

Enerlin'X

FDM128 Ethernet Display for Eight Devices

User Guide

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02/2023



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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..... | 7 |
| Introduction | 10 |
| Overview | 10 |
| Architecture Examples | 13 |
| Recommendations | 23 |
| Certifications and Standards..... | 25 |
| General Specifications | 27 |
| Functional Specifications | 29 |
| Interface Specifications | 30 |
| Presentation..... | 31 |
| Screen..... | 31 |
| Menu Structure..... | 33 |
| Browsing..... | 34 |
| Configuration | 35 |
| Prerequisites..... | 35 |
| Setting Wizard..... | 37 |
| Settings During Operation | 41 |
| Operation | 43 |
| Logins and Access Codes | 43 |
| General View | 46 |
| Real-Time Alarms..... | 49 |
| Device View for Circuit Breakers and Switch-Disconnectors..... | 51 |
| Device View for Devices Connected to the Smartlink Devices | 56 |
| Update and Maintenance | 61 |
| Firmware Update..... | 61 |
| Adding, Removing, and Replacing Devices | 63 |
| Regular Cleaning..... | 64 |
| Troubleshooting Checklists | 65 |
| Protecting the Environment | 67 |
| Appendices | 68 |
| FDM128 Icons..... | 68 |
| Icon List | 68 |
| Glossary of Acronyms | 71 |
| Acronym | 71 |

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

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

WARNING

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

CAUTION

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

NOTICE

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

Please Note

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

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

FCC Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designated to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at this own expense.

Cybersecurity Safety Notice

WARNING

POTENTIAL COMPROMISE OF SYSTEM AVAILABILITY, INTEGRITY, AND CONFIDENTIALITY

- Change default passwords at first use to help prevent unauthorized access to device settings, controls, and information.
- Disable unused ports/services and default accounts to help minimize pathways for malicious attackers.
- Place networked devices behind multiple layers of cyber defenses (such as firewalls, network segmentation, and network intrusion detection and protection).
- Use cybersecurity best practices (for example, least privilege, separation of duties) to help prevent unauthorized exposure, loss, modification of data and logs, or interruption of services.

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

About the Book

Document Scope

This guide describes how to use the FDM128 Ethernet display for eight devices, installed in an Ethernet network, to monitor and control the following devices:

- Circuit breakers equipped with communicating MicroLogic™ trip units, such as:

- MasterPact™ MTZ circuit breakers
- MasterPact™ NT/NW circuit breakers
- ComPact™ NS circuit breakers
- ComPact™ NSX circuit breakers
- PowerPact™ P- and R-frame circuit breakers
- PowerPact™ H-, J-, and L-frame circuit breakers

NOTE:

- The information related to the new generation of ComPact NSX and PowerPact H-, J-, and L-frame circuit breakers in this guide applies to the existing range ComPact NSX and PowerPact H-, J-, and L-frame circuit breakers also. The exceptions are mentioned wherever applicable.
- The information related to the new generation of ComPact NS and PowerPact P- and R-frame circuit breakers in this guide applies to the existing range ComPact NS and PowerPact P- and R-frame circuit breakers also. The exceptions are mentioned wherever applicable.
- These new ranges are based on the same technical and dimensional architecture as that of the exiting range of circuit breakers.

- Switch-disconnectors, such as:

- MasterPact™ NT HA switch-disconnectors
- MasterPact™ NW NA/HA/HA10/HF switch-disconnectors
- ComPact™ NS NA switch-disconnectors
- PowerPact™ P- and R-frame switch-disconnectors
- ComPact™ NSX NA switch-disconnectors
- PowerPact™ H-, J-, and L-frame switch-disconnectors

- PowerTag Link devices, such as:

- PowerTag Link gateway
- PowerTag Link B gateway
- PowerTag Link HD gateway

- Smartlink™ devices, such as:

- Smartlink SI B gateway
- Smartlink Modbus gateway

NOTE: The Smartlink product range is not available in the following countries: United States, Canada, Mexico. Consult the catalog for the list of products available in your country.

- EcoStruxure Panel Server devices, such as:

- EcoStruxure Panel Server Universal
- EcoStruxure Panel Server Advanced

Validity Note

This guide is valid for FDM128 Ethernet display for eight devices.

Online Information

The technical characteristics of the devices described in this guide also appear online. To access the information online, go to the Schneider Electric home page at www.se.com.

The information contained in this guide is likely to be updated at any time. Schneider Electric strongly recommends that you have the most recent and up-to-date version available on www.se.com/ww/en/download.

Related Documents for IEC Devices

| Title of documentation | Reference number |
|--|--------------------------------|
| <i>Enerlin'X FDM128 – Ethernet Display for Eight Devices – Instruction Sheet</i> | HRB45777 |
| <i>Enerlin'X FDM128 – Ethernet Display for Eight Devices – Firmware Release Notes</i> | DOCA0151EN |
| <i>Enerlin'X IFM – Modbus-SL Interface for One Circuit Breaker – Instruction Sheet</i> | NVE85393 |
| <i>Enerlin'X IFE – Ethernet Interface for One Circuit Breaker – Instruction Sheet</i> | QGH13473 |
| <i>Enerlin'X IFE - Ethernet Interface for One IEC Circuit Breaker – User Guide</i> | DOCA0142EN |
| <i>Enerlin'X IFE – Ethernet Switchboard Server – User Guide</i> | DOCA0084EN |
| <i>Enerlin'X EIFE – Embedded Ethernet Interface for One MasterPact MTZ Drawout Circuit Breaker – Instruction Sheet</i> | NVE23550 |
| <i>Enerlin'X EIFE – Embedded Ethernet Interface for One MasterPact MTZ Drawout Circuit Breaker – User Guide</i> | DOCA0106EN |
| <i>Enerlin'X IO – Input/Output Application Module for One Circuit Breaker – Instruction Sheet</i> | HRB49217 |
| <i>Enerlin'X IO – Input/Output Application Module for One IEC Circuit Breaker – User Guide</i> | DOCA0055EN |
| <i>MasterPacT NT/NW, ComPact NS, PowerPact P- and R-Frame Communication Option – Installation Manual</i> | EAV3608000 (EN, ES, FR) |
| <i>Smartlink Modbus Communication System – User Manual</i> | DOCA0004EN |
| <i>Smartlink Ethernet Communication System – User Manual</i> | DOCA0073EN |
| <i>Smartlink SI B – User Manual</i> | DOCA0123EN |
| <i>Smartlink SI D – User Manual</i> | DOCA0115EN |
| <i>EcoStruxure Panel Server - User Guide</i> | DOCA0172EN |
| <i>EcoStruxure Panel Server Universal - Firmware Release Notes</i> | DOCA0178EN |
| <i>PowerLogic™ Ethernet Gateway EGX300 – User Guide</i> | 63230-319-216 (EN, ES, FR, DE) |
| <i>ComPacT NSX – MicroLogic 5/6/7 Electronic Trip Units – User Guide</i> | DOCA0141EN |
| <i>ComPact NSX – Modbus Communication – User Guide</i> | DOCA0091EN |
| <i>ComPacT NSX – Modbus Communication – User Guide</i> | DOCA0213EN |
| <i>MicroLogic A and E Control Units – User Guide</i> | 04443724AA |
| <i>MicroLogic 5.0P to 7.0P Control Units – User Guide</i> | 04443726AA |
| <i>MicroLogic 5.0H to 7.0H Control Units – User Guide</i> | 04443728AA |
| <i>MasterPacT NT/NW, ComPact NS – Modbus Communication – User Guide</i> | DOCA0054EN |
| <i>MasterPact MTZ1 – IEC Circuit Breakers and Switch-Disconnectors from 630 to 1600 A – User Guide</i> | DOCA0100EN |
| <i>MasterPact MTZ2/MTZ3 – IEC Circuit Breakers and Switch-Disconnectors from 800 to 6300 A – User Guide</i> | DOCA0101EN |
| <i>MasterPact MTZ – MicroLogic X Control Unit – User Guide</i> | DOCA0102EN |
| <i>MasterPact MTZ – Modbus Communication – User Guide</i> | DOCA0105EN |
| <i>ULP System (IEC Standard) – ULP (Universal Logic Plug) System – User Guide</i> | DOCA0093EN |
| <i>WIFER – Quick Start Guide</i> | NHA24030 |

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

| Title of documentation | Reference number |
|--|--------------------------------|
| <i>Enerlin'X FDM128 – Ethernet Display for Eight Devices – Instruction Sheet</i> | HRB45777 |
| <i>Enerlin'X FDM128 – Ethernet Display for Eight Devices – Firmware Release Notes</i> | DOCA0151EN |
| <i>Enerlin'X IFM – Modbus-SL Interface for One Circuit Breaker – Instruction Sheet</i> | NVE85393 |
| <i>Enerlin'X IFE – Ethernet Interface for One Circuit Breaker – Instruction Sheet</i> | QGH13473 |
| <i>Enerlin'X IFE – Ethernet Interface for One UL Circuit Breaker – User Guide</i> | 0602IB1801EN |
| <i>Enerlin'X IFE – Ethernet Switchboard Server – User Guide</i> | 1040IB1401 |
| <i>Enerlin'X EIFE – Embedded Ethernet Interface for One MasterPact MTZ Drawout Circuit Breaker – Instruction Sheet</i> | NVE23550 |
| <i>Enerlin'X EIFE – Embedded Ethernet Interface for One MasterPact MTZ Drawout Circuit Breaker – User Guide</i> | DOCA0106EN |
| <i>Enerlin'X IO – Input/Output Application Module for One Circuit Breaker – Instruction Sheet</i> | HRB49217 |
| <i>Enerlin'X IO – Input/Output Application Module for One UL Circuit Breaker - User Guide</i> | 0613IB1317 |
| <i>MasterPacT NT/NW, ComPact NS, PowerPact P- and R-Frame Communication Option – Installation Manual</i> | EAV3608000 (EN, ES, FR) |
| <i>PowerLogic™ Ethernet Gateway EGX300 – User Guide</i> | 63230-319-216 (EN, ES, FR, DE) |
| <i>EcoStruxure Panel Server - User Guide</i> | DOCA0172EN |
| <i>EcoStruxure Panel Server Universal - Firmware Release Notes</i> | DOCA0178EN |
| <i>MicroLogic 5 and 6 Electronic Trip Units for PowerPact H-, J-, and L-Frame Circuit Breakers - User Guide</i> | 48940-312-01 (EN, ES, FR) |
| <i>PowerPact H-, J-, and L-Frame Circuit Breakers – Modbus Communication – User Guide</i> | 0611IB1302 |
| <i>MicroLogic 2.0A, 3.0A, 5.0A, and 6.0A Electronic Trip Units – Instruction Bulletin</i> | 48049-136 (EN, ES, FR) |
| <i>MicroLogic 5.0P and 6.0P Electronic Trip Units – Instruction Bulletin</i> | 48049-137 (EN, ES, FR) |
| <i>MicroLogic 5.0H and 6.0H Electronic Trip Units – Instruction Bulletin</i> | 48049-330 (EN, ES, FR) |
| <i>MasterPacT NT/NW and PowerPact P- and R-Frame – Modbus Communication – User Guide</i> | 0613IB1313 |
| <i>MasterPact MTZ – MicroLogic X Control Unit – User Guide</i> | DOCA0102EN |
| <i>MasterPact MTZ – Modbus Communication – User Guide</i> | DOCA0105EN |
| <i>ULP System (UL Standard) – ULP (Universal Logic Plug) System – User Guide</i> | 0602IB1503 |
| <i>WIFER – Quick Start Guide</i> | NHA24030 |

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

Introduction

Overview

Presentation

The FDM128 Ethernet display for eight devices is a 1-to-8 human machine interface (HMI). The main component is a 5.7-inch touch screen.

An FDM128 display can be connected to devices via an Ethernet interface by using:

- One or more Ethernet gateways (IFE server, Link150, PowerLogic EGX300 and EGX100 Ethernet, PowerTag Link, EcoStruxure Panel Server, Smartlink SI B, Smartlink SI D, or Smartlink Ethernet gateways).
- One or more third-party Ethernet gateways that possess the appropriate characteristics.

NOTE: FDM128 display does not support devices with local ID (Virtual ID) from the Com'X or Link150 gateways.

Each type of connection is described further in this section.

The FDM128 display can monitor and control up to eight devices. The information displayed includes measurements, alarms, and operating assistance data.

For ease of installation, a device discovery function is embedded in the FDM128 display.

Number and Nature of Connected Devices

Up to eight devices from the following list can be monitored simultaneously:

- MasterPact MTZ circuit breakers
- MasterPact NT/NW circuit breakers or switch-disconnectors
- ComPacT NS 1600b-3200 circuit breakers or switch-disconnectors
- ComPacT NS 630b-1600 circuit breakers or switch-disconnectors
- PowerPacT P- and R-frame circuit breakers
- ComPacT NSX circuit breakers or switch-disconnectors
- PowerPacT H-, J-, and L-frame circuit breakers
- Smartlink SI B gateway
- Smartlink SI D gateway
- Smartlink Modbus gateway
- PowerTag Link gateway
- PowerTag Link B gateway
- PowerTag Link HD gateway
- EcoStruxure Panel Server Universal
- EcoStruxure Panel Server Advanced

NOTE: PowerTag Link B gateway is equivalent to Smartlink SI B gateway.

Monitored Devices Through Smartlink SI B Gateway

When an Smartlink SI B gateway is connected to the FDM128 display, the status of the devices connected through the gateway can be viewed on the FDM128 display.

The status of the following devices can be viewed on the FDM128 display:

- Acti9 iOF+SD24 and OF+SD24 indication auxiliaries
- Acti9 OF24 indication auxiliaries
- Acti9 SD24 indication auxiliaries
- Acti9 iACT24 and iATL24 auxiliaries for contactors and impulse relays in the Acti9 range
- Acti9 RCA iC60 remote control module with Ti24 interface
- Acti9 Reflex iC60 integrated control circuit breaker with Ti24 interface
- PowerTag energy sensors, which are directly mounted on a Acti9 circuit breaker and communicate with the Smartlink SI B gateway through wireless communication. Refer to the [Component Part Numbers](#), page 20 for the list of PowerTag energy sensors.
- PowerTag M250/M630 energy sensors, which are directly mounted on a ComPacT NSX circuit breaker and communicate with the Smartlink SI B gateway through wireless communication. Refer to the [Component Part Numbers](#), page 20 for the list of PowerTag M250/M630 energy sensors.
- iEM2000T, iEM3110, iEM3155, iEM3210, and iEM3255 energy meters
- ComPacT NSX OF+SD indication auxiliaries

NOTE: The Smartlink product range is not available in the following countries: United States, Canada, Mexico. Consult the catalog for the list of products available in your country.

