Modicon M340 RTU

Web Designer for BMX NOR 0200 H
User Manual

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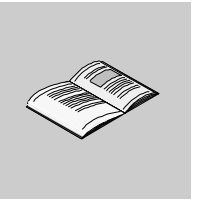
All pertinent state, regional, and local safety regulations must be observed when installing and using this product. For reasons of safety and to help ensure compliance with documented system data, only the manufacturer should perform repairs to components.

When devices are used for applications with technical safety requirements, the relevant instructions must be followed.

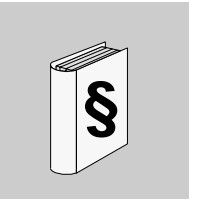
Failure to use Schneider Electric software or approved software with our hardware products may result in injury, harm, or improper operating results.

Failure to observe this information can result in injury or equipment damage.

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, 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 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 an imminently hazardous situation which, if not avoided, **will result in** death or serious injury.

⚠ WARNING

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

⚠ CAUTION

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

NOTICE

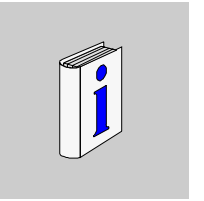
NOTICE is used to address practices not related to physical injury.

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 software for Modicon M340 RTU and describes its installation and operation.

NOTE: In this manual, the term "Web Designer" means "Web Designer for Modicon M340 RTU".

Validity Note

This documentation is valid for Web Designer software version 2.22.

Related Documents

Title of Documentation	Reference Number
Modicon M340 RTU BMX NOR 0200 H Module User Manual	EIO0000000505 (Eng) EIO0000000507 (Fre) EIO0000000506 (Ger) EIO0000000508 (Spa) EIO0000000509 (Ita)

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

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 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.

User Comments

We welcome your comments about this document. You can reach us by e-mail at techcomm@schneider-electric.com.

Introduction

1

Scope of this Chapter

This chapter introduces Web Designer, explains how to install it and provides a description of the graphical interface.

What's in this Chapter?

This chapter contains the following topics:

Presentation

Introduction

Web Designer is a software tool that allows easy creation of custom Web-based Human Machine Interfaces. It can also be used for easy configuration of built-in advanced processing functions for various Web enabled devices and RTU equipment:

- FactoryCast Web servers modules for Modicon M340 PAC and Premium and Quantum PLCs
- FactoryCast HMI Web servers modules for Modicon Premium and Quantum PLCs
- FactoryCast ETG 1000/3000 Gateways for remote access
- RTU module for Modicon M340 PAC

It provides the tools needed to design a Web HMI or RTU project.

This manual describes the Web Designer version dedicated to the RTU module BMX NOR 0200 H for the Modicon M340 PAC platform.

Web Designer handles the following basic features for the module application and Web site:

- configuration of the device Web site functions (data monitoring tables, monitoring screens, etc.)
- management and Upload/Download of the devices Web site
- configuration of advanced processing services

Advanced Services

Web Designer provides a user friendly interface to easily configure the following advanced services:

Name	Description
Datalogging	Allows archiving of application data (events, alarms, process data, measures, etc.) in CSV files in the internal memory of the BMX NOR 0200 H module.
Email	Allows the BMX NOR 0200 H module to sent alarm or report notifications via Email or SMS.

NOTE: Web Designer only configures the advanced processing services of the BMX NOR 0200 H module. The basic hardware (serial port, modem communications) and protocol (IEC60870 / DNP3) configuration of the module is done through the module Web pages. Please refer to the BMX NOR 0200H module documentation *(see Modicon M340 RTU, BMX NOR 0200 H Module, User Manual)* for the module setup.

Compatibility between Web Designer Target Version and BMX NOR 0200 H Firmware

The version of the firmware available in the BMX NOR 0200 H module is identical to the version of the target used in the Web Designer project.

An upgrade function is available in Web Designer via the menu:

Target → Upgrade Target version

This function upgrades only the Web Designer application to the latest version. If necessary, upgrade the firmware of the BMX NOR 0200 H.

Required configuration

To use this software at an optimal level, the following configuration is recommended for the PC running the Web Designer:

- 1 GHz CPU
- 512 Mb RAM
- 80 Mb minimum of free disk space available on the hard disk
- 800x600 screen
- Windows 2000 SP2, Windows XP Professional or Windows Vista Business 32-bit
- Java Virtual Machine 1.4.2 minimum

NOTE: For Windows XP or Windows Vista, you need administration privileges to install the Web Designer Software. You also need administration privileges to run the software under Windows Vista.

Preparing for Web Designer installation

Foreword

Uninstall any previous version of Web Designer before installing the new version. Web Designer offers to perform the uninstall for you.

NOTE: Once installed, you can access Web Designer by clicking **Start** → **All programs** → **Schneider Electric** → **Vijeo Designer Suite** → **Web Designer**.

Installation

The installation procedure is as follows: insert the CD-ROM into the CD drive. The CD is Auto-run, therefore if your PC is set up for this feature you should see the Web Designer main window. If Auto-run is disabled or does not work:

Step	Action
1	Click **Start** → **Settings** → **Control panel**.
2	Click **Add/Remove Programs** in the Control Panel.
3	Click **Add New Programs** in the menu on the left, then **CD-ROM** and follow the instructions.
4	The Install Tool will automatically find the WebDesigner.exe program on the CD and will also display the path and file name then prompt you to perform the installation.

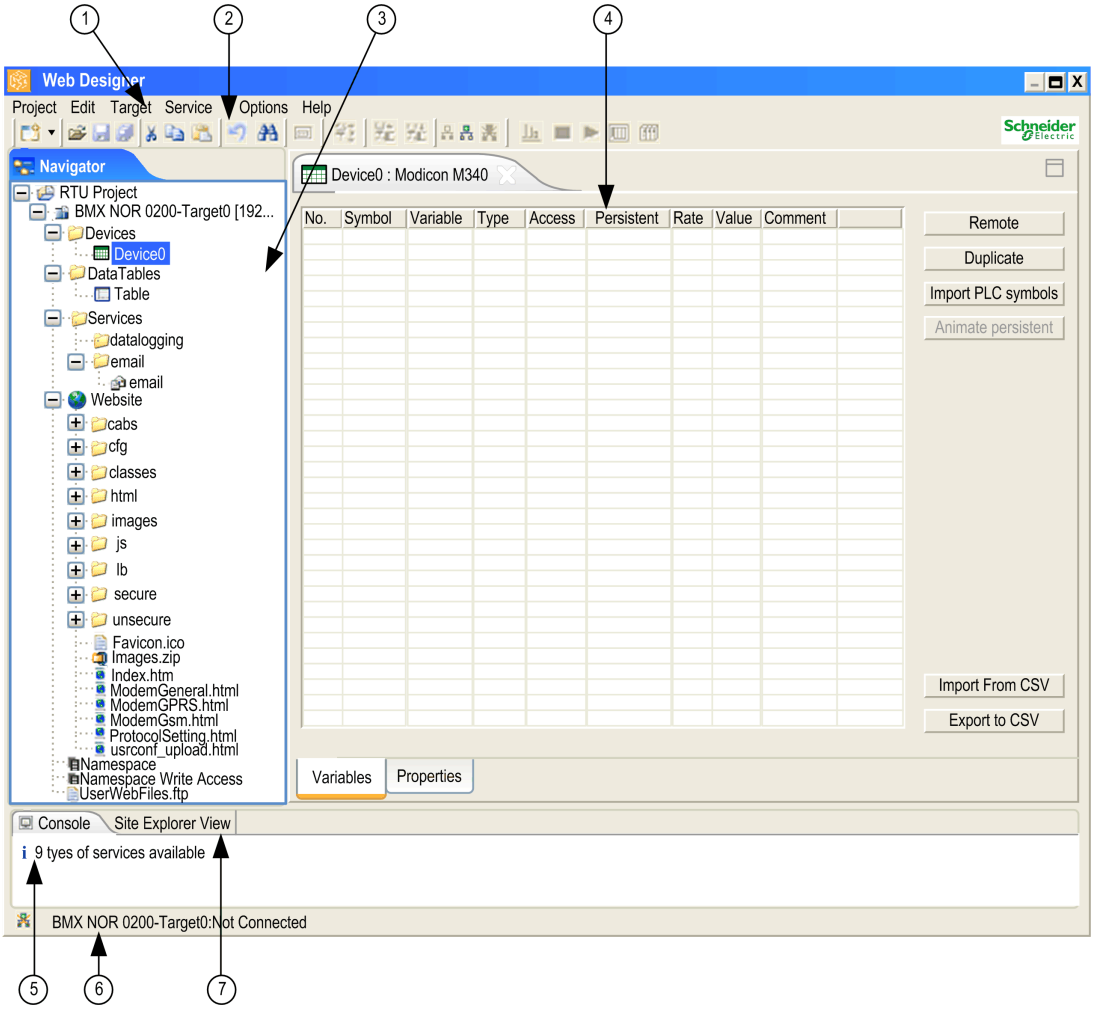
Importing Previous Projects

Previous projects are visible in the navigator once Web Designer is reinstalled.

Interface Presentation

Main Window Contents

The following illustration describes the elements of the Web Designer main window:

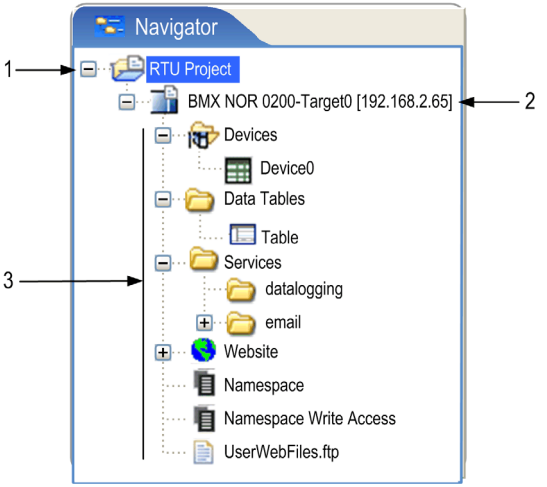


7 main zones compose this screen which are:

Number	Zone	Description
1	Menu *(see Web Designer for Modicon M340, Premium and Quantum, User Manual)*	list of options available
2	Toolbar	shortcuts to frequently used functions
3	Navigator *(see page 14)*	displays the files related to the projects
4	Editing zone	Web Designer uses this zone to edit, create or configure services associated with the project
5	Console zone	list of the last detected errors
6	Information zone	displays the connection status and the available memory of the selected module
7	Site Explorer View	displays the target files

Navigator

This zone displays the files and folders associated with existing projects. It provides an overall view of the application displayed as a file tree:



The 3 main zones that compose the navigator are:

Zone	Description
1	This zone displays the name of the project as root directory. By clicking **+**, all the targets associated with the project appear.
2	This folder displays the name of the target associated with the project and its IP address. By clicking **+**, all the folders and files associated with the target appear.

Zone	Description
3	4 directories are visible for each target associated with the project: ● *Device*: it displays the devices (CPUs connected to the module) associated with the target. ● *DataTables*: it contains tables created using the Data editor *(see page 82)*. ● *Service*: it displays the services created by the user (availability depending on the target). ● *Website*: it contains the website files for the project. You can customize the website *(see Web Designer for Modicon M340, Premium and Quantum, User Manual)* by changing these files or by adding your own pages.

Toolbar

The toolbar enables you to access the main functions of the program directly by clicking its icons.

The figure below shows you the toolbar:

The following table describes the elements of the toolbar:

Icon	Function
	New: by clicking the down arrow, you can: ● create a new project ● add a target to the project ● add a device to the target ● create a new service ● create a folder ● create a file
	Open: opens an existing project
	Save: saves the currently edited window
	Save All: saves all items modified in the project
	Cut: removes the selected object and puts it on the clipboard
	Copy: copies the object to the clipboard
	Paste: pastes the clipboard

Icon	Function
	Undo: cancels last action
	Find: opens the **Search** window where you can search for a text located in a file of the project
	Lookup: opens the **Lookup** window in which you can search a variable
	Global Transfers: downloads all the project's modules (and all the files)
	Target -> PC: transfers a project from the target to the PC
	PC -> Target: transfers a project from the PC to the target
	Connection to the module: connects Web Designer to the target
	Connection to the local simulator: connects Web Designer to the simulator
	Disconnect: disconnects from the target or the simulator
	Statistics: views statistics for the selected service (incoming messages, outgoing messages, and so on)
	Stop: shuts down the current service
	Run: starts the current service

Getting Started

2

Scope of this Chapter

The purpose of this chapter is to show the procedure using Web Designer to configure advanced services (Data logging, EMail/SMS notifications) and monitoring services for a Modicon M340 RTU application.

What's in this Chapter?

This chapter contains the following topics:

Presentation

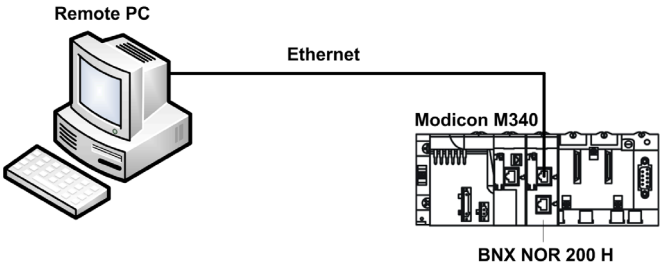
Introduction

This Getting Started is an example to show the steps to follow to configure an application for the BMX NOR 0200 H module.

A project consists of a BMX NOR 0200 H module and a Modicon M340 RTU PLC connected on the same PLC rack. The Web server hosted by the BMX NOR 0200 H module, periodically scans the values of selected variables located in the PLC and performs internal processing on these variables such as Datalogging, Alarm or report notification via Email.

Architecture

The following diagram shows the architecture of the Getting Started example:



The IP address for the module is a.b.c.d.

The following table describes the elements of the example:

Reference	Type	Description
BMX NOR 0200 H	Target	RTU module
Modicon M340	Device	PLC

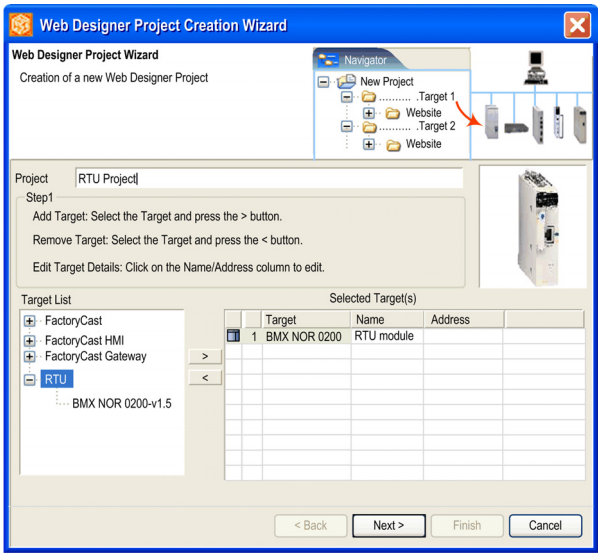
Creating a New Project

Introduction

This topic provides an example showing how to create a new project using a BMX NOR 0200 H module.

