Digital
Human Machine Interface

Pro-face

Pro-Designer

Startup Guide

Preface

Thank you for purchasing Pro-face's Pro-Designer software.This manual is a basic introduction to the features and set up of Pro-Designer. For more detailed descriptions of advanced-level features, please refer to this software's online help.
Also, some of the images used in this manual may differ slightly from the screens used in the Pro-Designer software.
Please read this and all related manuals carefully to ensure proper use of this product. We recommend that you keep this and all related manuals handy for easy reference.

Important

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Documentation Conventions

In this manual the following warning symbols are used to indicate important points concerning safe and proper operation of the PS-G unit. Prior to operating the PS-G unit, be sure to read these points carefully.

Warning Symbols

This manual's warning symbols indicate the following levels of danger.

⚠ WARNING	Failure to fully comply with points indicated by this symbol may result in death or serious injury.
⚠ CAUTION	Failure to fully comply with points indicated by this symbol may result in injury or equipment damage.
⊘	Indicates actions or procedures that should NOT be performed.
❗	Indicates actions or procedures that MUST be performed to ensure proper operation.

The following mark is also used in this manual.

MEMO	Refers to related information or an additional explanation.

Trademark Rights

All company or product names used in this manual are the trade names, trademarks (including registered trademarks), or service marks of their respective companies.
This product omits individual descriptions of each of these rights.

Trademark / Trade Name	Right Holder
Microsoft, MS, Windows, Windows 95, Windows 98, Windows NT, Windows 2000, Windows XP, Windows CE, Windows Explorer, eMbedded Visual C++	Microsoft Corporation, USA
Intel, Pentium	Intel Corporation, USA
Pro-face	Digital Electronics Corporation (in Japan and other countries)
IBM, VGA	International Business Machines Corporation (IBM), USA
Adobe, Acrobat	Adobe Systems Incorporated

The following terms differ from the above mentioned formal trade names and trademarks.

Term used in this manual	Formal Trade Name or Trademark
Windows NT	Microsoft® Windows® NT Operating System
Windows 2000	Microsoft® Windows® 2000 Operating
Windows XP	Microsoft® Windows® XP Operating System
Windows CE	Microsoft® Windows® CE Operating System
Pentium	Intel® Pentium® Processors
Acrobat Reader 5.0	Adobe® Acrobat® Reader 5.0

Target Machines

The following models are the target machines described in this manual:

Target Machine	Series Name	Model Name
GP2000 Series	GP-2600 Series	GP-2600T*1
	GP-2500 Series	GP-2500T*1
		GP-2500S*1
		GP-2500L
	GP-2400 Series	GP-2400T*1
	GP-2300 Series	GP-2300T
		GP-2300L
	GP-2601 Series	GP-2601T
	GP-2501 Series	GP-2501T
		GP-2501S
	GP-2401 Series	GP-2401T
	GP-2301 Series	GP-2301T
		GP-2301S
		GP-2301L
GP2000H Series	GP-2301H Series	GP-2301HS
		GP-2301HL
	GP-2401H Series	GP-2401HT
GP37W3 Series	GP-37W3 Series	GP-37W3B
PS Series Type P	PS-500P Series	—
PS Series Type G	PS-400G Series	
	PS-600G Series	
PS Series Type B	PS-2000B Series	
PL Series*2	PL-5900 Series	
	PL-X900 Series	
	PL-X920 Series	
Factory Gateway	Factory Gateway	
Windows® compatible PC	*2	

*1 This software is compatible only with Revision “2” of these models. The revision number is indicated on the GP unit’s rear face revision label.

*2 This software is compatible only with computers running Windows NT 4.0 (Service Pack 4 or higher), Windows 2000 or Windows XP.

CD-ROM Contents

The following items are included in the CD-ROM.

Installation menu	Function
Pro-Designer	Installs the development environment required to create an application.
Pro-Designer Runtime	Installs an operating environment for a Windows-compatible PC or a PL Series device.
Pro-eView	Installs a program that configures panels created with Pro-Designer for display on an intranet/internet browser.

MEMO

- Acrobat Reader 5.0 can also be installed from this CD-ROM. Acrobat Reader (as a self-expanding file) is the software required to view PDF files. This software is contained in the CD-ROM's [/Eng/Reader] folder.
- To install Pro-Designer Runtime in a device other than a PL series, a PS series B-type or a Windows-compatible computer, please refer to that software's online help.

Essential Safety Precautions

General Operation:

⚠ WARNINGS

- Touch panel switches should NOT be used for a device's Emergency Stop Switch. Generally speaking, all industrial machinery/systems must be equipped with a mechanical, manually operated emergency stop switch. Also, for other kinds of systems, similar mechanical switches must be provided to ensure safe operation of those systems.

CD-ROM Handling:

⚠ CAUTIONS

- Remove the CD-ROM before turning your PC's power ON or OFF.
- Do not remove the CD-ROM when the disc drive lamp is lit.
- Do not touch the recording surface of the CD-ROM.
- Do not expose the CD-ROM to extremely high or low temperatures, or excessive moisture or dust.
- Do not turn your PC OFF while an application is running.

Table of Contents

1 Introduction

1 About Pro-Designer

Pro-Designer is screen creation software that can be used on a variety of User platforms. Project files created with Pro-Designer can be run on various operating systems and platforms according to the User's needs and the panel's installation environment. Pro-Designer can exchange data with other software applications on devices running a Windows operating system. Thus, a system created with Pro-Designer offers excellent expandability and can store and re-use data from existing applications.
To run a project file created with Pro-Designer, use the Pro-Designer Runtime software. You can install Pro-Designer Runtime from the Pro-Designer CD-ROM.

2 Features

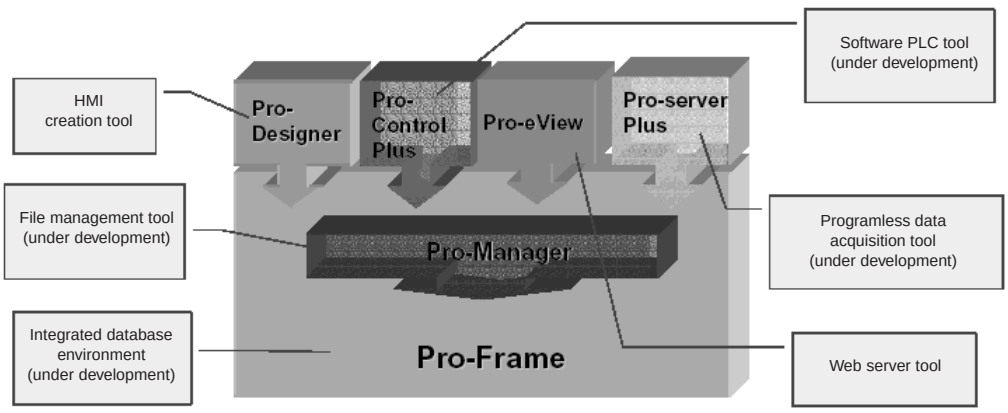
Multi-platform support

Project files created with Pro-Designer can be run on the following units.

- Windows-compatible computers
- PL Series units
- PS Series Type B unts
- PS Series Type G units
- PS Series Type P units
- GP2000 Series units
- GP2000H Series units
- Factory Gateway units
- GP37W3 units

Data exchange (between Pro-Designer and other Pro-Series software)

As one component of the Pro-Series family of software, Pro-Designer can easily share variables with other Pro-Series software. This significantly reduces the number of project development steps and allows you to create highly reliable systems.



Data reusability

Data created with Pro-Designer can be divided into reusable units that can be stored in the Toolchest. This makes for reuse. Registered data can be imported or exported in folders. This function is useful for system development, for harmonizing screens among several users, and for harmonizing all devices in use.

Connects to multiple PLCs

Pro-Designer uses built-in communication drivers to share data with a variety of communication devices. As a result, it can be easily connected to various manufacturer PLCs, using simple settings. Pro-Designer uses a single target machine to simultaneously communicate with several PLCs.

Expanded range of features

With its advanced-level script function for creating program scripts, Pro-Designer provides excellent expandability. Furthermore, all scripts can be easily reused.

Easy-to-create graphic screens

With its advanced-level animation features, Pro-Designer enables you to quickly and easily create a dynamic screen-operation environment. Combine a variety of features in a single program, such as on-screen object movements, enlarge/reduce, level indicators, ON/OFF indicators and touch features. Pro-Designer's new "Smart Parts" let you simply and easily create graphic screens.

Advanced-level reports

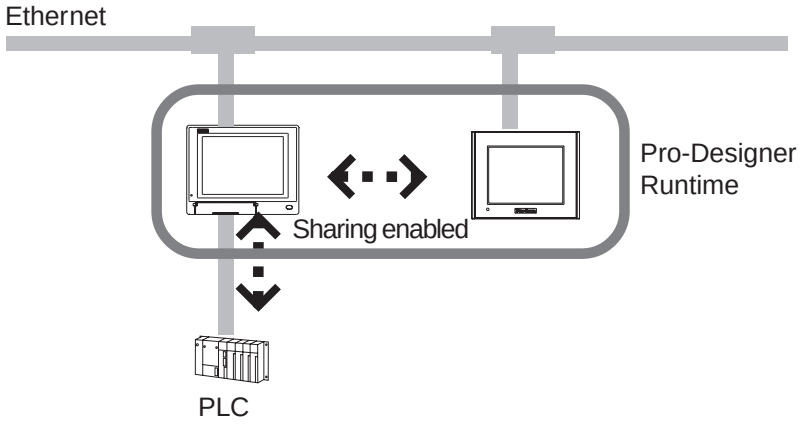
Pro-Designer has an advanced-level report function that simplifies the management of variables assigned to screen animations or panels. Also, Pro-Designer can display all panel images at the same time. These report features help you to create a smooth-running system and reduce the number of steps needed to prepare screen specifications.

Multi-language support

Pro-Designer can use up to 20 different (registered) languages. While your project is running, simply touch the screen to select the desired language used in your project's text objects.

Data-sharing (viewing/browsing project variables)

With Pro-Designer, you can create several targets for a single project and Data-sharing allows these targets to easily share data. Entering just a few, simple settings allows you to browse your network and find values assigned to another target's PLC.
(Note: Pro-Designer Runtime must be installed on each target machine.)



Editing variables created with general applications

Pro-Designer can import or export variables in CSV files. For example, a variable list created with a general application, such as a comment IO list for Excel or a PLC, can be imported into Pro-Designer for use or editing with Pro-Designer. In addition, variables created with Pro-Designer can be exported for use in general applications.

Data sharing API (exchanging data with general applications)

A data sharing API allows Pro-Designer to easily exchange data with other applications. With this feature, variables created with Pro-Designer can be loaded into other applications (such as VB/VC[*1]) for processing and calculation, with results assigned to Pro-Designer variables.

*1 Microsoft Visual Basic, Microsoft Visual C++ and eMbedded Visual C++

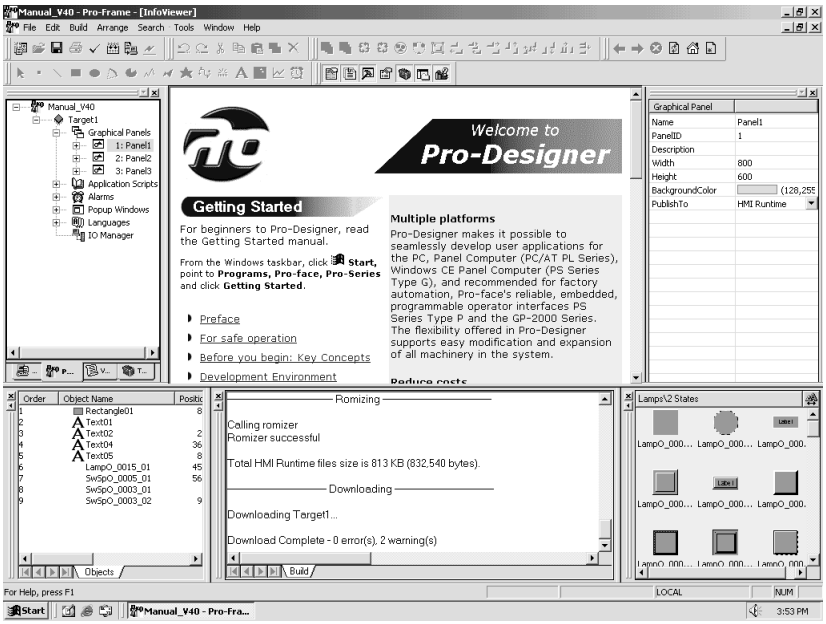
3 Integrated Development Environment

3.1 Pro-Frame

Pro-Frame is an integrated development environment for operating Pro-Series software. Pro-Frame allows for various operations – including creation of screens and control programs, data acquisition setup, and HTML file setup – in a single on-screen frame. Multi-featured tool windows allow you to quickly develop applications.
The Pro-Frame development environment provides standard Windows menus and tool bars, ensuring that every user can quickly and easily learn to use it.

3.2 Tool Windows

Pro-Designer's integrated development environment, features six panes, or "tools," that collectively allow you to quickly and efficiently develop projects. Each tool displays information about the current project/object. You can both change the size and placement of each tool's pane, and even hide a tool.
The Pro-Frame integrated development environment provides the following information. Simply click on a tool icon to display or hide that tool.