Monitored Devices Through Smartlink SI D Gateway

When an Smartlink SI D gateway is connected to the FDM128 display, the status of the devices connected through the gateway can be viewed on the FDM128 display.

The status of the following devices can be viewed on the FDM128 display:

- PowerTag 63A energy sensors, which are directly mounted on a Acti9 circuit breaker and communicate with the Smartlink SI D gateway through wireless communication. Refer to the [Component Part Numbers](#), page 20 for the list of PowerTag energy sensors.
- PowerTag M250/M630 energy sensors, which are directly mounted on a ComPacT NSX circuit breaker and communicate with the Smartlink SI D gateway through wireless communication. Refer to the [Component Part Numbers](#), page 20 for the list of PowerTag M250/M630 energy sensors.

NOTE: The Smartlink product range is not available in the following countries: United States, Canada, Mexico. Consult the catalog for the list of products available in your country.

Monitored Devices Through PowerTag Link Gateway

When a PowerTag Link gateway is connected to FDM128 display, the status of the devices connected through the gateway can be viewed on the FDM128 display.

The status of the following devices can be viewed on the FDM128 display:

- PowerTag 63A energy sensors, which are directly mounted on a Acti9 circuit breaker and communicate with the PowerTag Link gateway through wireless communication. Refer to the [Component Part Numbers](#), page 20 for the list of PowerTag energy sensors.
- PowerTag M250/M630 energy sensors, which are directly mounted on a ComPacT NSX circuit breaker and communicate with the PowerTag Link gateway through wireless communication. Refer to the [Component Part Numbers](#), page 20 for the list of PowerTag M250/M630 energy sensors.
- PowerTag F160 energy sensor (A9MEM1580)
- PowerTag Rope energy sensors (A9MEM1590, A9MEM1591, A9MEM1592, and A9MEM1593)

Monitored Devices Through EcoStruxure Panel Server Gateway

When an EcoStruxure Panel Server gateway is connected to FDM128 display, the status of the devices connected through the gateway can be viewed on the FDM128 display.

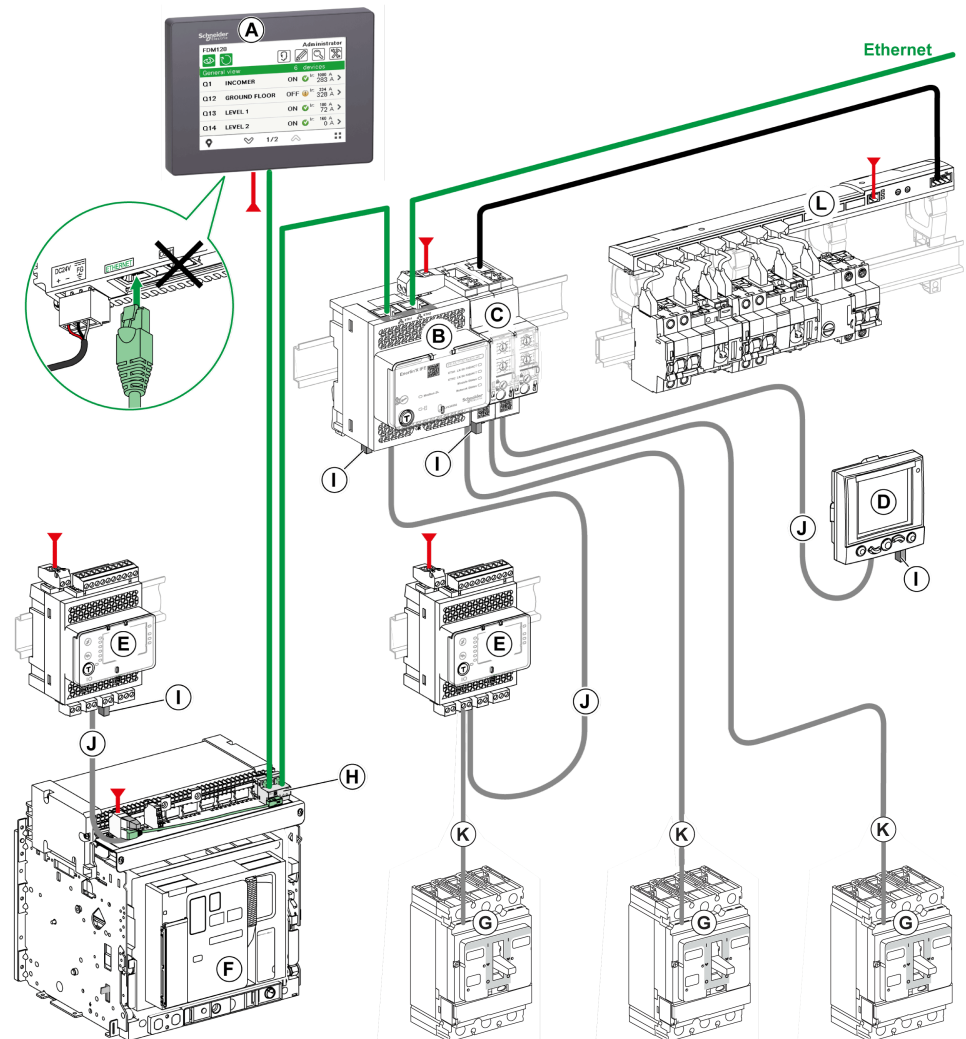
The status of the following devices can be viewed on the FDM128 display:

- PowerTag 63A energy sensors, which are directly mounted on a Acti9 circuit breaker and communicate with the EcoStruxure Panel Server gateway through wireless communication. Refer to the [Component Part Numbers](#), page 20 for the list of PowerTag energy sensors.
- PowerTag M250/M630 energy sensors, which are directly mounted on a ComPacT NSX circuit breaker and communicate with the EcoStruxure Panel Server gateway through wireless communication. Refer to the [Component Part Numbers](#), page 20 for the list of PowerTag M250/M630 energy sensors.
- PowerTag F160 energy sensor (A9MEM1580)
- PowerTag Rope energy sensors (A9MEM1590, A9MEM1591, A9MEM1592, and A9MEM1593)

Architecture Examples

FDM128 Display Connected to an IFE Server

The following diagram is an example of an IFE- based network architecture:



A FDM128 Ethernet display for eight devices

B IFE Ethernet switchboard server

C IFM Modbus-SL interface for one circuit breaker

D FDM121 ULP display for one circuit breaker

E I/O input/output application module for one circuit breaker

F MasterPact MTZ drawout circuit breaker

G ComPact NSX, PowerPacT H-, J-, or L-frame circuit breaker

H EIFE embedded Ethernet interface for one MasterPact MTZ drawout circuit breaker

I ULP line termination

J ULP cord

K NSX cord

L Smartlink Modbus gateway

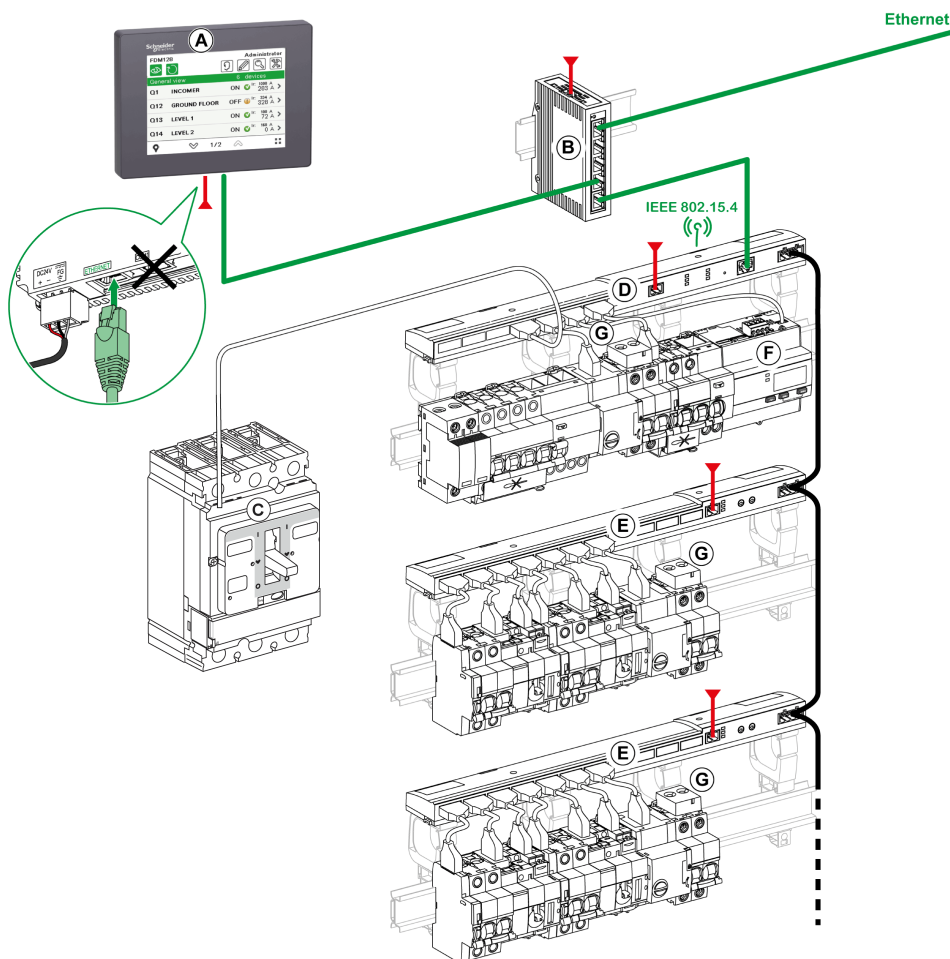
— Ethernet

— Modbus-SL

— 24 Vdc

FDM128 Display Connected to an Smartlink SI B Gateway

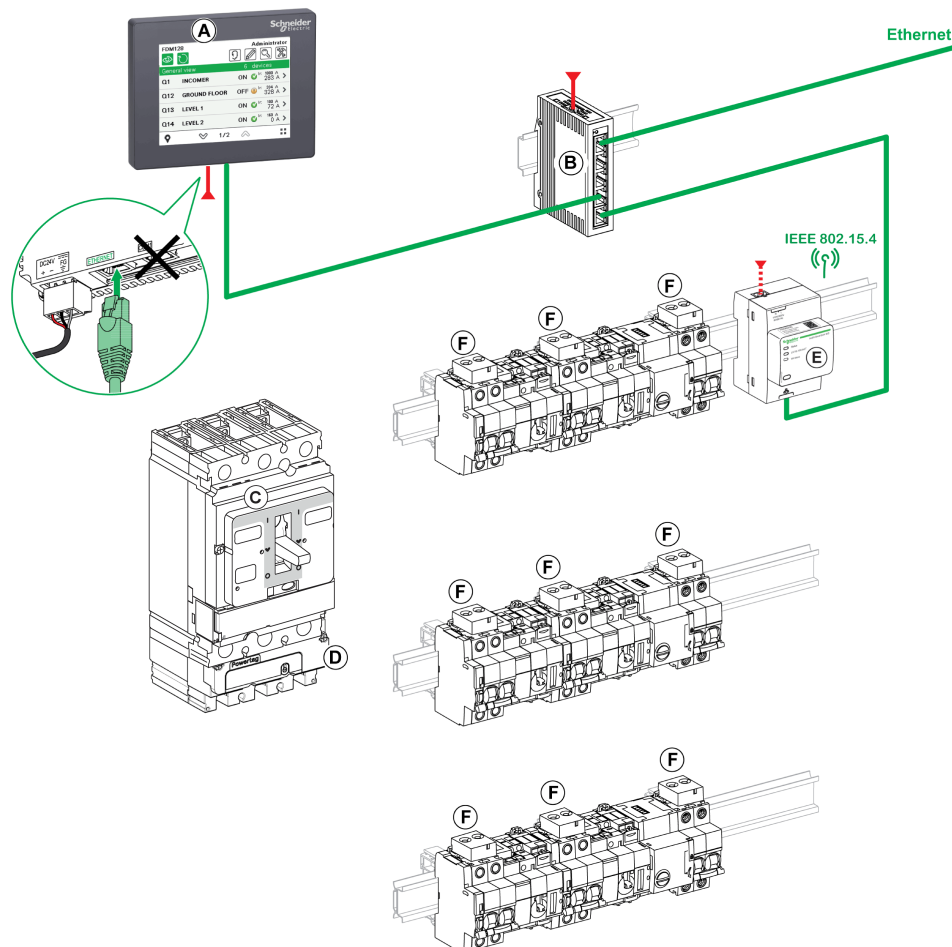
The following diagram is an example of an Smartlink SI B network architecture, in a floor switchboard application:



- A** FDM128 Ethernet display for eight devices
- B** ConneXium switch
- C** ComPacT NSX, PowerPacT H-, J-, or L-frame circuit breaker
- D** Smartlink SI B gateway
- E** Smartlink Modbus gateway
- F** Acti9 iEM energy meter
- G** PowerTag energy sensor
- Ethernet
- Modbus-SL
- 24 Vdc
- TI24 cord

FDM128 Display Connected to an Smartlink SI D Gateway

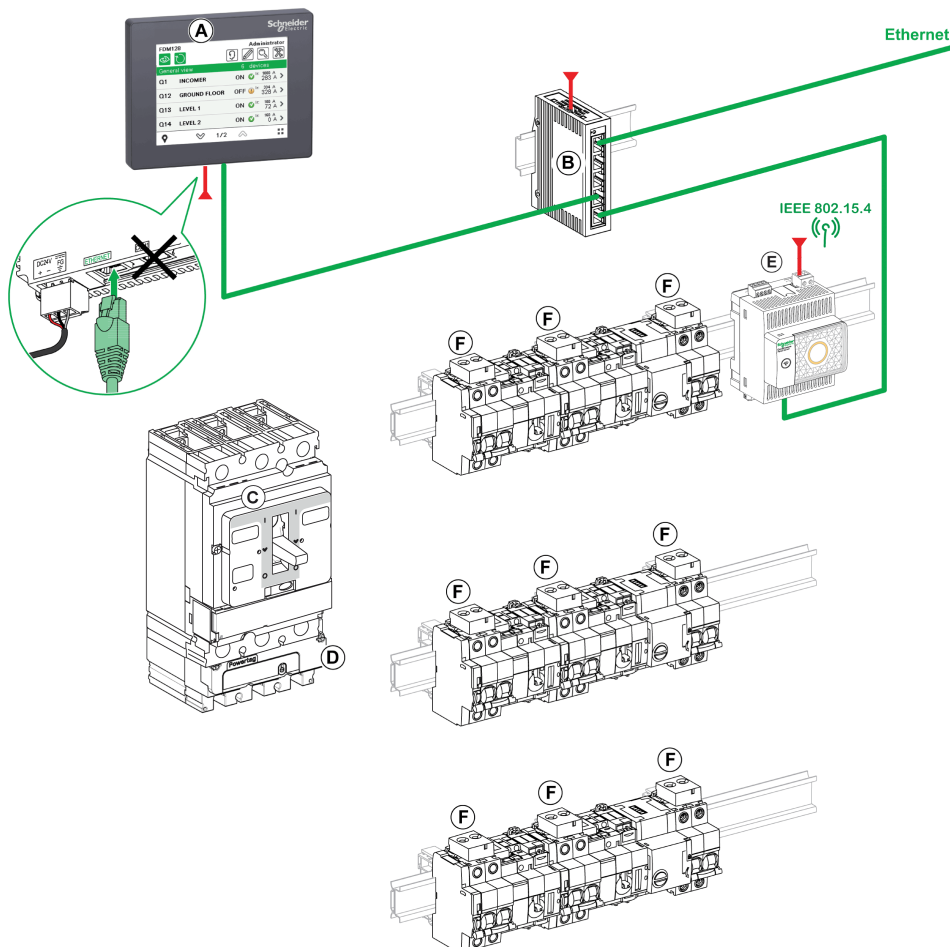
The following diagram is an example of an Smartlink SI D wireless network architecture, in a floor switchboard application:



- A** FDM128 Ethernet display for eight devices
- B** ConneXium switch
- C** ComPacT NSX circuit breaker
- D** PowerTag M250/M630 energy sensors
- E** Smartlink SI D gateway
- F** PowerTag energy sensor
- Ethernet
- 24 Vdc

FDM128 Display Connected to an EcoStruxure Panel Server

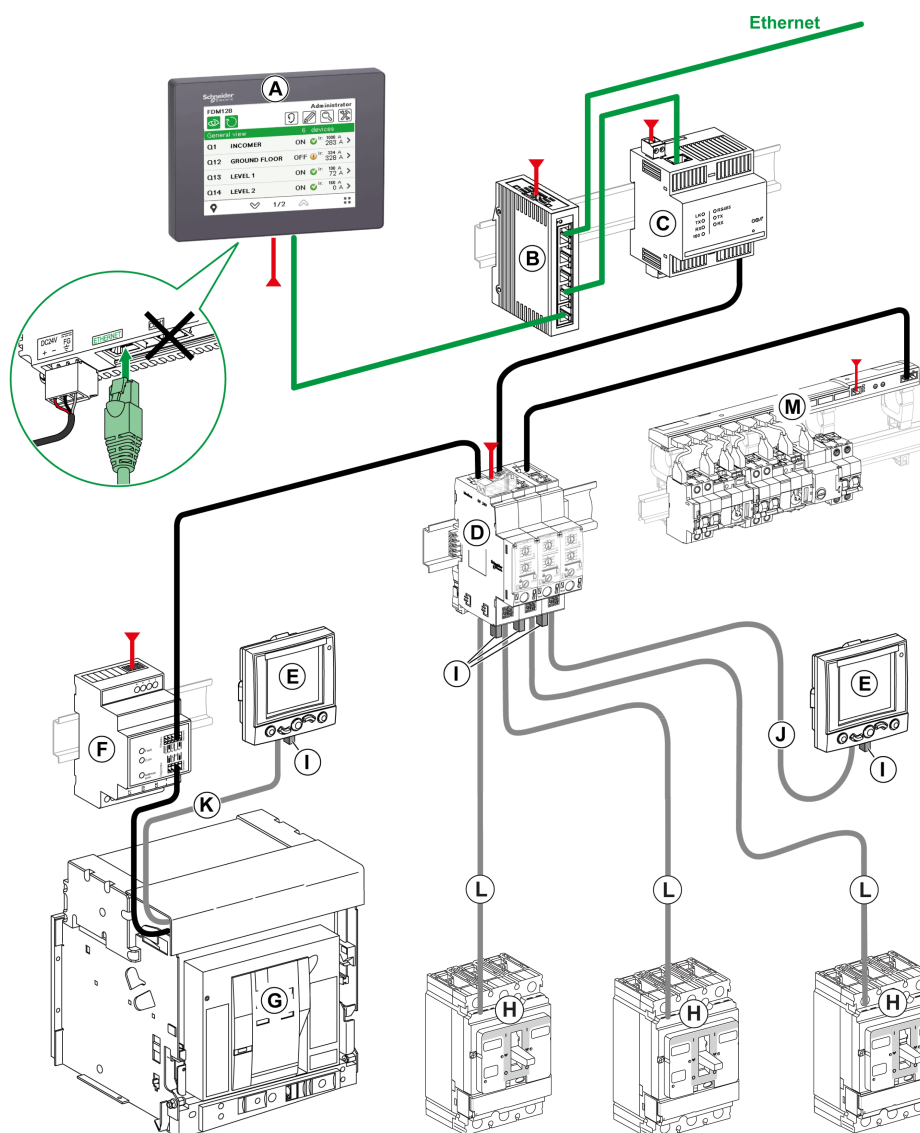
The following diagram is an example of an EcoStruxure Panel Server wireless network architecture, in a floor switchboard application:



- A** FDM128 Ethernet display for eight devices
- B** ConneXium switch
- C** ComPacT NSX circuit breaker
- D** PowerTag M250/M630 energy sensors
- E** EcoStruxure Panel Server
- F** PowerTag energy sensor
- Ethernet
- 24 Vdc

FDM128 Display Connected to a PowerLogic EGX300 or EGX100 Ethernet Gateway

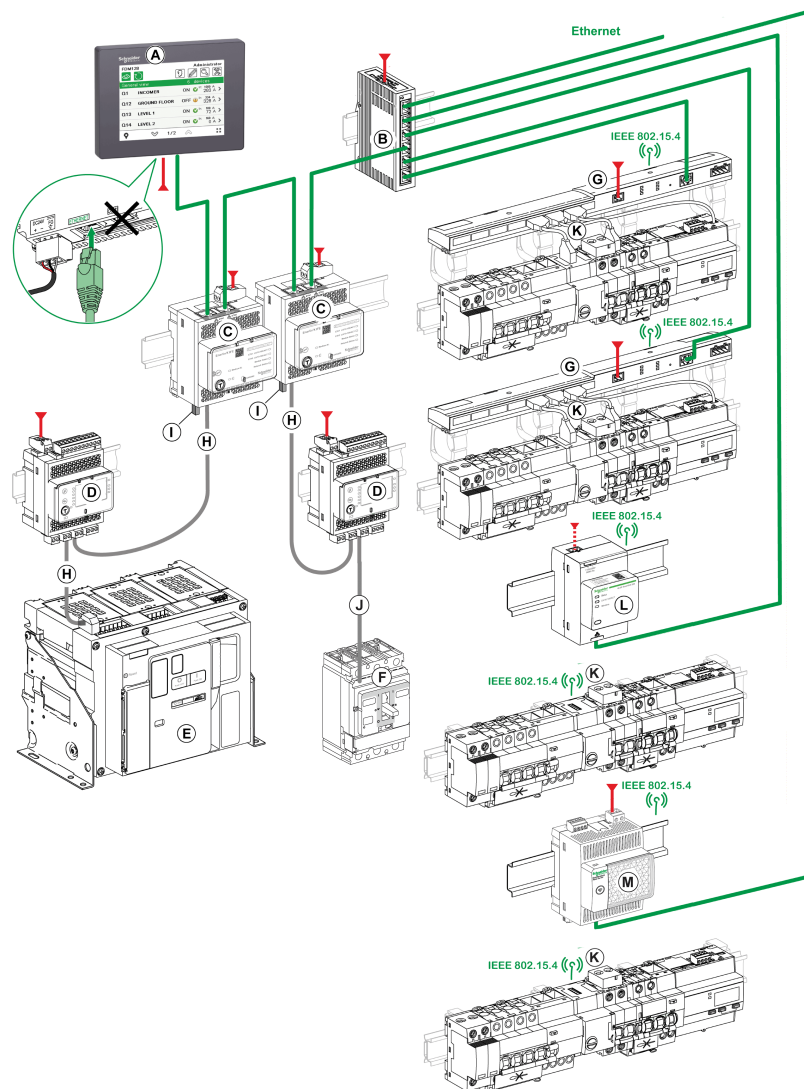
The following diagram is an example of a network architecture with a PowerLogic EGX300 Ethernet gateway:



- | | |
|--|-----------------------------------|
| A FDM128 Ethernet display for eight devices | I ULP line termination |
| B ConneXium switch | J ULP cord |
| C EGX300 Ethernet gateway | K BCM ULP |
| D IFM Modbus-SL interface for one circuit breaker | L NSX cord |
| E FDM121 ULP display for one circuit breaker | M Smartlink Modbus gateway |
| F CCM Modbus cradle communication module | Ethernet |
| G MasterPact NT/NW circuit breaker | Modbus-SL |
| H ComPact NSX, PowerPacT H-, J-, or L-frame circuit breaker | 24 Vdc |

FDM128 Display Connected to Several IFE or Smartlink SI B or Smartlink SI D or EcoStruxure Panel Server Gateways

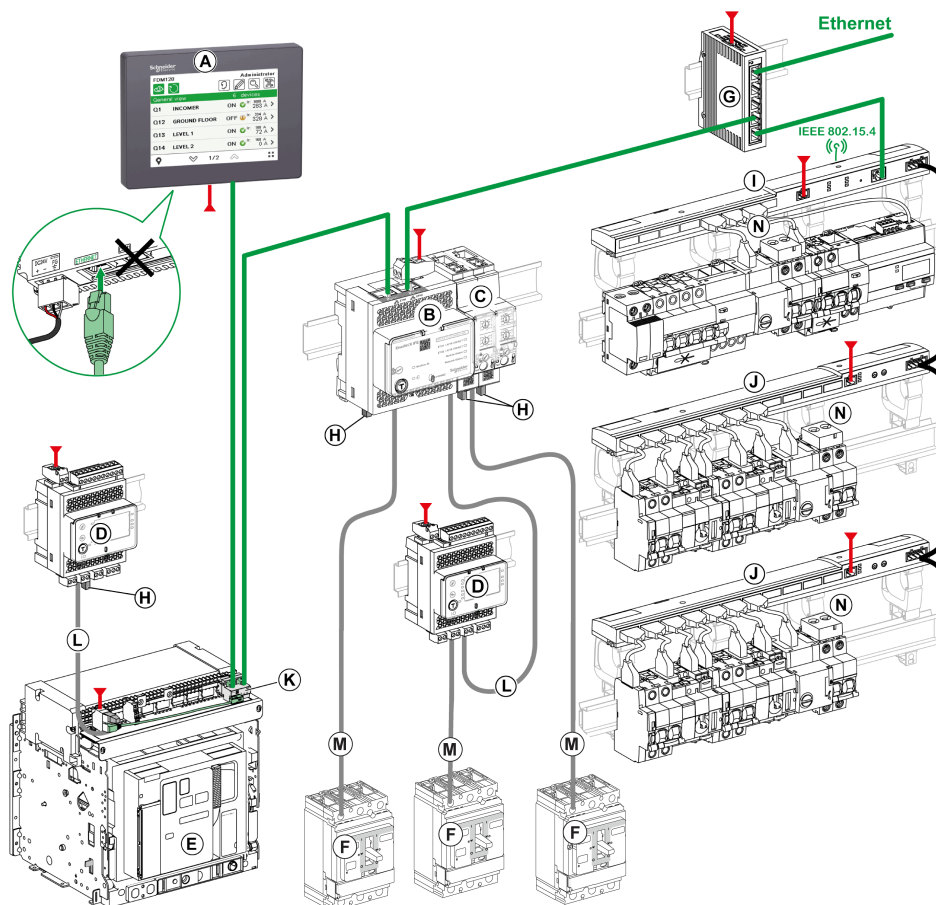
The following diagram is an example of an IFE- and Smartlink SI B or Smartlink SI D or EcoStruxure Panel Server-based network architecture:







- | | | | |
|----------|---|----------|--------------------------|
| A | FDM128 Ethernet display for eight devices | J | NSX cord |
| B | ConneXium switch | K | PowerTag energy sensor |
| C | IFE Ethernet interface for one circuit breaker | L | PowerTag Link |
| D | I/O input/output application module for one circuit breaker | M | EcoStruxure Panel Server |
| E | MasterPact MTZ fixed circuit breaker | | Ethernet |
| F | ComPacT NSX, PowerPacT H-, J-, or L-frame circuit breaker | | 24 Vdc |
| G | Smartlink SI B gateway | | TI24 cord |
| H | ULP cord | | 110/230 Vac |
| I | ULP line termination | | |

FDM128 Display Connected to Several Gateways

The following diagram is an example of architecture where the FDM128 display is connected to several gateways:



- | | | | |
|----------|---|---|---|
| A | FDM128 Ethernet display for eight devices | J | Smartlink Modbus gateway |
| B | IFE Ethernet switchboard server | K | EIFE embedded Ethernet interface for one MasterPact MTZ drawout circuit breaker |
| C | IFM Modbus-SL interface for one circuit breaker | L | ULP cord |
| D | I/O input/output application module for one circuit breaker | M | NSX cord |
| E | MasterPact MTZ drawout circuit breaker | N | PowerTag energy sensor |
| F | ComPacT NSX, PowerPacT H-, J-, or L-frame circuit breaker |  | Ethernet |
| G | ConneXium switch |  | Modbus-SL |
| H | ULP line termination |  | 24 Vdc |
| I | Smartlink SI B gateway |  | TI24 cord |

