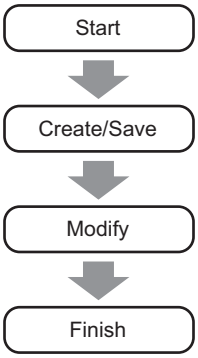
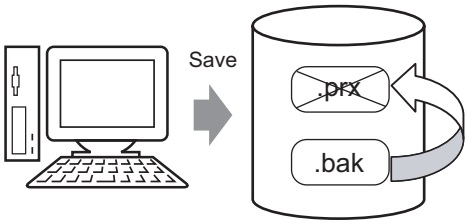
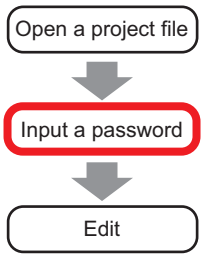
5 Start to End

This chapter explains about “From Start to Finish” in GP-Pro EX, and the basic operations used to manage project files and change addresses.
Start by reading “5.1 Settings Menu” (page 5-2) , and then turn to the corresponding page.

5.1 Settings Menu

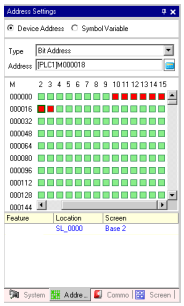
Starting/Creating/Saving/Finishing	
	☞ Setup Procedure (page 5-7) ☞ Details (page 5-6)

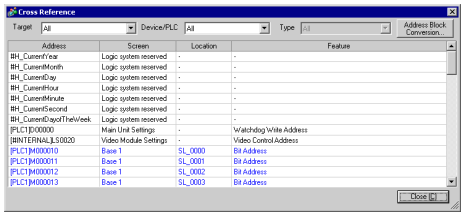
Backing Up a Project File	
 If a prx file was destroyed, you can use a bak file.	☞ Setup Procedure (page 5-18) ☞ Details (page 5-17)

Entering a Password in a Project File	
 Ensures that you cannot edit a project file unless you enter a password.	☞ Setup Procedure (page 5-22) ☞ Details (page 5-21)

Confirming the List of Addresses being Used in a Project File

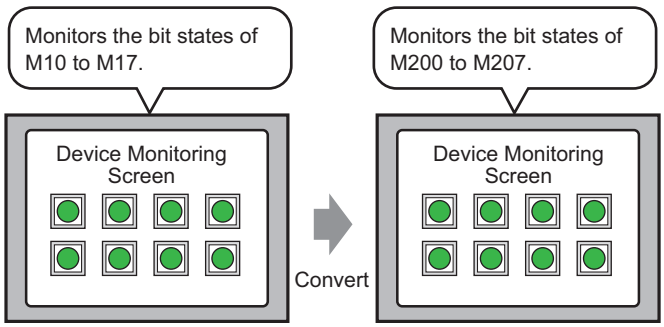
You can check the addresses specified in a project file using a map or list format.





☞ Setup Procedure (page 5-26)
☞ Details (page 5-25)

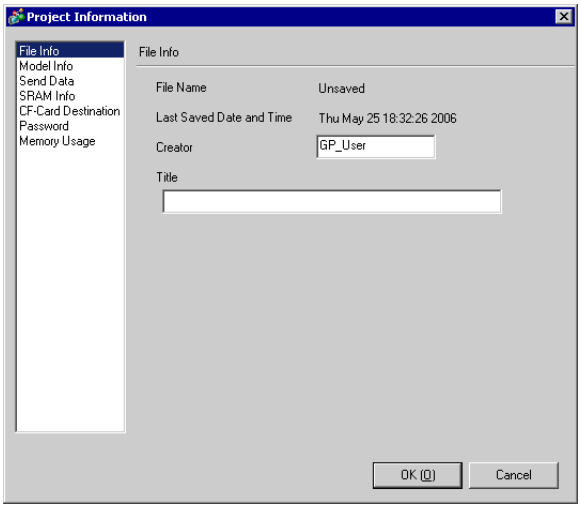
Converting the Addresses in a Project File in Block



You can convert addresses by specifying the start/end addresses before conversion and the start address after conversion.

☞ Setup Procedure (page 5-34)
☞ Details (page 5-33)

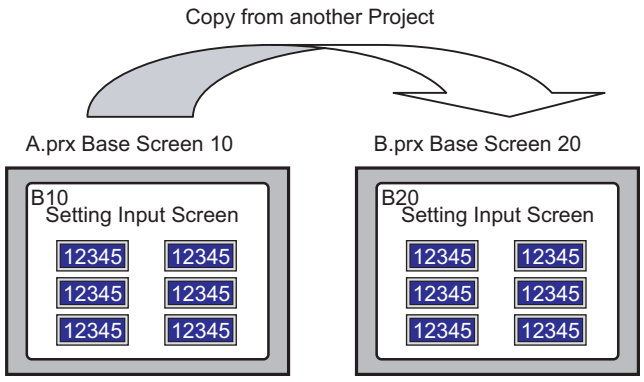
Seeing the Project information



You can check information on files, models, sent data, SRAM, and memory usage.

☞ Setup Procedure (page 5-37)
☞ Details (page 5-36)

Copying a Screen from another Project

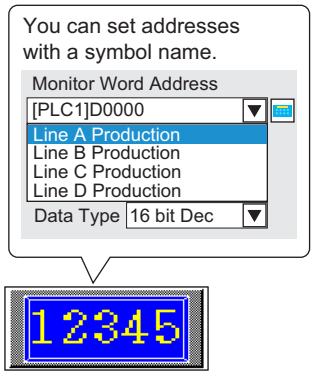


☞ Setup Procedure (page 5-41)
☞ Details (page 5-40)

Registering Addresses with Comprehensive Names

Name each address.

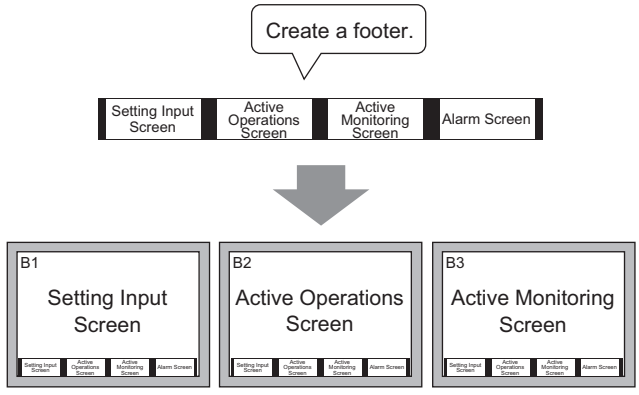
Address	Symbol Name
D100	Line A Production
D101	Line B Production
D102	Line C Production
D103	Line D Production



You can name an address as desired by registering the address as a symbol variable.

☞ Setup Procedure (page 5-45)
☞ Details (page 5-44)

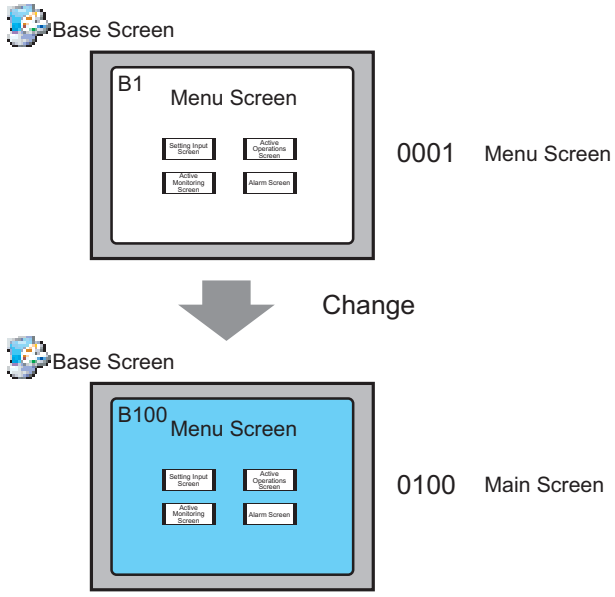
Putting a Header/Footer on the Screen



Even if the screen changes, you can display the same footer.

☞ Setup Procedure (page 5-52)
☞ Details (page 5-51)

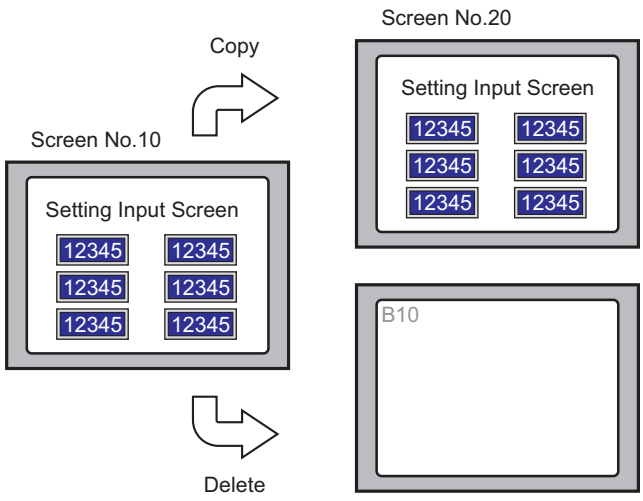
Changing the Screen No./Title/Screen Color



You can change the specify screen number, screen title and screen color.

☞ Setup Procedure (page 5-58)
☞ Details (page 5-57)

Copying/Deleting a Screen

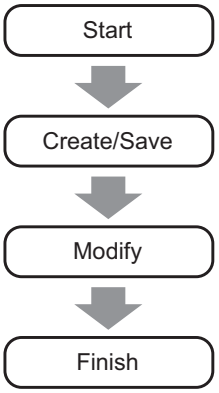


☞ Setup Procedure (page 5-61)
☞ Details (page 5-60)

5.2 Starting/Creating/Saving/Finishing

5.2.1 Details

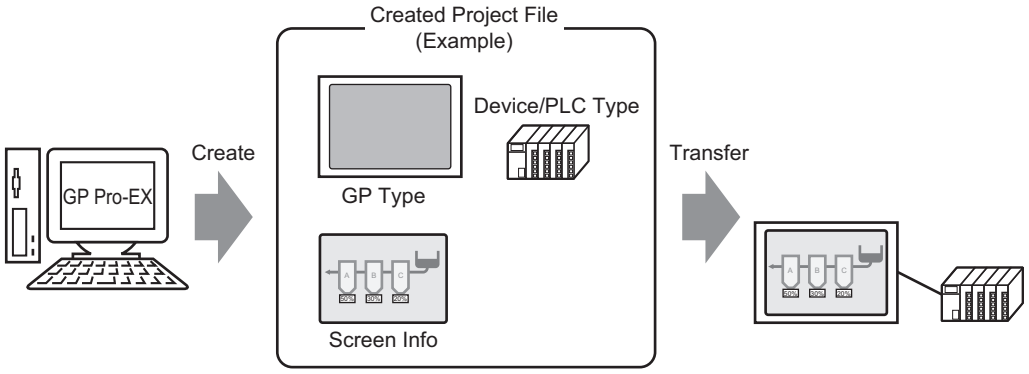
This section explains how to, after starting GP-Pro EX, create/save/edit a project file.



Project File

A file created by GP-Pro EX is called a “Project File”.

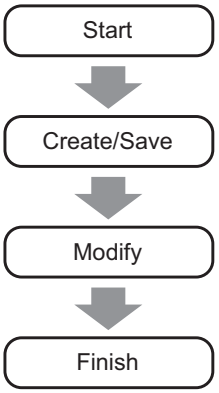
A project file (∗.prx) is a selection of data concerning the created screens, etc. If you transfer a created project file to the GP, you can communicate with a device/PLC and display/operate the project file.



5.2.2 Setup Procedure

NOTE

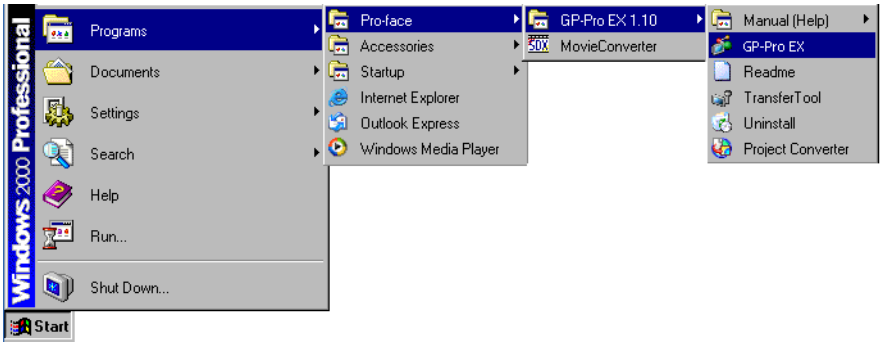
- Refer to the settings guide for details.
  - ☞ “5.13.2 [New] Settings Guide” (page 5-67)
  - ☞ “5.13.6 [System Settings Window] Settings Guide” (page 5-99)



■ Starting

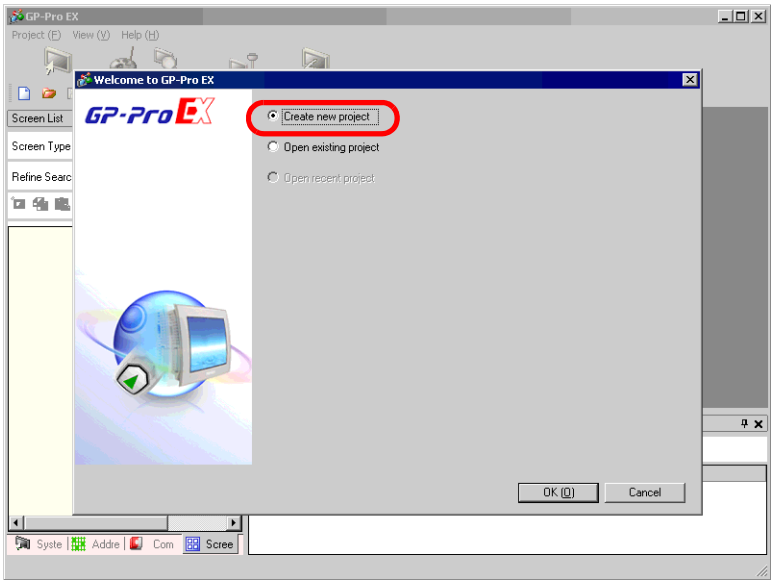
1 Double-click the shortcut 

on the Desktop screen or click the [Start] menu, select [Programs] - [Pro-face] - [GP-Pro EX 1.10], and click [GP-Pro EX]



2 GP-Pro EXstarts up and the following screen is displayed.

3 The main window and the [Welcome to GP-Pro EX] dialog box appear. Select [Create new project] and click [OK].

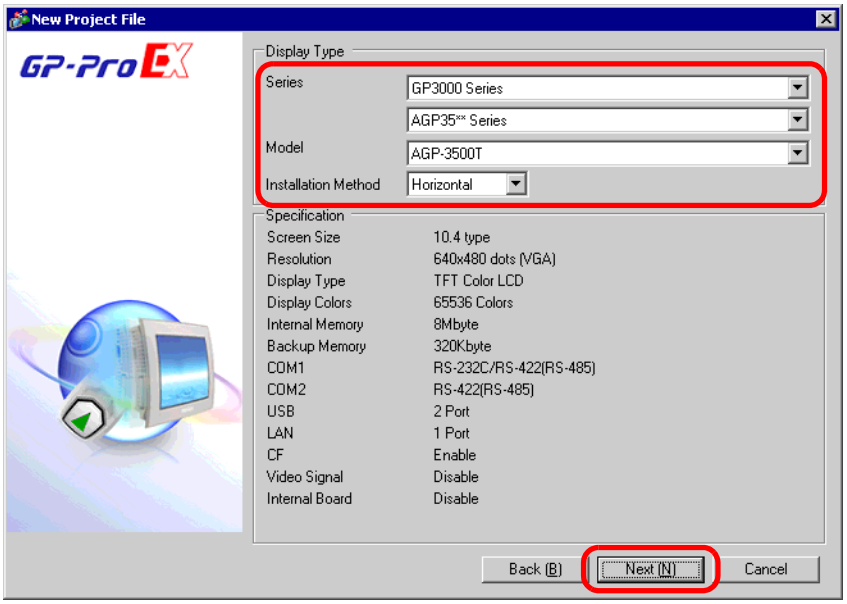


NOTE

- Select the main window's [Project (F)] menu - [New (N)] command, or click the , to create a new project. The [New Project File] dialog box is displayed.

4 The following screen will be displayed. In [Series], select [GP3000 Series], then select the screen size series, [Model], and [Installation Method], and click [Next].

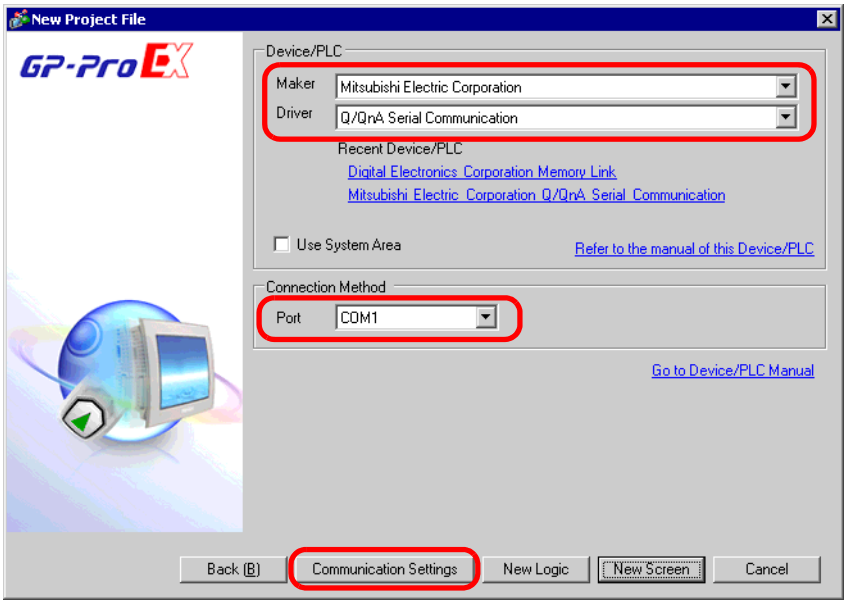
☞ "3.3 Supported Model List" (page 3-7)



NOTE

- [Specification] displays detailed specifications of the selected GP model.
- If you select [GP 2000 Series], you can exit GP-Pro EX and start up GP-PRO/PB III for Windows. However, GP-PRO/PB III for Windows must be installed first.

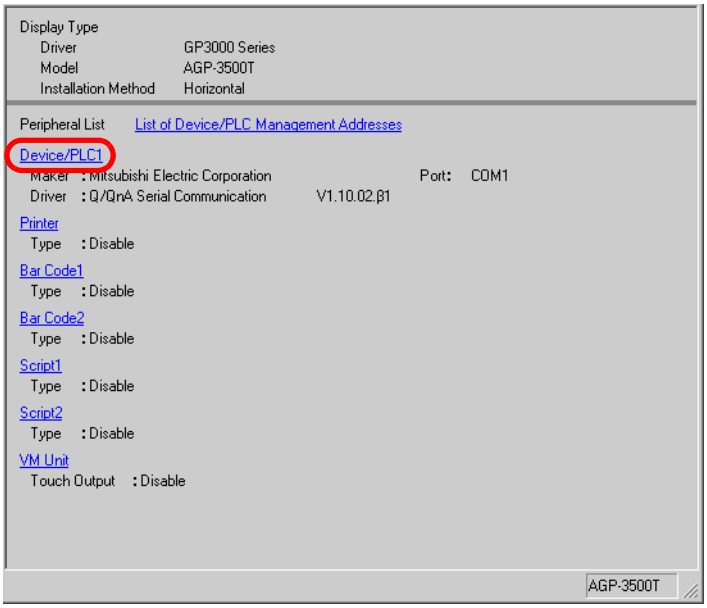
5 The following screen will appear. Select the device/PLC's [Maker], [Driver], and [Port] and click [Communication Settings].



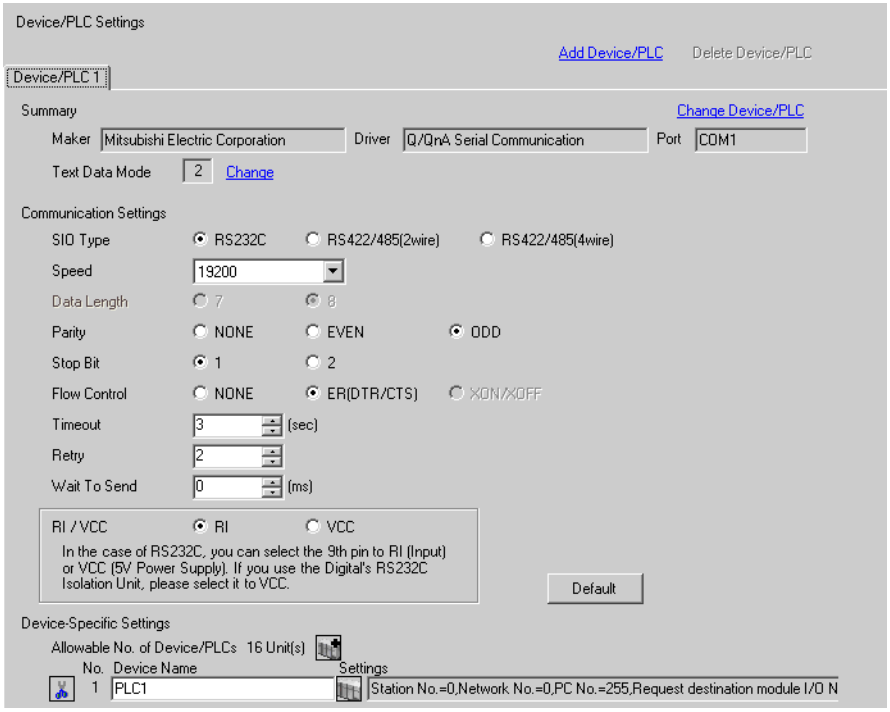
NOTE

- To create a screen without configuring communication settings for the device/PLC driver, click [New Screen] to display the drawing screen [Base 1]. To create a logic program, click [New Logic] to display the new logic screen [MAIN].
  ☞"Chapter 29 Logic Programming" (page 29-1)
- If you specify [Use System Area], you can assign the GP internal system data area to the device/PLC.
  ☞ "5.13.6 [System Settings Window] Settings Guide ◆ System Area Settings" (page 5-120)

6 Close the [New Project File] dialog box, and [Peripheral List] will appear in the main window. Click [Device/PLC1].



7 When [Device/PLC Settings] is displayed, specify the communication settings.

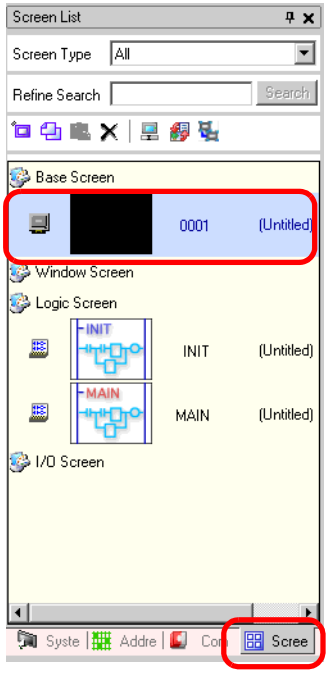


NOTE

- The [Communication Settings] description differs depending on each device/PLC series. Refer to the “GP-Pro EX Device/PLC Connection Manual”. However, [Timeout], [Retry], and [Wait To Send] are recommended to be used with their initial settings.

■ Creating/Saving

8 Open the Screen List Window, and double-click the displayed base screen.

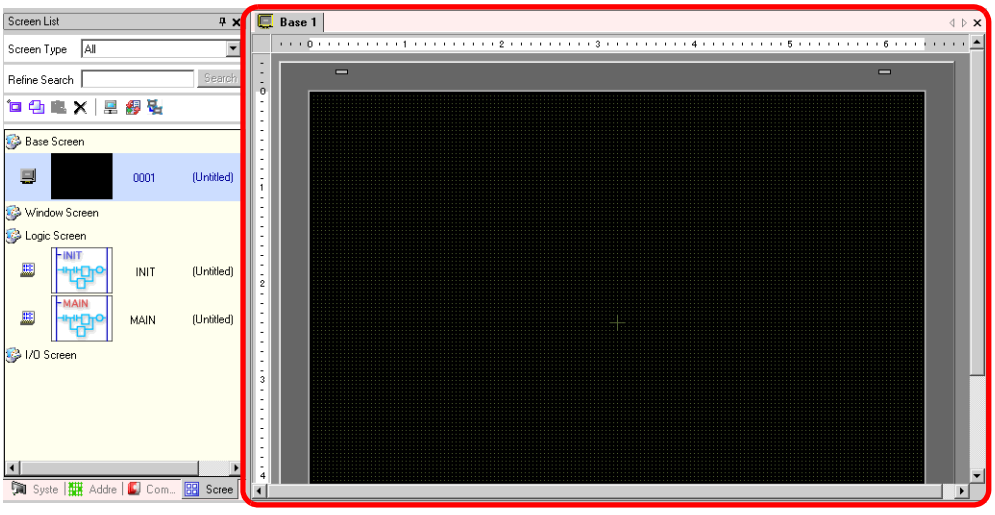


NOTE

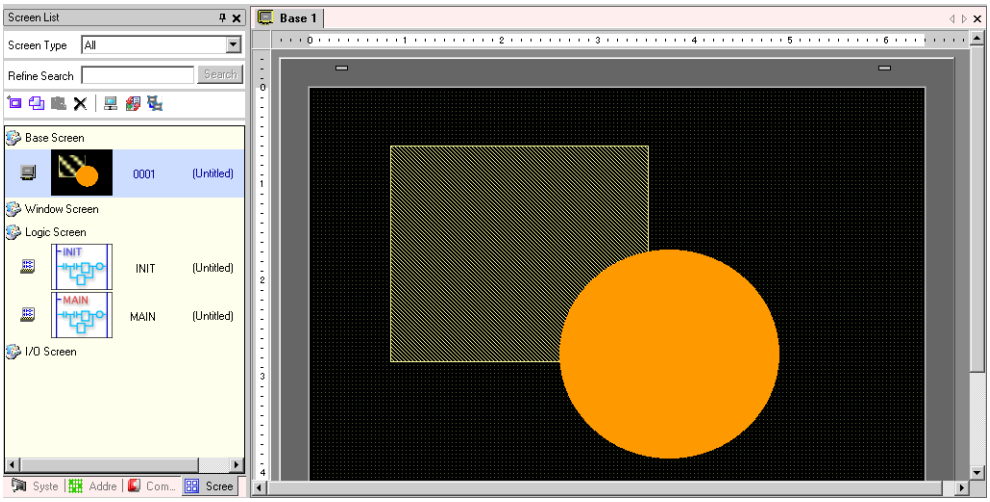
- If the [Screen List] tab is not displayed in the Work Space, select the [View (V)] menu - [Work Space (W)] option - [Screen List Window (G)] command.
- To create a logic program, double-click the logic screen. If you have selected a model that does not support the logic features, you will be able to create a logic program but it will not run on the GP.

☞"Chapter 29 Logic Programming" (page 29-1)

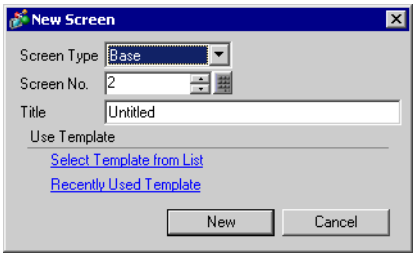
9 The following [Base Screen] is displayed.



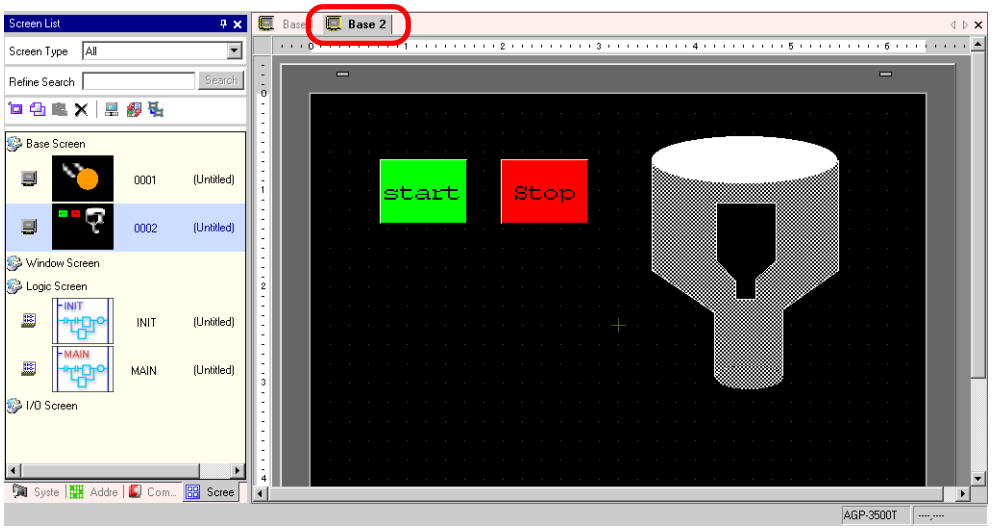
10 Create a screen.



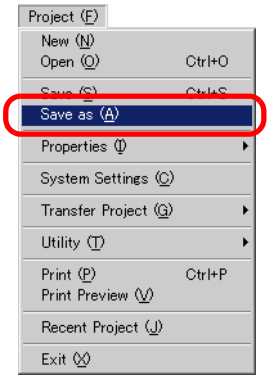
11 Add a new screen.
Select the [Screen (S)] menu - [New Screen (N)] command or click , and the following dialog box appears. Select a [Screen Type], specify the [Screen No.] and [Title], and click [New].



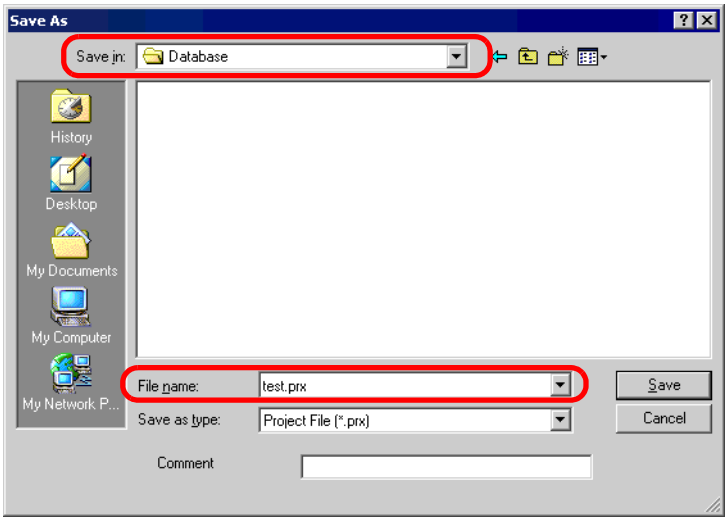
12 The [Base 2] screen is displayed. Create a screen.



13 Select the [Project (F)] menu - [Save as (A)] command or click the icon .



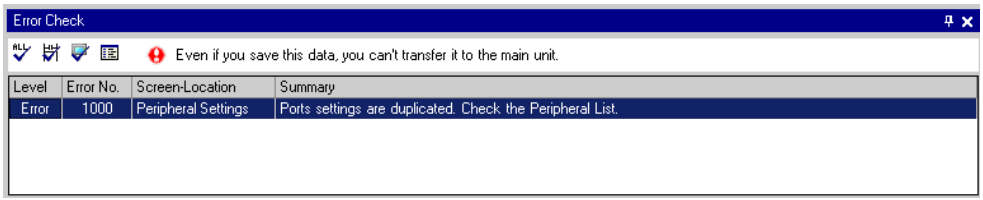
14 The [Save As] dialog box is displayed. Set the file's storage location and file name and click [Save].



NOTE

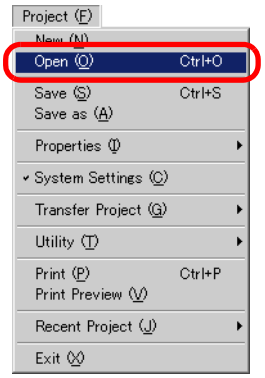
- Input a file name with up to 255 single-byte characters including the path and extension.
  The initial storage location is \Program Files\Pro-face\GP-Pro EX\Database.
- The following error message is displayed in the [Error Check] window if there is a problem saving the file.

☞ "32.9 Checking Errors" (page 32-52)

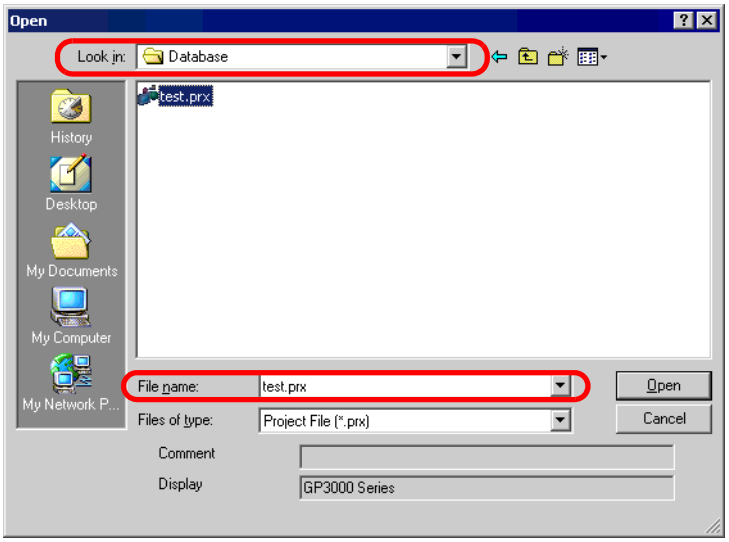


■ Modifying

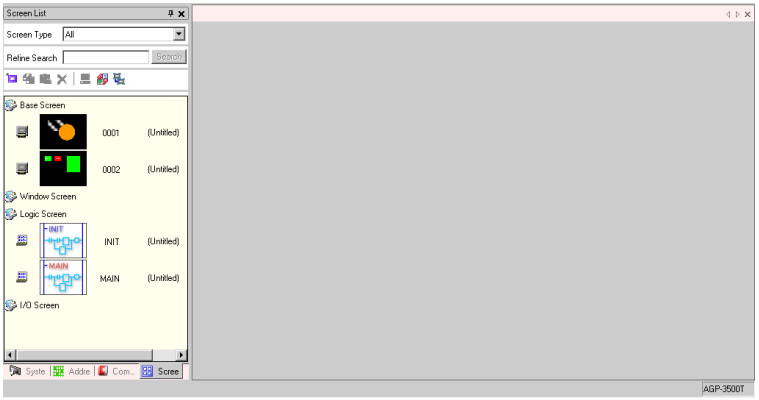
15 Select the [Project (F)] menu - [Open (O)] command or click the icon.



16 When the [Open] dialog box appears, designate the location where the file is saved, select a project file (*.prx) you want to open, and click [Open].



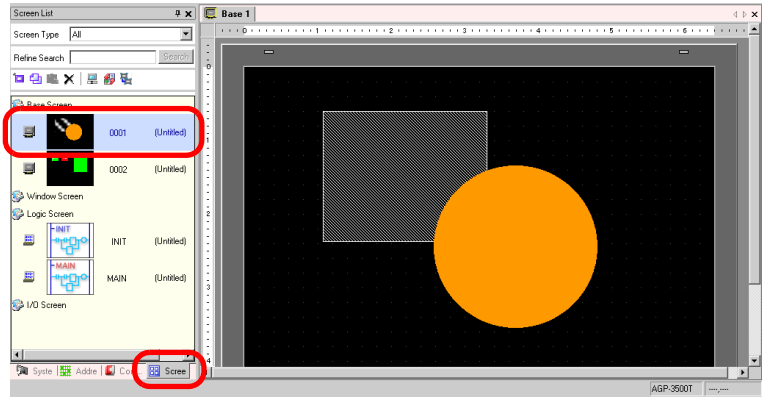
17 The existing project file's main window is displayed.



NOTE

- You can also open an existing file easily by directly double-clicking the project file (*.prx).
- You can start two different project files at the same time.

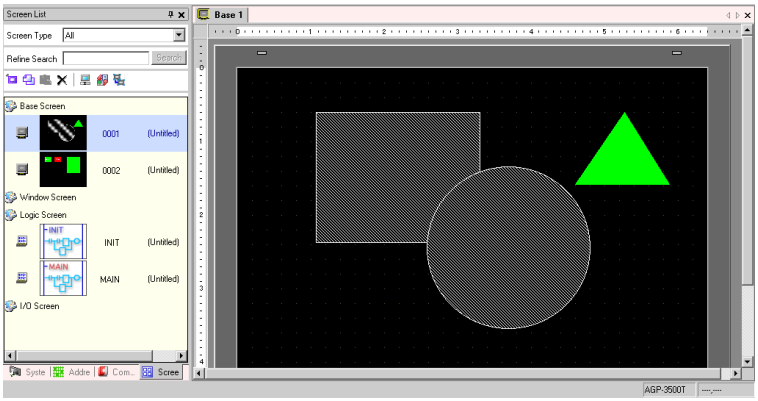
18 Double-click the [Base Screen] to modify from the Screen List in the Screen List Window and the base screen will be displayed in the editing area.



NOTE

- To modify the logic screen, in the screen list, double-click [Logic Screen] to display the logic screen in the edit area.

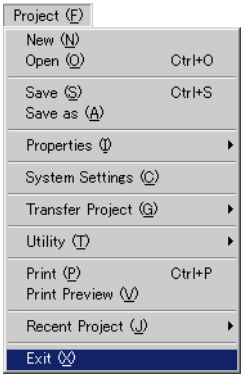
19 Modify the screen.



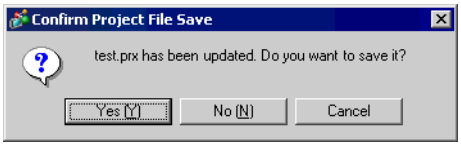
20 Select the [Project (F)] menu - [Save (S)] command or click  to save the modified file.

■ Finishing

21 Select the [Project (F)] menu - [Exit (X)] command or click the icon ✕ in the top right corner of the screen.



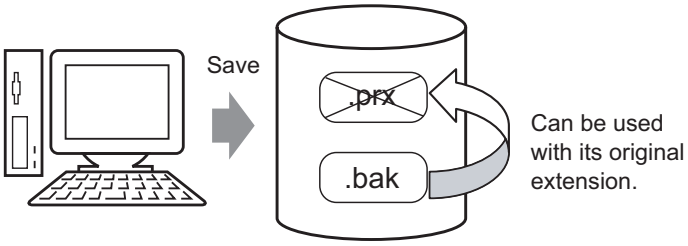
22 If you change a project file and try to exit the application without saving it, the [Confirm Project File Save] dialog box is displayed.



