

SYSMAC

CX-Designer

Ver. 1.0

NS-CXDC1-V1

OPERATION MANUAL

OMRON


CX-Designer
Ver. 1.0
NS-CXDC1-V1
Operation Manual


Produced November 2005

Notice:

OMRON products are manufactured for use according to proper procedures by a qualified operator and only for the purposes described in this manual.

The following conventions are used to indicate and classify precautions in this manual. Always heed the information provided with them. Failure to heed precautions can result in injury to people or damage to property.

 **DANGER** Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. Additionally, there may be severe property damage.

 **WARNING** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury. Additionally, there may be severe property damage.

 **Caution** Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury, or property damage.

OMRON Product References

All OMRON products are capitalized in this manual. The word “Unit” is also capitalized when it refers to an OMRON product, regardless of whether or not it appears in the proper name of the product.

The abbreviation “Ch,” which appears in some displays and on some OMRON products, often means “word” and is abbreviated “Wd” in documentation in this sense.

The abbreviation “PLC” means Programmable Controller. “PC” is used, however, in some Programming Device displays to mean Programmable Controller.

Visual Aids

The following headings appear in the left column of the manual to help you locate different types of information.

Note Indicates information of particular interest for efficient and convenient operation of the product.

1,2,3... 1. Indicates lists of one sort or another, such as procedures, checklists, etc.

Terminology

| | |
|--------------|--|
| NS-series PT | A Programmable Terminal in the NS Series manufactured by OMRON. |
| PLC | A Programmable Logic Controller manufactured by OMRON. |
| Host | A PLC, factory computer, personal computer or other controller controlling an NS-series PT. |
| NS-Designer | The NS-NSDC1-V□ NS-Designer produced by OMRON. The NS-Designer is an applications software package that enables creating screen data for NS-series PTs. |
| CX-One | The CXONE-AL□□C-E CX-One FA Integrated Tool Package produced by OMRON. This applications software package provides all of the software packages for OMRON PLCs and components. |
| CX-Designer | The NS-CXDC1-V1 CX-Designer produced by OMRON. |

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About this Manual:

The CX-Designer is a software package that enables creating screens for OMRON Programmable Terminals. Please be sure you understand the functions and performance of the CX-Designer to ensure correct application of the Programmable Terminals.

Please read this manual and related manuals carefully and be sure you understand the information provided before attempting to use the CX-Designer.

Section 1 provides an overview of the CX-Designer and its features and explains basic operating methods.

Section 2 describes how to install and uninstall the CX-Designer.

Section 3 describes the CX-Designer menus and basic procedures.

Section 4 describes convenient functions of the CX-Designer.

The **Appendices** provide a comparison between the CX-Designer and NS-Designer, tables of short-cut keys, and data transfer procedures between different versions of NS-series PT.

Related Manuals:

The manuals related to using the CX-Designer are listed below. Manual suffixes have been omitted. Please be sure you have the most recent version for your area.

Installing the CX-Designer

CX-Designer Operation Manual - - - - - V088

This manual describes how to install the CX-Designer and the user interface. It also describes characteristic functions and application methods.

Confirming Functional/Fixed Object Setting Procedures when Using the CX-Designer

CX-Designer Help

The online help feature explains CX-Designer operating methods and settings (including detailed settings for functional and fixed objects).

It also explains how to transfer screen data to the NS-series PT.

Using NS-series PT Functions and Troubleshooting Errors

NS-Series PT Programming Manual - - - - - V073

This manual describes using NS-series PT functions and application methods. It also provides troubleshooting methods in the event that problems occur with the PT.

Checking NS-series PT Functions, Operations, and Restrictions

NS-V1/V2-series PT Setup Manual - - - - - V083

This manual describes installation and connection procedures, general specifications, and other hardware information for NS-V1/V2-series PTs (NS12-V1, NS10-V1, NS8-V1, NS5-V1, and NS5-V2).

NS-series PT Setup Manual - - - - - V072

This manual describes installation and connection procedures, general specifications, and other hardware information for NS-series PTs (NS12, NS10, and NS7).

Installing the CX-Designer from the CX-One

CXONE-AL□□C-E CX-One Setup Manual - - - -W444

This manual provides an overview of the CX-One FA Integrated Tool Package and describes installation methods.

Using an NS-series PT for the First Time

CX-Designer Introduction Guide - - - - -V089

This tutorial describes using a NS-series PT for first-time users, from simple screen creation to system operation.

Using NS-series PT Macros

Macro Reference (Installed from CX-Designer CD-ROM.)

The online help for the CX-Designer provides detailed descriptions of the NS-series PT macro function. The same level of detail is also provided in this reference manual, which is installed on the hard disk as a PDF file when the CX-Designer is installed. Use either the online help or this reference as required.

Checking PLC Functions and Operation

Operation Manuals for the PLC Being Used

For information on PLC operation and functions, refer to the operation manuals for the CPU Unit, Special I/O Units, CPU Bus Units, Communications Units, or other Units that you are using.

Read and Understand this Manual

Please read and understand this manual before using the product. Please consult your OMRON representative if you have any questions or comments.

Warranty and Limitations of Liability

WARRANTY

OMRON's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by OMRON.

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In no event shall the responsibility of OMRON for any act exceed the individual price of the product on which liability is asserted.

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Application Considerations

SUITABILITY FOR USE

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of products in the customer's application or use of the products.

At the customer's request, OMRON will provide applicable third party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system, or other application or use.

The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this manual.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCTS ARE PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

PROGRAMMABLE PRODUCTS

OMRON shall not be responsible for the user's programming of a programmable product, or any consequence thereof.

Disclaimers

CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons.

It is our practice to change model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the products may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your OMRON representative at any time to confirm actual specifications of purchased products.

DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

PERFORMANCE DATA

Performance data given in this manual is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

ERRORS AND OMISSIONS

The information in this manual has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical, or proofreading errors, or omissions.

SECTION 1

Overview

This section describes the features of the CX-Designer and the startup procedures for NS-series PTs for first-time users.

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1-1 Features of the CX-Designer

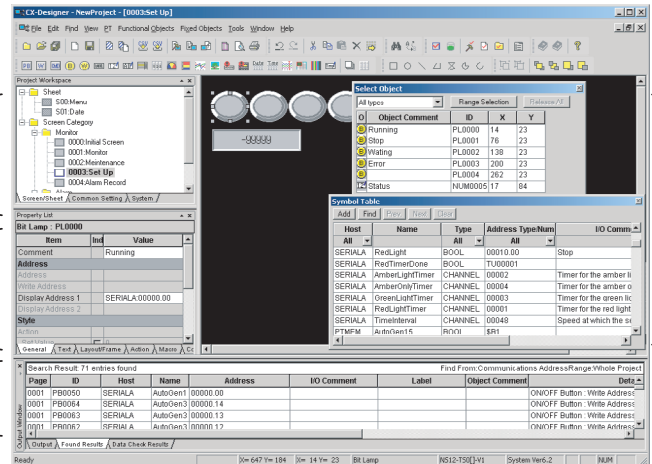
The CX-Designer is a screen creation tool that can be run on Windows 98 SE, NT, Me, 2000, or XP to create screen data for NS-series Programmable Terminals (PTs).

The CX-Designer has a variety of functions to enable efficient screen creation and debugging.

Project Workspace
The entire project structure can be displayed in a directory tree.

Property List
Functional object property settings can be changed and checked without having to open a properties dialog box.

Output Window
Displays data such as search results and error details.



Edit Screens
Screen data displayed on the PTs can be created for a group of objects.

1-1-1 Features

Screens Can Be Created Using Symbols

Symbols can be used with the CX-Designer. Symbols are address to which names have been assigned. In addition to the existing method of directly inputting addresses to be browsed by functional objects, the addresses can also be set by using symbols (names). When the address allocated for a symbol is changed, the address is changed for all objects that access that symbol. This makes it easy to change address allocations and reuse screens. Symbols can also be shared by the CX-Designer and CX-Programmer by copying the symbols from CX-Programmer symbol tables to the CX-Designer.

Refer to 4-1 *Creating Screens Using Symbols* for details.

Project Management Using Project Workspace

Screens, alarms, and other common settings can be displayed in a directory tree in the CX-Designer project workspace. Projects are easy to manage because the entire project structure can be checked at a glance.

Screens and settings can be copied between multiple CX-Designer project workspaces. Screens can also be copied within the same project workspace. Refer to 4-2 *Using Screens from Other Projects* for details.

Easy Reuse of Screens

Screens and settings can be copied between multiple CX-Designer project workspaces. Screens can also be copied within the same project workspace. The common settings accessed by screens are also copied automatically.

If symbols are used, it also becomes easy to change addresses after screens have been copied. Refer to 4-2 *Using Screens from Other Projects* for details.

Screen Classification by Application for Easy Management

Screens can be classified into any category, e.g., by application, and displayed in a directory tree. When screens are created, consecutive screen numbers are automatically applied to screens in the same category. These numbers can also be changed. This makes screen management even easier.

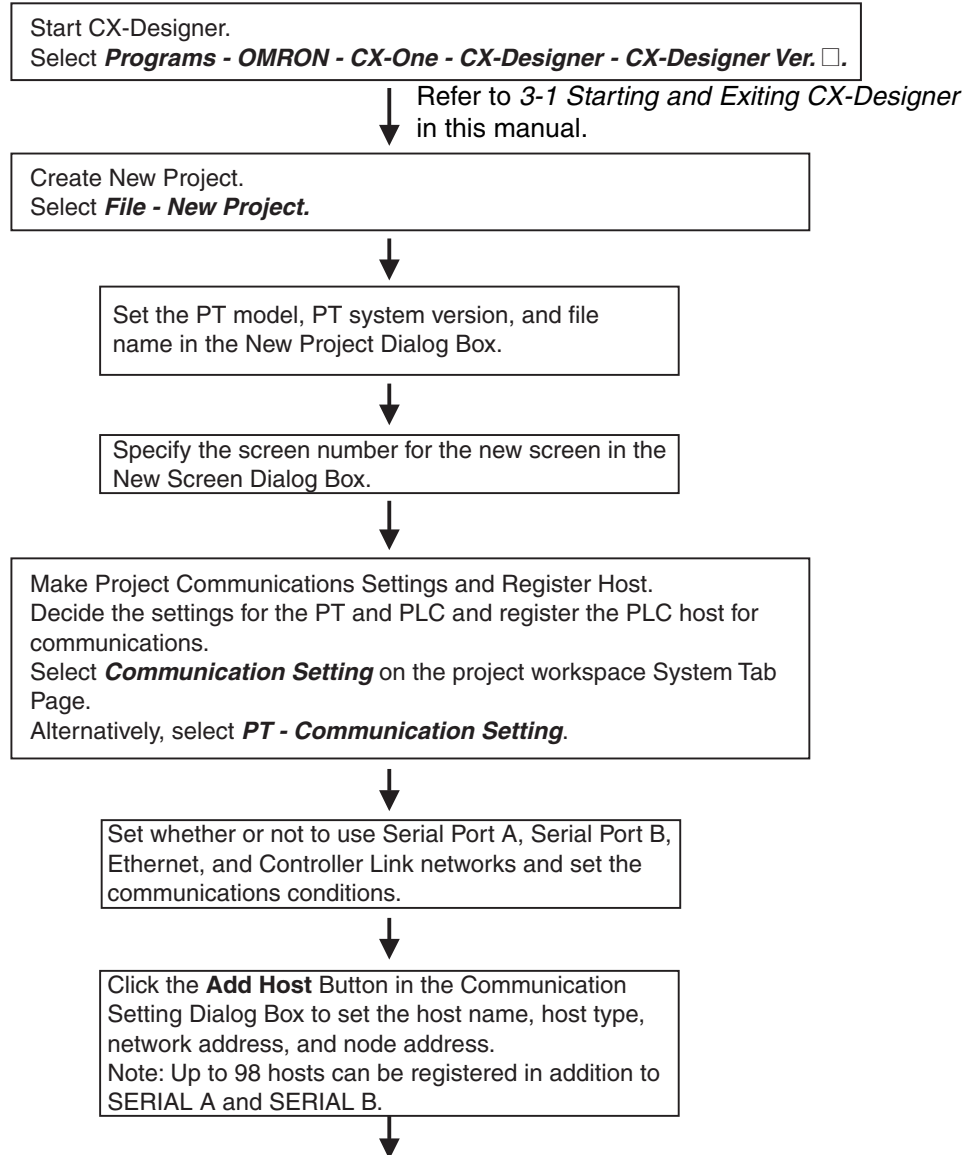
Refer to 4-3 *Classifying Screens by Application* for details.

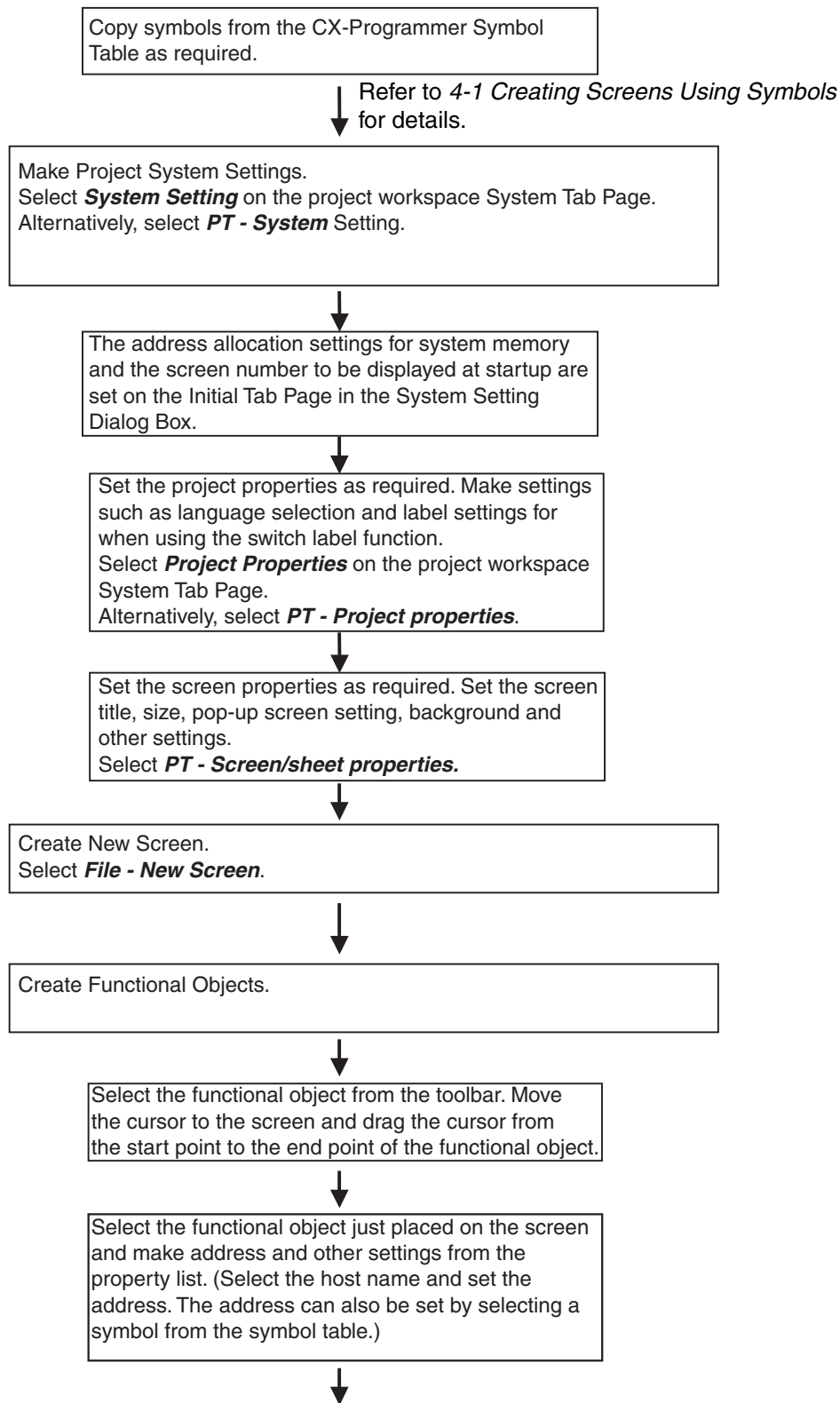
| | |
|---|--|
| Functional Object Property Settings Using Property Lists | <p>Functional object settings can be changed and checked without having to open a dialog box.</p> <p>When more than one object is selected, common settings for those objects can be changed in one operation from the property list.</p> <p>Refer to <i>4-4 Checking and Changing Functional Object Properties without Opening Property Setting Dialog Boxes</i>.</p> |
| Edit Properties from Lists | <p>Properties of objects on the screen can be displayed in table format and the settings changed.</p> <p>Settings for more than one object can be changed at the same time and consecutive addresses can be automatically set.</p> <p>Refer to <i>4-5 Listing and Editing Functional Object Properties</i> for details.</p> |
| Select and Display Specified Objects | <p>Objects on the screen can be listed and specified objects selected. The screen display can also be limited to specified objects.</p> <p>This makes it easy to check and change the property settings for overlapping objects.</p> <p>Refer to <i>4-6 Editing Overlapping Objects</i> for details.</p> |
| Find Macros | <p>Embedded macros can be listed.</p> <p>This improves debugging efficiency by no longer requiring individual object property settings to be opened to find objects that use macros.</p> <p>Refer to <i>4-9 Searching for Embedded Macros</i> for details.</p> |
| Automatic Transfer of Edited Data Only | <p>Once screens have been transferred to the PT, quick transfers of only the changed data can be made automatically. Screens are edited and data transferred many times during debugging, so the quick transfer function greatly reduces transfer time and increases efficiency.</p> <p>Refer to <i>4-10 Transferring Only Edited Data to PT</i> for details.</p> |
| Easy Document Creation | <p>Common settings and property settings for objects in screens can be output in rich text format (.rtf). The output settings are displayed in a list for easier viewing.</p> <p>Screen images can also be output to bmp and jpg files.</p> <p>Refer to <i>4-11 Creating Documents</i> for details.</p> |
| Note | <p>Project data created using NS-Designer can be used with CX-Designer. Project data created using CX-Designer can also be used with NS-Designer. (Only project data versions supported by NS-Designer, however, can be used.)</p> |

