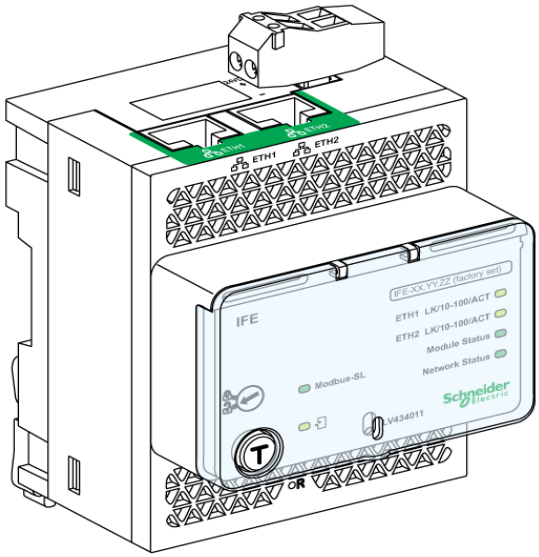
IFE Ethernet Interface for LV Circuit Breakers

User Guide

03/2014



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The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein. If you have any suggestions for improvements or amendments or have found errors in this publication, please notify us.

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

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

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

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

Table of Contents

Safety Information

Important Information

NOTICE

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

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

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

⚠ DANGER

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

⚠ WARNING

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

⚠ CAUTION

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

NOTICE

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

PLEASE NOTE

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

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

About the Book

At a Glance

Document Scope

The aim of this document is to provide the users, installers, and the maintenance personnel with the technical information and procedure needed to access and maintain the IFE web server.

Validity Note

The technical characteristics of the devices described in this document also appear online. To access this information online:

Step	Action
1	Go to the Schneider Electric home page *www.schneider-electric.com*.
2	In the **Search** box type the reference of a product or the name of a product range. ● Do not include blank spaces in the model number/product range. ● To get information on grouping similar modules, use asterisks (*).
3	If you entered a reference, go to the **Product datasheets** search results and click on the reference that interests you. If you entered the name of a product range, go to the **Product Ranges** search results and click on the product range that interests you.
4	If more than one reference appears in the **Products** search results, click on the reference that interests you.
5	Depending on the size of your screen, you may need to scroll down to see the data sheet.
6	To save or print a data sheet as a .pdf file, click **Download XXX product datasheet**.

The characteristics that are presented in this manual should be the same as those characteristics that appear online. In line with our policy of constant improvement, we may revise content over time to improve clarity and accuracy. If you see a difference between the manual and online information, use the online information as your reference.

Related Documents

Title of Documentation	Reference Number
IFE Ethernet Interface for LV Circuit Breaker - Instruction Sheet	HRB49218
Masterpact NT/NW, Compact NS Modbus Communication Guide	DOCA0054 (FR) DOCA0054 (EN) DOCA0054 (ES)
Compact NSX Modbus Communication Guide	LV434106 (FR) LV434107 (EN) LV434108 (ES)
ULP System - User Guide	TRV99100 (FR) TRV99101 (EN) TRV99102 (ES)

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

Chapter 1
IFE Presentation

What Is in This Chapter?

This chapter contains the following topics:

IFE Description

Introduction

The IFE Ethernet interface for LV circuit breaker enables an intelligent modular unit (IMU), for example a Masterpact NT or Compact NSX circuit breaker to be connected to an Ethernet network. Each circuit breaker has its own IFE and a corresponding IP address.

Types of IFE

There are 2 commercial references of the IFE:

- LV434010 - Ethernet interface for LV circuit breaker
  This type of IFE is an Ethernet interface for Compact, PowerPact, and Masterpact circuit breakers.
- LV434011 - Ethernet interface for LV circuit breaker and gateway
  This type of IFE is an Ethernet interface for Compact, PowerPact, and Masterpact circuit breakers and a gateway for Modbus-SL (serial line) connected devices.

IFE Features

The main features of IFE are:

- Dual Ethernet port for simple daisy chain connection
- Device profile web service for discovery of the IFE on the local area network (LAN)
- ULP compliant for localization of the IFE in the switchboard
- Ethernet interface for Compact, PowerPact, and Masterpact circuit breakers
- Gateway for Modbus-SL connected devices (only for the IFE with the commercial reference LV434011)
- Embedded set-up web pages
- Embedded monitoring web pages
- Embedded control web pages
- Built-in e-mail alarm notification

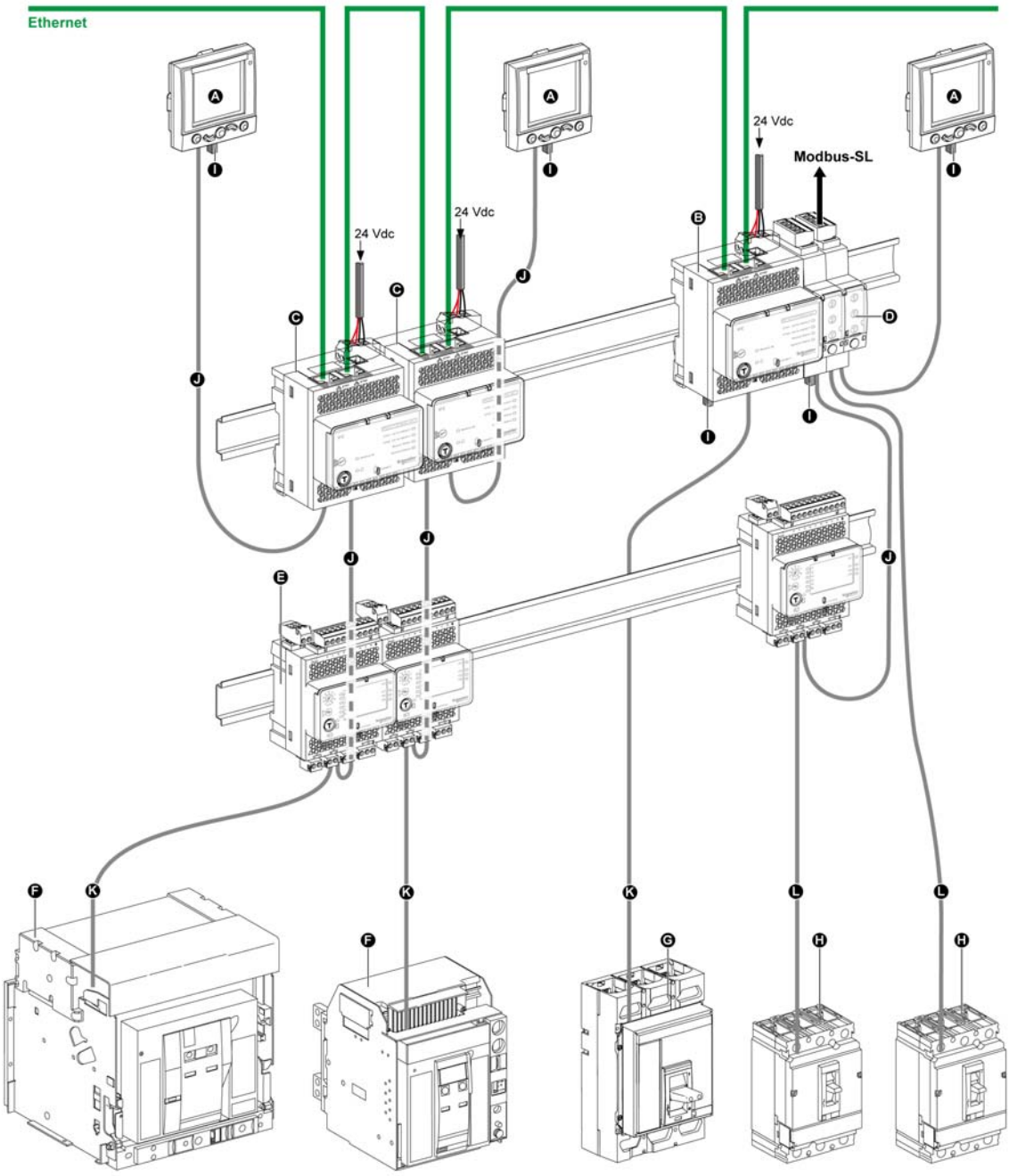
NOTE: IFE in-built switch does not support the ring topology as it does not have the feature of the loop back protection.

Intelligent Modular Unit

A modular unit is a mechanical and electrical assembly containing one or more products to perform a function in a switchboard (incoming protection, motor command, and control). The modular units are easily installed in the switchboard.

The circuit breaker with its internal communicating components (Micrologic and so on) and external ULP modules (FDM121, IO module, and so on) connected to one IFM or IFE communication interface is called an intelligent modular unit (IMU).

Communication Architecture



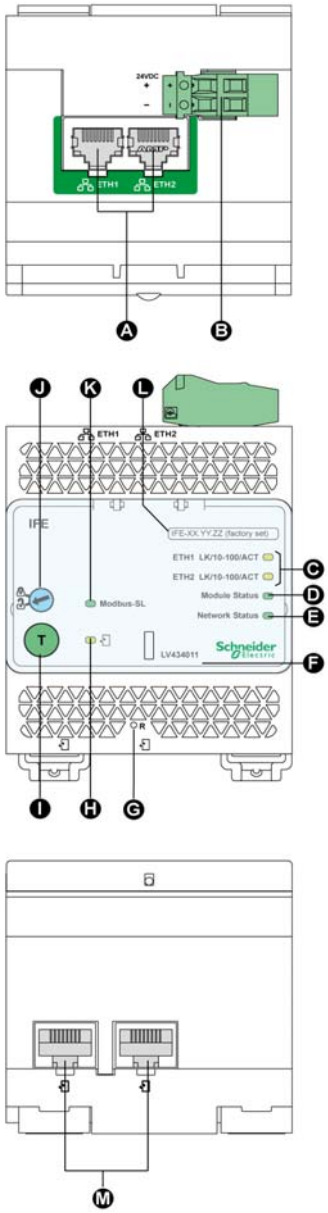
A FDM121 display for LV circuit breaker
B IFE Ethernet interface for LV circuit breaker and gateway
C IFE Ethernet interface for LV circuit breaker
D IFM Modbus-SL interface for LV circuit breaker
E IO input/output interface module for LV circuit breaker
F Masterpact NT/NW circuit breaker
G Compact NS circuit breaker
H Compact NSX circuit breaker
I ULP termination
J ULP cable
K Circuit breaker ULP cord
L NSX cord

Connection Accessories

The below table lists the part numbers for the components of the ULP system for the circuit breaker:

Product	Description	Part Number
Breaker 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
Cord for system voltage greater than 480 Vac	L = 1.3 m (4.26 ft), U > 480 Vac (cord with female socket)	LV434204
BCM ULP breaker communication module	–	33106
IO input/output interface for LV circuit breaker	–	LV434063
FDM121 display for LV circuit breaker	–	TRV00121
Surface-mounting accessory	–	TRV00128
IFM Modbus-SL interface for LV circuit breaker	–	TRV00210
IFE Ethernet interface for LV circuit breaker	Ethernet interface	LV434010
	Ethernet interface and gateway	LV434011
Stacking accessory	10 stacking accessories	TRV00217
Maintenance module	–	TRV00911
ULP cable	L = 0.3 m (0.98 ft), 10 cables	TRV00803
	L = 0.6 m (1.97 ft), 10 cables	TRV00806
	L = 1 m (3.28 ft), 5 cables	TRV00810
	L = 2 m (6.56 ft), 5 cables	TRV00820
	L = 3 m (9.84 ft), 5 cables	TRV00830
	L = 5 m (16.40 ft), 1 cable	TRV00850
RJ45 female/female connector	10 RJ45 female/female connectors	TRV00870
ULP line terminator	10 ULP terminators	TRV00880
Modbus line terminator	2 Modbus cable terminators with impedance of 120 Ω + 1 nF	VW3A8306DRC
24 Vdc power supply	24/30 Vdc-24 Vdc-1 A-overvoltage category IV	54440
	48/60 Vdc-24 Vdc-1 A-overvoltage category IV	54441
	100/125 Vdc-24 Vdc-1 A-overvoltage category IV	54442
	110/130 Vac-24 Vdc-1 A-overvoltage category IV	54443
	200/240 Vac-24 Vdc-1 A-overvoltage category IV	54444
	380/415 Vac-24 Vdc-1 A-overvoltage category IV	54445
	100/500 Vac-24 Vdc-3 A-overvoltage category II	ABL8RPS24030
Modbus cable	Belden: 7 mm (0.27 in.) diameter shielded cable with 2 twisted pairs	3084A
	Belden: 9.6 mm (0.38 in.) diameter (recommended) shielded cable with 2 twisted pairs	7895A
	Cable with 2 twisted pairs without shielding drain wire	50965
2-wire RS 485 isolated repeater module	-	TRV00211
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

Description



A Ethernet 1 and Ethernet 2 communication port
B 24 Vdc power supply terminal block
C Ethernet communication LEDs
D Module status LED
E Network status LED
F Sealable transparent cover
G Reset button
H ULP status LED
I Test button (accessible cover closed)
J Locking pad
K Modbus traffic status LED (IFE gateway only)
L Device name label
M ULP ports

Mounting

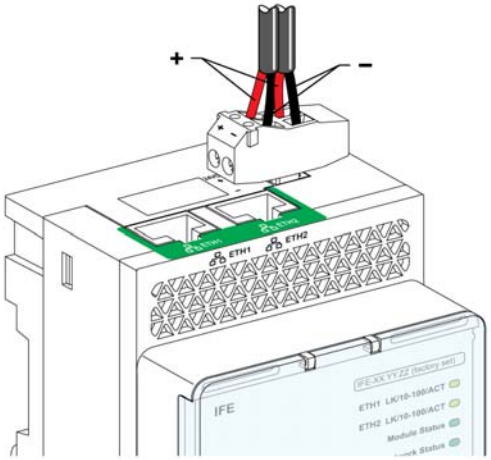
The IFE mounts on a DIN rail. The stacking accessory enables the user to connect several IFMs to an IFE gateway without additional wiring.

