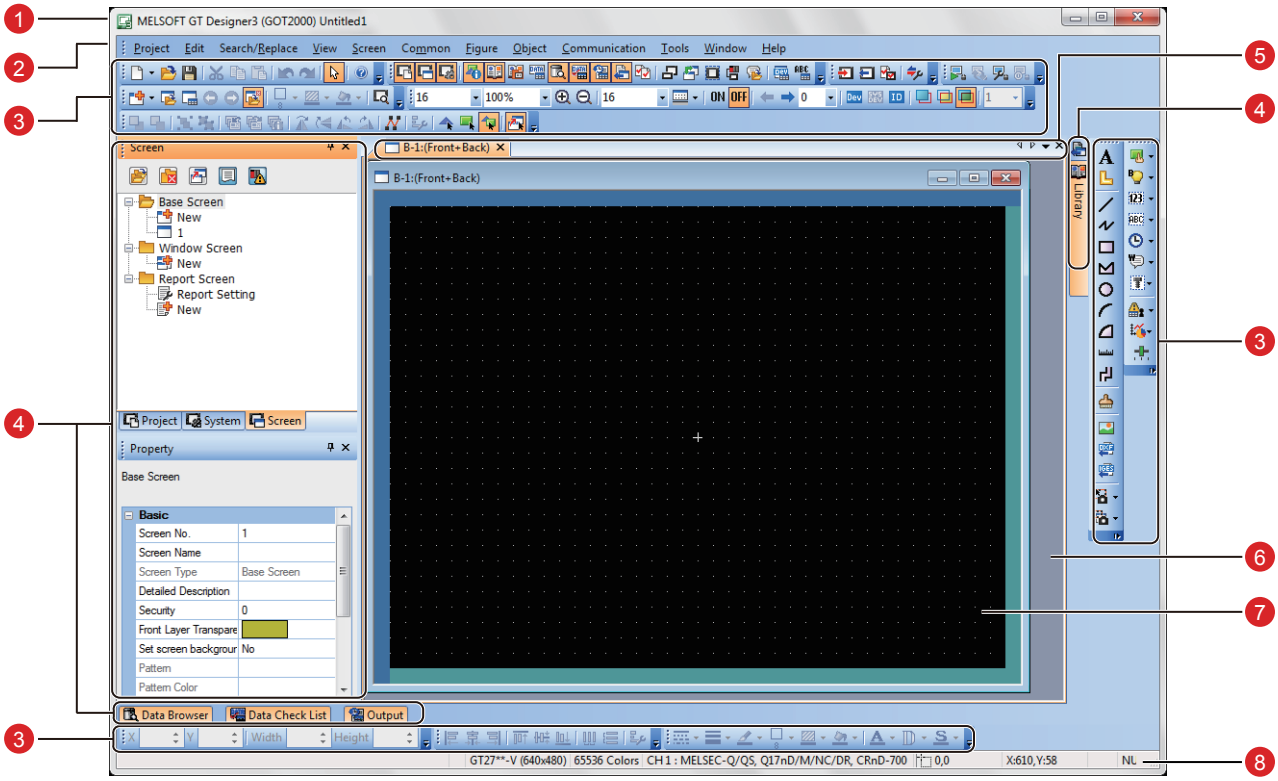
This document describes creating a screen for GOT2000 with GT Designer3 (GOT2000).

Screen image of GT Designer3 (GOT2000)



1 SCREEN LAYOUT OF GT Designer3

The following shows the screen layout of GT Designer3.



1 Title bar
Displays the software name, a project name, and a file name.

2 Menu bar
GT Designer3 can be operated from pull-down menus.

3 Toolbar
GT Designer3 can be operated by buttons. You can place the toolbar on the left, right, top, or bottom.

4 Docking window
Windows that can be docked with the screen of GT Designer3.

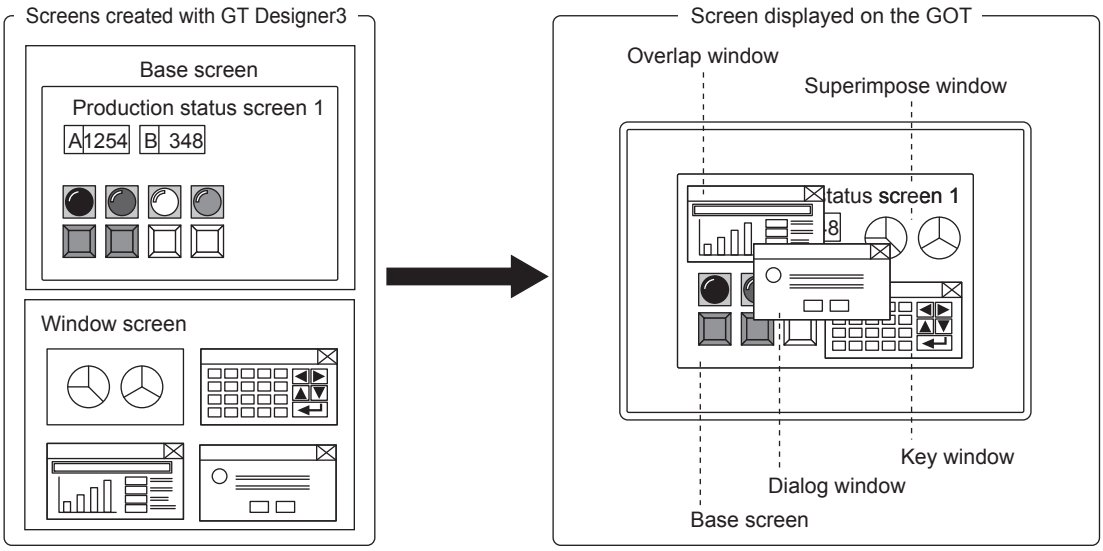
5 Editor tab
Displays the tabs of the windows and screen editors which are displayed on the work window.

6 Work window
Displays screen editors, the [Environmental Setting] window, the [GOT Setup] window, and other windows.

7 Screen editor
Creates a screen to be displayed on the GOT by placing figures and objects on the screen editor.

8 Status bar
Displays information according to the position of the mouse cursor, the status of a selected figure or object.

2 SCREENS THAT CAN BE CREATED WITH GT Designer3



(1) Base screen
A screen that is displayed as a base screen of the GOT.
The screen switching device controls the display of a base screen.

(2) Window screen
A screen displayed as an overlap window, superimpose window, key window, and dialog window on the GOT.

(a) Superimpose window
A window superimposed on a base screen and displayed as a part of the base screen.
Up to two superimpose windows (superimpose window 1 and 2) can be displayed simultaneously.
A screen switching device controls the display of a window screen.

(b) Overlap window
A pop-up window displayed over a base screen.
Up to five overlap windows (overlap window 1 to 5) can be displayed simultaneously.
The display position of an overlap window can be moved with a touch operation or a display position specification device.
A screen switching device controls the display of a window screen.
(GT21 can display up to two overlap windows (overlap window 1 and 2) simultaneously.)

(c) Key window
A pop-up window displayed on a base screen for the numerical input and others.
The display position of the key window can be moved with a touch operation.
Two types of key windows are provided: GOT standard key window and user-created key window.

(d) Dialog window
A window displaying error messages, warning messages, and GOT system messages in the foreground.
While a dialog window is displayed, other screens cannot be operated.
A screen switching device controls the display of a window screen.

(3) Report screen
A window for outputting the data by the report function.
This screen is not displayed on the GOT.

1 DEVICES REQUIRED TO OPERATE THE GOT

To operate the GOT, the GOT (1), cables (2), a personal computer and software (3), and a controller (4) are required.

1 GOT

GOT2000 (GT27)

2 Cable

USB cable
(GT09-C30USB-5P)

Ethernet cable

3 Personal computer and software

Personal computer

GX Works2

GT Designer3 (GOT2000)
GT Designer3 (GOT2000) Help

4 Controller

PLC
(QnUDV series)
* Built-in Ethernet type

Reference

For how to install the screen design software, refer to the following.

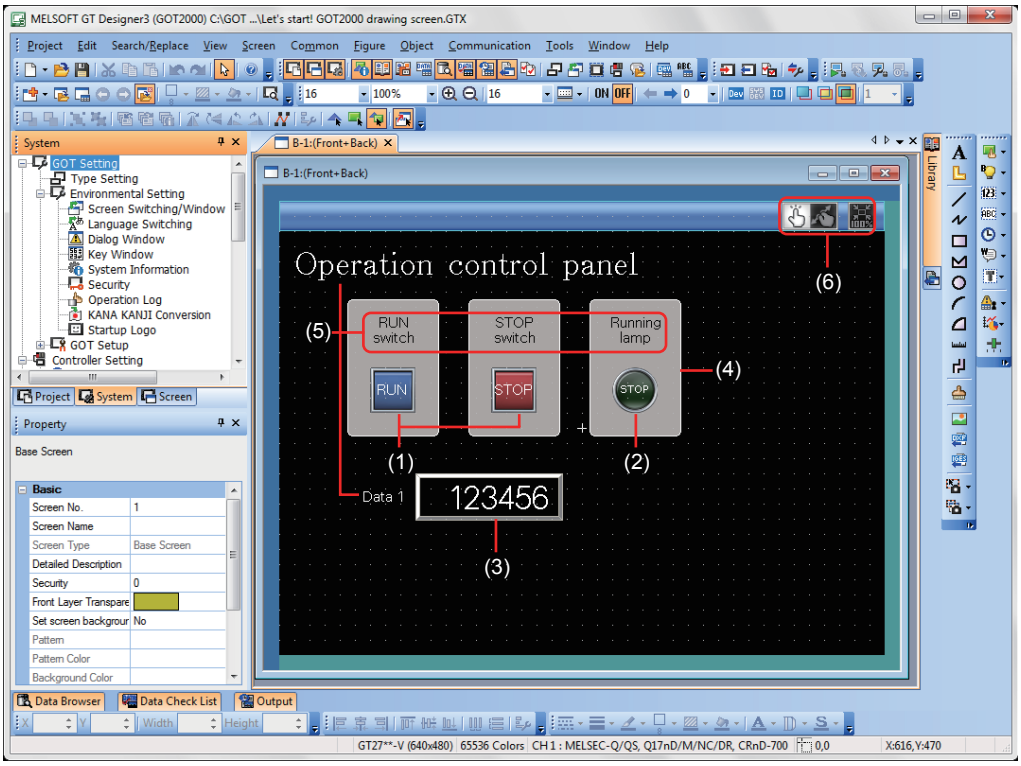
- GT Works3 Installation Instructions BCN-P5999-0066/0071

For the connecting method of the GOT and a controller, refer to the following.

- GOT2000 Series Connection Manual (Mitsubishi Products) For GT Works3 Version1 SH-081197ENG

1-1 Creating a New Project

The following screen is created in this document.



(1) RUN switch, STOP switch
Touch each switch to turn on or off a bit device of the PLC.

➠ 2-1 Creating a RUN Switch
2-2 Creating a STOP Switch

(2) Running lamp
Turns on or off according to the status of the bit device of the PLC.

➠ 2-3 Creating a Running Lamp

(3) Numerical display
Displays the value stored in the PLC.

➠ 2-4 Creating a Numerical Display

(4) Figure (Rectangle)
Place rectangles to make switches and lamps more visible.

➠ 3-1 Creating a Figure (Rectangle)

(5) Figure (Text) 1) to 5)
Characters that describe screens, switches, and lamps are displayed.

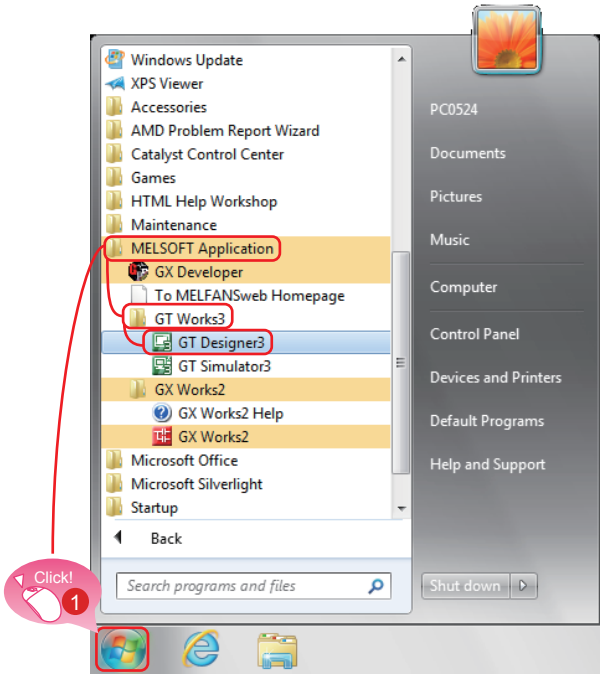
➠ 3-2 Creating Figures (Text) 1 to 3
3-3 Creating Figures (Text) 4 and 5

(6) Screen gesture switch
Pinch in the screen to zoom out the screen and pinch out the screen to zoom in the screen with this switch.

➠ 4-1 Setting the Screen Gesture Function

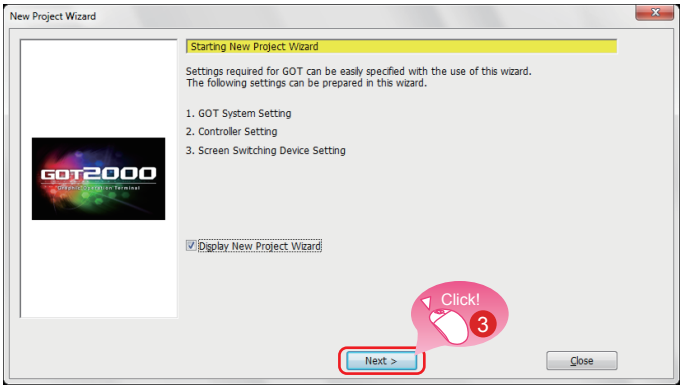
1. Creating a new project

Start GT Designer3 (GOT2000) and follow the wizard to configure the settings.



1 Select [MELSOFT Application] → [GT Works3] → [GT Designer3] from the start menu of Windows.

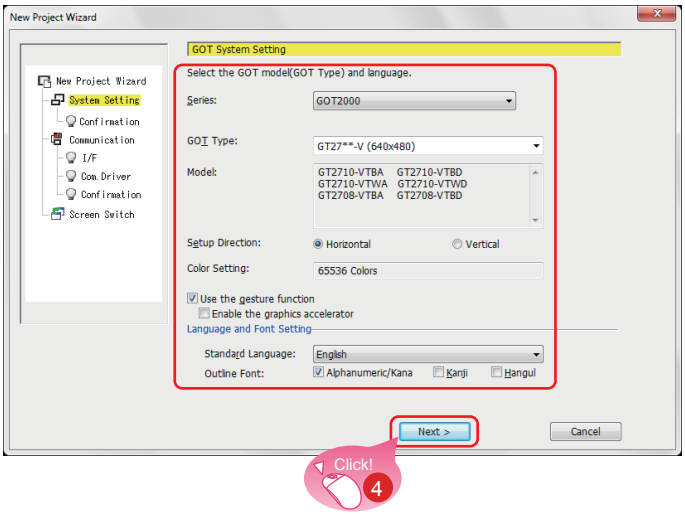
2 Click the [New] button in the Select Project dialog.



3 Click the [Next] button on the start screen of New Project Wizard.

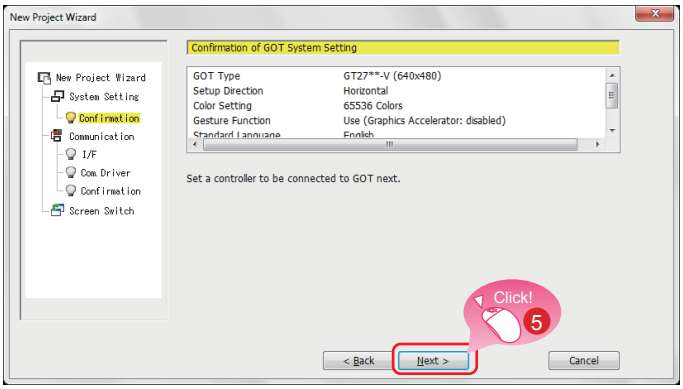
Hint

GT Designer3 can be started from the desktop when a shortcut icon was created at the installation.

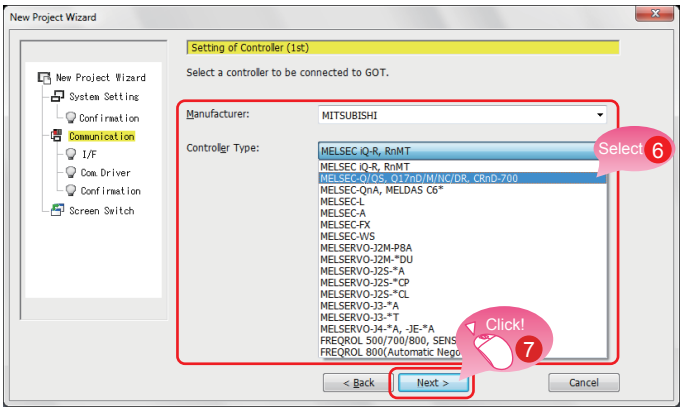


4 Check the settings on the system setting window and click the [Next] button.

- Series: GOT2000
- GOT Type: GT27**-V (640×480)
- Use the gesture function: Selected
- Standard Language: English
- Outline Font
  Alphanumeric/Kana: Selected
  Kanji: Cleared
  Hangul: Cleared

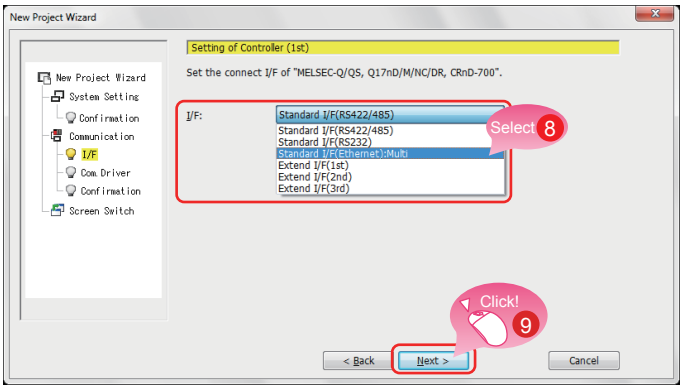


5 Check the displayed settings and click the [Next] button.



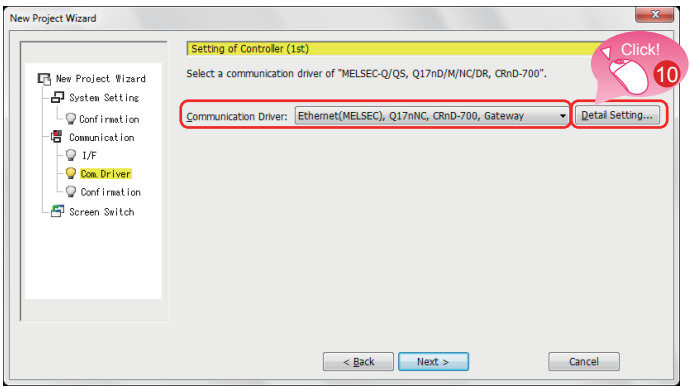
6 Select [MELSEC-Q/QS, Q17nD/M/NC/DR, CRnD-700] in a drop-down list of [Controller Type] on the communication settings window.