1-2 Basic Operation Procedures

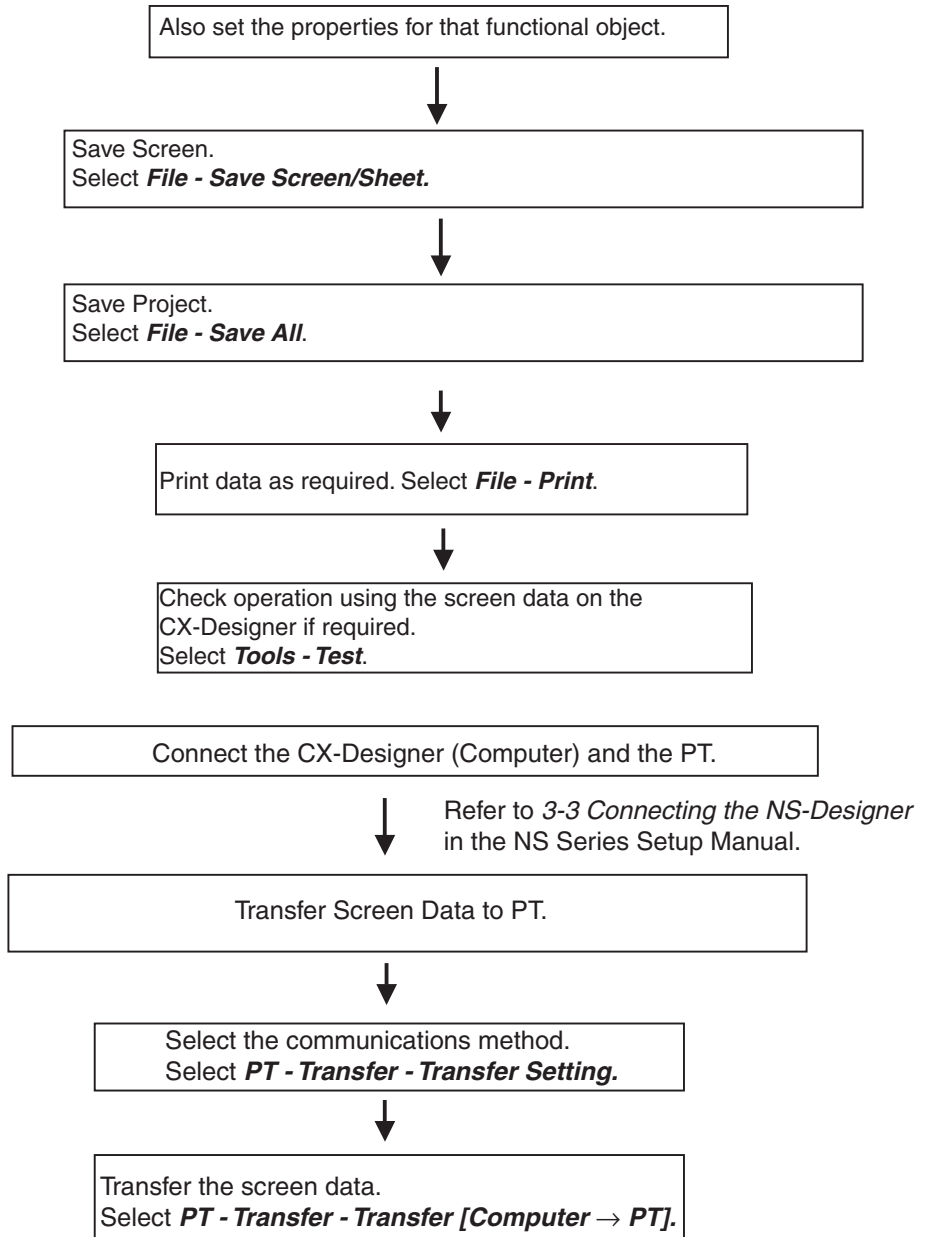
This section describes the basic procedures for creating screens using CX-Designer, transferring data to the PT, and displaying screens. Refer to the CX-Designer online help and the *NS Series Setup Manual* and *NS Series Programming Manual* for details.

Creating Projects and Screens on the CX-Designer

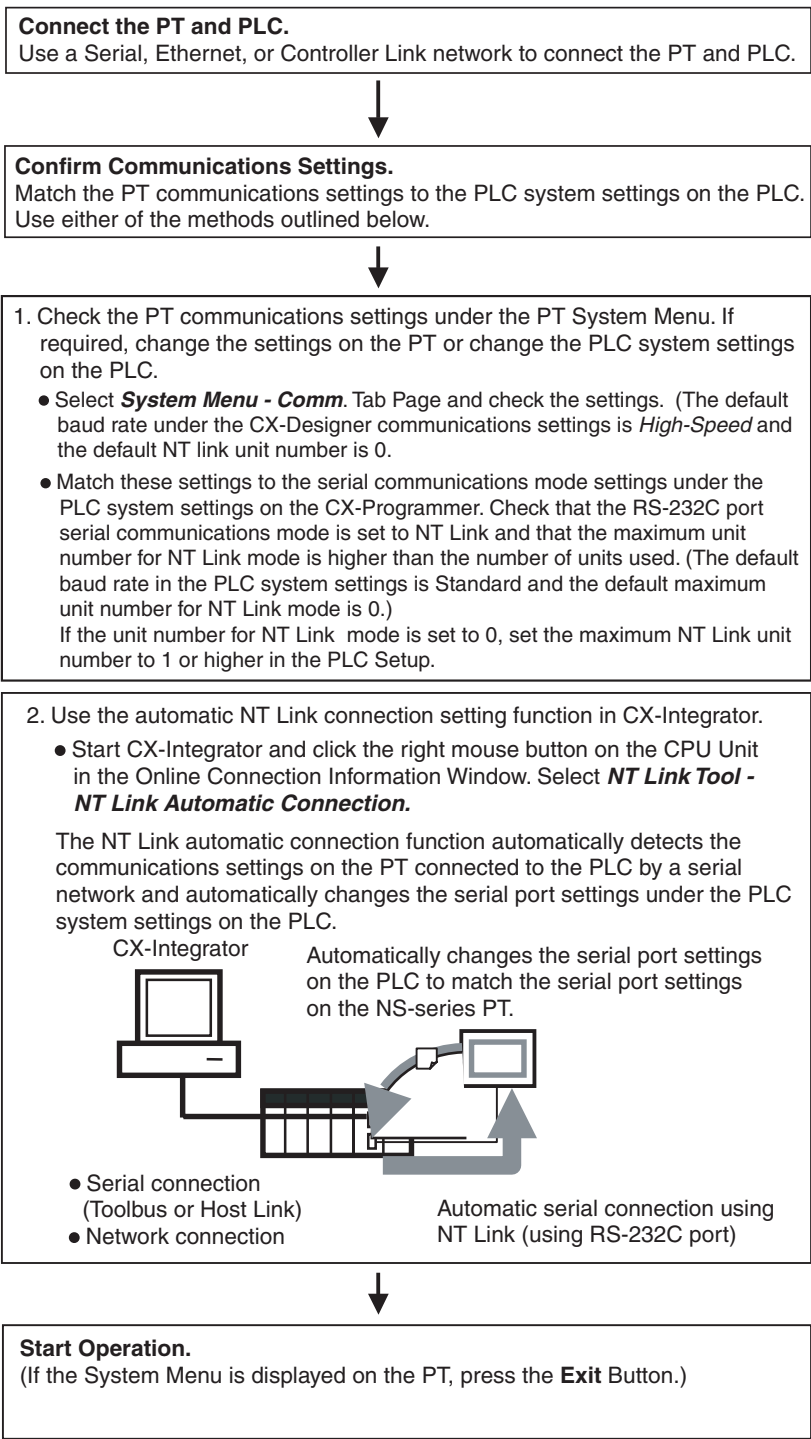




Transferring Projects and Screens to the PT



Communications between the PT and PLC



Refer to 6-10 Starting Operation in the NS Series Setup Manual.

SECTION 2

Setting Up the CX-Designer

The CX-Designer must be installed on the computer before it can be used for the first time. The CX-Designer is application software that runs on a Windows 98 SE, NT, Me, 2000, or XP operating system. This section describes how to install the CX-Designer assuming that the Windows 98 SE, NT, Me, 2000, or XP operating system has already been installed on the computer.

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2-1 Preparations for Installation

Check to be sure that the following system requirements have been met before installing the CX-Designer.

System Requirements The system requirements for the CX-Designer are given in the following table.

| Item | Requirement | | | |
|--|--|--|---|----------------------|
| Operating system (OS) (See note 1.) Japanese or English system | Microsoft Windows 98SE | Microsoft Windows NT (Service Pack 6a) | Microsoft Windows 2000 (Service Pack 3 or higher) or Microsoft Windows Me | Microsoft Windows XP |
| Computer | IBM PC/AT or compatible with a Pentium II 333 MHz or faster processor (Pentium III 1 GHz or faster recommended.) | | | |
| Memory | 256 MB minimum (See note 2.) | | | |
| Hard disk | Approx. 700 MB or more available space is required to install. | | | |
| Display | SVGA (800 × 600) or better high-resolution display with 256 colors min. | | | |
| Disk drive | CD-ROM drive | | | |
| Communications ports | One RS-232C port min. (See note 3.) | | | |
| Other | Internet access is required for online user registration, including a modem or other hardware connection method. | | | |

(1) CX-Designer Operating System Precaution

The CX-Designer will not run on Microsoft Windows 95 or any other OS not listed above. If such an OS is being used on the client computer, the OS must be upgraded before installing the CX-Designer. System requirements and hard disk space may vary with the system environment.

(2) Required to connect the NS-series PT to an RS-232C port.

2-2 Installing the CX-Designer

Install the CX-Designer in the hard disk.

To install the CX-Designer, execute the installation program provided.

For details on procedures for installing the CX-Designer from CX-One FA Integrated Tool Package, refer to the *CX-One Setup Manual* provided with CX-One.

| Cat. No. | Model | Manual name | Contents |
|----------|---------------|---------------------|---|
| W444 | CXONE-AL□□C-E | CX-One Setup Manual | Installation and overview of CX-One FA Integrated Tool Package. |

Note If the CX-Designer was previously installed from the CX-One and it's necessary to install it from the individual CX-Designer CD-ROM, always uninstall the CX-Designer using the following procedure before installing it from its individual CD-ROM. The CX-Designer will not operate properly if it is installed without first uninstalling it.

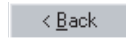
- 1,2,3...**
1. Insert the CX-One installation disk 1 into the CD-ROM drive.
 2. Select the *Modify* Option to enable modifying the Support Software that is installed.
 3. In the Select Features Dialog Box, clear the selection of only the CX-Designer. Do not change any other selections.
 4. Continue by following the instructions in the dialog boxes to modify the installation and uninstall CX-Designer.
 5. Once the CX-Designer uninstallation process has been completed, place the individual CD-ROM disk for the CX-Designer into the CD-ROM drive and install the CX-Designer. (See note.)

Note If the version of the CX-Server bundled on the individual CX-Designer CD-ROM is lower than the version of the CX-Server bundled with the CX-One, install only the CX-Designer and NOT the CX-Server. If a version of CX-Server that is lower than the version with the CX-One is installed, the CX-One will not operate properly.

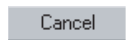
The main buttons that are displayed during installation are as follows:



Confirms the settings in the window displayed and moves to the next window.



Cancels the settings in the window displayed and returns to the previous window.



Closes the window currently being displayed. The settings in the window are cancelled.

Installation can be cancelled by pressing this button in the installation window. A confirmation message will be displayed.



The actual folder configuration is displayed in a tree format, from which the folders where installation files are to be installed can be selected.

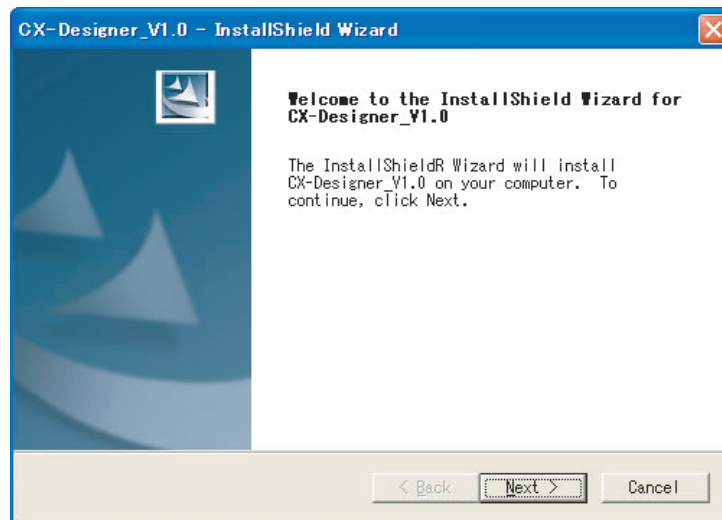
Installation Procedure

1,2,3...

1. Start up Windows 98SE, NT, Me, 2000, or XP.
2. Close all applications before executing installation. Place the CX-Designer CD-ROM in the CD-ROM drive. The setup program is started automatically. If the setup program does not start automatically, such as after executing uninstall, locate Setup.exe in the CD-ROM using Windows Explorer, and then double-click the file to execute the setup program.

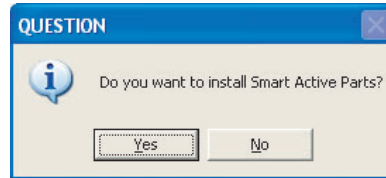
Note If CX-Designer is already installed, a dialog box to confirm deletion of this version will be displayed. Click the OK Button to start deleting this version. To exit the setup program, click the Cancel Button and then click the Exit Button. FinisGateway and CX-Server will not be uninstalled by this operation.

3. The CX-Designer Setup Wizard will be displayed. Install the CX-Designer by following the instructions in the Setup Wizard.



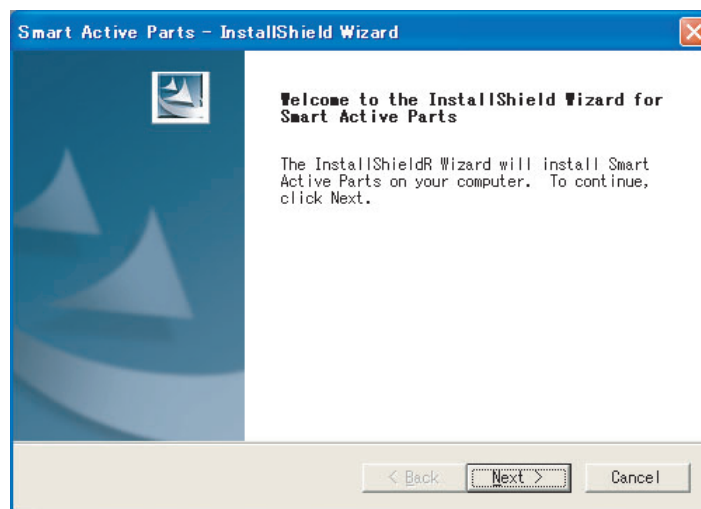
4. During installation, the installation progress is displayed as a percentage.

- When CX-Designer installation has been completed, a message to confirm installation of Smart Active Parts will be displayed. Click the **Yes** Button to start the installation. If Smart Active Parts installation is not required, click the **No** Button and proceed to step 10.

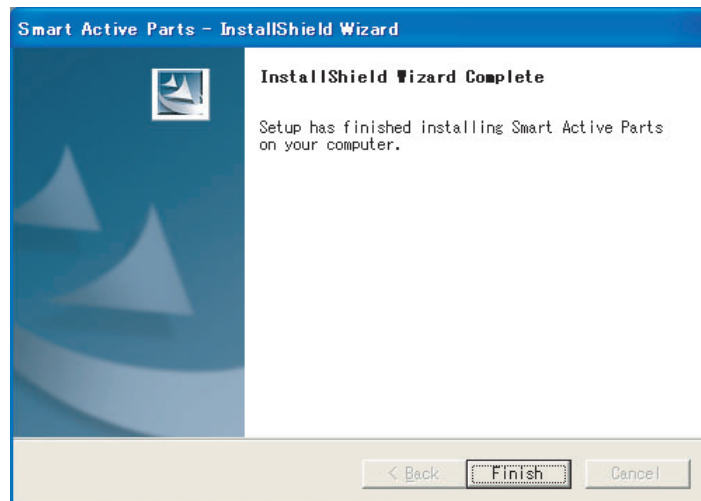


Smart Active Parts are libraries containing setting/monitoring screens (e.g., Position Control Unit setting screens and Temperature Controller monitoring screens).

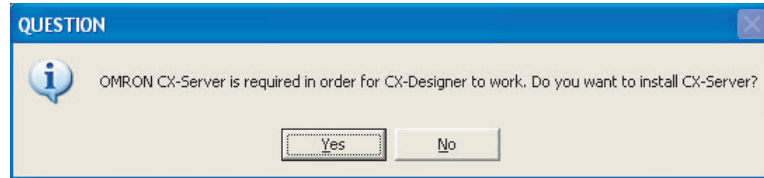
- The following dialog box will be displayed. Install the software according to the instructions given in window messages.



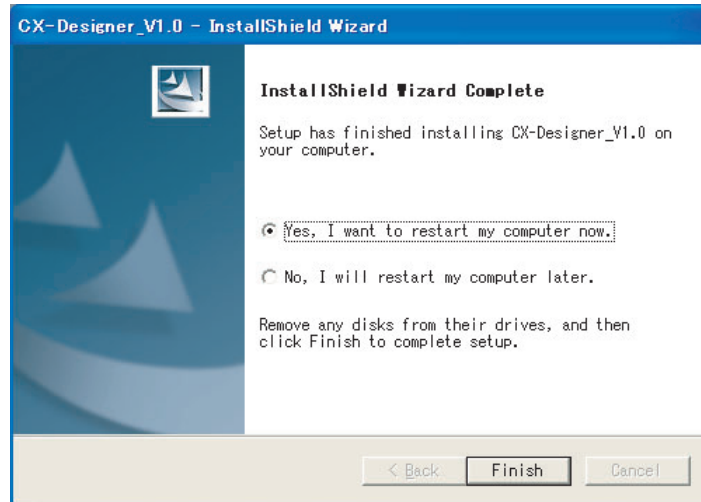
- During installation, the installation progress is displayed as a percentage. When installation has been completed, the following dialog box will be displayed. Click the **Finish** Button.