Creating a New Project

The following procedure shows how to create a new project:

Step	Action
1	Click on **Project** → **New** → **Project** **Result**: The Web Designer Project Creation Wizard dialog appears. 
2	Enter the project name (RTU Project) in the Project field.
3	In the target box, scroll over the drop down menu of the RTU and select the module you require (for example, BMX NOR 0200 H v1.5) and click on the > button. **Result**: The chosen module appears in the Selected Target(s) box on the right.
4	Enter the Name of the target (RTU module) in the Selected Target(s) box.
5	Enter the IP Address (a.b.c.d) in the Selected Target(s) box. For more information about IP addressing, refer to the *Modicon M340 for Ethernet Communications Modules and Processors User Manual*.
6	Repeat steps 3 to 5 if you want to select more than one target.
7	Click on **Next**. **Result**: The second dialog of the Web Designer Project Creation Wizard appears.

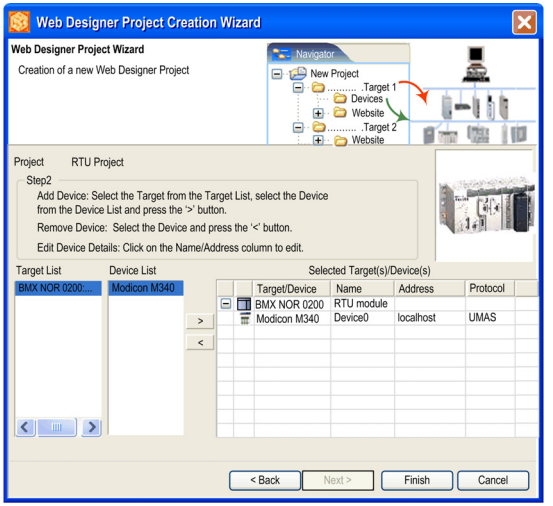
Device Selection

Introduction

For each target you can configure the devices that are connected to it.

Device creation

The following procedure shows how to attach devices to a target:

Step	Action
1	Select a device in the Device List box and click on the > button. **Result**: The device appears in Selected Target(s) Device(s). 
2	In the selected Target(s)/Device(s) table, enter the device name in the Name column and its address in the Address column. For more information about addressing refer to the *Modicon M340 for Ethernet Communications Modules and Processors User Manual*.
3	If the device supports several protocols, enter the desired protocol in the Protocol column.
4	If you want to attach more than one target, repeat steps 1 to 4 until you have selected all devices required.
5	Click on **End**. **Result**: The project example appears in the browser.
6	Save your project by clicking on: 

Target Properties

Introduction

The target properties allow you to change the name of the target and its address.

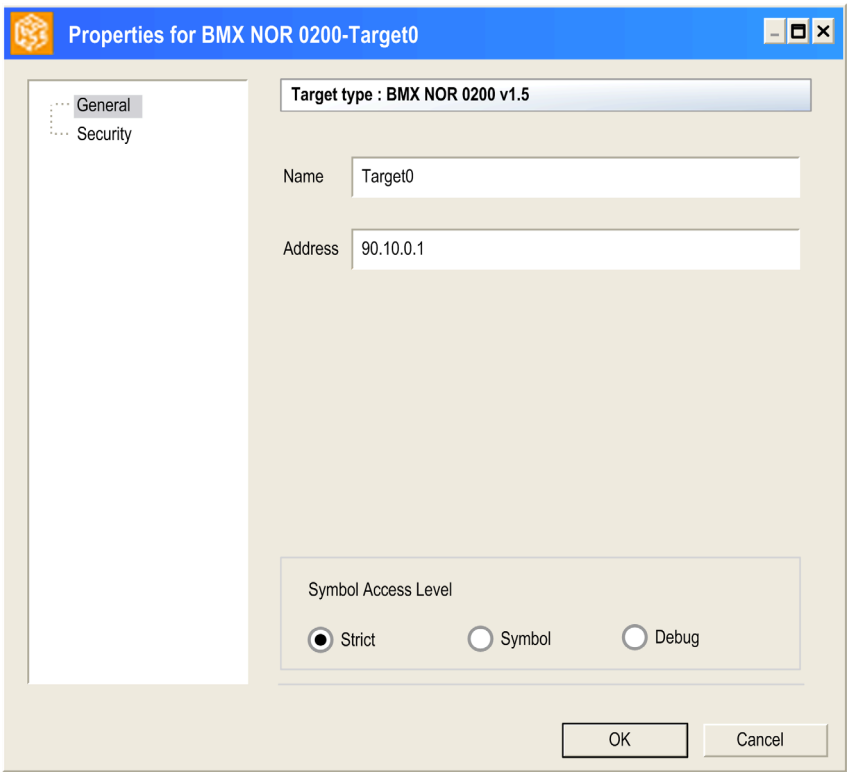
This example shows you how to manually configure the IP parameters for a BMX NOR 0200 H.

Accessing the Target Properties Page

You can access the Target Properties page by either:

- On the Web Designer browser, right-click on the device name and click on **Properties**.
- On the **Target** menu, click on **Properties**.

Result: The Target Properties dialog appears.



Setting the IP Parameters

Use the **IP parameters** area to define the IP configuration of the module.

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

⚠ WARNING

UNINTENDED OPERATION — DUPLICATE IP ADDRESS

- Make sure that each device receives a unique IP address.
- The system administrator needs to establish a standardized process for assigning IP addresses so that duplicate addresses are not assigned inadvertently.

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

NOTE: In this example, we manually assign the IP address to the module. For details about managing IP address, refer to the *Modicon M340 for Ethernet Communications Modules and Processors User Manual*.

The following procedure shows how to manually configure the BMX NOR 0200 H module:

Step	Action
1	Access the Target Properties page.
2	Enter the IP address for the BMX NOR 0200 H in the **IP Address** field.
3	Click on **OK** to validate.
4	Save the new configuration by clicking on: 

Variable Selection

Introduction

The **Import PLC Symbol** dialog menu lets you select the PLC variables that can be used in a BMX NOR 0200 H module application.

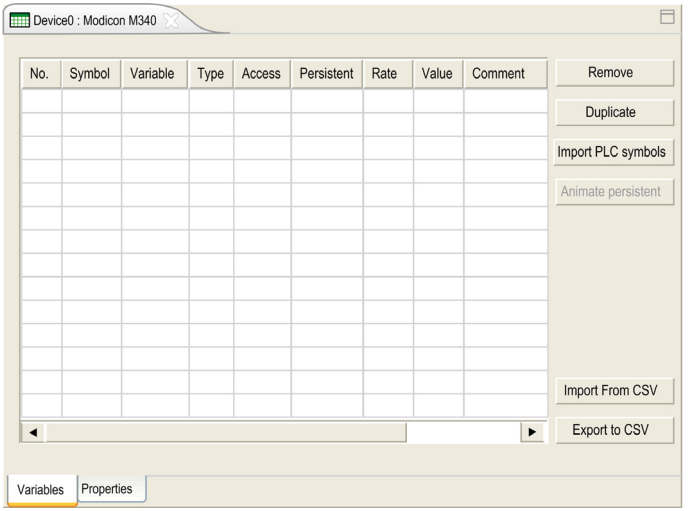
All PLC device variables used in a project are located in a file called **Namespace**. The Data Editor, Data logging and EMail report notification services in a project uses the variables in **Namespace**.

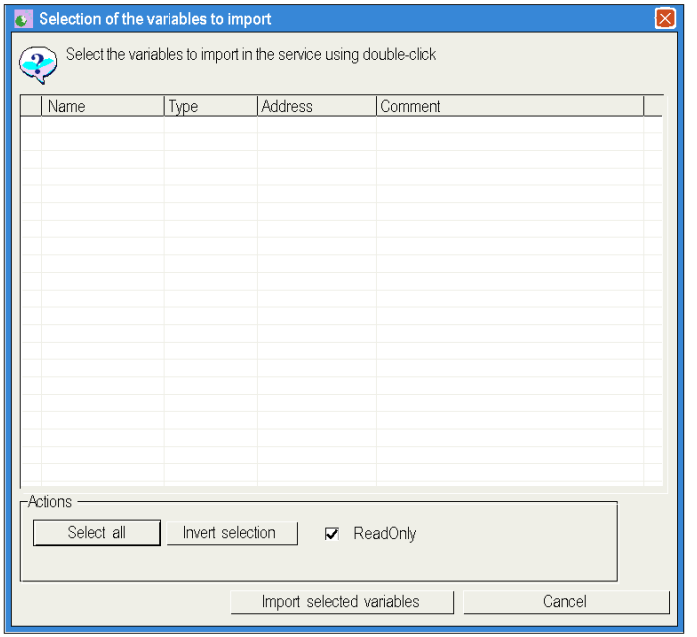
Types of Symbols

For Modicon M340 RTU PLCs, symbols that can be used come from the PLC application files (*.stu*, *.xvm*, *.prj* or *.fef* files).

Selecting PLC Symbols

The following procedure shows how to select PLC symbols:

Step	Action
1	In the browser, extend the menu tree.
2	In the *Devices* directory, double-click on a PLC type device (Modicon M340 in our example). **Result**: The device dialog opens. 
3	Click on **Import PLC symbols**. **Result**: The Open dialog appears
4	Select the (*.stu* or *.xvm*) file that has the application symbols.

Step	Action
5	Click on **Open**. **Result**: The Select Variables to Import dialog appears. 
6	Select the required symbols by double click on it in the 1st column.
7	Click on **Import selected variables**.
8	Save the project by using the menu **Project** → **Save all**.

Namespace

By clicking on the Namespace file of the project in the browser, a table that groups all symbols previously selected for targets or devices appears.

Data Editor

Introduction

The Data Editor enables you to create animated Data tables that display the values of application variables in a table format. In certain cases, these values can be modified by the user.

Allowing write access can change system behavior.

Variables that can be written are accessible only by trained personnel (through a password).

⚠ WARNING

UNINTENDED OPERATION

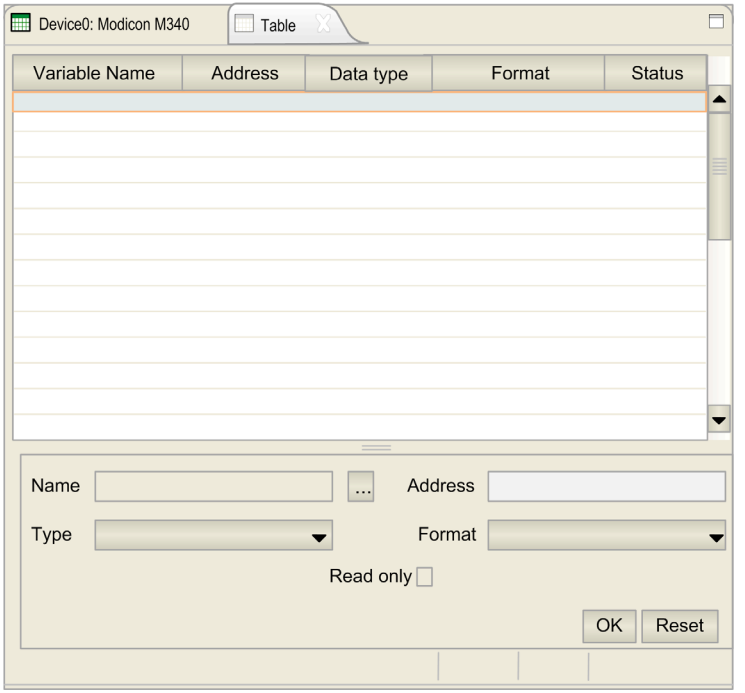
Apply password protection to limit access to the Data Editor.

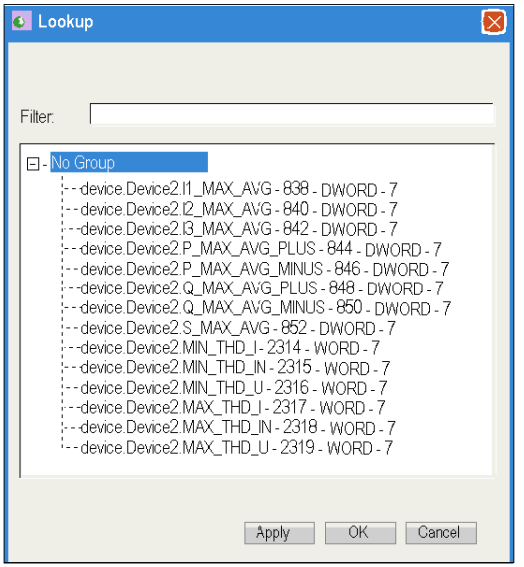
Failure to follow these instructions can result in death, serious injury, or equipment damage.

Selecting Editor Symbols

The following procedure shows how to select the editor symbols:

Step	Action
1	In the browser, extend the menu tree.
2	Right-click on the *DataTables* directory to open the contextual menu and choose **New Table**.
3	In the Table Name field, enter a name for the data table.
4	Click on **OK**. **Result**: An empty data table appears.

Step	Action
5	To access the configuration tab either: ● Double-click on a line of the Table dialog, ● Right-click on the Table dialog to open the contextual menu and choose **New**. **Result**: The configuration tab appears. 