NOTE: The stacking feature is available only for the IFE with the commercial reference LV434011.

24 Vdc Power Supply

The IFE must be always supplied with 24 Vdc. The IFMs stacked to an IFE gateway are supplied by the IFE gateway and it is not necessary to supply them separately.

It is recommended to use an UL listed and recognized limited voltage/limited current or a class 2 power supply with a 24 Vdc, 3 A maximum.



Ethernet Communication LEDs

The Ethernet communication dual color LEDs, indicate the status of the Ethernet ports **ETH1** and **ETH2**.

LED Indication	Status Description
OFF	No power or no link
Steady yellow	10 Mbps, link established, and no activity
Blinking yellow	10 Mbps, ongoing activity
Steady green	100 Mbps, link established, and no activity
Blinking green	100 Mbps, ongoing activity

Module Status LED

The module status dual color LED, indicates the IFE status.

LED Indication	Status Description
OFF	No power
Steady green	IFE operational
Blinking green (250 ms ON, 250 ms OFF)	Hidden control web page available
Blinking green (500 ms ON, 500 ms OFF)	IFE Firmware corrupted
Blinking red (500 ms ON, 500 ms OFF)	IFE in degraded mode
Steady red	IFE out of service
Blinking green/red (1 s green, 1 s red)	Firmware upgrade in progress
Blinking green/red (250 ms green, 250 ms red)	Self test in progress

Network Status LED

The network status dual color LED, indicates the Ethernet network status.

LED Indication	Status Description
OFF	No power or no IP address
Steady green	Valid IP address
Steady red	Duplicated IP address
Blinking green/red (250 ms green, 250 ms red)	Self test in progress
Steady amber	Error in IP configuration

Modbus Serial Line Traffic LED

The Modbus serial line traffic yellow LED, indicates that the traffic is being transmitted or received over the Modbus serial line network through the IFE gateway.

The LED is ON during the transmission and reception of the messages; otherwise LED is OFF.

NOTE: The LED is OFF on IFE without gateway feature (commercial reference LV434010).

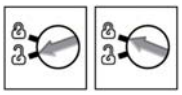
Modbus Address

The IFE accepts the Modbus address of the intelligent modular unit (IMU) to which it is connected.

The Modbus address is 255 and cannot be changed.

Locking Pad

The locking pad on the front panel of the IFE, enables or disables to send the remote control commands over the Ethernet network to the IFE, and to the other modules of the connected IMU.



- If the arrow points to the open padlock (factory setting), remote control commands are enabled.
- If the arrow points to the closed padlock, remote control commands are disabled.
  The only remote control command that is enabled even if the arrow points to the closed padlock is the set absolute time command.

Test Button

The test button has two functions, according to the duration of the button pressed.

Time Range	Function
1–5 s	Tests the connection between all the ULP modules for 15 seconds.
10–15 s	Activates the hidden configuration mode for 5 minutes.

Reset Button

When the reset button is pressed for 1–5 seconds, it forces the IP acquisition mode to the factory default setting (DHCP).

ULP LED

The yellow ULP LED describes the mode of the ULP module.

ULP LED	Mode	Action
	Nominal	None
	Conflict	Remove extra ULP module
	Degraded	Replace ULP module at the next maintenance operation
	Test	None
	Non-critical firmware discrepancy	Upgrade firmware at the next maintenance operation
	Non-critical hardware discrepancy	Replace ULP module at the next maintenance operation
	Configuration discrepancy	Install missing features
	Critical firmware discrepancy	Upgrade firmware
	Critical hardware discrepancy	Replace ULP module
	Stop	Replace ULP module
	Power OFF	Check power supply

Customer Engineering Tool

Definition

The customer engineering tool used to configure the IFE Ethernet interface for LV circuit breaker is Electrical Asset Manager software or:

- Compact NSX RSU software
  - to update the IFE firmware
  - to manage the passwords
  - to set date and time.
- Masterpact RSU software to configure the Masterpact pre-defined alarm.
- RCU software to check the network communication with IFE.

The customer engineering tools are available at *www.schneider-electric.com*.

Electrical Asset Manager

Electrical Asset Manager software enables the user to have the following features in addition to the features provided by Compact NSX RSU, Masterpact RSU, and RCU software:

- create projects by device discovery, selection of devices from Schneider Electric catalogue and importing Bill Of Material (BOM) files
- monitor the status of protection and IO status
- read information (alarms, measurements, parameters)
- check protection discrimination between two devices
- upload and download of configuration or settings in batches
- performs control actions in a secured way
- generate and print device settings report and communication test report
- manage multiple devices with electrical and communication hierarchy model
- manage artifacts (project and device documents)
- check consistency in settings between devices in a communication network
- compare configuration settings between the project and device (online)
- download latest firmware and upgrade devices
- safe repository of projects in Schneider Electric Cloud and Sharing of projects with other users

For more information, see the *Electrical Asset Manager Online Help*.

Compact NSX RSU Software

Compact NSX RSU (Remote Setting Utility) is the Compact NSX configuration software. It enables the user to:

- check and set up the Micrologic trip unit parameters:
  - protection parameters
  - measurement parameters
  - alarm parameters.
- display the Micrologic tripping curves.
- check and set up the SDx module output parameters.
- check the SDTAM module output parameters.
- check and set up the Breaker Status and Control Module (BSCM) parameters.
- edit and save configurations.

Compact NSX RSU can also be used to configure the intelligent modular unit (IMU) modules connected to Compact NSX, Compact NS, or Masterpact circuit breakers, and enables the user to:

- check and set up the IFM parameters.
- check and set up the IFE parameters.
- modify passwords in the IMU.
- change IMU identification.
- get and set the time.
- configure the IO assignments.
- modify the IO counters.
- reset the IO counters (only with **Schneider service** user profile).
- update firmware of ULP (Universal Logic Plug) modules (only with **Schneider service** user profile).
- reset the passwords to their factory values (only with the **Schneider service** user profile.)
- reset the IO module settings to their factory values (only with the **Schneider service** user profile.)
- edit and save configurations.

For more information, see the *Compact NSX RSU Online Help*.

Masterpact RSU Software

Masterpact RSU (Remote Setting Utility) is the Masterpact and Compact NS configuration software.
Masterpact RSU enables the user to:

- check and set up the Micrologic trip unit parameters:
  - protection parameters
  - measurement parameters
  - alarm parameters.
- display the Micrologic tripping curves.
- edit and save configurations.

For more information, see the *Masterpact RSU Online Help*.

RCU Software

RCU (Remote Control Utility) is a simple SCADA software for:

- Compact NSX circuit breakers
- Compact NS circuit breakers
- Masterpact circuit breakers
- Power meters

Depending on the equipment the RCU software is connected to, RCU enables the user to:

- display the measurements of I, U, E, THD.
- display the date and time.
- display the identification and maintenance information of the equipment.
- control the equipment (only for circuit breakers).
- log the measurements P, FP, E every 5 minutes.
- display the status of the IOs.
- check the network communication with IFM or IFE.

The RCU software helps the users to monitor and control their equipment and helps the installers to check and validate the newly installed equipment.

For more information, see the *RCU Online Help*.

IFE Schematics With Masterpact NT/NW and Compact NS Circuit Breakers

Description

Depending on the type of circuit breaker used, connect the IFE Ethernet interface for LV circuit breaker to the circuit breaker using one of the following configurations:

- Connection of the IFE to a fixed manually-operated Compact NS circuit breaker with a BCM ULP.
- Connection of the IFE to a fixed electrically-operated Masterpact NT/NW or Compact NS 630b-1600 circuit breaker with a BCM ULP.
- Connection of the IFE to a drawout Masterpact NT/NW or Compact NS 630b-1600 circuit breaker with a BCM ULP and its respective IO input/output interfaces for LV circuit breakers.

ULP Connection

NOTICE

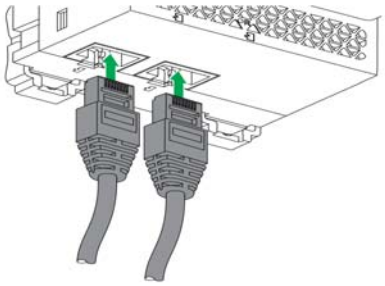
HAZARD OF EQUIPMENT DAMAGE

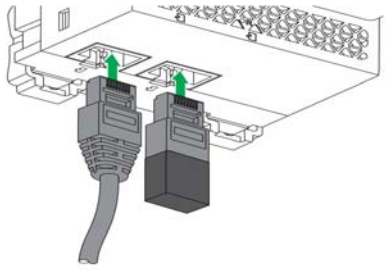
- The IFE RJ45 ports are for ULP modules only.
- Any other use can damage the IFE or the device connected to the IFE.
- To check if a ULP module is compatible with the IFE's RJ45 ports, refer to the *ULP System User Guide*.

Failure to follow these instructions can result in equipment damage.

All connection configurations require the breaker ULP cord. The insulated NSX cord is mandatory for system voltages greater than 480 Vac.

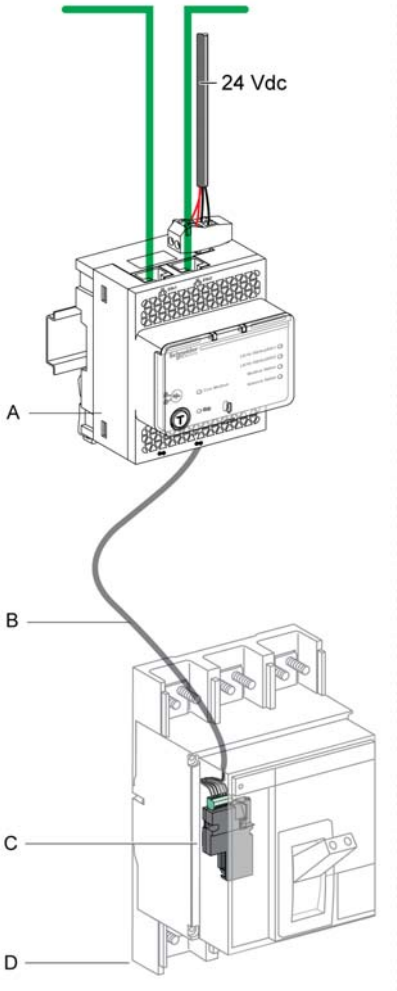
When the second ULP RJ45 connector is not used, it must be closed with a ULP terminator.





