Web Designer for FactoryCast

User Manual

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Table of Contents

Safety Information

Important Information

NOTICE

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

The addition of this symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER

DANGER indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

⚠ WARNING

WARNING indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

⚠ CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **could result** in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury.

PLEASE NOTE

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction and operation of electrical equipment and its installation, and has received safety training to recognize and avoid the hazards involved.

About the Book

At a Glance

Document Scope

This manual presents the Web Designer for Modicon M340, Modicon M580, Premium, and Quantum software and describes the installation and operation.

NOTE: In this manual, the term *Web Designer* refers to *Web Designer for Modicon M340, M580, Premium, or Quantum.*

Validity Note

This documentation is valid for Web Designer software.

Related Documents

Title of Documentation	Reference Number
Objects Library for ***Microsoft Expression Blend***®	S1A75812
FactoryCast for Modicon M340 User Manual	35015192 (English), 35015193 (French), 35015194 (German), 35015195 (Spanish), 35015196 (Itlian), 35015197 (Chinese)
FactoryCast for Premium and Quantum User Manual	31001229
Modicon M580 BMENOC0301/11 Ethernet Communications Module Installation and Configuration Guide	HRB62665 (English), HRB65311 (French), HRB65313 (German), HRB65314 (Italian), HRB65315 (Spanish), HRB65316 (Chinese)
Modicon M580 BMENOC0321 Control Network Module Installation and Configuration Guide	NVE24232 (English), NVE24233 (French), NVE24237 (German), NVE24240 (Italian), NVE24239 (Spanish), NVE24242 (Chinese)
Communications Setup Manual	TLX DS COMPL7 V4
Ethernet Network - Reference Manual	TSX DR ETH
Modbus - User Guide	TSX DG MDB

You can download these technical publications and other technical information from our website at http://www.schneider-electric.com/en/download

Product Related Information

All pertinent state, regional, and local regulations must be observed when installing and using this product. Only the manufacturer should perform repairs to this product to maintain system data.

When controllers are used for applications with technical requirements, please follow the relevant instructions.

⚠ WARNING

UNINTENDED EQUIPMENT OPERATION

Use only Schneider Electric software or approved software with our hardware products.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Anyone who has access to a configuration tool and to your embedded server can override your security settings and download new settings to the server.

Unauthorized or incorrect changes to data may change the behavior of your application in ways that may be undesirable or even hazardous.

⚠ WARNING

UNINTENDED EQUIPMENT OPERATION

- Keep strict access to the embedded server by configuring passwords.
- Carefully select the symbols and direct addresses you authorize to be modified online.
- Do not authorize online modifications of critical process variables.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Chapter 1
Introducing Web Designer

Overview

This chapter is an introduction to Web Designer. It contains installation instructions and a description of the graphical interface.

What Is in This Chapter?

This chapter contains the following topics:

About Web Designer

Introduction

Web Designer is a software application that you can use to create Web-based operator panels and configure operating parameters for Web human machine interface (Web HMI) devices.
Web Designer contains the tools for designing an HMI project from data acquisition to the creation and display of Web animation.

Use Web Designer for these tasks:
- editing Web sites
- configuring Web Sites
- modifying Web Sites

Web Designer offers two levels of personalization:
- You can create a variable base of devices that are viewed and modified in Web pages.
- You can add your own Web pages on the device site.

Devices

In the Schneider product range, Web Designer unites website configuration with services carried out in the coupling unit or device. A project can simultaneously manage several devices.

Web Designer manages these devices:

PLC Range	Device
Modicon M340	BMX NOE 0110 and BMXNOR0200
Modicon M580	BMENOC0311 and BMENOC0321
Premium	TSX ETY 5103
Quantum	140 NOE 771 11

Simulation

Web Designer enables you to simulate devices to debug the application. This means you can verify the behavior of Web pages and services without a physical connection to the device or module.

PC Requirements

To optimize your experience with Web Designer, we recommend that your PC meets these requirements:

PC Component	Operating System		
	Windows 10 Pro (64-bit)	Windows 7 Pro (64-bit)	Windows XP Pro (SP3)
System	Pentium processor 2.4 GHz or higher (3.0 GHz recommended)	Pentium processor 2.4 GHz or higher (3.0 GHz recommended)	Pentium processor 1.2 GHz or higher (3.0 GHz recommended)
RAM	2 GB minimum (4 GB recommended)	2 GB minimum (3 GB recommended)	1 GB minimum (2 GB recommended)
Hard disk (available free space	8 GB minimum	8 GB minimum	8 GB minimum
Internet browser	IE 11.0 or later	IE 7.0 or later	IE 7.0 or later
Java Virtual Machine	Version 1.8.0 or later	Version 1.4.2 or later	Version 1.4.2 or later
Silverlight plug-in	Version 5.0 or later	Version 4.0 or later	Version 4.0 or later

Opening Applications from Interim Target-Patched Versions of Web Designer

Some versions of Web Designer, earlier than version 3.0, were patched with a file to target an interim exec firmware version such as BMX NOE 0110 version 4.51. Applications created with such versions of Web Designer might not open as expected in the latest version of Web Designer.

If your application was created with a version of Web Designer earlier than version 3.0 that was patched for an interim firmware version, and does not open as expected in a later Web Designer version, perform the following steps.

Step	Action
1	Open the folder containing the project. For instance:. `C:\Documents and Settings\user name\My Documents\Schneider Electric\Web Designer\projects\project name` where `user name` is your Windows login name and `project name` is the name of the project you want to edit.
2	Use a text editor such as Wordpad to open the file *TargetVersion.xml*. Locate the lines that show the target firmware version. For instance, in the following example, the target firmware version is 4.51, as indicated by the values of `target firmwareVersion` and `version`: `<?xml version="1.0" encoding="UTF-8" ?>- <Targets> <target firmwareVersion="v4.51" name="TSX ETG 3021-Target0" version="4.51" /></Targets>`
3	Change the values of `target firmwareVersion` and `version` to reflect the latest Web Designer version number. For instance, in the following example, the latest Web Designer version is 5.0. `<?xml version="1.0" encoding="UTF-8" ?>- <Targets> <target firmwareVersion="v5.0" name="TSX ETG 3021-Target0" version="5.0" /></Targets>`
4	Save the *TargetVersion.xml* file.

Web Designer Installation

Installation

Install Web Designer from the CD:

Step	Action
1	Insert the CD into your computer.
2	Open the Web Designer CD in Windows Explorer.
3	Open the **WebDesigner** folder; then double-click the setup file (setup.exe).
4	Follow the on-screen instructions.

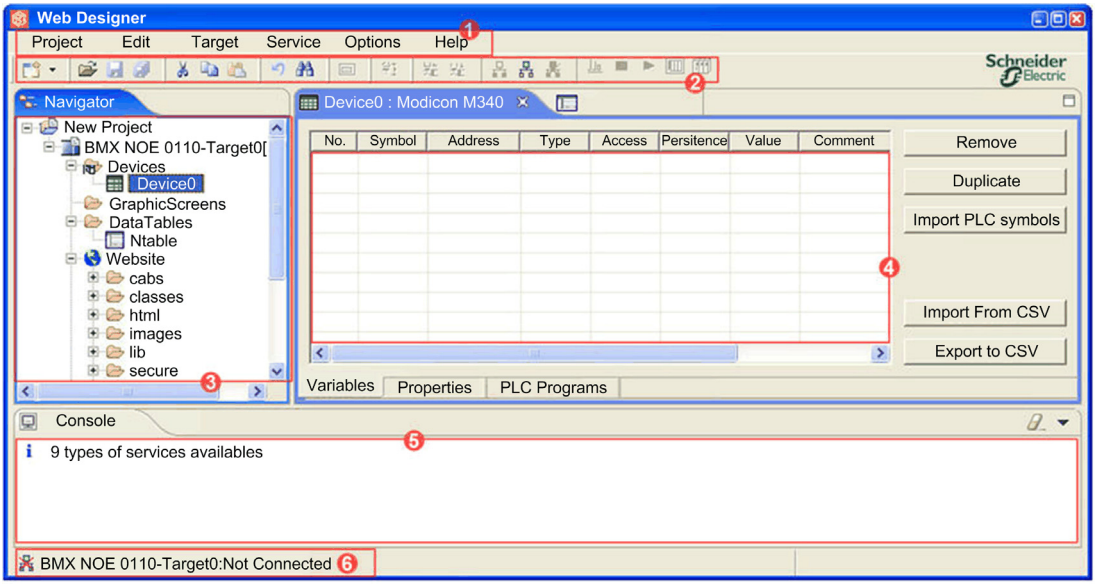
After the Installation

- After Web Designer is installed, you can open it (**Start → All Programs → Schneider Electric → SoCollaborative → Web Designer → Web Designer**).
- Your existing projects appear in the navigator when Web Designer is reinstalled.

The Web Designer Interface

Main Window

This is the main window of the Web Designer:

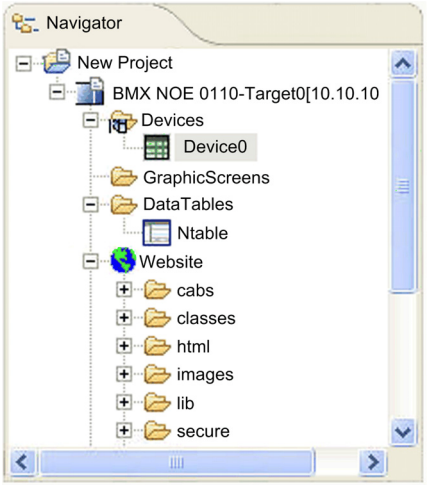


Legend:

1	The menus *(see page 148)* contain commands for various functions.
2	The toolbar contains shortcuts to frequently used functions. (Hover the cursor over each button in the toolbar to display its function name.)
3	The **Navigator** pane *(see page 14)* displays files related to your project.
4	You can edit, create, and configure services associated with your project in these columns.
5	The **Console** contains a list of recently detected errors.
6	This area contains information like the connection status and available memory for the selected module.

Navigator

The **Navigator** zone displays the files and folders associated with existing projects. It provides an overall view of the application in a file tree:



New Project: This is the name of the project as root directory. Click the plus sign (**+**) to make the targets associated with the project appear.

BMX NOE 011-Target0[10.10...: This folder displays the name of the target associated with the project and its IP address. Click the plus sign (**+**) to make the folders and files associated with the target appear.

The main directories are visible for each target associated with the project:

- *Device*: This directory displays the devices (CPUs connected to the module) associated with the target.
- *GraphicScreens*: This directory contains these items:
  - HTML pages (from the Graphic editor *(see page 82)*)
  - Silverlight pages (from Microsoft Expression Blend®) *(see page 120)*)
- *DataTables*: This directory contains tables created in the Data editor *(see page 72)*.
- *Website*: contains the website files for the project. You can customize the website by changing these files or by adding your own pages.

Toolbar

The toolbar gives you quick access to the main Web Designer functions through clickable icons:

You can scroll over each icon to see its name. This table contains a description of the functions:

Icon	Name	Description
1	**New**	Scroll through the menu to create a new item: • **Project** • **Target** • **Device** • **Service** • **Folder** • **File**
2	**Open Project**	Open an existing project.
3	**Save**	Save the currently edited window.
4	**Save All**	Save multiple items modified in the project.
5	**Cut**	Cut the selected object to the clipboard.
6	**Copy**	Copy the selected object to the clipboard.
7	**Paste**	Paste the content of the clipboard.
8	**Undo**	Cancel the last performed action.
9	**Find**	Open the **Search** window to find text in a project file.
10	**Lookup**	Open the **Lookup** window to search for available variables.
11	**Global Transfer**	Download the project's modules (and associated files).
12	**Target->PC**	Transfer a project from the target to the PC.
13	**PC->Target**	Transfer a project from the PC to the target.
14	**Connection to the module**	Connect Web Designer to the target.
15	**Connect to local simulator**	Connect Web Designer to the simulator.
16	**Disconnect**	Disconnect Web Designer from the target or simulator.
17	**Statistics**	View statistics for the selected service (incoming messages, outgoing messages, etc.).
18	**Stop**	Terminate the current service.
19	**Run**	Start the current service.
20	**Operator Screens**	View the operator screens.
21	**PLC Program Viewer**	View the **PLC Program Viewer**.

Chapter 2
Getting Started

Create a Web Designer Application

Use the procedures in this chapter to create a Web Designer application.

What Is in This Chapter?

This chapter contains the following topics:

Overview of the Web Designer Application

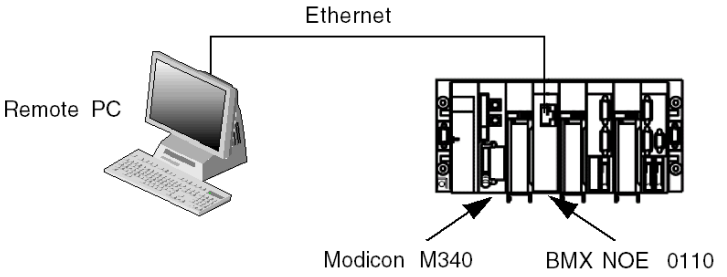
Introduction

In this book, you will create an example architecture in a Web Designer project that can be viewed in your PC's browser. The example uses a BMX NOE 0110 module and a Modicon M340 PLC on the same rack.

The Web server is hosted by the BMX NOE 0110 module, which periodically scans the values of variables located in the PLC. The IP address that is implemented for the module is `a.b.c.d`.

Architecture

This figure shows the architecture of the example:



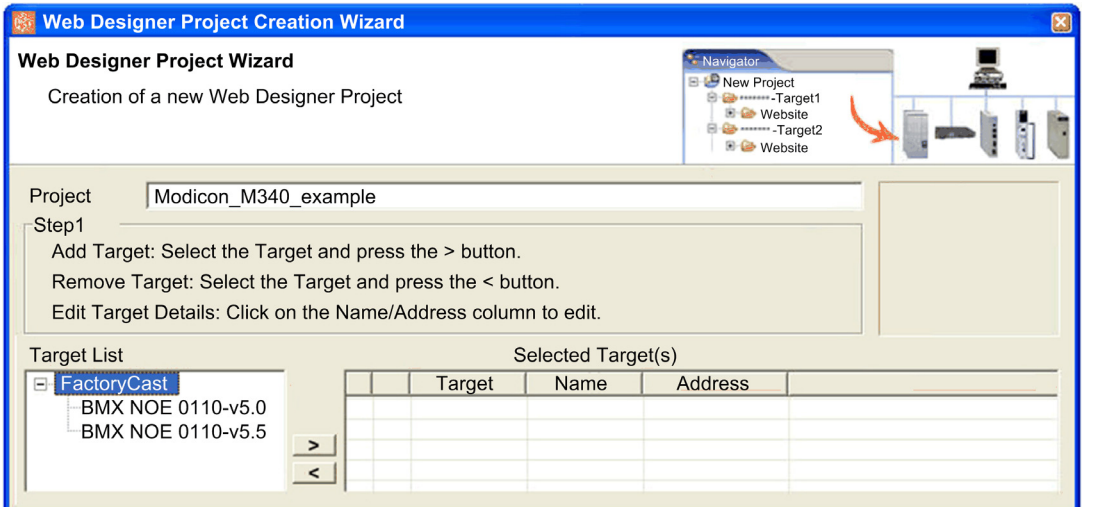
This table shows the components used in the example:

Reference	Type	Description
BMX NOE 0110	Target	Ethernet module
Modicon M340	Device	PLC

Creating a New Project

New Project Window

Create a project that uses a BMX NOE 0110 module with the **Project Creation Wizard** window in Web Designer (**Project → New → Project**):



NOTE: The preceding graphic depicts a Web Designer version earlier than version 3.0. In Web Designer version 3.0, the **Target List** does not display the version number. As a result, only a single target is displayed in version 3.0.

Creating a Project

In the **Step 1** screen for the **Project Creation Wizard** (above), assign a name in the **Project** field (for example, **Modicon_M340_example**).

In the **Target List**, expand **FactoryCast**.

Add target devices to the project:

Step	Action
1	Select a module from the **Target List** (for example, BMX NOE 0110 v5.0).
2	Click the move button (>). (The selected module appears in the first row of the **Selected Target(s)** column.)
3	In the **Name** column, you can replace the default target name (**Target0**) with a more appropriate name.
4	In the **Address** column, enter the IP Address (`a.b.c.d`) of the target. (For more information about IP addressing, refer to the *Modicon M340 for Ethernet Communications Modules and Processors User Manual*.)
5	Repeat these steps to select additional targets.

Click the **Next** button to go to the **Step 2** screen for the **Project Creation Wizard**.

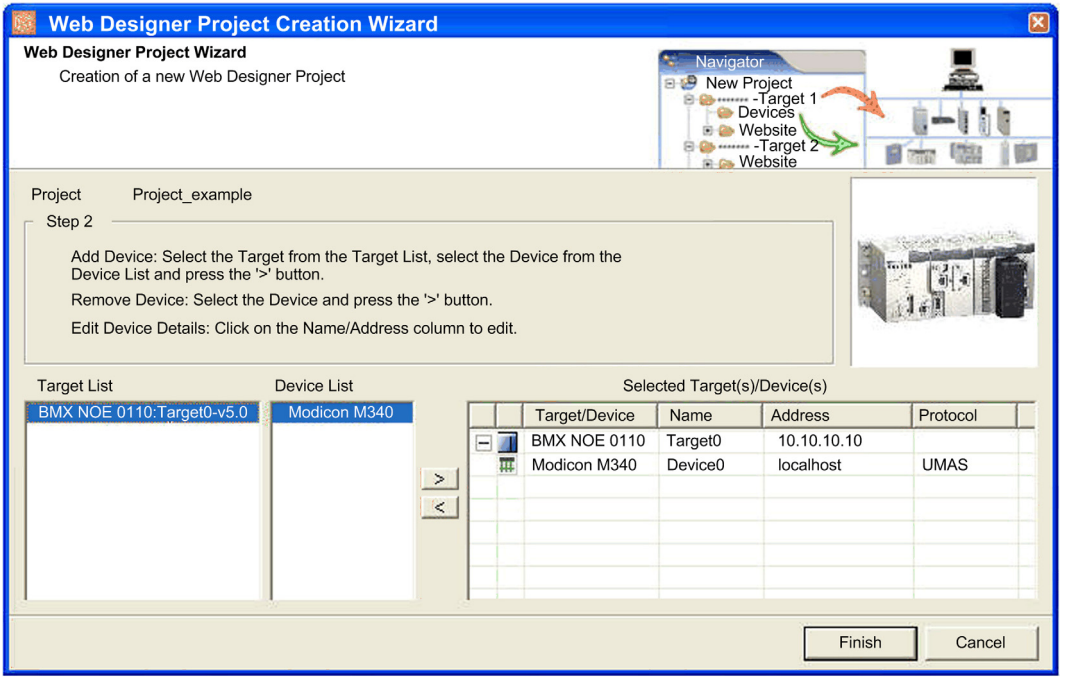
Selecting Devices

Introduction

Continue using Web Designer to select devices and variables.

Step 2 Screen

For each target in the new Web Designer project, you can configure the devices that are connected to it on the **Step 2** screen for the Web Designer:



NOTE: The preceding graphic depicts a Web Designer version earlier than version 3.0. In Web Designer version 3.0, the **Target List** does not display the version number.

Selections

This table describes the fields in the above screen:

Device List	Select a device in the **Device List** and click the move (**>**) button to make the device appear in the **Target/Device** column. Do this for every device you want to add to the target.
Selected Target(s)/Device(s)*	**Name:** Enter the name of the device.
	Address: Enter the address of the device.
	Protocol: Enter the desired protocol (if the device supports several protocols).
*For more information about addressing refer to the *Modicon M340 for Ethernet Communications Modules and Processors User Manual*.	

Click **Finish** to make the example appear in the **Navigator** pane in the Web Designer.

Save your project.

Target Properties

Introduction

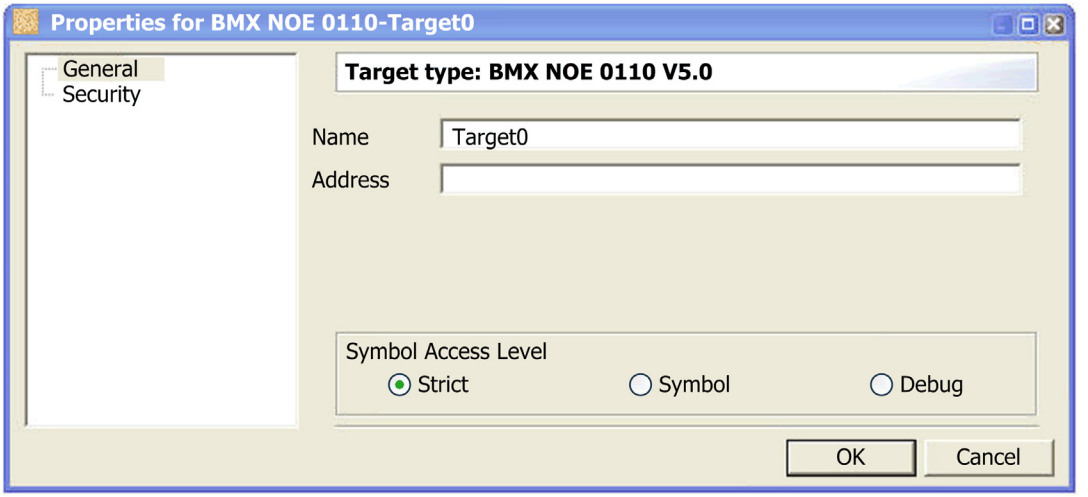
You can change the name and address of a target in the **Properties** window in Web Designer. In this example, you can manually configure IP parameters for a BMX NOE 0110 module.

Accessing the Target Properties Page

Access the **Target Properties** page with one of these steps:

- In the **Navigator** pane in the Web Designer, expand the project name, right-click the target, and scroll to **Properties**.
- On the **Target** menu, click **Properties**.

The **Properties** window appears:



Setting Up the IP Parameters

For this example, enter `a.b.c.d` in the **Address** field to assign that IP address the BMX NOE 0110 module.

NOTE: For details about managing IP addresses, refer to the *Modicon M340 for Ethernet Communications Modules and Processors User Manual*.

Having two devices with the same IP address can cause unpredictable operation of your network.

⚠ WARNING

UNINTENDED OPERATION — DUPLICATE IP ADDRESS

- Assign the device a unique IP address.
- Obtain the IP address from your system administrator to avoid the possibility of duplicate IP addresses.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

NOTE: In this example, we manually assign the address `a.b.c.d` to the BMX NOE 0110 module. For details about managing IP addresses, refer to the *Modicon M340 for Ethernet Communications Modules and Processors User Manual*.

Applying Target Properties

After you enter an IP address for the BMX NOE 0110 module, click **OK** to apply the changes and save your project.

Variable Selection

Introduction

Device variables within a project are grouped in a file called **Namespace**. The data editor and graphic editor in a project use the variables in the **Namespace**.

Symbol Types

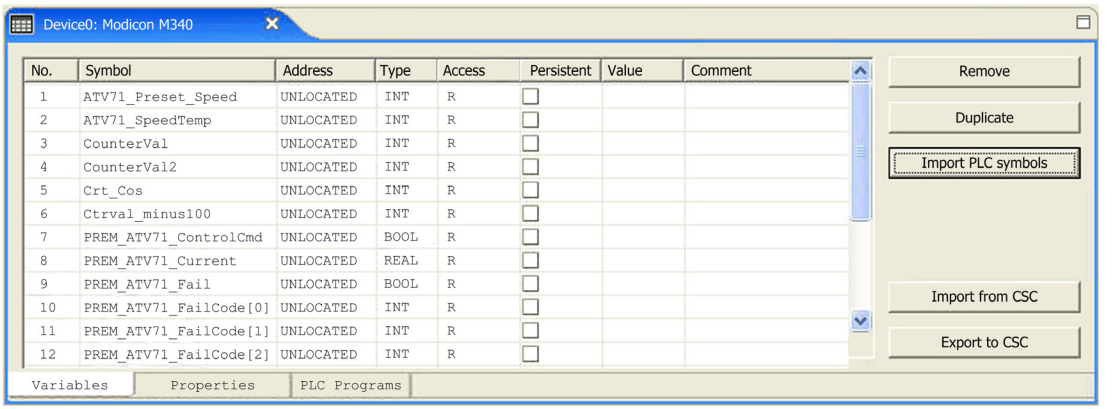
For M340, M580, Premium, and Quantum PLCs, use symbols from the PLC application (*.stu* or *.xvm* file type).

Selecting PLC Symbols

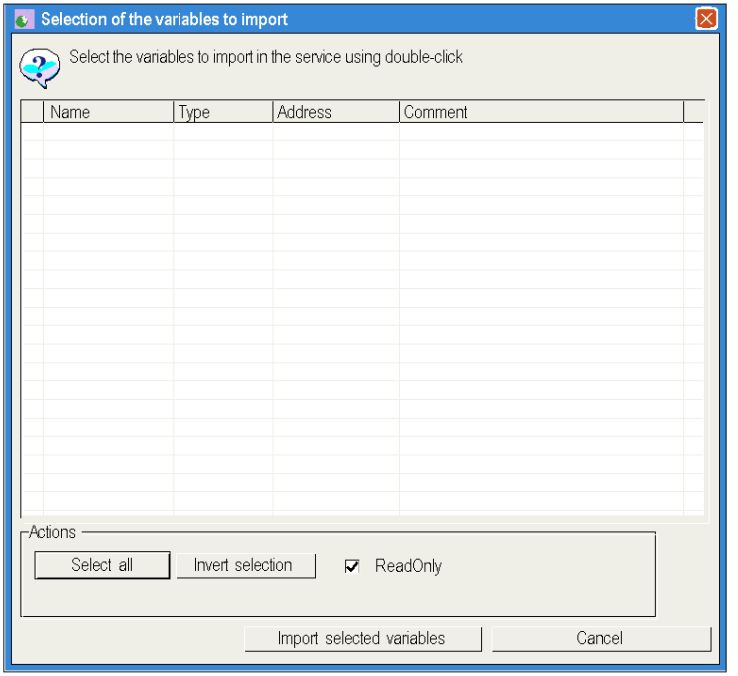
View the list of devices:

Step	Action
1	Select a project in the **Navigator** pane in `Web Designer`.
2	Click the plus sign (+) to expand the target directory.
3	Double-click the **Devices** directory.
4	Double-click a device in the **Devices** directory.

