Ecoreach

Online Help

Version 1.0

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www.schneider-electric.com

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” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.

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

⚠ DANGER

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

⚠ WARNING

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

⚠ CAUTION

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

NOTICE

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

PLEASE NOTE

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

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

FCC Notice

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

About the Book

At a Glance

Document Scope

The purpose of this online help is to provide authorized users, panel builders, installers and maintenance personnel with the technical information needed to operate Ecoreach software. Ecoreach provides a simple setting and operating software application for Compact NSX, Compact NS, Masterpact, PowerPact circuit breakers, and Acti 9 Smartlink through which the user can do the configuration or settings management and project management for these devices locally and in Ecoreach cloud.

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
Compact NSX AC 100-630 A Circuit Breakers - User Guide	LV434100 (FR) LV434101 (EN) LV434102 (ES)
Compact NSX Micrologic 5 and 6 Trip Units - User Guide	LV434103 (FR) LV434104 (EN) LV434105 (ES)
Compact NSX Modbus Communication Guide	LV434106 (FR) LV434107 (EN) LV434108 (ES) DOCA0091ZH
PowerPact H-, J-, and L-Frame Circuit Breakers - User guide	48940-313 (FR, EN, ES)
Micrologic 5/6 Electronic Trip Units - User Guide for PowerPact H-, J, and L Frame Circuit Breakers	48940-312 (FR, EN, ES)
PowerPact H-, J-, and L-Frame Circuit Breakers Modbus Communication Guide	0611IB1302 (EN) 0611IB1303 (ES) 0611IB1304 (FR) 0611IB1305 (ZH)

Title of Documentation	Reference Number
Masterpact NT/NW and Compact NS Modbus Communication Guide	DOCA0054EN DOCA0054ES DOCA0054FR DOCA0054ZH
Masterpact NT/NW, PowerPact P- and R-Frame Circuit Breakers Modbus Communication Guide	0613IB1313 (EN) 0613IB1314 (ES) 0613IB1315 (FR) 0613IB1316 (ZH)
ULP (Universal Logic Plug) System - User Guide	TRV99100 (FR) TRV99101 (EN) TRV99102 (ES)
IO Module - User Guide	DOCA0055EN (IEC) DOCA0055ES (IEC) DOCA0055FR (IEC) DOCA0055ZH (IEC) 0613IB1317 (EN) (UL) 0613IB1318 (ES) (UL) 0613IB1319 (FR) (UL) 0613IB1320 (ZH) (UL)
IFE Ethernet Interface for LV Circuit Breakers - User Guide	DOCA0084EN (IEC) DOCA0084ES (IEC) DOCA0084FR (IEC) DOCA0084ZH (IEC) 1040IB1401 (EN) (UL) 1040IB1402 (ES) (UL) 1040IB1403 (FR) (UL) 1040IB1404 (ZH) (UL)
Acti 9 Smartlink Modbus Communication System - User Manual	DOCA0004EN DOCA0004ES DOCA0004FR DOCA0004DE DOCA0004IT
Acti 9 Smartlink Ethernet Communication System - User Manual	DOCA0073EN DOCA0073ES DOCA0073FR DOCA0073DE DOCA0073IT

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

Chapter 1
Introduction

What Is in This Chapter?

This chapter contains the following topics:

Overview

Description

Ecoreach is an Electrical Asset Management software that helps the user to manage a project as part of designing, testing, commissioning, and maintenance phases of the project life cycle. It enables the user to build and commission panels efficiently, and assist in the maintenance and operation phases.

Ecoreach software operates connected to the cloud ensuring a unique project reference for the user. The user can prepare the settings of the devices offline (without connecting to the device), save the project in the cloud as reference, and configure the devices when connected with them. When the cloud connection is unavailable, Ecoreach manages a specific workflow to ensure that the device configuration is unaffected.

Using Ecoreach, the user can manage the project reference and access the reference project from any PC operating Ecoreach. The user can avail value-added features to manage the project. For example, attaching the artifacts to each device or at the project level, organizing devices in switchboards, managing a hierarchical structure of the installation, and so on.

Features

Ecoreach supersedes the Schneider Electric customer engineering tools such as the Remote Setting Utility (RSU) and Remote Control Utility (RCU) with additional features.

Ecoreach supports the connection of Schneider Electric devices to:

- Create projects by device discovery and selection of devices from devices catalog.
- Save the project in Ecoreach Cloud for reference.
- Upload and download settings to multiple devices in batches.
- Carry out commands, generate, and print device settings report.
- Perform a communication wiring test on the entire project or for a specific switchboard and generate and print test report.
- Manage multiple devices with an electrical and communication hierarchy model.
- Monitor the protections and IO status.
- Read information (alarms, measurements, parameters).
- Manage artifacts (project documents).
- Download latest device firmware.

Compatible Devices

Ecoreach is compatible with the following devices:

- Compact™ NSX 100-630 (IEC) circut breaker
- PowerPact™ H-, J-, and L- frame (UL) circuit breaker
- Compact NS 630b-3200A (IEC) and PowerPact™ M-, P-, and R-frame (UL) circuit breaker
- Masterpact NT/NW (IEC and UL) circuit breaker
- Acti 9 Smartlink
- Switch-disconnector
- Power meters (iEM3000, PM9, and PM3000 series)

Specifications

PC Requirements

The table shows the list of user PC requirements:

Component	Minimum Requirements
Processor	Intel ® Core™ 2 Duo CPU at 3.00 GHz
RAM	2 GB
System type	64 bit or 32 bit

Software Requirements

The required version of operating system is Microsoft Windows 7.

Chapter 2
Getting Started

What Is in This Chapter?

This chapter contains the following sections:

Section 2.1
Initial Setup

What Is in This Section?

This section contains the following topics:

Download and Installation

Overview

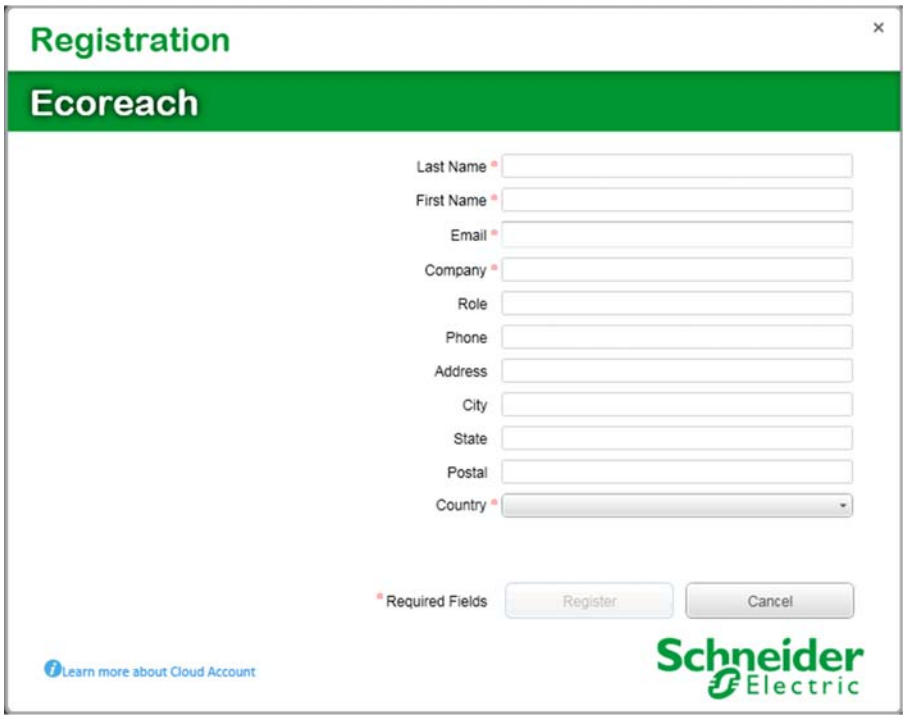
The table shows the steps to download Ecoreach software from Schneider Electric website:

Step	Action
1	Go to the Schneider Electric website: *www.schneider-electric.com* or Schneider Electric country website.
2	Navigate to one of these paths: ● Home/Products/Power Circuit breakers & Switches/High Current Air Circuit Breakers/Micrologic ● Home/Products/Power Circuit breakers & Switches/Molded Case Circuit Breaker/Micrologic ● Home/Products/Software/Configuration Software
3	If you have navigated through Home/Products/Software/Configuration Software point to the software. **Result:** Displays the list of softwares.
4	Download the Ecoreach installation software.
5	Install the Ecoreach software.