Component Part Numbers

The following table lists the part numbers for the components in the architecture diagrams:

| Component | Description | Part Number |
|---|--|--|
| FDM128 Ethernet display for eight devices | – | LV434128 |
| STU 5in7 front module spare part | – | HMIS85 |
| IFE Ethernet interface for one circuit breaker | – | LV434001 |
| IFE Ethernet switchboard server | – | LV434002 |
| EIFE embedded Ethernet interface for one MasterPact MTZ drawout circuit breaker | EIFE embedded Ethernet interface | LV851001 |
| | Spare part kit EIFE for one MasterPact MTZ1 drawout circuit breaker | LV851100SP |
| | Spare part kit EIFE for one MasterPact MTZ2/MTZ3 drawout circuit breaker | LV851200SP |
| IFM Modbus-SL interface for one circuit breaker | – | LV434000 |
| FDM121 ULP display for one circuit breaker | – | <ul style="list-style-type: none"> • TRV00121 (IEC) • STRV00121 (UL) |
| I/O input/output application module for one circuit breaker | – | LV434063 |
| ULP line termination | 10 ULP line terminations | TRV00880 |
| ULP cord | L = 0.3 m (0.98 ft) | TRV00803 |
| | L = 0.6 m (1.97 ft) | TRV00806 |
| | L = 1 m (3.28 ft) | TRV00810 |
| | L = 2 m (6.56 ft) | TRV00820 |
| | L = 3 m (9.84 ft) | TRV00830 |
| | L = 5 m (16.40 ft) | TRV00850 |
| BCM ULP cord | L = 0.35 m (1.15 ft) | LV434195 |
| | L = 1.3 m (4.26 ft) | LV434196 |
| | L = 3 m (9.84 ft) | LV434197 |
| TI24 cord | - | A9XCAS06 |
| NSX cord | L = 0.35 m (1.15 ft) | LV434200 |
| | L = 1.3 m (4.27 ft) | LV434201 |
| | L = 3 m (9.84 ft) | LV434202 |
| PowerTag Link gateway | PowerTag Link – Wireless to Modbus TCP/IP Concentrator | A9XMWD20 |
| PowerTag Link HD gateway | PowerTag Link HD – Wireless to Modbus TCP/IP Concentrator | A9XMWD100 |
| PowerTag Link B gateway | – | A9XMZC20 |
| Smartlink Modbus gateway | Smartlink – Modbus RS485 slave – Smart Communication I/O Module | A9XMSB11 |
| Smartlink SI B gateway | Smartlink SI B – Modbus TCP/IP and Wireless Communication Module | A9XMZA08 |
| Smartlink SI D gateway | Smartlink SI D – Wireless to Modbus TCP/IP Concentrator | A9XMWA20 |
| EcoStruxure Panel Server Universal | Wireless Concentrator and Modbus Gateway, Datalogger and Energy Server | – |
| | 24 Vdc | PAS600L |
| | 110–240 Vac/Vdc | PAS600T |
| | 110–277 Vac/Vdc | PAS600 |
| | PoE (Power over Ethernet) | PAS600P |

| Component | Description | Part Number |
|---|--|--|
| EcoStruxure Panel Server Advanced | Wireless Concentrator and Modbus Gateway, Datalogger and Energy Server | – |
| | 24 Vdc | PAS800L |
| | 110–277 Vac/Vdc | PAS800 |
| | PoE (Power over Ethernet) | PAS800P |
| PowerLogic EGX300 Ethernet gateway | – | <ul style="list-style-type: none"> EGX300 (Schneider Electric) EGX300SD (Square D) |
| iEM2000T energy meter | Single-phase energy meter without display | A9MEM2000T |
| iEM3110 energy meter | Three-phase energy meter with display | A9MEM3110 |
| iEM3155 energy meter | Three-phase energy meter with display | A9MEM3155 |
| iEM3210 energy meter | Three-phase energy meter with display | A9MEM3210 |
| iEM3255 energy meter | Three-phase energy meter with display | A9MEM3255 |
| PowerTag energy Monoconnect 63A | PowerTag energy M63 1P+wire | A9MEM1520 |
| | PowerTag energy M63 1P+N Top | A9MEM1521 |
| | PowerTag energy M63 1P+N Bottom | A9MEM1522 |
| | PowerTag energy M63 3P | A9MEM1540 |
| | PowerTag energy M63 3P+N Top | A9MEM1541 |
| | PowerTag energy M63 3P+N Bottom | A9MEM1542 |
| | PowerTag energy M63 3P 230 V LL | A9MEM1543 |
| PowerTag energy Flex 63A | PowerTag energy F63 1P+N | A9MEM1560 |
| | PowerTag energy F63 1P+N 110 V | A9MEM1564 |
| | PowerTag energy F63 3P+N | A9MEM1570 |
| | PowerTag energy F63 3P | A9MEM1573 |
| PowerTag energy PhaseNeutral 63A | PowerTag energy P63 1P+N Top | A9MEM1561 |
| | PowerTag energy P63 1P+N Bottom | A9MEM1562 |
| | PowerTag energy P63 1P+N Bottom for RCBO 18 mm | A9MEM1563 |
| | PowerTag energy P63 3P+N Top | A9MEM1571 |
| | PowerTag energy P63 3P+N Bottom | A9MEM1572 |
| | PowerTag energy F63 3P+N 127/220 V | A9MEM1574 |
| PowerTag energy Flex 160A | PowerTag energy F160 3P/3P+N | A9MEM1580 |
| PowerTag energy Rope 200A | PowerTag energy R200 3P/3P+N | A9MEM1590 |
| PowerTag energy Rope 600A | PowerTag energy R600 3P/3P+N | A9MEM1591 |
| PowerTag energy Rope 1000A | PowerTag energy R1000 3P/3P+N | A9MEM1592 |
| PowerTag energy Rope 2000A | PowerTag energy R2000 3P/3P+N | A9MEM1593 |
| PowerTag energy Monoconnect 250A | PowerTag energy M250 3P | LV434020 |
| | PowerTag energy M250 4P | LV434021 |
| PowerTag energy Monoconnect 630A | PowerTag energy M630 3P | LV434022 |
| | PowerTag energy M630 4P | LV434023 |
| PowerTag NSX energy sensor 250A (China market only) | PowerTag NSX 250 3P | LVSMC13 |
| PowerTag NSX energy sensor 630A (China market only) | PowerTag NSX 630 3P | LVSMC23 |

NOTE: The Smartlink product range is not available in the following countries: United States, Canada, Mexico. Consult the catalog for the list of products available in your country.

Recommendations

Critical Systems, Alarms, and Handling Requirements

Critical alarm indicators and system functions require independent and redundant hardware protection and/or mechanical interlocks.

If the FDM128 Ethernet display for eight devices becomes inoperative due to some reason (for example, due to an inoperative backlight), it may be difficult or impossible to identify a function. Functions that may present a hazard if not immediately executed, such as an emergency stop, must be provided independently of the FDM128 display.

The design of the control system must take into account simultaneously:

- An inoperative FDM128 display.
- The operator inability to control the circuit breakers or to respond to detected errors by using the FDM128 display.

Handling the LCD Panel

The following characteristics are specific to the LCD panel and are considered normal behavior:

- LCD screen may show unevenness in the brightness of certain images. These images may appear differently when seen from outside the specified viewing angle. Extended shadows, or cross-talk, may also appear on the sides of screen images.
- LCD screen pixels may contain black and white-colored spots and color display may seem to have changed over time.
- When the same image is displayed for a long period, an after-image may appear when the image changes. If this happens, turn off the FDM128 display, wait 10 seconds, and then restart it.

NOTE: Do not display the same image for a long time, change the screen image periodically.

CAUTION

SERIOUS EYE AND SKIN INJURY

The liquid present in the LCD panel contains an irritant:

- Avoid direct skin contact with the liquid.
- Wear gloves when you handle a broken or leaking FDM128 display.
- Do not use sharp objects or tools in the vicinity of the LCD touch panel.
- Handle the LCD panel carefully to prevent puncture, bursting, or cracking of the panel material.
- If the panel is damaged and any liquid comes in contact with your skin, immediately rinse the area with running water for at least 15 minutes.
- If the liquid gets in your eyes, immediately rinse your eyes with running water for at least 15 minutes and consult a doctor.

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

Using the Touch Panel Correctly

⚠ WARNING

UNINTENDED EQUIPMENT OPERATION

- Operate the touch panel with only one finger.
- Do not activate two or more points of the touch panel simultaneously.

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

Use only one finger to select an object on the touch panel.

If the touch panel receives pressure at two or more points at the same time, an unintended object could be selected.

Certifications and Standards

Introduction

Schneider Electric has submitted this product for independent testing and qualification by third-party listing agencies. These agencies have certified this product as meeting the following standards.

The FDM128 display is certified by the Underwriters Laboratories according to UL 508 for Industrial Control Equipment.

The FDM128 display is designed to comply with merchant navy bridge and deck requirements (refer to the Schneider Electric website for installation guidelines).

For detailed information, contact your local distributor or see the catalog and marking on the product.

Compliance with Standards

The FDM128 display complies with the following standards:

- IEC 60947-1 general rules
- UL 508, Industrial Control Equipment
- CSA C22.2 No. 14-05 Industrial Control Equipment
- IACS E10

Hazardous Substances

The FDM128 display is designed for compliance with the following directives and standards:

- WEEE, Directive 2002/96/EC
- RoHS, Directive 2002/95/EC
- RoHS China, Standard SJ/T 11363-2006

UL Conditions of Acceptability for the FDM128 Display

The FDM128 display is suitable for use in hazardous locations in accordance with Class 1, Division 2 standards. All relevant local, state, and regional codes must be followed.

CE Markings

This product conforms to the requirements for applying the  label.

WARNING

RISK OF EXPLOSION IN HAZARDOUS LOCATIONS

- Verify that the power, input, and output (I/O) wiring are in accordance with Class I, Division 2 wiring methods.
- Do not substitute components that could impair compliance to Class I, Division 2.
- Do not connect or disconnect equipment unless power has been switched off or the area is known to be non-hazardous.
- Securely lock externally connected units and each interface before turning on the power supply.
- Do not disconnect while the circuit is live.
- Front panel is a potential electrostatic charging hazard. Wipe the front panel of the terminal with a damp cloth before turning on.

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

General Specifications

Electrical Characteristics

| Characteristic | Value |
|---|------------------------------|
| Rated input voltage | 24 Vdc |
| Input voltage limits | 20.4–28.8 Vdc |
| Acceptable voltage drop | ≤ 7 ms |
| Power consumption | ≤ 6.8 W |
| In-rush current | ≤ 30 A |
| Voltage endurance between power terminal and functional ground (FG) | 1,000 Vac 20 mA for 1 minute |
| Insulation resistance between power terminal and functional ground (FG) | 10 MΩ or higher at 500 Vdc |

Physical Characteristics

| Characteristic | Value |
|---|--|
| Ambient operating temperature (cabinet interior and panel face) | –10 °C to +55 °C (14–131 °F) |
| Storage temperature | –40 °C to +85 °C (–40 °F to +185 °F) |
| Relative humidity | 95 % without condensation (non-condensing, wet bulb temperature 55 °C (131 °F) or less) |
| Air purity (dust) | ≤ 0.1 mg/m ³ (≤ 10 ⁻⁷ oz/ft ³) (non-conductive levels) |
| Corrosive gases | Free of corrosive gases |
| Atmospheric pressure | 800–1,114 hPa (2000 m (6,500 ft) or lower) |

Mechanical Characteristics

| Characteristic | Value |
|--------------------------------|--|
| Vibration immunity (operating) | IEC 60068-2-6 1 gn (1 g) 5–150 Hz (maximum 3.5 mm (0.13 in.)) |
| Protection (front panel) | IP65 (IEC 60529) |
| Protection structure | Type 4X indoor, installed on a panel |
| Protection (rear panel) | IP20 (IEC 60529) |
| Shock immunity (operating) | IK05 (IEC 60068-2-75) 15 gn (1 g) 11 ms |
| Cooling method | Natural air circulation |
| Weight | 0.25 kg (0.55 lb.) |
| Color | Front bezel: dark gray |
| Material | PC/PBT and PAA |

Electrical Environment Specifications

| Characteristic | Value |
|--|--|
| Noise immunity | Noise voltage: 1,000 Vp-p Pulse width: 1 μ s Rising time: 1 ns |
| High energy surges | 2 kV CM, 0.5 kV DM on DC power supply 2 kV CM on shielded cables |
| Electrical fast transient burst | 2 kV CM, 2 kV DM on DC power supply 1 kV on shielded cables |
| Radiated radio frequency electromagnetic field | 10 V/m / 80 MHz to 2 GHz Sinus amplitude modulated 80 % 1 kHz + internal clock frequency |
| Electrostatic discharge immunity | 8.8 kV direct contact 12 kV air contact |
| Power frequency magnetic field | 100 A/m continuous |
| Grounding | D-type grounding (SG-FG connected) |
| CM: Common Mode DM: Differential Mode | |

Functional Specifications

Display Characteristics

| Characteristic | Description |
|-----------------------------|--|
| Type | Color TFT LCD |
| Resolution (pixels) | 320 x 240 (QVGA) |
| Active display area (W x H) | 115.2 x 86.4 mm (4.53 x 3.40 in.) |
| Display colors | 65,536 colors |
| Backlight | LED backlight |
| | Lifetime: 50,000 hours before dimmed to 50 % brightness Ambient temperature: 25 °C (77 °F) |
| | Non-exchangeable |
| Brightness adjustment | 16 levels of adjustment available via touch panel in the General settings menu. |
| Brightness on LCD surface | White LED: 350 cd/m ² (33 cd/ft ²) maximum |
| View angle | <ul style="list-style-type: none">• 80 degrees: left, right• 70 degrees: up• 70 degrees: down (Test condition: contrast ratio > 2) |

Clock

Variations in operating conditions can cause a clock shift from -380 seconds to +90 seconds per month.

Touch Panel

| Characteristic | Description |
|----------------|--|
| Type | Analog resistance film type (metal tab, golden plated) |
| Lifetime | 1 million touches or more |

Interface Specifications

USB1 Interface (USB Peripherals)

| HOST Interface Characteristic | | Value |
|-------------------------------|------------|---------------------------|
| Transmission speed | High speed | 480 Mbps |
| | Full speed | 12 Mbps |
| | Low speed | 1.5 Mbps |
| Maximum current supplied | | 250 mA |
| Maximum transmission distance | | 5 m (16.40 ft) at 12 Mbps |
| Connector | | USB Type-A V2.0 |

Ethernet Interface

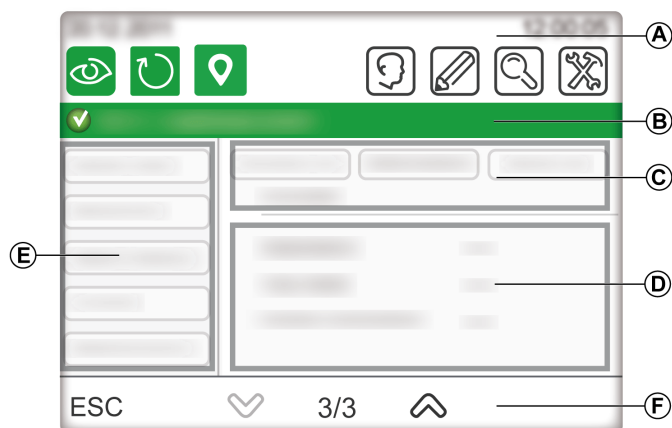
| LED | Description |
|---------|-------------|
| Green 1 | Link state |
| Green 2 | Activity |

Presentation

Screen

Overview

The following figure describes the display area:










- A** Header
- B** Title bar
- C** Headpiece
- D** Right area
- E** Left area
- F** Footer

Header

The header (A) is composed of the following elements:

- Product name (FDM128) and access profile
- Direct-access icons to the main functions

| Icon | Description |
|---|---|
|  | Go to General view, page 46 menu. |
|  | Refresh the display of the names of connected devices. |
|  | Locate the device, page 47 (or intelligent modular unit). |
|  | Go to Login/Access Code settings, page 43 menu. |
|  | Go to Editing devices, page 41 menu. |

| Icon | Description |
|---|---|
|  | Go to Communication settings, page 38 menu. |
|  | Go to General settings, page 37 menu. |

Title Bar

The title bar (B) contains the title of the screen or name of the selected device.