If you click [Yes], the project will be saved in the current state and closed.
If you click [No], the project will be closed with the last saved information.
If you click [Cancel], the project will return to the state before the operation without being closed.

5.3 Backing Up a Project File

5.3.1 Details



A backup file (∗.bak) can be automatically created in case of a project file's destruction or abnormal updates when saving a file. You can use the backup file as a history of the previous data. To recover a project file, change the backup file's extension to ".prx".

NOTE

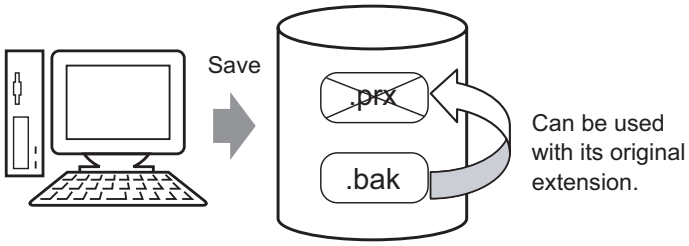
- When a project's abnormal termination occurs, a project file is automatically copied in the "backup" folder, which prevents a file loss.

5.3.2 Setup Procedure

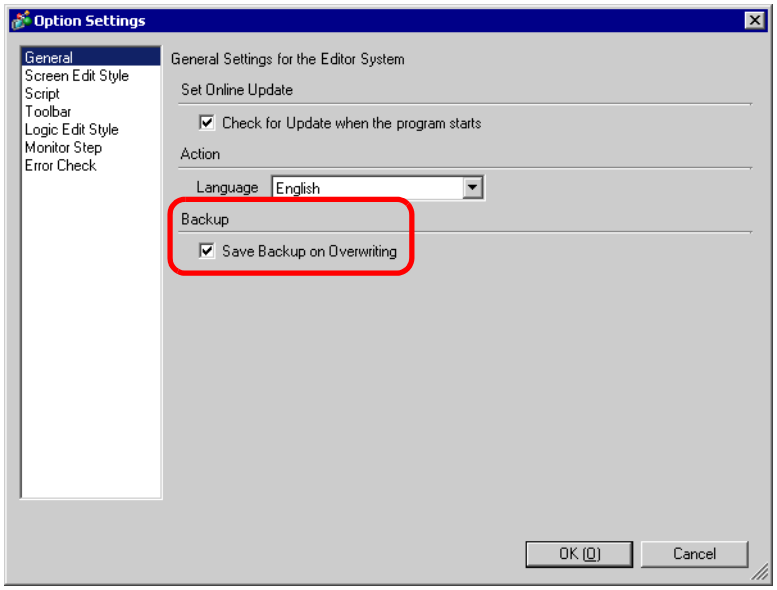
■ Backup as a History Procedure

NOTE

- Refer to the settings guide for details.
  ☞ "5.13.7 [Option Settings] Settings Guide ■ General" (page 5-128)



1 Select the [View (V)] menu - [Option Settings (O)] command and the following [Option Settings] dialog box is displayed. Put a check mark next to the [Save Backup on Overwriting] box.

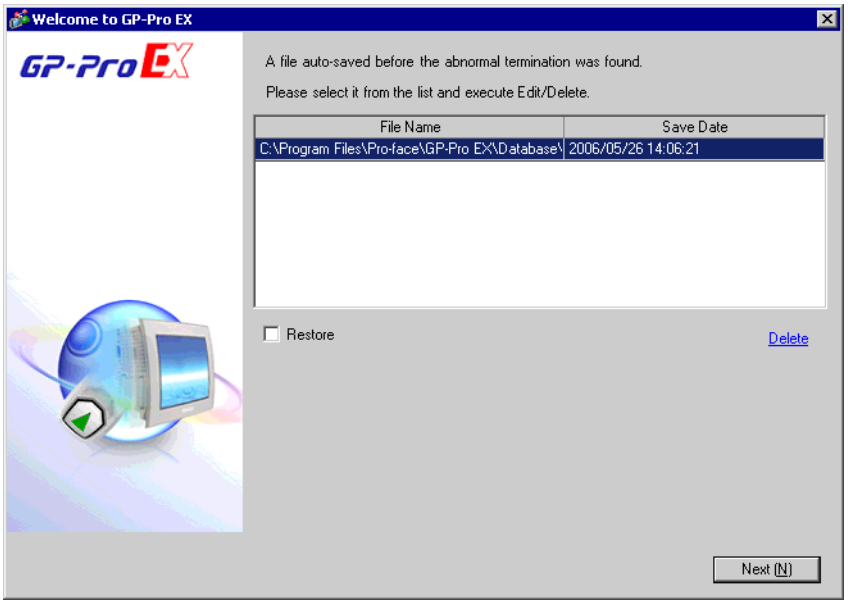


NOTE

- A backup file is saved as "Original Project File Name.bak".
- A backup file is saved in the same location where the original file exists.

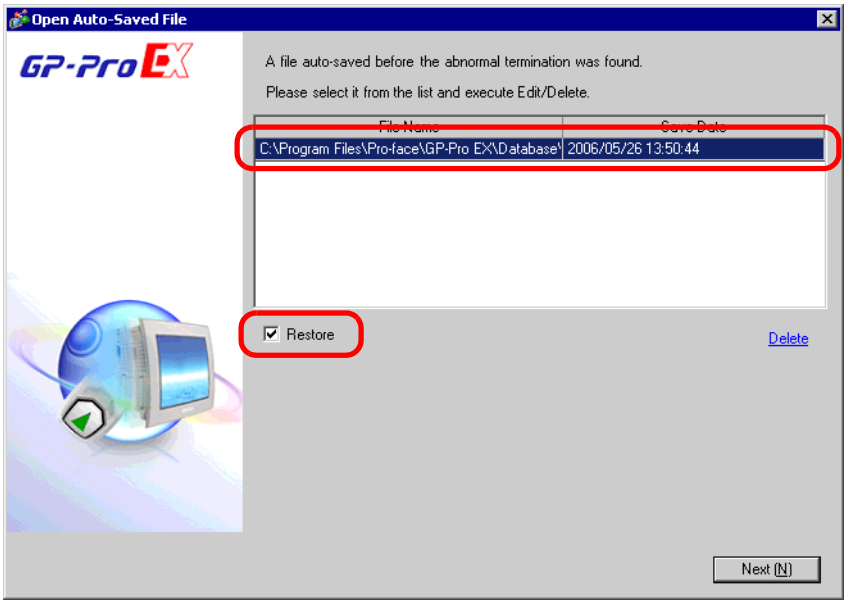
■ Backup on Abnormal Termination and File Startup

When abnormal termination is caused by memory shortage because there were too many processes to execute, a project file is automatically copied (backed up) in the “backup” folder. If there is a file that needs restoring in the “backup” folder, the following dialog box will open when you start up GP-Pro EX again.

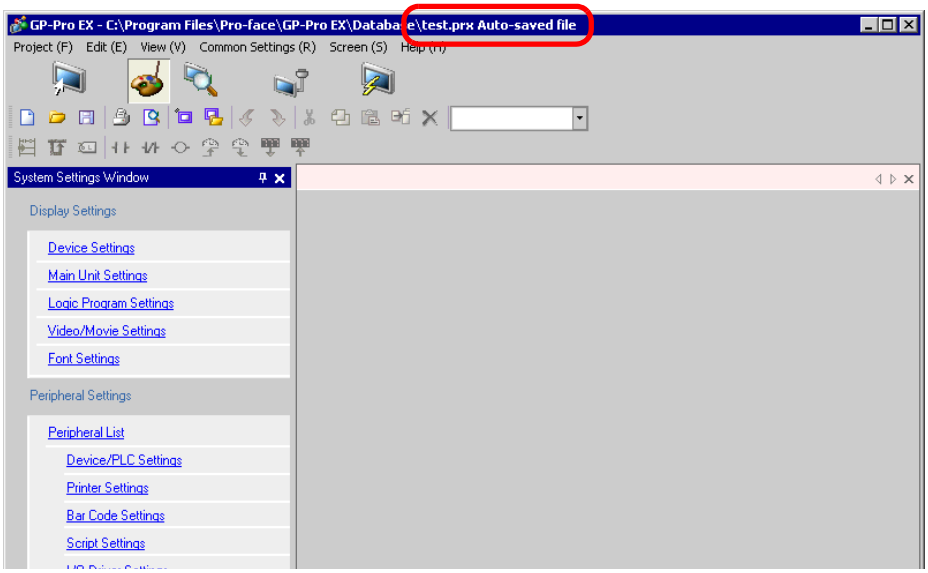


◆ When fixing and restarting an abnormally terminated project file

1 Select the file you want to fix, put a check mark next to the [Restore] option, and click [Next].



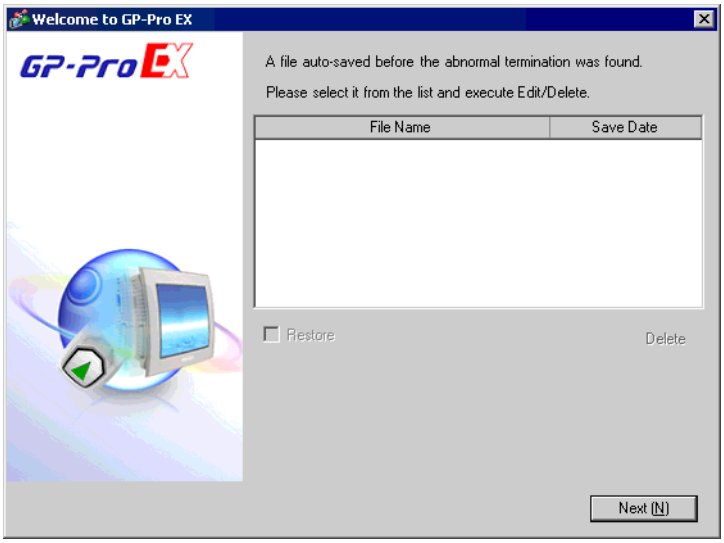
2 The file will be automatically fixed, and will open as an “Auto-saved file”.



3 Overwrite the file used before abnormal termination.

◆ When starting GP-Pro EX without fixing the abnormally terminated project file

1 Select the file that does not need to be fixed and click [Delete]. The file automatically saved in the “backup” folder will be deleted.



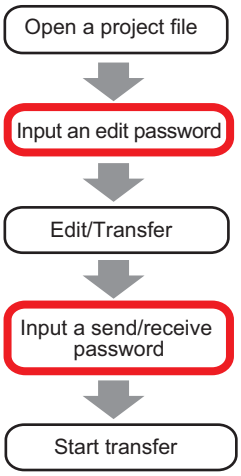
2 Click [Next], and start a project file as usual. The previously abnormally terminated project file opens in its most recently saved state.

NOTE

- If you click next without deleting and start GP-Pro EX normally, the next time you start GP-Pro EX the dialog box will appear again.

5.4 Entering a Password in a Project File

5.4.1 Details



You can protect a project file by setting a password for the file's editing or transfer.
When you edit or transfer a project file, a window that confirms the password is displayed.
If you enter a password and it is confirmed, you can edit or transfer the project file.

NOTE

- Be sure to remember your password in order to edit/transfer a project file.
- For information on setting a transmission password, refer to the following.

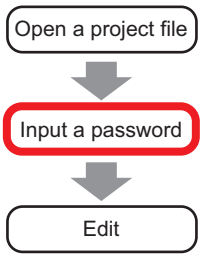
☞ "32.6 Transferring with Password" (page 32-31)

5.4.2 Setup Procedure

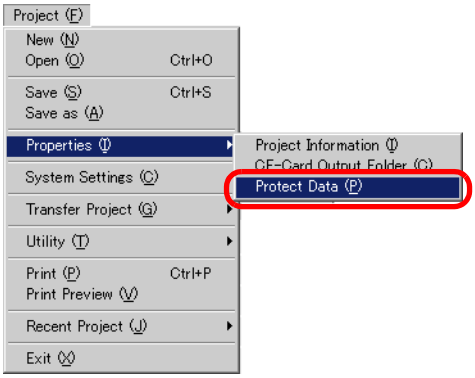
NOTE
- Refer to the settings guide for details.
  ☞ "5.13.3 [Properties] Settings Guide ◆ Password" (page 5-74)

■ Settings for an Edit Project File Password

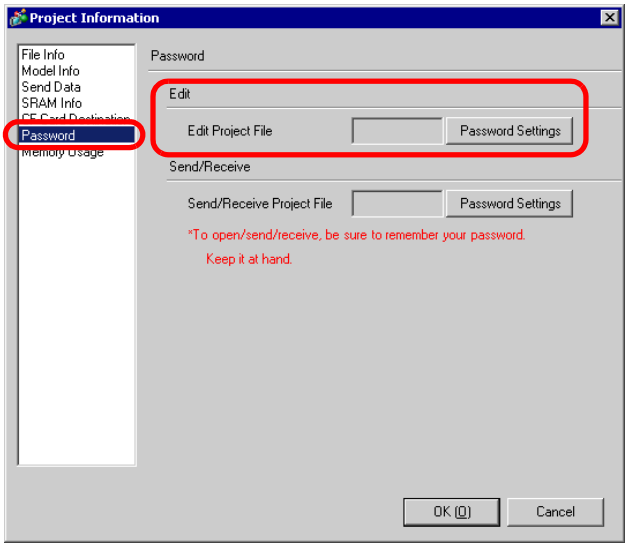
When you are about to open a project file, a dialog box to input a password opens.



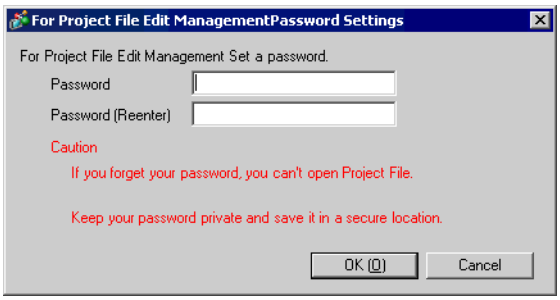
1 Select the [Project (F)] menu - [Properties (I)] option - [Protect Data (P)] command.



2 The [Password] setting screen is displayed on the [Project Information] dialog box.



3 Click Edit's [Password Setting]. The following dialog box will open.

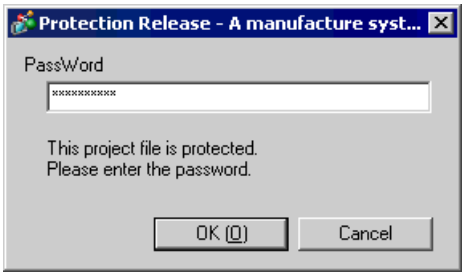


4 Enter a password of up to 10single-byte alphanumeric characters in [Password]. Confirm the password by entering the same input in [Password (Reenter)].

5 Complete setting the password by clicking [OK].

NOTE

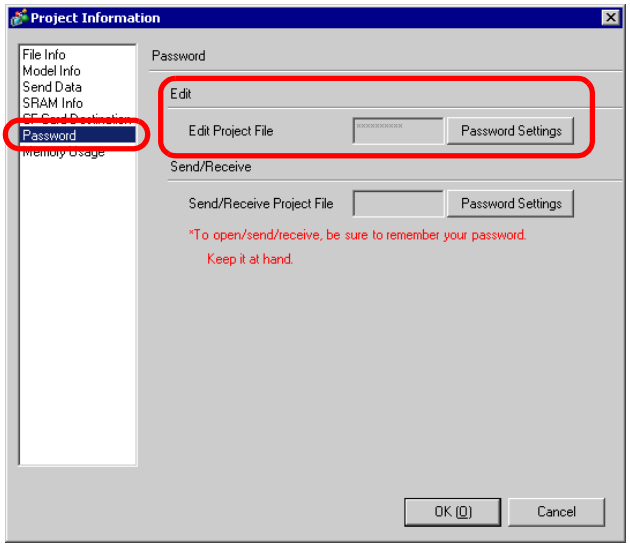
- When opening a project file set with a password, the [Protection Release]dialog box is displayed. If you input the set password and click [OK], the protection is released and you can edit the project file.



■ Releasing or Changing the Password for Editing a Project File

Use the [Project Information] dialog box as well to release or change the previously set password.

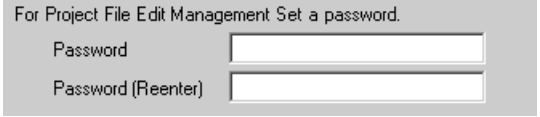
1 Select the [Project (F)] menu - [Properties (I)] option - [Protect Data (P)] command.
The [Project Information] dialog box appears.



2 Click Edit's [Password Settings]. The following dialog box will appear.

3 Enter the currently set password.

4 To change the password, enter a new password with up to 10 single-byte alphanumeric characters, enter the same password in [Password (Reenter)] as well, and click [OK].
To release the password, click [OK] leaving the boxes blank without inputting a new password.

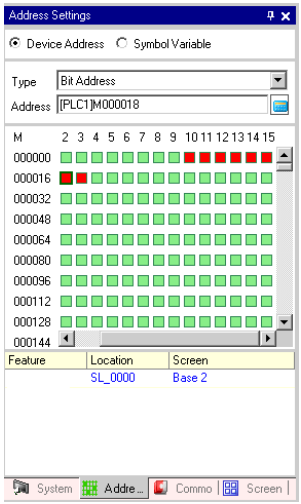


5.5 Confirming the List of Addresses being Used in a Project File

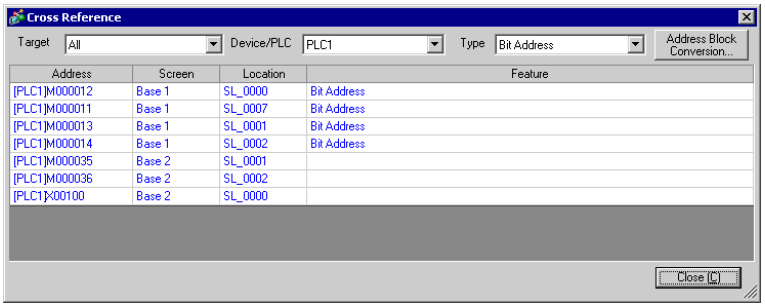
5.5.1 Details

You can check the addresses specified in a project file in the two following ways.

Map Format



List Format



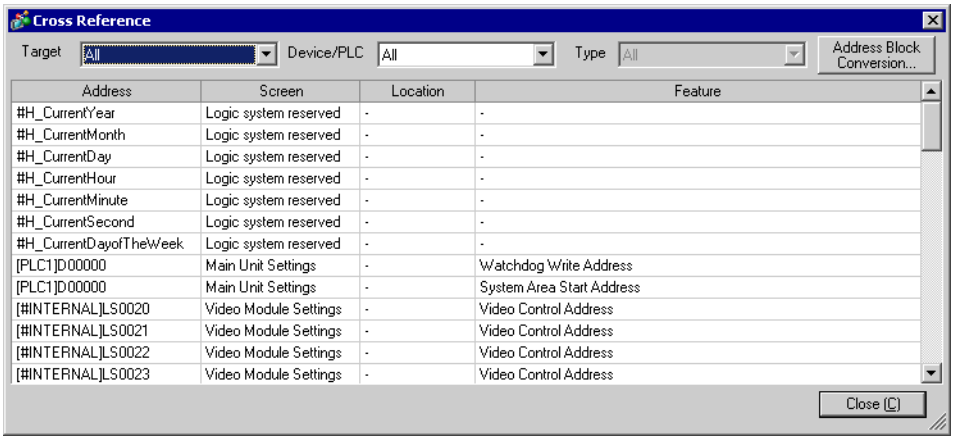
5.5.2 Setup Procedure

NOTE
- Refer to the settings guide for details.
  ☞ "5.13.4 [Utility] Settings Guide ■ Cross Reference" (page 5-81)

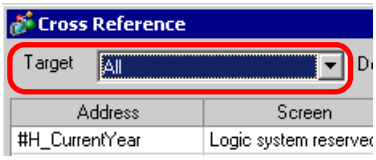
■ Setting Procedure to Display the List of Addresses in Use

Displays a list of the addresses specified in a project file.

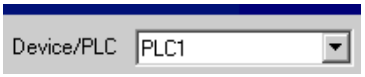
1 Select the [Project (F)] menu - [Utility (T)] option - [Cross Reference (R)] command. The following [Cross Reference] dialog box is displayed.



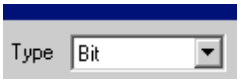
2 Select the screen or setting to be displayed from [Target].



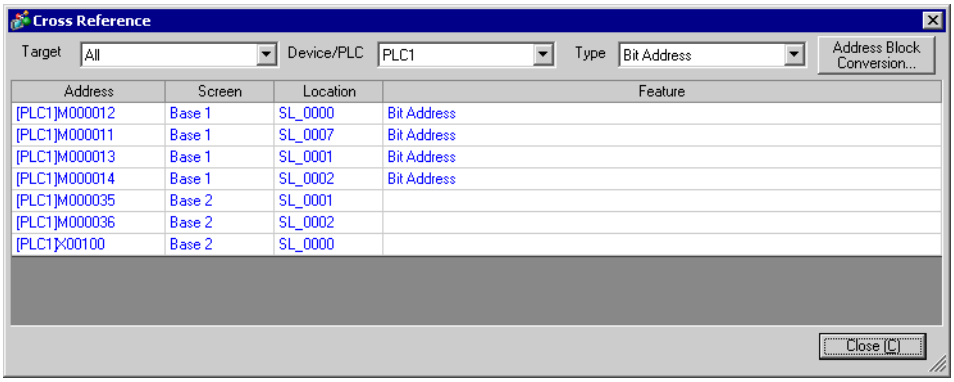
3 Select the Device/PLC of the target to be displayed.



4 Select the [Type] of the address to be displayed.

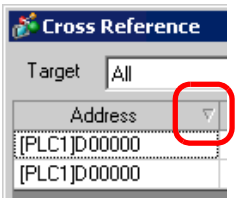


5 The list of addresses in use is displayed.



NOTE

- To switch each item content display between ascending order and descending order, click each item cell to display the arrow. Each time you click the arrow, the display switches between ascending order and descending order.



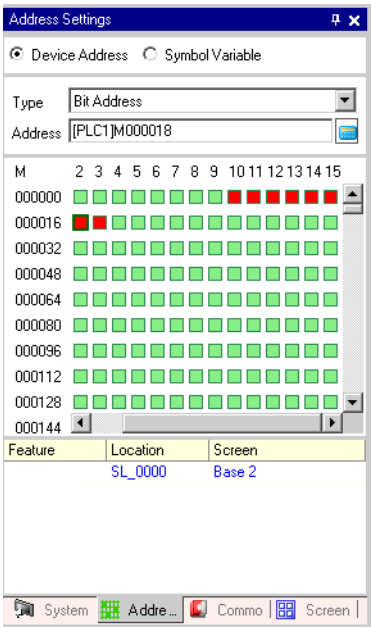
- To convert the listed addresses as a block, click [Address Block Conversion].
  ☞ "5.6 Converting the Addresses in a Project File in Block" (page 5-33)
- If you specify [All] to the Cross Reference's [Target], it may take a long time to get all the screens' address information and display it.
- For [Base Screen] and [Window Screen], double-click the cell and the screen's editing area is displayed.

■ Displaying Addresses In Use with a Map

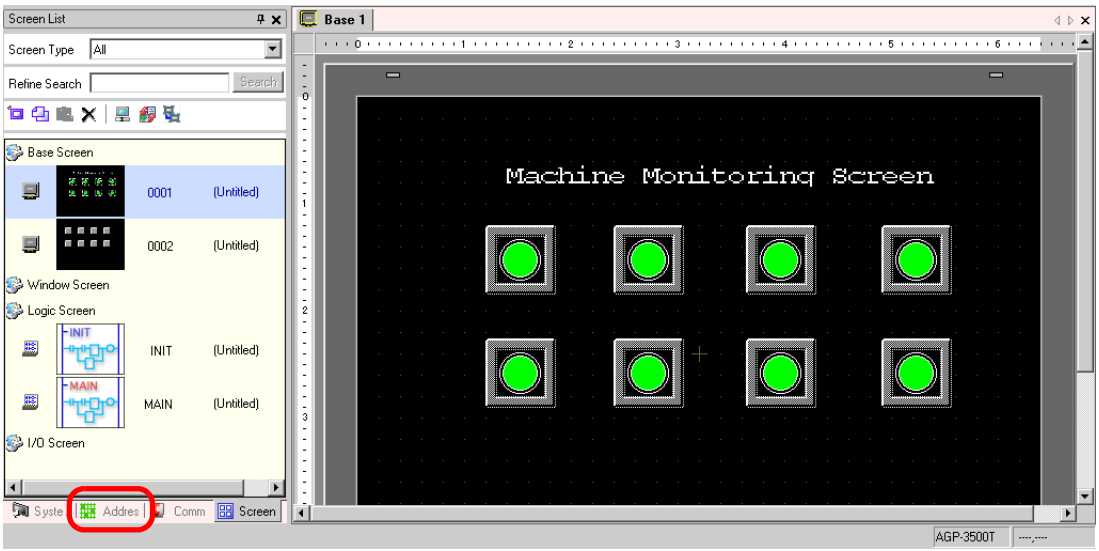
NOTE

- Refer to the settings guide for details.
  ☞ "5.13.5 [Work Space] Settings Guide ■ Address Settings Window" (page 5-86)

Displays the list of the addresses specified in a project file with a map.



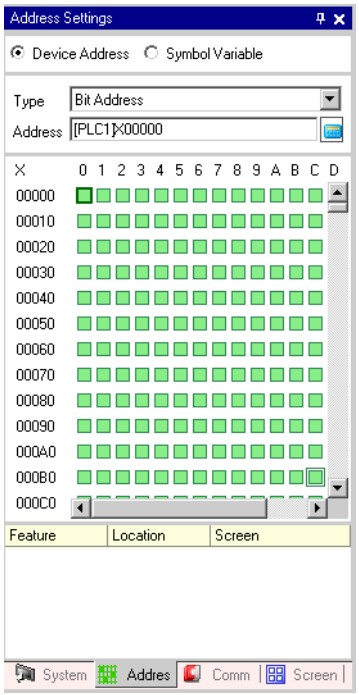
1 Click the [Address Settings] tab in the Work Space.



NOTE

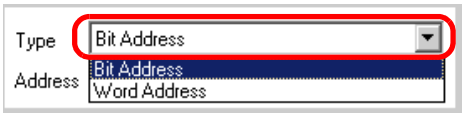
- If the [Address Settings] tab is not displayed in the Work Space, select the [View (V)] menu - [Work Space (W)] option - [Address Settings Window (A)] command.

2 The following [Address Settings] window is displayed.

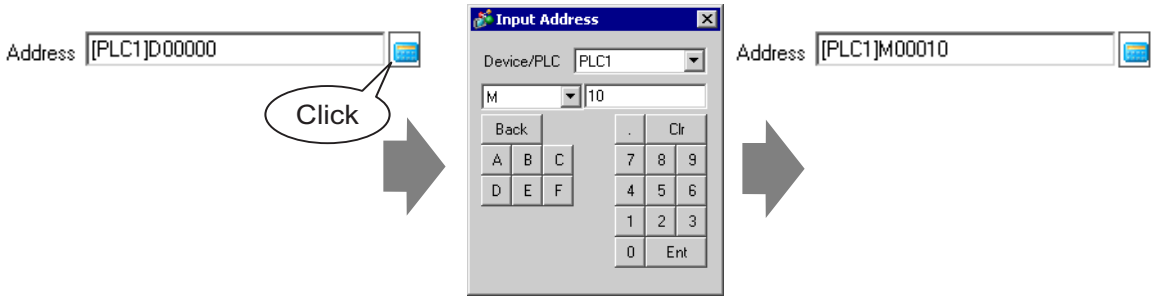


3 Select the target to display from [Device Address] or [Symbol Variable].

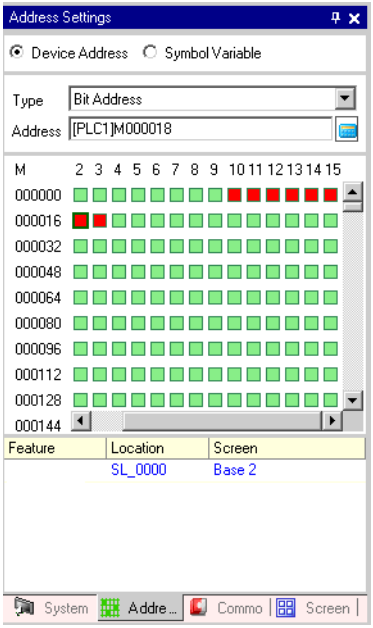
4 In [Type], select the address type from [Bit Address] or [Word Address].



5 Select the address of the target to display. (e.g. M010)

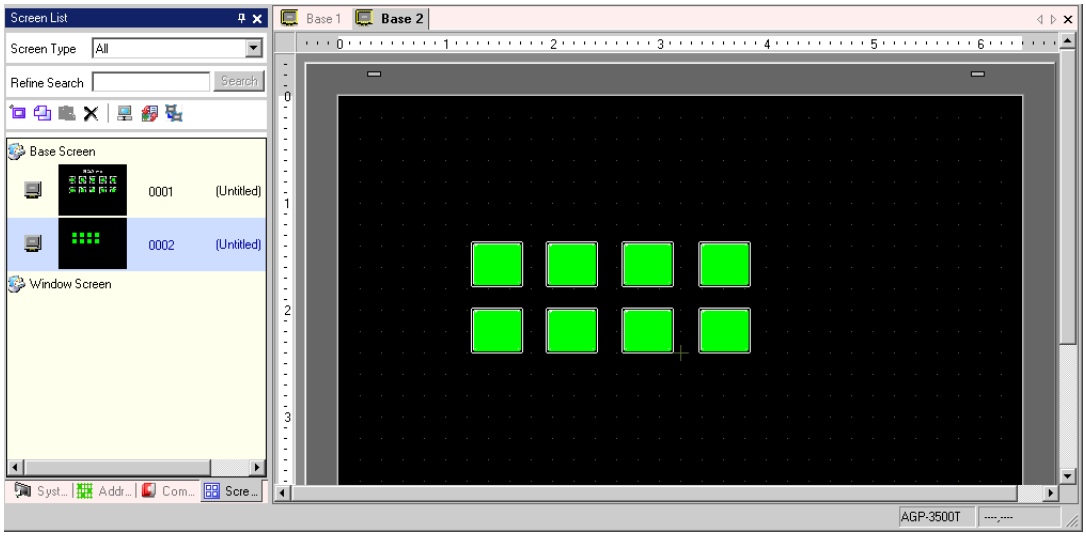


6 You can verify which addresses are used on the address map.

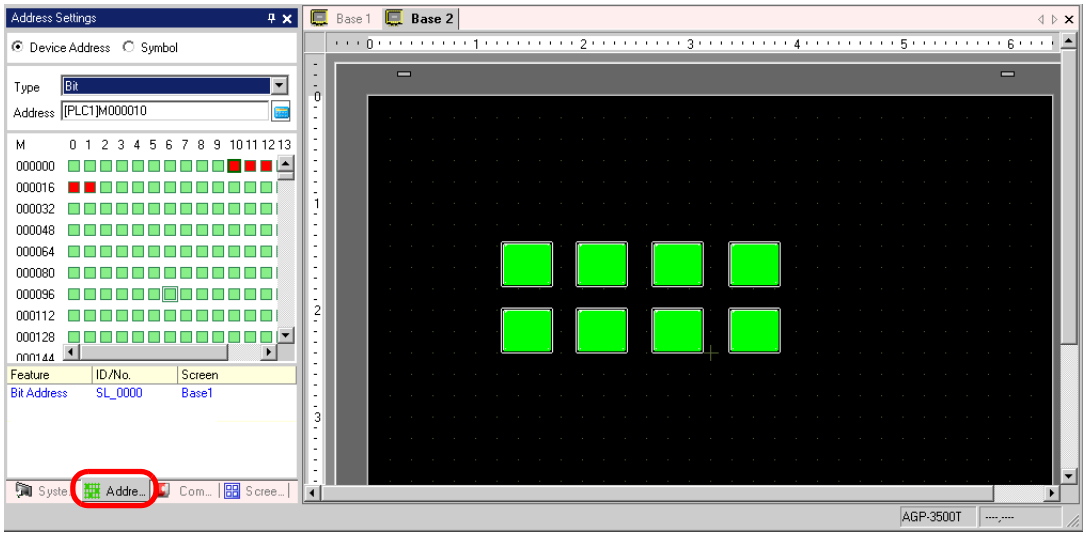


■ Changing the Screen Address of the Edit Part from the Address Map

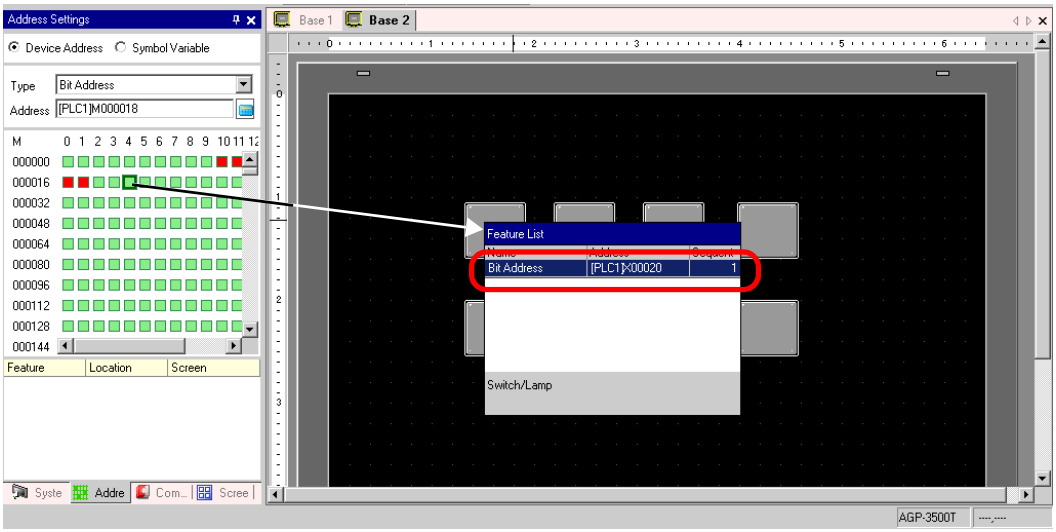
1 Open the screen on which the part whose address you want to change is placed.



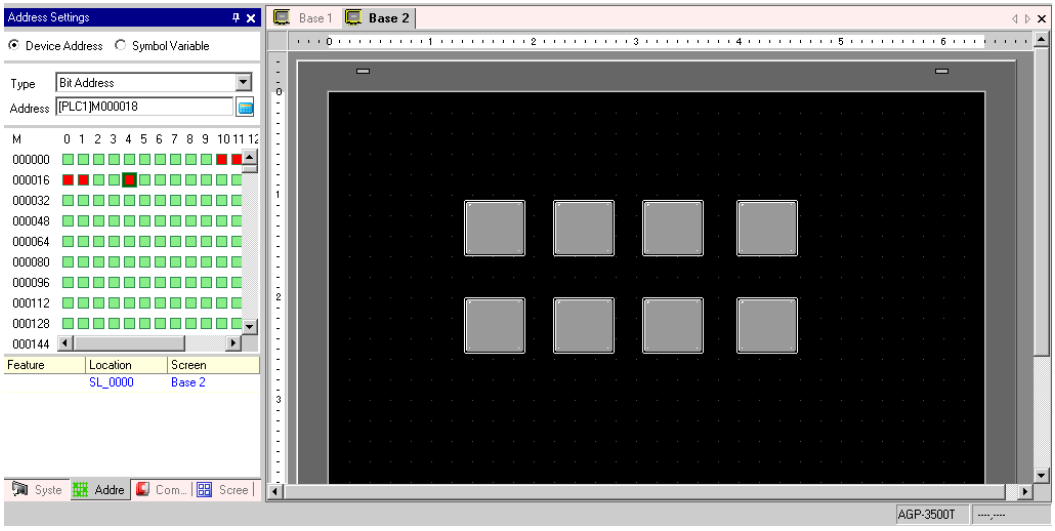
2 Click the Window's [Address Settings] tab and open the address map for reference.



3 If you drag the address from the address map onto a part in the drawing screen, the [Feature List] window is displayed. Select the address row in the displayed [Feature List].

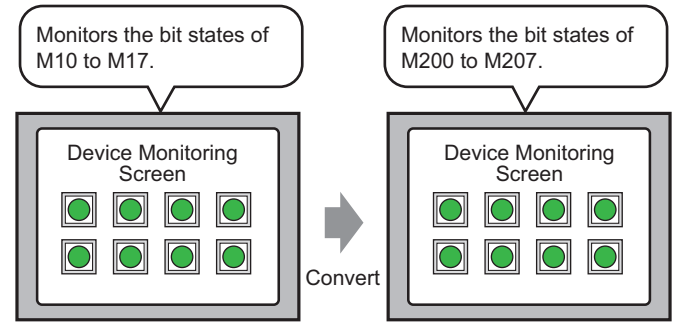


4 Release the drag and the address will be allotted to the part.



5.6 Converting the Addresses in a Project File in Block

5.6.1 Details



You can convert addresses by specifying the top/end addresses before conversion and the top address after conversion.

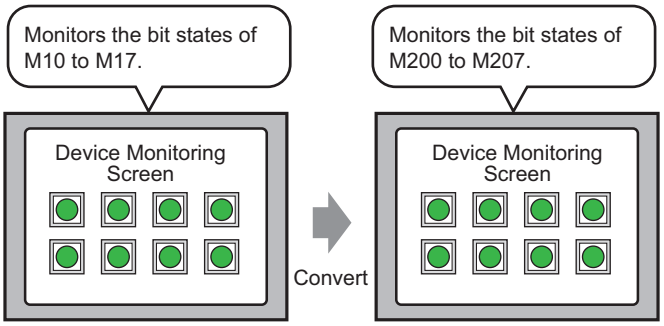
Converts the addresses specified in a project file to other addresses as a block. There are two conversion methods: [Whole Project], which converts the addresses in the whole project file as a block, and [Individual Settings], which sets and converts the conversion target screens individually.