Connection of the IFE to a Fixed Manually-Operated Compact NS Circuit Breaker

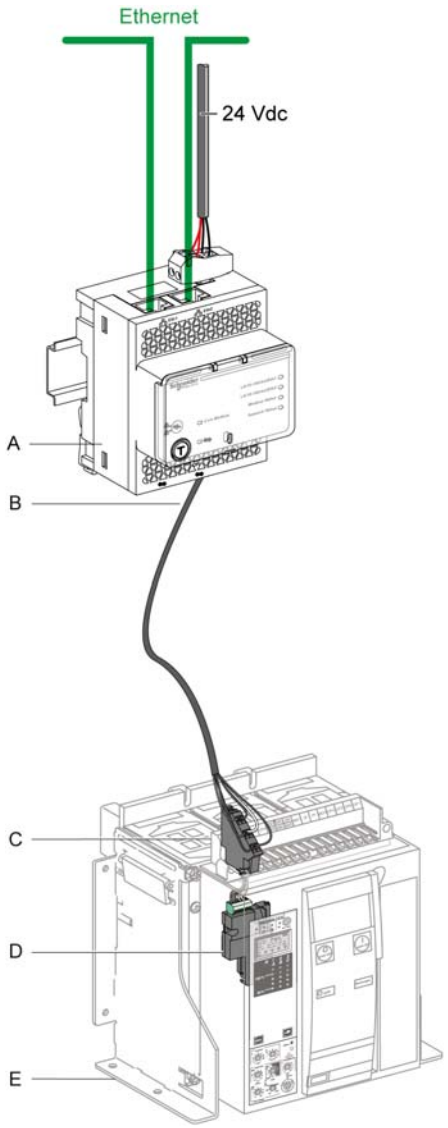
Connect the IFE to a fixed manually-operated Compact NS circuit breaker using the breaker ULP cord:



A IFE Ethernet interface for LV circuit breaker
B Breaker ULP cord
C BCM ULP breaker communication module
D Fixed manually-operated Compact NS circuit breaker

Connection of the IFE to a Fixed Electrically-Operated Masterpact NT/NW or Compact NS 630b-1600 Circuit Breaker

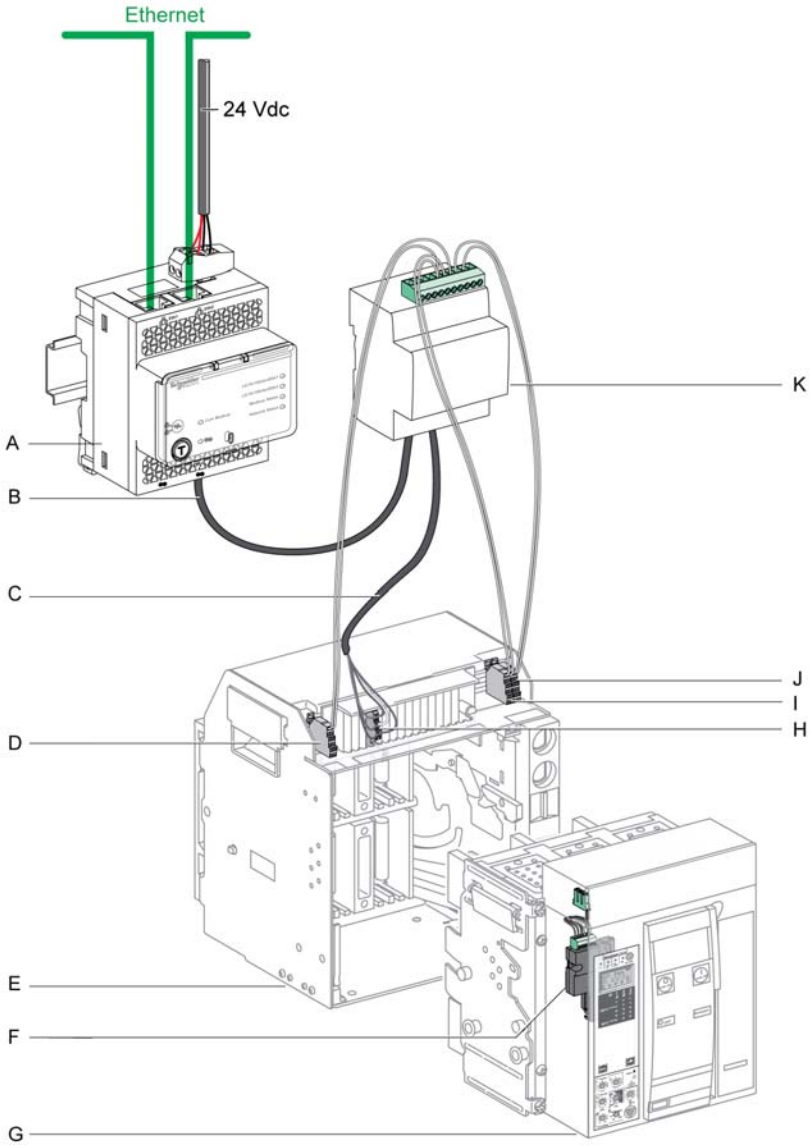
Connect the IFE to a fixed electrically-operated Masterpact NT/NW or Compact NS 630b-1600 circuit breaker using the breaker ULP cord:



A IFE Ethernet interface for LV circuit breaker
B Breaker ULP cord
C Fixed terminal block
D BCM ULP communication module
E Fixed electrically-operated circuit breaker

Connection of the IFE to a Drawout Masterpact NT/NW or Compact NS 630b-1600 Circuit Breaker

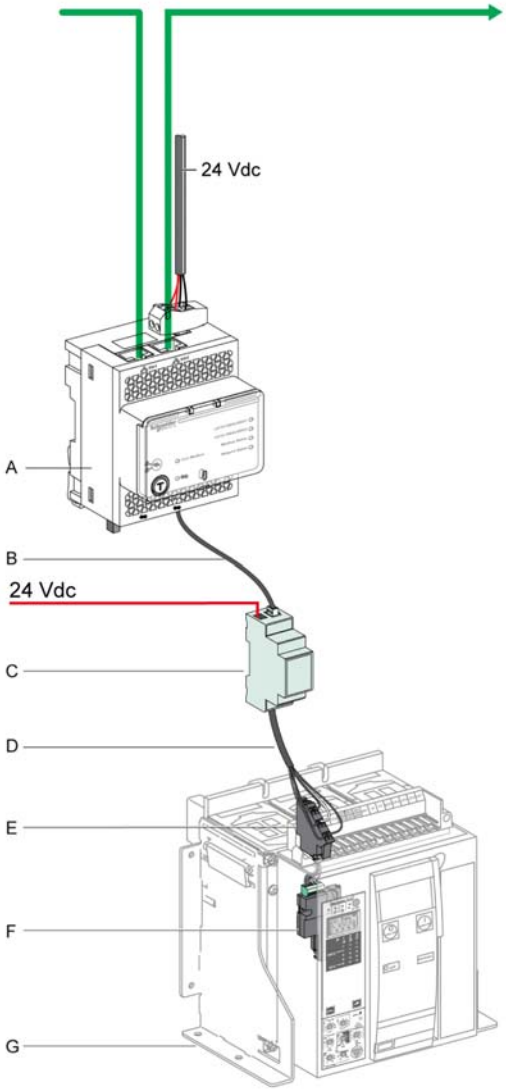
Connect the IFE to a drawout Masterpact NT/NW or Compact NS 630b-1600 circuit breaker using the breaker ULP cord:



A IFE Ethernet interface for LV circuit breaker
B ULP cable
C Breaker ULP cord
D Circuit breaker disconnected position contact (CD)
E Circuit breaker cradle
F BCM ULP breaker communication module
G Drawout circuit breaker
H Drawout terminal block
I Circuit breaker connected position contact (CE)
J Circuit breaker test position contact (CT)
K IO input/output interface for LV circuit breaker

Connection of the IFE to a Masterpact NT/NW or Compact NS Circuit Breaker for System Voltage Greater Than 480 Vac

The following figure presents a fixed electrically-operated Masterpact NT/NW or Compact NS circuit breaker using the insulated NSX cord:



A IFE Ethernet interface for LV circuit breaker
B ULP cable
C Insulated ULP module for system voltage greater than 480 Vac
D Insulated ULP cord for system voltage greater than 480 Vac
E Fixed terminal block
F BCM ULP breaker communication module
G Fixed electrically-operated circuit breaker

IFE Schematics With Compact NSX Circuit Breakers

General Description

Depending on the configuration of the Compact NSX circuit breaker, connect the IFE Ethernet interface for LV circuit breaker to the circuit breaker using one of the following configurations:

- connection of the IFE to the Micrologic trip unit
- connection of the IFE to the BSCM (Breaker Status and Control Module)
- connection of the IFE to the BSCM and to the Micrologic trip unit

ULP Connection

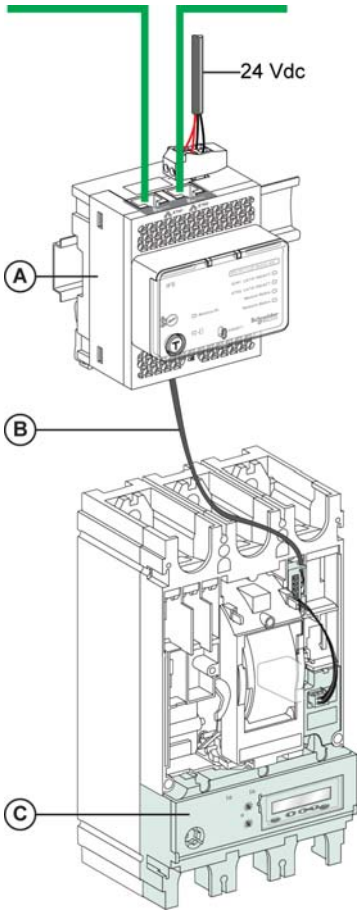
NOTICE
HAZARD OF EQUIPMENT DAMAGE ● The IFE RJ45 ports are for ULP modules only. ● Any other use can damage the IFE or the device connected to the IFE. ● To check if a ULP module is compatible with the IFE's RJ45 ports, refer to the *ULP System User Guide*. **Failure to follow these instructions can result in equipment damage.**

All the connection configurations require the NSX cord. The insulated NSX cord is mandatory for system voltages greater than 480 Vac.

See the *Compact NSX Circuit Breakers User manual* for more information regarding the description and mounting of the Compact NSX circuit breaker compliant products (Micrologic trip unit, BSCM, NSX Cord).

Connection of the IFE to the Micrologic Trip Unit

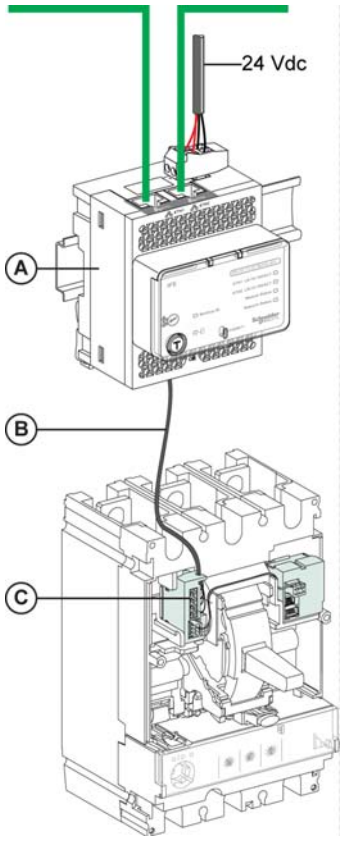
Connect the IFE to the Micrologic trip unit using the NSX cord:



A IFE Ethernet interface for LV circuit breaker
B NSX cord
C Micrologic trip unit

Connection of the IFE to the BSCM

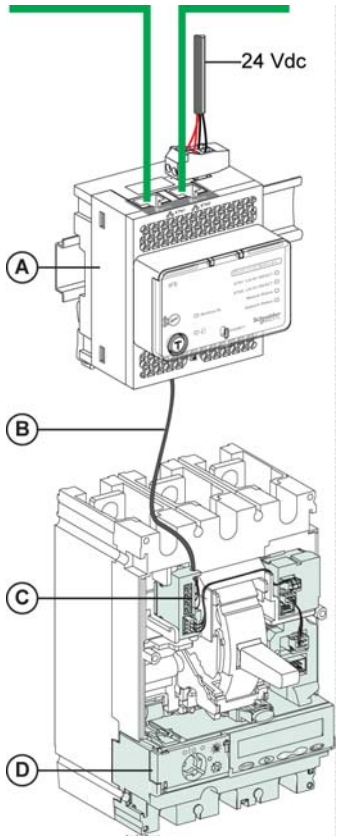
Connect the IFE to the BSCM using the NSX cord:



A IFE Ethernet interface for LV circuit breaker
B NSX cord
C BSCM Breaker status and control module

