

# Modicon M340

## Update Procedure

## User Guide

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[www.schneider-electric.com](http://www.schneider-electric.com)

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 **Electric**

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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.

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# Safety Information

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## Important Information

### NOTICE

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



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



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

## **DANGER**

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

## **WARNING**

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

## **CAUTION**

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

## **NOTICE**

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

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## 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.

## BEFORE YOU BEGIN

Do not use this product on machinery lacking effective point-of-operation guarding. Lack of effective point-of-operation guarding on a machine can result in serious injury to the operator of that machine.

 <b>WARNING</b>
<b>UNGUARDED EQUIPMENT</b>
<ul style="list-style-type: none"><li>• Do not use this software and related automation equipment on equipment which does not have point-of-operation protection.</li><li>• Do not reach into machinery during operation.</li></ul>
<b>Failure to follow these instructions can result in death, serious injury, or equipment damage.</b>



This automation equipment and related software is used to control a variety of industrial processes. The type or model of automation equipment suitable for each application will vary depending on factors such as the control function required, degree of protection required, production methods, unusual conditions, government regulations, etc. In some applications, more than one processor may be required, as when backup redundancy is needed.

Only you, the user, machine builder or system integrator can be aware of all the conditions and factors present during setup, operation, and maintenance of the machine and, therefore, can determine the automation equipment and the related safeties and interlocks which can be properly used. When selecting automation and control equipment and related software for a particular application, you should refer to the applicable local and national standards and regulations. The National Safety Council's Accident Prevention Manual (nationally recognized in the United States of America) also provides much useful information.

In some applications, such as packaging machinery, additional operator protection such as point-of-operation guarding must be provided. This is necessary if the operator's hands and other parts of the body are free to enter the pinch points or other hazardous areas and serious injury can occur. Software products alone cannot protect an operator from injury. For this reason the software cannot be substituted for or take the place of point-of-operation protection.

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Ensure that appropriate safeties and mechanical/electrical interlocks related to point-of-operation protection have been installed and are operational before placing the equipment into service. All interlocks and safeties related to point-of-operation protection must be coordinated with the related automation equipment and software programming.

**NOTE:** Coordination of safeties and mechanical/electrical interlocks for point-of-operation protection is outside the scope of the Function Block Library, System User Guide, or other implementation referenced in this documentation.

## START-UP AND TEST

Before using electrical control and automation equipment for regular operation after installation, the system should be given a start-up test by qualified personnel to verify correct operation of the equipment. It is important that arrangements for such a check be made and that enough time is allowed to perform complete and satisfactory testing.

### WARNING

#### EQUIPMENT OPERATION HAZARD

- Verify that all installation and set up procedures have been completed.
- Before operational tests are performed, remove all blocks or other temporary holding means used for shipment from all component devices.
- Remove tools, meters, and debris from equipment.

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

Follow all start-up tests recommended in the equipment documentation. Store all equipment documentation for future references.

#### **Software testing must be done in both simulated and real environments.**

Verify that the completed system is free from all short circuits and temporary grounds that are not installed according to local regulations (according to the National Electrical Code in the U.S.A, for instance). If high-potential voltage testing is necessary, follow recommendations in equipment documentation to prevent accidental equipment damage.

Before energizing equipment:

- Remove tools, meters, and debris from equipment.
- Close the equipment enclosure door.
- Remove all temporary grounds from incoming power lines.
- Perform all start-up tests recommended by the manufacturer.

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## OPERATION AND ADJUSTMENTS

The following precautions are from the NEMA Standards Publication ICS 7.1-1995 (English version prevails):

- Regardless of the care exercised in the design and manufacture of equipment or in the selection and ratings of components, there are hazards that can be encountered if such equipment is improperly operated.
- It is sometimes possible to misadjust the equipment and thus produce unsatisfactory or unsafe operation. Always use the manufacturer's instructions as a guide for functional adjustments. Personnel who have access to these adjustments should be familiar with the equipment manufacturer's instructions and the machinery used with the electrical equipment.
- Only those operational adjustments actually required by the operator should be accessible to the operator. Access to other controls should be restricted to prevent unauthorized changes in operating characteristics.



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# About the Book

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## At a Glance

### Document Scope

This user guide explains how to update Modicon M340 PAC firmware. It concerns CPUs, BMX NOE 01•0 modules, and modules that can be updated.

### Update Procedure

The update procedure is a maintenance operation that consists in changing a CPU or module embedded software. It requires the CPU to be in `STOP` mode and disconnected from the systems and applications it effects. When a module is addressed through the CPU, the CPU must be in `STOP` mode and no functional communication traffic occur between the CPU and the module.