Software Registration

Overview

The following screen appears when you start the Ecoreach software for first time.

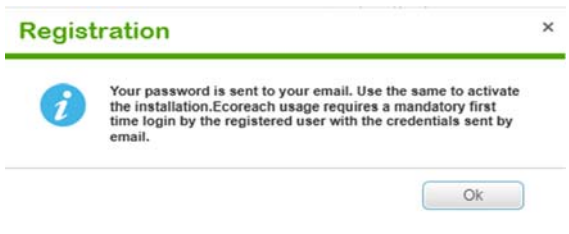
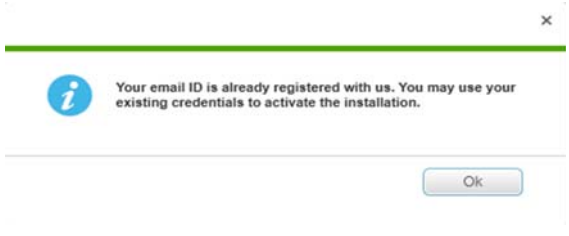


The table shows the steps to register the Ecoreach software:

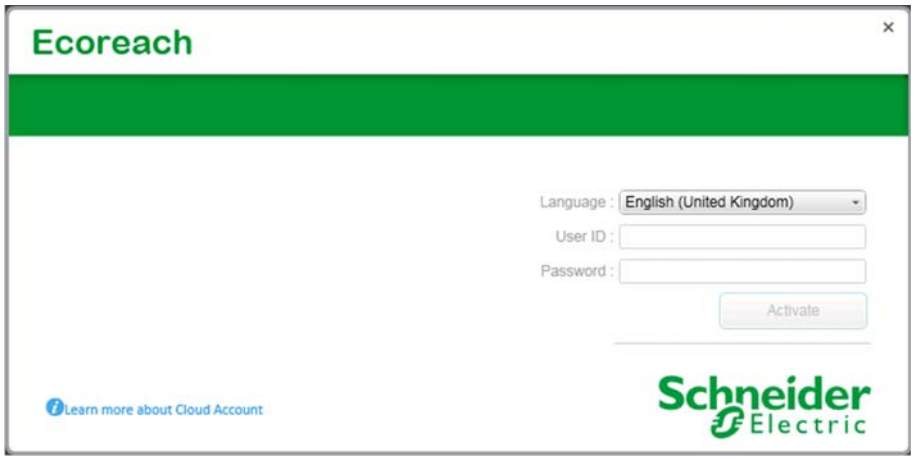
Step	Action
1	Enter all the details.
2	Enter a valid email address.
3	Click **Register**. **Result:** An email containing password is sent to your email address.
4	Use the password for further login.

Results of Registration

After the first time registration, a pop-up window appears for these two cases:

Cases	Pop-up Window
If you are a new Ecoreach cloud account user	
If you are an existing Ecoreach cloud account user	

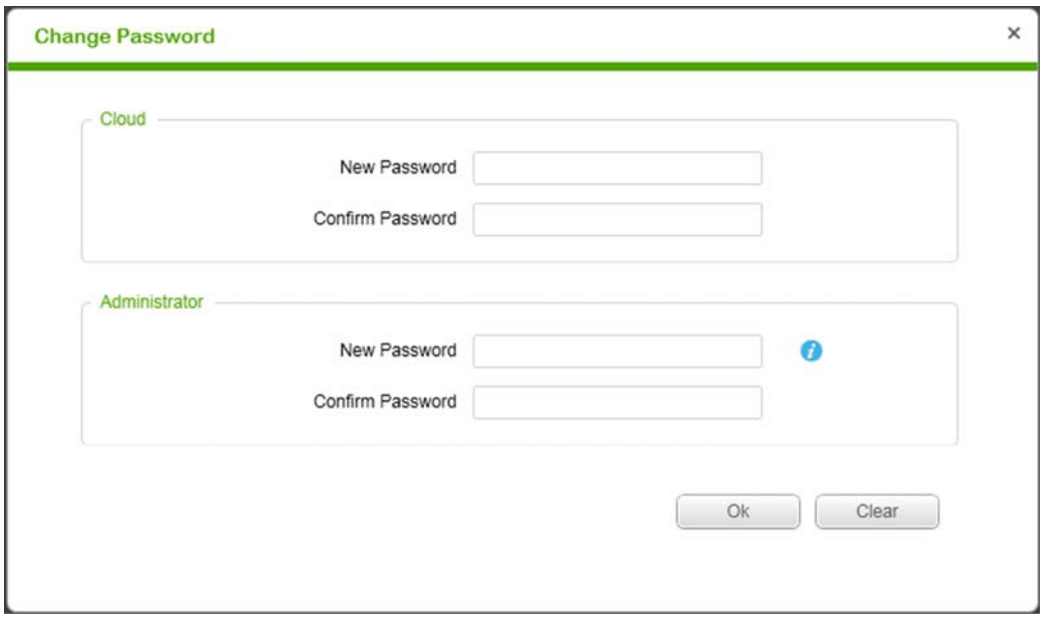
First Time Login



The table shows the steps to activate Ecoreach for the first time:

Step	Action
1	Select the language from the **Language** list.
2	Enter the **User Name** and **Password**. **NOTE:** ● **User Name**: Enter the email address that you have used for software registration. ● **Password**: Enter the password that has been sent by email.
3	Click the **Activate** button.

Change Password



After you activate the Ecoreach software, you will be prompted to change the password.

You are prompted to change two passwords:

- **Cloud:** This password is used each time when you start Ecoreach and connect to your Cloud account.
- **Administrator:** This password is used for control *(see page 95)* and firmware upgrade *(see page 100)* operations with the devices.

NOTE: The administrator password cannot be retrieved in case you lose the existing password. Reinstall and register the software to create a new password.

Section 2.2
Connection Procedure

What Is in This Section?

This section contains the following topics:

Introduction

Overview

The connection procedure is applicable for all the product ranges managed by Ecoreach.