View the list of devices:



Use these steps to select PLC symbols:

Step	Action
1	In the device window, click **Import PLC symbols** to view the **Open** window.
2	Select the (*.stu* or *.xvm*) file that contains the application symbols.
3	Click **Open** to view the **Selection of the variables to import** dialog box: 
4	Double-click a row in the first table column to select the required symbols.
5	Click **Import selected variables**.
6	Save the project (**Project → Save all**).

Viewing Groups of Targets and Devices

Click **Namespace** in the **Navigator** pane to view a table that groups the symbols you previously selected for targets or devices.

Variable Refresh

When using the **Project Creation** wizard, the list of variables may take a while to refresh.

NOTE: The **PLC Program Viewer** does not work with the **Data dictionary** turned off. If you need to use the **PLC Program Viewer**, limit the use of the Dynamic Namespace feature in FactoryCast devices. Variables that do not exist in Unity Pro will not work correctly on **Data Editor** and **Graphic Editor** web pages.

Data Editor

Introduction

The Data Editor enables you to create Web pages in which the values of variables are displayed in a table. In some cases, you can modify these values.

Allowing write access can change system behavior.

NOTE: The Data Editor web page for the BMXP3420•0 CPU modules uses located memory addresses only; they are not FactoryCast compatible. Only FactoryCast modules, like the BMXNOE0110, BMENOC0311, or BMENOC0321 modules, can be included in a Web Designer project that uses Unity Pro symbols.

⚠ WARNING

UNINTENDED OPERATION

- Password protect access to writable variables.
- Grant write access only to trained personnel.
- Do not grant write access to critical control variables.

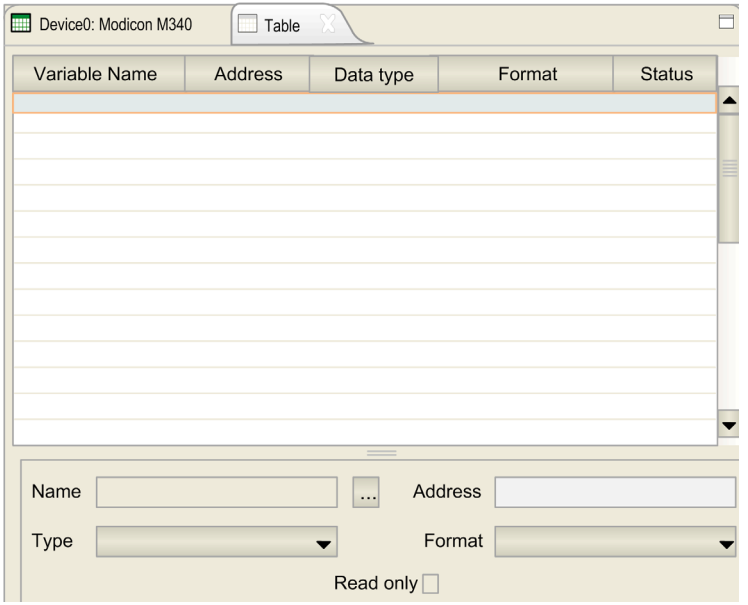
Failure to follow these instructions can result in death, serious injury, or equipment damage.

Selecting Editor Symbols

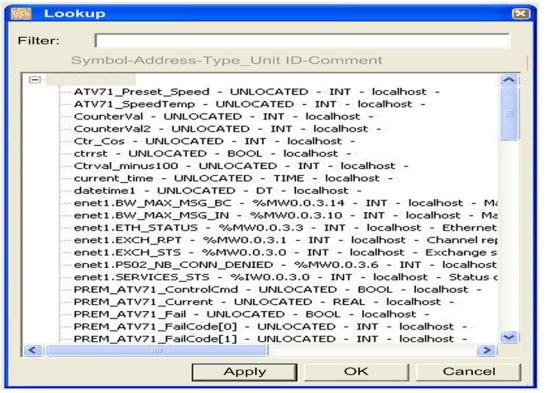
View and select the available symbols:

Step	Action
1	In the **Navigator** pane, expand the project and the target.
2	Right-click **DataTables → New Table** to view the **New Table** window.
3	Enter a name for the table in the **Table Name** field (for example, “Table”).
4	Click **OK**.

Select the **Table** tab, and double-click a row. You can also right-click the **Table** tab to open the contextual menu, and choose **New** to view the view the configuration zone:



Click the ellipses button (**...**) to view available symbols in the **Lookup** window:



Connect variables from the devices to the target:

Step	Action
1	Select the symbols you want to monitor.
2	Click **OK**.
3	Save your table.

Graphic Editor

Introduction

In the graphic editor window (**GDEEditor**), you can create Web pages in which the values of variables are displayed as graphic objects (buttons, sliders, VU meters, indicators, etc.).

For some graphic objects, you can edit variable values:

- You can configure the variable as read-write.
- You can grant the intended user(s) password-protected write access to the variable.

In the configuration phase, use the graphic editor to edit and view screens at the same time. In the operation phase, you can view only one screen at a time to optimize memory resources.

Using the Graphic Editor

Open the graphic editor (**GDEEditor**):

Step	Action
1	Expand (+) the target device in the **Navigator** pane.
2	Right-click **GraphicScreens**.
3	Scroll to **New Graphic Page** to open the **GDEEditor**.
4	Click the **Edit** button to view the available graphic objects.
5	From the pull-down menu, select the **standard** or **extended** menu to change the available graphic objects.
6	Click on a graphic object.
7	Click in the workspace to place the selected graphic object.
8	Repeat these steps to place additional graphic objects in the workspace.

Configure the graphic objects:

Step	Action
1	Double-click a graphic object in the workspace to open its **Properties** window.
2	Specify parameters in the parameter fields (**Name**, **Address**, **Data Type**, etc.).
3	Click the ellipses (**...**) button to see the **Lookup Variable** window.
4	Select the variable that you want to associate with the object.
5	Click **OK**.
6	Click **Done** on the **Properties** window.
7	Click **Done** in the graphic editor.
8	Click **Save** in the graphic editor.
9	Enter a name for the graphic.
10	Click **OK**.

NOTE: The components of the graphic editor (**GDEEditor**) are described in detail elsewhere in this guide *(see page 81)*.

Using Modicon M580 Graphic Editor

For Modicon M580 projects, the **Graphic Editor** utilizes Microsoft Silverlight graphics:

Step	Action
1	Expand (+) the Modicon M580 target device in the **Navigator** pane.
2	Right-click **GraphicScreens**.
3	Scroll to **New Silverlight Page → Using Silverlight Graphic Editor**. **NOTE:** Graphic screens can also be built with any external tool (such as Microsoft Expression Blend) when the external tool is configured in Web Designer *(see page 129)*.
4	In the **New Silverlight Page** dialog box, enter a name for the new graphic.
5	Click **OK**: ● The new graphic appears in the **Navigator** pane. ● A workspace for the new graphic appears automatically.
6	From the toolbar of available graphics, drag a graphic type and drop it in the workspace.
7	Double-click the graphic icon in the workspace to see the associated configuration options.
8	Configure the graphic.

Transfer

Introduction

Once you have created a Web site on the configuration PC, you can transfer it to a target.

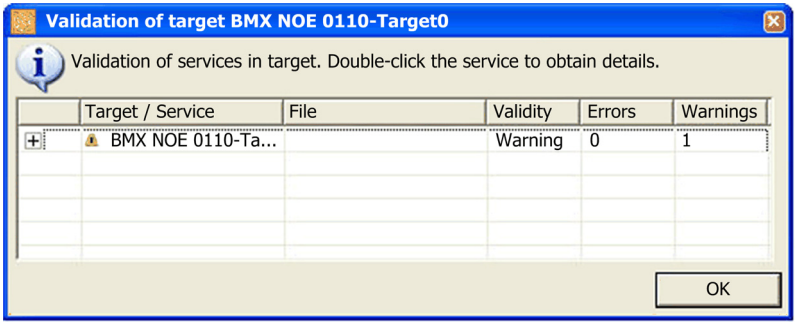
NOTE: For Modicon M580 modules, disable the **User Access rights** on the module's FactoryCast web pages (**Setup → Access Management**) to transfer the configuration.

Transfer the Website to a Target

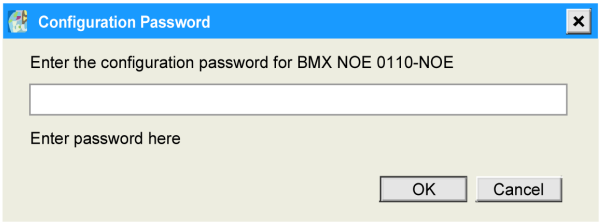
Open the target validation window:

Step	Action
1	Select BMX NOE 0110 in the **Navigator** pane.
2	Open the target validation window (**Target → Transfer → PC ->Target**).

The window appears:



NOTE: If the validation process detects errors in your project, the transfer cannot be performed. Refer to the Project Validation part *(see page 51)* for more information.

Step	Action
1	Click **OK** to open the **Transfer Status** window. **Note**: For versions of Web Designer earlier than version 3.0, if there are differences between the version of firmware for the project and the target, the transfer cannot be performed. For Web Designer version 3.0 and higher, the transfer can be performed if firmware version differences exist.
2	Click **Transfer**. **Result**: the Configuration Password window appears if a configuration password has already been set. Otherwise the project is transferred.  **NOTE:** For Modicon M580 modules, this password screen does not exist because the **User Access rights** are disabled before any data is transferred.
3	Click **OK** to see the **Progress Information** window. (The files are displayed in the **Status Bar**.)

Accessing the Website

Introduction

By now, you know how to use the Web Designer to perform these tasks:

- Create a project *(see page 19)*.
- Select devices and variables *(see page 20)*.
- Create a data table *(see page 26)* and graphic table *(see page 28)* to monitor the installation. (The data editor and graphic viewer are used to view graphic animation pages related to the device variables or internal module variables.)
- Transfer your application from the PC to the target *(see page 30)*. Connect to the website to complete this step.

The data tables and graphic tables can also be configured on the Web pages associated with the module.

Accessing Web Pages

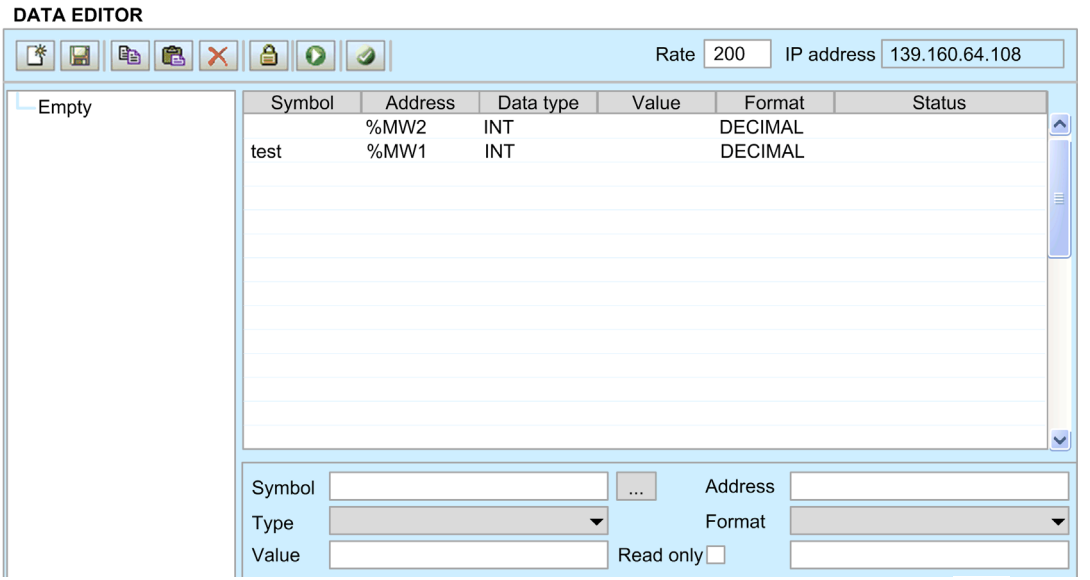
Access the home page of the module by entering its IP address in a browser:

Step	Action
1	Open a Web browser.
2	Enter the IP address of the module in the address field. (This example uses the module IP address a.b.c.d *(see page 48)*.)
3	Click **Go**.

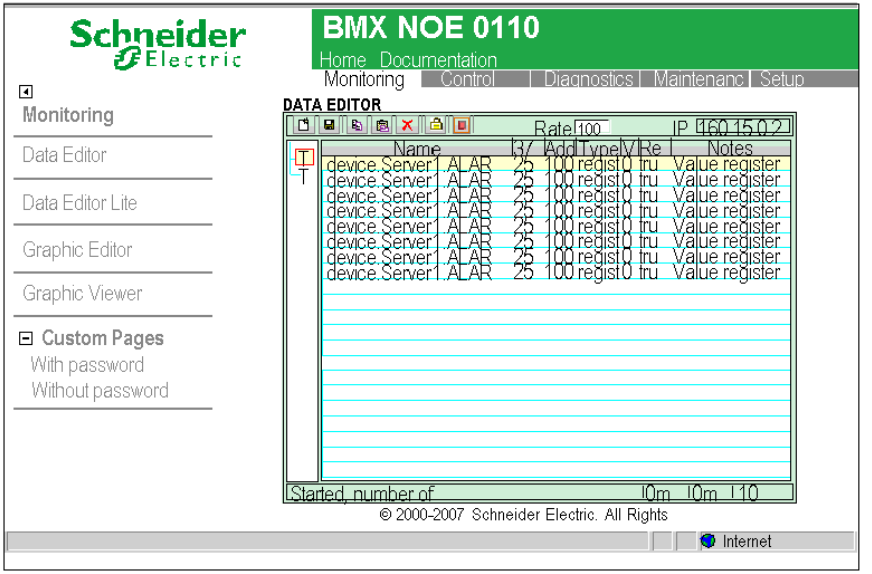
The home page associated with the module appears:

Monitoring Data Tables

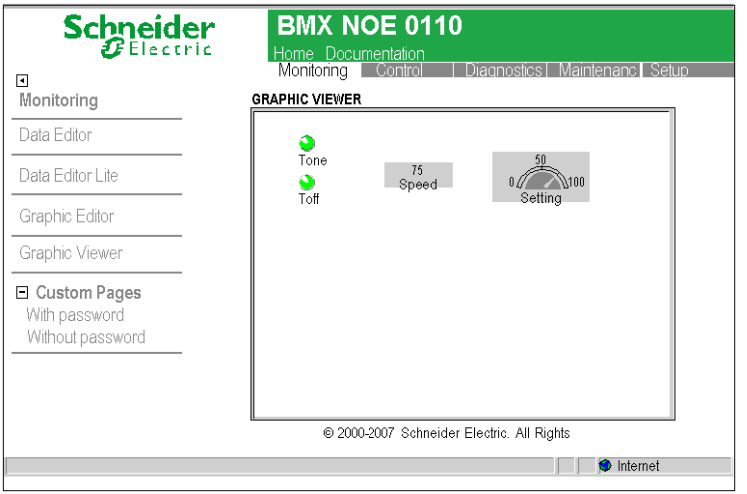
On the **Monitoring** page, click the **Data Editor** link to open the data editor:



Select the table created previously on the left side of the Data Editor applet and click  to launch the animation. This figure shows the data table:



Monitoring Graphic Screens

Step	Action
1	Click **Graphic Viewer** on the vertical menu bar of the website to see the animation pages created with the Graphic Editor. The following figure shows the graphics page: 

Chapter 3
Project Management

Introduction

This chapter contains instructions for managing Web Designer projects, including opening and closing projects, modifying projects, and importing a project from a file.

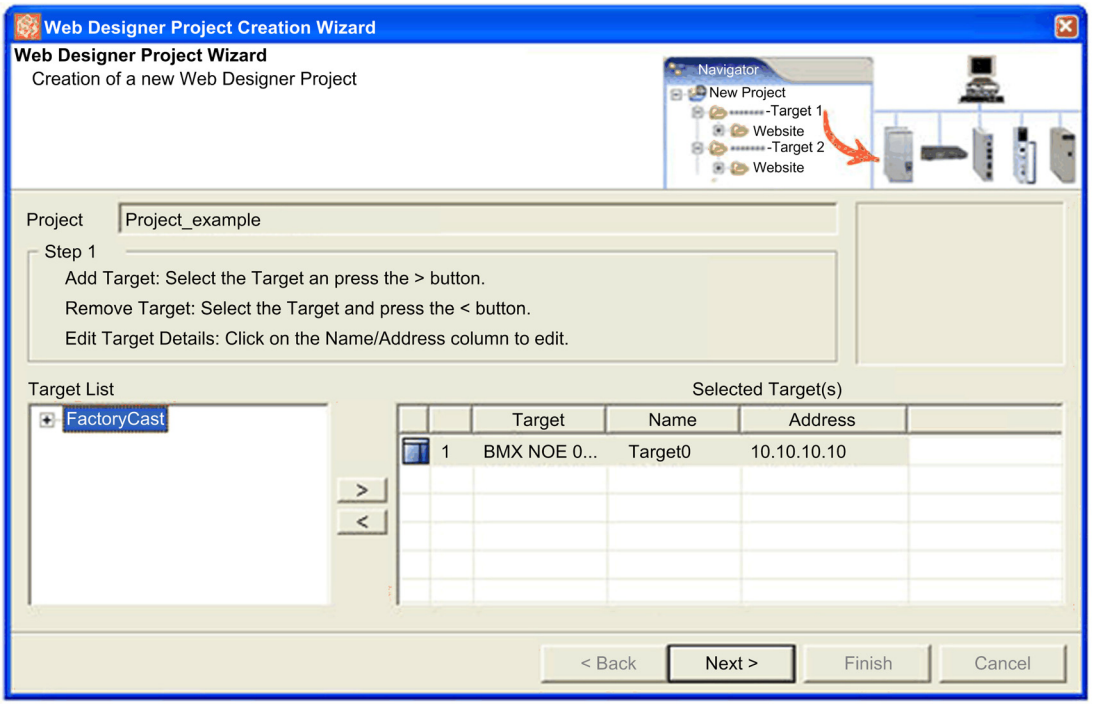
What Is in This Chapter?

This chapter contains the following topics:

Adding and Removing Targets

The Window

Select a project in the **Navigator** pane in Web Designer and open the **Web Designer Project Wizard** (**Project → New → Target**):



This table describes the components of the window:

Component	Description
Project	This is the project name.
Target List	View a list of available targets.
Target	This column shows the target types selected in the expanded **Target List**.
Name	This column shows the target names (to distinguish targets of the same type).
Address	This column contains the IP address of the target.
> (move)	Use this button to add a target to the **Selected Target(s)** list.
< (remove)	Use this button to remove a target from the **Selected Target(s)** list.

Adding a New Target

Add a target to a Web Designer project:

Step	Action
1	In the **Target List**, select the targets to add.
2	Expand the **FactoryCast** menu to see the targets that already exist in the project.
3	Click the move button (**>**) to move the target to the **Selected Target(s)** list.
4	Enter a name and address for the target.
5	Click **Next** to continue to the device selection screen.

Removing a Target

To remove a target from the project, right-click the target in the **Navigator** and scroll to **Delete**.

NOTE: This action also deletes the files associated with the deleted target (including devices).

Number of Targets

A project can contain a maximum of 16 targets. You can select the same type of target several times if you assign a unique name and IP Address for each target.

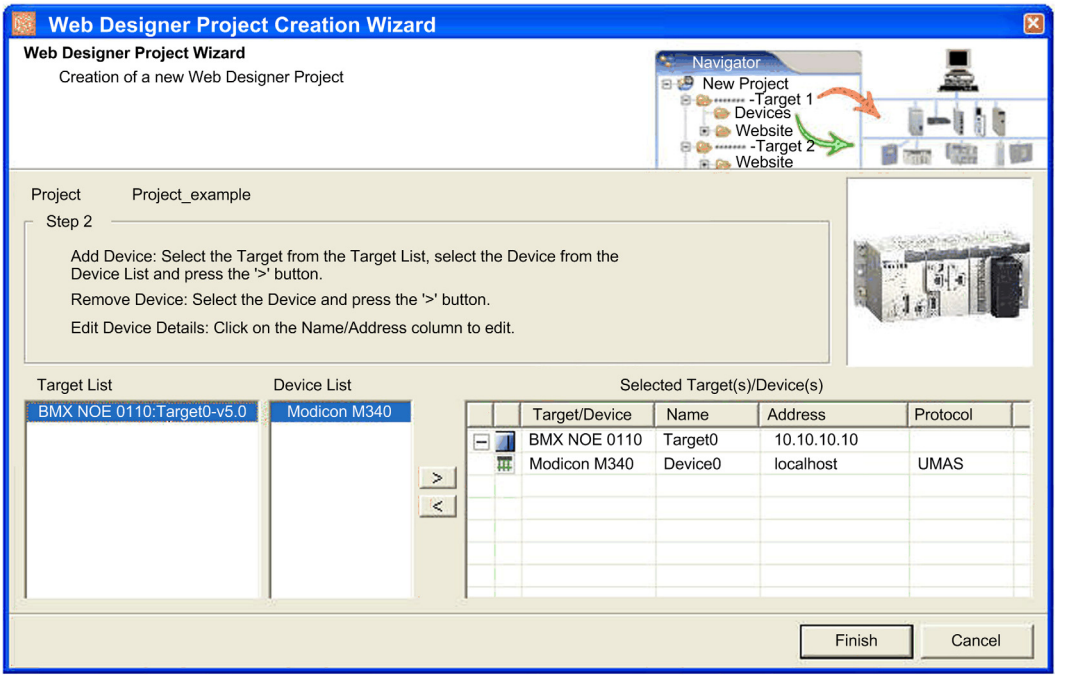
Adding and Removing Devices

Open the Window

Open the **Step 2** window:

Step	Action
1	In the **Navigator** pane, expand your project and the target.
2	Highlight the **Devices** directory.
3	Open the window to add a device (**Project → New → Device**). **NOTE:** You can also right-click the **Devices** directory and select **New Device**.

Look at the **Device List** in the **Step 2** window:



NOTE: Note that the **Web Designer Project Creation Wizard** window is already initialized with devices that exist in the project. If you have more than one target in your project, select the target in the **Target List** to which you want to attach the device before executing this step.

Fields

This table describes the components of the window:

Component	Description
Target List	This is a list of targets that were created in the previous panel *(see page 36)*.
Device List	This is a list of available devices.
Selected Target(s)/Device(s)	This table contains devices that were selected from the **Device List** and moved.
Name	In this column, give the device a name that distinguishes it from other devices of the same type.
Address	In this column, give the device a unique IP address.
Protocol	This column shows the protocol that the device supports (if the device supports more than 1 protocol). (See the note below.)
NOTE: You can associate one or more protocols with each device. If a device supports several protocols, the **Protocol** column is active and the user can choose a protocol from the list. The content of the **Address** column depends on the selected protocol.	

Adding a Device

Add a device to a Web Designer project:

Step	Action
1	Highlight devices to add from the **Device List**.
2	Move the highlighted devices to the **Selected Target(s)/Device(s)** table with the move button (**>**).
3	In the **Name** column, enter a name for the device.
4	In the **Address** column, enter an IP address for the device.
5	Click **Finish** to verify the addition of the project targets and devices.

Removing a Device

To remove a device from the project, right-click the device in the **Navigator** and scroll to **Delete**. (This action also deletes the files associated with the deleted target.)

NOTE: This action also deletes the variables associated with the **Namespace** of the device.

Device Selection

You can only select 1 device.

Module Address

For a target in a rack, the wizard presents an empty string as the default address.

Adding or Removing Items

Introduction

Add these components to you Web Designer project:

- data tables *(see page 26)*
- graphic pages *(see page 28)*
- folders *(see page 40)*
- files *(see page 40)*

Adding a Folder

Add a folder:

Step	Action
1	In the **Navigator** pane, expand your project and the target.
2	Highlight the **Website** folder.
3	Open the **New Folder** window with either of these actions: ● **Project → New → Folder** ● Right-click **Website** and scroll to **New → Folder**.

NOTE: You can create new folders only in the **Website** menu tree.

Adding a File

Add a file:

Step	Action
1	In the **Navigator** pane, expand your project and the target.
2	Highlight the **Website** folder.
3	Do one of the following: ● For Modicon M580 products (such as the BMENOC0311 and BMENOC0321): ❍ Under the **Website** node, right click on the **Custom** folder. ❍ Select **New → File**. **NOTE:** When you right click on the **Custom** folder, the **Import File** menu item is also available for adding an existing file to the website. ● For non-Modicon M580 products, open the **New File** window with either of these actions: ❍ **Project → New → File** ❍ Right-click **Website** and scroll to **New → File**.

NOTE: You can create new files only in the **Website** menu tree.

Removing Items

To remove an item from the project, right-click the item in the **Navigator** and scroll to **Delete**.

Opening and Closing a Project

Introduction

Use these directions to open, close, and save Web Designer projects.

Opening an Existing Project

Open an existing project:

Step	Action
1	View the **Open Project** window (**Project → Open Project**). **NOTE:** The **Open Project** window is a list of projects in the workspace.
2	Highlight a project in the **Open Project** window.
3	Click **Open** to see the project in the **Navigator** pane.