Tool/Pane Name	Description
Data List	Displays a list of all objects arranged on a panel, including their names, indications, order, position and animation settings. The object currently selected in the data list is highlighted on the panel. For a group object, information about the object and all objects belonging to the group is displayed in a hierarchy format. To sort the displayed items, click [Display Order], [Object Name], {Animation], [Variables], or [Position] at the top of the window.
Feedback Zone	Displays the progress and results of the “Error check,” “Build” and “Download” processes. If the specified process fails, the system displays an error or alert message. Double-click the displayed message to jump to the error position.
Inspector	Displays the settings of a selected object. You can edit each setting in this screen. If several objects have been selected, only the setting common to all selected objects is displayed.
Toolchest	Used to register Smart Parts supplied by the manufacturer or to register created objects, panels and scripts. You can place registered parts on a panel by dragging and dropping them from this tool. Since data registered in this tool can be imported or exported in folders, it can be used for several projects.
Navigator	This tool is used primarily to create applications. Information on each project displays in a hierarchical tree structure.
InfoViewer	Displays online help and information when the report functions are used.

4. Development and Operation Environments

Pro-Designer and Pro-Designer Runtime have the following system requirements.

Development Environment (Pro-Designer)		Operation Environment (Pro-Designer Runtime)		
Target Devices	Windows compatible*2 PL Series*1,2 PS Series Type B*2	Windows compatible*2 PL Series*1,2 PS Series Type B*2	PS Series Type G	PS Series Type P GP2000 Series*5 GP2000H Series GP-37W3 Series*5 Factory Gateway
CPU	Intel® Pentium® II 400MHz or higher			
RAM Memory	128 MB or more			
HDD/CF Card Memory	HDD: 200 MB or more		CF Card: 16 MB or more	*3
OS	Microsoft® Windows®NT 4.0 (Service Pack 4 or higher)*4 Microsoft® Windows®2000 Microsoft® Windows®XP*6 *7			
Web Browser	Microsoft Internet Explorer 5.0 or higher*4			

*1 Only PL-X9*0 and PL-5900 Series units are compatible.

*2 Windows-compatible computers, PL Series units and PS Series Type B units can be used for both development and operating environments.

*3 A CF Card is required to use certain PS Series Type P, GP2000 Series units and GP2000H Series and features.

*4 Be sure to check your Service Pack and Internet Explorer browser version numbers.

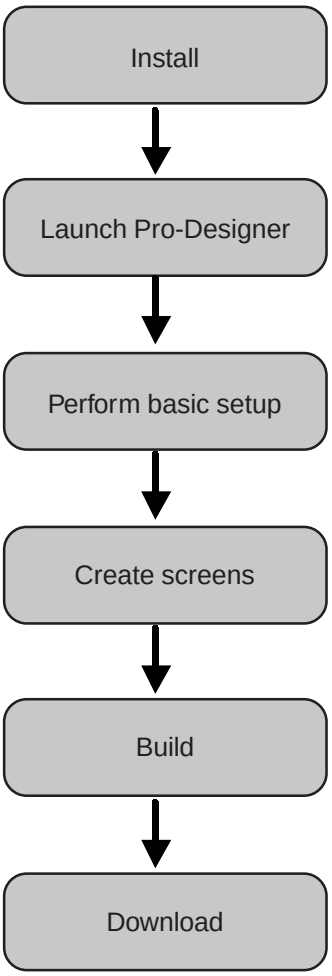
*5 For compatibility information about GP2000 Series, GP2000H Series and GP-37W3 Series units, refer to page 4 “Target Machines”.

*6 Only PL-6920 and PL-7920 Series units are compatible with Microsoft Windows® XP.

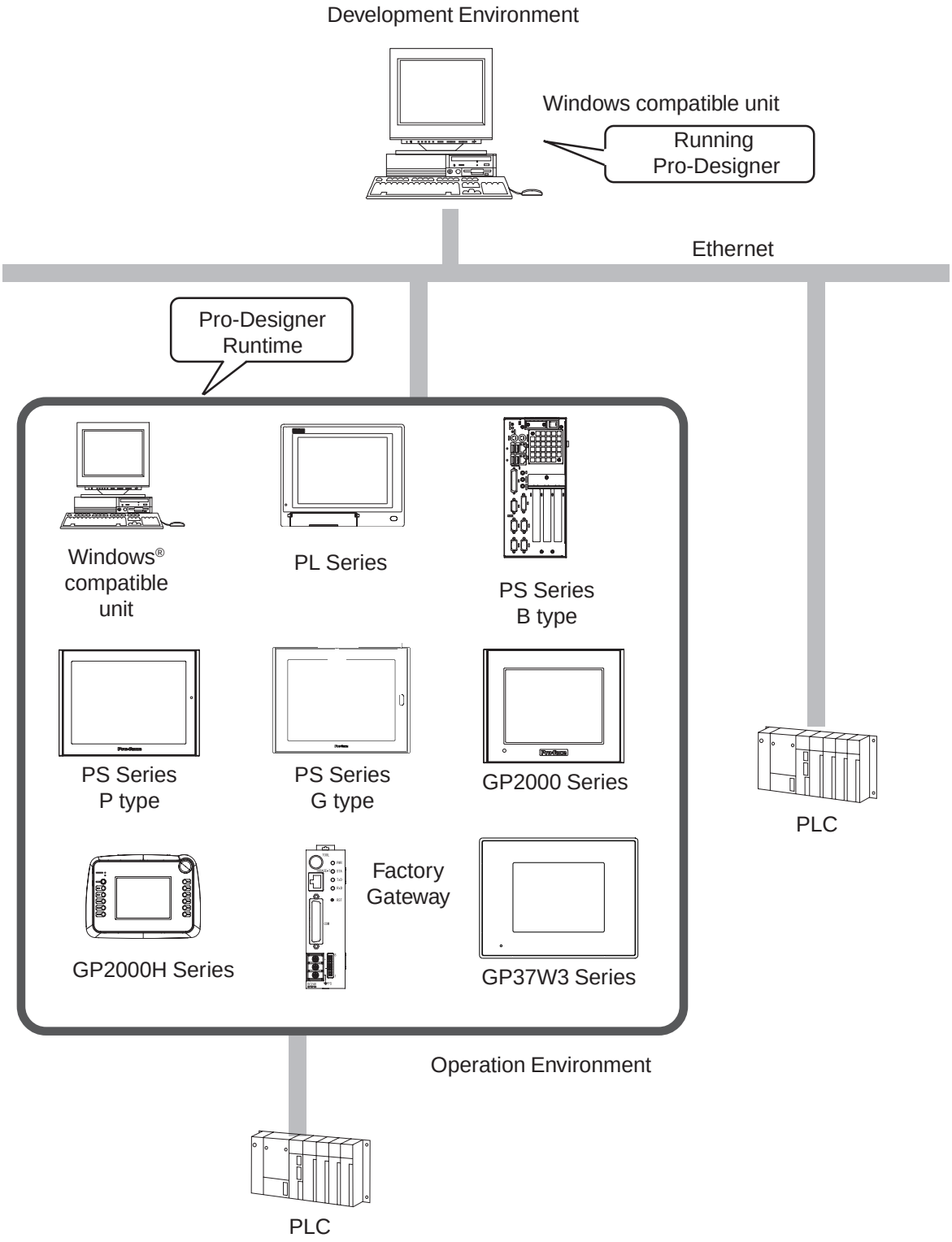
*7 Compatible with Microsoft Windows® XP Home and Windows® XP Professional.

5. Application Development Steps

Pro-Designer application development steps are as follows.



6 System Design



2 Installation

1 Before Installing the Software
2 Installing the Software
3 Uninstalling the Software
  3.1 Removing the application
  3.2 Deleting the folder

This chapter describes the installation procedure when a Windows-compatible computer is used for the development environment and operating environment. To install the software on different target machines, please refer to the online help.

1 Before Installing the Software

Before installing Pro-Designer (development environment) and Pro-Designer Runtime (operating environment) from the CD-ROM onto the PC hard disk, be sure to read the following:

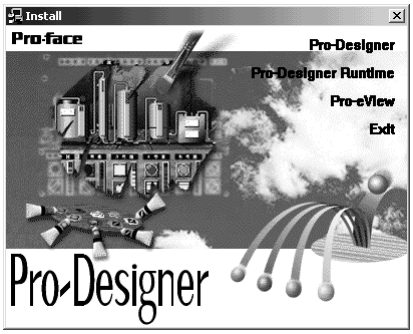
- If you are upgrading from an earlier version of Pro-Designer, uninstall the earlier version before installing the new version.
- Before starting installation, quit all programs, including both standard and resident programs (such as virus detection software).
- When installing Pro-Designer and Pro-Designer Runtime on a system running Windows NT 4.0, Windows 2000 or Windows XP, do so only with administrator-level authorization.
- Project files created/opened with this version of the software cannot be then opened with an earlier version of Pro-Designer. As a result, if it is necessary to open an earlier project file with this newer version, be sure to first use the earlier Pro-Designer software's export feature to make a backup copy of the original project file.
- Read the Pro-Designer "Readme" file before using the software.
  (Click on [Program] - [Pro-face] - [Pro-Series] - [Readme] in the [Start] menu.)
- After installing Pro-Designer Runtime, you must enter the Pro-Designer Runtime license key code before starting the program.*1

*1 Each target machine requires a single Pro-Designer Runtime license.

2 Installing the Software

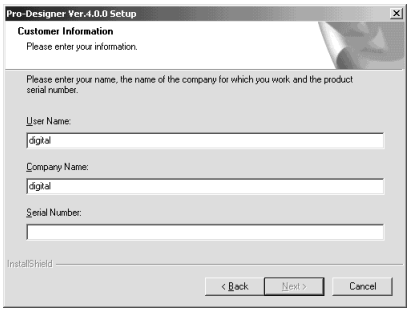
1. Insert the CD-ROM in your PC's CD-ROM drive. The Pro-Designer setup screen will appear automatically.
   If the setup screen does not appear, click on the [Start] button and then [Run]. Enter "x:\Install.exe" and click on [OK]. (Substitute your CD-ROM drive character for "x".)

2. Select the application you want to install (Pro-Designer or Pro-Designer Runtime).

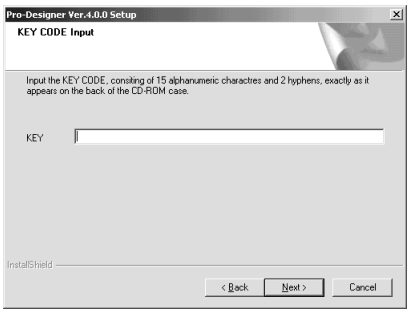


Follow the instructions provided by the installer to complete the installation.

3. Enter your user name, company name and product serial number. (The serial number is on the Pro-Designer package.)



4. Enter the key code. (The key code is on the Pro-Designer package.)

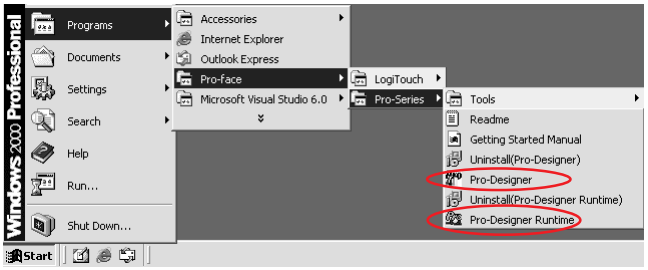


5. Specify the folder where you want to install the application.

6. The selected application will install in the specified folder. After the installation is completed, select [Exit].

MEMO

- Individual application icons are provided in the Start menu's [Program] - [Pro-face] - [Pro-Series] .



- If you create a shortcut, the corresponding icon will appear on the desktop.

3 Uninstalling the Software

3.1 Removing the application

The uninstallation menu for each application is located in the Start menu's [Program] - [Pro-face] - [Pro-Series] or [Tools] menu. To unintall a program file, use that program's uninstallation menu.

MEMO

- This procedure will not delete any files created after installation (such as project files and files in the Toolchest).
- Before uninstalling the software, quit all other programs including resident programs. Unless all programs are closed, some files may not be uninstalled.

3.2 Deleting the folder

The previous procedure will not delete any files created after program installation. Therefore, to delete all related files, after uninstalling the application, start Explorer and delete the folder where the applications were installed.

MEMO

- This procedure deletes all of a program's project file data. If you wish to save your project files before installing a new version of the software, do not delete the folder.

3 Creating Screens & Entering Settings

1. Creating a Project
   1.1 Overview
2. Starting Pro-Designer
3. Basic Settings
   3.1 Creating a project and setting up a target
   3.2 Creating variables
4. Creating Screens
   4.1 Creating Panel 1
   4.2 Creating Panel 2
   4.3 Creating Panel 3
   4.4 Creating Panel 10001
   4.5 Creating a Panel Script
5. Saving the Project

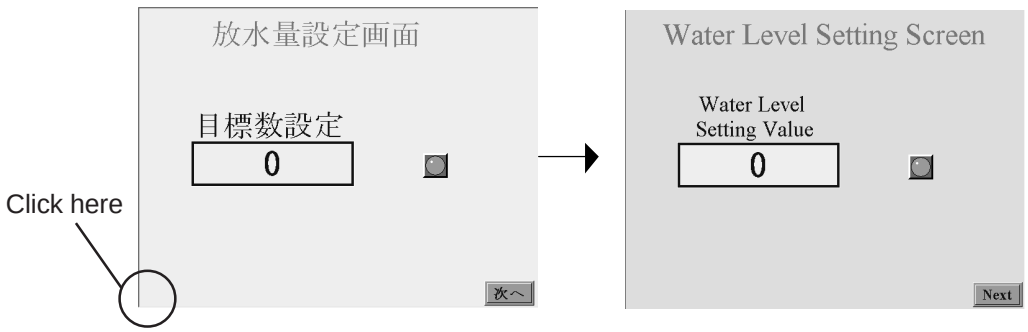
1 Creating a Project

In this chapter you will create a project named Lesson 1. It consists of four panels that demonstrate the use of the “numerical input”, “animation display”, “graph display” and “alarm display” features.
Lesson 1 has been prepared as a project file, named [Manual], found in the following folder.

