Pact Series

MasterPact MTZ - MicroLogic X Control Unit

Firmware Release Notes

Pact Series offers world-class breakers and switches

DOCA0144EN-14

02/2023





Legal Information

The Schneider Electric brand and any trademarks of Schneider Electric SE and its subsidiaries referred to in this guide are the property of Schneider Electric SE or its subsidiaries. All other brands may be trademarks of their respective owners.

This guide and its content are protected under applicable copyright laws and furnished for informational use only. No part of this guide may be reproduced or transmitted in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise), for any purpose, without the prior written permission of Schneider Electric.

Schneider Electric does not grant any right or license for commercial use of the guide or its content, except for a non-exclusive and personal license to consult it on an "as is" basis. Schneider Electric products and equipment should be installed, operated, serviced, and maintained only by qualified personnel.

As standards, specifications, and designs change from time to time, information contained in this guide may be subject to change without notice.

To the extent permitted by applicable law, no responsibility or liability is assumed by Schneider Electric and its subsidiaries for any errors or omissions in the informational content of this material or consequences arising out of or resulting from the use of the information contained herein.

As part of a group of responsible, inclusive companies, we are updating our communications that contain non-inclusive terminology. Until we complete this process, however, our content may still contain standardized industry terms that may be deemed inappropriate by our customers.

Table of Contents

Safety Information	5
About the Book	6
Firmware Release Notes	8
Introduction	8
Firmware Version 005.103.003	10
Firmware Version 004.109.000	10
Firmware Version 004.107.000	10
Firmware Version 004.105.003	11
Firmware Version 004.105.000	11
Firmware Version 004.101.000	11
Firmware Version 003.012.000	11
Firmware Version 003.011.000	12
Firmware Version 002.000.004	12
Firmware Version 002.000.003	12
Firmware Version 002.000.002	13
Firmware Version 001.000.206	14
Firmware Version 001.000.202	14
Firmware Version 001.000.200	14
Firmware Update	15
Updating Firmware of MicroLogic X Control Unit	
Updating Firmware of Enerlin'X Devices	
Purchasing and Installing a Digital Module	22

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.

A 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.

A CAUTION

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

NOTICE

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

Please Note

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

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

About the Book

Pact Series Master Range

Future-proof your installation with Schneider Electric's low-voltage and medium-voltage Pact Series. Built on legendary Schneider Electric innovation, the Pact Series comprises world-class circuit breakers, switches, residual current devices and fuses, for all standard and specific applications. Experience robust performance with Pact Series within the EcoStruxure-ready switchgear, from 16 to 6300 A in low-voltage and up to 40.5 kV in medium-voltage.

Document Scope

This document provides you with the firmware version history of MicroLogic[™] X control unit. Use this document to determine whether an update to the latest version of the MicroLogic X firmware is interesting or relevant for your application.

This document also provides users with the technical information needed to update the firmware of MicroLogic X control unit, and download and install an optional Digital Module.

Validity Note

This document applies to MicroLogic X control units in MasterPact™ MTZ circuit breakers.

NOTE: This document also applies to MicroLogic™ Xi control units. A MicroLogic Xi control unit is a MicroLogic X control unit without Bluetooth® Low Energy communication.

Related Documents for IEC Devices

The following table lists documents for IEC devices compatible with MicroLogic X control units with firmware version greater than or equal to 005.103.003.

Title of documentation	Publication date	Reference number
MasterPact MTZ Catalogue	07/2021	LVPED216026EN
MasterPact MTZ - MicroLogic X Control Unit - User Guide	08/2022	DOCA0102EN-09

You can download these technical publications and other technical information from our website at www.se.com/ww/en/download.

Related Documents for UL/ANSI Devices

The following table lists documents for UL devices compatible with MicroLogic X control units with firmware version greater than or equal to 005.103.003.

Title of documentation	Publication date	Reference number
MasterPact MTZ - Circuit Breakers and Switches - Catalog	01/2021	0614CT1701
MasterPact MTZ - MicroLogic X Control Unit - User Guide	08/2022	DOCA0102EN-09

You can download these technical publications and other technical information from our website at www.se.com/ww/en/download.