5.6.2 Setup Procedure

NOTE

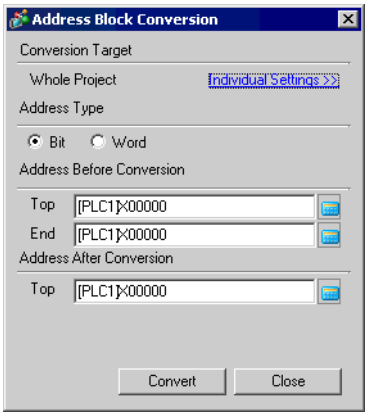
- Refer to the settings guide for details.
  ☞ "5.13.4 [Utility] Settings Guide ■ Address Block Conversion" (page 5-78)

Converts the addresses set on the specified screens as a block.

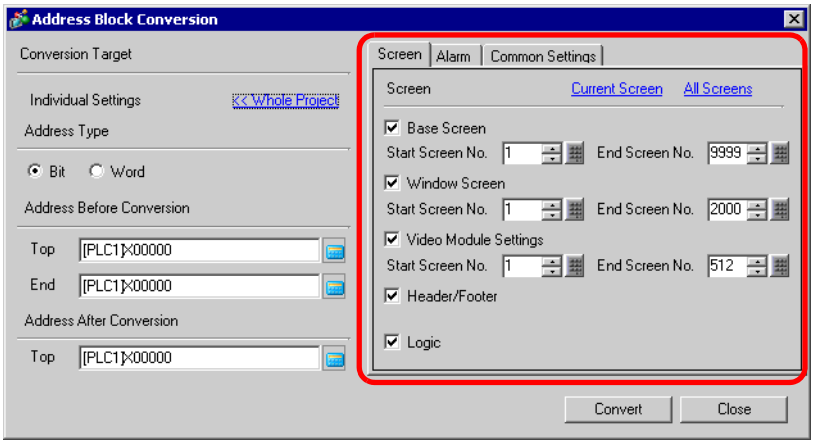


You can convert addresses by specifying the top/end addresses before conversion and the top address after conversion.

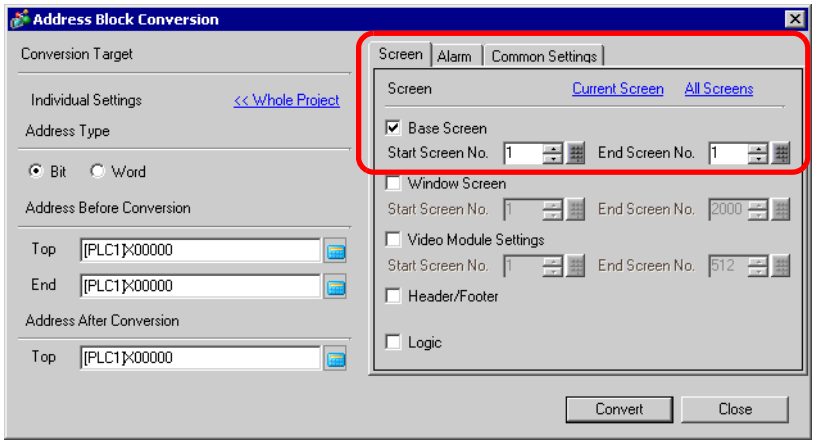
1 Select the [Project (F)] menu - [Utility (T)] option - [Convert Addresses (A)] command. The following [Address Block Conversion] dialog box will be displayed.



2 Click [Individual Settings] to display the setting items for each conversion target.

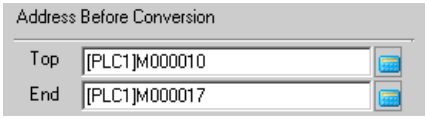


3 Set the screen you want to convert and the screen number or features.



4 Select the [Address Type] from [Bit] or [Word]. (e.g.: Bit)

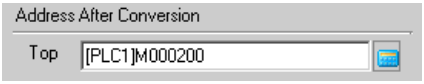
5 Set the [Address Before Conversion]'s [Top] and [End].
(e.g.: Top Address M10, End Address M17)



NOTE

- For [Address Before Conversion]'s [Top] and [End], you cannot specify a different device address.

6 Set the [Address After Conversion]'s [Top]. (e.g.: Top Address M200)



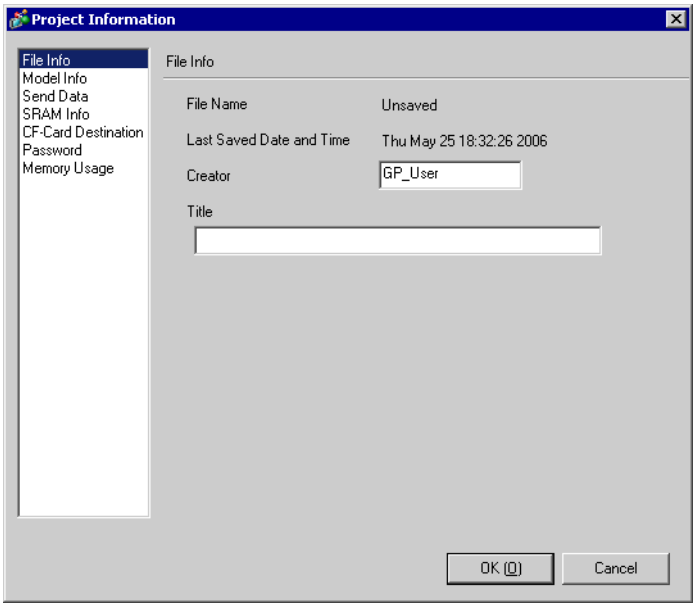
7 Click [Convert]. The [Address Block Conversion] dialog box with the process completion message appears so click [OK].

NOTE

- If you selected [Symbol Variable] for the addresses, the [Address Block Conversion] will not work properly.
- If the total number of addresses (End Address – Top Address) before conversion is greater than the total number of addresses (End Address – Top Address) after conversion, the device's last address is assigned to all the unconverted addresses.

5.7 Seeing the Project information

5.7.1 Details



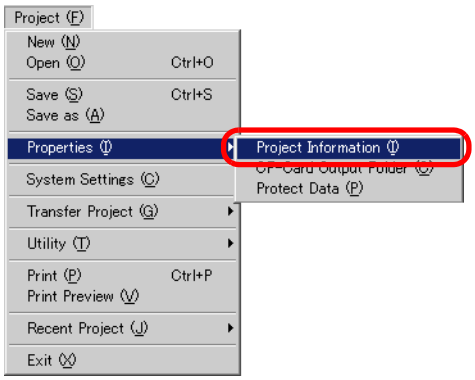
You can check all information on File Creator and Last Saved Data, Model and Device/PLC, the data sent by Project Transfer, backup SRAM's usage size, logic program you are creating, the registered variable size, etc.
You can also specify a CF-Card Output Folder and Password.

5.7.2 Setup Procedure

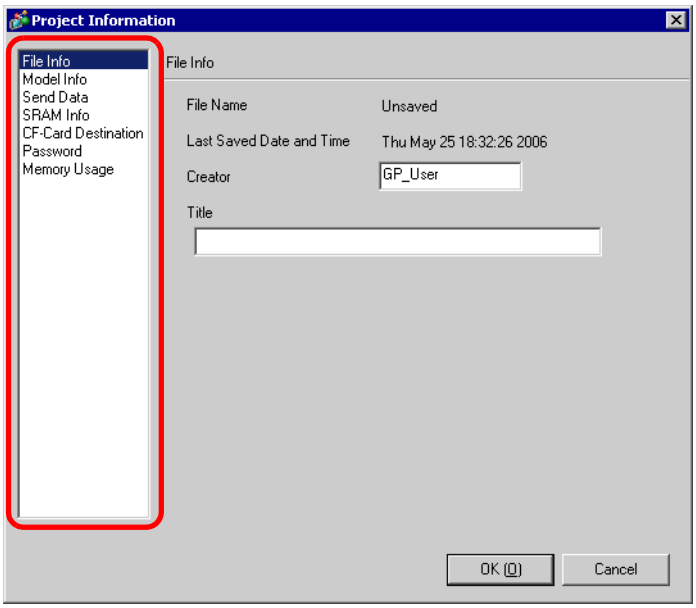
NOTE • Refer to the settings guide for details.
☞ "5.13.3 [Properties] Settings Guide ■ Project Information" (page 5-69)

■ Checking [Project Information]

1 Select the [Project (F)] menu - [Properties (I)] option - [Project Information (I)] command.



2 The [Project Information] dialog box will be displayed. If you click each item in the left window, the displayed information changes.

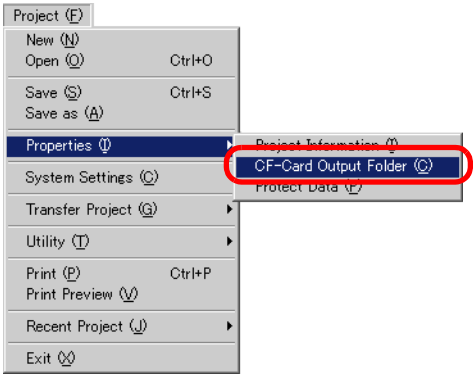


3 Confirm it and click [OK] to close the [Project Information] dialog box.

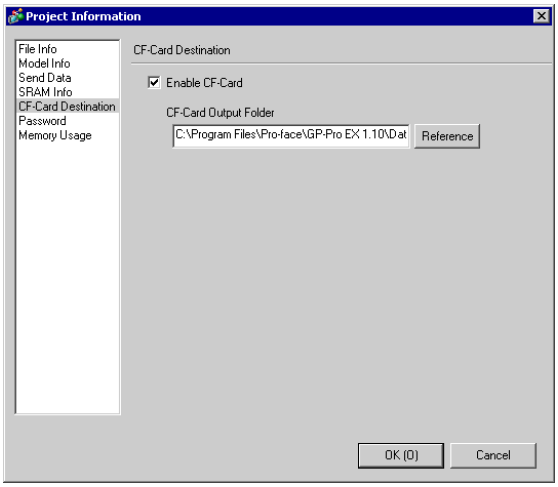
■ CF-Card Output Folder Setting Procedure

Set the location to temporarily store the data to be saved in a CF-card.

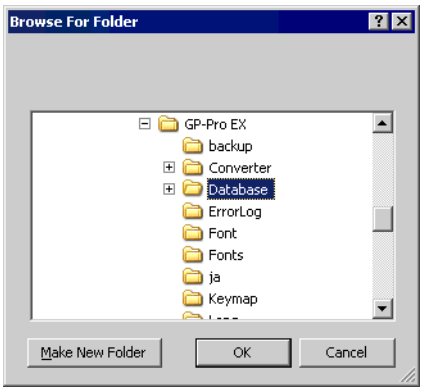
1 Select the [Project (F)] menu - [Properties (I)] option - [CF-Card Output Folder (C)] command.



2 The [Project Information] dialog box will be displayed. Put a check mark next to the [Enable CF-Card] box.



3 Click [Reference] and designate a CF-card output folder.



NOTE

- The initial settings in\Program Files\Pro-face\GP-Pro EX 1.10\Database\ (project file name and folder with the same name) are automatically specified as the CF-card Output Folder.

Click [OK] to return to the [Project Information] dialog box.

4 Click [OK]. If a CF-card folder does not exist in the specified output folder (when you specified the CF-card output folder for the first time), the following confirmation message is displayed. Click [Yes].

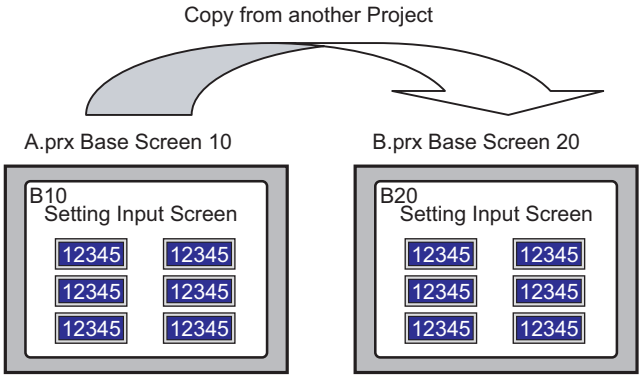
Folders ([data], [file], etc.) that store data to be saved in a CF-card are automatically created.

5.8 Copying a Screen from another Project

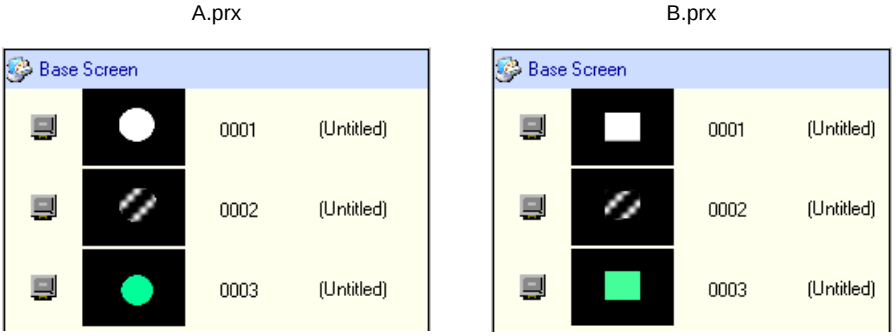
5.8.1 Details

You can copy a screen created in another project to the project currently being edited. There are two copying methods: specify necessary screens and copy them, or copy all the screens of another project.

Copying the specified screens in another project



Copying all the screens from another project

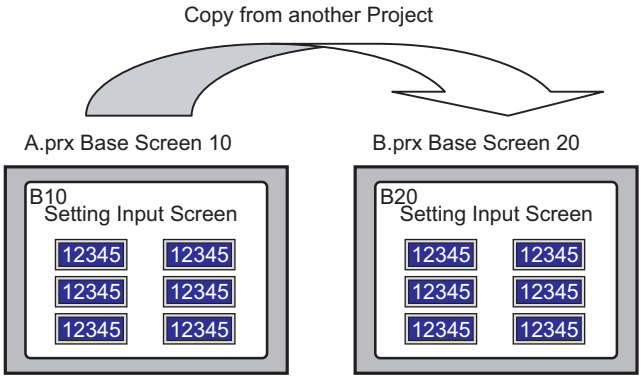


5.8.2 Setup Procedure

NOTE

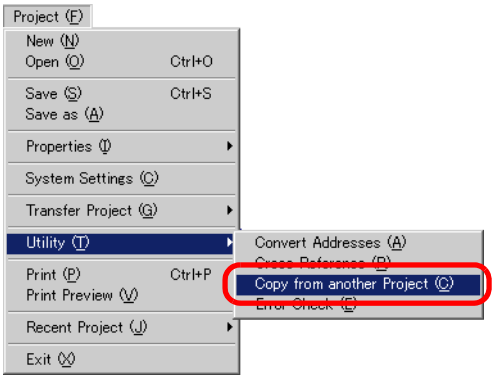
- Refer to the settings guide for details.
  ☞ "5.13.4 [Utility] Settings Guide ◆ Whole Project" (page 5-78)

Copy the project "A.prx"'s Base Screen: 10 to the project "B.prx".

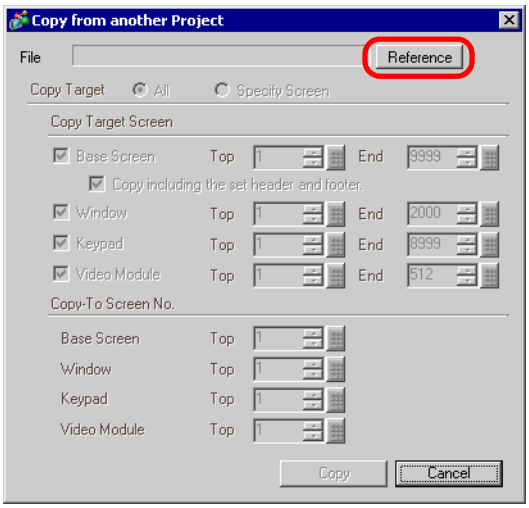


1 Open the copy-to project file.

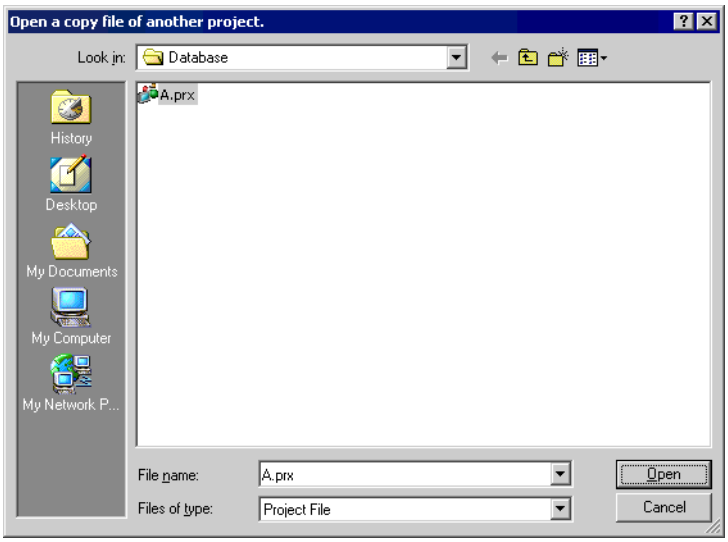
2 Select the [Project (F)] menu - [Utility (T)] option - [Copy from another Project (C)] command.



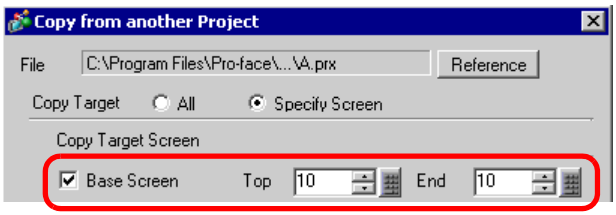
3 When the [Copy from another Project] dialog box is displayed, click [Reference].



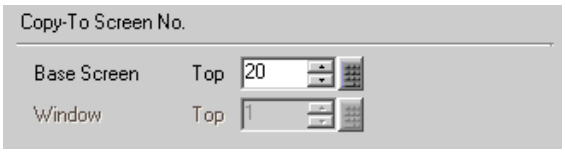
4 When the following dialog box is displayed, specify the [Look in] and [File name] and click [Open].



5 Return to the [Copy from another Project] dialog box. Click [Specify Screen] and specify the Copy Target Base Screen's [Top] number and [End] number in [Base Screen]. (e.g.: [Top][End]10).



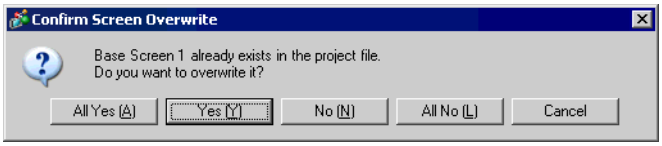
6 In [Copy-To Screen No.], specify the copy-to Base Screen's [Top] number.



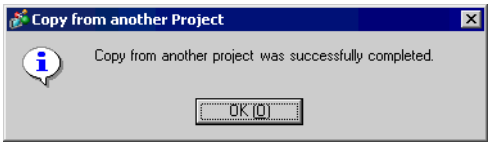
7 Click [Copy].

NOTE

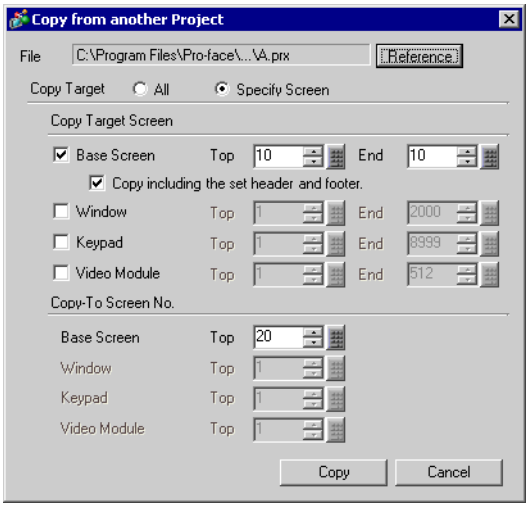
- If a screen of the same number exists in the copy destination, the following confirmation dialog box opens.



8 When the copy is complete, the following message is displayed. Click [OK].

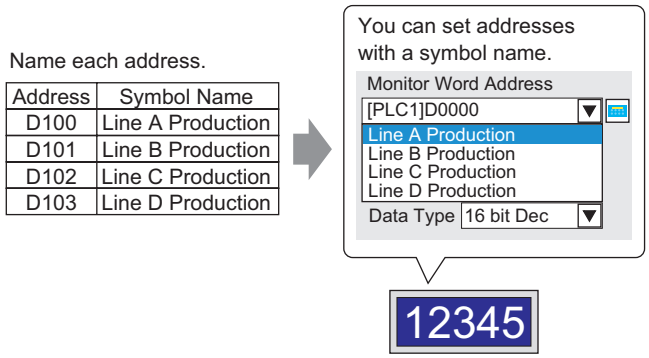


9 When the [Copy from another Project] dialog box is displayed, click ✕ to close it.



5.9 Registering Addresses with Comprehensive Names

5.9.1 Details

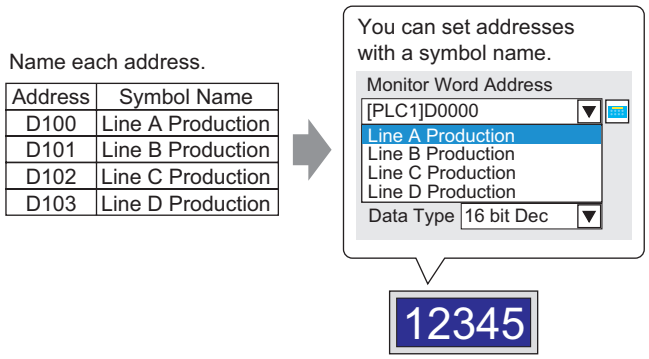


You are free to name and manage addresses as required. (The name is called “symbol.”). You can specify a symbol for a part address. You can change the symbol addresses all at once without changing the part settings.

5.9.2 Setup Procedure

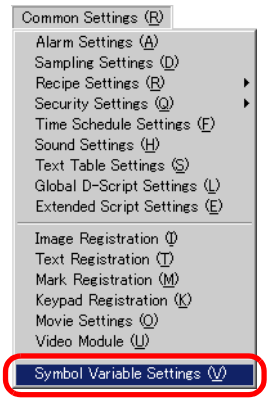
NOTE

- Refer to the settings guide for details.
  - ☞ "5.13.5 [Work Space] Settings Guide ■ Address Settings Window" (page 5-86)
  - ☞ "5.13.8 [Common Settings] Settings Guide ■ Symbol Variable Settings" (page 5-137)
- For the addresses that can be used with logic features, see the next page.
  - ☞ "29.3 Registering Addresses" (page 29-12)

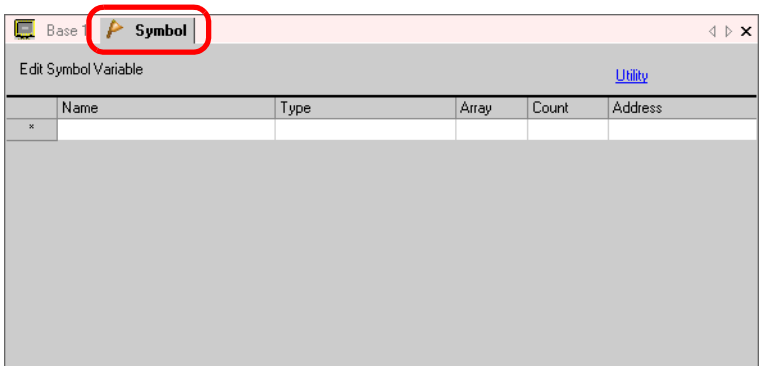


■ Registering the [Symbol Variable Settings]

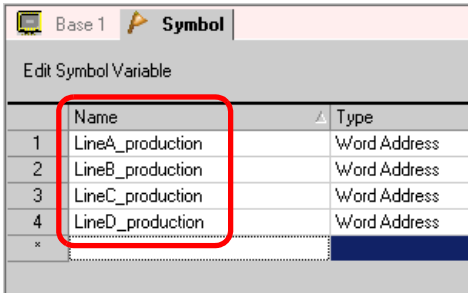
1 Select the [Common Settings (R)] menu - [Symbol Variable Settings (V)] command.



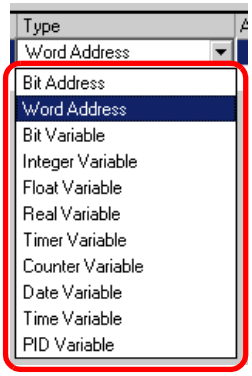
2 The [Symbol Variable Settings] screen is displayed.



3 Click a cell in the [Name] column and specify the symbol variable name.



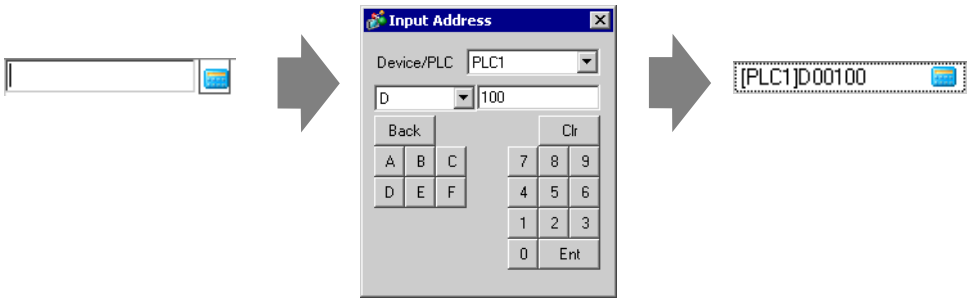
4 Click each cell in the [Type] column and select the symbol's address type.



5 Click each cell in the [Address] column to display . Set each symbol's address.
(e.g.: Line A Production: D100, Line B Production: D101, Line C Production: D102, Line D Production: D103)

Click the icon to display an address input keypad.

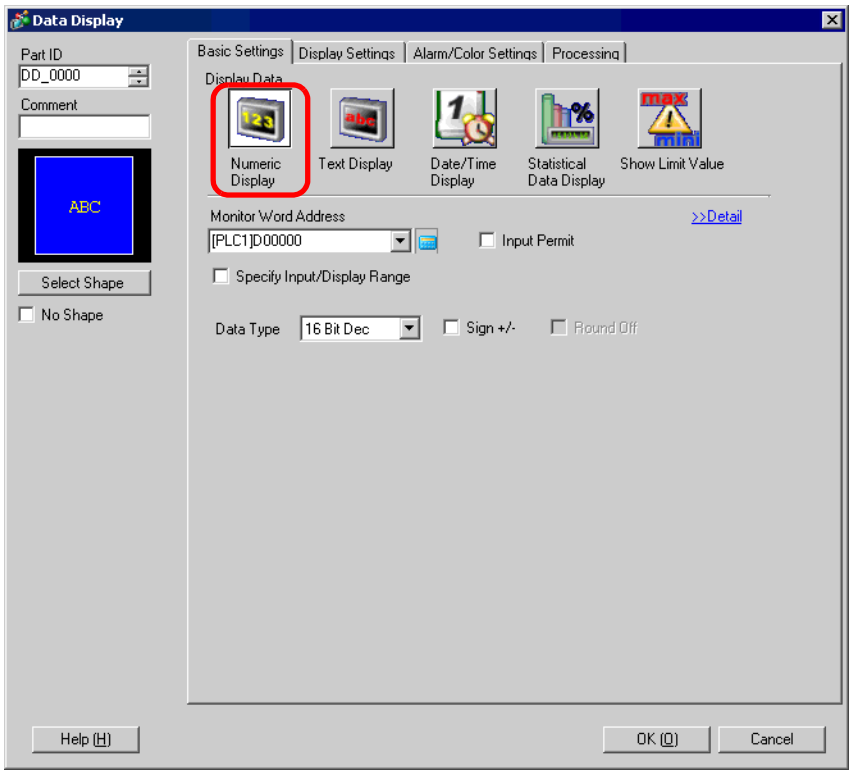
Select device "D", input "100" as the address, and press the "Ent" key.



6 The settings to register an address as a symbol are complete.

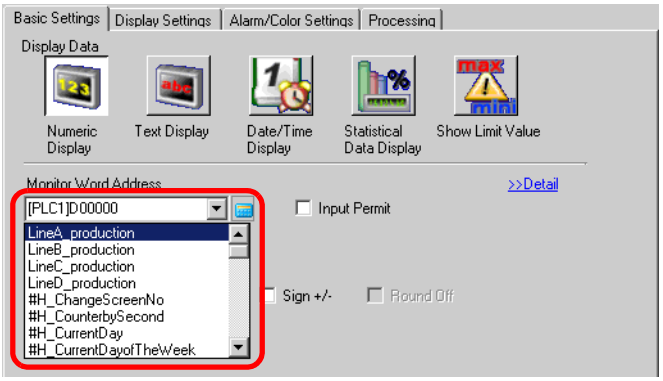
7 Set the symbols registered in Data Displays. Select the [Part (P)] menu - [Data Display (D)] option - [Numeric Display (N)] command, or click the icon, and place it on the screen.

8 Double-click the placed Data Display and the settings dialog box opens.

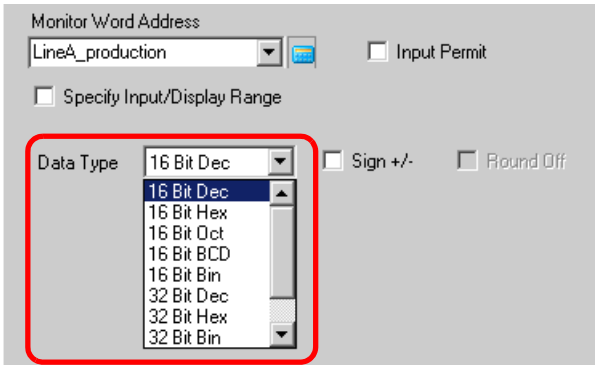


9 Select the Data Display shape from [Select Shape].

10 In [Monitor Word Address], specify the symbol of the address (e.g.: Line A Production = D100) which will store the value to be displayed.



11 Set the type of data that will be displayed (e.g. “16 Bit Dec”) in [Data Type].

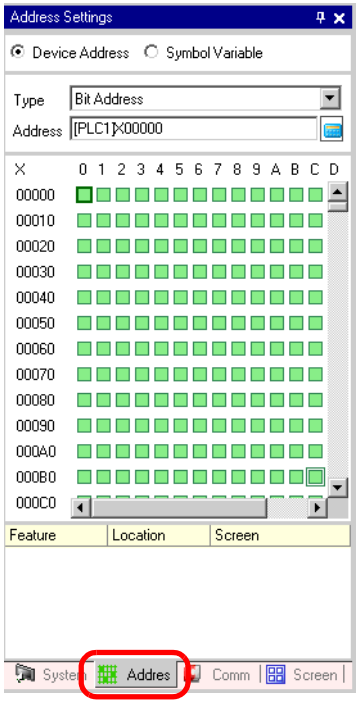


12 As needed, specify the Data Display’s color and text on the [Alarm/Color Settings] tab and [Display Settings] tab, and click [OK].

13 Set the Data Displays for the symbols of “Line B Production”, “Line C Production”, and “Line D Production” as well.

■ Setting Procedure to Confirm the Symbol Registration with a List

1 Click the [Address Settings] tab in the Work Space.

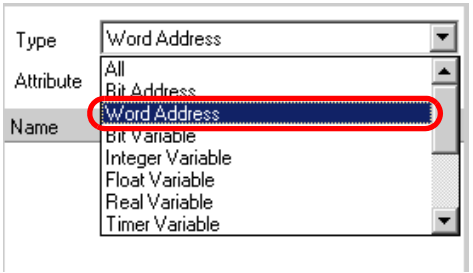


NOTE

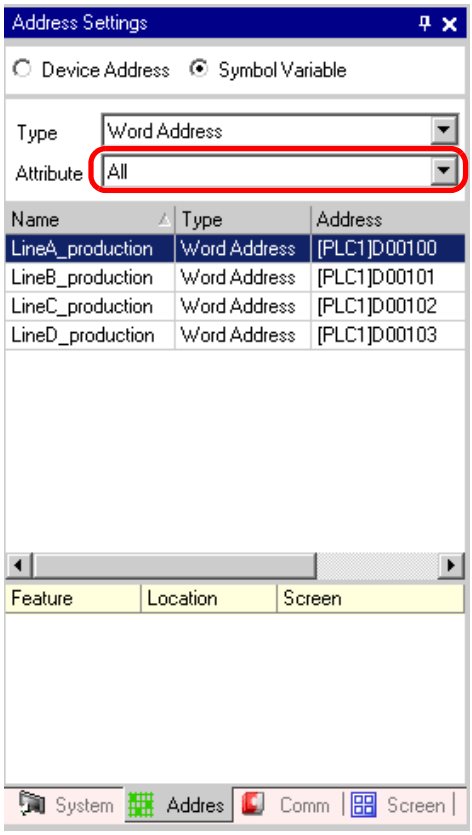
- If the [Address Settings] tab is not displayed in the Work Space, select the [View (V)] menu - [Work Space (W)] option - [Address Settings Window (A)] command.

2 Select [Symbol Variable].

3 In [Type], select the address type from the list.



4 In [Attribute], select the device/PLC for the symbol variable to display. The symbol variable's address list is displayed.

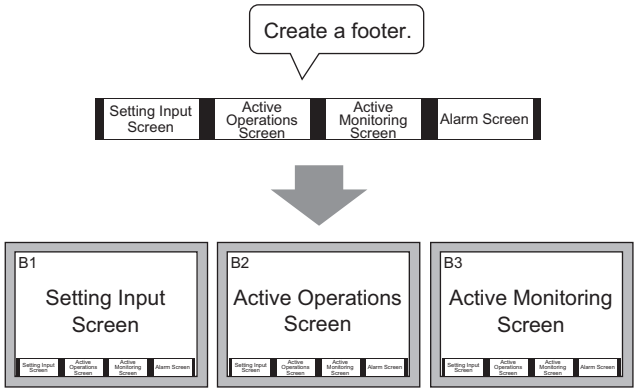


NOTE

- The address selected in the list can be dragged to connect it to a part placed on the drawing screen.
- By double-clicking the address in the list, you can open the [Edit Symbol Variable] screen.

5.10 Putting a Header/Footer on the Screen

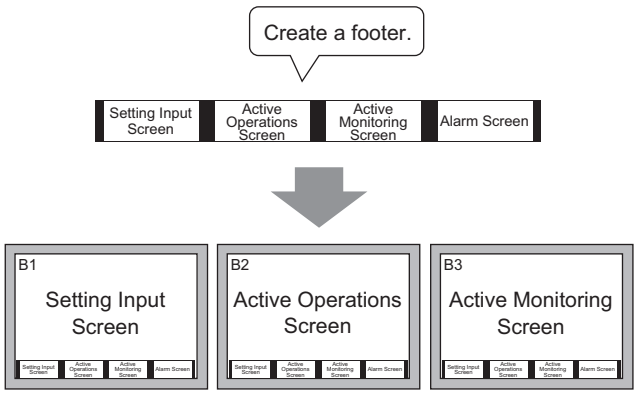
5.10.1 Details



You can display a footer on each screen.

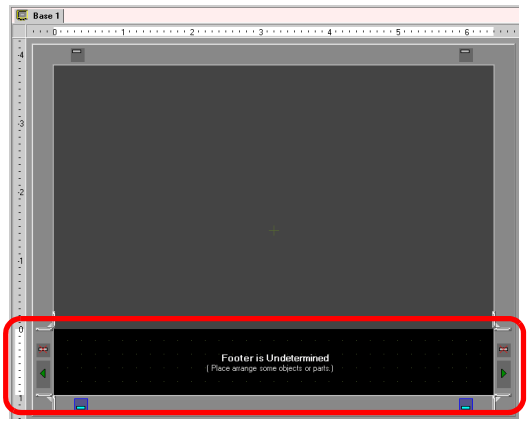
You can display a common header/footer on multiple screens.

5.10.2 Setup Procedure



You can display a footer on each screen.

1 You can display a footer on each screen. Select the [View (V)] menu - [Footer (F)] command or click the [Edit Footer] button at the bottom of the drawing screen to display the footer screen area. 



NOTE

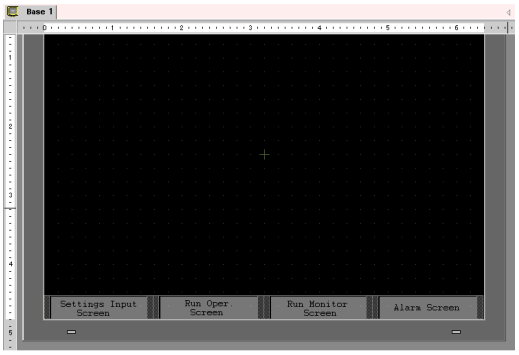
- To specify a Header, select the [View (V)] menu - [Header (H)] command or the [Edit Header] button  at the top of the drawing screen to display the header screen area.

2 Create a screen in the footer editing area.

NOTE

- To delete the created footer area, click  .
- To create another footer, click the [Next Footer] button  .

3 Click the [disable footer edit] button  in the footer editing area and the footer editing area will be released.



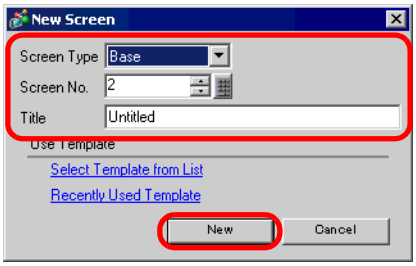
NOTE

- You can specify a comment in each header/footer screen. The comment is displayed in the bottom right corner of a header/footer screen. To specify a comment, select the [View (V)] menu - [Work Space (W)] option - [Properties Window (P)] command. When the Properties Window is displayed, specify the [Comment].

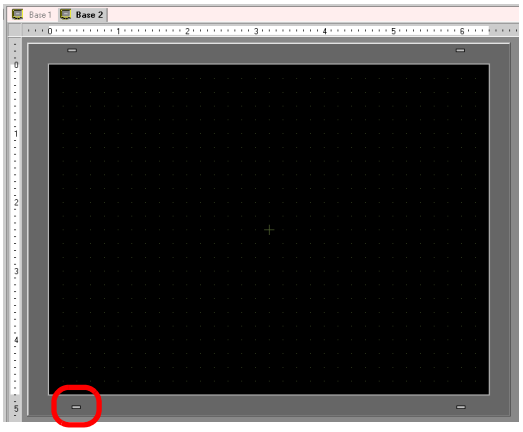
■ Calling a Header/Footer

1 Select the [Screen (S)] menu - [New Screen] command or click the [New Screen] button .

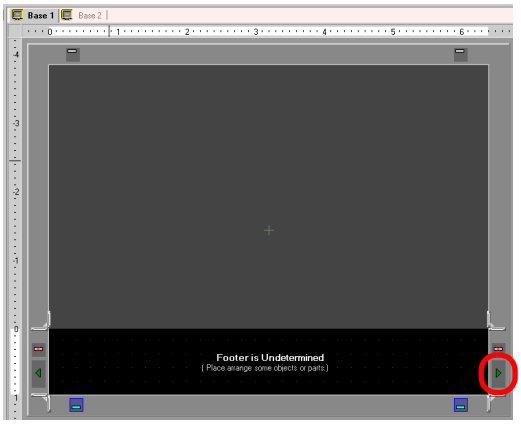
2 When the [New Screen] dialog box is displayed, specify [Screen Type], [Screen No.], and [Title] and click [New].