Connection of the IFE to the BSCM and to the Micrologic Trip Unit

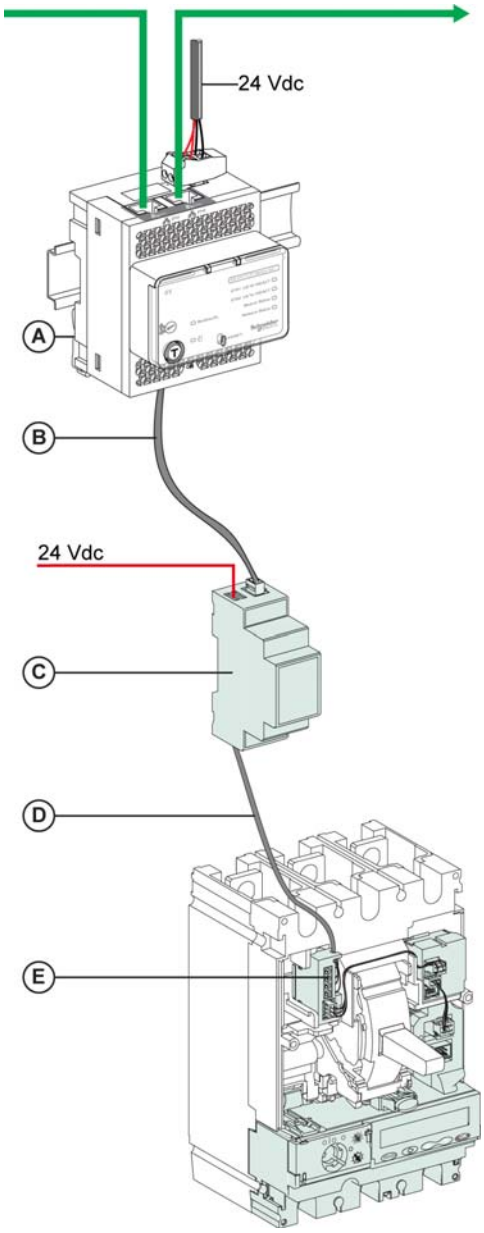
Connect the IFE to the BSCM and to the Micrologic trip unit using the NSX cord:



A IFE Ethernet interface for LV circuit breaker
B NSX cord
C BSCM Breaker status and control module
D Micrologic trip unit

Connection of the IFE to a Circuit Breaker for System Voltage Greater Than 480 Vac

The following figure represents the same connection schematic but with the insulated NSX cord:



A IFE Ethernet interface for LV circuit breaker
B ULP cable
C Insulated ULP module for system voltage greater than 480 Vac
D Insulated ULP cord for system voltage greater than 480 Vac
E Connector for Compact NSX internal connection

IFE Characteristics

Environmental Characteristics

Characteristic		Value
Conforming to standards		• IEC 60950 • IEC 60947-6-2
		• UL508 • UL60950
Certification		cULus, CE, and FCC marking
Ambient temperature	Storage	-40 to +85 °C (-40 to +185 °F)
	Operation	-25 to +70 °C (-13 to +158 °F)
Protective treatment		ULV0, conforming to IEC/EN 60068-2-30
Pollution		Level 3

Mechanical Characteristics

Characteristic	Value
Shock resistance	Conforming to IEC 60068-2-27 15 g/11 ms, 1/2 sinusoidal
Resistance to sinusoidal vibrations	Conforming to IEC/EN 60068-2-6

Electrical Characteristics

Characteristics		Value
Power supply		24 Vdc, -20%/+10% (19.2–26.4 Vdc)
Consumption	Typical	24 Vdc, 120 mA at 20°C
	Maximum with gateway	19.2 Vdc, 3 A at 60°C

Physical Characteristics

Characteristic	Value
Dimensions	72 x 105 x 71 mm (2.83 x 4.13 x 2.79 in)
Mounting	DIN rail
Weight	182.5 g (0.41 lb)
Degree of protection of the installed module	• On the front panel (wall-mounted enclosure): IP4x • Connectors: IP2x • Other parts: IP3x
Connections	Screw type terminal blocks

24 Vdc Power Supply Characteristics

It is recommended to use an UL listed/UL recognized limited voltage/limited current or a Class 2 power supply with a 24 Vdc, 3 A maximum.

For more information, refer to the *ULP System User Guide*.

Characteristic	Value
Power supply type	Regulated switch type
Rated power	72 W
Input voltage	100–120 Vac for single phase
	200–500 Vac phase-to-phase
PFC filter	With IEC 61000-3-2
Output voltage	24 Vdc
Power supply output current	3 A

IFE Firmware Update

Description

IFE consists of two types of components:

- The executable binary component
- The webpage and device supporting file (Data file)

The firmware on the IFE can be updated using:

- FTP
- Customer engineering tool

Executable Binary Component Firmware Version

Step	Action	Result
1	Open the web browser and log into the IFE.	Opens the IFE home page.
2	Locate the firmware version on **Device Information** page on the **Diagnostics** menu *(see page 72)*. **NOTE:** If you have updated the firmware recently, press **F5** to refresh the web page and update the displayed firmware number.	Determines the firmware version of the IFE.

Getting the Web Page and the Device Supporting Files

Step	Action	Result
1	Start the web browser, type *www.schneider-electric.com* in the **Address** text box, then press **Enter**.	Opens the *www.schneider-electric.com* website.
2	In the search box enter `IFE_DataFiles`, and then click the search button.	The `IFE_DataFiles_Vx.y.z` zip files will appear in the search result (where x.y.z is the datafile version number)..
3	Select the lastest version of the Datafiles, and then click the `IFE_DataFiles_Vx.y.z` zip file. to save the IFE data file in the local directory.	The **Save As** dialog box opens.
4	Click **Save As** to store the `IFE_DataFiles_Vx.y.z` zip file in the desired location.	Saves the `IFE_DataFiles_Vx.y.z` zip in the desired location.
5	Click the `IFE_DataFiles_Vx.y.z` zip file to unzip and save in the desired location.	Saves the IFE data file in the desired directory/folder.

Updating the Web Pages and Device Supporting Files using FTP

Step	Action	Result
1	Start the web browser, type `ftp://<device IP address>` in the **Address** text box, then press **Enter**.	Starts the FTP session and prompts for user name and password.
2	Type `Administrator` as the user name and `Gateway` as the password in the text boxes, and then click **Log On**.	Succeeds login process and locates a directory `wwwroot`.
3	Upgrade the web page by: ● locating `wwwroot` directory. Delete all the files in `wwwroot` directory. Drag and drop the new files from the `wwwroot` folder of the newly saved `IFE_DataFiles_Vx.y.z` file. ● locating `logging/templates` directory. Delete all the files in `logging/templates` directory. Drag and drop the new files from the `logging/templates` folder of the newly saved `IFE_DataFiles_Vx.y.z` file..	● Deletes the files from the directory. ● Adds the new files from the PC to the directory.

Updating the Executable Binary Component using the Customer Engineering Tool

For more information, refer to the *Customer Engineering Tool Online Help*.

Protecting the Environment

Recycling Packaging

The packing 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 the end of life, the modules of the ULP system have 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 as components are able to enter the usual end of life treatment processes as appropriate: depollution if recommended, reuse and/or dismantling if recommended so as to increase the recycling performances and shredding for separating the rest of materials.

Chapter 2
IFE Web Server

What Is in This Chapter?

This chapter contains the following sections:

Section 2.1
IFE Ethernet Interface for LV Circuit Breaker

What Is in This Section?

This section contains the following topics:

Access to IFE Web Pages

Supported Web Browsers

Browser	Version with Windows XP	Version with Windows Vista	Version with Windows 7
Internet Explorer	IE 8.0	IE 9.0	IE 10.0
Firefox	15.0	20.0	20.0
Chrome (recommended)	24.0 and later	24.0 and later	24.0 and later

First Acess to the IFE Web Pages

The IFE name must be configured during the first access to the IFE web pages.

The procedure to access the IFE web pages for the first time depends on the operating system of the computer:

- Windows Vista, Windows 7, or newer operating systems
- Windows XP or older operating systems

First Access Through PC with Windows 7 or Windows Vista

Step	Action
1	Disconnect the PC from the local area network (LAN) and switch off Wi-Fi.
2	Connect an Ethernet cable from the computer to the IFE or to the Ethernet switch inside the panel.
3	Open **Windows Explorer**.
4	Click **Network** and the **IFE-XXYYZZ** appears in the list of devices. **NOTE:** If the IFE-name is not displayed in the list of devices in **Windows Explorer**, check if the PC and the IFE are not connected through the router.
5	Double-click the selected **IFE-XXYYZZ**, the login page automatically opens in the browser.
6	Type `Administrator` as the user name and `Gateway` as the password, the home page automatically opens in the browser. **NOTE:** The user name and password are case sensitive.
7	To localize the IFE-XXYYZZ, select the **Setup** menu, go to **Device Localization/Name** submenu, click **Device physical localization**, and click **Blink ON**. The ULP LED of the selected IFE-XXYYZZ blinks for 15 seconds (test mode).
8	To name the **IFE-XXYYZZ**, select the **Setup** menu, go to **Device Name** submenu, click **Device Name**. Click **IFE-XXYYZZ** to set the IFE name.
9	Write the IFE name on a blank device name label and stick it on the existing one.

NOTE: XXYYZZ are the last 3 bytes of the MAC address in hexadecimal format.

First Access Through PC with Windows XP or Other Operating System

Step	Action
1	Disconnect the computer from the local area network (LAN) and switch off Wi-Fi.
2	Connect an Ethernet cable from the computer to the IFE.
3	Start the web browser *(see page 33)*. **NOTE:** The computer automatically uses the default IP address 169.254.#.# (#=0–255) and the default subnet mask 255.255.0.0.
4	In the address text box, type `169.254.YY.ZZ`, where YY and ZZ are the last 2 bytes of the IFE MAC address (to be found on the IFE side label), then press **Enter**: the home page opens in the browser. Example: For an IFE with MAC address 00-B0-D0-86-BB-F7 or 0-176-208-134-187-247 in decimal, type 169.254.187.247 in the address text box.
5	Press **Enter**, the login page automatically opens in the browser.
6	Type `Administrator` as the user name and `Gateway` as the password. The homepage automatically opens in the browser. **NOTE:** The user name and password are case-sensitive.
7	To localize the IFE-XXYYZZ, select the **Setup** menu, go to **Device localization/Name** submenu, click **Device physical localization**, go to **Device physical localization** and click **Blink ON**. The ULP LED of the selected IFE-XXYYZZ blinks for 15 seconds.
8	To name the IFE-XXYYZZ, select the **Setup** menu, go to **Device localization/Name** submenu, click **Device Name**, go to **Device Name**. Click IFE-XXYYZZ to set the IFE name.
9	Write the IFE-name on a blank device name label and stick it on the existing one.

NOTE: XXYYZZ are the last 3 bytes of the MAC address in hexadecimal format.

Access to Web Pages

Follow the Network Discovery, Name Browsing, and IP Address Browsing process to access the web pages.

The web page access depends on the IT infrastructure.

Network Discovery

Follow the below procedure to access the IFE web pages once the IFE name has been configured.

Step	Action
1	Connect the IFE or the Ethernet switch inside the panel to the local area network (LAN).
2	Connect the computer to the local area network (LAN).
3	Open **Windows Explorer**.
4	Click **Network**, the IFE-name is displayed in the list of devices. **NOTE:** If the IFE-name is not displayed in the list of devices in **Windows Explorer**, check if the PC and the IFE are not connected through the router.
5	Double-click the IFE-name which is written on the sticker located on the front face of the selected IFE, the login page automatically opens in the browser.

Name Browsing

DNS server is mandatory.

Step	Action
1	Connect the IFE or the Ethernet switch inside the panel to the local area network (LAN).
2	Connect the computer to the local area network (LAN).
3	Start the web browser *(see page 33)*.
4	In the address text box, type the IFE-name which is written on the sticker located on the front face of the selected IFE.
5	Press **Enter**, the login page automatically opens in the browser. **NOTE:** If the IFE does not appear in the list of devices in **Windows Explorer**, check if the PC and the IFE are not connected through the router.

IP Address Browsing

IP static configuration has to be set.

Step	Action
1	Connect the IFE or the Ethernet switch inside the panel to the local area network (LAN).
2	Connect the computer to the local area network (LAN).
3	Start the web browser *(see page 33)*.
4	In the address text box, type IP address given by the IT administrator.
5	Press **Enter**, the login page automatically opens in the browser. **NOTE:** If the login page in the web browser does not open or does not display correctly, check if **Internet Explorer\Tools\Compatibility View Settings\Display Intranet sites in Compatibility View** in Internet Explorer is checked.

First Time Log In

The web browser is a tool for reading and writing data. You will be prompted to change your password the first time you login, to prevent unauthorized access.

⚠ WARNING

UNAUTHORIZED DATA ACCESS

- Immedietly change the default password to a new and secure password.
- DO NOT distribute the password to unauthorized or otherwise unqualified personnel.