Closing an Open Project

Close an open project:

Step	Action
1	Highlight a project in the **Navigator** window.
2	Close the project (**Project → Close Project**).

Saving Multiple Modifications

The **Save All** command saves the modifications made to projects in all open windows. Use one of these methods:

- **Project → Save All**
- Click the **Save All** icon in the toolbar.

Quitting Web Designer

Web Designer automatically tracks the opened or closed state of projects when you quit the program. When you open Web Designer again, it automatically opens any projects that were open when the program was closed.

Importing Projects

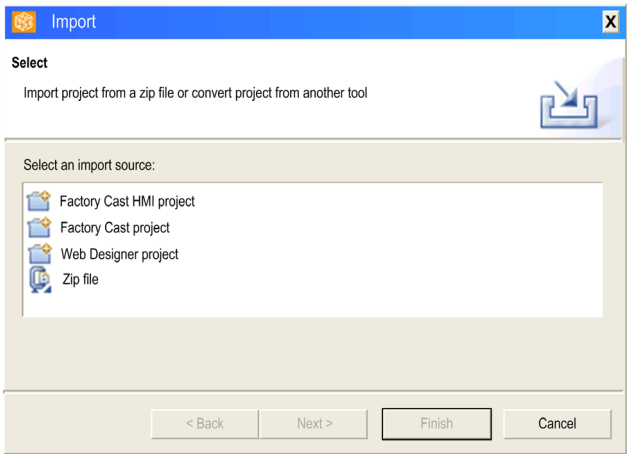
List of Sources

Web Designer can import projects in these formats:

- *.zip* file (previously exported by Web Designer)
- Web Designer project (outside the Workspace)

Import a Project

Follow these steps:

Step	Action
1	Open the **Import** dialog box (**Project** → **Import**): 
2	Select an import source.

NOTE: The project appears in the **Navigator** pane.

Export

You can export a Web Designer project as a *.zip* file (**Project** → **Export**). Use this export command when you want to save a project before you modify it. (The project is still open after you export it.)

Importing a FactoryCast Project and Web Site

Introduction

You can import a project (including its embedded web site) into Web Designer if the project was created the FactoryCast Configurator tool.

Process

You can perform these steps with the FactoryCast Configurator tool:

Stage	Description
1	Save the project as a configurator file (.cfg).
2	Back up the web site as a compressed file (.zip).
3	Import the saved configurator file and the compressed web site with Web Designer.

These stages are described in detail below.

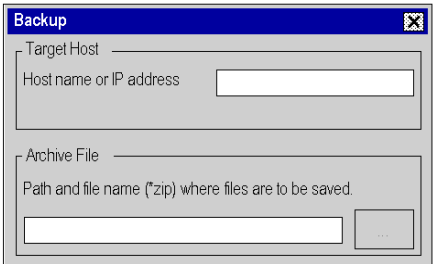
Saving the Configurator File

Save a FactoryCast configurator file (.cfg) with the FactoryCast Configurator tool:

Step	Action
1	Open the project you want to save in the FactoryCast Configurator tool.
2	Open the **Save As** window (**File → Save As**).
3	Save the project to a directory.

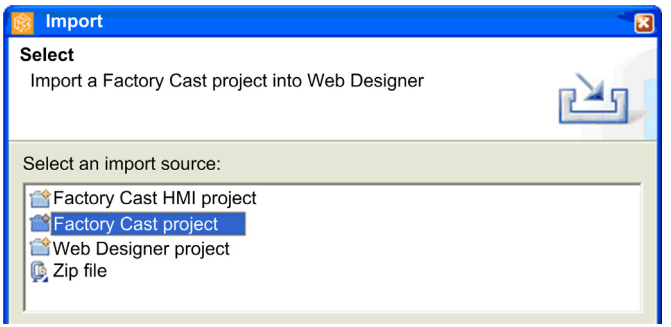
Backing Up the Web Site

Back up the web site that is associated with the saved configurator file with the FactoryCast Configurator tool:

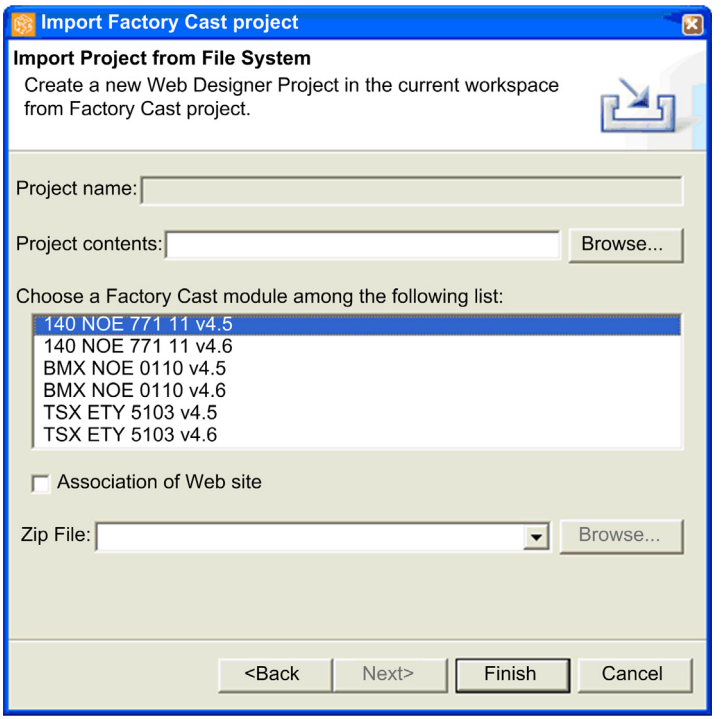
Step	Action
1	With the project open in the FactoryCast Configuration tool, open the **Backup** window (**Transfer → Backup**): 
2	In the **Target Host** are, enter the **Host name or IP address** of the device on which the web site resides.
3	In the **Archive File** area, enter the location and name of the file (**Path and file name...**). **NOTE:** You can also click the ellipses (**...**) to open a window that contains the files.
4	Click **OK** to close the window.

Importing the FactoryCast Configuration and Web Site

Use Web Designer to import the FactoryCast configuration file and the website that you previously saved:

Step	Action
1	In Web Designer, close all open projects.
2	Open the **Import** window (**Project → Import**).
3	Select **FactoryCast project**: 
4	Click **Next**.

The **Import Project From File System** window appears:



Follow these steps:

Step	Action
1	Enter the path and name of the FactoryCast configuration file you want to import in the **Project contents** field. (See the note below.)
2	From the list of modules, select the Factory Cast module to which you want to import the Factory Cast configuration.
3	To import a web site, select **Association of Web site**. (This step is optional.)
4	In the **Zip File** field, enter the path and name of the compressed web site files you want to import to the selected module. (This step is optional.) (See the note below.)
5	Click **Finish**.

NOTE: You can also click **Browse...** to navigate and select the files you want to import.

Chapter 4
Transferring a Web Site

Introduction

This chapter contains instructions for transferring Web sites. Web sites can be transferred from the configuration PC to the module (or vice-versa). The transferred Web pages are generated by the Web Designer or created by the user. The transfer can be more general and can include files that describe services.

What Is in This Chapter?

This chapter contains the following topics:

Transfer

Introduction

You can transfer these components from the configuration PC to the target (and vice-versa):

- data editor tables
- graphic editor pages
- services
- Web sites (and associated files)

Before the transfer, configure the target IP address. Web Designer validates the structure of the project before transferring files to the target.

Setting Up the IP Address

If two devices have the same IP address, there can be unpredictable operations on your network.

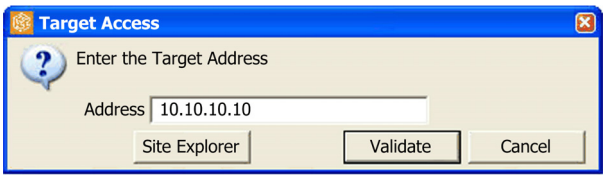
⚠ WARNING

UNINTENDED OPERATION — DUPLICATE IP ADDRESS

- Assign the device a unique IP address.
- Obtain the IP addresses from your system administrator to avoid the possibility of duplicate addresses.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Configure the physical IP address of the module before you transfer a Web site:

Step	Action
1	Select the target in the **Navigator** pane in Web Designer.
2	Open the **Target Access** window (**Target → Set Target Address**): 
3	Enter an IP address in the **Address** field.
4	Click **Validate**.

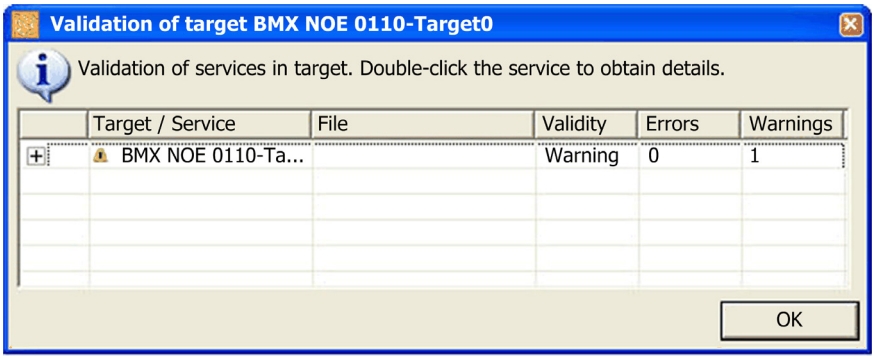
NOTE: You can also set the address during the creation of the project with the Creation Wizard.

Transferring from the PC to the Target

Open the target validation window:

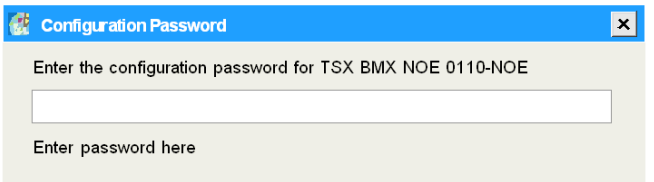
Step	Action
1	Select BMX NOE 0110 in the **Navigator** pane.
2	Open the target validation window (**Target → Transfer → PC ->Target**).

The **Validation** window appears:



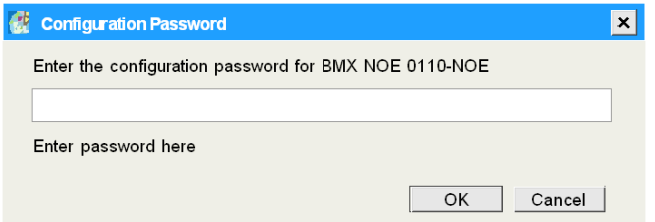
NOTE: If the validation process detects errors in your project, the transfer cannot be performed. Refer to the Project Validation discussion *(see page 51)*.

Transfer data to the module:

Step	Action
1	Select the target in the **Navigator** pane.
2	Click **OK**. **Note**: For versions of Web Designer earlier than version 3.0, if there are differences between the version of firmware for the project and the target, the transfer cannot be performed. For Web Designer version 3.0 and higher, the transfer can be performed if firmware version differences exist.
3	Click **OK** to open the **Transfer Status** window.
4	Select the files you want to transfer.
5	Click **Transfer**. The **Configuration Password** window appears if a configuration password is already set. Otherwise the project is transferred. 
6	Enter the configuration password and click **OK** to open the **Progress Information** window. (The files are displayed one at a time in the **Status Bar**.)

Transferring from the Target to the PC

The following table shows how to transfer data from the module to a PC:

Step	Action
1	In the browser, select the target.
2	Open the **Transfer Status** window (**Target → Transfer → Target ->PC**).
3	Select the files you want to transfer.
4	Click **Transfer**. **Result**: the Configuration Password window appears if a configuration password has already been set. Otherwise the project is transferred. 
5	Enter the configuration password and click **OK**. **Result**: the Progress Information window appears. The files are displayed one at a time in the Status Bar.

Total Transfer of the Project

This function lets you transfer the entire project to the targets associated with it. The transfer is done target by target. The global transfer operates in only one direction: you can transfer from the PC to the targets, but not from the targets to the PC. To transfer from the targets to the PC, manually transfer the files from each target (one target at a time).

To activate the transfer, click **Project → Global transfer**. The procedure is exactly the same than a transfer from the PC to the target *(see page 49)*.

Partial Transfer

It is possible to do only a partial transfer (to save time). In the Website, gdt (graphic pages), rdt (data tables) and Service directories, the contextual menu authorizes a partial transfer limited to files located in these directories. In this way, you don't have to transfer the entire project if you just modified a small part.

Documentation

To manage online documentation, the user can add Word (*.doc*) or Acrobat (*.pdf*) files to the website in the site directory. The Transfer function lets you copy these files to the target.

Site Explorer

The button **Site Explorer** displays the target files in the lower window. This is especially useful before or after a data transfer, in order to analyze the contents of the target.

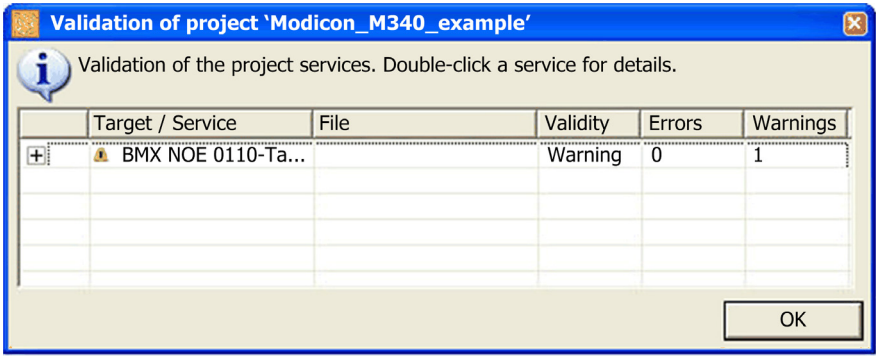
Project Validation

Introduction

Web Designer validates the structure of a project before it transfers the files to a target. If the verification detects anomalies, the transfer is canceled. Web Designer also performs a comparison between the PC configuration and the target configuration.

Validating a Project

When you start a transfer, Web Designer starts to validate the project. You can also validate a project at any time by opening the validation window (**Project → Project Validation**):



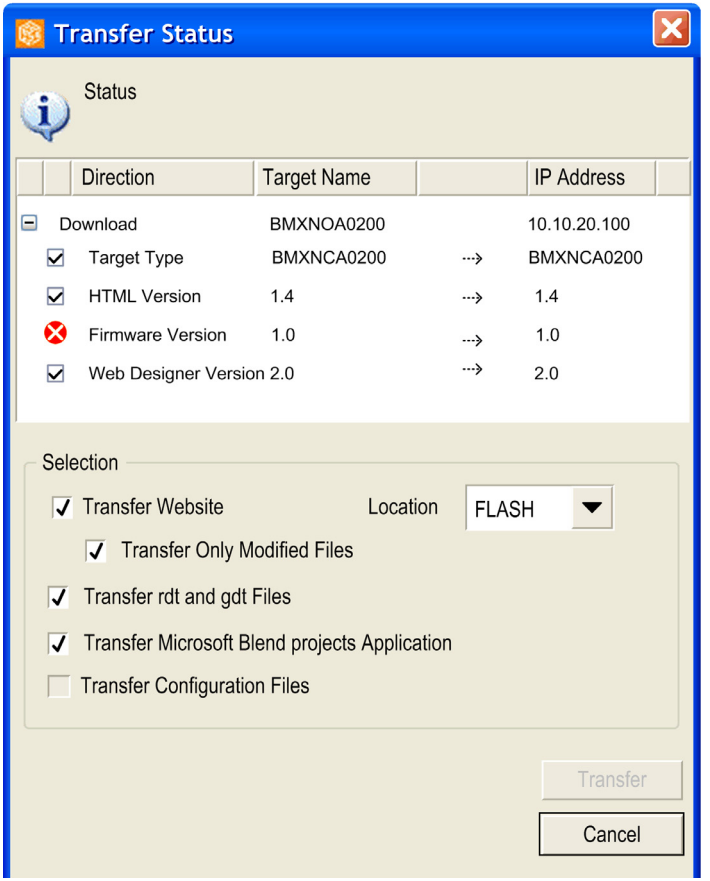
The validation process monitors performs these actions:

- The process tells you when the available space on the target is bigger than the size of the website.
- The validation monitors the use of a user page or service with variables that are not in the Namespace file (*Namespace.dat*).
- The validation tells you when the number of variables is more than the maximum number of variables (1000) authorized for the target.
- The process reports the detection of errors that are related to services.

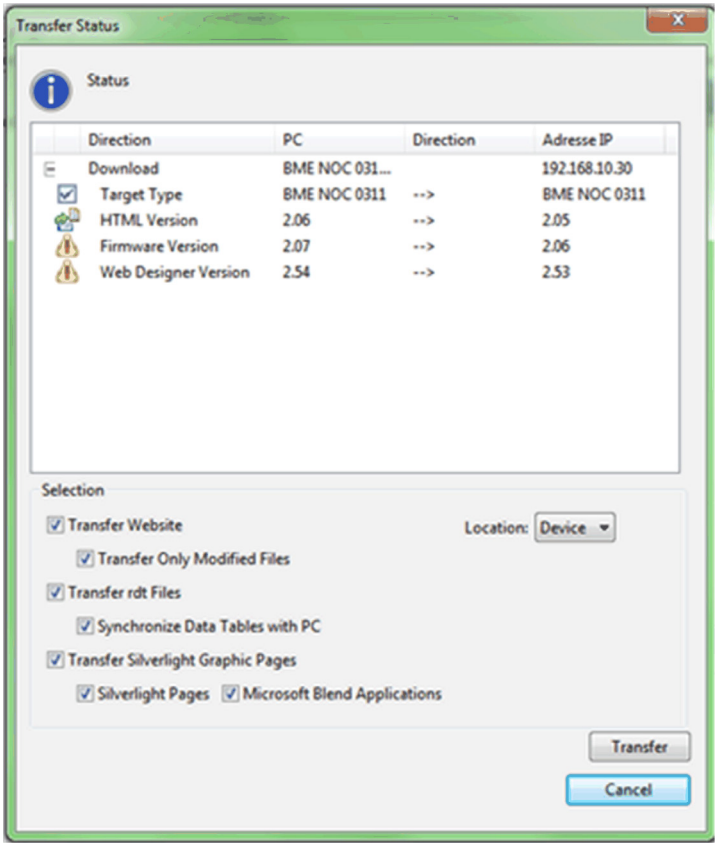
Click a line with a message to display the details of detected errors.

Transfer Status

This is the **Transfer Status** window for Web Designer versions earlier than version 3.0



This is the **Transfer Status** window for Web Designer versions 3.0 and higher:



? The information has not been found on the remote target.

Inconsistent, non-blocking information between the target and the PC.

Inconsistent, blocking information between the target and the PC.

Consistent information between the target and the PC.

Use the **Selection** area to specify the files you want to transfer:

Parameter	Version	Action
Transfer Website	All	Select this box to transfer files located in the **Website** directory.
Transfer Only Modified Files	All	Select this box to transfer only files of the website that have been modified since the last transfer.
Transfer rdt and gdt Files	< 3.0	Select this box to transfer data tables (*rdt* directory) and graphic pages (*gdt* directory).
Transfer rdt Files	≥ 3.0	Select this box to transfer data table (*rdt* directory).
Synchronize Data Tables with PC	≥ 3.0	Select this box to synchronize data tables (*rdt* directories) in both target and PC.
Transfer Microsoft Blend projects Application	< 3.0	Select this box to transfer the Microsoft Blend projects application.
Transfer Silverlight Graphics Pages	≥ 3.0	Select this box to include one or both of the following:
Silverlight Pages	≥ 3.0	Select this to transfer Silverlight graphics pages.
Microsoft Blend Application	≥ 3.0	Select this box to transfer the Microsoft Blend projects application.
Transfer Configuration Files	< 3.0	Select this box to transfer the FactoryCast configuration file.

Connecting and Disconnecting Web Designer and a Module

Introduction

Use the procedure below to execute a Web Designer application after the services are created.

When a project is transferred to a module, the project is erased permanently. Any project that exists on the module already is overwritten.

Users with access to Web Designer can modify the value of PLC variables that have been write enabled. You can also modify your security settings. Unauthorized or incorrect changes to data can change the behavior of your application or process in ways that can be undesirable or hazardous.

⚠ WARNING

UNAUTHORIZED SECURITY ACCESS

- Do not use default or obvious passwords.
- Change your passwords monthly.
- Do not use obvious user names.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

⚠ CAUTION

LOSS OF DATA

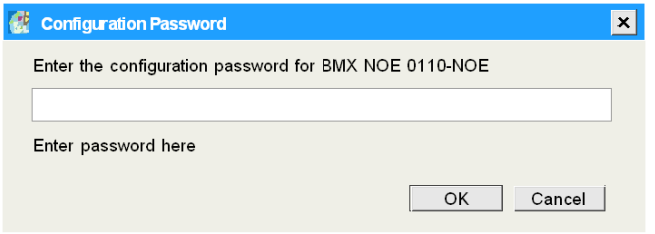
Back up sensitive information before transferring a new application.

Failure to follow these instructions can result in injury or equipment damage.

NOTE: When an application is in **RUN** mode, a new project can be used after a module reboot.

Connecting to the Module and Recovering a Project from the Module

Connect Web Designer to the module to recover its application:

Step	Procedure
1	Select the target in the **Navigator** pane in Web Designer.
2	Connect to the target (**Target → Connect → Target**). Web Designer analyses the changes between your project and the module content. If you have modified the project, the software asks you to transfer the project. Otherwise the application moves automatically to online mode. **NOTE:** The **Configuration Password** window appears if a configuration password is already set. Otherwise Web Designer connects to the module: 
3	Enter the configuration password and click **OK**.

Web Designer is now connected to the module.

Disconnecting from the Module

Disconnect Web Designer from the module (**Target → Disconnect**).

Chapter 5
Simulation Mode

Introduction

This chapter describes the simulation mode in Web Designer. You can this mode to debug data tables, graphic pages, and services when Web Designer is not connected to a target.

What Is in This Chapter?

This chapter contains the following topics:

Connecting and Disconnecting in Simulation Mode

Introduction to Simulation Mode

This topic describes the **Simulation** mode in Web Designer. This mode lets you execute an application without a connection to a target module. Use this mode to test an application on your PC before you transfer that application to the module.

NOTE: The graphic and data editors *(see page 71)* are active in simulation mode, so you can modify these pages in simulation mode.
After you make changes in a Web Designer application, you can execute a **Partial Transfer** to reduce transfer time.

Connection

Connect to the **Simulation** mode in Web Designer and transfer the application to the target:

Step	Procedure
1	Select a target in the **Navigator** pane in Web Designer.
2	Run the simulator (**Target → Connect → Simulation**). **NOTE:** The operation may run for a few seconds before there is a connection.

You are now connected to the simulator with the application in simulation mode.

NOTE: The simulation does not work when an FTP server is running on the system.

Disconnection

Disonnect the Web Designer simulator from a module (**Target → Disconnect → Simulation**).

Animation of Variables

In **Simulation** mode, the variables are animated in this manner:

- *bit*: value change (0 or 1)
- *word*: increment step 1

NOTE: The value update frequency depends on the update frequency setting.

Simulation

Introduction

The **Simulation** mode in Web Designer allows you to verify your configuration and test your application on a PC even when devices are not connected or available.

The **Simulation** mode works with these protocols:

- UMAS
- UNITE
- Modbus

Using the Simulator Icon

In **Simulation** mode, you can enter relevant values for variables (symbols). Default values are 0. Enter these values manually in the window associated with the device. (Double-click the device in the **Navigator** pane.) You can also automatically increment values through these steps:

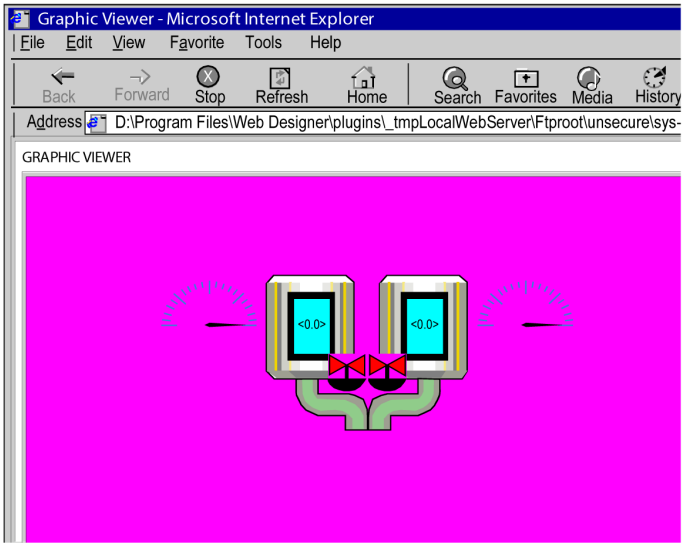
Step	Action
1	In the task bar, right-click the simulation icon  .
2	If you check **AutoIncrement** the variables are automatically incremented. Uncheck **AutoIncrement** to stop incrementing the variables. You can modify the value of read/write variables. Check **StopServer** to stop the simulation.