\Pro-face\Pro-Frame\Backup

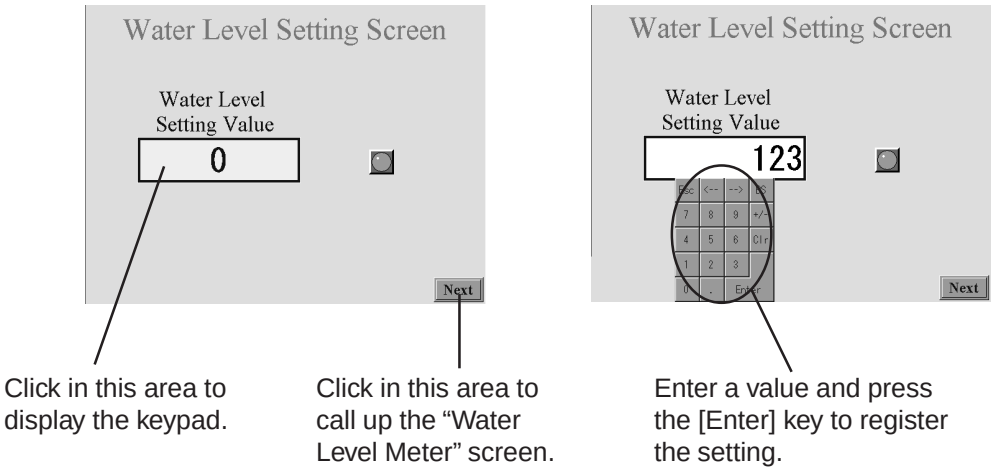
MEMO

- The [Manual] project file can be found in the [Pro-Manager] tab. Double-click on the project to open the project file.
- If the panel text appears in Japanese while you are viewing the [Manual] project, click in the bottom left corner of the panel to display English text.

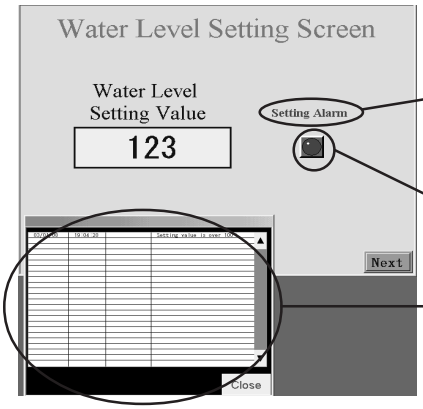


1.1 Overview

This section outlines the operation of the [Manual] project.
Click [Next] to call up the “Water Level Setting Screen.” This screen is used to define a target value for the water level. If this setting is greater than 100, the lamp lights and a setting error message and a pop-up window panel appear.
Click [Next] to call up the “Water Level Meter” screen. This screen is used to monitor changes in the water level in the tank.
Click [Next] to call up the “Water Level Data Chart (Historical)” screen. This screen graphically displays changing water levels.



When the value entered through the keypad exceeds the setting range (0 to 100)



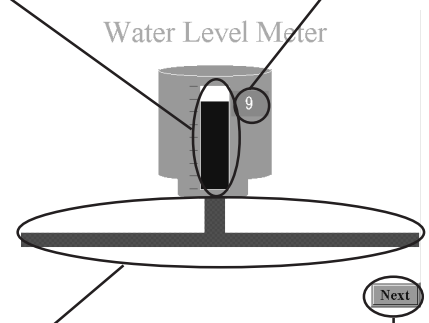
The message indicating a setting value error will blink.

The lamp lights.

The pop-up window panel appears.

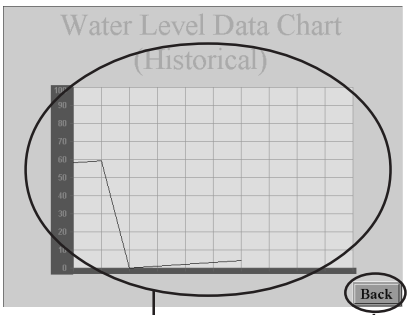
The change in water level is displayed graphically.

A change in water level is displayed numerically.



The line indicating water flow will blink.

Click here to call up the "Water Level Data Chart (Historical)" screen.

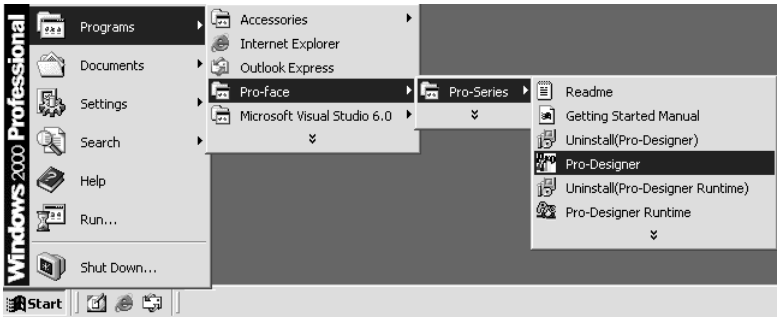


Changes in water level are displayed graphically.

Click here to change the screen to the "Water Level Setting Screen".

2 Starting Pro-Designer

To start Pro-Designer, select [Program] -> [Pro-face] -> [Pro-Series] -> [Pro-Designer] in the [Start] menu.



Or, you can simply double-click the Pro-Designer icon on the desktop.

3 Basic Settings

This section describes the basic setup procedures performed prior to creating a screen. However, the procedure described in this section does not include instructions on setting up external I/O. Therefore, if you need to set up external I/O, refer to Pro-Designer's online help.

3.1 Creating a project and setting up a target

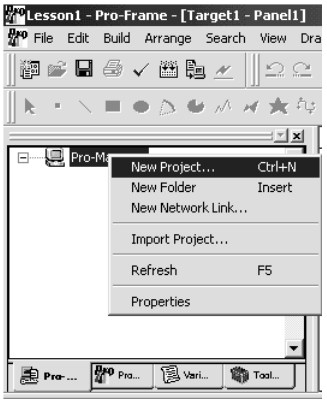
A Pro-Designer "project" is simply a collection of information, i.e. a database. Inside a project, target devices are set up and organized in a hierarchical structure. Each target indicates the hardware environment where the project will be executed.
See "Target Machines" on page 4.

Use the following steps to create a project and set up a target:

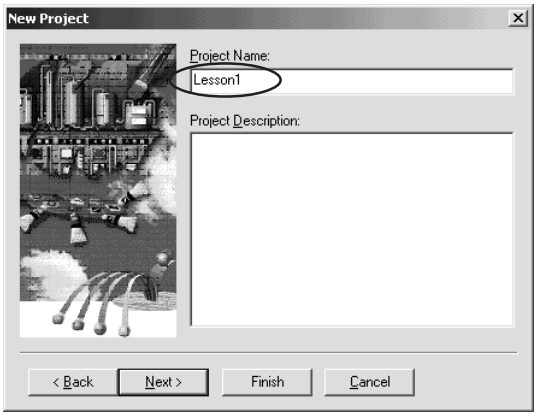
1. This dialog box appears when you start up Pro-Designer. Click [Next] to continue.

MEMO

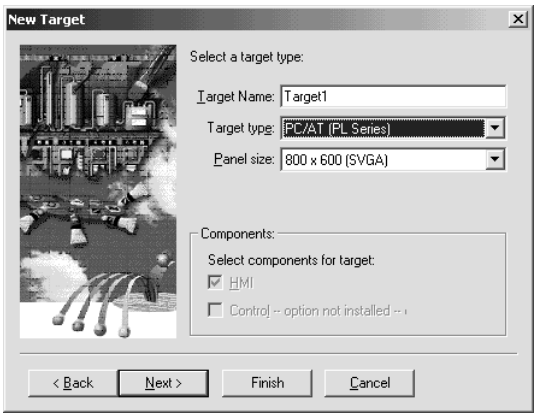
- If the above dialog box does not appear when you start up Pro-Designer, select the [Pro-Manager] tab in the Navigator, right-click on [Pro-Manager], and select [New Project].



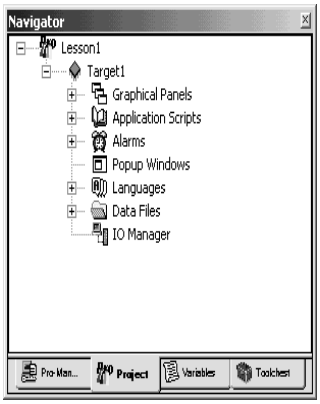
2. After the [New Project] dialog box appears, enter a project name and click [OK]. (For this example, enter “Lesson1”). For project naming conventions, refer to online help.



3. After the [New Target] dialog box appears, select [PC/AT (PL Series)] and click [Finish].



4. Now, a new target (Target1) is created. Also, that target’s panel folder, target script folder, alarm, pop-up window folder, language folder, data files and connected devices are also automatically created.



MEMO

- To add another target to the project, right-click [Lesson1] and select [New Target].

3.2 Creating variables

A variable is a location in memory for storing data that is given a name. Pro-Designer uses variables to access PLC device addresses. You can also create Pro-Designer internal-use variables that are used only by Pro-Designer. For details, refer to online help.

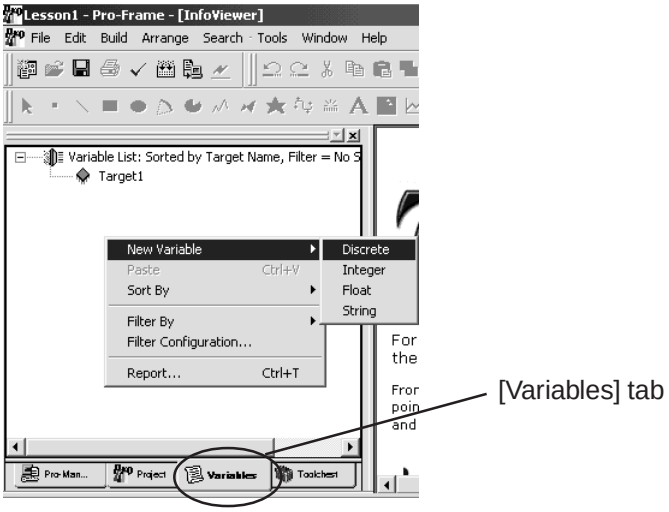
MEMO

- This manual provides only a sample procedure for creating an internal variable without connecting to a PLC. Thus, it is intended to illustrate only the general flow and procedure of basic operations.
  To use a PLC, refer to online help.

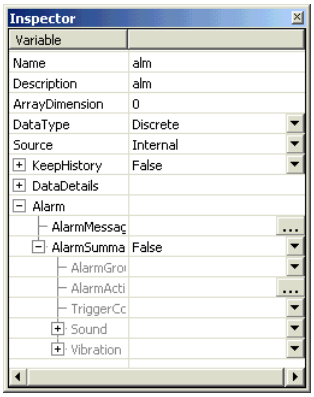
To create a new variable:

1. Click the [Variables] tab in the Navigator pane.

2. Right-click in the Navigator, highlight [New Variable], and select [Discrete].



3. Now that you have created a discrete variable, change the name of variable from “Discrete01” to “alm”. Once it is created, the variable’s properties will appear in the “Inspector”.

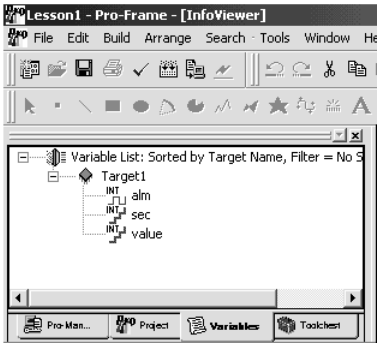


MEMO

- You can also change the name of a variable using the [Name] property.
- For rules about variable naming, refer to online help.

4. Repeat Steps 1 and 2 to create integer variables, named “sec” and “value”.

5. You have now created a discrete variable and two integer variables.



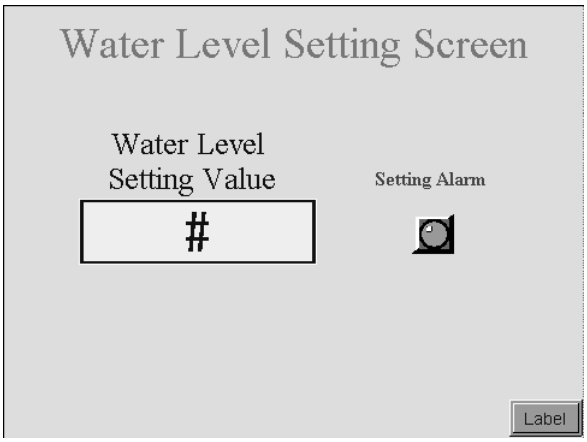
Be sure to save your project file regularly .
See “5 Saving the Project”.

4 Creating Screens

You can create any of the four screens that follow. The following sections describe the procedures for creating individual panels. For detailed descriptions, refer to online help.

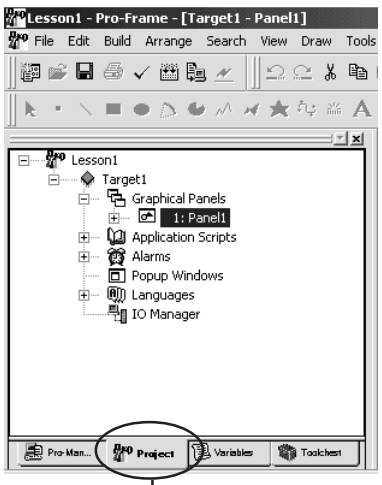
4.1 Creating Panel 1

Use this procedure to create the following screens.