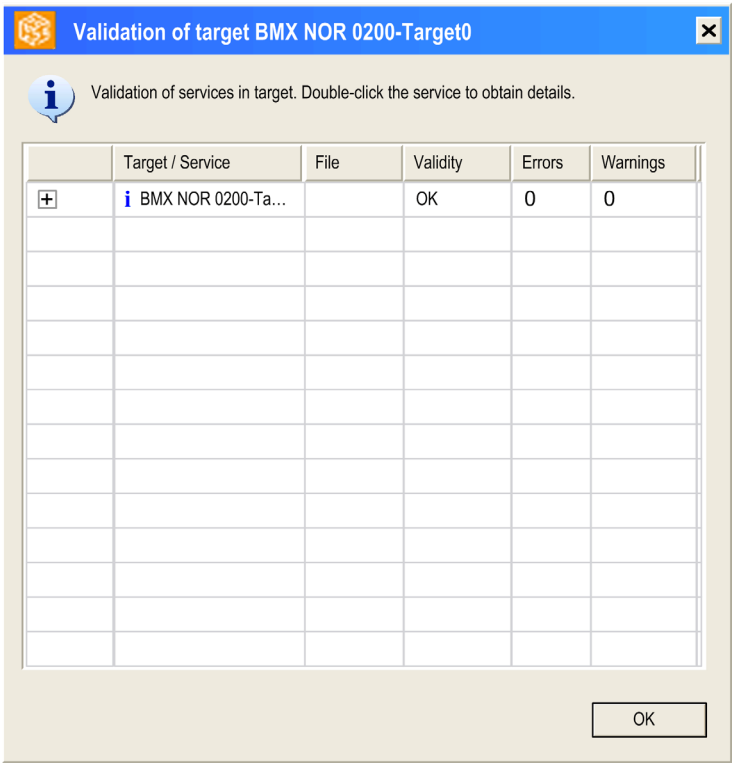
Step	Action
6	Click on  , to obtain a list of available symbols. **Result**: The search list box for symbols appears.  **Note**: The list corresponds to the variables coming from the devices connected to the target.
7	Select the symbols to monitor.
8	Click on **OK**.
9	Save your table by clicking on: 

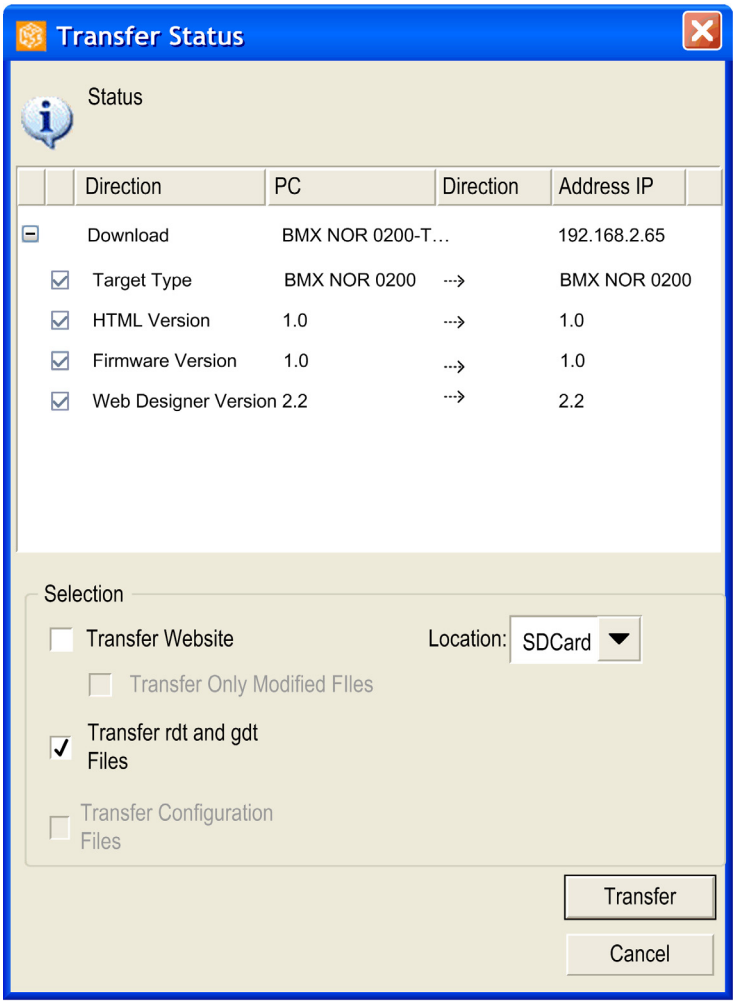
Transfer

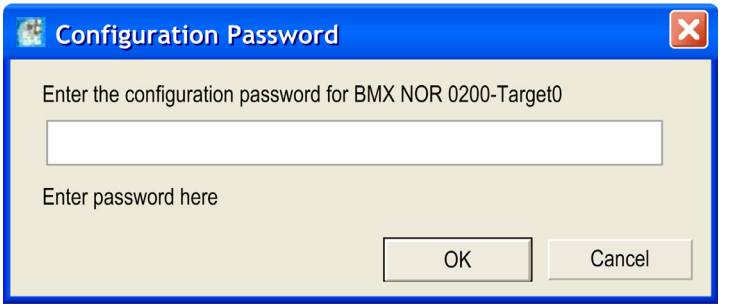
Introduction

Once you have completed BMX NOR 0200 H application configuration, you can transfer it to the BMX NOR 0200 H target.

Transfer the Website to a Target

Step	Action
1	Select BMX NOR 0200 H in the menu tree.
2	Click on **Target** → **Transfer** → **PC ->Target**. **Result**: The Target Validation dialog appears.  If errors are detected in your project, the transfer cannot be performed. Refer to Project Validation *(see page 49)* for more information.

Step	Action
3	Click on **OK**. **Result**: The Transfer Status dialog appears.  **Note**: if there are differences between the firmware version of the project and the target, the transfer cannot be performed.

Step	Action
4	Click on **Transfer**. **Result**: If a configuration password has been set, the Configuration Password dialog appears. Otherwise, go to step 6. 
5	Enter the configuration password and click on **OK**. **Result**: The Progress Information dialog appears. The files are displayed one at a time in the Status Bar.
6	The Transfer Progress Information dialog opens. The files are displayed one by one in the Status Bar.

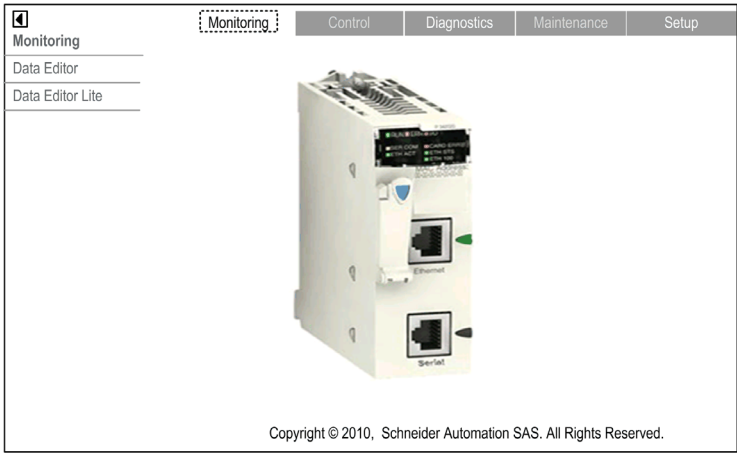
Accessing the Website

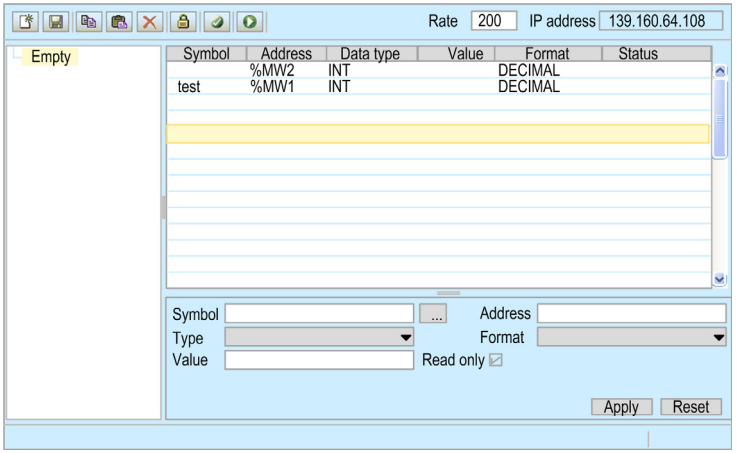
Introduction

At this time, you have:
- created a project,
- selected the devices and the variables of your choice,
- created data table to monitor the installation,
- transferred your application from the PC to the target.

The last step consists of connecting to the website.

Accessing the Website

Step	Action
1	Open a Web browser.
2	Type the IP address of the BMX NOR 0200 H module, a.b.c.d *(see page 44)*, in the address bar.
3	Click on **Go**. **Result**: The module website appears.
4	Click on **Monitoring** on the horizontal menu bar of the website. **Result**: The monitoring home page appears. 

Step	Action
5	Click on **Data Editor** on the vertical menu bar of the website to see the animation tables created with the Data Editor. The following figure shows the Data Table:  Select a table on the left side of the Data Editor applet and click on  to launch the animation.

Project Management

3

Scope of this Chapter

This chapter explains how to manage a project. It concerns:

- Modifying a project,
- Opening and closing a project,
- Importing a project from a file.

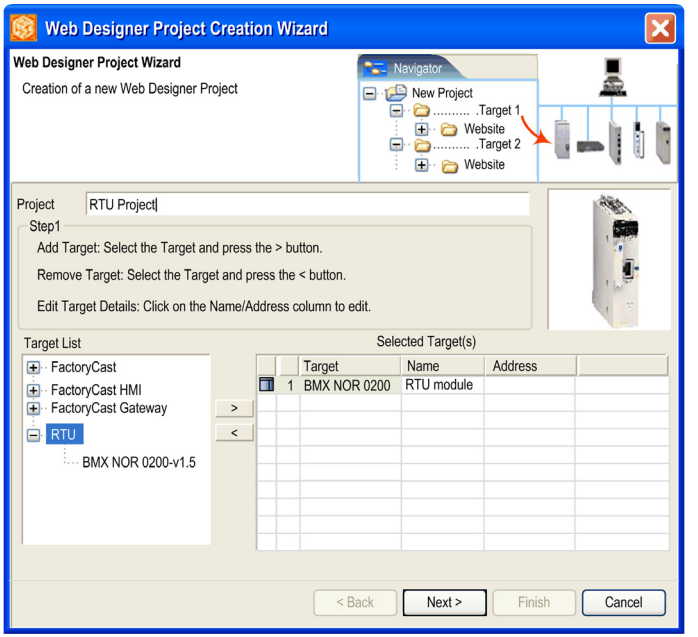
What's in this Chapter?

This chapter contains the following topics:

Adding/Removing Targets

Adding a New Target

The following procedure shows how to add a target:

Step	Action
1	Select a project.
2	Click on **Project** → **New** → **Target**. **Result**: The Web Designer Project Creation Wizard opens, initialized with targets that already exist in the project. 
3	In the **Target List**, select the targets to add.
4	Click on [>]. **Result**: The new target appears in the Selected Target(s) list.
5	Type a name and an address for that target.
6	Click on **Next**. **Result**: The device selection wizard appears.

Dialog Fields

The following table gives a description of the elements of the Web Designer Project Creation Wizard dialog:

Field	Function
Project	Project name
Target List	List of available targets
Target	Target types selected in the Module List
Name	Target Name, to distinguish targets of the same type
Address	IP address of the target

The button **>** enables you to add one of the targets in the list.

The button **<** enables you to remove a target in the list.

Removing a Target

To remove a target from the project, right-click on the target in the navigator to open the contextual menu and select **Delete**.

NOTE: If you delete a target of the project, the files associated with that target (including devices) are also deleted.

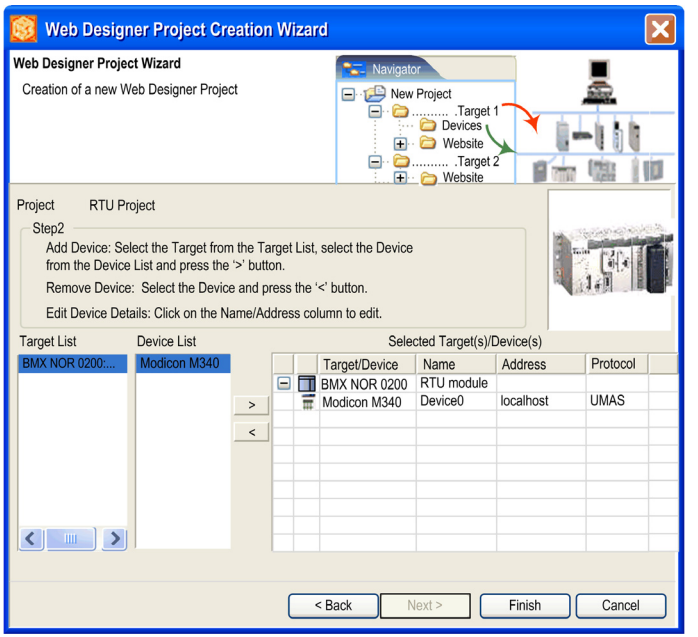
Number of Targets

A project can contain up to 16 targets. If you select the same type of target several times, attribute a different name and IP address for each target.

Adding/Removing a Device

Adding a Device

The following procedure shows how to add a device:

Step	Action
1	Select the *Devices* directory of your project.
2	Click on **Project** → **New** → **Device** or Right-click on the *Devices* directory and then click on **New Device**. **Result**: Web Designer Project Creation Wizard window appears, initialized with devices that already exist in the project. 
3	Select the devices to add in the Device List field and validate with the button **>**.
4	Type a name and an address for that device.
5	Click on **End** to validate the project targets and devices.

NOTE: If you have more than one target in your project, select another target in the Target List to attach it before performing step 3.

Window Fields

The following table shows the fields in the Web Designer Project Creation Wizard for the Device window.

Field	Function
Target List	List of targets created in the previous panel
Device List	List of available devices
Selected Target(s)/Device(s)	Device selected (from the Device List)
Name	Name given to the device to distinguish it from other devices of the same type
Address	Address of the target
Protocol	Protocol supported by the device (the Protocol List is determined by the type of device)

Removing a Device

To remove a device from the project, right-click on the device in the navigator to open the contextual menu and select **Delete**.

NOTE: When you delete a device, all variables in the Namespace of the device are also deleted.

Device Selection

You can only select 1 device.

Module Device

For a target in a rack, the default address is **localhost**.

Protocol

You can associate one or several protocols with each device. When a device supports several protocols, the protocol column is active and the user can choose one from the list. The address in the previous column depends on the protocol selected.

Adding/Removing Items

Presentation

This topics shows how to add elements of the following type to the project:

- Data Tables
- Services
- Folders
- Files.

Adding a Data Table

The following procedure shows how to add a Data table:

Step	Action
1	Select the project.
2	Select the sub-directory *DataTables* in the target directory.
3	Click on **Project** → **New** → **Data** or Right-click on the *DataTables* directory and click on **New Table**. **Result**: The Data Editor opens with a blank table.

Adding a Service

The following procedure shows how to add a service:

Step	
1	Select the target.
2	Click on **Project** → **New** → **Service** or Right-click on the *Service* directory and click on **New Service**. **Result**: A dialog opens with a list of services that can be created.
3	Select the desired service from the list.
4	Click on **OK**. **Result**: The Service dialog opens.

Adding a Folder

The following procedure shows how to add a folder:

Step	Action
1	Select one of the Website folders or the Website itself.
2	Click on **Project** → **New** → **Folder** or Right-click on the *Website* directory and click on **New** → **Folder**. **Result**: The Create a Folder dialog opens.

NOTE: You cannot create new folders outside of the *Website* menu tree.

Adding a File

The following procedure shows how to add a file:

Step	Action
1	Select one of the *Website* folders or the Website itself.
2	Click on **Project** → **New** → **File** or Right-click on the *Website* directory and click on **New** → **File**. **Result**: The Create a File dialog opens.

NOTE: You cannot create new files outside the *Website* menu tree.

Removing Items

To remove an item from the project, right-click on the item in the navigator to open the contextual menu and select **Delete**.

Opening/Closing a Project

Presentation

This section shows how to:

- open/close a project,
- save a project,
- close Web Designer.

Opening an Existing Project

The following table shows how to open an existing project:

Step	Action
1	Click **Project** → **Open Project**. **Result**: the Open Project window opens. This window displays the list of projects in the workspace.
2	Select a project.
3	Click **End**. **Result**: the project appears in the menu tree.

Closing a Project

The following table shows how to close an existing project:

Step	Action
1	Select the project.
2	Click **Project** → **Close Project**. **Result**: the project disappears from the menu tree.

Saving Multiple Modifications

To save multiple modifications, select **Save All** in the project menu or click the **Save All** icon in the tool bar. This operation saves the modifications made in open windows. These modifications relate to any open projects.

Closing Web Designer

When you close Web Designer, it memorizes the open or close state of projects. Projects that are open when you close Web Designer will automatically reopen the next time you launch the software.