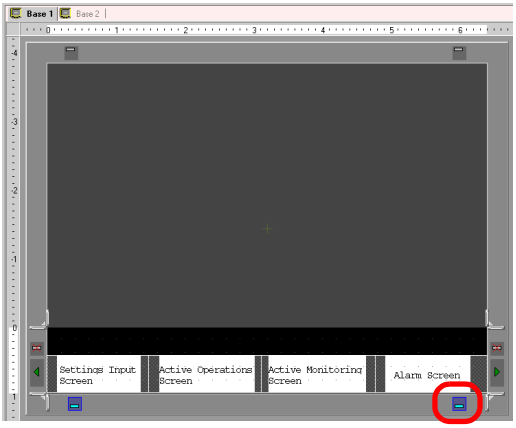
3 A new base screen is displayed. Select the [View (V)] menu - [Footer (F)] command or click the [Edit Footer] button at the bottom of the drawing screen.



4 The footer screen editing area is displayed. Click the [Next Footer] button .

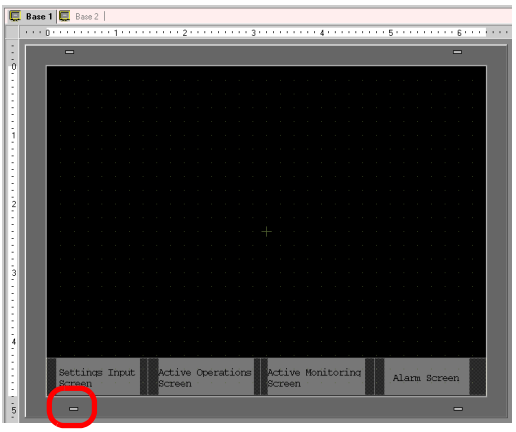


5 The footer is displayed. Click the [disable footer edit] button in the editing area and the editing area will be released.



■ Releasing a Header/Footer

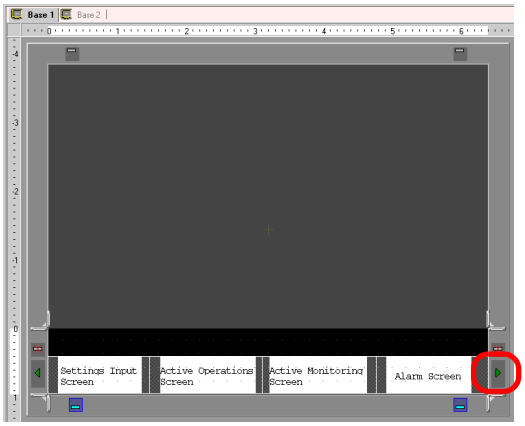
1 Display the screen with a footer you want to release and click the [Edit Footer] button .



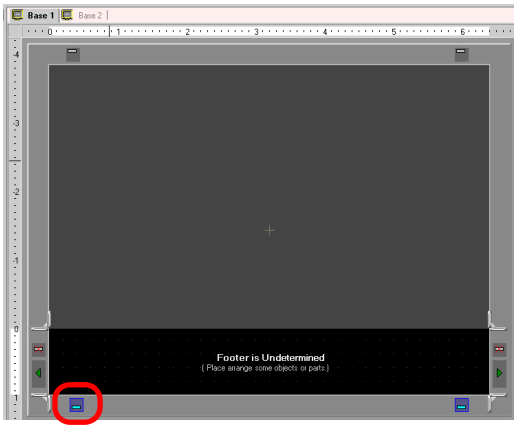
NOTE

- To release a Header, select the [View (V)] menu - [Header (H)] command or the [Edit Header] button at the top of the drawing screen to display the header screen area.

2 When the footer screen area is displayed, click the [Next Footer] button and specify a blank header.



3 Click the [disable footer edit] button in the editing area and the editing area will be released.

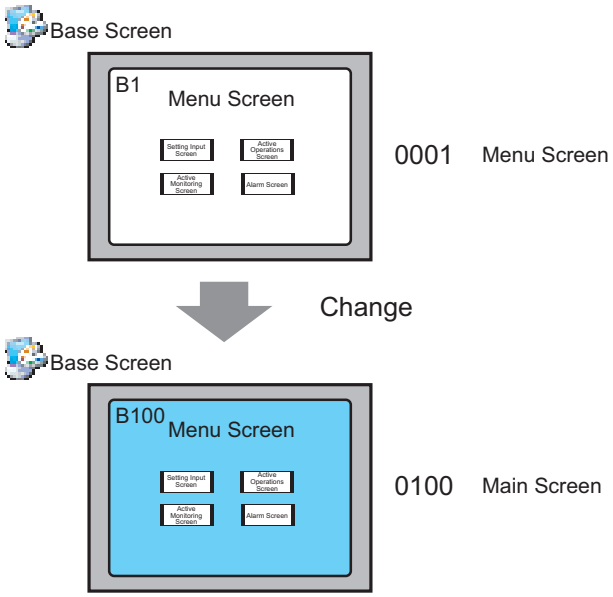


NOTE

- If you change from a large resolution GP main unit model to a small resolution model, a header/footer that exceeds the range due to the change is not displayed. After changing the GP type, you need to adjust the header/footer's size and position.

5.11 Changing the Screen No./Title/Screen Color

5.11.1 Details

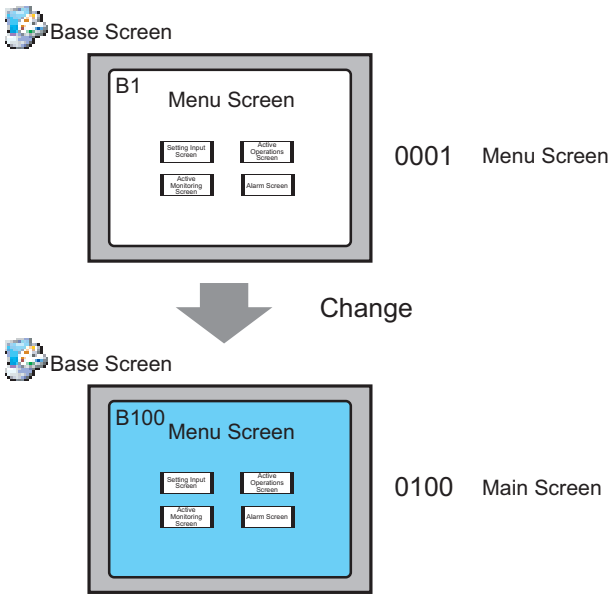


You can change the screen number, screen title, and screen color in a project file.

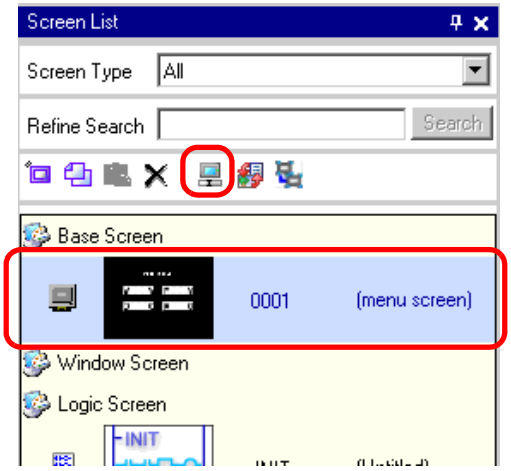
5.11.2 Setup Procedure

NOTE

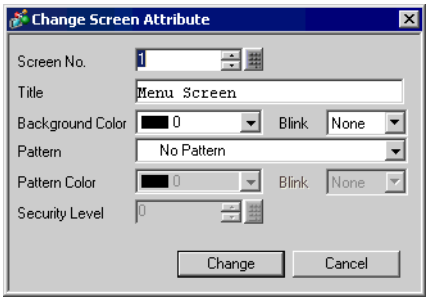
- Refer to the settings guide for details.
  ☞ "5.13.5 [Work Space] Settings Guide ■ Screen List Window" (page 5-89)



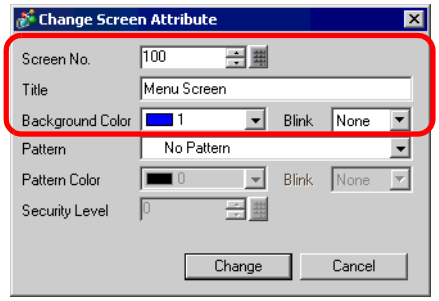
1 Select the screen with the attribute you want to change from [Screen List Window] and click the [Change Attribute] icon .



2 The [Change Screen Attribute] dialog box is displayed.



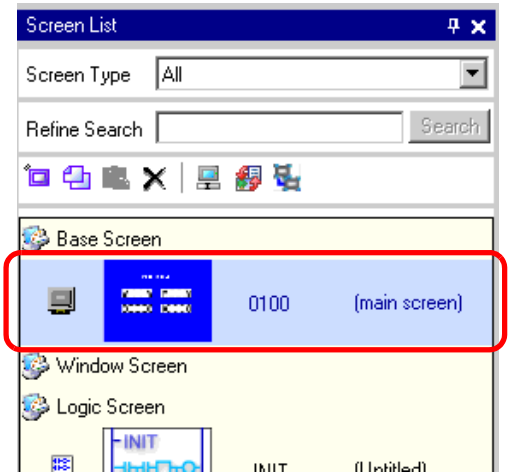
3 Change the [Screen No.], [Title] and [Background Color].
(e.g.: Screen No.: 100, Title: Main Screen)



NOTE

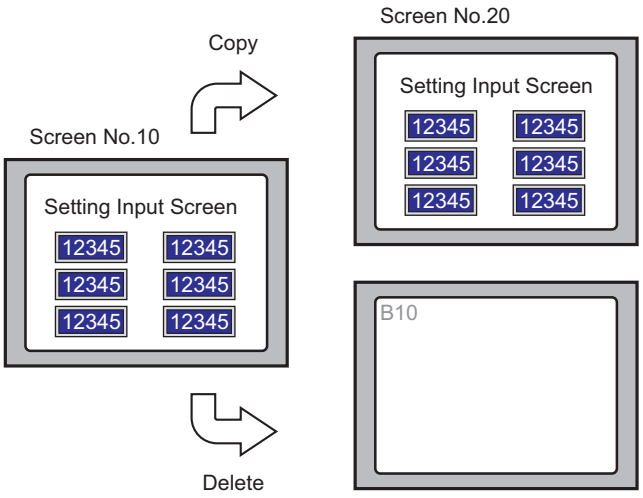
- To specify the [Security Level], refer to the following.
☞ "22.2 Creating Screens that Only Specific People can Use" (page 22-3)

4 The changed screen attribute is displayed.



5.12 Copying/Deleting a Screen

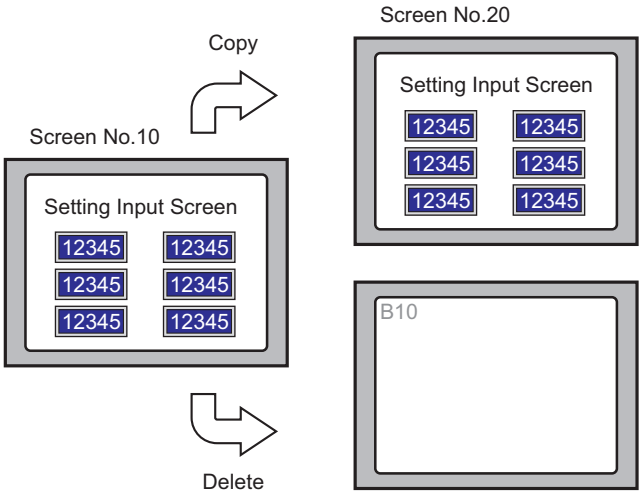
5.12.1 Details



You can copy or delete a screen easily.

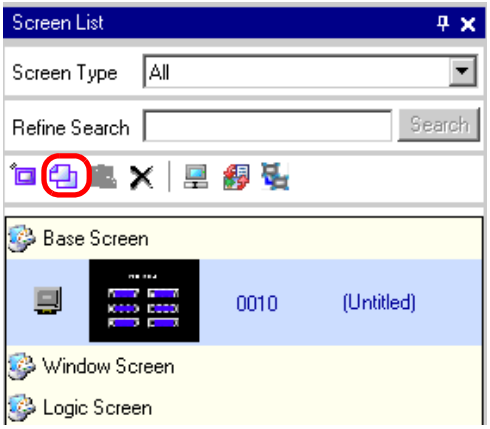
5.12.2 Setup Procedure

NOTE • Refer to the settings guide for details.
☞ "5.13.5 [Work Space] Settings Guide ■ Screen List Window" (page 5-89)

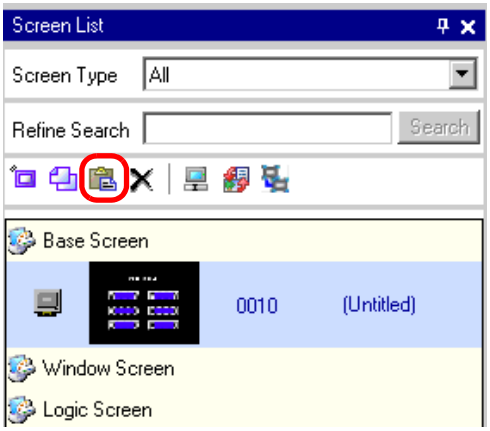


■ Copying a Screen

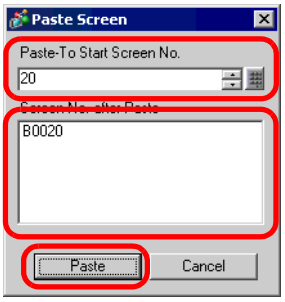
1 Select the screen you want to copy from [Screen List Window] and click the [Copy] .



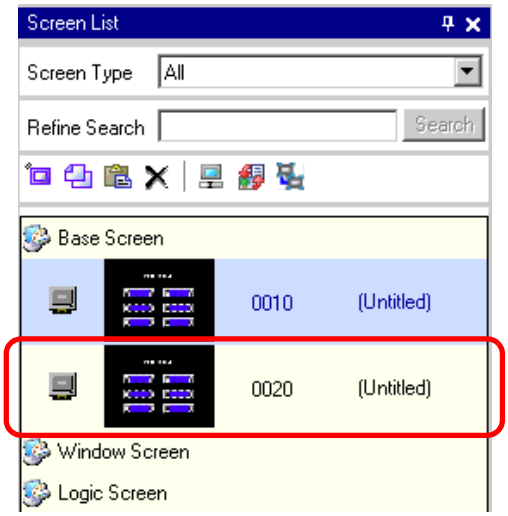
2 Then click the [Paste] icon .



3 When the [Paste Screen] dialog box is displayed, specify the [Paste-To Start Screen No.] and [Screen No. after Paste] and click [Paste]. (e.g.: [Paste-To Start Screen No.] 20)



4 The reduced display of the pasted screen is displayed in the [Screen List Window]'s list.

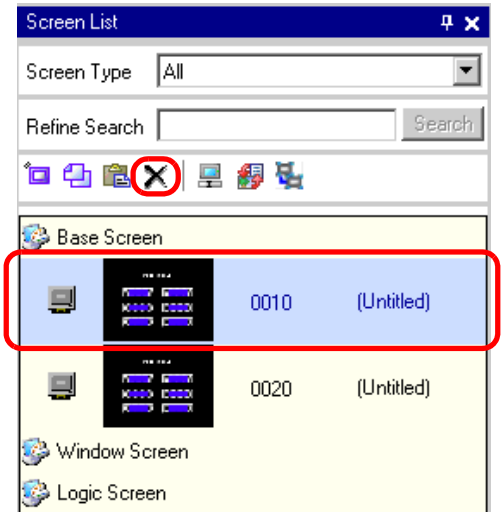


NOTE

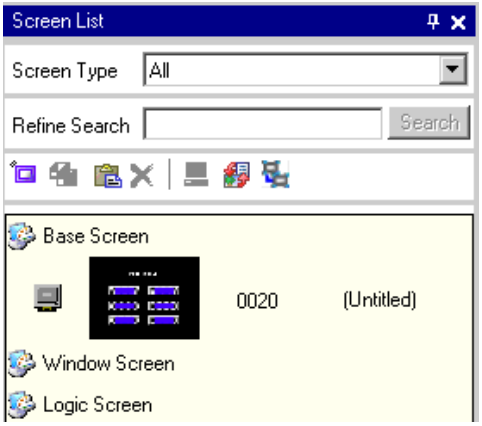
- To select multiple screens at a time, select the target screen on the [Screen List Window]'s list with the [Shift] key + click, or the [Ctrl] key + click.

■ Delete a Screen

1 Select the reduced screen display of the screen you want to delete from [Screen List Window] and click the [Delete] icon .



2 The screen is deleted from the [Screen List Window].



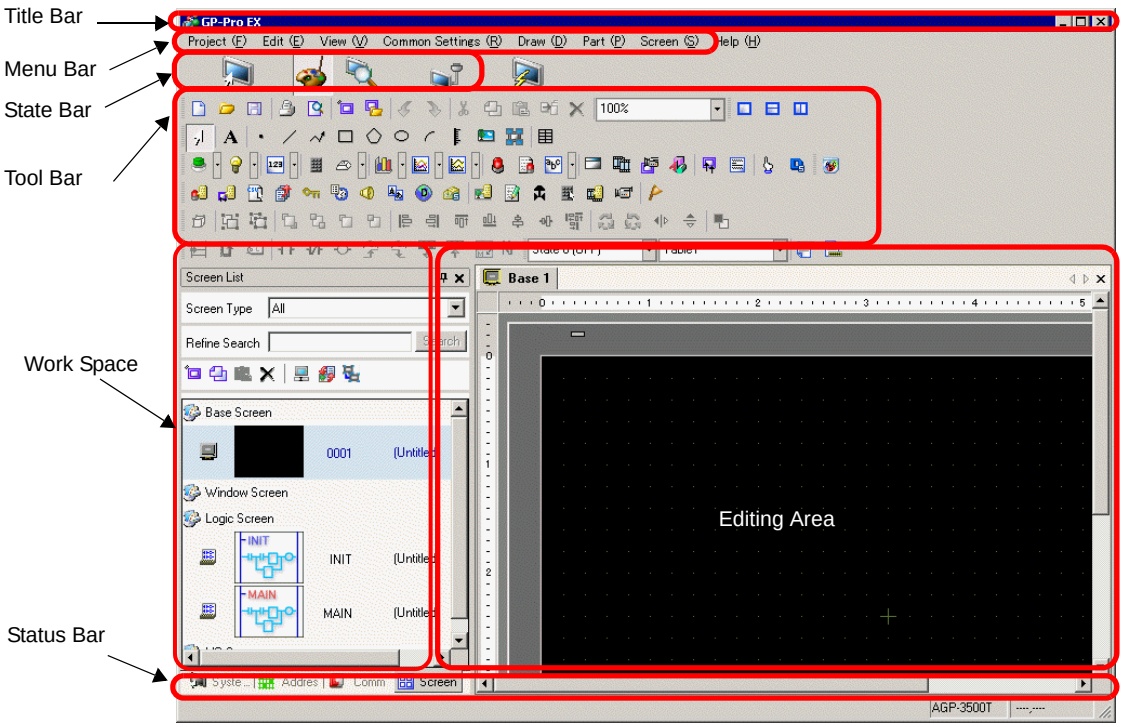
NOTE

- To select multiple screens at a time, select the target screen on the [Screen List Window]'s list with the [Shift] key + click, or the [Ctrl] key + click.

5.13 Settings Guide

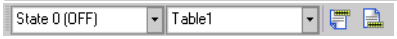
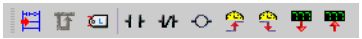
5.13.1 Main Window's Part Names

GP-Pro EX's basic screen part names and functions are as follows.



Setting	Description
Title Bar	Displays a project file name or screen title.
Menu Bar	Displays the menu to operate GP-Pro EX. Select from these to display a pull-down menu.
State Bar	Select the operation state from [System Settings], [Edit], [Preview], [Transfer Project], or [Monitor] to switch to the operation screen.
Tool Bar	Displays command icons, such as Part, Draw or Edit. Click one of these icons with the mouse to execute the operation. The Tool Bar can be switched between Show/Hide by selecting the [View (V)] menu - [Tool Bar (T)] command. Also, the bar can be moved by dragging it and placed in the left, right, top, or bottom of the screen. There are the following types of Tool Bar.

Continued

Setting		Description
Tool Bar	Normal	
	Edit	
	Display	
	Draw	
	Part	
	Command	
	Package	
	Common Settings	
	Screen Block	
Work Space		Displays a Window. By dragging a Window, you can move and place it in the desired position. Displays the following types of Windows.
	System Settings Window/ Address Settings Window/ Common Settings Window/ Screen List	Displays the [System Settings Window], [Address Settings Window], [Common Setting Window], or [Screen List Window]. • System Settings Window ☞ "■ System Settings Window" (page 5-84) • Address Settings Window ☞ "■ Address Settings Window" (page 5-86) • Common Setting Window ☞ "■ Common Setting Window" (page 5-87) • Screen List Window ☞ "■ Screen List Window" (page 5-89)
	Properties Window	Displays the selected part or screen's attributes to confirm or edit the attributes. ☞ "■ Properties Window" (page 5-91) **NOTE** • This window is displayed as popup the first time you start up the GP.
	Screen Data List Window	Displays a list of the Draw and Parts placed on the screen by editing screens and keypads. ☞ "■ Screen Data List Window" (page 5-92)
	Comment List Window	☞ "5.13.5 [Work Space] Settings Guide ■ Comment List Window" (page 5-93)
	Watch List Window	☞ "5.13.5 [Work Space] Settings Guide ■ Watch List Window" (page 5-94)
	Error Check Window	Displays a list of errors found on the created screen. You can execute an error check by clicking the icon displayed in the window. ☞ "■ Error Check" (page 5-135)
	PID Monitor Window	☞ "5.13.5 [Work Space] Settings Guide ■ PID Monitor Window" (page 5-95)

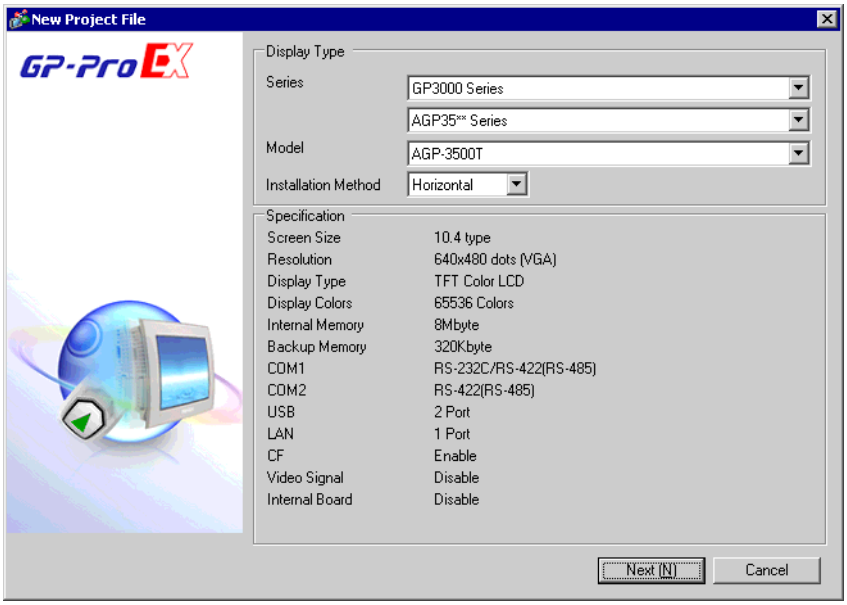
Continued

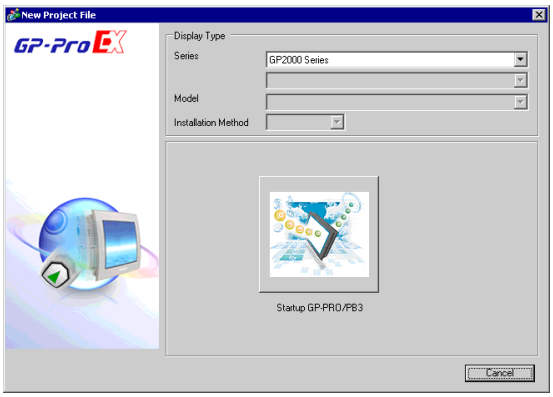
Setting	Description
Editing Area	This is an area in which to edit a screen. The editing area mainly displays Base Screens, Window Screens, or the registration of each function's [Common Settings] and setting screens. You can change the display method of the editing area by selecting the [View (V)] menu - [Screen Block (B)] command. Also, when displaying Base Screens or Window Screens, you can change the display state by using the [View (V)] menu's [Zoom (Z)] or [Change Language (L)] command.
Status Bar	Displays the specified main unit model and the coordinate position of the mouse pointer in the editing area.

5.13.2 [New] Settings Guide

[Project(F)] menu - [New (N)] command, or click and the following dialog box appears. Set the display model.

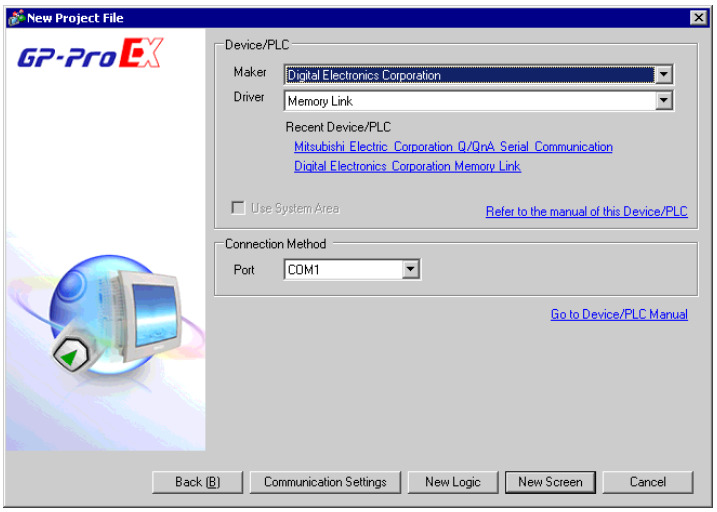
■ The Display Device Settings



Setting	Description
Select Series	Select the display to use from [GP3000 Series] or [GP2000 Series]. **NOTE** • If you select [GP2000 Series], the following dialog box is displayed. If you click the icon, GP-Pro EX exits and GP-PRO/PB3 starts up. However, GP-PRO/PB 3 will not start up if it is not installed. 
Display Type	Set the Display Type.
Series	Select the Series.
Model	Set the display model that can be specified in the selected [Series].
Installation Method	Select the display installation method from [Horizontal] or [Vertical].
Specification	Displays the specifications of the display specified in [Display Type].

■ Device/PLC Driver Settings

Click [Next] after the setting the display device and the following dialog box will be displayed. Select the Device/PLC.



Setting		Description
Device/PLC		Set the device/PLC.
	Maker	Select the device/PLC's maker name.
	Driver	Select the driver for the device/PLC selected in [Maker].
	Recent Device/PLC	Displays the maker name and driver name of up to three devices/PLCs recently specified in the [New Project File] dialog box. Click each display to specify the [Maker] and [Driver].
	Use System Area	Designate whether or not to assign the GP internal system data area to the device/PLC. ☞ "5.13.6 [System Settings Window] Settings Guide ◆ System Area Settings" (page 5-120)
	Refer to the manual of this Device/PLC	Displays the page in "GP-Pro Device/PLC Connection Manual" explaining about the selected device/PLC.GP-Pro EX
Connection Method		Set the connection method of the GP and device/PLC.
	Port	Select the port to assign to the device/PLC from [COM1], [COM2], [Ethernet (UDP)], or [Ethernet (TCP)].
Go to Device/PLC Manual		GP-Pro EXDisplays the top page of the "GP-Pro Device/PLC Connection Manual".

5.13.3 [Properties] Settings Guide

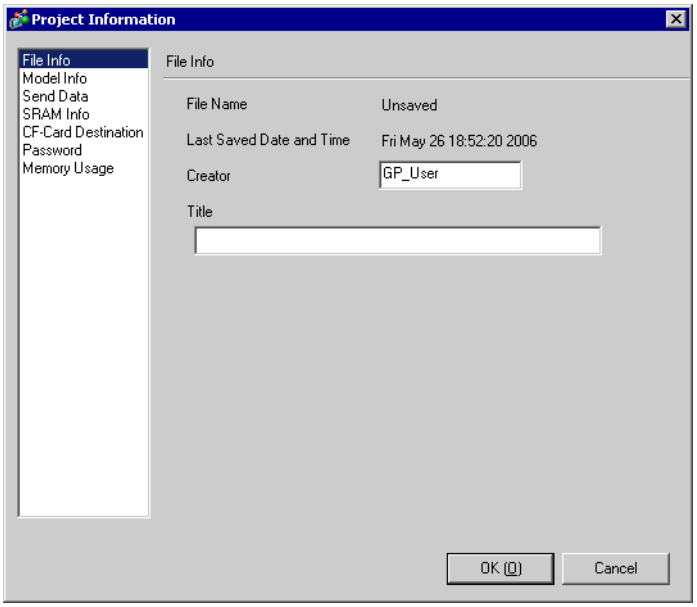
This section explains about each item displayed by selecting the [Project (F)] menu - [Properties (I)] command.

■ Project Information

Displays the screen information to check that there is no problem in sending the project file to the GP.

◆ File Info

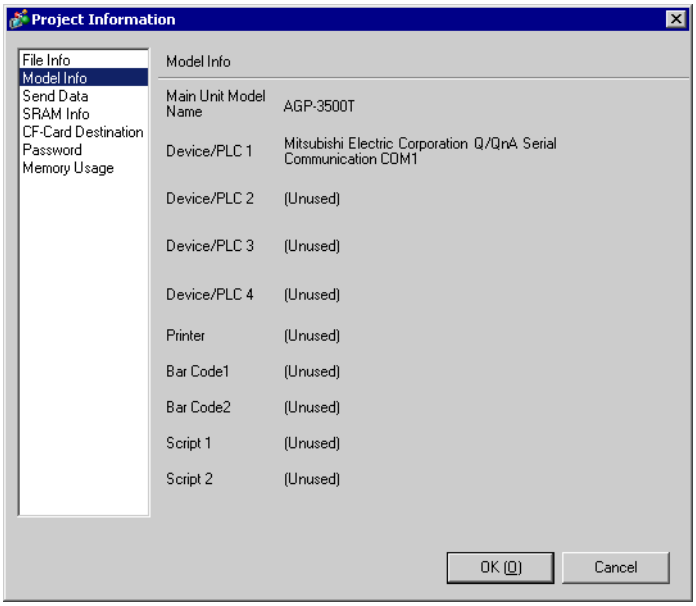
Displays information of a project file.



Setting	Description
File Name	Displays a project file name.
Last Saved Date and Time	Displays the year, date, day of the week, and time when the last project file was saved. The format is [Day of the Week (English abbreviation)], [Month (English abbreviation)], [Date], [Time (hh:mm:ss)], and [Year].
Creator	Set the name of the project file creator. You can input up to 30 characters.
Title	Set a comment for the project file. You can input up to 60 characters.

◆ Model Info

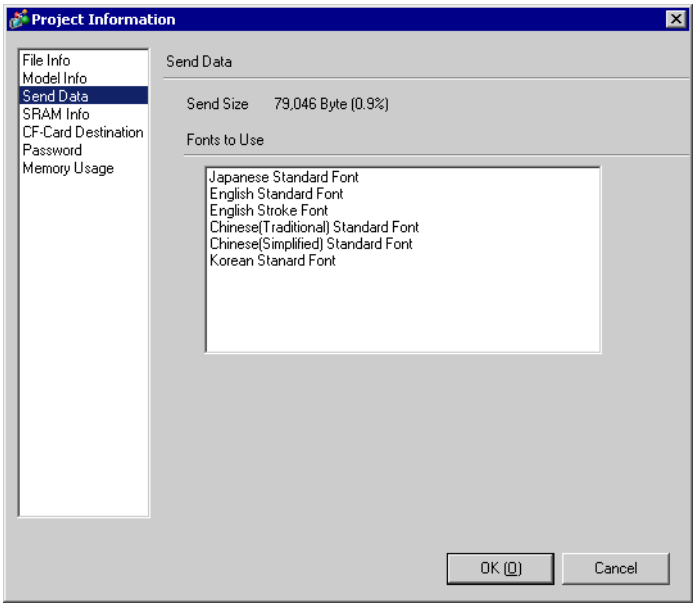
Displays the type or name of the specified devices/PLCs and peripheral devices. Displays [Unused] for unused devices.



Setting	Description
Main Unit Model Name	Displays the display model name.
Device/PLC 1 Device/PLC 2 Device/PLC 3 Device/PLC 4	Displays the specified device/PLC's driver (type). ☞ "5.13.6 [System Settings Window] Settings Guide ■ [Device/PLC Settings] Settings Guide" (page 5-124)
Printer	Displays the specified printer type. ☞ "33.6.2 System Settings [Printer Settings] Guide" (page 33-48)
Bar Code 1 Bar Code 2	Displays the specified barcode type. ☞ "8.4.1 [Bar Code Settings] Setting Guide" (page 8-20)
Script 1 Script 2	Displays the specified script type. ☞ "5.13.6 [System Settings Window] Settings Guide ■ [Script Settings] Settings Guide" (page 5-127)

◆ Send Data

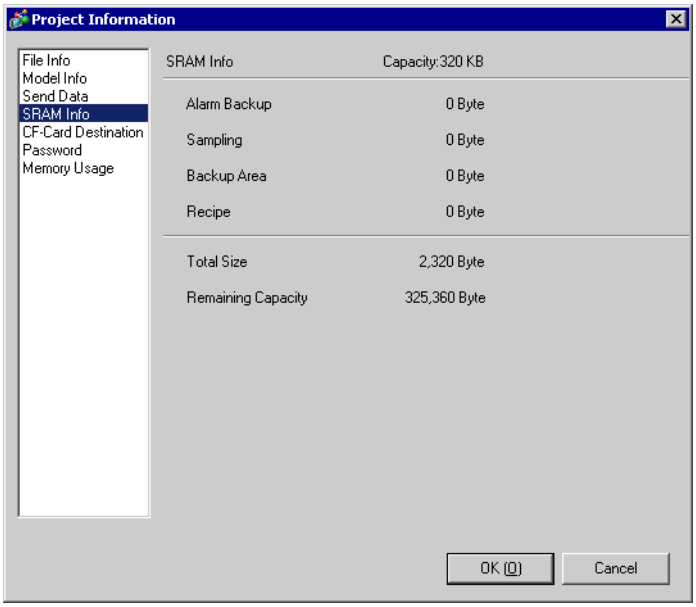
Displays information of the data to transfer to the display.



Setting	Description
Send Size	Displays the total size of the project data to send. The data exceeding the maximum size that the GP can send is displayed with red characters.
Fonts to Use	Displays a list of fonts to send. Designate the fonts for a project in [System Settings]'s [Font Settings]. ☞ "6.4 [Font Settings] Settings Guide" (page 6-19)

◆ SRAM Info

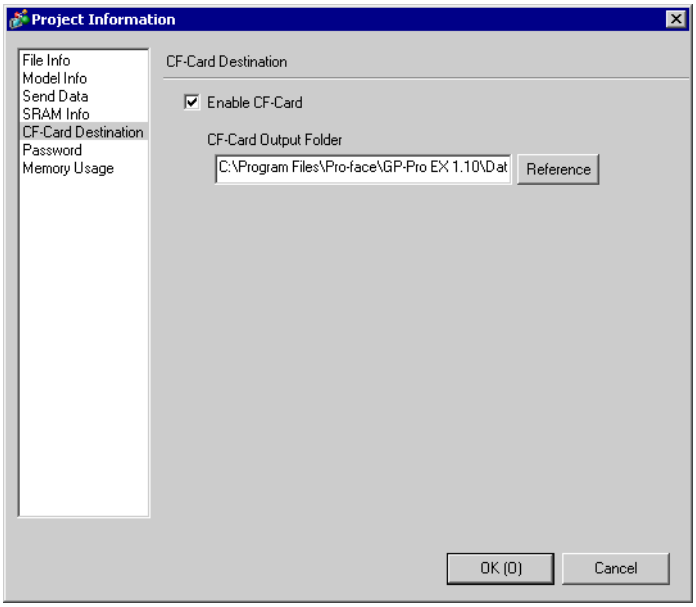
Displays information of GP's backup SRAM capacity.



Setting	Description
Capacity	Displays the specified display's backup SRAM's capacity by the Kbyte.
Alarm Backup	Displays the SRAM size used for Alarm History.
Sampling	Displays the SRAM size used for Sampling.
Backup Area	Displays the SRAM size used for the GP internal device's backup.
Recipe	Displays the SRAM size used for Recipe.
Total Size	Displays the total size used for the SRAM by the byte.
Remaining Capacity	Displays the remaining capacity by the byte. If the total size exceeds the usable capacity, the value is displayed with a minus.

◆ CF-Card Destination

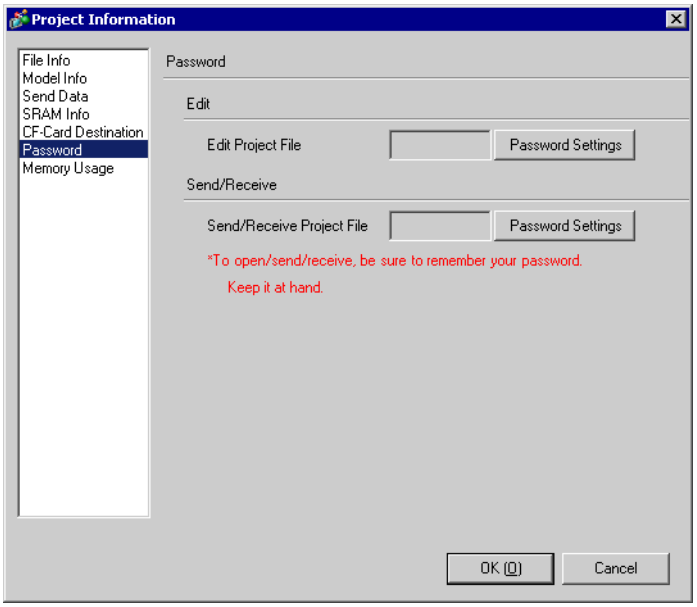
Set the storage location of the data to transfer to a CF-card in the GP.