8. A message will be displayed to confirm installation of the CX-Server. Click the **Yes** Button.



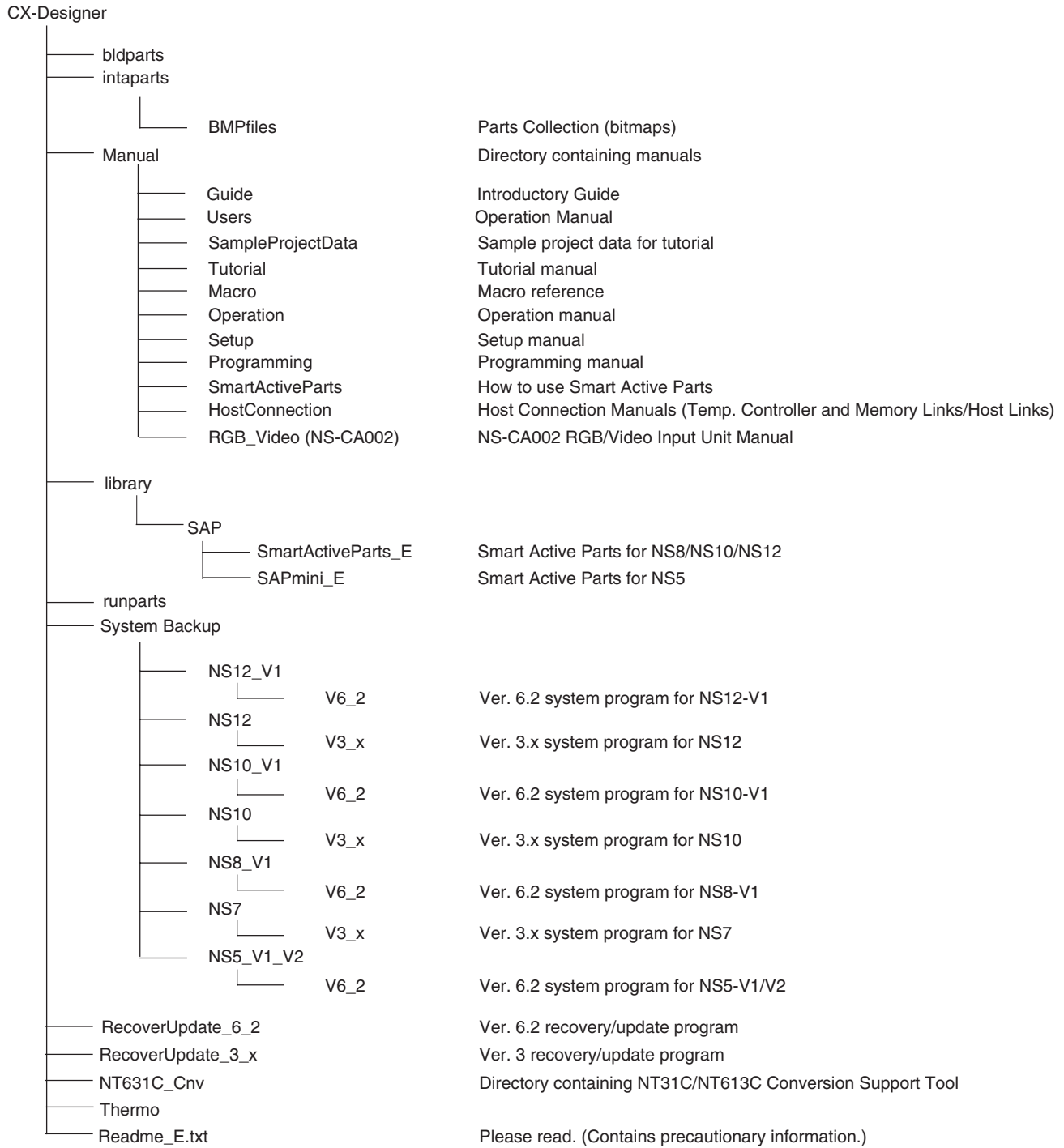
9. When installation has been completed, the following dialog box will be displayed. Select whether or not to restart the computer immediately, and click the **Finish** Button to complete the installation. Always restart the computer before using CX-Designer.



Note

- (1) When installing CX-Designer in Windows NT, 2000, or XP, log onto the computer as the administrator to ensure that system DLL files can be overwritten. If overwriting system DLL files fails, CX-Designer may not operate properly.
- (2) When adding Smart Active Parts after installation of CX-Designer, double-click the CD-ROM directory \SmartActiveParts\Setup.exe from Windows Explorer to execute the setup program. Select all the Smart Active Parts to be used in the dialog box for selecting components.
- (3) Refer to the *How to manage after conversion* file in the Programs Folder under the Windows Start Menu for details after NT31C/NT631C Conversion Support Tool conversion.
- (4) Internet Explorer Ver 5.5 or higher is required to transfer data.

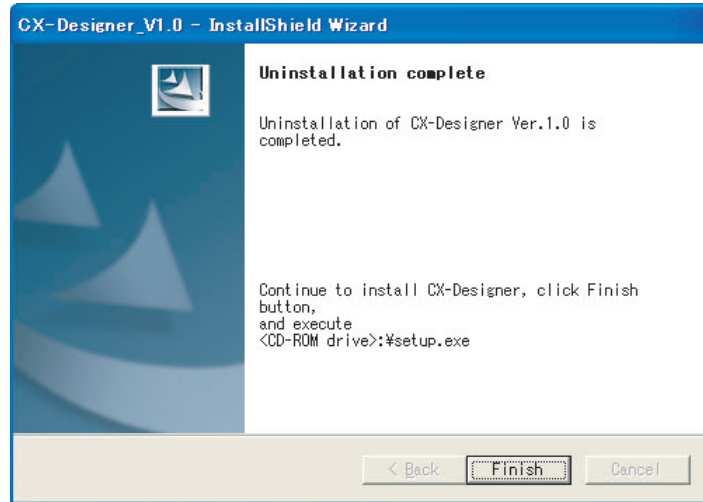
The folder structure after installation is as follows:



2-3 Uninstalling

Operation Procedure

- 1,2,3...
1. To uninstall the CX-Designer, click the Windows **Start** Button and select **Settings - Control Panel**.
 2. Double-click **Add/Remove Applications**.
 3. Select *CX-Designer_V1.0* from the list and click the **Edit/Delete** Button. Follow the instructions displayed in window messages to uninstall the CX-Designer.
 4. When uninstalling the CX-Designer has been finished, a message will be displayed indicating that the uninstall operation has been completed. Check the message and then click the **Finish** Button.



2-4 Installing USB Drivers for NS-Series PTs.

Install the NS-series USB driver in the personal computer. After installation, data can be transferred between the personal computer and NS-series PT via USB.

- Note**
- (1) With NS-V1 Series models, make sure that the PT has a lot number that supports USB transmission. The system program version of the NS-series PT must also support USB transmission. For details, refer to 3-3-2 *Connecting via USB in the NS series Setup Manual* (Cat. No. V083).
 - (2) If an NS-series USB driver has already been installed for use with the NS-Designer, the NS-series USB driver must be installed again to use the CX-Designer.
 - (3) Do not install the NS-series USB driver for the NS-Designer while the CX-Designer is being used.

Applicable Operating Systems

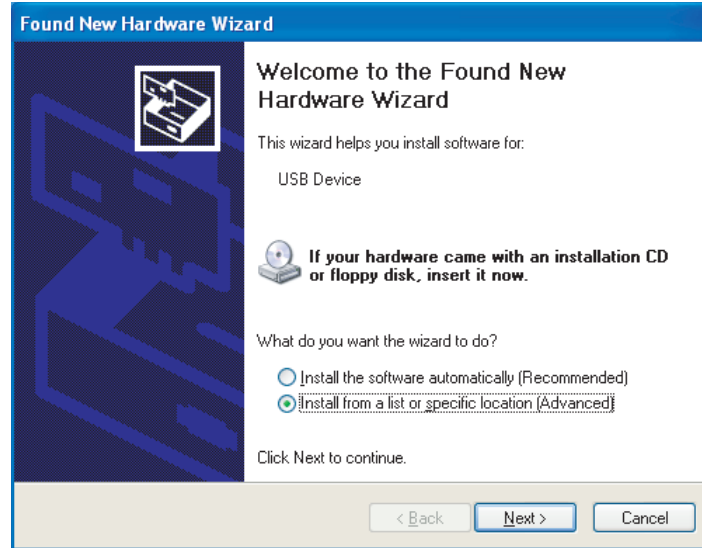
Windows 98SE, Windows Me, Windows 2000, and Windows XP

Operation Procedure

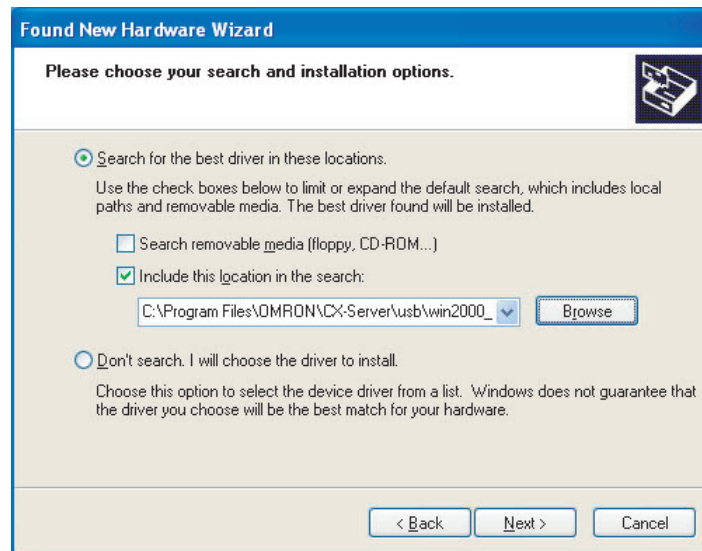
Windows 2000 and Windows XP:

- 1,2,3...
1. Start Windows 2000 or Windows XP.
 2. Connect the personal computer to the NS-series PT USB slave connector using the USB cable. The following Found New Hardware Wizard will be displayed.

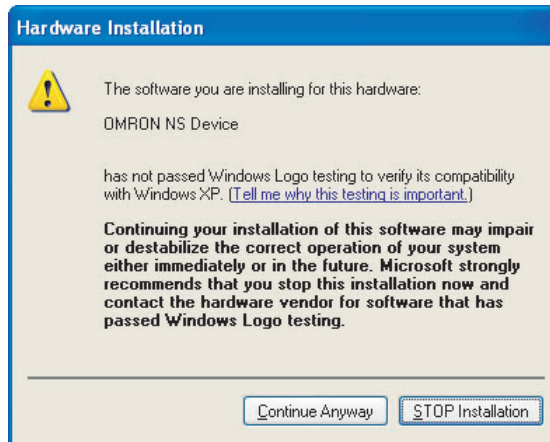
- For Windows 2000, select *Display a list of the known drivers for this device so that I can choose a specific driver* and click the **Next** Button. For Windows XP, select *Install from a list or specific location (Advanced)* and click the **Next** Button.



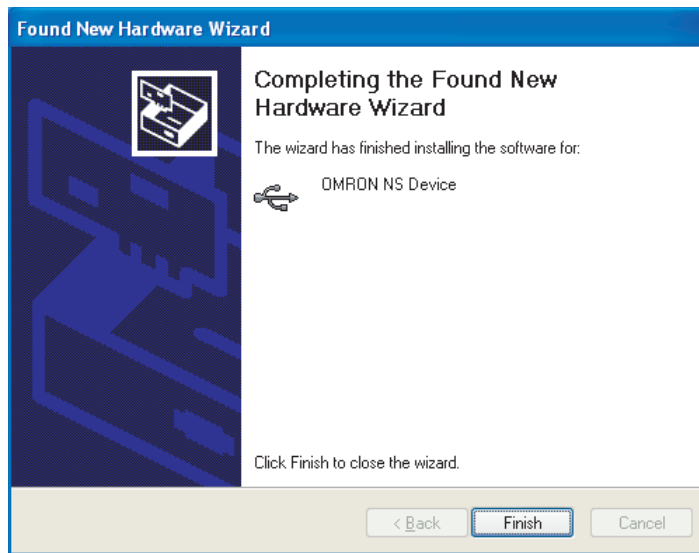
- The dialog box shown below will be displayed. Confirm that **Search for the best driver for my device (Recommended)** is selected. Select the **Include this location in the search** option, click the **Browse** Button and specify the following CX-Server installation directory folder:
\\USB\\win2000_XP\\inf
Then click the **Next** Button.



5. The dialog box shown below will be displayed. Click the **Continue Anyway** Button.



6. When installation is completed, the following dialog box will be displayed. Click the **Finish** Button.



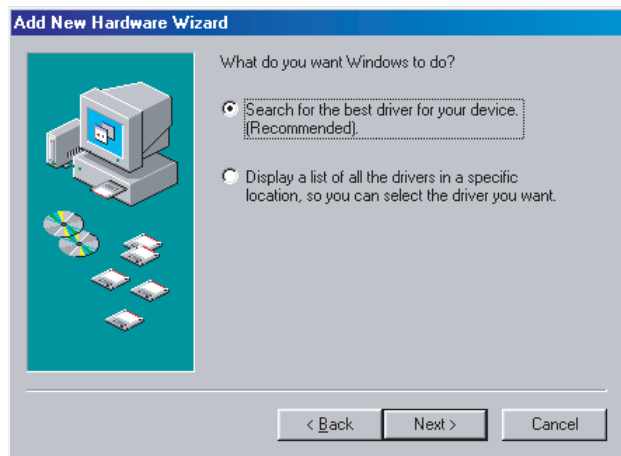
Windows 98SE and Windows Me:

1,2,3...

1. Start Windows 98SE or Windows Me.
2. Connect the personal computer to the NS-series PT USB slave connector using the USB cable. The following Add New Hardware Wizard will be displayed. Click the **Next** Button.



3. The following dialog box will be displayed. Select **Search for the best driver for your device (Recommended)**. Click the **Next** Button.



- 4. Select **Specify a location** only and then click the **Browse** Button and specify the following directory.
CX-Server installation directory
\\USB\\Win98_Me\\inf



- 5. Click the **Next** Button.



- 6. Click the **Next** Button to start installation. When installation is completed, the following dialog box will be displayed. Click the **Finish** Button.



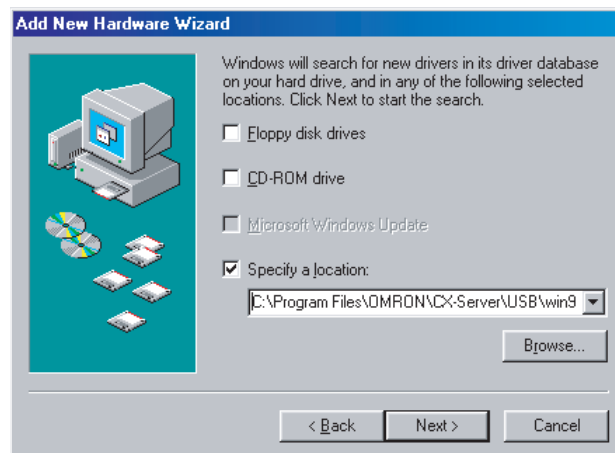
7. The Add New Hardware Wizard will be displayed again. Click the **Next** Button.



8. The following dialog box will be displayed. Check that **Search for the best driver for your device (Recommended)** is selected, and then click the **Next** Button.



9. Select **Specify a location** only and then click the **Browse** Button and specify the following directory.
CX-Server installation directory
\\USB\\Win98_Me\\inf



10. Click the **Next** Button.



11. Click the **Next** Button to start installation.
When installation is completed, the following dialog box will be displayed.
Click the **Finish** Button.



SECTION 3

Basic Operations of the CX-Designer

This section describes basic functions and operation methods, such as starting and exiting CX-Designer and the user interface.

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| 3-3-1 | Names of Basic Screen Components | 32 |
| 3-3-2 | CX-Designer Functions and Screens | 38 |

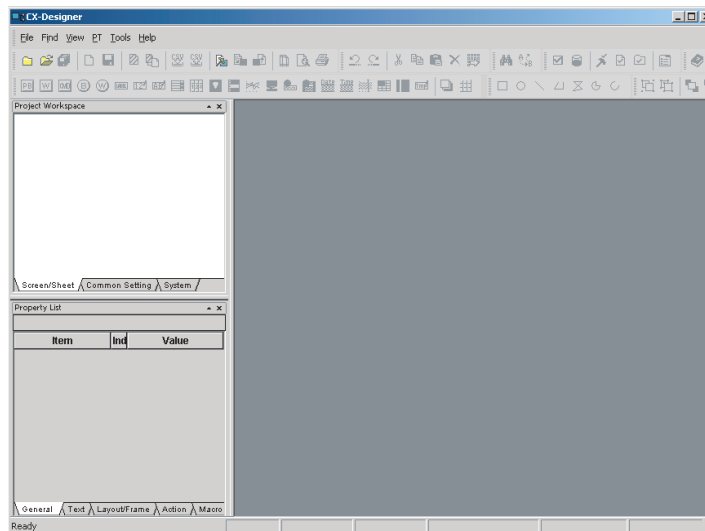
3-1 Starting and Exiting CX-Designer

This section describes how to start and exit the CX-Designer.

3-1-1 Startup Method

To start the CX-Designer, click the Windows **Start** Button, and then select **Programs - OMRON - CX-One - CX-Designer - CX-Designer Ver. □** (The items displayed may vary according to the program folder specified during installation). Alternatively, right-click the NS-series PT in the Network Configuration Window of CX-Integrator, and select **Start Special Application - Start Only**.

When the CX-Designer startup is completed, the Main Window will be displayed, as follows:



- Note**
- (1) More than one copy of the CX-Designer application can be run at the same time.
 - (2) To start CX-Designer, log in as the administrator when using a personal computer running Windows NT, 2000, or XP.

3-1-2 Exiting CX-Designer

Use one of the following operations to exit the CX-Designer.

- Select **Exit** from the File Menu.
- Click the **Close** Button at the top right of the Main Window.
- Double-click the CX-Designer icon at the top left of the Main Window.
- Click the CX-Designer icon at the top left of the Main Window and select **Close** from the Control Menu Box.
- Press the Alt + F4 Keys.

If the project data that is open has not been saved, a confirmation message will be displayed.

When the CX-Designer is exited, the system will return to the Windows display.

3-2 Menu Commands

The commands that appear on the pull-down menus of the CX-Designer and their functions are described in the following tables.