Import

List of sources

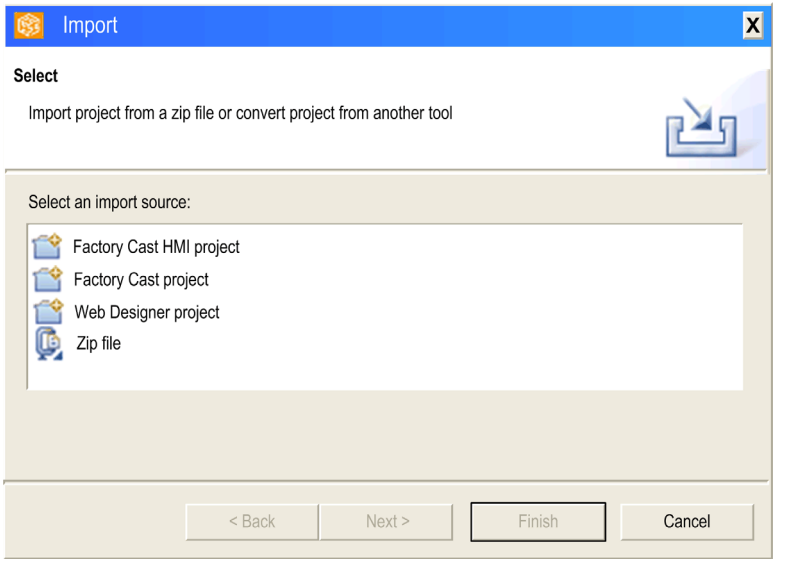
Web Designer can import a project from the following sources to recuperate previous developments:

- a *.zip* file exported by Web Designer,
- a Web Designer project outside the Workspace.

Import

To import a project, click on **Project** → **Import**.

Import dialog:



After the import, the project appears in the menu tree.

Export

To export a project as a *.zip* file, click on **Project** → **Export**. This function is useful for saving a complete project before modifying it. The project stays open after being exported.

Transfer

4

Subject of this Chapter

This chapter describes how to transfer a website. You can transfer it from the configuration PC to the module or vice-versa. The transfer concerns the WEB pages generated by Web Designer and those created by the user. The transfer can be more general and, it can include files describing services.

What's in this Chapter?

This chapter contains the following topics:

Transfer

Introduction

The transfer functions enable you to transfer the Data Editor tables, the services, the website and its associated files, either from the configuration PC to the target, or from the target to the configuration PC. Specify the target address. Web Designer carries out a validation of the structure of the project before transferring the files.

Setting Up the IP Address

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

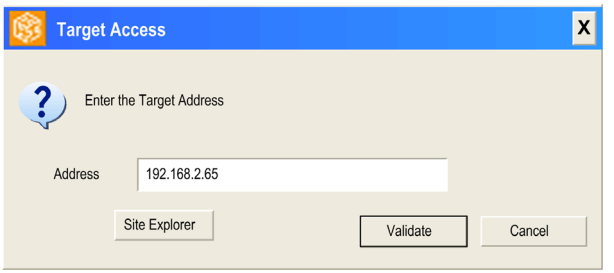
⚠ WARNING

UNINTENDED NETWORK OPERATION

- Assign each device a unique IP address.
- Always obtain your IP addresses from your system administrator.

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

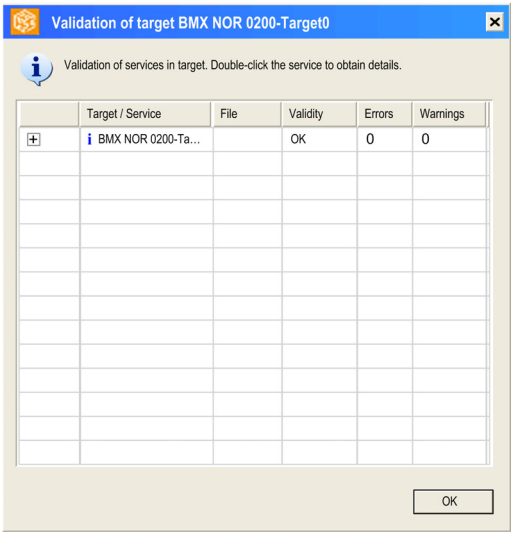
Set the IP address of the module to perform a transfer. The following procedure shows how to enter the physical IP address of the module:

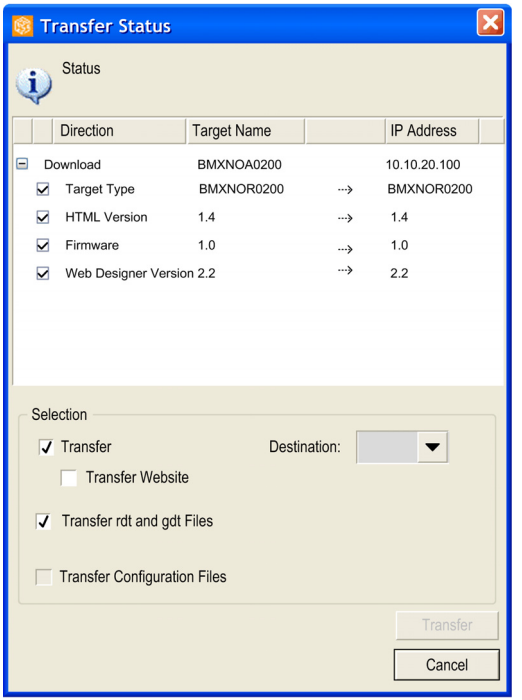
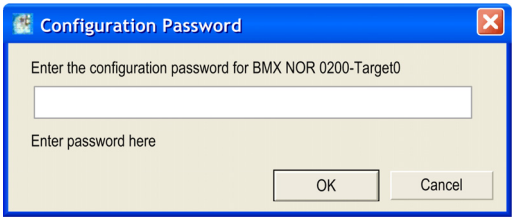
Step	Action
1	Select the target in the browser.
2	Click on **Target** → **Set Target Address**. The following dialog appears: 
3	Enter an IP Address.
4	Click on **Validate**.

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

Transferring from the PC to the Target

The following procedure shows how to transfer data to the module:

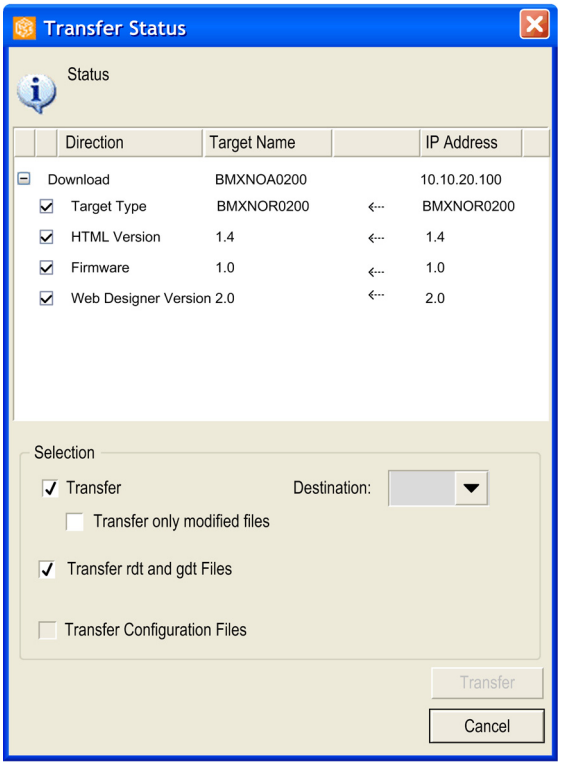
Step	Action
1	In the browser, select the target.
2	Click on **Target** → **Transfer** → **PC ->Target**. **Result**: The Target Validation dialog appears.  If there are detected errors in your project, the transfer cannot be performed. Refer to the Project Validation part *(see page 49)* for more information.

Step	Action
3	Click on **OK**. The Transfer Status dialog appears:  **Note**: If there are differences between the version of firmware for the project and the target, the transfer cannot be performed.
4	Select the files to transfer.
5	Click on **Transfer**. **Result**: If a configuration password has been set, the Configuration Password dialog appears. Otherwise, go to Step 7. 

Step	Action
6	Enter the configuration password and click on **OK**. **Result**: the Progress Information dialog appears. The files are displayed one at a time in the Status Bar.
7	The Transfer Progress Information dialog opens. The files are displayed one by one in the Status Bar.

Transferring from the Target to the PC

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

Step	Action
1	In the browser, select the target.
2	Click on **Target** → **Transfer** → **Target ->PC**. The Transfer Status dialog appears: 
3	Select the files to transfer.

Step	Action
4	Click on **Transfer**. **Result**: If a configuration password has been set, the Configuration Password dialog appears. Otherwise, go to Step 6. 
5	Enter the configuration password and click on **OK**. **Result**: the Progress Information dialog appears. The files are displayed one at a time in the Status Bar.
6	The Transfer Progress Information dialog opens. The files are displayed one by one in the Status Bar.

Total Transfer of the Project

This function transfers the entire project to all the targets associated with it. The transfer is done target by target. The global transfer only works in one way, 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, you have to manually transfer the files target by target.

To activate the transfer, click on **Project** → **Global transfer**. The procedure is exactly the same as a transfer from the PC to a target *(see page 45)*.

Partial Transfer

If you just modified a small part of a project, to save time, you can do a partial transfer. In the website, rdt (data tables) and Service directories, the contextual menu authorizes a partial transfer limited to files located in these directories.

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 copies these files to the target.

Site Explorer

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

Project Validation

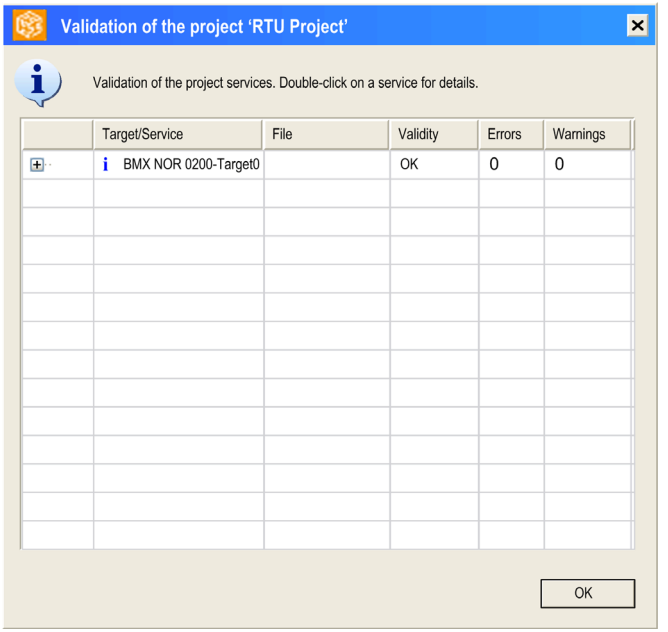
Introduction

Web Designer carries out a validation on the structure of the project before transferring files to the target. If the verification detects anomalies, the transfer is cancelled. Web Designer also performs a comparison between the PC configuration and the target configuration.

Validating a Project

When you start a transfer, Web Designer performs a project validation. You can also validate a project at any time by selecting **Project Validation** in the Project menu.

The Project Validation dialog looks like this:



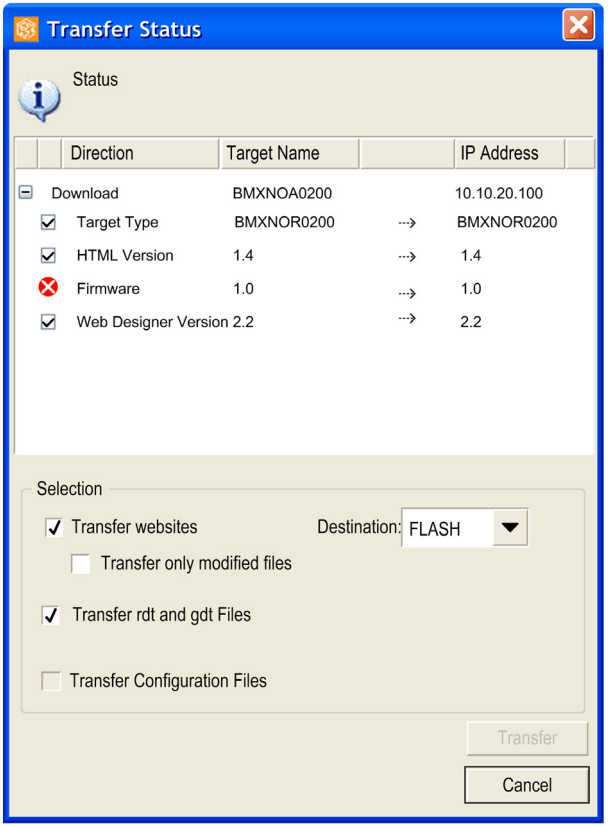
The validation process monitors the following points:

- The available space on the target is bigger than the size of the website.
- The use of a user page or a service with variables not in the Namespace (file *Namespace.dat*).
- The number of variables is less that the maximum number authorized for the target (1000).
- The detected errors related to services.

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

Transfer Status

The following figure shows the Transfer Status dialog:



Legend:

? 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 Select area to specify the files you want to transfer:

Parameter	Action
Transfer Website	Select this box to transfer files located in the *Website* directory.
Transfer only Modified Files	Select this box to transfer only files of the website that have been modified since the last transfer.
Transfer rdt Files	Select this box to transfer data tables (*rdt* directory).

Connecting/Disconnecting to/from the Module

Introduction

The information below explains the procedure for executing an application once the services have been created.

Transferring a project to the module permanently erases the existing project. When a project is transferred, the old project is overwritten.

Anyone who has access to Web Designer can modify the value of PLC variables that have been write enabled and also modify your security settings. Unauthorized or incorrect changes to data change the behavior of your application or your 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

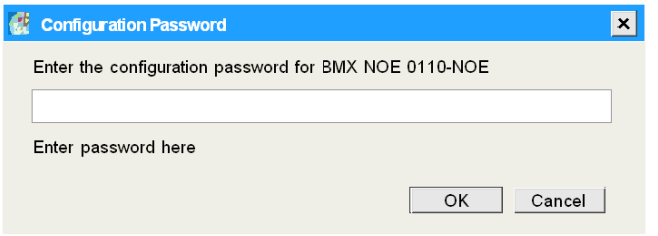
Backup sensitive information before transferring a new application.

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

NOTE: if an application is in RUN mode, the new project will be taken into account after a module reboot.

Connecting to the Module and Recovering a Project from the Module

The following table shows the procedure for connecting to the module with a view to recovering its application:

Step	Procedure
1	Select the target in the browser.
2	Click **Target** → **Connect** → **Target**. Web Designer analyses the changes between your project and the module content. If you have modified the project, the software will ask you to transfer the project. Otherwise the application moves automatically to online mode. **Result**: the Configuration Password window appears if a configuration password has already been set. Otherwise Web Designer connects to the module. 
3	Enter the configuration password and click **OK**. **Result**: Web Designer connects to the module.

Disconnecting from the Module

The following table shows the procedure for disconnecting from the module:

Step	Function	Procedure
1	Disconnecting from the module	Click **Target** → **Disconnect**. **Result**: Web Designer has just switched back to offline mode.

Managing Variables

5

Subject of this Chapter

This chapter explains how Web Designer handles variables.

This chapter also presents the *Namespace* file, which contains these variables. The data publishers and services use these variables.

What's in this Chapter?