Trademarks

 $\ensuremath{\textit{QR Code}}$ is a registered trademark of DENSO WAVE INCORPORATED in Japan and other countries.

Firmware Release Notes

Introduction

MicroLogic X Control Unit

MasterPact MTZ circuit breakers with MicroLogic X control units provide protection functions, metering, diagnostics, communication, and remote operations.

The control unit is customizable with optional Digital Modules.

MicroLogic X control units allow operation and monitoring of MasterPact MTZ circuit breakers locally or remotely.

NOTE: This release note also applies to MicroLogic Xi control units. A MicroLogic Xi control unit is a MicroLogic X control unit without Bluetooth® Low Energy communication. The firmware versions of the MicroLogic X and MicroLogic Xi control units are the same from firmware version 004.105.003.

MicroLogic X Firmware Release History

Date	MicroLogic X Firmware version	Availability
February 2023	005.103.003	Release for manufacturing
October 2021	004.109.000	Obsolete
March 2021	004.107.000	Obsolete
October 2020	004.105.003	Obsolete
April 2020	004.105.000	Obsolete
December 2019	004.101.000	Obsolete
July 2019	003.012.000	Obsolete
March 2019	003.011.000	Obsolete
November 2018	002.000.004	Obsolete
April 2018	002.000.003	Obsolete
March 2018	002.000.002	Obsolete
December 2017	001.000.206	Obsolete
July 2017	001.000.202	Obsolete
December 2016	001.000.200	Obsolete

Firmware Update Policy

If the latest features of a firmware update are not required, it is not mandatory to update the firmware of a device.

Use this document to determine whether an update to the latest version of the MicroLogic X firmware is interesting or relevant for your application.

For more information about the firmware update policy and the firmware compatibility between devices, refer to DOCA0155EN *MicroLogic Trip Units and Control Units - Firmware History*.

Firmware Update with EcoStruxure Power Commission Software

 ${\sf EcoStruxure^{TM}\ Power\ Commission\ is\ the\ new\ name\ of\ Ecoreach\ software}.$

Use the latest version of EcoStruxure Power Commission software:

- · To check the firmware compatibility of the devices in the IMU
- To update the devices with the latest firmware version available

After updating the firmware of one device, use EcoStruxure Power Commission software to check the firmware compatibility between IMU devices.

The Firmware Update table helps you to diagnose and identify all discrepancy issues between IMU devices. This table also provides the recommended actions for each discrepancy issue.

The latest version of EcoStruxure Power Commission software is available at: www.se.com.

For more information about the use of EcoStruxure Power Commission software, refer to *EcoStruxure Power Commission Online Help*.

Firmware Version 005.103.003

Bugs Fixed

- Firmware update process was stuck when MicroLogic X control unit was in non-nominal state.
- The event **Invalid Bluetooth communication** (0x1422) was generated spuriously.
- The MicroLogic X control unit was rebooting spuriously.

Firmware Version 004.109.000

Bugs Fixed

- Insignificant values displayed at load current close to 0 on MasterPact MTZ3 circuit breakers.
- The event Replace Battery (0x1433) was generated spuriously. Battery health detection improved.
- The event Last protection settings have not been applied (0x142F) was generated spuriously.

Firmware Version 004.107.000

New Features

 Performance improvement of self-test to monitor the presence of internal current power supply (CPS) sensors

NOTE: The discontinuity of internal current power supply (CPS) sensor can lead to user exposure to electric hazard. As a default behavior, a failed self-test can result in the opening of the circuit breaker to help to ensure user and material protection. In this case, the trip message **Replace Circuit Breaker Self Diagnostic (0x641F)** will be generated. For more information about this behavior, contact your Schneider Electric Customer Care Center and mention the following reference: FAQ000190726.

 Addition of automatic acknowledgment mode for orange pop-up messages related to medium severity protection alarms on the MicroLogic display screen

Bugs Fixed

- The event Last protection settings have not been applied (0x142F) was generated spuriously.
- The event Schedule manufacturer maintenance within three months (0x1482) was generated prematurely due to absence of commissioning date entered by the user in EcoStruxure Power Commission software.