File Menu

| Command | Function | Shortcut keys |
|-------------------|--|---------------|
| New Project | Creates a new project. | --- |
| Open Project | Opens an existing project. | --- |
| Close Project | Closes the project currently open without exiting the CX-Designer. | --- |
| Save Project As | Saves the current project under a specified name. | --- |
| Save All | Saves (overwrites) all of the data for the current project. | Ctrl+S |
| New Screen | Creates a new screen under the current project. | Ctrl+N |
| Open Screen | Opens the project workspace. | Ctrl+O |
| Save Screen/Sheet | Saves the current screen or sheet. | Ctrl+Shift+S |
| New Sheet | Creates a new sheet under the current project. | Ctrl+Shift+N |
| Apply Sheet | Sets a screen with overlapping sheets. | Ctrl+J |
| Import CSV File | Imports project or screen data saved in CSV format to the current project or screen. | --- |
| Export CSV File | Exports the current project or screen data to a file in CSV format. | --- |
| Page Setup | Makes the printer settings. | --- |
| Preview | Shows a preview of the printed image. | --- |
| Print | Outputs current project or screen information to a printer or to a file. Select Print to display a preview. | Ctrl+P |
| Recent Projects | Displays a list of currently edited projects. (Up to ten projects are displayed.) | --- |
| Exit | Ends the CX-Designer. | --- |

Edit Menu

| Command | Function | Shortcut keys |
|------------------|---|----------------------|
| Undo | Discards changes and restores the previous status. | Ctrl+Z |
| Redo | Restores the changes discarded with Undo . | Ctrl+Y |
| Cut | Deletes the selected objects and places them in the internal buffer. | Ctrl+X, Shift+DEL |
| Copy | Copies the selected objects and places them in the internal buffer. | Ctrl+C |
| Paste | Pastes objects that have been cut or copied. | Ctrl+V, Shift+Ins |
| Paste Style Only | Pastes objects that have been cut or copied using the default address settings. | --- |
| Delete | Deletes the selected objects. | DEL |
| Group | | |
| Group | Groups more than one functional or fixed object to create a single object. | Ctrl+G |
| Ungroup | Ungroups grouped objects. | Ctrl+U |

| Command | Function | Shortcut keys |
|-------------------------|---|---------------|
| Order | | |
| Front | Brings the currently selected object to the front. | --- |
| Back | Sends the currently selected object to the back. | --- |
| Bring Forward | Brings the currently selected object forward. | --- |
| Send Backward | Sends the currently selected object back. | --- |
| Align/Distribute | | |
| Align Left | Aligns the currently selected objects to the left. | --- |
| Center in a Column | Aligns the vertical centers of the currently selected objects. | --- |
| Align Right | Aligns the currently selected objects to the right. | --- |
| Align Top | Aligns the currently selected objects to the top. | --- |
| Center in a Row | Aligns the horizontal centers of the currently selected objects. | --- |
| Align Bottom | Aligns the currently selected objects to the bottom. | --- |
| Distribute Horizontally | Distributes the currently selected objects equidistant (between mid-points) horizontally. | --- |
| Distribute Vertically | Distributes the currently selected objects equidistant (between mid-points) vertically. | --- |
| Make Same Size | | |
| Smallest Width | Aligns the currently selected objects to the smallest width. | --- |
| Largest Width | Aligns the currently selected objects to the largest width. | --- |
| Smallest Height | Aligns the currently selected objects to the smallest height. | --- |
| Largest Height | Aligns the currently selected objects to the largest height. | --- |
| Table Column Width | Aligns table columns to equal widths. | --- |
| Table Row Height | Aligns table rows to equal heights. | --- |
| Nudge | | |
| Up | Moves the selected object one dot or one grid unit up. | ↑ |
| Down | Moves the selected object one dot or one grid unit down. | ↓ |
| Left | Moves the selected object one dot or one grid unit to the left. | ← |
| Right | Moves the selected object one dot or one grid unit to the right. | → |

| Command | Function | Shortcut keys |
|--|---|---------------|
| Rotate/Flip | | |
| Rotate Right 90 Degrees | Rotates the currently selected object 90 degrees to the right. | --- |
| Rotate Left 90 Degrees | Rotates the currently selected object 90 degrees to the left. | --- |
| Rotate Right 90 Degrees Around Center of Screen/ Frame | Rotates the currently selected object 90 degrees to the right around the center of the screen or frame. | --- |
| Rotate Left 90 Degrees Around Center of Screen/ Frame | Rotates the currently selected object 90 degrees to the left around the center of the screen or frame. | --- |
| Flip Horizontal | Flips the currently selected object horizontally. | --- |
| Flip Vertical | Flips the currently selected object vertically. | --- |
| Flip Horizontal Around Center of Screen/ Frame | Flips the currently selected object horizontally around the center of the screen or frame. | --- |
| Flip Vertical Around Center of Screen/ Frame | Flips the currently selected object vertically around the center of the screen or frame. | --- |
| Edit Node | Changes the positions of the vertices to change the shape of a fixed object node. | --- |
| Select All | | |
| All Objects | Selects all objects on the screen. | Ctrl+A |
| Same Type Objects | Selects all objects of the same type as the currently selected object. | Ctrl+D |
| Repeat | Makes multiple copies of the selected objects. | Ctrl+W |
| Edit Properties | Displays a list of functional objects on screen to enable changing property settings. | Ctrl+L |

Find Menu

| Command | Function | Shortcut keys |
|-------------------------|---|---------------|
| Find | Searches for address or character string keywords. | Ctrl+F |
| Replace | Replaces the specified addresses. | Ctrl+H |
| Address Cross Reference | Finds locations where an address is used and lists the results. | Ctrl+R |
| Macro Cross Reference | Lists macro locations. | --- |
| Replace Host | Replaces the host for all addresses in the project. | --- |

View Menu

| Command | Function | Shortcut keys |
|---------------------|---|---------------|
| Toolbar | Displays and hides the toolbar. | --- |
| Window | | |
| Project Workspace | Displays and hides the project workspace. | Alt+1 |
| Symbol Table | Displays and hides the symbol table. | Alt+2 |
| Property List | Displays and hides the property list. | Alt+3 |
| Library | Displays and hides the Library Window. | Alt+4 |
| Select Object | Displays and hides the object selection. | Alt+5 |
| Address in Use List | Displays and hides the List Up Addresses Used Window. | Alt+6 |
| Output Window | Displays and hides the Output Window. | Alt+7 |
| Status Bar | Displays and hides the Status Bar. | --- |
| Previous Label | Displays the previous label. | Ctrl+PgUp |
| Next Label | Displays the next label. | Ctrl+PgDn |
| Previous Screen | Displays the previous screen. | Shift+PgUp |
| Next Screen | Displays the next screen. | Shift+PgDn |
| Previous Frame Page | Displays the previous frame page. | PgUp |
| Next Frame Page | Displays the next frame page. | PgDn |
| Show Address | | |
| Show Symbol Name | Switches to functional object display showing symbol names. | --- |
| Show Address | Switches to functional object display showing addresses. | --- |
| Show I/O Comment | Switches to functional object display showing I/O comments. | --- |
| Hide | Switches to functional object display hiding addresses. | --- |
| Show ID | Displays and hides ID numbers for objects. | --- |
| Simulate ON/OFF | Switches ON and OFF display for functional objects. | --- |
| Show Sheet Object | Displays and hides objects registered in sheets. | --- |
| Grid | Sets the grid. | --- |
| Show Touch Points | Displays and hides PT touch points. | --- |
| Zoom | Zooms the display in and out. | --- |
| Refresh | Redraws the screen. | F9 |

PT Menu

| Command | Function | Shortcut keys |
|--------------------------------|--|---------------|
| Transfer | | |
| Quick transfer (Computer → PT) | Compares project data with data in the PT and transfers only refreshed data to the PT. | Ctrl+Q |
| Transfer (Computer → PT) | Transfers all project data to the PT. | Ctrl+B |
| Transfer (PT → Computer) | Uploads the project data stored in the PT to the computer. | Ctrl+Shift+B |
| Transfer Setting | Sets the communications path to be used in the transfer. | Ctrl+Alt+B |
| Transfer Program | Starts the tool for transferring project data created on the CX-Designer to the PT or receive project data from the PT to the CX-Designer. | Ctrl+I |
| System Setting | Sets the PT operating parameters. (This is the same as double-clicking System Setting on the project workspace System Tab Page.) | --- |
| Project Properties | Sets the project properties. (This is the same as double-clicking Project Properties on the project workspace System Tab Page.) | --- |
| Communication Setting | Registers hosts and sets communications conditions. (This is the same as double-clicking Communication Setting on the project workspace System Tab Page.) | --- |
| Alarm/Event | Registers and corrects alarms and events. (This is the same as double-clicking Alarm/Event Setting on the project workspace Common Setting Tab Page.) | --- |
| Data Log | Registers and corrects the data log function. (This is the same as double-clicking Data Log Setting on the project workspace Common Setting Tab Page.) | --- |
| Data Block | Registers and corrects data blocks. (This is the same as double-clicking Data Block Setting on the project workspace Common Setting Tab Page.) | --- |
| Password | Sets the password. (This is the same as double-clicking Password Setting on the project workspace Common Setting Tab Page.) | --- |
| Unit/Scale | Sets the units and scales used by numeral objects. (This is the same as double-clicking Unit/Scale Setting on the project workspace Common Setting Tab Page.) | --- |
| Dialog Setting | Sets the dialog displayed when functional objects are pressed. | --- |
| Flicker | Sets flicker settings for each screen or sheet. | --- |
| Color Transparent | Sets transparent colors for bitmap files set in the project. | --- |
| Screen/Sheet Properties | Sets the screen properties. | --- |
| Change Input Order | Sets the order for shifting the focus for numeral and text input objects on the screen. | --- |
| Object Properties | Sets the properties for the currently selected functional object. | Enter |
| Edit Label | Enables direct editing of functional object labels on the screen without opening a property dialog box. | Space |

Functional Objects Menu

| Command | Function | Shortcut keys |
|-------------------------------|---|---------------|
| ON/OFF Button | Starts creation of an ON/OFF button. | --- |
| Word Button | Starts creation of a word button. | --- |
| Command Button | Starts creation of a command button. | --- |
| Bit Lamp | Starts creation of a bit lamp. | --- |
| Word Lamp | Starts creation of a word lamp. | --- |
| Label | Starts creation of text. | --- |
| Numeral Display & Input | Starts creation of a Numeral Display & Input Object. | --- |
| String Display & Input | Starts creation of a String Display & Input Object. | --- |
| List Selection | Starts creation of a List Selection object. | --- |
| Thumbwheel Switch | Starts creation of a thumbwheel switch. | --- |
| Analog Meter | Starts creation of an analog meter. | --- |
| Level Meter | Starts creation of a level meter. | --- |
| Broken-line Graph | Starts creation of a broken-line graph. | --- |
| Bitmap | Starts creation of a bit map. | --- |
| Alarm/event Display | Starts creation of an alarm/event display object. | --- |
| Alarm/Event Summary & History | Starts creation of an alarm/event summary & history object. | --- |
| Date | Starts creation of a date object. | --- |
| Time | Starts creation of a time object. | --- |
| Data Log Graph | Starts creation of a data log graph. | --- |
| Data Block Table | Starts creation of a data block table. | --- |
| Video Display | Starts creation of a video display object. | --- |
| Temporary Input | Starts creation of a temporary input. | --- |
| Frame | Starts creation of a frame region. | --- |
| Table | Starts creation of a table on a table creation screen. | --- |

Fixed Objects Menu

| Command | Function | Shortcut keys |
|---------------|--|---------------|
| Rectangle | Starts creation of a rectangle. | --- |
| Circle•Oval | Starts creation of a circle or oval. | --- |
| Straight Line | Starts creation of a straight line. | --- |
| Polyline | Starts creation of a continuous straight line. | --- |
| Polygon | Starts creation of a polygon. | --- |
| Sector | Starts creation of a pie-shaped sector. | --- |
| Arc | Starts creation of an arc. | --- |

Tools Menu

| Command | Function | Shortcut keys |
|-----------------------------|---|---------------|
| Test | Performs an operating test on the computer without connecting to a PLC. | Ctrl+T |
| Resource Report | Displays a report on the resources that have been used. | --- |
| Validation | | |
| Validation (Project) | Checks all screen data in the project according to validation settings to see if any mistakes have been made. | Ctrl+E |
| Validation (Current Screen) | Checks screen data displayed at the front according to validation settings to see if any mistakes have been made. | Ctrl+Shift+E |
| Validation Setting | Sets the project data check items. | Ctrl+Alt+E |
| Library | Displays the Library Window to enable pasting objects registered in the library on the screen. Also enables registering objects on the screen in the library. | Alt+4 |
| Import Old Library | Converts a library created on CX-Designer for use with CX-Designer. | --- |
| Conversion | | |
| Version | Changes the system version of the project currently being edited. | --- |
| Model | Changes the model of the NS-series PT for the project currently being edited. | --- |
| Reset Defined Default | | |
| Functional Object | Resets functional object specified values to default values. | --- |
| Fixed Objects | Resets fixed object specified values to default values. | --- |
| Option | Sets optional functions for editing screens. | --- |

Window Menu

| Command | Function | Shortcut keys |
|-----------------|---|---------------|
| Next Window | Moves to the next window of the windows displayed under View - Window . | Alt+0 |
| Previous Window | Moves to the previous window of the windows displayed under View - Window . | Alt+Shift+0 |
| Close All | Closes all open screen editing windows. | --- |
| Cascade | Cascades the screen editing windows. | --- |
| Tile | Tiles the screen editing windows. | --- |
| Arrange Icons | Arranges the minimized window icons. | --- |
| Window List | Lists all open screen editing windows. The front screen will have a check mark by it. | --- |

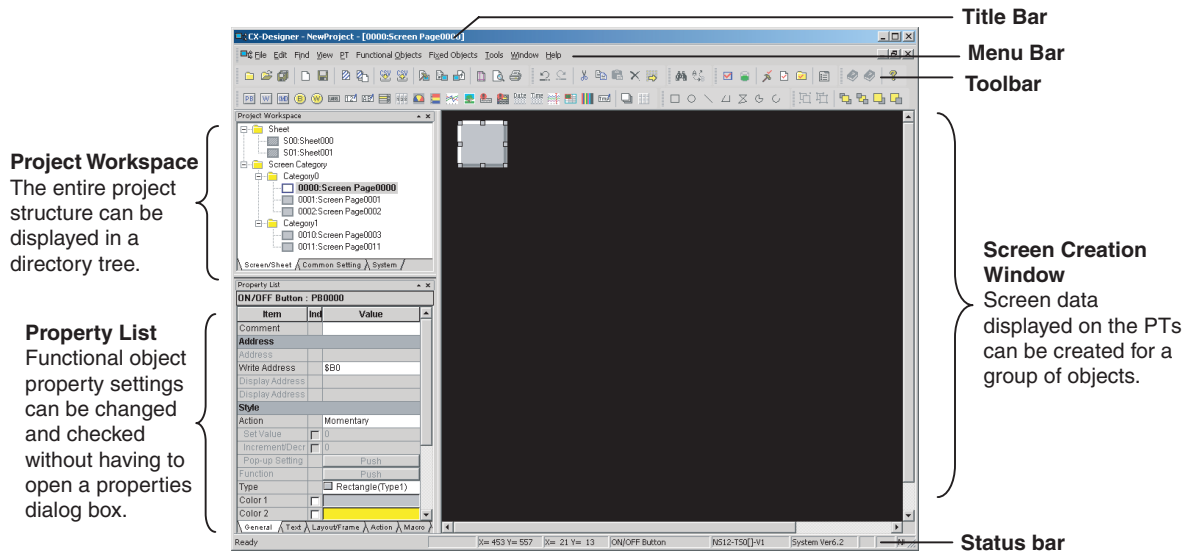
Help Menu

| Command | Function | Shortcut keys |
|---------------------|---|---------------|
| Contents | Displays the contents for the online help. | --- |
| Search Topic | Displays a search dialog box for help topics. | --- |
| Online Registration | Registers the user online. | --- |
| About CX-Designer | Displays information on the product. | --- |

3-3 User Interface

3-3-1 Names of Basic Screen Components

The configuration and names and functions of the components in the CX-Designer operation screen are described here.



Title Bar

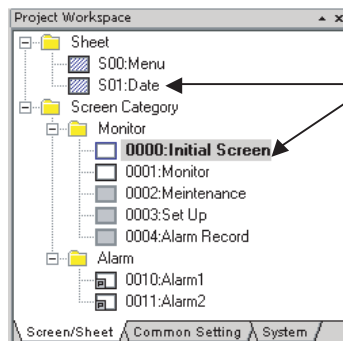
The title bar displays the application name, project name, and screen number.

Menu Bar

The menu bar provides groups of related functions. Each group name is displayed in the menu bar and the functions are displayed on pull-down menus under each group name.

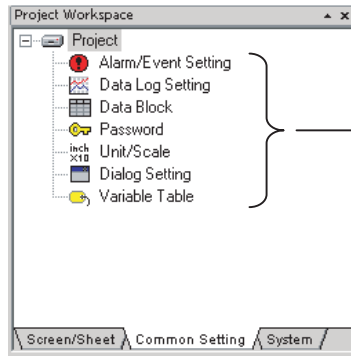
Project Workspace

The project screen data and settings are displayed in a tree hierarchy in the project workspace. Screens and sheets can be created, copied, and deleted in the project workspace. Screens from different projects can be copied between workspaces if more than one copy of CX-Designer is running at the same time. The project workspace can be displayed and hidden by selecting **View - Window - Project workspace**. A list of the created screens and sheets will be displayed on the Screen/Sheet Tab Page.



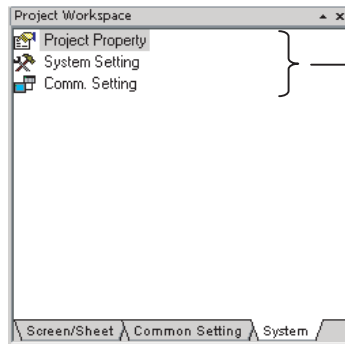
Double-click on any screen or sheet to open it. Screens and sheets can be created, copied, and deleted.

The Common Setting Tab Page displays the common settings browsed by all functional objects.



Double-click on any item to open the settings dialog box.

The System Tab Page displays the project and communications settings.



Double-click on any item to open the settings dialog box.

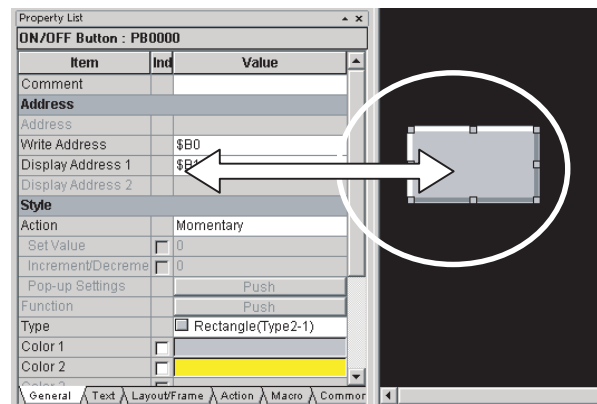
Property List

Property Lists display the property settings for the functional object selected on the screen. Settings can be checked and changed without opening a Property Setting Dialog Box.

Changes to properties made on the Property List are immediately reflected on the screen, which enables changes to be checked during screen creation.

Property Lists can be displayed and hidden by selecting **View - Window - Property List**.

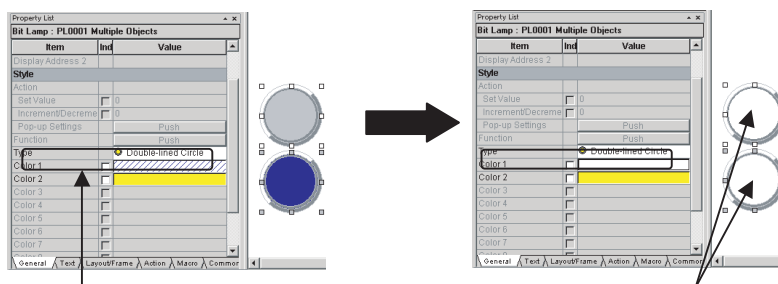
Enables display and settings of properties of the selected object without opening a property dialog box.



■ **Global Replace**

More than one object can be selected and the common settings for those objects can be changed in one operation.

The following example shows a global change of the object color.



The two objects on the screen for which the color is to be changed are selected and **Color 1** is changed.

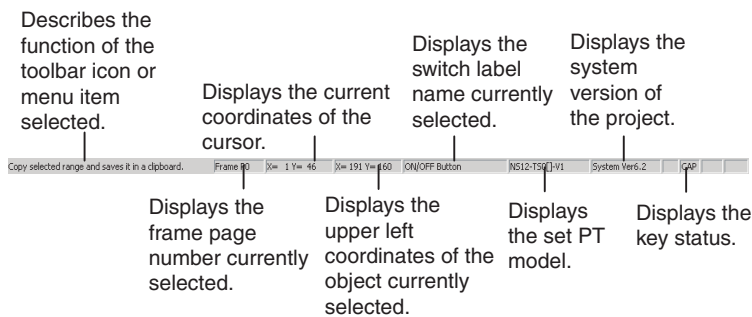
The color for the two selected objects is changed in the one operation.

Screen Creation Window

Screens displayed on the PTs can be created using functional and fixed objects.

Status bar

The Status Bar can be displayed and hidden by selecting **View - Status Bar**.