7 Click the [Next] button.

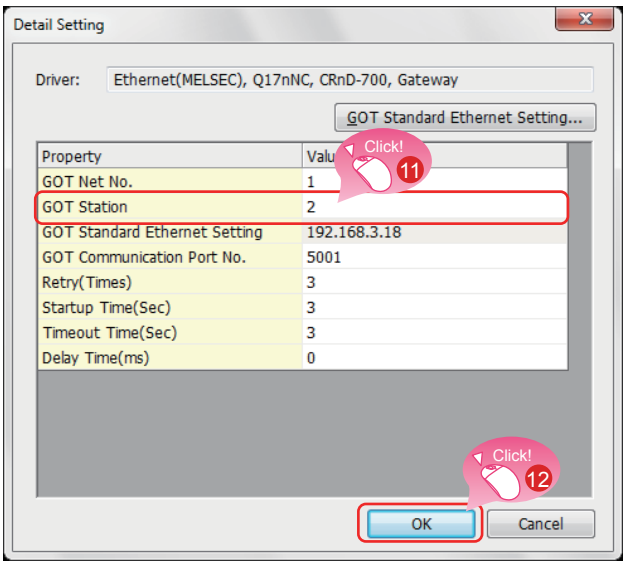


8 Select [Standard(Ethernet):Multi] in a drop-down list of [I/F].

9 Click the [Next] button.



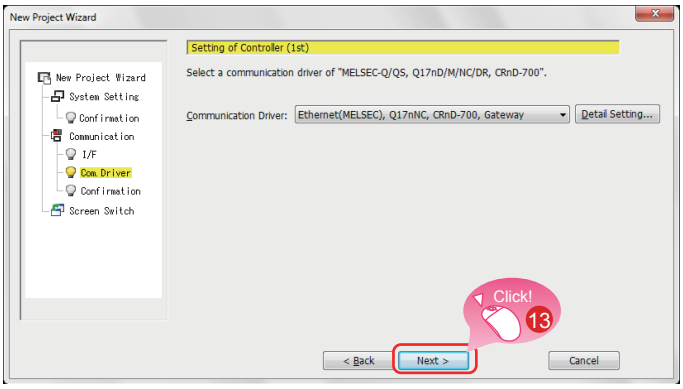
10 Check the communication driver setting and click the [Detail Setting] button.
Communication Driver: Ethernet(MELSEC), Q17nNC, CRnD-700, Gateway



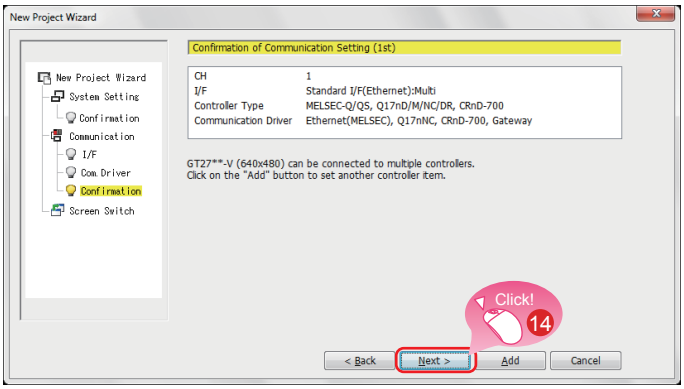
11 The window shown left appears. Change the value of [GOT Station].
GOT Station: 2

12 Click the [OK] button.

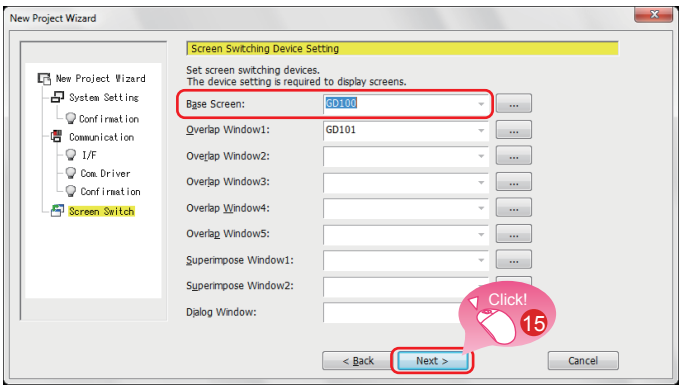
Hint Click the [GOT Standard Ethernet Setting] button to change the IP address of the GOT.



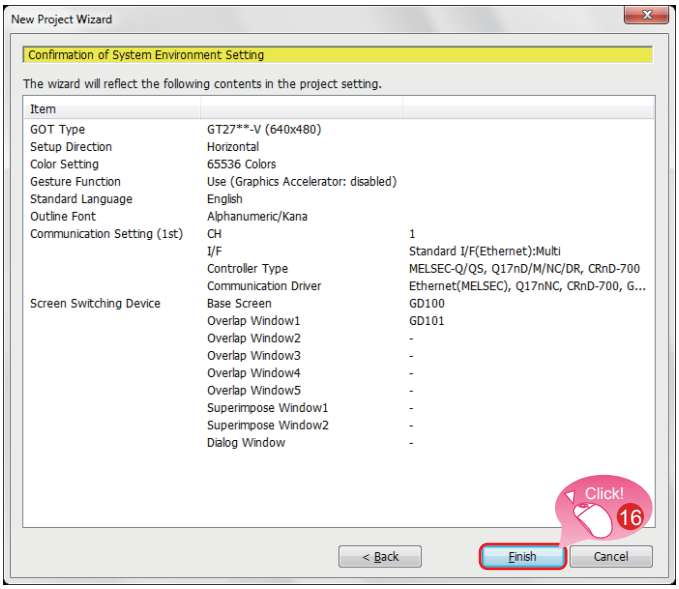
13 Click the [Next] button.



14 Check the displayed settings and click the [Next] button.

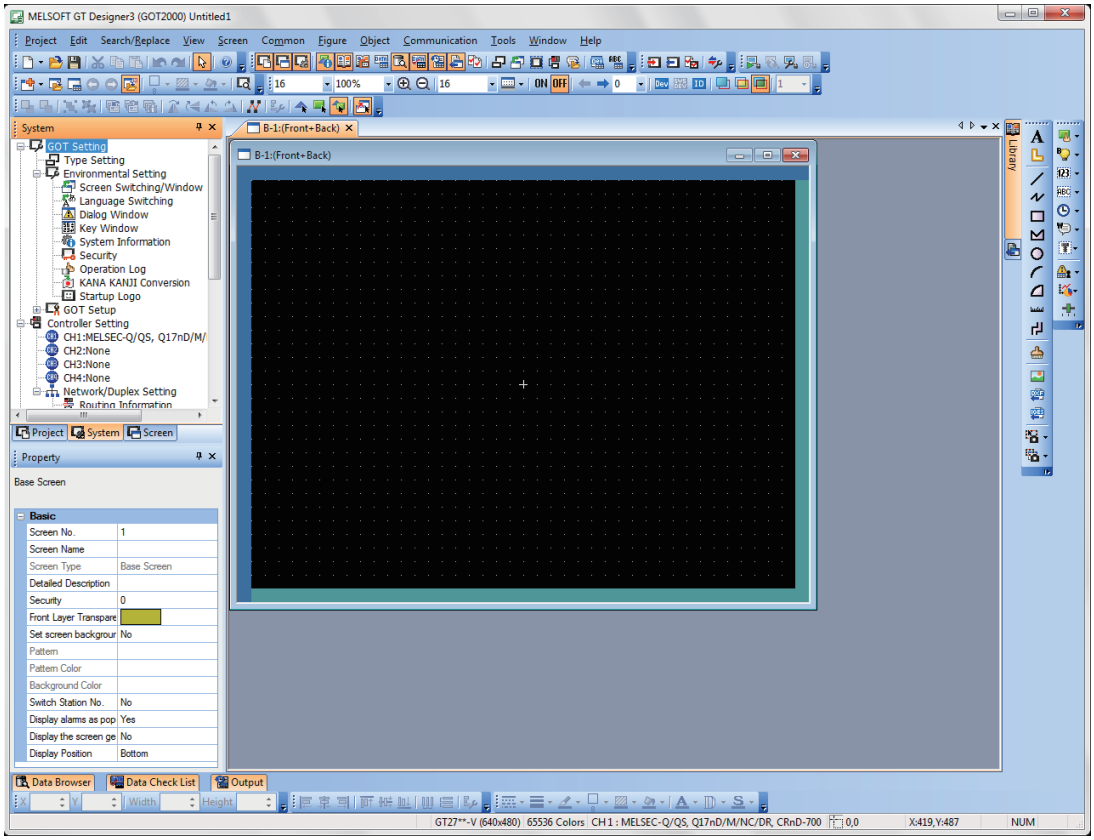


15 Check the screen switching devices of the base screen and click the [Next] button.
Base Screen: GD100 (Default)



16 Check the settings with the wizard then click the [Finish] button.

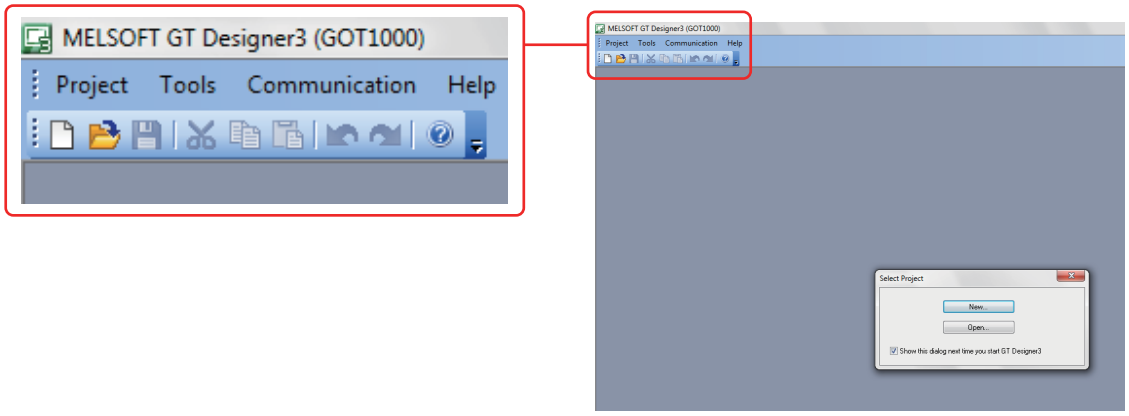
The editing screen of GT Designer3 (GOT2000) appears, and the base screen 1 is created.



When GT Designer3 (GOT1000) is started

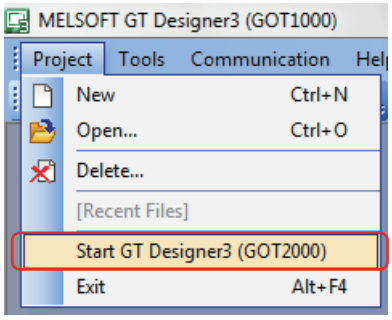
GT Designer3 starts the screen design software that was used to save a project last time.

When the screen design software for GOT1000 is started

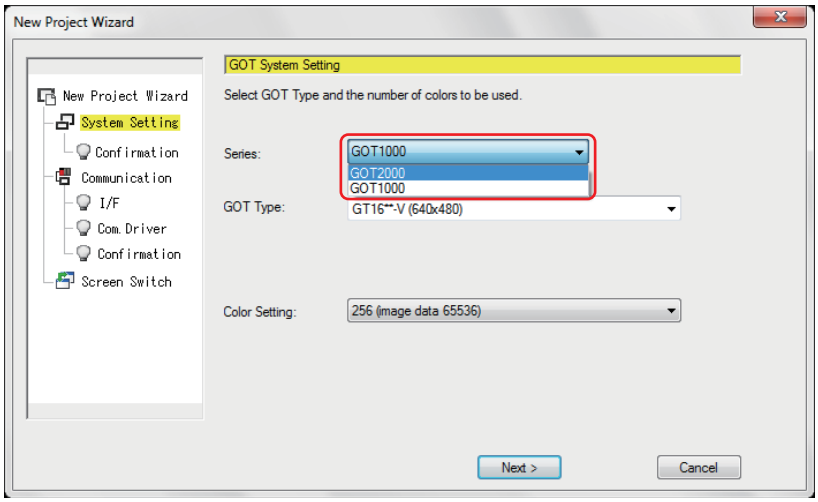


When GT Designer3 (GOT1000) is started, start the screen design software for GOT2000 by either of the following methods.

(1) Starting GT Designer3 (GOT2000) from the menu
Select [Project] → [Start GT Designer3 (GOT2000)] from the menu bar to start GT Designer3 (GOT2000).



(2) Starting GT Designer3 (GOT2000) from the wizard
Select [GOT2000] for [Series] on the [New Project Wizard] dialog to start GT Designer3 (GOT2000).

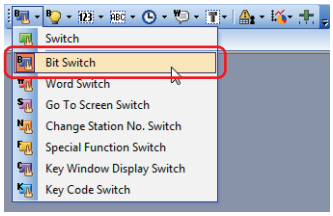


2-1 Creating a RUN Switch

1. Placing a switch

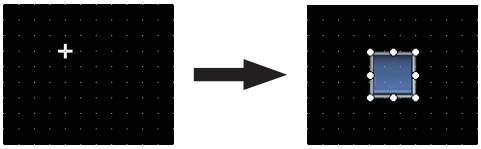
Select [Object] → [Switch] → [Bit Switch] from the menu bar to place a switch.

Hint You can select the item from the toolbar as well.

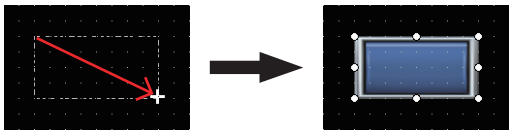


Hint Placing an object

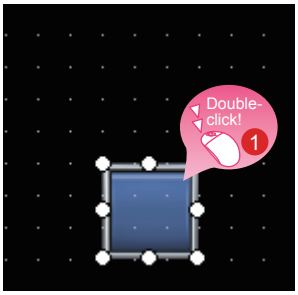
When an object is selected from the menu or the toolbar, the shape of the cursor changes to "+".
Click any area where the object is to be placed on a screen editor.



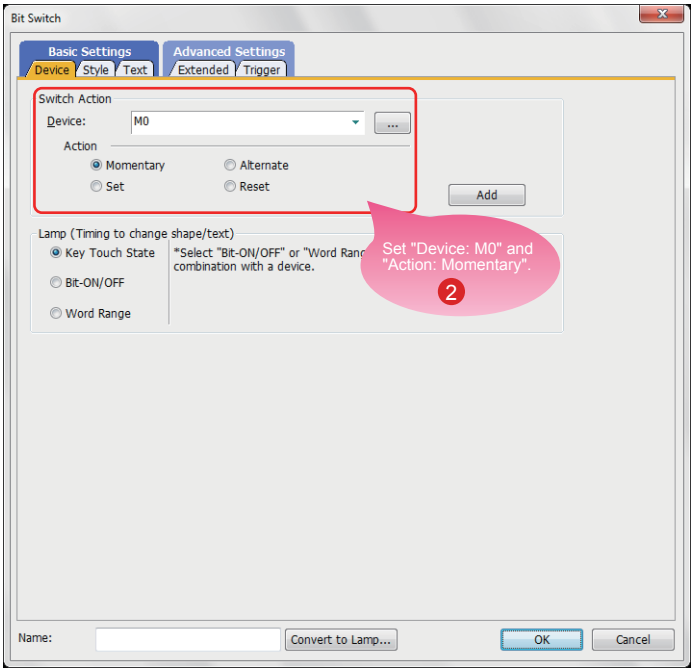
The object can be placed in any size when placing it by dragging the cursor.



2. Setting a device and action



1 Double-click the placed switch.



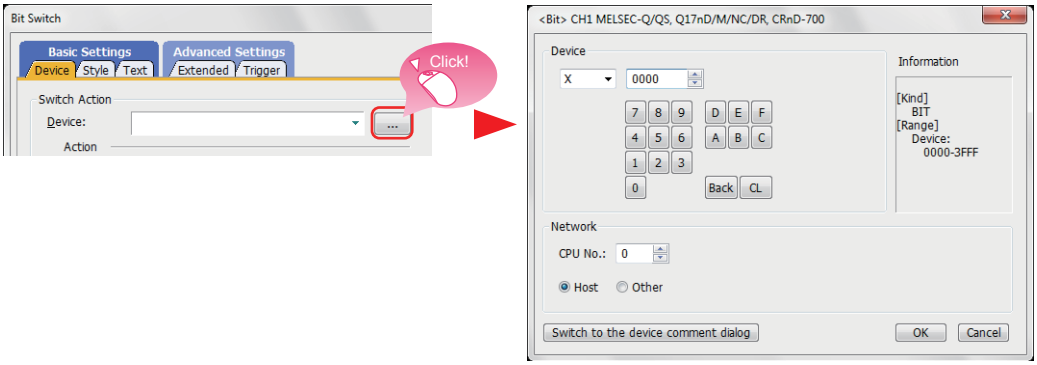
When the dialog shown left appears, set the following items.

2 Device: M0
Action: Momentary

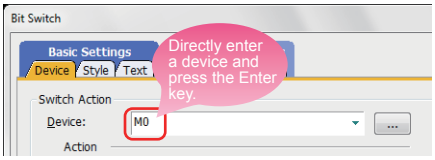
Point

Setting a device

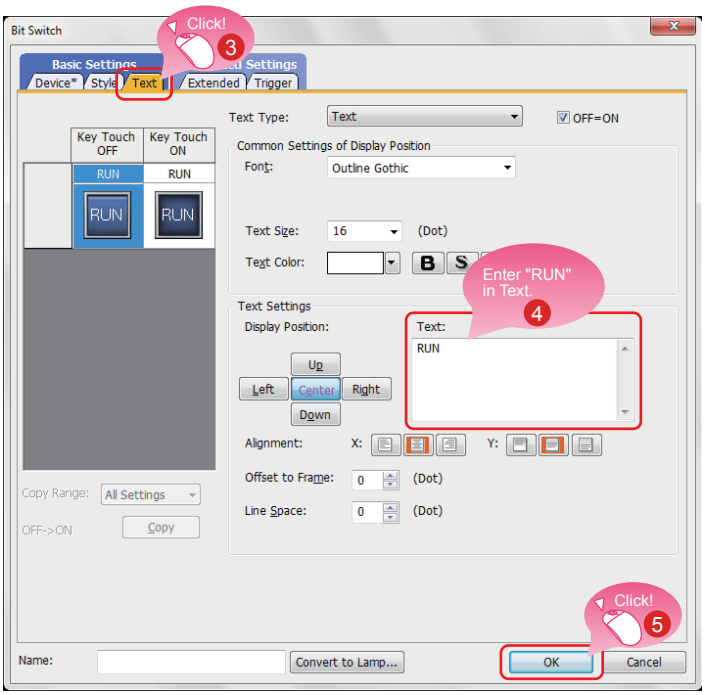
Click the [...] to set a device.



The device can also be set by entering it directly using a keyboard.



3. Setting text



3 Select the Text tab.

4 Enter "RUN" in Text.

5 Click the [OK] button.

Creating the RUN switch is completed.

Reference

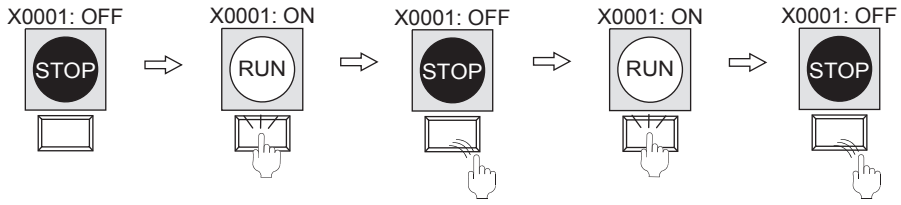
When you have any question, press the F1 key to start the GT Designer3 (GOT2000) help. The help page appropriate for the operation that you are doing is displayed.
For the GT Designer3 (GOT2000) help, refer to the following.

➠ APPENDIX 1.3 HELP

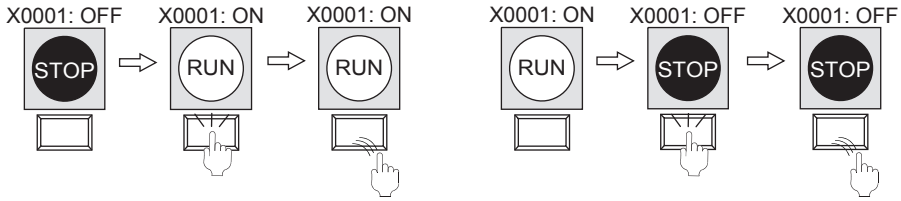
Bit switch actions

A bit switch turns on and off the bit device specified by the switch.
The following shows the actions that can be set with bit switches.

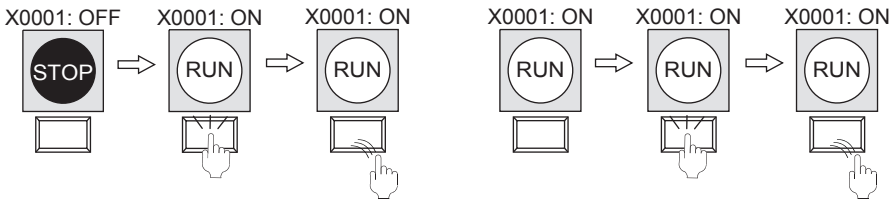
(1) Bit momentary
Keeps a specified bit device on only while you touch the switch.



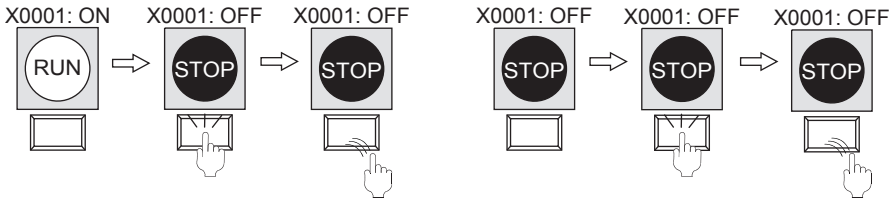
(2) Bit alternate
Alternates the status of a specified bit device (ON←→OFF) when you touch the switch.



(3) Bit set
Turns on a specified bit device when you touch the switch.

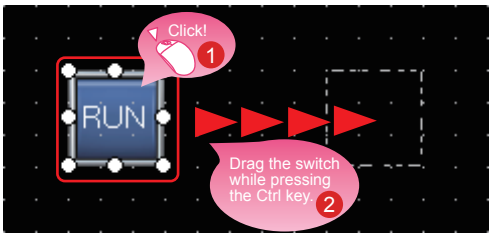


(4) Bit reset
Turns off a specified bit device when you touch the switch.