Firmware Version 004.105.003

New Features

Addition of the MicroLogic Xi control units. A MicroLogic Xi control unit is a MicroLogic X control unit without Bluetooth Low Energy communication.

Firmware Version 004.105.000

New Features

Addition of self-test to monitor the presence of the internal current power supply (CPS) sensors

Firmware Version 004.101.000

New Features

- Compatibility with the following optional Digital Modules (available through the Schneider Electric GoDigital marketplace):
 - ANSI 51 IDMTL overcurrent protection
 - ANSI 67 Directional overcurrent protection
 - IEC 61850 for MasterPact MTZ
- Compatibility with communication features:
 - RSTP (Rapid Scanning Tree Protocol)
 - NTP (Network Time Protocol)
- Addition of contact wear interpretation to facilitate the preventive maintenance of the circuit breaker
- Firmware update process made faster and more reliable

Bugs Fixed

The following events were generated spuriously and simultaneously on display screen of MicroLogic X control unit:

- Control unit self test #2 (0x1470)
- Firmware Discrepancy within control unit (0x0D09)

Firmware Version 003.012.000

New Features

Compatibility with the ANSI 81 – Under/Overfrequency Protection optional Digital Module (available through the Schneider Electric GoDigital marketplace)

Firmware Version 003.011.000

New Features

- Addition of maintenance schedule reminder events to help user to plan preventive maintenance programs
- Password management: enhancement of user profiles from levels to role profiles
- Addition of ERMS force unlock command to unlock ERMS function if smartphone used to engage the function is unavailable

Bugs Fixed

- Possible loss of voltage release configuration
- The following events were generated spuriously:
 - Control unit self test #5 (0x1473)
 - Earth leakage (Vigi) sensor disconnected (0x1408)
 - Invalid Control Unit factory config #1 (0x0D0A)

Firmware Version 002.000.004

Bugs Fixed

- High consumption of battery in specific cases without auxiliary power supply
- The following alarms and pop-up messages were generated spuriously on display screen of MicroLogic X control unit:
 - Protection settings reset to factory value (0x1430)
 - Error 21 Service not performed Internal error
 - Error 190 Service not performed Internal error

Firmware Version 002.000.003

New Features

Conformity to UL/ANSI standard with the addition of the following control units:

- MicroLogic 3.0 X control unit (LV848815)
- MicroLogic 5.0 X control unit (LV847609)
- MicroLogic 6.0 X control unit (LV847608)

Firmware Version 002.000.002

New Features

- Compatibility with the following optional Digital Modules (available through the Schneider Electric GoDigital marketplace):
 - ANSI 27/59 Under/Over Voltage Protection Digital Module
 - ANSI 32P Reverse Active Power Digital Module
 - ANSI 51N/51G Ground-Fault Alarm Digital Module
 - Individual Harmonics Analysis Digital Module
 - Modbus Legacy Dataset Digital Module
 - Energy Reduction Maintenance Settings (ERMS) Digital Module
- Addition of support for ERMS switch module (ESM)
- Protection setting procedure in 2 steps (Submit/Apply) for compliance with UL489SE
- Addition of current and power demand
- New calculation method for minimum and maximum values for current, voltage, and power factor
- Addition of load profile monitoring
- Multiple events assignment with M2C or IO module
- Addition of long waveform capture in the Waveform Capture on Trip Event Digital Module
- Additional information with Configuration mismatch between IO and control unit event message
- Enhancement of reliability of event management and time-stamping
- Addition of event code on event messages to improve diagnosis
- Enhancement of internal battery test pattern
- Enhancement of internal battery loss management
- Enhancement of external 24 Vdc power supply management
- Improved robustness of the file system management

Bugs Fixed

- Bluetooth LED remained on with Error 5 displayed, requiring control unit to be switched off and on
- Snapshot was not showing correct li coefficient pickup when Instantaneous protection was set to OFF
- Frequency measurement was shifted and/or unstable in 3-pole system using 3-wattmeter calculation
- Loss of event message Configuration mismatch between IO and control unit occurred when power cycling the control unit