## ***NOTICE***

### **INOPERABLE EQUIPMENT**

Stop the CPU before any firmware update or firmware check with Unity Loader software.

**Failure to follow these instructions can result in equipment damage.**

### Validity Note

This document is valid for EcoStruxure™ Control Expert 14.0 or later.

### Related Documents

Title of documentation	Reference number
Unity Loader, User Manual	33003805 (English), 33003806 (French), 33003807 (German), 33003809 (Italian), 33003808 (Spanish), 33003810 (Chinese)

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

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## Product Related Information

### **WARNING**

#### **UNINTENDED EQUIPMENT OPERATION**

The application of this product requires expertise in the design and programming of control systems. Only persons with such expertise should be allowed to program, install, alter, and apply this product.

Follow all local and national safety codes and standards.

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

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# Chapter 1

## Introduction

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### Update Process

#### Update Tools

You can perform the update by using either the Unity Loader software or an SD card initialized with Unity Loader (*see page 25*) (only for a CPU, BMX NOE 01•0 (firmware V2.0 or later), or BMX PRA 0100 module).

#### CPU Firmware Version

This table describes the evolution process of the CPU firmware:

Product reference	CANopen embedded	Procedure
BMX P34 1000 BMX P34 2000 BMX P34 2020	No	Update the CPU with the new firmware version.
BMX P34 20102 BMX P34 20302	Yes	Update the CPU with the new firmware version.
BMX P34 2010 BMX P34 2030	Yes	<ul style="list-style-type: none"><li>● Update the CPU to reach the latest CPU reference BMX P34 20102 and BMX P34 20302 without resetting the CPU.</li><li>● Update the CPU with the new firmware version for the latest reference.</li><li>● Reset the CPU.</li></ul>

#### BMX NOE 01x0 Module Firmware Version

This table describes the evolution process of the BMX NOE 01•0 module firmware:

Product reference	Procedure
BMX NOE 0100 BMX NOE 0110 (firmware V2.0 or later)	Update the BMX NOE 01•0 module with the new firmware version.
BMX NOE 0100 with firmware V1.0 and date of manufacturing from 0727 to 0803 ( <i>see page 18</i> )	<ul style="list-style-type: none"><li>● Update the BMX NOE 0100 module using a specific application software (patcher.exe) without resetting the module.</li><li>● Update the module with the new firmware version.</li><li>● Reset the module.</li></ul>



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# Chapter 2

## Update Procedure with Unity Loader

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### Overview

This chapter describes how to update a Modicon M340 CPU, BMX NOE 01•0, BMX PRA 0100, or module that can be updated using Unity Loader tool.

### What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
Preparing the CPU, BMX NOE 01x0, BMX PRA 0100, or Module	14
Connecting and Downloading the Firmware	15
BMX NOE 0100 with Firmware V1.0 and a Date of Manufacturing from 0727 to 0803 Specific Update Procedure	18
BMX P34 2010 or BMX P34 2030 Specific Update Procedure	20

## Preparing the CPU, BMX NOE 01x0, BMX PRA 0100, or Module

### Prerequisites

To proceed with an update, you need the following elements:

- The software. Unity Pro version 6.0 or later has to be installed on the PC.
- The firmware. It can be downloaded from <http://www.schneider-electric.com>.
- The Unity Loader software. It is available for download on <http://www.schneider-electric.com/ww/en/download> and has to be installed on the PC.
- CPU in STOP mode.

**NOTE:** Unity Pro is the former name of Control Expert for version 13.1 or earlier.

### Physical Connection

## ***NOTICE***

### **EQUIPMENT DAMAGE**

If using Ethernet connection, only use point-to-point mode with a crossover cable. Interrupting the update procedure before it has completed can cause irreparable damage to the CPU or module.

**Failure to follow these instructions can result in equipment damage.**

This table shows the connection mode between a PC and the following CPU or module:

Device	Cable type	Device connector
Modicon M340 CPU	2 possibilities: <ul style="list-style-type: none"> <li>• USB cable</li> <li>• Ethernet cable</li> </ul>	On the CPU, 2 possibilities: <ul style="list-style-type: none"> <li>• USB port</li> <li>• Ethernet port</li> </ul>
BMX NOE 01•0 module	Ethernet cable	BMX NOE 01•0 module Ethernet port
BMX PRA 0100 module	Ethernet cable	BMX PRA 0100 module Ethernet port
Module that can be updated	2 possibilities: <ul style="list-style-type: none"> <li>• USB cable</li> <li>• Ethernet cable</li> </ul>	On the CPU located on the same rack as the module, 2 possibilities: <ul style="list-style-type: none"> <li>• USB port</li> <li>• Ethernet port</li> </ul> <p><b>NOTE:</b> Do not connect the PC to the Ethernet port of a communication module located on the rack.</p>

## Connecting and Downloading the Firmware



### Prerequisites

Physically connect your PC to the CPU, BMX NOE 01\*0 (firmware v2.0 or later), BMX PRA 0100, or module.