This chapter contains the following topics:

Namespace

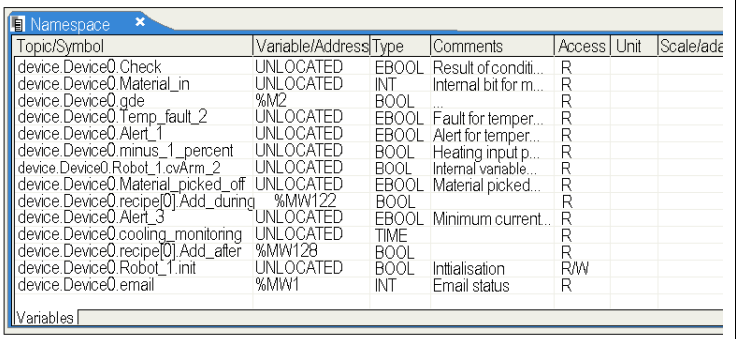
Introduction

Namespace contains all variables (symbols) previously selected for targets or devices. Data Editors and services get symbols from *Namespace*.

Variables come from either connected devices or from PLC applications. If there is more than one instance of a device type connected to the same target, use the following naming convention to have a unique name for each instance: *device.name, variable name*.

If the device is a PLC, name the variables declared in the PLC like this: *PLC device.name, PLC variable name.*

Accessing the Namespace

Step	Action
1	Select the project.
2	Extend the target directory.
3	Double-click on the Namespace icon. **Result**: The Namespace dialog appears. 

Importing from a Programmable PLC

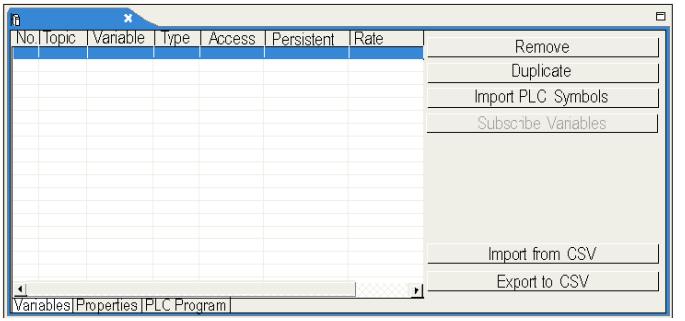
Introduction

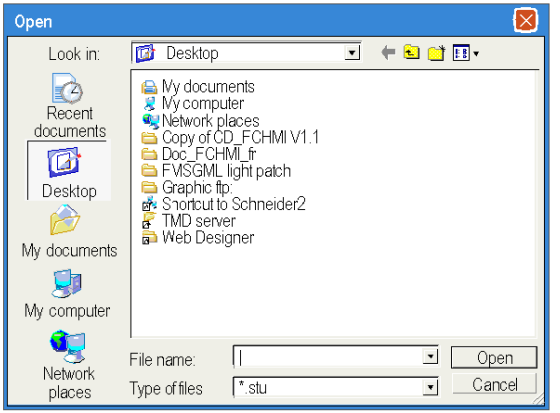
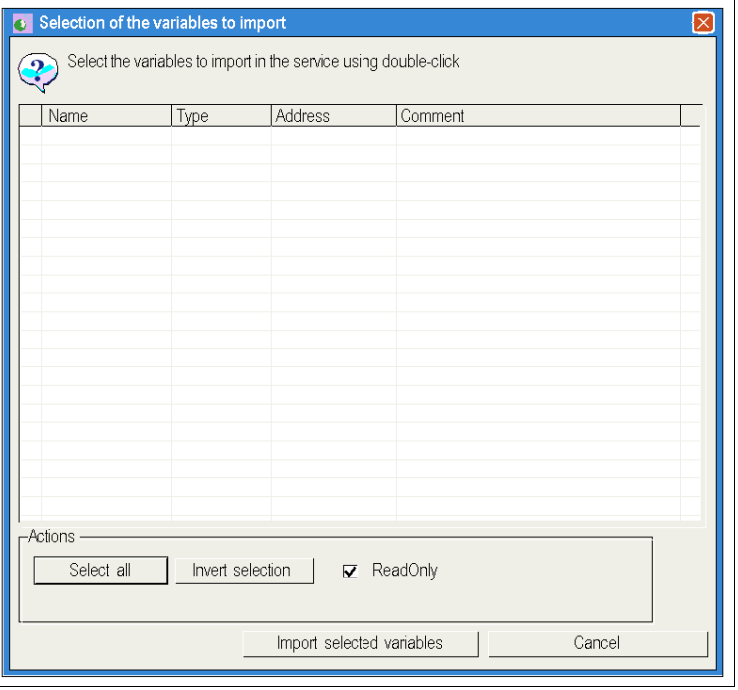
It's possible to access a Unity Pro database with the function Import Symbols.

NOTE: Depending on the devices that you connect to the target, the type of variables you can access through the target might be different. Refer to the Modicon M340 RTU User Manual *(see Modicon M340 RTU, BMX NOR 0200 H Module, User Manual)* for more information on supported variables.

Accessing the Software Database

The following procedure shows how to access the software database:

Step	Action
1	Double-click on the desired device in the *Devices* directory. **Result**: The following dialog appears.  Tab: **Topic:** Name of the variable **Variable:** Address of the variable **Type:** Type of variable **Access:** Access right to the variable **Persistent:** Access mode to the variable. It cannot be changed **Rate:** Frequency at which the variable value will be refreshed Button: **Remove:** Deletes the variable. **Duplicate:** Duplicates the variable. **Import PLC Symbols:** Opens a selection dialog of variables. **Import from CSV:** Imports all the variables from a CSV file. **Export to CSV:** Exports the variables to a CSV file.

Step	Action
2	Click on **Import PLC symbols**. **Result**: A file explorer dialog opens. 
3	Select the file (*.stu*, *.xvm*, *.fef* or *.prj*) to import.
4	Click on **Open**. **Result**: A dialog displaying symbols opens. 

Step	Action
5	Select desired symbols.
6	Select the variables you want to import by double clicking on the variables in the list.
7	Click on **Import selected variables**. **Result**: the variables appear in the Device window.

Accessing the Unity Pro Database

To access a Unity Pro database, install the Unity Pro software on your computer. Unity Pro database files have *.stu* extension. The Unity Pro export file (extension *.xvm*) can be used without installing Unity Pro.

Synchronization with the PLC Program

If you modify the Unity Pro database from which you created your Namespace, the Web Designer Configuration Program automatically alerts you about the differences between the database and your Namespace when you open a configuration associated with the PLC database file.

Synchronization

The following procedure shows how to synchronize a Namespace with a PLC database:

Step	Action
1	Click on **Target** → **Synchronize with PLC database**. **Result**: Inconsistencies are shown in a dialog.
2	Click on **OK** to start default resynchronization operations.
3	Transfer the project to the module.

Manual Edit

Presentation

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 easier the manual creation of 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 / Desactivating Automatic Input:

Options → **Automatic Input**

Author Rights in Namespace

Presentation

This table enables you to specify which variables can be accessed in the read/write mode.

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

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

⚠ WARNING

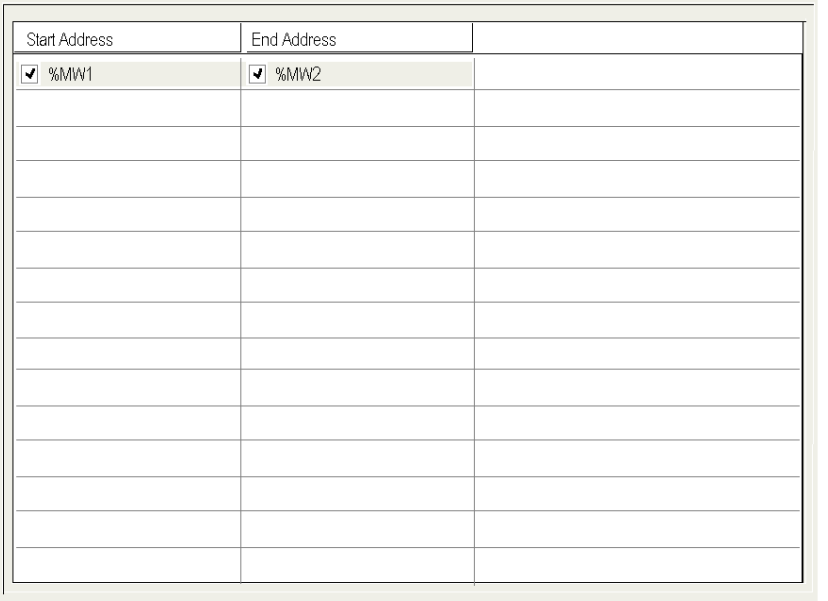
UNAUTHORIZED CHANGES TO VARIABLES OR DIRECT ADDRESSES.

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 the following procedure to manage author rights:

Step	Action
1	In the navigator either: ● double-click on the **NameSpace Write Access** file ● right-click on the **NameSpace Write Access** file and select **Open** **Result**: The dialog manager for the Namespace author rights appears. 
2	Define the intervals at which variables can be written. Outside these intervals, variables with direct access are read-only.

Embedded Advanced Services

6

Scope of this Chapter

This chapter describes the embedded advanced services.

What's in this Chapter?

This chapter contains the following topics:

Device and HMI Services

Presentation

The BMX NOR 0200 H module can perform internal standalone processing such as the following services: Advanced services are executed inside the module independently of any other processing done at CPU or SCADA level.

The following services are available for the BMX NOR 0200 H module:

- **Device Services:** for configuring devices data acquisition (device variables polling).
- **Datalogging:** automatic archiving of application information such as measures, events, alarms, device status, etc., to CSV log files in the BMX NOR 0200 H module memory (SD card).
- **Email:** for alarm or report notification via Email or SMS.

Services Limitations

⚠ WARNING

UNINTENDED EQUIPMENT OPERATION

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

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

Variables:

- a maximum of 1000 variables per application.
- a maximum of 100 internal variables per application.

Datalogging Service

Introduction

The datalogging service allows application data archiving (events, alarms, process data, devices status, measures, etc.) in the internal memory of the M340 BMX NOR 0200 H module. This service allows you to log data into CSV files in the ASCII format. CSV files are stored locally in the SD memory card of the M340 BMX NOR 0200 H module.

Datalogging can be performed either periodically or when a specific event (configured by the user) occurs. CSV files are directly usable by an MS Excel spreadsheet or a database management system (DBMS). The CSV files can also be sent through FTP or attached to an email (using the email service) that is automatically sent to specified users. CSV files can also be accessed by an FTP client.

Any FTP client can access the RTU module's file system. You can specify a URL to automatically send information to a remote FTP server.

For more information on the Datalogging service principle, refer to the M340 RTU BMX NOR 0200 H module User Manual *(see Modicon M340 RTU, BMX NOR 0200 H Module, User Manual)*.

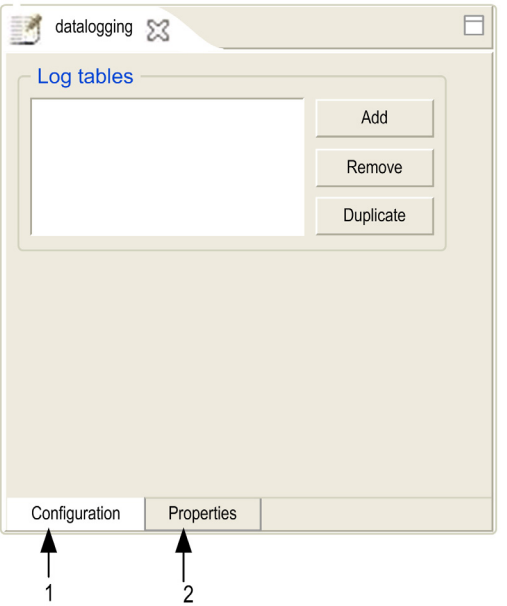
Accessing the Datalogging Configuration and Properties Dialog

To access the datalogging configuration dialog, double click on Datalogging in the project navigation window.

The configuration properties dialog contains:

- A **Configuration** tab
- A **Properties** tab

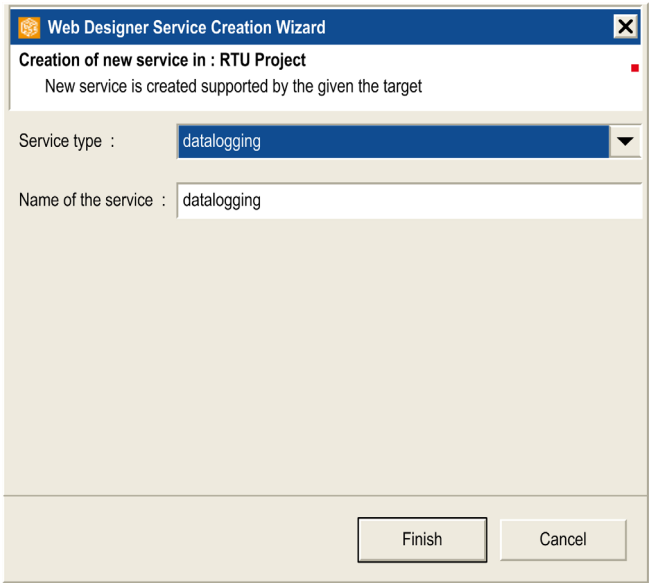
The **configuration** properties dialog for the Datalogging service is shown below:



1 Use this tab to customize the Datalogging service.
2 Use this tab to configure the general properties of the Datalogging service.

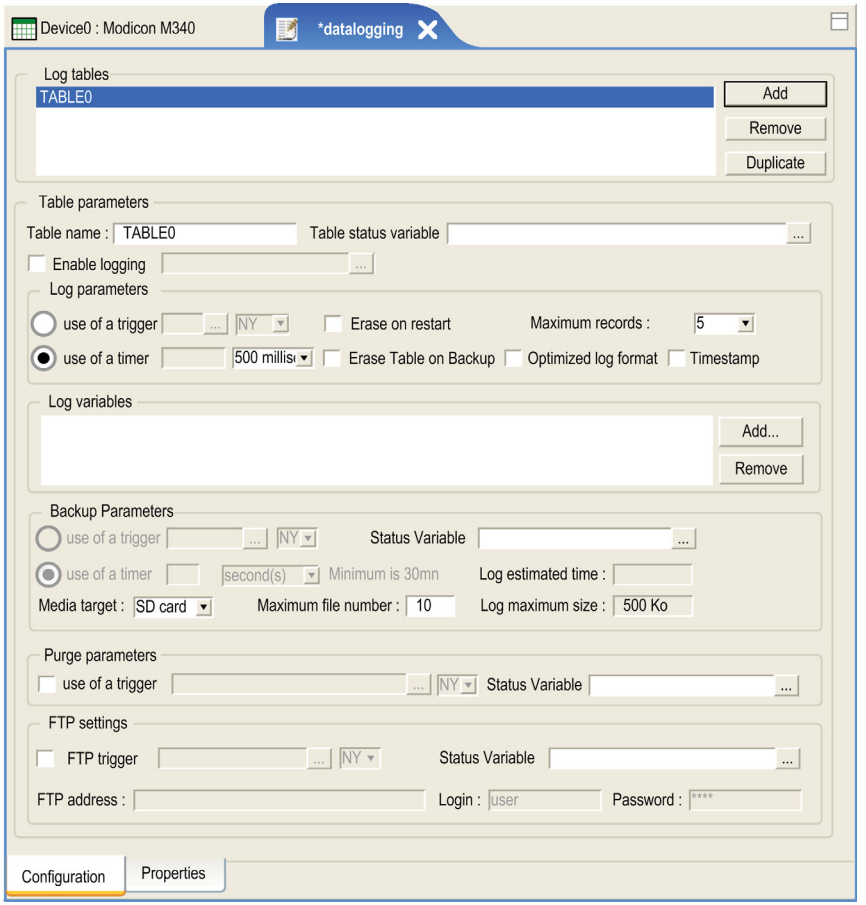
How to Create a Datalogging Service

Step	Action
1	Click on the name of your project in the browser.