Firmware Version 001.000.206

Bugs Fixed

- Incorrect calculation for In value:
 - Value displayed was twice the expected value
 - Impacted only 3-pole MTZ3 circuit breakers with External Neutral Current Transformer (ENCT)
- Unexpected trip due to ground-fault protection test function occurred without pushing test button:
 - If the value of the current power supply (CPS) mode was decreasing at a specific rate while the voltage power supply (VPS) was being powered up simultaneously
 - Impacted only MicroLogic 6.0 X control units with VPS voltage power supply module

Firmware Version 001.000.202

Bugs Fixed

- Ground-fault test did not always operate with firmware that was directly flashed in MCU
- Service LED Orange HMI error 8/21/22 was displayed and no alarm/trip history

Firmware Version 001.000.200

Description

Initial firmware version

Firmware Update

Updating Firmware of MicroLogic X Control Unit

Prerequisites

The prerequisites for updating MicroLogic X firmware are the following:

- The latest version of EcoStruxure Power Commission software is downloaded and installed on the PC.
- The PC is connected to a power supply. Standby mode is deactivated to avoid the possibility of interruption during the update.
- The PC is connected to the mini USB port on the MicroLogic X control unit by using the USB cable with part number LV850067SP.
- The MicroLogic X control unit is continuously powered during the firmware update.
 - When the control unit is not connected to other ULP modules, it is powered by the PC through the mini USB port.
 - When the control unit is connected to other ULP modules, it is powered by an external 24 Vdc power supply.

For more information, refer to EcoStruxure Power Commission Online Help.

Procedure for Updating MicroLogic X Firmware

NOTICE

HAZARD OF INTERRUPTION OF POWER SUPPLY

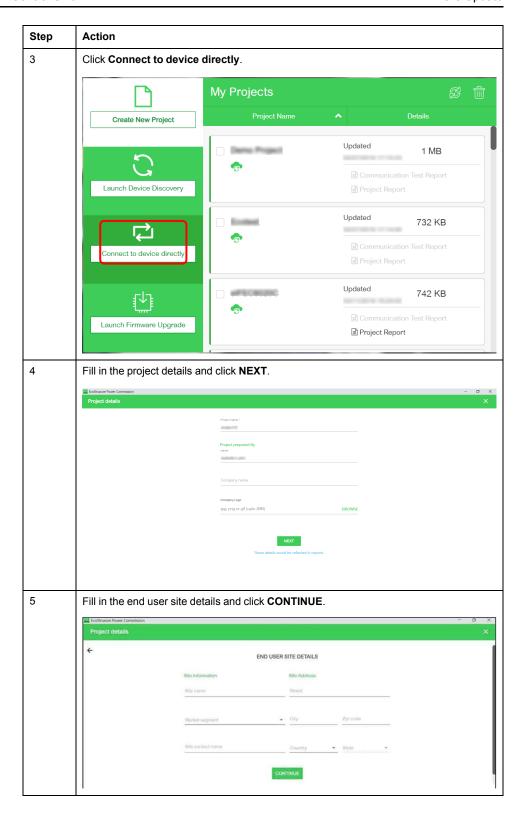
- The MicroLogic X control unit must be continuously powered during the firmware update.
- Do not disconnect the USB cable before clicking the CLOSE button at the end of the update procedure with EcoStruxure Power Commission software.
- Do not perform a replacement of the MicroLogic X display screen during the firmware update.