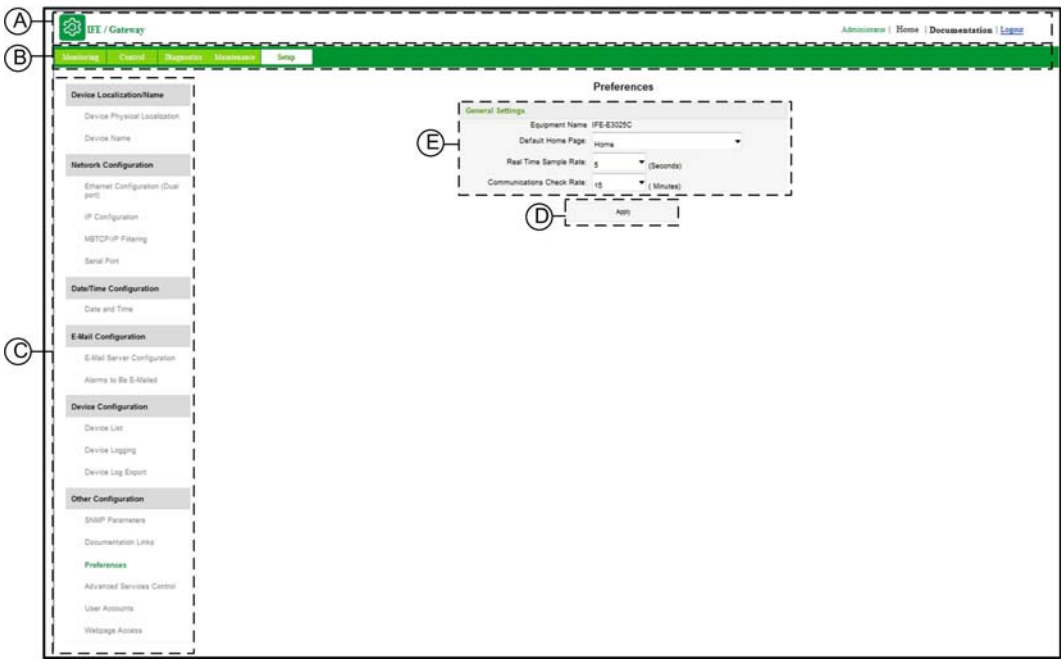
Failure to follow these instructions can result in death, serious injury, or equipment damage.

NOTE: A secure password should not be shared or distributed to unauthorized personnel. The password should not contain any personel or obvious information.

IFE User Interface Layout

Overview

This graphic shows the IFE user interface layout.



A Banner
B Menu tabs
C Subtabs
D Action button
E Display zone

Banner

The banner displays the following information at the top of all the pages.

Generic Information	Description
User name checked	Name of the user who has logged in
Home	A link to the home page
Documentation	A link to the required documentation
Logout	To log out the IFE session, click **Logout** or close your browser. It is recommended to log out from the IFE when it is not in use.

Main Tabs

The main tabs are:

- Monitoring
- Control
- Diagnostics
- Maintenance
- Setup

Subtabs

The subtabs display the submenus under the selected main tab.

Action Buttons

The action buttons correspond to the selected tab and it varies.

The following table describes the interface buttons:

Button	Action
Save changes	Validates the modification.
Apply	Applies the changes.
Cancel	Cancels the modifications to return to the last saved settings.

Display Zone

The display zone shows the selected subtab in detail with all the related fields.

IFE Web Page Description

Monitoring Web Page

Monitoring Submenu	Web Page	Description
Real Time Data	Single Device Pages *(see page 62)*	The single device pages table view provides, basic readings of selected devices.
	Summary Device Pages *(see page 62)*	The summary device pages table view provides, summaries of one or more selected devices.
	Trending *(see page 62)*	The trending page view provides, real-time graphic and table trending of common topics across multiple devices.
Device Logging	Single Device Pages *(see page 64)*	The single device pages provides, the graphic and table trending logs of user-selectable quantities for selected devices.
	Summary Device Pages *(see page 66)*	The summary device pages provides, graphic trending logs of multiple devices with a common topic.

Control Web Page

Control Submenu	Web Page	Description
Single Device Control	Single Device Control *(see page 67)*	Resets and controls the connected slave devices.

Diagnostics Web Page

Diagnostics Submenu	Web Page	Description
General	Statistics *(see page 70)*	Displays diagnostic data used to troubleshoot the network-related problems.
Product Information	Device Information *(see page 72)*	• Displays the IFE basic information to set the IFE device name and helps in the device physical localization. • Contains information about the product name, serial number, model number, firmware version, unique identifier, IPv4 address, IPv6 link local address, IPv6 global address#1, and IPv6 global address#2.
	IMU Information *(see page 73)*	Displays the list of the IMU devices connected to the ULP port.
Device Health Check	Read Device Registers *(see page 74)*	Displays register data connected locally to the IFE.
	Communication Check *(see page 75)*	Verifies the communications health of all the slave devices connected to IFE.

Maintenance Web Page

Maintenance Submenu	Web Page	Description
General	Maintenance Log *(see page 77)*	Shows the date, time, and user who last performed maintenance on the equipment, and provides entry detail on the maintenance performed.
Maintenance Counters	Maintenance Counters *(see page 78)*	Displays the maintenance counters of the connected devices.

Setup Web Page

Setup Submenu	Web Page	Description
Device Physical Localization/Name	Device physical localization *(see page 41)*	• Localizes the device IFE-XXYYZZ • Click **Blink ON**. • The ULP LED of the selected device IFE-XXYYZZ blinks and is active for 15 s (Test mode: 1 s ON, 1 s OFF).
	Device Name *(see page 42)*	Configures the IFE device name
Network Configuration	Ethernet Configuration (Dual port) *(see page 43)*	Configures the Ethernet.
	IP Configuration *(see page 44)*	Configures the IP parameters.
	Modbus TCP/IP Filtering *(see page 46)*	Configures the maximum number of Modbus TCP/IP server connections. Configures the IP addresses that can access the IFE through Modbus TCP/IP.
	Serial Port *(see page 47)*	Configures serial communication parameters.
Date/Time Configuration	Date and Time *(see page 48)*	Sets the date and time manually.
E-mail Configuration	E-mail Server Configuration *(see page 49)*	Configures the alarms to be e-mailed. Configures the SMTP parameter for mailing purpose.
	Alarms To Be E-mailed *(see page 50)*	Configures the alarms to be sent through e-mail.
Device Configuration	Device List *(see page 51)*	Configures local serial devices on the Modbus serial daisy chain and IMU core product connected to the ULP port.
	Device Logging *(see page 53)*	Configures device logging parameters.
	Device Log Export *(see page 54)*	Configures device logging export options.
Other Configuration	SNMP Parameters *(see page 55)*	Configures Simple Network Management Protocol (SNMP).
	Documentation Links *(see page 56)*	Configures file and URL documentation links.
	Preferences *(see page 57)*	Configures IFE preferences.
	Advanced Services Control *(see page 58)*	Configures the advanced service control parameters.
	User Accounts *(see page 59)*	Creates and edits groups and users. Configures e-mail accounts.
	Webpage Access *(see page 60)*	Configures web page access rights for each user group.

Section 2.2
IFE Web Server - Setup Pages

What Is in This Section?

This section contains the following topics:

Device Localization/Name

Device Physical Localization

Step	Action	Result
1	From the **IFE** menu bar, click **Setup**.	Opens the Setup menu.
2	From the **Setup** menu, in the **Device Localization/Name** submenu, click **Device Physical Localization**.	Opens the Device Physical Localization page.
3	In **Device Physical Localization** webpage, click **Blink ON**.	Sets the IFE in nominal mode and the LED blinks in ULP pattern.

NOTE: If the level value is changed, you are prompted to restart the device to take changes into account.

Device Name

Device Name Configuration

Step	Action	Result
1	From the **IFE** menu bar, click **Setup**.	Opens the Setup menu.
2	From the **Setup** menu, in the **Device Localization/Name** submenu, click **Device Name**.	Opens the Device Name page.
3	In **Device Name Configuration** webpage, enter the device name and click **Apply**.	Sets the IFE in test mode and the ULP LED blinks accordingly.

Ethernet Configuration (Dual Port)

Ethernet

Parameter	Description	Settings
MAC address	A unique media access control address of an IFE. The MAC address is written on the label which is placed on the side of the IFE.	-
Frame Format	Used to select the format for data sent over an Ethernet connection.	• Ethernet II • 802.3 • Auto (Factory setting)

Ethernet Port Control

Parameter	Description	Settings
Speed and mode for Port #1	Used to define the physical Ethernet connection speed and transmission mode for Ethernet port 1.	Auto-negotiation (Factory setting)
Speed and mode for Port #2	Used to define the physical Ethernet connection speed and transmission for Ethernet port 2.	Auto-negotiation (Factory setting)

Broadcast Storm Protection

Parameter	Description	Settings
Level	Defines the storm protection level. The level value corresponds to a committed information rate (CIR) value, that is, the amount of traffic entering the switch port from which the storm protection drops entering the broadcast traffic. **NOTE:** If the level value is changed, you are prompted to restart the device to implement changes.	• 0 (Factory setting) • 1 • 2 • 3 • 4 • 5 • 6
Committed Information Rate	Defines the read-only value of the storm protection level.	-

IP Configuration

IPv4 Configuration

Parameter	Description	Settings
Obtain an IP address automatically using	Used to select the mode for assigning the IPv4 parameters set. Obtain IPv4 parameters automatically using BOOTP or DHCP. **NOTE:** While using a DHCP server, the device name must be limited to 16 characters.	• DHCP (Factory setting) • BOOTP
Manual IP address	Used to enter the static IP address of an IFE.	169.254.X.Y (Factory setting) **NOTE:** X and Y are the last 2 bytes of the IFE MAC address (which is found on the IFE label).
Manual Subnet mask	Used to enter the Ethernet IP subnet mask address of your network.	255.255.0.0 (Factory setting)
Manual Default gateway	Used to enter the gateway (router) IP address used for wide area network (WAN) communication.	169.254.2.1 (Factory setting) Factory setting of gateway is same as the default IP address of the IFE.

IPv6 Configuration

Parameter	Description	Settings
Enable IPv6	Defines the IPv6 configuration.	• Enabled • Disabled (Factory setting)
Link local address	Used to open the IFE web page for future use. **NOTE:** In the URL address box, use [ ] brackets to enter the link local address.	-

DNS

Parameter	Description	Setting
Obtain DNS address automatically	Defines the dynamic behavior of the DNS server address configuration. Used to obtain the IP address from the DNS server automatically. **NOTE:** Domain name system (DNS) is the naming system for computers and devices connected to a loal area network (LAN) or the Internet.	Disabled when we select manual setting
Manual Primary server address	Defines the IPv4 address of the primary DNS server.	-
Manual Secondary server address	Defines the IPv4 address of the secondary DNS server. Used to perform a DNS resolution when the resolution fails with the primary DNS server.	-

Duplicate IP Address Detection

While connected to your network, the IFE publishes its IP address. To avoid any duplicate IP address conflicts, the IFE uses the address resolution protocol (ARP) to see if any other device on your network is using the same IP address. The below table explains how the IFE handles a duplicate IP address when it is detected.

Duplicate IP Address Scenario

Scenario	Duplicate IP Detected	Network Status LED
Ethernet link detected	Reverts to the default IP address, subnet mask, and gateway address. ARP requests are sent every 15 seconds until the IP address is available. IFE uses the IP address when it is available,	Steady red
Manual address change	Reverts to the default IP address, subnet mask, and gateway address. The ARP requests are sent every 15 seconds until the IP address is available. The IFE uses the IP address when it is available.	Steady red
Receives an ARP request	If more than one ARP is detected within 10 seconds, initiate the process to reacquire the IP.	OFF

Modbus TCP/IP Filtering

Description

This page allows the user to define the level of access for Modbus TCP/IP clients connected to IFE.

Block Connections

You can select the maximum number of IP connections allowed, 8 or 16.

NOTE: When the maximum number of IP connections is changed, a message pops-up on the screen *Max Connection is changed. Restart the Device to Take Effect* and prompts the user to restart the device.

IP Filtering

Parameter	Description	Setting
Enable IP_Filtering	Activates the IP address filtering. The list of IP addresses available in the table is granted access.	• Enabled • Disabled (No filtering)
Address	Filters the required IP address entered by the user.	10 addresses (Maximum allowed IP addresses)

Accessibility	Defines the access level for the corresponding IP address.	• Read: The following Modbus TCP/IP function codes are allowed:
		  • 1 (0x01)
		  • 2 (0x02)
		  • 3 (0x03)
		  • 4 (0x04)
		  • 7 (0x07)
		  • 8 (0x08)
		  • 11 (0x0B)
		  • 12 (0x0C)
		  • 17 (0x11)
		  • 20 (0x14)
		  • 24 (0x18)
		  • 43 (0x2B), with subfunction codes 14 (0x0E), 15 (0x0F), and 16 (0x10).
		  • 100 (0x64)
		• none: The access to the IP address is blocked.
		• read/write: Full access is provided.

