



Screen Creation Software for the GT Series

# *Terminal GTWIN* Operational Guide Book

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**Terminal GTWIN Operational Guide Book**  
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**Rcord of Changes**

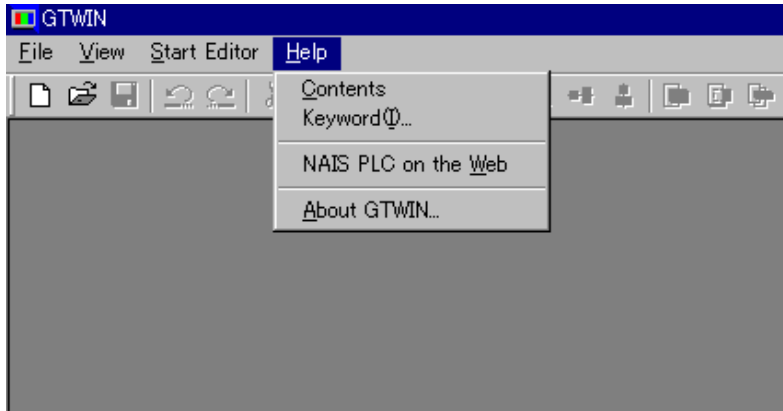
# How to Use GTWIN HELP

This guidebook explains basic operations of GTWIN.

As for items not described in this guidebook, find answers to your questions on GTWIN HELP opened from the main menu.

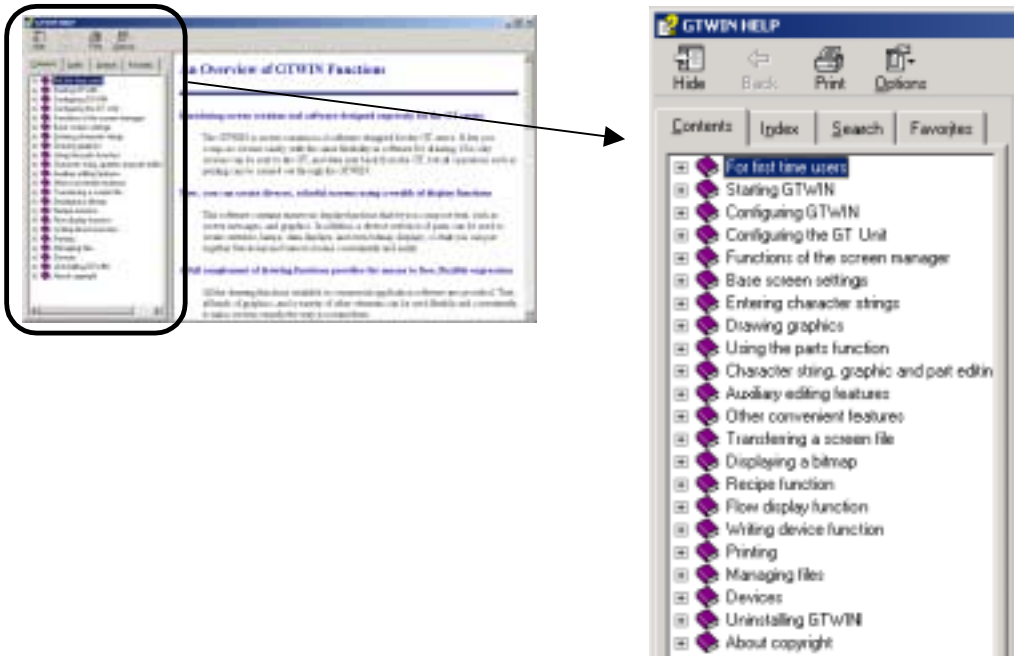
Please note that Internet Explorer Ver. 4.0 or later is required for viewing GTWIN HELP.

Select [Help (H)] – [Contents] or [Keyword (I)] to start up the GTWIN HELP.



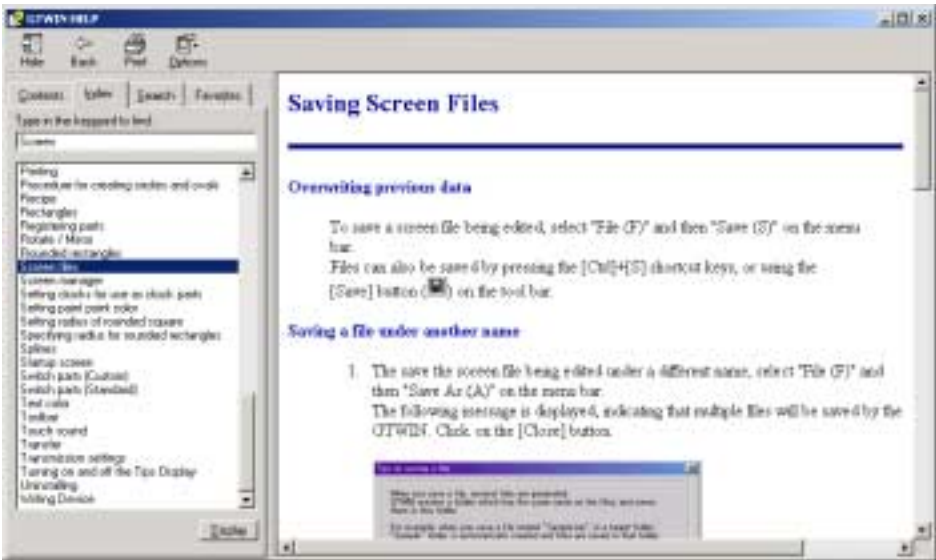
## 1. [Help (H)] – [Contents], GTWIN HELP - <Contents> tab: Browsing through topics by category

Select the topic in <Contents> tab in the left frame of the HELP window.



2. [Help (H)] – [Keyword (I)], GTWIN - <Index> tab: Finding a topic using a keyword

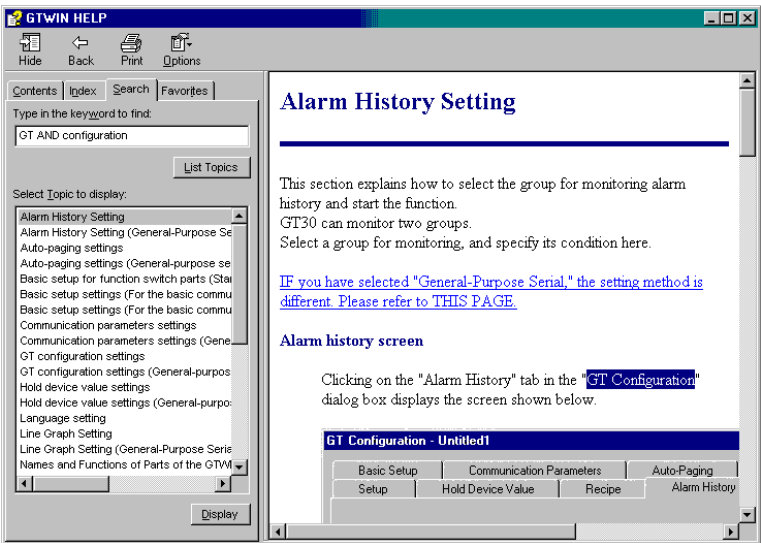
Frequently used keywords are registered in the <Index> tab. Type in the keyword you wish to find. Select a topic from the list associated with the keyword. This topic is then displayed in the right frame.



3. <Search> tab: Searching for words or phrases that may be contained in a HELP topic

Type in the keyword to find so that all the topics containing the typed keyword in the explanation are listed in the left frame. To find the topic that matches keywords, type in a space, "AND" and a space between the keywords. To find the topic that matches one keyword or another keyword, type in a space, "OR" and a space between the keywords.

(E.g.) Type in "GT AND configuration" in the text box., All topics containing "GT" and "configuration" in the explanation are listed in the left frame as shown below.



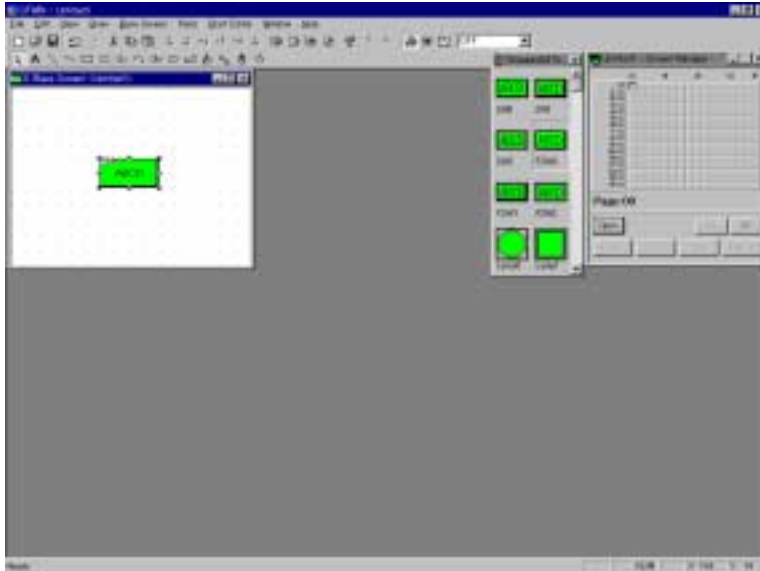
## 4. Finding answers using the F1 key

When you want to learn more about active GTWIN parts or dialog boxes, use the F1 key to display the associated HELP.

(Example 1) Learning more about parts

To learn more about the Function switch parts,

Drag and drop on the "Base Screen" window the Function switch part and press F1 key while it is active.



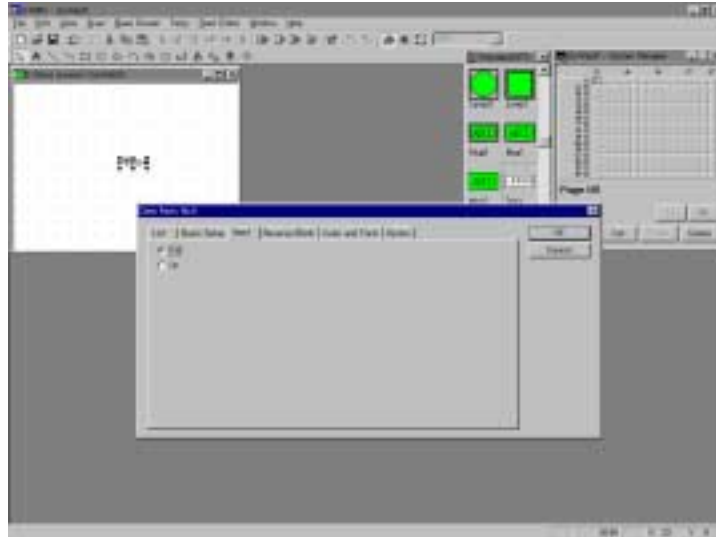
"GTWIN HELP" window for the Function switch parts is displayed.



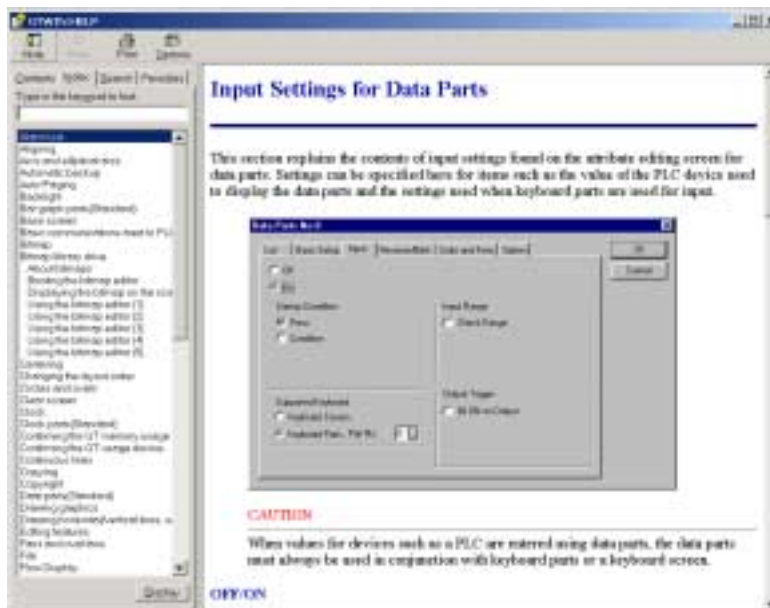
(Example 2) Learning more about a dialog box.

To learn more about a dialog box of Data parts,

Drag and drop on the “Base Screen” window the Data part and double-click it, so that the “Data Parts” dialog box is displayed. Click <Input> tab and press F1 key.



“GTWIN HELP” topics as for the input settings for Data parts can be viewed.





## New functions

New functions are available for the model and the version below.

	GT01	GT10	GT30
True type font	Ver1.0 or later	Ver2.0 or later	Ver1.0 or later
Display panel sideways setting	Ver1.0 or later	Ver2.0 or later	not available.
Custom parts: <Replacement> tab – “Direct” Method	Ver1.0 or later	Ver2.0 or later	Ver1.0 or later
Line Graph parts	Ver1.0 or later	not available.	Ver2.0 or later
Alarm List parts, Alarm History parts	not available.	not available.	Ver2.0 or later
Recipe	Ver1.0 or later	not available.	Ver2.0 or later
Password	Ver1.0 or later	not available.	Ver2.0 or later
Flow Display	Ver1.0 or later	not available.	Ver2.0 or later
Write Device	Ver1.0 or later	not available.	Ver2.0 or later
Data parts: Decimal place display, Scaling	Ver1.0 or later	not available.	Ver2.0 or later



### Impact by the OS installed in your PC

The functions of the True Type font and the character style use the system in the Windows OS. Accordingly, the display and size may vary slightly depending on the OS installed in your PC.

# Chapter 1

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## Functions of Parts



## 1.1 Features of GTWIN

---

### Screen creation tool!

GTWIN is a screen creation tool designed for the GT Series Programmable Operator Terminal made by Matsushita Electric Works, Ltd. Using GTWIN you can easily create images and design your own screen, similar to other illustrating software. In addition, GTWIN can transfer the screen data created to the Programmable Operator Terminal, receive data from the Programmable Operator Terminal and print out what you created.

### Plenty of display functions! Various screens can be created.

GTWIN has plenty of display functions. The parts for drawing a string or diagram, displaying a switch, lamp or data are registered. In addition, the screens created can be displayed in a bitmap picture. GTWIN promises that you can create convenient and functional screens.

### Substantial drawing functions!

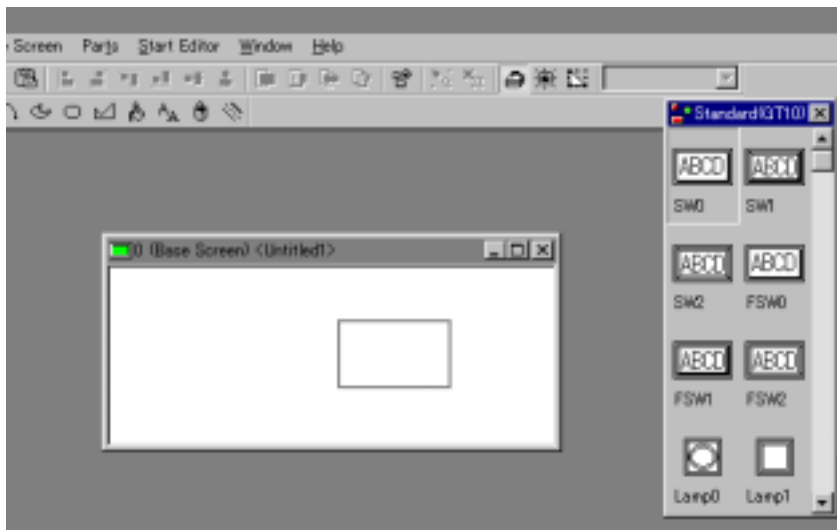
A pictorial representation can be realized at will.

GTWIN has substantial drawing functions similar to other drawing software on the market. You can write characters and draw various diagrams at will.

### Easy operation! (Drag and Drop)

Parts Library allows you to place parts by merely dragging and dropping. (drag and drop)

It includes various display parts, e.g. "Switch Parts" for turning ON/OFF the PLC contacts by touch, "Data Parts" for displaying the values of the PLC devices, "Keyboard Parts" for renewing the values of the devices, etc.



Just drag and drop parts on the "Base Screen" window for placement.

## **Easy registration of your original parts!**

You can easily register your original parts in the user library for future use using drag and drop.

## **Printing function! What has been created can be printed.**

A preview function is available. In addition, you can print the screens created or select settings to print.

## **Bitmap copy function! What copied can be utilized for manuals.**

What has been created on the "Base Screen" window can be easily copied to a Clipboard as a bitmap type in one action.

You can paste them to a document, such as a manual made using another application software.

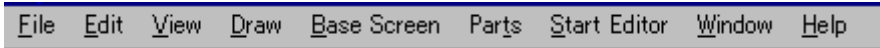
## **Easy-to-use! Bitmap editor**

A bitmap editor can create, read and edit bitmap data just like any other illustrating software. You can easily create an original screen display or read existing images.

### 1.2 Menu Bar

---

All the operations and functions can be selected in the menu bar.



#### **[File]**

Goes to the file-related operations, [Print]-related operations, [Transfer], [Configuration] etc.

#### **[Edit]**

Goes to [Cut] for cutting diagrams, characters or parts, [Copy], [Paste], [Align] for aligning the objects, and the layout-related operations.

#### **[View]**

Goes to the view-related operations such as [Grid] for setting a grid line on the “Base Screen” window, [Zoom] for changing a display magnification of an object, and [Toolbar] and [Statusbar] for showing them ON/OFF on the main window.

#### **[Draw]**

Goes to the drawing-related operations for selecting what to draw on the “Base Screen” window, a character font and its color.

#### **[Base Screen]**

Goes to the “Base Screen” window-related operations, such as [Screen Attribute] for setting the “Base Screen” attribute and [Memory Usage] for checking a memory usage.

#### **[Parts]**

Goes to the parts-related operations, such as [Open Parts Library] for selecting and opening the “Parts Library” window and [Attribute] for setting the parts attribute.

#### **[Start Editor]**

Goes to [Bitmap] for starting up a bitmap editor.  
[Recipe], [Flow Display] and [Write Device] are also available for GT01, 30.

#### **[Window]**

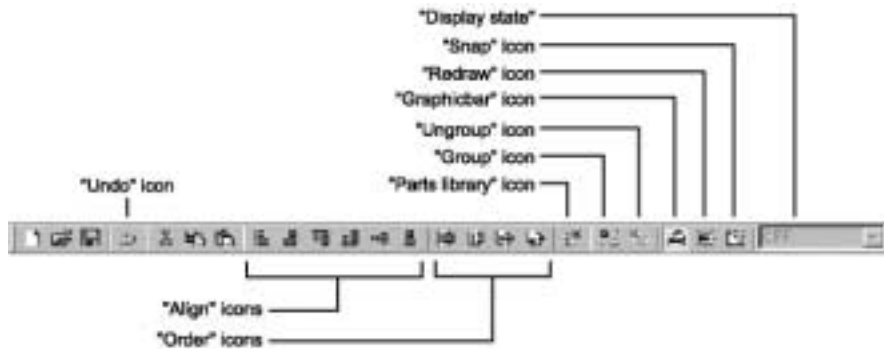
Goes to the window-displaying operations.

#### **[Help]**

Goes to the GTWIN HELP and information of the GTWIN version.

## 1.3 Toolbar

Names and functions of icons on the toolbar are as follows.



### “Undo” icon

Undoes the most recent action.

### “Align” icons

Aligns multiple objects (characters, diagram, parts).

### “Order” icons

Brings an object to the front or sends it to the back if multiple objects overlap. (See note.)

### “Parts library” icon

Opens a “Parts Library” window.

### “Group” icon

Groups objects.

### “Ungroup” icon

Ungroups grouped objects.

### “Graphicbar” icon

Displays or hides the graphicbar.

### “Redraw” icon

Re-fills an area with the set color when some disappeared due to multiple windows overlapping.

### “Snap” icon

Enables or disables a snap function for placing objects.

### “Display state”

Switches between ON and OFF the selected switch or lamp, or specifies the bit.



