Modicon M580 Controller Firmware Installation Guide

Original instructions



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About the Book

Document Scope

This manual describes how to update M580 firmware using the EcoStruxure Automation Device Maintenance (EADM) software tool.

Both the update and downgrade procedures are a maintenance operation that consists in changing a controller firmware. It requires the controller to be in *STOP* state.

NOTICE

INOPERABLE EQUIPMENT

Stop the controller before any firmware update or firmware verification with EcoStruxure Automation Device Maintenance software.

Failure to follow these instructions can result in equipment damage.

Validity Note

This document has been updated for the release of EcoStruxure Control Expert v16.0 $\,$

Related Documents

Title of documentation	Reference number						
Modicon M580, Hardware, Reference Manual	EIO0000001578 (English), EIO0000001579 (French), EIO0000001580 (German), EIO000001582 (Italian), EIO0000001581 (Spanish), EIO0000001583 (Chinese)						
Modicon M580 Standalone, System Planning Guide for Frequently Used Architectures	HRB62666 (English), HRB65318 (French), HRB65319 (German), HRB65320 (Italian), HRB65321 (Spanish), HRB65322 (Chinese)						
Modicon M580 Hot Standby, System Planning Guide for Frequently Used Architectures	NHA58880 (English), NHA58881 (French), NHA58882 (German), NHA58883 (Italian), NHA58884 (Spanish), NHA58885 (Chinese)						
EcoStruxure Automation Device Maintenance, Firmware Upgrade Tool, Online Help	EIO000004033 (English), EIO000004048 (French), EIO000004046 (German), EIO0000004049 (Italian), EIO0000004047 (Spanish), EIO000004050 (Chinese), EIO000005089 (Turkish), EIO000005090 (Portuguese)						

Product Related Information

LOSS OF CONTROL

- Perform a Failure Mode and Effects Analysis (FMEA), or equivalent risk analysis, of your application, and apply preventive and detective controls before implementation.
- Provide a fallback state for undesired control events or sequences.
- Provide separate or redundant control paths wherever required.
- Supply appropriate parameters, particularly for limits.
- Review the implications of transmission delays and take actions to mitigate them.
- Review the implications of communication link interruptions and take actions to mitigate them.
- Provide independent paths for control functions (for example, emergency stop, over-limit conditions, and error conditions) according to your risk assessment, and applicable codes and regulations.
- Apply local accident prevention and safety regulations and guidelines.1
- Test each implementation of a system for proper operation before placing it into service.

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

¹ For additional information, refer to NEMA ICS 1.1 (latest edition), *Safety Guidelines for the Application, Installation, and Maintenance of Solid State Control* and to NEMA ICS 7.1 (latest edition), *Safety Standards for Construction and Guide for Selection, Installation and Operation of Adjustable-Speed Drive Systems* or their equivalent governing your particular location.

Interrupting the update procedure before it has completed will cause the connection to be lost and can cause irreparable damage to the Modicon M580 controller.

NOTICE

INOPERABLE EQUIPMENT

During the transfer of the firmware file:

- Do not remove power from the Modicon M580 controller.
- Do not remove power from the PC.
- Do not exit Unity Loader or the EcoStruxure Automation Device Maintenance (EADM) software (depending on the procedure).
- Do not disconnect the communication cable.
- Do not remove or insert the optional SD memory card.

Failure to follow these instructions can result in equipment damage.

Information on Non-Inclusive or Insensitive Terminology

As a responsible, inclusive company, Schneider Electric is constantly updating its communications and products that contain non-inclusive or insensitive terminology. However, despite these efforts, our content may still contain terms that are deemed inappropriate by some customers.

Terminology Derived from Standards

The technical terms, terminology, symbols and the corresponding descriptions in the information contained herein, or that appear in or on the products themselves, are generally derived from the terms or definitions of international standards.

In the area of functional safety systems, drives and general automation, this may include, but is not limited to, terms such as *safety*, *safety function*, *safe state*, *fault*, *fault reset*, *malfunction*, *failure*, *error*, *error message*, *dangerous*, etc.

Among others, these standards include:

Standard	Description
IEC 61131-2:2007	Programmable controllers, part 2: Equipment requirements and tests.
ISO 13849-1:2023	Safety of machinery: Safety related parts of control systems.
	General principles for design.
EN 61496-1:2020	Safety of machinery: Electro-sensitive protective equipment.
	Part 1: General requirements and tests.
ISO 12100:2010	Safety of machinery - General principles for design - Risk assessment and risk reduction
EN 60204-1:2006	Safety of machinery - Electrical equipment of machines - Part 1: General requirements
ISO 14119:2013	Safety of machinery - Interlocking devices associated with guards - Principles for design and selection
ISO 13850:2015	Safety of machinery - Emergency stop - Principles for design
IEC 62061:2021	Safety of machinery - Functional safety of safety-related electrical, electronic, and electronic programmable control systems
IEC 61508-1:2010	Functional safety of electrical/electronic/programmable electronic safety- related systems: General requirements.
IEC 61508-2:2010	Functional safety of electrical/electronic/programmable electronic safety- related systems: Requirements for electrical/electronic/programmable electronic safety-related systems.
IEC 61508-3:2010	Functional safety of electrical/electronic/programmable electronic safety- related systems: Software requirements.
IEC 61784-3:2021	Industrial communication networks - Profiles - Part 3: Functional safety fieldbuses - General rules and profile definitions.
2006/42/EC	Machinery Directive
2014/30/EU	Electromagnetic Compatibility Directive
2014/35/EU	Low Voltage Directive

In addition, terms used in the present document may tangentially be used as they are derived from other standards such as:

Standard	Description
IEC 60034 series	Rotating electrical machines
IEC 61800 series	Adjustable speed electrical power drive systems
IEC 61158 series	Digital data communications for measurement and control – Fieldbus for use in industrial control systems

Finally, the term *zone of operation* may be used in conjunction with the description of specific hazards, and is defined as it is for a *hazard zone* or *danger zone* in the *Machinery Directive* (2006/42/EC) and ISO 12100:2010.

NOTE: The aforementioned standards may or may not apply to the specific products cited in the present documentation. For more information concerning the individual standards applicable to the products described herein, see the characteristics tables for those product references.

Safety Information

Important Information

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



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

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

NOTICE

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

Please Note

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

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

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.

AWARNING

UNGUARDED EQUIPMENT

- Do not use this software and related automation equipment on equipment which does not have point-of-operation protection.
- Do not reach into machinery during operation.

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

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.

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 pointof-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 are made and that enough time is allowed to perform complete and satisfactory testing.

AWARNING

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.

Operation and Adjustments

The following precautions are from the NEMA Standards Publication ICS 7.1-1995:

(In case of divergence or contradiction between any translation and the English original, the original text in the English language will prevail.)

- 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 required by the operator should be accessible to the operator. Access to other controls should be restricted to prevent unauthorized changes in operating characteristics.

Modicon M580 Controller Update Procedures

This chapter describe how to update the firmware of an M580 controller.

Depending on the initial version and the targeted version of the controller, the procedure is different. A new boot loader was introduced at version 4.x. Thus, the procedures to update from an earlier version (V3.22 or earlier) to version V4.x, or to downgrade from a V4.x version to an earlier version, require specific procedures.

Firmware Update Between Versions Inferior or Equal to v3.x

Introduction

This procedure uses EcoStruxure Automation Device Maintenance software tool v.3.2.136 or later and an FTP connection to update the firmware of a Modicon M580 controller from a version earlier than v3.22 to another version earlier than or equal to v3.22.

EcoStruxure Automation Device Maintenance and instructions for using it are available on the Schneider Electric website at the following URL:

https://www.se.com/ww/en/download/document/EADM/

Preliminary Tasks

- Configure your firewall to allow PC-to-controller communications.
- Download the target Modicon M580 firmware file from: https://www.se.com/ww/en/product-range/62098-modicon-m580/#softwareand-firmware
- Confirm you can ping the Modicon M580 controller:
 - Through the service port at IP address 10.10.MAC5.MAC6.
 - Through the USB port at IP address: 90.0.0.1.

The Modicon M580 controller acknowledges the ping if it is correctly configured on the same network.

NOTE: When you update your Modicon M580, it is important that you are in front of the equipment to monitor the progress of the update or, at a minimum, have a contact or other means of observing and reporting the state of the application before attempting the update.

Procedure

- 1. Perform this update using either one of the following ports of the Modicon M580 controller:
 - USB port
 - Ethernet service port (Port 1, connecting the PC directly to the service port)
- 2. Open EcoStruxure Automation Device Maintenance.

- 3. Navigate to **Settings > Global > Package Settings**, click the ellipsis (...). Then: .
 - In the selection dialog box, select the target firmware file and click OK.
 - Back in the Package Settings dialog box, click Apply.