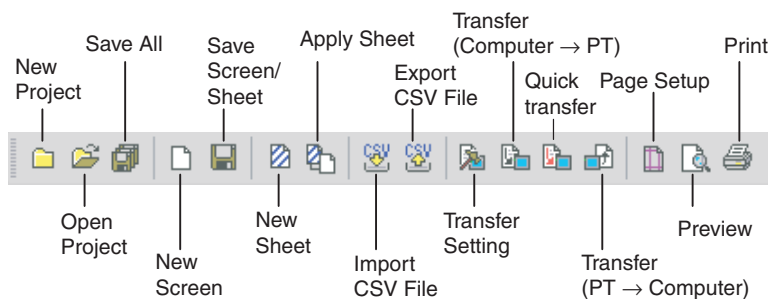


Toolbar

Each toolbar can be displayed and hidden according to the settings in the Customize Dialog Box displayed under **View - Toolbar**.

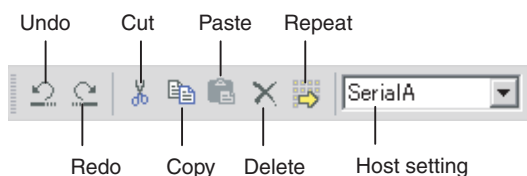
■ **File Toolbar**

Displays functions relating to file operation, such as creating or saving projects and screens and transferring project data, as icons.



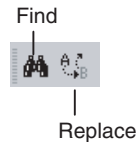
■ **Edit Toolbar**

Displays functions relating to editing objects, such as copy, cut, and paste as icons.



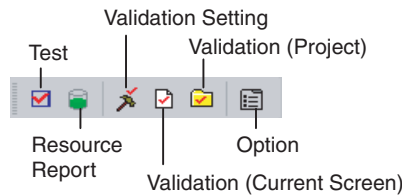
■ **Find Toolbar**

Displays functions relating to searching and replacing as icons.



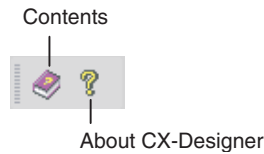
■ **Tool Toolbar**

Displays frequently used functions from the Tools Menu as icons.



■ **Help Toolbar**

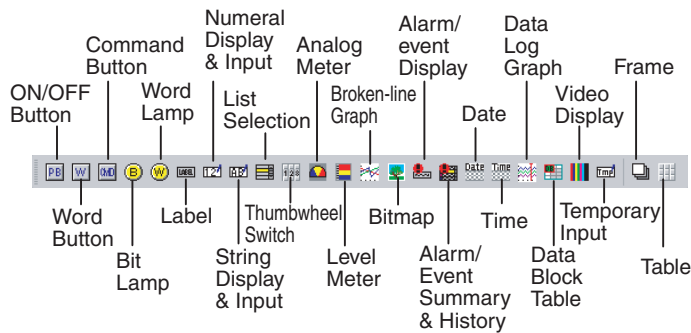
Displays help and version information functions as icons.



■ **Functional Object Toolbar**

Displays screen creation functions for functional objects as icons.

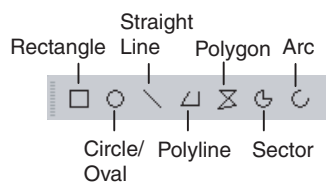
Select the icon button of the functional object to be used to start screen creation.



■ **Fixed Object Toolbar**

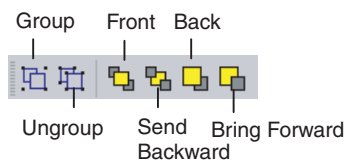
Displays fixed object drawing functions as icons.

Select the icon button of the fixed object to be used to start drawing screens.



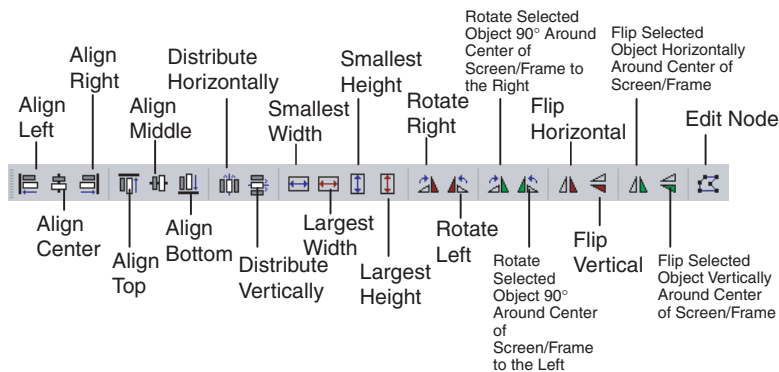
■ **Grouping Order Toolbar**

Displays object grouping and change distribution order functions as icons.



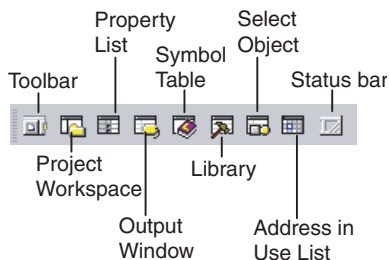
■ **Edit Objects Toolbar**

Displays functions relating to changing object layout and object alignment as icons.



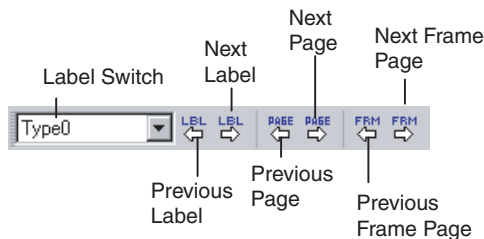
■ **Window Display Toolbar**

Displays functions for displaying windows as icons.



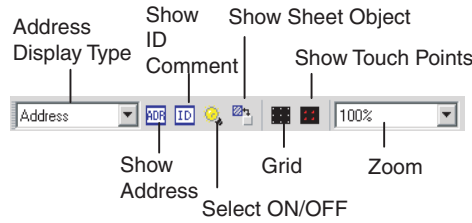
■ **Switch Toolbar**

Displays functions for switching labels, screens, and frame pages as icons.



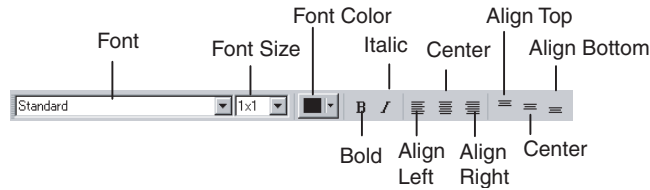
■ **View Toolbar**

Displays functions for switching the Screen Creation Window display as icons.



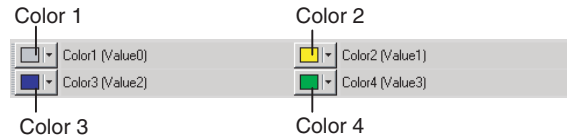
■ **Font Toolbar**

Displays the functions for setting text font properties in functional objects as icons.



■ **Color Toolbar**

Displays the color settings for functional objects and fixed objects as icons.



■ **Address Toolbar**

Displays the setting functions for the addresses of the functional objects in a toolbar. Select the functional object for which the address is to be set and set the address.

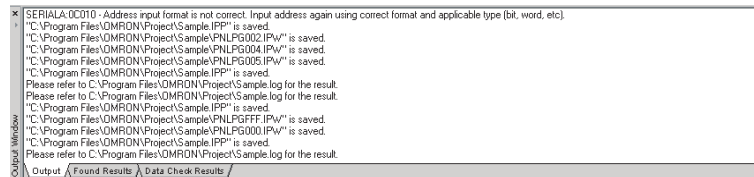


Output Window

The Output Window displays various data such as CX-Designer search, data check, and other processing results and error details.

The Output Window can be displayed and hidden by selecting **View - Window - Output Window**.

The Output Tab Page displays the CX-Designer operating status and error information.



The Found Results Tab Page displays the search and replace results.

Click an item to display and select the corresponding object.

| Page | ID | Host | Name | Address | I/O Comment | Label | Object Comment | Detailed Information |
|------|---------|---------|----------|------------|-------------|-------|----------------|-----------------------------------|
| 0000 | PL0002 | SERIALA | Waiting | HR00100.02 | Waiting | | Waiting | Bit Lamp : Display Address |
| 0000 | PL0001 | SERIALA | Stop | HR00100.01 | Stop | | Stop | Bit Lamp : Display Address |
| 0000 | PL0000 | SERIALA | Running | HR00100.00 | Running | | Running | Bit Lamp : Display Address |
| 0000 | PL0004 | SERIALA | Error | HR00100.03 | Error | | Error | Bit Lamp : Display Address |
| S00 | PL0000 | SERIALA | AutoGen4 | HR00100.10 | | | | Bit Lamp : Display Address |
| 0000 | NUM0006 | SERIALA | Status | HR00100 | Status | | Status | Numeral Display & Input : Address |
| 0100 | NUM0006 | SERIALA | Status | HR00100 | Status | | Status | Numeral Display & Input : Address |

The Data Check Results Tab Page displays the data check results. Click an item to display and select the corresponding object.

| Page | ID | Type | Cause |
|------|---------|---------|--|
| 0000 | PL0001 | Warning | Functional objects are overlapped. |
| 0000 | BMP0007 | Error | The specified file does not exist. |
| 0000 | PB0008 | Warning | Communication setting is not complete. |
| 0000 | | Warning | No screen switch object exists. |
| 0001 | PB0000 | Error | Functional object does not contain touch points. |
| 0100 | NUM0007 | Warning | Object is not placed inside the screen. |
| 0100 | | Warning | No screen switch object exists. |

3-3-2 CX-Designer Functions and Screens

Symbol Table

A symbol table lists the symbols registered to the project.

The CX-Designer can specify symbols as the data to be accessed by functional objects, in addition to directly specifying PLC or other host addresses or internal memory.

“Symbol” is a name to which an address is allocated. This symbol can be used instead of the address in the CX-Designer. This allows addresses to be changed simply by changing the address set for the symbol, instead of opening each screen and changing the property settings for the functional objects on that screen. In addition, comments can be specified for symbols in the CX-Designer.

The Symbol Table Window can be displayed and hidden by selecting **View - Window - Symbol Table** from the menu bar.

Click **Name** to change the display order between descending and ascending (the sort function).

Click to display a pull-down list and display only the desired type (the filter function).

| Host | Name | Type | Address | Type/Number | I/O Comment |
|---------|--------------------|---------|----------|-------------|--------------------------------------|
| All | AutoGen1 | BOOL | \$B0 | | |
| PTMEM | AutoGen2 | CHANNEL | \$W0 | | |
| SERIALA | AmberLight | BOOL | 00010.01 | | Prepare to go/stop |
| SERIALA | AmberLightTimer | CHANNEL | 00002 | | Timer for the amber light period |
| SERIALA | AmberOnlyTimer | CHANNEL | 00004 | | Timer for the amber only period |
| SERIALA | AmberOnlyTimerDone | BOOL | TU00004 | | |
| SERIALA | AmberTimerDone | BOOL | TU00002 | | |
| SERIALA | GreenLight | BOOL | 00010.02 | | Go |
| SERIALA | GreenLightTimer | CHANNEL | 00003 | | Timer for the green light period |
| SERIALA | GreenTimerDone | BOOL | TU00003 | | |
| SERIALA | RedLight | BOOL | 00010.00 | | Stop |
| SERIALA | RedLightTimer | CHANNEL | 00001 | | Timer for the red light period |
| SERIALA | RedTimerDone | BOOL | TU00001 | | |
| SERIALA | TimeInterval | CHANNEL | 00048 | | Speed at which the sequence works (t |

- Note**
- (1) Symbols can be added or deleted and functions that use a symbol can be searched for in the symbol table.
 - (2) Symbols (communications addresses) to be set can be copied from the symbol table to the Property List using the drag-and-drop function.
 - (3) Symbols can also be copied from the CX-Programmer's symbol table and pasted to the CX-Designer's symbol table. This enables the same symbol to be used by both the CX-Designer and CX-Programmer.

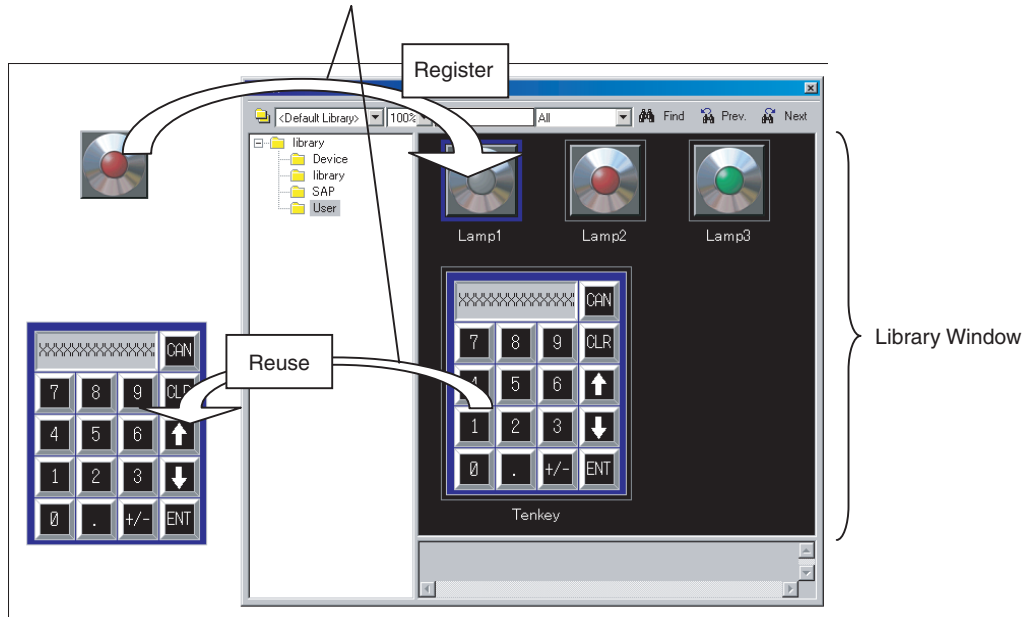
Library Window

A library object is a group of registered functional and fixed objects together with their property settings registered as one unit of data.

Objects can be registered as a library object and easily reused in multiple locations list or screens from the Library Window.

The Library Window can be displayed and hidden by selecting **View - Window - Library**.

Objects can be easily registered and reused, using the drag-and-drop function.



Object List Window

The Object List Window lists the functional objects located in Screen Creation Window.

Any object can be selected and the display on the Screen Creation Window can be restricted to a specified type of functional object from the Select Object Window.

Selecting and displaying objects by type enables easy editing of objects hidden under other objects. Normal screen editing is also possible in this mode.

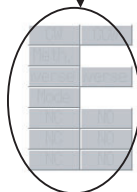
The Select Object Window can be displayed and hidden by selecting **View - Window - Object List**.

Screen Creation Window

| Define Origin 1 | | | |
|------------------|-----------|-------------|-----------------------------|
| Define Origin | OFF | ON | |
| Search Origin | CW | CCW | Search/Return Initial Speed |
| Detection Method | Meth. | 9 | 999999pps |
| Search Operation | Inv. 1 | Inv. 2 | Search High |
| Operation | Mode | 9 | 999999pps |
| O.Input Signal | NC | NO | Search Prox. Speed |
| P.Input Signal | NC | NO | 999999pps |
| L.Input Signal | NC | NO | S.Compensation Val. |
| P. Monitor Time | 99999msec | -9999999999 | |
| Search A.Ratio | 99999 | | |
| Search D. Ratio | 99999 | READ | WRITE |

| Select Object | | | | |
|-----------------------------|----------------|---------|-----|-----|
| All types | | | | |
| Range Selection Release All | | | | |
| O | Object Comment | ID | X | Y |
| PB | | PB0002 | 118 | 103 |
| PB | | PB0003 | 168 | 103 |
| PB | | PB0063 | 178 | 303 |
| PB | | PB0064 | 258 | 303 |
| W | Enable Input | PBW0006 | 118 | 123 |
| W | Enable Input | PBW0008 | 168 | 123 |
| W | Enable Input | PBW0011 | 118 | 143 |
| W | Enable Input | PBW0016 | 118 | 163 |
| W | Enable Input | PBW0018 | 168 | 163 |

Select Object Screen Lists objects on the screen.



Label objects that were hidden underneath

| Select Object | | | | |
|-----------------------------|----------------|---------|-----|-----|
| .label | | | | |
| Range Selection Release All | | | | |
| O | Object Comment | ID | X | Y |
| LBL | Disable Input | LBL0005 | 118 | 123 |
| LBL | Disable Input | LBL0007 | 168 | 123 |
| LBL | Disable Input | LBL0010 | 118 | 143 |
| LBL | Disable Input | LBL0015 | 118 | 163 |
| LBL | Disable Input | LBL0017 | 168 | 163 |
| LBL | Disable Input | LBL0020 | 118 | 183 |
| LBL | Disable Input | LBL0025 | 118 | 203 |
| LBL | Disable Input | LBL0027 | 168 | 203 |
| LBL | Disable Input | LBL0030 | 118 | 223 |

Select only **Label** to display labels that were hidden under other objects. Labels can also be edited in this mode.

Address in Use List

Displays a list of the number of times each address is used in functional objects.

A list of the functional objects using the addresses is also displayed in the Output Window and specified functional objects can be selected on the screen.

The Address in Use Window can be displayed and hidden by selecting **View - Window - Address in Use List**.

Displays the addresses.

Sets the start address for the search range.

| List U) Addresses Used | | | | | | | | | | | | | | | | |
|---------------------------------|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|
| Start Address: SERIALA:00000.00 | | | | | | | | | | | | | | | | |
| No. of Display Lines: 10 | | | | | | | | | | | | | | | | |
| Whole Project | | | | | | | | | | | | | | | | |
| Detail Find Reference Object | | | | | | | | | | | | | | | | |
| | +0 | +1 | +2 | +3 | +4 | +5 | +6 | +7 | +8 | +9 | +10 | +11 | +12 | +13 | +14 | +15 |
| SERIALA:00000.00 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 1 | 1 | 1 | 1 | 1 | 0 |
| SERIALA:00001.00 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SERIALA:00002.00 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SERIALA:00003.00 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| SERIALA:00004.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SERIALA:00005.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SERIALA:00006.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SERIALA:00007.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SERIALA:00008.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |
| SERIALA:00009.00 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |

Sets the search range.

Displays the number of times each address is used. (Unused addresses are displayed in gray.)

SECTION 4

Useful Functions

This section describes useful CX-Designer functions for creating project data and debugging and how to use these functions.

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4-1 Creating Screens Using Symbols

The CX-Designer can enter addresses as symbols when setting functional object addresses. (Addresses can also be directly input, the same as for the NS-Designer. Symbols are automatically allocated in these cases.)