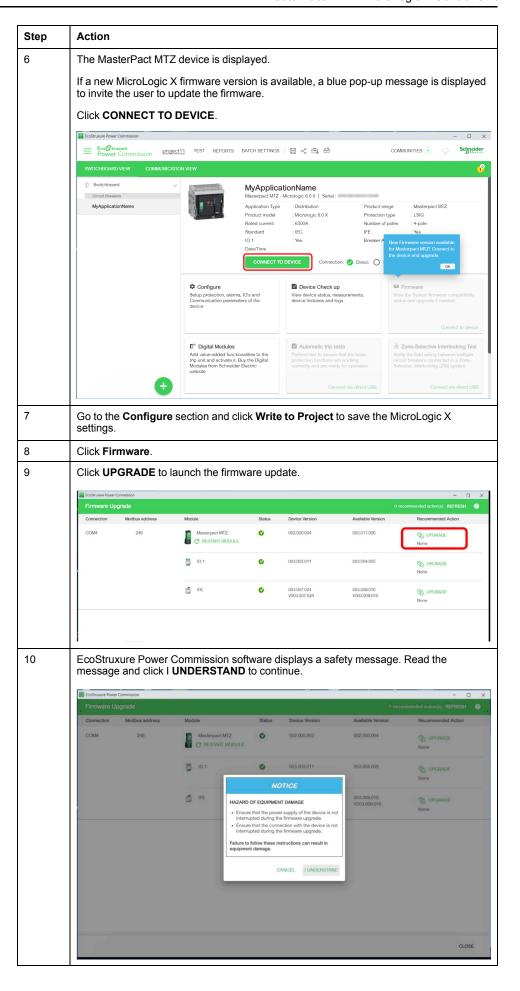
Failure to follow these instructions can result in deterioration of the control unit.

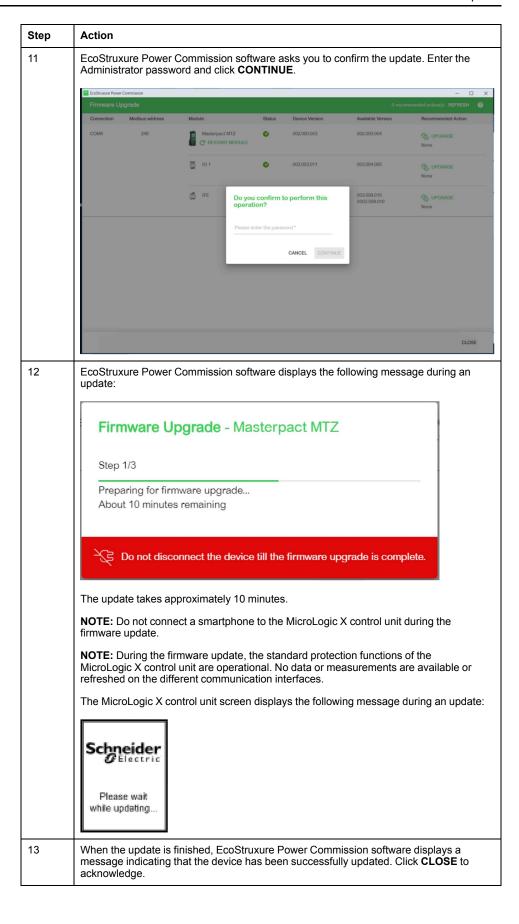
During the firmware update, the standard protection functions of the MicroLogic X control unit are operational. No data or measurements are available or refreshed on the different communication interfaces.

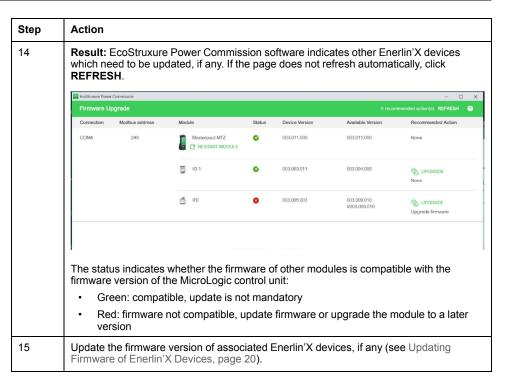
Follow this procedure to update the firmware version of the MicroLogic X control unit:

Step	Action
1	Disable all wireless access (Bluetooth and NFC) between the MicroLogic X control unit and a smartphone.
2	Use the USB cable with part number LV850067SP to connect a PC to the mini USB port on the front face of the MicroLogic X control unit.









NOTE: When updating aMicroLogic X control unit with firmware version 001.000.200 to the latest version of the firmware, red pop-up trip or alarm messages may be displayed on the MicroLogic X display screen following the firmware update. This corresponds to trip or alarm messages that were not acknowledged by the user before the firmware update. Press the **ESC** button on the control unit to remove these messages.

Updating Firmware of Enerlin'X Devices

Introduction

After updating the firmware of an Enerlin'X device connected to the MicroLogic X control unit, use the latest version of EcoStruxure Power Commission software to check the firmware compatibility between IMU devices.