Summary 🗘 Update 🛓 Export Cancel

- 4. In **DEVICE/LOADING**, click the **+Add** icon (Add), then:
 - Type "bme" in the search bar and select BME***
 - Select your Connection mode:
 - For Ethernet, select FTP and enter the controller IP address.
 - For USB, select USB.

NOTE: Port 21 is selected by default.

Add Device					
Search Commercial Ret	ference	Connection:*			
bme	×	FTP	\sim		
Commercial References	*	IP Address:*			
BME***		192.168.2.101	x :	21	
BME*** (modernized))				
BMEH582040					
BMEH584040					
BMEH586040					
BMEP581020					
BMEP582020					
BMEP582040					
Note: modernized = s For more information,	upports secure communication, refer to the <u>Schneider Electric P</u>	roduct Catalog		Add Device	Cancel
	Click Add Device	ŀ.			
	NOTE: You ca simultaneousl	an select several de y.	evices and	update these	devices
	The new device a	ppears in the DEV	CE Defau	lt Group.	
	Device status is Y	ELLOW, indicating	that the d	evice is reacha	able on t

NOTE: If the status is not YELLOW, consult the EcoStruxure Automation Device Maintenance, Firmware Upgrade Tool, Online Help.

CR: bME	•	BME*** CR: BME***	ftp://192.168.2.101:21 SN:	Current: - Target: -	Current: - Target: -			
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5. Click the **Set Credentials** icon (^A) and enter the **Firmware Password** and the **Application Password**, then click **Save and Connect**.

EcoStruxure™ Automation De	evice Maintenance	Untitled*	v D manage leaves	-	σx
SS D D D V 🕀 I 🗄 🕲 🚳		U Errors 📥 O Warnings Discovery: Manual	 O view status Settings 		
DATA PACKAGE DEVICE / LOADING					
DEVICE LIST		🕀 Add 👘 Connect	n Disconnect 🖞 Update Center 🖸	Read Device Information 🗇 Hide 🖯 Dispose	8
Status Device Name Commercial Reference	Service Endpoint Serial Number	Firmware Version Security Configuration Version Mode	Update Info Extensions	Actions	
Device Default Group (1)				~	19
CR: BME***	ftp://192.168.2.101:21 SN:	Current: - Current:			4
		Othersdautala			
		Set credentials ×			
		Device Name: BME***			
		Authentication Type: Custom \vee			
		Firmware Password:			
		Application Password:			
		Data Storage Password:			
		Save and Connect Save Discard			
Logs 🕜					×
0 Errors 🔺 0 Warnings 🕜 Messag	es			Save	Clear
Date Source	Description				

The device **Status** indicator turns green; the PC is now connected to the controller.

NOTE: The Connect / Disconnect command is located to the right of the

Summary 🗄 Update 🛓 Export Cancel

		56		icoli ('').						
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	Device Name	Service Endpoint		() Add -g (connect ag Disconnect a	opuate center i o ne	ad Device information	Ge Hide	0.08	pose
Status	Commercial Reference	Serial Number	Firmware Version	Security Configuration Version	Mode Update Info	Extensions	Actions			
Device Defau	lt Group (1)									^
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		Please select the type	f content you want to updatel (한) Firmware	iecurity $\widehat{\mathcal{O}}^{'}$ Reset						
2	0.Warrings				Cancel				Enun	
	Source	Description							Jave	
Date	0.000 00	o coeffortion								
2024-02-12 1	0:37:59 Unity Loader Extension	GetDeviceInformation - GetDeviceInformati	on successful							

7. The firmware instances previously selected that are compatible are displayed. Select the desired version then click **Save**.

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	Status	Device Name Commercial Reference	Service Endpo Serial Numbe	int r	Firmware Version	Secur	ty Co	Mode	Update Info	Extensions	Actions			\square
	Device D	fault Group (1)											γ	10
C	•	BME H58 6040 CR: BME H58 6040	Firmware							×	A 🖷 î	⊨⊳	2 💷 I	1
			Please select the	irmware version for selected device(s) to	update.									
			Device	Current	Target	Select	Version	Descripti	on					
			CR: BME H58 6 SE: ftp://192.16	03.20 IR 03.20 IR	15 03.20 IR 15	0	-	Ignore						
						•	03.20 IR 15	BMEH5860	40_FW_SV03.20					
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	Date	Source	. 0						Save	Cancel				
	e u c	200102					_		_					

Summary 🖞 Update 🛓 Export Cancel

- 8. Verify that your PC is connected to the correct controller and that the process is operating in maintenance mode.
- 9. Click the checkbox on the left of your screen to select the controller that you want to update, then click **Update**.

EcoStruxure™ Automation Device Mainte □ □ □ ↓ □ ∅	nance	• •	Errors A 0 Warnings Disco	very: Manual $^{\scriptstyle \lor}$	O View status	🔿 Settings			-	σX
DATA PACKAGE DEVICE / LOADING										
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Status Device Name Commercial Reference	Service Endpoint Serial Number	Firmware Version	Security Configuration Version	Mode	Update Info	Extensions	Actions			
Device Default Group (1)	Update Confirmation					×			~	10
BMEH586040 CR: BMEH586040	Select a Category	- 🛛 Prerequisit	te 🗿 Review the Selec	tion — G	Confirmation		ය මු එ		ð 📼 1	4
	Please select the type of content you wan	at to update!								
	The current version of EcoStruxur	re Automation Device Mainte	enance only supports one type of cor	ntent per update o	operation.					
			_							
		🕑 Firmv	ware 🔞 Security							
Logs 🕜					_					×
0 Errors 🛆 0 Warnings 🕖 Messages	0			E	Back Next	Cancel			Save	Clear
Date Source	Description									
							Summary	Update a	Export	Cancel

10. In the **Update Confirmation** dialog box, review the messages:

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	Device D	efault Group (1)	Update Confirmation					×			~	10
	•	BMEH586040 CR: BMEH586040	Select a Category		e — 🔗 Review the Select	tion — 🤇	Confirmation		冬 晩 土			4
			Please read carefully the instruction below a	nd confirm the update.	•							
			() Do not turn off the computer or put	it in sleep mode and do n	not close the application while the up	odate is in progre	55.					
			(Optional) I confirm that the syste • Verify that activating • Failure to follow these									
Logs	?						_					×
0	0 Errors	🔺 0 Warnings 🕜 Messages	Ø			1	Back Confirm	Cancel			Save	Clear

NOTE: If you click **Optional**, the safety messages that might have been displayed are considered acknowledged in advance and will be skipped.

If you agree, click Confirm.

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11. Safety messages can be viewed only in the Notifications Area, which you

can open using the licon.												
ŝ	EcoSt	ruxure TM Automation Device Maintenance 영 ~ 合 ! 답 ② @		0	Untitled* 0 Errors 🔺 0 Warnings Did	scovery: Manual	 ✓ O View statu 	s Settings			-	σ X
DATA F	PACKAGE	DEVICE / LOADING										
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	Status	Device Name Commercial Reference	Service Endpoint Serial Number	Firmware Version	Security Configuration Version	Mode	Update Info	Extensions	Actions			2
	Device De	fault Group (1)									^	0
	•	BMEH586040 CR: BMEH586040	https://192.168.2.101:443 SN: 21233890286	Current: 04.20.15 Target: 04.20.15 Cont	Current: Not Supported firmation required	RUN		Extensions	A 📵 🗅	D 🗈		4
Logs	2											×
•	Errors	🛕 0 Warnings 🔮 Messages									Save	Clear

Δ.

12. To acknowledge the safety messages that are displayed in the **Notification Area**, first select the item, then click **Confirm**.

£\$3	EcoStru D 🗁 🕻	uxure™ Automation Device Mainter ⊒ < 💩 I 🗎 🕐 🎱	nance	0	0 Errors 🔺 0 Warnings D	iscovery: Manual	✓ ひ View statu	s Settings	- 0
DATA P	ACKAGE	DEVICE / LOADING							
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	Status	Device Name Commercial Reference	Service Endpoint Serial Number	Firmware Version	Security Configuration Version	Mode	Update Info	Extensic	Notification Area
	Device Def	ault Group (1)						10	Security Advice
	•	BMEH586040 CR: BMEH586040	https://192.168.2.101:443 SN: 21233890286	Current: 04.20.15 Target: 04.20.15 Con	Current: Not Supported firmation required	RUN		Extension	MEH586040 mbps://192.168.2.101:443
									A WARNING
									UNANTICIPATED SYSTEM BEHAVIOR
									To facilitate safe device operations, please strictly adhere to the instructions outlined below:
									Ensure constant power supply to the device(s).
									 Verify that you are connected to the correct device(s). by using the localization function.
									 Verify the accuracy and integrity of the data intended for the transfer.
									 Ensure the device(s) are brought to a complete stop, the device(s) will not be operational until the operation is completed.
									 Note that the device(s) may reboot multiple times, the device(s) goes through the same steps as if it had been switched off and on again.
									 Preserve the compatibility between the software versions of all devices present in the system.
									 Before utilizing the tool for device interaction, refer to the chapter of "Safety information" in the user manual and respective hardware documentation.
Logs 🧃									Failure to follow these instructions can result in death, serious injury, or equipment damage.
0	Errors	🛆 0 Warnings 👩 Messages		Do you want to proceed?					
	Date	Source	Description						bo you want to proceed
0	2024-02-09	15:23:15 Automation Device Maintenance	Starting update process - Discovery Mod	e set to manual					
									Confirm Reject

NOTE: Subsequentnotifications may pop-up after you acknowledge a message. The **Notification Area** must be empty for the firmware update to begin.