Setting	Description
Enable CF-Card	Select whether or not to use a CF-card in a project.
CF-Card Output Folder	Set the storage location of data to be saved in a CF-card. The initial storage location is \Program Files\Pro-face\GP-Pro EX 1.10\Database\ (the project file name and the folder with the same name).

◆ Password

Set a password for editing or transferring a project file.



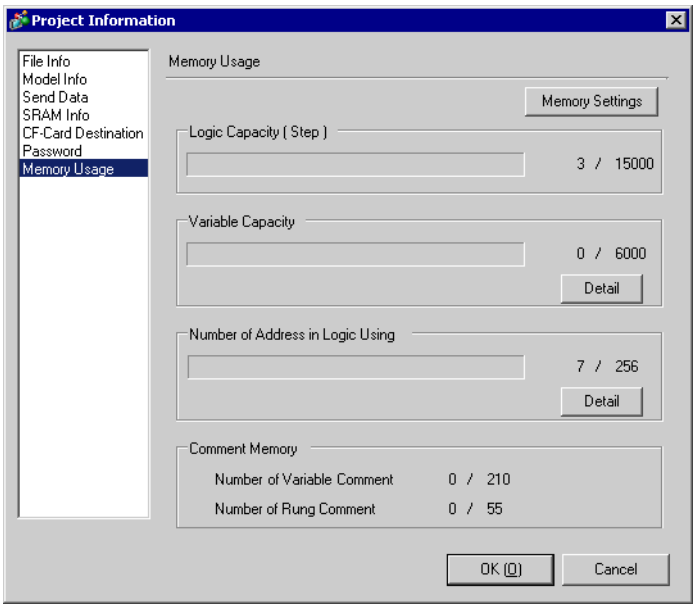
Setting		Description
Edit		Set a password to permit editing of a project file.
	Edit Project File	Displays a password for editing with "*****" if it is set.
	Password Settings	Click this button and the following dialog box will be displayed.  If you click [Password Settings] when a password is already set, the following dialog box is displayed. Change or release the password. 

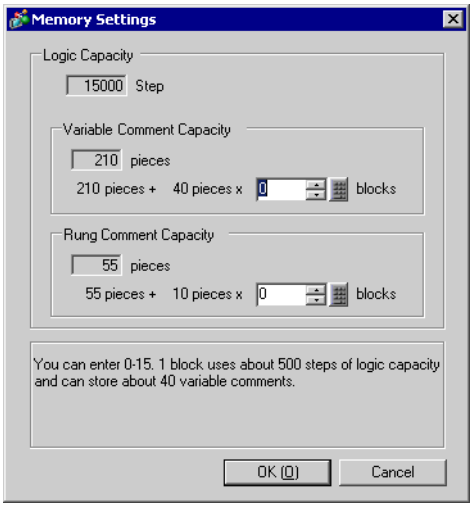
Continued

Setting		Description
Edit	Password	Set a password with up to 10 single-byte alphanumeric characters.
	Password (Reenter)	Confirm the password by entering the same input. **NOTE** • If you click [OK] leaving this box blank, the password is released.
Send/Receive		Set a password to permit a project transfer.
	Send/Receive Project File	Displays a password for sending/receiving with "*****" if it is set.
	Password Settings	Click this button and the following dialog box will be displayed.  If you click [Password Settings] when a password is already set, the following dialog box is displayed. Change or release the password. 
	Password	Set a password with up to 24 single-byte alphanumeric characters.
	Password (Reenter)	Confirm the password by entering the same input. **NOTE** • If you click [OK] leaving this box blank, the password is released.

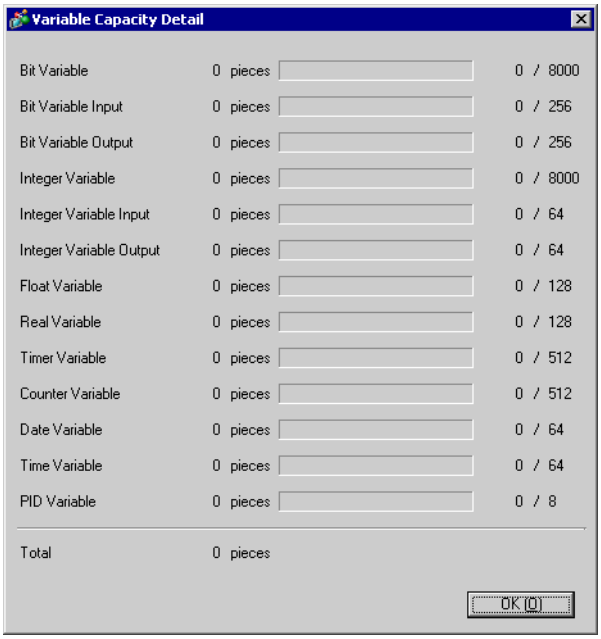
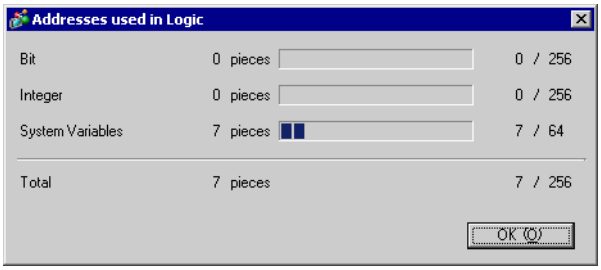
◆ Memory Usage

You can check the current logic capacity, symbol variable capacity, address points, and comment memory of the logic program. You can also change the proportion of the logic capacity and comment memory as required.



Setting	Description
Memory Settings	Click this button and the following dialog box will be displayed. 
Logic Capacity	Displays the number of steps that you can create.
Variable Comment Capacity	Sets the upper limit for the symbol variable comment memory ranging from 0 to 15.
Rung Comment Capacity	Sets the upper limit for the row comment capacity ranging from 0 to 15.

Continued

Setting	Description
Variable Capacity	Displays the number of symbol variables currently used and the total configurable number.
Details	Click this button to display the following dialog box. You can check the number of symbol variables currently used and the possible configurable number, as well as the total number of symbol variables. 
Addresses used in Logic	Displays the number of addresses actually used in the logic program and the possible configurable number.
Details	Click to display the following dialog box. You can check the current number used, and the possible configurable number, as well as the total number of bit variables, integers, and system variables. 
Comment Memory	Displays the current number and configurable number of symbol variable comments and row comments.

■ CF-Card Output Folder

Set the CF-Card Destination.

☞ “ ◆ CF-Card Destination” (page 5-73)

■ Protect Data

Set a password for editing or transferring a project file.

☞ “ ◆ Password” (page 5-74)

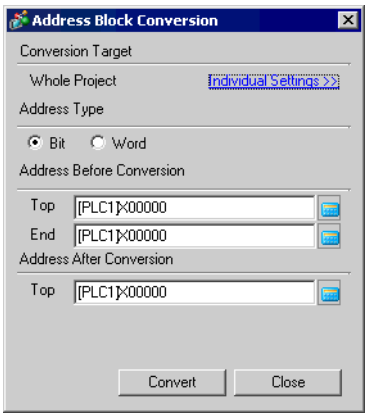
5.13.4 [Utility] Settings Guide

This section explains about each item displayed by selecting the [Project (F)] menu - [Utility (T)] command.

■ Address Block Conversion

Converts the sequential addresses specified in a project as a block. There are two conversion methods: [Whole Project], which converts the addresses in the whole project as a block, and [Individual Settings], which specifies and converts the conversion target screens or features.

◆ Whole Project



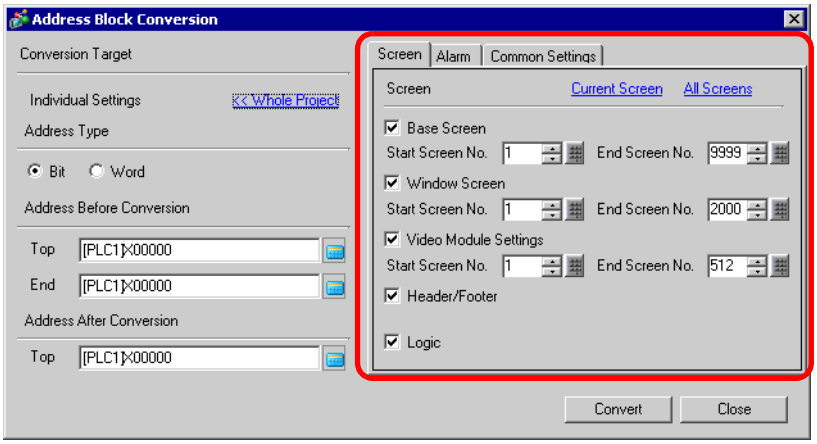
Setting		Description
Conversion Target		Displays the conversion target.
	Whole Project	Display this when converting all the addresses in a project file.
	Individual Settings	Goes to the mode that sets the conversion target individually. ☞ " ◆ Individual Settings" (page 5-79)
Address Type		Select the address type to convert from [Bit] or [Word].
Address Before Conversion		Set the range of sequential addresses to convert.
	Top	Set the top address to convert.
	End	Set the end address to convert.
Address After Conversion		Set the addresses after conversion.
	Top	Set the top address of the convert destination.

NOTE

- For [Address Before Conversion]'s [Top] and [End], you cannot specify a different device address.
- If the total number of addresses (End Address – Top Address) before conversion is greater than the total number of addresses (End Address – Top Address) after conversion, the device's last address is assigned to all the unconverted addresses.

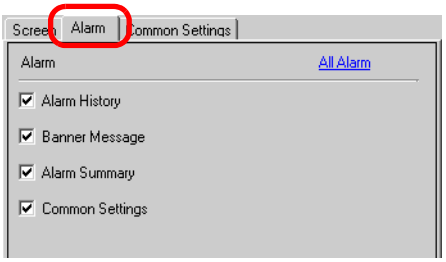
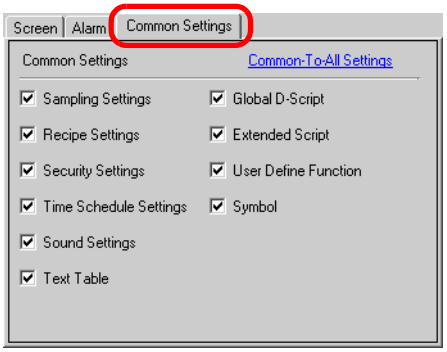
◆ Individual Settings

Sets the address conversion target screens individually and converts them.



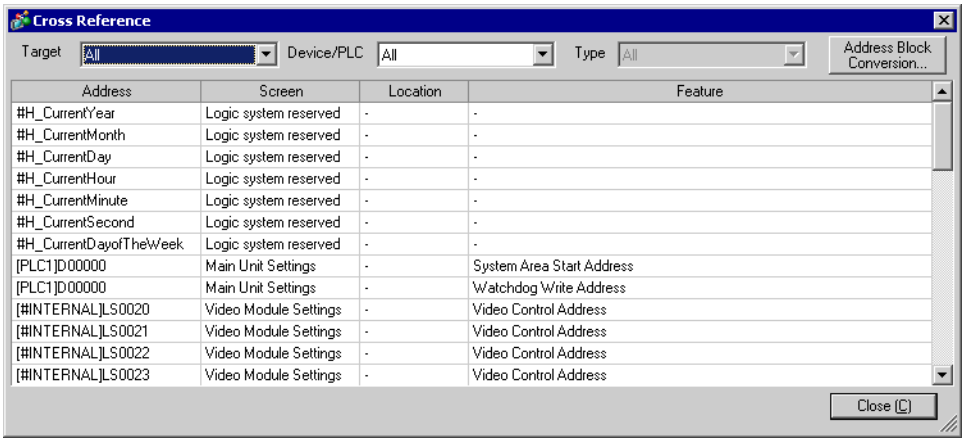
Setting	Description
Screen	Select the block conversion target screens.
Current Screen	Converts addresses as a block only for the screens that are currently being edited.
All Screens	Converts addresses as a block for all screens. Turns ON all the check boxes on the [Screen] tab.
Base Screen	Set whether or not to include Base Screens among the address block conversion targets.
Start Screen No.	Set the start screen number of the address block conversion target Base Screens from 1 to 9,999.
End Screen No.	Set the end screen number of the address block conversion target Base Screens from 1 to 9,999.
Window Screen	Set whether or not to include Window Screens among the address block conversion targets.
Start Screen No.	Set the start screen number of the address block conversion target Window Screens from 1 to 2,000.
End Screen No.	Set the end screen number of the address block conversion target Window Screens from 1 to 2,000.
Video Module Settings	Determines whether to include the Video Module window in the address block conversion.
Start Screen No.	Specifies the first Video Module window number to be included in the conversion from 1 to 512.
End Screen No.	Specifies the last Video Module window number to be included in the conversion from 1 to 512.
Header/ Footer	Set whether or not to include the addresses specified for Headers/Footers among the address block conversion targets.
Logic	Determines whether to include the logic screen in the address block conversion.

Continued

Setting		Description
Alarm		Select the block conversion target Alarm Settings. 
	Alarm	Select the address block conversion target Alarm features from [Alarm History], [Banner Message], [Alarm Summary], or [Common Settings].
	All Alarm	Converts addresses as a block for all Alarm features. Switches ON in all the check boxes placed on the [Alarm] tab.
Common Settings		Select the block conversion target features other than [Alarm Settings] from [Common Settings]. 
	Common Settings	Select the address block conversion target features from [Sampling Settings], [Recipe Settings], [Security Settings], [Time Schedule Settings], [Sound Settings], [Text Table], [Global D-Script], [Extended Script], [User Define Function], or [Symbol].
	Common-To-All Settings	Converts addresses as a block for all Common Settings except Alarm. Switches ON in all the check boxes placed on the [Common Settings] tab.

■ Cross Reference

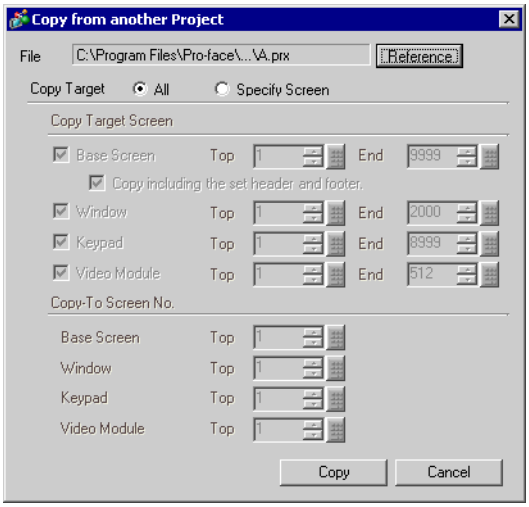
Displays the addresses used by screens and placed parts in a project.

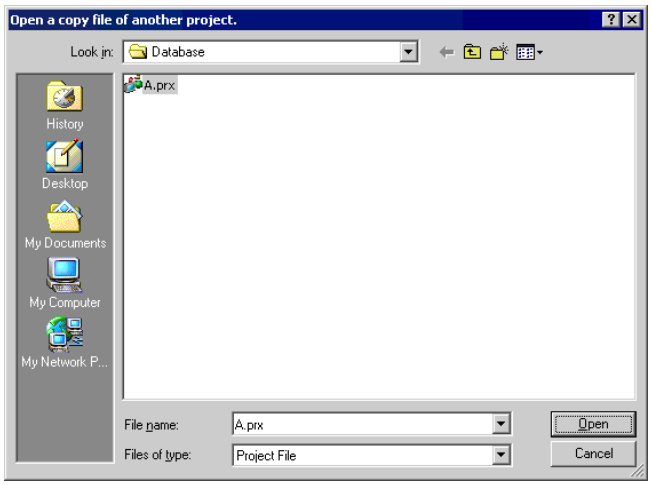


Setting	Description
Target	Select the contents to display on the Cross Reference from [All], [Current Screen], [Base Screen], [Window Screen], [Header/Footer], [Logic Screen], [I/O Screen], [Alarm], [Sampling Settings], [Recipe Settings], [Security Settings], [Time Schedule Settings], [Sound Settings], [Text Table], [Global DScript], [Extended Script], [User Define Function], [Video Module Window Setting] or [System Settings].
Device/PLC	Select the contents to display on the Cross Reference from [All], [Symbol Variable], [PLC1] (device/PLC), [#INTERNAL] (internal device address), or [#MEMLINK] (only when using memory link).
Type	Select the address type to display from [All], [Bit Address], [Word Address], [Bit Variable], [Integer Variable], [Float Variable], [Real Variable], [Timer Variable], [Counter Variable], [Date Variable], [Time Variable], [PID Variable], [System Variable(Bit)], [System Variable(Integer)].
Address Block Conversion	Displays the [Address Block Conversion] dialog box. Converts the addresses specified in a project as a block. There are two conversion methods: [Whole Project], which converts the addresses in the whole project as a block, and [Individual Settings], which sets and converts the conversion target screens individually. ☞ " ■ Address Block Conversion" (page 5-78)
Address	Displays the address or symbol name in use.
Screen	Displays the screen numbers, Alarms, Common Settings' types, etc. in use.
Location	Displays the part IDs in use or the group, block number, or row number an address belongs to.
Feature	Displays the usage of each address.

■ Copy from Another Project

Specifies another project file to copy necessary screens.



Setting	Description
File	Displays the copy-from file.
Reference	The following dialog box is displayed. Set the copy-from file's storage location and select a file. 
Copy Target	Select the copy target from [All] or [Specify Screen].
Copy Target Screen	Set the target screens when the Copy Target is [Specify Screen].
Base Screen	Copies Base Screens in another project file.
Top	Set the copy-from Base Screen top number from 1 to 9999.
End	Set the copy-from Base Screen end number from 1 to 9999.
Copy including the set header and footer.	Set whether or not to copy including the header/footer in another project file.

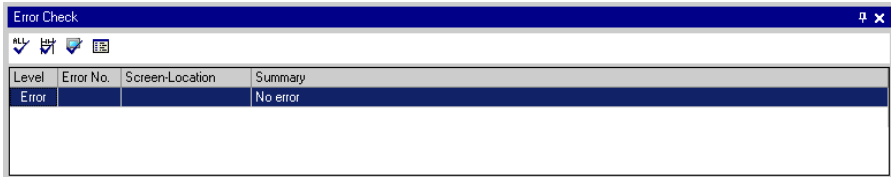
Continued

Setting			Description
Copy Target Screen	Window		Copies Window Screens in another project file.
		Top	Set the copy-from Window Screen top number from 1 to 2000.
		End	Set the copy-from Window Screen end number from 1 to 2000.
	Keypad		Copies the keypad screen from another project file.
		Top	Specifies the first copy-from keypad screen number from 1 to 8999.
		End	Specifies the last copy-to keypad screen number from 1 to 8999.
	Video Module Window		Copies the Video Module window from another project file.
		Top	Specifies the first copy-from Video Module window number from 1 to 512.
		End	Specifies the last copy-from Video Module window end number from 1 to 512.
Copy-To Screen No.			Specifies the copy-to screen numbers.
	Base Screen		Specifies the copy-to Base Screen top number from 1 to 9999.
	Window		Specifies the copy-to Window Screen top number from 1 to 1999.
	Keypad		Specifies the first copy-to keypad screen top number from 1 to 8999.
	Video Module		Specifies the first copy-to Video Module window top number from 1 to 512.

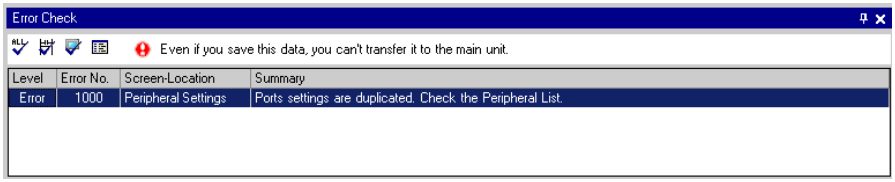
■ Error Check

Checks whether an error exists in the settings in a project.

No error exists.



An error exists.



Setting		Description
Operation Button	All	Checks for errors in all settings.
	Logic only	Checks for errors in logic screen settings.
	Screen only	Checks for errors in the new screen settings.
	Settings	Displays the [Error Check] screen in [Option Settings].
Level		Displays the level of error as either [Error] or [Warning].
Error No.		Displays the error number. For details about error numbers, refer to “Maintenance/Troubleshooting.”
Screen-Location		Displays the screen No., part No., or Row No. where the error occurred.
Summary		Displays the error details.

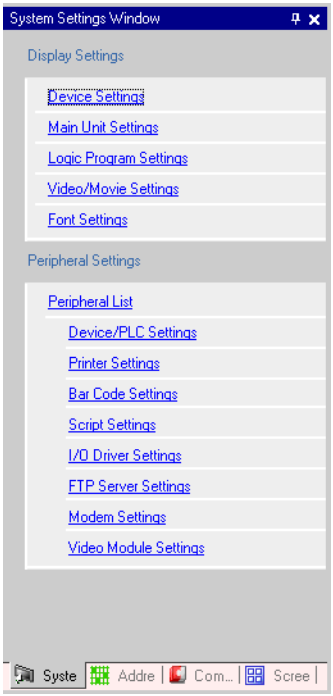
NOTE • Error checks are automatically performed when saving projects.

5.13.5 [Work Space] Settings Guide

This section explains about each window displayed by selecting the [View (V)] menu - [Work Space (W)] command.

■ System Settings Window

This window is used to configure system settings for a project file.



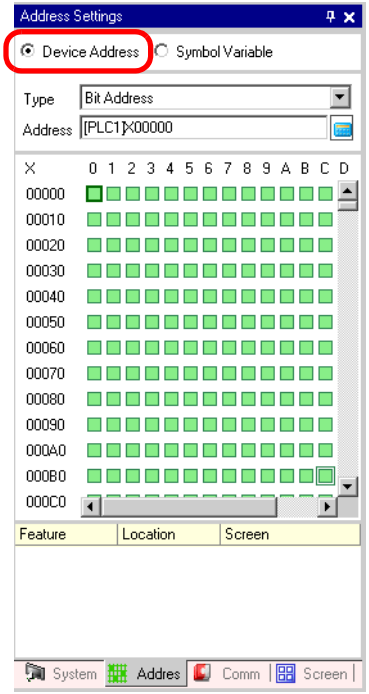
Setting		Description
Display Settings		Configure settings for the GP.
	Device Settings	Displays the GP's device settings and specifications. ☞ " ■ [Device Settings] Settings Guide" (page 5-99)
	Main Unit Settings	Configure detailed settings for the GP main unit. ☞ " ■ [Main Unit Settings] Settings Guide" (page 5-100)
	Logic Program Settings	Configures the logic feature settings. ☞ "29.14.1 [System Settings Window] Settings Guide for Logic Features ■ [Logic Program Settings] Setup Guide" (page 29-128)
	Video/Movie Settings	Configures the settings for video play and movie recording. ☞ "27.9.1 [Video/Movie Settings] Settings Guide" (page 27-72)
	Font Settings	Set a font to display on the GP. ☞ "6.4 [Font Settings] Settings Guide" (page 6-19)

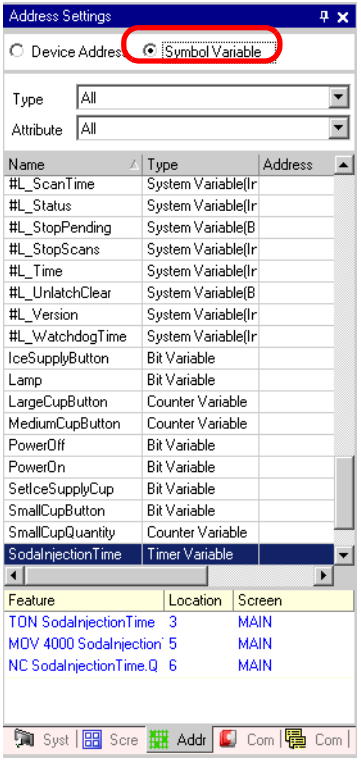
Continued

Setting		Description
Peripheral Settings		Configure settings for each peripheral device.
	Peripheral List	Displays a list of the specified peripheral devices. ☞ " ■ [Peripheral List] Settings Guide" (page 5-122)
	Device/PLC Settings	Configure settings for a device/PLC. ☞ " ■ [Device/PLC Settings] Settings Guide" (page 5-124)
	Printer Settings	Configure settings to communicate with the printer. ☞ "33.6.2 System Settings [Printer Settings] Guide" (page 33-48)
	Bar code Settings	Configure settings to communicate with the barcode. ☞ "8.4.1 [Bar Code Settings] Setting Guide" (page 8-20)
	Script Settings	Configure script settings. ☞ "20.8.1 Common Settings Guide for D-Script" (page 20-48)
	I/O Driver Settings	Configures the I/O driver settings. ☞ "31.2.1 [I/O Driver Settings] Setup Guide" (page 31-9)
	FTP Server Settings	Registers FTP servers. ☞ "27.9.2 [FTP Server Settings] Setting Guide" (page 27-89)
	Modem Settings	Configures the settings for the modem connected to the GP. ☞ "32.10.2 [Modem Settings] Setup Guide" (page 32-61)
	Video Module Settings	Configures the Video Module window settings. ☞ "27.9.6 Setup guide of [Video Module Settings]" (page 27-119)

■ Address Settings Window

Displays a map of the device/PLC addresses in use or a list of the symbol variables.





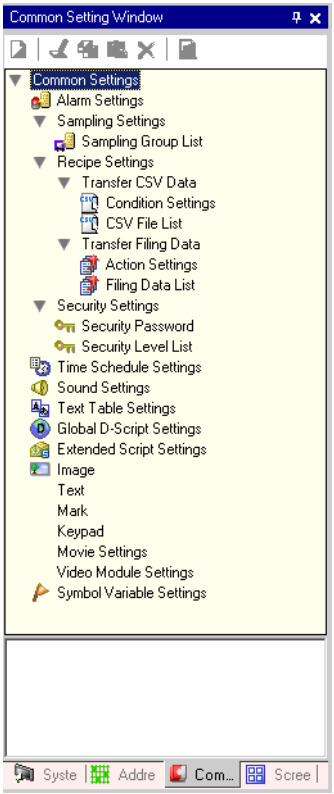
Setting		Description
Select Model		Select the target for a list from [Device Address] or [Symbol Variable].
Device Address		Displays a map of the device/PLC addresses used in a project.
	Type	Select the address type to list. The selectable items vary depending on the [Register Format] specified for [Logic Program Settings] in the System Settings Window. If you selected [Variable Format] for [Register Format], select the type from [Bit Address] or [Word Address]. If you selected [Address Format] for [Register Format], select the type from [Bit Address (Bit Variable)], [Word Address (Integer Variable), [Float Variable], [Real Variable], [Timer Variable], [Counter Variable], [Date Variable], [Time Variable] or [PID Variable].
	Address	Select the address of the target to display in the map area.
	Map Area	Displays a map of how the addresses are used.
Symbol Variable		Displays the symbol variables used in the project.
	Type	Select the address type to list. The selectable items vary depending on the [Register Format] specified for [Logic Program Settings] in the System Settings Window. If you selected [Variable Format] for [Register Format], select the type from [All], [Bit Address], [Word Address], [Bit Variable], [Integer Variable], [Float Variable], [Real Variable], [Timer Variable], [Counter Variable], [Date Variable], [Time Variable], [PID Variable], [System Variable(Bit)], or [System Variable (Integer)]. If you selected [Address Format] for [Register Format], select the type from [All], [Bit Address], [Word Address], [System Variable (Bit)], or [System Variable (Integer)].

Continued

Setting		Description
	Attribute	Select the symbol variable usage from [All], [In Use], or [Not used].
	Display Area	Displays a list of the symbol variables.
Feature		Displays the usage of each address.
Location		Displays the part IDs in use or the group, block number, or row number an address belongs to.
Screen		Displays the screen numbers, Common Settings type, etc.

■ Common Setting Window

Calls features common to a project file.



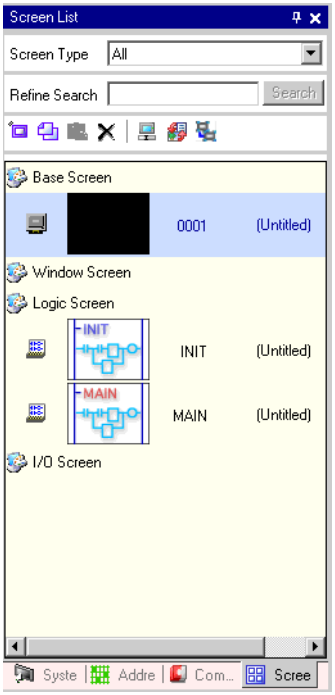
Setting			Description
Alarm Settings			Displays the setting screen to register an alarm message. ☞ "19.9.1 Alarm Settings Guide" (page 19-63)
Sampling Settings	Sampling Group List		Displays a list of each setting content for sampling groups. ☞ "24.8.1 Sampling Settings Guide" (page 24-37)
Recipe Settings	Transfer CSV Data	Condition Settings	Displays the screen to configure condition settings for transferring CSV data. ☞ "25.10.1 Setup Guide for Common Settings (Recipe Settings) ■ Transfering CSV Data (Condition Settings)" (page 25-56)
		CSV File List	Displays the screen to register CSV data. ☞ "25.10.1 Setup Guide for Common Settings (Recipe Settings) ■ Transferring CSV Data (CSV File List)" (page 25-61)

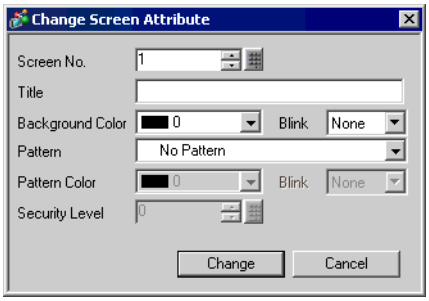
Continued

Setting			Description
Recipe Settings	Transfer Filing Data	Action Settings	Displays the screen to specified filing data's transfer actions. ☞ "25.10.1 Setup Guide for Common Settings (Recipe Settings) ■ Transferring Filing Data (Action Settings)" (page 25-63)
		Filing Data List	Displays the screen to register filing data. ☞ "25.10.1 Setup Guide for Common Settings (Recipe Settings) ■ Transferring Filing Data (Filing Data List)" (page 25-67)
Security Settings	Security Password		Displays the screen to specify a security level and password. ☞ "22.5.2 Security Level List" (page 22-12)
	Security Level List		Displays a list of the screens with the security settings and the security level. ☞ "22.5.1 Password Settings" (page 22-9)
Time Schedule Settings			Displays a list of actions with the time schedule settings. ☞ "23.4 Common Settings (Time Schedule Settings) Guide" (page 23-10)
Sound Settings			Displays the screen to register sound. ☞ "26.5 Settings Guide" (page 26-13)
Text Table Settings			Displays the text table to register text. ☞ "15.7.3 Text Table Settings Guide" (page 15-49)
Global D-Script Settings			Displays a list of created global D-scripts. ☞ "20.8.1 Common Settings Guide for D-Script" (page 20-48)
Extended Script Settings			Displays the screen to program extended scripts. ☞ "20.8.1 Common Settings Guide for D-Script" (page 20-48)
Image			Displays the [Image] screen to register images. ☞ "10.5.1 Setup Guide for Common Settings (Image Registration)" (page 10-23)
Text			Displays the screen to register text. ☞ "15.7.2 Common Settings Guide (Text Register)" (page 15-48)
Mark			Displays the screen to create marks. ☞ "9.12.3 Common Settings (Mark Registration) Settings Guide" (page 9-79)
Keypad			Displays the screen to edit a keypad. ☞ "16.5.2 Setup Guide for the Common Settings (Keypad Registration)" (page 16-23)
Movie Settings			Displays the [Movie Settings] screen for creating a movie list file. ☞ "27.9.3 Common Settings [Movie Settings (O)] Setting Guide" (page 27-91)
Video Module Settings			Displays the screen for creating the Video Module window. ☞ "27.9.5 Setup guide of common settings [Video Module Settings]" (page 27-112)
Symbol Variable Settings			Displays a screen to register a symbol. ☞ "5.9.2 Setup Procedure ■ Registering the [Symbol Variable Settings]" (page 5-45) ☞ "29.3 Registering Addresses" (page 29-12)

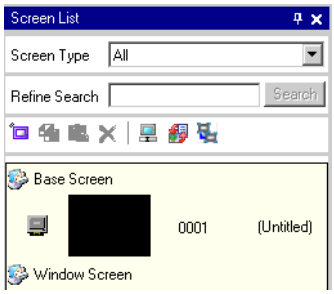
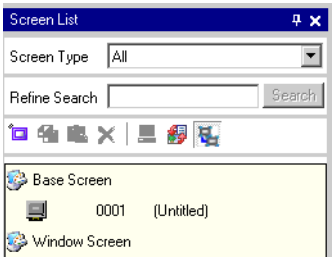
■ Screen List Window

Displays a list of created Base Screens or Window Screens.



Setting		Description
Screen Type		Select the screens to list from [All], [Base Screen], [Window Screen], [Logic Screen], or [I/O Screen].
Refine Search		Set up to 128 single-byte characters for the search target text.
Operation Button	New Screen	Displays the [New Screen] dialog box.
	Copy (C)	Copies the selected screen.
	Paste	Pastes the copied screen on the Screen List.
	Delete	Deletes the selected screen from the project.
	Change Attribute	The following dialog box is displayed. You can change the screen number, title, and color. 

Continued

Setting		Description
Operation Button	Change Display Mode	Changes the display mode of the [Screen List]. Reduced Screen Display  List Display 
	Nesting	Displays screens hierarchically.
Screen List		Displays a list of screens registered in a project. Double-click the screen row you want to open and the screen is displayed in the right editing area. You can select a screen and copy or delete it easily, for example.

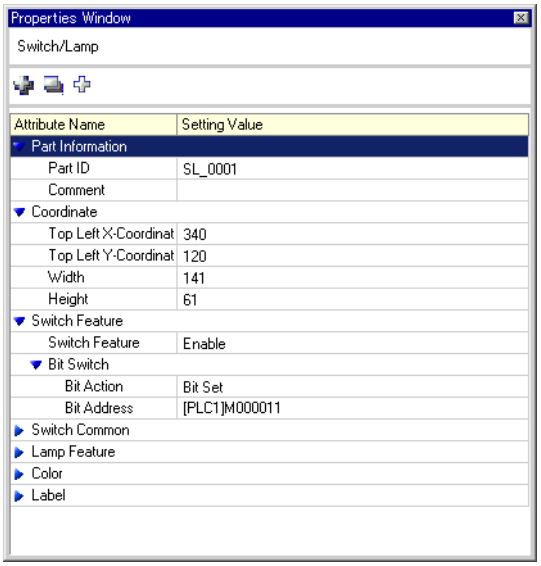
■ Properties Window

Displays the selected part or screen's attributes/settings. Using this window, you can check the attributes or change the settings easily.

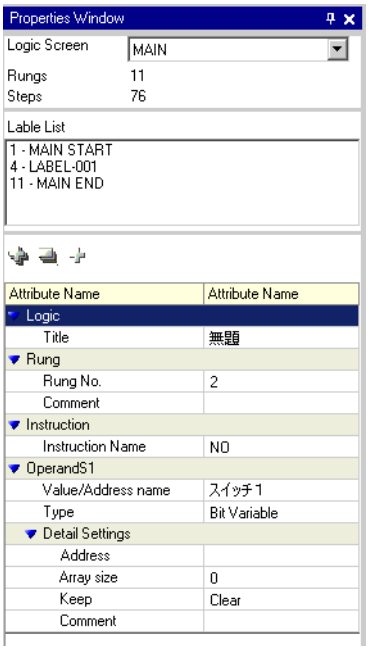
NOTE

- Not all of the setting information for the selected part will be displayed in this window.
- Attributes and setting information for parts whose placement position and setting information is fixed with fixed pins will not be displayed. For more details on the fixed pins, refer to:
  ☞ "9.6.3 Fix/Unfix Objects" (page 9-48)

When Creating a Screen



When Creating Logic



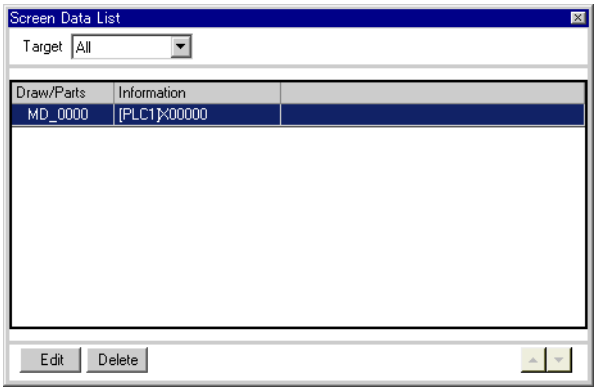
Setting		Description
Part Name Display Area (When creating a screen)		The name of the selected part or screen is displayed. If multiple parts are selected, the number of selected parts is displayed.
Part Name Display Area (When creating logic)		For how to create a logic program using the [Logic Program Window], refer to "29.13.5 Using Reference Features to Search Logic Programs" (page 29-118) .
	Logic Screen	When creating a [MAIN], [INT], or subroutine screen, select the logic screen from [SUB-01] to [SUB-32].
	Rungs	Displays the total number of rows in the logic program.
	Steps	Displays the total number of steps in the logic program.
	Label List	Displays a list of the labels in the logic program.

Continued

Setting	Description
Button Area	Opens and closes the category display on the window.
Expand All	Expands and displays all categories.
Collapse All	Reduces and hides all categories.
Expand to 1st Level	Expands and displays only top level categories.
Attribute Display/ Setting Area	Displays the setting content for each attribute. You can change the settings in this area.

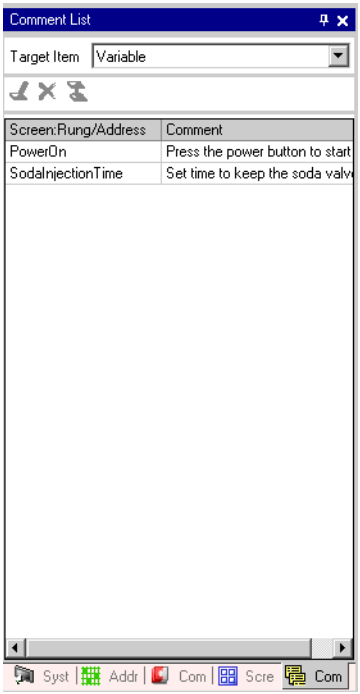
■ Screen Data List Window

Displays a list of the Parts and Draw placed on the screen.