#### NOTE

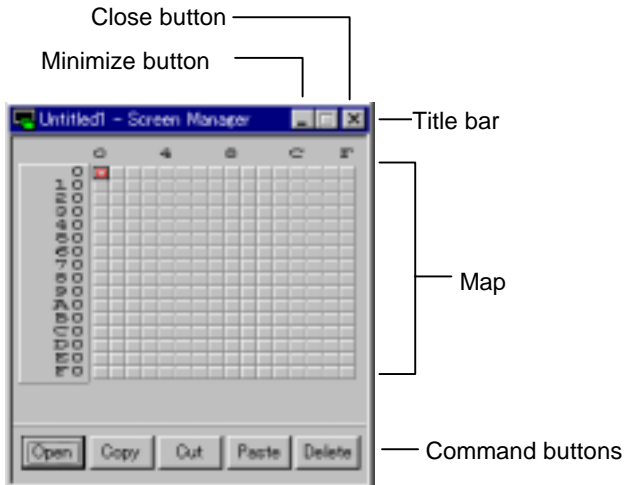
**Characters and diagrams drawn on the “Base Screen” window always appear behind parts.**

## 1.4 Screen Manager

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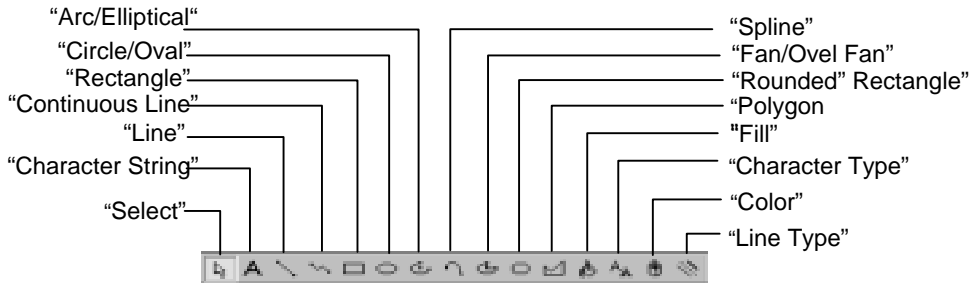
The Screen Manager binds and manages multiple “Base Screen” windows in a single screen file. The “Screen Manager” window displays all the available “Base Screens” in a map or a list. Click your optional “Base Screen” No. on a map or a list, so that its “Base Screen” window is opened. What was created on the “Base Screen” window will be registered in the Screen Manger, enabling you to check what was created later on.

In addition, you can copy and paste the registered “Base Screen” to the other “Base Screen”, or delete the registered one. Also, multiple “Screen Manager” windows can be opened simultaneously, enabling you to copy or move the objects between them.



## 1.5 Graphicbar

Names and functions of icons on the Graphicbar are as follows.



### “Select” icon

Selects characters, diagram or parts on the “Base Screen” window.

### “Character String” icon

Write characters on the “Base Screen” window.

### “Line” icon

Draws a straight line.

### “Continuous Line” icon

Draws lines continuously. (Double-click to end.)

### “Rectangle” icon

Draws a rectangle.

### “Circle/Oval” icon

Draws a circle or an oval.

### “Arc/Elliptical Arc” icon

Draws an arc circular or an elliptical arc.

### “Spline” icon

Draws a curve.

### “Fan/Oval Fan” icon

Draws a fan or an oval fan.

### “Rounded Rectangle” icon

Draws a rounded rectangle. (Select [Draw]-[Line Type] to set its radius value.)

### “Polygon” icon

Draws a polygon.

### “Fill” icon

Fills an area with the selected drawing color.

### “Character Type” icon

Changes a size or effects (bold, outlined, underlined etc.) of characters.

### “Color” icon

Changes a color of characters or drawings.

### “Line Type” icon

Sets a line type and a radius of a rounded rectangle.



## 1.6 Grid Settings

---

The items for grid settings of the “Base Screen” windows are as below.

Select [File] - [Configuration] - [GTWIN Configuration] so that “GTWIN Configuration” dialog box is displayed. Click <Grid> tab;



### “Display”

Select “On” or “Off” to display or hide a grid on the “Base Screen” window.

“On”: Displays a grid on the “Base Screen” window.

“Off”: Hides a grid on the “Base Screen” window.

### “Pitch”

Sets an interval of a grid if “Display” is set to “On”. (2 to 80)

“Setup”: Sets an interval of a grid in X and Y directions each in dot units.

“Touch Switch”: Matches a grid of the “Base Screen” window in X and Y directions with the ones of the Programmable Operator Terminal.

### “Snap”

Select “Enable” or “Disable” to turn ON or OFF the snap function. The snap function always makes the starting and ending points of the objects come on a grid.

“Enable”: Enables snap function.

“Disable”: Disables snap function.

### “Color”

Selects a color of a grid displayed on the “Base Screen” window.

“Grid”: Click a button to display the “Color” window and select your optional color.



### ◆ NOTES

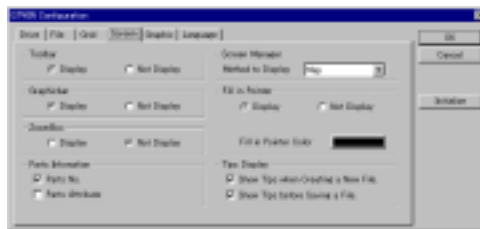
---

- The “GTWIN Configuration” dialog box - <Grid> tab can be also displayed by pressing Alt + G.
- The snap function can be also turned ON/OFF using the “Snap” icon on the toolbar.

## 1.7 Main Window Display Settings

Display settings for the GTWIN main window are explained below.

Select [File] - [Configuration] - [GTWIN Configuration] so that "GTWIN Configuration" dialog box is displayed. Click the <Screen> tab;



### “Toolbar”

Sets whether or not to display the Toolbar on the GTWIN main window when GTWIN is activated. You can also control its display by selecting [View] - [Toolbar].

“Display”: Displays the Toolbar on the GTWIN main window when GTWIN is activated.

“Not Display”: Hides the Toolbar when GTWIN is activated.

### “Graphicbar”

Sets whether or not to display the Graphicbar on the GTWIN main window when GTWIN is activated. You can also control its display by selecting [View] - [Graphicbar].

“Display”: Displays the Graphicbar on the GTWIN main window when GTWIN is activated.

“Not Display”: Hides the Graphicbar when GTWIN is activated.


### “Zoom Box”

Magnifies a specific area of open base screen enabling you to check objects placed.

### “Parts Information”

Displays the address of the device or the PLC.

### “Screen Manager”

Displays the “Method to Display” in a map or a list. Click  to select Map or List.

### “Fill in Pointer”

Selects a color to fill enclosed areas.

### “Fill in Pointer Color”

Click  so that a “Color” window is displayed. Select a color.

### “Tips Display”

Sets whether or not to display “Tips” message for the following operations.

“Show Tips when Creating a New File.”: This specifies whether, when a new file is created, a message will be displayed reminding the user to specify the basic communication area with the PLC.

“Show Tips before Saving a File.”: This specifies whether or not a message will be displayed when a file is saved, reminding the user that multiple files will be saved to GTWIN.



# Chapter 2

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## Character Writing and Data Transfer



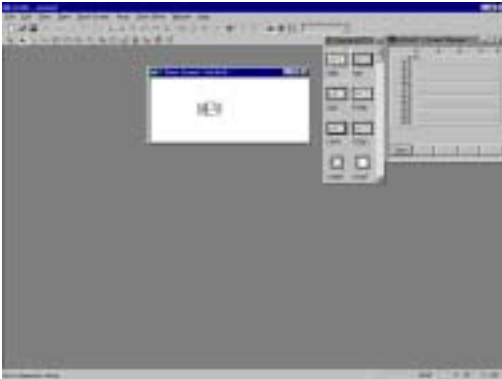
## 2.1 Character Writing and Data Transfer

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### 2.1.1 Editing Characters

---

#### 1. Open the No. 0 “Base Screen” window and write characters.




Click the No. 0 on the “Screen Manager” window so that its “Base Screen” window is displayed.

Click the “Character String” icon .

Write “MEW” on the “Base Screen” window.

#### 2. Double the character size (vertically and horizontally) and set the character style to “Outlined”.



Click “Select” icon, .

Click the “MEW” to select. Then, right-click it to open the menu and select [Character Type].

Set the following and click **OK**.

“Character Size” ----

2 for “Vertical” and “Horizontal”

“Character Style” ---- “Outlined”

\*1: True Type font is available for the GTWIN Version 2.0 or later.

The character size can be selected in dot units for the True Type font.

\*2: GT10 handles the True Type font from Ver.2.0 or later.

3. Sets a color of characters.



While "MEW" is selected, right-click it and select [Character Type] from the menu.

Choose the following settings and click **OK**.


**"Color"**

"Character" ---- White

"Background" ---- Black

4. Draw a rounded rectangle.



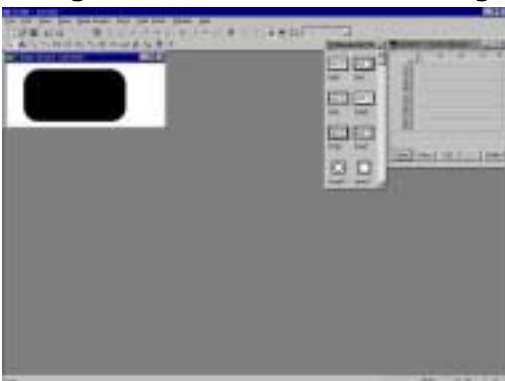
Click the "Rounded Rectangle" icon , circle "MEW" and click when finished.

Right-click the set rounded rectangle and select [Color] from the menu.

Choose the following settings and click **OK**.

**"Background Color"** ---- Black

5. Bring to back the rounded rectangle.



Right-click anywhere on the black rounded rectangle to open the menu and click [Order]-[Bring Behind All].

**6. Transfer the created screen data to the Programmable Operator Terminal.**



Click [File]-[Transfer] so that "Transfer Data" window is displayed.

Choose the following settings and click .

**"Data to Transfer"** ---- "All Data"

**"Direction"** ---- "GTWIN → GT"

**7. Change the backlight (background) color.**



Click [Base Screen]-[Screen Attribute], so that "Base Screen Attribute" window is displayed.

Select "Color" - "Orange" for **"Backlight"** and click .

\* The backlight color settings are available only for GT01 and GT10.

\* For GT30 you can set the pattern and its color.

**8. Transfer the screen data created to the Programmable Operator Terminal.**



Click [File]-[Transfer], so that "Transfer Data" window is displayed.

Choose the following settings and click .

**"Data to Transfer"** ---- "All Data"

**"Direction"** ---- "GTWIN → GT"

## 2.2 Changing the Backlight Settings

1. Open the No. 0 “Base Screen” window and write characters.



Write “NAIS”.

2. Quadruple the character size (vertically and horizontally).



Click the “Select” icon .

Click “NAIS” to select. Then, right-click it to open the menu and select [Character Type].

Choose the following settings and click .

“Character Size” ----

4 for “Vertical” and “Horizontal”.

3. Transfer the screen data created to the Programmable Operator Terminal.



Click [File]-[Transfer] so that “Transfer Data” window is displayed.

Choose the following settings and click .

“Data to Transfer” ---- “All Data”

“Direction” ---- “GTWIN → GT”

Check whether the characters written on the “Base Screen” window are displayed on the Programmable Operator Terminal.



**4. Change the backlight (background ) color.**



Click [Base Screen]-[Screen Attribute], so that "Base Screen Attribute" window is displayed.

Set the following and click .

**"Backlight"**

"Color" ---- "Red"

"Operation" ----"Blink"

**5. Transfer the screen data created to the Programmable Operator Terminal.**



Click [File]-[Transfer], so that "Transfer Data" window is displayed.

Choose the following settings and click .

**"Data to Transfer"** ---- "All Data"

**"Direction"** ---- "GTWIN → GT"

Check the Programmable Operator Terminal whether the background is blinking in red.

# Chapter 3

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## How to Use the Parts Library



## 3.1 “Standard” Parts Library

---

Switch parts are used to turn ON or OFF the bit of the specified PLC device.

### 3.1.1 Setting a Switch Part to the “Alternate” Operation Mode

---

#### 1. Open the No. 0 “Base Screen” window and place a Switch part.



Double-click the No. 0 on the “Screen Manager” window so that its “Base Screen” window is displayed.

From the “Standard” Parts Library, drag “SW0” and drop it on the “Base Screen” window.

#### 2. Double-click the placed Switch part and change its operation mode.



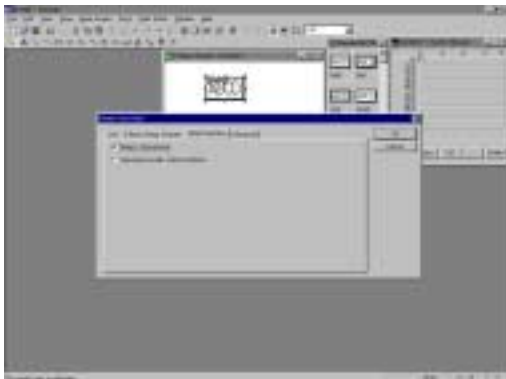
Double-click “SW0” so that the “Switch Parts” dialog box - <Basic Setup> tab is displayed. Select “Alternate” for “Operation Mode”.

#### “ON/OFF Indication” ----

“On”: Select this if you want to alter the way a switch looks depending on whether it’s ON or OFF.

“Off”: Select this if a switch’s display should remain the same, regardless of whether it’s ON or OFF.

#### 3. <Valid Condition> tab – Keep the default settings.



Keep the default settings. (“Always operational”)

#### “Always Operational”:

The set switch always operates as a switch.

#### “Operational under Valid Condition”:

The set switch operates as a switch only when the set condition is met.

4. <Character> tab - Set characters to display when the switch is OFF.



Set to display "OFF" when the switch is OFF.

"Character String"

Delete the default characters, ABCD, and enter OFF.

"Size"

Select 1\*1.

2 for "Vertical" and "Horizontal".

"Style" ---- nothing to check.

"Color"

"Character" ---- Black

"Background" ---- White

\*1: The True Type font is available for GTWIN Version 2.0 or later.

The character size can be selected in dot units for the True Type font.

\*2: GT10 handles the True Type font from Ver.2.0 or later.

5. <Character> tab - Set characters to display when the switch is ON.



Set to display "ON" when the switch is ON.

"Character String" ----

Delete the default characters, ABCD. Enter 3 spaces, ON and 3 spaces.

"Size" ----

Select 1\*1.

2 for "Vertical" and "Horizontal".

"Style" ---- "Bold"

"Color"

"Character" ---- White

"Background" ---- Black

6. Click **OK**.



When the settings are completed, click **OK** so that what was set is displayed on the "Base Screen" window.

7. Transfer the created screen data to the Programmable Operator Terminal.



Click [File]-[Transfer] so that the "Transfer Data" window is displayed. Choose the following settings and click **OK**.

"Data to Transfer" ---- "Base Screen"

"Direction" ---- "GTWIN → GT"

"Base Screen No." ---- "0"

8. Check display on the Programmable Operator Terminal.



When a transmission is completed, the switch created using GTWIN is displayed on the Programmable Operator Terminal.

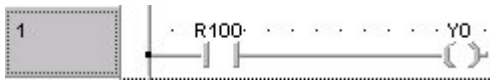
**9. Check performance with the programming software.**

Start up the PLC programming software connected with PLC. Create a program and download it to the PLC.

**FPWIN GR programming example**



**FPWIN Pro programming example, LD body**



After downloading is complete, press the switch created on the display panel and check whether the program works properly.

### 3.1.2 Setting a Switch Part to “Momentary” Operation Mode

---

**1. Open the No. 0 “Base Screen” window and place a Switch part.**



Click the No. 0 on the “Screen Manager” window so that its “Base Screen” window is displayed.

From the “Standard” Parts Library, drag “SW0” and drop it on the “Base Screen” window.

**2. Double-click the placed Switch part and change its operation mode.**



Double-click “SW0” so that the “Switch Parts” dialog box - <Basic Setup> tab is displayed. Select “Momentary” for “**Operation Mode**”.

(Keep the default setting for “**ON/OFF Indication**”.)

**3. <Valid Condition> tab – Keep the default settings.**



Keep the default setting. (“Always Operational”)

4. <Character> tab - Set a display when the switch is OFF.



Set to display nothing when the switch is OFF.

"Character String" ----  
Delete the default characters, ABCD, and move the cursor to the far left.

\*1: The True Type font is available for GTWIN Version 2.0 or later.  
The character size can be selected in dot units for the True Type font.

\*2: GT10 handles the True Type font from Ver. 2.0 or later.

5. <Character> tab - Set a display when the switch is ON.



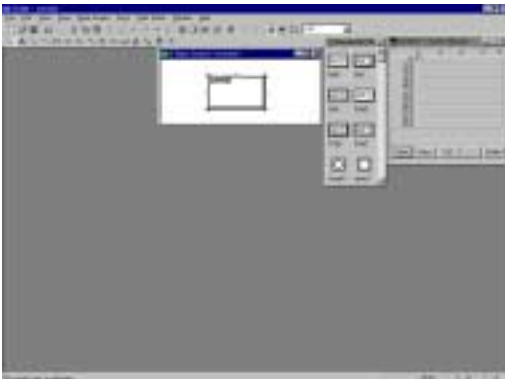
Set 7 spaces for the switch-ON.

"Character String" ----  
Delete the default characters, ABCD. Enter 7 spaces.

"Size" ----  
Select 1\*1.  
2 for "Vertical", 1 for "Horizontal".

"Style" ---- Nothing to check.

6. Check what was created on the "Base Screen" window.



When the settings are completed, what was set is displayed on the "Base Screen" window.



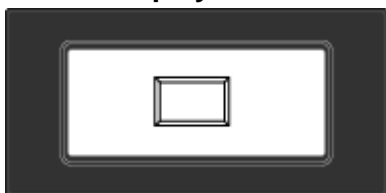
**7. Transfer the screen data created to the Programmable Operator Terminal.**



Click [File]-[Transfer], so that "Transfer Data" window is displayed.  
Choose the following settings and click **OK**.

**"Data to Transfer"** ---- "All Data"  
**"Direction"** ---- "GTWIN → GT"

**8. Check display on the Programmable Operator Terminal.**



When a transmission is completed, the created Switch using GTWIN is displayed on the Programmable Operator Terminal.

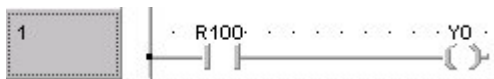
**9. Check performance with the programming software.**

Start up the PLC programming software connected with PLC. Create a program and download it to the PLC.

**FPWIN GR programming example**



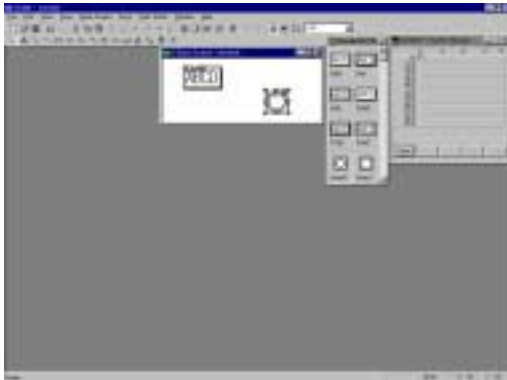
**FPWIN Pro programming example, LD body**



After downloading is complete, press the switch created on the display panel and check whether the program works properly.

### 3.1.3 Setting Switch and Lamp Parts

**1. Open the No. 0 “Base Screen” window and place Switch and Lamp parts.**



Click the No. 0 on the “Screen Manager” window so that its “Base Screen” window is displayed.

From the “Standard” Parts Library, drag “SW0” and “Lamp0”, and drop them on the “Base Screen” window.

**2. Double-click the placed Switch part and change its operation mode.**



Double-click “SW0”, so that “Switch Parts” dialog box - <Basic Setup> tab is displayed.

Select “Alternate” for “Operation Mode”.

**3. <Valid Condition> tab – Keep the default settings.**



Keep the default setting.  
(Always Operational)

**4. <Character> tab - Set characters to display when the switch is OFF.**



Set to display "Lamp lighting" when the switch is OFF.

"Character String" ----

Enter "Lamp lighting".

"Size" ----

Select 1\*1.

1 for "Vertical" and "Horizontal".

"Color"

"Character" ---- Black

"Background" ---- White

"Style" ---- "Outlined"

**5. <Character> tab - Set characters to display when the switch is ON.**



Set a display for the switch-ON.

"Character String" ----

Enter 1 space, "Lamp lighting" and 1 space.

"Size" ----

Select 1\*1.

2 for "Vertical", 1 for "Horizontal".

"Color"

"Character" ---- White

"Background" ---- Black

"Style" ---- "Underlined"

**6. Double-click the Lamp part.**



Double-click "LP0", so that "Lamp Parts" dialog box - <Basic Setup> tab is displayed.

Keep the default settings.

7. <Color Setup> tab – Keep the default settings.



Keep the default settings.

“ON Color” ---- Black  
“OFF Color” ---- White

8. Check what was created on the “Base Screen” window.



The above settings create the ones shown on the left.

9. Transfer the screen data created to the Programmable Operator Terminal.

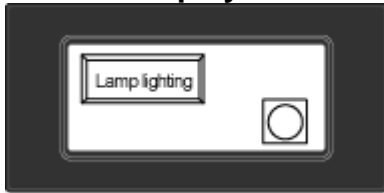


Click [File]-[Transfer], so that “Transfer Data” window is displayed.