Result: The update begins, do not disconnect the controller and do not turn off your computer.

During the update, a **Loading** screen is displayed.

~ ^ ~	FcoStr	uvure TM Automation Device Mainte	Untitled*								. ø X	
¥\$\$			endruce	0 Errors	A 0 Warnings D	iscovery: Manual	✓ ♡ View stat	us Settings				
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_					() Aud	-g connect	•g Disconnect	E oposte center	 Read Device Information 	an an more	U Dispos	He U
	Status	Device Name Commercial Reference	Service Endpoint Serial Number	Firmware Version	Security Co	Mode	Update Info	Extensions	Actions			
	Device De	fault Group (1)									1	10
		BME H58 6040	ftp://192.168.2.101:21	Current: 05 20 IR 15	Current: Not Supp	STOP		Extensions	A 10A 1		3	
	· ·	CR: BME H58 6040	SN:	Target: 03.20 IR 15	Target: -	3101	22 C	/ Extensions	in <u>a</u> r			
Logs	0											×
0	0 Errors	🔺 0 Warnings 🕜 Messages									Save	Clear
	Date	Source	Description									
0	2024-02-1	2 11:33:41 BME H58 6040 (ftp://192.168.2.101:2	1) Flashing item 1 of 2 to channel 10, index 0, 556000 of 34	186128 bytes transferred (15%)								_
0	2024-02-1	2 11:33:40 BME H58 6040 (ftp://192.168.2.101:2	1) Flashing item 1 of 2 to channel 10, index 0, 503000 of 34	86128 bytes transferred (14%)								-
0	2024-02-1	2 11:33:39 BME H58 6040 (ftp://192.168.2.101:2	1) Flashing item 1 of 2 to channel 10, index 0, 450000 of 34	86128 bytes transferred (12%)								
0	2024-02-1	2 11:33:38 BME H58 6040 (ftp://192.168.2.101:2	1) Flashing item 1 of 2 to channel 10, index 0, 398000 of 34	86128 bytes transferred (11%)								
0	2024-02-1	2 11:33:37 BME H58 6040 (ftp://192 168.2 101:2	1) Flashing item 1 of 2 to channel 10, index 0, 345000 of 34	86128 bytes transferred (9%)								
0	2024-02-1	2 11:33:36 BME H58 6040 (ftp://192 168.2 101:2	1) Flashing item 1 of 2 to channel 10, index 0, 292000 of 34	86128 bytes transferred (8%)								
0	2024-02-1	2 11:33:35 BME H58 6040 (ftp://192.168.2.101:2	1) Flashing item 1 of 2 to channel 10, index 0, 239000 of 34	186128 bytes transferred (6%)								
2	Updates in p	rogress. Updates must completely finish or have	to be cancelled before additional updates can be executed	L					Summary	🖄 Update	🗄 Export	Cancel

13. When the update is finished and the selected firmware installed, you will see a screen like this:

ŝ	EcoStruxure™ Automation Device Maintenance □ □ □ □ □ ○ ④ I □ ② ● APACKAGE DEVICE / LOADING				O Errors	A 0 Warnings Dis	scovery: Manual	View stat	tus Settings				_ 0 X
DATA	PACKAGE	DEVI	CE / LOADING			_					_		
DEV	ICE LIST	_				🕀 Add	n Connect	1 Disconnect	1 Update Center	○ Read Device Informat	ion 🕸 Hide	🕆 Dispo	ise 🛛 🕅
	Status	Device M Comme	lame cial Reference	Service Endpoint Serial Number	Firmware Version	Security Co	Mode	Update Info	Extensions	Actions			
	Device D	efault Group	(1)										< 10
	٠	BME H58 CR: BME	6040 H58 6040	ftp://192.168.2.101:21 SN:	Current: 03.20 IR 15 Target: 03.20 IR 15	Current: Not Supp Target: -	STOP	0 🖵 🕧	Extensions	A 19	Î₽₽	1 m	
Logs	0												×
0	0 Errors	💧 0 Wan	nings 🕧 Messages									Save	Clear
	Date		Source	Description									
0	2024-02	12 11:36:06	BME H58 6040 (ftp://192.168.2.101.21)	Download and installation finished									
0	2024-02	12 11:36:03	BME H58 6040 (ftp://192.168.2.101.21)	Firmware upgraded successfully									
0	2024-02	12 11:35:35	BME H58 6040 (ftp://192.168.2.101.21)	Waiting for PLC ready									
0	2024-02	12 11:35:34	BME H58 6040 (ftp://192 168.2 101-21)	Flash upgrade completed for channel 10, index 5									
0	2024-02	12 11:35:26	BME H58 6040 (ftp://192.168.2.101.21)	Flashing item 2 of 2 to channel 10, index 5, 1059696 of	1059696 bytes transferred (100%))							
0	2024-02	12 11:35:25	BME H58 6040 (ftp://192 168 2 101 21)	Flashing item 2 of 2 to channel 10, index 5, 1047000 of	1059696 bytes transferred (98%)								
0	2024-02	12 11:35:24	BME H58 6040 (ftp://192.168.2.101.21)	Flashing item 2 of 2 to channel 10, index 5, 997000 of 1	059696 bytes transferred (94%)								
										Summary	1 Update	± Export	Cancel

Perform a reset on the updated controller before restarting the process.

Firmware Update Between Versions Superior or Equal to v4.x

Introduction

This procedure uses EcoStruxure Automation Device Maintenance software tool v.3.2.136 or later and an HTTPS connection to update the firmware of a Modicon M580 controller from a version equal to or greater than v4.10 to another version also greater than v4.10.

EcoStruxure Automation Device Maintenance and instructions for using it are available on the Schneider Electric website at the following URL:

https://www.se.com/ww/en/download/document/EADM/

Preliminary Tasks

- Configure your firewall to allow PC-to-controller communications.
- Download the target Modicon M580 firmware file from: https://www.se.com/ww/en/product-range/62098-modicon-m580/#softwareand-firmware
- Confirm you can ping the Modicon M580 controller:
 - Through the service port at IP address 10.10.MAC5.MAC6.
 - Through the USB port at IP address: 90.0.0.1.

The Modicon M580 controller acknowledges the ping if it is correctly configured on the same network.

NOTE: When you update your Modicon M580, it is important that you are in front of the equipment to monitor the progress of the update or, at a minimum, have a contact or other means of observing and reporting the state of the application before attempting the update.

Procedure

- 1. Perform this update using either one of the following ports of the Modicon M580 controller:
 - USB port
 - Ethernet service port (Port 1, connecting the PC directly to the service port)
- 2. Open EcoStruxure Automation Device Maintenance.

- 3. Navigate to **Settings > Global > Package Settings**, click the ellipsis (...). Then:
 - In the selection dialog box, select the target firmware file and click OK.
 - Back in the Package Settings dialog box, click Apply.



Summary 🗘 Update 🛓 Export Cancel

- 4. In **DEVICE/LOADING**, click the **+Add** icon (Add), then:
 - Type "bme" in the search bar and select **BME***** (modernized).
 - Under **Connection**, select **HTTP/HTTPS** and select the **Secure** checkbox.
 - Click Add Device.

NOTE: You can select several devices and update these devices simultaneously.

Image: SecoStruxure™ Automation Device Maintenance Image: Image: Image: SecoStruxure™ Automation Device Maintenance Image: Image: Image: SecoStruxure™ Automation Device Maintenance Image: Imag		O Errors	A 0 Warnings Disc	covery: Manual	✓ ℃ View state	us Settings			-	0 X
DATA PACKAGE DEVICE / LOADING										
DEVICE LIST			① Add	명 Connect	n Disconnect	û Update Center	C Read Device Informa	ation 🐵 Hide	🖯 Dispose	Y
Status Device Name Commercial Reference	Service Endpoint Serial Number	Firmware Version	Security Co	Mode	Update Info	Extensions	Actions			
	Add Device				×					19
	Search Commercial Reference BME	Connection HTTP/H	nt* ITTPS ∨							4
	Commercial Reference:*	Secure]							
	BME*** BME*** (modernized)	192.168.	14.1 × : 4	143						
	Note: modernized = supports sector For more information, refer to the	ure communication. • <u>Schneider Electric Product Catalog</u>	A	Add Device Ca	ancel					
Logs 🕜										×
😑 0 Errors 🔺 0 Warnings 🕜 Messages									Save	Clear
Date Source Description										
Ø 2024-02-09 13:21:17 Settings - Security Syslog Server Configuration	ion is not done									
							Summary	û Update a	±. Export	Cancel

The new device appears in the **DEVICE Default Group**.