### Connecting and Selecting the CPU or Module

To establish a connection and select the device, proceed as follows:

Step	Action
1	Click <b>Start</b> → <b>Program</b> → <b>Schneider Electric</b> → <b>Unity Loader</b> to launch Unity Loader.
2	Select the <b>Firmware</b> tab: <div data-bbox="336 568 1118 1153" style="border: 1px solid gray; padding: 5px; margin: 10px 0;"> </div>
3	In the <b>Connection</b> dialog box, select the media in accordance with the chosen physical connection: <ul style="list-style-type: none"> <li>● <b>Ethernet</b>: enter the CPU or module IP address in the <b>Address</b> field or click <b>Scan...</b> to detect IP addresses within a specified range.</li> <li>● <b>USB</b></li> </ul>
4	Click <b>Connect</b> . <p><b>NOTE:</b> The connection is confirmed when the <b>Connect</b> button changes to <b>Disconnect</b> button. If the button does not change, verify that the CPU, BMX NOE 01*0, or module is turned on and the physical connection is correctly set.</p>
5	Stop the CPU.

Step	Action
6	Depending on the device to update, proceed as follows: <b>CPU:</b> In the <b>PLC</b> dialog box, select the CPU to be updated in the window list. <b>BMX NOE 01•0:</b> In the <b>PLC</b> dialog box, select the BMX NOE 01•0 module to be updated in the window list. <b>Module that can be updated:</b> In the <b>PLC</b> dialog box: <ul style="list-style-type: none"> <li>○ Select the <b>Module</b> check box to list the modules.</li> <li>○ Click  to select the rack and module position.</li> <li>○ Click <b>OK</b>.</li> </ul>
7	In the <b>PC</b> dialog box, click  to browse the PC files.
8	Select the appropriate <i>*.ldx</i> firmware file and click <b>Open</b> .

### Downloading the Firmware File

Do not interrupt the update procedure before it has completed because it can cause irreparable damage to the CPU or module.

## ***NOTICE***

### **EQUIPMENT DAMAGE**

During the download:

- Do not power OFF the CPU or module.
- Do not power OFF the PC.
- Do not shut down Unity Loader.
- Do not disconnect the communication cable.
- Do not remove the SD card.

**Failure to follow these instructions can result in equipment damage.**



After connecting the device, proceed as follows to download the firmware file:

Step	Action
1	<p>After selecting the appropriate *.ldx firmware file in the <b>Firmware</b> tab of Unity Loader, check if the firmware of the PC is:</p> <ul style="list-style-type: none"> <li>● Compatible with the CPU or module firmware. It is indicated by a green arrow between the <b>PC</b> and <b>PLC</b> dialog box. The transfer is allowed.</li> <li>● An earlier version than the CPU or module firmware. It is indicated by a yellow arrow between the <b>PC</b> and <b>PLC</b> dialog box. The transfer is allowed but it downgrades the CPU or module firmware to an earlier version.</li> <li>● Not compatible with the CPU or module firmware. It is indicated by a red arrow between the <b>PC</b> and <b>PLC</b> dialog box and the <b>Transfer</b> button is grayed. The transfer is not allowed. Solve the incompatibility before proceeding with the next step.</li> </ul>
2	<p>Check that the SD card is plugged in if one of the following devices is updated:</p> <ul style="list-style-type: none"> <li>● CPU</li> <li>● BMX NOE 01•0</li> <li>● BMX PRA 0100</li> </ul>
3	<p>Click <b>Transfer</b>.  <b>Result:</b> A <b>Security Advice</b> popup window is displayed.</p>
4	<p>Check that:</p> <ul style="list-style-type: none"> <li>● The PC is connected to the right device.</li> <li>● If an Ethernet connection is used, check that the displayed MAC address corresponds to the device MAC address.</li> </ul>
5	<p>Click <b>Yes</b> to start downloading the firmware file.  <b>Result:</b> The <b>Transferring data to PLC</b> window is displayed with the remaining time. The duration depends on the protocol used and the PC configuration.</p>
6	<p>In the <b>Transferring data to PLC</b> window, check if the download is completed.  <b>Result:</b> The <b>Firmware upgraded successfully</b> message is displayed when the download is completed.  <b>NOTE:</b> If this message is not displayed, check each step and contact your local Schneider Electric office for assistance.</p>
7	<p>Click <b>Close</b>.  <b>Result:</b> The device is automatically reset once the download of the firmware file is completed.</p>

### Checking the Version

To check the new firmware version of the device, follow this procedure:

Step	Action
1	Connect the PC to the device.
2	Launch Unity Loader software.
3	Select the <b>Firmware</b> tab.
4	Establish a connection with the device.
5	In the <b>PLC</b> dialog box, check the version displayed.