Allow Anonymous IP	Allows all Modbus TCP/IP clients to have the read-only access.	• Enabled • Disabled (Factory Setting)

Serial Port

Serial Port Settings

Parameter	Settings
Baud rate	● 9600 bps ● 19200 bps (Factory setting) ● 38400 bps
Parity	● Even (1) (Factory setting) ● Odd (1) ● None (2)
Stop bits	● Auto Stop bits (Factory setting) ● 1 bit ● 2 bits
Termination	● Enabled ● Disabled (Factory setting)
Response Timeout	● 1 s (Factory setting) ● 0.1–0.5 s ● 1–10 s

NOTE: When Stop bits parameter is set to **Auto**, the actual value is based on the parity chosen.

Date and Time

Local Date and Time

Parameter	Description	Setting
Current Date	Allows the user to set the present date manually. **NOTE:** Date and Time Synchronization should be in manual mode.	Date format: yyyy-mm-dd
Current Time	Allows the user to set the present time manually. **NOTE:** Date and Time Synchronization should be in manual mode.	Time format: h: min: sec

E-mail Server Configuration

E-mail Server

Parameter	Description	Setting
SMTP Services: Enable/Disable	Allows the user to enable or disable the e-mail service in IFE.	• Enabled • Disabled (Factory setting)
E-mail (SMTP) server address	Allows the user to enter an E-mail server address (SMTP server). **NOTE:** Contact your network administrator to know the IP address or the name of the simple mail transfer protocol (SMTP) server.	-
Authentication enable	If the SMTP server requires login information, enable the **Authentication Enable** check box.	0.0.0.0–255.255.255.255 or the name of the SMTP server. Example: smtp.server.com
From address	In the **From Address** text box, type the e-mail address of the administrator who is administering the device.	-

Alarms to Be E-mailed

Description

This feature is supported for the device connected on the ULP port. Alarms to be e-mailed provides the list of the alarms that can be selected for the notification through e-mail. The list of available alarms depends on the devices connected to the ULP port.

NOTE: If an e-mail SMTP server is not located on the same Ethernet network segment as IFE, ensure that the IFE default gateway is properly configured.

NOTE: This feature supports only the unencrypted email server (SMTP). For the encrypted email servers we need to have a proxy server which accepts unencrypted connections, encrypts them, and forwards them to normal SMTP server.

Parameter	Description
Alarms	List of alarms for configuration
Notification	A check box to enable the notification.
To-Recipients	Allows the user to choose from a list of E-mail recipients.
Custom-Text	Allows the user to enter a custom text.

Device List

Description

The device list is used to discover the list of devices connected to the IFE ULP port and serial port.

NOTE: The web page are supported only for the devices added in the device list.

Device List Parameters

Parameters	Description	Settings
Number of Viewable Devices	The maximum number of viewable devices displayed on the web page.	1–13
Connection	Selects the connection type.	The 2 types of port are: ● ULP port ● Serial port (available for commercial reference LV434011)
Device Type	List of supported devices *(see page 81)*	–
Device Name	The list of supported devices by the IFE web page. ● For ULP port: Click **edit**, and then click the **Device Name** to edit the device name, ● For Serial port: Click **Device Name** to edit the device name.	–
Local ID	The local address of the device connected to the IFE.	● For ULP port: 255 (Fixed) ● For serial port: 1–247

When you start the device, the IFE queries the ULP and serial port using a user-defined address range. Modbus RTU protocol is used for discovery on the serial port. If the device replies to the query, the local ID is set to the current discovery address, and the device is given a default device name. The IFE, then tries to identify the device type. If the IFE recognizes the device type of the discovered device, the IFE sets the recognized device type in the **Device Type** field. If the IFE does not recognize the **Device Type** of the discovered device, the IFE sets to Modbus in the **Device Type** field.

The list of devices supported by the IFE is in Appendix *(see page 81)*.

Device Discovery Procedure

Step	Action	Result
1	From the IFE menu bar, click **Setup**.	Opens the Setup menu.
2	From the **Setup** menu, in the **Device Configuration** submenu, click **Device List** .	Opens the Device List page.
3	To discover locally connected devices, click **Discover**.	Opens the Device Discovery page.
4	Enter **Start Address** and **End Address**.	Enters the discovery address range.
5	Click **Start Discover**. (Click **Stop Discover** to stop the process). **NOTE:** Discovery only finds local serial Modbus devices connected to the IFE. The device on the ULP port is discovered automatically.	Begins to discover all connected devices.
6	Enter a new device name in the **Name** text box.	Renames the device.
7	Select the **Save** check box for the device to be saved in the device list.	Selects or deselects a device entry to be saved or removed.
8	Click **Apply** in the **Device Discovery** page.	Displays the saved device list.

Adding a Device

In order to add a device, either choose the **Device Discovery** procedure or follow the below procedure to add the device manually.

Step	Action	Result
1	Choose the supported device from the **Device Type** list.	Selects the device type selected from the list.
2	Enter a new device name in the **Name** text box.	Renames the device.
3	Enter the local address of the device.	Displays the local address of the device.
4	Click **Apply**.	Displays the new device added to the list.

Device Discovery Parameters

Parameters	Description	Setting
Start/End Address	Defines the Modbus slave address range that is to be used to discover devices on the IFE serial port.	• Start address: 1–247 (Factory setting: 1) • End address: 1–247 (Factory setting: 10)
Save	Allows you to save the selected device to the **Device List**.	-
Connection	Displays the connection on which the device was discovered or validated.	• ULP port (Factory setting) • Serial port
Defined	Lists the device type that was defined for this device.	–
Assigned	Allows you to assign the device type from the drop-down list.	–
Name	Allows you to enter a custom name for the device.	–
Local ID	The slave address of the device connected to the IFE.	-
Status	Displays the discovery or validation status.	• Attempting (trying to determine the device type that matches in the device list.) • Discovering (query attempt of device which is not in the device list.) • Found (device found but the device type does not match what is defined in the device list.) • Unknown (device found but the device type is unknown.) • Valid (device type identified and matches what is defined in the device list.) • Failed (failed to communicate with the device.)

Device Logging

Description

Logging is available for the devices which are in the device list. The IFE can log data received at predefined intervals (5, 10, 15, 20, 30, and 60 minutes). Below is an explanation of how the IFE logs data and how to set up logging for a device.

Logging Interval

Many devices in a power monitoring system do not have the ability to record data in non-volatile memory. The IFE provides this data logging at predefined intervals for up to 13 devices.

The logging capacity is fixed in IFE, and it can be 12,960 entries per device. The logging capacity of each data-log file can be calculated by dividing the maximum possible number of recorded intervals a data-log file can contain (12960) by the multiplication (product) of the minutes per day and the logging interval.

Logging capacity = (12960/1440)*Logging interval

Where:

- 12960 - number of entries per device
- 1440 - minutes per day
- Logging interval in minutes

Logging Interval (Minutes)	Logging Capacity (Days)
5	45
10	90
15	135
20	180
30	270
60	540

Interval Logging Setting Procedure

Each device in the device list may be independently enabled for logging. Topics to log are unique to each device. To view interval data logs, refer to Device Logging *(see page 64)* in **Monitoring** menu.

NOTE: To enable the **Device Logging** feature, there must be a time value selected from the **Logging Interval** drop-down list. It is recommended to disable the logging feature for the specific device being configured. To do this, clear the logging check box for the device being selected.

Logging

To disable logging, select a logging interval of zero, ensure that the logging selections are cleared, then click **Apply**.

Purge Data

To delete a data log, check **Purge Data** for the topics to be deleted.

Customize

To customize logging content, enable device logging. Click **Topics** under **Customize** for the device to be configured.

Device Log Export

Description

Device Log Export is used to export the device logs automatically by IFE. The device log export allows the user to configure IFE to export device logs periodically. User can choose to export the device log files through e-mail or FTP.

NOTE: If the e-mail and the FTP servers are not located on the same Ethernet network segment as the IFE, ensure that the IFE default gateway is properly configured.

Transport

Parameter	Description	Setting
Disabled	When **Disabled** is selected, either e-mail or FTP is enabled.	-
E-mail	Allows the user to choose the way of exporting the log files through e-mail. **NOTE:** When **E-mail** is selected, **Test E-mail** is enabled.	-
Test E-mail	Sends an e-mail to the mail configured in the e-mail server configuration. The e-mail message contains the device information, and the device name with the date and time.	-
FTP	Allows the user to choose the way of exporting the log files through FTP. **NOTE:** When **FTP** is selected, **Test FTP** is enabled.	-
Test FTP	Sends the text file to the FTP server configured in the FTP parameters. The text file contains the device information, and the device name with the date and time.	-
Incremental	Selects only the new interval data logged since the last successful data export. **NOTE:** • If the transport is scheduled for **Hourly** or **Logging Interval**, the incremental check box is selected automatically. • If the **Incremental** check box is not selected, the complete log file is sent through an e-mail as an attachment on each scheduled interval.	-

Schedule

Parameter	Description	Setting
Logging Interval	Selects how often the data logs are sent.	• Hourly • Daily • Weekly • Monthly • Logging Interval

To Addresses

Parameter	Description	Setting
To Addresses	Lists the e-mail recipients configured in the IFE user accounts.	-

SNMP Parameters

Manage IP Parameters

The IFE supports SNMP, allowing a network administrator to access remotely an IFE with an SNMP manager and to view the networking status and diagnostics of the IFE in the MIB-II format.

Parameter	Description	Setting
Manager One	Allows the user to configure the IP address of SNMP manager one.	-
Manager Two	Allows the user to configure the IP address of SNMP Manager Two.	-
System Contact	Allows the user to configure the SNMP system contact name.	-
System Location	Allows the user to configure the SNMP system location.	-
Read-only Community Name	Allows the user to configure the SNMP Read-only community name.	Public (Factory setting)
Read-write Community Name	Allows the user to configure the SNMP Read-write community name.	Private (Factory setting)
Trap	Allows the user to trap the community name.	Public (Factory setting)

Enabled Traps

Parameter	Description	Setting
Cold Start Trap	Generates a trap when the IFE is powered ON.	-
Warm Start Trap	Not supported	-
Link Down Trap	Generates a trap when an Ethernet port communication link is disconnected.	-
Link Up Trap	Generates a trap when an Ethernet port communication link is reconnected.	-
Authentication Failure Trap	Generates a trap when an SNMP manager is accessing the IFE with incorrect authentication.	-

Documentation Links

Description

The IFE supports two types of documentation links:

- Local file access (documentation stored onboard the IFE)
- URL access

Local File Access

To access the files, select **Enabled** for the file name link to be enabled. The local file documents to be appeared on the documentation web page must be placed in the IFE wwwroot/documentation folder using FTP.

URL Access

Parameter	Description	Setting
Enabled	Always selected to enable the URL link access.	-
New Window	Always selected if the selected files and URLs to be opened in a new window when clicked.	-
Link Text	Sets the documentation link that appears on the documentation page.	127 characters
File Name	Displays the file name which is available in the IFE documentation link.	-
URL	Displays the link to the external web page to be accessed.	-

Preferences

General Settings

Parameter	Description	Setting
Equipment name	Displays the equipment name. This name is used in the web interface banner. **NOTE:** The device name can be updated in the **Device Name** of the **Device Localization/Name** in the **Setup** menu.	-
Default Home Page	Allows selecting of the default home page.	• Home (Factory setting) • Circuit summary • Load current summary • Demand current summary • Power summary • Energy summary
Real Time Sample Rate	Controls how often data is read from the device(s) in the standard monitoring table views.	5–60 seconds Factory setting: 5 seconds
Communication Check Rate	Controls how often a communications check is performed while the browser is displaying real time readings in the standard monitoring table views. This function attempts to bring any out-of-service devices back into service automatically.	Disabled or 5–30 minutes Factory setting: 15 minutes

Advanced Services Control

Industrial Protocol

Parameter	Description	Setting
Enable Modbus/TCP	Allows the user to enable/disable the Modbus/TCP service.	● Enabled (Factory Setting) ● Disabled

Services Configuration

Parameter	Description	Setting
Enable FTP server	Allows the user to enable/disable the FTP service.	● Enabled (Factory Setting) ● Disabled
Enable device announcement	Allows the user to enable/disable the DPWS service.	● Enabled (Factory Setting) ● Disabled
Enable SNMP	Allows the user to enable/disable the SNMP service.	● Enabled (Factory Setting) ● Disabled

User Accounts

Description

The IFE users are assigned with user names and passwords. Each user belongs to a group, and each group has access rights to the IFE web pages assigned by the IFE administrator.