Device status is YELLOW, indicating that the device is reachable on the network.

NOTE: If the status is not YELLOW, consult the EcoStruxure Automation Device Maintenance, Firmware Upgrade Tool, Online Help.

		•	BME*** CR: BME***	https://192.168.2.101:443 SN:	Current: - Target: -	Current: - Target: -			8 🖷 🖞 🗎 Þ 😫 📼 I
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5. To set the controller certificate to "Trusted", click the red certificate icon displayed on the right.

😵 EcoStrux	kure™ Automation Device Maintenance ~	e		0 Errors	A 0 Warnings Di	covery: Manual	✓ ♥ View state	us Settings			-	θX
DATA PACKAGE	DEVICE / LOADING											
DEVICE LIST					① Add	嚼 Connect	1 Disconnect	Dpdate Center	C Read Device Information	n 🐵 Hide	🕤 Dispose	V I
Status	Device Name Commercial Reference	Service Endpoint Serial Number		Firmware Version	Security Co	Mode	Update Info	Extensions	Actions			
Device Defau	alt Group (1)									_	^	19
D O BI	ME*** R: BME***	https://192.168.2.101:443 SN:	Certificate In	formation		×			8 🖷 ć	. 🖻 ▷ 🛛		4
			General Deta	ils Certification Path	1							
			(i) Certific	ate Information								
			_									
			This certific	ate is not trusted.	he Trusted Certificates st	078						
			The specific			ore:						
			> Subject:	BMEH58604	0 21233890286							
			> Issuer:	BMEH58604	0_21233890286							
			Valid from	1970-01-01 to 2050-01	1-01							
Logs 🕐											_	×
0 Errors 🛆	0 Warnings 🕜 Messages					- i I					Save	Clear
Date	Source Description		0		Trust	Close						

6. In the **Certificate Information** dialog box, verify the certificate content and click **Trust**.

Summary 🗘 Update 🗄 Export Can

- 7. To log into the controller, click the **Set Credentials** icon (^(C)) and enter your credentials:
 - Authentication Type: Username
 - Device User Name: loader
 - **Device password**: The **Firmware Password** configured in your EcoStruxure Control Expert application.

~	EcoSt	ruvureTM Automation Device Maintenanc		Untitle	d*						-	σx
रङ्ग	00		C	0 Errors	🔺 0 Warnings D	iscovery: Manual	 View stat 	us Settings				
DATA	PACKAGE	DEVICE / LOADING										
DEV	ICE LIST				① Add	嚼 Connect	🔁 Disconnect	এ Update Center		🕸 Hide	🕆 Dispose	e 🛛
	Status	Device Name Commercial Reference	Service Endpoint Serial Number	Firmware Version	Security Co	Mode	Update Info	Extensions	Actions			
	Device De	fault Group (1)									~	19
	•	BME***	https://192.168.2.101:443	Current: -	Current: -				<u>ث</u> 🕫 ۲	D D	i 💷 🕯	1
			_			_						
			Set crede	ntials		×						
			Device Na	me: BME***								
			Authentic	ation Type: Usernar	ne	\sim						
			Device Us	er Name: loader								
			Device pa	ssword:	•••••	Ø						
			0	Save and Connect	Save	Discard						
						_						
Logs (?											×
0) Errors	🔺 0 Warnings 🛛 🕐 Messages									Save	Clear
	Date	Source Description										

The device **Status** indicator turns green. Your PC is connected to the controller. The **Connect / Disconnect** icon is next to the **Set Credentials** icon.

	٠	BMEH586040 CR: BMEH586040	https://192.168.2.101:443 SN: 21233890286	Current: 04.20.15 Target: -	Current: Not Supported Target: -	RUN	Extensions	ß	Ð	1	Þ	I.
-									_			

8. Select the firmware that will be used to update the controller. Click the

Update Center () icon, then click**Firmware**:

EcoStri DD	uxure™ Automation Device Mair ∃ ~	itenance	6	Untitled ^a O Errors A O Warnings D	iscovery: Manual	ジ View stat	us Settings			,	. ø x
DATA PACKAGE	DEVICE / LOADING										
DEVICE LIST				① Add	। 働 Connect	🖷 Disconnect	Dpdate Center	© Read Device Information	🕸 Hide	🕆 Dispos	se 🛛 🖓
Status	Device Name Commercial Reference	Service Endpoint Serial Number	Firmware Version	Security Configuration Version	Mode	Update Info	Extensions	Actions			
Device Def	ault Group (1)									~	10
•	BMEH586040	https://192.168.2.101:443	Current: 04.20.15	Current: Not Supported	0.00		Extensions	A 🖷 🗅	Ê ⊳ 6		1
		Please select the type of	Content you want to updat	® Security ∽	Reset	Cancel					
0 Errors	0 Warnings 🕜 Messages									Save	Clear
Date	Source	Description								2016	
2.010											

9. The firmware instances previously selected that are compatible are displayed, select the intended firmware version, then click **Save**:

	uxure™ Automation Device Mainte	enance	0	Unti O Errors	🔺 0 Warn	ings Dis	covery: Manual	・ ひ View state	us Settings				-	0 X
DEVICE LIST						🕀 Add	영 Connect	n Disconnect	் Update Center	© Read Device Infor	mation 🐵	Hide	🖯 Dispose	8
Status	Device Name Commercial Reference	Service Endpoint Serial Number	Firmware Version	Securit	y Configuratio	n Version	Mode	Update Info	Extensions	Actions				
Device Def	fault Group (1)												^	10
•	BMEH586040 CR: BMEH586040	Firmware							×	R #	î B	⊳ 🖹	III 1	4
		Please select the firmware version for select	ed device(s) to update.											
		Device	Current Targ	get	Select	Version	Descripti	on						
		CR: BMEH586040 SE: https://192.168.2.101:443	04.20.15 04	.10.13	0		Ignore							
					•	04.10.13	BME H58 6	040						
		-						_	_					
Logs 🕐		Ø						Save	Cancel					×
0 Errors	🔺 0 Warnings 🕜 Messages												Save	Clear
Date	Source	Description												
										Summary	土 Upda	ite 🛓	Export	Cancel

10. Verify that your PC is connected to the correct controller and that the process is operating in maintenance mode.

土 Update 止 Export

Summary

11. Click the checkbox on the left of your screen to select the controller that you want to update, then click **Update**:

\$ <u>\$</u>	EcoS	itruxure™ Automation Device	e Maintenance	0 Err	Untitled* rors 🔺 0 Warnings 🗍 0	Discovery: Manual 🗠	ව View status				-	0 X
DATA	ICE LIST	DEVICE / LOADING			(+)	Add 🐵 Connect	的 Disconnect	∴ Update Center	○ Read Device Information	영우 Hide	🕆 Dispose	Ιv
	Status	Device Name S Commercial Reference	Service Endpoint Serial Number	Firmware Version	Security Configuration Versi	ion Mode	Update Info	Extensions	Actions			
	Device [Default Group (1)	Update Confirmation					×			^	10
	•	BMEH586040 CR: BMEH586040	Select a Category	2 Prerequisite	B Review the S	Selection —	Confirmation		冬 �� ①	Ê ⊳	i 📼 1	4
			The current version of EcoStruxure A	utomation Device Maintena	nce only supports one type o	of content per update	operation.					
				_								
				🕑 Firmwai	re 🔞 Security	r						
	•											_
Logs	0 Errors	🔺 0 Warnings 🕜 Messages	0				Back Next	Cancel			Save	Clear
	Date	Source	Description				_	_				
									Summary	Update	⊥. Export	Cancel

12. If you chose to include files available on the Schneider Electric remote repository, you will be asked to first download them locally before resuming the update:

ŝ	EcoSt	ruxure™ Automation Device Ma	aintenance	Untitled* Errors A 0 Warnings Discov	ery: Manual $^{\vee}$	View status				-	σX	
DATA	PACKAGE			_					_			
DE	ICELIST	DEFICE / EXADING			0.00		all ni i i		0.0. (D.). (d.). (No. 117.1	0.0	
	ICE LIST				(+) Add	喝 Connect	백) Disconnect		C Read Device Information	os Hide	1 Dispose	1 V
	Status	Device Name Commercial Reference	Service Endpoint Serial Number	Firmware Version	Security Configuration Version	Mode	Update Info	Extensions	Actions			\square
	Device De	fault Group (1)	Update Confirmation					×			~	10
	•	BMEH586040 CR: BMEH586040	Select a Category	- 2 Prerequisit	e 🗿 Review the Select	tion — 🕻	Confirmation		冬 �� 土	₽⊳	i 📼 1	4
			Please download the package(s) below from	the remote repository, or	else the corresponding device(s) will	not be updated.						
			Version Package Name			Status						
				All requi	red files are available locally							
Logs	0						Skip Download	i Download				×
0	0 Errors	🔺 0 Warnings 🕜 Messages	0			1	Back Next	Cancel			Save	Clear

Click Next.