Choose the following settings and click .

“Data to Transfer” ---- “All Data”  
“Direction” ---- “GTWIN → GT”

### 10. Check display on the Programmable Operator Terminal.



When transmission is completed, the switch and lamp created using GTWIN are displayed on the Programmable Operator Terminal.

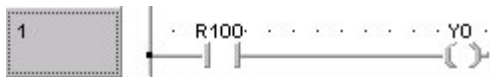
### 11. Check performance with the programming software.

Start up the PLC programming software connected with PLC. Create a program and download it to the PLC.

#### FPWIN GR programming example



#### FPWIN Pro programming example, LD body



After downloading is complete, press the switch created on the display panel and check whether the program works properly.

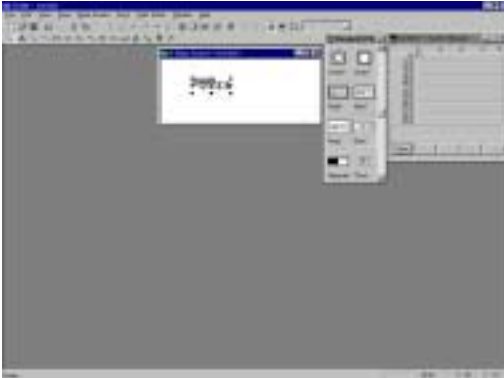
## 3.2 “Keyboard” Parts Library

### 3.2.1 Setting to Enter and Display Integer Values

#### What are Data parts?

Data parts are used to display the values of internal PLC devices directly on the screen. When they are used together with Keyboard parts, values for the internal PLC devices can be changed or input from GTWIN.

#### 1. Open the No. 0 “Base Screen” window and place a Data part.



Double-click the No. 0 on the “Screen Manager” window, so that its “Base Screen” window is displayed.

From “Standard” Parts Library, drag “Data” and drop it on the “Base Screen” window.

#### 2. Select “Keyboard” from “Select Parts Library” window.



Click [Parts]-[Open Parts Library] from the main menu.

The “Parts Library” window is displayed. Select “Keyboard[GT10]” or “Keyboard[GT30]” and click .

#### 3. Place a Keyboard part on the “Base Screen” window.



From the “Keyboard” Parts Library, drag “DEC Wd1”, which includes a CLR key, and drop it on the right of “DA0” on the “Base Screen” window.

#### 4. Double-click the Data part and change basic settings.



Double-click "DA0", so that the "Data Parts" dialog box - <Basic Setup> tab is displayed. Choose the following settings;

- "Data to Display"**
  - "Number of Digits" ---- "4"
  - "Data Format" ---- "DEC[1W]Unsigned"
  - "Zero Suppression" ---- "On"
- "Reference Device"** ---- "DT100"
- "Size"**
  - "Font" ---- 1\*1, 1 for "Vertical" and "Horizontal"
- "Display Decimal Places"** ---- "Off"

#### 5. <Input> tab – Change the settings.



Click <Input> tab and Choose the following settings.

First, select "On" so that its related items appear.

- "Startup Condition"** ---- Check "Press".
- "Supported Keyboard"** ----
  - Check "Keyboard Parts".
  - Select "0" for "Part No."

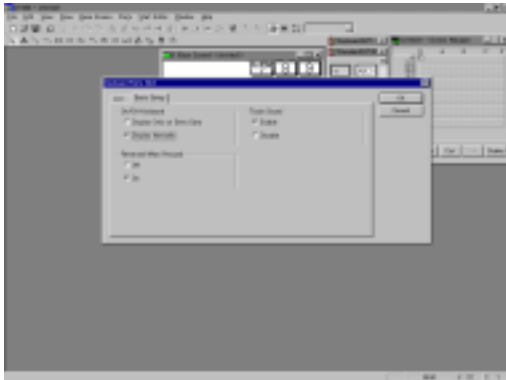
#### 6. <Color and Form> tab – Set the color and frame of the Data part.



Click <Color and Form> tab and Choose the following settings.

- "Color"**
  - "Character" ---- Black
  - "Background" ---- White
- "Display Frame"** ---- "On"

**7. Double-click the Keyboard part and change its basic settings.**



Double-click "KY0" so that the "Keyboard Parts" dialog box - <Basic Setup> tab is displayed.

Choose the following settings.

**"On/Off Keyboard"**

Select "Display Normally".

**8. Transfer the screen data created to the Programmable Operator Terminal.**



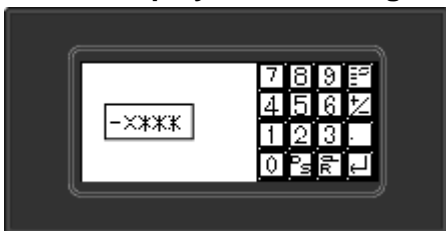
Click [File]-[Transfer], so that "Transfer Data" window is displayed.

Choose the following settings and click  OK.

**"Data to Transfer"** ---- "All Data"

**"Direction"** ---- "GTWIN → GT"

**9. Check display on the Programmable Operator Terminal.**



When transmission is completed, the Data and Keyboard parts created using GTWIN are displayed on the Programmable Operator Terminal.

Try to enter numbers using the keyboard on the display panel.



### 3.2.2 Setting to Enter and Display Decimal Values

---

1. **Open the No. 0 “Base Screen” window and place Data and Keyboard parts.**



Double-click the No. 0 on the “Screen Manager” window, so that its “Base Screen” window is displayed.

Drag and drop on the “Base Screen” window the “Data” from “Standard” Parts Library and the “DEC ±” (square type) from the “Keyboard” Parts Library.

2. **Double-click the Data part and change its basic settings.**



Choose the following settings for <Basic Setup> tab and click **OK**.

“Reference Device” ---- “DT110”

“Display Decimal Places”

Select “On”.

“Decimal Places” ---- “1” Digits

3. **<Input> tab – Change the settings.**



Click <Input> tab and Choose the following settings.

First, select “On” so that its related items appear.

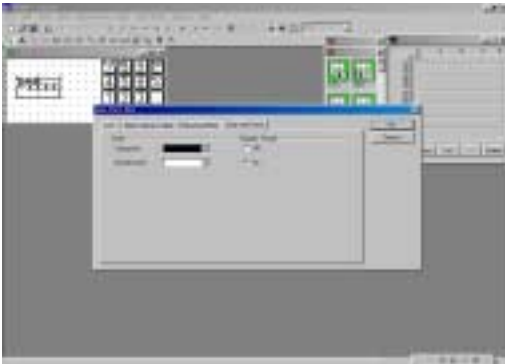
“Startup Condition” ---- Check “Press”.

“Supported Keyboard” ----

Check “Keyboard Parts”.

Select “0” for “Part No.”

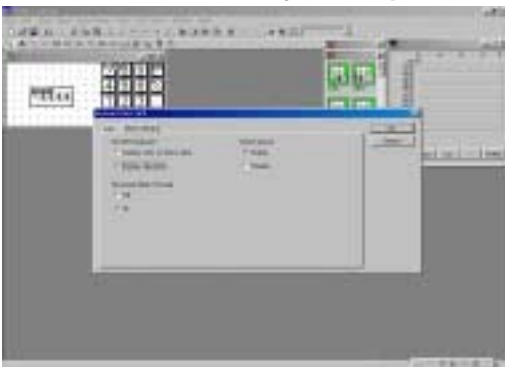
**4. <Color and Form> tab – Set the color and frame of the Data part.**



Click <Color and Form> tab and Choose the following settings.

- “Color”
  - “Character” ---- Black
  - “Background” ---- White
- “Display Frame” ---- “On”

**5. Double-click the Keyboard part and change its basic settings.**



Double-click “KY0” so that the “Keyboard Parts” dialog box - <Basic Setup> tab is displayed.

Choose the following settings.

- “On/Off Keyboard”
  - Select “Display Normally”.

**6. Transfer the screen data created to the Programmable Operator Terminal.**

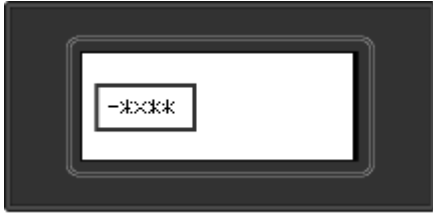


Click [File]-[Transfer] so that the “Transfer Data” window is displayed.

Choose the following settings and click **OK**.

- “Data to Transfer” ---- “All Data”
- “Direction” ---- “GTWIN → GT”

## 7. Check display on the Programmable Operator Terminal.



When transmission is completed, the Data and Keyboard parts created using GTWIN are displayed on the Programmable Operator Terminal.

Touch the Data part, so that the Keyboard part appears, enabling you to make entries.

Try to enter values and check whether the decimals are displayed.

### 3.2.3 Specifying a Range of Value Entries

1. Open the No. 0 “Base Screen” window and place Data and Keyboard parts.



Double-click the No. 0 on the “Screen Manager” window so that its “Base Screen” window is displayed.

Drag and drop on it the “Data” from the “Standard” Parts Library and the “DEC ±” (square type) from “Keyboard” Parts Library.

2. Double-click the Data part and change the settings for the <Input> tab.



Click <Input> tab and select “On” so that the related items appear.

Check “Input Range” - “Check Range”.  
Enter optional values for “Max.” and “Min.”

“Max.” ---- 9000

“Min.” ---- 1000

When finished setting, click .

3. <Color and Form> tab – Set the color and frame of the Data part.



Click <Color and Form> tab and Choose the following settings.

“Color”

“Character” ---- Black

“Background” ---- White

“Display Frame” ---- “On”

**4. Double-click the Keyboard part and change its basic settings.**



Double-click "KY0" so that "Keyboard Parts" dialog box - <Basic Setup> tab is displayed.

Choose the following settings.

**"On/Off Keyboard"**

Select "Display Normally".

**5. Transfer the screen data created to the Programmable Operator Terminal.**



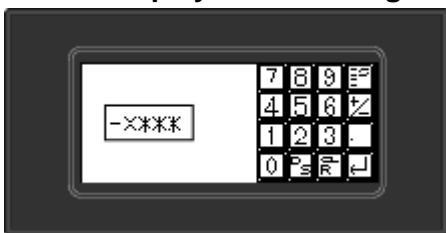
Click [File]-[Transfer], so that the "Transfer Data" window is displayed.

Choose the following settings and click .

**"Data to Transfer"** ---- "All Data"

**"Direction"** ---- "GTWIN → GT"

**6. Check display on the Programmable Operator Terminal.**



When transmission is completed, the Data and Keyboard parts created using GTWIN are displayed on the Programmable Operator Terminal.

Try to enter numbers using the keyboard on the display panel.  
(Check that values from 1000 to 9000 can be entered, but that values outside this range cannot.)

### 3.2.4 Setting a Screen for a Value Entry and a Value Display

**1. Open the No. 0 “Base Screen” window and place a Data part.**



Double-click the No. 0 on the “Screen Manager” window so that its “Base Screen” window is displayed.

From “Standard” Parts Library, drag the “Data” and drop it on the “Base Screen” window.

**2. Double-click the Data part and change its basic settings.**



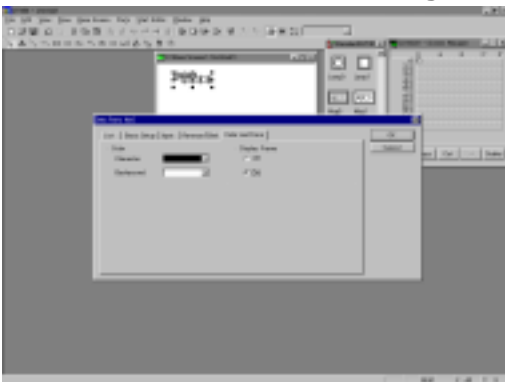
Double-click “DA0”, so that “Data Parts” dialog box - <Basic Setup> tab is displayed. Choose the settings below:

“Data to Display”  
 “Data Format” ---- “DEC[1W]Unsigned”  
 “Zero Suppression” ---- “Off”

“Reference Device” ---- “DT130”

“Size”  
 “Font” ---- 2 for “Vertical” and  
 “Horizontal”

**3. <Color and Form> tab – Change the settings.**

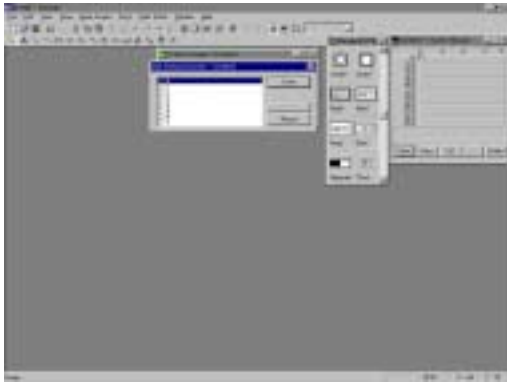


Click <Color and Form> tab, Choose the following settings and click **OK**. (The settings for <Input> tab are made later.)

“Display Frame” ---- “On”

Keep the default settings for the <Reverse/Blink> tab.

**4. Open the “Keyboard Screen” window.**



Click [File]-[Keyboard Screen] so that the “Edit Keyboard Screen” window is displayed.

Select [ ]0 and click **Draw**.

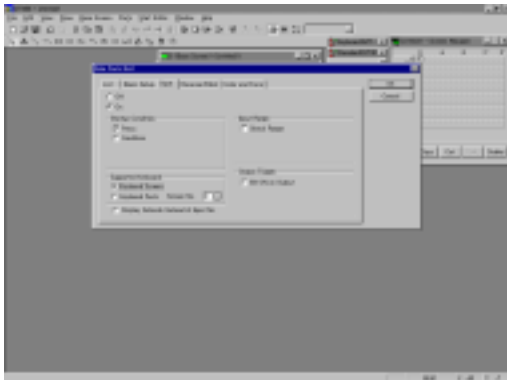
**5. Place Data and Keyboard parts on the “Keyboard Screen” window.**



Drag and drop on the “Keyboard Screen” window the “Data” from the “Standard” Parts Library and the “DEC ±” (square type) from the “Keyboard” Parts Library.

(Keep the default settings for them.)

**6. Double-click the Data part on the “Base Screen” window and change settings for the <Input> tab.**



Double-click “DA0” on the “Base Screen” window so that the “Data Parts” dialog box - <Basic Setup> tab is displayed. Click <Input> tab, Choose the following settings and click **OK**.

Select “On” so that its related items appear.

**“Supported Keyboard”**

Select the “Keyboard Screen” and “0” for “Screen No.”.

**7. Write characters and a frame on the “Base Screen” and “Keyboard Screen” windows.**



Click the “Character String” icon to write characters and the “Rectangle” icon to draw a frame.

Write “Data change” above “DA0” on the “Base Screen” window.

Write “Data input”, with a frame, next to “KY0” on the “Keyboard Screen” window.

**8. Transfer the screen data created to the Programmable Operator Terminal.**



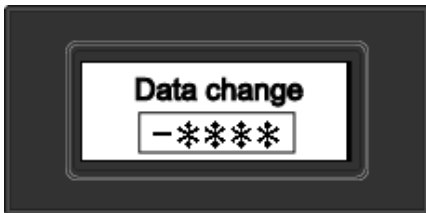
Click [File]-[Transfer] so that the “Transfer Data” window is displayed.

Choose the following settings and click .

“Data to Transfer” ---- “All Data”

“Direction” ---- “GTWIN → GT”

**9. Check display on the Programmable Operator Terminal.**



When transmission is completed, the parts created using GTWIN are displayed on the Programmable Operator Terminal.

Press the “Data change” Data part on the display panel, so that it changes to the “Data input” screen.



Try to enter values and check whether the screen goes back to the “Data change” screen when

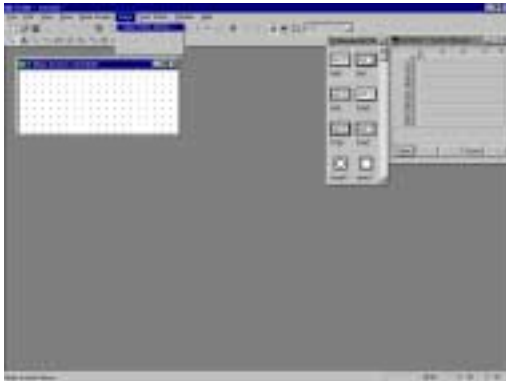


### 3.3 “Custom” Parts Library

Custom parts are used when you want to create an original part, e.g. one with a complicated pattern.

#### 3.3.1 How to Create Switch Parts

**1. Open the “Custom” Parts Library window.**



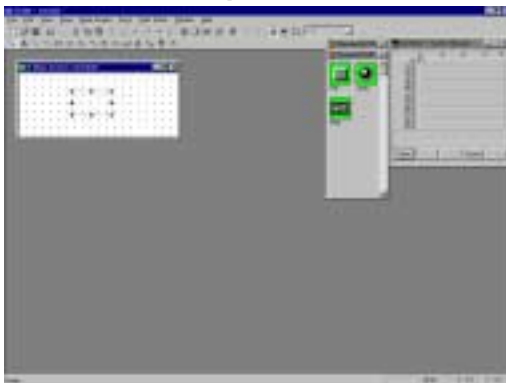
Double-click the No. 0 on the “Screen Manager” window so that its “Base Screen” window is displayed.

Click [Parts] - [Open Parts Library] to display the “Select Parts Library” window.

**2. Select “CUST\_V10.SPL” for GT01, 10 or “CUST\_V30.SPL” for GT30, and click Open.**



**3. Place a Switch part on the “Base Screen” window.**



Drag the Switch part “SW” from the “Custom” Parts Library and drop it on the “Base Screen” window.

**4. Double-click the Switch part and set its parameters.**



Double-click the placed Switch part, so that the “Custom Switch Parts” dialog box - <Operation> tab is displayed.

The setting items for each tab are as follows.

**(1) <Replacement> tab**

When “On” is selected, what to display will be able to be selected depending on the status of the PLC devices.

There are 3 methods.

1. ON/OFF: Switches displays in response to the bit being turned ON/OFF.
2. Digit: Switches displays between 0 to F (16 ways) per 1 digit (4 bits).
3. Direct: Switches displays in 1-word units.

**(2) <Operation> tab**

Select what you want, such as Bit Set and Bit Reset.

**(3) <Option> tab**

The sound and the highlighted display of a switch can be set.

\* When “On” is selected for “Reversed When Pressed”, a display will be highlighted when a switch is pressed.

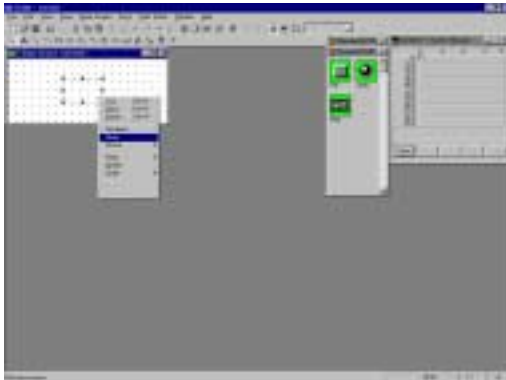
**(4) <Valid Condition> tab**

Switch operation can be ON or OFF in response to the status of the PLC devices (ON/OFF).

**(5) <Reverse/Blink> tab**

How to display is set.

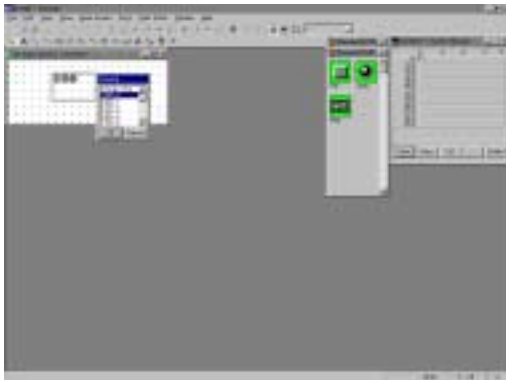
**5. Set the Switch part to drawing mode for writing characters or drawings.**



Select the Switch part and right-click it so that the menu is displayed.

Select [Draw].

**6. Write characters or drawings in the Switch part.**



The Switch part in drawing mode will be surrounded by a thick gray line.

The "Drawing" child window is displayed. This lists multiple displays if "On" is selected in <Replacement> tab of the "Custom Switch Parts" dialog box.

One by one, select and draw what you want using drawing icons.

When completed, click .

\* Select "Change Size" in the "Drawing" child window to change the part size.

### 3.3.2 How to Create Original Lamp and Message Parts

Creating custom Lamp or Message parts is fundamentally the same as creating custom Switch parts.

**(1) <Replacement> tab**

The setting items are the same as the custom Switch parts.

**(2) <Display/Hide> tab**

Lamp or Message parts can be displayed or hidden in response to the status of the PLC devices.