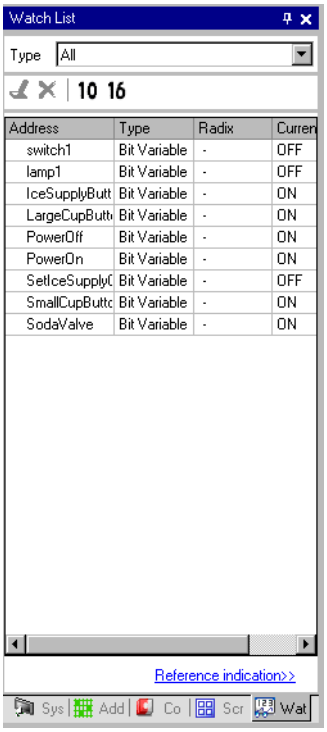
Setting	Description
Target	Select the targets to display on the display list from [All], [Draw], or [Part].
Target Assistance	Select the targets to display on the display list when the [Target] is [Draw] or [Part].
Display List	Displays a list of the Parts and Draw placed on the screen. Double-click a row and each setting dialog box opens for editing.
Draw/Parts	Displays the Draw type when the [Target] is [Draw] and the Part ID number when the [Target] is [Part]. Displays “Group Object” for a grouped target. And displays “D-script”when [D-Script] is selected.
Information	Displays the coordinate when the [Target] is [Draw] and all the Part’s addresses when the [Target] is [Part]. Displays the ID number and comment when [D-Script] is selected, and the coordinate and all the addresses in a group when Group Object is selected.
Show Fixed Pins	You can confirm whether or not the part or drawing is fixed. For more details on the fixed pins, see the following. ☞ “9.6.3 Fix/Unfix Objects” (page 9-48)
Edit	Displays the setting dialog box for the Part/Draw selected on the display list.
Delete	Deletes the Part/Draw selected on the display list.
Order (Top)	Moves the item selected on the display list to the top.
Order (Bottom)	Moves the item selected on the display list to the bottom.

■ Comment List Window



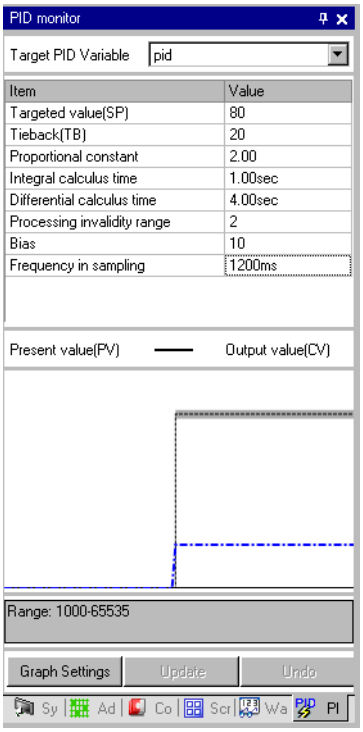
Setting		Description
Target Item		Selects the item to be displayed from [Variable], [System Variable], or [Rung].
Operation Button	Edit	You can edit comments in [Variable] and [Rung].
	Delete	You can delete comments in [Variable] and [Rung] .
	Add	Clicking the icon displays the [Address Input] dialog box when [Address Format] has been selected in [Register Format]. You can specify addresses and add logic addresses. ☞ "29.3.3 Using Symbol Variables with Fixed Addresses (Address Format) ■ Logic Address Display" (page 29-33)
Screen: Rung/Address		[Variable] displays the symbol variable name. [System Variable] displays the system variable name. Double-click to switch the window to the [Address Settings] window and the relevant variable will be selected. [Rung] displays the logic name and row No. of the logic screen. Double-click to select the relevant row in the logic program.
Comment		Displays the comment for the selected row. Double click to edit [Variable] and [Rung].

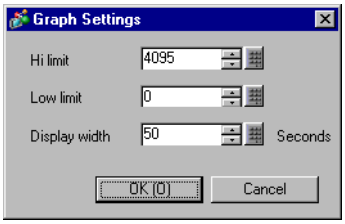
■ Watch List Window



Setting			Description
Type			Selects the type of symbol variable or system variable registered in the [Watch List] window. For how to register, refer to the following. ☞ "29.10.2 Monitor the Current Values of Symbol Variables" (page 29-78)
Operation Button	Edit		You can edit registered symbol variables.
	Delete		You can delete registered symbol variables.
	Decimal	10	Change the display format to decimal format.
	Hexadecimal	16	Change the display format to hexadecimal format.
Address			Displays the variable name that was added to the watch list.
Type			Displays the variable type that was added to the watch list window.
Radix			Displays the variable format that was added to the watch list.
Current Value			Displays the current value that was added to the watch list. If the type is [Bit Variable], right-click to select [ON] or [OFF]. If the type is [Integer Variable], [Float Variable], or [Real Variable], click to input the value.
Display Example			You can configure the settings only when the type is [Integer Variable]. Select [Specify Bit], [Specify Byte], or [Specify Word]. Decimal/hexadecimal displays are available if you select [Specify Byte] or [Specify Word].

■ PID Monitor Window



Setting	Description
Target PID Variable	Select the PID variable that you want to monitor.
List of PID Adjustments	You can input values and adjust the PID while referring to the graph.
Graph Display	The PID instruction values are displayed in a graph that can be monitored.
Graph Settings	You can specify how to display the graph. Click to display the settings dialog box. 
Display Items	Select the check box to display [Current Value], [Target Value], [Output Value], [Output Invalidity Range], or [Output Range].
Graph Display Range	Specifies the [Upper Limit], [Lower Limit] and [Width] for the graph display.
Update	Compulsorily updates the graph with the values specified in the PID adjustments.
Undo	Returns to the state before inputting the PID adjustment values.

◆ PID Adjustments

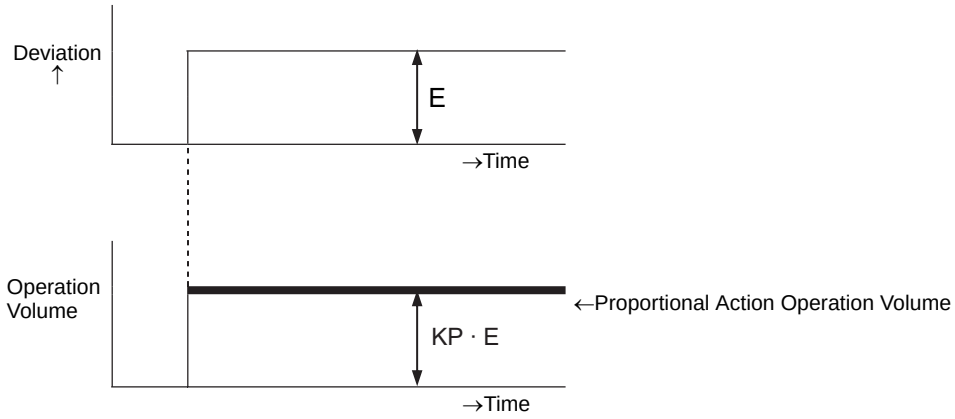
Item	Value
Target Value (SP)	Specifies the target value. Input the minimum and maximum output value. The input range depends on the PID instruction output settings. For details, refer to the PID instructions. ☞ "Chapter 30 Instruction List" (page 30-1)
Tieback (TB)	Specifies the output value when the monitor is off. The input range depends on the PID instruction output settings. For details, refer to the PID instructions. ☞ "Chapter 30 Instruction List" (page 30-1)
Proportional Constant	Specifies the proportion for compare control. A larger value will reach the target value sooner. A smaller value will approach the target value more gradually, resulting in less overshoot. The settings range from 0.01 to 1000.00. For details about proportional constants, see the next page. ☞ "5.13.5 [Work Space] Settings Guide ◆ Proportional Action (P Action)" (page 5-97)
Integral Calculus Time	Specifies the intervals between integral calculations. The settings range from 0.10 to 3000.00 (S). For details about integral calculus time, see the next page. ☞ "5.13.5 [Work Space] Settings Guide ◆ Integral Action (I Action)" (page 5-97)
Differential Calculus Time	Specifies the intervals between differential calculations. The settings range from 0.00 to 3000.00 (S). For details about differential calculus time, see the next page. ☞ "5.13.5 [Work Space] Settings Guide ◆ Derivative Action (D Action)" (page 5-98)
Processing Invalidity Range	Specifies the range in which PID instructions are not operated. The deviation in the settings range is "0" and ± the processing invalidity range is based on the target value. The settings range from 0 to (maximum output value − minimum output value) / 2.
Bias	The value specified here is added to the output value in advance. The settings range from the minimum output value to the maximum output value.
Frequency in sampling	Specifies the PID operation sampling frequency. The frequency is subject to the scan time and the PID is operated in the scan executed after the specified frequency. The settings range from the operation frequency to 60000 (ms).

◆ Proportional Action (P Action)

Calculates the operation volume (output value) proportionate to the deviation (deviation between the target value and current value). The formula for the relation between deviation (E) and operation volume (CV) is as follows.

CV = KP × E (The constant of proportion calls KP “proportional gain.”)

When the deviation is fixed, the proportional action is as follows.



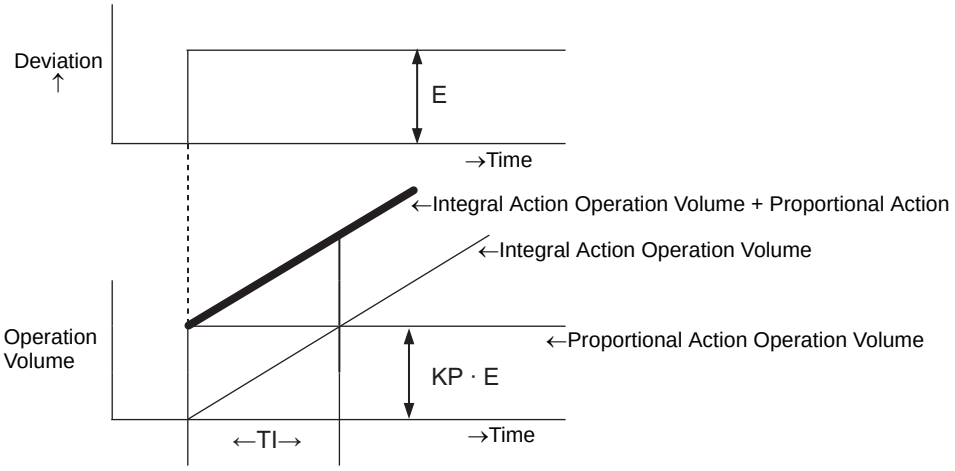
The operation volume varies in the range of 0 to 4095 (initial value). As KP increases, the operation volume proportionate to the deviation increases and the correcting action strengthens and causes offset (residual deviation).

◆ Integral Action (I Action)

Continuously changes the operation volume (output value) to eliminate any deviation (deviation between the target value and current value). This can eliminate the offset caused in the proportional action.

Once deviation is caused in the integral action, the operation volume changes to the operation volume of the proportional action. The time required for the change is called “integral calculus time” and is indicated as TI. A smaller TI results in stronger integral action.

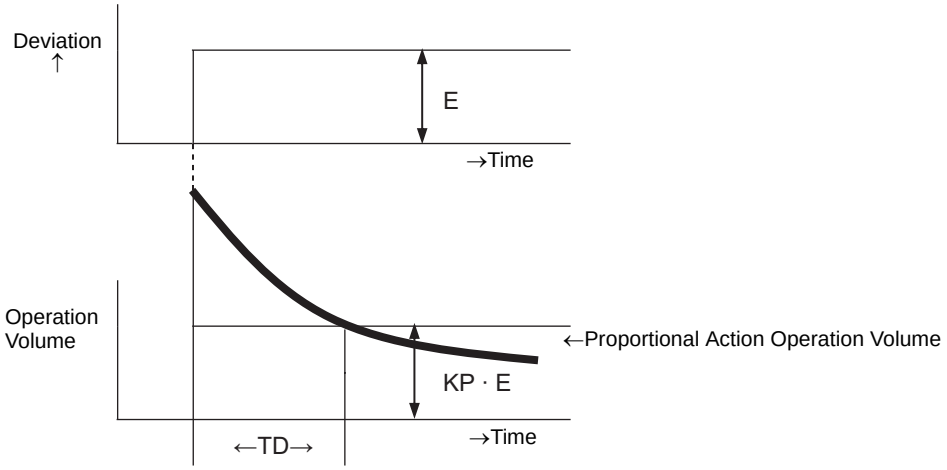
If the deviation is fixed, the integral action is as follows.



Uses the integral action as “PI action” combined with the proportional action, or as “PID action” combined with the proportional action and derivative action.” Integral action alone cannot be used.

◆ Derivative Action (D Action)

Adds the operation volume (output value) proportionate to any deviation (deviation between the target value and current value) in order to eliminate deviation. This prevents the control target from drastically changing due to external disturbances.
Once deviation occurs in the derivative action, the operation volume changes to the operation volume of the integral operation. The time required for the change is called “differential calculus time” and is indicated as TD.
A larger TD results in stronger derivative action.
If the deviation is fixed, the derivative action is as follows.



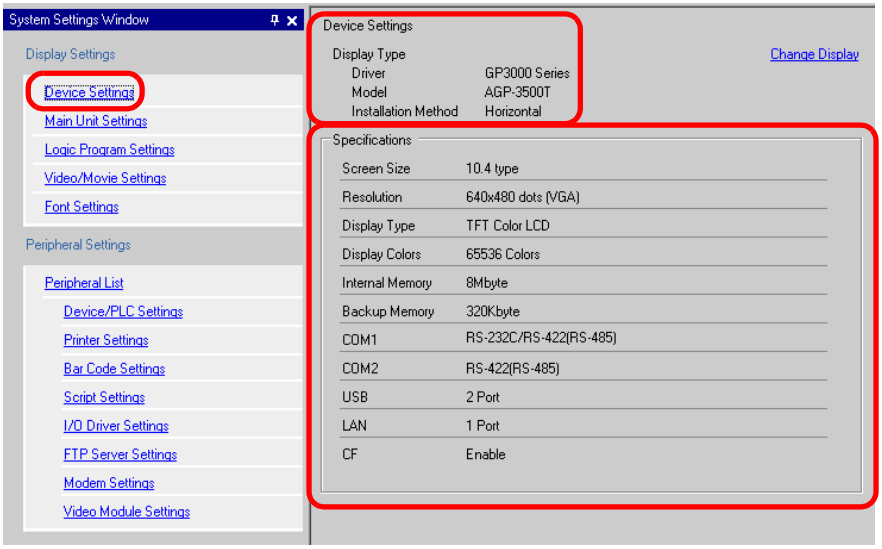
Uses the derivative action as “PD action” combined with the proportional action, or as “PID action” combined with the proportional action and integral action. Derivative action alone cannot be used.

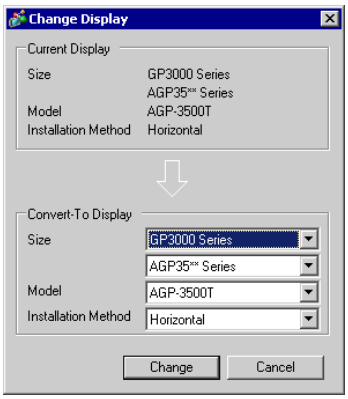
5.13.6 [System Settings Window] Settings Guide

This section explains about the screens called from each item displayed in the [System Settings Window].

■ [Device Settings] Settings Guide

Displays the specified display's specifications.



Setting		Description
Display Type		Displays the display's model. **NOTE** • Commonly displayed on all the screens called from the System Settings Window.
	Driver	Displays the series name of a display.
	Model	Displays the model name that supports the display series.
	Installation Method	Displays the display installation method with [Horizontal] or [Vertical].
Specifications		Displays the specifications of the display specified in [Display Type].
Change Display		The [Change Display] dialog box will appear. Change the display model to be used for the project file. 

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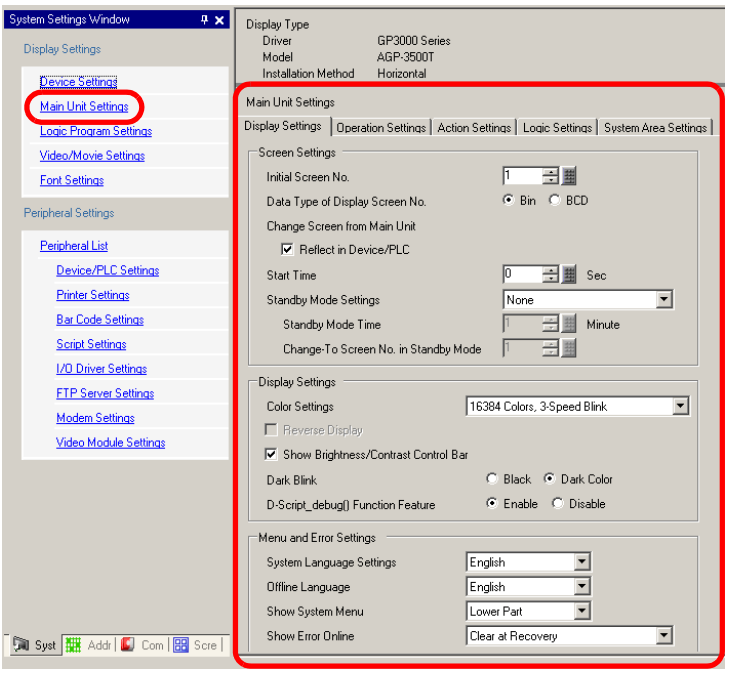
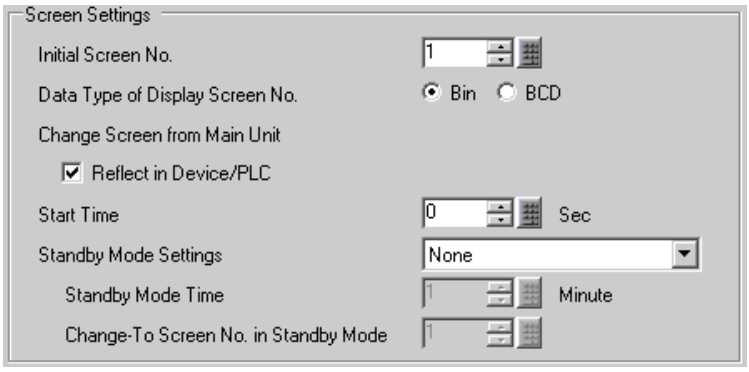
Setting		Description
	Current Display	Displays the series name, model name and installation method of the currently specified display.
	Convert-To Display	Set the [Size], [Model], and [Installation Method] of the change-to display.

■ [Main Unit Settings] Settings Guide

◆ Display Settings



- Screen Settings

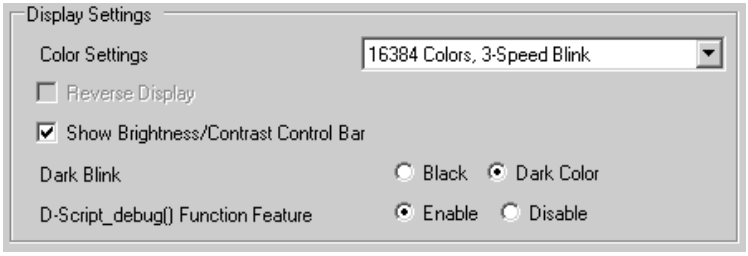


Setting	Description
Initial Screen No.	Set the number of the screen that will display at startup. ☞ "12.3 Choosing the Screen that will Display when the GP Turns on" (page 12-7) **NOTE** • Set the screen number from 1 to 9999 when the [Data Type of Display Screen No.] is [Bin], and from 1 to 7999 for [BCD].

Continued

Setting	Description
Data Type of Display Screen No.	Select the data type of the screen number specified when changing screens from [Bin] or [BCD].
Change Screen from Main Unit	Set whether or not to reflect the settings in the device/PLC when the screen is changed from the main unit.
Reflect in Device/PLC	The updated screen number (the currently displayed screen number) is written into the connected device's [System Data Area Top Address] + 8 address. This must be specified to change screens from a Screen Change switch and connected device. ☞ "12.5 Changing the Displayed Screen from both Touch and a Device/PLC" (page 12-13)
Start Time	Set the time it takes for the display to start up after the power turns ON from 0 to 255 seconds.
Standby Mode Settings	Select the standby mode from [None], [Screen OFF], or [Screen Change]. • Unchecked The screen does not change to the standby mode. • Screen OFF Clears the screen if there is no screen touch, screen change or alarm message display after the time specified in [Standby Mode Time] passes. • Screen Change Changes to the screen specified in [Change-To Screen No. in Standby Mode] if there is no screen touch, screen change or alarm message display after the time specified in [Standby Mode Time] passes.
Standby Mode Time	Set the time to automatically clear the screen to protect the display from 1 to 255 minutes. Automatically clears the screen display or changes to the specified screen when the specified time passes without any display operations.
Change-To Screen No. in Standby Mode	Set the screen number to change to after the [Standby Mode Time] passes when the [Standby Mode Settings] is [Screen Change]. **NOTE** • Set the screen number from 1 to 9999 when the [Data Type of Display Screen No.] is [Bin], and from 1 to 7999 for [BCD].

- Display Settings



Setting	Description
Color Settings	Set the color for the display. Type: TFT Display — Color Setting Range: 65536 Colors, No Blink and 16384 Colors, 3-Speed Blink Type: STN Display — Color Setting Range: 4096 Colors, 3-Speed Blink Type: Monochrome Display — Color Setting Range: Monochrome 16 Levels 3-Speed Blink

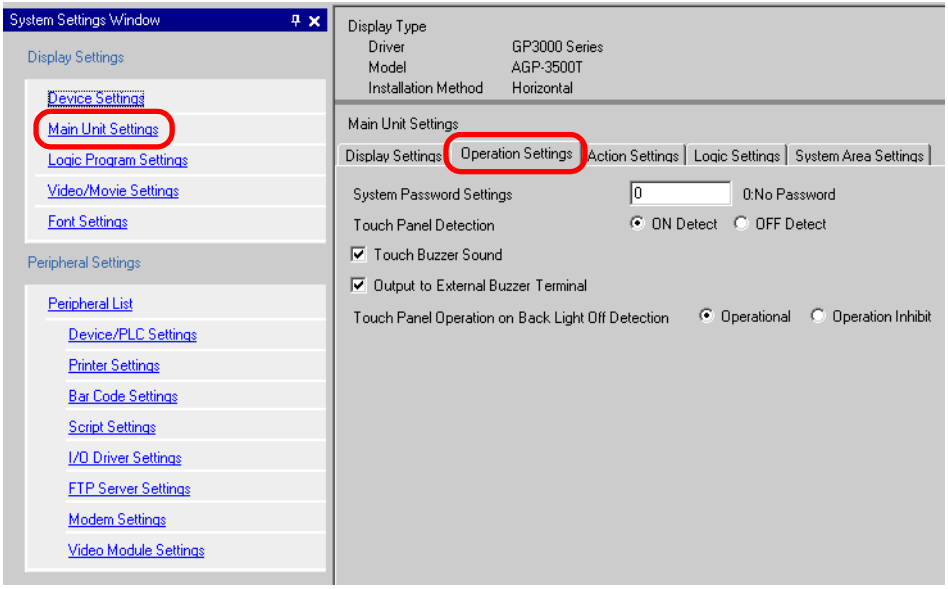
Continued

Setting	Description
Reverse Display	Set whether or not to display the screen with black/white reversed. NOTE • This can be set only when a monochrome display is selected.
Show Brightness/ Contrast Control Bar	Set whether or not to show the [Brightness/Contrast Control Bar] to control the brightness and contrast by touch input.
Dark Blink	Select the reverse-to color of a part or picture with blink from [Black] or [Dark Color]. If you select [Dark Color], the blink is reversed to the dark color of the color specified to the part or picture.
D-Script_debug ( ) Function Feature	Set whether or not to execute the debug() function data described in D-script. ☞ "21.7.1 Debug Function" (page 21-61)

- Menu and Error Settings

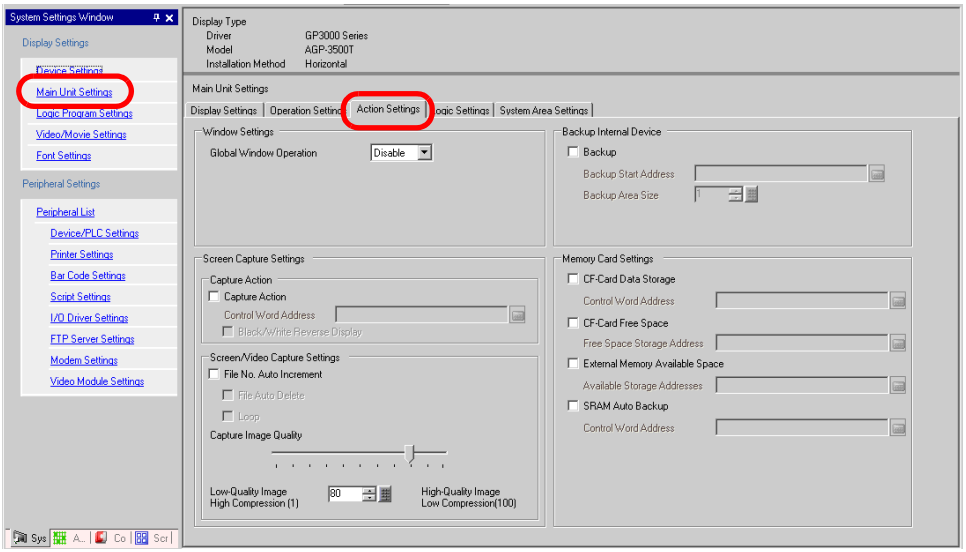
Setting	Description
System Language Settings	Set the language of "System Menu", "Brightness/Contrast Control", and "Error Message" (a one-line message and detail message) displayed on the GP from [Japanese] or [English].
Offline Language	Select the offline menu's display language from [Japanese] or [English].
Show System Menu	Select the system menu position from [Do Not Display], [Upper Part], or [Lower Part].
Show Error Online	Select the timing for clearing online error displays from [None], [Clear at Recovery], or [Clear on Screen Change]. IMPORTANT • The error message that occurs when the device/PLC cannot be written to due to a communication error will not be deleted from the GP screen, even if [Clear at Recovery] is specified. You can delete this error message by initiating a screen change.
Error Display Position	Select the error display position from [Upper Part] or [Lower Part].
Auto Recovery on System Error	Set whether or not to perform auto recovery on system errors.

◆ Operation Settings

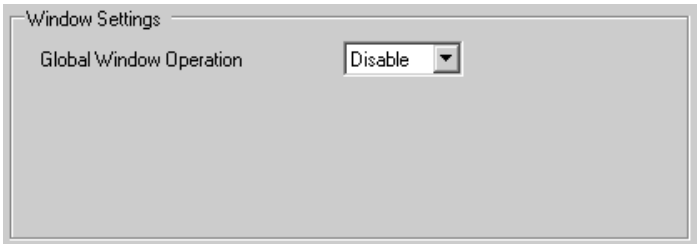


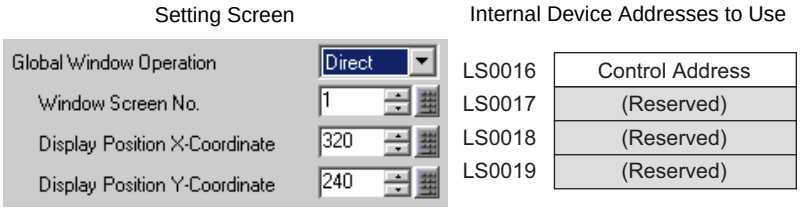
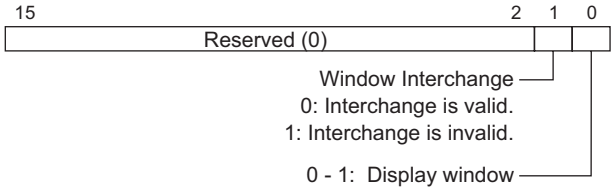
Setting	Description
System Password Settings	Set the system password for the initial settings or to go offline from 0 to 99999999. Set “0” when a system password is unnecessary.
Touch Panel Detection	Select the detection timing from [ON Detect] (when touching the touch panel) or [OFF Detect] (when taking your finger off the touch panel).
Touch Buzzer Sound	Set whether or not to sound the built-in buzzer when touching the screen.
Output to External Buzzer Terminal	Set whether or not to output the touch panel buzzer to the external buzzer terminal.
Touch Panel Operation on Back Light Off Detection	Set whether or not to enable the touch panel operation on back light off detection. Select from [Operational] or [Operation Inhibit].

◆ Action Settings

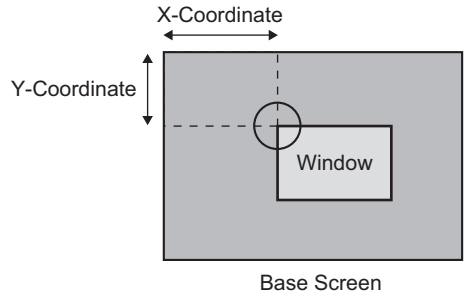
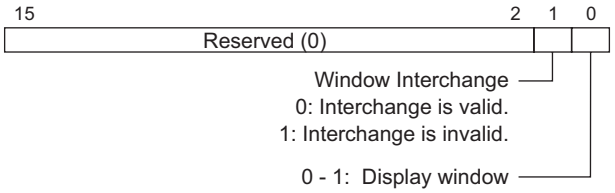


- Window Settings
  Set the Global Window's display settings

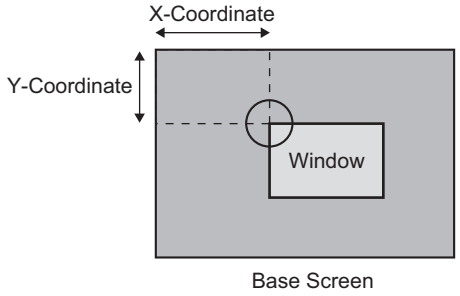


Setting	Description
Global Window Operation	Select the action of the Global Window commonly displayed on all screens from [Disable], [Direct], or [Indirect].
Disable	Does not specify a Global Window.
Direct	Displays the Window Screen number to display and its position in a fixed state. Control the display by operating the address (LS16) in the GP internal device or the device/PLC to which the system data area is assigned.  • Control Address Controls the display of a Global Window. If you turn ON Bit 0, a Window is displayed.  **NOTE** • To use a system data area on the device/PLC, specify this using four sequential words of the assigned address. ☞ "◆ System Area Settings" (page 5-120)
Window Screen No.	Set the Global Window's screen number from 1 to 2000.

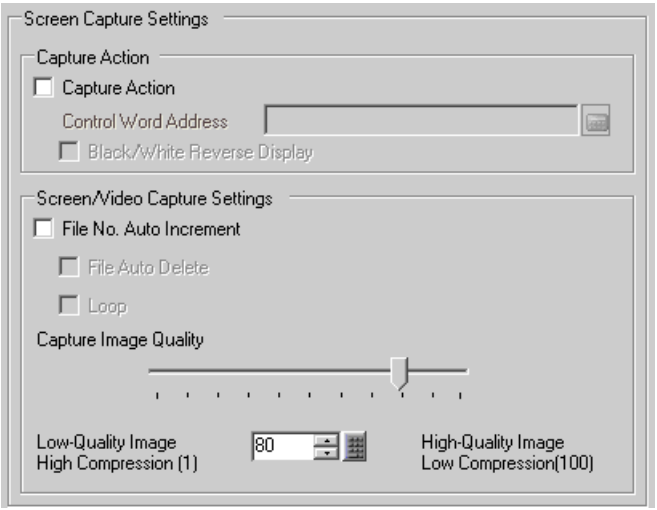
Continued

Setting			Description
Global Window Operation	Direct	Display Position X-Coordinate/ Y-Coordinate	Set the Global Window's display position. Even if the screen changes, the Window is displayed in the same position. The coordinate specified here is the top left corner of the Window.  **NOTE** • Specifies the X-coordinate by 4 dots. If the display position is not specified by 4 dots, the position is automatically corrected by 4 dots to the left of the specified coordinate to display the Global Window.
	Indirect		Set the Window Screen number to display and its position by storing data in the GP internal device's address (LS16 to LS19). If you assign a system data area to the device/PLC, you can switch Window Screens or change the display position from the device/PLC. Setting Screen  Internal Device Addresses to Use LS0016 Control Address LS0017 Window Screen No. LS0018 Display Position (X-Coordinate) LS0019 Display Position (Y-Coordinate) • Control Address Controls the display of a Global Window. If you turn ON Bit 0, a Window is displayed.  • Window Screen No. Specify the number of the Window Screen you want to display from 1 to 2000.

Continued

Setting			Description
Global Window Operation	Indirect		• Display Position X-Coordinate/Y-Coordinate Set the Global Window's display position. If you change the value to store in the address, you can move the Window. The coordinate specified here is the top left corner of the Window.  **NOTE** • To use a system data area on the device/PLC, specify this using four sequential words of the assigned address. ☞ " ◆ System Area Settings" (page 5-120)
		Data Type	Select the type of data to store in the address from [Bin] or [BCD].

- Screen Capture Settings
  Prints hard copy of the GP screen or video screen.



Setting		Description
Capture Settings	Capture Action	Set whether or not to perform a screen capture.
	Control Word Address	Set the control word address to trigger the screen capture. Three words are used starting from the designated [Control Word Address] to check the file number, file output execution, and saving results (status). • About Address Address +0 — Control Address +1 — Status Address +2 — Hard Copy File No. Control 15 … 0 Bit Reserved Bit 0: File output start bit Starts file output when [0] changes to [1]. Status 15 … 12 … 1 0 Bit Reserved JPEG Error Code Bit 1: File output completed [0]: Unoutputted [1]: Output completed Bit 0: File outputting [0]: Unoutputted [1]: Outputting

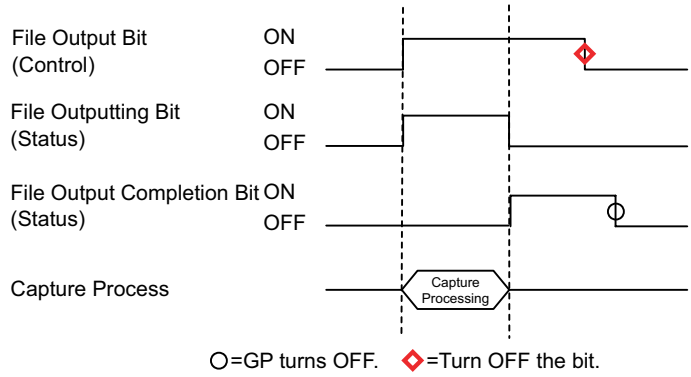
Continued

Setting		Description
Capture Settings	Control Word Address	Details of JPEG Error Code

Bit 12 to 15	Description	Details
0000	Completed Successfully	When the process was completed successfully.
0001	Reserved	
0010	Reserved	
0011	Reserved	
0100	No CF-Card	When a CF-card is not inserted or the CF-card hatch is open during screen capture or when JPEG data is displayed.
0101	CFWrite Error	When there is not sufficient free space in the CF-card or the CF-card is removed while the data is written during screen capture.
0110	Reserved	
0111	CFCard Error	When the CF-card is unformatted.
1000	Reserved	
1001	Excess of No. of Auto Increment Files	When the file number exceeds 65535 in the auto increment feature.

(Hard Copy File No.)
Designates the "*****" Eportion in a screen capture file's name "CP*****.jpg" The value can be from 0 to 65535. When using the [File No. Auto Increment] function, this address will automatically store the file number.

- Details of Capture Action
  In the file output completion bit, the status address Bit 1 turns ON when the capture process was completed. After the capture process was completed, confirm that the file output completion bit is ON and then turn OFF the file output bit from the device/PLC. If the file output bit is turned OFF, the GP turns OFF the file output completion bit. The timing of the control and status during capture is as follows.



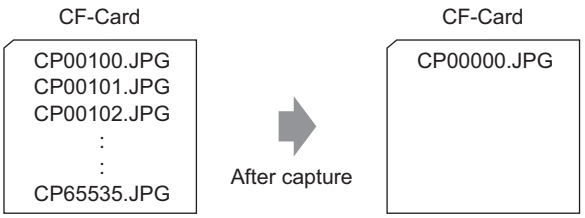
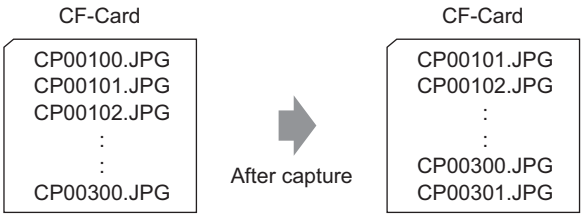
NOTE

- If you turn OFF the file output bit (control) before the file output completion bit turns ON, the file output completion bit is automatically turned OFF.
- If an error occurs while processing screen capture, the status area is not cleared when the control address' rigger bit is turned OFF. It will be cleared next time the process is completed successfully.