13. Review the selected controller and firmware version selected for this update, then click **Next**:

ŝ	EcoSt	ruxure™ Automation Device Maintena 日 ~ 合 目 ② ◎	ance	0	0 Errors	0 Warnings C	Discovery: Manua	l ∽ ℃ View stati	us Settings				_ @ X
DATA	PACKAGE	DEVICE / LOADING											
DEV	VICE LIST					\oplus Add	i Connect	🖷 Disconnect	1 Update Center	○ Read Device Information	d® Hide	🗑 Dispo	se 🛛
	Status	Device Name Commercial Reference	Service Endpoint Serial Number	Firmware Version	Security Confi	guration Version	Mode	Update Info	Extensions	Actions			
	Device D	efault Group (1)	Update Confirmation						×			1	10
	•	BMEH586040 CR: BMEH586040	Select a Catego	Praraguisit	0	Raview the Sele	ction	Confirmation		A 🖷 🗅	₽⊳		4
			Please review the selection.	iy Vierequisio		internet the sere	cion	9					
			Device Name Commercial Reference	Service Endpoint	Update	Current	Target	Data Package / File	2				
			BMEH586040 P CR: BMEH586040 S	https://192.168.2.101:443 5N: 21233890286	Firmware	04.20.15	04.10.13	BME H58 6040					
Loos	0		1 selected for update (0 skipped).										
0	0 Errors	🔺 0 Warnings 🕜 Messages	Ø					Back Next	Cancel			Save	Clear

14. In the **Update Confirmation** dialog box, review the messages:

EcoStruxure™ Automation Device Maintenan □ □ □ ● ● ●	ice	0	0 Errors A 0 Warnings Di	scovery: Manual	・ ひ View state	us Settings				- @ X
DATA PACKAGE DEVICE / LOADING										
DEVICE LIST			\oplus Add	·明 Connect	畸 Disconnect	1 Update Center	\odot Read Device Information	ð⊅ Hide	🕆 Dispos	ie
Status Device Name Commercial Reference	Service Endpoint Serial Number	Firmware Version	Security Configuration Version	Mode	Update Info	Extensions	Actions			Δ
Device Default Group (1)	Update Confirmation					×			~	10
BMEH586040 CR: BMEH586040	Select a Category		e — 🔗 Review the Select	tion — 🕢	Confirmation		유 🖷 土			4
	Please read carefully the instruction below a	nd confirm the update.								
	Do not turn off the computer or pu	it in sleep mode and do n	ot close the application while the up	date is in progress	5.					
	(Optional) I confirm that the syste • Verify that activating • Failure to follow these	m is in maintenance mode this function does not resu e instructions can result in	e and that I want to suppress all safe ult in unsafe conditions. death, serious injury, or equipment	ty messages for thi damage.	is update sequence	h.				
Logs 📀					_					×
0 Errors 🛆 0 Warnings 🕐 Messages	Ø			Bi	ack Confirm	Cancel			Save	Clear

NOTE: If you click **Optional**, the safety messages that might have been displayed are considered acknowledged in advance and will be skipped.

lf you agree, click **Confirm**.

15. Safety messages can be viewed only in the Notifications Area, which you

				can ope	en using th	ne 🛆 icon.							
ŝ	E	coStruxure™ Automatic) ີ ☐ 日 ~ 읍 I 🗎 🕡 @	on Device Maintenance	3	0	Untitled ^a O Errors 🔺 O Warnings 🛛 Di	scovery: Manual	✓ ⑦ View statu	s Settings			-	<i>∞</i> ×
DA	EVICE L	LIST				① Add	ତ Connect	Disconnect	① Update Center	⊖ Read Device Information	🕸 Hide 🕈	😚 Dispose	8
	s	Status Commercial Reference		Service Endpoint Serial Number	Firmware Version	Security Configuration Version	Mode	Update Info	Extensions	Actions			29
	Dev	vice Default Group (1)										^	10
	2	O RMEH586040 CR: BMEH586040		https://192.168.2.101:443 SN: 21233890286	Current: 04.20.15 Target: 04.20.15	Current: Not Supported	RUN		Extensions	A 👰 🗅	e D		4
Log	8												×
	0 Err	rors 🔺 0 Warnings 🕜 N	fessages								5	Save	Clear

16. To acknowledge the safety messages that are displayed in the **Notification Area**, first select the item, then click **Confirm**

188	EcoSt	uxure™ Automation Device Maintena 문 ✓ 😂 । 🗎 ② 🞯	ance	G	Untitled* O Errors O Warnings Di	iscovery: Manual	✓ じ View state	us Settings			_ 0
DAT	A PACKAGE	DEVICE / LOADING									
D	EVICE LIST				\oplus Add	ानु Connect	n Disconnect	∴ Update Center	C Read Device Informati	on 🐵 Hide	$\widehat{\Box}$ Dispose ∇
	Status	Device Name Commercial Reference	Service Endpoint Serial Number	Firmware Version	Security Configuration Version	Mode	Update Info	Extensic 😰	Notification Area		
	Device De	fault Group (1)						13	Security Advice		
		BMEH586040	https://192.168.2.101:443	Current: 04.20.15	Current: Not Supported	RUN		Extension	3MEH586040 https://192.168.2.101:443		
		CR: BMEH586040	SN: 21233890286	larget: 04.20.15	larget: -				▲ V	VARNING	
									UNANTICIPATED SYST	EM BEHAVIOR	
									To facilitate safe device to the instructions outli	operations, please ned below:	strictly adhere
									Ensure constant power	r supply to the dev	rice(s).
									Verify that you are con by using the localization	nnected to the con on function.	ect device(s),
									Verify the accuracy and for the transfer.	d integrity of the d	ata intended
									Ensure the device(s) the device(s) will not it is completed.	are brought to a operational unti	complete stop, I the operation
									 Note that the device(device(s) goes throug switched off and on a 	s) may reboot mul h the same steps a gain.	tiple times, the s if it had been
									Preserve the compatil versions of all devices	pility between the s present in the syst	oftware em.
									Before utilizing the to the chapter of "Safety and respective hardw	ol for device intera information" in th are documentation	ction, refer to e user manual
Logs	0								Failure to follow these	instructions can	result in
0	0 Errors	🔺 0 Warnings 🕜 Messages							deutit, serious injury,	or equipment dur	inge.
	Date	Source	Description						Do you want to proceed?		
0	2024-02-0	9 15:23:15 Automation Device Maintenance	Starting update process - Discovery Mode	e set to manual							
									a Con	firm Reject	
~										Neject	
(\circ)	Updates in p	rogress. Updates must completely finish or have to b	e cancelled before additional updates can	be executed.					Summary	⊥ Update 🛃	Export Cance

NOTE: Subsequent notifications may pop-up after you acknowledge a message. The **Notification Area** must be empty for the firmware update to begin.

Result: As the update proceeds, you will see a screen like this:

Since the second se	Automation Device Maintenan	ce	•	🕽 0 Errors 🔺 0 Warnings D	iscovery: Manual	U ⊂ Uiew stat	us Settings			-	- 0
DATA PACKAGE DEV	ICE / LOADING										
DEVICE LIST				① Add	🖷 Connect	🚯 Disconnect	Dpdate Center	C Read Device Informati	ion 🐵 Hide	🕆 Dispos	se 🛛 🏹
Status Device	Name rrcial Reference	Service Endpoint Serial Number	Firmware Version	Security Configuration Version	Mode	Update Info	Extensions	Actions			L
Device Default Group	p (1)									~	1
BMEH58	6040 H586040	https://192.168.2.101:443	Current: 04.20.15	Current: Not Supported	STOP		Extensions	A 🖷 .	î 🗄 Þ 🗎		J
CR: DWI	11300040	3N: 21233030200	Target: 04.20.15	larget -							
Loas ?											
😑 0 Errors 🔺 0 Wa	mings 🕖 Messages									Save	Clear
Date	Source	Description									
2024-02-09 16:18:51	BMEH586040 (https://192.168.2.101:443)	Downloading 10%									
2024-02-09 16:18:48	BMEH586040 (https://192.168.2.101:443)	Downloading0%									
2024-02-09 16:18:48	BMEH586040 (https://192.168.2.101:443)	Preparation finished									
2024-02-09 16:18:48	BMEH586040 (https://192.168.2.101:443)	Download started									
	and share access an end shale. We lake the barries have been	second to the face of distance building and	a few second and					C	A Handaka I	Course and	Canad

17. When the update is finished and the selected firmware installed, you will see a screen like this:

_	coStruxure	Automation Device Maintena	nce		• • • • • • • •			in terminal				
					U Errors A U Warnings	Discovery: Manual	 View stat 	us Settings				
	AGE D	VICE / LOADING										
EVICE L	IST				① Ad	d 🗐 Connect) Disconnect	1 Update Center	C Read Device Information	đ⊅ Hide	🖯 Disp	pose
s	Devic	e Name	Service Endpoint	Firmware Version	Security Configuration Version	Mode	Update Info	Extensions	Actions			
	Com	nercial Reference	Serial Number									_
Dev	ice Default Gr	rup (1)										^
~	BMEH	86040	https://192.168.2.101:443	Current: 04.20.15	Current: Not Supported	STOP	0 🗆 🕧	Extensions	品 🖷 🗘		(1)	1
s 😧												
s 🕐	ors 🛕 0 V	arnings 🔮 Messages									Save	Clea
s 😨 O Erro Date	ors 🛕 0 V	tamings 🕖 Messages Source	Description	_			-		_		Save	Clea
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Perform a reset on the updated controller before restarting the process.