## BMX NOE 0100 with Firmware V1.0 and a Date of Manufacturing from 0727 to 0803 Specific Update Procedure

### BMX NOE 0100 with DOM from 0727 to 0803

The DOM (date of manufacturing) is printed on the side of the module. For example, reading **DOM:0727** means that the module has been manufactured in 2007, week 27.

A BMX NOE 0100 module with firmware V1.0 and a DOM from 0727 to 0803 needs to be patched before update.

The last BMX NOE 0100 firmware provides patcher.bat and patcher.exe files. You have to copy these two files in the same directory.

<b><i>NOTICE</i></b>
<b>EQUIPMENT DAMAGE</b>
Do not power off the BMX NOE 0100 module during the patch and before updating it.
<b>Failure to follow these instructions can result in equipment damage.</b>

For the patching procedure and update, proceed as follows:

Step	Action	Result
1	Connect the PC that contains the patcher files to the BMX NOE 0100 module with an Ethernet cable ( <i>see page 14</i> ).	–
2	Double-click the patcher.bat file.	In the <b>Command Prompt</b> window, the <b>NOE IP address?</b> message is displayed.
3	Enter the IP address of the BMX NOE 0100 module, for example 138.157.9.53, and press <b>Enter</b> .	The <b>Connecting to 138.157.9.53...</b> message is displayed (for a BMX NOE 0100 with the IP address 138.157.9.53).
4	Wait.	The <b>Checking...</b> message is displayed and depending on the module status, the following message is displayed: <ul style="list-style-type: none"> <li>● <b>Patch not needed!</b>: The patch is not needed and the process is completed.</li> <li>● <b>Patch is done!</b>: The patch is needed and the module is ready to be patched.</li> </ul>

Step	Action	Result
5	Do not reset the BMX NOE 0100 module at this step.	–
6	Launch Unity Loader and connect the PC to the BMX NOE 0100 module with an Ethernet cable ( <i>see page 14</i> ) to update the module.	The module can now be updated ( <i>see page 15</i> ). <b>NOTE:</b> The patch is a temporarily stored in RAM memory. If the module is reset before the update with Unity Loader, the patch is not processed and the module gets back to its initial state.

### BMX NOE 0100 V1.0 with Web C Cartridge

The BMX NOE 0100 with firmware V1.0 equipped with a Web C cartridge (BMX RWSC016M) **must not** be updated with BMX NOE 0100 (V2.0) firmware. It has to **be updated with BMX NOE 0110** (V2.0 or later) firmware.

## BMX P34 2010 or BMX P34 2030 Specific Update Procedure

### Overview

To update a BMX P34 2010 CANopen CPU or BMX P34 2030 CANopen CPU to a BMX P34 20102 CANopen2 CPU or BMX P34 20302 CANopen2 CPU:

1. Transform (with an update) the CPU to reach a new CPU reference (BMX P34 20102 or BMX P34 20302).
2. Update the BMX P34 20102 or BMX P34 20302 CPU with the new firmware.
3. Reset the CPU.

**NOTE:** When a CPU is updated, the marking on the front panel and on the label is no longer consistent.


### Prerequisites

The complete update has to be performed at once: prepare the CPU then download the firmware.

Physically connect your PC to the CPU (*see page 14*).

## Connecting and Selecting the CPU

To establish a connection and select the CPU, proceed as follows:

Step	Action
1	Click <b>Start</b> → <b>Program</b> → <b>Schneider Electric</b> → <b>Unity Loader</b> to launch Unity Loader.
2	Select the <b>Firmware</b> tab: <div data-bbox="334 358 1112 945" style="border: 1px solid gray; padding: 5px; margin: 10px 0;"> </div>
3	In the <b>Connection</b> dialog box, select the media in accordance with the chosen physical connection: <ul style="list-style-type: none"> <li>● <b>Ethernet</b>: enter the CPU IP address in the <b>Address</b> field or click <b>Scan...</b> to detect IP addresses within a specified range.</li> <li>● <b>USB</b></li> </ul>
4	Click <b>Connect</b> . <p><b>NOTE:</b> The connection is confirmed when the <b>Connect</b> button changes to <b>Disconnect</b> button. If the button does not change, verify that the CPU is turned on and the physical connection between the PC and the CPU is correctly set.</p>
5	Stop the CPU.
6	In the <b>PLC</b> dialog box, select the CPU to be updated in the window list, if necessary.
7	In the <b>PC</b> dialog box, click  to browse the PC files.
8	To update the CPU from a BMX P34 2010 or BMX P34 2030 to a BMX P34 20102 or BMX P34 20302, select the <i>Bmx2010_to_20102_B.idx</i> or <i>Bmx2030_to_20302_B.idx</i> file and click <b>Open</b> .