2-2 Creating a STOP Switch

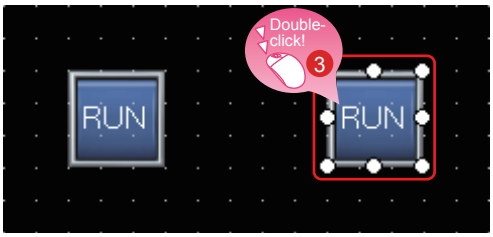
1. Copying the RUN switch



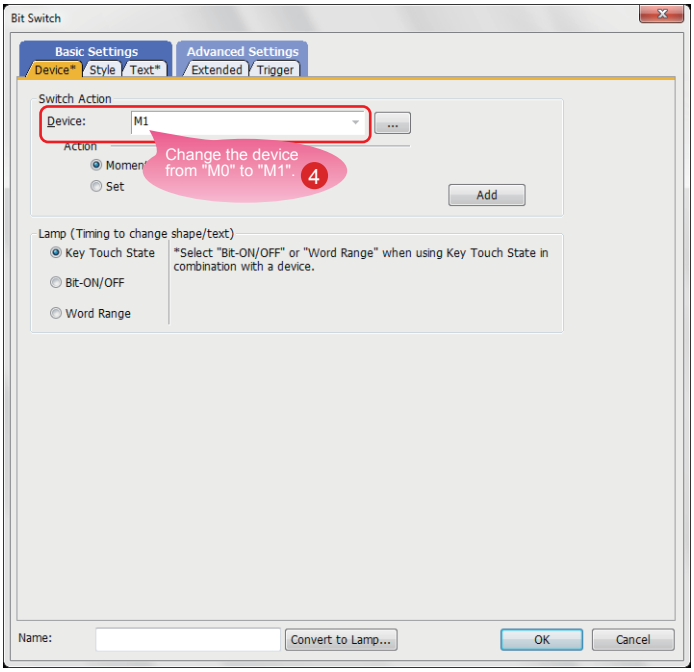
1 Select the RUN switch.

2 Drag the switch while pressing the Ctrl key.

2. Changing the device of the copy of the RUN switch

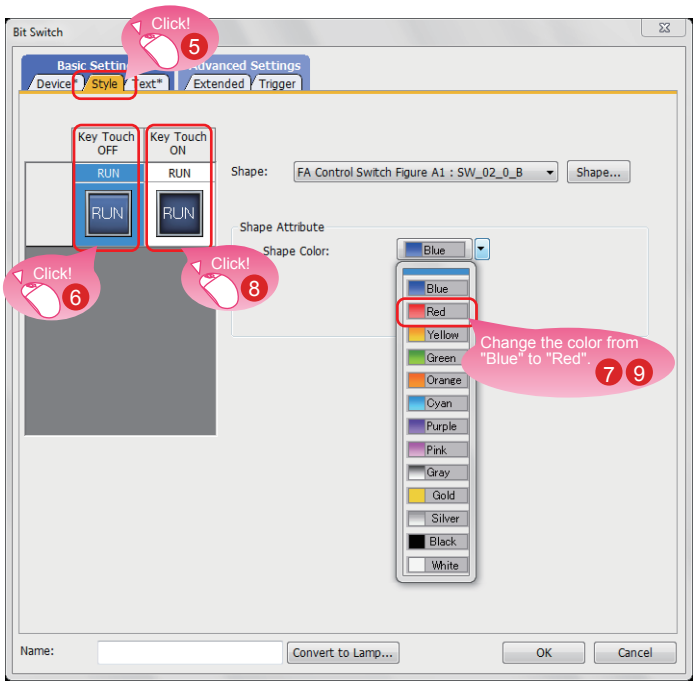


3 Double-click the copied RUN switch.



4 When the dialog shown left appears, change the device as follows.
Device: M0 → M1

3. Changing the shape color of the switch



5 Select the Style tab.

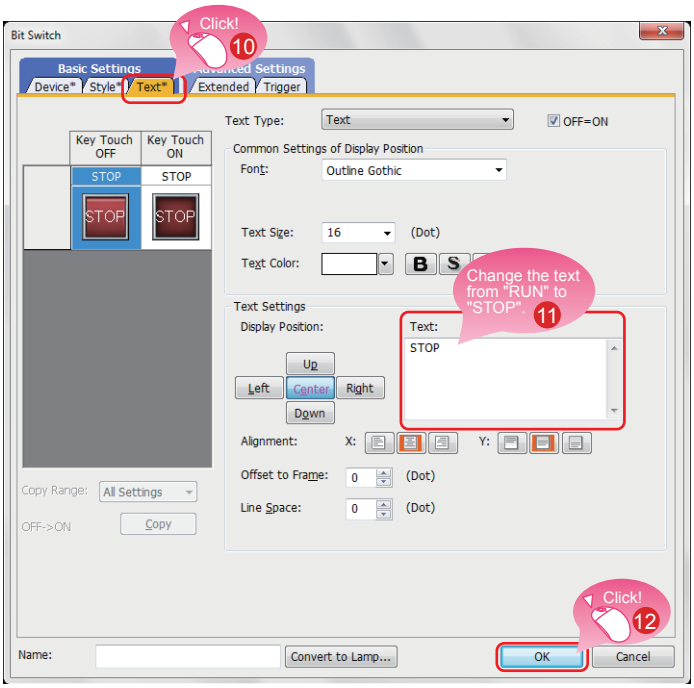
6 Select the shape of the off status.

7 Select a shape color.
Blue → Red

8 Select the shape of the on status.

9 Select a shape color.
Blue → Red

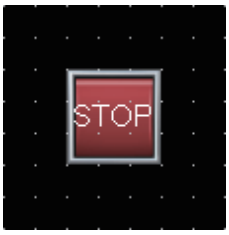
4. Changing the text of the switch



10 Select the Text tab.

11 Enter "STOP" in Text.

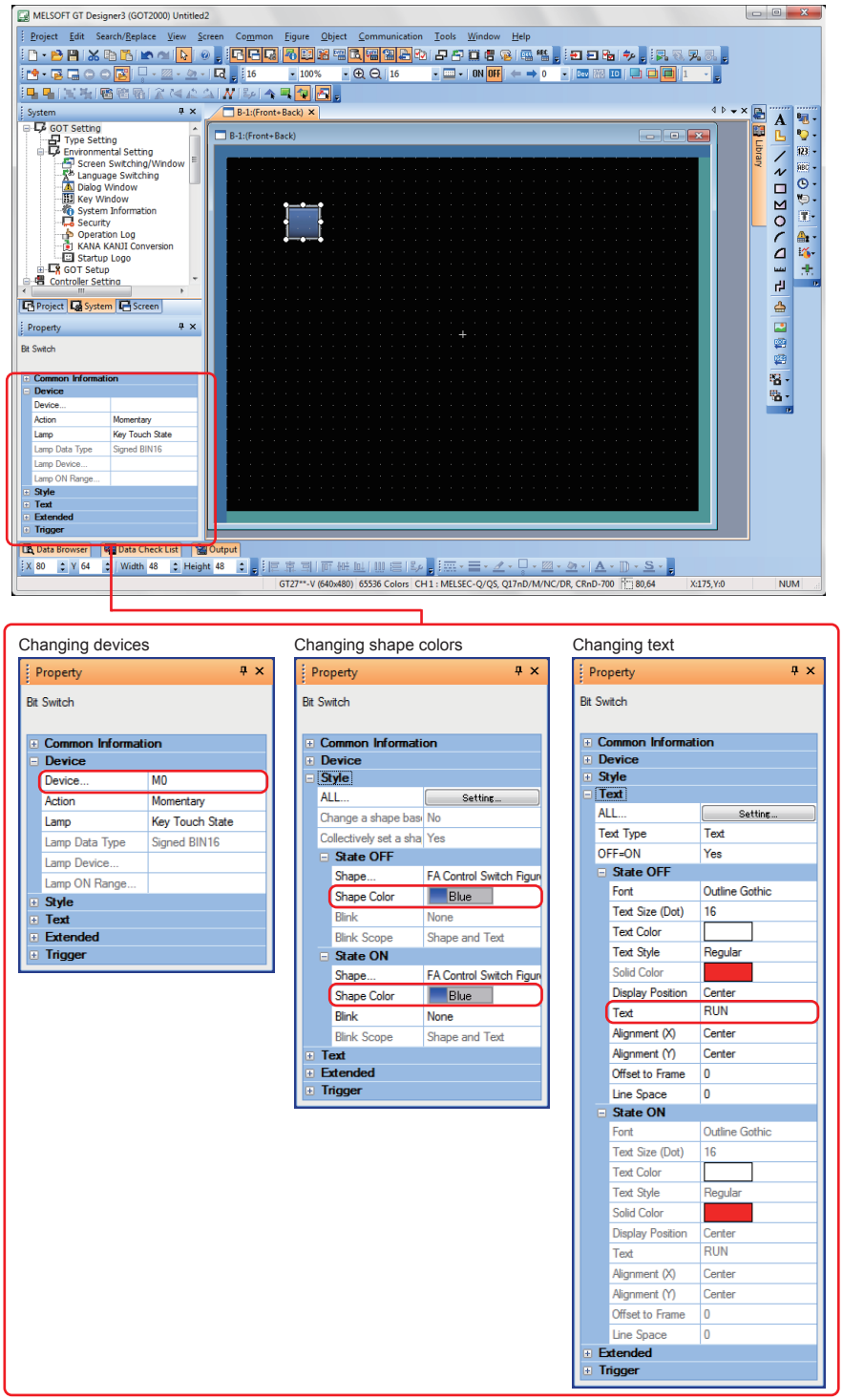
12 Click the [OK] button.



Creating the STOP switch is completed.

Property sheet

The property sheet displays the list of attributes and set values of a selected screen, figure, or object.
Settings can be checked or changed without opening the setting dialog.
Set values can be changed collectively by selecting multiple figures or objects on the same screen.



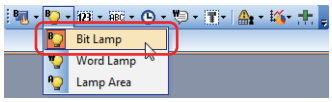
Reference For how to display the property sheet and how to set each item, refer to the help or the GT Designer3 (GOT2000) Screen Design Manual.

2-3 Creating a Running Lamp

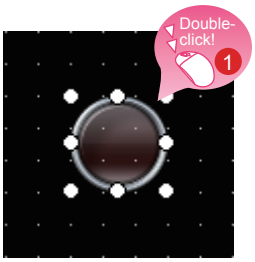
1. Placing a lamp

Select [Object] → [Lamp] → [Bit Lamp] from the menu bar to place a lamp.

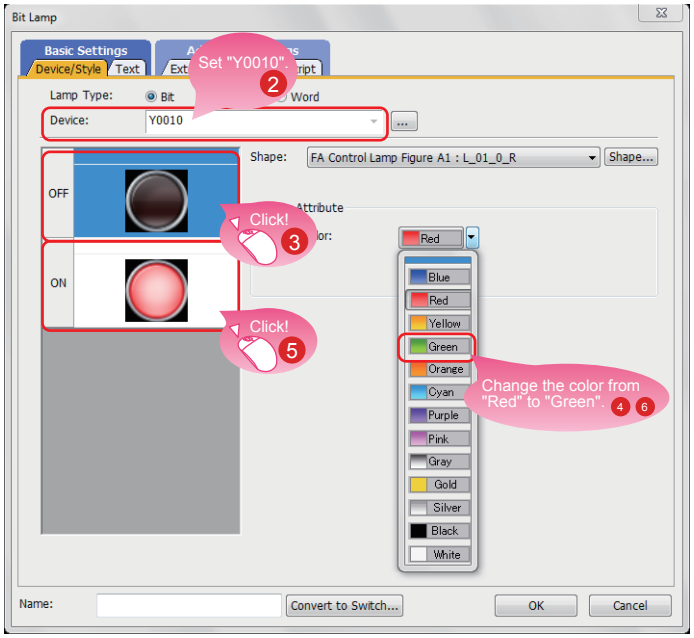
Hint You can select the item from the toolbar as well.



2. Setting a device, shape, and color for the lamp



1 Double-click the placed lamp.



When the dialog shown left appears, set the following items.

2 Device: Y0010

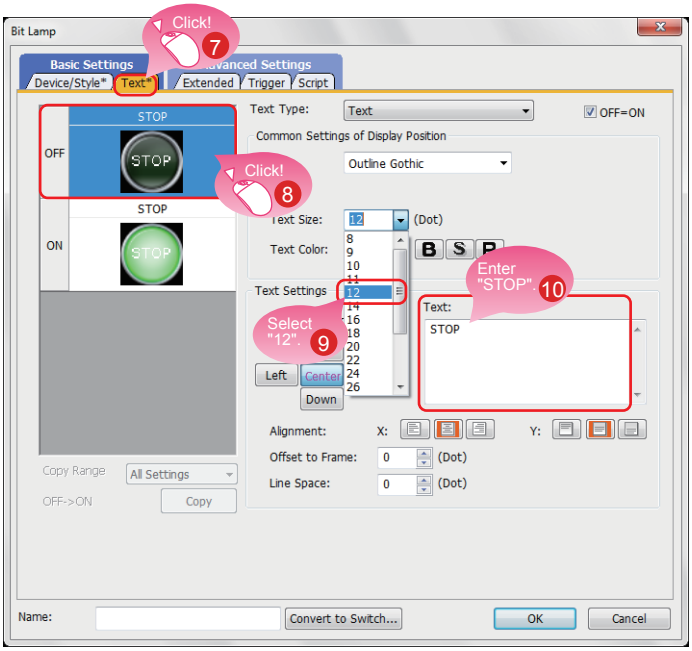
3 Select the shape of the off status.

4 Select a shape color.
Red → Green

5 Select the shape of the on status.

6 Select a shape color.
Red → Green

3. Setting text for the lamp

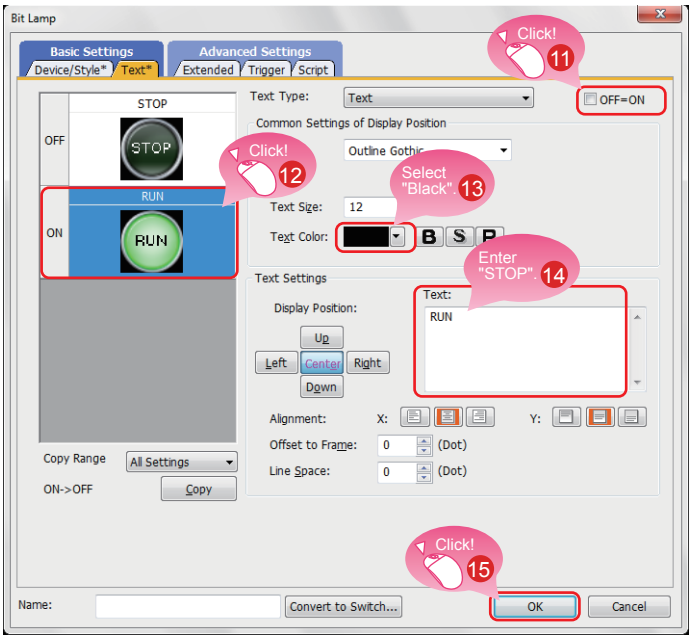


7 Select the Text tab.

8 Select the shape of the off status.

9 Text Size: Select 12 dots.

10 Enter "STOP" in Text.



11 Clear the check box for "OFF=ON".

12 Select the shape of the on status.

13 Select black for Text Color.

14 Enter "RUN" in Text.

15 Click the [OK] button.

Creating the running lamp is completed.

Display of objects on the screen editor

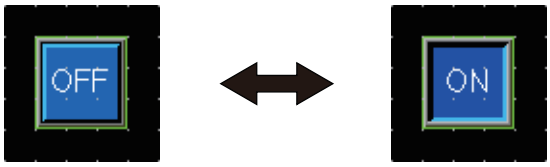
The status of objects to be displayed on the screen editor and the display or non-display of set information can be switched.

(1) Switching the status of objects to be displayed on the screen editor

(a) Switching the status between ON and OFF

Select [View] → [Switch ON/OFF Display] from the menu to switch between the on status image and off status image of each object on the screen editor.

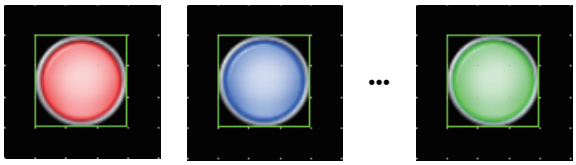
If a state is set to an object, the display of the object switches between OFF with state No.0 and ON with state No.1.



(b) Switching the status by specifying a state No.

Select [View] → [State No.] → [Previous State] or [Next State] from the menu to change display of the objects on the screen editor according to the state No.

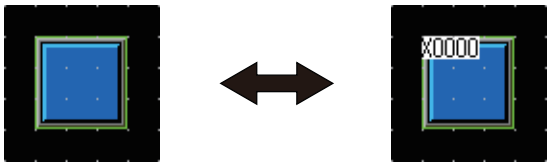
If the status of an object is switched between ON and OFF, the display of the object switches between OFF with state No.0 and ON with state No.1 or more.



(2) Setting information to be displayed on the screen editor

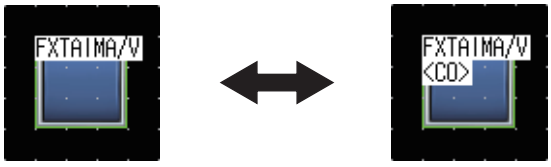
(a) Device

Select [View] → [Display Items] → [Device] from the menu to switch between displaying and hiding devices on the screen editor.



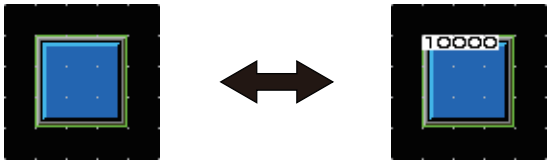
(b) System label device

Select [View] → [Display Items] → [Device of System Label] from the menu to switch between displaying and hiding devices assigned to system labels on the screen editor.



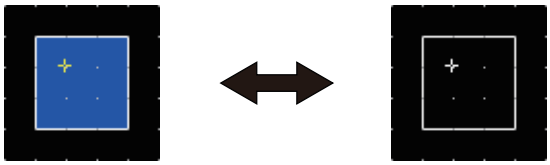
(c) Object ID

Select [View] → [Display Items] → [Object ID] from the menu to switch between displaying and hiding object IDs on the screen editor.



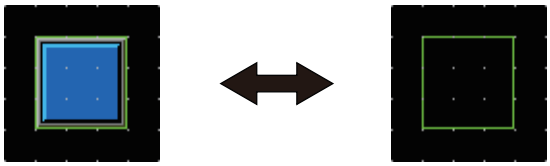
(d) Paint

Select [View] → [Display Items] → [Paint] from the menu to switch between displaying and hiding paints on the screen editor.



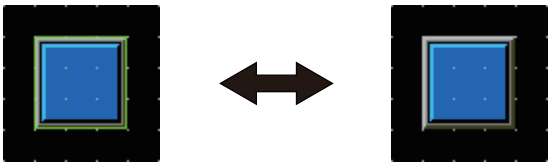
(e) Object

Select [View] → [Display Items] → [Object] from the menu to switch between displaying and hiding objects on the screen editor.



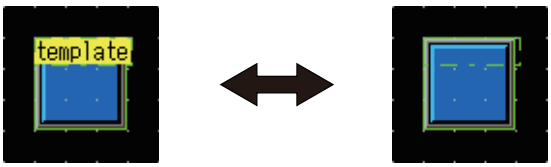
(f) Object frame

Select [View] → [Display Items] → [Object Frame] from the menu to switch between displaying and hiding object frames on the screen editor.



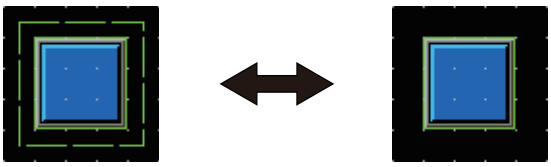
(g) Template information

Select [View] → [Display Items] → [Template Information] from the menu to switch between displaying and hiding template information on the screen editor.



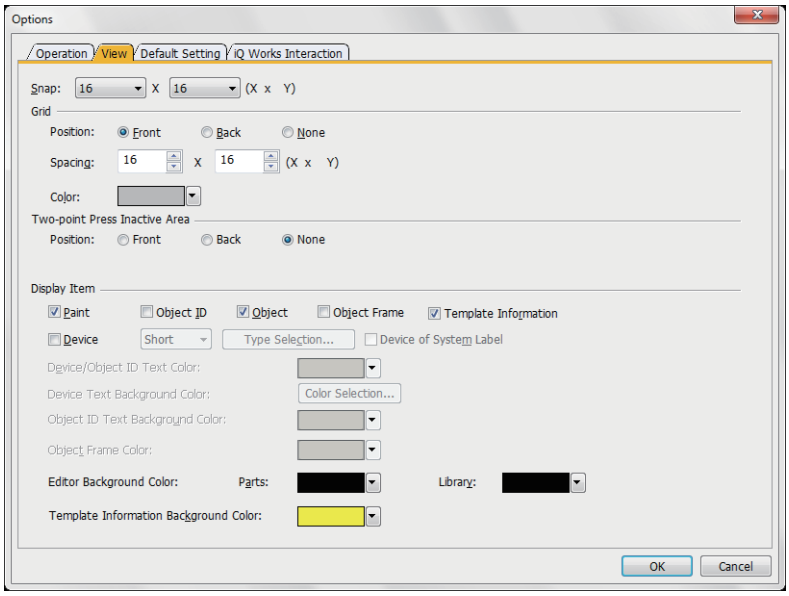
(h) Touch area

Select [View] → [Display Items] → [Touch Area] from the menu to switch between displaying and hiding touch areas on the screen editor.