NOTE: There are two pre-defined user accounts:

- Administrator (the pre-defined password is Gateway)
- Guest (the pre-defined password is Guest)

Groups

To change the group name, type a new name in one of the groups text boxes.

NOTE: The Administrator group name cannot be changed.

Users

Parameter	Description
Name	Enter a name (1 to 15 characters) for a new user. **NOTE:** User names are case-sensitive and can contain only alphanumeric characters.
Password	Enter a password (0 to 11 characters) for a new user.
E-mail Id	Enter a valid e-mail address for the selected name.
Group	Select a group for the new user.
Default Language	Select the default language for the new user.

NOTE: The maximum number of user-defined accounts are 11.

IFE Accounts and Passwords

Accounts	Password
Administrator	Gateway
Guest	Guest
User-defined accounts (11 accounts possible)	User-defined passwords

NOTE: The passwords can be reset by the user.

Web Page Access

Group Access

Group	Access
Administrator	Full access to all web pages. **NOTE:** It is recommended to change the default administrator password for system security the first time you log in.
Guest	Read-only access to selected web pages.
User-defined groups	Choosing from the following options, the administrator assigns web page access for each group. The access levels are as follows: ● **None**: A group has no access to selected web page ● **Read-Only**: The password grants a group read-only access to the selected web page ● **Full**: A group has the same access as the administrator group to the selected web page

NOTE:

- The **Webpage Access** is available for the **Administrator** only.
- The **Administrator** has full access to all the web pages.

Section 2.3
IFE Web Server - Monitoring Pages

What Is in This Section?

This section contains the following topics:

Real Time Data

Description

The real time data page provides:

- the basic readings of the selected devices in real time on **Single Device Pages**.
- the device summaries on **Summary Device Pages**.
- the real time trending for the selected device for the selected topics on **Trending**.

NOTE: Refresh the web page by action on the function key F5 when Out of service is displayed.

Single Device Pages

Step	Action	Result
1	From the **IFE** menu bar, click **Monitoring**.	Opens the Monitoring menu.
2	From the **Monitoring** menu, in the **Real Time Data** submenu, select a device from **Single Device Pages**.	Displays the real time data of the selected device.
3	At the top of the display, select either **Load Current**, **Power**, **Voltage LL**, or **Voltage LN** to be displayed on the **Analog Gauge** graphic display.	Selects the quantities to be displayed on the Analog Gauge graphic display. **NOTE:** Analog gauges are not available for all device types.
4	The gauges automatically adjust their display range.	Controls the display range of the Analog Gauges.
5	Click **Apply**.	Updates the gauge selection for the device page.

Summary Device Pages

The summary device table views provide summary of one or more selected devices.

Step	Action	Result
1	From the **Monitoring** menu, in the **Real Time Data** submenu, click **Summary Device Pages**.	Expands tree for summary page selection choices.
2	Select the **Summary Page** to be viewed.	Opens the device selection list.
3	Select a device(s) from the **Available Devices**, then click **Next**. **NOTE:** Click **>>** to select all the available devices.	Selects a device(s) for the summary options.

Trending

Step	Action	Result
1	From the **IFE** menu bar, click **Monitoring**.	Opens the Monitoring menu.
2	From the **Monitoring** menu, in the **Real Time Data** submenu, select **Trending**.	Expands the data tree for real time data option selection and the time trending option selection.
3	Select **Real Time Trending**.	Opens the Real Time Trending setup page.
4	Select up to 4 devices from the **Available Devices** list.	Selects devices for trending.
5	Select a topic(s) from the **Available Topics** list. **NOTE:** Only topics common to all selected devices are available for trending. The maximum number of topics to trend is dependent on the number of devices selected.The multiplication (product) of the selected devices and the selected topics must be 8 or less.	Selects topics for trending.
6	Click **Next** to open the **Real Time Trending** display page.	Opens the Real Time Trending display page.
7	Set the trending parameters.	Allows trending parameters to be set.

Trending Parameters

Step	Action	Result
1	Select **Absolute** or **Relative** trending. **NOTE: Absolute** redraws the graph's x-axis after each sample, filling it with all the data collected since the start of the trend. The **Relative** updates the graph with the latest data after each sample while the x-axis stays constant to show the overall trend time selected.	Selects graph mode.
2	Choose a trend time from 1 to 15 minutes. This is the duration of the trend. **NOTE:** Data samples are taken as fast as possible but may take longer depending on the communications load on the Modbus-SL port.	Selects the amount of time of the trend.
3	Select **Start Sampling** to start the trending of the selected device topics. **NOTE:** Trending may be stopped before reaching the trend time by clicking **Stop Sampling**. If, after stopping the sampling, **Start Sampling** is pressed, a new trend is started.	Starts trending.
4	Press **Data Points** to view a log of all the sampled topics recorded during the trend time.	Displays a log of all topic values sampled during the trend.
5	Press **New Topics** to reselect the devices and topics to trend.	Navigates back to the Real Time Trending setup page.

Device Logging

Introduction

Device logging page provides the graphic and table representations of the selected device log data. For more details on configuring device logging, refer to Device Logging *(see page 53)*.

Single Device Pages

Step	Action	Result
1	From the **IFE** menu bar, click **Monitoring**.	Opens the Monitoring menu.
2	From the **Monitoring** menu, click **Device Logging**.	Expands tree to show available device logging choices.
3	From the **Device Logging**, click **Single Device Pages**.	Expands tree to show available devices that have logged data available for viewing.
4	Select a device from the **Device List**.	Displays the device log for the selected device.
5	To view a data range, select a period range from the period range drop-down list: ● Last Full Day ● Last Full Week ● Last Full Month ● All	Plots the selected period range.
6	Hold the left mouse button and drag a selection box around a graph area to zoom in on it.	Zooms in on the selected graph area.
7	To return to the original full view, type Z on your keyboard, or double-click the graph.	The view zooms out.
8	Click **Data Points** to view the selected interval data log table.	Opens the selected **Interval Data Log** table.
9	To view different topics, click **New Topic(s)**. Enable the check box(es) of the topic(s) to be displayed, and click **Apply**.	Enables the display of the selected topic(s).

The data logged from each device is displayed in a web page in a time-trend chart format. The time-trend chart is preconfigured to display data from the **Last Full Day**, **Last Full Week**, **Last Full Month**, or **All**.

Energy parameters are logged as accumulating values but are displayed as incremental values on an interval basis. All other parameters are logged and displayed as the actual value recorded.

Retrieving a Data Log

Interval data logs can be retrieved using the methods given in the following table:

Retrieval Method	File Format Retrieved
IFE FTP server	Comma-separated variable (CSV)
Export to an external FTP server	CSV
Data point button	HTML
Microsoft Web Query	CSV
E-mail	CSV

To view the list of all the available log files, follow steps 2 to 4 in the section Getting an Interval Data Log using FTP *(see page 65)*. Files are in the format: *Device Name.csv* where the device name is the name given to the slave device. For example, a device named Building 1 Utility Entrance will be *Building 1 Utility Entrance.csv*.

When the log files are exported, the date and time are appended to the file name in the following format: _YYYYMMDDHHMMSS. For example, *Building 1 Utility Entrance_20100218115216.csv*. This indicates that the file was exported on 2010 February 18 at 11:52:16 AM.

Log Format

Data is logged in the CSV file with the following format:

Row	Data in CSV Format	Description
1	IFE Name,IFE SN, IFE Address, Device Name, Device Local ID, Device Type Name, Logging Interval.	This row contains the column headings for the information in row 2.
2	IFE 555, 23227,157.198.184.116, Building1 Utility Entrance, 3, CM4000,15	This row contains the information about the IFE and the logged device.
3	This row is blank.	-
4	,,,Topic ID 1,Topic ID 2,Topic ID 3	This row contains the column headings for the topic IDs in row 5. A topic ID is a numerical reference to the quantity being logged. Topic IDs are used to identify the quantity, regardless of the device or language. The first three commas are used for layout purposes in a spreadsheet application.
5	,,,1617,1621,1625	This row contains the topic IDs of the values logged.
6	This row is blank.	–
7	Error, UTC offset (Minutes), Local Time Stamp, Apparent Energy (kVAh), Real Energy (kWh), Reactive Energy (kVARh)	This row contains the column headings for the data logged in rows 8 and higher.
8 and higher	These rows contain the logged data. 0,-300,2008-10-09 14:15:00,1400738.219,1201962.707,647069.906,15 0,-300,2008-10-09 14:20:00,1400758.260,1201980.725,647078.602,15 0,-300,2008-10-09 14:25:00,1400778.198,1201998.661,647087.233,15	

If a spreadsheet application is used to view the CSV file, data should look similar to the Interval Data log opened in a spreadsheet application.

Error Codes for Data Logs

The below error codes may be seen when troubleshooting data logs:

Error Code	Definition	Result
19	Communication error occurred (for example: CRC, protocol, or exception).	Logging is left enabled unless the last interval was missed.
25	Timeout occurred when a request was sent without receiving a corresponding response within the allowed time.	Logging is left enabled unless the last interval was missed.
38	Invalid data.	-
100	Interval time expired before data could be recorded.	Missed interval.

Contact technical support if you need assistance in resolving these or other error conditions.

Retrieving Data Log Using IFE FTP Server

You can use IFE FTP server to retrieve a data log file by connecting to the IFE via FTP and transferring the .csv file, as shown in the steps below.

NOTE: If you want the IFE to send the data log file via FTP automatically, the device log export must be configured for FTP.

Step	Action	Result
1	Create a folder on your computer, such as `C\:file_logs`.	Creates a folder to store the IFE data log.
2	Launch Windows explorer, type `ftp://` and the IP address of the IFE in the address text box (for example, `ftp://169.254.0.10`), press **Enter**.	Opens the Log On As dialog box.
3	Type the user name as **Administrator** and password as **Gateway** in the text boxes, click **Log On**.	Opens an FTP session with the IFE and displays the files stored in the IFE.
4	Navigate to the directory*/logging/data* on the IFE.	Opens the data logging directory on the IFE.
5	Copy the log file and paste it into the folder created in step 1.	Copies the data log to the folder.

Retrieving Data Log Using the Data Points Button

Step	Action	Result
1	From the **Device Logging** web page, click **Data Points**.	Opens a new window displaying the logged data.
2	Press **CTRL+A**, then press **CTRL+C**.	Selects all of the data and copies the data to the clipboard.
3	Open Excel, then press **CTRL+V**.	Pastes the data into an Excel spreadsheet.

Retrieving an Interval Data Log Using the Microsoft Web Query Feature

Step	Action	Result
1	Launch your web browser.	Opens the web browser.
2	Verify that the log file is available by typing the IFE IP address followed by */stream/devlog_data.html=x* (where "x" is the device local ID).	Opens the data log page.
3	Launch Microsoft Excel. • For Excel 2003: On the **Data** menu, go to **Import External Data** and select **New Web Query**. • For Excel 2007: On the **Data** menu, go to **From Web** and enter the URL in the **Address** bar, and then click **Import**.	Opens the New Web Query dialog box.
4	In the **New Web Query** dialog box, type the address of the log entered in step 2, then click **Go**.	Opens the data log file.
5	Click the outer-most arrow to select all of the data and click **Import**.	Selects the data, then opens the **Import Data** dialog box.
6	Click **OK**.	Imports the data.

NOTE: If you want to display the latest data each time you open the spreadsheet, click **Properties** on the **Import Data** dialog and select **Refresh data on file open**.

Retrieving Data Log Using E-mail

The IFE must be configured to deliver data logs to an e-mail address. For more information, refer to E-mail Export *(see page 54)*.

Summary Device Pages

The Summary Device view provides the summary of one or more selected devices.

Step	Action	Result
1	From the **Monitoring** menu, click **Device Logging**.	Expands the tree for device logging choices.
2	Under **Device Logging**, click **Summary Device Pages**.	–
3	Under Summary Device Pages, click **Single Topic for Multiple Devices**.	Opens the setup page for the Multiple devices, and Single Topic page for Multiple Devices.
4	Select a device from the **Available Devices** list. **NOTE:** A maximum of 4 devices may be selected.	Selects the devices for the summary options.
5	Select a topic from the **Available Topics** list. **NOTE:** Only topics that are common between the selected devices are available.	Selects the topic to display for each selected device.
6	Select **Next**.	Displays the Single Topic for Multiple Devices page.
7	Hold the left mouse button and drag a selection box around a graph area to zoom in on it.	Zooms in on the selected graph area.
8	To return to the original full view, type *Z* on the keyboard, or double-click the graph.	The view zooms out.

The topic logged from the selected devices is displayed in a web page in a time-trend chart format. The time-trend chart is preconfigured to display data from the Last Full Day, Last Full Week, Last Full Month, or Last 6 Weeks.