The table lists the possible connections with circuit breakers and Acti 9 Smartlink:

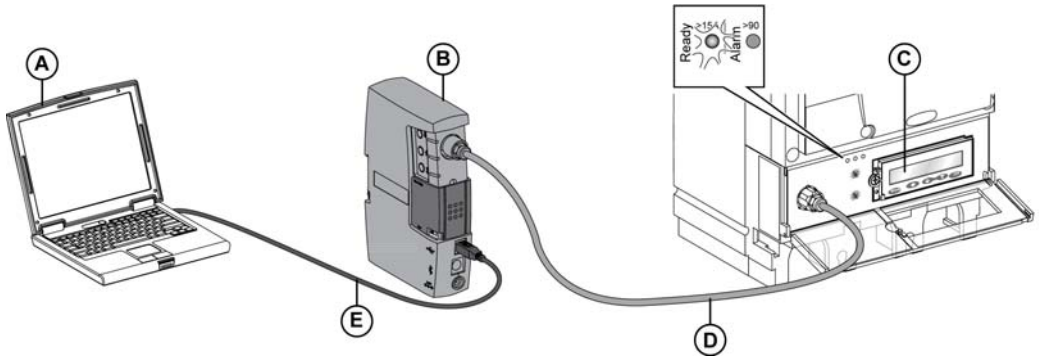
Connection Type	Connections
Local Connection	
Connection through UTA-Test Plug *(see page 20)*	Compact NSX or PowerPact H-, J-, and L- frame: point-to-point connection through the front test plug of the trip unit
Connection through UTA-ULP cable *(see page 21)*	• Compact NSX or PowerPact H-, J-, and L- frame with BSCM ULP and ULP bus • Masterpact or Compact NS 630b-3200A with BCM ULP and ULP bus
Connection through MagicBox *(see page 22)*	Masterpact or Compact NS 630b-3200A or PowerPact M-, P-, and R- frame: point-to-point connection through the front test plug of the trip unit
Serial Connection	
Connection through IFM *(see page 24)*	• Compact NSX or PowerPact H-, J-, and L- frame with BSCM module and ULP bus and IFM communication module • Masterpact or Compact NS 630b-3200A or PowerPact M-, P-, and R- frame with BCM ULP and ULP bus and IFM communication module
Connection through BCM *(see page 25)*	Masterpact or Compact NS 630b-3200A or PowerPact M-, P-, and R- frame with BCM module
Connection through CCM *(see page 26)*	Masterpact or Compact NS 630b-3200A or PowerPact M-, P, and R- frame with BCM and CCM module or with BCMULP and CCM module
Connection through Acti 9 Smartlink device *(see page 27)*	Acti 9 Smartlink RS485
TCP/IP Connection	
Connection to devices network through TCP/IP gateway *(see page 28)*	Compact NSX or PowerPact H-, J-, and L- frame with IFM communication module, Masterpact or Compact NS 630b-3200A or PowerPact M- , P-, and R- frame with IFM communication module, all connected to the gateway through their IFM module
Connection through IFE *(see page 29)*	• Compact NSX or PowerPact H-, J-, and L- frame with BSCM module with ULP bus and IFE communication module • Masterpact or Compact NS 630b-3200A or PowerPact M-, P-, and R- frame with BCM ULP and ULP bus and IFE communication module
Connection to devices network through Ethernet TCP/IP daisy chain *(see page 30)*	• Compact NSX or PowerPact H-, J-, and L- frame with BSCM module with ULP bus and IFE communication module • Masterpact or Compact NS 630b-3200A or PowerPact M-, P-, and R- frame with BCM ULP and ULP bus and IFE communication module
Typical network connection *(see page 31)*	Compact NSX or PowerPact H-, J-, and L- frame with IFE communication module, Masterpact or Compact NS 630b-3200A or PowerPact M-, P-, and R- frame with IFE communication module, Acti 9 Smartlink IP, all connected to an Ethernet switch

Local Connection

Connection through UTA-Test Plug Using a USB Cable

This connection is applicable for Compact NSX and PowerPact H-, J-, and L- frame circuit breakers.

The figure shows an example of the Compact NSX circuit breaker:

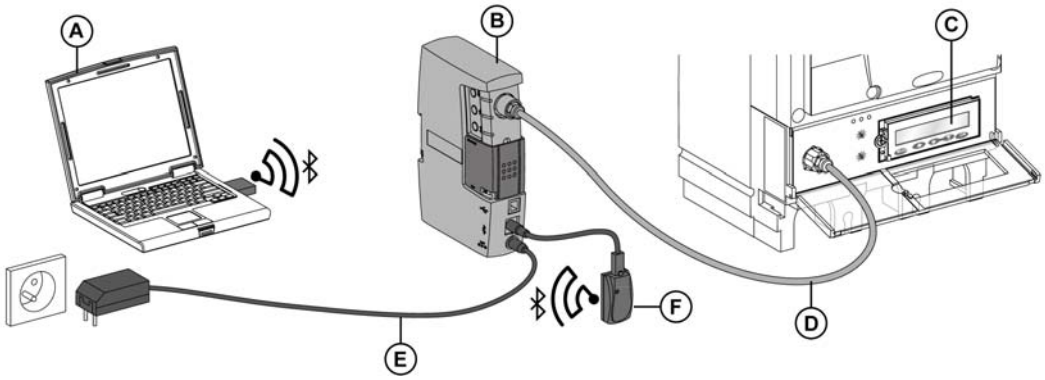


A PC running Ecoreach
B UTA maintenance module
C Micrologic trip unit
D ULP cable
E Standard USB cord for connection to the PC

Connection through UTA-Test Plug Using a Bluetooth Dongle

This connection is applicable for Compact NSX and PowerPact H-, J-, and L- frame circuit breakers.

The figure shows an example of the Compact NSX circuit breaker:



A PC running Ecoreach
B UTA maintenance module
C Micrologic trip unit
D ULP cable
E Power cord
F Bluetooth dongle

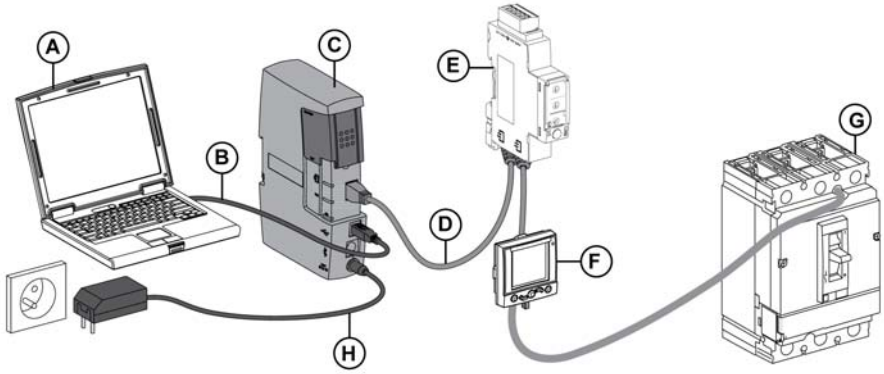
Connection to a UTA-ULP Cable

This connection is applicable for Compact NSX, Compact NS 630b-3200A, Masterpact, PowerPact M-, P- and R- frame, and PowerPact H-, J-, and L- frame circuit breakers.