(i) Option

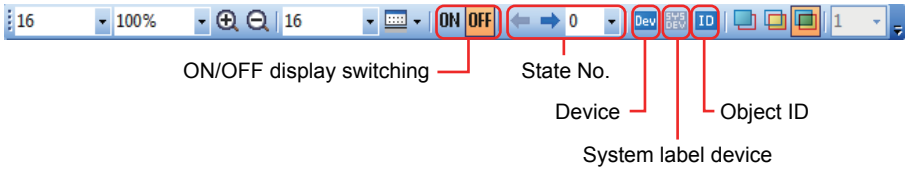
Select [View] → [Display Items] → [Option] from the menu to display the [Option] dialog. In this dialog, you can configure the settings displayed on the screen editor.



Reference For the details of the option, refer to the help or the GT Designer3 (GOT2000) Screen Design Manual.

Operations using the toolbar

The display of objects can be switched using the [View] toolbar as well.

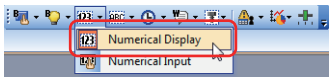


2-4 Creating a Numerical Display

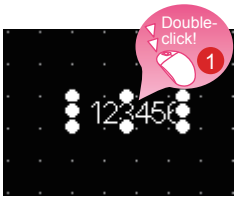
1. Placing a numerical display

Select [Object] → [Numerical Display/Input] → [Numerical Display] from the menu bar to place a numerical display.

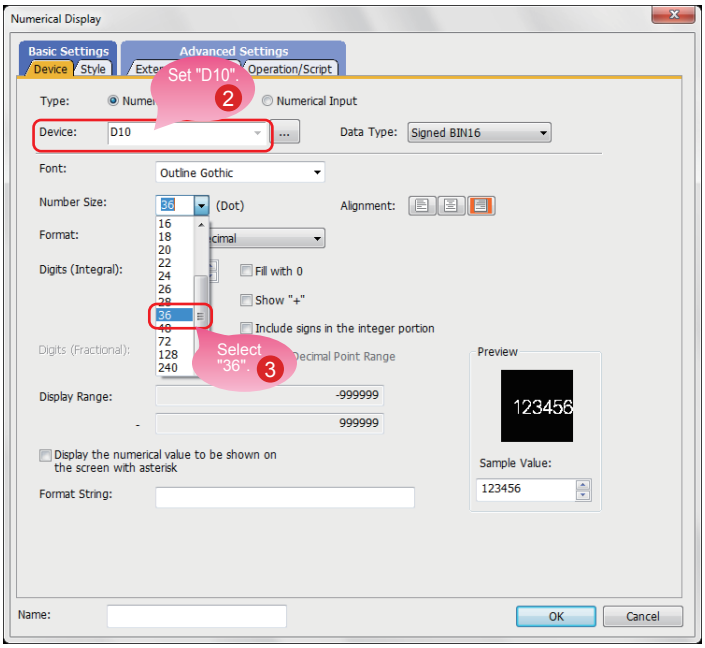
Hint You can select the item from the toolbar as well.



2. Setting a device and number size for the numerical display



1 Double-click the placed numerical display.

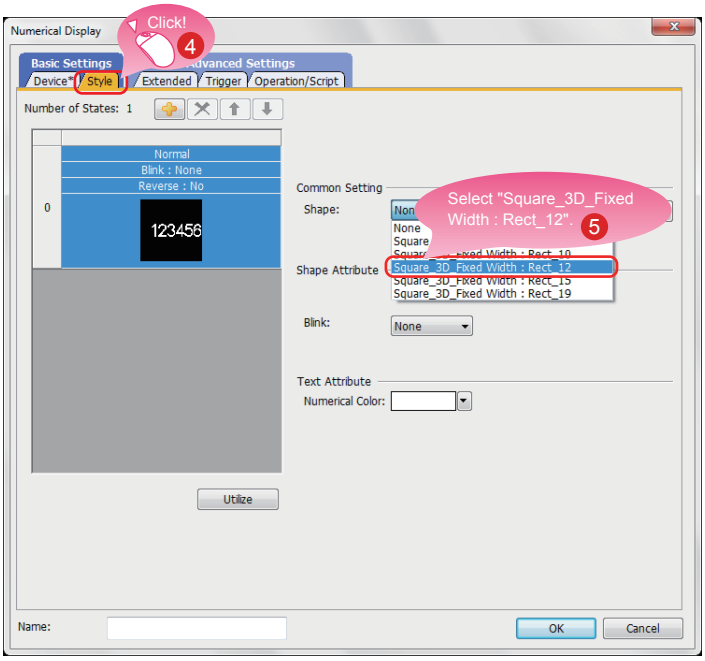


When the dialog shown left appears, set the following items.

2 Device: D10

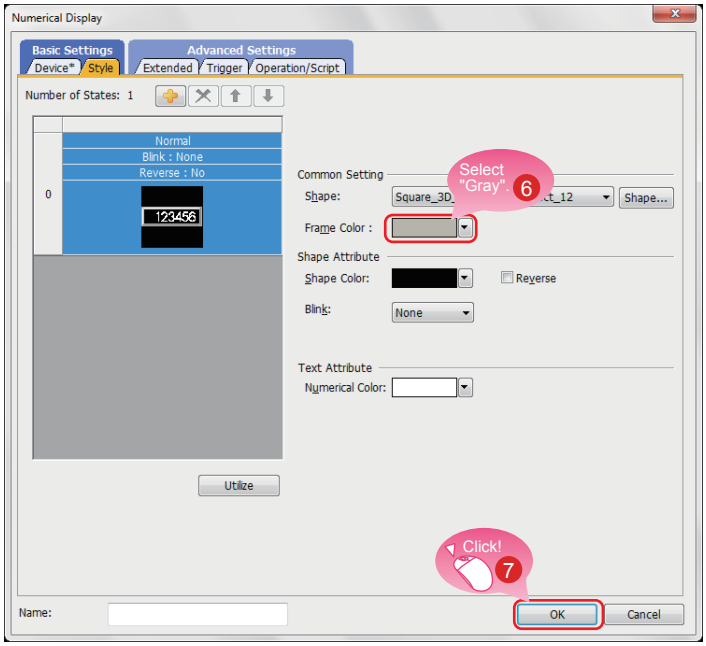
3 Number Size: Select 36 dots.

3. Setting a shape and frame color for the numerical display



4 Select the Style tab.

5 Select "Square_3D_Fixed Width : Rect_12" for Shape.



6 Select gray for Frame Color.

7 Click the [OK] button.

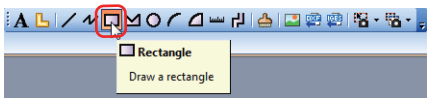
Creating the numerical display is completed.

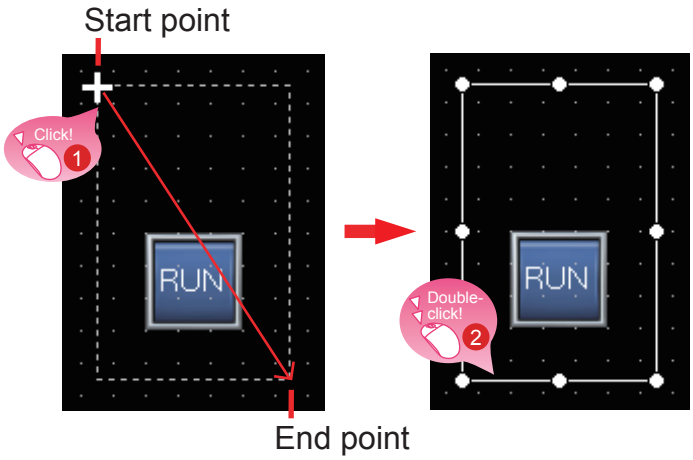
3-1 Creating a Figure (Rectangle)

1. Placing a rectangle

Select [Figure] → [Rectangle] from the menu bar to place a rectangle.

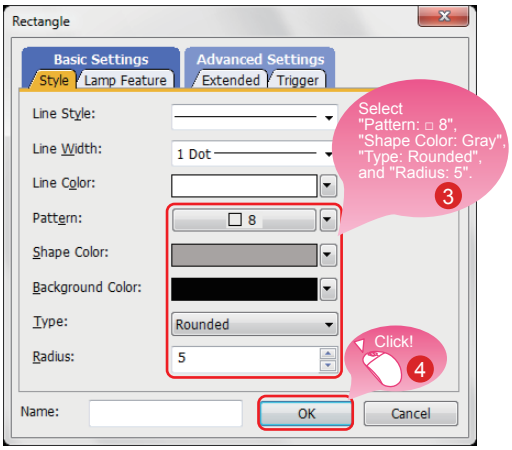
Hint You can select the item from the toolbar as well.





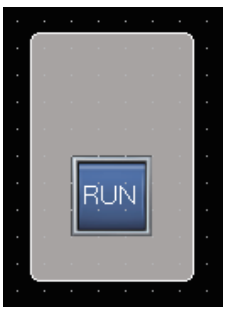
1. Drag the mouse from the start point to the end point while clicking the mouse.
2. Double-click the rectangle.

2. Changing the setting of the rectangle



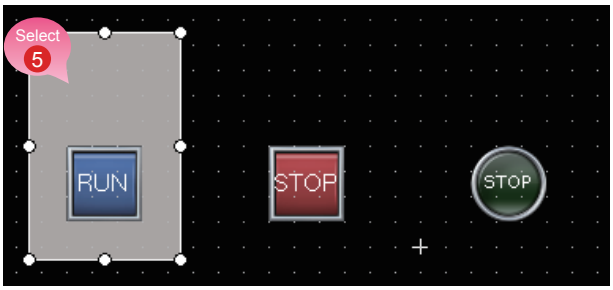
When the dialog shown left appears, set the following items.

3. Pattern: □ 8
   Shape Color: Gray
   Type: Rounded
   Radius: 5 dots
4. Click the [OK] button.

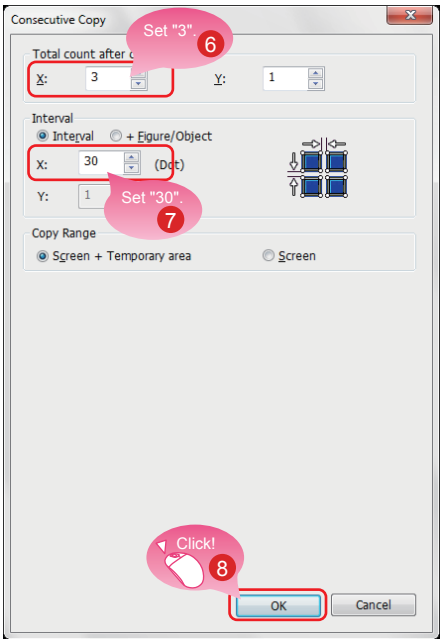


Creating the rectangle is completed.

3. Consecutively copying the rectangle



5 Select the rectangle and select [Edit] → [Consecutive Copy] from the menu bar.

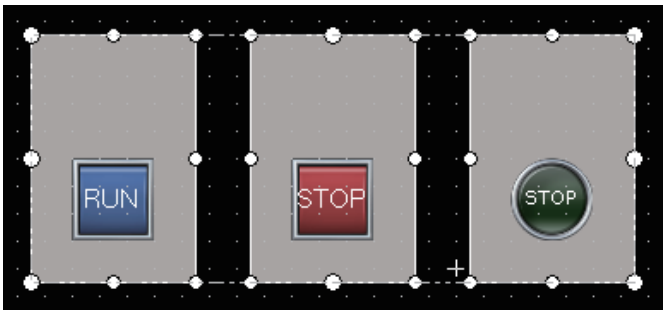


When the dialog shown left appears, set the following items.

6 Total count after copy: X 3

7 Interval: X 30

8 Click the [OK] button to consecutively copy the rectangle.



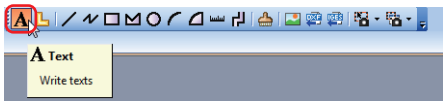
Point The figures are placed on the back layer of the objects.

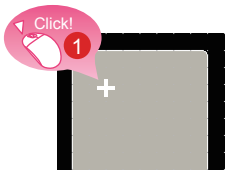
3-2 Creating Figures (Text) 1 to 3

1. Placing a figure (Text) 1

Select [Figure] → [Text] from the menu bar to place a figure (Text).

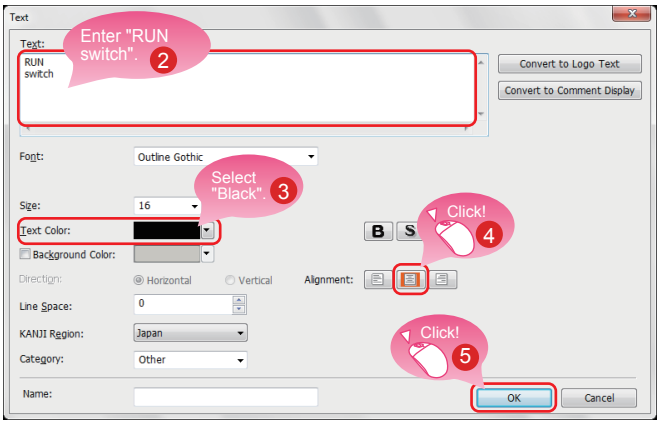
Hint You can select the item from the toolbar as well.





1 Click the mouse on the area where the text is to be entered.

2. Setting the figure (Text) 1



When the dialog shown left appears, set the following items.

2 Text: RUN switch
(A line feed can be inserted after the text "RUN" by pressing the Enter key.)

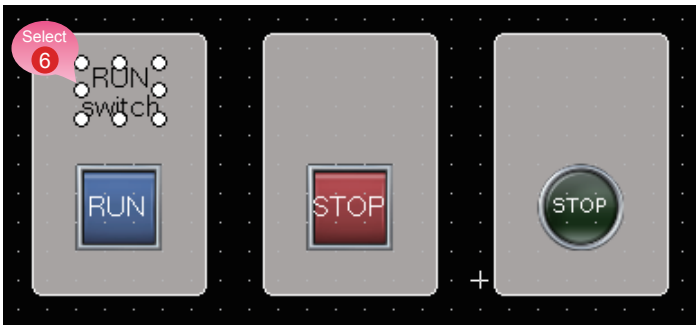
3 Text Color: Black

4 Alignment: Center

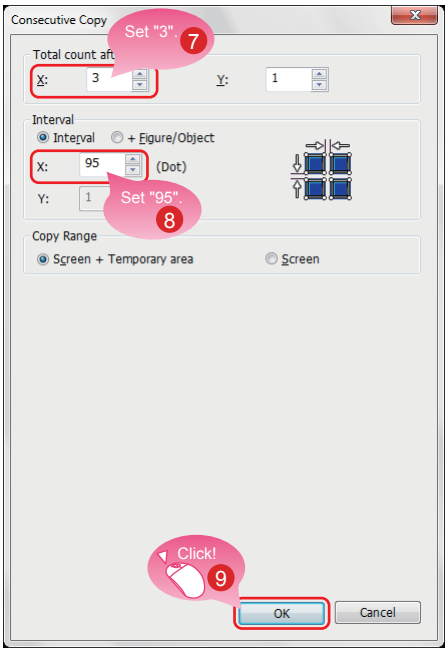
5 Click the [OK] button.

Creating the figure (Text) 1) is completed.

3. Consecutively copying the figure (Text) 1 to create figures (Text) 2 and 3



6 Select the figure (Text) 1) and select [Edit] → [Consecutive Copy] from the menu bar.

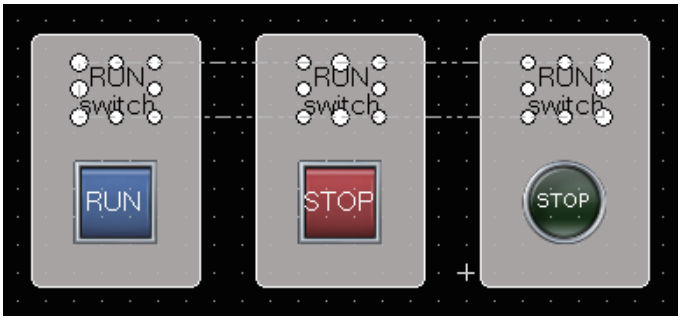


When the dialog shown left appears, set the following items.

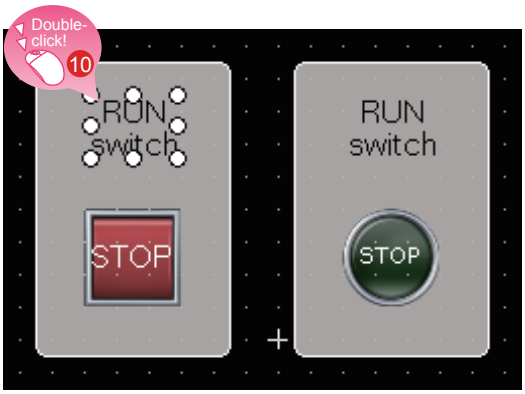
7 Total count after copy: X 3

8 Interval: X 95

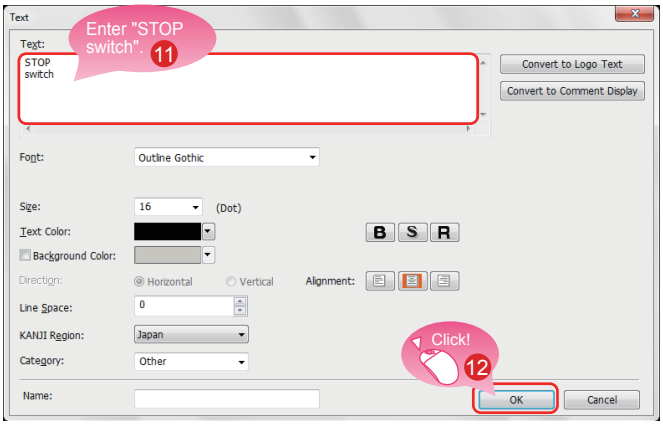
9 Click the [OK] button to consecutively copy the figure (Text).



4. Modifying the text of the copies



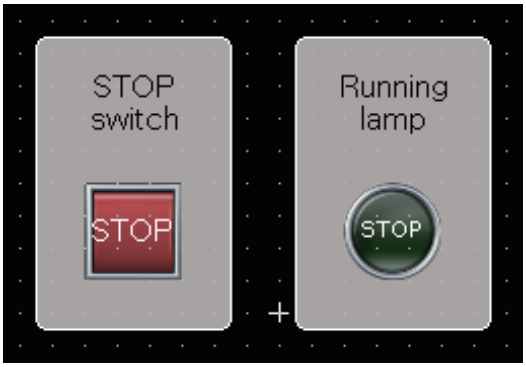
10 Double-click the copied figure (Text) 2.



When the dialog shown left appears, set the following item.

11 Text: STOP switch
(A line feed can be inserted after the text "STOP" by pressing the Enter key.)

12 Click the [OK] button.



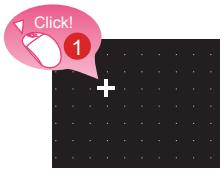
Modify the figure (Text) 3 with the same procedure.
Text: Running lamp
(A line feed can be inserted after the text "Running" by pressing the Enter key.)

Creating the figures (Text) 2 and 3 is completed.

3-3 Creating Figures (Text) 4 and 5

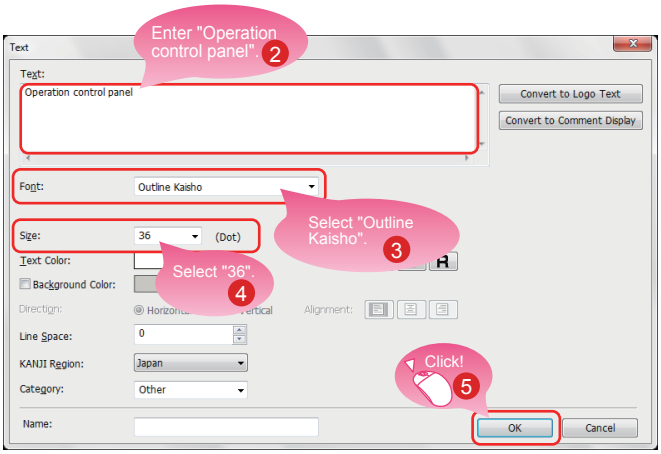
1. Placing a figure (Text) 4

Select [Figure] → [Text] from the menu bar to place a figure (Text).
You can select the figure (Text) from the toolbar as well.



1 Click the mouse on the area where the text is to be entered.

2. Setting the figure (Text) 4



When the dialog shown left appears, set the following items.

2 Text: Operation control panel

3 Font: Outline Kaisho

4 Size: 36 dots

5 Click the [OK] button.

Creating the figure (Text) 4 is completed.

3. Placing and setting a figure (Text) 5 with the same procedure

Set the following items.
Text: Data 1
Font: Outline Gothic
Size: 16 dots

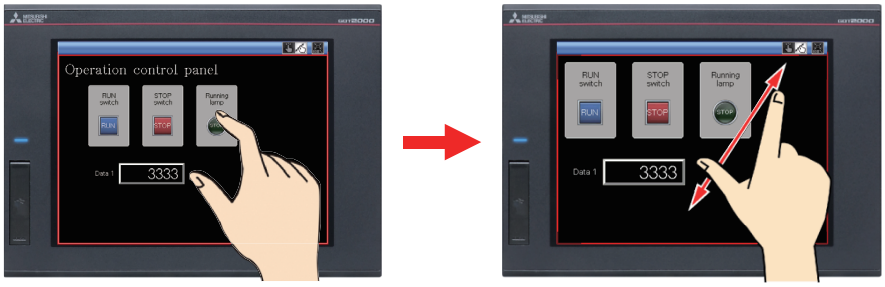
Creating the figure (Text) 5 is completed.