Main Area

The main area includes the headpiece (C), the right area (D), and the left area (E).

The following table describes the parts of the main display area:

| Position | Description | Use |
|----------------|-------------------------|--|
| Headpiece (C) | Right area title | Navigate through the submenus items. |
| Right area (D) | Information | Displays information of the selected submenu or submenu item. Information screens depend on the device. |
| Left area (E) | Submenus, if applicable | Navigate through the submenus. Various contents depending on the device. |

Footer

The footer (F) contains some navigation icons depending on the selected screen.

The icons are listed in the [Icon List](#), page 68.

If there is more than one page in the selected submenu, the screen number is displayed. The screen number format is X/Y, where X is the current screen number and Y is the total number of screens.

Menu Structure

Menu Types

FDM128 menus are divided into two types:

- Settings menus: blue title bar background
- Operation menus: green title bar background

Settings Menus

Settings menus are composed of two sequences:

- General settings sequence
- Settings sequence for devices: communication settings, device discovery, and editing devices

The [setting wizard](#), page 37 of the FDM128 display guides you through these sequences.

General View

The **General view** menu is used to monitor up to eight devices at the same time.

For further information, refer to the [general view](#) topic, page 46.

Device View

Device view menus are only accessible from the **General view** menu.

The **Device view** for circuit breakers menu is composed of the following submenus:

- **Quick view**, page 52
- **Measures**, page 52
- **Alarm history**, page 53
- **Control**, page 53
- **Maintenance**, page 54
- **I/O1** and **I/O2**, page 55

The **Device view** for Smartlink SI B menu is composed of the following submenus:

- **Status**
- **Counters** (energy, water, gas...)
- **Control**, page 57
- **PowerTag**, page 57

The **Device view** for Smartlink SI D menu is composed of **PowerTag**, page 57 submenu.

Browsing

Navigate Through the Screens

In a menu or a submenu, you can navigate through the screens by using the footer icons.

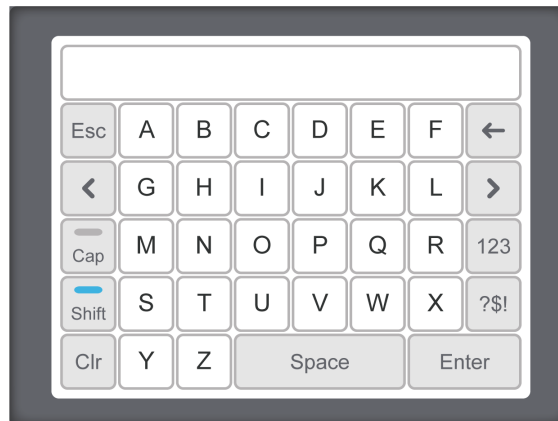
The browsing actions are executable by pressing the icons. Refer to the icon list, page 68 to get the meaning of each of them.

The icons are available depending on the network configuration, the selected menu, and the possible actions.

NOTE: A gray icon means that the option or action is not available in the actual context.

Data Entry

When an action requires an alphanumeric entry (for example, typing a designation), the following touch keyboard is displayed:



When an action requires a numeric entry (for example, typing an IP address), the numeric keyboard is displayed.

NOTE: You can also display the numeric keyboard by pressing the **123** key on the alphanumeric keyboard.

Configuration

Prerequisites

Ethernet Network

The Ethernet connections of the IP devices in the Ethernet network must be correctly installed and configured.

NOTE: To connect to an Ethernet device outside the subnetwork a popup message requests your confirmation to connect to another subnetwork.

The Ethernet network may include the following IP devices:

- EGX300 or EGX100 gateways
- Link150 gateways
- IFE or EIFE interfaces
- IFE server
- Smartlink Ethernet devices
- Smartlink SI B gateway
- Smartlink SI D gateway
- PowerTag Link gateway
- PowerTag Link B gateway
- PowerTag Link HD gateway
- Third-party gateways
- EcoStruxure Panel Server Universal
- EcoStruxure Panel Server Advanced

NOTE: FDM128 display does not support devices with local ID (Virtual ID) from the Com'X or Link150 gateways.

For further information, refer to the corresponding user guides provided in the section [Related Documents](#), page 8.

NOTE: PowerTag Link B gateway is equivalent to Smartlink SI B gateway.

Modbus Serial Line Network

The devices in the Modbus serial line network must be correctly installed and configured with the following Modbus parameters:

| Parameter | Value |
|------------------------------|---|
| Modbus address (slaves only) | The Modbus address of each monitored device must be unique. The range of Modbus addresses is [1-247]. |
| Physical interface | RS-485 2-wire |
| Transmission mode | RTU (Automatic) |
| Communication speed | The communication speed must be the same for all devices. |
| Parity | The parity must be the same for all devices. |
| Response time-out | 1 second |

To check the Modbus parameters of each monitored device, refer to the section [Related Documents](#), page 8:

- The *BCM ULP Circuit Breaker Communication Module Installation Manual*
- The *IFM Modbus-SL Interface for One Breaker - Instruction Sheet*
- The *Smartlink Modbus Communication System User Manual*

Architecture Network Limitation

The limitations of the architecture network are as follows:

- Modbus serial line time out in the IFE device should be 1 s
- To avoid communication error or not to overload the network, a maximum of two FDM128 displays must be connected to the same IFE device. The FDM128 displays can scan data of the same circuit breaker.

Setting Wizard

Wizard Presentation

A setting wizard is automatically launched at first power-on to help you set up the FDM128 display.

The setting wizard guides you through three main configuration parts:





1. FDM128 display general settings
2. Communication settings depending on the network architecture
3. Editing device function

Each configuration part is described further in this section.

It is recommended that you update the communication settings each time you modify the communication network.

General Settings

The following table describes the sequence of steps presented by the setting wizard to configure the FDM128 general settings:

| Step | Screen | Action |
|------|---------------------------------|---|
| 1 | Welcome | Touch the screen to start the wizard. |
| 2 | Language | <p>Select a language.</p> <p>In the footer, press  to access the next step.</p> |
| 3 | Refresh Rate | <p>Press one of the two possible ways to set manually the real-time sample rate in the General View:</p> <ul style="list-style-type: none"> Fast (default setting): refresh every 3 s for circuit breakers and 5 s for Smartlink device. Slow: refresh every 10 s for all devices. <p>Example:</p> <ul style="list-style-type: none"> 8 MasterPact MTZ circuit breakers connected in Fast refresh mode has a maximum duration equal to $(8 \times 3) = 24$ seconds. 8 MasterPact MTZ circuit breakers connected in Slow refresh mode has a maximum duration equal to $(8 \times 10) = 80$ seconds. <p>In the footer, press  to access the next step.</p> |
| 4 | Phase labels | <p>Press one of the two possible ways to represent the phases 1,2,3,N (default setting), or A,B,C,N.</p> <p>In the footer, press  to access the next step.</p> |
| 5 | Units of measurement I/O | <p>Select the units of measurement for the analog input of the I/O modules:</p> <ul style="list-style-type: none"> The unit of temperature (°C (default setting) or °F) The unit of volume (m³ (default setting) or gallon US or gallon UK) <p>In the footer, press  to access the next step.</p> |
| 6 | Brightness | <p>Press the +/- icons to adjust the brightness level of the display.</p> <p>In the footer, press Finish.</p> <p>The setting wizard displays the Selection of the communication architecture screen to allow you to set up the FDM128 communication. Follow the communication settings procedure that corresponds to your network architecture.</p> |

Communication Settings for a Single Gateway-Based Architecture

This procedure is applicable when:

- The FDM128 display is connected to an IFE interface, page 18 or an EIFE interface , page 13
- The FDM128 display is connected to an Smartlink SI B or Smartlink SI D gateway , page 14
- The FDM128 display is connected to an EcoStruxure Panel Server, page 16
- The FDM128 display is connected to an EGX gateway

The FDM128 setting wizard guides you through the following steps:

| Step | Action |
|------|--|
| 1 | Configure the FDM128 display within the network. Set the following parameters: <ul style="list-style-type: none"> • The FDM128 IP address • The subnet mask • The default gateway IP address |
| 2 | Press YES to indicate that the FDM128 display is connected to a gateway. |
| 3 | Set the IP address of the gateway. |
| 4 | Enter Modbus range between 1–247. |
| 5 | Press Start to launch the device discovery sequence. For more information, refer Device Discovery, page 39. Up to 16 devices are displayed. |
| 6 | Select up to eight devices among the devices displayed. |
| 7 | If you select less than eight devices among the devices displayed, you are prompted for an additional gateway. Press NO . |
| 8 | If needed, you can configure manually extra IFE, EIFE, Smartlink SI B, or Smartlink SI D devices. |
| 9 | Press Finish . The FDM128 display can now monitor the list of selected devices. The setting wizard displays the Editing devices screen to allow you to edit the label and name of the devices. |

Communication Settings for Several Gateway-Based Architectures

This procedure is applicable when the FDM128 display is connected to several gateways, page 19.

The FDM128 setting wizard guides you through the following steps:

| Step | Action |
|------|--|
| 1 | Configure the FDM128 display within the network. Set the following parameters: <ul style="list-style-type: none"> • The FDM128 IP address • The subnet mask • The default gateway IP address |
| 2 | Press YES to indicate that the FDM128 display is connected to a gateway. |
| 3 | Set the IP address of the gateway. |
| 4 | Enter Modbus range between 1–247. |
| 5 | Press Start to launch the device discovery sequence , page 39. Up to 16 devices are displayed. |

| Step | Action |
|------|--|
| 6 | Select up to eight devices among the devices displayed. |
| 7 | If you select less than eight devices among the devices displayed, you are prompted for an additional gateway. If you have another gateway to configure, press YES and go back to step 3. |
| 8 | When you have configured all gateways, press NO . You can now manually configure extra IFE, EIFE, Smartlink SI B, or Smartlink SI D devices. |
| 9 | Press Finish . The FDM128 display can now monitor the list of selected devices. The setting wizard displays the Editing devices screen to allow you to edit the label and name of the devices. |

NOTE: Before launching the auto discovery, make sure that the Modbus serial line time out is 1 s.

Communication Settings for Several IFE, EIFE, Smartlink SI B, Smartlink SI D, PowerTag Link, or EcoStruxure Panel Server Architecture

The procedure is applicable when the FDM128 display is connected to several IFE, EIFE , Smartlink SI B, Smartlink SI D, PowerTag Link, or EcoStruxure Panel Server , page 18 devices.

The FDM128 setting wizard guides you through the following steps:

| Step | Action |
|------|--|
| 1 | Configure the FDM128 display within the network. Set the following parameters: <ul style="list-style-type: none"> • The FDM128 IP address • The subnet mask • The default gateway IP address |
| 2 | Press NO to indicate that there is no gateway. |
| 3 | Configure manually up to eight IFE, EIFE, Smartlink SI B, Smartlink SI D, PowerTag Link, or EcoStruxure Panel Server devices. |
| 4 | Press Finish . The FDM128 display can now monitor the list of selected devices. The setting wizard displays the Editing devices screen to allow you to edit the label and name of the devices. |

Device Discovery

The device discovery feature enables detection of devices in a given Modbus range (1–247).

NOTE: The default Modbus range is 1–10.

The device discovery sequence detects up to 16 devices on the network as per the given Modbus range. These devices are displayed sorted in ascending order of Modbus address, with the Modbus address indicated in the first column.

The device discovery sequence time varies depending on the Modbus range selected.

NOTE: The 16 detected devices are those with the 16 first Modbus addresses.

Among the detected devices, you can select a maximum of eight devices.

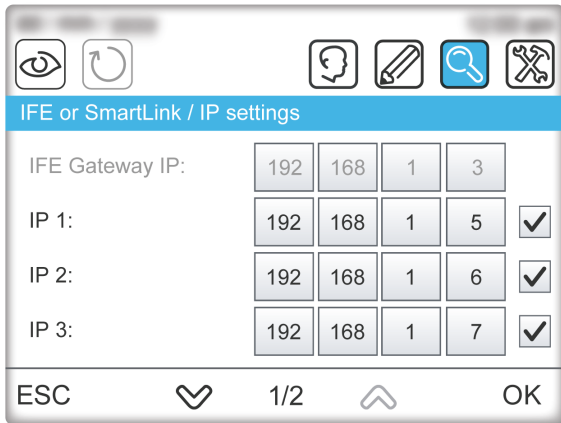
The FDM128 display guides you through the following device discovery procedure:

| Step | Action |
|------|--|
| 1 | <p>The device discovery sequence is started during the communication settings procedure.</p> <p>A progress bar is displayed during the device discovery sequence.</p> <p>NOTE: During the device discovery, if you want to stop the discovery sequence, press Cancel. It will take you back to the Device Discovery page.</p> |
| 2 | <p>In the list of the discovered devices, select the check box for each device you want to include.</p> <p>Devices previously selected in a device discovery loop are displayed in gray.</p> |
| 3 | <p>Press Finish.</p> <p>The Editing devices screen appears.</p> |

Manual Configuration of IFE, EIFE, Smartlink SI B, Smartlink SI D, PowerTag Link, and EcoStruxure Panel Server Gateways

You configure devices manually either after a device discovery sequence, or if you do not have a IFE, EIFE, Smartlink SI B, Smartlink SI D, PowerTag Link, or EcoStruxure Panel Server gateway.

To configure devices manually during the device settings sequence, proceed as follows:

| Step | Action |
|------|---|
| 1 | <p>On the configuration screen, tick the check boxes of the number of IFE, EIFE, Smartlink SI B, Smartlink SI D, PowerTag Link, or EcoStruxure Panel Server devices to configure.</p>  |
| 2 | For each selected device, set its IP address. |
| 3 | <p>Press OK to launch the device discovery sequence. Device Discovery page is displayed with the list of available gateways.</p> <p>NOTE: A maximum of 8 devices can be discovered.</p> |
| 4 | Select up to eight devices among the devices displayed. |
| 5 | If you select less than eight devices among the devices displayed, you are prompted for an additional gateway. Press NO . |
| 6 | If needed, you can configure manually extra IFE, EIFE, Smartlink SI B, Smartlink SI D, PowerTag Link, or EcoStruxure Panel Server devices. |
| 7 | <p>Press Finish.</p> <p>The FDM128 display can now monitor the list of selected devices.</p> <p>The setting wizard displays the Editing devices screen to allow you to edit the label and name of the devices.</p> |

Power Loss

In case of power loss, the FDM128 display retains the settings.