Using the Simulator for Data Tables and Graphic Pages

Use **Simulation** mode for data tables:

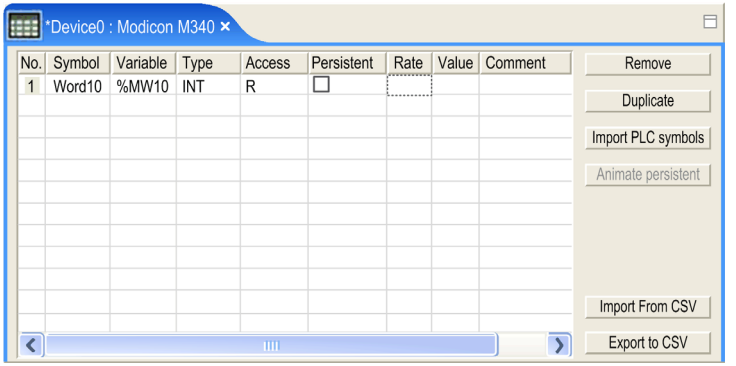
Step	Action
1	Select a target in the **Navigator** pane in Web Designer.
2	Expand (+) the target directory.
3	Select a table in the **DataTables** directory.
4	Right-click the selected item and scroll to **Open**. **Result**: An Internet Explorer window appears. Note that the selected table appears in the pane on the left.
5	Apply the values to simulate to the variables.

Use **Simulation** mode for graphics:

Step	Action
1	Select a target in the **Navigator** pane in Web Designer.
2	Expand (+) the target directory.
3	Select a graphic in the **GraphicScreens** directory.
4	Right-click the selected graphic and scroll to **Open** to open an Internet Explorer window.
5	Scroll to a graphic in the drop-down menu. This figure shows a graphic being simulated. 
6	Apply the values to simulate to the graphic objects.

Using the Simulator for Device windows

Use **Simulation** mode for device windows:

Step	Action
1	Select a target in the **Navigator** pane in Web Designer.
2	Expand (+) the target directory.
3	Double-click a device in the **Devices** directory to open the device window: 
4	Click **Animate persistent**.

NOTE: If the **AutoIncrement** function is checked, the variables are automatically incremented. The simulated values are displayed in the **Value** column. Otherwise, the incrementation of the variables stops.
For read/write variables, double-click the **Value** column to modify the values.

Chapter 6
Managing Variables

Introduction to Variable Management

This chapter describes the manner in which Web Designer handles variables:

- You can import variables from a file that describes a piece of equipment.
- You can import a list of variables that are exported to a file from an automated software program.

This chapter also describes grouping of files in a *Namespace* file. The data and graphics publishers as well as services use these variables.

What Is in This Chapter?

This chapter contains the following topics:

Namespace

Introduction

The **Namespace** table groups variables (symbols) that have been selected for targets or devices. Data editors, graphic editors, and services get symbols from the *Namespace* table.

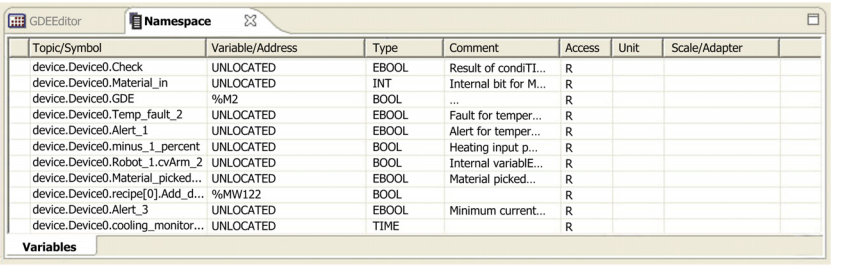
Variables come from connected devices or PLC applications. If you connect a device type to the same target several times, create a unique name in this format: *device.name, variable name*. If the device is a PLC, create names for variables declared in the PLC in this format: *PLC device.name, PLC variable name.*

Accessing the Namespace

Open the **Namespace** window:

Step	Action
1	Select a project in the **Navigator** pane in `Web Designer`.
2	Expand the target directory by clicking the plus sign (+).
3	Double-click the **Namespace** icon.

The **Namespace** window is open:



Importing from a Programmable PLC

Introduction

You can access a Unity Pro database with the **Import Symbols** command in Web Designer.

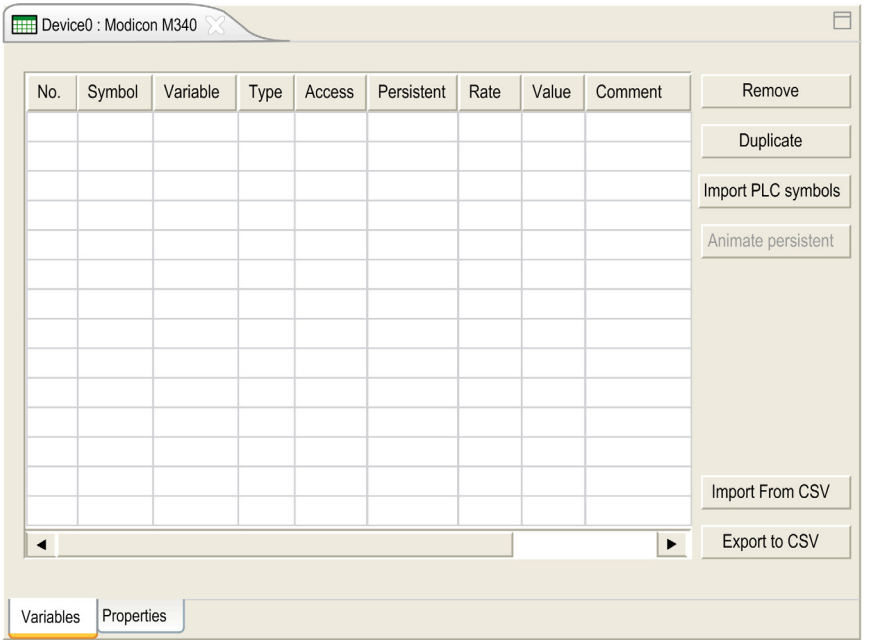
NOTE: Depending on the devices that you connect to the target, the type of variable you can access through the target might be different. Refer to the *FactoryCast for Modicon M340 User Manual* or *FactoryCast for Premium and Quantum User Manual* for more information on supported variables.

Accessing the Software Database

Open the list of devices:

Step	Action
1	Select a project in the **Navigator** pane in `Web Designer`.
2	Expand the target directory by clicking the plus sign (+).
3	Expand the **Devices** directory.
4	Double-click a device in the **Devices** directory.

View the list of devices:



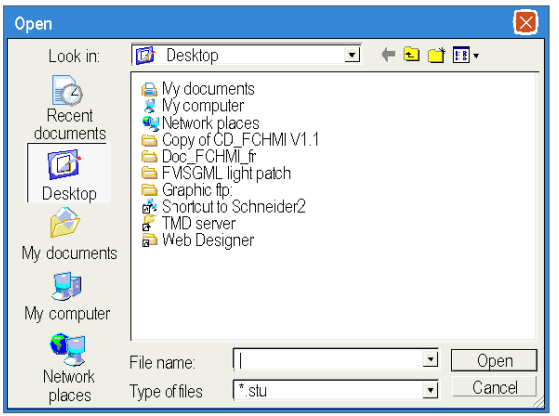
Window Elements

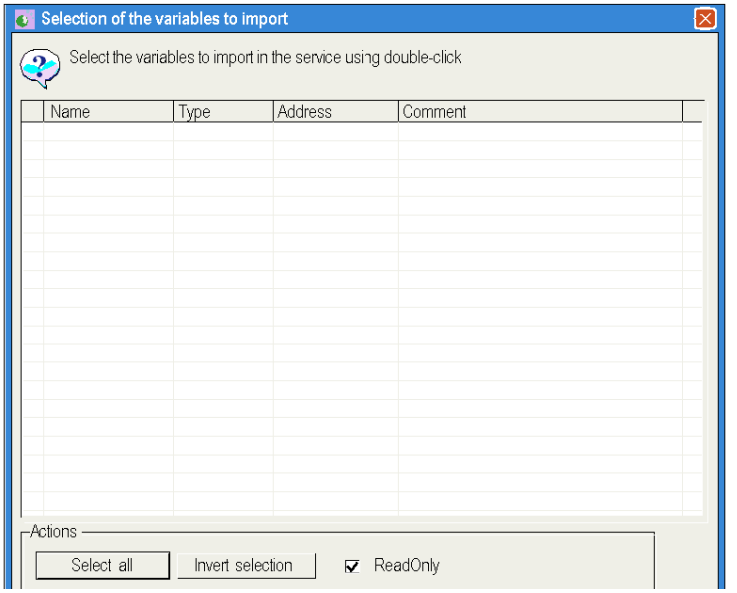
This table describes the components of the devices window:

Feature		Description
Column	**Symbol**	The symbol serves as the name of the variable.
	Variable	This column lists the register address of the variable.
	Type	This column lists the data type of the variable (BOOL, INT, etc.).
	Access	Access to the variable is read, write, etc.
	Persistent	The access mode to the variable is constant (not configurable).
	Rate	The variable is refreshed at this interval.
	Value	This is the value of the current variable.
Button	**Remove**	Delete the variable.
	Duplicate	Duplicate the variable.
	Import PLC Symbols	Open a selection window of variables.
	Import from CSV	Import the variables from a CSV file.
	Export to CSV	Export the variables to a CSV file.

Importing Symbols

Import symbols:

Step	Action
1	Click the **Import PLC symbols** button to open an Explorer window: 
2	Select a file (*.stu* or *.xvm*) to import.

Step	Action
3	Click **Open** to view the symbols: 
4	Select symbols.
5	Double-click variables in the list to select them.
6	Click **Import selected variables** to view the variables in the device window.

Accessing the Unity Pro Base

To access a Unity Pro database, install the Unity Pro software on your computer. Unity Pro database files have the extension *.stu*. You can also use a Unity Pro export file (extension *.xvm*). In the latter case, the installation of Unity Pro is not required.

Synchronization with the PLC Program

It is possible to modify the Unity Pro database from which you created your **Namespace** at any time. The Web Designer Configuration Program alerts you to any differences between the database and your **Namespace** when you open a configuration that is associated with the PLC database file.

Synchronization

Synchronize with a PLC database:

Step	Action
1	Open a window to view the inconsistencies in a window (**Target → Synchronize with PLC database**).
2	Click **OK** to start the default resynchronization operation.
3	Transfer the project to the module.

Manually Edit Variables

Introduction

You can manually add variables by directly entering a symbol, an address, its type and define the access rights in the Variables dialog of each device.

NOTE: Depending on the devices that you connect to the target, the type of variables you can access through the target might be different.

Automatic Input

Automatic Input is an option that makes it easier to manually create variables by incrementing the value of the last record.

If you select this option, the value of the fields is automatically filled when you add a new variable. The values correspond to those of the previous line incremented by 1.

Activating / Deactivating Automatic Input:

Options → Automatic Input

Author Rights in Namespace

Introduction

The **Namespace** table in the Web Designer software enables you to specify the variables that can be accessed in read/write mode.

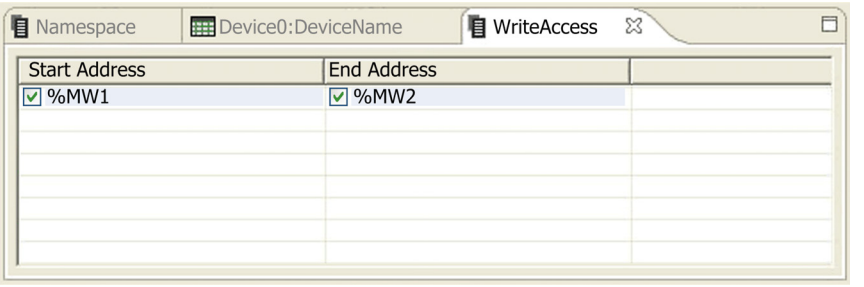
NOTE: The default password for write access is USER.

Unauthorized or incorrect changes to data may change the behavior of your application in ways that may be undesirable or hazardous.

⚠ WARNING
UNINTENDED EQUIPMENT OPERATION Carefully select the variables (symbols) and the direct addresses you authorize to be modified online, and the people authorized to do so. **Failure to follow these instructions can result in death, serious injury, or equipment damage.**

Managing Author Rights

Use these steps to manage access rights:

Step	Action
1	Expand a project in the **Navigator** pane in Web Designer by clicking the plus sign (+).
2	Expand a target in the **Navigator** pane.
3	Double-click **Namespace Write Access** to open the **Namespace** author rights table:  **NOTE:** You can also open this window by right-clicking **Namespace Write Access → Open**.
4	Define the intervals at which variables can be written. Outside these intervals, variables with direct access are read-only.

Chapter 7
Monitoring

Subject of this Chapter

This chapter presents the different ways provided by Web Designer to monitor your system.

What Is in This Chapter?

This chapter contains the following sections:

Section 7.1
Data Editor

Overview

The Data Editor allows you to edit/create data monitoring tables or to display data tables. Data tables provide read/write access to application data and device registers. Write access is password protected.

Allowing write access can change system behavior.

⚠ WARNING

UNINTENDED SYSTEM OPERATION

- Help protect the access to writable variables by configuring passwords.
- Grant write access only to trained personnel.
- Do not grant write access to critical control variables.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

This section shows how to use the Data Editor to display and modify the values of the symbol variables and direct addresses.

What Is in This Section?

This section contains the following topics:

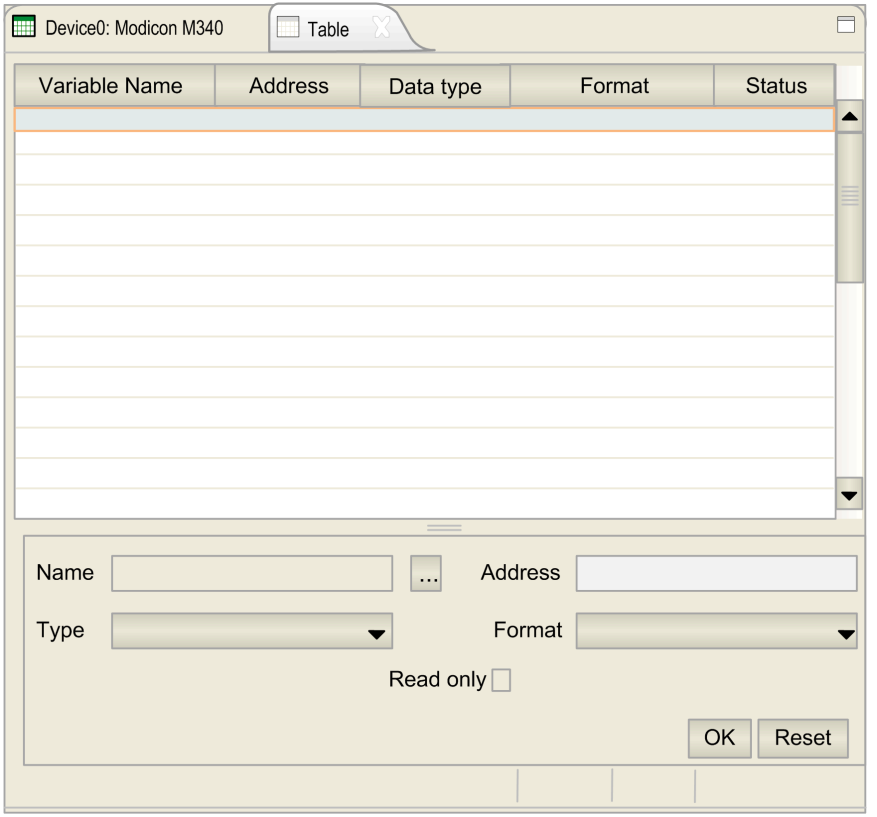
Data Editor

Introduction

The data editor is a Java applet that enables you to create dynamic data tables that can be updated with run-time data from the PLC.

View the Data Editor

This is the data editor in Web Designer:



NOTE: The configuration fields (**Name**, **Address**, **Read only**, etc.) are visible after you double-click on a table row.

Data Editor Components

Introduction

This topic describes the different options on the data editor window *(see page 73)*.

Configuration

Double-click in any table row to make view other fields (**Name**, **Address**, **Type**):

- select and/or modify a name
- select and/or modify an address
- select the variable type
- select the variable's format
- check the read-only option

This table describes the configurable fields:

Column	Description
Name	The **Name** field contains the name of a symbolic variable from the **Namespace** file. Available variables are those that have been predefined in the configuration tool and grouped in the **Namespace** file.
Address	The **Address** column contains the addresses of the symbols. You can display any direct address by entering its reference in this field. This direct address does not need to be referenced in **Namespace**, but it needs to be associated with a symbol.
Type	Data type *(see page 75)*: input or output register, input or output bit.
Format	Format *(see page 75)* of the data value.
Read only	Check this box to limit a variable to read-only access.

NOTE: The columns that are relevant to different targets may not match those listed in the table.

Type

The **Type** scroll bar contains the data type of the symbol variable or direct address. The types of data of the symbolic variable appear automatically when the symbol variable is located. Scroll to one of these data types:

Abbreviation	Type
INT	16-bit signed integer
UINT	16-bit unsigned integer
DINT	32-bit signed integer
UDINT	32-bit unsigned integer
REAL	32-bit IEEE floating point
TIME	32-bit unsigned integer (ms)
DATE	Date (32-bit BCD)
TOD	Date/time (32-bit BCD)
BOOL	1 internal bit (boolean)

Format

The **Format** scroll bar contains the format type for the value of the symbol variable or direct address. These types are available:

Abbreviation	Format Type
bool	boolean
dec	decimal
hex	hexadecimal
binary	binary
ASCII	bytes (ASCII characters)
time	Day_hr_min_sec_ms
date	YYYY-MM-DD or HH:MM:SS

Status Field

The **Status** column contains messages about the status of communications with the symbol variable or direct address. When communications are normal, the status message is "OK".

If communication with a simple variable or a direct address is not operational, the Status column displays a message describing the event.

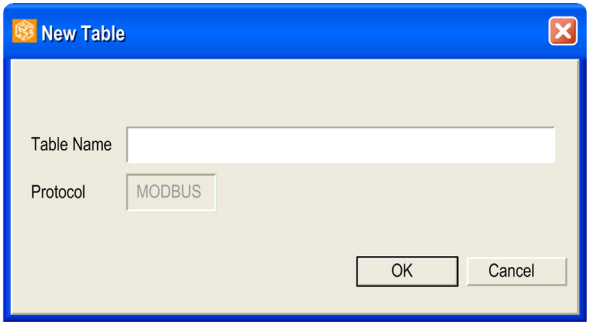
Creating a Data Template

Introduction

To display some symbols (variables) in Web Designer, create a new data template.

Creating a Data Template

Use these steps:

Step	Action
1	Expand a project in the **Navigator** pane in Web Designer by clicking the plus sign (+).
2	Right-click the **DataTables** directory and scroll to **New Table** to open the **New Table** window: 
3	Enter a name for the new data template in the **Table Name** field.
4	Click **OK**.

NOTE: Save the current spreadsheet before you select a new spreadsheet. Selecting a new spreadsheet deletes the current table.

Inserting a Symbol (Variable) in a Data Template

Overview

To view or modify the value of a symbol (variable) in the **Namespace**, insert that symbol (variable) in a data template.

To modify these values, users need write privileges to the embedded server. Changing symbol values can change system behavior.

⚠ WARNING

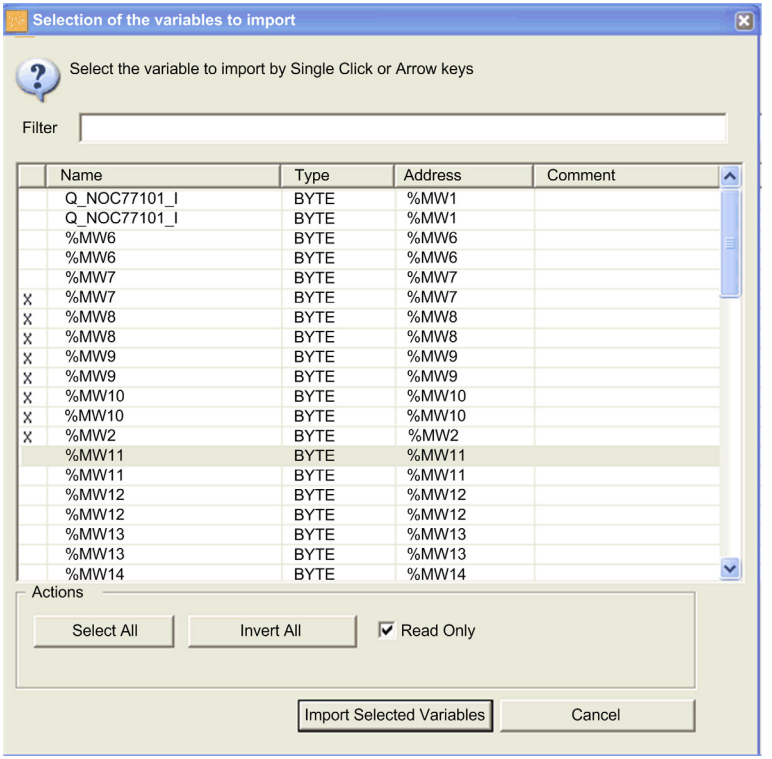
UNINTENDED EQUIPMENT OPERATION

- Password-protect access to the embedded server.
- Carefully select the symbols and direct addresses you authorize to be modified online.
- Do not authorize online modifications of critical process variables.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Inserting a Symbol (Variable)

Use these steps to insert a symbol (variable):

Step	Action
1	Double-click an empty row in the spreadsheet to see the configuration options.
2	In the configuration area, click the ellipses (**...**) button to open the **Lookup** table: 
3	Select the symbols to insert in the data template one at a time. (You can click **Select All** to select all listed variables.
4	(Optional) If you select **Read Only** for a selected variable, that variable can be read (but not written to) when accessed (via the module web pages).
5	Click **Import Selected Variables** to see new rows for the symbols (variables) you selected.
6	Save your data table.

Inserting a Direct Address in a Data Template

Presentation

If you want to view or modify the value of a direct address, insert that direct address in a data template.

Allowing write access can change system behavior.

⚠ WARNING

UNINTENDED EQUIPMENT OPERATION

- Limit embedded server access to qualified personnel.
- Restrict access to the embedded server by configuring passwords.
- Carefully select the symbols and direct addresses you authorize to be modified online.
- Do not authorize online modification of variables that can adversely affect human and material integrity.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Inserting a Direct Address

Step	Action
1	Double-click an empty row in the spreadsheet. **Result**: The data editor's configuration area appears.
2	In the **Address** field of the configuration area, enter the variable's direct address.
3	In the configuration area, click **Apply**. **Result:** A new row that corresponds to the variable address is displayed in the spreadsheet.

Using an Existing Data Template

Overview

After you create templates in the data editor in the Web Designer software, you can access and modify those templates.

Accessing a Data Template

Access an existing data template.

Step	Action
1	Extend the **DataTables** directory in the **Navigator** to see existing tables.
2	Access the table for editing. Use one of these methods: ● Double-click the table you want to modify in the list. ● Right-click the table you to modify and scroll to **Edit**.

Section 7.2
Graphic Editor

Introduction

This section describes the functions and characteristics of the graphic editor. The graphic editor is a Web page that enables the user to create dynamic graphic displays using a predefined set of graphic objects. It is both a graphic editor that can be used to create and modify displays and a runtime environment that allows the user to view animated displays using data from the PLC. To limit the size of the applet, only the viewer is accessible from the module's website.

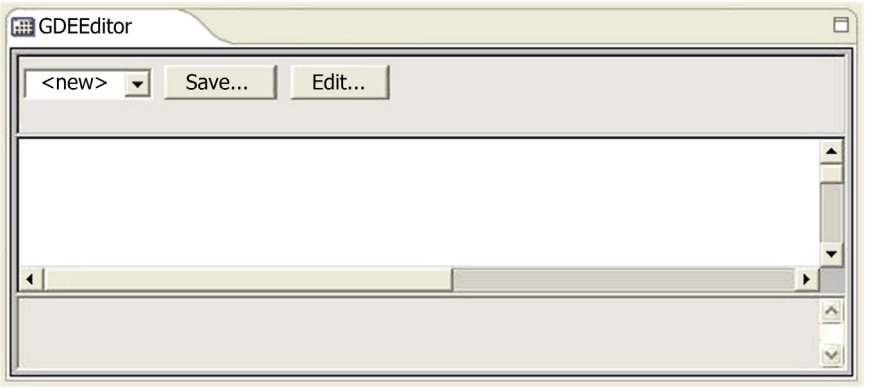
What Is in This Section?

This section contains the following topics:

Introducing the Graphic Editor

Graphic Editor Window

This is the graphic editor in Web Designer:



This table describes the components of the graphic editor:

Feature		Description
control options	drop-down list	A drop-down list shows the graphic pages that have been saved. You can retrieve those pages. When you select a graphic page from this list, the graphic display currently visible in the window is replaced with the one selected. If the current graphic page has been modified since it was last saved, confirm that the changes can be discarded. Choose **<new>** from the list to clear the display window and create a new graphic page.
	Save...	Click the **Save** button to open a save dialog box. (This button is disabled until you enter a valid write-enabled password.)
	Edit...	Press **Edit...** to access graphic editing features.
workspace	The white window contains the current graphic display. You can add graphic elements to this space.	
message area	The bottom window contains messages generated by the graphic editor.	

The controls in the top dialog box provide the following functions.

- **Delete**: Click the **Delete** button to open the **Delete dialog box**. This button is disabled until you enter a correct password or save the current graphic display.
- **Information display area:**The information display area shows the name and version of the Concept, PL7 or Unity Pro program that is running in the connected PLC.

Graphic Objects

The graphic objects supplied with the graphic editor can communicate with the Modbus devices from which the graphic editor was downloaded. There is no additional "wiring" between graphic objects and "communication objects." The graphic objects are designed as standalone objects, which means that no connection is needed between the objects. Each object can operate on its own.

Allowing write access can change system behavior.

⚠ WARNING

UNINTENDED EQUIPMENT OPERATION

- Restrict access to the embedded server by configuring passwords.
- Carefully select the symbols and direct addresses you authorize to be modified online.
- Do not authorize online modification of variables of critical nature concerning human and material integrity.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

NOTE: Write access is controlled by a password whose default value is USER.