The table shows the steps to connect a PC to IMU (Intelligent Modular Unit):

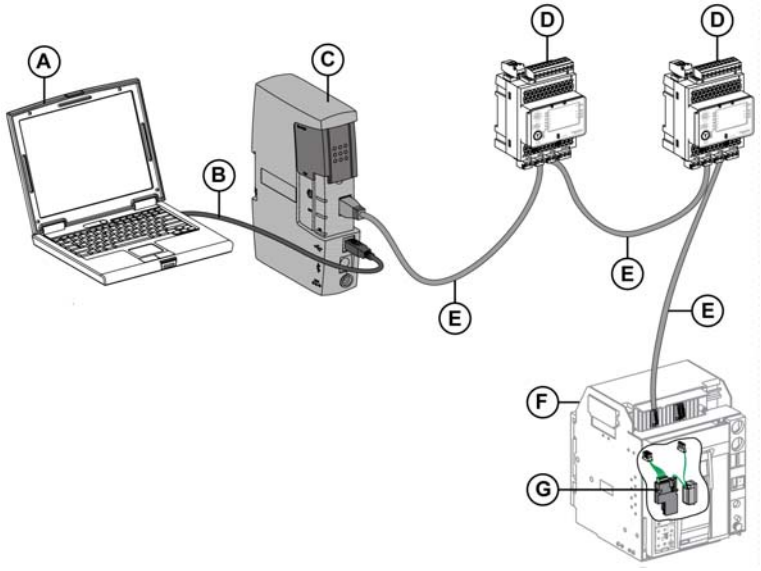
Step	Action
1	Identify an ULP module, located within the IMU that has the termination plug installed. **NOTE:** The ULP modules can be IFM, IFE, FDM121, or IO module.
2	Disconnect the ULP termination and connect the ULP cable from the maintenance module.
3	Use the PC running Ecoreach to configure the device.
4	Disconnect the maintenance module and connect the ULP termination in the RJ45 port.

The figure shows an example of UTA connection with the Compact NSX breaker and ULP modules like IFM, FDM:



A PC running Ecoreach
B USB cable
C UTA maintenance module
D ULP cable
E IFM Modbus-SL interface for LV circuit breaker
F FDM121 display for LV circuit breaker
G Compact NSX circuit breaker
H Power cord

The figure shows the UTA connection to IO modules in Masterpact circuit breaker:

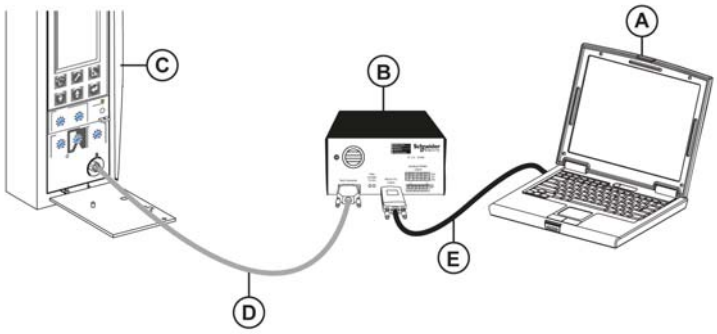


A PC running Ecorecah
B USB cable
C UTA maintenance module
D IO input/output module for LV circuit breaker
E ULP cable
F Masterpact NT/NW circuit breaker
G BCM ULP

Connection through a MagicBox

This connection is applicable for Masterpact, Compact NS630b-3200A, and PowerPact M-, P- and R- frame.

The figure shows an example of Masterpact circuit breaker:



A PC running Ecoreach
B MagicBox
C Micrologic trip unit
D Test connector
E Converter USB to RS232

Connection to Device through a Local Connection

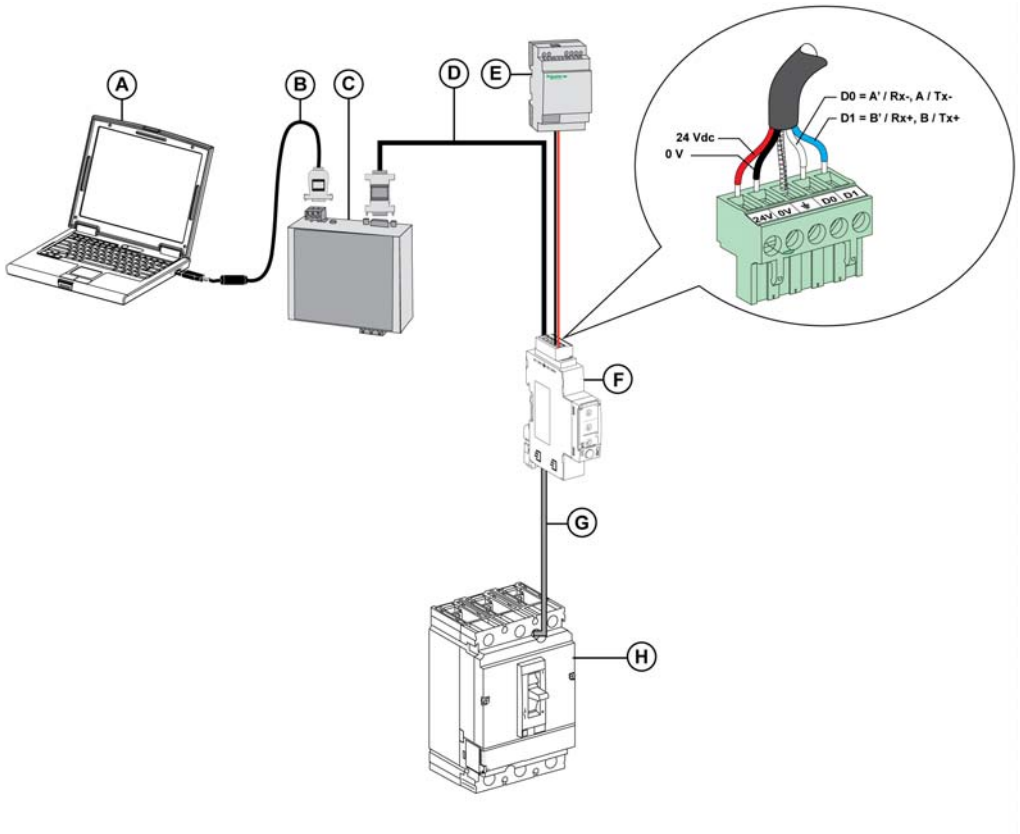
Step	Action
1	Hard wire the device to the PC.
2	Start Ecoreach and connect it to the device.
3	Click the **Configuration** tab *(see page 48)*.
4	Select a device from TreeView *(see page 48)*.
5	Click **Communication** in the **Display** list.
6	Click the **PC Communication** section in the display area.
7	Click the **Local** subsection.
8	Select the appropriate communication module.
9	Select the required COM port from the list.
10	Select **Local Plug** in the **Connection** list in the toolbar.
11	Click the **ON** button. **Result:** The Progress bar next to the **ON** button indicates the progress of the connection.
12	At the end of the connection sequence: If the connection is made: ● **ON** button turns green. ● Progress bar turns green. If the connection fails: ● Progress bar stops. ● Relevant error is displayed in the error window.

Serial Connection

Connection through an IFM

This connection is applicable for Compact NSX, Compact NS 630b - 3200A, Masterpact, PowerPact M-, P-, and R- frame, and PowerPact H-, J-, and L- circuit breakers.