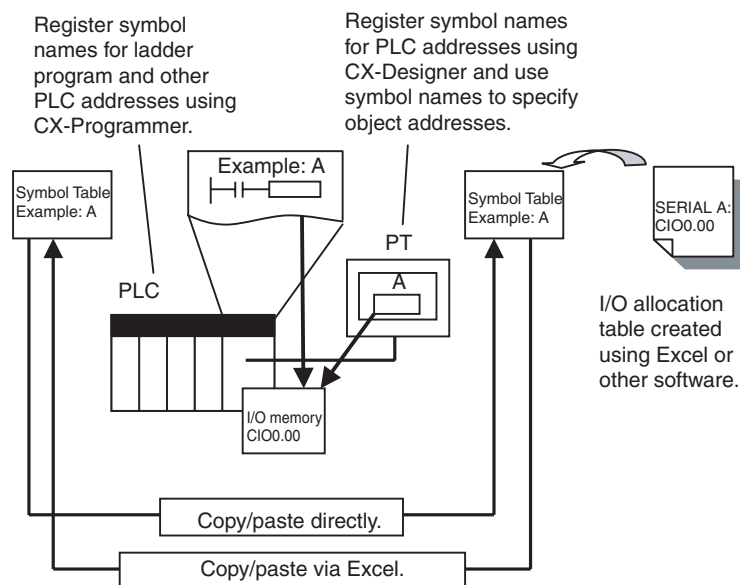
This means that all addresses used in a project can be managed from the symbol table.

The following operations can be performed easily using the symbol table.

- Changing allocated addresses when the address allocation changes suddenly.
- Reusing existing projects in another system.

Symbols can also be copied and pasted between the CX-Programmer and CX-Designer symbol tables.

Also, any I/O allocation table created using Excel or other software can be used as is in symbol tables.



4-1-1 Changing Allocated Addresses

If an address allocated for a symbol is changed on a symbol table, the change is automatically reflected in all screens.

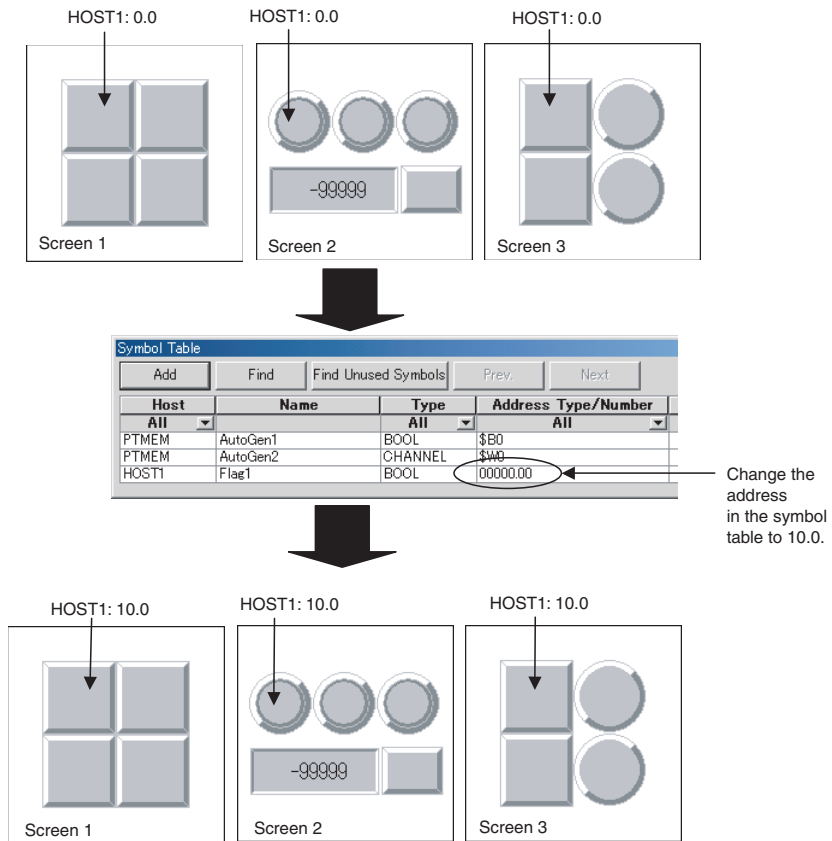
This allows allocated addresses to be changed simply by changing the symbol table, instead of opening each screen and changing the property settings for the functional objects on that screen.

There is flexibility with symbol changes to meet any requirement. The replace function can be used to globally replace the host and addresses. Symbols can also be changed individually.

Procedure

- 1,2,3...
1. Select **Symbol Table** on the project workspace Common Setting Tab Page. The symbol table will be displayed.
 2. Double-click the symbol for which the allocated address is to be changed in the symbol table.
 3. Change the allocated address in the displayed Address Settings Dialog Box.

- When the changes have been completed, they will be reflected in all functional objects that use that symbol.



4-1-2 Reusing Existing Projects in Another System

When using existing projects in another system, the addresses allocated for objects can be easily changed simply by changing the addresses in the symbol table.

Procedure

- 1,2,3... 1. Change the allocated address for each symbol in the symbol table.
2. To replace addresses in the symbol table, right-click the mouse and select **Replace** from the pop-up menu that is displayed.

4-1-3 Copying and Pasting Symbols Between the CX-Programmer and the CX-Designer

Both CX-Designer and CX-Programmer have symbol tables and can share their symbol data.

This means that CX-Programmer symbols can be copied to the CX-Designer. And symbols added using the CX-designer can be copied to the CX-Programmer.

| Name | Data Type | Address / Value | Rack Location | Usage | Comment |
|--------------------|-----------|-----------------|---------------|-------|-----------------------------|
| P_First_Cycle | BOOL | A200.11 | | Work | First Cycle Flag |
| P_Step | BOOL | A200.12 | | Work | Step Flag |
| P_First_Cycle_Task | BOOL | A200.15 | | Work | First Task Execution Flag |
| P_Max_Cycle_Time | UDINT | A262 | | Work | Maximum Cycle Time |
| P_Cycle_Time_Value | UDINT | A264 | | Work | Present Scan Time |
| P_Cycle_Time_Error | BOOL | A401.08 | | Work | Cycle Time Error Flag |
| P_Low_Battery | BOOL | A402.04 | | Work | Low Battery Flag |
| P_IO_Verify_Error | BOOL | A402.09 | | Work | I/O Verification Error Flag |
| P_Output_Off_Bit | BOOL | A500.15 | | Work | Output Off Bit |



CX-Programmer symbols are copied and pasted to the CX-Designer symbol table.

| Host | Name | Type | Address | Type/Number | I/O | Comment |
|---------|--------------------|---------|------------|-------------|-----|------------------|
| All | All | All | All | All | | |
| PTMEM | AutoOn1 | BOOL | | I50 | | |
| PTMEM | AutoOn2 | CHANNEL | | 5W0 | | |
| SERIALA | P_First_Cycle | BOOL | AR00200.11 | | | First Cycle |
| SERIALA | P_Step | BOOL | AR00200.12 | | | Step |
| SERIALA | P_First_Cycle_Task | BOOL | AR00200.15 | | | First Cycle Task |
| SERIALA | P_Max_Cycle_Time | CHANNEL | AR00262 | | | Max Cycle Time |
| SERIALA | P_Cycle_Time_Value | CHANNEL | AR00264 | | | Cycle Time Value |
| SERIALA | P_Cycle_Time_Error | BOOL | AR00401.08 | | | Cycle Time Error |
| SERIALA | P_Low_Battery | BOOL | AR00402.04 | | | Low Battery |
| SERIALA | P_IO_Verify_Error | BOOL | AR00402.09 | | | I/O Verify Error |
| SERIALA | P_Output_Off_Bit | BOOL | AR00500.15 | | | Output Off Bit |



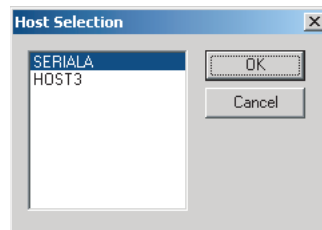
The same symbol as the CX-Programmer symbol is added.

Procedure

Copying CX-Programmer Symbols to the CX-Designer

1,2,3...

1. Start CX-Programmer and open the project with the symbol to be shared.
2. Select the symbol from the CX-Programmer symbol table.
3. Open the CX-Designer symbol table and paste the symbol.
4. If a host address is set for the symbol, select the applicable host for the destination.



Copying CX-Designer Symbols to the CX-Programmer

1,2,3...

1. Select the symbol from the CX-Designer symbol table and copy it to the CX-Programmer.

| Host | Name | Type | Address | Type/Number | I/O | Comment |
|---------|-------------------------|---------|----------|-------------|-----|-------------------------|
| All | All | All | All | All | | |
| PTMEM | AutoOn1 | BOOL | | I50 | | |
| PTMEM | AutoOn2 | CHANNEL | | 5W0 | | |
| SERIALA | Trigger | BOOL | 00100.00 | | | Trigger |
| SERIALA | Operation Complete Flag | BOOL | 00100.01 | | | Operation Complete Flag |



Copy the symbol for which a PLC address is allocated and paste it to Excel.

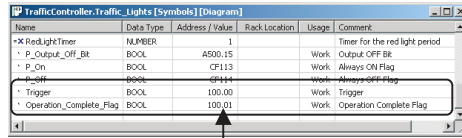
2. Paste to Excel. Select and copy the cells in Excel other than those in the Host column.

| | | | | |
|---------|-------------------------|------|--------|-------------------------|
| SERIALA | Trigger | BOOL | 100.00 | Trigger |
| SERIALA | Operation Complete Flag | BOOL | 100.01 | Operation Complete Flag |



This section is copied.

- Open the CX-Programmer symbol table and paste the symbol.



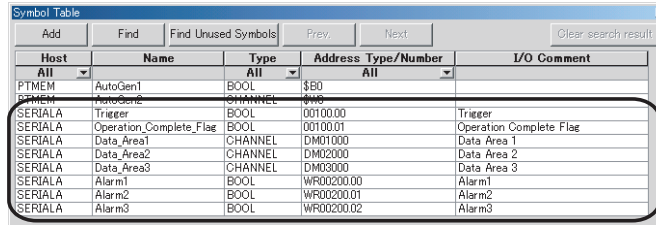
The same symbol as the CX-Designer symbol is added.

4-1-4 Using I/O Allocation Table in Symbol Table

The user can create the required I/O allocation table when creating projects. If the I/O allocation table is created in the same format as the symbol table, the I/O allocation table data can be copied as is to the symbol table. This enables symbols to be created easily from the I/O allocation table.

| Host | Name | Type | Address | Comment |
|----------|-------------------------|---------|---------|-------------------------|
| SERIAL A | Trigger | BOOL | 100.00 | Trigger |
| SERIAL A | Operation_Complete_Flag | BOOL | 100.01 | Operation Complete Flag |
| SERIAL A | Data_Area1 | CHANNEL | DM1000 | Data_Area1 |
| SERIAL A | Data_Area2 | CHANNEL | DM2000 | Data_Area2 |
| SERIAL A | Data_Area3 | CHANNEL | DM3000 | Data_Area3 |
| SERIAL A | Alarm1 | BOOL | WR200.0 | Alarm1 |
| SERIAL A | Alarm2 | BOOL | WR200.1 | Alarm2 |
| SERIAL A | Alarm3 | BOOL | WR200.2 | Alarm3 |

Copy the I/O allocation table created using Excel and past to the CX-Designer symbol table.



The I/O allocations in the table are registered as symbols.

Procedure

- 1,2,3... Create an I/O allocation table using Excel. Use the following order in the I/O allocation table: Host, symbol name, type, address, and I/O comment
- Copy the I/O allocation table.
- Open the CX-Designer symbol table and paste the symbols.

4-2 Using Screens from Other Projects

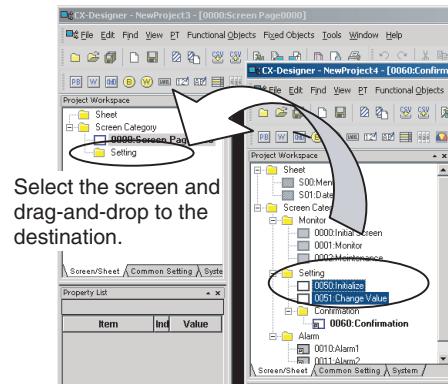
Screens from different projects can be copied between project workspaces if more than one copy of CX-Designer is running at the same time.

If there is an alarm/event display object, data log graph, or other functional object on the copied screen that accesses common settings, the common settings are automatically copied as well. This means that settings do not need to be adjusted to use the same common settings in both the source and destination project.

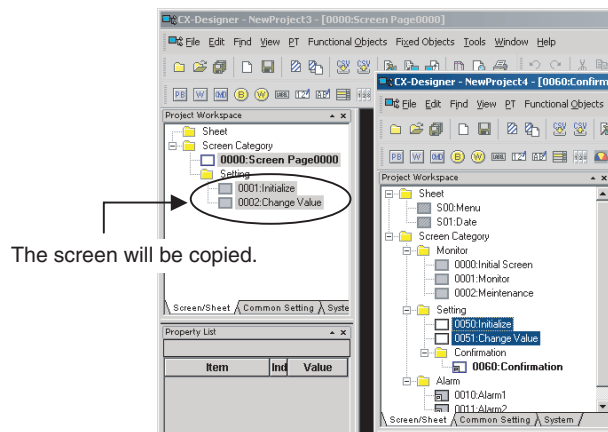
Procedure

- 1,2,3... Start two copies of CX-Designer and open the source project on one copy and the destination project on the other copy. Open the project workspace Screen/Sheet Tab Page.

2. Select the screen to be copied on the source CX-Designer and drag-and-drop the screen to the destination category. The dialog box for setting the destination screen number and host will be opened.



3. Specify the destination screen number and the address host in the dialog box. The screen will be copied.



4. The addresses used in the source screen will be automatically copied to the symbol table in the destination project. The common settings accessed by screens are also added automatically.

■ Copying Screens with Alarm/Event Displays

Source settings

The 'Source settings' screenshot shows two windows. The 'Symbol Table' window has a table with the following data:

| Host | Name | Type | Address | Type/Number | I/O Comment |
|---------|----------|---------|------------|-------------|-------------|
| PTMEM | AutoGen1 | BOOL | \$80 | All | |
| PTMEM | AutoGen2 | CHANNEL | \$90 | All | |
| SERIALA | Alarm1 | BOOL | WR00200.00 | | |
| SERIALA | Alarm2 | BOOL | WR00200.01 | | |
| SERIALA | Alarm3 | BOOL | WR00200.02 | | |

The 'Alarm/Event' dialog box shows a table with the following data:

| No. | Message | Address | Priority | Display Type | Group | Auto | Switch | Auto | Save | Detection Type | Occurred Text | Released Text |
|-----|---------|--------------------|----------|--------------|-------|------|--------|------|------|----------------|---------------|---------------|
| 1 | Alarm1 | SERIALA:WR00200.00 | 1 | H | 0 | FALS | 0 | FALS | TRUE | Up | | |
| 2 | Alarm2 | SERIALA:WR00200.01 | 1 | H | 0 | FALS | 0 | FALS | TRUE | Up | | |
| 3 | Alarm3 | SERIALA:WR00200.02 | 1 | H | 0 | FALS | 0 | FALS | TRUE | Up | | |



Destination settings

The 'Destination settings' screenshot shows the same two windows as above, but with annotations. A box highlights the Symbol Table entries for Alarm1, Alarm2, and Alarm3. A text box with an arrow pointing to the Symbol Table says: "Addresses registered as alarm/events in the source project are automatically added to both the symbol table and the Alarm/Event Dialog Box." The Alarm/Event dialog box now shows the following data:

| No. | Message | Address | Priority | Display Type | Group | Auto | Switch | Auto | Save | Detection Type | Occurred Text | Released Text |
|-----|---------|--------------------|----------|--------------|-------|------|--------|------|------|----------------|---------------|---------------|
| 1 | AlarmA | SERIALA:WR00100.00 | 1 | H | 0 | FALS | 0 | FALS | TRUE | Up | | |
| 2 | AlarmB | SERIALA:WR00100.01 | 1 | H | 0 | FALS | 0 | FALS | TRUE | Up | | |
| 3 | Alarm1 | SERIALA:WR00200.00 | 1 | H | 0 | FALS | 0 | FALS | TRUE | Up | | |
| 4 | Alarm2 | SERIALA:WR00200.01 | 1 | H | 0 | FALS | 0 | FALS | TRUE | Up | | |
| 5 | Alarm3 | SERIALA:WR00200.02 | 1 | H | 0 | FALS | 0 | FALS | TRUE | Up | | |

Addresses registered as alarm/events in the source project are automatically added to both the symbol table and the Alarm/Event Dialog Box.

- Address allocations can be changed from the symbol table to an address suitable for the destination project. (Refer to 4-1 Creating Screens Using Symbols.)

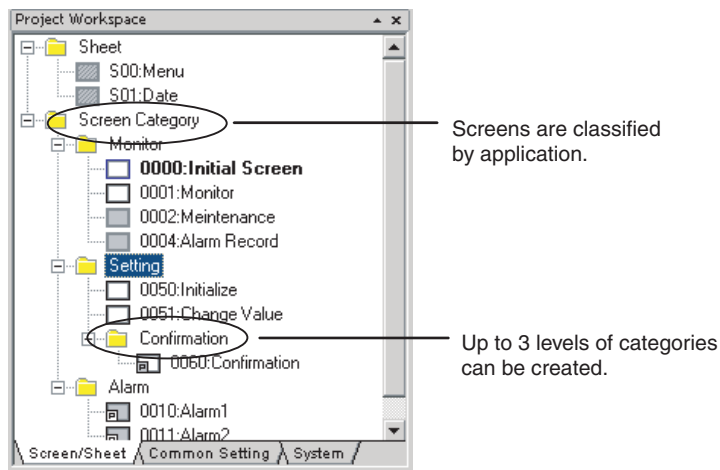
Note

- All screens in a category can be copied by selecting the category and dragging-and-dropping it to another project workspace.
- Sheets can also be copied using the same method.
- Common settings can be copied by selecting them on the project workspace Common Settings Tab Page and dragging-and-dropping them to another CX-Designer's project workspace Common Settings Tab Page.

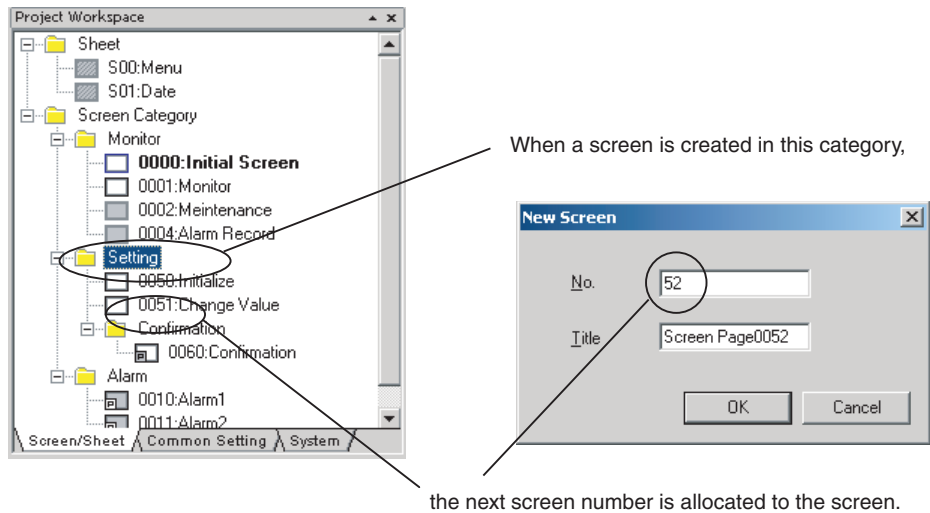
4-3 Classifying Screens by Application

Screens can be classified by application in the CX-Designer. These classifications are called "screen categories."