4-1 Setting the Screen Gesture Function

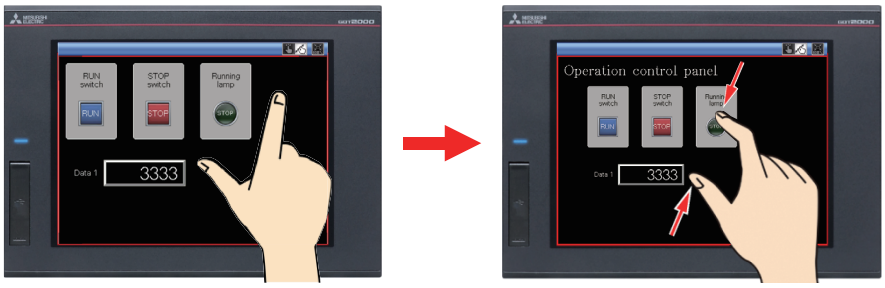
1. Screen gesture function

This function enables zooming and scrolling the monitor screen of the GOT.
The displayed contents of the objects can be scrolled or zoomed in and out touching directly the GOT screen by gestures such as pinching out and in.

(Example) Pinching out the screen to zoom in the displayed contents



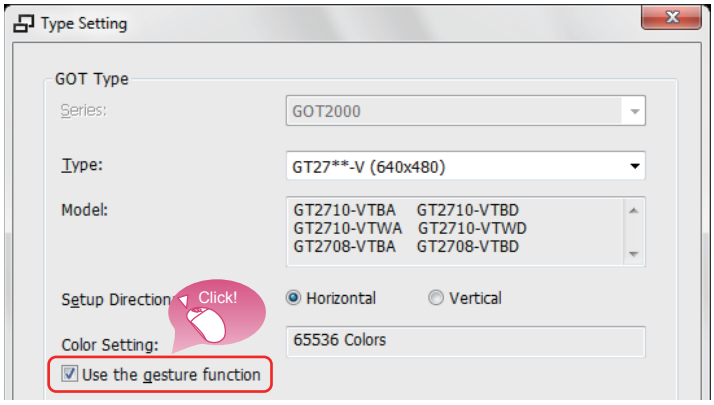
(Example) Pinching in the screen to zoom out the displayed contents



Point

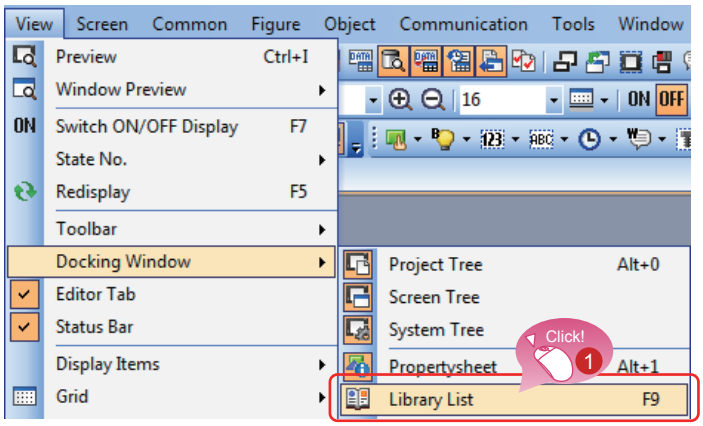
The screen gesture function is enabled by default.
If the screen gesture function is disabled, configure the setting according to the following procedure.

Select [Common] → [GOT Type Setting] from the menu bar to display the Type Setting dialog.
Select [Use the gesture function] and click the [OK] button.
The screen gesture function is enabled.

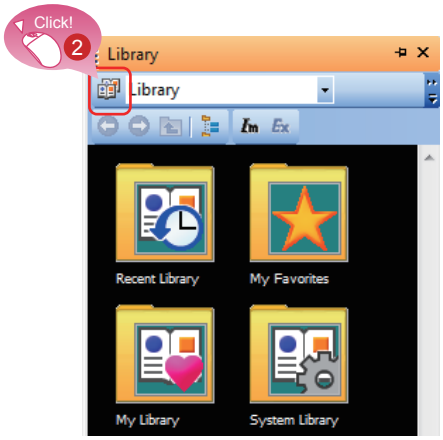


2. Creating an object for the screen gesture

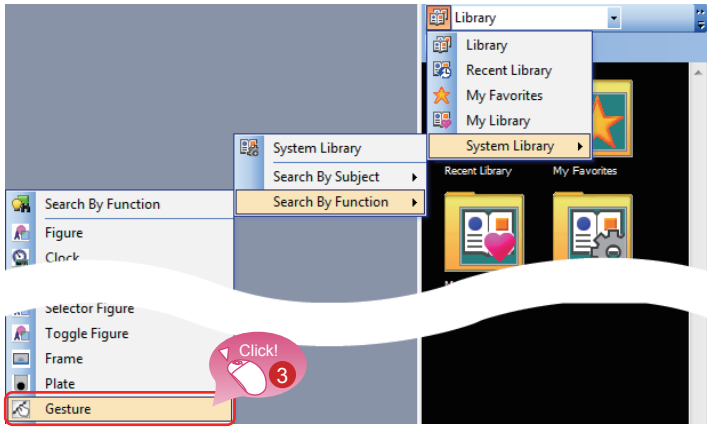
Place the switch for switching to the screen gesture mode.



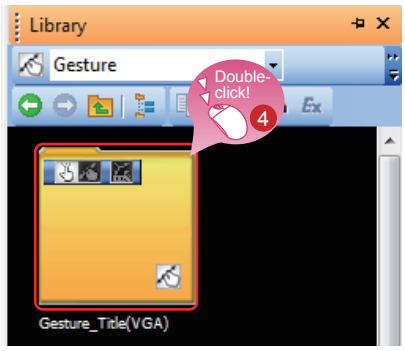
1 Select [View] → [Docking Window] → [Library List] from the menu bar.



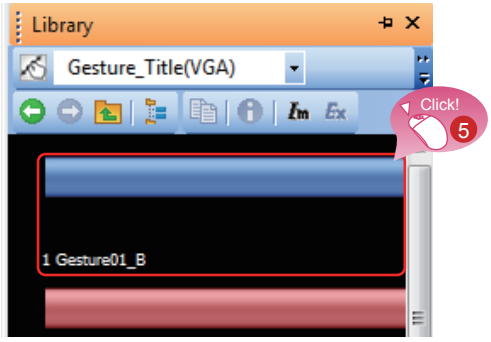
2 Click the icon on the [Library List] window.



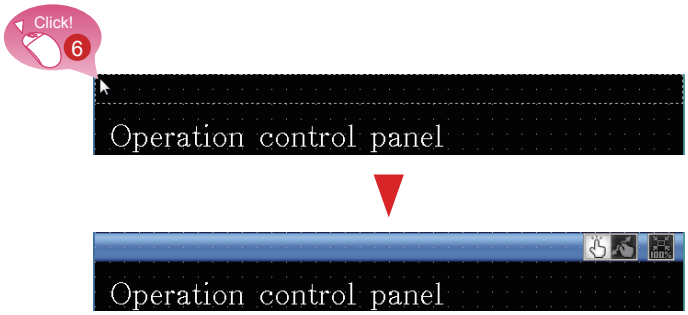
3 Select [System Library] → [Search By Function] → [Gesture] from the displayed pull-down menu.



4 Double-click [Gesture_Title(VGA)].



5 The registered styles are displayed in a list.
Click [1 Gesture01_B].



6 Move the cursor to the screen editor, and click the top left of the screen.
(The broken line that indicates the size of the object appears.)

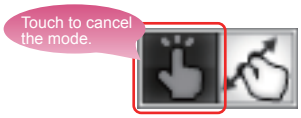
The object for the screen gesture is placed.

Point

Functions of the object for the screen gesture

- Switching to the screen gesture mode
  Touching the following icon switches to the screen gesture mode.

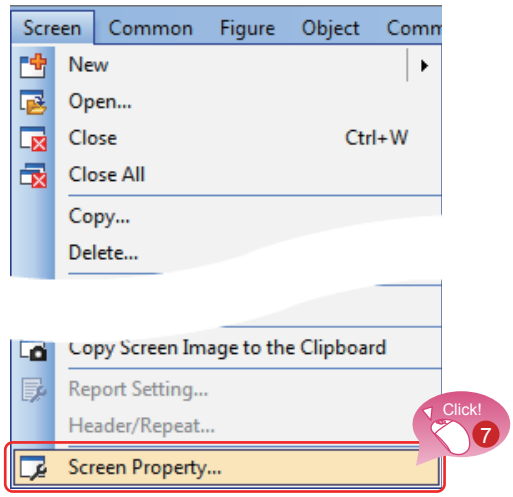
- Canceling the screen gesture mode
  Touching the following icon during the screen gesture mode cancels the screen gesture mode.



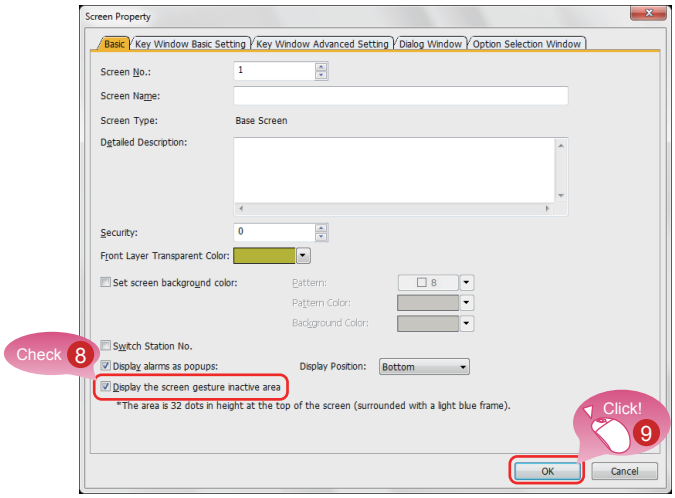
- Full scale display (100%)
  Touching the following icon resizes the screen enlarged using the gesture function to the actual size (100%).

3. Displaying the screen gesture inactive area

The screen gesture inactive area, the area for 32 dots from the top of the screen, is not the target to be zoomed in and out and scrolled during the use of the gesture function.

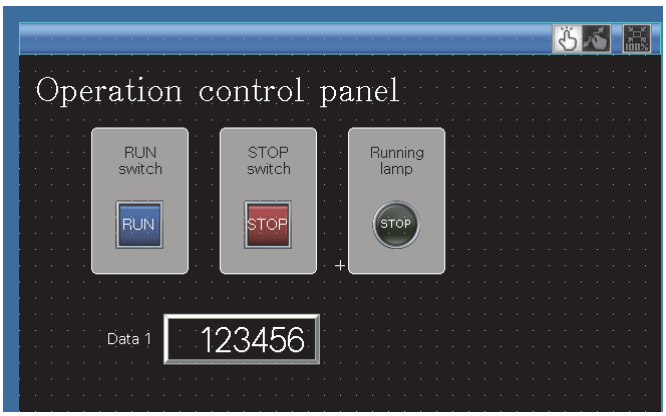


7 Select [Screen] → [Screen Property] from the menu bar.



8 Select [Display the screen gesture inactive area].

9 Click the [OK] button.



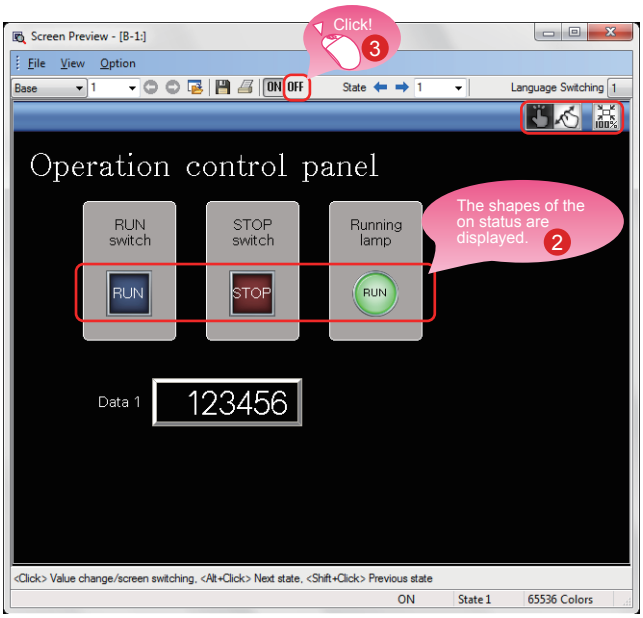
Setting the screen gesture function is completed.

5-1 Checking the Display (Screen Preview)

1. Checking the display state of on and off of the created screen and objects

Select [View] → [Preview] from the menu bar.

1 The Screen Preview window appears. Click the [ON] button.



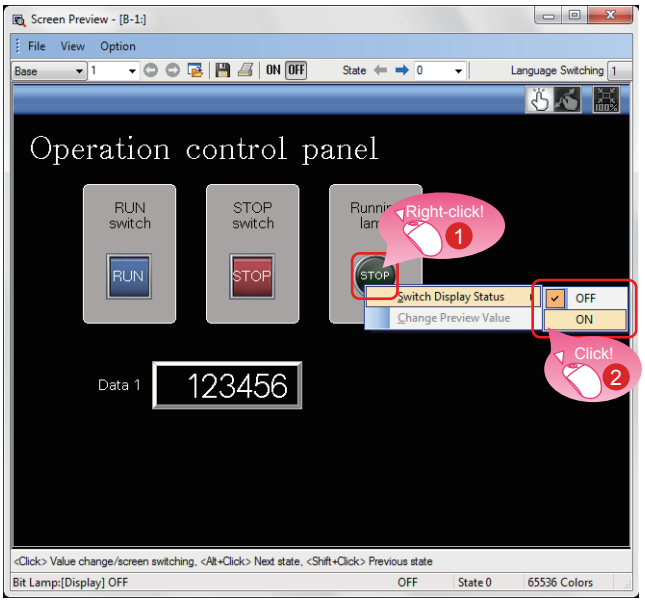
2 The shapes of the objects are switched to the shapes of the on status.

3 Clicking the [OFF] button displays the shapes of the off status.

Checking the display of lamps and switches by each object

On the Screen Preview window, the display of lamps and switches can be switched to check each display.

(1) Switching the ON/OFF status



1 Right-click an object.

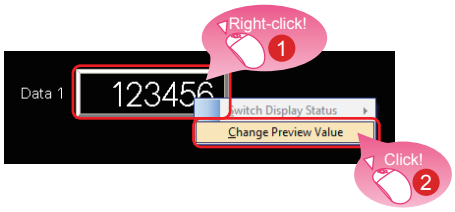
2 Select [ON] or [OFF].

Shape of on status

Shape of off status

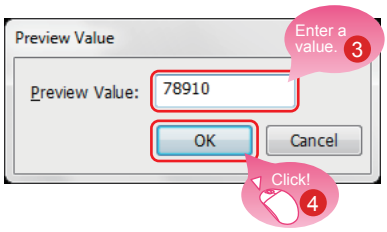
The shape of the on status or the one of the off status is displayed.

(2) Changing the preview value of a numerical display or numerical input



1 Right-click the numerical display.

2 Select [Change Preview Value].



3 Enter a value.

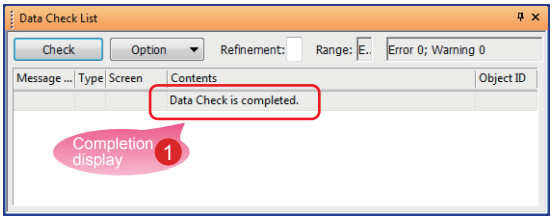
4 Click the [OK] button.

The preview value is changed.

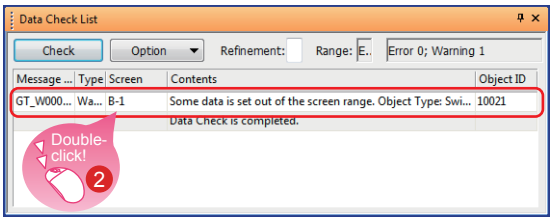
5-2 Checking Data Errors (Data Check)

1. Checking that no error exists in the project

Select [Tool] → [Data Check] → [Check] from the menu bar.



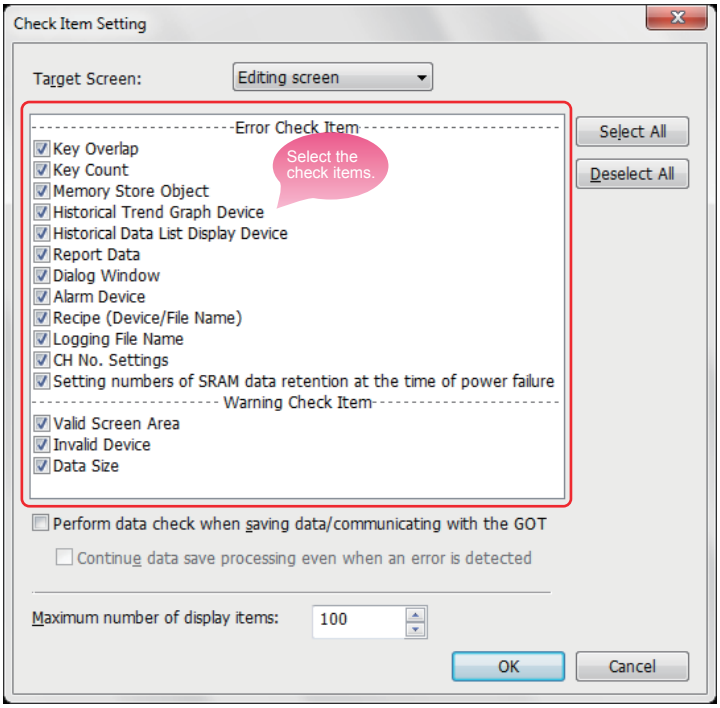
1 Check that the message [Data Check is completed.] is displayed on the Data Check widow and no error exists.



2 If any error exists, double-click the result to jump to the position which causes an error or warning.
Check the error and change the setting.

Hint

The items to be checked with the data check can be set.
Select [Tool] → [Data Check] → [Item Setting] from the menu bar.

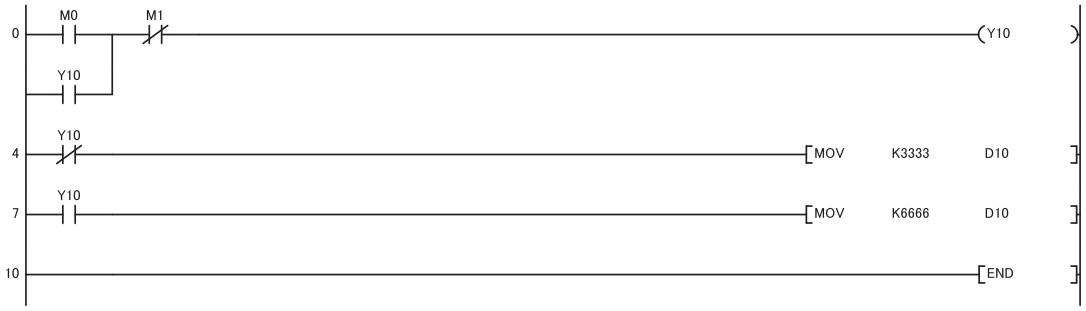


5-3 Checking Operations (Simulator)

1. Preparing a sequence program

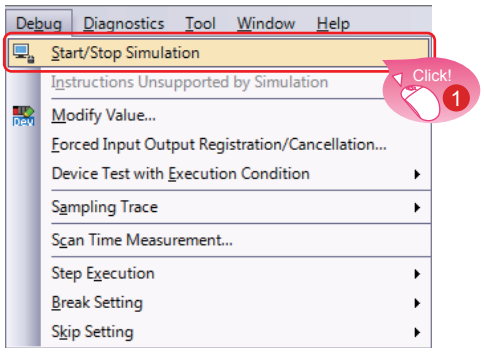
Prepare a sequence program for the simulation using simulators.
To proceed to the next step, create a sequence program using GX Works2.

<Sample program>



2. Starting the simulator for the PLC

Start GX Simulator2 from GX Works2.