The figure shows an example of Compact NSX circuit breaker:

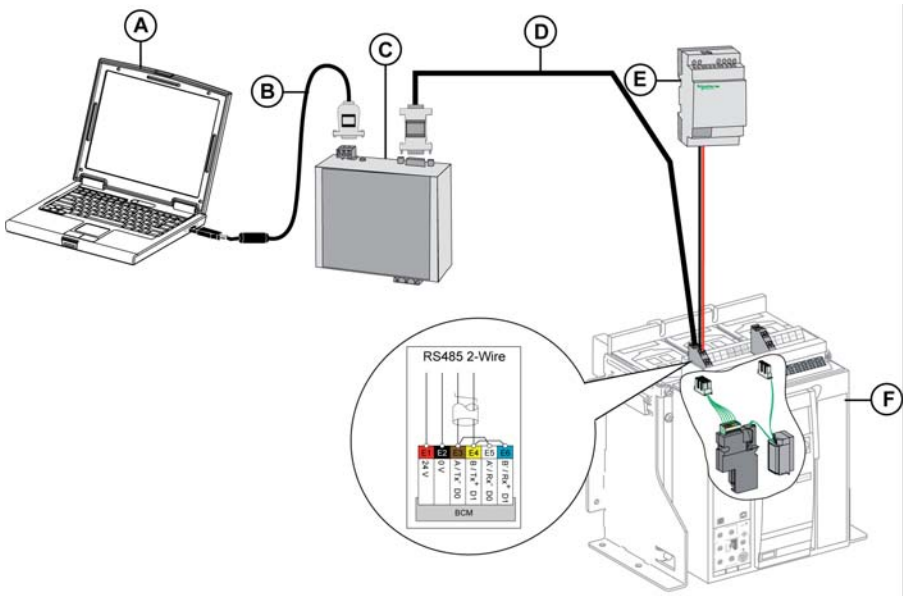


A PC running Ecorecah
B Converter USB to RS 232
C Converter RS 232 to RS 485
D Modbus serial cable
E 24 Vdc power supply
F IFM Modbus-SL interface for LV circuit breaker
G ULP cable
H Compact NSX circuit breaker

Connection through a Breaker Communication Module (BCM)

This connection is applicable for Masterpact NW, Masterpact NT, Compact NS 630b-3200A, and PowerPact M-, P- and R- frame circuit breakers.

The figure shows an example of Masterpact circuit breaker:

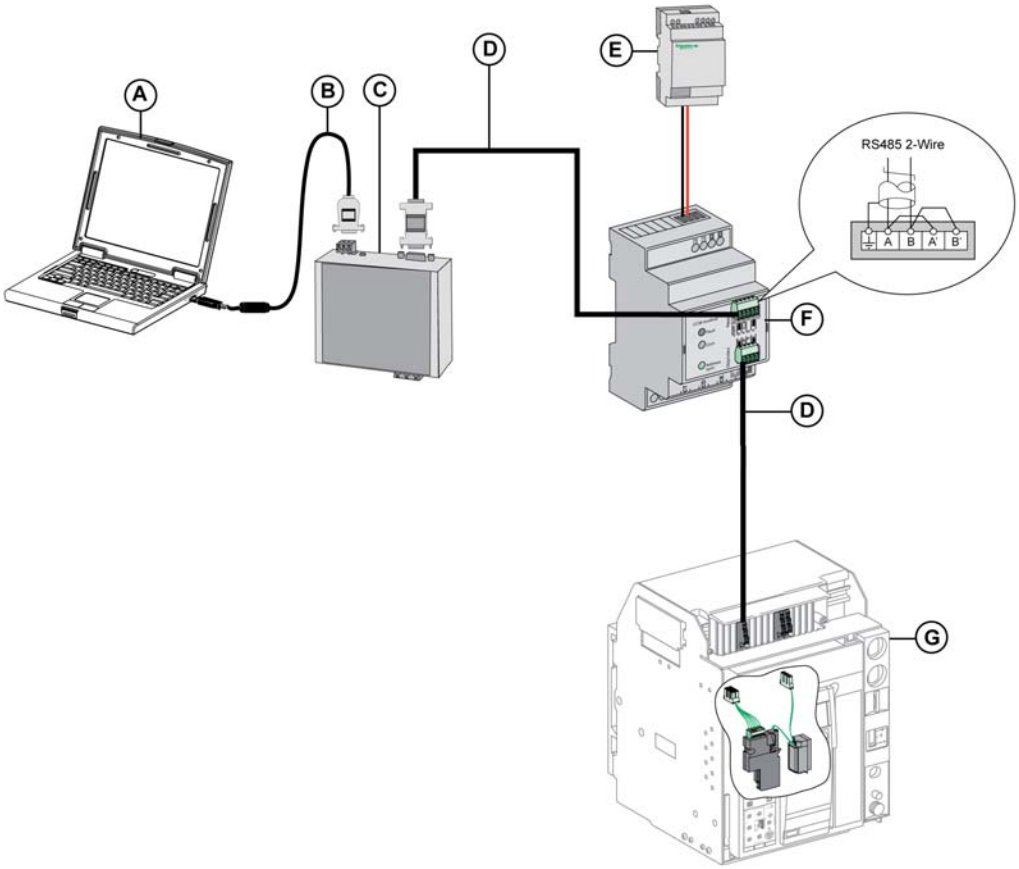


A PC running Ecoreach
B Converter USB to RS 232
C Converter RS 232 to RS 485
D Modbus serial cable
E 24 Vdc power supply
F Masterpact NT circuit breaker

Connection through a Cradle Communication Module (CCM)

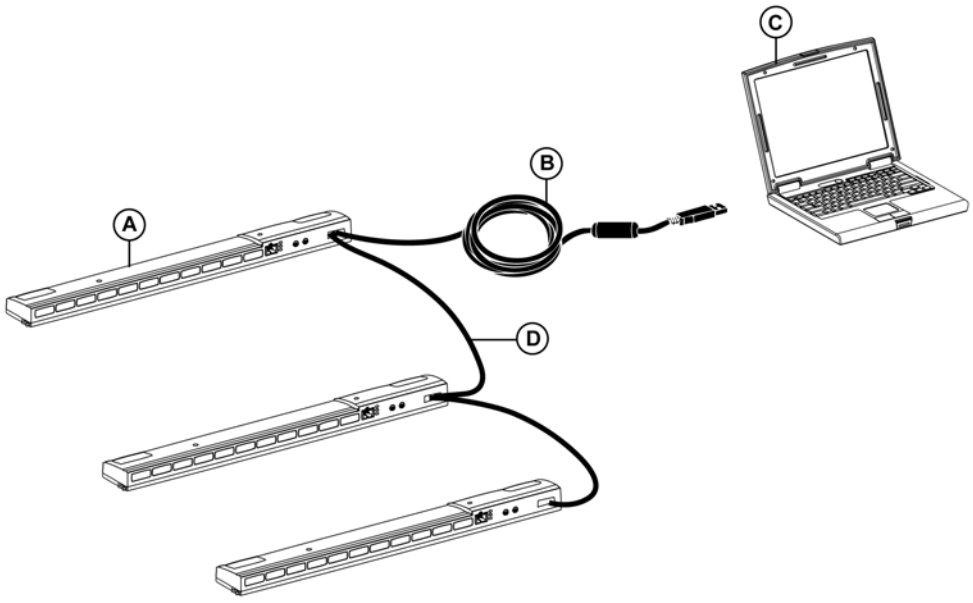
This connection is applicable for Masterpact NW, and Compact NS 630b-3200A circuit breakers.