Step	Action
2	To add the new service you can either: ● Click on **Project** → **New** → **Service** ● Right-click on **Services** in the browser, then click on **New Service** **Result**: The following dialog appears. 
3	Select **datalogging** in the **Service type** list box.
4	Enter the service name or click on **Finish** to keep the name by default. **Result:** The datalogging service is created.

NOTE: You can create only one datalogging service.

View of the Datalogging Configuration Dialog



Datalogging Configuration Dialog Parameters

Log Tables Parameters:

Elements	Function
Log Tables list box	List of the current log tables stored in the module. It is possible to: ● create a new log file using the **Add** button ● remove a log file using the **Remove** button ● duplicate a log file using the **Duplicate** button

Tables Parameters:

Fields	Function
Table name text box	Name of the log file that contains all data configured by the user.
Table status variable text box	Determines the status of the table.
Enable logging check box	By selecting this check box and defining an associated variable in the **Enable logging** variable, the table can only perform actions such as: log data, backup, purge or FTP when the associated variable is set to a value other than zero and when the trigger is activated. **NOTE:** Select the type of trigger in the drop down menu.

Log Parameters:

Elements	Function
Use of a trigger text box	If the event is associated with a variable, to trigger logging of variables, configure an event in the **Use of a trigger** variable. Provide the name of this variable (for example, calculation.calculation1.Pressure1) in the text box. **NOTE:** Select the type of trigger in the drop down menu.
Use of a timer text box	If the event is periodic, to trigger logging of variables, configure an event in the **Use of a timer** variable. Set a time base in the text box. **NOTE:** Select the timer units in the drop down menu.
Erase on restart check box	Selecting this deletes the table log files on restart of the module.
Erase Table on Backup check box	Selecting this removes the previous logs in the table after backup, so the table restarts empty.
Timestamp check box	Selecting this records in the log file Timestamp (hour and date) for each event. **Note:** Timestamps are mandatory if you want to use the log file for a Datalogging History.
Optimized log format check box	Selecting this compacts the log file format of the *.csv* file. In this case, the variable name does not appear in each record.
Maximum record number drop-down list	Configures the maximum of records that can be stored in a log file. If that number is reached, new records overwrite old records.

Log Variables Parameters:

Elements	Function
Log variables list box	The **variable name** part lists the variables (PLC/devices or Calculation variables) that are stored in the log file. It is possible to: ● create a new log variable using the **Add** button ● remove a log variable using the **Remove** button

Backup Parameters:

Elements	Function
Use of a trigger text box	If the event is associated with a variable, to trigger logging of variables, configure an event in the **Use of a trigger** variable. Provide the name of this variable (for example, calculation.calculation1.Pressure1) in the text box. The **use of a trigger** field is greyed-out depending whether the **Global backup** check box from the datalogging properties dialogs is checked or not. **NOTE:** Select the type of trigger in the drop down menu.
Use of a timer text box	If the event is periodic, to trigger logging of variables, configure an event in the **Use of a timer** variable. Set a time base in the text box. The **use of a timer** field is greyed-out depending whether the **Global backup** check box from the datalogging properties dialogs is checked or not. **NOTE:** Select the timer units in the drop down menu.
Media target drop-down list	Use to define the media target to use.
Maximum file number text box	Defines the maximum number of CSV files to use for each table. By default it is set to 10. The maximum authorized value is 100. The last file is the .csv file, the previous is the .0 file, and the oldest is the .8 file.
Status variable text box	Determines the status of the Backup action. The status is set to 0 when the service starts, to 1 when the backup action begins, and to 2 when the backup action completes.
Log estimated time text box	Provides information on the time length of the log based on the maximum file number, the logging and backup period. It is only available when using a timer.
Log maximum size text box	Provides the maximum log size. This field can be changed via the backup parameters in the datalogging Properties Dialog.

Purge Parameters:

Elements	Function
Use of trigger text box	Specifies the event that triggers the purge.
Status Variable text box	Determines the status of the Purge action. The status is set to 0 when the service starts, to 1 when the purge action begins, and to 2 when the purge action completes.

FTP Settings:

Elements	Function
FTP trigger check box	Specifies the event that triggers sending the selected table log files (CSV file) via FTP.
FTP address text box	The address of the remote FTP server.
Status Variable text box	Determines the status of the FTP action. The status is set to 0 when the service starts, to 1 when the FTP action begins, and to 2 when the FTP action completes.
Login and Password text boxes	Login parameters for the remote FTP server access.

FTP Access to Datalogging CSV Files

Datalogging CSV files stored in the module memory can be accessed from any FTP client utility using the following path: SDCARD/USERDATA.

File Format

The file format is fixed and cannot be modified by the user. The file is encoded in the ASCII format as a text file with a *.csv* extension. Microsoft Excel is able to open these files.

Example of log file:

2007-10-01;02:44:55;plc.plc1.height;150;plc.plc1.length;200;plc.plc1.width;50;

2007-10-01 03:48:08; plc.plc1.height;140;plc.plc1.length;150;plc.plc1.width;30;

2007-10-01 04:55:10; plc.plc1.height;220;plc.plc1.length;280;plc.plc1.width;80;

2007-10-01 06:01:05; plc.plc1.height;170;plc.plc1.length;220;plc.plc1.width;60;

Example of optimized log file:

Date;plc.plc1.height;plc.plc1.length;plc.plc1.width;

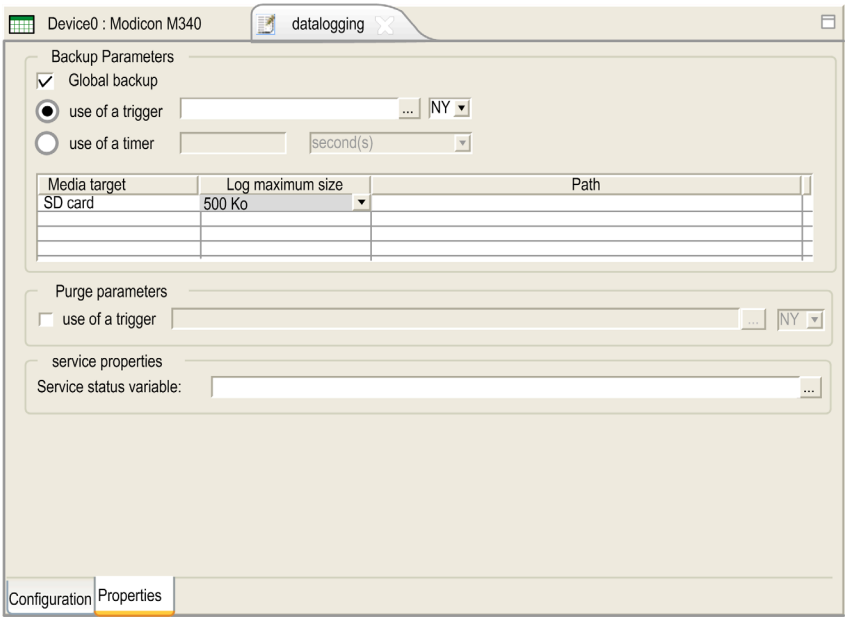
2007-10-01 02:44:55;150;200;50;

2007-10-01 03:48:08;140;150;30;

2007-10-01 04:55:10;220;280;80;

2007-10-01 06:01:05;170;220;60;

View of the Datalogging Properties Dialog



Datalogging Properties Parameters

Backup Parameters:

Elements	Function
Global backup check box	When checked, all created tables use the same event to trigger a backup. When not checked, each created table has its own event to trigger a back up. **NOTE:** When a **Global backup** check box is checked, the fields **use of a trigger** and **use of a timer** become available.

Elements	Function
use of a trigger text box	Provides the name of a variable to trigger variable logging on an event associated to this variable. **NOTE:** Select the type of your trigger in the drop down menu on the left.
use of timer text box	Provides a periodic time base to trigger variable logging on an event.
Media target list box	**SD card** to store the information on the SD card of the module
Log maximum size drop-down list	Specifies the maximum size of memory allocated to the backup files. The maximum log file size is defined for each media via the drop down menu, but the value can be changed. For more information, refer to Datalogging Limitations *(see page 74)*.
Path text box	Provides the destination path for the media selected.

Purge Parameters:

Elements	Function
Use of a trigger text box	If checked, this event triggers a purge of the current backup files on all media currently in use. **NOTE:** Select the type of your trigger in the drop down.

Service Properties Parameters:

Elements	Function
Service status variable text box	Selects the variable with the associated event that is to trigger the check of the status of the Datalogging service.

Trigger Types

The trigger types available are:

Type	Meaning	Function
NY	Notify	Triggered by a change from a bit status or word value.
RE	Rising Edge	Triggered by a bit rising edge or by an increasing word value.
FE	Falling Edge	Triggered by a bit falling edge or by a decreasing word value.
BQ	Bad Quality	Triggered if the trigger status has bad quality.

Datalogging Limitations

The Datalogging service has the following limitations:

- The maximum number of Datalogging services is 1.
- The maximum number of tables is 10.
- The maximum number of variables is 100 per table.
- The maximum number of records per table is 10 000.
- The number of backup copies is 100 by default (10 backup CSV files per table), but it may be changed for each table.

Maximum Log Size Limitation

The limitation is 128 MB for a SD card in the BMX NOR 0200 H

Email and SMS Services

Presentation

The BMX NOR 0200 H module can automatically and dynamically send emails or SMSs to alert specified users to:

- alarm notifications
- maintenance reminders
- production reports
- plant status updates
- other plant information

The email service enables you to create various email notifications (including recipient's names, email addresses, message subject, email body and attached files).

The body of an email can include fixed text messages, hyperlinks, file attachments, and real-time application values that are dynamically integrated into the email at the moment the email is sent by the module. Files can be attached to the email (for example, a datalogging file generated by the datalogging service).

SMS messages may also be sent to mobile phones if you are using a GSM modem or if the client's email server has the capability. SMSs are a dedicated configuration of the email service. Emails or SMSs are sent when predefined application or process event is triggered.

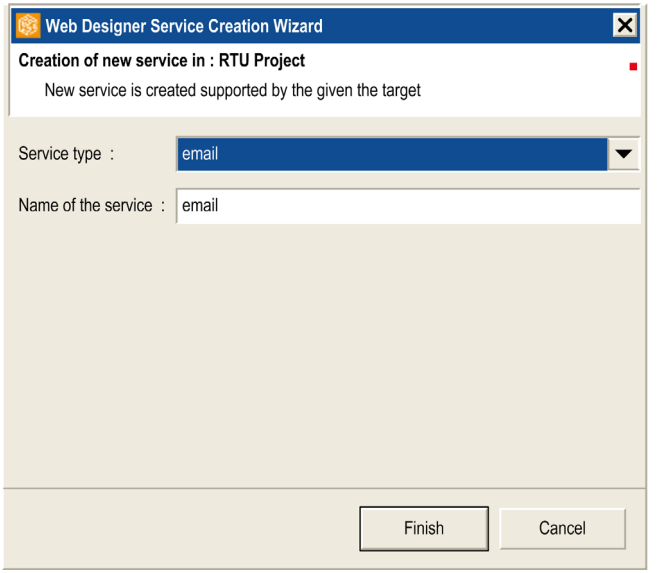
For more information on the Email and SMS service principle, refer to the M340 RTU BMX NOR 0200 H module User Manual *(see Modicon M340 RTU, BMX NOR 0200 H Module, User Manual)*.

NOTE: The module is not designed for:

- integrity of data sent by the module with the email or SMS service
- the exactness of the time at which the message has been sent

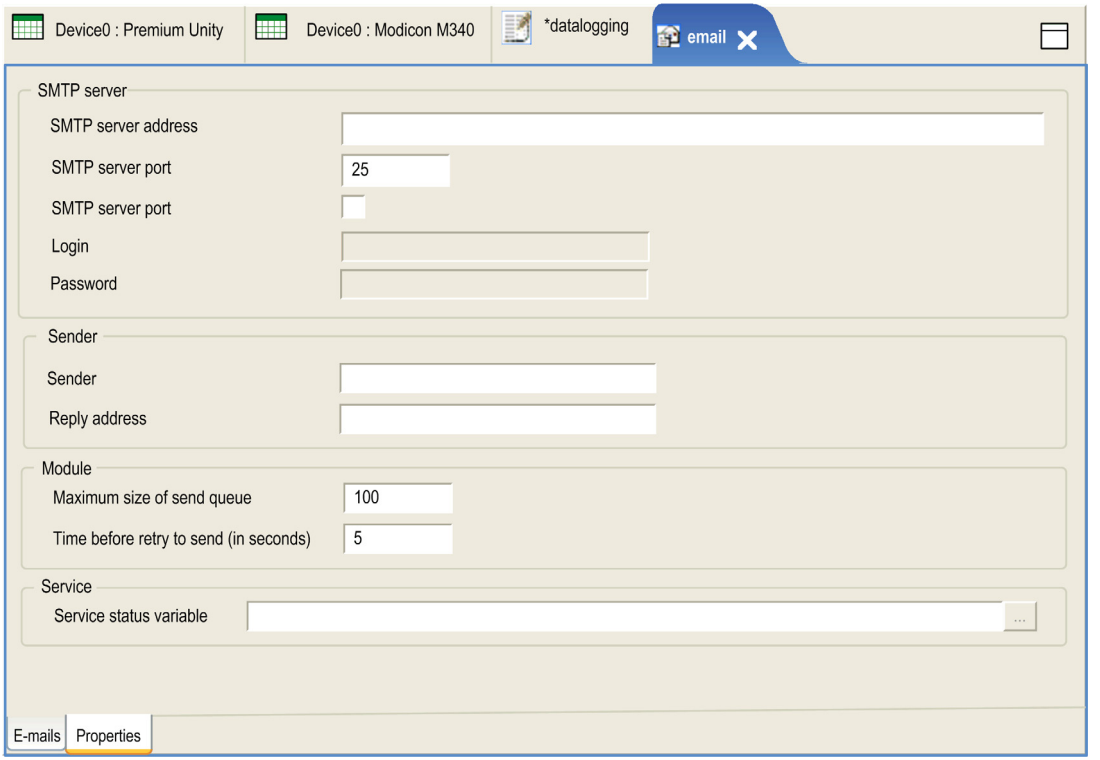
Creating an Email or a SMS Service

The procedure below describes how to create an e-mail or a SMS service:

Step	Action
1	Click on the name of your project in the browser.
2	To add the new service you can either: ● Click on **Project** → **New** → **Service** ● Right-click on **Services** in the browser, then click on **New Service** **Result**: The following dialog appears. 
3	Select **email** in the **Service Type** list box.
4	Enter a service name or click on **Finish** to keep the name by default. The email service has been created.