## Downloading the Firmware File

Do not interrupt the update procedure before it has completed because it can cause irreparable damage to the CPU.

### ***NOTICE***

#### **EQUIPMENT DAMAGE**

During the download:

- Do not power OFF the CPU.
- Do not power OFF the PC.
- Do not shut down Unity Loader.
- Do not disconnect the communication cable.
- Do not remove the SD card.

**Failure to follow these instructions can result in equipment damage.**

After connecting the CPU, proceed as follows to download the initial update firmware file:

Step	Action
1	After selecting the appropriate *.ldx firmware file in the <b>Firmware</b> tab of Unity Loader, check if the firmware of the PC is: <ul style="list-style-type: none"> <li>● Compatible with the CPU firmware. It is indicated by a green arrow between the <b>PC</b> and <b>PLC</b> dialog box. The transfer is allowed.</li> <li>● An earlier version than the CPU firmware. It is indicated by a yellow arrow between the <b>PC</b> and <b>PLC</b> dialog box. The transfer is allowed but it downgrades the CPU firmware to an earlier version.</li> <li>● Not compatible with the CPU firmware. It is indicated by a red arrow between the <b>PC</b> and <b>PLC</b> dialog box and the <b>Transfer</b> button is grayed. The transfer is not allowed. Solve the incompatibility before proceeding with the next step.</li> </ul>
2	Click <b>Transfer</b> . <b>Result:</b> A <b>Security Advice</b> popup window is displayed.
3	Check that: <ul style="list-style-type: none"> <li>● The PC is connected to the right CPU to update.</li> <li>● The displayed MAC address corresponds to the CPU MAC address in case of an Ethernet connection.</li> </ul>
4	Click <b>Yes</b> to start downloading the firmware file. <b>Result:</b> The <b>Transferring data to PLC</b> window is displayed with the remaining time. The duration depends on the protocol used and the PC configuration.
5	In the <b>Transferring data to PLC</b> window, check if the download is completed. <b>Result:</b> The <b>Firmware upgraded successfully</b> message is displayed. <b>NOTE:</b> If this message is not displayed, check each step and contact your local Schneider Electric office for assistance.
6	Do not reset the CPU.

Update the BMX P34 20102 or BMX P34 20302 CPU:

Step	Action
1	Select the file to update the updated CPU now considered as a BMX P34 20102 or BMX P34 20302.
2	<p>After selecting the appropriate <i>*/dx</i> firmware file in the <b>Firmware</b> tab of Unity Loader, check if the firmware of the PC is:</p> <ul style="list-style-type: none"> <li>● Compatible with the CPU firmware. It is indicated by a green arrow between the <b>PC</b> and <b>PLC</b> dialog box. The transfer is allowed.</li> <li>● An earlier version than the CPU firmware. It is indicated by a yellow arrow between the <b>PC</b> and <b>PLC</b> dialog box. The transfer is allowed but it downgrades the CPU firmware to an earlier version.</li> <li>● Not compatible with the CPU firmware. It is indicated by a red arrow between the <b>PC</b> and <b>PLC</b> dialog box and the <b>Transfer</b> button is grayed. The transfer is not allowed. Solve the incompatibility before proceeding with the next step.</li> </ul>
3	<p>Click <b>Transfer</b>.</p> <p><b>Result:</b> A <b>Security Advice</b> popup window is displayed.</p>
4	<p>Check that:</p> <ul style="list-style-type: none"> <li>● The PC is connected to the right CPU to update.</li> <li>● The displayed MAC address corresponds to the CPU MAC address in case of an Ethernet connection.</li> </ul>
5	<p>Click <b>Yes</b> to start downloading the firmware file.</p> <p><b>Result:</b> The <b>Transferring data to PLC</b> window is displayed with the remaining time. The duration depends on the protocol used and the PC configuration.</p>
6	<p>In the <b>Transferring data to PLC</b> window, check if the download is completed.</p> <p><b>Result:</b> The <b>Firmware upgraded successfully</b> message is displayed.</p> <p><b>NOTE:</b> If this message is not displayed, check each step and contact your local Schneider Electric office for assistance.</p>
7	<p>Click <b>Close</b>.</p> <p><b>Result:</b> The CPU is automatically reset once the download of the firmware file is completed.</p>

**NOTE:** To check the new version, refer to Checking the Version ([see page 17](#)).





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# Chapter 3

## Update Procedure with an SD Card

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### Overview

This chapter describes how to update a Modicon M340 CPU, BMX NOE 01•0, or BMX PRA 0100 module by using an SD card. This option is useful to update a Modicon M340 CPU or a communication module that cannot be directly connected to a PC with Unity Loader.