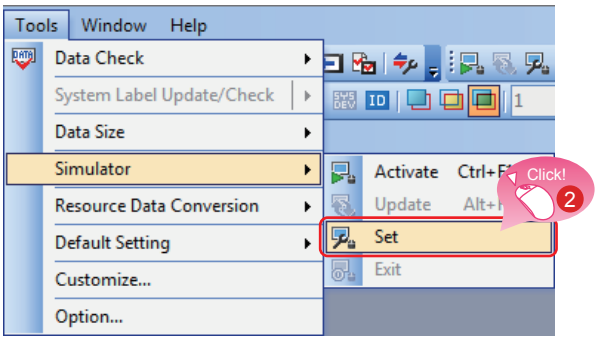


1 Select [Debug] → [Start/Stop Simulation] from the menu bar of GX Works2.

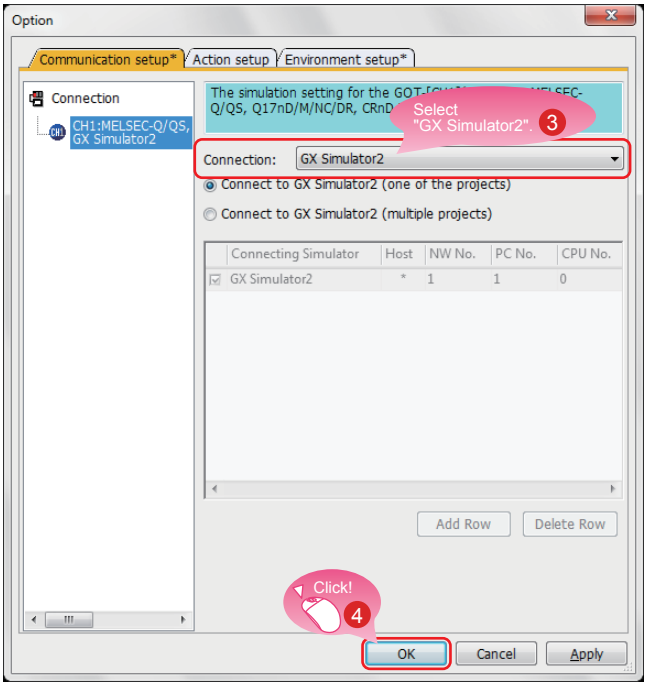
GX Simulator2 starts.

3. Starting the simulator for the GOT to check the created screen

Start GT Simulator3 from GT Designer3 (GOT2000) to check the created screen.

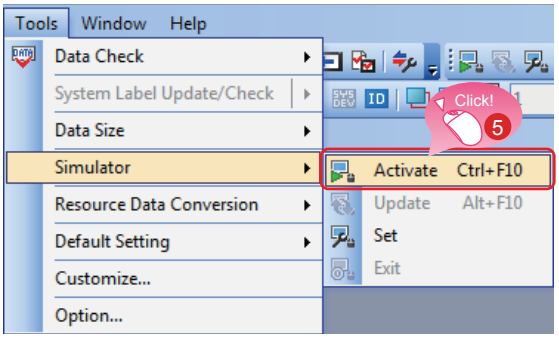


2 Select [Tools] → [Simulator] → [Set] from the menu bar of GT Designer3 (GOT2000).

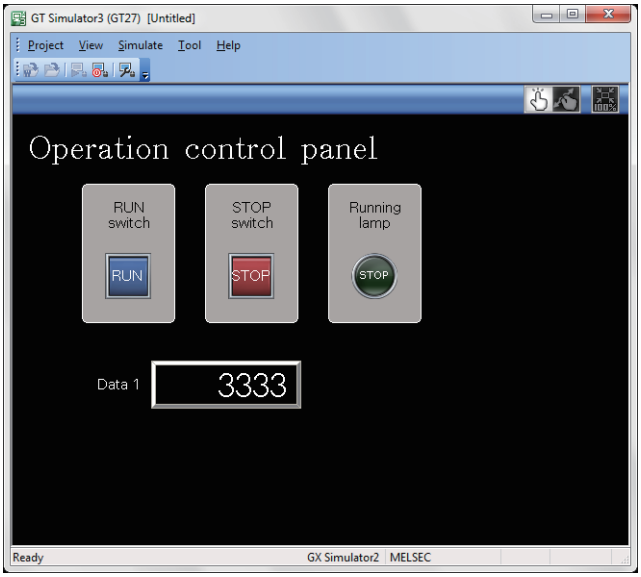


3 When the dialog shown left appears, select GX Simulator2 for Connection.

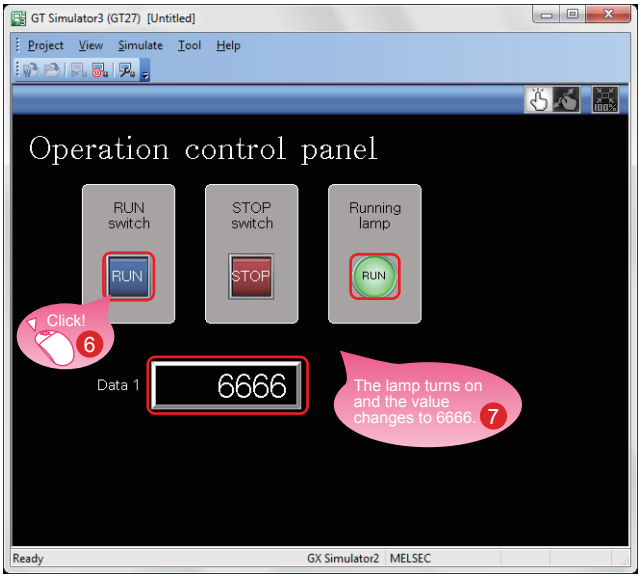
4 Click the [OK] button to complete the settings.



5 Select [Tools] → [Simulator] → [Activate] from the menu bar of GT Designer3 (GOT2000).



The simulator starts, and the created screen can be simulated.

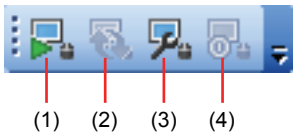


6 Click the RUN button.

7 The Running lamp turns on and the value of Data 1 changes to 6666.

Hint

The simulator can be started, updated, and exited from the toolbar of GT Designer3.

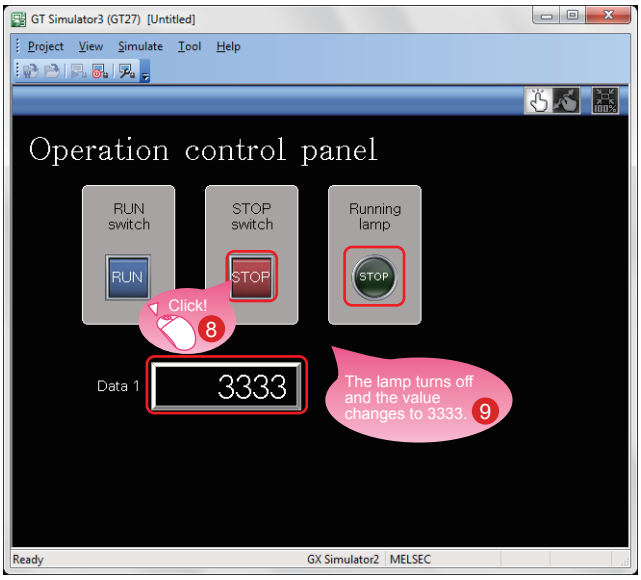


(1) [Simulator: Activate]
Activates GT Simulator3 to start the simulation.

(2) [Simulator: Update]
Updates the project in simulation with the project being edited.
The changes made by using GT Designer3 can be reflected to the project in simulation.

(3) [Simulator: Set]
Opens the setting window of the simulator.

(4) [Simulator: End]
Exits GT Simulator3.

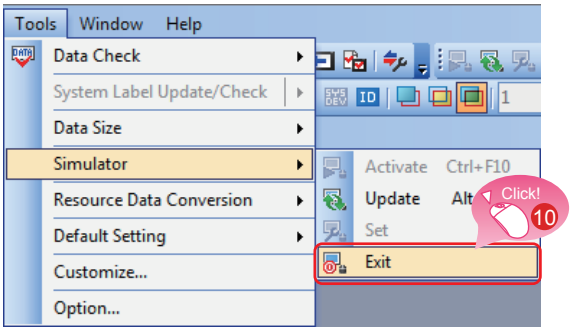


8 Click the STOP button.

9 The Running lamp turns off and the value of Data 1 changes to 3333.

4. Exiting the simulator for the GOT

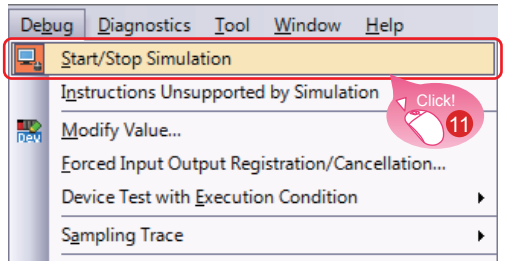
Exit GT Simulator3 after the simulation.



10 Select [Tools] → [Simulator] → [Exit] from the menu bar of GT Designer3 (GOT2000).

5. Exiting the simulator for the PLC

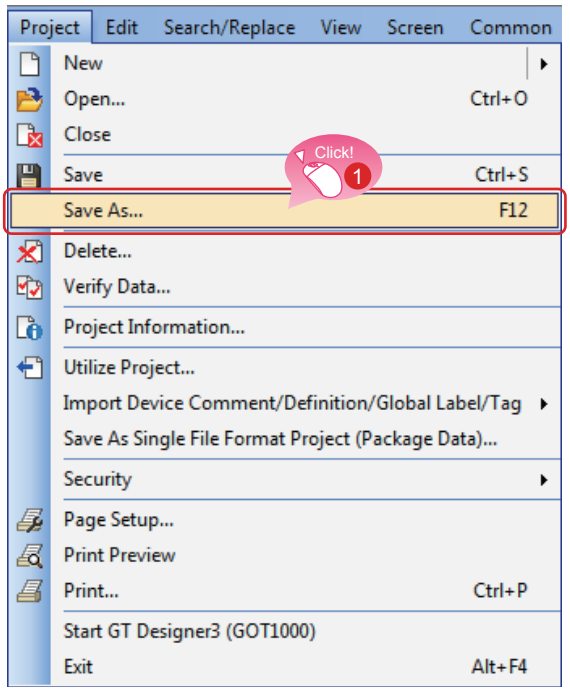
Exit GX Simulator2 of GX Works2.



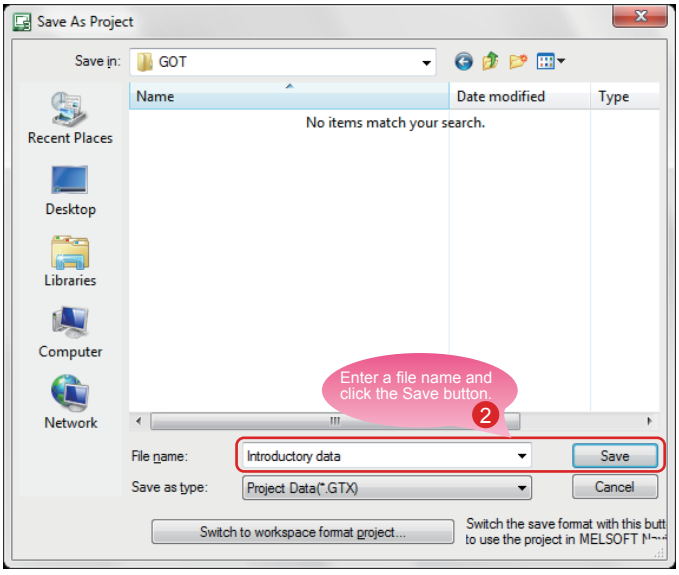
11 Select [Debug] → [Start/Stop Simulation] from the menu bar of GX Works2.

6-1 Saving the Project

1. Saving the created screen



1 Select [Project] → [Save As] from the menu bar.



2 Enter a file name and click the [Save] button to save the screen.

2. Type of files

A project can be saved in the following formats.

- Workspace format
- Single file format (*.GTX)
- Single file format (*.GTXS) with system applications

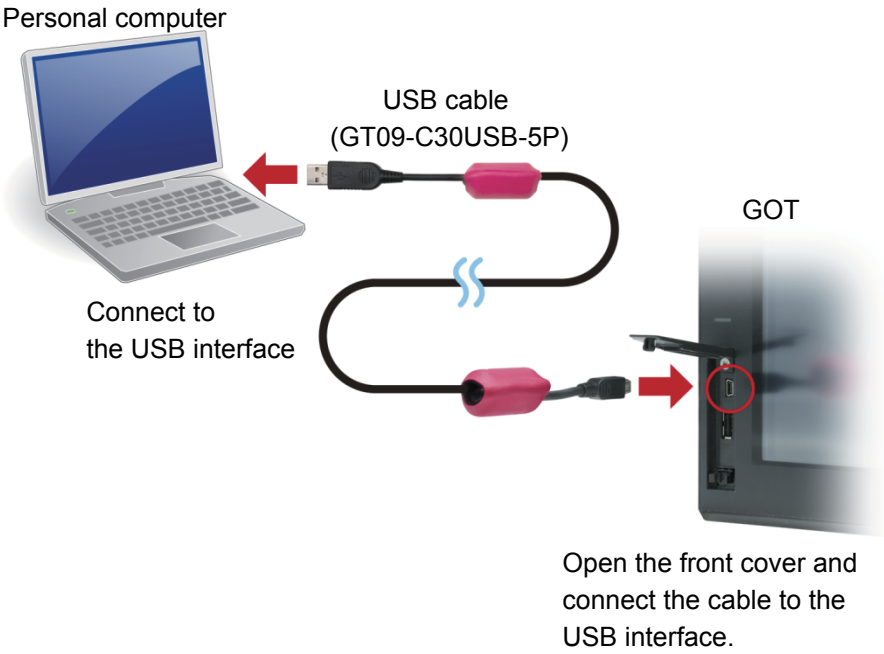
Reference

This document explains about a single file format (*.GTX) project.
For the details of each format, refer to the help or the GT Designer3 (GOT2000) Screen Design Manual.

1-1 Transferring the Project Data

1. Connecting the personal computer to the GOT

Use a USB cable to connect the personal computer to the GOT.

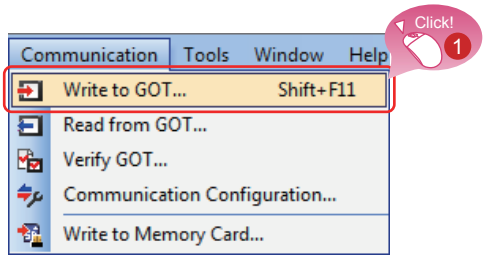


* For the USB communication with the GOT, install a USB driver.
The USB driver is installed to the personal computer at the first connection.
Data can also be transferred using an SD card or connection methods other than the USB cable.

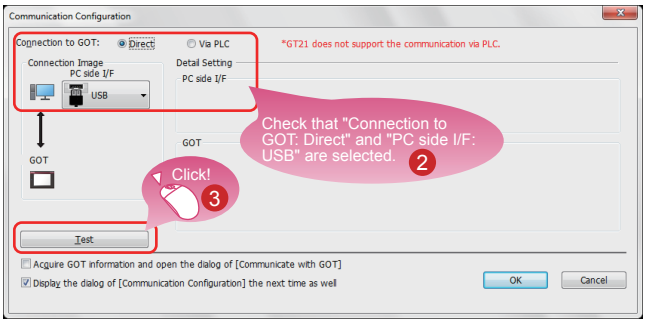
Reference For how to transfer data using an SD card or connection methods other than the USB cable, refer to the help or the GT Designer3 (GOT2000) Screen Design Manual.

2. Communication setting

Configure the communication setting of the personal computer and the GOT.
Power on the GOT before the configuration.



1 Select [Communication] → [Write to GOT] from the menu bar.

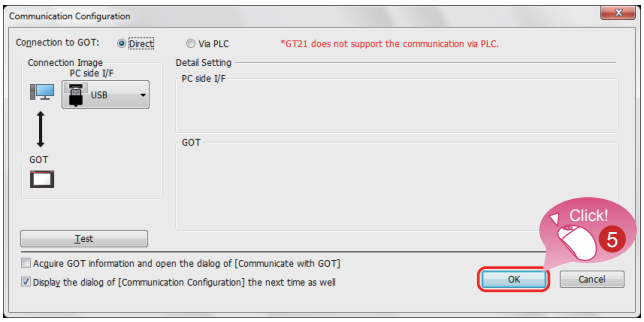


2 Check that the following settings are configured.
Connection to GOT: Direct
PC side I/F: USB

Perform the communication test to check the communication.

3 Click the [Test] button.

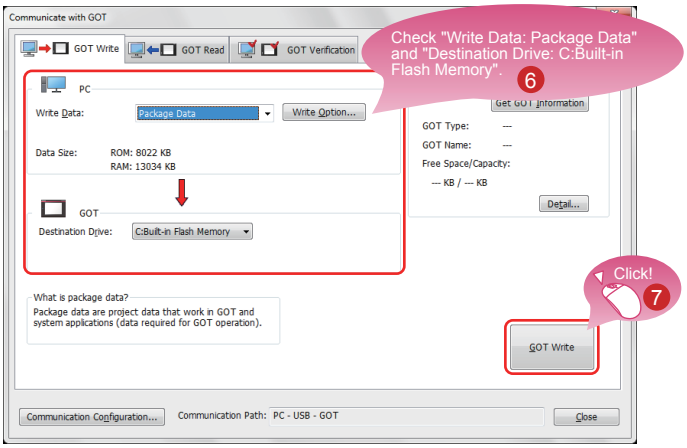
4 When the message [Successfully connected.] appears, click the [OK] button.



5 Click the [OK] button.

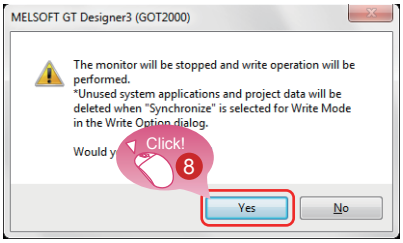
3. Transferring the project data

Transfer the project data from the personal computer to the GOT.



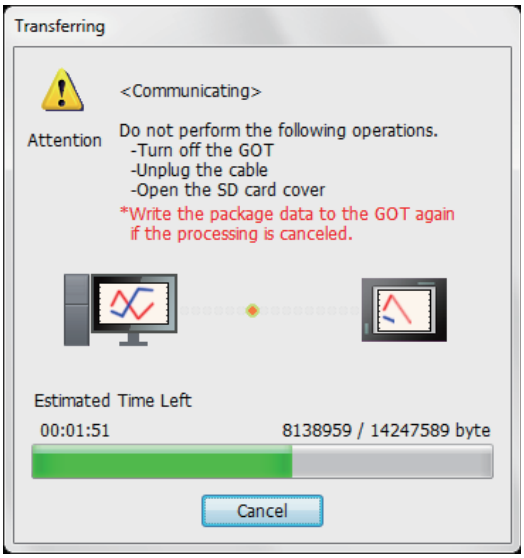
6 Check that the following settings are configured.
Write Data: Package Data
Destination Drive: C:Built-in Flash Memory

7 Click the [GOT Write] button.



The dialog for confirming writing to the GOT appears.

8 Click the [Yes] button to start writing.



The dialog shown left is displayed while the data is written.
Do not perform the following operations.

- Turning off the GOT
- Unplugging the cable
- Opening the SD card cover

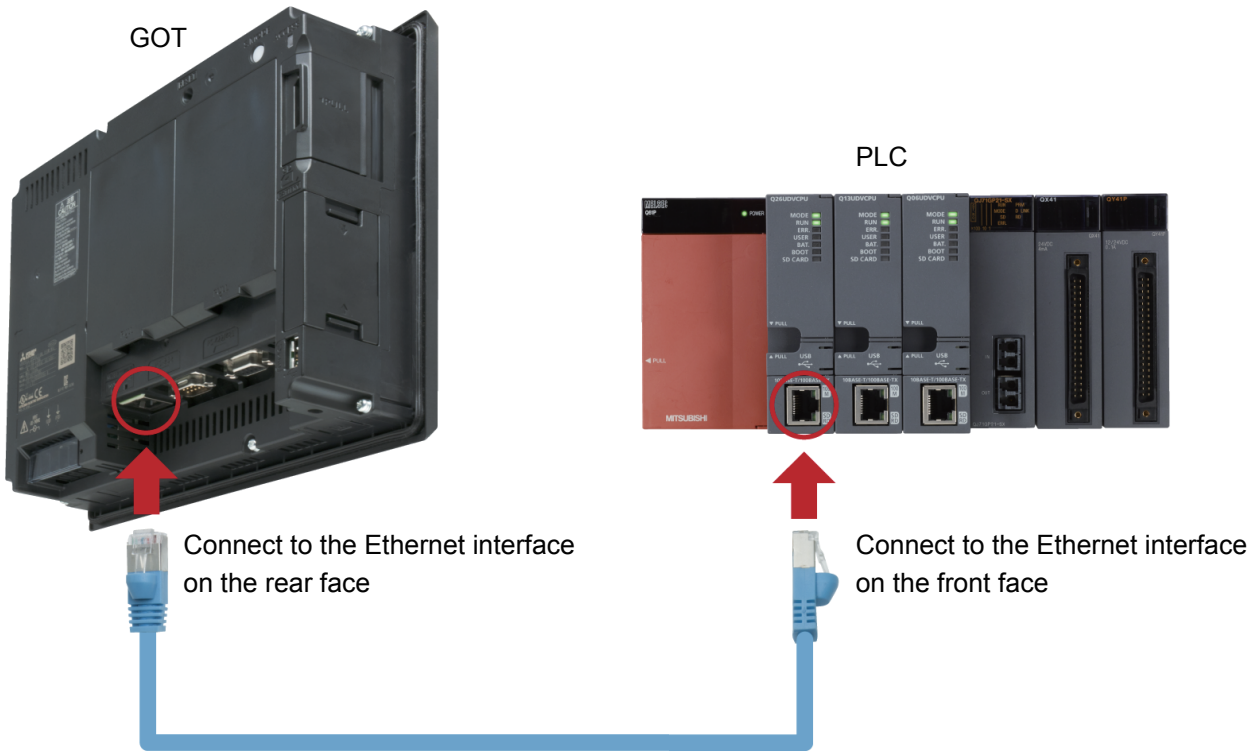
9 When writing to the GOT is completed, the dialog shown left appears. Click the [OK] button.