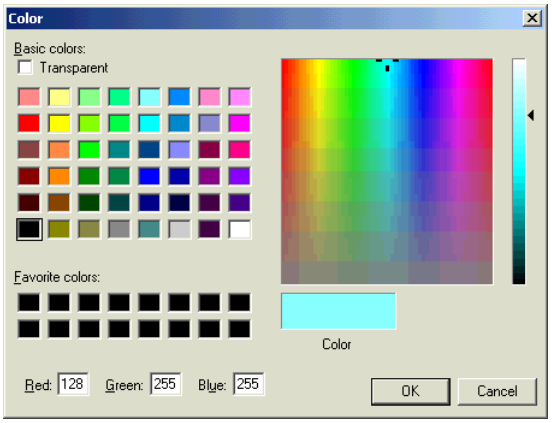


4.1.1 Opening the panel

1. Click the [Project] tab in the Navigator.
2. Double-click [Graphical Panels] to open the folder.
3. Click [1:Panel1] to open the panel.
4. In the Inspector, set the [Background Color] property to “128,255,255”.



[Project] tab



4.1.2 Creating a title for Panel 1

Create “Water Level Setting Screen” as the text object for the Panel 1 title.

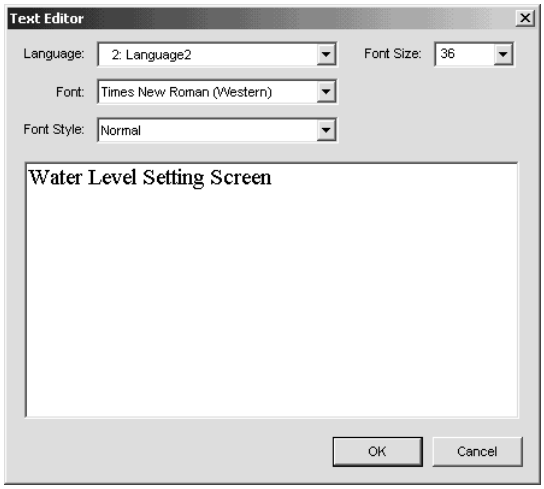
1. Click (Text) on the drawing tool bar and define the area where the text frame will be placed on the panel.

Drawing tool bar

MEMO

- To change the size of the displayed panel, right-click the mouse on the panel and select [Zoom].

2. When the [Text Editor] dialog box appears, enter “Water Level Setting Screen”. Select [Times New Roman (Western)] for the [Font], [36] for the [Font Size] and click [OK].



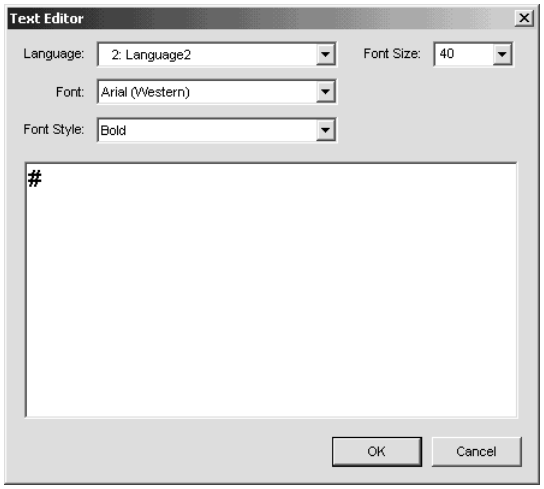
3. Set the [Text Color] to “102,102,255”. Set the [Background Color] and [Line Color] to “Transparent”.

4.1.3 Creating numerical indicators

Create the text object “#”, which is used for entering numerical data, and the text object “Water Level Setting Value”, which is used as a title.

MEMO

- To add the numerical input feature to a text object, be sure to set up data animation.
- Use only “#(single-byte)” text when setting up data animation.
- Be sure to not put a return (line break) after the “#” character. If a line break is used, data animation settings will be disabled.



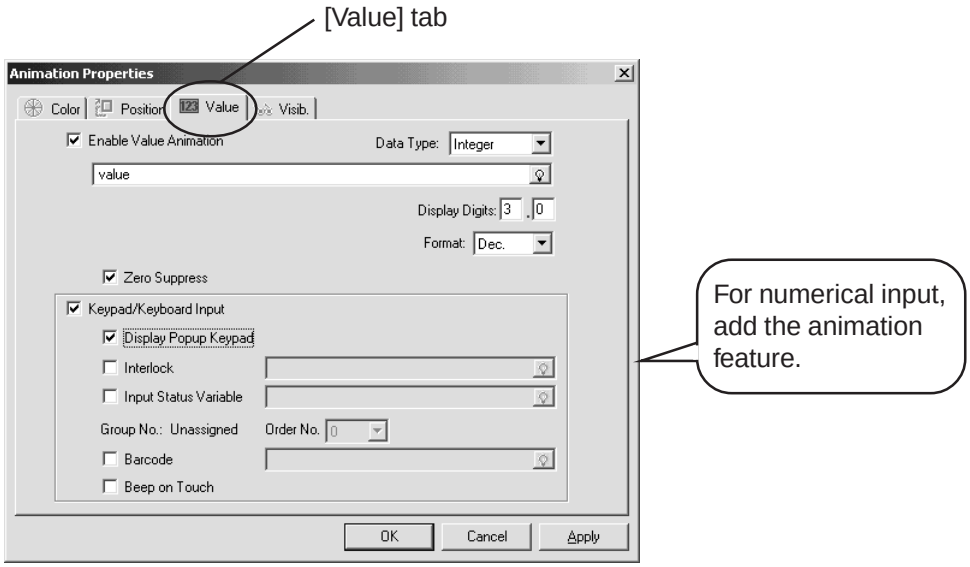
[Language]: 2: Language2
[Font]: Arial (Western)
[Style]: Bold
[Font Size]: 40

1. Create the text object “#”. See Steps 1 and 2 of “4.1.2 Creating a title for Panel 1” and set up the [Text Editor] dialog box properties as shown below:

2. In the color screen:
   - Set the [Text Color] and [Line Color] properties to “0,0,255.”
   - Set the [Background Color] to “255,255,0” and the [Line Width] to “3”.

3. Click on the [Animation] property to display [...]. Click [...].

4. In the following [Animation Properties] dialog box, click the [Value] tab. Check the [Enable Value Animation], [Keypad/Keyboard Input] and [Display Pop-up Keypad] check boxes.

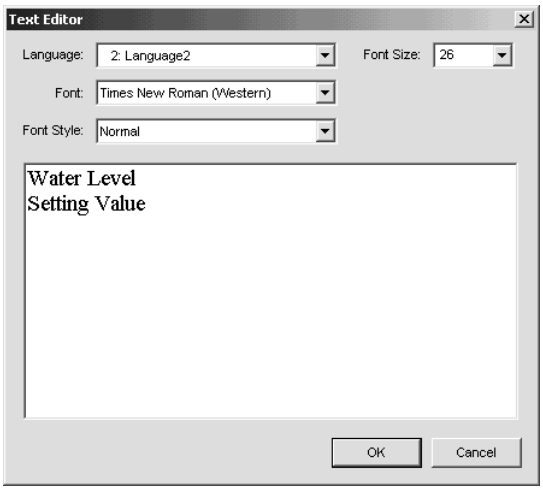


Next, click [💡], select the "value" variable, set [Display Digits] to "3.0" and click [OK].

MEMO

- Simply double-click an object to display the [Animation Properties] dialog box.

5. Create the text object "Water Level Setting Value". Set up individual properties in the [Text Editor] dialog box as shown below:
See Steps 1 and 2 of "4.1.2 Creating a title for Panel 1".



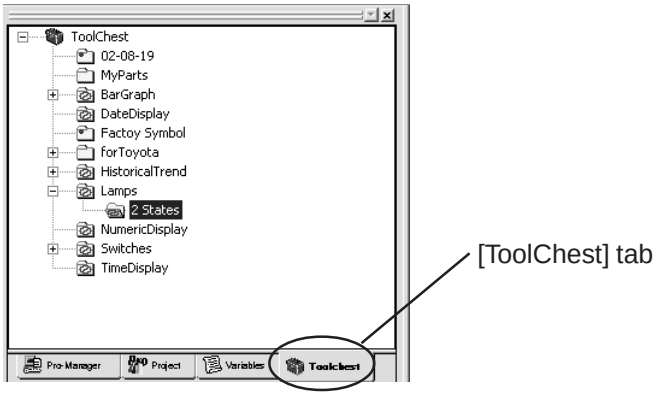
[Language]: 2: Language2
[Font]: Times New Roman (Western)
[Style]: Normal
[Font Size]: 26

6. Set the [Text Color] property to "0,0,153." Set the [Background Color] and [Line Color] properties to "Transparent".

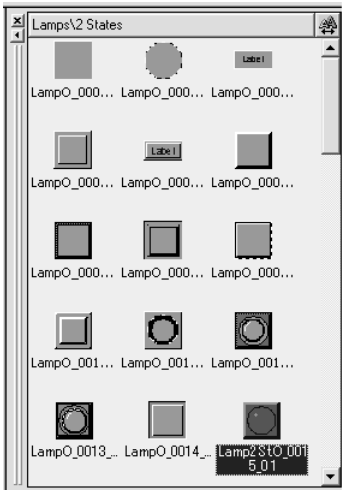
4.1.4 Creating a lamp

Smart Parts can be used to create a lamp that lights when a data entry error is detected. For a detailed description of Smart Parts, refer to online help.

1. Click on the Navigator's [ToolChest] tab, and click on the [Lamps] folder's [2 States] folder.



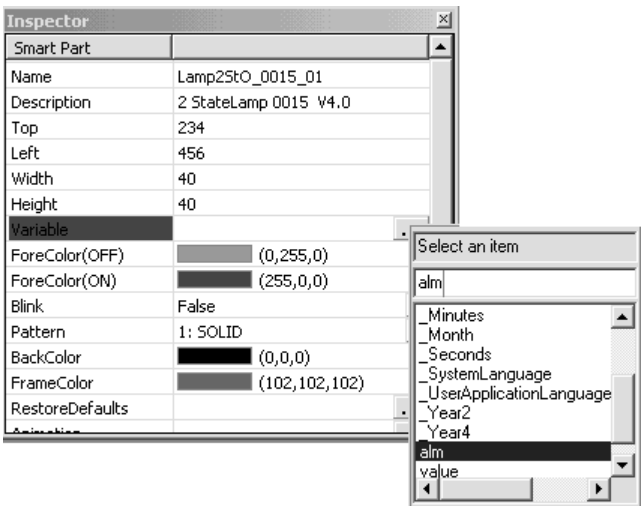
2. Drag & drop [Lamp2St0_0015_01] onto the panel.



MEMO

- To place any object on the panel, simply drag & drop it from the Tool Chest.

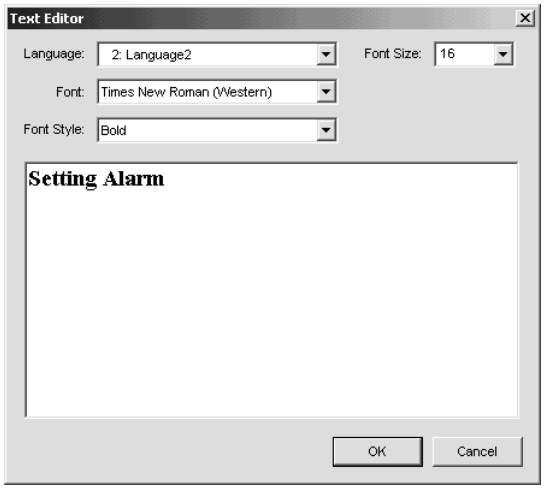
3. Click on the [Variable] property to display [...], and click [...] to select the variable “alm.”



4.1.5 Creating an alarm message

In this example you can create a text object that blinks when a data entry error is detected.

1. Create the text object “Setting Alarm”. Enter individual settings in following [Text Editor] dialog box.
   See Steps 1 and 2 of “4.1.2 Creating a title for Panel 1”.

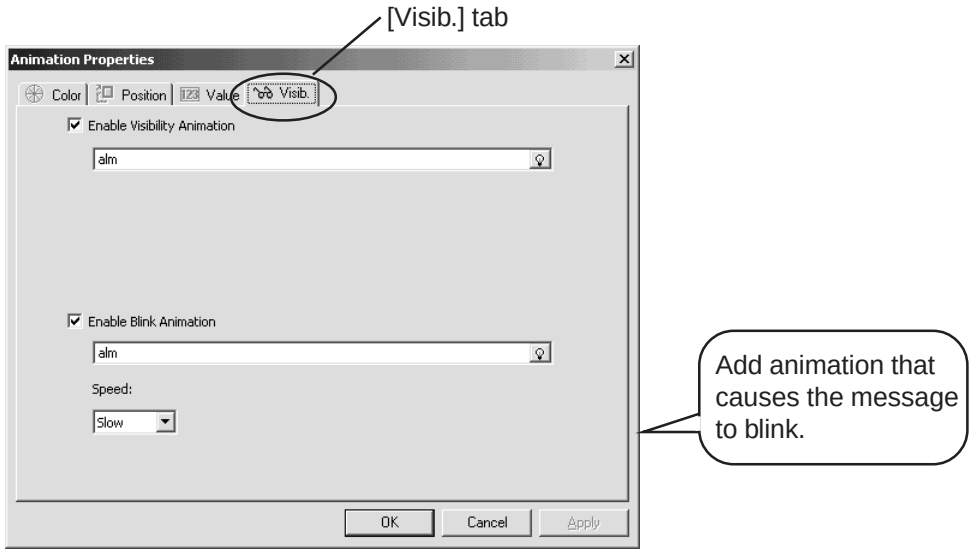


[Language]: 2: Language2
[Font]: Times New Roman (Western)
[Style]: Bold
[Font Size]: 16

2. Set the [Text Color] property to “252,0,0”, and set the [Background Color] and [Line Color] properties to “Transparent”.