### What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
Preparing the CPU, BMX NOE 01•0, or BMX PRA 0100 Module	26
Updating Procedure	27

## Preparing the CPU, BMX NOE 01•0, or BMX PRA 0100 Module

### Prerequisites

To proceed with an update using an SD card, you need the following elements:

- The software. Unity Pro version 6.0 or later has to be installed on the PC.
- The new firmware. It can be downloaded from <http://www.schneider-electric.com>.
- The Unity Loader software. It is available for download on <http://www.schneider-electric.com/ww/en/download> and has to be installed on the PC.
- An SD card named *transfer SD card* in this chapter. It has to fit the targeted CPU, BMX NOE 01•0, or BMX PRA 0100 module and be dedicated to the CPU, BMX NOE 01•0, or BMX PRA 0100 module. Check the free memory available on the SD card (refer to Unity Loader documentation for the description of the necessary size).  
**NOTE:** This SD card must be kept in the CPU or module after the update because the updated webpages are stored on the SD card.
- A CPU (with the same reference as the CPU that needs to be updated), BMX NOE 01•0 (firmware V2.0 or later), or BMX PRA 0100.
- A second SD card is necessary to update a BMX P34 2010 or BMX P34 2030 CPU.

### BMX NOE 0100 with Firmware V1.0 and a DOM 0727 to 0803 Specific Procedure

The DOM (date of manufacturing) is printed on the side of the module. For example, reading **DOM:0727** means that the module has been manufactured in 2007, week 27.

A BMX NOE 0100 module with firmware V1.0 and a DOM from 0727 to 0803 needs to be patched before update.

For more information, refer to BMX NOE 0100 With Date of Manufacturing From 0727 to 0803 Specific Update Procedure (*see page 18*).

### BMX P34 2010 or BMX P34 2030 Specific Procedure

For BMX P34 2010 update to BMX P34 20102, or BMX P34 2030 update to BMX P34 20302, you cannot perform the update using a single SD card. You need two different SD cards:

- A first SD card initialized with *Bmx2010\_to\_20102\_B.idx* or *Bmx2030\_to\_20302\_B.idx* file (*see page 20*).
- A second SD card (transfer SD card) containing the new CPU firmware.

## Updating Procedure

### Overview

This topic describes how to update a Modicon M340 CPU, BMX NOE 01•0 (firmware V2.0 or later), or BMX PRA 0100 module using an SD card.

The transfer SD card needs first to contain the new firmware file before it can be used to perform the update. Therefore the procedure is split into two steps:

1. Initialize this SD card using Unity Loader and a CPU (with the same reference as the CPU that needs to be updated) or upgradeable module.
2. Use the initialized transfer SD card to update a CPU or upgradeable module in another PAC.

### Step 1: Initialize the Transfer SD Card with the New Firmware

Do not interrupt the update procedure before it has completed because it can cause irreparable damage to the CPU or module.

## ***NOTICE***

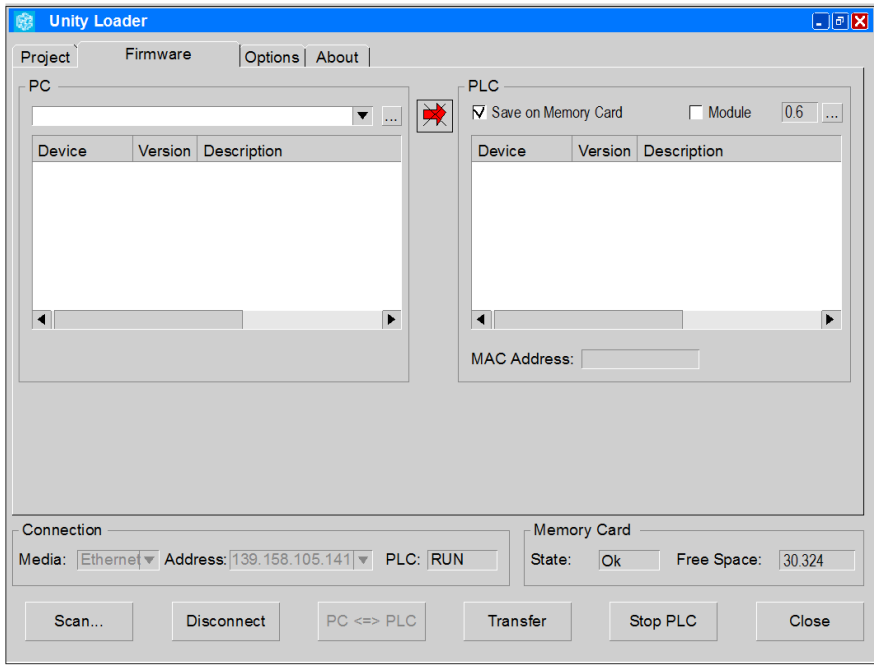
### **EQUIPMENT DAMAGE**


During the download:

- Do not power OFF the CPU or module.
- Do not power OFF the PC.
- Do not shut down Unity Loader.
- Do not disconnect the communication cable.

**Failure to follow these instructions can result in equipment damage.**

Prepare a CPU, BMX NOE 01•0 (firmware V2.0 or later), or BMX PRA 0100 module and connect it to transfer the firmware file in the transfer SD card:

Step	Action
1	Stop the CPU.
2	Remove the original SD card from the CPU, BMX NOE 01•0 (firmware V2.0 or later), or BMX PRA 0100 module.
3	Insert the transfer SD card in the CPU, BMX NOE 01•0 (firmware V2.0 or later), or BMX PRA 0100 module.
4	Click <b>Start</b> → <b>Program</b> → <b>Schneider Electric</b> → <b>Unity Loader</b> to launch Unity Loader.
5	Select the <b>Firmware</b> tab: 
6	In the <b>Connection</b> dialog box, select the media in accordance with the chosen physical connection: <ul style="list-style-type: none"> <li>● <b>Ethernet</b>: enter the CPU, BMX NOE 01•0, or BMX PRA 0100 module IP address in the <b>Address</b> field or click <b>Scan...</b> to detect IP addresses within a specified range.</li> <li>● <b>USB</b></li> </ul>
7	Click <b>Connect</b> .  <b>NOTE:</b> The connection is confirmed when the <b>Connect</b> button changes to <b>Disconnect</b> button. If the button does not change, verify that the CPU, BMX NOE 01•0, or BMX PRA 0100 module is turned on and the physical connection between the PC and the CPU, BMX NOE 01•0, or BMX PRA 0100 module is correctly set.

Step	Action
8	In the <b>PLC</b> dialog box, select the CPU, BMX NOE 01•0, or BMX PRA 0100 module that contains the transfer SD card.
9	Check that the transfer SD card has enough free memory to receive the firmware file. The SD card available memory is displayed in the <b>Memory Card</b> dialog box, <b>Free Space</b> field.
10	In the <b>PC</b> dialog box, click  to browse the PC files.
11	Select the appropriate *.dx firmware file and click <b>Open</b> .
12	In the <b>PLC</b> dialog box, select the <b>Save on Memory card</b> check box.
13	Click <b>Transfer</b> . <b>Result:</b> A <b>Security Advice</b> popup window is displayed.
14	Check that: <ul style="list-style-type: none"> <li>• The PC is connected to the right CPU or module that contains the transfer SD card.</li> <li>• The displayed MAC address corresponds to the CPU or a module MAC address in case of an Ethernet connection.</li> </ul>
15	Click <b>Yes</b> to start downloading the firmware file. <b>Result:</b> The <b>Transferring data to PLC</b> window is displayed with the remaining time. The duration depends on the protocol used and the PC configuration.
16	In the <b>Transferring data to PLC</b> window, check if the download is completed. <b>Result:</b> The <b>Transfer completed</b> message is displayed when the download is completed. <b>NOTE:</b> If this message is not displayed, check each step and contact your local Schneider Electric office for assistance.
17	Click <b>Close</b> .
18	Remove the transfer SD card from the CPU, BMX NOE 01•0, or BMX PRA 0100 module.

## Step 2: Update a CPU, BMX NOE 01•0 (Firmware V2.0 or Later), or BMX PRA 0100 Module with the Transfer SD Card

### *NOTICE*

#### INOPERABLE EQUIPMENT

After updating the CPU, BMX NOE 01•0, or BMX PRA 0100 module, do not remove the transfer SD card used for the update.

**Failure to follow these instructions can result in equipment damage.**

The SD card needs to remain in the updated CPU, BMX NOE 01•0, or BMX PRA 0100 module because it stores the updated webpages.