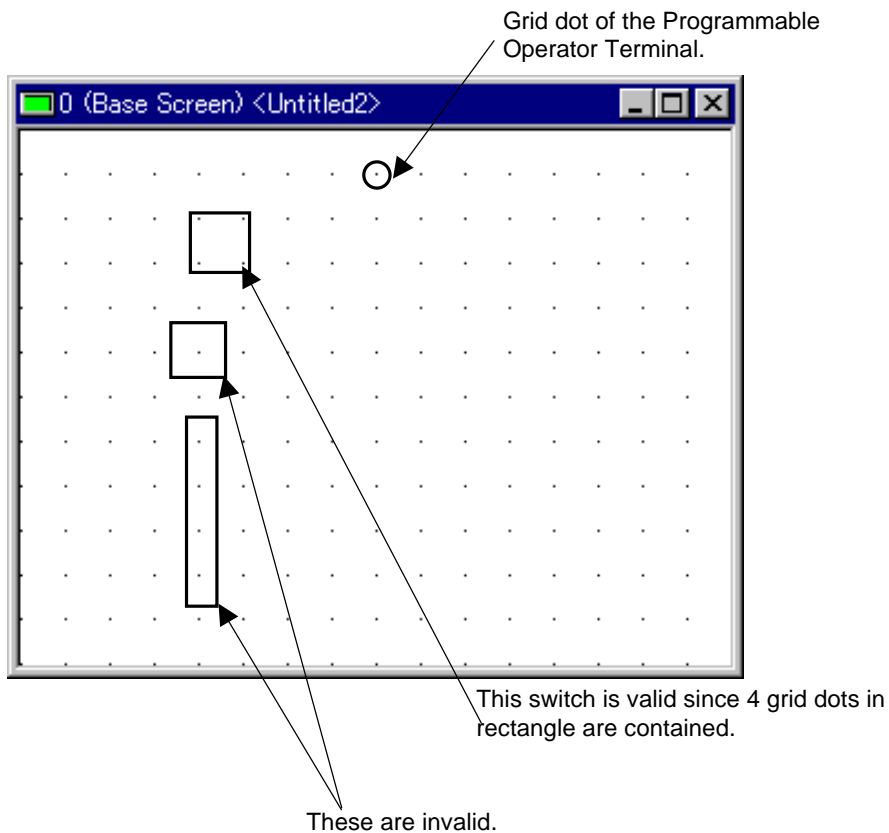
**(3) <Reverse/Blink> tab**

The setting items are the same as the custom Switch parts.



**NOTE**

**Switch parts must contain at least 4 grid dots in a rectangle. Otherwise they will be invalid.**



**GT01**

**GT01 is an analog touch panel; therefore, switches can be laid out freely without regard to the grid. The minimum size of a switch is 8 x 8 dots.**



# Chapter 4

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## Screen Switching



## 4.1 Switching Between Screens

### 4.1.1 Using Function Switch Parts

#### What are Function switch parts?

Function switch parts are used to switch screens on the display panel or execute arithmetic operations when the switch is pressed on the panel.

#### 1. Open the No. 0 “Base Screen” window and place a Function switch part.



Double-click the No. 0 on the “Screen Manager” window so that its “Base Screen” window is displayed.

From the “Standard” Parts Library, drag “FSW0” and drop it on the “Base Screen” window.

#### 2. Double-click the Function switch part and change its basic settings.



Double-click “FS0” on the No. 0 “Base Screen” window so that the “Function Switch” dialog box - <Basic Setup> tab is displayed. Enter the settings below;

#### “Operation Mode” ----

Select “Change Screen”.  
Enter 1 for “Screen No.”

#### 3. <Character> tab - Change characters to be displayed on the switch.

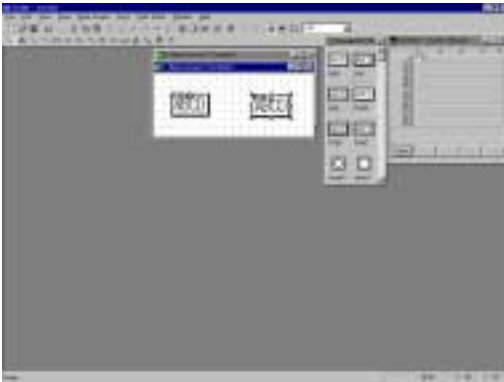


Click <Character> tab.

Delete the default, ABCD, in “Character String” and enter the following.

(for ON and OFF)  
“to Panel 1”

#### 4. Open the No. 1 “Base Screen” window and place 2 Function switch parts.



Double-click the No. 1 on the “Screen Manager” window so that its “Base Screen” window is displayed.

From the “Standard” Parts Library, drag “FSW0” twice and drop on the “Base Screen” window.

#### 5. Double-click the placed Function switch parts and change basic settings.



Double-click “FS0” on the No.1 “Base Screen” window so that the “Function Switch” dialog box - <Basic Setup> tab is displayed. Choose the following settings:

“**Operation Mode**” ---- “Change Screen”  
“Screen No.” ---- 2

Do the settings for “FS1” as below;

“**Operation Mode**” ---- “Change Screen”  
“Screen No.” ---- 0

#### 6. <Character> tab - Change characters to be displayed on the switches.



Click <Character> tab.

Delete the default, ABCD, in “Character String” and enter the following.

(for ON and OFF)  
for “FS0” ---- “to Panel 2”  
for “FS1” ---- “to Panel 0”



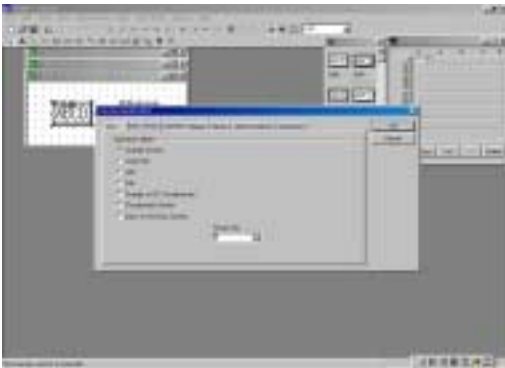
**7. Open the No. 2 “Base Screen” window and place 2 Function switch parts.**



Double-click the No. 2 on the “Screen Manager” window so that its “Base Screen” window is displayed.

From the “Standard” Parts Library, drag “FSW0” twice and drop on the “Base Screen” window.

**8. Double-click the placed Function switch parts and change basic settings.**



Double-click “FS0” on the No.2 “Base Screen” window so that the “Function Switch” dialog box - <Basic Setup> tab is displayed. Choose the following settings:

“**Operation Mode**” ---- “Change Screen”  
“Screen No.” ---- 3

Do the settings for “FS1” as below;  
“**Operation Mode**” ---- “Change Screen”  
“Screen No.” ---- 1

**9. <Character> tab – Change characters to be displayed on the switch.**



Click <Character> tab.

Delete the default, ABCD, in “Character String” and enter the following

(for ON and OFF)  
for “FS0” ---- “to Panel 3”  
for “FS1” ---- “to Panel 1”

## 12. Open the No. 3 “Base Screen” window and place a Function switch part.



Double-click the No. 3 on the “Screen Manager” window so that its “Base Screen” window is displayed.

From “Standard” Parts Library, drag “FSW0” and drop it on the “Base Screen” window.

## 13. Double-click the placed Function switch part and change basic settings.



Double-click “FS0” on the No.3 “Base Screen” window so that the “Function Switch” dialog box - <Basic Setup> tab is displayed. Choose the following settings:

“**Operation Mode**” ---- “Change Screen”  
 “Screen No.” ---- 2

## 14. <Character> tab - Change characters to be displayed on the switch.

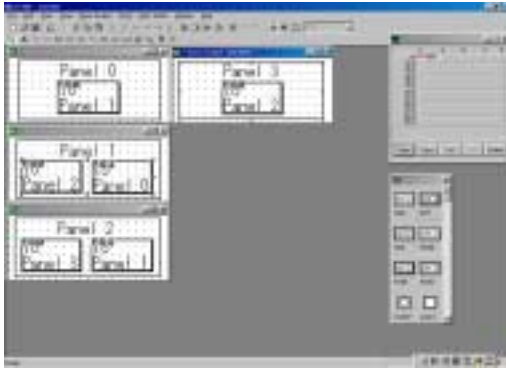


Click <Character> tab.

Delete the default, ABCD, in “Character String” and enter the following

(for ON and OFF)  
 “to Panel 2”

**15. Write characters on the “Base Screen” windows.**



Click “Character String” icon and write “Panel 0” on the No. 0 “Base Screen” window, “Panel 1” on the No. 1 “Base Screen” window, “Panel 2” on the No. 2 “Base Screen” window and “Panel 3” on the No. 3 “Base Screen” window.

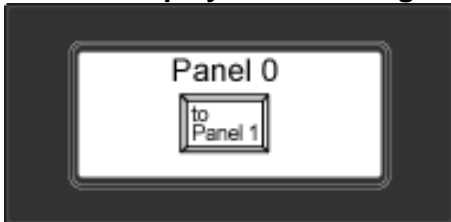
**16. Transfer the screen data created to the Programmable Operator Terminal.**



Click [File]-[Transfer] so that the “Transfer Data” window is displayed. Choose the following settings and click .

“Data to Transfer” ---- “All Data”  
“Direction” ---- “GTWIN → GT”

**17. Check display on the Programmable Operator Terminal.**



When transmission is completed, what was created on the No. 0 “Base Screen” window is displayed on the Programmable Operator Terminal.

Press switches on the display panel and check whether screens switch properly.

Panel 0→Panel 1→Panel 2→Panel 3  
Panel 3→Panel 2→Panel 1→Panel 0

## 4.1.2 Switching between Screens Using Switch Parts and the PLC Program

1. Open the No. 0, 1, 2, 3 “Base Screen” windows and place a Switch part on each.



Double-click the No. 0, 1, 2 and 3 on the “Screen Manager” window so that their “Base Screen” windows are displayed.

From “Standard” Parts Library, drag “SW0” and drop it on each “Base Screen” window.

2. Double-click the Switch part on the No. 0 “Base Screen” window and change its basic settings.



“Switch Parts” dialog box - <Basic Setup> tab is displayed.

Choose the following settings;

“Operation Mode” ---- “Momentary”  
“R100”

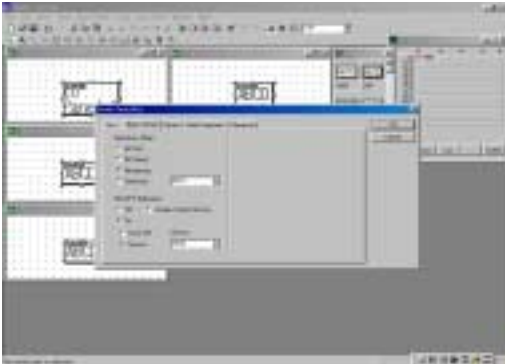
3. <Character> tab of the No. 0 “Base Screen” window - Change its settings.



Click <Character> tab, delete the default, ABCD, in “Character String” and enter the following.

(For ON and OFF)  
“To Panel 1”

**4. Double-click the Switch part on the No. 1, 2 and 3 “Base Screen” windows and change its settings.**



The “Switch Parts” dialog box - <Basic Setup> tab is displayed.

Choose the following settings;

**“Operation Mode”** ----

(No. 1 Base Screen)

“Momentary”

“R101”

(No. 2 Base Screen)

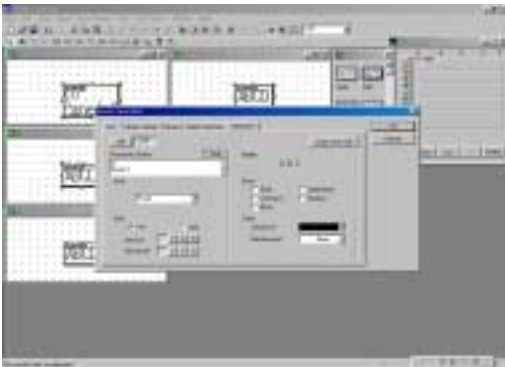
“Momentary”

“R102”

(No. 3 Base Screen)

“Momentary”

“R103”



Click <Character> tab, delete the default, ABCD, in “Character String” and enter the following.

(For ON and OFF)

(No. 1 Base Screen)

“To Panel 2”

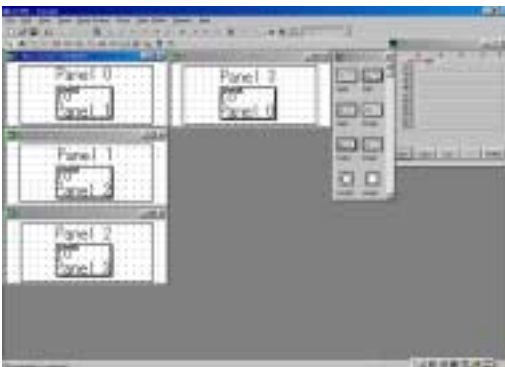
(No. 2 Base Screen)

“To Panel 3”

(No. 3 Base Screen)

“To Panel 0”

**5. Write characters on the “Base Screen” windows.**



Click “Character String” icon and write “Panel 0” on the No. 0 “Base Screen” window, “Panel 1” on the No. 1 “Base Screen” window, “Panel 2” on the No. 2 “Base Screen” window and “Panel 3” on the No. 3 “Base Screen” window.

**6. Transfer the screen data created to the Programmable Operator Terminal.**



Click [File]-[Transfer] so that the "Transfer Data" window is displayed.  
Choose the following settings and click **OK**.

"Data to Transfer" ---- "All Data"

"Direction" ---- "GTWIN → GT"

**7. Check display on the Programmable Operator Terminal.**

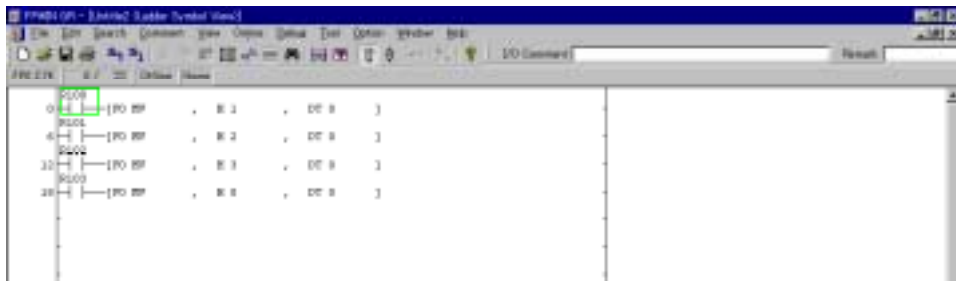


When transmission is completed, what was created on the No.0 "Base Screen" window is displayed initially on the Programmable Operator Terminal.

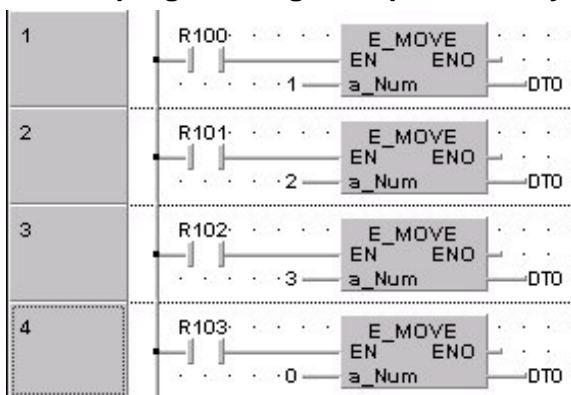
**8. Check display on the Programmable Operator Terminal.**

Start up the PLC programming software connected with PLC. Create a program and download it to the PLC.

**FPWIN GR programming example**



**FPWIN Pro programming example, LD body**



## Screen Switching

---

After downloading is complete, press the switch created on the display panel and check whether the panels switch properly.  
The screen should change from Panel 0 Panel 1 Panel 2 Panel 3 (and go back to) Panel 0.

### 4.1.3 By Function Switch Parts and the PLC Program

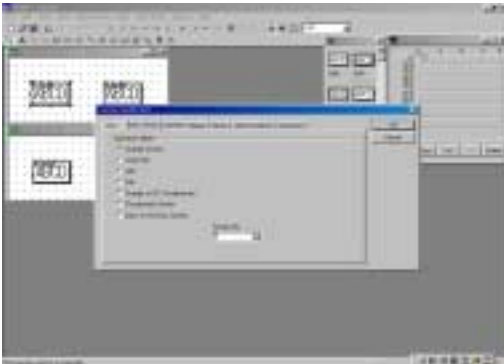
1. Open the No. 0 and 1 “Base Screen” windows, and place a Function switch part and a Switch part on each.



Double-click the No. 0 and 1 on the “Screen Manager” window so that their “Base Screen” windows are displayed.

From the “Standard” Parts Library, drag “FSW0” and “SW0”, and drop them on each “Base Screen” window.

2. Double-click the Function switch part on the No. 0 and 1 “Base Screen” windows and change its settings.



“Function Switch” dialog box - <Basic Setup> tab is displayed.

Choose the following settings:

“Operation Mode” ----  
 (No. 0 Base Screen)  
 “Change Screen”  
 “Screen No.” ---- 1  
 (No.1 Base Screen)  
 “Change Screen”  
 “Screen No.” ---- 0

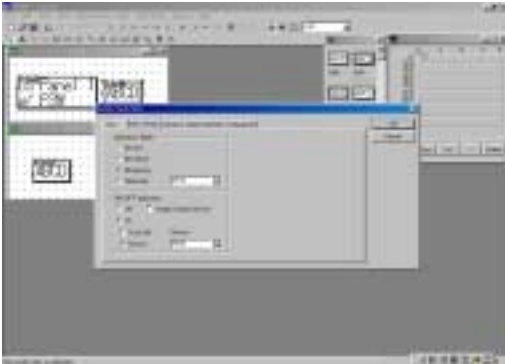


Click <Character> tab and enter the following. (For ON and OFF)

“Character String” ----  
 (No. 0 Base Screen)  
 “To Panel 1 w/ FSW”  
 (No.1 Base Screen)  
 “To Panel 0 w/ FSW”



**3. Double-click the Switch part on the No. 0 and 1 “Base Screen” windows and change its settings.**



“Function Switch” dialog box - <Basic Setup> tab is displayed.  
Choose the following settings:

- “Operation Mode” ----
- (No. 0 Base Screen)
- “Momentary”
- “R110”
- (No. 1 Base Screen)
- “Momentary”
- “R120”



Click <Character> tab and enter the following (for ON and OFF):

- “Character String” ----
- (No. 0 Base Screen)
- “To Panel 1 w/ SW”
- (No. 1 Base Screen)
- “To Panel 0 w/ SW”

**4. Write characters on the “Base Screen” windows and transfer the screen data created to the Programmable Operator Terminal.**



Write “Panel 0” on the No. 0 “Base Screen” window and “Panel 1” on the No. 1 “Base Screen” window.

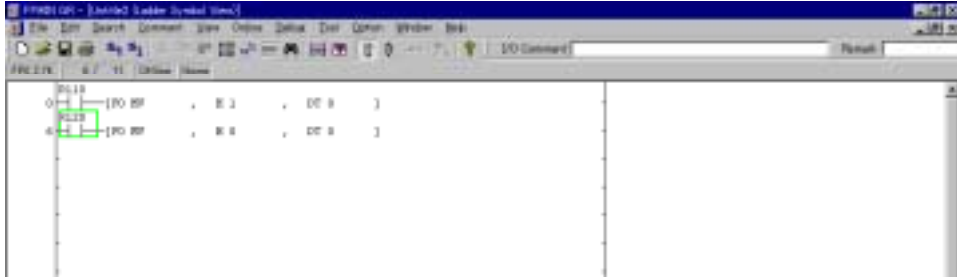
Click [File]-[Transfer], so that the “Transfer Data” window is displayed.  
Choose the following settings and click .

- “Data to Transfer” ---- “All Data”
- “Direction” ---- “GTWIN → GT”

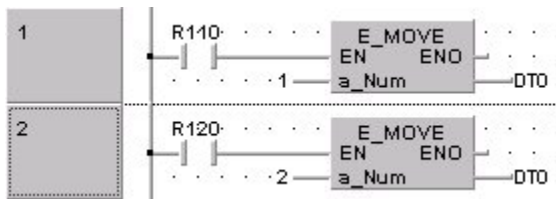
**5. Check display on the Programmable Operator Terminal.**

Start up the PLC programming software connected with PLC. Create a program and download it to the PLC.

**FPWIN GR programming example**



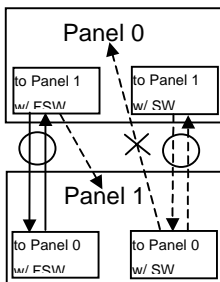
**FPWIN Pro programming example, LD body**



After downloading is completed, press the switch on the display panel to check whether the screens switch properly.



**KEY POINTS**



Switching between screens according to schemes and is possible.