2-1 Connecting the GOT and the PLC

1. Connecting the GOT and the PLC

Connect the GOT and the PLC.
Before connecting the GOT and the PLC, check that the GOT and the PLC are powered off.

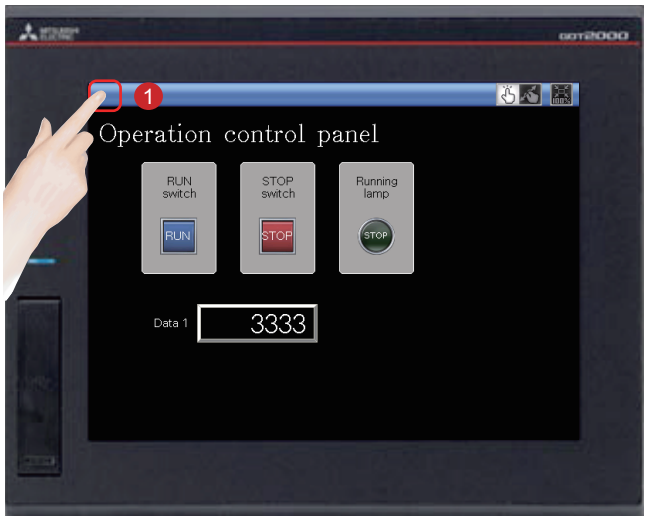
After that, connect the GOT and the PLC using an Ethernet cable, and power on the GOT and the PLC.



The language selection screen appears. Select [English].

2. Checking the connection status

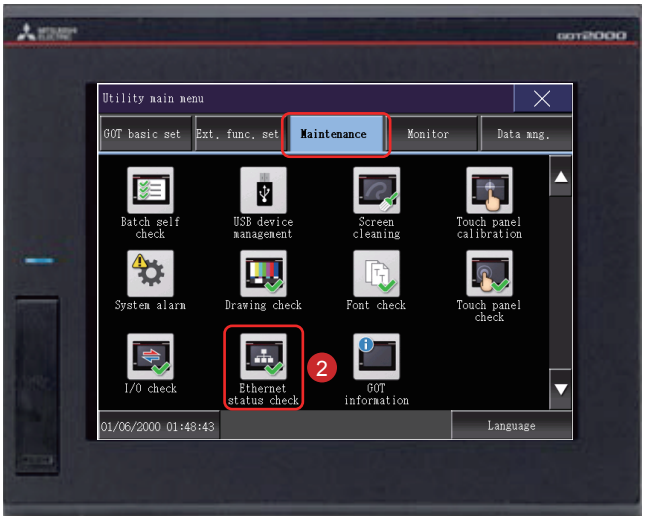
Perform the Ethernet status check of the GOT to check that the GOT can communicate with the PLC.
The Ethernet status check function checks the connection status between the GOT and a device on the Ethernet network by sending a ping request.
Before performing the Ethernet status check, check that the GOT and the PLC are powered on.



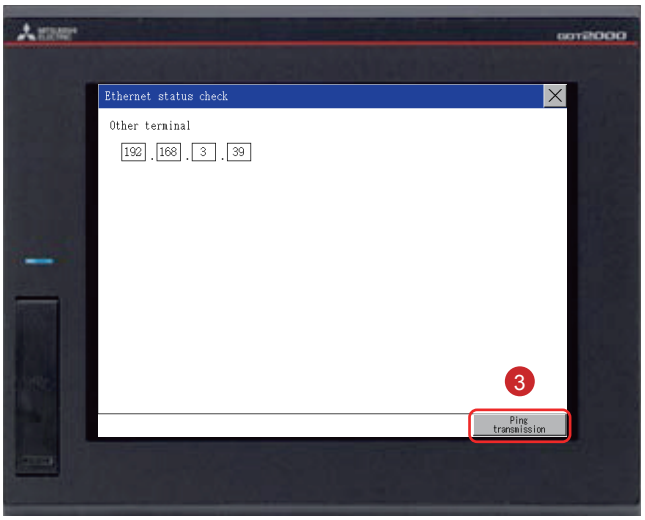
1 Touch the utility call key on the GOT to display the utility main menu.

The utility call key is set to the top left corner of the GOT screen (press the key for 2 seconds). The settings can be changed with GT Designer3.

The utility main menu is displayed.

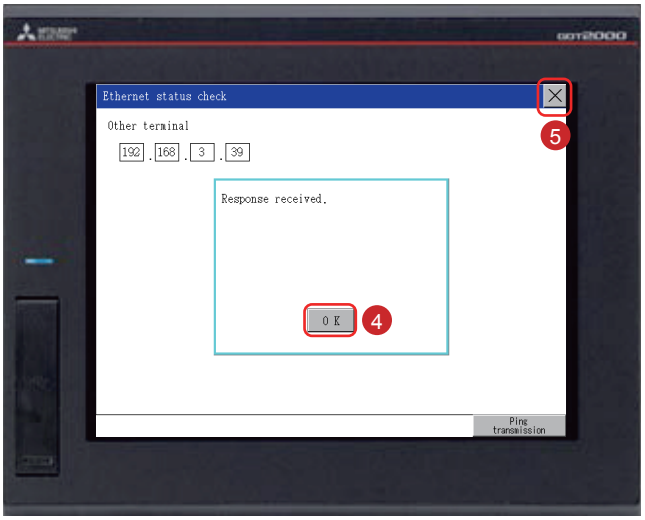


2 Touch [Maintenance] → [Ethernet status check] on the utility main menu.



3 Set the IP address of the target controller and touch the [Ping transmission] button.

In this document, the IP address of the target controller is 192.168.3.39 (default).
The IP address of the target controller can be checked and changed in [Ethernet Setting] by selecting [Common] → [Controller Setting] from the menu bar of GT Designer3.



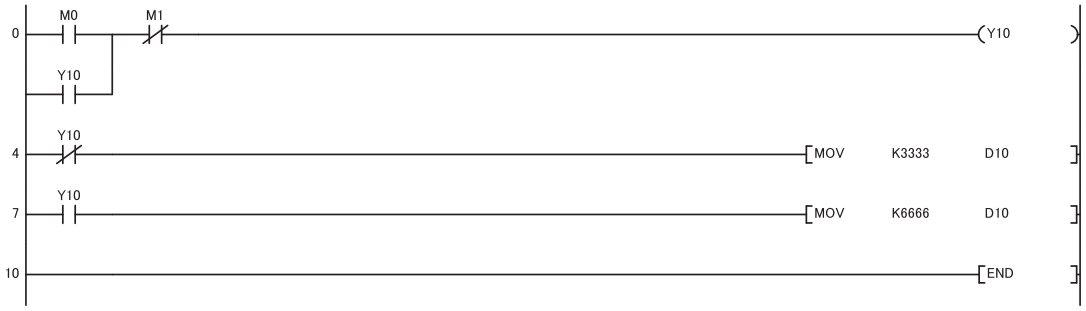
When no communication error exists, the message [Response received.] appears.

4 Touch the [OK] button.

5 Touch the [×] button to display the created screen.

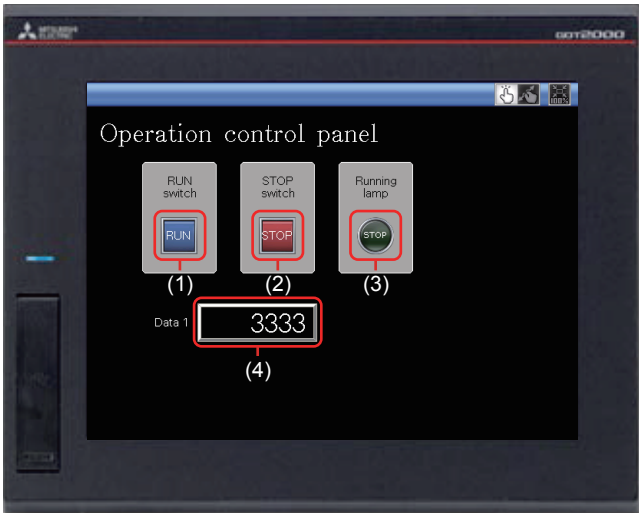
3. Writing the sequence program to the PLC

Write the sequence program , which was created for simulation, from GX Works2 to the PLC.



1-1 Checking the ON/OFF action of switches

Touch each switch to check the switch action.



Display the created screen.
The following shows the action set for each object.

(1) RUN switch

Touching this switch starts operation (M0 is turned on).

(2) STOP switch

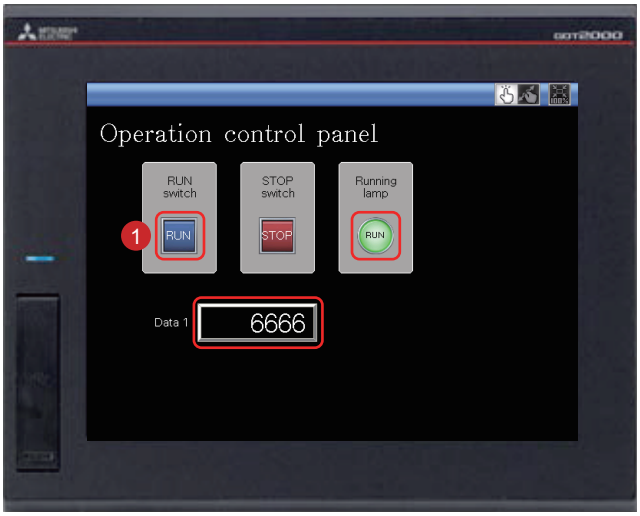
Touching this switch stops operation (M1 is turned on).

(3) Running lamp

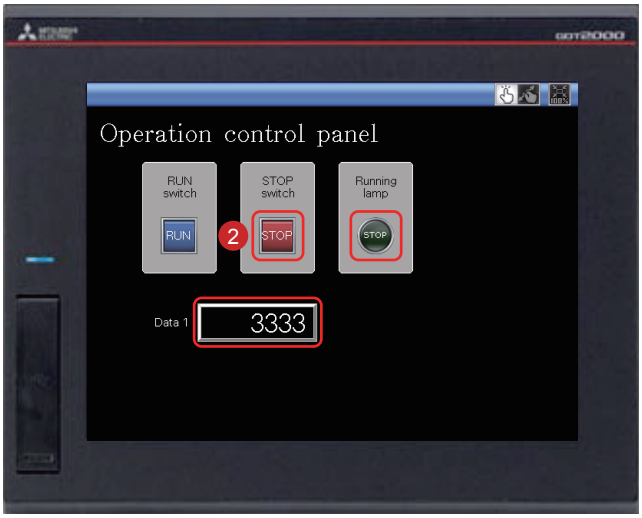
RUN: The lamp turns on with the text "RUN". (While M0 is on, Y10 is on.)
(Y10 turns on by the sequence program.)
STOP: The lamp turns off with the text "STOP". (While M1 is on, Y10 is off.)
(Y10 turns off by the sequence program.)

(4) Data 1 (Numerical display)

RUN: The numerical value 6666 is shown. (While M0 is on.)
(The value 6666 is stored in D10 by the sequence program.)
STOP: The numerical value 3333 is shown. (While M1 is on.)
(The value 3333 is stored in D10 by the sequence program.)



1 Touching the RUN switch turns on the Running lamp and displays 6666 in Data 1.



2 Touching the STOP switch turns off the Running lamp and displays 3333 in Data 1.

2-1 Using the Screen Gesture Function

The monitor screen can be zoomed in and out by using the screen gesture function.

1 Touch the switch for switching the screen gesture mode.

2 A red line indicating the area that can be zoomed in and out appears.

3 The screen can be zoomed in and out by pinching out and in this area.

4 To cancel the screen gesture mode, touch the switch for switching the screen gesture mode. The screen gesture mode is canceled and the screen display remains enlarged.

5 To change the display to the full scale, touch the full scale display (100%) switch.
When the screen display is changed to the full scale during the screen gesture mode, the screen gesture mode is canceled and the screen is displayed in the full scale.

1 UTILIZE DATA FUNCTION

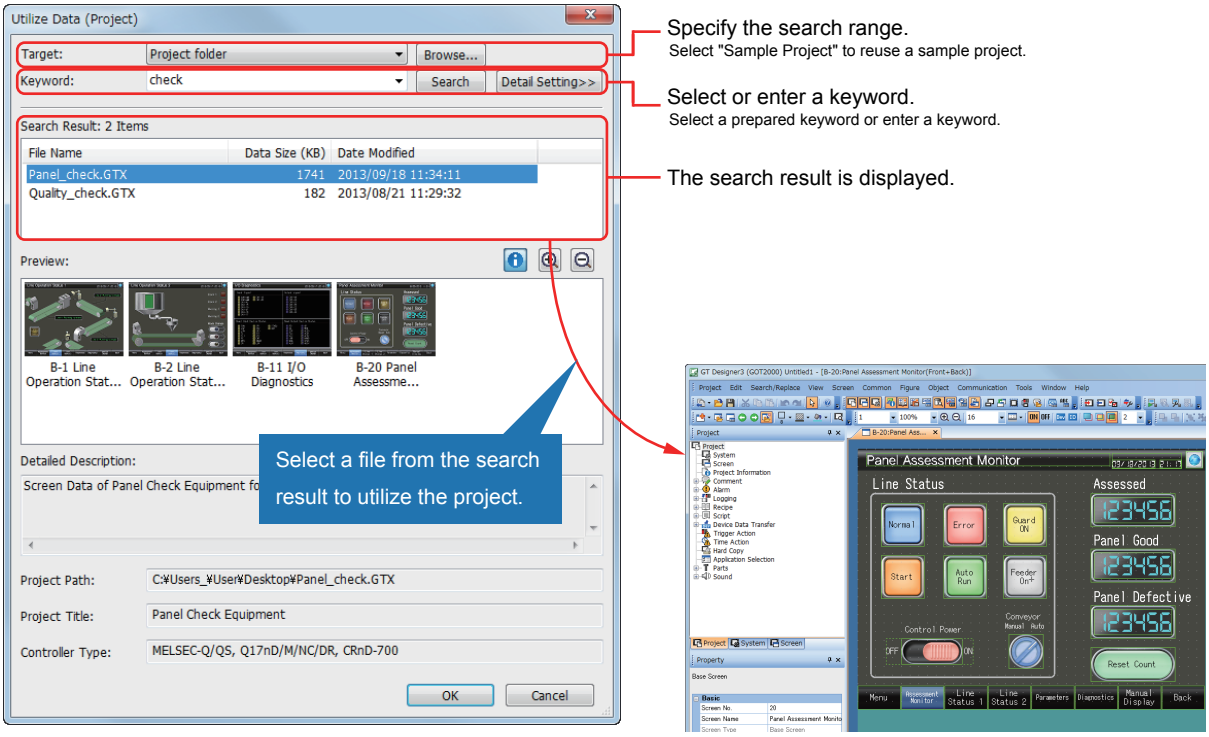
Reuse existing screens to increase efficiency!

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. Various screen assets can be effectively utilized.

1. Reusing previous projects

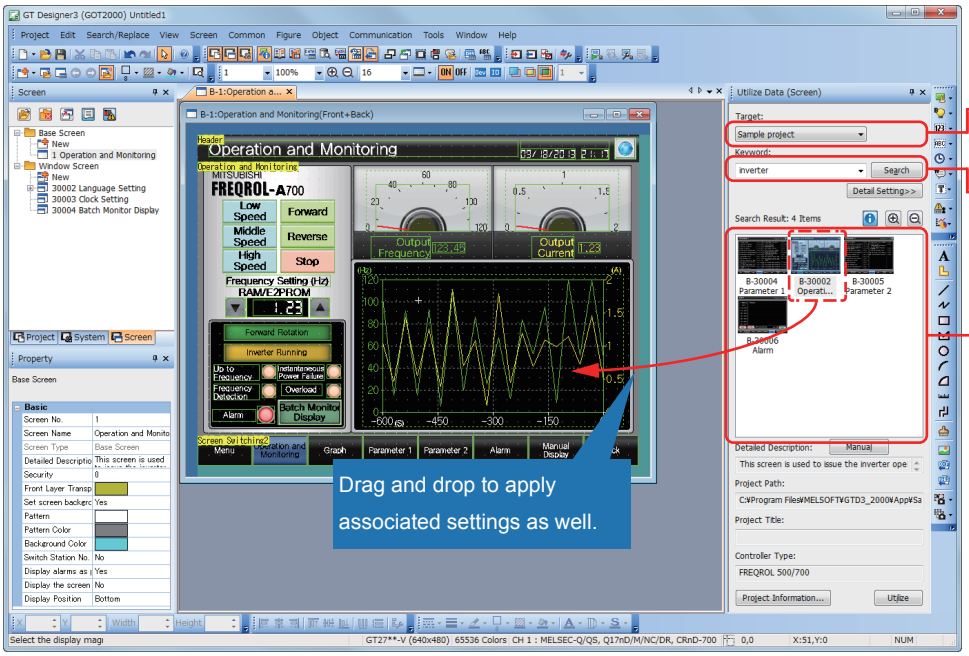
When creating a new project, search through the existing projects to find any existing projects that may be reused.
Keyword search helps narrow down the search.

Select [Project] → [New] → [Utilize Data] from the menu bar.

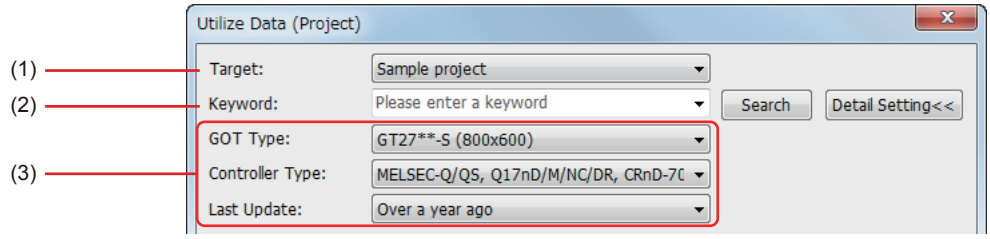


2. Reusing previous screens

Reuse individual screens from past or sample projects.
The settings, such as comments and logging settings, are also applied and reused.
Select [Screen] → [New] → [Utilize Data] from the menu bar.



3. Searching for utilizable projects



(1) Search target
The search range can be specified.
- Sample project
- Recently edited project
- Project folder (Search folders up to three levels below)

(2) Search keywords
Select a prepared keyword or enter a keyword to search for a project.
To utilize a project, search for the project by specifying a file name or project information (project title, detail 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.
To utilize a screen, search for the screen by specifying a file name, screen title, screen detail information, object name, shape name, or template name.

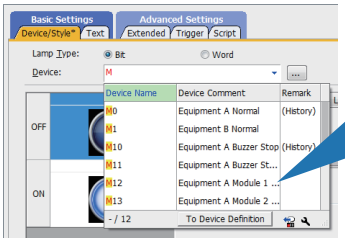
(3) Refined search
Refine the search by the GOT type, controller type, and last update to quickly find the data you want to utilize.

2 INPUT ASSIST FUNCTION

Quick and easy device settings!

When the device settings are configured, the list of utilizable data is displayed from the preset devices, device comments, and device definitions.

1. Displaying utilizable data from preset devices



1) Enter a device name.

2) Devices corresponding to the entered device name are displayed from the device preset in the project or from the history of recently set devices.

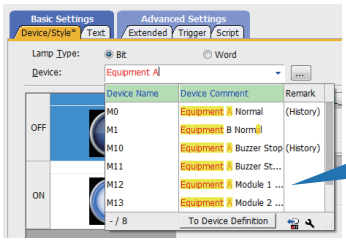
3) Select and set a device.

The list of utilizable devices is displayed when a device name is entered in the device setting dialog.
The device comments and device definitions are also displayed so that this information can be referred to when setting a device.

2. Displaying utilizable data from device comments and device definitions

The list of utilizable data is displayed when a keyword is entered in the device setting dialog.
A device can be searched for and set from the device comments and device definitions.

(1) Device comment



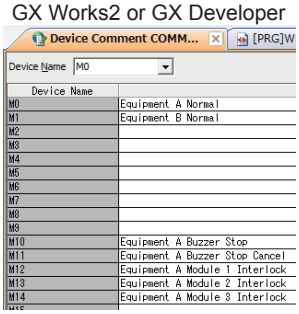
1) Import comment files.

2) Enter a keyword.

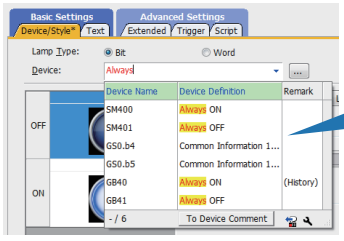
3) Devices corresponding to the entered keyword are displayed from the device comments set with GX Works2.

4) Select and set a device.