Creating and Modifying Graphic Displays

To create and modify a graphic page, click **Edit**. The standard functions of the graphic editor are displayed. With these tools, you can select objects from a palette, position them in an area, move and resize them with the mouse, and define their properties. You can immediately test the graphic display modified with the execution data from Modbus devices by clicking **Done** to leave the editing mode. When you are satisfied with the graphic display, save it to the module for later use (click **Save**). This requires the correct password.

NOTE: Be careful when you modify and save a graphic page. When modifications are saved, the existing page is overwritten, even if someone else has created it.

User Functions

Most user functions in the graphic editor are in the top window *(see page 84)*. You can modify the size and position of a graphic object directly in the display window. The properties of a graphic object (such as its scale, labels, colors, and Uni-Telway execution data device addresses) are defined in the properties sheet *(see page 90)*.

Graphic Editor Toolbar

Introduction

This topic describes some features of the graphic editor in Web Designer.

Standard and Extended Toolbars

In the Web Designer graphic editor, click the **Edit...** button to scroll to see the toolbar. In the scroll box, select either the **standard** (default) or **extended** panel of the graphic editor.

This is the **standard** panel of the graphic editor:

This is the **extended** panel of the graphic editor:

Save

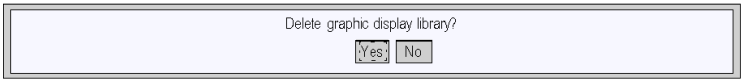
Click the **Save** button to save the current graphic display to the Web server module.

When you click **Save**, a dialog box appears. Enter a name in the empty name field (**save graphic display as:**) and press **OK**. (If the graphic display has already been saved, the name is already displayed. Saving in this case is a virtual “save as” command.)

Click **Cancel** if you don’t want to save the graphic display.

Delete Dialog

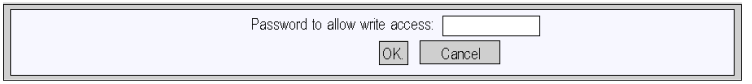
The **Delete** dialog box allows you to delete the current graphic page.



If you click **Yes**, the existing graphic display window is cleared and the graphics file on the Web server module is deleted. Clicking **No** will cause the **Top dialog box** to be shown again, with no action being taken.

Password Dialog

The **Password** dialog box allows you to enter the password that enables those user functions that modify graphic display files or PLC run-time data values.



If you enter the correct password and click **OK**, you can save and delete the current graphic display. Correct password entry also permits you to write new values to the PLC (via those graphic objects that support writing values to a PLC, if any). If you click **OK** when the text field is empty, then the current password permissions, if any, are cleared. The **Cancel** button brings you back to the top dialog box. In this case, no changes are made to current password permissions.

Edit Dialog

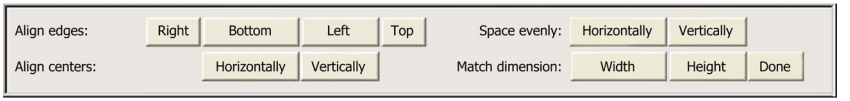
The **Edit...** dialog box allows you to create or modify a graphic page, by selecting a graphic object for placement in the display window, and accessing all the graphic editing functions. The graphic objects available are presented in a single object palette:

The controls of the **Edit** provide the following functions:

- The drop-down list contains the available palettes. When you select the name of a palette from the list, the palette area of the dialog displays the selected one's graphic objects.
- The dialog box shows the graphic objects that are in the current palette with an icon that depicts each graphic object's type (meter, button, etc.). When you click any of the icons in the palette, a graphic object of the corresponding type becomes selected for insertion. While the Graphic Editor is in "insert mode," if you click in an open area of the display window, an instance of the selected graphic object is inserted into the graphic display.
- A white information box in the toolbar shows the name and size of the graphic object that is currently selected.
- Click **Cut** to remove the selected graphic object(s) from the graphic display and saved it to a buffer (an internal clipboard). (This replaces the content of the buffer.)
- Click **Copy** to copy the selected graphic object(s) to the buffer. (The copied item replaces the content of the clipboard.)
- Click **Paste** button causes the content of the clipboard to be inserted into the upper left corner of the graphic display. The pasted graphic objects can then be moved to the desired location in the display.
- Click **Properties** to view the properties sheet *(see page 90)* for the selected graphic object.
- Click **Customize** to view the **Customizer** for the selected object (if the graphic object has a **Customizer**).
- Click **Layout** to view the **Layout** dialog box.
- Click **Options** to view the **Options** dialog box.
- Click **Done** to return to the top dialog box.

Layout Dialog

The **Layout** dialog box allows you to change the position and size of a group of graphic objects:



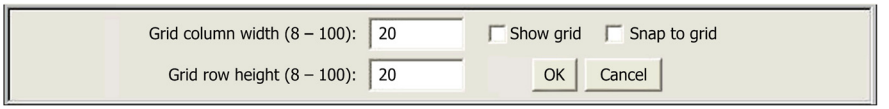
This table describes the components of the **Layout** window:

Button	Description
Right	Use these buttons to align the edges of multiple selected graphic objects.
Bottom	
Left	
Top	
Horizontally	Use these buttons to evenly space and distribute the centers of multiple graphic objects.
Vertically	
Horizontally	
Vertically	
Width	Use these buttons to assign uniform dimensions to multiple selected graphic objects.
Height	
Done	Click this button to return to the top dialog box.

NOTE: For all layout operations (except **Space evenly**), one of the selected objects is the “reference object.” Other selected objects have a location and size in relation to the reference object. For example, click the **Width** button to change the width of selected objects to match the width of the reference object. The reference object is not the same color as other objects.

Options Dialog

The **Options** dialog box is used to change the settings related to a grid in the display window. The grid is solely for assistance in editing or creating a graphic display and is shown only when the Graphic Editor is in "edit mode":



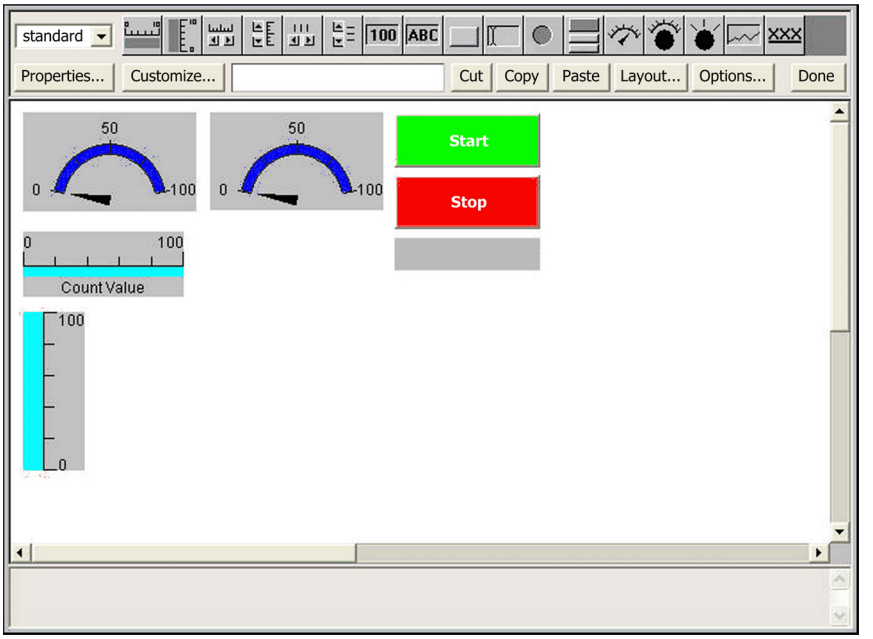
This table describes the components of the **Options** window:

Component	Description
Grid column width	The cell size of the grid can be changed by the entering the grid's column width and row height into the dialog's text fields.
Grid row height	
Show grid	Check this box to place a grid under the objects in your graphic display.
Snap to grid	Check this box to make the size and position of graphic objects conform to points on the grid.
OK	Click this button to enable the current option settings. This returns you to the **Edit** dialog box.
Cancel	Click this button to cancel changes and return to the top dialog box.

User Functions in the Display Window

Introduction

Add graphic objects in the graphic editor window in Web Designer. You can move and resize selected objects in the workspace. This is an example of a graphic display:



Selecting Graphic Objects

Use these tips to select and deselect graphic objects:

Goal	Action
Select an object.	Left-click a graphic object to select it.
	Left-click in an empty area of the workspace and drag-and-release the mouse to select any object(s) in the outlined area.
	Hold down the CTRL key to select multiple objects.
Change the reference object *(see page 86)*.	Hold down the SHIFT key when multiple objects are selected and left-click the intended reference object.
Deselect an object.	Left-click in an empty area of the workspace or any other object.

Sizing Graphic Objects

To resize a graphic object, left-click the border or corner of the object and drag the mouse.

Moving Graphic Objects

Hold down the left mouse button on a graphic object and move the mouse to move the object in the workspace.

Defining Graphic Object Properties

You can define the properties of a graphic object using the property sheet *(see page 90)*. If this window is displayed, you can modify the properties of the selected graphic object. Click **Properties...** or double-click on an object to see the property window.

Customizing Complex Graphic Objects

Use a customization module to configure complex graphic objects when the property sheet is not adequate or too cumbersome. The customization module is a dialog box designed specially for configuring the graphic object with which it is associated. When the graphic editor detects a customization module associated with the selected graphic object, the **Customize...** button is enabled so that the module can be accessed. When you double-click a graphic object that has an associated customization module, the module is displayed instead of the properties sheet. If a graphic object has an associated customization module, only its name is displayed in the properties sheet.

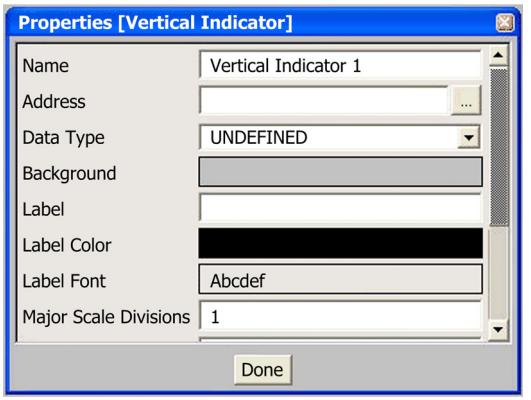
Display Background Image

The Background image property of the graphic editor allows you to choose an image that will be used as the background for the display. The image may be a *.gif* file or a *.jpeg* file. Refer to the Adding Images part *(see page 112)* for information on adding images.

Properties Sheet

Introduction

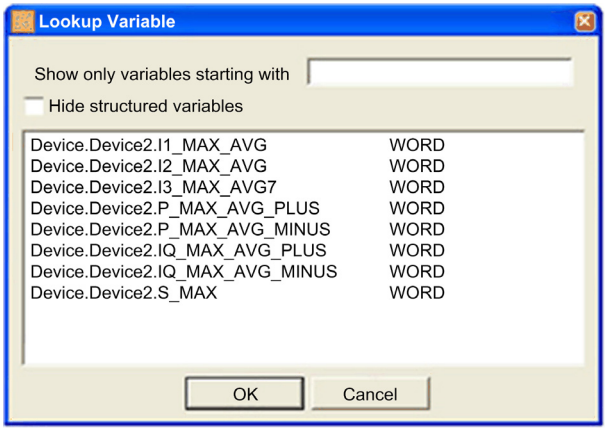
The **Properties** sheet is a floating dialog box that contains the configurable properties of graphic object. Double-click on an object too see its properties:



The properties of a graphic object are specific to the object type. They are contained in a drop-down list, and are identified by a name and value. The graphic editor provides a description of the graphic objects *(see page 93)*.

Lookup Variables Table

In the Address field, you can enter the address of a variable.Click the ellipses (**...**) button to see the **Lookup Variable** table for the address of the graphic object. The table contains a list of symbols (variables) that have been Web-enabled in Web Designer. You can select one of these symbols:



Security

Security

Security

Three security elements are provided to help you protect your data:

- The HTML page which contains the Graphic Editor applet has been placed in the *secure* directory on the Web module. The Web browser user is therefore invited to enter a password which will allow him/her to download the HTML page.
- The **Password** dialog enables you to save/delete files or to transfer data values. The dialog is password-protected. When you transfer of data values, the Graphic Editor reinforces the read only mode by deactivating the user commands relating to graphic objects.
- The Graphic Editor allows you to indicate if an element is read only. The **Graphic Editor** reinforces the read only attribute of a symbol (variable) or address by rejecting any request which would define a new data value and by informing the user via the **Graphic Editor** message window.

⚠ WARNING

UNINTENDED EQUIPMENT OPERATION

- Do not use graphic objects in situation where loss of communication to the FactoryCast module can affect human or material integrity.
- Do not use graphic objects in safety critical machine functions.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

For example, say you have programmed a pushbutton object to jog a motor when the button is depressed and to stop jogging when the button is released. If communications are lost while the button is depressed, the motor will continue to jog even when the button is released. Graphic objects should not be used to control situations such as this unless other interlock methods are installed in the system.

Graphic Editor Applet Parameters

Overview

Three applet parameters allow the **Graphic Editor** behavior to be customized. These are defined by the <PARAM> tags inside the <APPLET> tag on the Graphic Editor HTML page. The parameters recognized by the **Graphic Editor** applet are as follows:

- **LOAD**: this parameter asks the **Graphic Editor** to automatically load a specific graphic file at start-up. If this file does not exist, a message is displayed. If this parameter does not appear in the <APPLET> tag, no file will be automatically loaded at start-up. In this case, select an initial graphic file from the list proposed by the **Graphic Editor**.
- **MODE**: this parameter asks the **Graphic Editor** to start either in Edit (normal mode) or View mode (specific mode). When starting in View mode, the **Graphic Editor** only displays the display window. When this parameter is used with the LOAD parameter, you can design a website with HTML pages dedicated to specific graphic display. The user does not need to select a graphic file so the behavior of the HMI screen is more standard. This parameter may take the following values:
  - **EDIT** (default value): The **Graphic Editor** starts up in Edit mode (normal mode).
  - **VIEW_RO**: The **Graphic Editor** starts up in View mode (read only). The Web browser user is not authorized to send data values to Modbus devices.
  - **VIEW_RW**: The **Graphic Editor** starts up in View mode (read/write). The Web browser user is authorized to send data values to Modbus devices after having entered the password to allow write access.
- **AUTO_LOGIN**: this parameter asks the **Graphic Editor** to automatically indicate the password which authorizes write access to Modbus devices. If the **MODE** parameter is set to **VIEW_RW** or **EDIT**, and if you set AUTO_LOGIN to **TRUE**, the **Graphic Editor** authorizes write access to Modbus devices without asking the user to enter a password. This parameter may take the values **FALSE** (default value) and **TRUE**.

Example

Here is an example of an <APPLET> tag which asks the **Graphic Editor** to start in View mode and automatically load a graphic file called **UNIT_1**. In this case, the Web browser allows you to send values to Modbus devices via any graphic object handling the sending of values (providing that the password to allow write access has been entered).

```
<APPLET codebase="/classes"
archive="SAComm.jar,GDE.jar,Widgets.jar"
code="com.schneiderautomation.gde.GdeApplet"
width="700" height="514">
<PARAM name="LOAD" value="UNIT_1">
<PARAM name="MODE" value="VIEW_RW">
<PARAM name="AUTO_LOGIN" value="FALSE">
</APPLET>
```

Graphic Objects

Introduction

Use graphic objects offered by the graphic editor help you to create graphic displays imitating conventional instrument panels. The data control and monitoring objects have integrated communication functions and are designed as standalone graphic objects.

Be aware, however, that if communication to the device linked to the graphic object is lost, the object becomes inoperative without the end device's knowledge.

For example, say you have programmed a pushbutton object to jog a motor when the button is depressed and to stop jogging when the button is released. If communications are lost while the button is depressed, the motor will continue to jog even when the button is released. Graphic objects should not be used to control situations such as this unless other interlock methods are installed in the system.

⚠ WARNING
UNINTENDED EQUIPMENT OPERATION
Do not use graphic objects in situations where loss of communication to the module can put human integrity or material damage at risk.
Failure to follow these instructions can result in death, serious injury, or equipment damage.

In addition, the objects in the graphic editor exist in the form of applets to help clients who wish to insert several simple applets into a single HTML page. When combined with the *LiveBeanApplet*, the graphic objects in the graphic editor can be used in the same way as the *LiveLabelApplet*.

Horizontal Indicator

A horizontal indicator gives an analogue representation of the value of a variable in a device. This is a horizontal bar which represents a percentage of its range in physical units. It is possible to display the value’s digital indication in the centre of the bar.

This table describes the horizontal indicator’s properties:

Property	Description	Limits
Name	Name of the graphic object	–
Address	Direct address of the variable to monitor	Note 1 *(see page 109)*
Data Type	Variable data type	Note 2 *(see page 109)*
Background	Graphic object background color	–
Label	Label to be displayed as part of the graphic object	
Label Color	Color of the label	
Label Font	Font used for the label	

Property	Description	Limits
Major Scale Divisions	Number of major scale divisions (marked)	0...100
Minor Scale Divisions	Number of minor scale divisions (not marked)	0...100
Scale Color	Color of the scale and its labels	–
Scale Font	Font used for the scale labels	
Scale Precision	Number of decimal places to be shown for the scale labels (set to -1 to use a general exponential format)	-1...6
Maximum EU Value	Maximum value of the variable in physical units	–
Minimum EU Value	Minimum value of the variable in physical units	
Maximum Value	Maximum gross value (without scale) of the device variable	Note 3 *(see page 109)*
Minimum Value	Minimum gross value (without scale) of the device variable	Note 3 *(see page 109)*
Value Visible	Indicates if there should be digital display of the value on the scale	–
Value Font	Font used for digital display of the value (where this exists)	
Bar Background	Background color of the indicator bar	
Bar Color	Color of the indicator bar (if the scale value is within the High/Low range)	
High High Limit Value	Value expressed in physical units of the "High High" limit.	
High High Limit Color	Color of the indicator bar if the scale value is greater than the "High High" limit	
High Limit Value	Value expressed in physical units of the "High" limit.	
High Limit Color	Color of the indicator bar if the scale value is greater than the "High" limit.	
Low Limit Value	Value expressed in physical units of the "Low" limit	
Low Limit Color	Color of the indicator bar if the scale value is less than the "Low" limit	
Low Low Limit Value	Value expressed in physical units of the "Low Low" limit	
Low Low Limit Color	Color of the indicator bar if the scale value is less than the "Low Low" limit	
Limit Deadband	Neutral range (as a percentage of the EU range) to apply to verification of the High/Low limit	0...10
Border Width	Width (in pixels) of the graphic object border	0...32
Border Color	Color of the graphic object border	–
Value	Simulated gross starting value (without scale) for testing the graphic object	Note 3 *(see page 109)*

Vertical Indicator

A vertical indicator gives an analogue representation of the value of a variable in a device. This is a vertical bar which represents a percentage of its range in physical units.

This table describes the vertical indicator's properties:

Property	Description	Limits
Name	Name of the graphic object	–
Address	Direct address of the variable to monitor	Note 1 *(see page 109)*
Data Type	Variable data type	Note 2 *(see page 109)*
Background	Graphic object background color	–
Label	Label to be displayed as part of the graphic object	
Label Color	Color of the label	
Label Font	Font used for the label	
Major Scale Divisions	Number of major scale divisions (marked)	0...100
Minor Scale Divisions	Number of minor scale divisions (not marked)	0...100
Scale Color	Color of the scale and its labels	–
Scale Font	Font used for the scale labels	
Scale Precision	Number of decimal places to be shown for the scale labels (set to -1 to use a general exponential format)	-1...6
Maximum EU Value	Maximum value of the variable in physical units	–
Minimum EU Value	Minimum value of the variable in physical units	
Maximum Value	Maximum gross value (without scale) of the device variable	Note 3 *(see page 109)*
Minimum Value	Gross minimum value (without scale) of the variable in the device	Note 3 *(see page 109)*
Bar Background	Background color of the indicator bar	–
Bar Color	Color of the indicator bar (if the scale value is within the High/Low range)	
High High Limit Value	Value expressed in physical units of the "High High" limit.	
High High Limit Color	Color of the indicator bar if the scale value is greater than the "High High" limit	
High Limit Value	Value of the "High" limit expressed in physical units	
High Limit Color	Color of the indicator bar if the scale value is greater than the "High" limit.	
Low Limit Value	Value of the "Low" limit expressed in physical units	
Low Limit Color	Color of the indicator bar if the scale value is less than the "Low" limit	
Low Low Limit Value	Value of the "Low Low" limit expressed in physical units	
Low Low Limit Color	Color of the indicator bar if the scale value is less than the "Low Low" limit	
Limit Deadband	Neutral range (as a percentage of the EU range) to apply to verification of the High/Low limit	0...10

Property	Description	Limits
Border Width	Width (in pixels) of the graphic object border	0...32
Border Color	Color of the graphic object border	–
Value	Simulated gross starting value (without scale) for testing the graphic object	Note 3 *(see page 119)*

Horizontal or Vertical Slider

A horizontal or vertical slider gives an analogue representation of the value of a variable in a device. This is a slider, whose position is indicated by the cursor, which represents a percentage of its range in physical units. Using the mouse, you can change the value of the slider by sending a new value to the device.

This table describes the properties of the horizontal and vertical sliders:

Property	Description	Limits
Name	Name of the graphic object	–
Address	Direct address of the variable to monitor	1 *(see page 119)*
Data Type	Variable data type	Note 2 *(see page 109)*
Background	Graphic object background color	–
Label	Label to be displayed as part of the graphic object	
Label Color	Color of the label	
Label Font	Font used for the label	
Major Scale Divisions	Number of major scale divisions (marked)	0...100
Minor Scale Divisions	Number of minor scale divisions (not marked)	0...100
Scale Color	Color of the scale and its labels	–
Scale Font	Font used for the scale labels	
Scale Precision	Number of decimal places to be shown for the scale labels (set to -1 to use a general exponential format)	-1...6
Maximum EU Value	Maximum value of the variable in physical units	–
Minimum EU Value	Minimum value of the variable in physical units	
Maximum Value	Maximum gross value (without scale) of the device variable	Note 3 *(see page 119)*
Minimum Value	Minimum gross value (without scale) of the device variable	Note 3 *(see page 119)*
Block Increment	Amount by which the scale value is modified when the user clicks on the bar's slide area.	–
Unit Increment	Amount by which the scale value is modified when the user clicks on the slider arrows	
Border Width	Width (in pixels) of the graphic object border	0...32
Border Color	Color of the graphic object border	–

Horizontal or Vertical Selector

A horizontal or vertical selector allows you to choose from a number of options. Once the selection has been made, the value corresponding to the choice is sent to the device. The choices are represented by the marks on a "scale", the current selection being indicated by the position of the cursor on a slider.

This table describes the properties of the horizontal and vertical selectors:

Property	Description	Limits
Name	Name of the graphic object	–
Address	Direct address of the variable to monitor	Note 1 *(see page 109)*
Data Type	Variable data type	Note 2 *(see page 109)*
Background	Graphic object background color	–
Choices	Selector choices Each choice is indicated in the form of a "label=value" input (when you select a "label", the "value" is sent to the device).	At least two choices required
Label	Label to be displayed as part of the graphic object	–
Label Color	Color of the label	
Label Font	Font used for the label	
Scale Visible	Indicates if a "scale", labeled with the choices should be displayed	
Scale Color	Color of the scale and its labels	
Scale Font	Font used for the scale labels	
Border Width	Width (in pixels) of the graphic object border	0...32
Border Color	Color of the graphic object border	–

Digital Indicator

A digital indicator gives a digital representation of the value of a variable in a device. The value may be displayed in different formats and may be set to change color when a predefined high or low limit is exceeded.

This table describes the properties of the digital indicator:

Property	Description	Limits
Name	Name of the graphic object	–
Address	Direct address of the variable to monitor	Note 1 *(see page 109)*
Data Type	Variable data type	Note 2 *(see page 109)*

Property	Description	Limits
Background	Graphic object background color	–
Label	Label to be displayed as part of the graphic object	
Label Color	Color of the label	
Label Font	Font used for the label	
Value Format	Format (decimal, hexadecimal, etc.) to be used to display the value on the scale	
Value Precision	Number of decimal places to be shown for the value on the scale (set to -1 to use a general exponential format)	-1...6
Value Background	Background color of the value's display zone	–
Value Color	Color of the value's digital display text	
Value Font	Font used for digital display of the value	
Units	Label of the value's physical units (attached to the value's digital display)	
Maximum EU Value	Maximum value of the variable in physical units	
Minimum EU Value	Minimum value of the variable in physical units	
Maximum Value	Maximum gross value (without scale) of the device variable	Note 3 *(see page 119)*
Minimum Value	Minimum gross value (without scale) of the device variable	Note 3 *(see page 119)*
High High Limit Value	Value of the "High High" limit expressed in physical units	–
High High Limit Color	Color of the indicator bar if the scale value is greater than the "High High" limit	
High Limit Value	Value of the "High" limit expressed in physical units	
High Limit Color	Color of the indicator bar if the scale value is greater than the "High" limit.	
Low Limit Value	Value of the "Low" limit expressed in physical units	
Low Limit Color	Color of the indicator bar if the scale value is less than the "Low" limit	
Low Low Limit Value	Value of the "Low Low" limit expressed in physical units	
Low Low Limit Color	Color of the indicator bar if the scale value is less than the "Low Low" limit	
Limit Deadband	Neutral range (as a percentage of the EU range) to apply to verification of the High/Low limit	0...10
Border Width	Width (in pixels) of the graphic object border	0...32
Border Color	Color of the graphic object border	–
Value	Simulated gross starting value (without scale) for testing the graphic object	Note 3 *(see page 119)*

Message Display

A message display shows a text message based on the value of a variable in a device. For each specified message, a set value triggers its display.