- Turn ON a) → goes to Panel 1.
- Turn ON c) → goes to Panel 0.
- Turn ON b) → goes to Panel 1.
- Turn ON d) → goes to Panel 0.

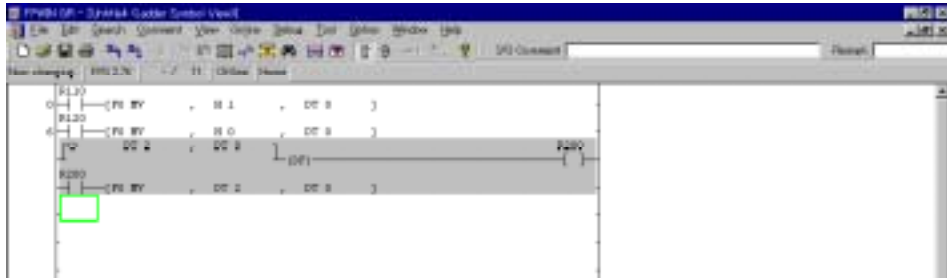
However, switching between screens according to scheme is not possible.

- Turn ON a) → goes to Panel 1.
- Turn ON d) → goes to Panel 0.

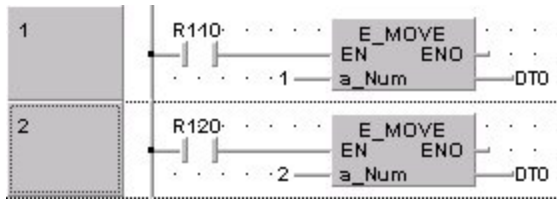
Bear in mind that switching as shown in scheme often happens when a Function switch part and a Switch part are used together.

**FPWIN GR programming example**

To enable a scheme like , amend the program as shown and download it to the PLC.



**FPWIN Pro programming example, LD body**



Press the switches on the display panel and check whether scheme works.

# Chapter 5

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## Practical Use for GT Series



## 5.1 Bar Graph Parts

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### What are Bar graph parts?

Bar graph parts display changes in the values of the PLC device used as a reference, in bar graph format. Value change can be displayed on the graph in the vertical or horizontal direction.

### 5.1.1 Displaying a Bar Graph Utilizing the PLC Timer

---

#### 1. Open the No. 0 “Base Screen” window and place a Bar graph part.



Double-click the No. 0 on the “Screen Manager” window so that its “Base Screen” window is displayed.

From the “Standard” Parts Library, drag “Bargraph” and drop it on the “Base Screen” window.

#### 2. Double-click the Bar graph part and keep the default for <Basic Setup> tab.



Double-click “BG0”, so that the “Bar Graph Parts” dialog box - <Basic Setup> tab is displayed.

Keep the default.

Also keep the default settings for <Reverse/Blink> tab.

#### 3. <Color and Form> tab – Keep the default settings.



Click <Reverse/Blink> tab.  
Keep default settings.

4. <Display Numeric> tab - Change the settings.



Click <Display Numeric> tab.

Select "On" so that the related items appear. Choose the following settings and click .

- "Display %" ---- "On"
- "Size"
- "Font" ---- "1\*1"

5. Transfer the created screen data to the Programmable Operator Terminal.

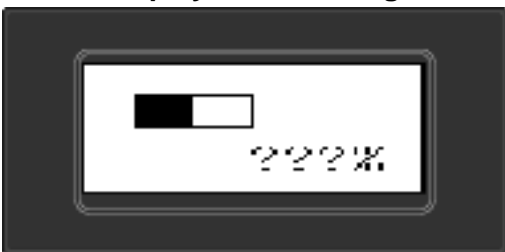


When all the settings on "Bar Graph Parts" dialog box are completed, click . A zone for "Display %" will appear on the "Base Screen" window. Move it under "BG0" as shown on the left and click it to place it.

Click [File]-[Transfer] so that the "Transfer Data" window is displayed. Choose the following settings and click .

- "Data to Transfer" ---- "All Data"
- "Direction" ---- "GTWIN -> GT"

6. Check display on the Programmable Operator Terminal.

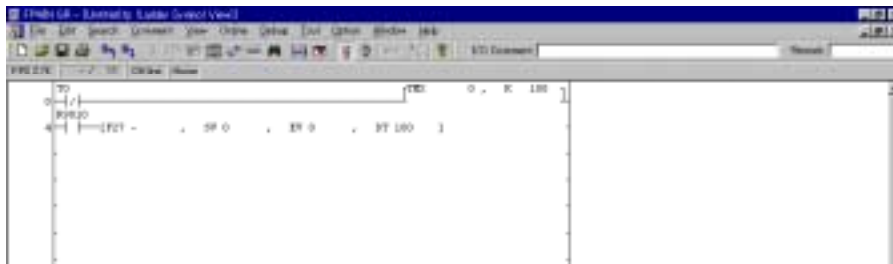


When transmission is completed, the Bar graph part created using GTWIN is displayed on the Programmable Operator Terminal.

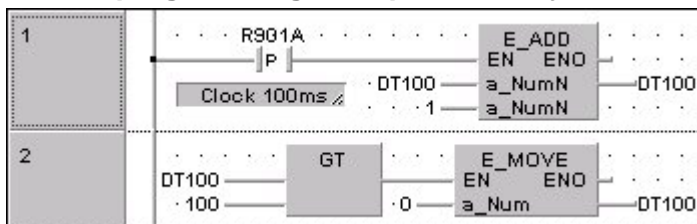
## 7. Check performance using the programming software.

Start up the PLC programming software connected with PLC. Create a program and download it to the PLC.

### FPWIN GR programming example



### FPWIN Pro programming example, LD body

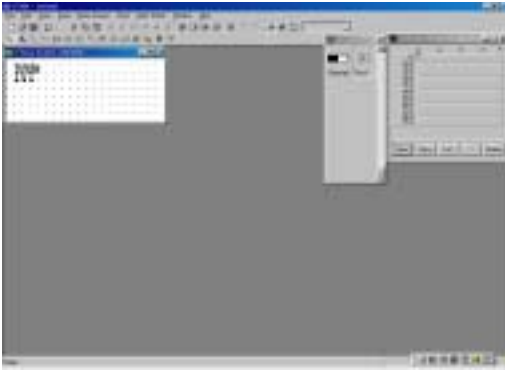


After downloading is completed, check performance of the Bar graph part on the display panel and the one of the timer in the program.

## 5.2 Clock Parts

### 5.2.1 Clock Function

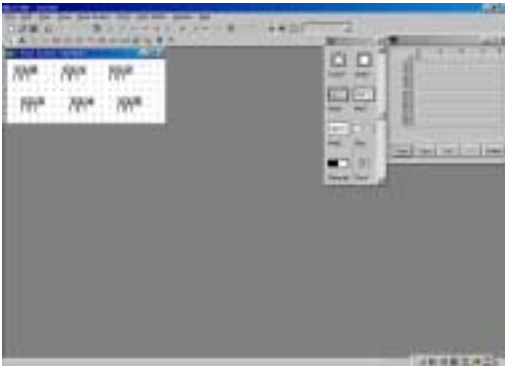
#### 1. Open the No. 0 “Base Screen” window and place a Clock part.



Double-click the No. 0 on the “Screen Manager” window so that its “Base Screen” window is displayed.

From “Standard” Parts Library, drag “Clock” and drop it on the “Base Screen” window.

#### 2. Make a copy of the Clock part.



Make 5 copies of the Clock part and place them as shown on the left.

Copying can be done by selecting [Copy] from the menu, or by pressing Ctrl + C while the part is selected.

#### 3. Double-click the Clock part, “CL0”, and change its settings.



Double-click “CL0”, so that “Clock Parts” dialog box - <Basic Setup> tab is displayed. Choose the settings below:

“Clock” ---- “Month”



**4. Double-click the Clock part CL1, and change its settings.**



Double-click "CL1" so that the "Clock Parts" dialog box - <Basic Setup> tab is displayed. Choose the settings below:

**"Clock" ---- "Day"**

**5. Double-click the Clock part CL2, and change its settings.**



Double-click "CL2" so that the "Clock Parts" dialog box - <Basic Setup> tab is displayed. Choose the settings below:

**"Clock" ---- "Year"**

**"Zero Suppression" ---- [On]**

**6. Double-click the Clock part CL3, and change its settings.**



Double-click "CL3" so that the "Clock Parts" dialog box - <Basic Setup> tab is displayed. Choose the settings below:

**"Clock" ---- "Hour[24 Hours]"**

**7. Double-click the Clock part CL4, and change its settings.**



Double-click "CL4" so that the "Clock Parts" dialog box - <Basic Setup> tab is displayed. Choose the settings below:

**"Clock" ---- "Minute"**

**8. Double-click the clock part CL5, and change its settings.**



Double-click "CL5" so that the "Clock Parts" dialog box - <Basic Setup> tab is displayed.

Change the settings for <Basic Setup> and <Reverse/Blink> tabs as below;

<Basic Setup>

**"Clock" ---- "Second"**

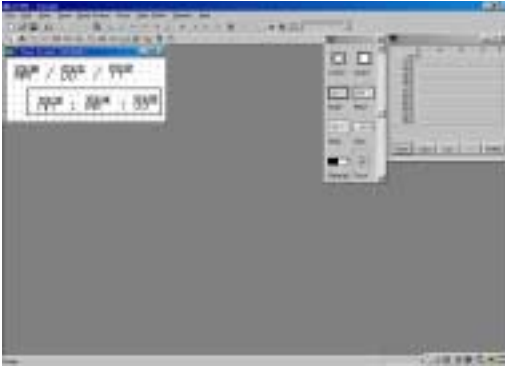


<Reverse/Blink>

**"Normal" ---- Select "On".**

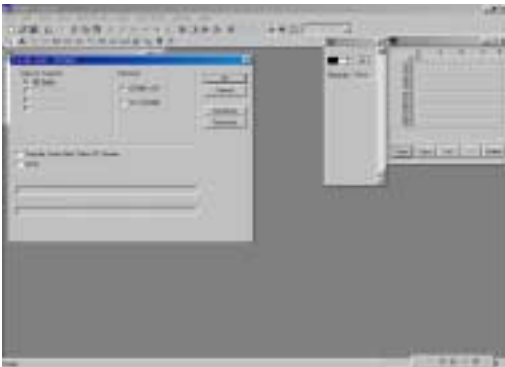
**"Operation" ---- "Blink"**

**9. Write characters and draw a frame on the “Base Screen” window.**



After all the settings are completed, surround the time display with a frame, enter “/” (slash) in between for the date display and “:” (colon) between Hour, Minute and Second, as shown on the left.

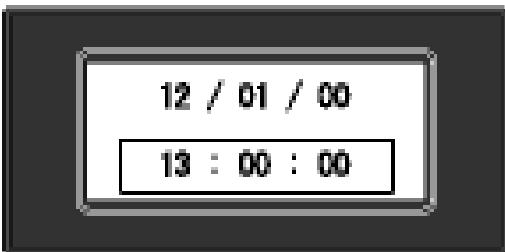
**10. Check display on the Programmable Operator Terminal.**



Click [File]-[Transfer] so that the “Transfer Data” window is displayed. Choose the following settings and click .

- “Data to Transfer” ---- “Base Screen”
- “Direction” ---- “GTWIN → GT”
- “Base Screen No.” ---- “0”

**11. Check display on the Programmable Operator Terminal.**

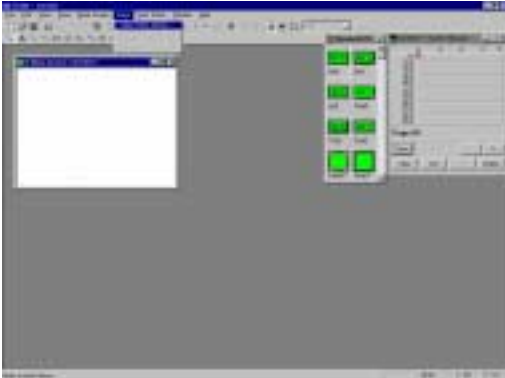


When a transmission is completed, the screen (displaying the date and time) created using GTWIN is displayed on the Programmable Operator Terminal.

\*To use a clock with the GT01, please adjust the configuration settings so that they point to the PLC clock to be referenced. The GT01 does not have its own internal clock.

## 5.3 How to Paste the Same Part Multiple Times

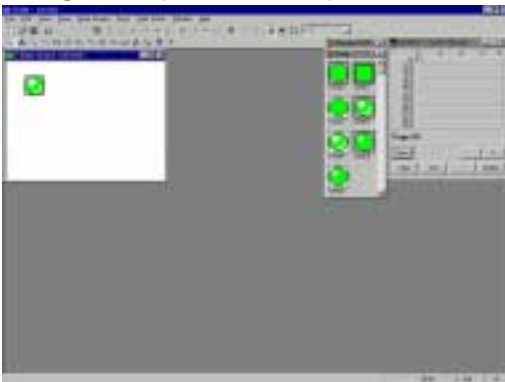
### 1. Open the Parts Library.



Double-click the No. 0 on the "Screen Manager" window so that its "Base Screen" window is displayed.

Click [Parts] - [Open Parts Library] from the menu and select "LAMP\_LIB.SPL".

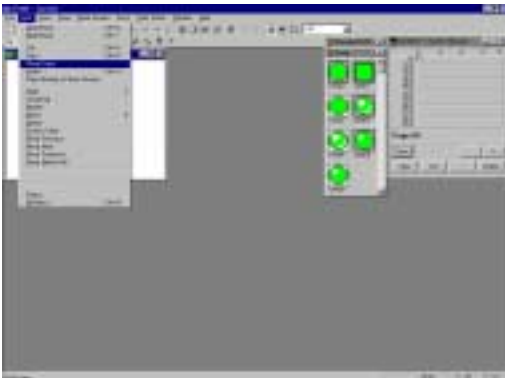
### 2. Drag "Lamp3" and drop it on the "Base Screen" window.



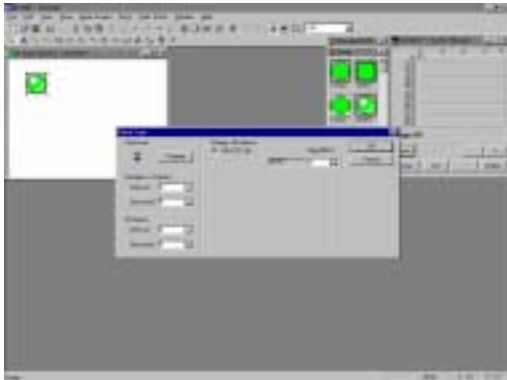
Drop it on the top-left of the "Base Screen" window.

(The "Base Screen" window on the left is the one opened from GT30.)

### 3. While "LP0" is selected, select [Edit] – [Plural Copy] from the main menu.



#### 4. Set parameters for “Plural Copy” window.



Choose the settings below and click .

“Direction” ---- Keep the default.

“Number of Copies”

“Vertical” ---- 3

“Horizontal” ---- 5

“Distance”

“Vertical” ---- 5

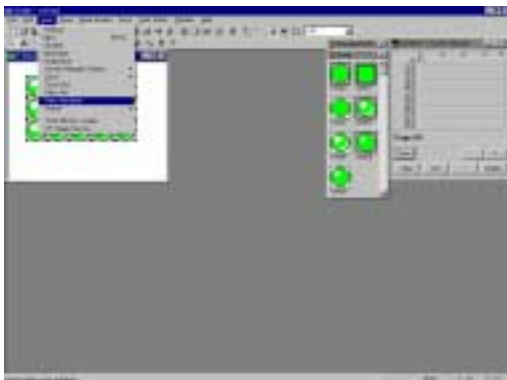
“Horizontal” ---- 5

“Change Attributes”

“ON/OFF Bit” ---- checked.

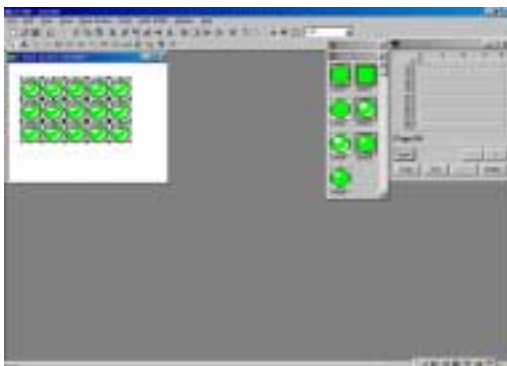
“Step” ---- 1

#### 5. Check what created on the “Base Screen” window.



The parts copied under conditions set in step 4 above are displayed on the “Base Screen” window.

Select [View] - [Parts Attribute] from the main menu to check that the device No. is added by 1 from the previous one.



This [Plural Copy] is available for all the parts.

## 5.4 Multi-language Function (Windows2000 or XP)

The multiple language input is possible for GTWIN used on Windows2000 or XP.  
How to personalize your computer for the multiple language input is explained below.

### 1. Select “Regional Options”.



Select [Start] - [Settings] - [Control Panel] from Windows and double-click “Regional Options”.

### 2. Select languages you want to use.



“Regional Options” is displayed.

Check in “Language settings for the system” the languages you need. (GTWIN handles Japanese, Western Europe and the United States, Traditional Chinese, Simplified Chinese and Korean.)

When finished setting, click **OK**.

### 3. Set a keyboard.



Double-click "Keyboard".

### 4. Select the languages for the keyboard you want.



"Keyboard Properties" window is displayed.

Click <Input Locales> tab and add the languages you need.

When you practice the multiple language input, select the language you want in the IME and make the following settings in GTWIN. If these settings are not made, garbage letters will be displayed.

**1. With parts from the “Standard” Parts Library.**



Set the language you want to use in <Character> tab.

Click where circled in the left figure to set the language you want.

**2. With custom parts or when writing characters on the “Base Screen” window**



Click the “Character Type” icon and select the language you want.





# Chapter 6

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**Practical Use dedicated to GT01, 30**

## 6.1 Line Graphs

You can set line graphs to be displayed in the following two ways:

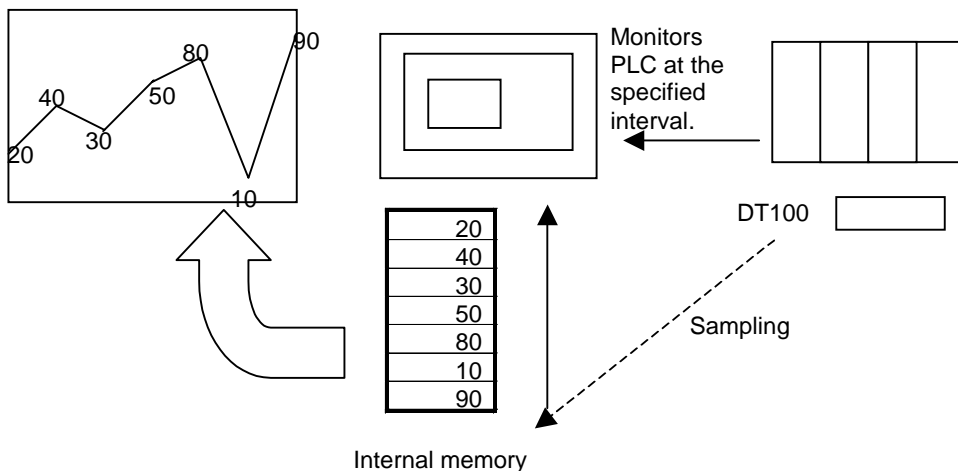
- Sampling method: data is read from PLC in specific intervals
- Block method: data is read from PLC when triggered

### 6.1.1 Sampling Method

PLC data is read into the internal memory of the GT at the specified interval in 1-word or 2-word units and is displayed as a line graph.

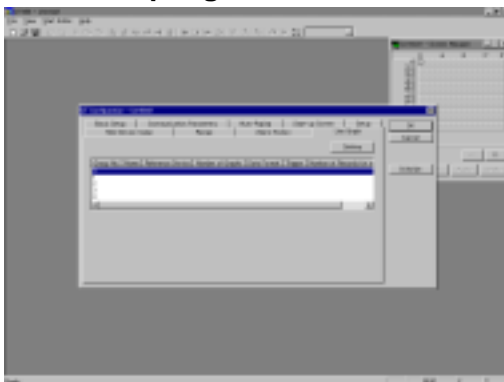
### Performance

- (1) GT reads data from PLC at the specified time interval and saves them in the internal memory of GT.
- (2) The values saved in the internal memory of GT will be displayed using a line graph part.
- (3) The graph will be updated at the specified time interval.