Firmware Update from v3.x to v4.x

This section contains the step-by-step instructions for updating the Modicon M580 controller firmware from a previous version to 4.10 or later.

New firmware version 4.10 (and later) for the Modicon M580 has an enhanced integrity check mechanism compared to previous versions. This evolution is performed in a two-step process.

To update Modicon M580 controller firmware from version 3.22 or earlier to 4.10 or later, follow the procedure set forth in this chapter.

NOTICE

INOPERABLE EQUIPMENT

- Do not upgrade with firmware version equal to or later than 4.10 any of the following Modicon M580 commercial references: BMEP581020(H), BMEP582020(H), BMEP582040(H), BMEP583020, BMEP583040, BMEP584020, BMEP584040, that have a Product Version (PV) inferior or equal to 3.
- If you intend to upgrade the M580 controller with a firmware version equal to or later than 4.10, and there is a Modicon M580 remote terminal unit (RTU) module in your configuration, first upgrade the RTU module to firmware version 03.02.02 or later and test your application.
- If you intend to upgrade the M580 controller with a firmware version equal to or later than 4.10, and there is a Modicon BMENOC0301/BMENOC0311 module in your configuration, first upgrade the BMENOC0301/ BMENOC0311 module to firmware version 02.20 or later and test your application.
- If you intend to upgrade the M580 controller with a firmware version equal to or later than 4.10, and there is a Modicon BMENOC0321 module in your configuration, first upgrade the BMENOC0321 module to firmware version 1.09 or later and test your application.

Failure to follow these instructions can result in equipment damage.

NOTE:

- Verify that your PC can communicate with the Modicon M580 controller using FTP and HTTPS protocols. (Cybersecurity policies applied to some networks may block this update procedure.)
- The Product Version (PV) information can be found on the product label.
- Ensure the compatibility of your modules in your system (refer to the firmware history).

Overview

The Modicon M580 controller undergoes two firmware changes during the update, as follows:

Initial state	V3.22 (or earlier)						
	NOTE: V3.22 uses FTP protocol for firmware updates.						
Step 1: Upgrade Cor	ntroller to Modicon M580 Migration Firmware, page 32						
Intermediate state	V3.99 - Migration Firmware						
	 Used only to update firmware to V4.10 or later. 						
THEF	 Accepts only secure firmware (SEDP files over HTTPS). 						
	Does not accept applications.						
	IP Address = 10.10.MAC5.MAC6						
	NOTE:						
100	After the update, the firmware password is reset to fwdownload						
_	• If power cycles to the controller, firmware reverts to V3.20.						
Step 2: Upgrade Mig	ration Firmware to Modicon M580 Secure Firmware, page 37						
Final state	V4.10 (or later)						
	Firmware is secured with:						
THEF	 Enhanced integrity check of the firmware 						
	 List of fixed vulnerability can be found at: 						
	https://www.se.com/ww/en/work/support/cybersecurity/security- notifications-archive.jsp						
100	List of specific impact is found in firmware history.						
<u> </u>							

NOTE: After the update, the application configured in the controller remains the same as before the update.

Downloading EcoStruxure Automation Device Maintenance

EcoStruxure Automation Device Maintenance and instructions for using it are available on the Schneider Electric website at the following URL:

https://www.se.com/ww/en/download/document/EADM/

The version for this procedure is: EcoStruxure Automation Device Maintenance V3.1.147 and subsequent supporting version(s).

Step 1: Upgrade Controller to Modicon M580 Migration Firmware

Preliminary Tasks

Before beginning Step 1:

- Configure your firewall to allow PC-to-controller communications.
- Download the latest Modicon M580 migration firmware file from:

https://www.se.com/ww/en/product-range/62098-modicon-m580/#softwareand-firmware

- Confirm that the real time clock of your controller is correct.
- Confirm that you know the credentials of the controller application, including firmware password (default = *fwdownload*) and application password.

NOTE: When you update your Modicon M580 controller, it is important that you are in front of the equipment to monitor the progress of the update or, at a minimum, have a contact or other means of observing and reporting the state of the application before attempting the update.

Using EcoStruxure Automation Device Maintenance

Using EcoStruxure Automation Device Maintenance indicated version, page 31, perform these tasks:

- 1. Perform this update using only one of the following Modicon M580 controller ports:
 - USB port
 - Ethernet service port (Port 1, connecting the PC directly to the service port).

NOTE: Do not use one of the controller dual network ports, or a port on a communications module. If you use one of these ports, the procedure set forth in Step 2, page 37 may not function as intended and the update may not succeed.

2. Open EcoStruxure Automation Device Maintenance.

3. Navigate to **Settings > Global > Package Settings**, click the ellipsis (...), select the folder where you saved your .LDX firmware upgrade file and click **Apply**.



NOTE: Optionally, you can view the firmware available for update in the **DATA PACKAGE** screen.

- 4. In **DEVICE/LOADING**, click the **+Add** icon (Add), then:
 - Type "bme" in the search bar and select BME***
 - Under Connection, select FTP.
 - Enter the IP Address of the controller:
 - 192.168.10.1 for Service Port (set in controller program)
 - 90.0.0.1 for the USB port

NOTE: Port 21 is selected by default.

rch Commercial Re	ference	Connection:*		
e	×	FTP	\sim	
nmercial Reference	*	IP Address:*		
ИЕ***		192.168.10.1	x : 21	
//E*** (modernized)			
/IE H58 2040	SV <= 03.99 IR 6			
/IEH582040	SV >= 04.02.02			
/IEH584040	SV >= 04.02.02			
/IE H58 4040	SV <= 03.99 IR 6			
/IEH586040	SV >= 04.02.02			
/IE H58 6040	SV <= 03.99 IR 6			

Click Add Device.

The new device appears in the **Device Default Group**.

FcoStruxure™ Automation Device Maintenance				Untitled*				-	. a х	
		ce Maintenance		\rm 0 Errors 🔺	1 Warnings	Discovery: Manual $^{\vee}$	👏 View status Settings 🔺			
DATA PACKAGE	DEVICE / LOADING									
DEVICE LIST							🕀 Add 🖷 Connect 🖷 Disconnect	🖞 Update Center 🐵 Hide	🕆 Dispose	e V
Status	Device Name Commercial Reference	Service Endpoint Serial Number	Firmware Version	Security Co	Mode	Update Center Info	Add new device Extensions	Actions		Δ
Device Defa	ault Group (1)								~	19
•	BME*** CR: BME***	ftp://192.168.10.1:21 SN:	-	-	-		-	∆ @ ⊥ 🗎 Þ	() () () () () () () () () () () () () (
Logs ?										×
0 Errors	1 Warnings 🕜 Messages								Save	Clear
Date	Source D	escription								
A 2023-02-02	13:40:56 Settings - Security S	ecurity is not configured.								

Summary Update Cancel

Device status is YELLOW, indicating that the device is reachable on the network.

NOTE: If the status is not YELLOW, consult the EcoStruxure Automation Device Maintenance, Firmware Upgrade Tool, Online Help.

- 5. Click the **Set Credentials** icon (\bigtriangleup) and do one of the following:
 - If the application has no password: only enter the firmware password (default or configured).
 - If the application has a password: enter both the application password and the firmware password (default or configured).
 - If there is no application in the controller, enter the firmware password (default or configured).
- 6. Click Save and Connect.

Device status is GREEN: EcoStruxure Automation Device Maintenance has connected to the device successfully.

7. Click the **Update Center** icon (); then click **Firmware**; select the corresponding Modicon M580 migration firmware V3.99; and click **Save**.

NOTE: The firmware version 3.99 is an intermediate version intended to enable the download of the final firmware version 4.10 or later in the Step 2 procedure, page 37. Version 3.99 is not an operational version.

- 8. Select the device you want to update, then click Update.
- 9. In the **Update Confirmation** dialog box, follow the instructions then click **Confirm**. A notification appears to the right of the dialog box.
- 10. Click on the **Notification** icon ($^{L\!\Delta}$), follow the instructions and click **Confirm**.