To display screens by screen categories, right-click in the Project Workspace and select **Display Screen Category** from the pop-up menu.

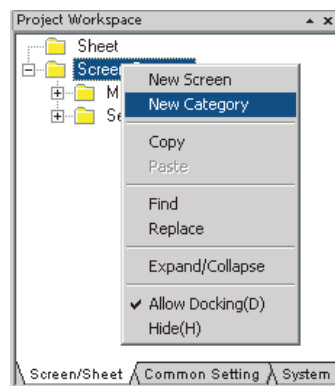


Consecutive screen numbers are automatically allocated in the same category when a new screen is created. The screen numbers can be changed.

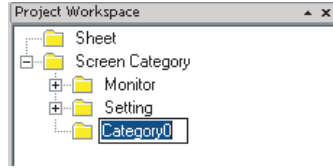


4-3-1 Creating Categories

- 1,2,3...
1. Open the project workspace Screen/Sheet Tab Page.
 2. Select **Screen Category** or an existing category.
 3. Right-click and select **New Category** from the pop-up menu.



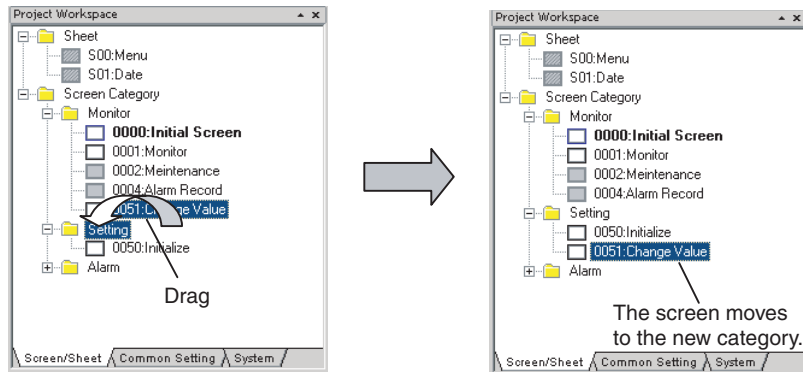
4. A new category will be created. Enter the category name.



4-3-2 Moving Screens between Categories

Existing screens can be moved to different categories.

- 1,2,3... 1. Select the screen to be moved to a different category from the project workspace Screen/Sheet Tab Page. (More than one screen can be selected.)
2. Drag the screen or screens to the destination category.



Note Categories can also be moved by selecting and dragging them to the desired location. Screens in that category are also moved.

4-3-3 Creating New Screens

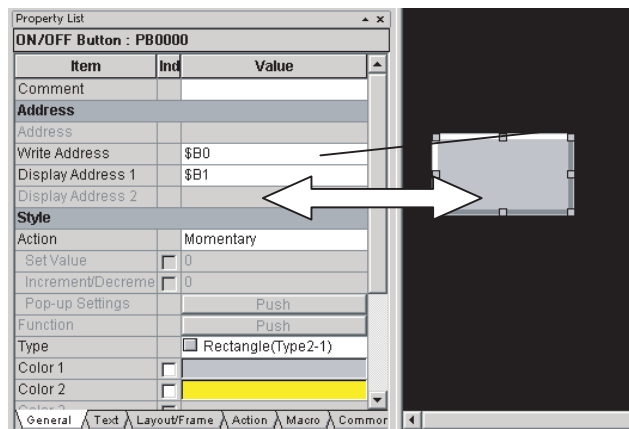
Screens can be created in a category.

- 1,2,3... 1. Select the category for the new screen on the project workspace Screen/Sheet Tab Page.
2. Right-click the screen category and select **New Screen** from the pop-up menu.

4-4 Checking and Changing Functional Object Properties without Opening Property Setting Dialog Boxes

Click a functional object on the screen to display the properties of that object in the Property List. Settings can be checked and changed on the Property List without opening a Property Setting Dialog Box.

Settings for more than one object can be changed in the Property List by using the global replace function.



The Property List is used to display and set the properties for the selected object. Changes to properties are immediately reflected on the screen, which enables changes to be checked during screen creation.

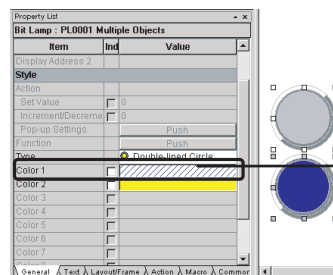
Note The Property Settings Dialog Box for an object can still be displayed by double-clicking the object.

4-4-1 Globally Replacing Settings for More Than One Object

More than one item can be selected and settings common to all items can be changed. The changed settings will be reflected in all selected objects.

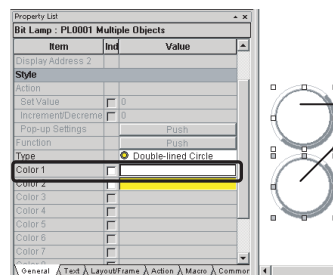
Procedure

- 1,2,3...
1. Select all the objects for which settings are to be changed.
 2. Change the setting items common to all selected objects on the Property List.



The setting common to the selected objects, **Color 1**, will be changed.

3. The change will be reflected in all objects.



All selected objects change to the same color.

Note Items not common to all selected objects cannot be changed.

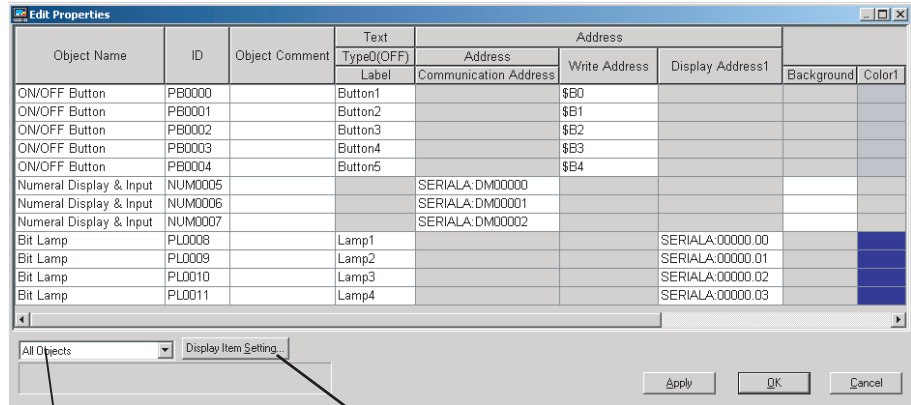
4-5 Listing and Editing Functional Object Properties

Properties of objects on the screen can be displayed in table format and the settings changed.

Settings for more than one object can be changed at the same time and consecutive addresses can be automatically set, making editing more efficient.

Procedure

- 1,2,3... 1. Select **Edit - Edit Properties**.
2. The functional objects on the screen and their properties will be displayed. Entries made to each item will be reflected as changes in the functional object.



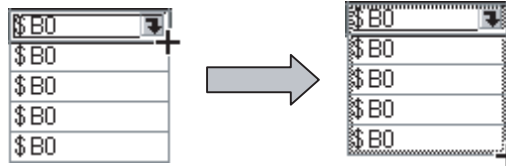
The display can be limited to functional objects selected from the list.

Click the **Display Item Setting** Button to change property settings displayed in the Edit Properties Window.

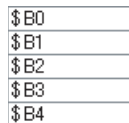
4-5-1 Setting Consecutive Addresses

Addresses can be changed to make the address consecutive.

- 1,2,3... 1. Select the cell for the set address and move the mouse to the bottom-right of the cell. When the cursor changes to a + cursor, drag the cursor down or up.



2. The addresses will change to descending order when the cursor is dragged down, and to ascending order when dragged up.



4-5-2 Copying the Same Setting to More Than One Cell

Each setting can be copied to other cells for items of the same type.

- 1,2,3... 1. Select and copy the desired cell.



2. Select the destination cell and paste the copied setting. Copied settings can be pasted to more than one cell, enabling global replacement of settings.



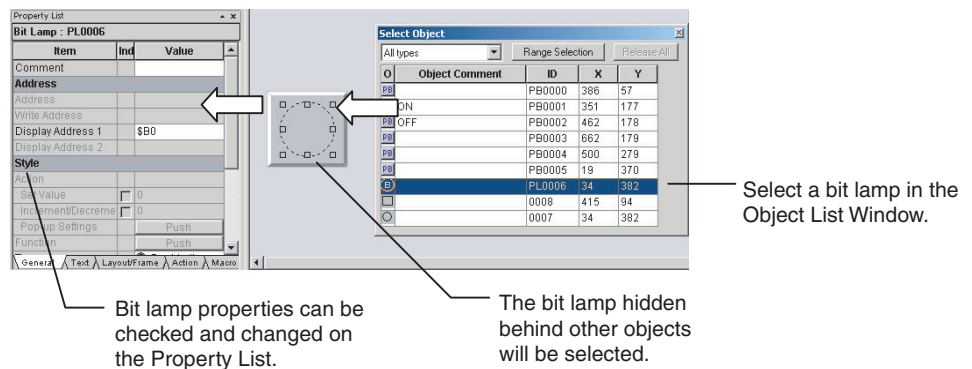
- Note**
- (1) If an object is selected on the screen, only the properties for the selected functional object are listed.
 - (2) The properties of the following functional objects can be set using the list edit function.
 - ON/OFF Buttons
 - Word Buttons
 - Command Buttons
 - Bit Lamps
 - Word Lamps
 - Text
 - Numeral Display & Input
 - String Display & Input
 - Thumbwheel Switches
 - Dates
 - Time
 - Temporary Inputs

4-6 Editing Overlapping Objects

The CX-Designer has an Object List Function, which lists objects on the screen.

4-6-1 Method for Selecting Specified Objects

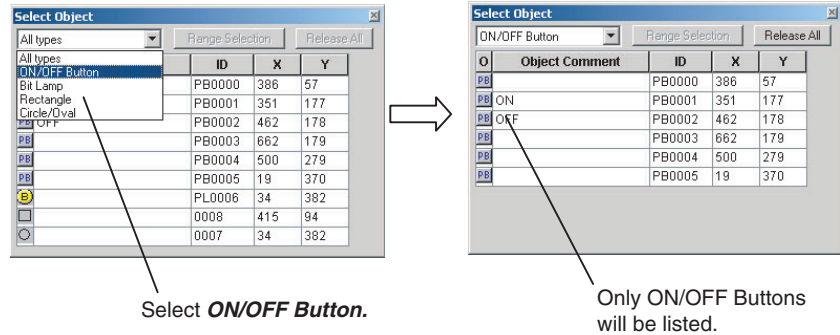
Specify objects in the Object List Window to have that object selected. This enables objects hidden under other objects to be selected and for the settings for these objects to be checked and changed on the Property List.



Procedure

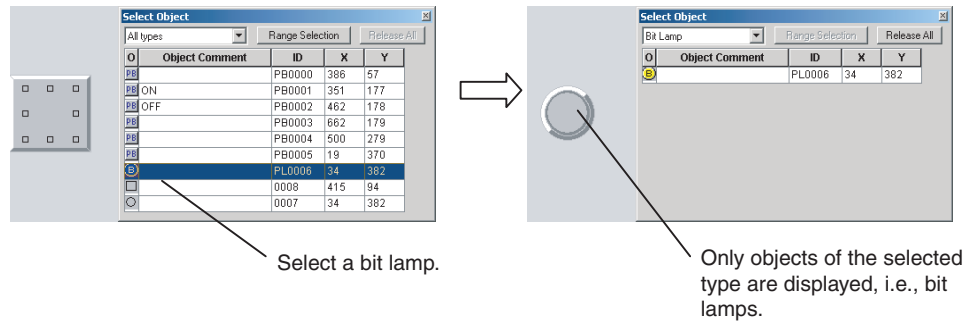
1. Select **View - Window - Object List**.

2. The Object List Window will be displayed and the objects on the screen listed.
3. Objects specified on the Object List Window will be selected on the screen. Hold down the **Shift** or **Ctrl** Key to select more than one object. The list of objects in the Object List Window can be restricted to a specific type of object. Select the type of objects to be listed from the drop down list at the top left of the Object List Window.



4-6-2 Displaying Only Specified Objects on a Screen

The screen display can also be limited to objects selected on the Object List Window. These objects can be edited on screen.



Procedure

- 1,2,3... 1. Select the object in the Object List Window and click the Range Selection Button.
2. Click the **Release All** Button to display all objects on the screen.

4-7 Creating Multi-language Labels

CX-Designer multi-language displays use Unicode for the character information displayed in a screen. This enables switching the screen between different languages, such as Japanese, English, and Chinese, for display and setting.

The CX-Designer also has functions to export functional object label strings to CSV files and import label strings from CSV files, called the CSV import/export functions.

These functions can be used to edit and set label strings in multiple languages, such as Japanese, English, and Chinese, making it easy to create multi-language screens.

An operating system that supports Unicode (Windows 2000 or XP) is required to use multi-language labels.



Procedure

1,2,3...

1. Select **File - Export to CSV File**.
2. Follow the directions in the displayed dialog box and export the labels to a CSV file. Select *Unicode* in the *Output Code Area*.
3. Edit the CSV file with a version of Excel that supports Unicode (Excel 2000 or 2002).

| PRJ | Project/Screen No. | Title | Parts ID | Parts Comment | Property | Type0 | Type1 | Type2 |
|-----|--------------------|----------------|----------|---------------|----------|-------|---------|-------|
| | Screen-0 | Screen Page000 | PL0003 | | Caption | 異常発生中 | Error | 异常发生 |
| | Screen-0 | Screen Page000 | PL0002 | | Caption | 待機中 | Waiting | 等待中 |
| | Screen-0 | Screen Page000 | PL0001 | | Caption | 停止 | Stop | 停止 |
| | Screen-0 | Screen Page000 | PL0000 | | Caption | 実行中 | Runing | 运行中 |

Enter the label strings in Japanese, English, Chinese, etc.

4. Select **File - Import CSV File**.
5. Follow the directions in the displayed dialog box and import the edited CSV file.
The strings in the CSV file will be reflected in each object.

Note

- (1) Set the number of labels to 2 or more under **Project Property** to set multi-language strings for one object.
- (2) In order to create screen data with CX-Designer using the multi-language function, it is necessary to perform Windows settings beforehand. Refer to the CX-Designer online help **Reference - Multi-language Display** for details.

4-8 Checking Address Usage Status

The Address in Use Window displays a list of the number of times each address is used in functional objects.

A list of the functional objects using the addresses is also displayed in the Output Window and specified functional objects can be selected on the screen.

Procedure

1,2,3...

1. Select **View - Window - Address in Use**.

- Set the addresses and search range and click the Go Button to display the number of times the addresses are used.

Displays the addresses.

Sets the start address for the search range.

Sets the search range.

Displays the number of times each address is used. (Unused addresses are displayed in gray.)

- Select an address and click the **Find Reference Object** Button to display a list of functional objects using that address in the Output Window. Select a functional object in the Output Window to automatically select that object on the screen.

Search Result: 6 entries found Find From: Communications AddressRange\Whole Project

| Page | ID | Host | Name | Address | I/O Comment | Label | Object Com | Detailed Information |
|------|---------|---------|---------|----------|-------------|-------|------------|-----------------------------------|
| 0001 | NUM0067 | SERIALA | Status | 00000 | Status | | | Numeral Display & Input : Address |
| 0001 | PL0068 | SERIALA | Running | 00000.00 | Running | | | Bit Lamp : Display Address |
| 0002 | PL0000 | SERIALA | Running | 00000.00 | Running | | | Bit Lamp : Display Address |
| 0002 | NUM0001 | SERIALA | Status | 00000 | Status | | | Numeral Display & Input : Address |
| 0003 | NUM0009 | SERIALA | Status | 00000 | Status | | | Numeral Display & Input : Address |
| 0050 | NUM0001 | SERIALA | Status | 00000 | Status | | | Numeral Display & Input : Address |

Output Window

Running Stop Waiting

Objects selected in the Output Window are selected on the screen.

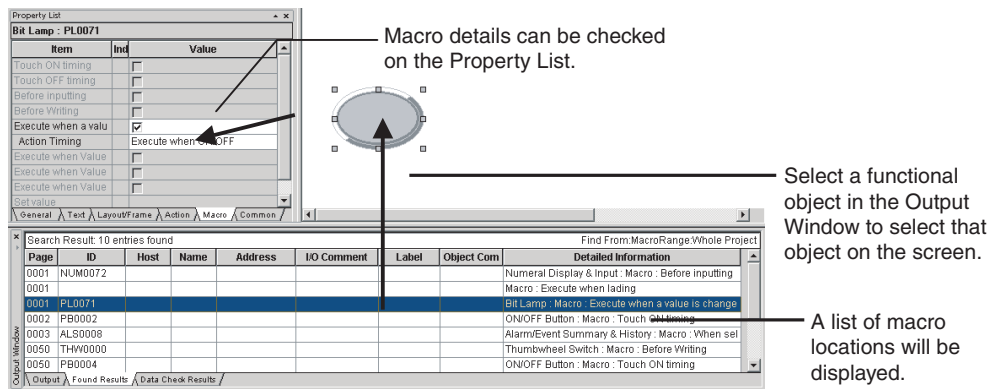
Note Searches can be made for the addresses used in a project or in a screen and the results displayed in a list. Select **Find - Address Cross Reference**.

4-9 Searching for Embedded Macros

Embedded macros can be found and displayed in the Output Window. Objects selected in the Output Window are automatically selected, so macro details can be checked on the Property List.

Procedure

- 1,2,3...**
- Select **Find - Macro Cross Reference**.
 - Specify the search range in the displayed Search Embedded Macro Dialog Box and execute the search.
 - A list of macro locations will be displayed in the Output Window.

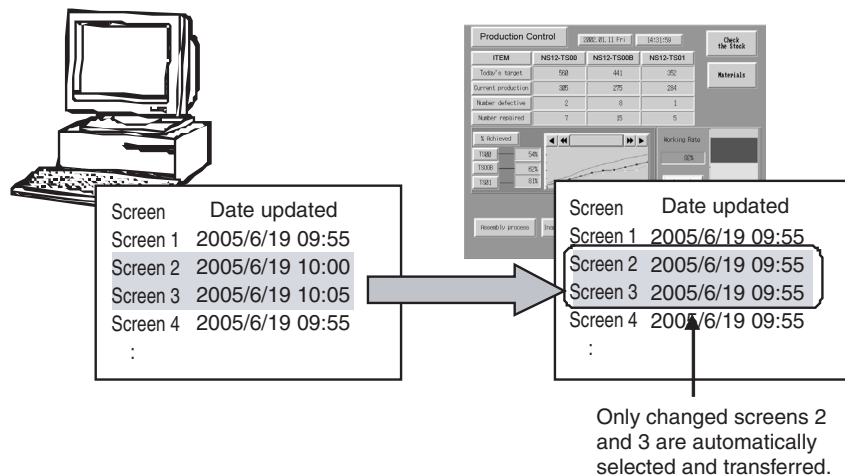


4-10 Transferring Only Edited Data to PT

The data is edited and transferred to the PT many times when debugging projects.