3. When the [Animation Properties] dialog box appears:
   - Click on the [Visib.] tab
   - Check the [Enable Visibility Animation] and [Enable Blink Animation] check boxes.
   - Click and select the variable “alm”. Click [OK].

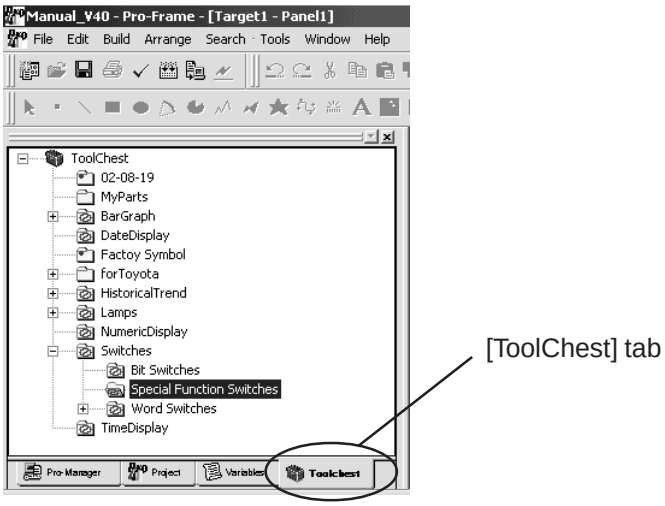
   See Steps 3 and 4 of “4.1.3 Creating numerical indicators”.



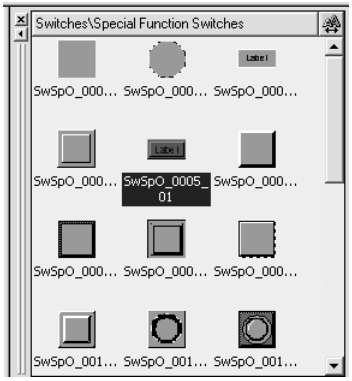
4.1.6 Creating a panel selector switch

Use Smart Parts to create a switch for changing Panel 1 to Panel 2.

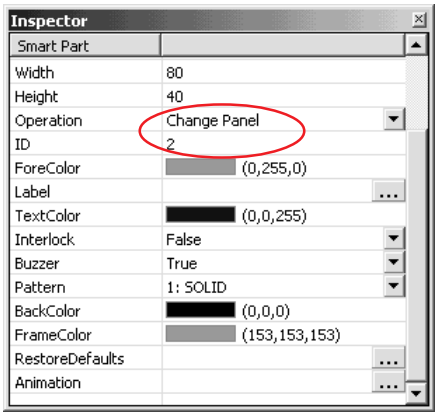
1. Click on the [ToolChest] tab in the Navigator. Click on the [Special Function Switches] folder



2. Drag and drop [SwSp0_0005_01] onto the panel.

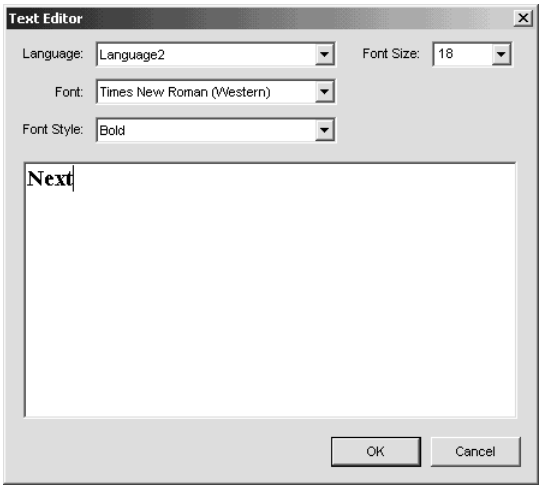


3. Set the [ID] to "2".



Add a Change Panel feature via the [Operation] property.
In the [ID] property, specify the panel's ID number.

4. Click on the [Label] property, and click [...] to display the [Text Editor] dialog box. Set up each item as shown below.



[Language]: Language2
[Font]: Times New Roman (Western)
[Style]: Bold
[Font Size]: 18

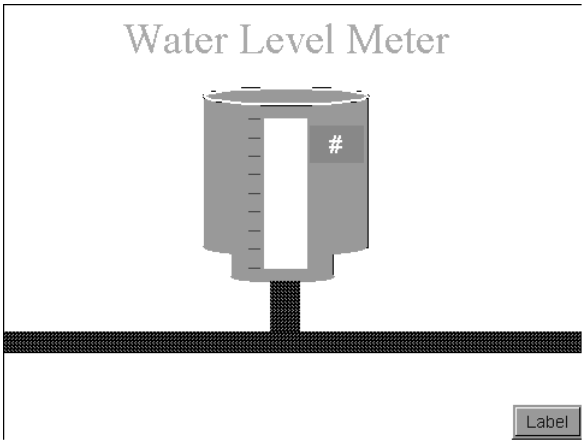
MEMO This will appear in Pro-Designer as "Label".

Be sure to save your project file regularly .
See “5 Saving the Project”.

This completes the procedure for creating Panel 1.

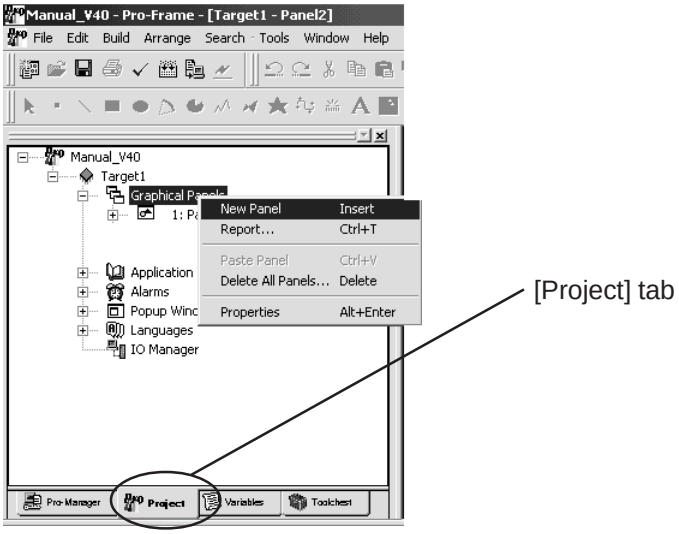
4.2 Creating Panel 2

This section describes how to create the following panel.



4.2.1 Creating a new panel

1. Click on the [Project] tab in the Navigator. Right-click on [Graphical Panels] and select [New Panel].

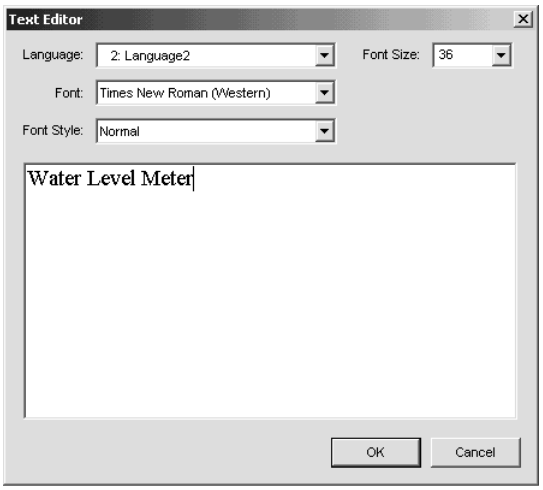


2. [2:Panel2] panel is created. Set the [Background Color] property to “255,255,153”. See Step 4 of “4.1.1 Opening the panel”.

4.2.2 Creating a title for Panel 2

Here we will create the text object “Water Level Meter” for the title of Panel 2.

1. Create a text object “Water Level Meter”, using steps 1 and 2 of “4.1.2 Creating a title for Panel 1”. Next, use the example below to enter that screen’s information in the [Text Editor].



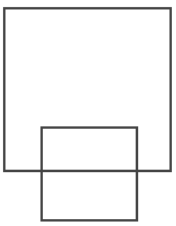
[Language]: 2: Language2
[Font]: Times New Roman (Western)
[Style]: Normal
[Font Size]: 36

2. Set the [Text Color] property to “255,153,0”. Select “Transparent” as the [Background Color] and [Line Color] properties.

4.2.3 Creating a tank

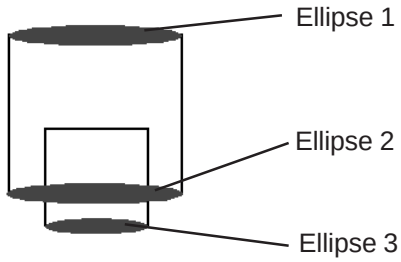
In this section, create a tank with a water level change indicator.

1. Click the drawing toolbar’s icon and draw the following two rectangles.



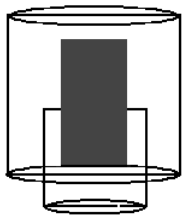
2. For each rectangle, set the [Foreground Color] property to “153,153,102” and the [Line Color] property to “Transparent”.

3. Click on the drawing toolbar’s icon and draw the three ellipses shown below.



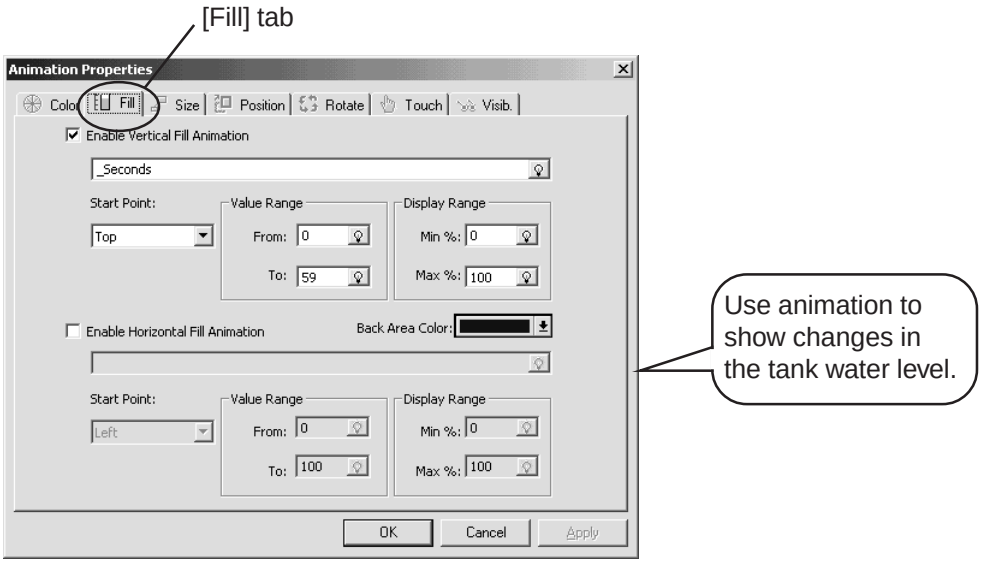
4. For Ellipse 1, set the [Foreground Color] property to “153,153,153” and the [Line Color] property to “255,255,255”.
   For Ellipses 2 and 3, set the [Foreground Color] property to “153,153,102” and the [Line Color] property to “Transparent”.

5. Click the drawing toolbar’s icon and draw the following rectangle.



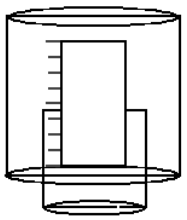
6. Set the [Foreground Color] and the [Line Color] properties to “255,255,255”.

7. When the [Animation Properties] dialog box appears, click on the [Fill] tab and check the [Enable Vertical Fill Animation] check box.
Next, click and select the variable "_Seconds". Set the [Start Point] property to "Top", the [Back Area Color] property to "0,0,255", the [Value Range] - [To] (maximum value) property to "59" and click [OK].



MEMO "_Seconds" is a system variable. These variables are reserved for Pro Designer use. For details, refer to online help.

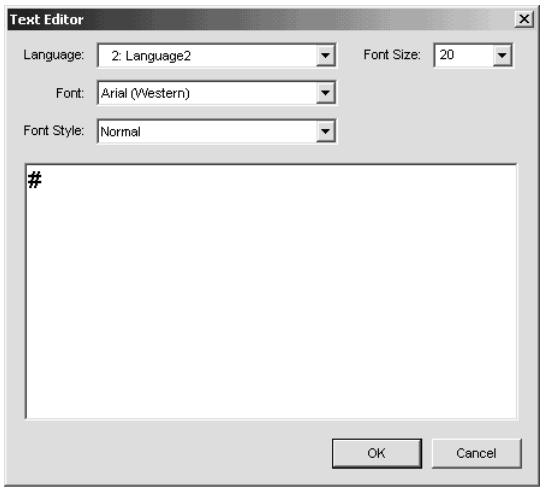
8. Click the drawing toolbar's icon and draw the following scale-type object.



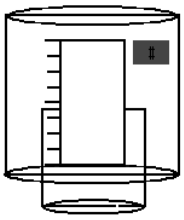
9. Select "255,0,0" for the [Line Color] property.

10. Refering to steps 1 and 2 of “4.1.2 Creating a title for Panel 1”, create the text object “#” and place it on the tank as shown below. Enter the following settings..

.