### Procedure

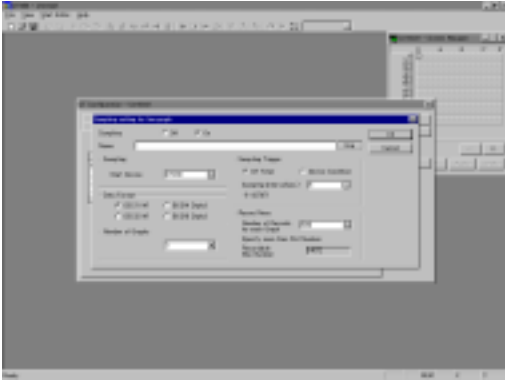
1. Set a sampling method in “GT Configuration” dialog box.



Select [File] - [Configuration] - [GT Configuration] so that “GT Configuration” dialog box is displayed.

Click <Line Graph> tab.

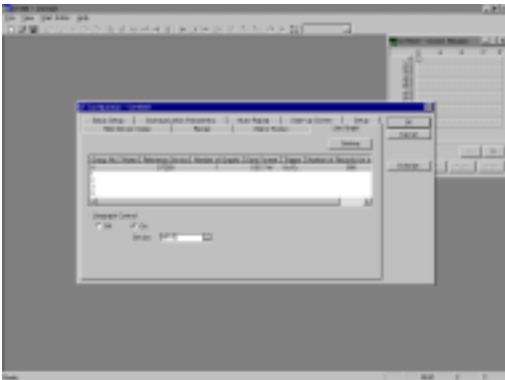
2. Select the Group No. 0 and click **Setting** to make a sampling setting.



The "Sampling setting for line graph" dialog box is displayed. Select "On" for "Sampling" so that its related items appear. Choose the following settings and click **OK**.

- "Sampling"** ---- "On"
- "Start Device"** ---- [DT200]
- "Data Format"** ---- DEC[1W]
- "Number of Graphs"** ---- 1
- "Sampling Trigger"** ---- "GT Timer"
- "Sampling Interval[sec.]"** ---- "5"
- "Record Area"**
- "Number of Records for each Graph"** ---- 500"

### 3. <Line Graph> tab - Set "Linegraph Control".



Do the following setting and click **OK**.  
**"Linegraph Control"** ---- "On"  
**"Device"** ---- "WR15"

Now, settings for the "GT Configuration" dialog box are completed.

## What to Set in “GT Configuration” Dialog Box - <Line Graph> tab

Up to 5 sampling methods, in Group No. 0 to No. 4, can be set.

### “Sampling” - “Start Device”

GT samples PLC data from the specified “Start Device” for the number of words set by (“Number of Graphs” x “Data Format”).

If “Number of Graphs” is set to 5 and “Data Format” is set to DEC[2 W], GT will sample PLC data from the “Start Device” for (5 x 2 words) = 10 words.

### “Data Format”

Specifies a format of data to be sampled.

### “Number of Graphs”

Sets the number of graphs to be sampled. This is not the number of graphs to be displayed on a Line graph screen. The number of lines to be displayed is set in “Line Graph Parts” dialog box - <Basic Setup> tab.

\*: Set a value here bigger than the number of lines to be displayed.

### “Sampling Trigger”

Specifies the timing of sampling. The “GT Timer” samples PLC data at the specified interval. When you want to sample PLC data depending on the status of PLC devices (bit ON/OFF), select “Device Condition”.

### “Record Area”

Sets the count of sampled data to be recorded. The sampled data will be stored in the internal memory of the Programmable Operator Terminal.

\* Set this value bigger than the value obtained by (“Number of Plots” x “Number of Graphs”, both set in “Line Graph Parts” dialog box - <Basic Setup> tab.)

### Line graph control device (2 words)

Address	F	E	D	C	B	A	9	8	7	6	5	4	3	2	1	0
n	Reserved (Do not use.)			Memory over flow of Group 4.	Memory over flow of Group 3.	Memory over flow of Group 2.	Memory over flow of Group 1.	Memory over flow of Group 0.	Reserved (Do not use.)			Stops sampling for Group 4.	Stops sampling for Group 3.	Stops sampling for Group 2.	Stops sampling for Group 1.	Stops sampling for Group 0.
n+1				Reserved (Do not use.)			Completed clearing memory of the Group 4.	Completed clearing memory of the Group 3.				Completed clearing memory of the Group 2.	Completed clearing memory of the Group 1.	Completed clearing memory of the Group 0.	Reserved (Do not use.)	

**Stops sampling for the Group:**

When the specific bit goes ON in PLC, GT stops sampling data of the PLC.

**Memory overflow of the Group:**

When the number of alarms sampled exceeds “Number of Records for each Graph” set in the “GT Configuration” dialog box - <Line Graph> tab, the bit goes ON. Once it is ON, the ON status will be maintained until the memory is cleared.

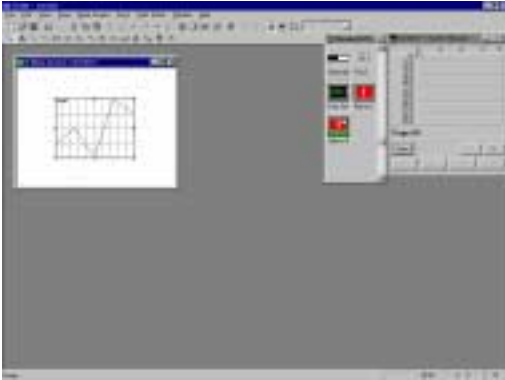
**Clears the memory of the Group:**

When the specific bit goes ON in the PLC, the recorded contents will be cleared.  
Confirm that the memory clear complete flag is OFF before turning OFF the bit.

**Completed clearing a memory of the Group’s memory:**

When GT has completed clearing the memory of the specified Group, GT makes the applicable bit in the PLC go ON. That bit will go OFF after GT confirms that the memory clear complete flag has gone OFF.

**4. Open the No. 0 “Base Screen” window and place a Line graph part.**



Double-click the No. 0 on the “Screen Manager” window so that its “Base Screen” window is displayed.

From the “Standard” Parts Library, drag “Line Graph” and drop it on the “Base Screen” window.

**5. Double-click the Line graph part for setting.**



Double-click “LG0”, so that “Line Graph Parts” dialog box - <Basic Setup> tab is displayed.

Keep the default settings below:

- “Method to Draw” ---- “Sampling”
- “Reference”
  - “Group” ---- “0”
  - “Number of Graphs” ---- “1”
- “Graph Type” ---- “Pen Move”
  - “Number of Scrolls” ---- “1”
- “Direction” ---- “Right”
- “Stop Update” ---- “Off”
  - “Number of Plots” ---- “80”

**6. <Display> tab – Change the settings.**



Choose the following settings;

- “Display Data”
  - “Plot Interval” ---- “1”
- “Display Frame” ---- “Whole”
- “Scale”
  - “Horizontal Line” ---- “On”
    - “Number of Divisions” ---- “5”
  - “Vertical Line” ---- “On”
    - “Number of Divisions” ---- “5”

## **“Line Graph Parts” Dialog Box - <Basic Setup> Items**

### **“Method to Draw”**

“Sampling” samples the values of the PLC (in 1 word or 2 word segments) and displays them as a line graph.

“Block” reads the values stored in the internal memory of the PLC all at once and displays them in a line graph.

### **“Reference”**

Specifies the Group No. set in the “GT Configuration” dialog box - <Line Graph> tab, so that its sampling method will be set.

“Number of Graphs” sets the number of graph lines to be displayed in a graph (up to 8 lines).

### **“Graph Type”**

Select the plot method, “Pen Move” or “Sheet Move”.

“Pen Move” draws a graph by moving a pen.

“Sheet Move” draws a graph by moving a sheet with the fixed pen.

### **“Direction”**

Sets the direction of a pen or a sheet movement.

\* A graph display will vary depending on the settings for “Graph Type” and “Direction”. Check how it looks on the panel display of GT.

### **“Stop Update”**

“On” stops updating a graph when the specified bit of the PLC device goes ON. However, sampling does not stop.

### **“Number of Plots”**

Set the number of data to be plotted on a graph.

If this is set to 100, “Number of Records for each Graph” in the “GT Configuration” dialog box - <Line Graph> tab should be more than 100.



7. <Element Setup> tab - Set parameters.



Select the Group No. 0 in the list and double-click it or click **Setup** so that the "Line Graph Parts" dialog box is displayed.

8. <Graph Setting> tab - Set parameters.



**"Line Type/Color/Mark"** ----  
Select what you want.

Keep the default below.  
**"Data Format"** ---- DEC[1W]

**"Max./Min."**  
**"Max."** ---- "Fixed", "100"  
**"Min."** ---- "Fixed", "0"

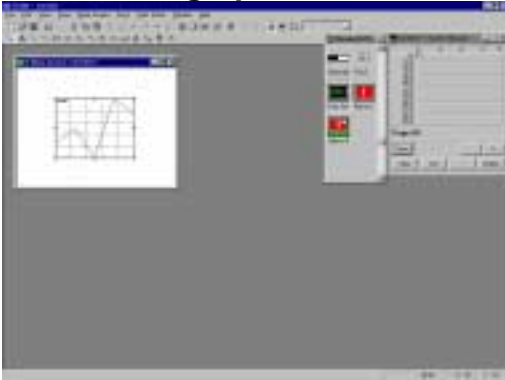
\* **"Max."** and **"Min."** are for the Max. and Min. values in Y axis of the graph.

9. <Reverse/Blink> tab - Keep the default settings.

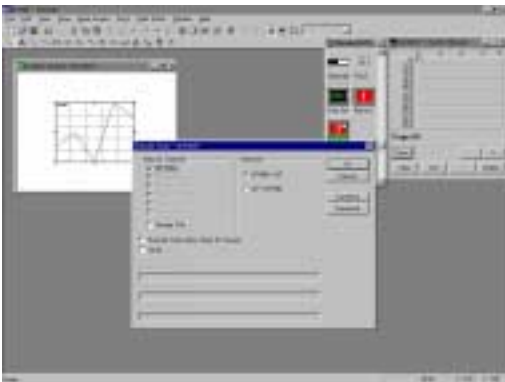


Click **OK** to close the dialog box.

**18. Check the graph on the “Base Screen” window.**



**19. Transfer the screen data created to the Programmable Operator Terminal.**



Click [File]-[Transfer] so that the “Transfer Data” window is displayed.  
Choose the following settings and click .

“Data to Transfer” ---- “All Data”  
“Direction” ---- “GTWIN → GT”

**20. Check display on the Programmable Operator Terminal.**

Input a value from 0 to 100 for DT200 and check whether the graph is updated every 5 seconds.  
The recorded data can be deleted by the Linegraph Control device. Here, turn ON R160.

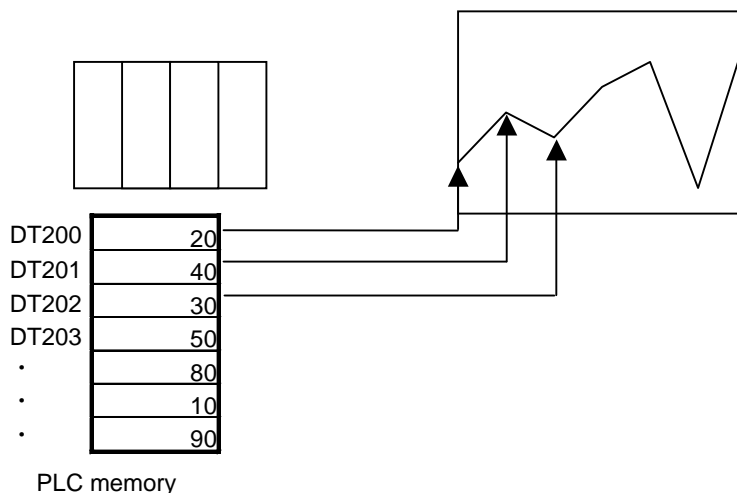
## 6.1.2 Block Method

---

The specific bit of the PLC device is set as a trigger signal in advance, and when it goes ON, PLC data for multiple words are read in block and displayed in graph.

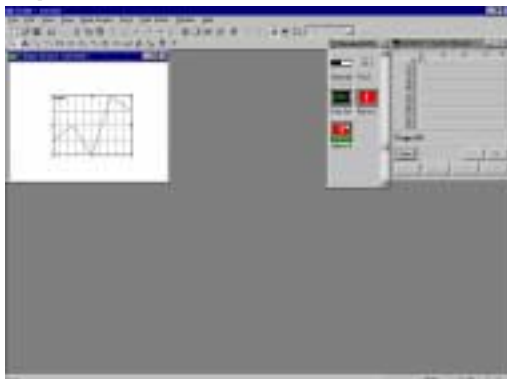
### Performance

- (1) When the specified bit of the PLC device goes ON, GT starts reading data of PLC.
- (2) The read values are displayed using a Line graph part.
- (3) The graph will be always updated while the specified bit is ON.



### Procedure

1. **Open the No. 0 “Base Screen” window and place a Line graph part.**



Double-click the No. 0 on the “Screen Manager” window so that its “Base Screen” window is displayed.

From the “Standard” Parts Library, drag “Line Graph” and drop it on the “Base Screen” window.

2. **Double-click the Line graph part and change its basic settings.**



Double-click "LG0", so that "Line Graph Parts" dialog box - <Basic Setup> tab is displayed.

Choose the settings below:

**"Method to Draw"** ---- "Block"

**"Number of Graphs"** ---- "1"

**"Direction"** ---- "Right"

**"Update Graph"**

"Update" ---- "WR20>(\*1)"

**"Number of Plots"** ---- "80"



## ◆ KEY POINTS

\*1: When the bit of the device specified in "Update Graph" is ON, a graph will be updated.  
 Bit 0 is applied to Graph No. 0 and bit 1 to Graph No. 1.  
 When the bit is OFF, a graph will not be updated.

\*2: For the Block method, no setting is required in the "GT Configuration" dialog box -<Line Graph> tab.

### 3. <Display> tab - Set parameters.



Choose the following settings:

**"Display Data"**

"Plot Interval" ---- "1"

**"Display Frame"** ---- "Whole"

**"Scale"**

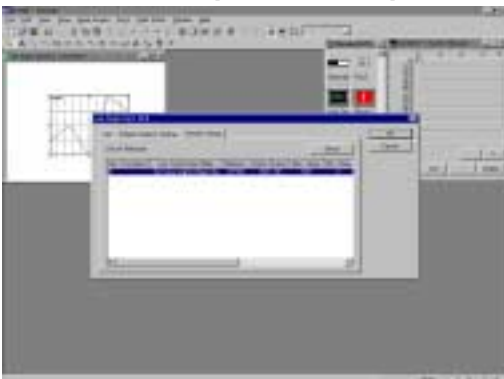
"Horizontal Line" ---- "On"

"Number of Division" ---- "5"

"Vertical Line" ---- "On"

"Number of Division" ---- "5"

### 4. <Element Setup> tab – Set parameters for No. 0.



Select the No. 0 in the list and double-click it or click Setup so that the "Line Graph Parts" dialog box is displayed.

## 5. <Graph Setting> tab - Set parameters.



**“Line Type/Color/Mark”** ----

Select what you want.

Set the following:

**“Reference Device”** ---- “DT200”

**“Data Format”** ---- “DEC[1W]”

**“Max./Min.”**

**“Max.”** ---- “Fixed”, “100”

**“Min.”** ---- “Fixed”, “0”

\*GT reads the PLC data from the bit specified in **“Reference Device”** of <Element Setup> tab for the **“Number of Plots”** set in <Basic Setup> tab.

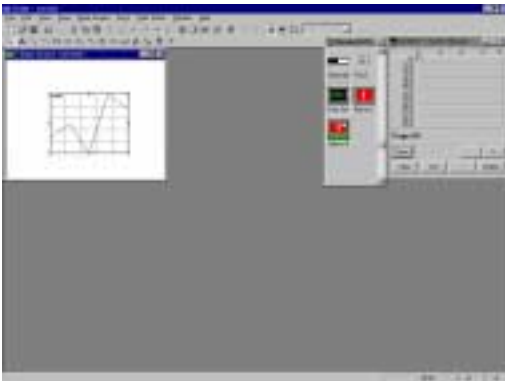
If **“Data Format”** in <Element Setup> tab is set to DEC[1W], the PLC data for (1 x **“Number of Plots”**) is read. If DEC[2W] is set, the one for (2 x **“Number of Plots”**) is read.

**6. <Reverse/Blink> tab – Keep the default settings.**

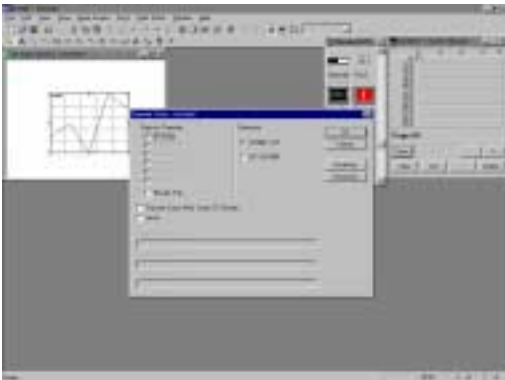


Click **OK** to close the dialog box.

**7. Check the graph on the “Base Screen” window.**



**8. Transfer the screen data created to the Programmable Operator Terminal.**



Click [File]-[Transfer], so that the “Transfer Data” window is displayed.

Choose the following settings and click **OK**.

“Data to Transfer” ---- “All Data”

“Direction” ---- “GTWIN → GT”

**9. Check display on the Programmable Operator Terminal.**

Input any value for DT200 to DT279 and check performance.

When R200 (bit 0 of WR20) is turned ON, the graph will be updated.

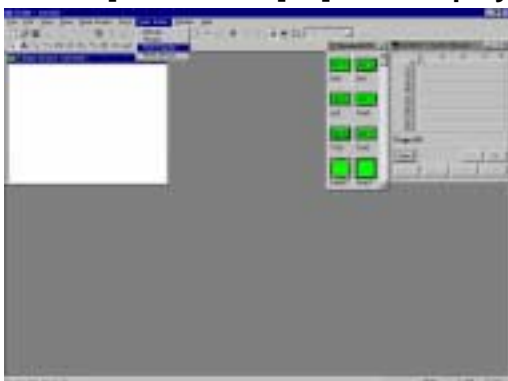
When R200 goes OFF, updating will be stopped.

## 6.2 Flow Display

---

A flow display means that the message will flow at the bottom of the display panel screen. This is possible on any screen if the specified condition is met.

### 1. Select [Start Editor] – [Flow Display] from the main menu.



### 2. Specify “Number of Message” and “Display Condition”.



The “Flow Display” dialog box - <Basic Setup> tab is displayed.

Up to 128 messages can be registered. Choose the following settings here;

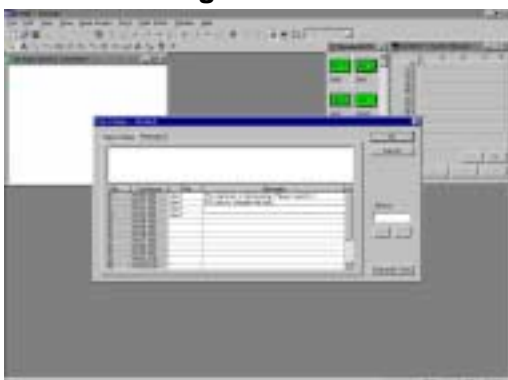
“Number of Message” ---- “16”

#### “Display Condition”

“Starting Device” ---- “WR17”

“Condition” ---- “ON”

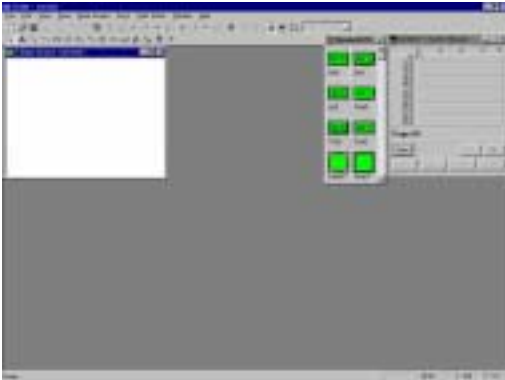
### 3. Click <Message> tab and enter messages you want to display.



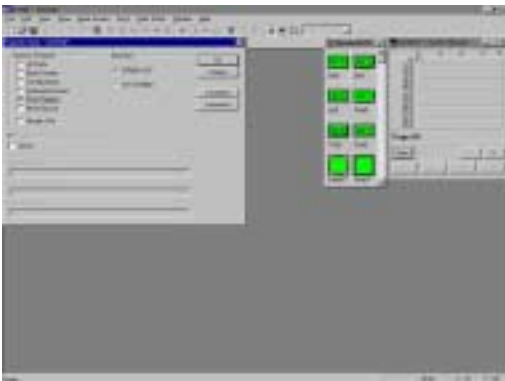
Up to 128 characters can be entered for one message.

Set a title as you like.

4. Click **OK** to go back to the “Base Screen” window.



5. Transfer the Flow display file created to the Programmable Operator Terminal.



Click [File]-[Transfer] so that the “Transfer Data” window is displayed. Choose the following settings and click **OK**.