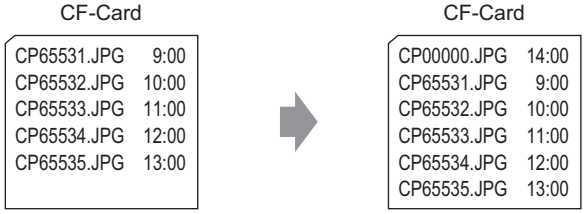
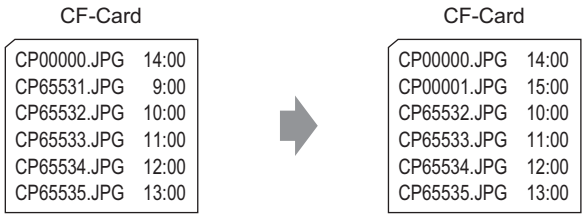
Continued

<table>
<tr><th colspan="2">Setting</th><th>Description</th></tr>
<tr><td>Capture Settings</td><td>Black/White Reverse Display</td><td>Set whether or not to save the screen captured in a CF-card with black and white reversed.
NOTE
• On a monochrome or color model of GP, the black/white reverse states are displayed as follows.
<table>
<tr><th rowspan="2">PC Screen</th><th rowspan="2">GP Type</th><th rowspan="2">GP Screen</th><th colspan="2">Black/White Reverse Display (in CF-Card)</th></tr>
<tr><th>Enable</th><th>Disable</th></tr>
<tr><td rowspan="2">(White ○)</td><td>Monochrome</td><td>(Normal) Black
(Reverse) White</td><td>Black</td><td>White</td></tr>
<tr><td rowspan="2">Color</td><td>White</td><td>Black</td><td>White</td></tr>
<tr><td>(Other Colors)
e.g.: Green</td><td>Green</td><td>Green</td><td>Green</td></tr>
</table>
• You can reverse only black or only white.
• Color inversion is not available.</td></tr>
<tr><td>Screen/Video Capture Settings</td><td>File No. Auto Increment</td><td>When a screen is captured, a new file is created with a file name automatically assigned (numbering) by adding 1 to the highest file number of files saved on the CF-card.
The automatically numbered file number will be written to designated [Control Word Address] +2.
Numbering will occur to a maximum file number of 65535. After that screen capture will not function. To continue, use the [File Auto Delete] function or the [Loop] function.
NOTE
• The GP searches for the highest file number upon GP power-up, upon opening/closing of the CF-card cover, and upon insertion/removal of a CF-card.
• When using this function, file numbers specified to the designated [Control Word Address] +2 are ignored.</td></tr>
</table>

Continued

Setting		Description
Screen/Video Capture Settings	File Auto Delete	Deletes existing files and allows new files to be saved even when the CF-Card does not have sufficient free space or the file number exceeds 65535. When a file with the highest file number exists When a file exists in the CF-card with the highest file number (65535), all existing files are deleted and new files are created starting from file number 0. e.g.) When “CP65535.JPG” exists in the CF-card  All screen capture files in the CF-card “CP *****.JPG” are deleted and “CP00000.JPG” is saved. **NOTE** • All files are deleted so this can take from a few seconds to a few minutes. If no free space is available on the CF-card This feature deletes the file with the lowest file number and creates a file with the highest file number + 1. e.g.) Files with file numbers “CP00100.JPG” to “CP00300.JPG” are saved on the CF-Card.  The file with the smallest number, “CP00100.JPG”, is deleted and the new file “CP00301.JPG” is created.

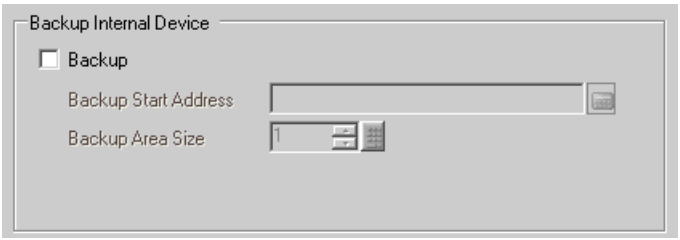
Continued

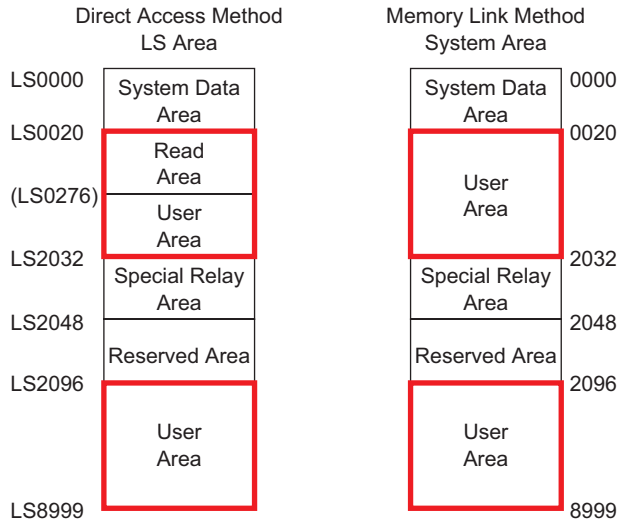
Setting		Description
Screen/Video Capture Settings	Loop	During screen capture, a new file is created with the file number assigned by adding 1 to the file number with the most recent time stamp among file numbers in the CF-card. When files with file Nos. 00000 through 65535 exist on the CF-card, the files will be overwritten sequentially from file No. 00000 and the screen captures will continue. **NOTE** • File timestamps are checked each time a file is created. The latest file has the highest file number When the latest file number is 65535, a new file is created with file No. 00000. e.g.) Files with file numbers “CP65531.JPG” to “CP65535.JPG” are saved on the CF-Card.  A new file, “CP00000.JPG”, is created. If no free space is available on the CF-card During screen capture, the oldest file is deleted and the new file is saved with a file number 1 larger than the latest file. e.g.) When the latest file is “CP00000.JPG”  The oldest file, “CP65531.JPG”, is deleted and the new file “CP00001.JPG” is created. **NOTE** • When a file is deleted due to insufficient free space, the oldest file is deleted in order to create a new file. In such a case, it may take twice as long to save a file compared to saving when there is sufficient free space.
	Capture Image Quality	Set the capture image quality from 1 to 100. You can also specify by directly inputting numeric values. 1 : Low-Quality Image, High Compression 100 : High Quality Image, Low Compression

- Backup Internal Device
  Copies data stored in the internal device address's user area to the backup SRAM. If you specified the Backup Internal Device, the GP will start up maintaining the data stored in the internal device address when you turn ON the GP again.

IMPORTANT

- The data stored in the GP internal device is cleared when turning OFF the GP or when the GP goes offline. You can use this function to back up the data in the user area.



Setting	Description
Backup	Set whether or not to backup the GP internal device. **NOTE** • Backs up the data stored in sequential addresses in the user area. Select the user area range from LS or USR (system area or USR for the memory link method). You cannot back up multiple ranges. If you select the LS area in the direct access method, only one of the two user areas (red frame portion) is backed up. This holds true for selecting the system area in the memory link method. 

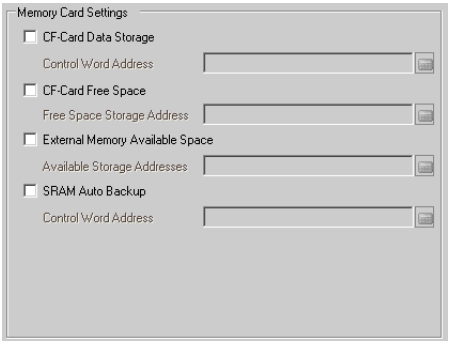
Continued

<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>Backup Start Address</td><td>Set the start address of the internal device to back up. Set the start address within the range to ensure the [Backup Area Size].
For direct access method, the start address should be specified within the range of LS20 to LS2031, LS2096 to LS8999, or USR0 to USR29999.
For memory link method, the start address should be specified within the range of 20 to 2031, 2096 to 8999, or USR0 to USR29999.</td></tr>
<tr><td>Backup Area Size</td><td>Set the internal device size to back up.
IMPORTANT
• If the [Backup Start Address] + [Backup Area Size] exceeds the valid range of the internal device's backup, the backup function will not work.
NOTE
• For the LS area or MtoM device (memory link), specify from 1 to 6,096. For the USR area, specify from 1 to 30000.
• The internal device's backup size depends on the backup area size.
Calculation
16 + (4*1 × Backup Area Size)

e.g.)<table><tr><th>Settings</th><th>Description</th></tr><tr><td>Backup Start Address</td><td>LS2096</td></tr><tr><td>Backup Area</td><td>6096</td></tr></table>Calculation Result
(16) + (4 × 6096) = 24400 bytes (approximately 24 Kbytes)

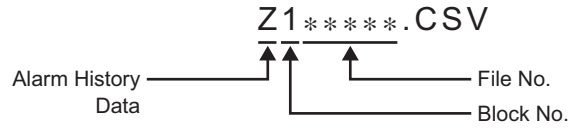
*1 The value is 4 for the LS device address and the memory link. The value is 2 for the USR device address. If the Backup Area Size is an odd number, add 1 to the value.</td></tr>
</table>

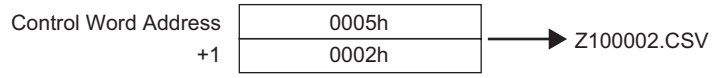
- Memory Card Settings
  Configures the settings for saving data to various memory cards.



<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>CF-Card Data Storage</td><td>Set whether or not to save the data stored in the backup SRAM when the GP is active, such as filing data or CSV files (Alarm, Sampling, etc.), in a CF-card.
☞ “5.14.2 Notes on CF-Card Saving” (page 5-147)</td></tr>
<tr><td>Control Word Address</td><td>This address controls the writing of data to the CF-card. Writes a command to the address after designating a file number.
Control Word Address: Command/Status
+1: File No.
Command/Status
Write the command and the data is written to the CF-card. The operation result (status) is reflected in the address.
<table>
<tr><th>Mode</th><th>Data</th><th>Description</th></tr>
<tr><td rowspan="14">Command</td><td>0001h</td><td>Filing Data</td></tr>
<tr><td>0002h</td><td>GP-PRO/PB III for Windows Logging data (compatible)</td></tr>
<tr><td>0003h</td><td>GP-PRO/PB III for Windows Line Chart data (compatible)</td></tr>
<tr><td>0004h</td><td>GP-PRO/PB III for Windows Sampling data (compatible)</td></tr>
<tr><td>0005h</td><td>Block 1’s Alarm History data</td></tr>
<tr><td>0006h</td><td>Block 2’s Alarm History data</td></tr>
<tr><td>0007h</td><td>Block 3’s Alarm History data</td></tr>
<tr><td>0008h</td><td>Block 4’s Alarm History data</td></tr>
<tr><td>0009h</td><td>Block 5’s Alarm History data</td></tr>
<tr><td>000ah</td><td>Block 6’s Alarm History data</td></tr>
<tr><td>000bh</td><td>Block 7’s Alarm History data</td></tr>
<tr><td>000ch</td><td>Block 8’s Alarm History data</td></tr>
<tr><td>0020h</td><td>GP-PRO/PB III for Windows Logging loop auto-save start (compatible)</td></tr>
<tr><td>0021h</td><td>GP-PRO/PB III for Windows Logging loop auto-save completion (compatible)</td></tr>
<tr><td rowspan="8">Status</td><td>0000h</td><td>Completed Successfully</td></tr>
<tr><td>0100h</td><td>Write Error</td></tr>
<tr><td>0200h</td><td>No CF-card is inserted, or the cover is open.</td></tr>
<tr><td>0300h</td><td>No data to be loaded (when no data is specified)</td></tr>
<tr><td>0400h</td><td>File No. Error (File number is outside of range)</td></tr>
<tr><td>0500h</td><td>Conflict error with Pro-Server request</td></tr>
<tr><td>2000h</td><td>GP-PRO/PB III for Windows Logging loop auto-save responding correctly (compatible)
While the Control Address has this value, the auto-save mode continues. When the value is changed, the auto-save mode finishes.</td></tr>
</table></td></tr>
</table>

Continued

<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>Control Word Address</td><td>
File Name and Save Location
When [Enable multiple folders] is specified for filing data, specify within the range of 1 to 8,999. When it is not specified, the file number is fixed with “1”. After writing a command, Alarm History data will be saved to the CF-card’s [ALARM] folder with the following file name.


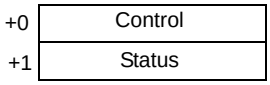
e.g.)


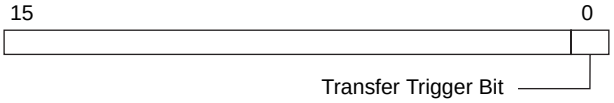
NOTE
• When the CF-card is reset by the GP unit, a folder will automatically be created to save data.
<table>
<tr><th>Folder</th><th>Data to be saved</th><th>File Name</th></tr>
<tr><td rowspan="2">\FILE</td><td>Filing Data</td><td>F*****.BIN</td></tr>
<tr><td>Transfer CSV Data</td><td>ZR*****.CSV</td></tr>
<tr><td>\LOG</td><td>GP-PRO/PB III for Windows Logging data (compatible)</td><td>ZL*****.CSV</td></tr>
<tr><td rowspan="2">\DATA</td><td>Image Screen</td><td>I*****.BIN</td></tr>
<tr><td>Sound Data</td><td>O*****.BIN</td></tr>
<tr><td>\CAPTURE</td><td>Screen Capture
Video Capture</td><td>CP*****.JPG</td></tr>
<tr><td>\MOVIE</td><td>Movie File</td><td>*.SDX</td></tr>
<tr><td rowspan="2">\TREND</td><td>GP-PRO/PB III for Windows Line Chart data (compatible)</td><td>ZT*****.CSV</td></tr>
<tr><td>GP-PRO/PB III for Windows Sampling data (compatible)</td><td>ZS*****.CSV</td></tr>
<tr><td rowspan="8">\ALARM</td><td>Block 1’s Alarm History data</td><td>Z1*****.CSV</td></tr>
<tr><td>Block 2’s Alarm History data</td><td>Z2*****.CSV</td></tr>
<tr><td>Block 3’s Alarm History data</td><td>Z3*****.CSV</td></tr>
<tr><td>Block 4’s Alarm History data</td><td>Z4*****.CSV</td></tr>
<tr><td>Block 5’s Alarm History data</td><td>Z5*****.CSV</td></tr>
<tr><td>Block 6’s Alarm History data</td><td>Z6*****.CSV</td></tr>
<tr><td>Block 7’s Alarm History data</td><td>Z7*****.CSV</td></tr>
<tr><td>Block 8’s Alarm History data</td><td>Z8*****.CSV</td></tr>
<tr><td>\SRAM</td><td>Backup SRAM data</td><td>ZD*****.BIN</td></tr>
<tr><td>\SAM0P1</td><td>Sampling Group 1’s data</td><td>SA*****.CSV</td></tr>
<tr><td>.
.
.</td><td>.
.
.</td><td>.
.
.</td></tr>
<tr><td>\SAMP64</td><td>Sampling Group 64’s data</td><td>SA*****.CSV</td></tr>
</table>
</td></tr>
<tr><td>CF-Card Free Space</td><td>Set whether or not to store the CF-card’s free space in an internal device. You can know the CF-card’s free space.</td></tr>
</table>

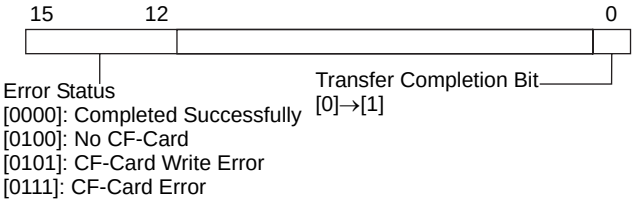
Continued

Setting	Description
Free Space Storage Address	Set the address to store CF-card free space. For direct access method, the start address should be specified within the range of LS20 to LS2031, LS2096 to LS8999, or USR0 to USR29999. For direct access method, the start address should be specified within the range of 20 to 2031, 2096 to 8999, or USR0 to USR29999. Stores the value within the range of 0 to 65,535 (FFFFh) in the specified address. The unit of a value to be stored is the Kbyte. **NOTE** • When a CF-card is not inserted, the GP cannot check the free space successfully and displays it as 0 Kbyte. • The CF-card free space is only an estimate. You may not always be able to save data exactly the size of the free space. • If free space exceeds 65,535 (FFFFh) Kbytes, the value of the LS area is 65,535 (FFFFh).
External Memory Available Space	Determines whether to save the free space in the external memory (USB memory, etc.) to the internal device. The approximate free space in the external memory is shown.
Available Storage Address	Configures the address where the free space in the external memory (USB memory, etc.) is saved. For direct access method, the start address should be specified within the range of LS20 to LS2031, LS2096 to LS8999, or USR0 to USR29999. For direct access method, the start address should be specified within the range of 20 to 2031, 2096 to 8999, or USR0 to USR29999. Stores the value within the range of 0 to 65,535 (FFFFh) in the specified address. The unit of a value to be stored is the Kbyte. **NOTE** • Note that if the external memory is not inserted, the free space will not be recognized and will be displayed as 0K byte. • The free space in the external memory is only an estimate. You may not always be able to save data exactly the size of the free space. • If free space exceeds 65,535 (FFFFh) Kbytes, the value of the LS area is 65,535 (FFFFh).
SRAM Auto Backup	Set whether or not to automatically transfer all the backup SRAM data to a CF-card.

Continued

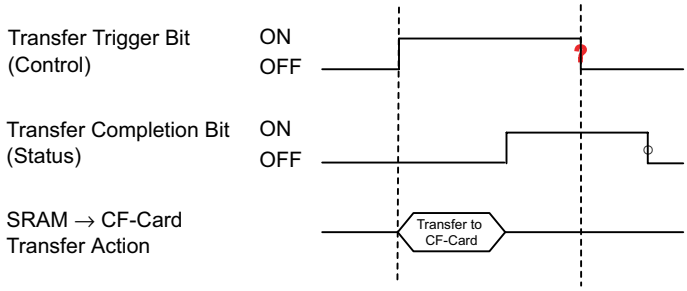
<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>Control Word Address</td><td>
Backs up the SRAM data to a CF-card in operating mode. Specify the control address to trigger the backup. The processing status is saved to an address created from the specified control address +1.


• Control
Turn On Bit 0 to start the backup.


• Status
When the transfer has successfully completed, Bit 0 (Transfer Completion Bit) turns ON. Confirm that Bit 0 is ON, and turn OFF Bit 0 of the control address. The transfer completion bit will then turn OFF automatically.


The details of error codes are as follows.
<table>
<tr><th>Error Code</th><th>Error Name</th><th>Details</th></tr>
<tr><td>0000</td><td>Completed Successfully</td><td>When the backup process was completed successfully.</td></tr>
<tr><td>0100</td><td>No CF-Card</td><td>When a CF-card is not inserted at backups or the CF-card hatch is open.</td></tr>
<tr><td>0101</td><td>CF-Card Write Error</td><td>When there is no sufficient free space in the CF-card at backups or the CF-card is removed while the data is written.</td></tr>
<tr><td>0111</td><td>CFCard Error</td><td>When the CF-card is unformatted.</td></tr>
</table>
</td></tr>
</table>

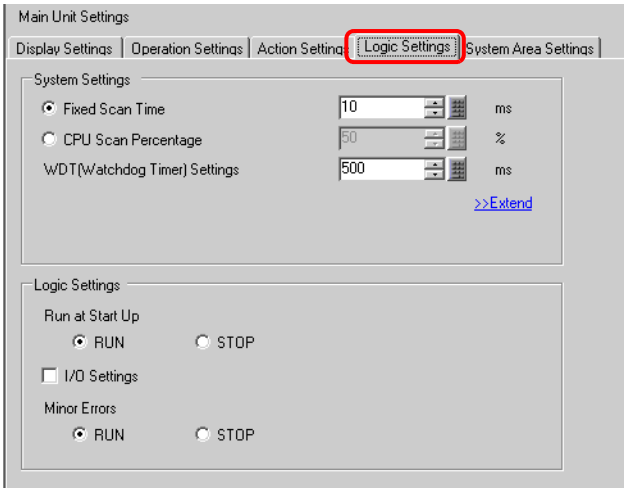
Continued

Setting	Description
Control Word Address	The timing during transfer is as follows.  **NOTE** • After confirming that the data is not being saved in the CF-card by another feature and that the [Transfer Completion Bit] is OFF, transfer SRAM data to the CF-card. • When transferring SRAM data to the CF-card, make sure the [Transfer Trigger Bit] and [Transfer Completion Bit] are OFF at the start of operation in case the power is turned OFF during transfer. • Maintain the [Transfer Trigger Bit]'s ON or OFF for a longer time than [Communication Cycle Time]*1 or [Display Scan Time]*2.

*1 The Communication Cycle Time is the time from when the GP requests data from the external device to when the data arrives. This value is stored in internal device LS2037 as a binary value, in units of 10 ms.

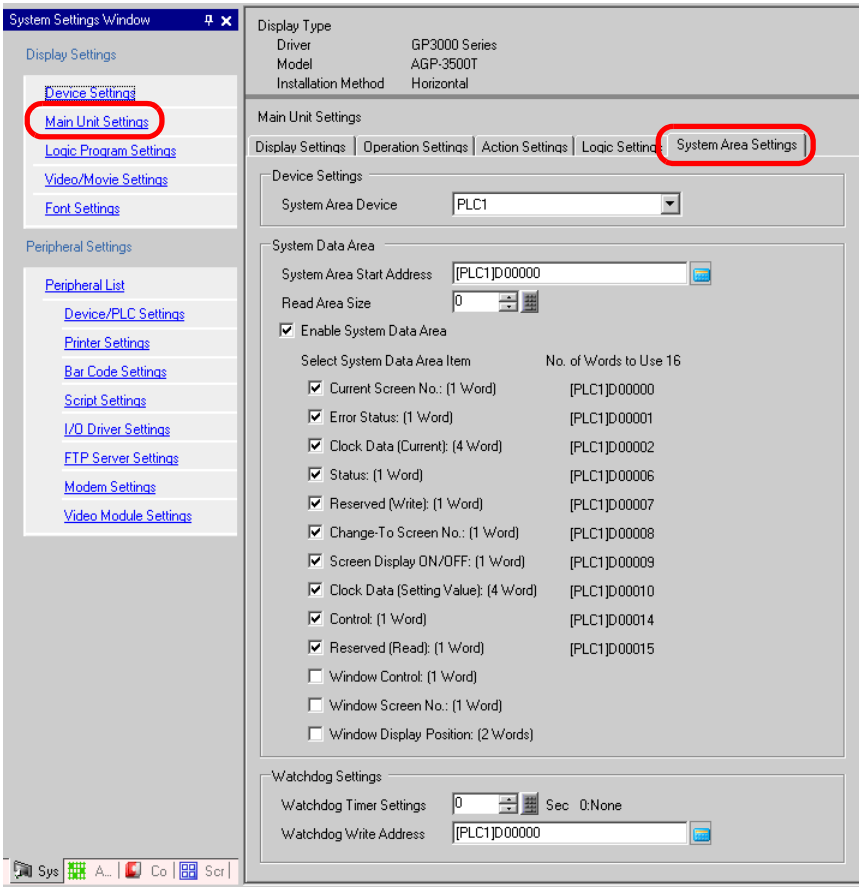
*2 Display Scan Time is the time required to process one screen. This value is stored in internal device LS2036 as a binary value, in millisecond units.

◆ Logic Settings



Setting	Description
System Settings	Configures the system settings for logic features.
Fixed Scan Time/CPU Scan Percentage	Selects the mode for logic scan time. • If you select [Fixed Scan Time], you can specify the logic time frequency from 10 ms to 2000 ms (unit: ms). ☞ "29.13.3 Adjusting Logic Scan Time ◆ Fixed Scan Time" (page 29-111) • If you select [CPU Scan Percentage], you can specify the logic time occupancy. The settings range from 0% to 50% (unit: %). ☞ "29.13.3 Adjusting Logic Scan Time ◆ CPU Scan Percentage" (page 29-112)
WDT (Watchdog Timer) Settings	You can configure the monitoring time for the logic scan time. An error will occur if the logic scan time exceeds the WDT (Watchdog Time). The settings range from 100 ms to 3000 ms (unit: ms).
>>Extension/<<Basic	Click [>>Extension] to specify the [Address Refresh] speed.
Address Refresh	Select the address refresh speed from [Low], [Medium], and [High].  ☞ "29.13.3 Adjusting Logic Scan Time ■ Address Refresh" (page 29-114)
Logic Settings	Click [Keep Area Settings] to display the [Keep Setting] dialog box. [Variable Format] specifies the symbol variable keep/clear points. [Address Format]specifies the symbol variable keep/clear range. ☞ "29.3.1 Usable Addresses ■ Keep Area Settings" (page 29-16)
Run at Start Up	Select the logic program status at GP start up from [Run] or [Stop].
I/O Settings	Determines whether to enable input/output to and from the I/O unit. Select the check box to enable input and output.
Minor Errors	Select whether to [Continue] or [Stop] the logic program when a minor error occurs.

◆ System Area Settings



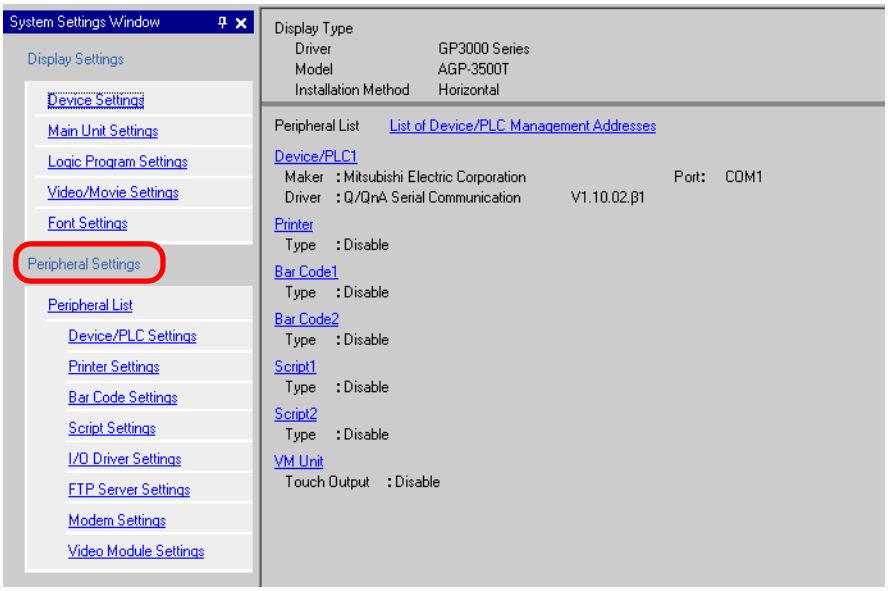
Setting		Description
Device Settings		Specify a device/PLC.
	System Area Device	Select the device/PLC to specify the system data area.
System Data Area		Set the system data area.
	System Area Start Address	Designate the start address used for the system area.
	Read Area Size	Set the number of words in the [Read Area] that stores the data used commonly on all screens or the line chart block display data from 0 to 256. **NOTE** • Cannot be specified when a device/PLC is connected with the memory link method.
	Enable System Data Area	Set whether or not to enable the system data area.
	Select System Data Area Item	Set the system data area items to use. For details of each item, refer to “ “A.1.4.2 System Data Area” (page A-10) for the direct access method, and “ “A.1.5.2 System Data Area” (page A-25) for the memory link method.
	No. of Words to Use	Displays the total number of words for the items specified to the system data area.

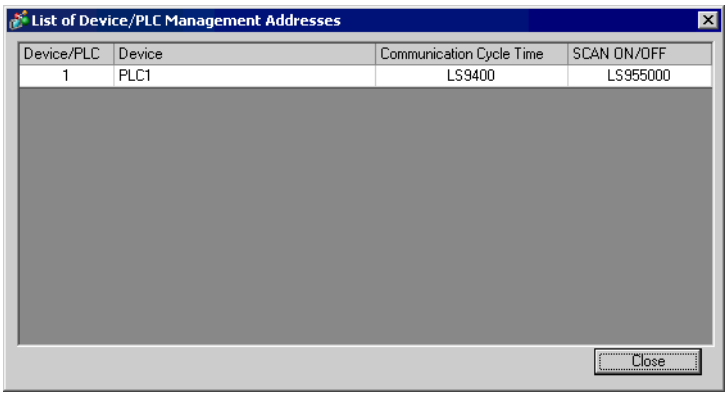
Continued

Setting		Description
Watchdog Settings		Monitors the communication state of the GP and the PLC. The GP writes “00FF” to the PLC’s word address at every setting time. The PLC confirms at every setting time that “00FF” has been written and that communication is performed.
	Watchdog Timer Settings	Set the watchdog’s monitoring cycle time from 0 to 65535 seconds.
	Watchdog Write Address	Set the write address for the watchdog.

■ [Peripheral List] Settings Guide

Displays a list of the specified peripheral devices.



Setting	Description
List of Device/PLC Management Addresses	Displays a list of the specified device/PLC management addresses. 
Device/PLC	Displays the specified device/PLC driver numbers.
Device	Displays the specified device/PLC names.
Communication Cycle Time	Displays the internal device addresses in which to store the specified device/PLC's communication cycle time *1.
SCAN ON/OFF	Displays the internal device addresses storing the bit address that switches ON or OFF the communication scan *2 of the specified devices/ PLCs.

Continued

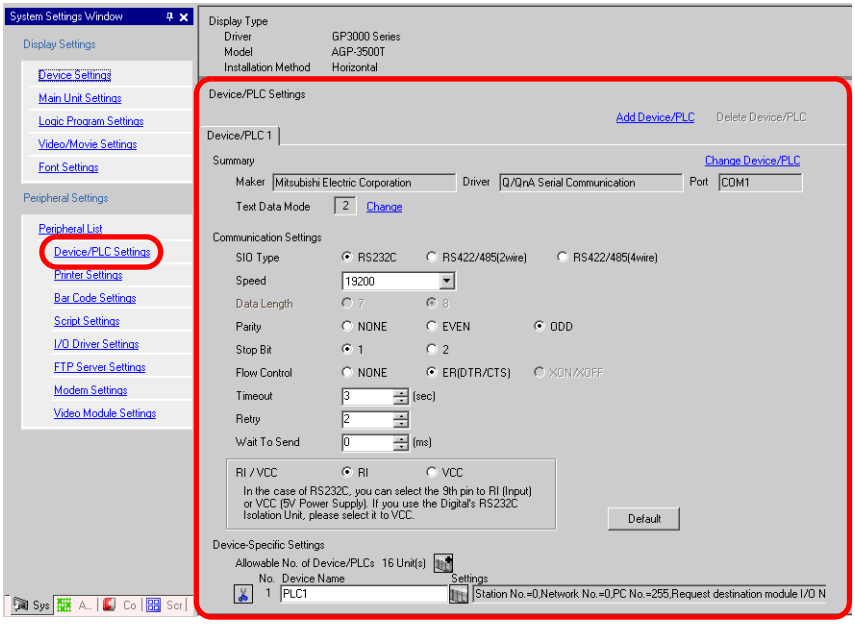
Setting		Description
Device/PLC1 to 4		Displays the memory size of the font being used in the user screen area. The user screen area capacity depends on the GP model. ☞ "1.3 List of Supported Functions by Device" (page 1-4)
	Maker	Displays the currently specified device/PLC's maker.
	Series	Displays the series of the currently specified PLC.
	Version	Displays the device/PLC driver version.
	Port	Displays the ports that can be connected to a device/PLC. **NOTE** • If the port is also used for other devices/PLCs, is displayed to the right of the [Port].
Printer, Bar Code 1, Bar Code 2, Script 1, Script 2,		Displays and edits the settings of the specified [Printer], [Bar Code 1], [Bar Code 2], [Script 1], and [Script 2].
	Type	Displays the types of the specified peripheral devices.
	Port	Displays the connecting ports of the specified peripheral devices. **NOTE** • If the port is also used for other devices/PLCs, is displayed to the right of the [Port].

*1 The communication cycle time is the time it takes to request and take in data from the GP unit to the PLC. It is stored in the internal device's LS2037 as binary data. The unit is 10 ms.

*2 The communication scan is the action that transmits the request from the GP unit sequentially to each device/PLC in the running mode.

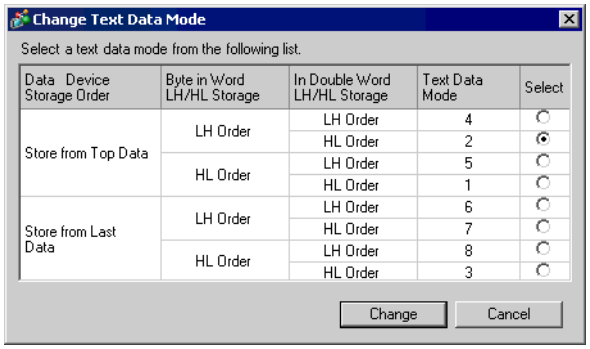
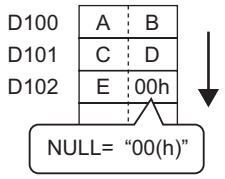
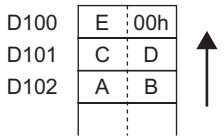
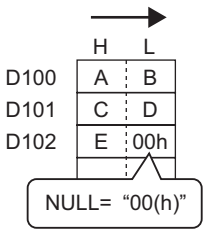
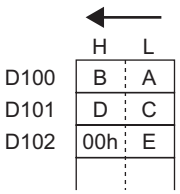
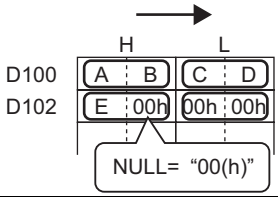
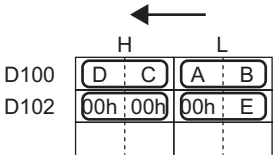
■ [Device/PLC Settings] Settings Guide

Set the details of a device/PLC.



Setting		Description
Add Device/PLC		Adds the device/PLC settings. Use this setting when one GP is communicating with multiple devices/PLCs. **NOTE** • The number of device/PLC drivers that the GP can communicate with at the same time depends on the type of GP. ☞ "1.3 List of Supported Functions by Device" (page 1-4)
Delete Device/PLC		Deletes the specified device/PLC.
Change Device/PLC		Changes the settings of the device/PLC.
Summary		Displays the settings of the currently specified devices/PLCs.
	Maker	Displays the currently specified device/PLC's maker.
	Driver	Displays the currently specified device/PLC series name.
	Port	Displays the connection port of the currently specified device/PLC. **NOTE** • If the port is also used for other devices/PLCs, ⓘ is displayed to the right of the [Port].
	Text Data Mode	Displays the text data mode of the currently specified devices/PLCs.

Continued

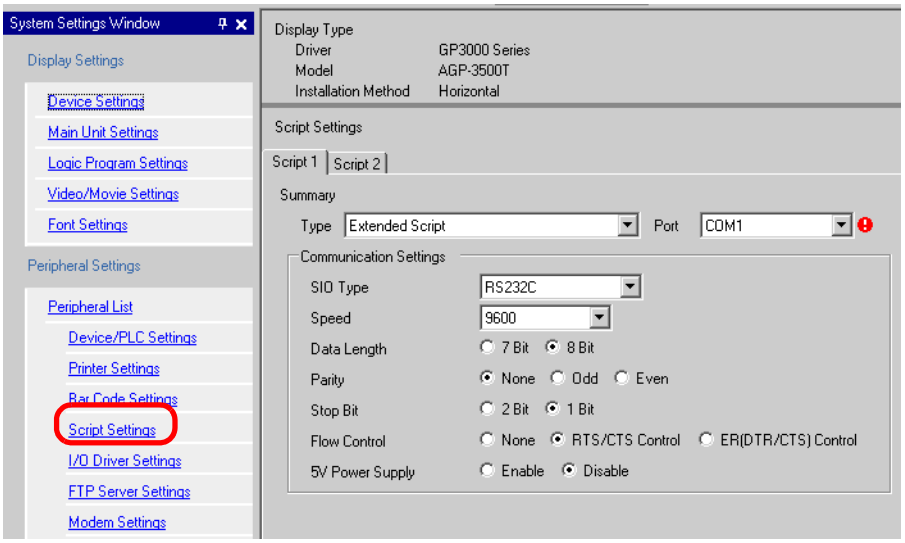
Setting			Description
Summary	Change		When the [Change Text Data Mode] dialog box is displayed, you can change the text data mode. Normally the text data mode is specified according to each device/PLC. 
		Data Device Storage Order	Select the data device storage order from [Store from Top Data] or [Store from Last Data]. e.g.) Storing the text “ABCDE”. • Store from Top Data: (When the [Text Data Mode] is “5”)  • Store from Last Data: (When the [Text Data Mode] is “8”) 
		Byte in Word LH/HL Storage	Select the data storage order to specify in one word (16 bits) from [LH Order] or [HL Order]. e.g.) Storing the text “ABCDE”. • HL Order (When the [Text Data Mode] is “5”)  • LH Order (When the [Text Data Mode] is “4”) 
		In Double Word LH/HL Storage	Select the data storage order to specify in two words (32 bits) from [LH Order] or [HL Order]. e.g.) Storing the text “ABCDE”. • HL Order (When the [Text Data Mode] is “1”)  • LH Order (When the [Text Data Mode] is “4”) 

Continued

Setting			Description
Summary	Change	Text Data Mode	Displays the combination number of the text data mode storage orders.
		Select	Select the text data mode to be used.
Communication Settings			Set this according to each device/PLC. Each device/PLC series has different settings. Refer to “GP-Pro EX Device/PLC Connection Manual” However, [Timeout], [Retry], and [Wait To Send] are recommended to be used with their initial settings.
Device-Specific Settings			Set this according to each device/PLC.
	Allowable No. of Devices/PLCs		Displays the allowable number of devices/PLCs for the selected device/PLC type.
	[Add Device Button] 		Each time you click the [Add Device Button], one device/PLC is added. This cannot be added when the [Allowable No. of Devices/PLCs] is one.
	[Delete Device Button] 		Deletes the device/PLC’s settings.
	No.		Displays the specified device/PLC’s number.
	Device Name		Set a device/PLC’s name with up to 20 single-byte characters. **NOTE** • When adding the desired [Device Name], ensure not to use a repeated name.
	[Device Settings Button] 		Set settings as needed for the device/PLC. Opens the [Individual Device Settings] dialog box. **NOTE** • [The [Individual Device Settings] dialog box settings differ depending on the PLC. For more information on each device/PLC’s settings, refer to “GP-Pro EX Device/PLC Connection Manual”.

■ [Script Settings] Settings Guide

Configure settings to communicate with the device/PLC using scripts.