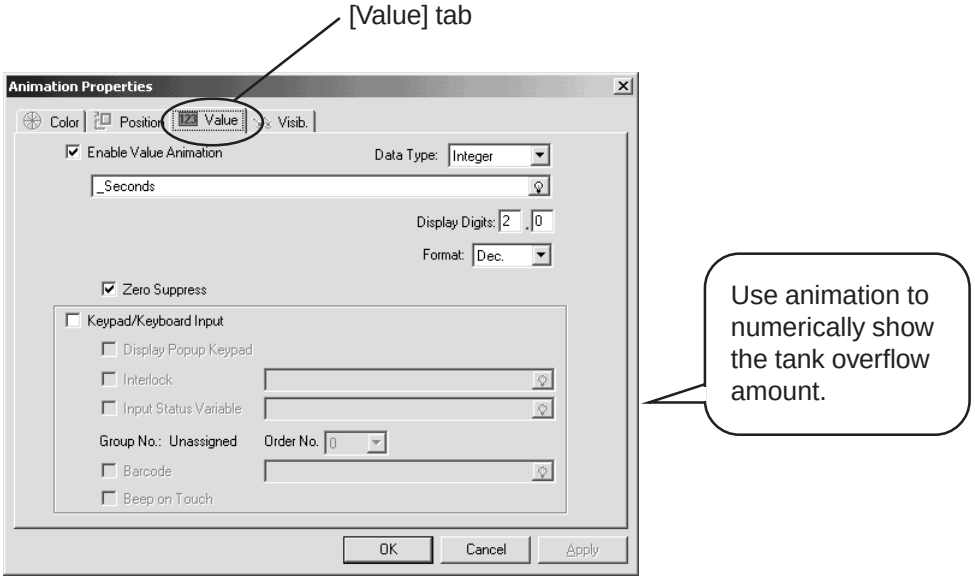


[Language]: 2: Language2
[Font]: Arial (Western)
[Style]: Normal
[Font Size]: 20



11. Set the [Text Color] property to “255,255,255” and the [Background Color] and [Line Color] properties to “255,102,0”.

12. When the following [Animation Properties] dialog box appears click on the [Value] tab. Next, click the [Enable Value Animation] check box so that a check mark appears. Then, click , select the “_Seconds” variable, set the [Display Digits] property to “2.0” and click [OK].

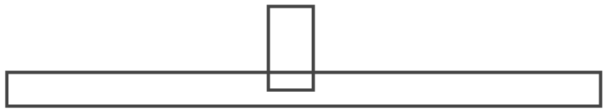


Be sure to save your project file regularly .
See “5 Saving the Project”.

4.2.4 Creating a pipe

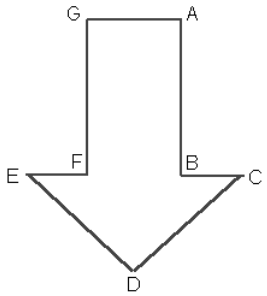
Create a pipe that indicates water flow from the tank.

1. Click the drawing toolbar's (rectangle) icon and draw the following two rectangles.



2. Set the [Line Color] and [Foreground Color] properties to "42".

3. Click the drawing toolbar's (polygon) icon and draw the following object.



Procedure:

1. Left-click the mouse at point A.
2. Left-click the mouse button at vertexes B through G.
3. Right-click on the panel.

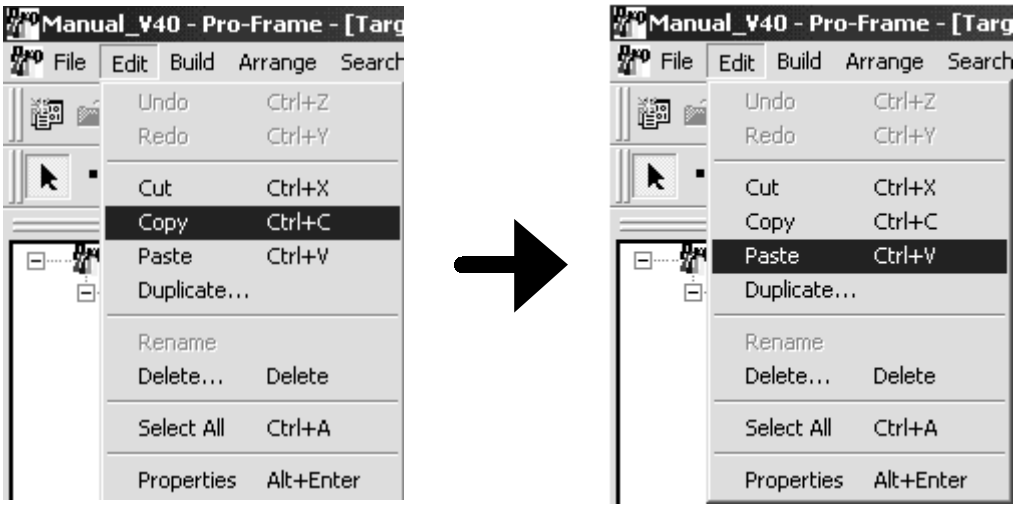
MEMO

- To use the [Snap to Grid] feature, right-click on the panel and check that check box. Each vertex will be positioned automatically at a grid point.

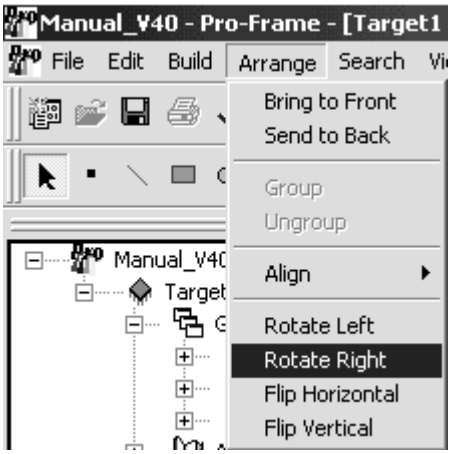
4. Set the [Line Color] property to "255,255,255" and the [Foreground Color] property to "0,0,255".

5. Click the drawing tool bar's (Select) icon and select the arrow created in step 3.

6. Select [Edit] menu -> [Copy] and then [Paste].



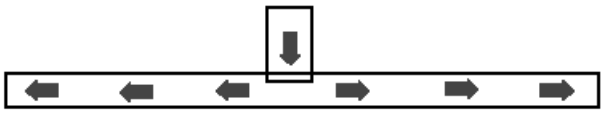
7. This creates another arrow. Select the arrow and choose [Rotate Right] in the [Arrange] menu. The arrow will turn clockwise to point to the left.



8. Repeat step 6. to create another downward-pointing arrow. Select [Rotate Left] in the [Arrange] menu so that the arrow points to the right.

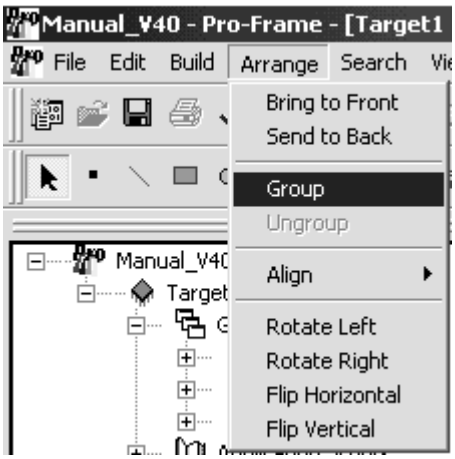
9. Create two more rightward-pointing arrows and two more leftward-pointing arrows.

10. Place the seven arrows created in Steps 3 through 9 in the rectangles, as shown below.



MEMO • Enlarge or reduce the size of the arrows or objects if needed.

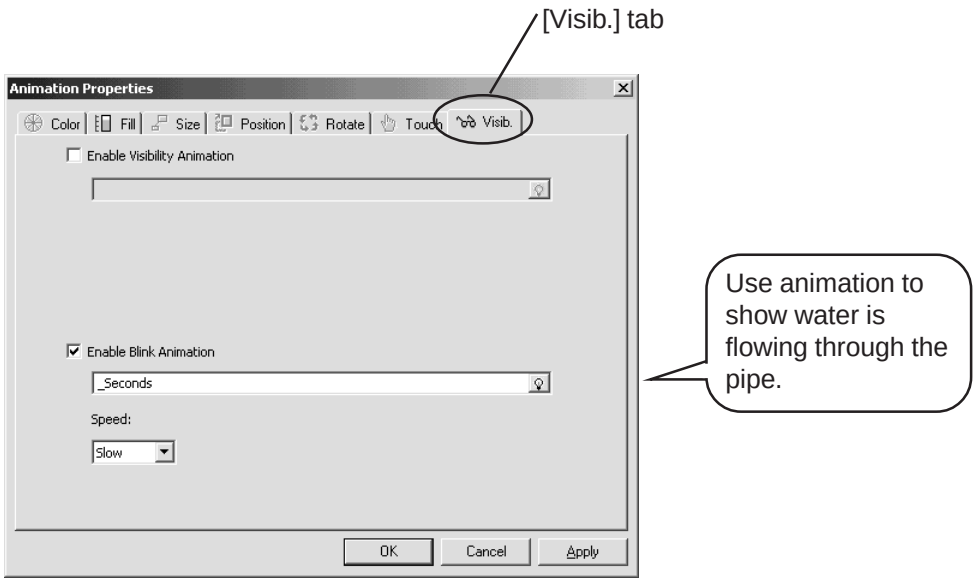
11. Select all seven arrows. Select [Group] in the [Arrange] menu to create a group object.



MEMO

- To simultaneously select multiple objects, hold down the [Shift] key while selecting the objects.

12. Click the [Visib.] tab in the [Animation Properties] dialog box for the grouped object created in Step 11.
Next, check [Enable Blink Animation], click , select the "_Seconds" variable, and click [OK].



4.2.5 Creating a panel selector switch

Create a switch to change Panel 2 to Panel 3.

1. Click on [1:Panel1] in the Navigator to open Panel 1. Click the drawing toolbar's  (Select) icon to select the "SwSp0_0005_01" switch.
   Next, select the [Edit] menu's [Copy] command.

2. Click [2:Panel2] in the Navigator to open Panel 2. Click on the panel and select [Paste].

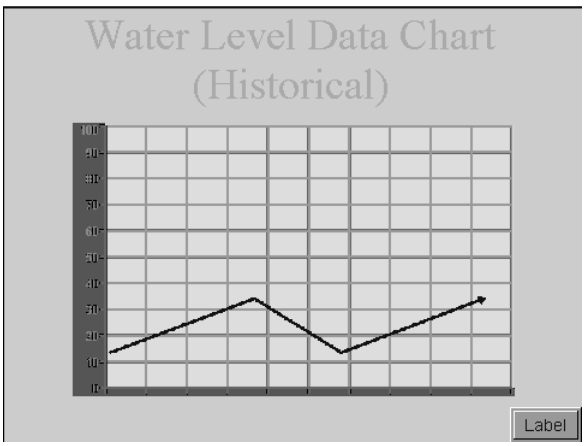
3. Select the switch labeled "SwSp0_0005_01". Select "3" for the [ID] property.
   Refer to "4.1.6 Creating a panel selector switch". (Step 3)

Be sure to save your project file regularly .
See "5 Saving the Project".

This completes the procedure for creating Panel 2.

4.3 Creating Panel 3

This section describes how to create the following panel.



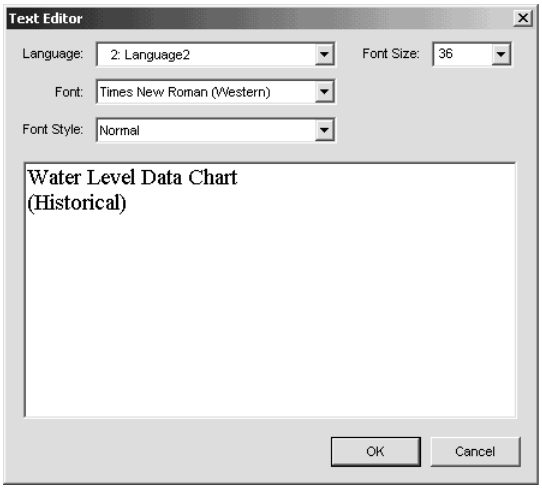
4.3.1 Creating a new panel

1. Click on the Navigator's [Project] tab. Right-click on [Graphical Panels] and select [New Panel].
   See Step 1 of "4.2.1 Creating a new panel".

2. Set [3:Panel3] panel's [Background Color] property to "153,255,0".
   See Step 4 of "4.1.1 Opening the panel".

4.3.2 Creating a title for Panel 3

1. Create the text object "Water Level Data Chart (Historical)". Enter the following setting data in the [Text Editor] dialog box:
   See Steps 1 and 2 of "4.1.2 Creating a title for Panel 1".