Settings During Operation

General Settings

Setting functions that can be used during operation, without restarting the setting wizard, are:

- Modifying the general settings
- Editing devices
- Adding single IP devices manually

During operation, you can access the **General settings** menu by pressing .

Editing Devices

Limitations

When the following devices are used together, you cannot write or edit the device name:

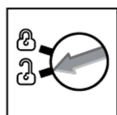
- MasterPact NT/NW with BCM module, firmware version lower than 3.2.5.
- ComPact NS with BCM module, firmware version lower than 3.2.5.
- PowerPact P- and R-frame with BCM module, firmware version lower than 3.2.5.


An example network architecture is provided in this guide, page 17.

Prerequisites

Before editing devices, you must verify that the following prerequisites are met:

- Circuit breaker must be in the remote control mode.
- Device logging in the IFE or EIFE webpage must be disabled.
- Only the following characters are allowed:
 - Upper case letters from A to Z
 - Lower case letters from a to z
 - Digits from 0 to 9
 - Hyphen -
- Before editing the name and label of the circuit breaker:
 - The EIFE intrusive command mode must be unlocked
 - The locking pad of the IFE, or IFM interface must point to the open padlock, as shown in the following graphic



When the communication network is configured, access the **Editing devices** menu by pressing .

Use the **Editing devices** menu to:

- Provide a label for each device:

The label is defined in the **ID** field and is only displayed in the FDM128 display. The **ID** field contains up to 4 characters.


- Rename a device:

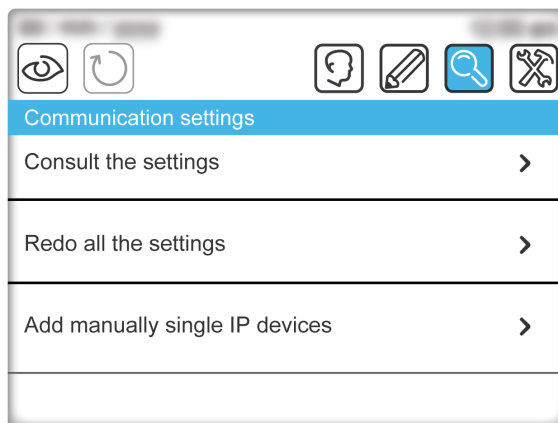
The name is defined in **Name** field and is the actual name of the device. You may need to use the device password to rename the device. The **Name** field contains up to 12 characters.

NOTE: Press **OK** to validate the settings and go back to the operation mode.

Communications Settings

During operation, you can access the **Communication settings** menu by

pressing .




Use this menu to:

- View the present communication settings configuration.
- Restart the [setting wizard](#), [page 37](#), beginning at the point following the general settings, where you can modify the FDM128 display settings.
- If the number of devices is less than eight, manually add an IFE interface, an EIFE interface, an Smartlink SI B gateway, or an Smartlink SI D gateway.

Access Code Settings

During operation, you can access the **Access Code settings** menu by pressing

. Use this menu to view and edit user login and access code settings, [page 43](#).

Operation

Logins and Access Codes

Levels of Access

The FDM128 display requires login and access code combinations to access the following functions:

- Monitoring functions:
By default, you do not need to log in to access monitoring functions (viewer or guest) access).
- Operation functions:
Log in as an operator to access operation functions (operator access).
- Administration, communication, and other advanced functions:
Log in as administrator to access advanced functions (administrator access).


The various functions that available at different access levels are listed in the table.

| Function | Type | Guest | Operator | Administrator |
|---|---------------|-------|----------|---------------|
| IO output control | Control | No | Yes | Yes |
| Light and load control | Control | No | Yes | Yes |
| Breaker control | Control | No | No | Yes |
| Acti9 device control | Control | No | Yes | Yes |
| Reset measurement (min max, energy) | Configuration | No | Yes | Yes |
| Edit breaker device names | Configuration | No | No | Yes |
| Discovery of devices | Configuration | No | No | Yes |
| General settings (language, date, brightness) | Configuration | No | Yes | Yes |
| Configuration of login and access code | Configuration | No | No | Yes |
| Monitoring | Monitor | Yes | Yes | Yes |

NOTE: Menus and functions that are not available at an access level are grayed out.


Login Procedure

To log in to the FDM128 display, follow these steps:

| Step | Action |
|------|---|
| 1 | Press  . The Operator/Administrator access screen opens. |
| 2 | Enter your login and access code. |
| 3 | Press OK . In the screen header, you can now access the direct function icons for your level. |

Logout Procedure

To log out of the FDM128 display, follow these steps:

| Step | Action |
|------|--|
| 1 | When you are logged in to the FDM128 display, press  . The Login/Access code management screen opens. |
| 2 | Press Logout . |
| 3 | When prompted to confirm logout, press YES . In the screen header, you can now access only the Login/Access code function icon. |




NOTE: If you do not touch any button or function on the FDM128 display for 25 minutes, you are automatically logged out.



Configuring Logins and Access Codes

The predefined default user login/access code combinations are:


- For the administrator: `admin/admin`
- For the operator: `oper/oper`

If you need to change a login name or access code, follow these steps:

| Step | Action |
|------|---|
| 1 | Log in as administrator. In the General view screen, in the screen header, you can now access all the direct function icons. |
| 2 | Press  . The Login/Access code management screen opens. |
| 3 | Press Configuration . The Operator : login configuration screen opens. |
| 4 | Type the new login for an operator. The login: <ul style="list-style-type: none"> • Is case-sensitive. • Can contain from 1 to 16 characters. • Can contain alphanumeric characters and symbols, excluding the space character. After editing the operator login value, press  to go to the next screen. The Operator : access code configuration screen opens. |
| 5 | Type the new access code for an operator. The access code: <ul style="list-style-type: none"> • Is case-sensitive. • Can contain from 1 to 16 characters. • Can contain alphanumeric characters and symbols, excluding the space character. After editing the operator access code value, press  to go to the next screen. The Administrator : login configuration screen opens. |
| 6 | Type the new login for an administrator. The login: <ul style="list-style-type: none"> • Is case-sensitive. • Can contain from 1 to 16 characters. |

| Step | Action |
|------|---|
| | <ul style="list-style-type: none">Can contain alphanumeric characters and symbols, excluding the space character. <p>After editing the administrator login value, press  to go to the next screen.</p> <p>The Administrator : access code configuration screen opens.</p> |
| 7 | <p>Type the new access code for an administrator.</p> <p>The login:</p> <ul style="list-style-type: none">Is case-sensitive.Can contain from 1 to 16 characters.Can contain alphanumeric characters and symbols, excluding the space character. <p>After editing the administrator access code value, do one of the following:</p> <ul style="list-style-type: none">Press  one or more times to go back to previous login and access code configuration screens.Press OK. |
| 8 | When prompted to confirm changes to the logins and access codes, press YES . |

Login/Access code Reset

You can restore the default login and access code settings by pressing  and holding it down for 10 seconds.

General View

Overview

The **General view** menu allows you to monitor up to eight selected devices through summarized information.

There are two display modes:

- Icon
- List

Switch between display modes by pressing the corresponding icon in the lower right corner of the screen.

From this menu, you can reach the **Device view** screens of the monitored devices:

- Device view for ComPacT, PowerPacT, MasterPact circuit breakers, page 51.
- Device view for Smartlink devices, page 56.

Icon Mode

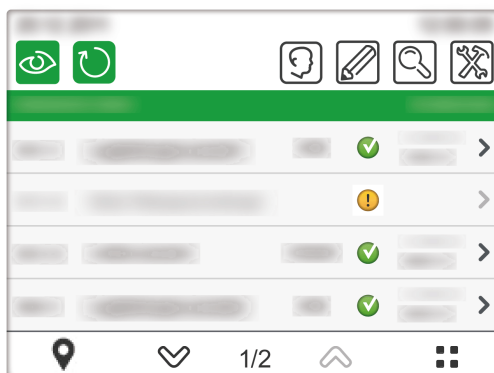


In the icon mode, the eight devices are displayed on one screen, each one by an icon.

To reach a **Device view**, press the corresponding icon.

NOTE: If only one device is discovered, the display, skips the **General view** and displays the **Device view** of the discovered device.

List Mode



In the list mode, four devices are displayed per screen, one per line.




To reach **Device view**, press  on the corresponding line.

Locating Intelligent Modular Units

The FDM128 display enables you to identify a circuit breaker that is part of a monitored intelligent modular unit (IMU), by making its MicroLogic trip unit or FDM121 display blink.

NOTE: A modular unit is a mechanical and electrical assembly containing one or more products that perform a function in a switchboard (incoming protection, motor command, and control). An IMU is a circuit breaker in which internal communicating components and external ULP modules are connected to one IFM, IFE, or EIFE interface. An example of internal communicating component is the MicroLogic trip unit. Examples of external ULP modules are the FDM121 display or the I/O module.

To locate an IMU:

| Step | Action |
|------|--|
| 1 | <p>From the General view, in list mode, press  .</p> <p>The list of locatable IMU displays.</p> <p>NOTE: If you do not perform any action on this screen for more than 25 minutes, you are redirected back to the General view screen.</p> |
| 2 | <p>From the General settings screen, press the  corresponding to the device to locate.</p> <p>The backlighting of the MicroLogic trip unit, or FDM121 display, or both if present, start blinking for around 15 seconds.</p> <p>During this time,  also blinks on the FDM128 display.</p> |

Viewing Devices Updated Remotely

The FDM128 display can display the names of the circuit breakers and the name of the Smartlink SI B, Smartlink SI D, and Smartlink Modbus gateway that they are connected to. The names can be remotely updated using EcoStruxure Power Commission software. In this case, you have to refresh the displayed names to see the new names.

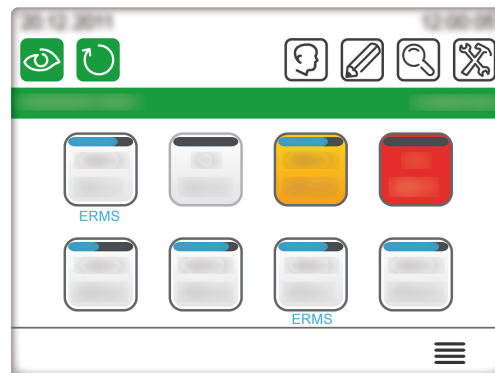
To refresh the display of names, press  . A progress bar is displayed while the screen is refreshed.

In networks where names can be updated at anytime, it is recommended to refresh the FDM128 display periodically.

ERMS Status for MasterPact MTZ Circuit Breaker

The ERMS status is displayed in the **General view** for a MasterPact MTZ circuit breaker.

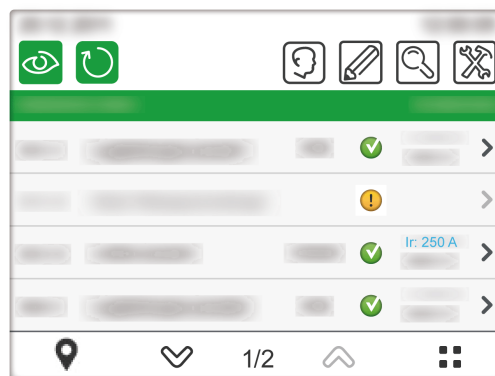
Icon Mode



In the icon mode, the device with its ERMS mode engaged displays a blue ERMS message below the device icon.

To reach a **Device view**, press the corresponding icon.

List Mode



In the list mode, the device with its ERMS mode engaged displays the Ir settings in blue.

To reach **Device view**, press ➤ on the corresponding line.

Device View



In the **Device view**, the device with its ERMS mode engaged displays an ERMS message in the title bar.

Real-Time Alarms

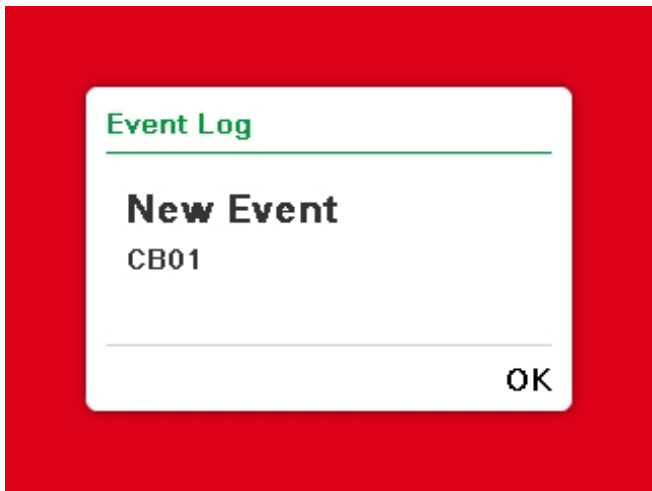
Overview

Alarms are displayed differently according to their priority level.

NOTE: The alarms must be acknowledged on the circuit breakers. There is no acknowledgment from the FDM128 display.

Alarms for Circuit Breakers

The circuit breaker predefined alarms are displayed on the FDM128 display as follows:

| Alarm Priority | Description |
|----------------|--|
| Trip | <p>When a trip occurs, the FDM128 screen shows a pop-up window. The following window represents an example of a trip on circuit breaker CB01.</p>  <p>You must close this window before returning to the General view.</p> <p>This alarm also appears as a red icon on the General view screen and on the title bar of the Device view screen.</p> |
| High | <p>The device icon turns red to indicate a high-priority alarm , page 46.</p> <p>This alarm also appears as a red icon on the title bar of the Device view screen.</p> |
| Medium | <p>When a medium-priority alarm occurs, an orange icon appears on the General view screens and on the title bar of the Device view screens.</p> |
| Low | <p>Low-priority alarms are only registered in the alarm history and viewable in the Alarm history submenu.</p> |

NOTE: The circuit breaker alarms configured using EcoStruxure Power Commission software are only registered in the alarm history and viewable in the Alarm history submenu. For information about configuring alarms using EcoStruxure Power Commission software, refer to the circuit breaker documentation.

Alarms for Circuit Breakers Connected to Smartlink SI B Device

Alarms are raised depending on the type of circuit breaker:

- Acti9 circuit breakers: when an alarm occurs, the FDM128 screen shows a pop-up window. You must close this window before returning to the **General view**. This alarm also appears as a red icon on the **General view** screen and in the corresponding Smartlink SI B and Smartlink Modbus **Device view (Status)**.

- Other circuit breakers: an alarm appears as a red icon on the **General view** screen and in the corresponding **Device view (Status)**.

An example of this type of circuit breaker is item C in the architecture diagram showing the FDM128 display connected to an Smartlink SI B, page 14.