Configuring the Server

The properties configuration dialog for the email and the SMS service is shown below:



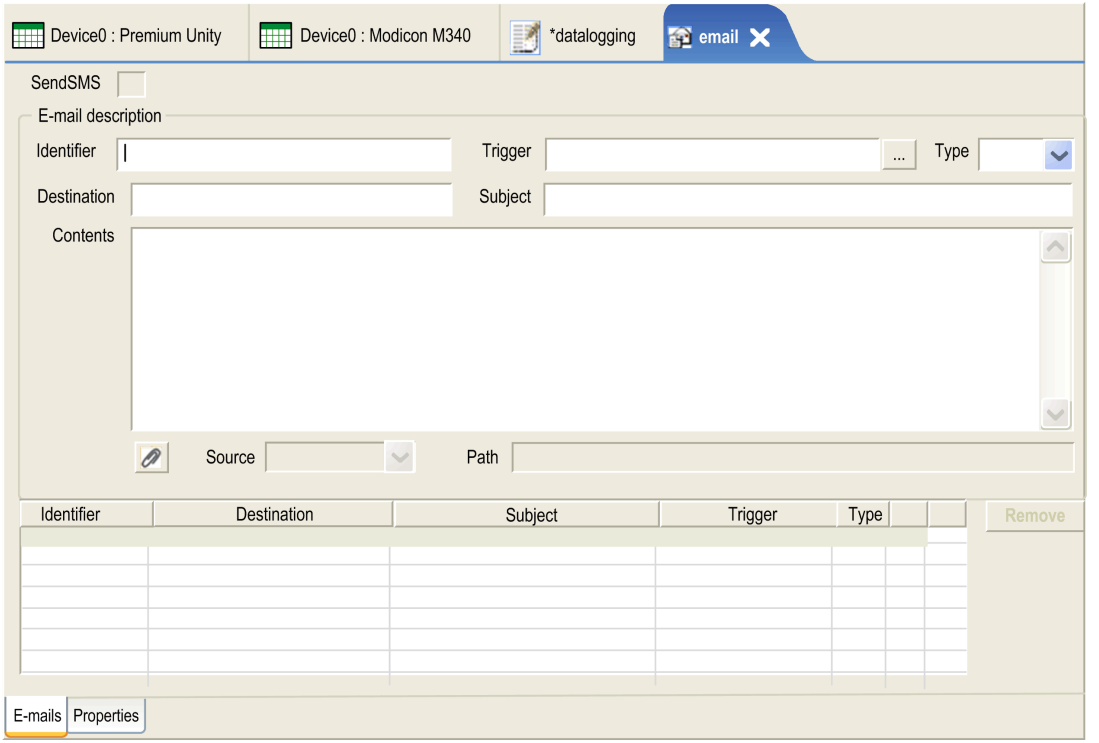
The elements in the properties configuration dialog are:

Elements	Function
SMTP server	
SMTP server address text box	SMTP address of the server.
SMTP server port text box	TCP port used by the SMTP server (generally port 25).
Secure Authentication check box	Select this box if authentication is required to access the SMTP server.
Login text box	Login to access the SMTP server.
Password text box	Password to access the SMTP server.
Sender	
Sender text box	Email address of the sender of the message.

Elements	Function
Reply address text box	Email address to which a reply will be sent if the user clicks on **Reply**.
Module	
Maximum size of the send queue text box	Maximum number of emails that can be stored in the buffer memory before being sent: ● Default value = 100, ● Minimum value = 30, ● Maximum value= 200. **NOTE:** When the maximum number of emails is reached (100), no further messages can be queued.
Time before retry is sent (in seconds) text box	Delay before emails stored in the buffer memory are reset after an unsuccessful transmission: ● Default value = 15 s, ● Minimum value = 5 s, ● Maximum value= 3,600 s.
Service	
Service status variable text box	Used to determine the status of the Email service.

Configuring the Email and the SMS Service

The email and SMS configuration dialog is shown below:



The elements in the email and SMS configuration dialog are:

Elements	Function	
Send SMS check box	Select this box to send a SMS instead of an email.	
Identifier text box	Email address or phone number (SMS) of the sender of the message.	
Trigger text box	Event that triggers the email.	
Type drop-down list box	**NY**: Notify	Triggered by bit status change or word value change.
	RE: Rising Edge	Triggered by a bit rising edge or by an increasing word value.
	FE: Falling Edge	Triggered by a bit falling edge or by a decreasing word value.
	BQ: Bad Quality	Triggered if the trigger status is Bad quality.

Elements	Function
Destination text box	Email addresses or SMS numbers of the recipients (separator ‘,’).
Subject text box	Subject of the notification.
Content list box	Content of the notification.
	Click on this button to attach a file to the email (not available for a SMS).
Source drop-down list box	Select the media from which the attached file comes from (not available for a SMS).
Path text box	Specify the name and the path of the file to be attached to the email. Typical attached files are Datalogging files. Default path is /SDCA/WEB/USERDATA.

NOTE:

- You can include dynamic application data inside the message body:
  - double click on in the body of the message at the place where you want to display the value of a variable and select the variable within the list which is displayed.
  - type the variable name between brackets.
- The following fields are mandatory to record and save an email: **Identifier**, **Trigger** and **Destination**.

Limitations

The number of messages (email or SMS) you can configure in the project is restricted to 100.

The maximum number of email or SMS services is 2.

NOTE: The SMTP server supports PLAIN or LOGIN authentication. Other authentication protocols are not supported.

Monitoring

7

Subject of this Chapter

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

What's in this Chapter?

This chapter contains the following topics:

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.

Variables that can be written are accessible only by trained personnel (through a password).

⚠ WARNING

UNINTENDED SYSTEM OPERATION

Apply password protection to limit access to the Data Editor.

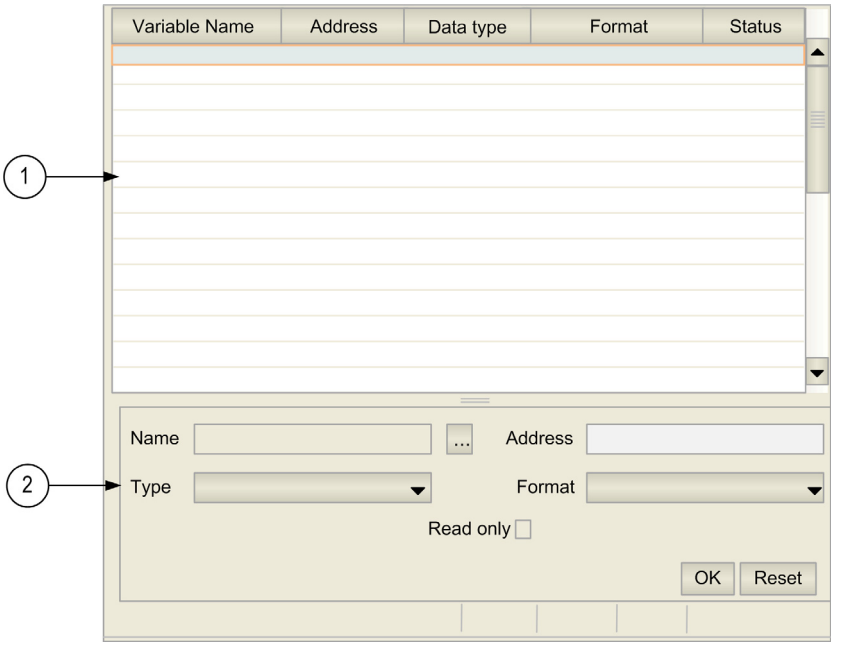
Failure to follow these instructions can result in death, serious injury, or equipment damage.

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

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.

Elements of Data Editor

The following illustration shows you the Data Editor:



Number	Description
1	List of the variables included in this table.
2	The configuration area makes it possible to: ● select and/or modify a symbol ● select and/or modify an address ● select the variable type ● select the variable's display format ● check the read-only option

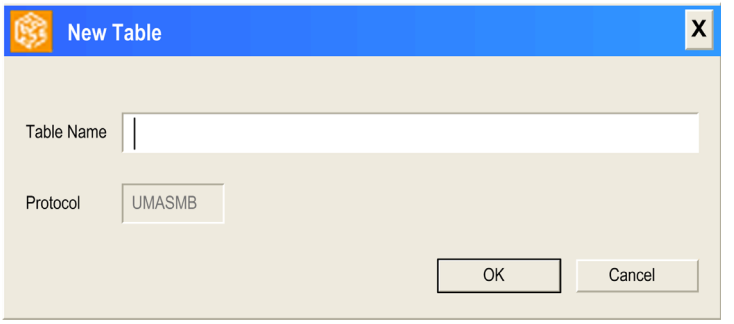
Creating a Data Template

Overview

To display symbols (variables), create a new data template.

Creating a Data Template

Follow the procedure below to create a data template:

Step	Description
1	Right click on the *DataTables* directory in the navigator and select **New Table**. **Result**: The New Table dialog appears. 
2	Enter a name of the new Data template.
3	Click on **OK**.

NOTE: Save the current spreadsheet before selecting a new spreadsheet. Selecting a new spreadsheet deletes the current spreadsheet.

Data Editor Spreadsheet

Overview

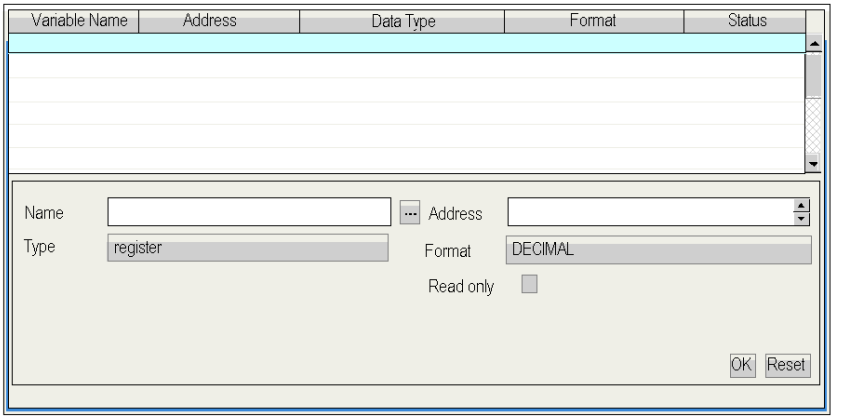
Depending on the target, the Data Editor displays data in a spreadsheet with the following fields:

- name,
- address,
- type,
- read only,
- format,
- status.

This section describes the spreadsheet screen and gives an explanation of each field.

Spreadsheet

The following figure shows the Data Editor spreadsheet:



Field Name

The fields in the Data Editor screen are:

Fields	Function
Name	The Name column contains the names of symbolic variables from the Namespace. The symbolic variables which may be used in the Data Editor are those that have been predefined by the configuration tool. The symbolic variables are grouped in a file called *Namespace*.

Fields	Function
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 needs to be associated with a symbol.
Type	Data type *(see page 86)*: input or output register, input or output bit.
Format	Format *(see page 86)* of the data value.
Read Only	If this box is selected the variable cannot be output directly.

Type Field

The Data Type field 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. Set the direct address data types from a drop-down list.

The following data types are valid:

Abbreviation	Data 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 (in ms)
DATE	Date (32-bit BCD)
TOD	Date/time (32-bit BCD)
BOOL	1 internal bit (boolean)

Format Field

The Format field contains the format type for displaying the value of the symbol variable or direct address. The following formats are accepted:

Abbreviation	Format Type
bool	Boolean
dec	Decimal
hex	Hexadecimal
binary	Binary
ASCII	Bytes displayed as 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. If 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.

Inserting a Symbol (Variable) in a Data Template

Overview

If you want to view or modify the value of a symbol (variable) in the Namespace, you must insert that symbol (variable) in a data template.

⚠ WARNING

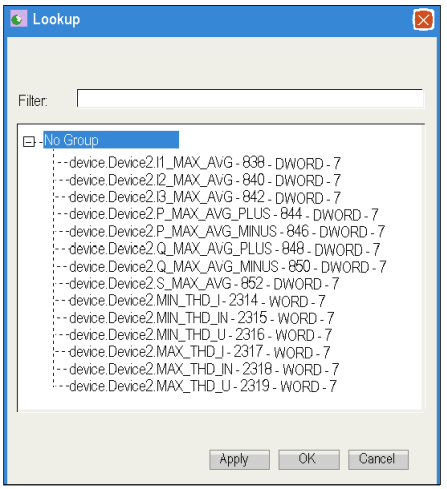
UNINTENDED EQUIPMENT OPERATION

- 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)

Follow the steps in the procedure below to insert a Symbol (variable):

Step	Action
1	Double-click on an empty row in the spreadsheet. **Result**: The data editor's configuration tab appears.
2	In the configuration area, click on the  button. **Result:** The **Lookup** dialog appears. 

Step	Action
3	Select the symbols (variables) you want to insert in the data template by clicking them in the list.
4	Click on **OK**. **Result**: New rows corresponding to the symbols (variables) you selected appear in the spreadsheet.
5	Save your data table by clicking on  .

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.
- 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 Direct Address

Step	Action
1	Double-click on 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 on **Apply**. **Result:** A new row that corresponds to the variable address is displayed in the spreadsheet.

Using an Existing Data Template

Overview

Once you have created data templates, you may want to access or modify them.

Accessing a Data Template

The following procedure shows you how to access a existing data template.

Step	Action
1	Extend the *DataTables* directory in the navigator. **Result**: The existing tables appear in the navigator.
2	Either: ● Double click on the table you want to modify in the list or, ● Right click on the table you to modify and select **Edit**. **Result**: The selected table appears in the editing zone.