This table describes the properties of the message display:

Property	Description	Limits
Name	Name of the graphic object	–
Address	Direct address of the variable to monitor	Note 1 *(see page 109)*
Data Type	Variable data type	Note 2 *(see page 109)*
Background	Graphic object background color	–
Messages	The messages to be displayed. A "value=text" input corresponds to each message (when the device value is equal to "value", the "text" message is diplayed).	At least one message required
Message Background	Background color of the message display zone	–
Message Color	Message text color	
Message Font	Message text font	
Label	Label to be displayed as part of the graphic object	
Label Color	Color of the label	
Label Font	Font used for the label	
Border Width	Width (in pixels) of the graphic object border	0...32
Border Color	Color of the border of the graphic object	–
Value	Simulated input value for testing the graphic object	Note 3 *(see page 109)*

Push Button

When activated with the mouse, a push button allows you to send one or more preset values to a device.

This table describes the properties of the push button:

Property	Description	Limits
Name	Name of the graphic object	–
Address	Direct address of the variable to monitor	Note 1 *(see page 109)*
Data Type	Variable data type	Note 2 *(see page 109)*
Background	Background color of the graphic object	–
Values	Values to send to the device	Note 4 *(see page 109)*
Reset Values	Values to send to the device once the reset delay has expired. If no reset value is given, the reset will not take place.	–

Property	Description	Limits
Reset Delay	Delay (in milliseconds) that the push button waits between sending the values to the device and sending the reset values	0...2000
Label	Label to be displayed as part of the graphic object	–
Label Color	Color of the label	
Label Font	Font used for the label	
Button Label	Text of the button label	
Button Background	Button color	0...100
Button Label Color	Color used for the button label	–
Button Label Font	Font used for the button label	
Border Width	Width (in pixels) of the graphic object border	0...32
Border Color	Color of the graphic object border	–

Direct Output Station

The direct output station allows you to enter a digital value in a text zone directly from the keyboard. If the value entered is between the upper and lower preset limits, a **Set** button is activated. In this case, the value entered is sent to the device when you click **Set** or press **ENTER** (if keyboard input is authorized for the input zone).

This table describes the properties of the direct output station:

Property	Description	Limits
Name	Name of the graphic object	–
Address	Direct address of the variable to monitor	Note 1 *(see page 109)*
Data Type	Variable data type	Note 2 *(see page 109)*
Background	Graphic object background color	–
Label	Label to be displayed as part of the graphic object	
Label Color	Color of the label	
Label Font	Font used for the label	
Maximum EU Value	Maximum value of the variable in physical units	
Minimum EU Value	Minimum value of the variable in physical units	
Maximum Value	Maximum gross value (without scale) of the device variable	Note 3 *(see page 109)*
Minimum Value	Minimum gross value (without scale) of the device variable	Note 3 *(see page 109)*
Maximum Input	Maximum value, expressed in physical units, authorized for the value entered in input	–
Minimum Input	Minimum value, expressed in physical units, authorized for the value entered in input	
Border Width	Width (in pixels) of the graphic object border	0...32
Border Color	Color of the graphic object border	–

Indicator Light

The indicator light provides a double indication of the value of a variable in a device. If the Input Inverted property is not set to TRUE, a zero input value is declared as being OFF and a non-zero value is declared as being ON. If the Flash Interval property is set to a positive value, the indicator light will flash when the input value is equal to ON.

This table describes the properties of the indicator light:

Property	Description	Limits
Name	Name of the graphic object	–
Address	Direct address of the variable to monitor	Note 1 *(see page 109)*
Data Type	Variable data type	Note 2 *(see page 109)*
Background	Graphic object background color	–
Label	Label to be displayed as part of the graphic object	
Label Color	Color of the label	
Label Font	Font used for the label	
Off Word	Text to be displayed when the input value is OFF	
Off Word Background	Background color of the indicator light when **Off Word** is displayed	
Off Word Color	Color of the **Off Word** text	
Off Word Font	Font used for the **Off Word** text	
On Word	Text to be displayed when the input value is ON	
On Word Background	Background color of the indicator light when **On Word** is displayed	
On Word Color	Color of the **On Word** font	
On Word Font	Font used for the **On Word** text	
Flash Interval	The flashing time for the indicator light (expressed in milliseconds) when the input value is ON. Set to zero for no flashing.	200...2000
Shape	Shape (circular, rectangular, etc.) of the indicator light	–
Input Inverted	On **TRUE**, inverts the input value. (The indicator displays **Off Word** when the input value is ON.)	
Border Width	Width (in pixels) of the graphic object border	0...32
Border Color	Color of the border of the graphic object	–
Value	Simulated input value for testing the graphic object	Note 3 *(see page 109)*

Motor Control Station

The motor control station is designed to imitate the on/off push button standard station which is frequently used to control the motors. This graphic object is essentially composed of 2 push buttons and an indicator light. To facilitate the configuration of this object's many properties, a custom module is provided. It is by means of this module, and not the **Graphic Editor** properties sheet, that the properties (apart from the name) are configured.

This table describes the properties of the motor control station:

Property	Description	Limits
Name	Name of the graphic object	–
Background	Graphic object background color	
Label	Label to be displayed as part of the graphic object	
Label Color	Color of the label	
Label Font	Font used for the label	
Border Width	Width (in pixels) of the graphic object border	0...32
Border Color	Color of the graphic object border	–
Indicator Light	Properties identical to those of the Indicator Light graphic object with the exception of the shared properties listed above	
Top Push Button	Properties identical to those of the Push Button graphic object with the exception of the shared properties listed above	
Bottom Push Button	Properties identical to those of the Push Button graphic object with the exception of the shared properties listed above	

Analog Meter

An analog meter gives an analog representation of the value of a variable in a device. It is represented by a pointer on a circular dial whose position corresponds to a percentage of its range in physical units. You can set the size of the meter's circular dial (circle degrees sweep), its colors and the style of the pointer.

This table describes the properties of the analog meter:

Property	Description	Limits
Name	Name of the graphic object	–
Address	Direct address of the variable to monitor	Note 1 *(see page 109)*
Data Type	Variable data type	Note 2 *(see page 109)*

Property	Description	Limits
Background	Graphic object background color	–
Label	Label to be displayed as part of the graphic object	
Label Color	Color of the label	
Label Font	Font used for the label	
Major Scale Divisions	Number of major scale divisions (marked)	0...100
Minor Scale Divisions	Number of minor scale divisions (not marked)	0...100
Scale Color	Color of the scale and its labels	–
Scale Font	Font used for the scale labels	
Scale Precision	Number of decimal places to be shown for the scale labels (set to -1 to use a general exponential format)	-1...6
Maximum EU Value	Maximum value of the variable in physical units	–
Minimum EU Value	Minimum value of the variable in physical units	
Maximum Value	Maximum gross value (without scale) of the device variable	Note 3 *(see page 109)*
Minimum Value	Minimum gross value (without scale) of the device variable	Note 3 *(see page 109)*
Dial Degrees Sweep	Portion of circular segment to be used to draw the dial	60...300
Pointer Type	Type of pointer used (needle, arrow, etc.)	–
Pointer Color	Color used for the pointer	
Dial Color	Color used for the dial (for the part in the High/Low range)	
High High Limit Value	Value of the "High High" limit expressed in physical units	
High High Limit Color	Color of the indicator bar if the scale value is greater than the "High High" limit	
High Limit Value	Value of the "High" limit expressed in physical units	
High Limit Color	Color of the indicator bar if the scale value is greater than the "High" limit.	
Low Limit Value	Value of the "Low" limit expressed in physical units	
Low Limit Color	Color of the indicator bar if the scale value is less than the "Low" limit	
Low Low Limit Value	Value of the "Low Low" limit expressed in physical units	
Low Low Limit Color	Color of the indicator bar if the scale value is less than the "Low Low" limit	
Border Width	Width (in pixels) of the graphic object border	0...32
Border Color	Color of the graphic object border	–
Value	Simulated gross starting value (without scale) for testing the graphic object	Note 3 *(see page 109)*

Rotary Slider

A rotary slider gives an analog representation of the value of a variable in a device. It is represented by a knob on a circular dial whose position corresponds to a percentage of its range in physical units. You can set the size of the dial and the color of the knob. Using the mouse, you can change the position of the knob by sending a new value to the device.

This table describes the properties of the rotary slider:

Property	Description	Limits
Name	Name of the graphic object	–
Address	Direct address of the variable to monitor	Note 1 *(see page 109)*
Data Type	Variable data type	Note 2 *(see page 109)*
Background	Graphic object background color	–
Label	Label to be displayed as part of the graphic object	
Label Color	Color of the label	
Label Font	Font used for the label	
Major Scale Divisions	Number of major scale divisions (marked)	0...100
Minor Scale Divisions	Number of minor scale divisions (not marked)	0...100
Scale Color	Color of the scale and its labels	–
Scale Font	Font used for the scale labels	
Scale Precision	Number of decimal places to be shown for the scale labels (set to -1 to use a general exponential format)	-1...6
Dial Degrees Sweep	Portion of circular segment to be used to draw the dial	60...300
Dial Color	Color of the dial	–
Knob Color	Color used for the knob	
Maximum EU Value	Maximum value of the variable in physical units	
Minimum EU Value	Minimum value of the variable in physical units	
Maximum Value	Maximum gross value (without scale) of the device variable	Note 3 *(see page 109)*
Minimum Value	Minimum gross value (without scale) of the device variable	Note 3 *(see page 109)*
Border Width	Width (in pixels) of the graphic object border	0...32
Border Color	Color of the graphic object border	–

Rotary Selector

A rotary selector allows you to choose from a number of options. Once the selection has been made, the value corresponding to the choice is sent to the device. The choices are represented by the marks on a "scale", the current selection being indicated by the position of the knob. The size of the circular dial (circle degrees sweep) and the color of the knob can be configured.

This table describes the properties of the rotary selector:

Property	Description	Limits
Name	Name of the graphic object	–
Address	Direct address of the variable to monitor	Note 1 *(see page 109)*
Data Type	Variable data type	Note 2 *(see page 109)*
Background	Graphic object background color	–
Choices	Selector choices Each choice is indicated in the form of a "label=value" input (when you select a "label", the "value" is sent to the device).	At least two choices required
Label	Label to be displayed as part of the graphic object	–
Label Color	Color of the label	
Label Font	Font used for the label	
Scale Visible	Indicates if a "scale", labeled with the choices should be displayed	
Scale Color	Color of the scale and its labels	
Scale Font	Font used for the scale labels	
Dial Degrees Sweep	Portion of circular segment to be used to draw the dial	60...300
Knob Color	Color used for the knob	–
Border Width	Width (in pixels) of the graphic object border	0...32
Border Color	Color of the graphic object border	–

Trend Recorder

A trend recorder enables you to obtain a continuous, time-based graphic of the values of a maximum of six variables in a device. It emulates a strip-chart recorder, with the pens on the right and the "paper" moving from right to left. A vertical scale to the left of the graphic indicates the range of registered values and a horizontal scale beneath the graphic displays the range’s time frame. You can set the update frequency and the appearance of the graphic.

To facilitate the configuration of the many properties of this object, a custom module is provided. It is by means of this module, and not the **Graphic Editor** properties sheet, that the properties (apart from the name) are set.

This table describes the properties of the trend recorder. (The properties available for each of the pens are described in the next table):

Property	Description	Limits
Name	Name of the graphic object	–
Background	Graphic object background color	
Label	Label to be displayed as part of the graphic object	
Label Color	Color of the label	
Label Font	Font used for the label	
Major Scale Divisions	Number of major scale divisions (marked)	0...100
Minor Scale Divisions	Number of minor scale divisions (not marked)	0...100
Scale Color	Color of the scale and its labels	–
Scale Font	Font used for the scale labels	
Scale Precision	Number of decimal places to be shown for the scale labels (set to -1 to use a general exponential format)	-1...6
Maximum EU Value	Maximum value of the variable in physical units	–
Minimum EU Value	Minimum value of the variable in physical units	
Update Period	Graphic update interval (in seconds)	0.5...120
Time Scale Divisions	Number of divisions on the horizontal scale	0...6
Chart Background	Color of the graphic zone	–
Grid Color	Color of the grid drawn in the graphic zone	
Vertical Grid Divisions	Number of vertical divisions in the grid	0...100
Border Width	Width (in pixels) of the graphic object border	0...32
Border Color	Color of the graphic object border	–

These are the available trend recorder properties for each pen:

Property	Description	Limits
Address	Direct address of the variable to monitor	Note 1 *(see page 109)*
Data Type	Variable data type	Note 2 *(see page 109)*
Maximum Value	Maximum gross value (without scale) of the device variable	Note 3 *(see page 109)*
Minimum Value	Minimum gross value (without scale) of the device variable	Note 3 *(see page 109)*
Pen Color	Color of the "pen" which allows the value placed on the scale to be recorded	–
Pen Label	Label used to identify the pen	

Display Link

A display link is a special graphic object which allows you to move to another graphic display by clicking it. To indicate that the object represents a link towards another display, the link's text label is underlined and the mouse cursor changes to a hand when it passes over it. This object is especially useful when the **Graphic Editor** is used in **View mode** which has no drop-down list of graphic displays.

A display link can also be used as an hypertext link to an HTML file. If you enter a URL such as Link Display Name, you can open it in a new browser window by pressing the SHIFT key while clicking the link. If you only click the link, the existing browser window is replaced by the URL.

If the Link Display Name is blank, the **label** is not displayed underlined and the object displayed becomes a simple text label.

This table describes the properties of the display link:

Property	Description
Label	Label of the link
Link Display Name	Name of the graphic display to load when the user clicks on the link, or URL of a web page
Label Color	Color of the label
Label Font	Font used for the label

Datalogging History

A Datalogging History provides a continuous, time-based charting of the value of up to six symbols (variables) coming from the log file of the Datalogging service. A Datalogging History emulates a strip-chart recorder, with the pens on the right, and the "paper" moving from right to left. A vertical scale can be shown on the left side of the chart for showing the range of the values being recorded, and a horizontal scale can be shown below the chart for showing the time span of the chart.

NOTE: In order to plot the Datalogging History, select the Timestamp option in the Datalogging Service *(see Web Designer, TSX ETG 3000 Product Range, User Manual)* configuration window.

In order to make it easier to set this object's many properties, a Customizer is provided. Use the Customizer (and not the **Graphic Editor's** Property Sheet) to set Datalogging History properties (except Name).

3 buttons are available in edition and animation mode:

- Reload: the Datalogging History object is a static widget. This button enables to refresh the value used to build the chart.
- +: zoom on the trend. It decreases the time scale in order to have a better vision of a part of the trend.
- -: zoom out on the trend. It increases the time scale in order to have a larger vision of the trend.

If you place the mouse cursor on a point of the trend, a tooltip appears displaying the exact value at that point. Stay pressed and rollover several points to display their tooltips.

Releasing the mouse button and rolling over any point will cleanup existing tooltips and display a new one.

Right click on it to make it disappear.

This table describes properties for the Datalogging History. (Properties available for each pen are described in the next table.)

Property	Description	Limits
Name	The name for the graphic object	–
Background	The background color for the graphic object	
Label	The label to be displayed as part of the graphic object	
Label Color	The color for the label	
Label Font	The font for the label	
Major Scale Divisions	The number of major (labeled) scale divisions	0...100
Minor Scale Divisions	The number of minor (unlabeled) scale divisions	0...100
Scale Color	The color for the scale and its labels	–
Scale Font	The font for scale labels	
Scale Precision	The number of fractional digits to be shown for scale labels (Set to -1 to use a general exponential format.)	-1...6
Maximum EU Value	The maximum value, in engineering units, of the symbol (variable)	–
Minimum EU Value	The minimum value, in engineering units, of the symbol (variable)	
Update Period	The update interval (in seconds) for the chart	0.5...120
Time Scale Divisions	The number of horizontal scale divisions	0...6
Chart Background	The color for the chart area	–
Grid Color	The color of the grid drawn in the chart area	
Vertical Grid Divisions	The number of vertical divisions for the grid	0...100
Border Width	The width (in pixels) for the graphic object’s border	0...32
Border Color	The color for the graphic object’s border	–

These Datalogging History properties are available for each pen:

Property	Description	Limits
Name of the CSV file	The name of the CSV file used to build the trend. Location: ● Default (no path): the file is located on the FLASH memory. ● /CFA00/USERDATA/TABLEx: the file is located on the CF card. ● /USBHD/00/USERDATA/TABLEx: the file is located on the USB memory. ● /RAMDISK/USERDATA/TABLEx: the file is located on the saved RAM. **Note:** the log file includes timestamps *(see Web Designer, TSX ETG 3000 Product Range, User Manual)*.	–
Address	The name of a symbol (variable) to monitor.	
Data Type	The data type of the symbol (variable). **Note:** the data type is numerical.	
Maximum PLC Value	The maximum raw (unscaled) value of the symbol (variable) in the PLC.	Note 3 *(see page 109)*
Minimum PLC Value	The minimum raw (unscaled) value of the symbol (variable) in the PLC.	Note 3 *(see page 109)*
Pen Color	The color of the "pen" used to record the scaled value.	–
Pen Label	The label used to identify the pen.	

Notes on this Topic

The above tables refer to these notes:

Note 1	A direct Modbus address is a number between 0 and 65535.	
Note 2	The various values of the Data Type property for a direct Modbus address have these meanings:	
	`COIL`	output bit (Boolean)
	`DISCRETE INPUT`	input bit (Boolean)
	`REGISTER`	16-bit signed integer
	`INT32`	32-bit signed integer
	`INT32SWAP`	32-bit signed integer with least significant and most significant words inverted
	`INPUT REGISTER`	16-bit signed integer for analog input
Note 3	The limits of the Maximum PLC Value and Minimum PLC Value properties are the natural limits of the configured Data Type property.	
Note 4	For a push button, specify at least one value. If several values are entered, they are assigned to an address table starting with the direct address indicated.	

Extended Graphic Objects

Introduction

The extended graphic objects available in the Graphic Editor are designed to help you to create graphic displays imitating advanced graphic display panels. The data control and monitoring objects have integrated communication functions and are designed as standalone graphic objects.

Be aware, however, that if communication to the device linked to the graphic object is lost, the object becomes inoperative without the end device's knowledge.

⚠ WARNING

UNINTENDED EQUIPMENT OPERATION

Do not use graphic objects in situations where loss of communication to the module can put human integrity or material damage at risk.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

For example, say you have programmed a pushbutton object to jog a motor when the button is depressed and to stop jogging when the button is released. If communications are lost while the button is depressed, the motor will continue to jog even when the button is released. Graphic objects should not be used to control situations such as this unless other interlock methods are installed in the system.

In addition, to help clients who wish to insert several simple applets into a single HTML page, objects in the Graphic Editor exist in the form of applets. When combined with the *LiveBeanApplet*, the graphic objects in the Graphic Editor can be used in the same way as the *LiveLabelApplet*.

ASCII Text Editor

The ASCII text editor is based on the message display graphic element. It enables new text to be entered.

The properties of the ASCII text editor are as follows:

Property	Description	Limits
Name	Name of the graphic object	–
Address	Direct address of the variable to monitor	Note 1 *(see page 119)*
Max. Text Length	Maximum length of the text	–
Text Color	Color of the text	
Text Font	Font of the text	
Swap Bytes	False if the target byte order is the same as that of the PC	
Value	The text itself	

Bar Graph

A bar graph gives an analog representation of the value of a variable in a device. It draws a vertical bar whose length is proportional to the value and represents a percentage of its range in physical units.

The properties of the bar graph are as follows:

Property	Description	Limits
Name	Name of the graphic object	–
Address	Direct address of the variable to monitor	Note 1 *(see page 119)*
Data Type	Variable data type	Note 2 *(see page 119)*
Background	Graphic object background color	–
Label	Label to be displayed as part of the graphic object	
Label Color	Color of the label	
Label Font	Font used for the label	
Maximum EU Value	Maximum value of the variable in physical units	
Minimum EU Value	Minimum value of the variable in physical units	
Maximum Value	Maximum gross value (without scale) of the device variable	Note 3 *(see page 119)*
Minimum Value	Minimum gross value (without scale) of the variable in the device	Note 3 *(see page 119)*
Bar Background	Background color of the indicator bar	–
Bar Color	Color of the indicator bar (if the scale value is within the High/Low range)	
High High Limit Value	Value of the "High High" limit expressed in physical units	
High High Limit Color	Color of the indicator bar if the scale value is greater than the "High High" limit	
High Limit Value	Value of the "High" limit expressed in physical units	
High Limit Color	Color of the indicator bar if the scale value is greater than the "High" limit.	
Low Limit Value	Value of the "Low" limit expressed in physical units	
Low Limit Color	Color of the indicator bar if the scale value is less than the "Low" limit	
Low Low Limit Value	Value of the "Low Low" limit expressed in physical units	
Low Low Limit Color	Color of the indicator bar if the scale value is less than the "Low Low" limit	
Limit Deadband	Neutral range (as a percentage of the EU range) to apply to verification of the High/Low limit	0...10
Border Width	Width (in pixels) of the graphic object border	0...32
Border Color	Color of the graphic object border	–
Value	Simulated gross input value (without scale) for testing the graphic object	Note 3 *(see page 119)*

Bitmap

The bitmap interface graphic element displays a static bitmap on the screen.

The properties of the bitmap interface graphic element are as follows:

Property	Description	Limits
Name	Name of the graphic object	–
Background	Graphic object background color	Note 1 *(see page 119)*
Label	Label to be displayed as part of the graphic object	–
Label Color	Color of the label	
Label Font	Font used for the label	
Border Width	Width (in pixels) of the graphic object border	
Border Color	Color of the graphic object border	
Bitmap Choices	File names of custom bitmaps to display Refer to the next paragrah for information on adding images into the module.	

Adding Images

You can add images into the module in one of the following way:

- Add your images into the *images.zip* file (path: */NAND/FLASH1/wwwroot*).
- Create a directory into the module (i.e. */NAND/FLASH1/wwwroot/bitmaps*). Copy your images into this directory. In this case, you need to specify the path of the images you want to use (i.e. */NAND/FLASH1/wwwroot/bitmaps/key.gif*).

Step	Action
1	Create an *images* folder on your PC.
2	Copy the images you want to use in this folder.
3	Import the *user.jar* file from the TSX ETG 30•• to the PC (path: */NAND/FLASH1/wwwroot/classes*) using a FTP client.
4	Open the *user.jar* file using a file archiver.
5	Drag and drop the *images* folder in the *user.jar* file. Confirm that the relative path of the image files is 'images/'.
6	Transfer the *user.jar* file back to the module using a FTP client.

Generic Bitmap

The generic Bitmap interface graphic element can display a static bitmap for each separate value of a variable. It can be used to display dynamic animations, such as the variation in level of a reservoir.

The properties of the generic Bitmap interface graphic element are as follows:

Property	Description	Limits
Name	Name of the graphic object	–
Address	Direct address of the variable to monitor	Note 1 *(see page 119)*
Data Type	Variable data type	Note 2 *(see page 119)*
Background	Graphic object background color	Note 1 *(see page 119)*
Label	Label to be displayed as part of the graphic object	–
Label Color	Color of the label	
Label Font	Font used for the label	
Bitmap Choices	File names of custom bitmaps to display Refer to the previous paragrah for information on adding images into the module.	
Border Width	Width (in pixels) of the graphic object border	
Border Color	Color of the graphic object border	
Value	Simulated starting value for testing the behavior of the graphic object	

Graphic Link

A graphic link is a special graphic object that moves to another graphic display when you click it with the mouse. Graphic links can also be recognized by their underlined labels, and by the fact that the mouse cursor changes to a hand when it passes over them. They are especially useful when the Graphic Editor is used in Display mode, in which there is no pull-down list of graphic displays.

A graphic link can also be used as a hypertext link to an HTML file. If you enter a URL such as **Link Display Name**, you can open the URL in a new browser window by pressing the SHIFT key while clicking on the link. If you only click the link, the URL will open in the existing browser window.

If the **Link Display Name** is not filled in, the label will not be underlined and the object displayed becomes a simple text label.

The properties of the graphic link are as follows:

Property	Description
Label	Label of the link
Link Display Name	Name of the graphic display to load when the user clicks on the link, or URL of a Web page
Label Color	Color of the label
Label Font	Font used for the label
Bitmap Choices	Name of the bitmap file to be clicked on

Indicator Light

The indicator light displays the value of a variable in a device. The input value of 0 is equal to OFF, and any value other than 0 is equal to ON. If the **Flash Interval** property is set to a positive value, the indicator light will flash when the input value is equal to ON. There is one bitmap for the ON state and another for the OFF state.

The properties of the indicator light are as follows:

Property	Description	Limits
Name	Name of the graphic object	–
Address	Direct address of the variable to monitor	Note 3 *(see page 119)*
Data Type	Variable data type	Note 2 *(see page 119)*
Background	Graphic object background color	–
Label	Label to be displayed as part of the graphic object	
Label Color	Color of the label	
Label Font	Font used for the label	
OFF Word	Text to be displayed when the input value is OFF	
OFF Bitmap Choice	Indicator bitmap when the OFF word is displayed	
OFF Word Color	Color of the OFF word text	
OFF Word Font	Font of the OFF word text	
ON Word	Text to be displayed when the input value is ON	
ON Bitmap Choice	Indicator bitmap when the ON word is displayed	
ON Word Color	Color of the ON word font	
ON Word Font	Font of the ON word text	
Flash Interval	The flashing time for the indicator light (expressed in milliseconds) when the input value is ON. Set to 0 for no flashing.	200...2,000
Input Inverted	On TRUE, inverts the input value. (The indicator displays the OFF word when the input value is ON.)	–
Border Width	Width (in pixels) of the graphic object border	0...32
Border Color	Color of the graphic object border	–
Value	Simulated input value for testing the graphic object	Note 3 *(see page 119)*

Motor

The Motor graphic interface element displays the value of a variable in a device. The input value of 0 is equal to OFF, the value 1 is equal to ON and other values are equal to DEFAULT. These three states are represented by different bitmaps.