“Data to Transfer” ---- “Flow Display”  
 “Direction” ---- “GTWIN → GT”

6. When the condition set is met in the Programmable Operator Terminal, the flowing message will be displayed.



◆ **NOTE**

When multiple conditions are met at the same time, only the message with the smaller No. will be displayed. The size of the flow display depends on the “Character Size” set in the “Character Attributes” dialog box that pops up by clicking **Character Type** in the <Message> tab.



## 6.3 Write Device Function

The write device function allows GT to write values into the PLC depending on the “Base Screen” No. or the status of PLC devices. This is useful for resetting a Writing contact for a Recipe or a Memory clear flag for a Line graph or Alarm history part.

### 6.3.1 Creating a Write Device File

1. Select [Start Editor] – [Write Device] from the main menu.



2. The “Write Device” dialog box is displayed.



Click at the top of the list, then click Setting.

3. The “Write Device” setting dialog box is displayed.



Choose the following settings in the <Condition> tab:

“Specified Screen” ---- “All Screen”  
“Condition 1” ----  
    “Operational under Valid Condition”  
“Condition 2” ----  
    “Always Operational”

If “Operational under Valid Condition” is set for both of “Condition 1” and “Condition 2”, values will be written into the PLC only when both conditions are met.

4. Select **“Operational under Valid Condition”** for **“Condition 1”** and click **Condition** so that the **“Condition”** dialog box is displayed.



Set the following:

“Relation Device” ---- “Bit”  
 “Relation Code” ---- “Reference Device: ON”  
 “Reference Device” ---- “R901D”

5. **<Operation>** tab – Set the parameters.



“Operation Mode” ---- “Others”,  
 “Add [DEC, Word, Signed, 2’s  
 Compliment]  
 “Output” ---- “DT100”  
 “Device to Add/Sub” ---- “DT100”  
 “Value” ---- “1”

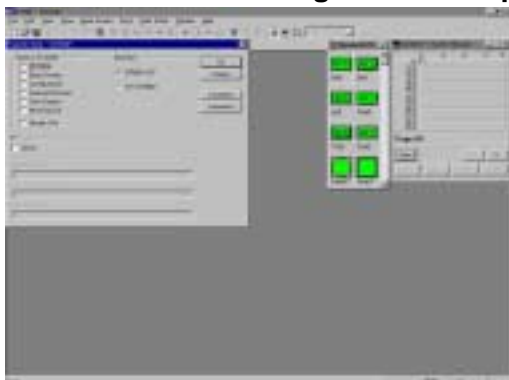
6. Click **OK** to return to **“Write Device”** dialog box.



When you want to set conditions or data multiple times, click the line below the one set and click **Setting**.

\* Up to 64 can be set.

7. Click **OK** to return to the “Base Screen” window. Transfer the Write device file created to the Programmable Operator Terminal.



Click [File]-[Transfer], so that “Transfer Data” window is displayed.

Choose the following settings and click **OK**.

“Data to Transfer” ---- “All Data”

“Direction” ---- “GTWIN → GT”

\* R901D, set in “Condition 1”, repeats going ON and OFF every 2 seconds, so that 1 is added to the value for DT100 every 2 seconds.



#### NOTE

If “All Screen” is frequently selected under “Specified Screen”, GT30 will always be busy reading out values from the PLC, resulting in a slower response. When a screen can be specified, we recommend selecting “Specified Screen”.

Write device operation is executed by derivative action at the timing when the specified conditions are met. When conditions are met and its status is maintained, writing is executed once.

### 6.3.2 Handshaking by Write Device Function

---

The Write Device function can practice handshaking without programming it in the PLC.

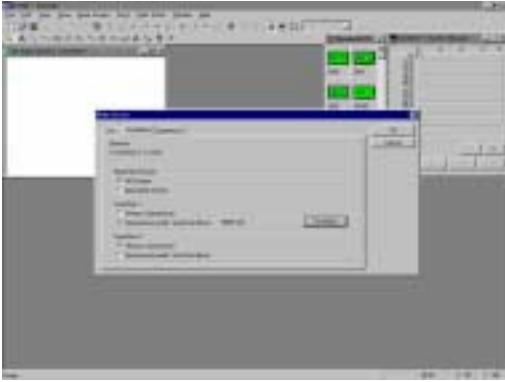
(E.g.) Writing (GT → PLC) using Write Device function

The Control Device is to be WR20.

1. Select **[Start Editor] – [Write Device]** from the main menu.



2. Double-click in the list and set the followings in <Condition> tab.



“Specified Screen” ---- “All Screen”

“Condition 1” ---- “Operational under Valid Condition”

Click **Condition**.

“Relation Device” ---- Select “Bit”.

“Relation Code” ---- “ON”

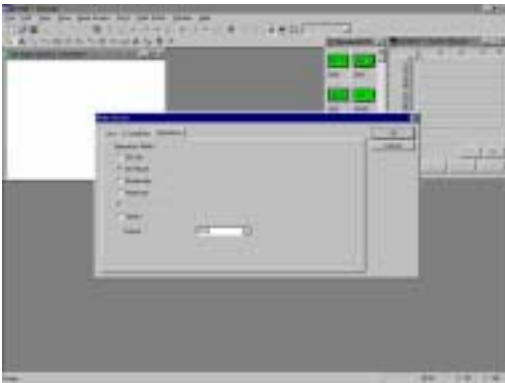
“Reference Device” ---- “R208”

“Condition 2” ---- “Always Operational”

\* R208 is a Writing complete bit.

\* If you can specify the screen No., select “Specified Screen” and specify the screen No.

### 3. <Operation> tab.



Choose the following settings.

“Operation Mode” ---- “Bit Reset”

“Output” ---- R200

\* R200 is the bit for Writing operation.

The bit for the operation, R200, once turned ON in step 3 above, will go OFF automatically when the bit for operation complete, R208, goes ON.

## 6.4 Recipe Function

### ■ Performance

This transfers the values set in advance to the PLC.

File No. and Block No. are specified to transfer the values to the PLC.

The Recipe file can be updated by transferring the values set in the PLC to GT30.

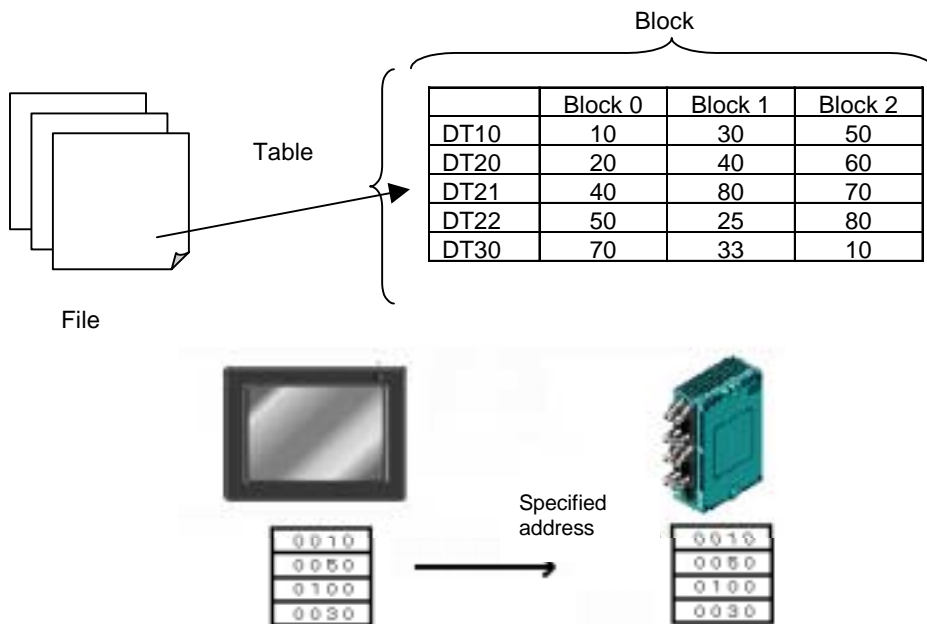
Up to 100 files can be created.

Up to 100 blocks can be created.

Up to 100 table entry devices can be created.

About 3,600 words for Recipe can be saved in GT30 in total. (This might be decreased due to the number of files registered or comment entries.) Select [View] - [Total Memory Usage] to confirm how much memory is available for Recipes.

### Configuration of File, Block and Table



**Do not use “through mode” during Recipe operation.**

## 6.4.1 Controlling the Recipe File

The recipe function is controlled by specifying the “File No.” and “Block No.”, and by turning ON/OFF the specified bit for the operation.

### Function of Control device

	F	E	D	C	B	A	9	8	7	6	5	4	3	2	1	0
n	Error occurrence					Deleting complete	Reading complete	Writing complete						GT 30 Recipe file deleting	Reading (PLC→GT)	Writing (GT→PLC)
n+1	File No.															
n+2	Block No.															
n+3	Error Code															

#### ■ Bit for Operations (Controlled by the PLC.)

Writing (GT→PLC): Writes the data, saved in GT, into PLC. The data is specified by the “File No.” and “Block No.” of the Control device.

Reading (GT←PLC): Reads out the data in the PLC and registers it in GT. Once registered it is still stored even if GT power is turned OFF. Specify “File No.” and “Block No.” for reading out.

Deleting Recipe file of GT: Deletes the specified block of the recipe file saved in GT.

#### ■ Bit for the Operation Complete (Area where GT Writes into)

Writing complete: The bit goes ON when writing is completed.

Reading complete: The bit goes ON when reading is completed.

Deleting complete: The bit goes ON when deleting is completed.

Error occurrence: The bit goes ON when any error has occurred. The contents of the error are confirmed by its error code. When the error is cleared, the bit will go OFF.

#### ■ Timing of the Writing Flag and Writing Complete Flag

The Writing complete flag goes ON when writing the block data of the specified recipe file is completed.

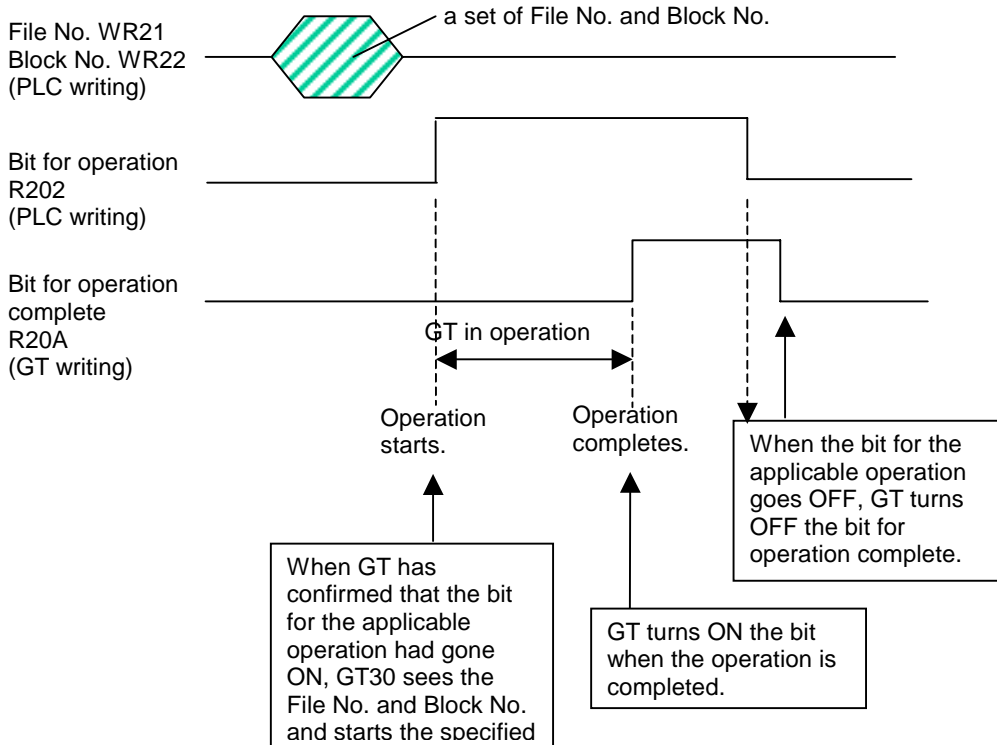
Writing, Reading and Deleting cannot be practiced at the same time. When they are ON at the same time, the order of the operation priority is Writing, Reading and Deleting.

When the flags for Writing complete, Reading complete and Deleting complete are all OFF, Writing, Reading and Deleting are possible.

The Error occurrence flag (error code) will be cleared when Writing, Reading or Deleting is properly done. (The Error occurrence flag will go OFF and an error code shows 00(H).)

## Other Information

File No.: Specifies the file No.  
 Block No.: Specifies the block No.  
 Error code: Is displayed when any error has occurred in the communication between GT and the PLC. When the error is cleared, its display changes to 00.  
 00 (hex): normal  
 01 (hex): The specified file No. not Found.  
 02 (hex): The specified block No. not Found.  
 03 (hex): GT memory is already used up. Writing is impossible.



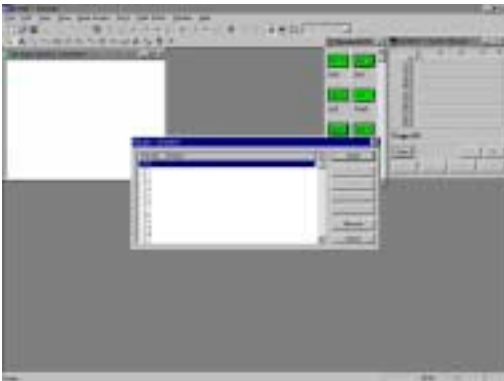
### NOTE

The Device Nos. shown in the above figure are for when the “Control Device” in the “GT Configuration” is set to WR20.

## 6.4.2 How to Create a Recipe File

The recipe function allows GT to set the values in multiple devices in a block.

### 1. Select [Start Editor] – [Recipe] from the main menu.



The "Recipe" window is displayed.

### 2. Click Browse to open "GT Configuration" window.



The "GT Configuration" - <Recipe> tab is displayed.

Choose the following and click .

"Recipe" ---- "On"  
 "Control Device" ---- "WR20"

\* Up to 100 Recipe files (No. 00 to 63) can be created.

### 3. Set <Table/Block Setting> tab.



Double-click File No. 0 in "Recipe" window, click Form and choose the followings:

"Table Entry Device" ---- "10"  
 "Block" ---- "3"



4. <Entry Device Setting> tab - Set the parameters.



Set the following and click **OK**.

“Setup Continuously” ---- “On”  
 “Data Format” ---- “DEC[1W]”  
 “Device” ---- “DE200”

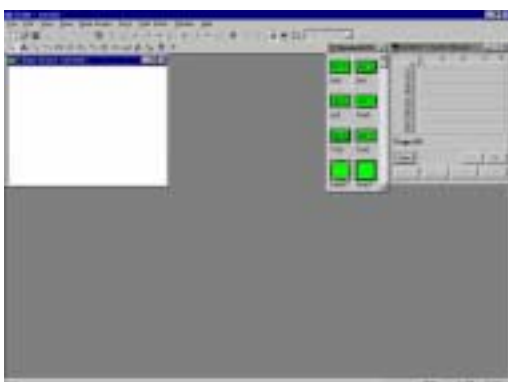
5. Enter the value per block in the table.



Enter the following and click **OK**.

	No.0	No1	No.2
200	10	15	10
201	20	25	30
202	30	35	50
203	40	45	70
204	50	55	90
205	60	65	110
206	70	75	130
207	80	85	150
208	90	95	170
209	100	105	190

6. Click **OK** and **Close** on the next window to go back to the “Base Screen” window.



**7. Transfer the Recipe file created to the Programmable Operator Terminal.**



Click [File]-[Transfer], so that "Transfer Data" window is displayed.

Choose the following settings and click .

**"Data to Transfer"** ---- "Recipe File"

**"Direction"** ---- "GTWIN → GT"

**8. Check performance on the display panel.**

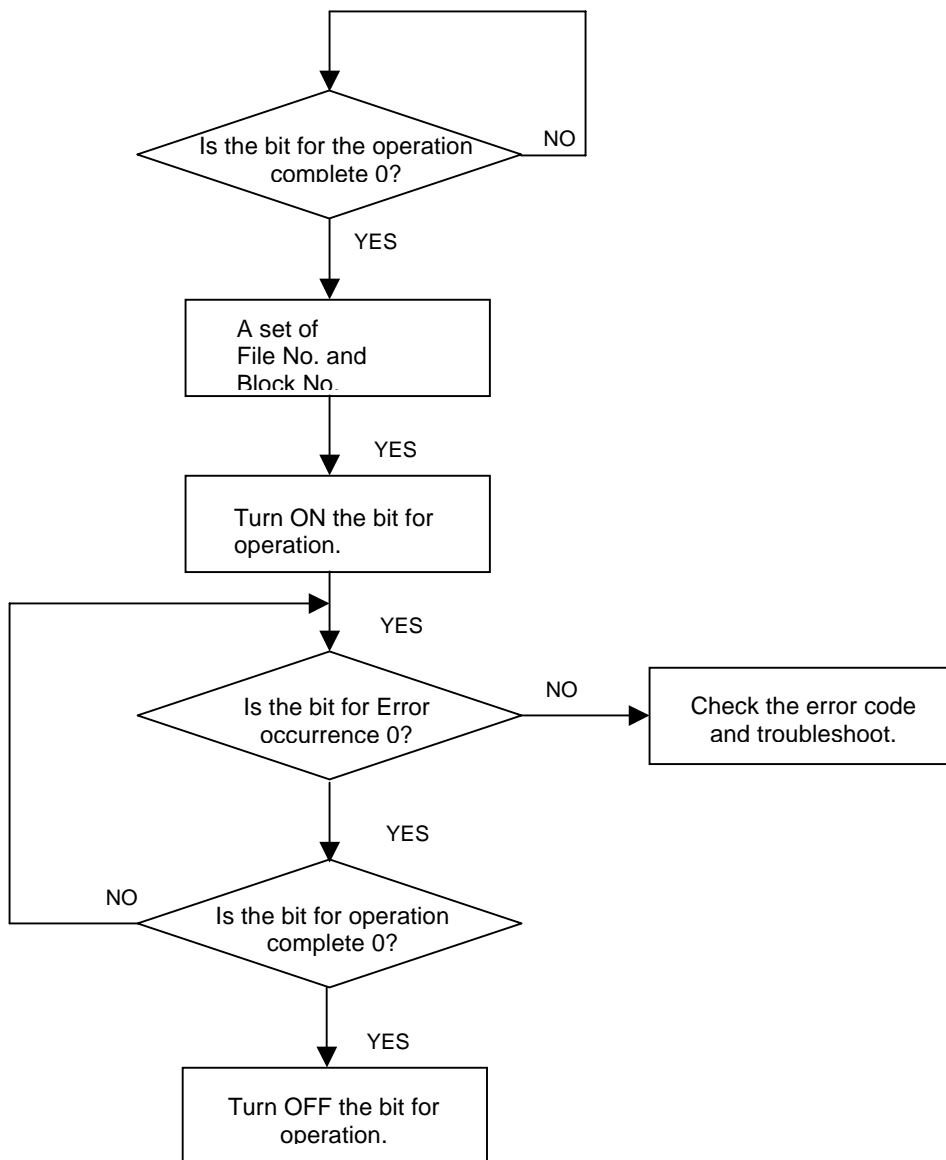
Since "Control Device" is set to WR20 and the Block No. 0 to No. 2 are set in the File No. 0, 0 is written into WR21 and 0 is written into WR22. When the bit of R200 is turned ON, the block No. set in step 2 above is shown for DT200 to DT209.

Change the Block No. or the bit for operations to check performance.

### 6.4.3 How to Set Control Devices for Recipe Function

---

Follow the procedures below to use Recipe function properly.



# Chapter 7

---

**Practical Use dedicated to GT30**

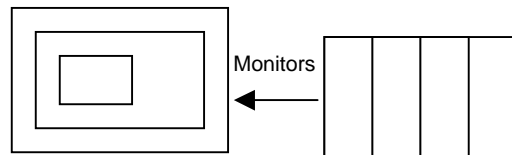


## 7.1 Alarms

### Performance

- (1) GT30 can always monitor data in the internal memory of the PLC. (Set in <Alarm History> tab of the “GT Configuration” window.)
- (2) When an error occurs or the error is recovered, its alarm No., occurrence time and recovery time is stored in the internal memory of GT30. (Set in <Alarm History> tab of the “GT Configuration” window.)
- (3) Existing alarms can be displayed in an Alarm list.
- (4) Alarm history parts, which include Function switch parts, record alarm acknowledgement in the internal memory of GT30. (Touch the alarm displayed on the display panel and press the **Ack** button to acknowledge it, so that its acknowledgement will be recorded.) (The operation mode of **Ack** button is set in its “Function Switch” dialog box.)