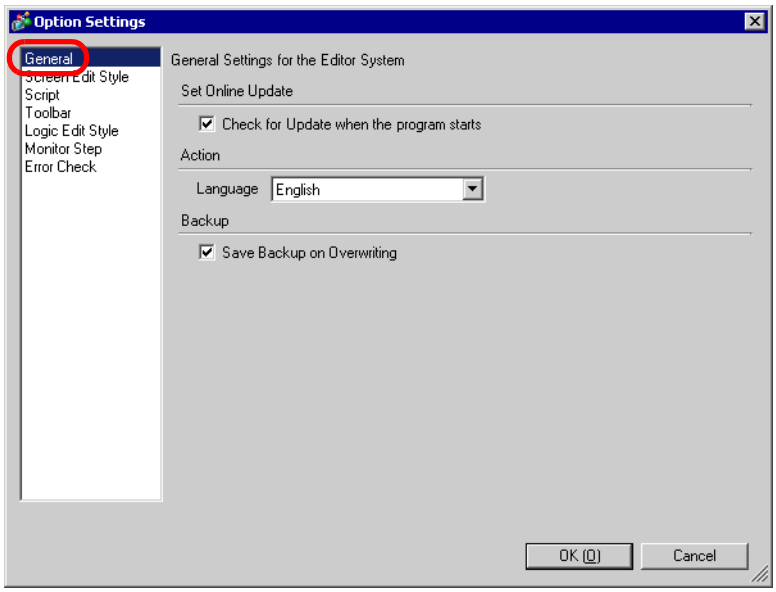
Setting	Description
Type	Select [D-Script/Global D-Script] to use the “SIO Port Operation” function, which communicates using a serial port for D-script or global D-script. Select [Extended Script] to use extended scripts.
Port	Select a port for scripts from [COM1] or [COM2]. **NOTE** • If the port is also used for other devices/PLCs, is displayed to the right of the [Port].
Communication Settings	Configure communication settings. **NOTE** • This is not displayed when the [Type] is [Do Not Use]. • The [Communication Settings] description differs depending on the specified device/PLC. For more information on each device/PLC’s settings, refer to “GP-Pro EX Device/PLC Connection Manual”.
SIO Type	Select the communication method from [RS232C], [RS422/485 (4wire)], or [RS422/485 (2wire)].
Speed	Select a communication speed from [2400], [4800], [9600], [19200], [38400], [57600] or [115200].
Data Length	Choose the communication data length from [7 bit] or [8 bit].
Parity	Select the communication parity bit from [None], [Odd], or [Even].
Stop Bit	Choose the communication stop bit length from [2 bit] or [1 bit].
Flow Control	If the communication method is [RS232C], select the communication control method from [None], [RTS/CTS Control] or [ER (DTR/CTS) Control].
5V Power Supply	If the communication method is [RS232C], 5Vdesignate whether or not to specify the 5V power supply. Only specify it to Enable if the connected device requires a power supply. If a 5V power supply is not needed and you specify it to Enable, damage can occur to the connected device or the GP. Confirm the specifications of the connected device and cable when setting this.

5.13.7 [Option Settings] Settings Guide

This section explains about each item on the [Option Settings] dialog box displayed by selecting the [View (V)] menu - [Option Settings (O)] command.

■ General

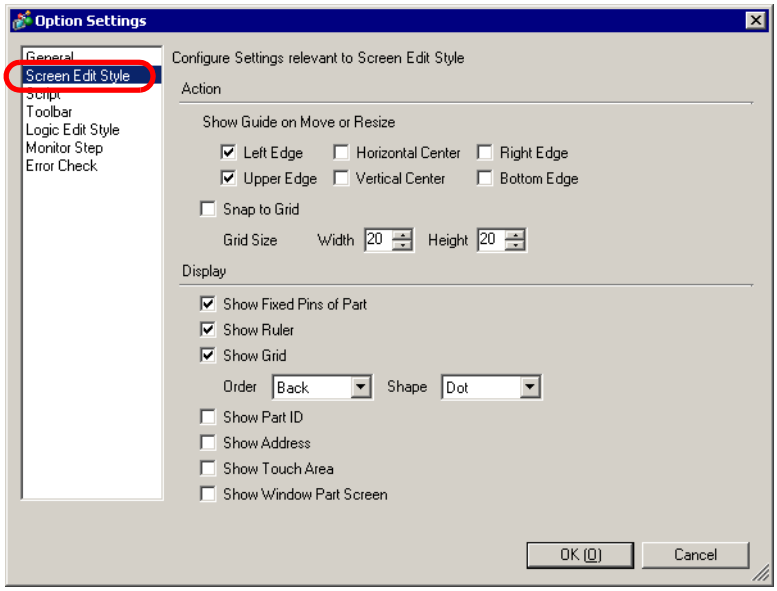
Configure general settings for the editor system.



Setting		Description
Set Online Update	Check for Update when the program starts	Set whether or not to perform an online update when the program starts.
Action	Language	Select the language of menus displayed on from [Japanese] or [English]. **NOTE** • After modifying this setting, you have to restart the GP-Pro EX.
Backup	Save Backup on Overwriting	Set whether or not to automatically back up the file before overwriting when you overwrite a project file. ☞ "5.3.2 Setup Procedure ■ Backup as a History Procedure" (page 5-18)

■ Edit Screen

Configure settings relevant to Screen Edit Style.



Setting	Description
Action	Set the actions for editing screens.
Show Guide on Move or Resize	Shows guides to place pictures or parts in alignment with the placed pictures or parts when moving them.
Left Edge	Displays a guide on move in alignment with the left edge.
Horizontal Center	Displays a guide on move in alignment with the horizontal center.
Right Edge	Displays a guide on move in alignment with the right edge.
Upper Edge	Displays a guide on move in alignment with the upper edge.
Vertical Center	Displays a guide on move in alignment with the vertical center.
Bottom Edge	Displays a guide on move in alignment with the bottom edge.
Snap to Grid	Displays a guide for Pictures/Parts on move in alignment with the grid.
Grid Size	Set the grid size.
Width	Set the grid size in the X-coordinate direction from 4 to 120.
Height	Set the grid size in the Y-coordinate direction from 4 to 120.
Display	Set the display for editing screens.
Show Fixed Pins of Part	Shows fixed pins of a Part. ☞ "5.13.5 [Work Space] Settings Guide ■ Screen Data List Window" (page 5-92)
Show Ruler	Shows the ruler.
Show Grid	Shows the grid.
Order	Select whether or not to show the grid at the [Front] or the [Back] of the pictures or parts.
Shape	Set the grid's shape from [Dot] or [Grid].

Continued

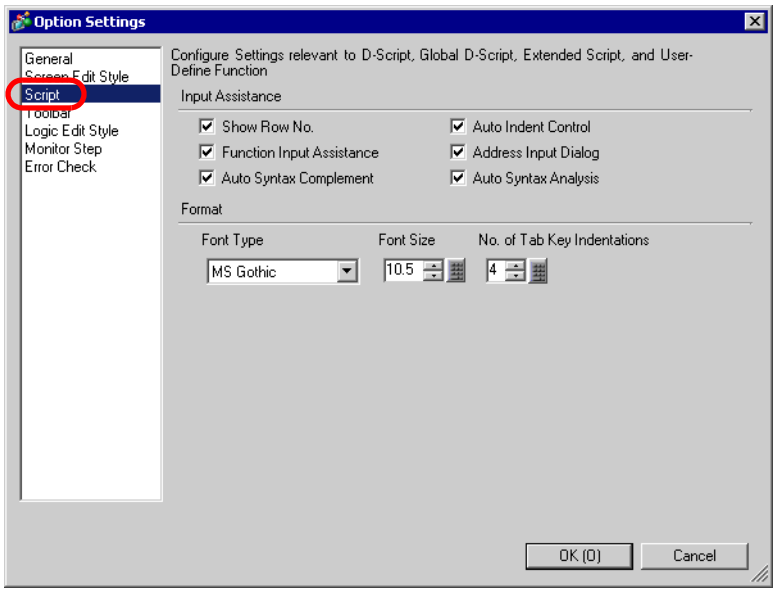
Setting		Description
Display	Show Part ID	Shows a Picture or Part's label.
	Show Address	Shows the address of a Part with address settings.
	Show Touch Area	Shows the area where you touch touchable Parts in orange.
	Show Window Part Screen	Shows Window Screens that refer to window Parts.

■ Script

Configure settings relevant to D-Script, Global D-Script, Extended Script, and User Define Function.

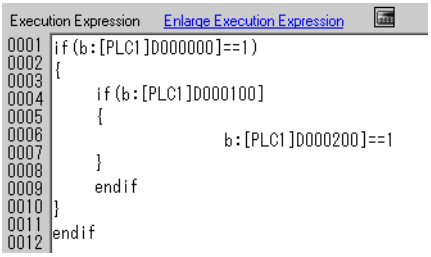
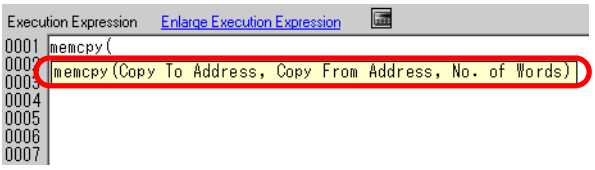
You can also specify this in the [Extended Script] and [Global D-Script] dialog boxes.

☞ "20.8.1 Common Settings Guide for D-Script" (page 20-48)



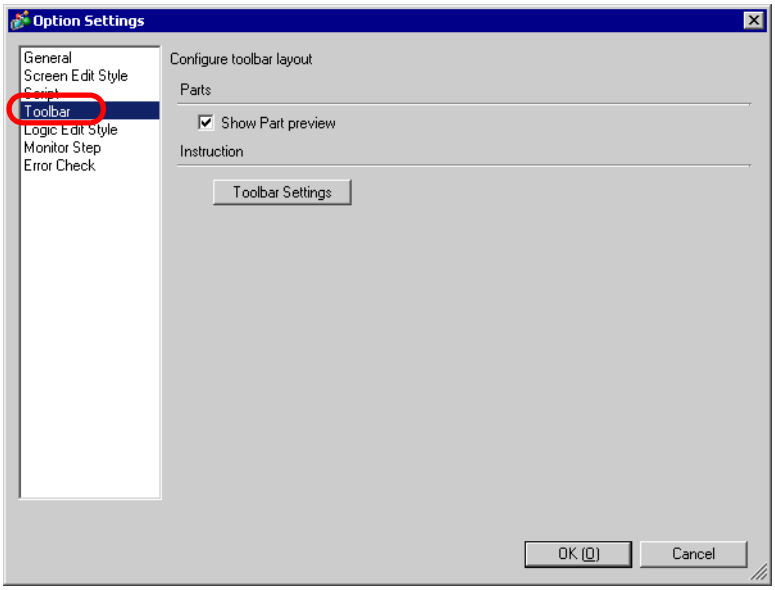
Setting		Description
Input Assistance		Configure settings of input assistance in D-Script, Global D-Script, Extended Script, and User Define Function.
	Show Row No.	Shows the row number to the right of the program.

Continued

Setting		Description
Input Assistance	Auto Indent Control	If you insert line feeds as below, tabs are automatically inserted according to the hierarchy. 
	Function Input Assistance	When the function and the initial bracket “(” are inputted as below, the function’s format is displayed. 
	Address Input Dialog	When creating a script, input a left-hand square bracket ([) and the [Input Address] dialog box will automatically display. You can input addresses in this dialog box.
	Auto Syntax Complement	When “if”or“loop”is inputted from the keypad, the remaining syntax is automatically placed.
	Auto Syntax Analysis	Automatically checks an execution expression being inputted when creating scripts and notifies the [Message Area] of the results if the execution expression has a problem. (e.g.) “Line 1:The expression is incorrect.)”
Format		Set the format for scripts.
	Font Type	Select the font type to use.
	Font Size	Set the font size to use from 8 to 72 by the unit of 0.5.
	No. of Tab Key Indentations	Set the number of tab key indentations to use from 1 to 8.

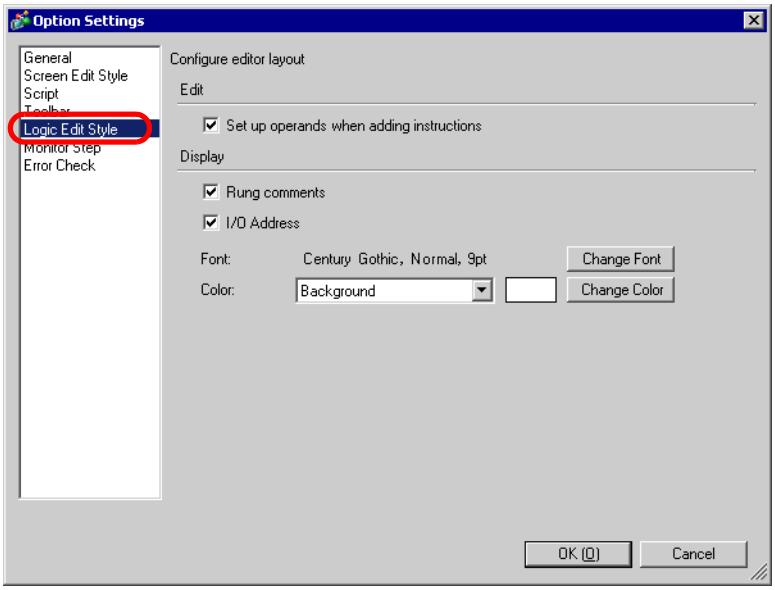
■ Toolbar

Customize each Toolbar.



Setting		Description
Parts	Show Part preview	Set whether or not to show each tool band's parts image.
Instruction		Select the logic instruction icon to be displayed on the toolbar.
	Toolbar Settings	Opens the [Toolbar Settings] dialog box. **NOTE** • For the toolbar settings, refer to the following. ☞ "29.2.4 Customizing the Toolbar" (page 29-7)

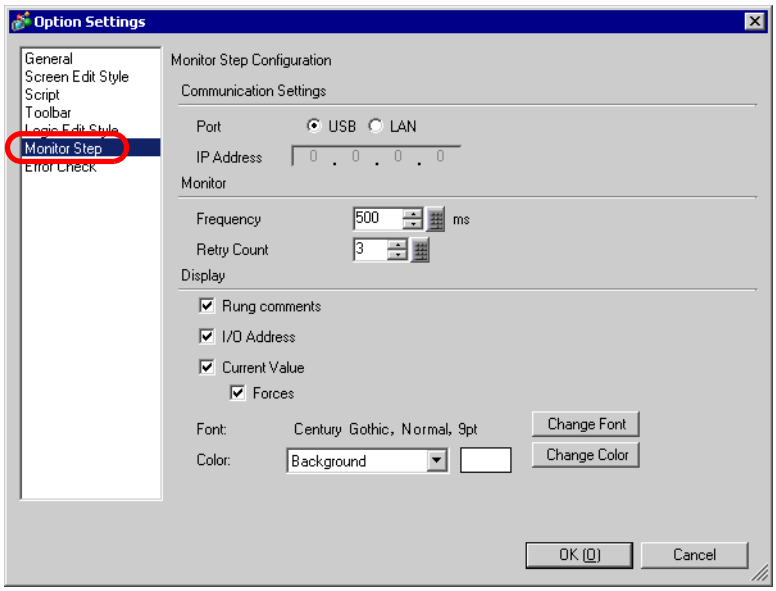
■ Logic Edit Style



Setting		Description
Edit	Set up Operands when Adding Instructions	Specifies operands at the same time as inserting the instruction in the logic programming.
Display	Rung comments	Displays row comments on the logic screen.
	I/O Address	Displays the I/O address if a symbol variable is allocated to an I/O terminal.
	Change Font	Configures the font for the logic screen. The selected font is used for all the characters on the logic screen.
	Color	Select [Background], [Rung Comment], [Instructions, Power Bar, Rung], [Operand], or [I/O Address] to change the color. Click [Change Color] and select the color in the dialog box.

■ Monitor Step

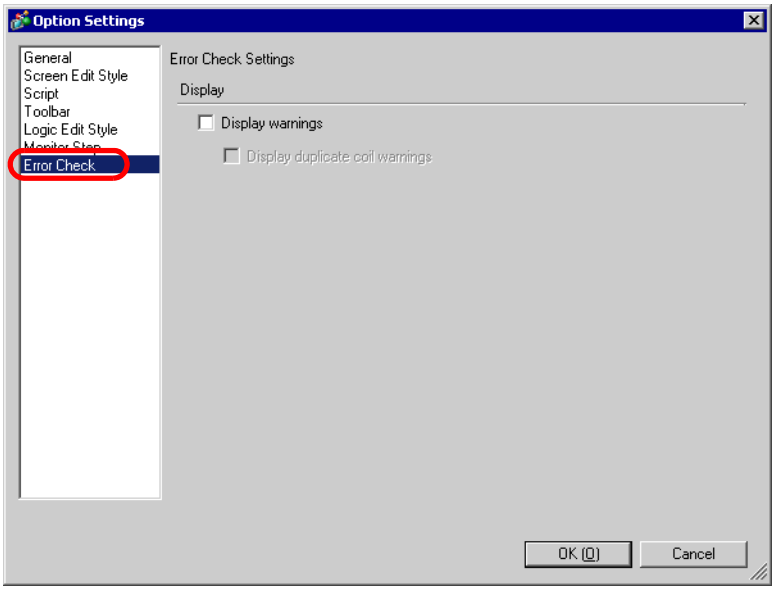
Configures the settings for monitoring logic programs online.



Setting		Description
Communication Settings	Port	From [USB] or [LAN], select the communication port for online monitoring.
	IP Address	If you select [LAN] for [Port], specify the IP Address.
Monitor	Frequency	Specifies the communication frequency from 200 to 3000.
	Retry Count	Specifies the communication retry count from 200 to 3000.
Display	Rung Comments	Displays row comments on the logic screen.
	I/O Address	Displays the I/O address if a symbol variable is allocated to an I/O terminal.
	Current Value	Displays the current values of symbol variables during online monitoring.
	Forces	Displays values that have been compulsorily changed during online monitoring.
	Change Font	Configures the font for the logic screen. The selected font is used for all the characters on the logic screen.
	Color	Select [Background], [Rung Comments], [Instruction, Power Bar, Rung], [Operand], [I/O Address], [Current Value], [Forces] or [Power Flow] to change the color. Click [Change Color] and select the color in the dialog box.

■ Error Check

Configures the error check settings.



Setting	Description
Display Warnings	Specify whether to display a warning in the error window after error checking. Unchecked: Only errors are displayed. Checked: Both errors and warnings are displayed.
Display duplicate coil warnings	Displays a warning in the error window after error checking if an address is used more than once.

5.13.8 [Common Settings] Settings Guide

■ Alarm Settings

☞ “19.9.1 Alarm Settings Guide” (page 19-63)

■ Sampling Settings

☞ “24.8.1 Sampling Settings Guide” (page 24-37)

■ Recipe Settings

☞ “25.10.1 Setup Guide for Common Settings (Recipe Settings)” (page 25-56)

■ Security Settings

☞ “22.5 Common Settings Guide (Security Settings)” (page 22-9)

■ Time Schedule Settings

☞ “23.4 Common Settings (Time Schedule Settings) Guide” (page 23-10)

■ Sound Settings

☞ “26.5.1 Common Settings (Sound Settings) Guide” (page 26-13)

■ Text Table Settings

☞ “15.7.3 Text Table Settings Guide” (page 15-49)

■ Global D-Script Settings

☞ “20.8.1 Common Settings Guide for D-Script” (page 20-48)

■ Extended Script Settings

☞ “20.8.1 Common Settings Guide for D-Script” (page 20-48)

■ Image Registration

☞ “10.5.1 Setup Guide for Common Settings (Image Registration)” (page 10-23)

■ Text Registration

☞ “15.7.2 Common Settings Guide (Text Register)” (page 15-48)

■ Mark Registration

☞ “9.12.3 Common Settings (Mark Registration) Settings Guide” (page 9-79)

■ Keypad Registration

☞ “16.5.2 Setup Guide for the Common Settings (Keypad Registration)” (page 16-23)

■ Movie Settings

☞ “27.9.3 Common Settings [Movie Settings (O)] Setting Guide” (page 27-91)

■ Video Module Window Settings

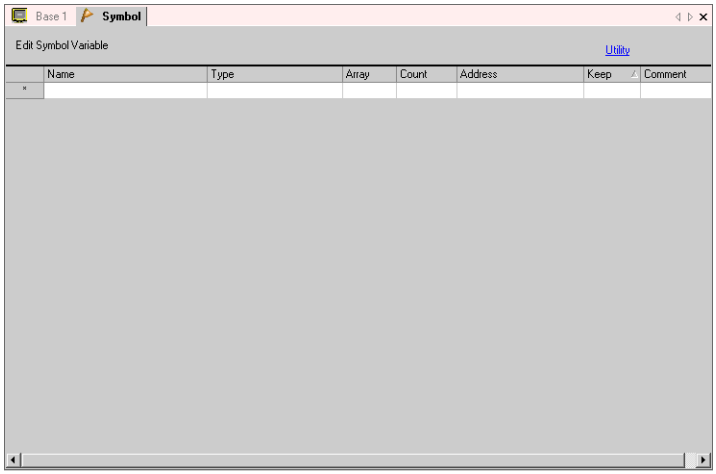
☞ “27.9.5 Setup guide of common settings [Video Module Settings]” (page 27-112)

■ Symbol Variable Settings

Displays the screen for registering symbol variables.

NOTE

- For details about registering symbol variables, refer to the following.
  ☞ "29.3.2 Using Symbol Variables with Arbitrary Names (Variable Format)" (page 29-19)
  ☞ "29.3.3 Using Symbol Variables with Fixed Addresses (Address Format)" (page 29-31)



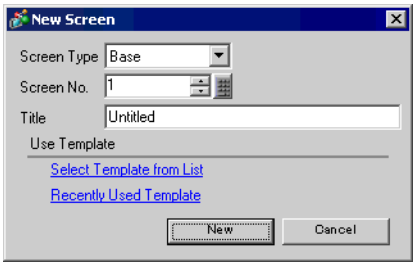
Setting	Description
Name	Specifies the symbol variable name.
Type	Specifies the symbol variable type. If you selected [Variable Format] for [Register Format], select the type from [Bit Address], [Word Address], [Bit Variable], [Integer Variable], [Float Variable], [Real Variable], [Timer Variable], [Counter Variable], [Date Variable], [Time Variable], or [PID Variable]. If you selected [Address Format] for [Register Format], select the type from [Bit Address] or [Word Address].
Array	Determines whether to specify arrays.
Count	Specifies the array size of an [Array].
Address	If you specified [Bit Address] or [Word Address] for [Type], specify the Device/PLC address.
Keep	Selects Keep/Clear.
Comment	Input comments.
Utility	• Import Imports CSV file format symbol variables. • Export Exports CSV file format symbol variables.

5.13.9 [Screen] Settings Guide

This section explains about each item displayed by selecting the [Screen (S)] menu.

■ New Screen

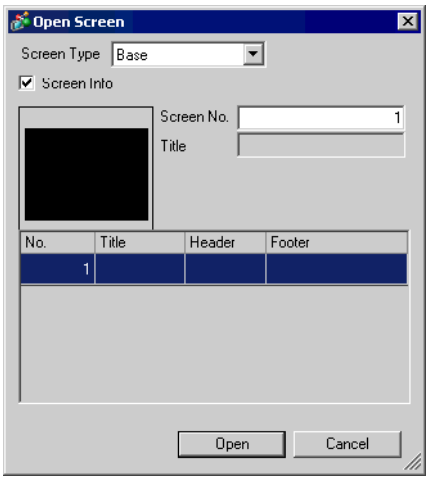
Create a new screen.



Setting		Description
Screen Type		Select the screen type to create or select a template from [Base], [Window], or [Logic].
Screen No.		If you selected [Base] for [Screen Type], specify the number of the screen to create from 1 to 9999. If you selected [Window], specify the number from 1 to 2000. If you selected [Logic], specify from SUB-01 to SUB-32.
Title		Set the title of a screen to create with up to 30 single-byte characters.
Use Template		Select a template.
	Select Template from List	Displays the [Select Template] dialog box to select a template.
	Recently Used Template	The names of recently used templates are displayed as popup.

■ Open Screen

Opens a screen.



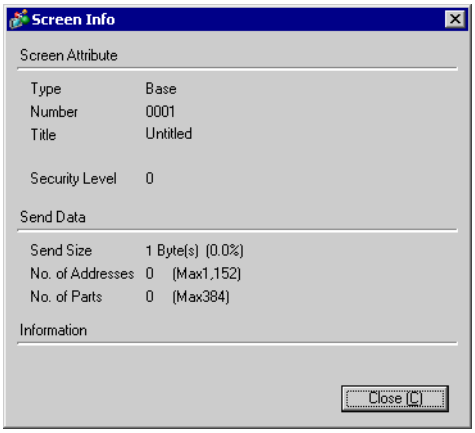
Setting		Description
Screen Type		Select the type of a screen to open from [Base], [Window], [Logic], or [I/O].
Screen Info		Set whether or not to display the information and preview of a screen to open.
	Screen No.	Displays the screen number selected on the display list. If you rewrite the number, the preview is changed.
	Title	Displays the screen title displayed in the preview.
Display List		Displays a list of all the screens in a project file.
	No.	Displays the number specified to the screen.
	Title	Displays the title specified to the screen.
	Header	When a Header is specified, the Header's [Title] is displayed.
	Footer	When a Footer is specified, the Footer's [Title] is displayed.

■ Close Screen

Closes the drawing screen.

■ Screen Information

Displays the specified screen information.



Setting		Description
Screen Attribute		Displays the information specified to the screen.
	Type	Displays the type of the specified screen with [Base], [Window] or [Logic]. If you open the [Screen Info] when the screen's Header/Footer can be edited, the Type is displayed with [Header] or [Footer].
	Number	Displays the number specified to the screen.
	Title	Displays the title specified to the screen.
	Security Level	Displays the security level specified to the screen.
Send Data		Displays the summary of data to send to the GP.
	Send Size	Displays the data size for one screen by the byte. Displays the usage rate of the screen total size in percentage in ( ).
	No. of Addresses	Displays the total number of addresses used for screens with [No. of Set Addresses (Max No. of Addresses)]. Displayed in red if it exceeds the maximum number of addresses.
	No. of Parts	Displays the total number of parts used for screens with [No. of Set Parts (Max No. of Parts)].
Information		Displays supplementary information on the specified screen.

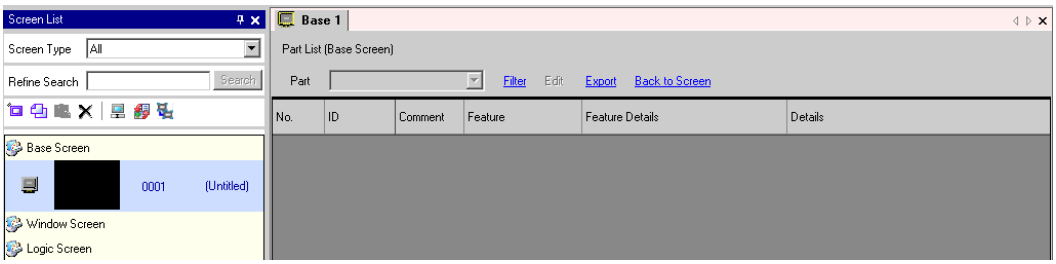
■ Change View

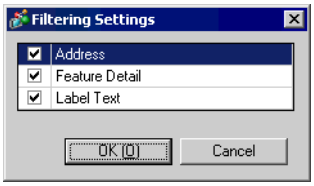
◆ Edit Screen

Changes the view to the drawing screen.

◆ Part List

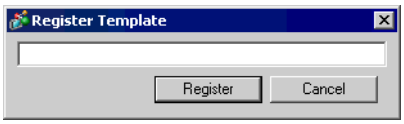
Displays a list of the attributes of the parts used on the selected screen. Does not display a list of [Draw], [Trigger Action], or [D-Script]. Displays a list of the attributes of the parts used on the selected screen. Does not display a list of [Draw], [Trigger Action], or [D-Script].



Setting	Description
Part	Select the part type to list from all the parts placed on the screen.
Filter	The [Filtering Settings] dialog box will appear. Set whether or not to display [Address], [Feature Detail], and [Label Text] on the Part List. 
Edit	Displays the setting dialog box for the part selected from the list.
Export	The [Export Parts List] dialog box will appear. Set the location to save the [Parts List] in a CSV file (*.csv).
Back to Screen	Changes the view to the drawing screen.
Display List	Lists the details of parts.
No.	Numbers are sequentially assigned to the placed parts from the oldest, starting from 1.
ID	Displays the part IDs.
Comment	Displays the Comments specified to the parts.
Feature	Displays each part's feature names. e.g.) Bit - Comparison
Address/ Address1	Displays the address types and addresses specified to the parts.
Feature Details	Displays the detail text for a Part's features.
Label/State 0	Displays the labels specified to the parts. If different labels are specified to each state of a part, a label is displayed for each state.
Details	Displays other detailed information such as coordinates where parts are placed. The display contents depend on parts.

■ Template Registration

Register the parts placed on the drawing screen except the header/footer as a template.



Setting	Description
Register Template	Set the title of a template to create with up to 30 single-byte characters.

5.14 Restrictions

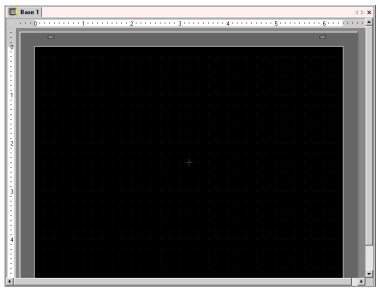
5.14.1 Restrictions for Creating Screens

■ Screen Type

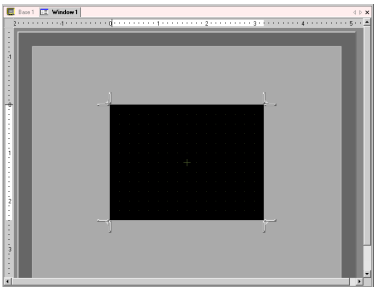
This section is about the types of screens created with project files.
A project file is mainly composed of two screens: a Base Screen and Window Screen. A Base Screen is a screen displayed on the GP. To display a screen on the GP, always use a Base Screen. A Window Screen is a screen called and displayed on a Base Screen. A Window Screen is used to display one screen on top of the other, such as a keypad input.

☞ "18.3 Displaying Windows" (page 18-7)

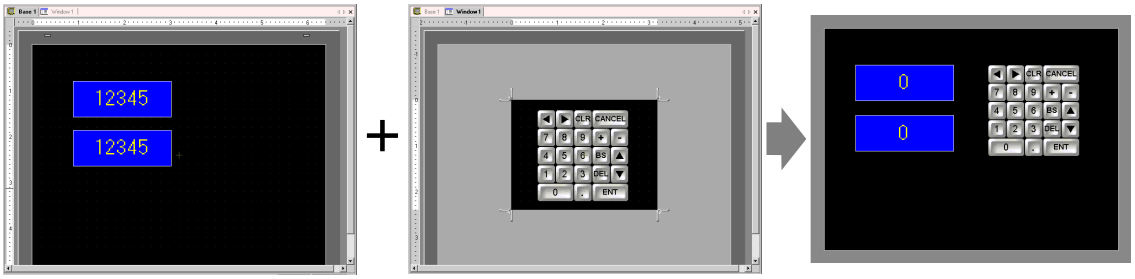
◆ **Base Screen**



◆ **Window Screen**



e.g.)



Base Screen + Window Screen

NOTE

- The logic screen and I/O screen are used for creating logic programs.

☞ "29.2.3 Logic Screens" (page 29-6)
☞ "31.3.1 I/O Terminals in the GP Built-in DIO ■ Displaying the I/O Screen" (page 31-12)

■ No. of Screens that can be Created

Screen Type	Allowable Setting No. Range for Screens
Base Screen	1 to 9999
Window Screen	1 to 2000

■ Data Capacity per Screen

The maximum capacity per screen is approximately 1 Mbyte.
The maximum capacity of the area that can maintain created screen data ([User Screen Area]) depends on each GP model.

☞ "1.3 List of Supported Functions by Device" (page 1-4)

■ No. of Features that can be Placed on a Screen

The maximum allowable number of parts and features placed on a single screen is as follows. Each number is the maximum allowable number of parts on a newly created screen without any settings.

NOTE

- The total number of parts that can be placed on a single screen is 384. The maximum number of addresses that can be specified is 1,152.

Part	Feature Type	Base Screen	Window Screen*1
Alarms	Summary	1	1
	Show History	384	
Text Alarm	—	1	1
Graph	Normal Graph	384	
	Statistical Graph		
	Meter Graph		
Key Part	—	384	
Data Display	Numeric Display*2	384	
	Text Display *2	384	
	Date/Time Display	384	
	Statistical Data Display	384	
	Show Limit Value	384	
Picture Display	ON/OFF Display	384	
	State Display		
	CF Image Display		
	Move Display (only when Mark is selected)	30	
Switch/Lamp	Bit Switch	384	
	Word Switch		
	Screen Change		
	Special Switch		
	Selector Switch		
	Lamp		
Window*3	Window	384	0
	Global Window		
Movie Player	—	1	

Continued

Part	Feature Type	Base Screen	Window Screen*1
Video Module Display	—	512*4	0
Message Display	Direct Input	384	
	Text Display		
D-Script	—	—*5	
Sampling Data Display *2	—	1	1
Historical Trend Graph*6	—	8	
Data Block Display Graph *6	—		
Special Data Display	Data Transmission	1	1
	Filing	384	
	Show CSV *2	1	1
	File Manager	1	0
Trigger Action	Bit Action	384	
	Word Action		
	Screen Change		
	Draw Action		

*1 A maximum of 3 Windows can be displayed on the GP screen at the same time. For more details about displaying Windows, refer to the following:
"18.8.2 Restrictions for Show Window ■ Displaying multiple windows on a single screen" (page 18-30)

*2 You cannot draw a Sampling Data Display and Special Data Display (Show CSV) at the same time. The same goes for drawing a Special Data Display (Show CSV) and a Data Display set up with Input Permit.

*3 Up to three window parts with the [Continuous Read] option (two if using Global Windows) can be placed on a single screen. If three [Continuous Read] windows are placed on a screen, any additional windows will not operate.

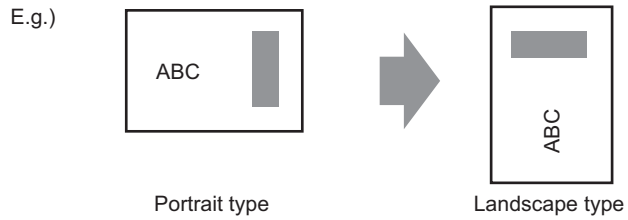
*4 You can display only one Video Module window on the GP screen at once.

*5 The number of D-Scripts setting depends on the number of setting addresses on 1 screen (up to a total of 1,152) and the volume of screen data.

*6 Maximum 8 [Historical Trend Graphs] and [Data Block Display Graphs].

■ Screen Display

- If you change the GP type from vertical to horizontal or from horizontal to vertical, the drawing content is displayed with a 90-degree rotation. Select the [Edit] menu - [Rotate/Flip] command to edit the screen. Be sure to confirm the screen after changing it.



- If you change from a large resolution GP type to a small resolution GP type, the data that exceeds the range due to the change is not displayed. If you change to a large resolution GP type again, the data that exceeded the range is displayed.
  The maximum number of display characters on a part in operation differs between a small resolution GP type and a large resolution GP type. If you change an alarm message created with a large resolution GP type to a small resolution GP type, any part that does not fall on the message screen is not displayed.
- When you reduce the screen edit area with the zoom function, some drawings may not display correctly, depending on the magnification.

5.14.2 Notes on CF-Card Saving

■ Notes on CF-Card Saving

- While data is being written to the CF-card, changes of parts and screens may slow down.
- It may take several seconds to write data, depending on the amount.
- After the Status data is read out from the GP, before the next command can be written be sure to allow time equal to at least one communication cycle[*1] or one Display Scan Time[*2] period, whichever is longer.
- Do not call up screens that use the CF-card when it is not installed in the GP. Otherwise, they will not function properly.
- If a write error occurs, any file that has not finished loading may remain on the CF-Card.
- When overwriting a file by transferring data to the CF-card, the CF-card must have enough free room to allow the data. If the data is larger than the available space, a write error will occur.
- When saving to the CF-card, if the target folder (\ALARM) does not exist, a folder will be automatically created, and the data will be saved there. However, if the CF-card does not reset or the folder can not be created, a read error will occur.
- There is a limit to the frequency that data can be written to the CF-card (500 KB of data can be rewritten around 100,000 times).

■ CF-Card Usage Warnings

- When removing the CF-card, verify that the access lamp is switched off. There is a chance that CF-card data can be lost or damaged.
- While accessing the CF-card, do not turn the GP unit off, reset the GP, or remove the CF-card. Create a preset verification screen for information about CF-card access. Turn off power, reset, open the CF-card cover, or remove the CF-card only after verifying that screen.
- When inserting the CF-card in the GP unit, make sure you have the correct side up and the correct location for the CF-card connector. If installed incorrectly, damage can occur to the data or to the CF-card/GP unit.
- Please use a CF-card made by Pro-face. If using another company's CF-card, damage may occur to the CF-card's data.
- Please make sure to back up all CF-card data.
- Please refrain from doing the following, as it can result in damage to data and equipment:
  - Bending the CF-card
  - Dropping the CF-card
  - Spilling water on the card
  - Touching the CF-card's connectors directly
  - Disassembling or modifying the CF-card

*1 The Communication Cycle Time is the time from when the GP requests data from the external device to when the data arrives. This value is stored in internal device LS2037 as a binary value, in units of 10 ms.

*2 Display Scan Time is the time required to process one screen. This value is stored in internal device LS2036 as a binary value, in millisecond units.

■ Screen Capture

- It takes five to six seconds to capture a screen, and the file size is approximately 200 KBytes (when the Image Quality is 80).
- The file size and capture time depend on the image quality and screen size.
- Part displays are not updated during capture.
- If you capture a screen with the Blink option, the captured image is displayed with no blink.
- If you create a file with other actions than screen capture while the CF-card is inserted, the file is overwritten with the next [File No. Auto Increment].
- When you use [File Auto Delete], it may take some time to delete many files. All files are deleted so this can take from a few seconds to a few minutes.

■ SRAM Auto Backup

- Make sure the CF-Card free space is larger than the backup SRAM size. Free space is checked before the process execution. If there is no sufficient free space in a CF-card, data is not saved in the CF-card.
- When you use the CF-card storage feature, confirm that the CF-card storage control address has no data. You can save the following data in a CF-card.
  Filing Data, Logging Data, Line Chart Data, Sampling Data (Data Sampling's Data), and Alarm Data
- If you execute the backup SRAM's backup while executing the CF-card storage feature, the backup does not start until the CF-card storage feature finishes. During this time the write to the CF-card is interrupted.
- While executing the backup SRAM's backup, the process of CF-card storage feature is interrupted. When automatically writing to the CF-card with the logging feature's loop action, the logging action is also interrupted until the write to the CF-card starts.
- Only one backup file can be saved in a CF-card.
- If you execute [Initialize CF-Card] under [Initialize Memory] in GP offline mode, a SRAM folder will be created.
- If you execute CF-Card → SRAM (Restore) in GP offline mode, all the saved data (such as sampling data) will be replaced with the newly stored data.
- If you execute CF-Card → SRAM (Restore) in GP offline mode, the adjusted values for Brightness, Contrast, and Sound Volume will not change. The adjusted values will be applied after you turn ON the power again or after the GP goes into operation mode.
- If you execute CF-Card → SRAM (Restore) in GP offline mode, the stored Japanese FEP learning information will be overwritten. For this reason, the display order of the convert-to characters may change according to the frequency of use.