General View Grid Screen Icons

| Icon Color | Description |
|---|---|
| Red | There is an active alarm with a high severity or the circuit breaker has tripped. |
| Partial orange (current value and ID are displayed) | A medium severity alarm is active. |
| Full orange (only ID is displayed) | FDM128 display has lost the communication with the circuit breaker. Check the cable connection or check if the Modbus serial line time out is set to 1 s. |
| Full orange (ID and disconnected symbols are displayed) | The circuit breaker is in disconnected position. |

To check the details on the current Active alarm, refer to the **Alarm history** submenu.

Device View for Circuit Breakers and Switch-Disconnectors

Overview

For each submenu selected in the left tab of the main area, a headpiece allows you to navigate through the tabs. Press the corresponding tab title to display it.

Data displayed in the **Device view** screen depends on the type of device. For circuit breakers, it depends also on the type of MicroLogic trip unit installed. Refer to the relevant *MicroLogic user guides* provided in the section [Related Documents](#), page 8.

The table lists the features available per device type:

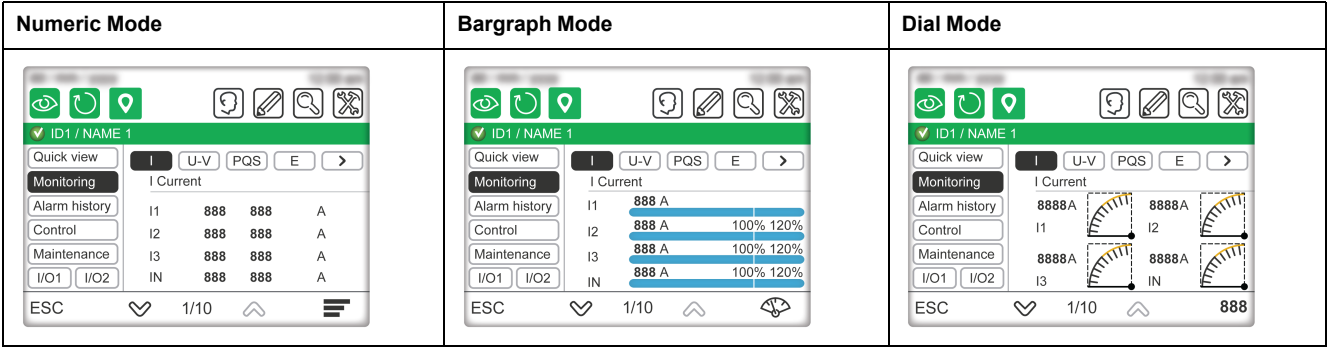
| Features | MasterPact MTZ circuit breakers | MasterPact NT/NW, ComPacT NS, and PowerPacT P- and R-frame circuit breakers | ComPacT NSX and PowerPacT H-, J-, and L-Frame circuit breakers | MasterPact NT/NW, ComPacT, and PowerPacT switch-disconnectors |
|---------------------------|---------------------------------|---|--|---|
| Quick Views | ✓ | ✓ | ✓ | ✓ |
| Measures/I | ✓ | ✓ | ✓ | – |
| Measures/V | ✓ | ✓ | ✓ | – |
| Measures/PQS | ✓ | ✓ | ✓ | – |
| Measures/E | ✓ | ✓ | ✓ | – |
| Measures/F-PF-Cosphi | ✓ | ✓ | ✓ | – |
| Measures/THD | ✓ | ✓ | ✓ | – |
| Alarm History/Trip | ✓ | ✓ | ✓ | – |
| Alarm History/Alarm | ✓ | – | ✓ | – |
| Alarm History/Active | ✓ | – | – | – |
| Alarm History/Maintenance | – | – | ✓ | – |
| Alarm History/BSCM | – | – | ✓ | – |
| Control | ✓ | ✓ | ✓ | ✓ |
| Maintenance/Information | ✓ | ✓ | ✓ | ✓ |
| Maintenance/Product ID | ✓ | ✓ | ✓ | ✓ |
| IO/Status | ✓ | ✓ | ✓ | ✓ |
| IO/Counters | ✓ | ✓ | ✓ | ✓ |
| IO/Control | ✓ | ✓ | ✓ | ✓ |

Measurement Display Modes

Measurements can be displayed in the following modes:

- Numeric
- Bargraph
- Dial

To switch between modes, press the icon at the bottom-right of the screen.



To read the voltage bar graph correctly, you must set up the primary nominal voltage of the circuit breaker.

Quick View

The **Quick view** submenu displays the status and main measurements, and protection settings (long time, short time, instantaneous, ground fault, or earth leakage) from a single circuit breaker.

There is no tab in this submenu.



Measures

The **Measures** submenu displays measurements from a single circuit breaker.

The tabs are the following:

- **I**
- **V**
- **PQS**
- **E**
- **F-PF-Cosφ**
- **THD**

In tabs where the maximum measurement can be reset, you can reset the measurements when the remote control is enabled (IFM or IFE locking pad points to the open padlock, or the EIFE intrusive commands mode is unlocked). In these conditions, press the **Reset** button to access the **RESET** screen, where:

- Pressing  resets the measurements on the previous screen.
- Pressing  resets the maximum values, minimum values, and energy counters of the circuit breaker.

NOTE: The data for Minimum/Maximum CosØ per phase and Minimum/Maximum THD are not available in FDM128 display when connected to MasterPact MTZ circuit breaker. Use EcoStruxure Power Commission software to check the values.

Alarm History

The **Alarm history** submenu gives access to the various histories of the circuit breaker.

The table presents the description and number of records of each history according to the circuit breaker.

| Tab | Description | Number of records: ComPacT NSX and PowerPacT H-, J-, and L- Frame circuit breakers: | Number of records: MasterPact NT/NW, ComPacT NS, and PowerPacT P- and R- frame circuit breakers | Number of records: MasterPact MTZ circuit breakers |
|----------|----------------------|--|---|--|
| Active | List of active alarm | | | |
| Trip | Trip history | 17 | 10 | 10 |
| Alarm | Alarm history | 10 | – | 10 |
| Active | Active alarms | – | – | 40 |
| Mainten. | Operation history | 10 | – | – |
| BSCM | BSCM event history | 10 | – | – |

Each record is summarized by three elements:

- Date and time of event occurrence and completion
- Designation
- Code

NOTE:

- The active alarm events for MasterPact MTZ circuit breaker are not displayed from most recent to the oldest. The order is shown randomly.
- To refresh the **Alarm history** submenu, you need to exit and return to the **Alarm history** submenu.

Control

DANGER

HAZARD OF ELECTRIC SHOCK

- Check that the downstream electrical equipment is safe.
- Check that you control the appropriate circuit breaker.

Failure to follow these instructions will result in death or serious injury.

WARNING

HAZARD OF CLOSING ON ELECTRICAL FAULT

Do not close the circuit breaker again without first inspecting and, if necessary, repairing the downstream electrical equipment.

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

Before controlling a circuit breaker, you have to:

- Verify that you are logged as an administrator. The control functions can be accessed only when you are logged in as an administrator.
- Verify that MasterPact MTZ circuit breakers are equipped with MX and XF communicating voltage releases.
- Verify that MasterPact NT/NW, ComPacT NS, or PowerPacT P- and R-frame circuit breakers are equipped with a BCM ULP, MX, and XF communicating voltage releases or a communicating motor mechanism.

- Verify that ComPacT NSX or PowerPacT H-, J-, or L-frame circuit breakers are equipped with a BSCM and a communicating motor mechanism in automatic mode.
- Verify that the circuit breaker is in remote control mode.
- Verify that you know the circuit breaker password. The password of the circuit breaker is set using the EcoStruxure Power Commission software.
- Verify that the IFE or IFM locking pad points to the unlocked position, when the circuit breaker is connected to an IFE or IFM interface.
- Verify that the intrusive command mode is unlocked, when the circuit breaker is connected to an EIFE interface.

The **Control** submenu allows you to check the status and to execute actions remotely to operate the circuit breaker.

The table presents the possible actions depending on the circuit breaker:

| Action | Circuit breaker |
|--------|--|
| Open | All circuit breakers |
| Close | All circuit breakers |
| Reset | ComPacT NSX and PowerPacT H-, J-, or L-frame circuit breakers only |

The FDM128 display takes you through the following sequence:

| Step | Action |
|------|--|
| 1 | In the submenu Control , press the action for the target circuit breaker. A breaker opening confirmation popup is displayed. |
| 2 | Click OK to continue. A password popup is displayed. |
| 3 | Enter the circuit breaker password. |
| 4 | Press Enter . A popup message confirms that the command is successfully sent. NOTE: The popup message only confirms that the command is successfully sent. It does not confirm whether the complete operation is successful. |
| 5 | Press OK to close the result popup. |

Maintenance

The table presents the functions of each tab of the **Maintenance** submenu:

| Tab | Function |
|--------------------|--|
| Information | <p>Maintenance information available for MasterPact MTZ circuit breakers:</p> <ul style="list-style-type: none"> • remaining service life rate • contact wear rate • load profile • circuit breaker operation counter values • cradle counter values <p>Maintenance information available for MasterPact NT/NW, ComPacT NS, ComPacT NSX and PowerPacT circuit breakers:</p> <ul style="list-style-type: none"> • contact wear rate • load profile • circuit breaker operation counter values • cradle counter values <p>NOTE: The value displayed for operation counter corresponds to the resettable counter.</p> |
| Product ID | Displays the identification data of all ULP modules of the intelligent modular unit. |

I/O1 and I/O2

For each connected I/O module, the **I/O1** and **I/O2** submenus allow you to:

- Check the status of its inputs
- Control its outputs
- Read its pulse counters

Before controlling an I/O module output, you have to:

- Verify that the output of the I/O module is assigned using EcoStruxure Power Commission software.
- Verify that you know the I/O module password. The password of the I/O module is set using EcoStruxure Power Commission software.
- Verify that the I/O module locking pad points to the unlocked position.
- Verify that the IFE or IFM locking pad points to the unlocked position when the I/O module is connected to an IFE or IFM interface.
- Verify that the intrusive command mode is unlocked when the I/O module is connected to an EIFE interface.

The **Control** submenu allows you to check the status and to execute actions remotely to actuate the I/O module output.

The possible actions are to open or close the output.

The FDM128 display takes you through the following sequence:

| Step | Action |
|------|--|
| 1 | In the submenu Control , press the action for the target output. A password popup is displayed. |
| 2 | Enter the I/O module password. A confirmation popup is displayed. |
| 3 | Press YES . The following operations occur: <ol style="list-style-type: none"> 1. The command is sent to the output. 2. The output executes the command. 3. When the execution of the command is finished, a result popup is displayed with a failure or success message. |
| 4 | Press OK to close the result popup. |

Device View for Devices Connected to the Smartlink Devices

Overview

For each submenu selected in the left tab of the main area, a headpiece allows you to navigate through the tabs. Press the corresponding tab title to display it.

Data displayed in the **Device view** screen depends on the device connected to the Smartlink device. Refer to the relevant user guides provided in the section *Related Documents*, page 8.

Each Smartlink device concentrates data from connected devices on its channels.

NOTE: The Smartlink product range is not available in the following countries: United States, Canada, Mexico. Consult the catalog for the list of products available in your country.

The table lists the features available per device type:

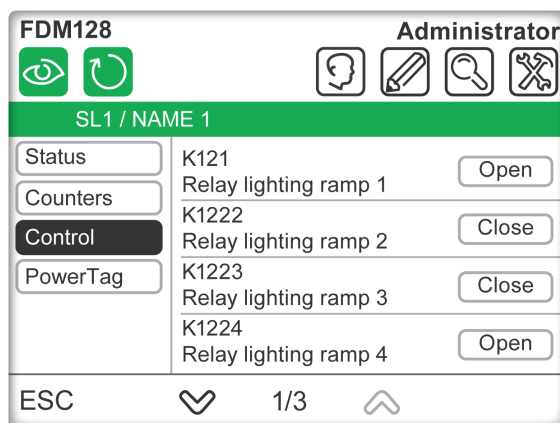
| Features | Smartlink SI B | Smartlink SI D PowerTag Link PowerTag Link HD | Smartlink Modbus |
|----------|----------------|---|------------------|
| Control | ✓ | – | ✓ |
| Status | ✓ | ✓ | ✓ |
| Counters | ✓ | ✓ | ✓ |

Monitoring Information

Depending on the type of the connected device, the **Device view** displays:

- The status of the connected device (only for Smartlink SI B and Smartlink Modbus devices)
- The counters measured by the connected device (only for Smartlink SI B and Smartlink Modbus devices)
- Buttons to control other devices connected to the Smartlink (only for Smartlink SI B and Smartlink Modbus devices)
- Metering data provided by PowerTag energy sensors (only for Smartlink SI B, Smartlink SI D, and EcoStruxure Panel Server devices)

For example, the layout of the **Device view** for a device connected to an Smartlink SI B gateway is as follows:



NOTE: When browsing an Smartlink device view for the first time or after a configuration update, it may take up to 20 seconds for the displayed data to refresh.

Control

DANGER

HAZARD OF ELECTRIC SHOCK

- Check that the downstream electrical equipment is safe.
- Check that you control the appropriate circuit breaker.

Failure to follow these instructions will result in death or serious injury.

WARNING

HAZARD OF CLOSING ON ELECTRICAL FAULT

Do not close the circuit breaker again without first inspecting and, if necessary, repairing the downstream electrical equipment.

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

The procedure to control an Smartlink device is as follows:

| Step | Action |
|------|---|
| 1 | In the submenu Control , press the action (Open or Close) for the target device. |
| 2 | Press YES . The following operations occur: <ol style="list-style-type: none"> 1. The command is sent to the device. 2. The device executes the command. 3. When the execution of the command is finished, a result popup is displayed with a detected failure or success message. |
| 3 | Press OK to close the result popup. |

PowerTag 63A for Acti9 Circuit Breakers

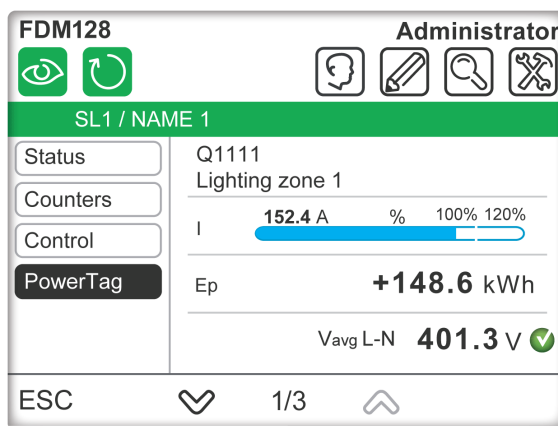
The FDM128 display scans, discovers, and shows data from up to:

- 20 PowerTag Energy sensors per Smartlink SI B, Smartlink SI D, or PowerTag Link (maximum gateway capacity is 20).
- 40 PowerTag Energy sensors per PowerTag Link HD or EcoStruxure Panel Server gateway (maximum gateway capacity is 100).