The properties of the Motor graphic interface element are as follows:

Property	Description	Limits
Name	Name of the graphic object	–
Address	Direct address of the variable to monitor	Note 1 *(see page 119)*
Data Type	Variable data type	Note 2 *(see page 119)*
Background	Graphic object background color	–
Label	Label to be displayed as part of the graphic object	
Label Color	Color of the label	
Label Font	Font used for the label	
OFF Word	Text to be displayed when the input value is OFF	
OFF Bitmap Choice	Motor bitmap when the OFF word is displayed	
OFF Word Color	Color of the OFF word text	
OFF Word Font	Font of the OFF word text	
ON Word	Text to be displayed when the input value is ON	
ON Bitmap Choice	Motor bitmap when the ON word is displayed	
ON Word Color	Color of the ON word font	
ON Word Font	Font of the ON word text	
DEFAULT Word	Text to be displayed when the input value is ON	
DEFAULT Bitmap Choice	Motor bitmap when the DEFAULT word is displayed	
DEFAULT Word Color	Color of the DEFAULT word font	
DEFAULT Word Font	Font of the DEFAULT word text	
Border Width	Width (in pixels) of the graphic object border	0...32
Border Color	Color of the graphic object border	–
Value	Simulated input value for testing the graphic object	Note 3 *(see page 119)*

Pipe

A pipe displays the value of a variable in a device that has two possible states. The input value of 0 is equal to OFF, and any value other than 0 is equal to ON. There is one bitmap for the ON state and another for the OFF state.

The properties of the pipe are as follows:

Property	Description	Limits
Name	Name of the graphic object	–
Address	Direct address of the variable to monitor	Note 1 *(see page 119)*
Data Type	Variable data type	Note 2 *(see page 119)*
Background	Graphic object background color	–
Label	Label to be displayed as part of the graphic object	
Label Color	Color of the label	
Label Font	Font used for the label	
OFF Word	Text to be displayed when the input value is OFF	
OFF Bitmap Choice	Pipe bitmap when the OFF word is displayed	
OFF Word Color	Color of the OFF word text	
OFF Word Font	Font of the OFF word text	
ON Word	Text to be displayed when the input value is ON	
ON Bitmap Choice	Pipe bitmap when the ON word is displayed	
ON Word Color	Color of the ON word font	
ON Word Font	Font of the ON word text	
Border Width	Width (in pixels) of the graphic object border	0...32
Border Color	Color of the graphic object border	–
Value	Simulated input value for testing the graphic object	Note 3 *(see page 119)*

Push button

When activated with the mouse, a push button allows the user to send one or more preset values to a device.

The properties of the push button are as follows:

Property	Description	Limits
Name	Name of the graphic object	–
Address	Direct address of the variable to monitor	Note 3 *(see page 119)*
Data Type	Variable data type	Note 2 *(see page 119)*
Background	Graphic object background color	–
Values	Values to send to the device	Note 4 *(see page 119)*
Reset Values	Values to send to the device once the reset delay has expired. If no reset value is given, the reset will not take place.	–
Reset Delay	Delay (in milliseconds) that the push button waits between sending the values to the device and sending the reset values.	0...2000
Label	Label to be displayed as part of the graphic object	–
Label Color	Color of the label	
Label Font	Font used for the label	
Button Label	Button label text	
Button Label Color	Color used for the button label	
Button Label Font	Font used for the button label	
OFF Bitmap Choice	Button bitmap when the OFF state is displayed	
ON Bitmap Choice	Button bitmap when the ON state is displayed	
Border Width	Width (in pixels) of the graphic object border	0...32
Border Color	Color of the graphic object border	–

Distributor

A distributor displays the value of a variable in a device that has two possible states. The input value of 0 is equal to OFF, and any value other than 0 is equal to ON. There is one bitmap for the ON state and another for the OFF state.

The properties of the distributor are as follows:

Property	Description	Limits
Name	Name of the graphic object	–
Address	Direct address of the variable to monitor	Note 1 *(see page 119)*
Data Type	Variable data type	Note 2 *(see page 119)*
Background	Graphic object background color	–
Label	Label to be displayed as part of the graphic object	
Label Color	Color of the label	
Label Font	Font used for the label	
OFF Word	Text to be displayed when the input value is OFF	
OFF Bitmap Choice	Distributor bitmap when the OFF word is displayed	
OFF Word Color	Color of the OFF word text	
OFF Word Font	Font of the OFF word text	
ON Word	Text to be displayed when the input value is ON	
ON Bitmap Choice	Distributor bitmap when the ON word is displayed	
ON Word Color	Color of the ON word font	
ON Word Font	Font of the ON word text	
Flash Interval	The flashing time for the indicator light (expressed in milliseconds) when the input value is ON. Set to 0 for no flashing.	200...2,000
Border Width	Width (in pixels) of the graphic object border	0...32
Border Color	Color of the graphic object border	–
Value	Simulated input value for testing the graphic object	Note 3 *(see page 119)*

Notes

The notes relating to this section are as follows:

1.	The Data Type property needs to correspond exactly to the actual data type of the variable. If the Address property is the direct address of a binary PLC reference (reference 0x/1x Quantum for example), set the Data Type property to Coil for outputs or to Discrete Input for discrete inputs.	
2.	The various values of the Data Type property have the following meanings:	
	Type	Signification
	COIL	output bit (Boolean)
	DISCRETE INPUT	input bit (Boolean)
	REGISTER	16-bit signed integer
	INT32	32-bit signed integer
	INT32SWAP	32-bit signed integer with least significant and most significant words inverted
	INPUT REGISTER	16-bit signed integer for analog input
3.	The limits of the Maximum PLC Value and Minimum PLC Value properties are the natural limits of the configured Data Type property.	
4.	For a push button, specify at least one value. If several values are entered, they will be assigned to an address table starting with the direct address indicated.	
5.	For the applet to display a numerical data value instead of a label, specify parameters in the HTML code as follows: name = "label" value = "$data$".	

Section 7.3
Adding Microsoft Silverlight® Pages

Adding Microsoft Silverlight® Pages

Introduction

Use the commands in Web Designer to create new—or import existing—Microsoft Expression Blend applications, and add them to your Web Designer project. Expression Blend is a powerful development platform you can use to create graphically rich Silverlight pages for your website.

When you launch Expression Blend from Web Designer, the following tools are available for use in Expression Blend:

- a collection of custom FactoryCast objects—developed by Schneider Electric—that you can embed in your Silverlight pages
- a list of PLC variables—imported from your Unity Pro project—that you can use to animate the Factory Cast objects you add to your Silverlight pages

Expression Blend Commands

With a Web Designer project open, you can use the following commands to add an Expression Blend application to your website.

To create a new Expression Blend application:

<Project> → <Target> → GraphicScreens → New Microsoft Blend Application

To import an existing Expression Blend application:

<Project> → <Target> → GraphicScreens → Import Blend Application

Further Reference

For instructions on how to use Expression Blend and the Schneider Electric Factory Cast custom objects, refer to the following documents:

- Expression Blend help
- *Web Designer Objects Library for Microsoft Expression Blend®*, which you can access as follows:
  - as a help file, from the Web Designer software **Help** menu, or
  - in .pdf format from the Web Designer installation disk

Section 7.4
PLC Program Viewer

PLC Program Viewer

Presentation

The PLC program viewer feature enables you to visualize and monitor UnityPro programs in run mode using a Web Designer. The PLC programs are displayed and animated as they are in UnityPro

PLC programs developed in any languages supported by UnityPro can be visualized:

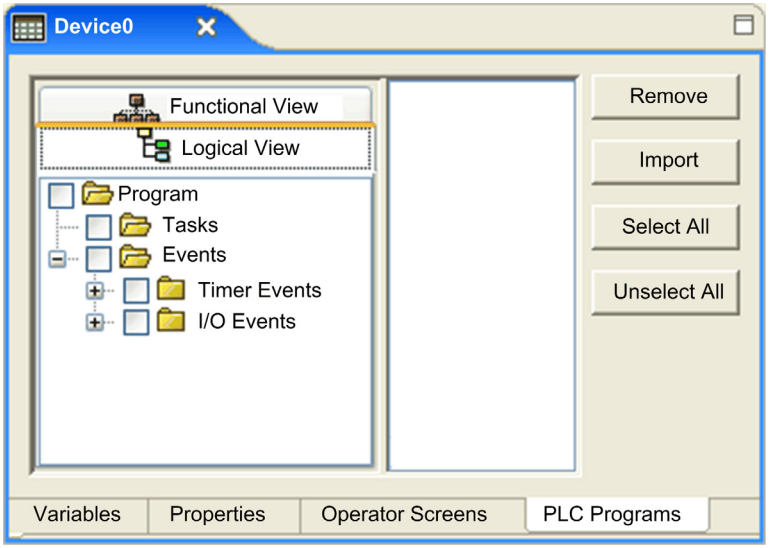
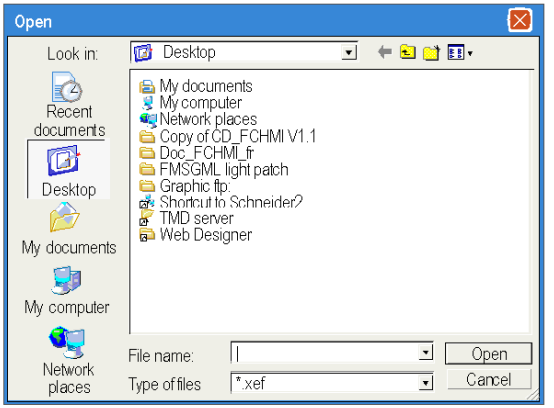
- Ladder (LD)
- Instruction List (IL)
- Function Block Diagram (FBD)
- 984 Ladder Logic (LL984)
- Structured Text (ST)
- Sequential Function Chart (SFC)

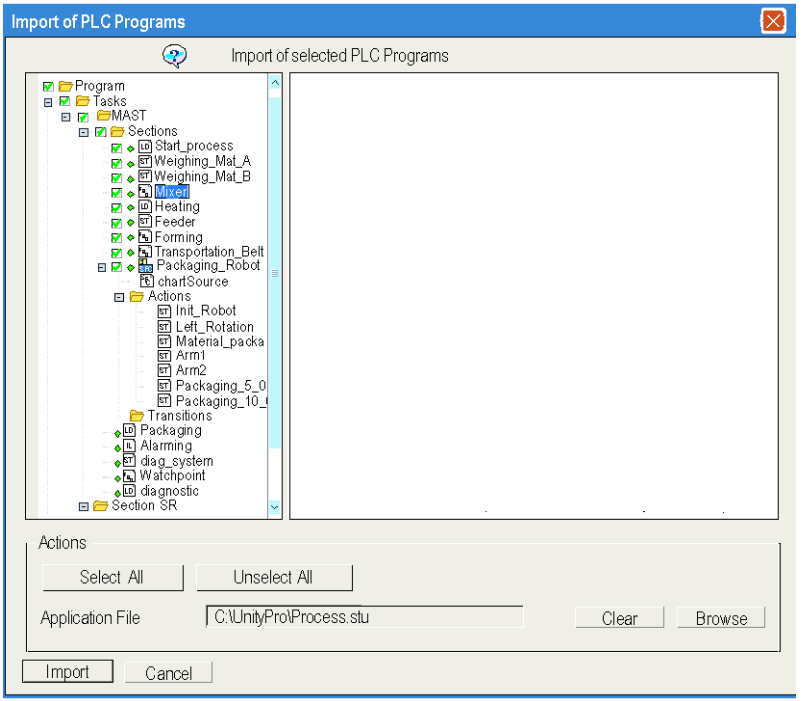
Accessing the PLC Program Viewer

Step	Action
1	Double click the PLC (*Devices* directory) you want to monitor in the Web Designer navigator.
2	Click the **PLC Programs** tab.

Importing PLC Programs

The following procedure shows you how to import PLC programs from UnityPro to Web Designer.

Step	Action
1	In the Web Designer **Navigator** window, under **<Target> → Devices**, double click on the PLC device to which you will import a program. The **Device** window opens.
2	In the **Device** window, click on the **PLC Programs** tab to open that window (below): 
3	Click **Import** on the right side of the **PLC Programs** window. **Result:** the Open window appears. 
4	Use an external tool (such as 7-Zip) to extract the .XEF file from the .ZEF file exported from Unity Pro.

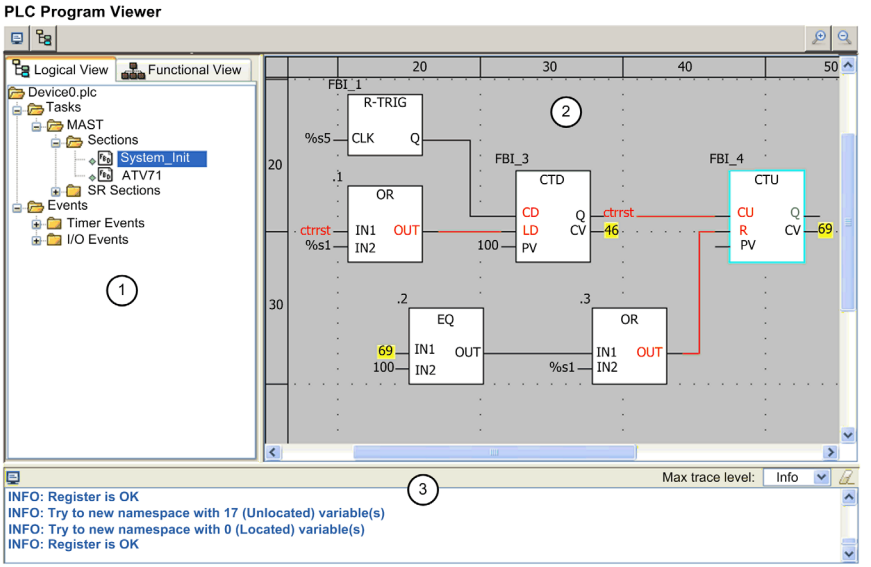
Step	Action
5	Select the Unity Pro file (.XEF) containing PLC Programs data. Click **Open**. **Result:** the Import PLC Programs window appears. 
6	• Select the sections of the PLC program you want to monitor using the checkbox. • Click **Browse** to select the STU or .XVM file associated to the .XEF for variables animation. **Note:** It is advised to import from .XVM for the import to be faster. As some elements are not available in the .XVM, a STU could be required to complete the import. Click **Import**. **Result:** the sections of the PLC program selected appear in the navigation tree of the PLC Program tab.

Accessing an Animated PLC Program

Step	Action
1	Select a target in a project.
2	• Click **Target → Connect → Simulation** (Alt + S) to switch to simulation mode or, • click **Target → Connect → Target** (Alt + C) to switch to run mode.
3	Extend the target directory.
4	Select a device in the Devices directory.
5	Right-click and select Open. **Result:** an Internet Explorer window in which the PLC program viewer window associated with the selected device appears.
5	Select the PLC program section you want to visualize in the navigation tree. **Result:** the PLC program appears in the Display window.

Representation and Color Convention

The PLC Program Viewer window:



1 Navigation tree: select the section of the PLC program you want to visualize
2 Display window: this zone displays the animated PLC program
3 Console: displays selected trace event data

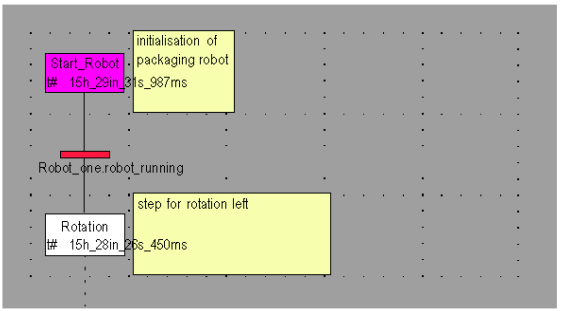
Variables animation:

- Boolean are displayed in:
  - ❍ green if its value is true
  - ❍ red if its value is false
- Other types display the name or the value of the variable in yellow. Use the tool tip to see more information as the name of the variable, its type, its address and its comment.

Links animation:

- Links connected to boolean variables are displayed in green or red depending on the value of the variable they are connected to (green if true red if false).
- Other links are displayed in black.

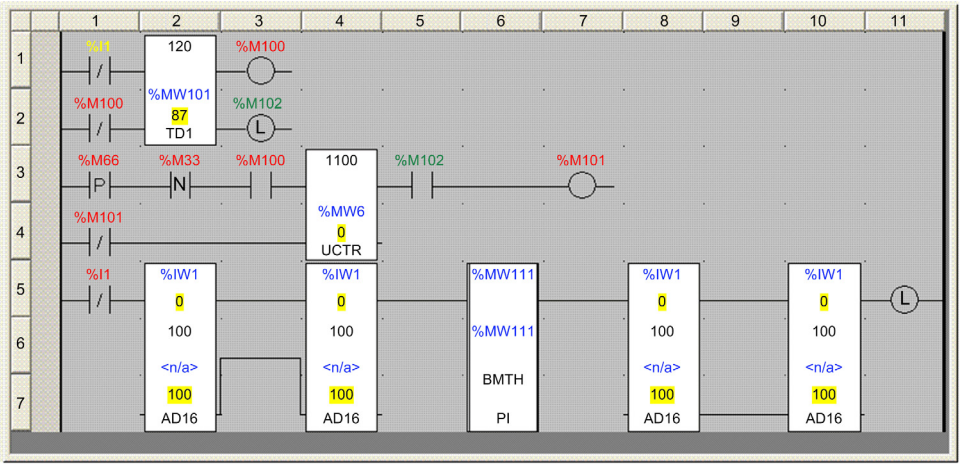
SFC animation:



The colors used for the different elements are:

- for steps:
  - ❍ green if the step is active,
  - ❍ white if the step is inactive,
  - ❍ yellow if the activity time of the step is less than the minimum programmed time,
  - ❍ pink if the activity time of the step is greater than the minimum programmed time.
- for macro-steps:
  - ❍ when a macro-step becomes active the upper half is shown in green,
  - ❍ when the OUT step of the macro-step is active the whole of the macro-step is shown in green,
  - ❍ when the macro-step becomes inactive it is then shown in white.
- for transitions associated with a Boolean element or a simple Boolean expression:
  - ❍ green if the element or the expression is TRUE,
  - ❍ red if the element or the expression is FALSE.
- for transitions associated with a section:
  - ❍ black as long as the previous step remains inactive,
  - ❍ green if the conditions in the section are TRUE,
  - ❍ red if the conditions in the section are FALSE.

LL984 animation:



The colors used for the different variables, and their meanings, are:

- Black: not monitored
- Yellow: real time value isn't available
- Red: a boolean set to false
- Green: a boolean set to true
- Black with yellow background: a non-boolean (for example, a constant)

Tool Tip

The tool tip function is a help bubble which is displayed when you move the cursor over a variable.

It displays information about the value of the variable only if its name is visible in the viewer.

Click on the variable to display the bubble permanently. Right click on it to make it disappear.

Zoom In / Out

The PLC program viewer presents two buttons you can use to zoom in and zoom out of the program display. These buttons are located at the top right corner of the PLC program viewer:

Click on the button on the left (with the "+" sign) to zoom in up to three magnification levels.

Click on the button on the right (with the "–" sign) up to three times to zoom out and display the entire program in the PLC program viewer.

Show / Hide Console and Navigation Tree

The PLC program viewer presents two buttons you can toggle to show or hide the the PLC program viewer's console and navigation tree. These buttons are located at the top left corner of the PLC program viewer:

Toggle the button on the left to show or hide the console.

Toggle the button on the right to show or hide the navigation tree.

Limitations

- Only PLC programs created using UnityPro 4.0 or later can be viewed.
- You can only monitor PLC programs, changes are not allowed.
- The following objects are not animated, they appear in black:
  - Objects for which the result depends on an expression
  - Function blocks without instance for which there is no information on input/output variables
  - Standard DFB (i.e. ALARM_DIA)
  - Multiple dimension tables

Chapter 8
Setting Up an External Tool

Setting Up an External Tool

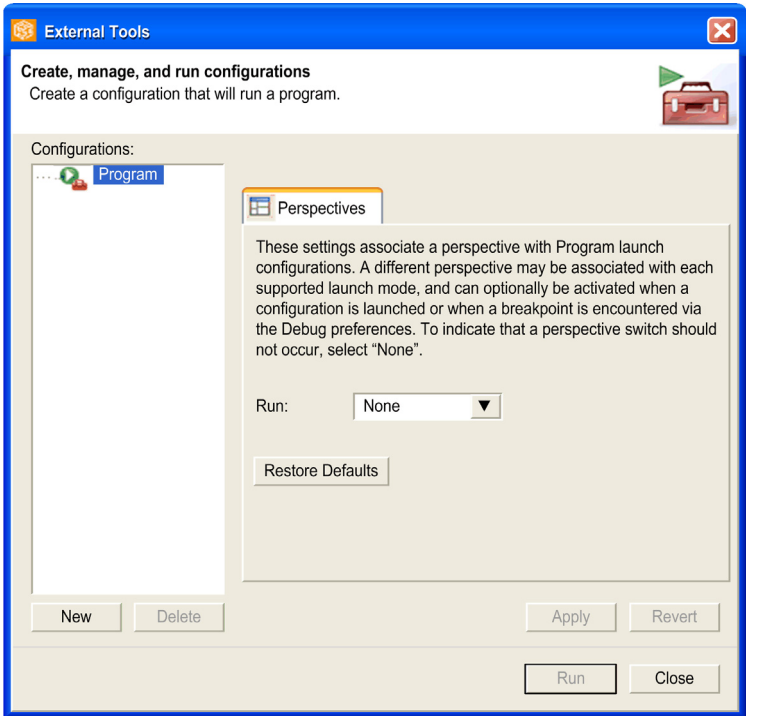
Overview

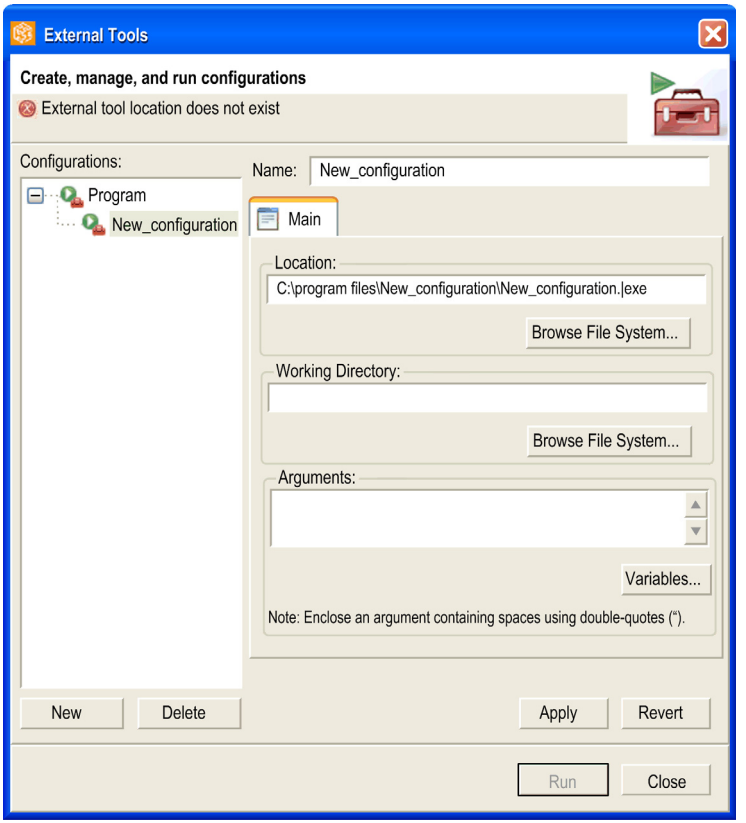
You can use Web Designer in concert with a standard external tool to edit files for your website.

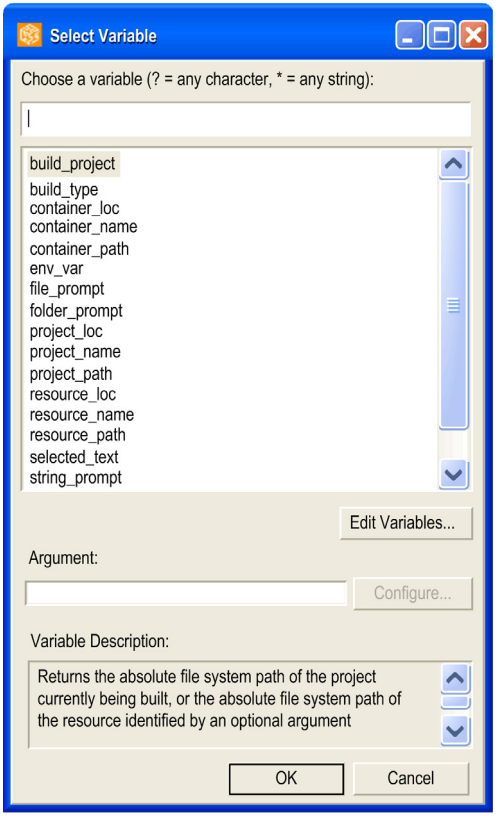
The examples in this chapter show you how to set up FrontPage to open website files. The procedure, however, applies to other software packages, like Microsoft Expression Blend.