The Firmware Update table helps you to diagnose and identify all discrepancy issues between IMU devices. This table also provides the recommended actions for each discrepancy issue.

The firmware update of the Enerlin'X devices with EcoStruxure Power Commission software can be done:

- With the PC connected to the communication network.
- With the PC connected to the mini USB port of the MicroLogic X control unit for MicroLogic X control units with firmware version greater than or equal to 002.000.000, EIFE/IFE interface with firmware version greater than or equal to 003.007.024, and IO module version greater than or equal to 003.003.016.

NOTE: If Enerlin'X devices are associated with the MicroLogic X control unit, from the start of the MicroLogic X firmware update and until the Enerlin'X devices are updated, the event **Critical firmware modules discrepancy** is detected. An event message is displayed on the screen of the control unit.



When there is a firmware discrepancy between the MicroLogic X control unit and the communication interfaces (IFE, EIFE, or IFM interface), MicroLogic X data is not available remotely.

Procedure for Updating Enerlin'X Device Firmware

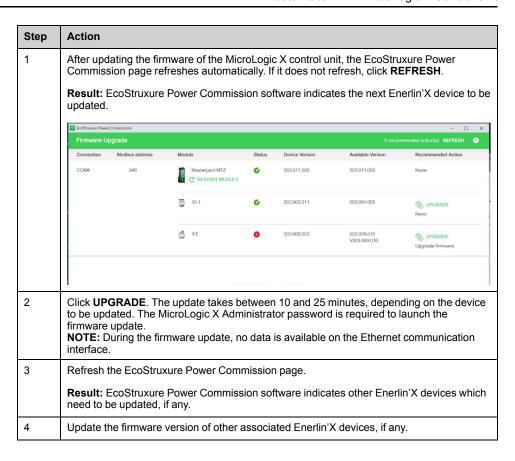
NOTICE

HAZARD OF INTERRUPTION OF POWER SUPPLY

The Enerlin'X device must be continuously powered during the firmware update.

Failure to follow these instructions can result in equipment damage.

Follow this procedure to update the firmware version of an Enerlin'X device, for example, EIFE interface, with the PC running EcoStruxure Power Commission software and connected to the mini USB port on the MicroLogic X control unit, by using the USB cable with part number LV850067SP.



Purchasing and Installing a Digital Module

Prerequisites

The prerequisites to purchasing and downloading a Digital Module are as follows:

 The firmware version of the MicroLogic X control unit must be compatible with the Digital Module (refer to table below). Update the firmware version of the MicroLogic X control unit if the Digital Module required is not compatible.

Digital Module	Commercial reference	Minimum MicroLogic X firmware version
IEC 61850 for MasterPact MTZ	LV850046	004.101.000
ANSI 67 - Directional short-time overcurrent protection	LV850015	004.101.000
ANSI 51 - IDMTL overcurrent protection	LV850037	004.101.000
ANSI 81 - Under/Over frequency protection	LV850013	003.012.000
Individual harmonics analysis	LV850006	002.000.002
ANSI 27/59 - Under/Over voltage protection	LV850012	002.000.002
ANSI 32P - Reverse active power protection	LV850011	002.000.002
ANSI 51N/51G - Ground-fault alarm	LV850007	002.000.002
Energy Reduction Maintenance Settings (ERMS)	LV850009	002.000.002
Modbus legacy dataset	LV850045	002.000.002
Energy per phase	LV850002	001.000.002
Power restoration assistant	LV850004	001.000.002
MasterPact operation assistant	LV850005	001.000.002
Waveform capture on trip event	LV850003	001.000.002

- The latest version of EcoStruxure Power Commission software is downloaded and installed on the PC.
- · The PC is connected to a power supply.
- The PC is connected to the Internet.
- You have the identification number of the MicroLogic X control unit.
- You have the commercial reference of the Digital Module to be purchased.
- You provide the email address to receive the Installer email containing Digital Module download information.