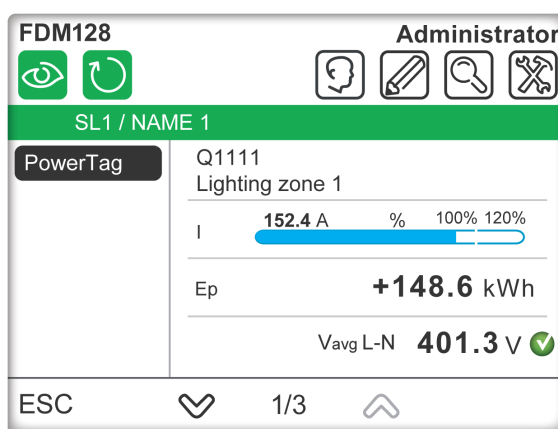
The FDM128 display can show data from a maximum of 8 gateways (Smartlink SI B, Smartlink SI D, PowerTag Link, PowerTag Link HD, or EcoStruxure Panel Server gateway).

The data from each energy sensor is displayed on a dedicated page.

The below figure shows the PowerTag screen of Smartlink SI B gateway.



The below figure shows the PowerTag screen of Smartlink SI D and EcoStruxure Panel Server gateway.



Depending on whether the PowerTag energy sensor is single- or three-phase, the following information is displayed in the submenu.

For single-phase PowerTag energy sensors:

- Label
- Asset name
- Current (I)
- Total active energy (Resettable)
- Voltage status
- Voltage (phase-to-neutral voltage)

For three-phase PowerTag energy sensors:

- Label
- Asset name
- Current (I) among the phases Ia, Ib, and Ic
- Total active energy (Resettable)
- Voltage status
- Average voltage (phase-to-phase voltage)

For three-phase and neutral PowerTag energy sensors:

- Label
- Asset name
- Current (I) among the phases Ia, Ib, and Ic
- Total active energy (Resettable)
- Voltage status

- Average voltage (phase-to-neutral voltage)

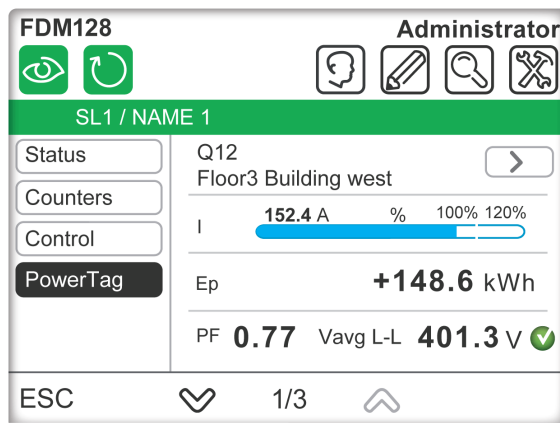
PowerTag for ComPacT NSX Circuit Breakers

The FDM128 display scans, discovers, and shows data from up to:

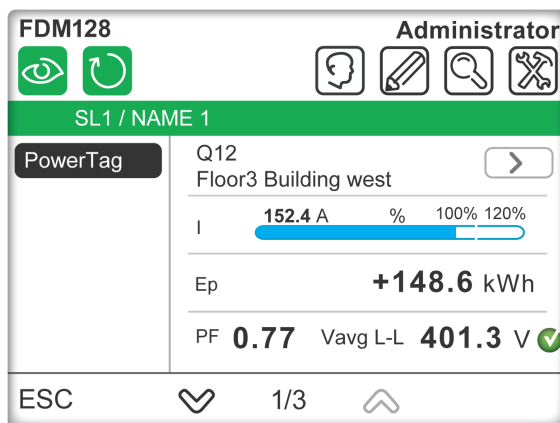
- 20 PowerTag M250/M630 energy sensors per Smartlink SI B, Smartlink SI D, or EcoStruxure Panel Server gateway.
- 40 PowerTag M250/M630 energy sensors per PowerTag Link HD gateway.

The data from each energy sensor is displayed on a dedicated page.

The below figure shows the PowerTag screen of Smartlink SI B gateway.



The below figure shows the PowerTag screen of Smartlink SI D, PowerTag Link HD, and EcoStruxure Panel Server gateway.



The following information is displayed in the submenu of PowerTag M250/M630 energy sensors:

- Label
- Asset name
- Current (I)
- Total active energy (Resettable)
- Power Factor
- Average voltage
- Voltage status

Use the **Right Arrow** button on the top-right corner of the screen to view the following information:

- Current and voltage per phase (I-V)
- Energy (E)
- Power per phase (P)
- Total power and energy (P-E)

Update and Maintenance

Firmware Update

Firmware Update Policy

The primary reason for updating the firmware of a FDM128 display is to obtain the latest FDM128 features. If the latest FDM128 features are not required, it is not mandatory to update the firmware of FDM128 display.

If you notice a bug on the FDM128 display, refer to [FDM128 firmware release note](#) to check if the bug is corrected in a later version of the firmware. Update the firmware of the FDM128 display to benefit from the correction. If there is no bug fix available, call the Customer Care Centre.

Prerequisites

To update the FDM128 firmware, use a USB memory key.

This USB memory key must be:

- Formatted in FAT32 system format
- Empty

⚠️⚠️ DANGER

HAZARD OF ELECTRICAL SHOCK

- Ensure that the zone is safe before connecting or disconnecting the USB key.
- Use the USB connector for a temporary connection during maintenance and configuration of equipment.


Failure to follow these instructions will result in death or serious injury.

Downloading the Latest Firmware Version

Perform the below steps to download the latest firmware version:

| Step | Action |
|------|---|
| 1 | Go to the Schneider Electric home page www.se.com . |
| 2 | In the Search box, type the reference of the FDM128 display (LV434128) or the name of the product offer (FDM128). <ul style="list-style-type: none"> • Do not include leading or trailing blank spaces in the search string. • To get information on similar modules, use asterisks (*). |
| 3 | If you entered the reference, go to the Product datasheets search results. If you entered the name of the product offer, go to the Product Offer search results. Click the link of the FDM128 display product. |
| 4 | Click Documents and Downloads , then go to Firmware - Updates section. The list of available firmware for the FDM128 display is displayed. |
| 5 | Click the link Firmware update for Enerlin'X FDM128 (zip) of the FDM128 firmware version you want to download. Save the .zip file on your computer. |

Updating the Firmware

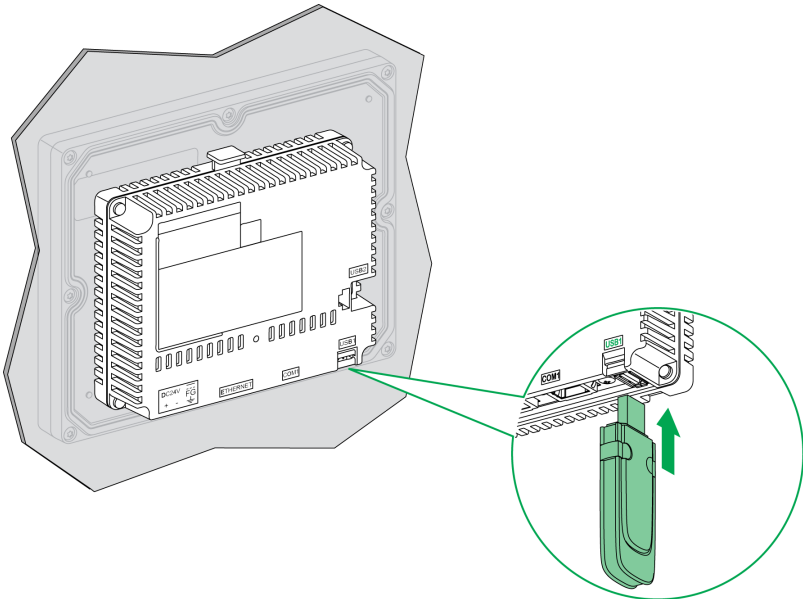
 **WARNING**

LOSS OF DATA

- Note down the old configuration settings to re-configure them after firmware update.
- The configuration settings of the FDM128 display (such as IP configuration and slave device configuration) may be lost when the FDM128 firmware is updated.


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

After downloading the firmware, update the FDM128 display as follows:


| Step | Action |
|------|--|
| 1 | Extract files from the .zip file. |
| 2 | Load the extracted files onto the USB memory key. |
| 3 | Ensure that the FDM128 display is powered ON. |
| 4 | Plug the USB memory key into the USB1 port on the FDM128 display. <div></div> |
| 5 | Follow the instructions on the FDM128 screen. |

Adding, Removing, and Replacing Devices


Adding New Devices

| Step | Action |
|------|---|
| 1 | Ensure that settings of the new devices are compliant with the prerequisites, page 35. |
| 2 | Press the  icon to update the FDM128 communication settings. |
| 3 | <p>For devices connected through a gateway:</p> <ol style="list-style-type: none">1. Press Redo all the settings.2. Set the communication settings according to your gateway-based architecture, page 38. <p>For devices connected directly:</p> <ol style="list-style-type: none">1. Press Add manually single IP devices.2. Manually configure their IP addresses, page 40. |

Removing Selected Devices

| Step | Action |
|------|---|
| 1 | Disconnect the devices from the network. |
| 2 | Press the  icon to update the FDM128 communication settings. |
| 3 | <p>For devices connected through a gateway:</p> <ol style="list-style-type: none">1. Press Redo all the settings.2. Set the communication settings according to your gateway-based architecture, page 38. |

Replacing MicroLogic

| Step | Action |
|------|---|
| 1 | Replace the MicroLogic trip unit. |
| 2 | Press the  icon to update the FDM128 communication settings, page 39. |
| 3 | <p>For devices connected through a gateway:</p> <ol style="list-style-type: none">1. Press Redo all the settings.2. Set the communication settings according to your gateway-based architecture, page 38. |

Regular Cleaning

Cleaning the Display

NOTICE

EQUIPMENT DAMAGE

- Power off the FDM128 display before cleaning it.
- Do not use hard or sharp objects to operate the touch panel since it can damage the panel surface.
- Do not use paint thinner, organic solvents, or a strong acid compound to clean the FDM128 display.

Failure to follow these instructions can result in equipment damage.

When the surface or the frame of the display gets dirty, soak a soft cloth in water with a neutral detergent, wring the cloth tightly, and wipe the display.

Troubleshooting Checklists

Introduction

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel.
 - Before working on the equipment, ensure that you are working in a safe area
- Failure to follow these instructions will result in death or serious injury.**

When a problem is detected, go through the checklist and follow the instructions given.

Possible problems that could occur when using an FDM128 display are:

- Panel display is blank.
- Connected equipment cannot be used.
- Panel does not respond or responds slowly.
- Panel beeps when powered on.

NOTE: Contact your local Schneider Electric vendor or your local distributor.

Panel Display Is Blank

If the display is blank, perform the following check steps:

| Step | Check/Operation | Solution |
|------|--|--|
| 1 | Is the FDM128 display using the correct rated voltage? | Verify the power supply connections and levels. |
| 2 | Is the power supply off or disconnected? | Follow the instructions in the Instruction Sheet to reconnect the power supply. |
| 3 | Is the backlight lit? | Potential detected problem with the FDM128 display. Contact your local Schneider Electric distributor. |
| 4 | Is the problem resolved? | If none of the previous steps resolve the detected problem, verify the hardware. |

Display Replacement

The following replacements are available:

- Front part only: reference HMIS85
- Whole device, including the front part: reference LV434128

For information about how to reinstall the product, see the Instruction Sheet.

Connected Equipment Cannot Be Used

If the FDM128 display does not communicate with connected equipment, perform the following check steps:

| Step | Check/Operation | Solution |
|------|---|--|
| 1 | Is the power supply off or disconnected? | Verify the power supply connections and levels. |
| 2 | Is the communication cable connected correctly? | For more information about cable diagrams, refer to <i>FDM128 Ethernet Display for Eight Devices Instruction Sheet</i> . |
| 3 | Is the problem resolved? | If none of the previous steps resolve the communication problem, then check the hardware. |

Protecting the Environment

Recycling Packaging

The packaging materials from this equipment can be recycled. Please help protect the environment by recycling them in appropriate containers.

Thank you for playing your part in protecting the environment.

End-of-Life Recycling

At end of life, the FDM128 display has been optimized to decrease the amount of waste and valorize the components and materials of the product in the usual end of life treatment process.








The design has been achieved so components are able to enter the usual end-of-life treatment processes as appropriate: depollution if recommended, reuse and/or dismantling if recommended to increase the recycling performances, and shredding for separating the rest of materials.

Appendices









FDM128 Icons

Icon List









Header Icons

| Icon | Description |
|---|---|
|  | Go to General view menu |
|  | Refresh the display of the names of connected devices |
|  | Locate the device |
|  | Go to Login/Access Code settings menu |
|  | Go to Editing devices menu |
|  | Go to Communication settings menu |
|  | Go to General settings menu |





Footer Icons

| Icon | Description |
|---|--------------------------|
|  | Go to next screen |
|  | Go to previous screen |
|  | Switch to bargraph mode |
|  | Switch to numeric mode |
|  | Switch to dial mode |
|  | Switch to icon mode |
|  | Switch to list mode |
|  | Locate a circuit breaker |









Action Icons




| Icon | Description |
|---|--|
|  | Reset measurements displayed in the previous screen |
|  | Reset all measurements and counters of the circuit breaker |
|  | Reset circuit breaker |
|  | Locate a circuit breaker |
|  | Decrease level |
|  | Increase level |
|  | Display next tabs |
|  | Display previous tabs |

Alarm Status Icons

| Icon | Description |
|---|------------------------------------|
|  | Circuit breaker status is OK |
|  | Circuit breaker is offline |
|  | Medium priority alarm is occurring |
|  | High priority alarm is occurring |

Circuit Breakers Status Icons

| Icon | Description |
|---|--|
|  | Circuit breaker is charged |
|  | Circuit breaker is discharged |
|  | Circuit breaker is closed |
|  | Circuit breaker is open |
|  | Withdrawable circuit breaker is connected |
|  | Withdrawable circuit breaker is disconnected |
|  | Capacitive load |
|  | Inductive load |

| Icon | Description |
|---|--|
|  | Cradle position: Test active |
|  | Cradle position: Test disabled |
|  | Global health status (For MasterPact MTZ only) |

Glossary of Acronyms

Acronym

Acronyms and Definitions

The following table lists the acronyms used in various screens and their respective definition:

| Acronym | Definition |
|---------|---|
| EpIn | Energy active delivered count positively |
| EpOut | Energy active received count negatively |
| EqIn | Energy reactive delivered count positively |
| EqOut | Energy reactive received count negatively |
| NA | Not applicable (means either the data is not available from the circuit breaker or communication error) |

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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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