The figure shows an example of Masterpact circuit breaker:



A PC running Ecorecah
B Converter USB to RS 232
C Converter RS 232 to RS 485
D Modbus serial cable
E 24 Vdc power supply
F Craddle Communication Module (CCM)
G Masterpact NT circuit breaker

Connection to Acti 9 Smartlink RS485 Device



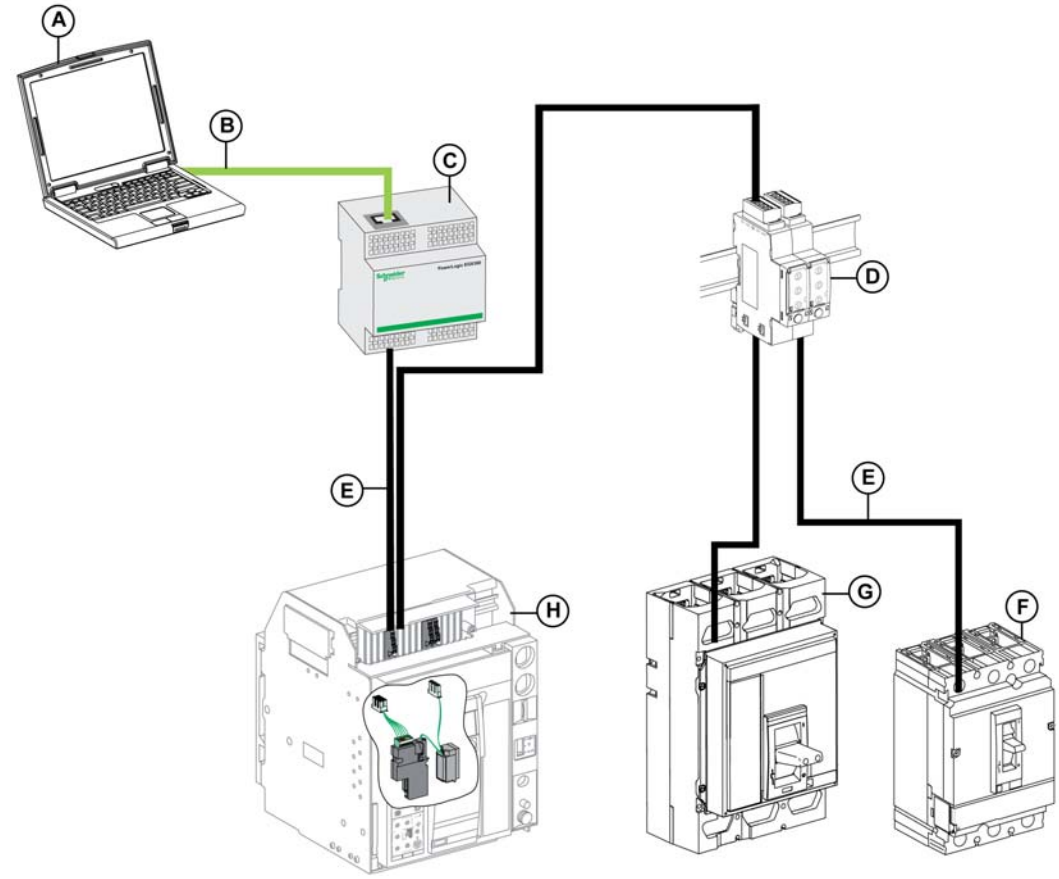
A Acti 9 Smartlink RS485
B Acti 9 Smartlink converter
C PC running Ecoreach
D Modbus serial cable

Connecting the Device through a Serial Line Network

Step	Action
1	Hard wire the device to the PC.
2	Start Ecoreach and connect it to the device.
3	Click the **Configuration** tab *(see page 48)*.
4	Click **Communication** in the **Display** list.
5	Select a device from TreeView *(see page 48)*. **NOTE:** The device must be attached to a serial line communication access point *(see page 81)* and must be ready for communication.
6	Click the **PC Communication** section in the display area.
7	Verify the communication parameters.
8	Open **Network** subsection.
9	Verify that the connection type is **Modbus Serial**.
10	Verify the **COM port**.
11	Select **Network** in the **Connection** list in the toolbar.
12	Click the **ON** button. **Result:** The Progress bar next to the **ON** button indicates the progress of connection.
13	At the end of the connection sequence: If the connection is made: ● **ON** button turns green. ● Progress bar turns green. If the connection fails: ● Progress bar stops. ● Relevant error is displayed in the error window.

TCP/IP Connection

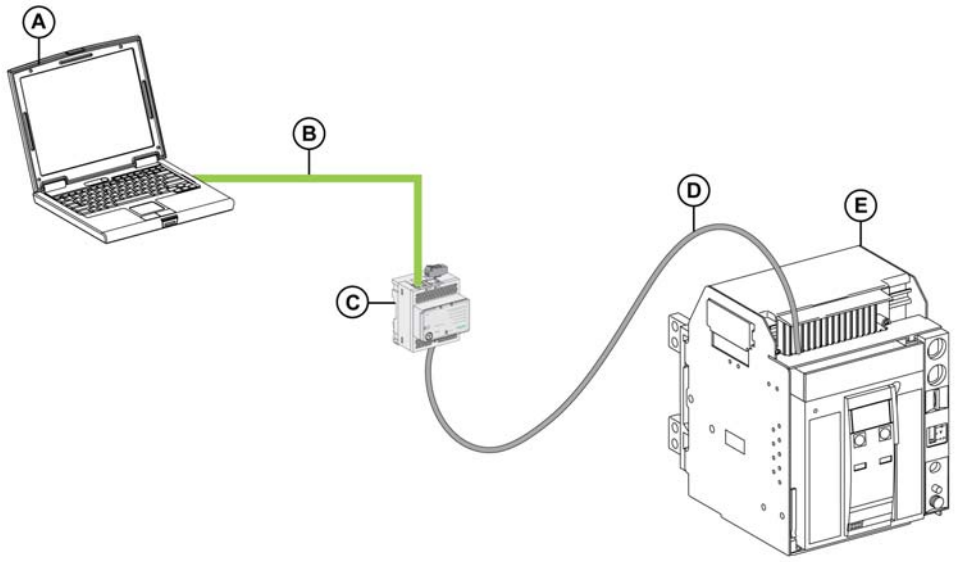
Connection to Device Network through a Gateway



A PC running Ecoreach
B Ethernet communication
C EGX100/300 gateway
D IFM Modbus-SL interface for LV circuit breaker
E Modbus serial cable
F Compact NSX circuit breaker
G Compact NS 630b-3200 circuit breaker (BCM ULP)
H Masterpact NT circuit breaker (BCM)