Getting Control Unit Identification Number

You can get the control unit identification number on site or off site using one of the following means:

- On site, by scanning the QR code on the front face of the MicroLogic X control unit from a smartphone. The QR code identifies the MicroLogic X control unit. Use the **Share** button to share the control unit information with the person qualified to select and purchase Digital Modules.
- On site, from EcoStruxure Power Commission software with a PC connected to the mini USB port of the MicroLogic X control unit.
- Off site, from EcoStruxure Power Commission software. This access can only be used for a MicroLogic X control unit previously registered in the relevant project.

Purchasing and Downloading a Digital Module

Follow this procedure to purchase and download a Digital Module:

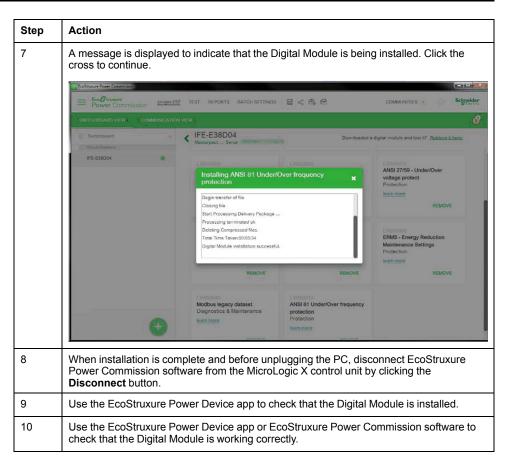
Step	Action				
1	Contact your local Schneider Electric Customer Care Center (CCC) or Schneider Electric Field Services Representative (FSR).				
	Visit the www.se.com website to contact your local Schneider Electric CCC.				
2	Provide the information indicated in <i>Prerequisites</i> and purchase the Digital Module.				
	You will receive an Installer email at the address you indicated to CCC.				
3	Select the email from dsc-no-reply@verified.se.com to download your Digital Module. The subject is Your Digital Modules are ready for download . Your Digital Module appears in a list of items ready to be downloaded.				
	NOTE: If you do not see the email in your Inbox, check the Junk mailbox.				
4	Click the checkbox next to the Digital Module that you want to download and click Download to download the delivery package.				
	Schneider Electric				
	Your Digital Module(s) associated to the S/N 00003N1645210224 of the Micrologic control unit LV847602 are ready to be downloaded				
	Digital Modules Select All □				
	00003N1645210224LV847602_DM_LV850009_V001.000.000.07.sc				
	Download				
	NOTE: This delivery package is used to install the Digital Module on the MicroLogic X control unit using EcoStruxure Power Commission software. Make sure that the delivery package is present on the PC used to install a Digital Module.				
	NOTE: If the Digital Module was purchased previously, you can access the file downloaded by clicking the following link: https://digitalpackage.schneider-electric.com/dpb?lang=en.				

Installing a Digital Module on the MicroLogic X Control Unit

The MicroLogic X Administrator, Services, or Engineer password is required to install a Digital Module on the MicroLogic X control unit.

Follow this procedure to install a purchased Digital Module on a MicroLogic X control unit.

Step	Action
1	Use the USB cable with part number LV850067SP to connect a PC running EcoStruxure Power Commission software to the mini USB port on the front face of the MicroLogic X control unit.
2	Click Connect to device directly to establish a connection between the EcoStruxure Power Commission software and the MicroLogic X control unit. EcoStruxure Power Commission software displays the MicroLogic X control unit identification number on the screen.
3	Open the Digital Module page by clicking Digital Modules .
4	Check that the delivery package for the Digital Module to be installed is present on the PC being used.
5	Select the Digital Module to be installed by clicking Install.
	The standard protection functions of the MicroLogic X control unit remain active during installation of the Digital Module.
	NOTE: Only modules previously purchased can be installed directly by clicking Install.
6	EcoStruxure Power Commission software asks you to confirm the installation. Enter the Administrator password and click CONTINUE .



For more information, refer to EcoStruxure Power Commission Online Help.

NOTE: To uninstall a Digital Module, use EcoStruxure Power Commission software.

Schneider Electric 35 rue Joseph Monier 92500 Rueil Malmaison France

+ 33 (0) 1 41 29 70 00

www.se.com

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

© 2023 – Schneider Electric. All rights reserved.