[Language]: 2: Language2
[Font]: Times New Roman (Western)
[Style]: Normal
[Font Size]: 36

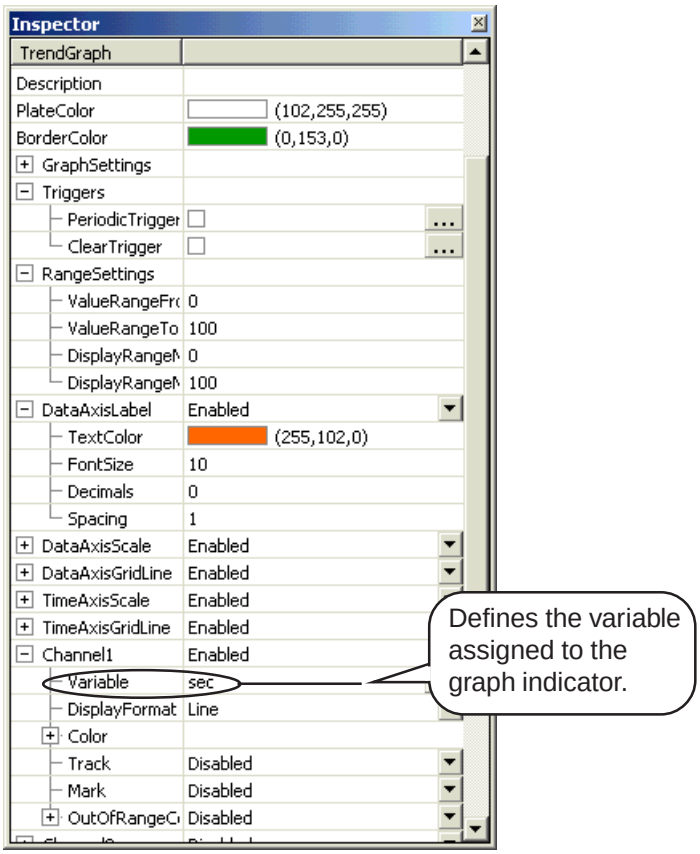
2. Set [Text Color] to "255,153,0", and select "Transparent" for the [Background Color] and [Line Color] properties.

4.3.3 Creating a graph indicator

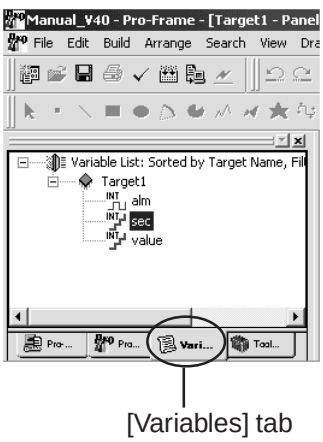
Create a graph indicator that displays water level changes. The graph indicator displays time-series changes in variables. For details, refer to the online help.

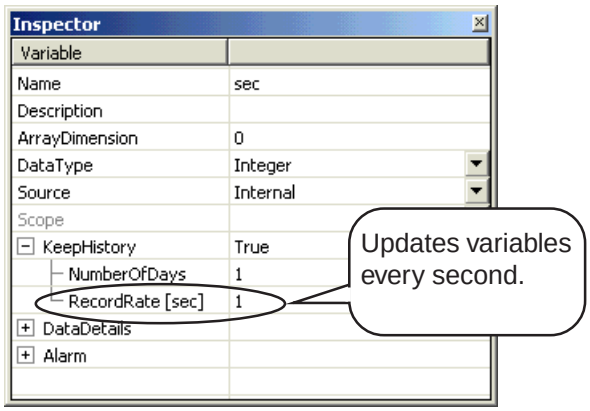
1. Click on the drawing toolbar's  (Graph) icon and create a graph-type indicator.

2. Select “102,255,255” for the [PlateColor] property and “0,153,0” for the [Border Color] property. Next, set the [Data Axis Label] -> [Text Color] property to “255,102,0”. Select “sec” for the [Channel 1] -> [Variable] property.



3. Click on the [Variables] tab in the Navigator. Select the “sec” variable and set the [Record Rate[sec]] property to “1”.



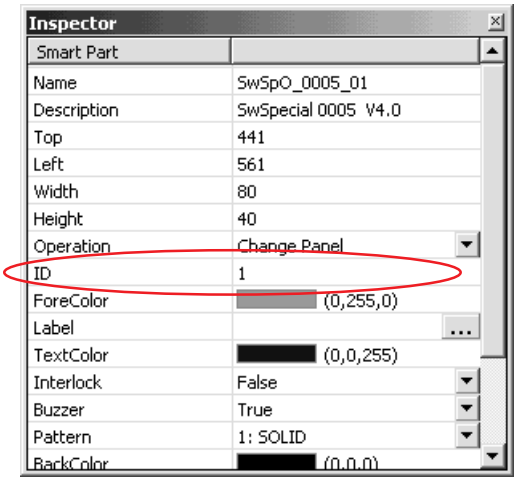


4.3.4 Creating a panel selector switch

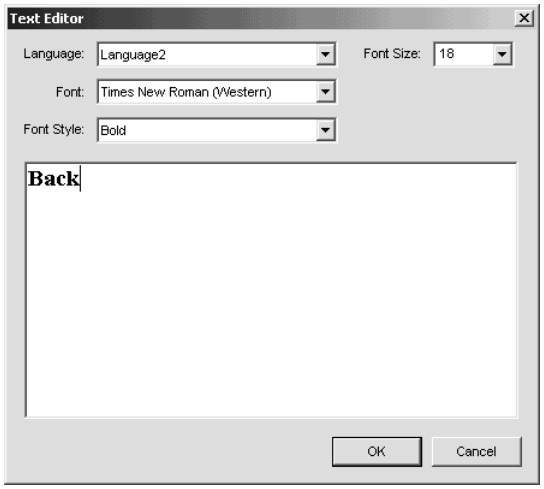
Create a switch to change Panel 3 to Panel 1.

1. Copy the “SwSp0_0005_01” switch from Panel 1, as explained previously for Panel 2. See “4.2.5 Creating a panel selector switch”.

2. Click the drawing toolbar’s (Select) icon, select the “SwSp0_0005_01 switch, and set the [ID] property to “1”.



3. Click on the [Label] property and click the ... to call up the [Text Editor] dialog box. Enter “Back” in the dialog box, and set up each item as follows:



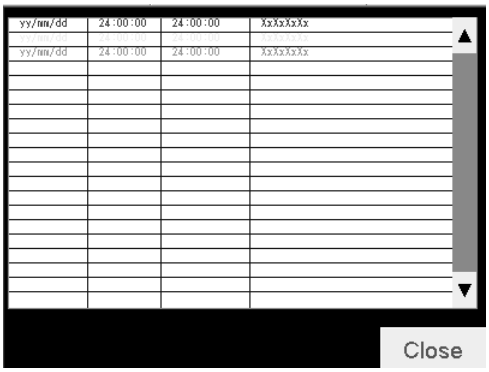
[Language]: Language2
[Font]: Times New Roman (Western)
[Style]: Bold
[Font Size]: 18

Be sure to save your project file regularly . See “5 Saving the Project”.

This completes the procedure for creating Panel 3.

4.4 Creating Panel 10001

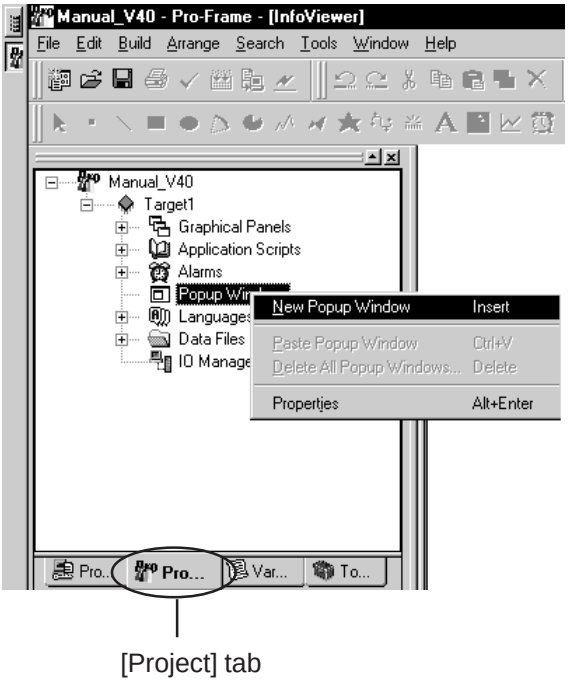
This section describes how to create the following panel.



4.4.1 Creating a pop-up window

Panel10001 is a pop-up window that can be overlaid on another, previously opened panel. For set up details, refer to online help.

1. Click on the [Project] tab in the Navigator and right-click on [Popup Windows] to select [New Popup Window].



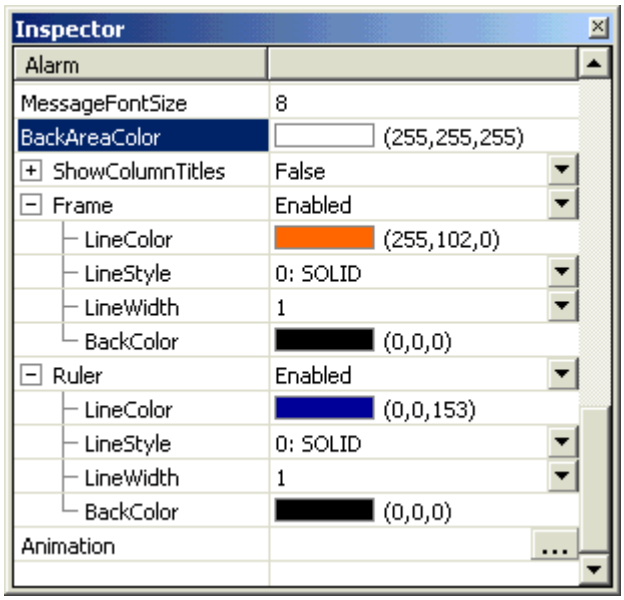
2. “1:Window” and “10001:Panel4” are now completed. Click on “10001:Panel4” to open the panel.

4.4.2 Creating an alarm summary

This section explains how to create an alarm summary that displays alarm messages related to Panel 1 setting errors. For alarm summary setup details, refer to online help.

1. Click the drawing toolbar's  (Alarm Summary) icon to create an alarm object.

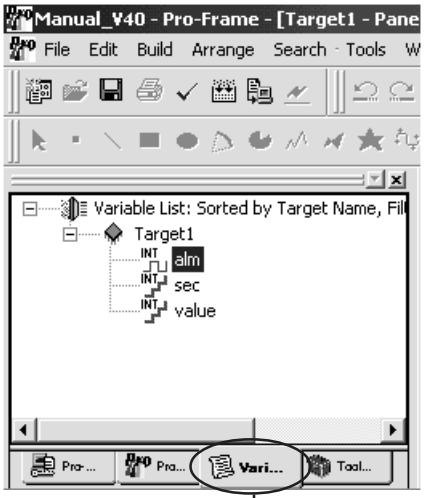
2. Set the [Message Font Size] property to "8", the [BackAreaColor] property to "255,255,255", the [Frame] property to "Enabled", and the [Line Color] property to "255,102,0".
   Next, set the [Ruler] property to "Enabled", and the [Line Color] property to "0,0,153".

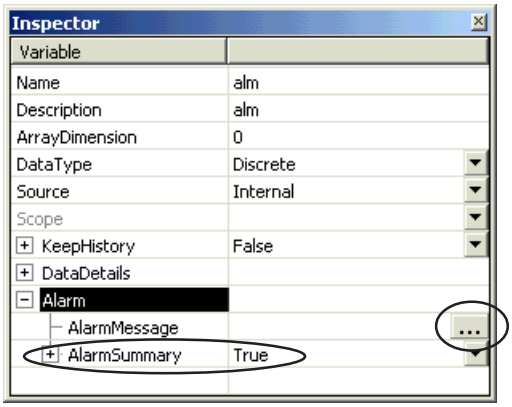


4.4.3 Creating an alarm message

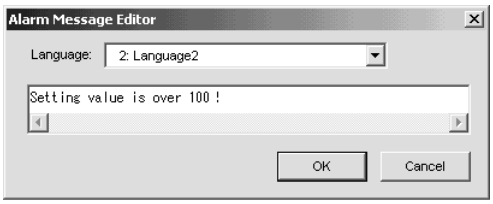
Use the [Variable] property to designate the alarm message(s) shown in the alarm summary. For details, refer to online help.

1. Click on the [Variables] tab in the Navigator to select the “alm” variable.
   Next, set the [Alarm] - [Alarm Summary] property to “True”.
   Click on the [Alarm Message] property and click [...].





2. After the [Alarm Message Editor] dialog box appears, enter “Setting value is over 100!” in the dialog box and click [OK].



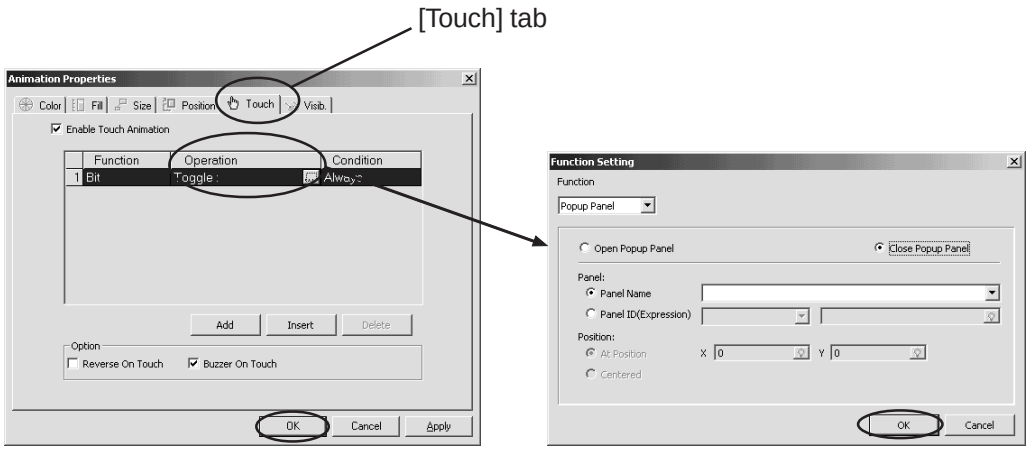
4.4.4 Creating a panel closing switch

This section explains how to create a switch for closing the pop-up window panel.