The CX-Designer has a Quick Transfer function. The Quick Transfer function automatically compares project data with the data already transferred to the PT and transfers only changed data.

This means that only the required data is transferred to the PT, which greatly reduces the time and work required for transfers.



Procedure

- 1,2,3... 1. Select **PT - Transfer - Quick Transfer [Computer → PT]**.
2. A dialog box to confirm the transfer will be displayed. Press the Yes Button to start transferring the data.

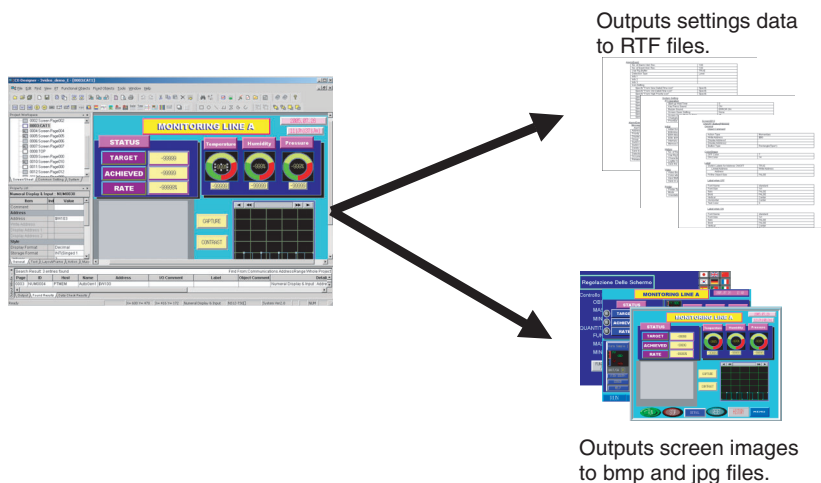
- Note**
- (1) Transfer routes and other settings need to be made before executing Quick Transfer. Select **PT - Transfer - Transfer Setting** to make the settings.
 - (2) Select **PT - Transfer - Transfer [Computer → PT]** to transfer data for the whole project to the PT.

4-11 Creating Documents

Project and screen settings and functional object property settings can be output to RTF files by using the CX-Designer print function.

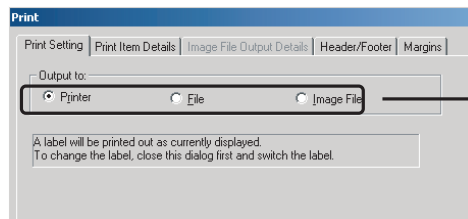
Screen images can also be output to bmp and jpg files.

The CX-Designer print function facilitates the production of a variety of documents, e.g., these files can be used as is for specifications, or the data can be processed to create operation manuals, etc.



Procedure

- 1,2,3... 1. Select **File - Print**.



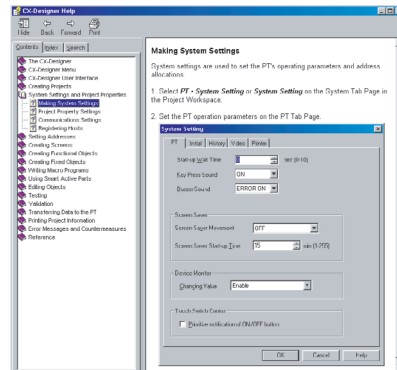
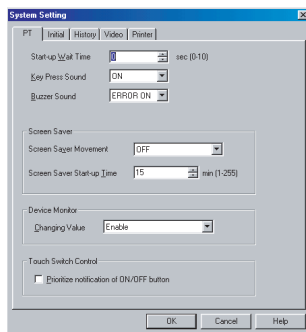
Select **File** to output settings to an RTF file. Select **Image File** to output screen images to a bmp or jpg file.

2. When printing is executed, an RTF or bmp/jpg file is created.

- Note**
- (1) If **Output to:** is set to **Printer**, the settings will be output to the printer.
 - (2) If **Output to:** is set to **File** or **Printer**, header, footer, and margin settings can be made.

4-12 How to Use Help

Press the **F1** Key or click the **Help** Button in dialog boxes to display help information relating to the selected menu or dialog box.




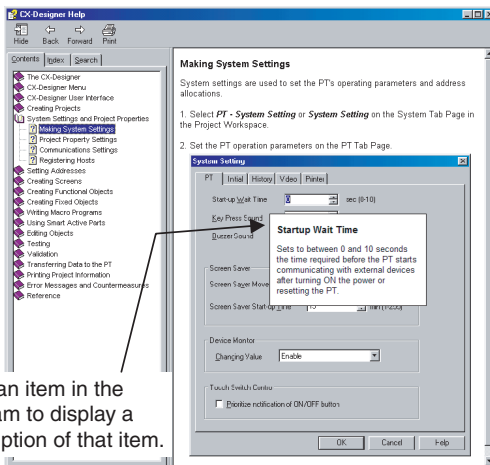
Press the **F1** Key or click the **Help** Button on the History Tab Page of the System Setting Dialog Box.

A description of the History Tab Page of the System Setting Dialog Box will be displayed.

Procedure

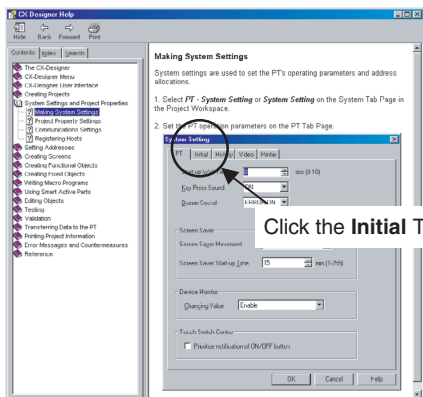
Click on the diagram in Help Mode to display a description or switch to another topic.

If the mouse is moved to locations that can be clicked in Help Mode, the cursor will change shape to .

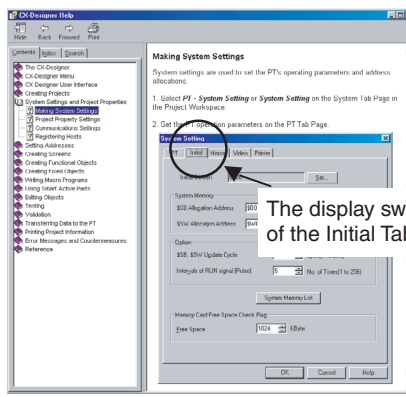


Click an item in the diagram to display a description of that item.

If there is a tab page in the explanatory dialog box, the Help diagram display can be switched by clicking that tab page.



Click the **Initial** Tab Page.



The display switches to a description of the Initial Tab Page.

Appendix A

Comparison of Functions with NS-Designer

The following tables show the CX-Designer menus, commands, and functions that correspond to NS-Designer menus.

| Menu | NS-Designer menu command | CX-Designer menu/function |
|------|--------------------------|---|
| File | New Project | File - New Project |
| | Open Project | File - Open Project |
| | Save Project | File - Save Project |
| | Save Project As | File - Save Project As |
| | Template | --- |
| | Project Maintenance | --- |
| | New Screen | File - New Screen |
| | Open Screen | File - Open Screen |
| | Close Screen | --- |
| | Save Screen | File - Save Screen/Sheet |
| | Save All | File - Save All |
| | Open Sheet | Project Workspace - Screen/Sheet Tab Page |
| | Apply Sheet | File - Apply Sheet |
| | Import CSV File | File - Import CSV File |
| | Export CSV File | File - Export CSV File |
| | Transfer Data | PT - Transfer |
| | Print | File - Print |
| | Recent Projects | File - Recent Projects |
| | Exit | File - Exit |
| Edit | Undo | Edit - Undo |
| | Redo | Edit - Redo |
| | Cut | Edit - Cut |
| | Copy | Edit - Copy |
| | Paste | Edit - Paste |
| | Offset Paste | Edit - Repeat |
| | Delete | Edit - Delete |
| | Find | Edit - Find |
| | Replace | Edit - Replace |
| | Select All | Edit - Select All |
| | Repeat | Edit - Repeat |

| Menu | NS-Designer menu command | CX-Designer menu/function |
|-------------------|-------------------------------------|---|
| View | Toolbar | View - Toolbar |
| | Status Bar | View - Status Bar |
| | Switch Label | View - Previous Label View - Next Label |
| | Previous Screen | View - Previous Screen |
| | Next Screen | View - Next Screen |
| | Previous Frame Page | View - Previous Frame Page |
| | Next Frame Page | View - Next Frame Page |
| | Simulate ON/OFF | View - Simulate ON/OFF |
| | Show ID | View - Show ID |
| | Show Address | View - Show Address - Show Address |
| | Show Error Object | Output Window - Data Check Results Tab Page |
| | Show Sheet Object | View - Show Sheet Object |
| | Show Touch Points | View - Show Touch Points |
| | Zoom | View - Zoom |
| | Refresh | View - Refresh |
| Functional Object | ON/OFF Button | Functional Object - ON/OFF Button |
| | Word Button | Functional Object - Word Button |
| | Command Button | Functional Object - Command Button |
| | Bit Lamp | Functional Object - Bit Lamp |
| | Word Lamp | Functional Object - Word Lamp |
| | Label | Functional Object - Label |
| | Numeral Display & Input | Functional Object - Numeral Display & Input |
| | String Display & Input | Functional Object - String Display & Input |
| | List Selection | Functional Object - List Selection |
| | Thumbwheel Switch | Functional Object - Thumbwheel Switch |
| | Analog Meter | Functional Object - Analog Meter |
| | Level Meter | Functional Object - Level Meter |
| | Broken-line Graph | Functional Object - Broken-line Graph |
| | Bitmap | Functional Object - Bitmap |
| | Alarm/Event Display | Functional Object - Alarm/Event Display |
| | Alarm/Event Summary & History | Functional Object - Alarm/Event Summary & History |
| | Date | Functional Object - Date |
| | Time | Functional Object - Time |
| | Data Log Graph | Functional Object - Data Log Graph |
| | Data Log Table | Functional Object - Data Log Table |
| | Video Display | Functional Object - Video Display |
| | Frame | Functional Object - Frame |
| Table | Functional Object - Table | |
| Temporary Input | Functional Object - Temporary Input | |
| Fixed Object | Rectangle | Fixed Object - Rectangle |
| | Circle/Oval | Fixed Object - Circle/Oval |
| | Straight Line | Fixed Object - Straight Line |
| | Polyline | Fixed Object - Polyline |
| | Polygon | Fixed Object - Polygon |
| | Sector | Fixed Object - Sector |
| | Arc | Fixed Object - Arc |

| Menu | NS-Designer menu command | CX-Designer menu/function |
|----------------|---------------------------------|---|
| Settings | Object Properties | PT - Object Properties |
| | Edit Label | PT - Edit Label |
| | Change Settings at Once | Edit - Edit Properties |
| | Flicker | PT - Flicker |
| | Password | PT - Password |
| | Unit/Scale Setting | PT - Unit/Scale |
| | Alarm/Event Setting | PT - Alarm/Event Setting |
| | Data Log Setting | PT - Data Log Setting |
| | Data Block Setting | PT - Data Block Setting |
| | Change Input Order | PT - Change Input Order |
| | Project Properties | PT - Project Properties |
| | Screen Properties | PT - Screen/Sheet Properties |
| | System Setting | PT - System Setting PT - Communication Setting |
| | Reset Defined Default | Tool - Reset Defined Default |
| | Convert | Tool - Convert |
| Register Hosts | PT - Communication Setting | |
| Layout | Align/Distribute | Edit - Align/Distribute |
| | Make Same Size | Edit - Make Same Size |
| | Order | Edit - Order |
| | Nudge | Edit - Nudge |
| | Rotate/Flip | Edit - Rotate/Flip |
| | Modify | Edit - Edit Node |
| | Group | Edit - Group - Group |
| | Ungroup | Edit - Group - Ungroup |
| | Grid | View - Grid |
| Tool | Screen Maintenance | Project Workspace - Screen/Sheet Tab Page |
| | Sheet Maintenance | Project Workspace - Screen/Sheet Tab Page |
| | Error Check | Tool - Validation |
| | Validation Result | Output Window - Data Check Results Tab Page |
| | Functional Object List | Edit - Edit Properties |
| | List Up Functional Objects Used | View - Window - Select Object |
| | List Up Addresses Used | View - Window - Address in Use List |
| | Address Cross Reference | Find - Address Cross Reference |
| | Edit Background Bitmap | --- |
| | Register Library | Tool - Library |
| | Use Library | Tool - Library |
| | Test | Tool - Test |
| | Resource Report | Tool - Resource Report |
| | Option | Tool - Options |
| Window | Cascade | Window - Cascade |
| | Tile | Window - Tile |
| | Arrange Icons | Window - Arrange Icons |
| Help | Contents | Help - Contents |
| | Search Topic | Help - Search Topic |
| | About NS-Designer | Help - About CX-Designer |

Appendix B

Shortcut Keys

The following tables list the shortcut keys that can be used with CX-Designer.

| Menu | Function | Shortcut Keys |
|------|-------------------------|---|
| File | Open Screen | Ctrl+O |
| | Save All | Ctrl+S |
| | New Screen | Ctrl+N |
| | Save Screen/Sheet | Ctrl+Shift+S |
| | New Sheet | Ctrl+Shift+N |
| | Apply Sheet | Ctrl+J |
| | Print | Ctrl+P |
| Edit | Undo | Ctrl+Z |
| | Redo | Ctrl+Y |
| | Cut | Ctrl+X, Shift+DEL |
| | Copy | Ctrl+C |
| | Paste | Ctrl+V, Shift+Ins |
| | Delete | DEL |
| | Group | Ctrl+G |
| | Ungroup | Ctrl+U |
| | Up | ↑ (when object is selected) |
| | Down | ↓ (when object is selected) |
| | Left | ← (when object is selected) |
| | Right | → (when object is selected) |
| | One dot shift | Shift + ↑, ↓, →, or ← (when Snap to Grid is selected) |
| | All Objects | Ctrl+A |
| | Same Type Objects | Ctrl+D (when object is selected) |
| | Repeat | Ctrl+W |
| | Edit Properties | Ctrl+L |
| Find | Find | Ctrl+F |
| | Replace | Ctrl+H |
| | Address Cross Reference | Ctrl+R |
| View | Project Workspace | Alt+1 |
| | Symbol Table | Alt+2 |
| | Property List | Alt+3 |
| | Library | Alt+4 |
| | Select Object | Alt+5 |
| | Address in Use List | Alt+6 |
| | Output Window | Alt+7 |
| | Previous Label | Ctrl+PgUp |
| | Next Label | Ctrl+PgDn |
| | Previous Screen | Shift+PgUp |
| | Next Screen | Shift+PgDn |
| | Previous Frame Page | PgUp (when frame is selected) |
| | Next Frame Page | PgDn (when frame is selected) |
| | Refresh | F9 |

| Menu | Function | Shortcut Keys |
|--------|--------------------------------|---|
| PT | Quick transfer (Computer → PT) | Ctrl+Q |
| | Transfer (Computer → PT) | Ctrl+B |
| | Transfer (PT → Computer) | Ctrl+Shift+B |
| | Transfer Setting | Ctrl+Alt+B |
| | Transfer Program | Ctrl+I |
| | Object Properties | Enter (when functional object is selected) |
| | Edit Label | Space (when functional object with label setting is selected) |
| Tool | Test | Ctrl+T |
| | Validation (Project) | Ctrl+E |
| | Validation (Current Screen) | Ctrl+Shift+E |
| | Validation Setting | Ctrl+Alt+E |
| | Library | Alt+4 |
| Window | Next Window | Alt+0 |
| | Previous Window | Alt+Shift+0 |

Appendix C

Exchanging Data between NS-series Products

The following tables show the data compatibility between different versions of NS-series products.

Hardware and System Programs

The versions of the system program that can be installed in the PT vary with the model. The possible combinations are shown in the following table. Use a system program that can be installed for the hardware used.

| Item | NS12/NS10/NS7 | NS12-V1/NS10-V1/ NS8-V1/NS5-V1 | NS12-V2/NS10-V2/ NS8-V2/NS5-V2 | NSJ12/10/8/5 NSH5 |
|-------------------------|---------------|-----------------------------------|-----------------------------------|----------------------|
| System Program Ver. 1.X | Yes | No | No | No |
| System Program Ver. 2.X | Yes | No | No | No |
| System Program Ver. 3.X | Yes | No | No | No |
| System Program Ver. 4.X | No | Yes (Not for NS5-V1) | No | No |
| System Program Ver. 5.X | No | Yes | No | No |
| System Program Ver. 6.0 | No | Yes | No | No |
| System Program Ver. 6.2 | No | Yes | Yes | No |
| System Program Ver. 6.5 | No | No | No | Yes |

Yes: Can be installed, No: Cannot be installed

System Programs and Screen Data Versions

The versions of screen data that can be used on the PT depend on the version of the system program installed there. The “screen data version” is the version of the program selected when screen data is created on CX-Designer. The combinations that can be used on the PT are shown in the following table. Screen data versions are upwardly compatible.

| Item | | System program | | | | | | | |
|----------------------|----------|----------------|----------|----------|----------|----------|----------|----------|-------------------------|
| | | Ver. 1.X | Ver. 2.X | Ver. 3.X | Ver. 4.X | Ver. 5.X | Ver. 6.0 | Ver. 6.2 | Ver. 6.5 (See note.) |
| Screen Data Versions | Ver. 1.X | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No |
| | Ver. 2.X | No | Yes | Yes | Yes | Yes | Yes | Yes | No |
| | Ver. 3.X | No | No | Yes | Yes | Yes | Yes | Yes | No |
| | Ver. 4.X | No | No | No | Yes | Yes | Yes | Yes | No |
| | Ver. 5.X | No | No | No | No | Yes | Yes | Yes | No |
| | Ver. 6.0 | No | No | No | No | No | Yes | Yes | No |
| | Ver. 6.2 | No | No | No | No | No | No | Yes | No |
| Ver. 6.5 | No | No | No | No | No | No | No | Yes | |

Yes: Can be used on the PT, No: Cannot be used on the PT

Note With the NSJ12/10/8/5 and NSH5, operation is possible only if the screen data version has been converted to 6.5.

CX-Designer and Screen Data Versions

The versions of screen data that can be read and created depend on the CX-Designer version. Convert the data as required with CX-Designer before reading it.

| Item | | CX-Designer |
|------------------------------|----------|-----------------|
| | | Ver. 1.X |
| Screen Data Ver- sions | Ver. 1.X | Yes (See note.) |
| | Ver. 2.X | Yes |
| | Ver. 3.X | Yes |
| | Ver. 4.X | Yes |
| | Ver. 5.X | Yes |
| | Ver. 6.0 | Yes |
| | Ver. 6.2 | Yes |

Yes: Can be read, No: Cannot be read

Note Screen data can be read only if a Japanese operating system is used.

Revision History

A manual revision code appears as a suffix to the catalog number on the front cover of the manual.

Cat. No. V088-E1-01



Revision code

The following table outlines the changes made to the manual during each revision. Page numbers refer to the previous version.

| Revision code | Date | Revised content |
|---------------|---------------|---------------------|
| 01 | November 2005 | Original production |

Revision History

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