DATA		DEVI	CE / LOADING											
DE	/ICE LIST							\oplus Add	🔞 Connect	🔞 Disconnect	⊥ Update Center	🕸 Hide	🖯 Dispose	\forall
	Status	Device N Commen	lame rcial Reference	Service Endpoint Serial Number	Firmw	Security Co	Mode	Update C	enter Info	Extensions	Actions			Δ
	Device Def	ault Group	o (1)										^	19
	•	BME P58 CR: BME	3040 P58 3040	ftp://192.168.10.1:21 SN:	03.20 IR 15	Not (10) Loading	STOP	Firmware u	pdate was ca	(f) Extensions	A 0 1			
Logs	0													×
0	0 Errors	🛆 0 Warr	nings 🕜 Messages										Save	Clear
	Date		Source	Description										
0	2022-12-12	2 09:17:50	BME P58 3040 (ftp://192.16	i8.10.1:21) Flashing item 1 of 1 t	o channel 10, inde	x 0, 7767568 of 7767	7568 bytes tra	nsferred (1009	96)					
0	2022-12-12	2 09:17:49	BME P58 3040 (ftp://192.16	i8.10.1:21) Flashing item 1 of 1 t	o channel 10, inde	x 0, 7760000 of 7767	7568 bytes tra	nsferred (99%)					
	2022 12 11					/								

Result: The firmware download begins:

- 11. Wait approximately one minute, until the controller LEDs enter the following states:
 - RUN is green and flashing
 - ERR is red and flashing
 - IO is red and flashing
 - ETH MS is green



The controller firmware is now upgraded to V3.99. Proceed to the Step 2 procedure, page 37.

NOTE: If power is interrupted to the controller, it will restart with firmware V3.20.

NOTE: If you see a different combination of LEDs at the end of this procedure, an error has been detected during initial phase of the upgrade. The upgrade procedure cannot be completed and you will need to power cycle the controller to return it to V3.20. In this event, contact your local Schneider Electric service representative and provide following information:

- The sequence of LEDs flashing.
- The DiagFile, which you can download in EcoStruxure Control Expert by clicking the Help > About EcoStruxure Control Expert > Technical support.

Step 2: Upgrade Migration Firmware to Modicon M580 Secure Firmware

Preliminary Task

Before beginning Step 2:

- Configure your firewall to allow PC-to-controller communications.
- Download latest Modicon M580 firmware file from:

https://www.se.com/ww/en/product-range/62098-modicon-m580/#software-and-firmware

- Confirm you can ping the Modicon M580 controller:
 - Through the service port at IP address 10.10.MAC5.MAC6.
 - Through the USB port at IP address: 90.0.0.1.

The Modicon M580 controller acknowledges the ping if it is correctly configured on the same network.

NOTE: When you update your Modicon M580, it is important that you are in front of the equipment to monitor the progress of the update or, at a minimum, have a contact or other means of observing and reporting the state of the application before attempting the update.

Using EcoStruxure Automation Device Maintenance

Use EcoStruxure Automation Device Maintenance with BMEx58x0x0_v04.10.XX on SEDP format to perform the following tasks:

- 1. Perform this update using either one of the following ports of the Modicon M580 controller:
 - USB port
 - Ethernet service port (Port 1, connecting the PC directly to the service port)
- 2. Open EcoStruxure Automation Device Maintenance.
- 3. Navigate to Settings > Global > Package Settings, click the ellipsis (...), select the folder where you saved your .SEDP firmware upgrade file and click Apply.

NOTE: Optionally, you can view the firmware available for update in the **DATA PACKAGE** screen.

- 4. In **DEVICE/LOADING**, click the **+Add** icon (Add), then:
 - Type "bme" in the search bar and select **BME***** (modernized)
 - Under Connection, select HTTP/HTTPS and select the Secure checkbox.
 - Enter the **IP Address** of the controller with firmware V3.99:
 - 10.10.MAC5.MAC6 for the service port
 - 90.0.0.1 for the USB port

NOTE: Port 443 is selected by default.

Add Device					×
Search Commercial Refere	ince	Connection:*			
bme	×	HTTP/HTTPS	\sim		
Commercial Reference:*		Secure			
BME***		IP Address:*			
BME*** (modernized)		90.0.0.1	× :	443	
BMEH582040	SV >= 04.02.02				
BME H58 2040	SV <= 03.99 IR 4				
BMEH584040	SV >= 04.02.02				
BME H58 4040	SV <= 03.99 IR 4				
BMEH586040	SV >= 04.02.02				
BME H58 6040	SV <= 03.99 IR 4				
Note: Modernized = comr For more information, refe	mercialized after 2019. er to the <u>Schneider Electric P</u>	roduct Catalog		Add Device	Cancel

Click Add Device.

The new device appears in the **Device Default Group**:

Ecos	truxure™ Automa	ation Device Maintena	nce	0 Errors	🔺 1 Warnings 🛛 🕻	Discovery: Manual \vee t	- • ×
DATA PACKAGE	DEVICE / LOADI	NG					
DEVICE UST			A	M4 ® Connect	B Discovered 2	Hodata Cantor 30 Hi	da 🕀 Dispose 🗸
			0,	-g connect	-g Doconnect	, opdate Center Sor Ha	oe () Dapose [
Statue	Device Name Commercial Re	Service Endpoint Firmw Serial Number Versio		Mode Update (Center Extens	Actions	4
Device 0	efault Group (1)						~ 10
•	BME*** CR: BME***	https://90.0.0.1:443 SN:				8 © ⊥ 🖻 ▷	1 m 1
Logs 🕐							×
Date	Course	Description					Save Clear
A 2023-01	23 10 30 17 Settings -	Security Security is not config	jured.				
		Device s network NO T Dev	status is YE Г E: If the statice Mainter	ELLOW, indic atus is not Yl nance, Firmw	ating that the o ELLOW, consu vare Upgrade ⊺	device is reach ult the EcoStrux Fool, Online He	able on the kure Automation lp.
		Device	certificate is	s RED (🚺),	indicating the	device is untru	sted on the PC.
		5. In the D click the click Tru	EVICE/LO/ red certific ist.	ADING > DE ate icon, the	VICE LIST > E n in the Certifi	DEVICE DEFAU	JLT GROUP, ion dialog box,
		Clic	k the RED	certificate ico	on (📕).		
		• Ver	ify the Cert	ificate Infor	mation and, if	you agree, clic	k Trust.
		6. Click the	e Set Crede	entials icon ((\mathcal{A}) and ente	er:	
		• Dev	vice User N	lame : loader	-		
		• Dev	/ice passw	ord : fwdowr	nload		
		7. Click Sa	ve and Co	nnect.			
		NO migi	E: These of ation firmw	default crede /are V3.99.	ntials are used	d only for this M	lodicon M580
		Device s	status is GF fully conne	REEN, indica	ting EcoStruxu evice:	ure Device Mai	ntenance has
Status Commerce	me al Reference	Service Endpoint Serial Number	Firmware See	curity Co Mode	Update Center Info	Extensions	Actions
Device Default Group	1)	https://10.10.238.100-443					^
BIVIE H58 6	UTV UT	maps://10.10.200.100:445	00.00.00				

- 8. Click the **Update Center** icon (); then click **Firmware**; select the corresponding Modicon M580 firmware 4.10 or later and then click **Save**.
- 9. Select the device you want to update, then click Update.

10. During the firmware update process, a message is displayed, indicating the percentage of firmware update progress. When the update is completed, the controller is restarted and the connection with EcoStruxure Automation Device Maintenance is terminated.

NOTE: This process can take several minutes.

When the controller is restarted, a new connection with EcoStruxure Automation Device Maintenance is possible using the controller IP address and user credentials.

NOTE: After the package has been downloaded, the M580 controller will reboot.

After the reboot, the IP address of the controller is defined by the client application inside the controller. Thereafter, the EcoStruxure Automation Device Maintenance is unable to connect using the default IP address; instead the application IP address must be used.

Firmware Downgrade from v4.x to v3.20

This section contains the step-by-step instructions to downgrade Modicon M580 controller firmware from a version of 4.10 or later to firmware version 3.20.

In line with our policy of constant improvement, subsequent upgrades from version 3.20 contain many function and feature improvements, as well as mitigation of many important, known anomalies.

Performing the downgrade from Modicon M580 firmware version 4.10 or later to a previous firmware version 3.20 or earlier may preclude or eliminate important updates, and in particular, mitigation of certain cybersecurity vulnerabilities.

AWARNING

LOSS OF OPERATIONAL AND SECURITY IMPROVEMENTS

Avoid downgrading your Modicon M580 firmware version 4.10 or later if at all possible.

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

NOTE: A list of some of these vulnerabilities can be viewed at https://www.se. com/ww/en/work/support/cybersecurity/security-notifications.jsp.