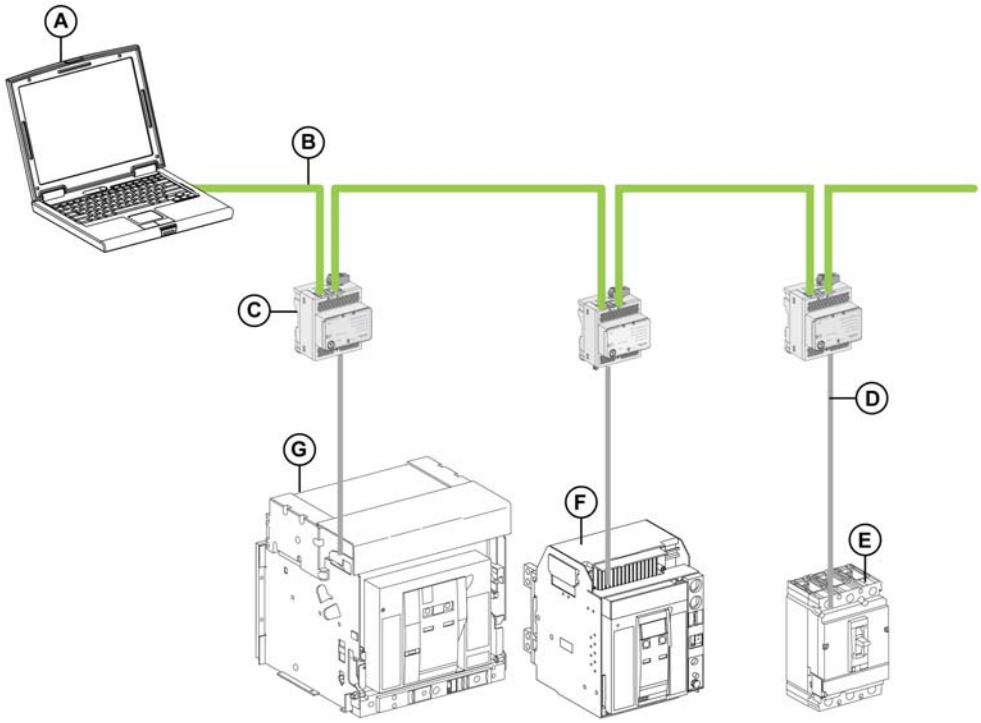
Step	Action
1	Connect the device to the PC
2	Start Ecoreach and connect it to the device.
3	Click the **Configuration** tab *(see page 48)*.
4	Click **Communication** in the **Display** list.
5	Select a device from TreeView *(see page 48)* attached to a Gateway communication access point *(see page 82)* and ready for communication.
6	Click the **PC Communication** section in the display area.
7	Verify the communication parameters.
8	Open the **Network** subsection.
9	Verify that the connection type is **TCP/IP Gateway**, and verify the Gateway IP address.
10	Select **Network** in the **Connection** list.
11	Click the **ON** button. **Result:** The progress bar next to the **ON** button indicates the progress of connection.
12	At the end of the connection sequence: If the connection is made: ● **ON** button turns green. ● Progress bar turns green. If the connection fails: ● Progress bar stops. ● Relevant error is displayed in the error window.

Connection to Device through the IFE



A PC running Ecoreach
B Ethernet communication
C IFE Ethernet interface for LV circuit breaker
D ULP cable
E Masterpact NT circuit breaker (BCM ULP)

Connection to Device Network through a Daisy Chain



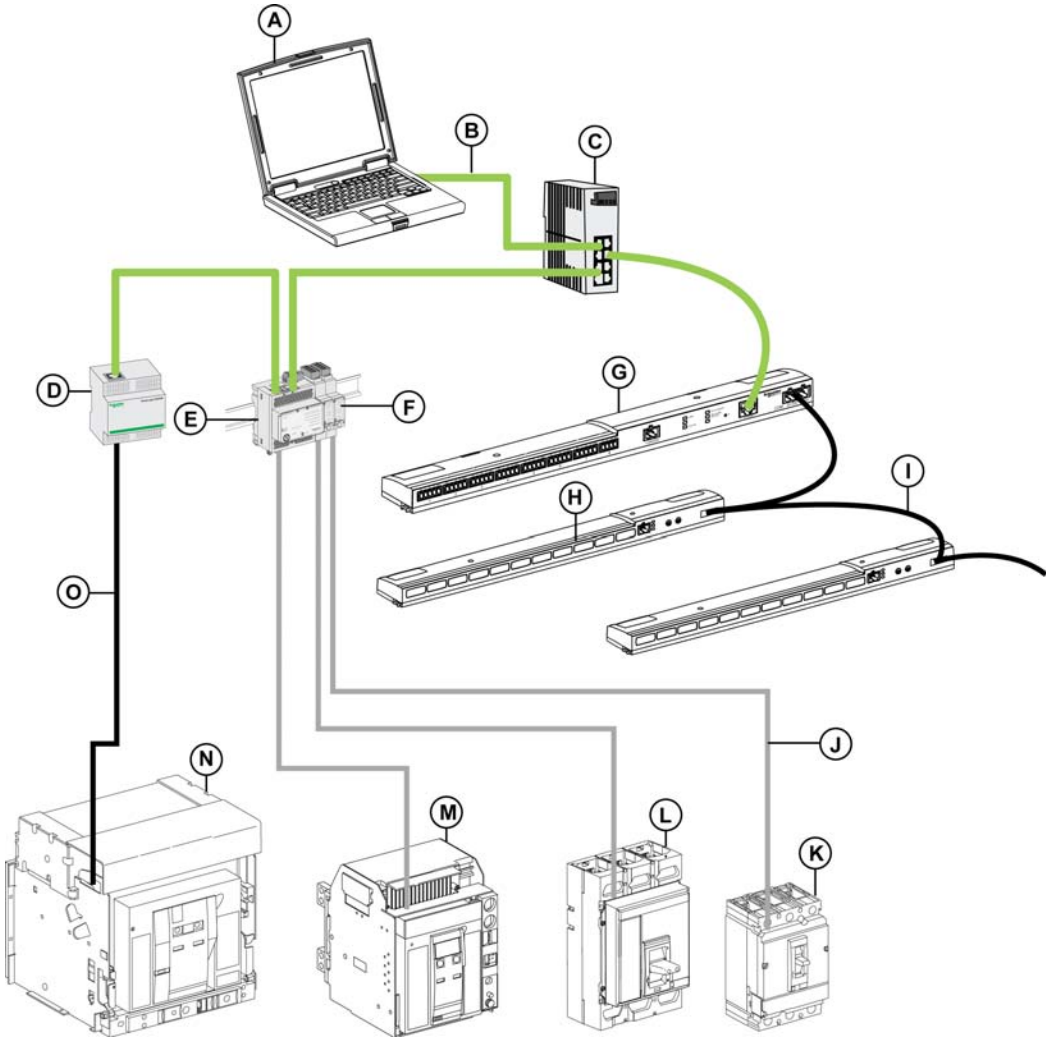
A PC running Ecoreach
B Ethernet communication
C IFE Ethernet interface for LV circuit breaker
D ULP cable
E Compact NSX circuit breaker
F Masterpact NT circuit breaker (BCM ULP)
G Masterpact NW circuit breaker (BCM)

Typical Network Connection

An Ethernet switch allows you to connect multiple devices in a single network.

You can connect devices to IFE, EGX gateway, and Acti 9 Smartlink IP devices through an Ethernet switch.

The figure shows an example of multiple devices connected to a single network using an Ethernet switch:



A PC running Ecoreach
B Ethernet communication
C ConneXium Ethernet switch
D EGX100/300 gateway
E IFE Ethernet interface for LV circuit breaker
F IFM Modbus-SL interface for LV circuit breaker
G Acti 9 Smartlink IP
H Acti 9 Smartlink RS485
I Modbus serial cable
J ULP cable
K Compact NSX circuit breaker
L Compact NS 630b-3200 circuit breaker
M Masterpact NT circuit breaker (BCM ULP)
N Masterpact NW circuit breaker (BCM)
O Modbus serial cable

Connect to Device through TCP/IP Network

Step	Action
1	Connect the device to the PC.
2	Start Ecoreach and connect it to the device.
3	Click the **Configuration** tab *(see page 48)*.
4	Click **Communication** in the **Display** list.
5	Select a device from TreeView. **NOTE:** The device must be attached to a TCP/IP communication access point *(see page 82)* and must be ready for communication.
6	Click the **PC Communication** section in the display area.
7	Verify the communication parameters.
8	Open the **Network** subsection.
9	Verify that the connection type is **TCP/IP**.
10	Select **Network** in the **Connection** list.
11	Click the **ON** button. **Result:** The progress bar next to the **ON** button indicates the progress of connection.
12	At the end of the connection sequence: If the connection is made: ● **ON** button turns green. ● Progress bar turns green. If the connection fails: ● Progress bar stops. ● Relevant error is displayed in the error window.