Device comments set with GX Works2 or GX Developer



(2) Device definition

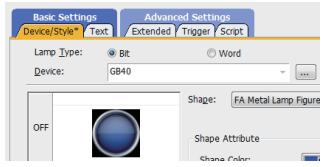


1) Enter a keyword.

2) Devices corresponding to the entered keyword are displayed from the GOT internal device function names or the device definitions about special devices of connected devices (servos, PLCs, etc.)

3) Select "GB40 Always ON".

4) Setting the device is completed.



Hint

- Search target
  "Device Name and Comment/Definition", "Device Name", and "Comment/Definition" can be selected.
- Input keywords
  You can search with multiple keywords by specifying keywords with one-byte spaces between the keywords.
  A connected channel can be specified with "@n" (n = 1 to 4). (For Ch2 M0: @2 M0)

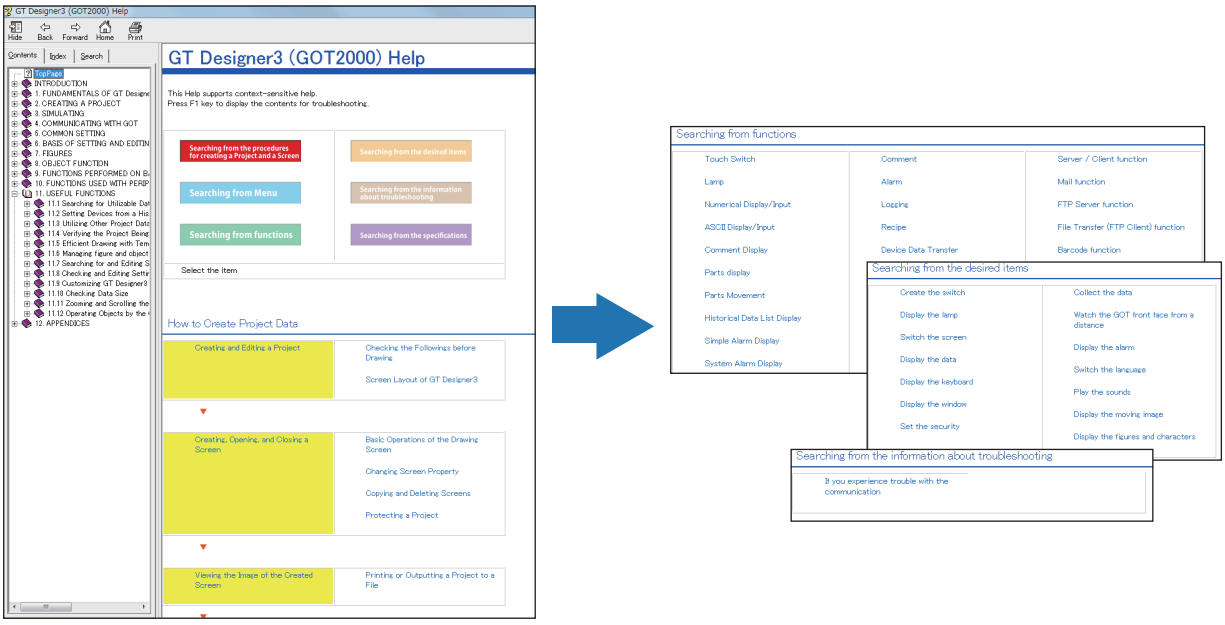
3 HELP

Information right at your fingertips!

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

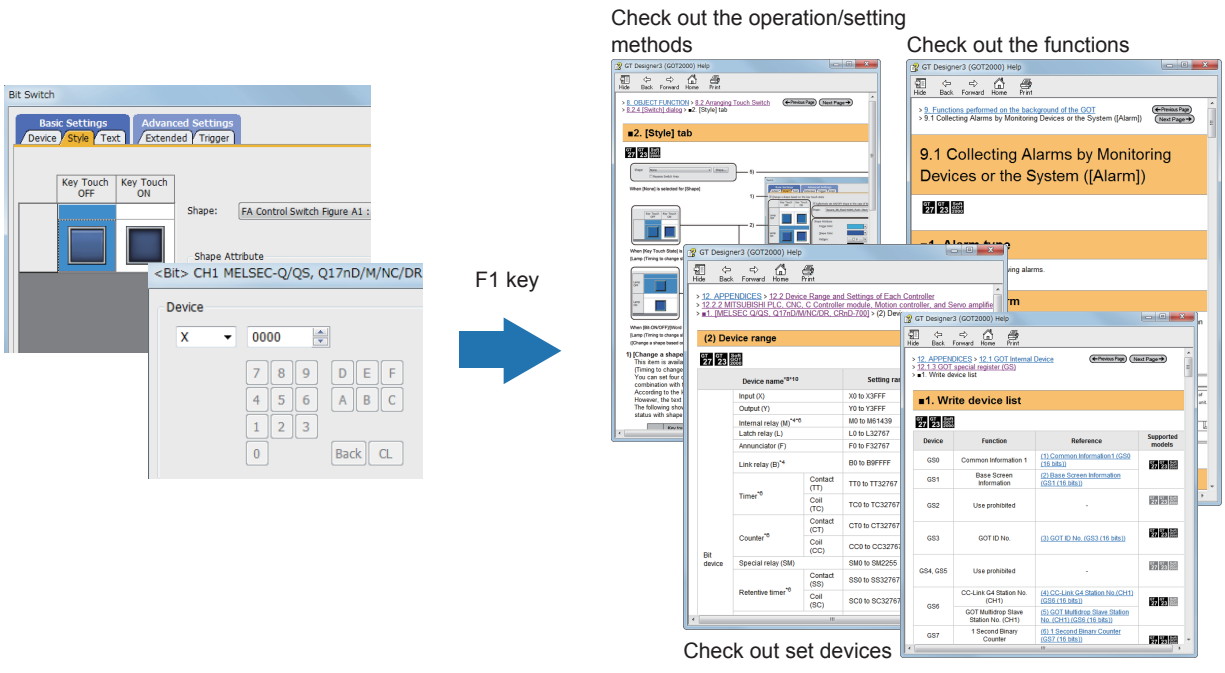
1. Various searching methods to match your situation (GOT2000 only)

You can search for information with the function name, specifications, or with phrases on information you need or are having trouble with.
Select [Help] → [GT Designer3 Help] from the menu bar.



2. Quickly confirm with F1 key

Press the F1 key to quickly jump to the help page for the dialog being edited and check the setting method.



FUNCTION UPDATE

1.SCREEN DESIGN SOFTWARE UPDATE

New functions and improvements are regularly added to the screen design software.
You can use GOT2000 more conveniently by updating your screen design software to the latest version.

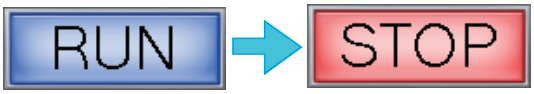
For the update to the latest version, please consult your local Mitsubishi Electric sales office.

The GOT has various functions useful on sites.
This section introduces some of the functions.

Lamp, switch

Lamp display

Changes the color of a lamp.



Bit switch

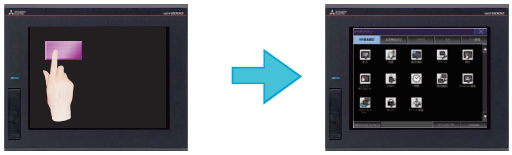
Touch the switch to turn on or off a bit device.

Word switch

Touch the switch to change the value of a word device.

Special function switch

Touch the switch to switch the screen to the utility screen or other screens.



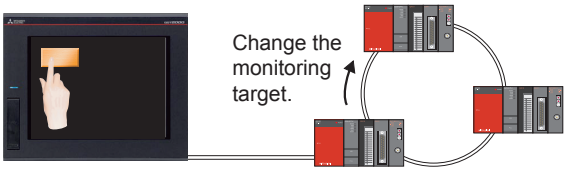
Go to screen switch

Touch the switch to switch the base and window screens.

Base screen 1 Base screen 2

Change station No. switch

Touch the switch to switch the station number of the controller to be monitored.



Key code switch

This switch can be used as a key for entering numerical values or text.

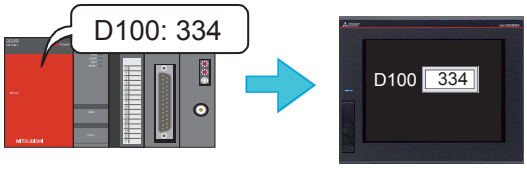
Key window display switch

Displays a specified key window at a specified position, or displays a cursor on a specified object.

Numerical and text display

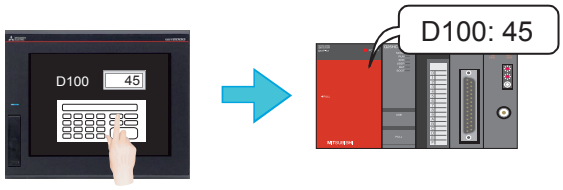
Numerical display

A device value is displayed with a numerical value.



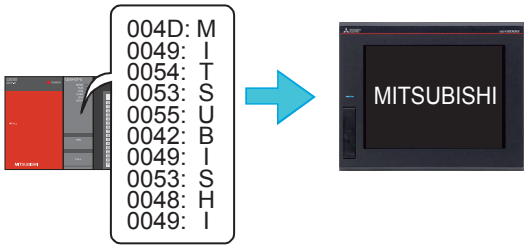
Numerical input

Values are written into devices.



Text display

A device value is displayed with a character.

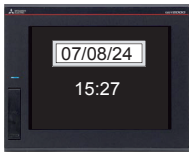


Text input

Character codes are entered to a device.

Clock display

The date and time are displayed.



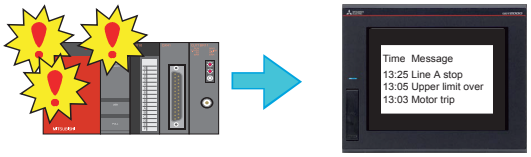
Comment display

A comment is displayed.

Alarm

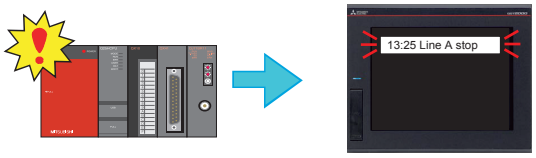
Alarm display

Displays GOT errors, communication errors, the message created by users as history when an alarm occurs.
Alarms are displayed hierarchically.



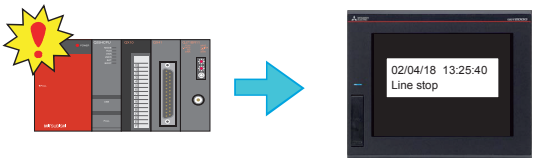
Alarm popup display

Displays GOT errors, communication errors, messages created by users with pop-up windows when an alarm occurs.



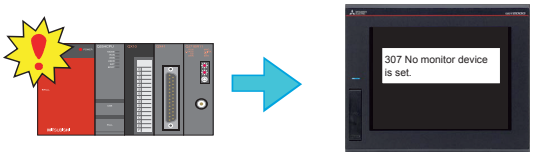
Simple alarm display

Displays a message created by users when an alarm occurs.



System alarm display

Displays GOT errors and communication errors when an alarm occurs.



Parts

Parts display

Displays registered parts.

Parts movement

Displays movements of parts.

Graph, meter

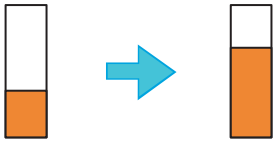
* These are just some examples. Other functions are also provided.

Panel meter display

A device value is displayed with a meter.

Level display

A device value is displayed with the percentage of total.



Statistics graph display

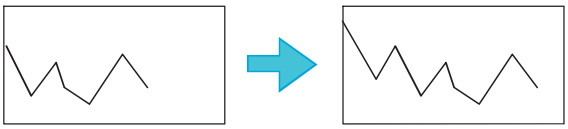
Multiple device values are displayed in a graph with the percentages of total.

Pie graph

Bar graph

Historical trend graph display

Data including past and present data collected using the logging function is displayed with a trend graph.



Slider

Slider

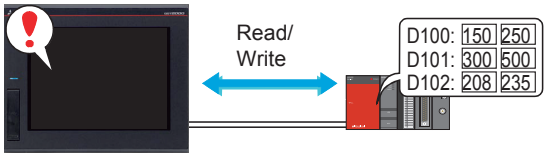
Use the slider to set continuous values to the device within any setting range.
The value of the destination where you stop the knob is input to the device.

Changing the set output with the slider

Recipe

Recipe function

The status of devices is monitored, and the device values are read or written when conditions are satisfied.
Multiple values can be set for one device.
Device values can be read and written using the utility.

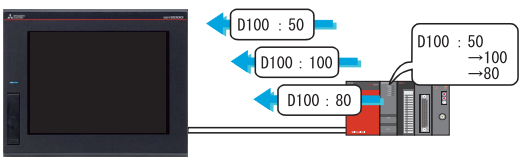


Condition → Operation

* These are just some examples. Other functions are also provided.

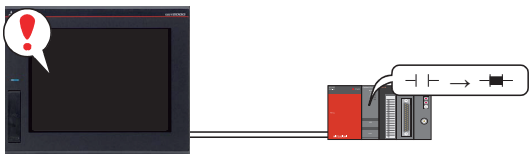
Logging function

Device values are collected and stored.



Time action function

Devices can be written on a specified date and time.



External I/O

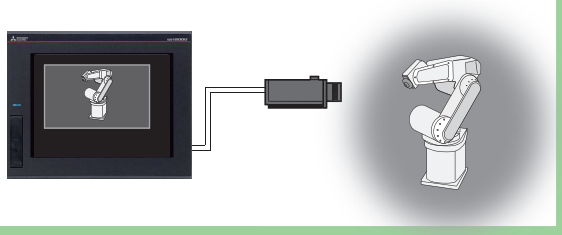
* These are just some examples. Other functions are also provided.

Report

Collects data such as production management and production status and prints the collected data.

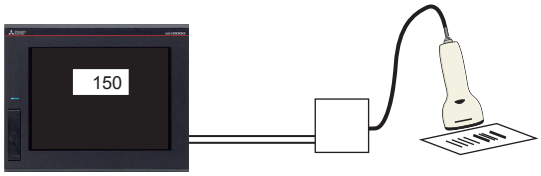
Video display

Displays video images.



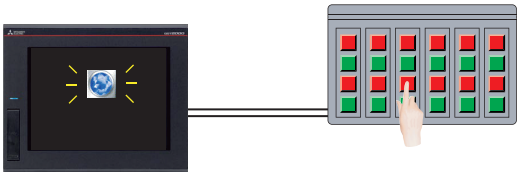
Barcode

Data read with the barcode reader is written to devices.



Operation panel

Devices are written by operating the operation panel.

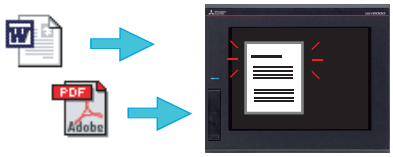


Others

* These are just some examples. Other functions are also provided.

Document display

Document data can be displayed on the GOT.



Language switching

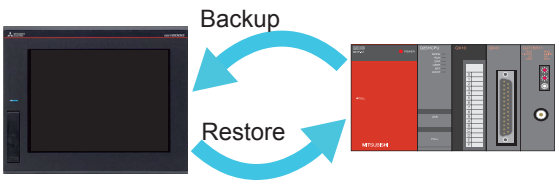
Multiple languages can be switched to display an appropriate one.

Device monitor

Monitors the status of the PLC devices.

Backup/Restore

The settings of the controller can be backed up or restored from the GOT.



GOT2000 series catalogs

Catalog name	Catalog number
Mitsubishi Graphic Operation Terminal GOT2000 Series	L(NA)08270ENG
Mitsubishi Graphic Operation Terminal Screen Design Software MELSOFT GT Works3	L(NA)08170ENG

GOT2000 series relevant manuals

Manual name	Included/Sold separately	Manual number
GOT2000 Series User's Manual (Hardware)	Stored in DVD-ROM	SH-081194ENG
GOT2000 Series User's Manual (Utility)	Stored in DVD-ROM	SH-081195ENG
GOT2000 Series User's Manual (Monitor)	Stored in DVD-ROM	SH-081196ENG
GOT2000 Series Connection Manual (Mitsubishi Products) For GT Works3 Version1	Stored in DVD-ROM	SH-081197ENG
GT Designer3 (GOT2000) Screen Design Manual	Stored in DVD-ROM	SH-081220ENG

* The manuals (PDF data) described above can be installed with the screen design software.

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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.

Mitsubishi Graphic Operation Terminal GOT2000 Series Quick Start Guide

Country/Region	Sales office	Tel/Fax
USA	MITSUBISHI ELECTRIC AUTOMATION, INC. 500 Corporate Woods Parkway, Vernon Hills, IL 60061, U.S.A.	Tel: +1-847-478-2100 Fax: +1-847-478-2253
Brazil	MITSUBISHI ELECTRIC DO BRASIL COMÉRCIO E SERVIÇOS LTDA. Rua Jussara, 1750- Bloco B Anexo, Jardim Santa Cecilia, CEP 06465-070, Barueri - SP, Brasil	Tel: +55-11-4689-3000 Fax: +55-11-4689-3016
Mexico	MITSUBISHI ELECTRIC AUTOMATION, INC. Mexico Branch Mariano Escobedo #69, Col.Zona Industrial, Tlalnepantla Edo, C.P.54030, Mexico	Tel: +52-55-3067-7500 Fax: —
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
UK	MITSUBISHI ELECTRIC EUROPE B.V. UK Branch Travellers Lane, Hatfield, Hertfordshire, AL10 8XB, U.K.	Tel: +44-1707-28-8780 Fax: +44-1707-27-8695
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France	MITSUBISHI ELECTRIC EUROPE B.V. French Branch 25, Boulevard des Bouvets, F-92741 Nanterre Cedex, France	Tel: +33-1-55-68-55-68 Fax: +33-1-55-68-57-57
Czech	MITSUBISHI ELECTRIC EUROPE B.V. Czech Branch Avenir Business Park, Radlicka 751/113e, 158 00 Praha5, Czech Republic	Tel: +420-251-551-470 Fax: +420-251-551-471
Turkey	MITSUBISHI ELECTRIC TURKEY A.S. Umraniye Branch Serifali Mahallesi Nutuk Sokak No:5, TR-34775 Umraniye, Istanbul, Turkey	Tel: +90-216-526-3990 Fax: +90-216-526-3995
Poland	MITSUBISHI ELECTRIC EUROPE B.V. Polish Branch ul. Krakowska 50, 32-083 Balice, Poland	Tel: +48-12-630-47-00 Fax: +48-12-630-47-01
Russia	MITSUBISHI ELECTRIC EUROPE B.V. Russian Branch St. Petersburg Office Piskarevsky pr. 2, bld 2, lit "Sch", BC "Benua", office 720; RU-195027 St. Petersburg, Russia	Tel: +7-812-633-3497 Fax: +7-812-633-3499
South Africa	Adroit Technologies 20 Waterford Office Park, 189 Witkoppen Road, Fourways, Johannesburg, South Africa	Tel: +27-11-658-8100 Fax: +27-11-658-8101
China	MITSUBISHI ELECTRIC AUTOMATION (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 Road, Wugu District, New Taipei City 24889, Taiwan, R.O.C.	Tel: +886-2-2299-2499 Fax: +886-2-2299-2509
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Singapore	MITSUBISHI ELECTRIC ASIA PTE. LTD. 307, Alexandra Road, Mitsubishi Electric Building, Singapore 159943	Tel: +65-6473-2308 Fax: +65-6476-7439
Thailand	MITSUBISHI ELECTRIC FACTORY AUTOMATION (THAILAND) CO., LTD. 12th Floor, SV.City Building, Office Tower 1, No. 896/19 and 20 Rama 3 Road, Kwaeng Bangpongpang, Khet Yannawa, Bangkok 10120, Thailand	Tel: +66-2682-6522 to 31 Fax: +66-2682-6020
Indonesia	PT. MITSUBISHI ELECTRIC INDONESIA Gedung Jaya 11th Floor, JL. MH. Thamrin No.12, Jakarta Pusat 10340, Indonesia	Tel: +62-21-3192-6461 Fax: +62-21-3192-3942
Vietnam	MITSUBISHI ELECTRIC VIETNAM COMPANY LIMITED Unit 01-04, 10th Floor, Vincom Center, 72 Le Thanh Ton Street, District 1, Ho Chi Minh City, Vietnam	Tel: +84-8-3910-5945 Fax: +84-8-3910-5947
India	MITSUBISHI ELECTRIC INDIA PVT. LTD. Pune Branch Emerald House, EL -3, J Block, M.I.D.C Bhosari, Pune - 411026, Maharashtra, India	Tel: +91-20-2710-2000 Fax: +91-20-2710-2100
Australia	MITSUBISHI ELECTRIC AUSTRALIA PTY. LTD. 348 Victoria Road, P.O. Box 11, Rydalmere, N.S.W. 2116, Australia	Tel: +61-2-9684-7777 Fax: +61-2-9684-7245

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MITSUBISHI ELECTRIC CORPORATION

HEAD OFFICE: TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN
NAGOYA WORKS: 1-14, YADA-MINAMI 5, HIGASHI-KU, NAGOYA, JAPAN

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Specifications are subject to change without notice.