1. Click on the drawing toolbar’s [ ] (Rectangle) icon and draw a rectangle.

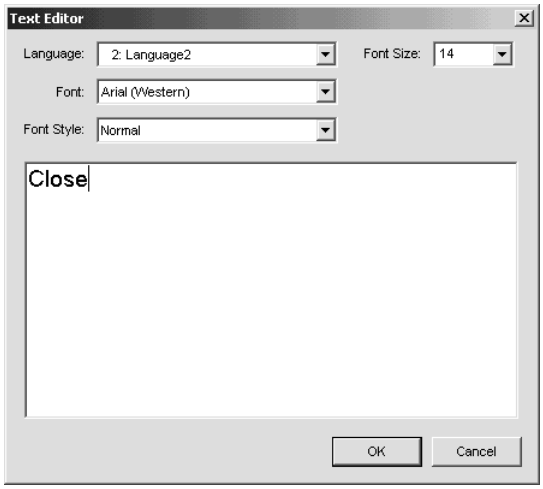
2. Select “255,255,102” for the [Foreground Color] property.

3. When the [Animation Properties] dialog box appears, click on the [Touch] tab and check the [Enable Touch Animation] check box. Next, double-click on the [Operation] property to display the [Function Setting] dialog box. Select “Popup Panel” for the [Function] property, then “Close Popup Panel”, and click [OK]. Also, click [OK] in the [Animation Properties]



dialog box.

4. Click the drawing toolbar’s (Text) icon and create a text object named “Close”. Enter the



[Language]: 2: Language2
[Font]: Arial (Western)
[Style]: Normal
[Font Size]: 14

5. Select “255,0,102” for the [Text Color] property and “Transparent” for the [Background Color] and [Line Color] properties.

Be sure to save your project file regularly .
See “5 Saving the Project”.

This completes the procedure for creating Panel 10001.

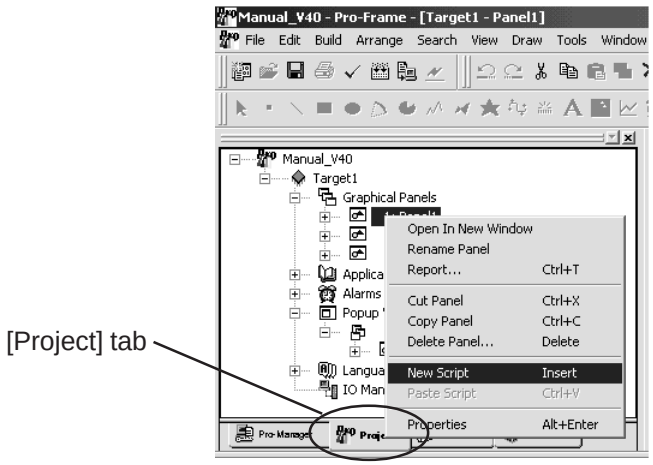
4.5 Creating a Panel Script

In Pro-Designer, a script is a set of programs that describe processes performed via Pro-Designer Runtime. If you use a script to define a process and then perform that script when a trigger condition is satisfied, you can add a function that is not available with the panel settings alone. For details on script creation, refer to online help.

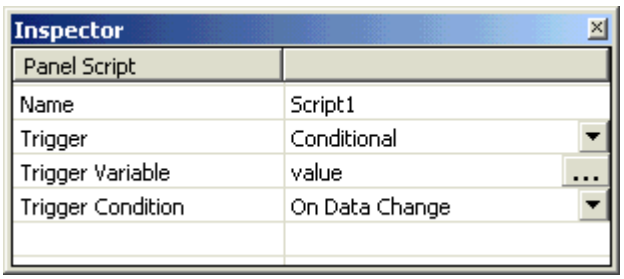
4.5.1 Creating the “Script1” panel script

The following explains how to create a script that is performed when a pre-defined value is entered in Panel 1.

1. Click on the [Project] tab in the Navigator. Right-click [1:Panel1] to select [New Script].



2. Select “Conditional” for the [Trigger] property, “value” for the [Trigger Variable] property and “On Data Change” for the [Trigger Condition] property.



3. Click [Script1] to open the script editor and enter the following program.

```
int a;

a = value.getIntValue();
if (a > 100) {
        alm.write(1);
        Window1.open((short)10,(short)400);
        Window1.changePanel(10001);
        Window1.show(true);
}
else {
        alm.write(0);
}
```

When the "Value" variable is greater than 100, the "alm" variable bit turns on and window panel 10001 is displayed.

When the "Value" variable is 100 or less, the "alm" variable bit turns off.

MEMO

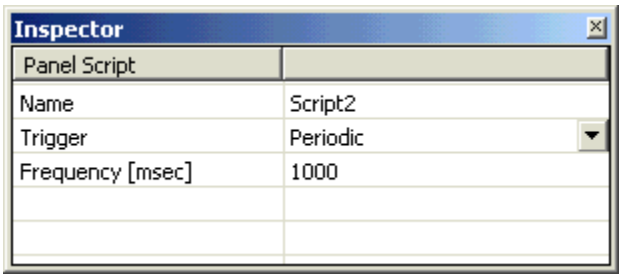
- Place your cursor over the script, right-click and use the "Insert" menu to easily create a script. For details, refer to online help.

4.5.2 Creating the "Script2" panel script

Here a script will be used to change the values used by the Graph display.

1. Click on the [Project] tab in the Navigator. Right-click [3:Panel3] to select [New Script]. See Step 1 of "4.5.1 Creating the "Script1" panel script".

2. "Script2" is created. In the Inspector select "Periodic" for the [Trigger] property and "1000" for the [Frequency[msec]] property .



3. Click [Script2] to open the script editor and enter the following program.

```
sec.write(_Seconds.getIntValue());
```

The value of system variable "_Seconds" is assigned to variable "sec".

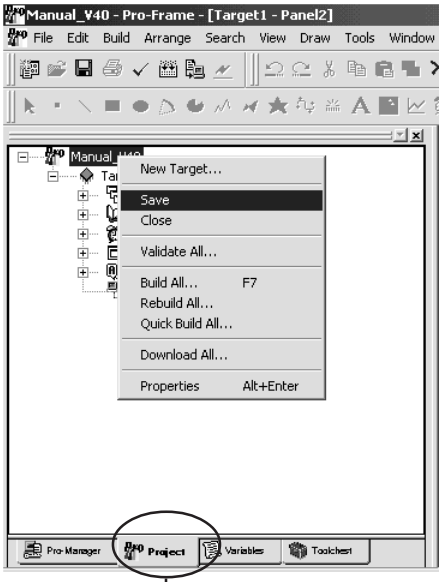
MEMO

- Since the graph display cannot directly allocate system variables, create a script to copy the system variable "_Seconds" to the variable "sec".

This completes the project file "Lesson1".

5 Saving the Project

Click on the [Project] tab, right-click on [Lesson1], and select [Save].



4 Data Transfer

1. Types of Data Transfer
2. Build Processing
3. Data Transfer Procedures

1 Types of Data Transfer

To transfer a project file created with Pro-Designer, use any of the following four methods:

Type	Process
Ethernet	Data created with "Build" is transferred to a target machine via Ethernet.
Tool Connector*1	Data created with "Build" is transferred to a target machine via the serial interface.
File System	Data created with "Build", a Runtime system file or compressed project file will be written in the file system.
Local*2	Data created with "Build" is copied to a PC where a development environment is installed.

**1 This can only be selected if the target unit is a GP Series or a Factory Gateway unit.*

**2 This can only be selected if the target unit is a Windows® compatible PC, a PL Series or a PS Series B-type unit.*

2 Build Processing

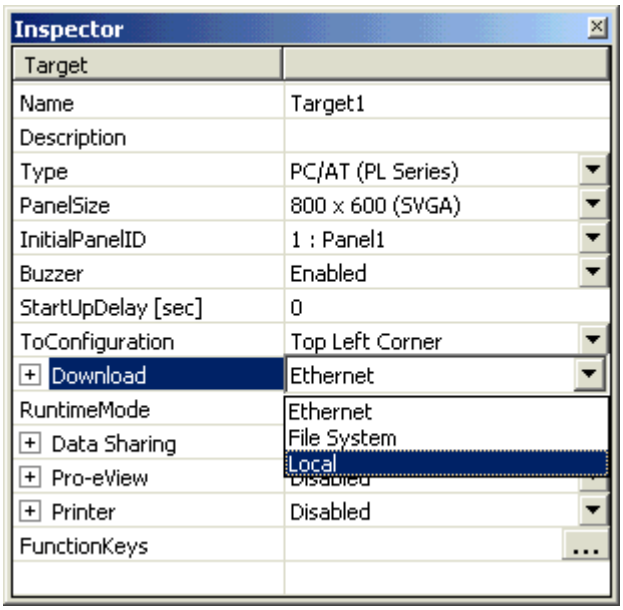
"Build" is a process for converting a project file created with Pro-Designer into data that can be used by Pro-Designer Runtime.
If you perform [Download], the system transfers the data after performing the build process. Pro-Designer can also perform the build process by itself.
Pro-Designer can perform the following three types of build processes:

Type	Process
Build	Builds only the part of the data updated after the previous build process and optimizes the resulting file. The processing time is longer than "Quick Build".
Quick Build	Rebuilds the entire project in a specified target unit and optimizes the resulting file. Even though the creation time is faster than "Build", the simulation function's "RUN" speed is comparitively slower than "Build". It can only be used for the simulation function.
Clean Up	Deletes the previously built data for the specified unit(s). If the entire project is "Built", the build process is performed after Clean Up is completed.

3 Data Transfer Procedures

This section describes a sample procedure for transferring a project file created with Pro-Designer to a PC that is running a development environment. For information about transferring a project file to a target machine with no development environment, refer to online help.

1. Select “Local” as the target in the [Download] property.

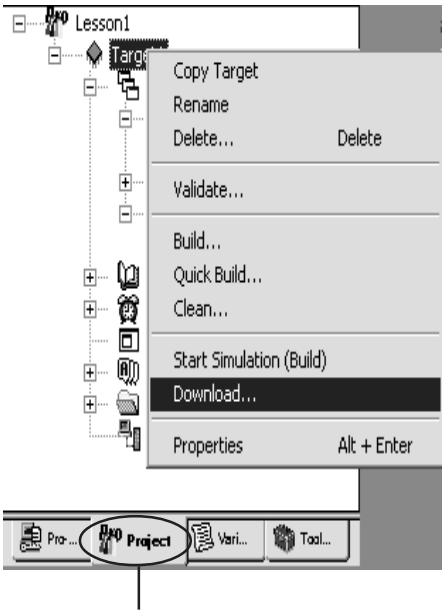


2. The [IP Address] property automatically displays the IP address of the target machine.

MEMO

- If the IP address of the target PC cannot be read, the correct IP address will not be displayed. In this case, re-check the target PC's network settings.

3. Right-click [Target1] in the Navigator and select [Download].



[Project] tab

MEMO

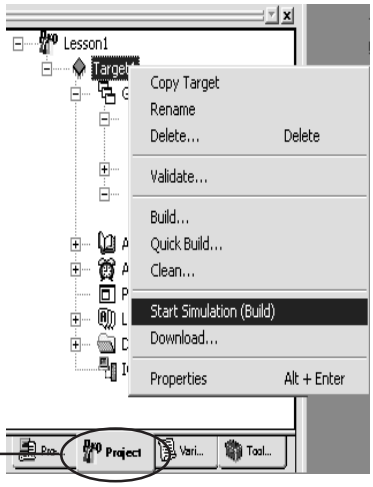
- If an error message appears in the feedback zone, download did not complete normally. After correcting the problem, try to download the data again.
- If you double-click on the error currently displayed in the feedback zone, the error's location is automatically displayed.

5 Running/Exiting Pro-Designer

1. Simulation
2. Running the Project
3. Closing the Project
4. Exiting Pro-Designer

1 Simulation

The simulation function performs a trial run of a project file created with Pro-Designer on a target PC.
Right-click on the project and select “Start Simulation (Build)” to start the simulation. To end the simulation, press [Ctrl] and [Z] at the same time.

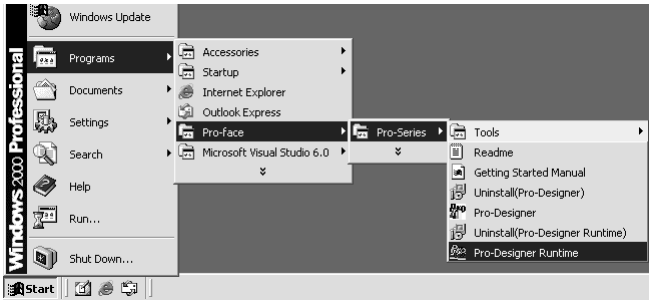


MEMO

- The following items are disabled during a simulation:
  - Graph indicator
  - Alarm backup function
  - Connected devices
  - Data logging function
  - Pro-eView

2 Running the Project

After file transfer (“Download”) has been completed, start Pro-Designer Runtime on the target machine. This allows the Pro-Designer project file to be run.
To start Pro-Designer Runtime, select [Program] → [Pro-face] → [Pro-Series] → [Pro-Designer Runtime] in the [Start] menu. Or, simply double-click the shortcut icon on the desktop.



MEMO

- If you are starting Pro-Designer Runtime for the first time after installation, be sure to enter the Runtime license key code, found on the key code label.

3 Closing the Project

When you exit Pro-Designer Runtime, the project file currently being run is closed.
To exit Pro-Designer Runtime, press the [Z] key while holding down the [Ctrl] key. When the exit confirmation dialog box appears, click [Yes].

MEMO

- For information on the procedure for running or closing a project file on a target machine that has no development environment software, refer to online help.

4 Exiting Pro-Designer

Select [Exit] from the [File] menu.