02/4/3	12:30	Ack*	Alarm3
02/4/3	12:10	Trig*	Alarm4
02/4/3	11:30	Trig	Alarm3
02/4/3	10:40	Rcv*	Alarm1
02/4/3	10:35	Ack	Alarm1
02/4/3	10:30	Trig	Alarm1
Up	Down		Ack



\* Ack (means Acknowledged), Trig (Triggered) and Rcv (Recovered) are the default display. They can be changed as you like.

#### 7.1.1 Displaying the Alarm History

##### Setting to monitor the PLC device status at the specified interval

1. Set parameters for <Alarm History> tab in the “GT Configuration” dialog box.



Select [File] - [Configuration] - [GT Configuration] so that the “GT Configuration” dialog box is displayed.

Click <Alarm History> tab.

Select the Group No. 0 and click **Setting**.

2. Set parameters for monitoring.



“Alarm History Setting” dialog is displayed. Select “On” for “Monitoring”, choose the following settings and click **OK**.

“Name” ---- Insert your optional comment.

**“Monitoring”**

“Start Device” ---- “WR30”

“Alarm Number”(\*1) ---- “32”

“Alarm Status”(\*2) ---- “Bit ON”

**“Record”**

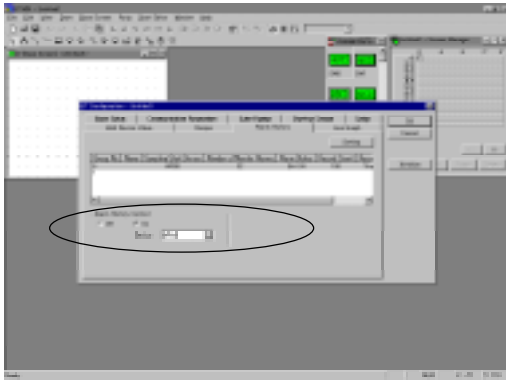
“Number of Records”(\*3) ---- “100”

**“Record Information”(\*4) ----**

Check “Triggered”, “Recovered” and “Acknowledged”.

- \*1: **“Monitoring”** - “Alarm Number” can be set up to 128. 1 bit will be assigned to 1 alarm. If “Alarm Number” is set to 128, 8 words (8 x 16 bits = 128) will be monitored.  
If “Start Device” is set to WR30 and “Alarm Number” to 32, data from WR30 for 32 bits will be monitored, i.e. WR30 and WR31.
- \*2: “Bit ON” displays an alarm when the bit is ON. “Bit OFF” displays an alarm when the bit is OFF.
- \*3: “Number of Records” sets the number of alarms to be recorded in GT30. This should be bigger than “Alarm Number”. Even if GT30 power is turned OFF, the alarms recorded so far will be backed-up by a battery. However, if the battery becomes dead, they will be lost.
- \*4: “Triggered” and “Recovered” information is displayed when its specific device bit is ON/OFF. “Acknowledged” information is displayed when **Ack** button is pressed on the display panel.

### 3. Set “Alarm History Control”.



Select “On” for “Alarm History Control” in the “GT Configuration” - <Alarm History> tab.

Set “WR16” for “Device”.

When completed, click **OK**.

### Function of Control Devices (2 words)

Address	F	E	D	C	B	A	9	8	7	6	5	4	3	2	1	0
n		Reserved (Do not use.)					Memory overflow of Group 1.	Memory overflow of Group 0.			Reserved (Do not use.)				Stops monitoring for Group 1.	Stops monitoring for Group 0.
n+1		Reserved (Do not use.)					Completed clearing the memory of Group 0	Completed clearing the memory of Group 1.			Reserved (Do not use.)				Clears the memory of Group 1.	Clears the memory of Group 0.

#### Stops monitoring a Group:

When the specific device bit goes ON in the PLC, GT30 stops monitoring the PLC.

#### Memory overflow of a Group:

When the number of alarms monitored exceeds “Number of Records” set in “GT Configuration” dialog box - <Alarm History> tab, the bit goes ON. Once it is ON, the ON status will be maintained until the memory is completely cleared.

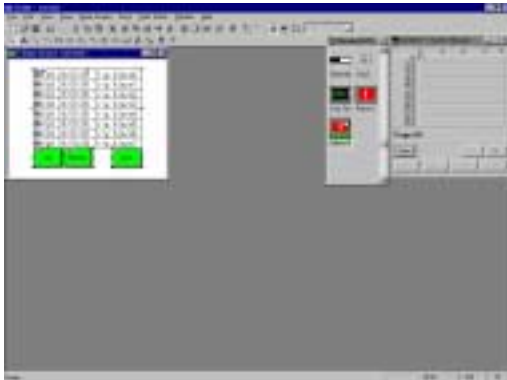
#### Clears the memory of a Group:

When the specific device bit goes ON in the PLC, the recorded contents will be cleared. Confirm that the Memory clear complete flag is OFF before turning OFF the bit.

#### Completed clearing the memory of a Group:

When GT30 has completed clearing the memory, it makes the applicable PLC bit go ON. That bit will go OFF after GT30 confirms the Memory clear flag has gone OFF.

**4. Open the No. 0 “Base Screen” window and place an Alarm history part.**



Double-click the No. 0 on the “Screen Manager” window so that its “Base Screen” window is displayed.

From the “Standard” Parts Library, drag “Alarm History” and drop it on the “Base Screen” window.

**5. Double-click the Alarm history part and change its basic settings.**



Select only “AL0”. Double-click it so that “Alarm List Parts” dialog box - <Basic Setup> tab is displayed.

Choose the settings below:

- “Operation Mode” ----  
“History(Time Order)”
- “Reference”  
“Group No.”(\*1) ---- “0”  
“Alarm Number”(\*2) ---- “32”
- “Display Form”  
“Date” ---- “MM/dd”  
“Time” ---- “24:00:00”
- “Display Event” ----  
Check “Triggered”, “Recovered”  
and “Acknowledged”.
- “Stop Updating”(\*3) ---- “Off”

\*1: “Reference” - “Group No.”

Select the desired No. set in “GT Configuration” dialog box.

\*2: “Reference” - “Alarm Number”

Sets the number of alarm messages to be registered. “Monitoring” - “Alarm Number” in “GT Configuration” dialog box should be greater than or equal to “Reference” - “Alarm Number”.

\*3: “Stop Updating”

“On” stops updating a display when the specified bit of the PLC device goes ON. However, sampling keeps going.



**6. <Color and Form> tab - Set parameters.**



Keep the default.

**“Display Area”**

“Number of Lines” ---- “8”

**“Display Frame”** ---- “On”

“Frame Type” ---- “Outer + Inner”

“Frame Color” ---- Black

**“Color & String”**

“Triggered”, “Acknowledged”, “Recovered”  
---- Black

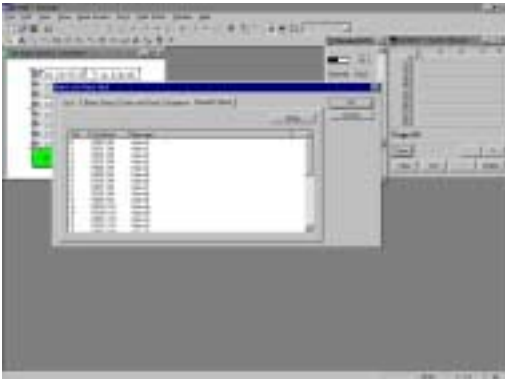
Click **String Setting** to set the followings.

“Triggered” ---- “Fixed”, “Trig”

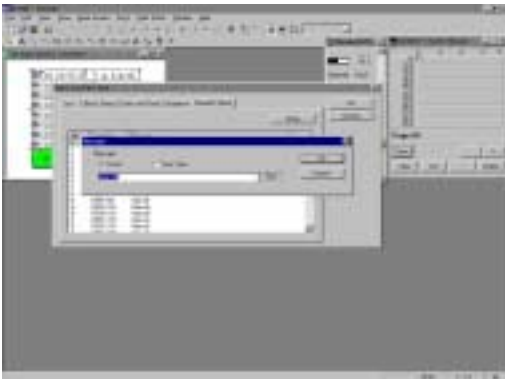
“Recovered” ---- “Fixed”, “Rcv”

“Acknowledged” ---- “Fixed”, “Ack”

**7. Click <Element Setup> tab.**



**8. Insert messages for alarms.**

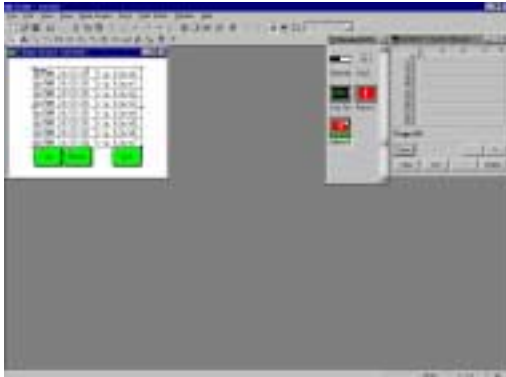


Select any No. and double-click it so that the “Message” dialog box is displayed.

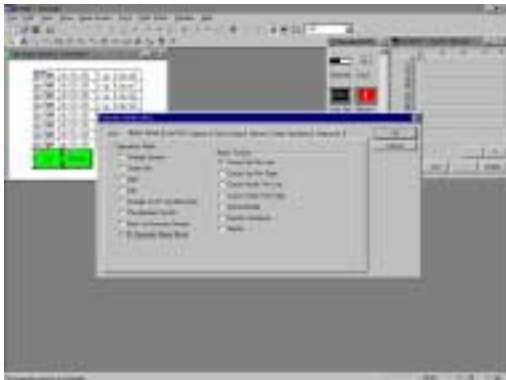
Insert any comments you want to display.

\* Alarm No. 0 is for the bit 0 of the “Start Device”. When completed for all messages, click **OK**.

**9. Set parameters for Function switches to be used for confirming an alarm history.**



**10. Double-click the Function switch, “FS0”, and set its operation mode.**



The “Function Switch” dialog box - <Basic Setup> tab is displayed. Choose the following settings:

- “Operation Mode” ----  
 “To Operate Alarm Parts”  
 “Alarm Format” ---- “Cursor Up Per line”

\* The above settings enable you to scroll the alarm display upwards.

**11. Double-click the Function Switch, “FS1”, and set its operation mode.**



The “Function Switch” dialog box - <Basic Setup> tab is displayed. Choose the following settings:

- “Operation Mode” ----  
 “To Operate Alarm Parts”  
 “Alarm Format” ---- “Cursor Down Per line”

\* The above settings enable you to scroll the alarm display downwards.

## 12. Double-click the Function switch “FS2” and set its operation mode.



The “Function Switch” dialog box - <Basic Setup> tab is displayed. Choose the following settings:

“**Operation Mode**” ----  
    “To Operate Alarm Parts”  
    “Alarm Format” ---- “Acknowledge”

\* The above settings makes a switch to acknowledge alarms.

Touch the alarm on the display panel and press **Ack** button so that the selected alarm will be stored in GT30.

This is useful for recording a history of alarm acknowledgement.

## 13. Transfer the screen data created to the Programmable Operator Terminal.



Click [File]-[Transfer] so that the “Transfer Data” window is displayed. Choose the following settings and click **OK**.

“**Data to Transfer**” ---- “All Data”  
“**Direction**” ---- “GTWIN → GT”

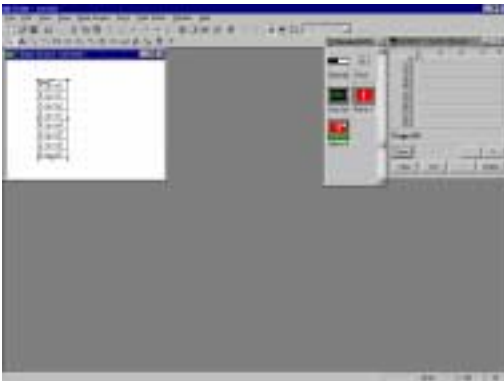
## 14. Check display on the Programmable Operator Terminal.

WR30 and WR31 have been monitored. So, when R300 goes ON, the No. 0 message will be displayed on an alarm. When R30A goes ON, the No. A message is displayed. When R313 goes ON, the No. 13 message is displayed.

The Control device is set to WR16 in step 3 above, so when R160 goes ON, recording will be stopped. When you want to clear the contents recorded so far, turn ON R170.

## 7.1.2 Displaying in a List the Existing Alarms (Alarm List Parts)

### 1. Open the No. 0 “Base Screen” window and place an Alarm list part.



Double-click the No. 0 on the “Screen Manager” window so that its “Base Screen” window is displayed.

From the “Standard” Parts Library, drag “Alarm List” and drop it on the “Base Screen” window.

### 2. Double-click the Alarm list part and change its basic settings.



The “Alarm List Parts” dialog box - <Basic Setup> tab is displayed. Choose the settings below:

“**Operation Mode**” ---- “Active List”

“**Monitoring**”

“Start Device” ---- “WR30”

“Alarm Number”(\*1) ---- “32”

“Alarm Status”(\*2) ---- “Bit On”

\*1 1 bit is assigned to 1 alarm. When the “Alarm Number” is set to 32, data for 2 words will be monitored.

\*2 “Alarm Status” - “Bit On” displays an alarm when the specified bit goes ON.

\*3 Settings in “GT Configuration” are not required.

### 3. <Color and Form> tab – Set parameters.



Keep the default.

“**Display Area**”

“Number of Lines” ---- “8”

“**Display Frame**” ---- “On”

“Frame Type” ---- “Outer + Inner”

“Frame Color” ---- Black

“**Color**”

“String” ---- Black

“Background” ---- White

4. <Guidance> tab (\*1) - Select "Display Text" and set parameters.



"Display Area"

"Number of Lines"(\*2) ---- "5"

"Display Frame" ---- "On"

"Frame Color" ---- Black

"Color"

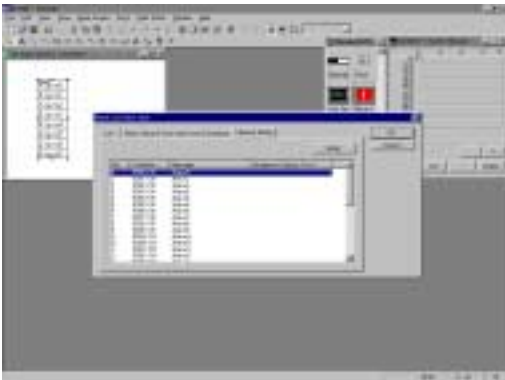
"String" ---- Black

"Background" ---- White

\*1 <Guidance> is for displaying a detailed explanation for the alarms displayed.

\*2 "Display Area" - "Number of Lines" is the number of lines for displaying the detailed explanation.

5. Click <Element Setup> tab.



Double-click No. 0 so that the "Message" dialog box is displayed.



Enter a message to be displayed as an alarm and a guidance for it.

When completed, click **OK**.

\* Message No. 0 is for the bit 0 of "Monitoring" - "Start Device".

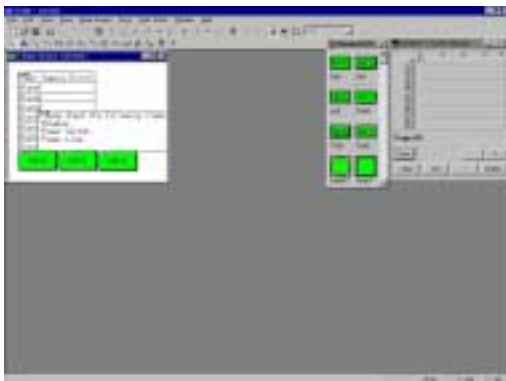
Message example  
- Power Supply Error

Guidance example  
Please check the following items.  
-Breaker  
-Power Switch  
-Power Line

6. Place a guidance box.

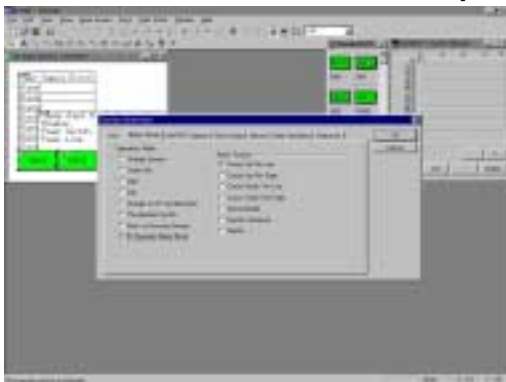


7. On the “Base Screen” window paste Function switch parts for scrolling the list.



Drag 3 “FSW0” from the “Standard” Parts Library and drop them on the “Base Screen” window.

8. Double-click “FS0” and set its operation mode.



The “Function Switch” dialog box - <Basic Setup> tab is displayed. Choose the following settings:

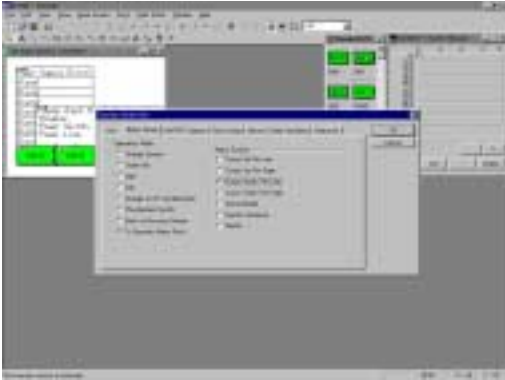
“Operation Mode” ----

“To Operate Alarm Parts”

“Alarm Format” ---- “Cursor Up Per line”

\* The above settings enable you to scroll the alarm list upwards.

**9. Double-click “FS1” and set its operation mode.**

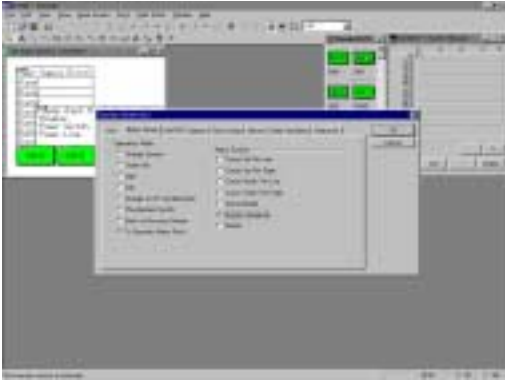


The “Function Switch” dialog box - <Basic Setup> tab is displayed. Choose the following settings:

- “Operation Mode” ----  
“To Operate Alarm Parts”
- “Alarm Format” ---- “Cursor Down Per line”

\* The above settings enable you to scroll the alarm list downwards.

**10. Double-click “FS2” and set its operation mode.**



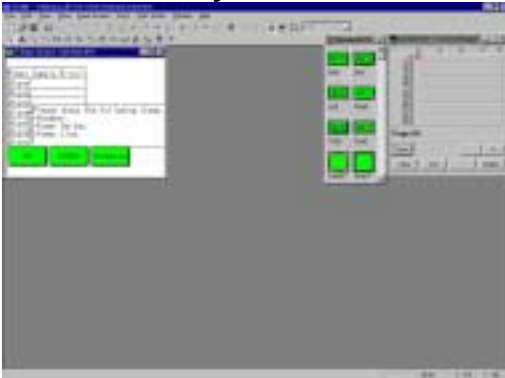
The “Function Switch” dialog box - <Basic Setup> tab is displayed. Choose the following settings:

- “Operation Mode”  
“To Operate Alarm Parts”
- “Alarm Format” ---- “Display Guidance”

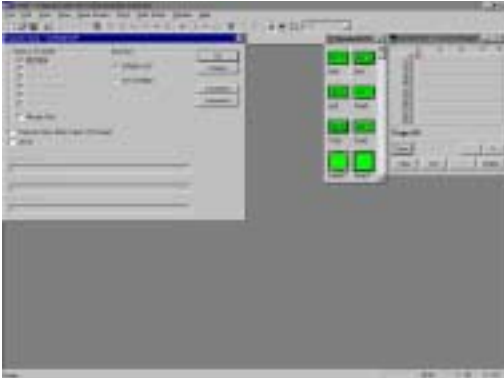
\* The above settings can call the contents of guidance set in steps 4 and 5 by selecting an alarm and pressing this switch.

<Character> tab - “Character String”: Enter the words, Guidance!.

**11. Check display on the “Base Screen” window. Adjust the size of switches as you like.**



## 12. Transfer the screen data created to the Programmable Operator Terminal.



Click [File]-[Transfer], so that the “Transfer Data” window is displayed.

Choose the following settings and click .

“Data to Transfer” ---- “All Data”

“Direction” ---- “GTWIN → GT”

## 13. Check display on the Programmable Operator Terminal.

When R300 goes ON, the No. 0 message will be displayed.

Touch the alarm displayed on the display panel and press the Guidance! button so that its guidance is displayed. Touch guidance to make it disappear. Check the other messages, too.