To update a CPU, BMX NOE 01•0 (firmware V2.0 or later), or BMX PRA 0100 module using the transfer SD card, proceed as follows:

Step	Action
1	Stop the CPU.
2	Remove the SD card that is in the CPU, BMX NOE 01•0 (firmware V2.0 or later), or BMX PRA 0100 module.
3	Insert the transfer SD card in the CPU, BMX NOE 01•0 (firmware V2.0 or later), or BMX PRA 0100 module.
4	<p>Perform a manual reset of the CPU, BMX NOE 01•0 (firmware V2.0 or later), or BMX PRA 0100 module.</p> <p><b>Result:</b> The firmware is automatically downloaded if the current version of the CPU or module is earlier than the version on the SD card, and the firmware on the SD card is compatible with the firmware on the target CPU or module.</p> <p><b>NOTE:</b> The files on the SD card related to firmware update are automatically removed after the update.</p> <p><b>NOTE:</b> Do not remove the SD card when the update is completed (the SD card stores the updated webpages).</p> <p>CPU or module LED state once the update is completed:</p> <p><b>RUN:</b> Off.  <b>ERR:</b> Off.  <b>CARD ERR:</b> Off.  <b>SD card Access:</b> On.</p>
5	<p>After the reset, the CPU is in stop forced mode.</p> <p>If <b>Automatic start in Run</b> is selected in the application, a manual reset automatically starts the CPU.</p>

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# Chapter 4

## Changing an Application with Control Expert

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### Application Evolution

#### Overview

This chapter describes briefly how to change a V1.0, V2.0, V2.1 or V2.2, V2.3, or V2.4 application into a V2.5 (or later) application. Refer to Control Expert documentation for the detailed procedure of each step.

#### Prerequisites

Before changing the application version from V1.0, V2.0, V2.1, V2.2, V2.3, or V2.4 to V2.5 (or later), verify the module firmware version and update it if necessary:

- Modicon M340 CPU firmware: V2.5 or later. For CANopen CPU modules, refer to BMX P34 2010 or BMX P34 2030 Specific Update Procedure (*see page 20*).
- BMX NOE 01•0 module firmware: V2.0 or later.

The following procedures describe how to change an application version in Unity Pro V6.0 or later.

**NOTE:** Unity Pro is the former name of Control Expert for version 13.1 or earlier.

#### Changing Application Version Without BMX NOE 01x0 Module

For example, to change an application without a BMX NOE 01•0 module from V1.0, V2.0, V2.1, V2.2, V2.3 or V2.4 to V2.5 (or later), proceed as follows:

Step	Action
1	Launch Control Expert <b>Configuration</b> screen.
2	Replace the CPU from V1.0, V2.0, V2.1, V2.2, V2.3, or V2.4 to V2.5 (or later). <b>NOTE:</b> CANopen CPUs higher than V2.0 are provided with a new part number.
3	Build the application and transfer it to the CPU.

### Changing Application Version with BMX NOE 01x0 Module

For example to change an application with a BMX NOE 01•0 module configured in the application with a software version lower than V2.0, proceed as follows:

Step	Action
1	Launch Control Expert <b>Configuration</b> screen.
2	Delete the BMX NOE 01•0 module.
3	Replace the CPU from V1.0, V2.0, V2.1, V2.2, V2.3, or V2.4 to V2.5 (or later).
4	Add the BMX NOE 01•0.2 module.
5	Change the Ethernet network <b>Model Family</b> from <b>NOE 0100, NOE 0110</b> to <b>NOE 0100.2, NOE 0110.2</b> (in <b>Project Browser</b> → <b>Communication</b> → <b>Networks</b> select the concerned Ethernet network).
6	Enable (set to <b>Yes</b> ) the following network parameters if they were previously configured: <ul style="list-style-type: none"><li>● <b>IO Scanning</b></li><li>● <b>Global Data</b></li><li>● <b>Address Server</b></li></ul>
7	Link this family to the BMX NOE 01•0.2 module.
8	Build the application and transfer it to the CPU.

### Updating Both Firmware and Application with an SD Card

Refer to Control Expert documentation to build such an SD card.





## B

BMXNOE0100  
  update, *11*  
BMXNOE0110  
  update, *11*  
BMXP341000  
  update, *11*  
BMXP342000  
  update, *11*  
BMXP342010  
  update, *11*  
BMXP3420102  
  update, *11*  
BMXP342020  
  update, *11*  
BMXP342030  
  update, *11*  
BMXP3420302  
  update, *11*  
BMXPRA0100  
  update, *11*

## C

CPU  
  update, *11*

## U

Unity Loader, *11*

## update

  BMXNOE0100, *11*  
  BMXNOE0110, *11*  
  BMXP341000, *11*  
  BMXP342000, *11*  
  BMXP342010, *11*  
  BMXP3420102, *11*  
  BMXP342020, *11*  
  BMXP342030, *11*  
  BMXP3420302, *11*  
  BMXPRA0100, *11*  
  CPU, *11*  
  x80 module, *11*

## X

x80 module  
  update, *11*