NOTE: Verify that your PC can communicate with the Modicon M580 controller using FTP and HTTPS protocols. (Cybersecurity policies applied to some networks may block this update procedure.)

Overview

The process of downgrading Modicon M580 controller firmware from V4.10 or later to V3.20 is accomplished by applying the following downgrade migration firmware package:

BMEx58xxx downgrade package from 4.x to 3.20 v01

The EcoStruxure Automation Device Maintenance software and the downgrade package prepare the controller for the downgrade and then install the Modicon M580 firmware V3.20 contained in the package.

You can obtain the migration firmware package at https://www.se.com/ww/en/product-range/62098-modicon-m580/#softwareand-firmware.

For information on how to download EcoStruxure Automation Device Maintenance (EADM) and instructions for using it refer to the topic: Downloading EcoStruxure Automation Device Maintenance, page 31

The version for this downgrade procedure is EcoStruxure Automation Device Maintenance V3.2.136 and subsequent supporting version(s).

NOTE: Before starting the downgrade procedure, confirm that your controller application is built using firmware V3.20 or earlier, and that your controller is configured with the current date and time.

NOTE: The downgrade does not affect the application previously loaded on the controller. If the controller application was built using firmware V4.10 or later, the controller will restart in NO-CONF state.

NOTE: To retain the same controller IP address after the downgrade is completed, change the application level to V3.20 in EcoStruxure Control Expert, rebuild your project, and download it to the controller.

Procedure to Downgrade Controller to Firmware V3.20

Preliminary Tasks

Before beginning:

- Configure your firewall to allow PC-to-controller communications during this downgrade operation.
- Confirm that you know the credentials of the controller application, including the application password.

When you downgrade your Modicon M580 controller, it is important that you are in front of the equipment to monitor the progress of the downgrade or, at a minimum, have a contact or other means of observing and reporting the state of the application before attempting the downgrade.

Further, interrupting the procedure by any means before it has completed may cause irreparable damage to the Modicon M580 controller.

NOTICE

INOPERABLE EQUIPMENT

During the transfer of the firmware file:

- do not remove power from the Modicon M580 controller.
- do not remove power from the PC.
- do not exit the EcoStruxure Automation Device Maintenance (EADM) software.
- do not disconnect the communication cable.
- do not remove or insert the optional SD memory card.

Failure to follow these instructions can result in equipment damage.

Using EcoStruxure Automation Device Maintenance

EcoStruxure Automation Device Maintenance uses the downgrade firmware files provided by your local Schneider Electric service representative.

The name of the file, in SEDP format, that you use depends upon the reference of the controller. Generically, the name of the file varies depending on the reference of your controller. For example: BMEP582040 downgrade package from 4.x to 3.20 v01.

- 1. Perform this update using either one of the following ports of the Modicon M580 controller:
 - USB port
 - Ethernet service port (Port 1, connecting the PC directly to the service port).
- 2. Open EcoStruxure Automation Device Maintenance.
- Navigate to Settings > Global > Package Settings, click the ellipsis (...), select the folder where you saved your .SEDP firmware downgrade file and click Apply. For example:

\$	EcoStr	uxure™ Automa ⊒ ∨ 👌 I 🗎 Ø	ation Device Maintena @	ince		0 Errors	A 0 Warnings	s Discover	ry: Manual $\scriptstyle{\smallsetminus}$	O View status	Settings 🔺		-	σx
DATA	PACKAGE	DEVICE / LOADI	NG											
DEV	ICE LIST							① Add	Connect	Disconnect	û Update Center	🕸 Hide	🖯 Dispose	∇
	Status	Device Name Commercial Referen	Settings	0							×			4
			 Global Discovery DPWS Modbus TCP Communication Package Settings Security Certificate Manage PKI Syslog Logs 	Q ement	Local Repository	gration Downgrade	e 4.90			Incluc	e Subfolders 			
Logs	? D Errors Date	▲ 0 Warnings	Language Group V Project										Save	× Clear
			Reset							Ok Cance	Apply			

Summary Update Cancel

NOTE: Optionally, you can view the firmware available in the **DATA PACKAGE** screen.

- 4. In **DEVICE/LOADING**, click the **+Add** icon (\bigoplus Add), then:
 - Type "bme" in the search bar and select BME*** (modernized)
 - Under Connection, select HTTP/HTTPS and select Secure
 - Enter the **IP Address** of the controller:
 - For the Service Port: enter its IP address (as configured in the application)
 - For the USB Port: enter 90.0.0.1 (port 443 is selected by default)
 - **NOTE:** If your controller is in NO CONF, connect using the default IP address: 10.10.MAC5.MAC6.

arch Commercial Re	ference	Connection:*		
me	×	HTTP/HTTPS \sim		
ommercial Reference	**	Secure		
BME***		IP Address:*		
BME*** (modernized	1)	90.0.0.1 ×	443	
BMEH582040	SV >= 04.02.02			
BME H58 2040	SV <= 03.99 IR 4			
BMEH584040	SV >= 04.02.02			
BME H58 4040	SV <= 03.99 IR 4			
BMEH586040	SV >= 04.02.02			
BME H58 6040	SV <= 03.99 IR 4			

• Click Add Device.

The new device appears in the **Device Default Group**.

i	EcoStruxure™ Automation Device Maintenance D 🗁 🔄 ∨ 🚔 目 🕡 🞯		🤑 0 Er	O Errors O Warnings Discovery: Manual View status Settings Settings							_ @ X	
DATA	PACKAGE	DEVICE / LOADING										
DE	/ICE LIST						🕀 Add 🛛 🕀 Connect	🕫 Disconnect	⊥ Update Center	🕸 Hide	🕆 Dispo	se 🛛
	Status	Device Name Commercial Reference	Service Endpoint Serial Number	Firmware Version	Securi	Mode	Update Center Info	Extensions	Actions			
	Device Det	ault Group (1)									~	1
]	BME*** CR: BME***	https://90.0.0.1:443 SN:	-	-	-		-	& ® ⊥		1	
Logs	?											×
•	0 Errors	🔺 0 Warnings 🛛 🧭 Messages									Save	Clear
	Date	Source	Description									
									Summa	ry	Update	Cancel

Device status is YELLOW, indicating that the device is reachable on the network.

NOTE: If the status is not YELLOW, consult the EcoStruxure Automation Device Maintenance, Firmware Upgrade Tool, Online Help.

Device certificate is RED (¹), indicating the device is untrusted on the PC.

- 5. In the DEVICE/LOADING > DEVICE LIST > DEVICE DEFAULT GROUPDEVICE/LOADING > DEVICE LIST > DEVICE DEFAULT GROUP:
 - Click the red certificate icon (
 - Verify the Certificate Information and, if you agree, click Trust.
- 6. Click the **Set Credentials** icon (\triangle), then:
 - If the controller has previously been configured, enter:
 - Device User Name: loader
 - **Device password**: your application password, if set.; otherwise, the default password: *fwdownload*
 - If the controller has never been configured, enter:
 - Device User Name: anonymous
 - **Device password**: No password is required.
 - Click Save and Connect.

Device status is GREEN, indicating EcoStruxure Device Maintenance has successfully connected to the controller.

7. Select the corresponding Modicon M580 BMEx58xxx downgrade package from 4.x to 3.20 v01, then click **Save**.

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DATA	PACKAGE	DEVICE / LOADING									
DE	/ICE LIST					🕀 Add 🚳 Connect	🗐 Disconnect	🗅 Update Center 🚳	P Hide 😚 Dispo	se 🛛	
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	•	BMEP584040 CR: BMEP584040	https://90.0.0.1:443 SN: 21210411513	04.10.13	Not Supp STOP	Firmware selected	(<i>i</i>) Extensions	A 0 ⊥ E	▶ 🖹 🗊		
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	Date	Source	Description								
								Summary	Update	Cancel	

8. Select the device you want to update, then click Update.

During the firmware update process, the **DL** LED flashes green:



A message is displayed, indicating the percentage of firmware update progress.

After the download of the firmware has completed, the controller is restarted and EcoStruxure Automation Device Maintenance is disconnected.

NOTE: This process can take several minutes.

At the conclusion of the process, the **ETH MS** LED turns orange for about 1 minute.



If power to the controller is interrupted, the controller can become corrupted and unable to restart.

NOTICE

INOPERABLE EQUIPMENT

Maintain continuous power to the controller.

Failure to follow these instructions can result in equipment damage.

After successful reboot, the procedure is complete and the controller is running with firmware V3.20.

NOTE: When the controller reboots, EcoStruxure Automation Device Maintenance may incorrectly indicate that the firmware was not successfully installed. This is due to the disconnection of the EADM software during the reboot of the controller.

An FTP connection to the controller is now possible. Use EcoStruxure Automation Device Maintenance to re-connect to the controller over the USB port, and confirm that the firmware version is V3.20.

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As standards, specifications, and design change from time to time, please ask for confirmation of the information given in this publication.

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