Setting Up an External Tool

8

Setting Up an External Tool

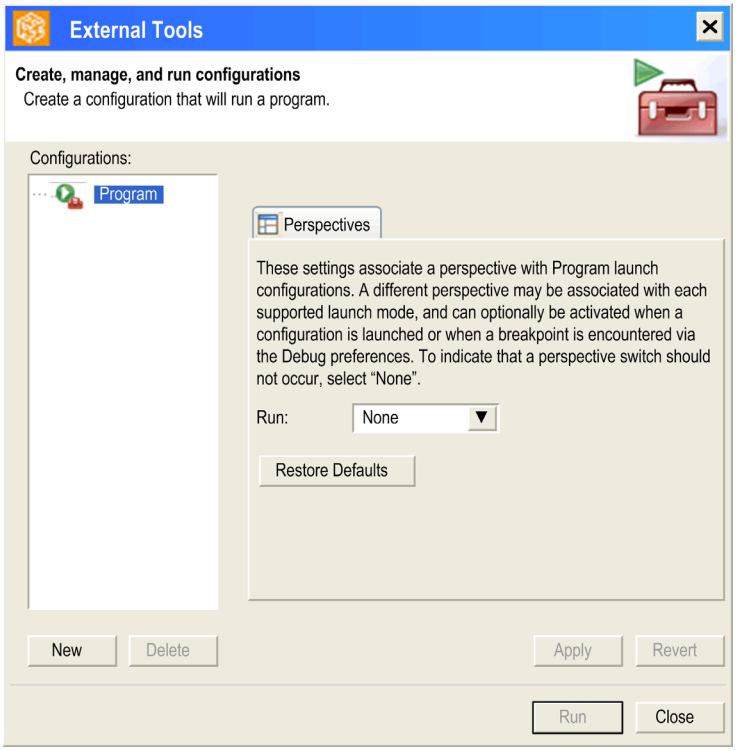
Overview

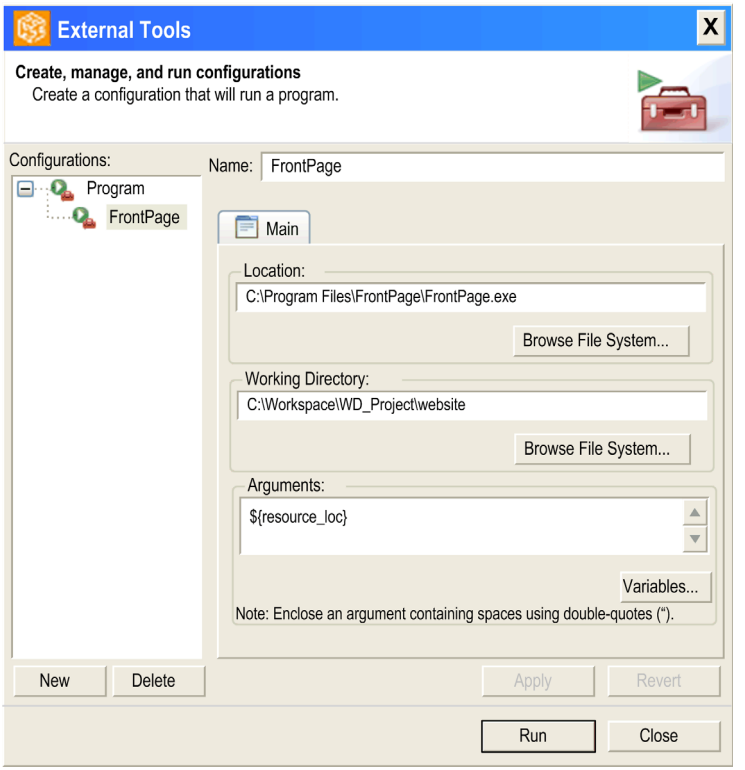
This function enables you to setup an external tool to be used by Web Designer. For example, you can setup FrontPage to edit the files of your website.

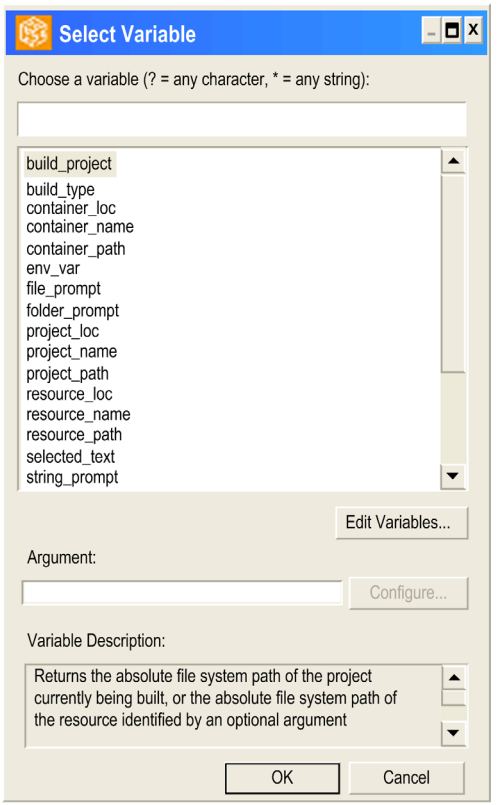
The following part shows you how setup FrontPage to open the files of the website, however the procedure is the same if you use another software.

Example

The following procedure shows how to set up a HTML editor. Here, hostname is used as an example:

Step	Action
1	Click on **Options** → **Configuration of an external tool** → **External tools**. **Result**: The setup dialog for external tools appears. 

Step	Action
2	Click on **New**. **Result**: The following dialog appears. 
3	Enter a name for the external software (i.e. FrontPage).
4	In the **Location** group, click on **Browse File System**. **Result**: A file explorer opens.
5	Select the path of the *.exe* file of the external software (i.e. *C:\windows\frontpage\frontpage.exe*).
6	In the **Working Directory** group, click on **Browse File System**. **Result**: A file explorer opens.
7	Specify the directory that contains the files you want to open with your external tool (i.e. *C:\workspace\WD_project\website*.

Step	Action
8	In the **Arguments** group, click on **Variables...**. **Result**: The Select Variables dialog appears. 
9	Select the *ressource_loc* variable that returns the absolute file system path of a resource.
10	Click on **Apply**.
11	Click on **Close**.
12	Select a file of the website in your Web Designer navigator.
13	Click on **Options** → **Configuration of an external tool** → **FrontPage**. **Result**: FrontPage opens automatically the selected file.

Changing the Workspace Directory

9

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.

Formatting and Restarting a Module

10

Restart/Format a Module

Introduction

Restarting is necessary to take into account the modifications made to the application.

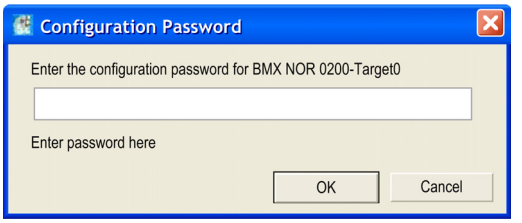
Formatting deletes the website on the module and restores the default website *(Website* and *rdt* directories). Formatting allows you to delete the modifications made to the website of a module, to start a fresh one from a defined status. It does not modify the system configuration.

The following procedure shows how to restart a module:

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

Format the Module

The following procedure shows how to format a module:

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

Security

11

Subject of this Chapter

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

What's 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

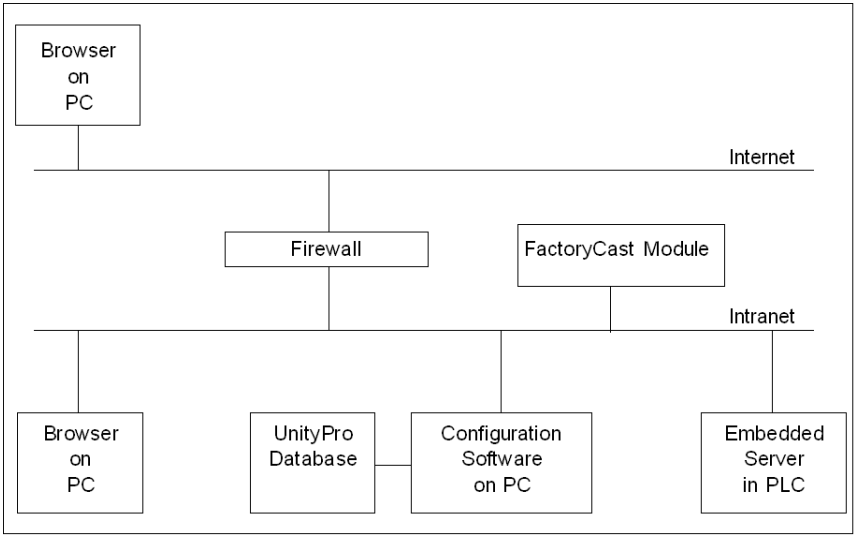
Overview

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 installed between the Internet and a single entry point to an intranet or internal protected network.

Application-Level Firewalls

An application firewall works for an application, for example FTP. It intercepts 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 a firewall, configure the firewall to authorize HTTP, FTP and MBAP traffic.

Port	Protocol	Access to...
21	FTP	Protected embedded server files
Higher than 1024		
80	HTTP	WEB pages
502	MBAP	Operational data

NOTE:

- The default FTP name and password are USER/USER.
- The RTU client follows the "Firewall Friendly FTP" standard, RFC 1579. It issues an FTP PASV command to the RTU 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

- 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 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.

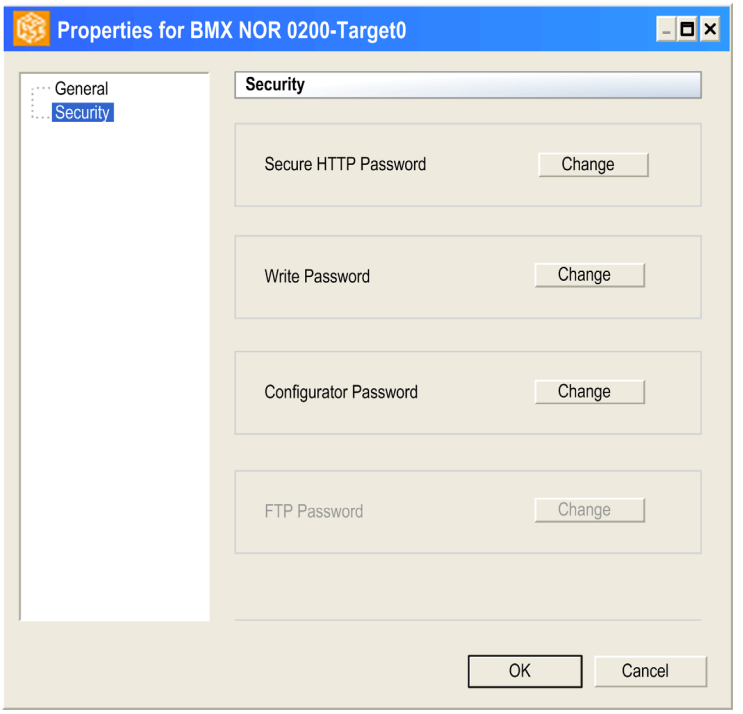
Changing Passwords

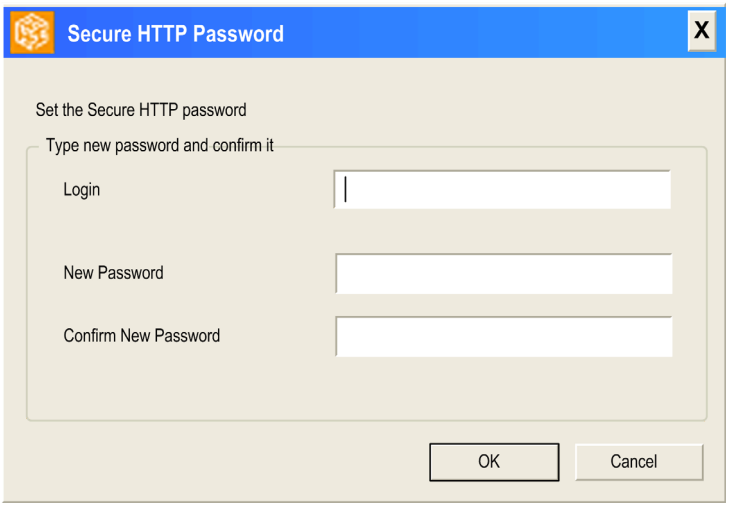
Introduction

This topic explains how to modify the different user names and passwords that are used for identification.

Modify Passwords

This procedure describes how to change passwords:

Step	Action
1	In the browser, select the target.
2	In the **Target** menu, click on **Properties**. **Result**: The Target Properties dialog appears.
3	Select **Security**. **Result**: The following dialog appears. 

Step	Action
4	Click on **Modify** to change a password *(see page 107)*. **Result**: The Password dialog appears. 
5	Enter a new password and confirm it by typing it in the **Confirm new password** field. If it's an HTTP password, the login is also requested.
6	Click on **OK** in the Password dialog. **Note**: if you leave any fields empty during the modification, you are asked to confirm the replacement of the current password by an empty password.
7	Repeat actions 4...6 for each password to modify.
8	Click on **OK** in the Properties dialog of the target to close the dialog.

Passwords

This table shows the elements in the various dialogs used to modify passwords:

Dialog	Function
Secure HTTP Password	Required for connecting to the secure pages of the module website via a browser.
Write Password	Required to write variables in the animation mode.
Configuration Password	Required to access the configuration parameters of the module.
FTP Password	Not available.

Appendices

Menu

A

Subject of this Chapter

This chapter describes the menus for Web Designer functions.

What's in this Chapter?

This chapter contains the following topics:

Menu

Overview

The following table shows the complete menu system when all functions are supported:

Menu	Sub-menu	Overview
Project	New	Create a new project: Creating a new module/device/data table. Creating a service. Creating files and folders.
	Open project	Open an existing project.
	Close project	Close current project.
	Save	Save an item modified in the project.
	Save all	Save all items modified in the project.
	Import	Importing an existing (*.zip*) project or a RTU or RTU HMI project.
	Export	Exporting the current project to a *.zip* file.
	Global transfer	Downloading the project's modules (and all the files).
	Project Validation	Verifying the project before transfer.
	Refresh	Updating the dialog and menu tree.
	Properties	View/modify the project's properties (passwords, comments, etc.).
	Quit	Exit application
Edit	Undo	Cancel last action.
	Cut	Removing the selected object and putting it on the clipboard (the object can be a project, a module, a device, 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 all files, either from your PC to the destination, or from the destination to your PC.
	Partial Transfer	Transfer only 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	Disconnect from the module or from the simulator
	Stop all services	Shutting down all the services (for targets using services).
	Start all services	Starting all the services (for targets using services).
	Site Explorer	Display a view of the website in the dialog 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.
	Upgrade target version	
	Synchronize with PLC database	Synchronize the namespace of your project with a PLC database. Not available for RTU targets.
	Properties	View/modify the target's properties.
Service	Stop	Shut down current service.
	Run	Start current service.
	Operator screens	View operator screens.
	Plc Program Viewer	
	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 dialog 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

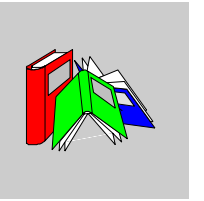
The following table shows the contextual menu of the file tree.

File tree item	Menu (right-click)	Sub-menu	Comment
Project name	New	Project Target	Launch the wizard. 1st dialog.
	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 dialog.
	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	Connect module.
	Disconnect		Disconnect module.
	Properties		View the module's properties.
Devices folder	New device		View the selection dialog of symbols.
	Paste		Paste device.
Device element	Edit		Launch the device display dialog.
	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.

File tree item	Menu (right-click)	Sub-menu	Comment
DataTables folder	New Table		Launch the data editor.
	Paste		Paste the data table.
	Partial transfer	Target>PC PC->Target	Transfer only the folder. See note.
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. See note.
Services folder	New service		Create a new service.
	Paste		Paste a service.
	Partial transfer	Target>PC PC->Target	Transfer only the folder. See note.
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. See note.
Services item	Cut		Cut the service.
	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. See note.

File tree item	Menu (right-click)	Sub-menu	Comment
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. See note.
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. See note.
File in *WebSite*	Open		Open the file.
	Open with System Editor		Launch another dialog 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 dialog.
Namespace Write Access	Edit		Launch the author rights Namespace dialog.

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.

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 Automation 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 Automation 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 Automation PLCs.

PSTN/RTC

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

Q

Quantum

Family of Schneider Automation 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 a logic 0
- A signal of -3V to -25V indicates a logic 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

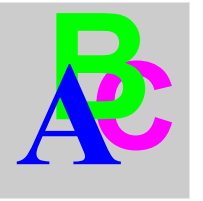
Virtual Private Network: A private network that is configured within a public network. It uses encryption and other security mechanisms so that only authorized users can access the network and that the data cannot be intercepted.

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.

Index



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