Energy parameters are displayed as incremental values on an interval basis. All other parameters are logged and displayed as the actual value recorded.

Section 2.4
IFE Web Server - Control Page

Single Device Control

Reset Commands

The IFE Control page allows the user to execute one or more reset commands per device type.

From the **Control** menu, in the **Single Device Control** submenu, on the device list, select the device and click **Resets**. Select an **Operation** in the **Resets** list to reset.

This feature is always enabled.

Application Control

The IFE Control page allows the user to control the following applications remotely:

- Breaker application
- IO application

By default, this feature is disabled in IFE.

Enable Application Control in IFE

Follow the below procedure to enable the **Application Control** feature in IFE.

NOTE: The application control feature is enabled only when the user is logged in as an **Administrator**.

Step	Action	Result
1	Press the test button on the front face of the IFE for 10 to 15 seconds.	Initiates the application control feature.
2	After 15 seconds, IFE initiates the application control feature.	The application control feature window is available continuously for 5 minutes. The module status LED starts blinking continuously for 5 minutes (1 s ON, 1 s OFF) once the test button is released.
3	Access the IFE web page and login as an administrator.	The administrator login to the IFE web page.
4	From the **Setup** menu, click **Webpage Access**.	The **Administrator** reads the disclaimer and chooses either the option **I Understand the risks/Apply** or **Continue to disable**. The application control feature disclaimer is: *By accepting this disclaimer, you are directed to web page access which enables you to control several applications remotely. It is highly recommended that the Administrator modify the default Administrator password. By using, you are agreeing to indemnify and hold harmless Schneider Electric for and from any and all claims , losses, demands, lawsuits and damages that are a result of direct or indirect use of this application control feature by reason of any act or emission which the user commits.* The disclaimer page is available in the language selected by the administrator.
5	Select **I Understand the risks/Apply**.	The application control feature is now enabled for the administrator. The breaker application and IO application are enabled in the web page access for providing access to the other user groups.
6	Select **Continue to disable**.	The application control feature is disabled. The breaker application and IO application are disabled in the web page access.

Breaker Application

From the **Control** web page, in the **Breaker Application**, the authorized group can perform the following operations:

Control	Status	Operation	Availability
Breaker	Open/Close/Tripped/NA	Compact NSX Open/Close/Reset	BSCM
		Masterpact NT/NW, Compact NS Open/Close	BCM ULP

NOTE: Pop-up message confirms the command is successfully sent. It does not confirm wether the complete operation is successful.

IO Application

From the **Control** web page, in the **IO Application**, the authorized group can perform the following operations:

Control	Status	Operation	Availability
Reset input counters	-	I1 I2 I3 I4 I5 I6	IO 1
		#I1 #I2 #I3 #I4 #I5 #I6	IO 2
Reset output counters	-	O1, O2, O3	IO 1
		#O1 #O2 #O3	IO 2
Light control	ON or OFF	ON / OFF	IO 1
Load control	ON or OFF	ON / OFF	IO 1
User-defined output control	ON or OFF	ON / OFF	IO 1 or IO 2

NOTE:

- The IO application control is possible only when the IO module is connected to a circuit breaker.
- The light and the load control are available when the application rotary switch of IO 1 is in position 4.
- The user-defined output control is available only when the user-defined output has been assigned with customer engineering tool.
- If the input is assigned as a pulse counter, the operation is P1, P2, P3, P4, P5, and P6 for IO 1. For IO 2, the pulse counter operation is #P1, #P2, #P3, #P4, #P5, and #P6.

Section 2.5
IFE Web Server - Diagnostics Pages

What Is in This Section?

This section contains the following topics:

Statistics

Description

This page shows the readings accumulated since the IFE was last activated. If the power to the IFE is terminated or the device is reset due to a configuration change or other event, all cumulative values are reset to 0.

Reset Procedure

Step	Action	Result
1	From the **IFE** menu bar, click **Diagnostics**.	Opens the Diagnostics menu.
2	From the **Diagnostics** menu, in the **General** submenu, click **Statistics**.	Opens the Statistics page.
3	View the data.	See the statistics for each group.
4	Click **Reset**.	Resets the IFE cumulative diagnostic data to 0.

Interpreting Ethernet Statistics

Global Statistic	Description
Received Frames	Number of frames received
Transmitted Frames	Number of frames transmitted
Reset Counters	Resets the transmitted and received frames

Statistic Per Port	Description
Link Speed	Operational speed (10 Mbps or 100 Mbit/s)
Duplex mode	Current mode of operation (full duplex or half duplex)

Interpreting Modbus TCP/IP Statistics

Statistic	Description
Port status	Status of the connected Ethernet port
Opened TCP connections	Number of active connections
Received messages	Number of messages received
Transmitted messages	Number of messages transmitted
Reset counters	Resets the received and transmitted messages

Interpreting System Statistics

Statistic	Description
CPU	Status of the CPU: • Nominal • Degraded • Out of service
Boot Memory	Healthiness of the boot memory
EEPROM	Healthiness of EEPROM
File System	Healthiness of the file system
Ethernet PHY 1	Healthiness of PHY1 hardware
Ethernet PHY 2	Healthiness of PHY 2 hardware
DDR	Healthiness of the execution memory

Interpreting Date and Time Statistics

Statistic	Description
Date	Current date
Time	Current time
Uptime	Run time during the system power-up

Interpreting Modbus Serial Statistics

Statistic	Description
Transmitted Message	A counter that increments each time a frame is sent.
Received Message	A counter that increments each time a frame is received.
Error Message	An error marked from the slave or the response timeout.

Interpreting ULP Statistics

Statistic	Description
Frames Transmitted	Number of CAN frames transmitted successfully
Frame Received	Number of CAN frames received successfully
Max Transmit Error	Maximum number of CAN transmitted errors (TEC)
Max Receive Error	Maximum number of CAN received errors (REC)
Bus off	CAN Bus off count
Max Bus off	Maximum number of Bus off counts

Interpreting File System Statistics

Statistic	Description
Total Size	Total amount of the IFE disk size in kilobytes
Used Size	Total amount of used disk size on the IFE disk in kilobytes
Free Size	Total amount of unused disk space on the IFE disk in kilobytes
Bad Size	Amount of corrupted disk space on the IFE disk in kilobytes

Interpreting TCP Port Connections Statistics

Statistics	Description
Remote IP	Remote IP address
Remote Port	Remote port number
Transmitted messages	Number of messages transmitted
Received messages	Number of messages received
Sent Errors	Number of error messages sent
Reset Counters	Resets the transmitted and received messages

Device Information

Device Name Configuration Procedure

Step	Action	Result
1	From the **IFE** menu bar, click **Diagnostics**.	Opens the Diagnostics page.
2	From the **Diagnostics** menu, in the **Product Information** submenu, click **Device Information**.	Opens the Device Information page.

List of Parameters in Device Information

Parameter	Description
Device name	Device name which is updated in the device name field
Product name	Name of the product
Serial number	Device serial number
Model number	Device model number
Firmware version	Current firmware version
Unique Identifier	Combination of MAC address and the time
MAC address	Unique MAC address
IPv4 address	Addressing scheme to specify the source and destination addresses
IPv6 link local address	Address used to communicate on the local network

IMU Information

Description

This page gives the information about the devices which are connected to the IFE in ULP port. The devices connected are:

- Breaker Communication Module
- Breaker Communication Module for ULP system
- Micrologic Trip Unit
- Breaker Status and Communication Module
- FDM121 display for LV circuit breaker
- IO 1
- IO 2
- Maintenance module

Read Device Registers

Description

Read device registers allows the IFE to read Modbus registers from the selected device.

Read Procedure

Step	Action	Result
1	From the **IFE** menu bar, click **Diagnostics**.	Opens the Diagnostics menu.
2	From the **Diagnostics** menu, in the **Device Health Check** submenu, click **Read Device Registers**.	Opens the Read Device Registers page.
3	From the **Device Name**, select the device.	Selects the device from the drop-down list.
4	Enter **Local** (or choose from the defined device list), **Starting Register**, and the **Number of Registers** to read.	Enters the registers to read from the specified device.
5	Select **Data** type.	Selects the appropriate data type.
6	To change how Modbus data is displayed in the **Value** column, select **Decimal**, **Hexadecimal**, **Binary**, or **ASCII**.	Selects how the data values are displayed.
7	Click **Read**.	Reads the device registered according to the selected configuration.

IFE Read Device Register Parameters

Parameter	Description	Settings
Device Name	Selects a device to read from the list of previously added devices. A device not defined in the device list can be read by entering its Local ID number.	-
Local ID	The address (Local ID) of the device that is to be read.	1
Starting Register	Register number in decimal.	0–65535 Factory setting: 1000
Number of Registers	The number of registers to read.	1–125 Factory setting: 10
Register column	Lists the register numbers in decimal.	-
Value column	Lists the data stored for a register. Values retrieved depend on the device connected to the IFE. Refer to the documentation for the connected device for more information about stored register values.	-
Data type	Lists the data types available for the device.	• Holding Registers (Factory setting) • Input Registers • Input Coils • Output Coils
Decimal, Hexadecimal, Binary, or ASCII options	Select an option to specify how the Value column data is displayed.	Decimal (Factory setting)

Communication Check

Automated Communication Check

While browsing the Real Time Data views, the IFE has an automated communication check that runs every 15 minutes by default. To change the timing, refer to Preferences *(see page 57)*. This check verifies the communication health of all the devices configured on the IFE, and attempts to re-establish the communication to any device marked out of service within the current browser session.

Manual Communication Check

In certain cases, the user may not want to wait for the automated communications check interval and need to force the check to run manually.

Step	Action	Result
1	From the **IFE** menu bar, click **Diagnostics**.	Opens the Diagnostics menu.
2	From the **Diagnostics** menu, in the **Device Health Check** submenu, click **Communication Check**.	Opens the Communications Check page.
3	Click **Check Device Status**.	Runs a communications check. The communicating device displays: ● **Passed** in the **Comms** column. ● **In Service** in the **Status** column. A device that is not communicating display: ● **Failed** in the **Comms** column. ● **Out of Service** in the **Status** column if it has failed multiple times.

Section 2.6
IFE Web Server - Maintenance Pages

What Is in This Section?

This section contains the following topics:

Maintenance Log

Description

The maintenance log provides a way to document maintenance performed on the IFE, the connected equipment, or the system of which, the IFE is a part. Each entry is recorded with the date and time the entry was made, and the name of the user who made it.

Maintenance Log Setting Procedure

Step	Action	Result
1	From the **IFE** menu bar, click **Maintenance**.	Opens the Maintenance menu.
2	From the **Maintenance** menu, in the **General** submenu, click **Maintenance Log**.	Open the Maintenance Log page.
3	To add a new log entry, click **Add Log Entry**. Enter the maintenance text details in **Entry Detail** text box and click **Apply**.	Opens the Add Log Entry page and allows the user to enter the maintenance details.
4	Select the check box next to the entry to be deleted. Click **Delete Entries**.	Deletes the selected entry.
5	Click **Delete Log** to delete all the entries in the log.	Clears the maintenance log.

Maintenance Counters

Description

This page provides the maintenance counter information for the selected device. The page displays the information about the circuit breaker operation counters, contact wear counters, and the cradle counters.

Viewing Maintenance Counters

Step	Action	Result
1	From the **IFE** menu, click **Maintenance**.	Opens the Maintenance page.
2	From the **Maintenance** menu, click **Maintenance Counters**.	Opens the Maintenance Counters page.
3	Select the device from the device list. **NOTE:** This feature is available for circuit breakers only.	Displays the information about the circuit breaker operation counters, contact wear counters, and the cradle counters.

Appendices

Appendix A
Appendix A - List of IFE Supported Devices

List of IFE Supported Device Types

Description

The table below gives the list of devices that can be connected as Modbus slaves on an IFM stacked to the IFE gateway. This list of supported devices was accurate at the time this document was published. Check *www.schneider-electric.com* for updates.

Device Group	Device
Masterpact NT/NW, Compact NS, and PowerPact P- and R-frame circuit breakers with Micrologic trip units	Micrologic A
	Micrologic E
	Micrologic P
	Micrologic H
Compact NSX and PowerPact H-, J-, and L-frame circuit breakers with Micrologic trip units	Compact NSX-A
	Compact NSX-E
	PowerPact - A
	PowerPact - E
Insulation Monitoring Devices	Vigilohm IM20
	Vigilohm IM20-H
Motor Management	TeSys T
Power Factor Controller	Varlogic
Power Meters	PM9c
	PM800
	PM800 A-S1/A-S2
	PM1200
	PM3250
	PM5000
Others	Acti9 Multicontrol
	iEM3250
	iEM3255