Example

Set up an external tool:

Step	Action
1	Open the **External Tools** setup window (**Options → Configuration of an external tool → External tools**): 

Step	Action
2	Click **New** to proceed to the next screen: 
3	Enter a name for the external software (in this case, FrontPage).
4	In the **Location** area, click **Browse File System** to open a file explorer window.
5	Select the path of the *.exe* file of the external software (for example, *C:\windows\frontpage\frontpage.exe*).
6	In the **Working Directory** area, click **Browse File System** to open a file explorer window.
7	Specify the directory that contains the files you want to open with your external tool (for example, *C:\workspace\WD_project\website*.

Step	Action
8	In the **Arguments** area, click **Variables...** to open the **Select Variables** window: 
9	Select the *ressource_loc* variable that returns the absolute file system path of a resource.
10	Click **Apply**.
11	Click **Close**.
12	Select a file of the website in your Web Designer navigator.
13	Open the selected file by opening FrontPage (**Options → Configuration of an external tool → FrontPage**).

Chapter 9
Changing the Workspace Directory

Presentation

The workspace is the space where projects are stored. Only those located in the current workspace can be opened. Projects are automatically created in the current workspace. It is possible to have several workspaces and to pass from one to another.

This function enables you to change the path to the workspace.

To do this, select **Change Workspace...** in the **Options** menu.

Chapter 10
Formatting and Restarting a Module

Re-start/Format a Module

Introduction

Re-starting is necessary to take into account the modifications made to the application.

Formatting deletes the website on the module and restores the default website *(Website*, *gdt* and *rdt* directories). Formatting allows you to delete the modifications made to the website of a module, in order to start a fresh one from a defined status. It does not modify the system configuration.

NOTE: This topic does not apply to the Modicon M580 platform.

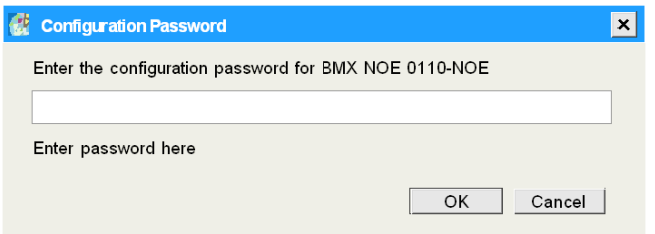
Re-start the Module

The following table shows how to re-start a module:

Step	Action
1	In the menu tree, select a module.
2	In the **Target** menu, click **Reboot target**.

Format the Module

The following table shows how to format a module:

Step	Action
1	In the menu tree, select a module.
2	In the **Target** menu, click **Format target**. **Result**: the Configuration Password window appears if a configuration password has already been set. Otherwise the formatting starts. 
3	Enter the configuration password and click **OK**.

Chapter 11
Security

Subject of this Chapter

This chapter explains how to manage the security for a website using a firewall, access rights and password protection.

What Is in This Chapter?

This chapter contains the following topics:

Internal Security

Overview

Web Designer provides 2 mechanisms to allow that only authorized users view and modify your data:

- password entry,
- write restrictions.

Anyone who has access to a configuration tool and to your embedded server can override your security settings and download new settings to the server. Unauthorized or incorrect changes to data may change the behavior of your application in ways that may be undesirable or hazardous.

⚠ WARNING

UNINTENDED OPERATION

Restrict control of access to the embedded server:

- Change passwords monthly.
- Do not use simple user names and passwords.
- Disable default passwords before commissioning the module.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Password Entry

Although you may add unprotected Web pages to the site, the default Web pages and any other pages to which you want to restrict access can only be viewed by users who supply the correct user name and password.

Restrictions

Restrictions are applied overall.

When you create a website and you want to restrict access to it, place it in the folder called *secure*.

External Security

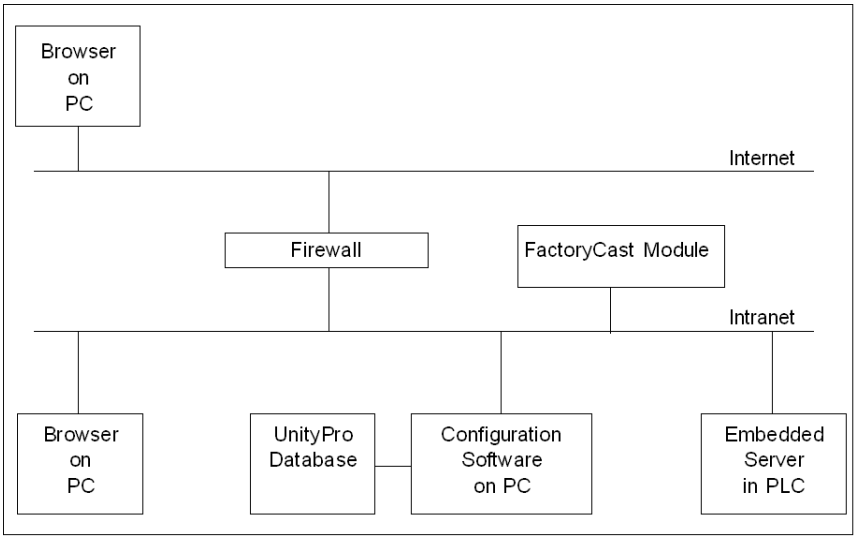
Overview

If your network has been configured to enable users to consult your Internet site, your security system is the same as that of an intranet site, only you have an additional security measure: a firewall.

Architecture of a Firewall

A firewall forms a gateway between Internet and your embedded server. You can use a firewall to restrict or forbid access to your website.

A firewall can be configured to authorize network connections to a limited range of ports, or to authorize traffic to or from certain IP addresses.



Types of Firewalls

There are two types of firewalls:

- Network firewalls
- Application firewalls

Network Firewalls

Network firewalls are often installed between the Internet and a single entry point to an intranet or internal network.

Application-Level Firewalls

An application firewall works for an application, for example FTP. It intercepts all traffic sent to this application, and decides whether or not to transmit this traffic to the application. Application firewalls are located on individual host computers.

Firewall Configuration

Web Designer uses HTTP, FTP and Schneider Electric Modbus application protocol (MBAP) to access embedded server pages and files. If you want viewers to be able to access your site from the Internet and your embedded server is behind by a firewall, you need to configure the firewall to authorize HTTP, FTP and MBAP traffic.

Port	Protocol	Access to...
21	FTP	Embedded server files (behind a firewall)
Higher than 1024		
80	HTTP	Web pages
502	MBAP	Operational data

NOTE:

- The default FTP name and password are USER/USER.
- The FactoryCast client follows the "Firewall Friendly FTP" standard, RFC 1579. It issues an FTP PASV command to the FactoryCast server before any attempt to establish an FTP data connection.
- The online mode of the configuration tool is not operational if the module is behind a firewall. The ports in this mode are dynamically assigned.

Variable Access Security, Symbol, Direct Address

Presentation

Users who enter the write password can only modify variables (symbols) and direct addresses which are write-enabled. When you create a WEB-enabled database of variables and direct addresses, you can designate each element as read-only or write-enabled.

Unauthorized or incorrect modifications made to symbols and direct addresses may have undesirable or hazardous effects on the behavior of your application.

⚠ WARNING

UNINTENDED EQUIPMENT OPERATION

- Restrict access to the embedded server by configuring passwords.
- Carefully select the symbols and direct addresses you authorize to be modified online.
- Do not authorize online modification of variables of critical nature concerning human and material integrity.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

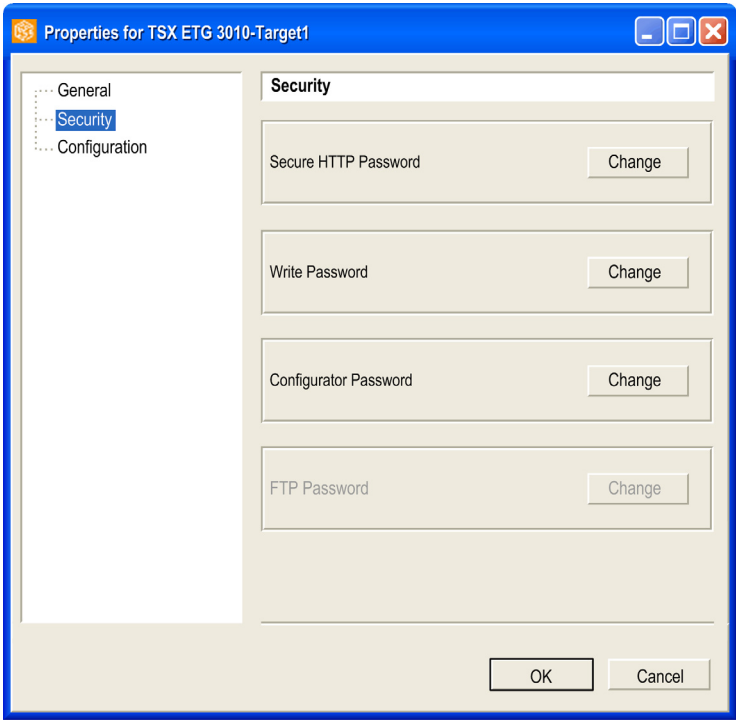
Changing Passwords

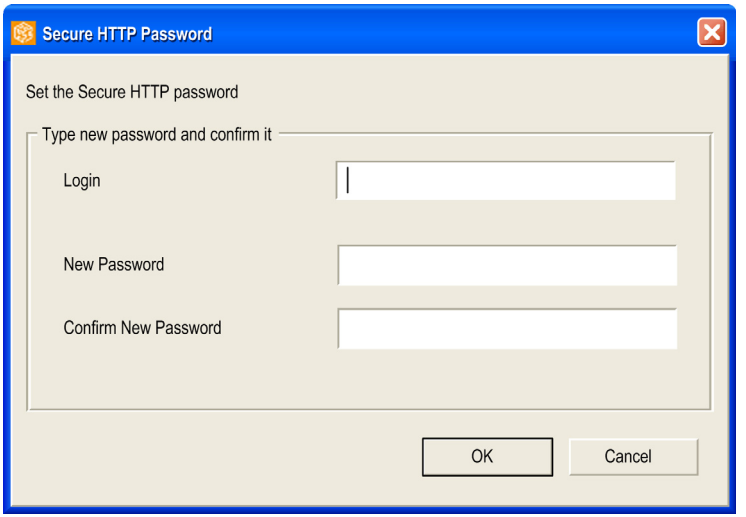
Introduction

This page enables you to modify the different user names and passwords that are used for identification.

Modify Passwords

This table describes how to change passwords:

Step	Action
1	In the browser, select the target.
2	In the **Target** menu, click **Properties**. **Result**: The target properties window appears.
3	Select **Security**. **Result**: The following window appears. For security reasons, the **FTP Password** field is disabled. 

Step	Action
4	Click **Modify** to change a password. Refer to the next paragraph for a description of each password. **Result**: The password window appears. 
5	Enter a new password and confirm it by typing it in the **Confirm new password** field. If it is an HTTP password, the login is also requested.
6	Click **OK** in the Password window. **Note**: if you leave any fields empty during the modification, you are asked to confirm the replacement of the current password with an empty password.
7	Repeat steps 4...6 for each password to modify.
8	Click **OK** in the Properties window of the target to close the window.

Function

This table describes the fields and lists whether a field is enabled or disabled for each communication module:

Field	Description	Module Restrictions	
Secure HTTP Password	Required for connecting to the secure HTTP pages of the module website via a browser	Enabled	• TSX ETG 30•• • TSX ETY 5103 • 140 NWM 100 00 • TSX WMY 100
		Disabled	• 140 NOE 771 11 • 140 NOE 0110 • BME NOC 0311 • BME NOC 0321
Write Password	Required to write variables in animation mode	Enabled	• TSX ETG 30•• • TSX ETY 5103 • 140 NWM 100 00 • TSX WMY 100 • 140 NOE 771 11 • 140 NOE 0110
		Disabled	• BME NOC 0311 • BME NOC 0321
Configurator Password	Required to access the configuration parameters of the module	Enabled	• TSX ETG 30•• • TSX ETY 5103 • 140 NWM 100 00 • TSX WMY 100 • 140 NOE 771 11 • 140 NOE 0110
		Disabled	• BME NOC 0311 • BME NOC 0321
FTP Password		Enabled	—
		Disabled	• TSX ETG 30•• • TSX ETY 5103 • 140 NWM 100 00 • TSX WMY 100 • 140 NOE 771 11 • 140 NOE 0110 • BME NOC 0311 • BME NOC 0321

Appendices

Appendix A
Menu

Subject of this Chapter

This chapter describes the menus for Web Designer functions.

What Is in This Chapter?

This chapter contains the following topics:

Menu

Overview

The following table shows the complete menu system when every function is supported:

Menu	Sub-menu	Overview
Project	New	Create a new project: Creating a new module/device/data table/graphic page. Creating a service. Creating files and folders.
	Open project	Open an existing project.
	Close project	Close current project.
	Save	Save item modified in the project.
	Save all	Save every unsaved item modified in the project.
	Import	Importing an existing (*.zip*) project or converting a FactoryCast or FactoryCast HMI project.
	Export	Exporting the current project to a *.zip* file.
	Global transfer	Downloading the project's modules (and files).
	Project Validation	Verifying the project before transfer.
	Refresh	Updating the window and menu tree.
	Properties	View/modify the project’s properties (passwords, comments, etc.).
	Quit	Exit application
Edit	Undo	Cancel last action.
	Cut	Destruction of the selected object and putting it on the clipboard (the object can be a project, a module, a device, a graphic object, a file, a variable etc.).
	Copy	Copy the object to the clipboard.
	Paste	Paste the clipboard.
	Delete	Delete the selected object.
	Find...	Search for text in the project.

Menu	Sub-menu	Overview
Target	Transfer	Transfer files, either from your PC to the destination, or from the destination to your PC.
	Partial Transfer	Transfer only graphic pages, data tables and service directories, either from your PC to the destination, or from the destination to your PC.
	Connect	Connecting to the module (if the module authorizes the connection) or to the simulator.
	Disconnect	Disconnecting from the module or from the simulator
	Stop all services	Shutting down the services (for targets using services).
	Start all services	Starting the services (for targets using services).
	Site Explorer	Display a view of the website in the window on the bottom.
	Reboot target	Rebooting the connected module (for modules that authorize).
	Format target	Formatting the connected module (for modules that authorize).
	Set target address	Display/modify the IP Address, user name and password of the target.
	Synchronize with PLC database	Synchronize the namespace of your project with a PLC database. Not available for FactoryCast targets.
	Properties	View/modify the target's properties.
Service	Stop	Shut down current service.
	Run	Start current service.
	Operator screens	View operator screens.
	Print	Print current service.
	Statistics	View statistics for the selected service (incoming messages, outgoing messages, etc.).
Options	Configuration of an external tool	Set up an external tool (for example FrontPage).
	Change workspace...	Changing a workspace directory.
	Default display	Restoring the three-dimensional view of the work window by default.
	Automatic input	Fill in automatically the values of a new variable by incrementing the values of the last record.
Help	Help	Access to Web Designer Help file.
	About	Information about the version, copyright etc. of Web Designer.

Contextual Menu

Table

The following table shows the contextual menu of the file tree.

File tree item	Menu (right-click)	Sub-menu	Comment
Project name	New	Project Target	Launch the wizard. 1st window.
	Edit		
	Paste		Paste project.
	Delete		Destroy project.
	Rename		Rename project.
	Global transfer		Transfer project.
	Properties		View the project properties.
Module name	New	Device Service	Launch the wizard. 2nd window.
	Edit		
	Cut		Cut module.
	Copy		Copy module.
	Paste		Paste module.
	Delete		Delete module.
	Rename		Rename module.
	Transfer	PC->Target Target->PC	Transfer web site.
	Connect	Target Simulation	Connect module.
	Disconnect		Disconnect module.
	Properties		View the module's properties.
Devices folder	New device		View the selection window of symbols.
	Paste		Paste device.
Device element	Edit		Launch the device display window.
	Cut		Cut device.
	Copy		Copy device.
	Delete		Delete device.
	Rename		Rename device.
	Run		Start the service.
	Stop		Stop the service.
	Partial transfer	Target>PC	Transfer only the folder.
GraphicScreens folder	New Microsoft Blend Application		Launch Microsoft Expression Blend® software.
	New Graphic Page		Launch Graphic Editor.
	Paste		Paste the graphic.

File tree item	Menu (right-click)	Sub-menu	Comment
	Import Blend Application		Open dialog for navigating to and selecting an existing Microsoft Expression Blend application.
	Soap Debug Mode	Enable/Disable	Enables/Disables the use of PLC data by the Microsoft Expression Blend application.
	Partial transfer	Target>PC PC->Target	Transfer only the folder.
GraphicScreens item	Edit		Graphic Editor.
	Open		View graphic.
	Cut		Cut the graphic.
	Copy		Copy the graphic.
	Delete		Delete graphic.
	Rename		Rename gaphic.
	Partial transfer	Target>PC PC->Target	Transfer only the folder.
DataTables folder	New data		Launch the data editor.
	Paste		Paste the data table.
	Partial transfer	Target>PC PC->Target	Transfer only the folder.
DataTables item	Edit		Data Editor.
	Open		Data Viewer.
	Cut		Cut the data table.
	Copy		Copy the data table.
	Delete		Delete the data table.
	Rename		Rename the data table.
	Partial transfer	Target>PC PC->Target	Transfer only the folder.
Services folder	New service		Create a new service.
	Paste		Paste a service.
	Partial transfer	Target>PC PC->Target	Transfer only the folder.
A *Services* folder calculation, email, database, data logging, active pages	New		Launch the service wizard with the selected service.
	Cut		Cut a service.
	Copy		Copy a service.
	Paste		Paste a service.
	Delete		Delete a service.
	Partial transfer	Target>PC PC->Target	Transfer only the folder.
Services item	Edit		Launch the edit window of the service.
	Cut		Cut the service.

File tree item	Menu (right-click)	Sub-menu	Comment
	Copy		Copy the service.
	Delete		Delete the service.
	Rename		Rename the service.
	Run		Start the service.
	Stop		Stop the service.
	Partial transfer	PC->Target	Transfer only the folder.
Website folder	New	Folder File	Create a new file or folder.
	Paste		Paste a new file or folder.
	Import File		Importing an existing website.
	Partial transfer	Target>PC PC->Target	Transfer only the website.
Folder in *Website*	New	Folder File	Create a new file or folder.
	Cut		Cut the folder.
	Copy		Copy the folder.
	Paste		Paste a new file or folder.
	Delete		Delete the folder.
	Rename		Rename the folder.
	Import File		Importing an existing file.
	Partial transfer	Target>PC PC->Target	Transfer only the folder.
File in *WebSite*	Open		Open the file.
	Open with System Editor		Launch another window with System Editor.
	Edit with	Notepad	Launch the HTML page in Edit mode with notepad.
		FrontPage	Launch the HTML page in Edit mode with FrontPage.
	Cut		Cut the file.
	Copy		Copy the file.
	Delete		Delete the file.
	Rename		Rename the file.
	Partial transfer	Target>PC PC->Target	Transfer only the file.
Namespace	Open		Launch the Namespace window.
Namespace Write Access	Edit		Launch the author rights Namespace window.

Glossary

A

applet

Software component that runs in the context of another program, for example a Web browser.

ASCII

American Standard Code for Information Interchange.

Pronounced "aski". This is an American code (but now an international standard) which allows alphanumerical characters used in English, punctuation marks, some graphics characters and various commands to be defined with 7 bits.

AT commands

Also called **Hayes Commands**: Set of commands for various phone-line manipulations, dialing and hanging up for instance.

B

bit

Contraction of Binary Digit.

This is the binary unit of information content, which can represent two separate values (or states): 0 or 1.

A field of 8 bits constitutes 1 **byte**.

BOOTP

Bootstrap Protocol: Protocol for booting diskless terminals or stations by centralized management of network parameters.

C

CF card

CompactFlash card: Type of data storage device, used in portable electronic devices.

communication interruption

Communication error detected by the module when the periodic exchanges with the PLC stop.

configuration

The configuration comprises the data that defines the device (invariable) and that is necessary to the operation of the module.

CPU

Central Processing Unit: The microprocessor. This comprises the entire control unit and the arithmetic unit. The purpose of the control unit is to extract the execution instruction from the central memory along with the data needed to execute this instruction, to establish electrical connections in the arithmetic and logic unit and to start the processing of this data in the unit. **ROM** or **RAM** memories are sometimes included on the same chip, and sometimes I/O interfaces or buffers.

CRC

Cyclic Redundancy Check: Type of hash function used to produce a checksum – a small, fixed number of bits – against a block of data, such as a packet of network traffic or a block of a computer file.

D

DHCP

Dynamic Host Configuration Protocol: Protocol allowing a station connected to the network to obtain its configuration dynamically.

DNS

Domain Name System: It stores and associates many types of information with domain names and it translates domain names (computer hostnames) to IP addresses.

driver

Program which informs the operating system of the presence and characteristics of a peripheral.

E

Ethernet

Ethernet is a LAN cabling and signaling specification used to connect devices within a defined area (such as a building). Ethernet uses a topology such as bus or star to connect different nodes on a network.

F

FactoryCast HMI

Active Web server that executes HMI functions integrated in a PLC module. When you use the active Web server, you do not need to communicate via polling to update the HMI/SCADA database.

FDR

Faulty Device Replacement: Automatic configuration recovery service provided by the module.

firewall

Information technology (IT) security device which is configured to permit, deny or proxy data connections set and configured by the organization's security policy.

Flash memory
Form of non-volatile computer memory that can be electrically erased and reprogrammed.

FTP/TFTP
File Transfer Protocol/Trivial File Transfer Protocol: Network file transfer protocol.

G

GPRS
General Packet Radio Service: A radio technology for GSM networks that adds packet-switching protocols and shorter set-up time for ISP connections.

H

HMI
Human Machine Interface: The aggregate of means by which people (the users) interact with a particular machine, device, computer program or other complex tool (the system).

HTML
HyperText Markup Language: the predominant markup language for the creation of web pages. It provides a means to describe the structure of text-based information in a document and to supplement that text with interactive forms, embedded images, and other objects.

HTTP
HyperText Transfer Protocol: Network transfer protocol for documents written in hypertext (links).

I

IP
Internet Protocol: Data-oriented protocol used for communicating data across a packet-switched internetwork (i.e. the Internet).

IP Address
Unique address that devices use in order to identify and communicate with each other on a computer network utilizing the Internet Protocol standard (IP)—in simpler terms, a computer address.

ISO
International Standards Organization. Formats, symbols, transmission rules are covered by ISO standards. AFNOR is a member of ISO.

ISP
Internet Service Provider: Business or organization that sells to consumers access to the Internet and related services.

M

MIB

Management Information Base: Database used by the SNMP protocol for network management and containing information on data transmission, station or router components, etc.

- MIB II: standard MIB
- Schneider Electric MIB: private MIB

N

NAT

Network Address Translation: is the translation of an Internet Protocol address (IP address) used within one network to a different IP address known within another network.

NTP

Network Time Protocol: Protocol for synchronizing the clocks of computer systems over packet-switched, variable-latency data networks.

O

operating mode

The rules governing the behavior of the module when it is running.

P

PAP

Password Authentication Protocol: Password identification protocol used for remote modem connections.

PL7

Schneider Electric PLC programming software.

PLC

Programmable Logic Controller: It is a small computer used for automation of industrial processes, such as control of machinery on factory assembly lines.

PPP

Point-to-Point Protocol: Point-to-point communication protocol used for modem connections.

Premium

Family of Schneider Electric PLCs.

PSTN/RTC

Public Switched Telephone Network: The network of the world's public circuit-switched telephone networks.

Q

Quantum
Family of Schneider Electric PLCs.

R

RGB
Additive model in which red, green, and blue (often used in additive light models) are combined in various ways to reproduce other colors.

RS232
Serial communication standard that in particular defines the following operating voltage:

- A signal of +3 to +25V indicates logical value 0.
- A signal of -3V to -25V indicates logical value 1.

Between +3V and -3V the signal is regarded as invalid.

RS 232 connections are relatively sensitive to interference. The standard recommends not exceeding a distance of 15 meters and a speed of 20,000 baud (bps) maximum.

RS485
Serial connection standard operates at +/-5V differential. The connection uses separate wires for transmission and receipt. Their "3-status" outputs allow them to switch to listening mode when transmission is completed.

RTU
Remote Terminal Unit.

RUN
Function used to start execution of the application program in the PLC.

S

SCADA
Supervisory Control And Data Acquisition: Software that, interfacing with a programmable logic controller, gathers and analyzes information used to monitor and control commercial equipment.

SMTP
Simple Mail Transfer Protocol: Application protocol used to transmit messages via the Internet and direct them to a mailbox.

SNMP
Simple Network Management Protocol: Network management protocol for controlling a network remotely by polling the stations for their status and modifying their configuration, performing security tests and viewing information relating to data transmission. It can also be used to manage software and databases remotely.

SQL

Structured Query Language: Used to query (request data from) a relational database.

T

TCP

Transmission Control Protocol: Virtual circuit protocol that is one of the core protocols of the Internet protocol suite, often simply referred to as TCP/IP.

TCP/IP

The set of communications protocols that implement the protocol stack on which the Internet and many commercial networks run.

Time Out

Expiry of a waiting time. Stops the application or disconnects after a lengthy period of non-use.

U

UDP

User Datagram Protocol: One of the core protocols of the Internet protocol suite. Using UDP, programs on networked computers can send short messages sometimes known as datagrams to one another.

URL

Uniform Resource Locator: The global address of documents and other resources on the World Wide Web.

V

VPN

Virtual Private Network: A private network that is configured within a public network. It uses encryption and other security mechanisms so that only authorized users can access the network and that the data cannot be intercepted.

X

XML

Extensible Markup Language: it is aimed to facilitate the sharing of data across different information system. It is a simplified subset of the SGML and is designed to be relatively human-legible.

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