Chapter 3
Principles

What Is in This Chapter?

This chapter contains the following sections:

Section 3.1
Operating Modes

Introduction

Overview

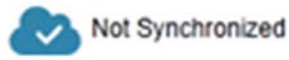
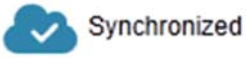
The Ecoreach software operates in cloud-connected mode and the projects created are stored in the Ecoreach cloud storage allotted to you. Once the project is created, you are ready to use the complete features of the Ecoreach software. When you save the project, Ecoreach will prompt you to save it in your local PC for the first time and the same project will also be saved in the cloud as reference. Whenever you modify and save, the project gets automatically synchronized with the project reference in cloud. As a result, you can completely prepare a project offline even when you are at the office.

During the commissioning phase, you may sometime have a challenge to access the internet connection at customer sites. If this occurs, you can still continue to use the Ecoreach software with complete features for a grace period of 30 days within which you can synchronize the project to the cloud. The grace period details will be displayed when the mouse pointer rests on the cloud status bar. The grace period starts once you modify and save a cloud project when you are not connected to Ecoreach cloud

The complete features and sub features of Ecoreach software are:

- Prepare Project Architecture
  - Create a New Project Architecture
  - Edit a Project Architecture
- Adding a Device
  - Adding Schneider Electric Devices
  - Adding Other Devices
- Create a Project Architecture - Advanced Option
  - Device Discovery
  - Device Discovery Report
  - Add Discovered Devices into Project
- Setup a Device
  - Setup a Device Online
  - Setup a Device Offline
  - Contextual Help of Device Settings
- Artifacts
  - Project Artifacts
  - Device Artifacts
- Prepare Communication Architecture
  - Adding Devices in Communication Network
  - Modifing Devices in Communication Network
  - Communication Settings Consistency
  - Connecting to a Device
  - Device Connection through Different Modes
  - Device Identification
  - Transfer of Settings for a Device
  - Transfer of Settings - Multiple Devices
  - Communication Test and its Report
  - Export Project Configuration
- Monitoring and Control
- Logs and Histories
- Configuration Report
- Firmware Upgrade and Compatibility Matrix Device/Firmware with Corrective Actions

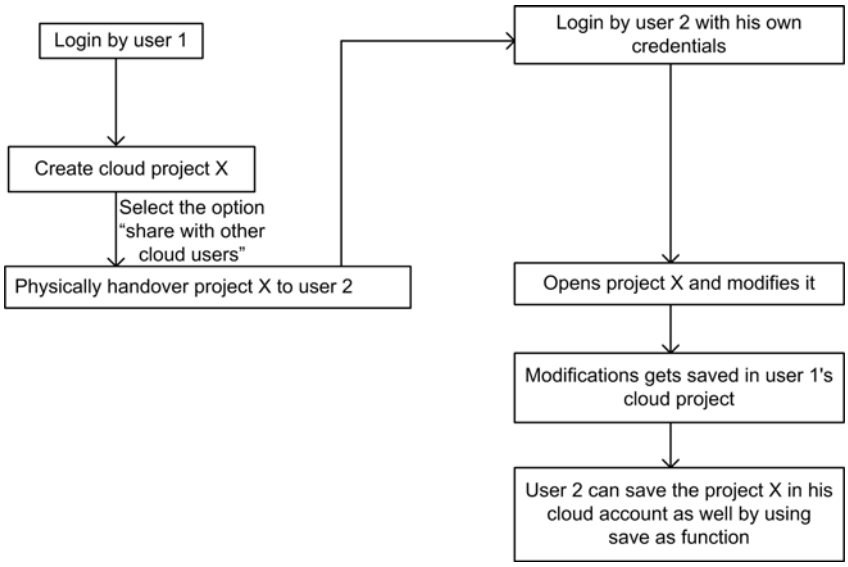
The status of cloud connection and the project synchronization are displayed in the toolbar *(see page 45)*:

Status	Description
	Indicates that an active internet connection is available and the modified project copy in the PC is synchronized with the reference project in Ecoreach cloud.
	Indicates that an active internet connection is available but the modified project copy in the PC is not synchronized with the reference project in Ecoreach cloud.

Sharing Cloud Projects

Once you create a cloud project, Ecoreach provides you an option to share the project with a second user by selecting the option, **Share this project with other cloud users** under the Project properties. Once this option is selected, you can transfer the project to the second user by using any of the file transfer methods like USB storage device, Email, so on. The second user can work on the project shared by you and perform any modifications. When the second user saves the project, it gets saved onto your cloud project even though you are the project owner.

The figure shows an example of this feature usage:



NOTE: This feature shall be used between two users working on a same project from the same company or two users working on the same project from two different companies. Please note that the sharing of projects between users should be done only with mutual agreement. Schneider Electric is not responsible for any consequences due to misuse of this feature.

Create a Project without Internet Connectivity

Under normal conditions, you will create a project in Ecoreach with an active cloud connection so that the project gets stored in Ecoreach cloud and will be the reference project. Ecoreach also manages a condition when you need to create a local project when the internet connection is unavailable.

After you create a project in this mode, you can setup the device configuration when connected to the devices.

The following features are also available after the project is registered in Ecoreach cloud and gets synchronized with the reference project in cloud:

- Adding devices to the project after identifying the devices through Device Discovery function
- Setup of device parameters in project when it is disconnected from Ecoreach (offline device configuration)
- Adding artifacts to the project
- Communication test and its report
- Exporting project configuration
- Multiple devices configuration
- Compatibility matrix for device/ firmware with corrective actions

NOTE: In the local project mode, wherever the icon  is displayed indicates that the features will be available after the project is registered in Ecoreach Cloud.

Synchronize a Local Project to the Reference Project in Ecoreach Cloud

After the Internet connection with Ecoreach is established, you can update the project in your cloud account:

Step	Action
1	Click the  icon in the toolbar *(see page 45)*, which prompts for confirmation of the action.
2	Click **Yes** and save the project. **Result:** The project gets saved on your local PC and in Ecoreach cloud.

Section 3.2
Ecoreach Process

Introduction

Overview

You can create an Ecoreach project to configure and monitor the devices, execute wiring check tests and generate reports. The projects created are saved in cloud and locally in your PC, and when cloud connection is unavailable, the projects are saved only in your PC.

Creating a Project

Step	Action
1	Click the **Create a new project** button. **NOTE:** Clicking the New Project button closes the current project. If the current project has been modified since the last save, a dialog box warns you that the latest modifications are lost. Cancel the action or proceed to create a new project.
2	Enter the project details *(see page 47)* such as customer details, internal references, and related artifacts.
3	Prepare a project architecture *(see page 61)*.
4	Prepare configuration in offline mode *(see page 67)*.
5	Prepare communication architecture *(see page 80)*.
6	Connect to a device *(see page 86)*. **NOTE:** Refer to Connection Procedure to check the physical connection.
7	Transfer the device settings *(see page 88)* (upload or download).
8	Monitor *(see page 91)* the status of device and its modules.
9	Perform Control *(see page 95)* operations like open, close, reset of the circuit breakers.
10	Generate and print configuration report *(see page 98)*.
11	Upgrade the firmware *(see page 100)* of modules and devices.

Chapter 4
Description of UI Pages

What Is in This Chapter?

This chapter contains the following sections:

Section 4.1
Start Page

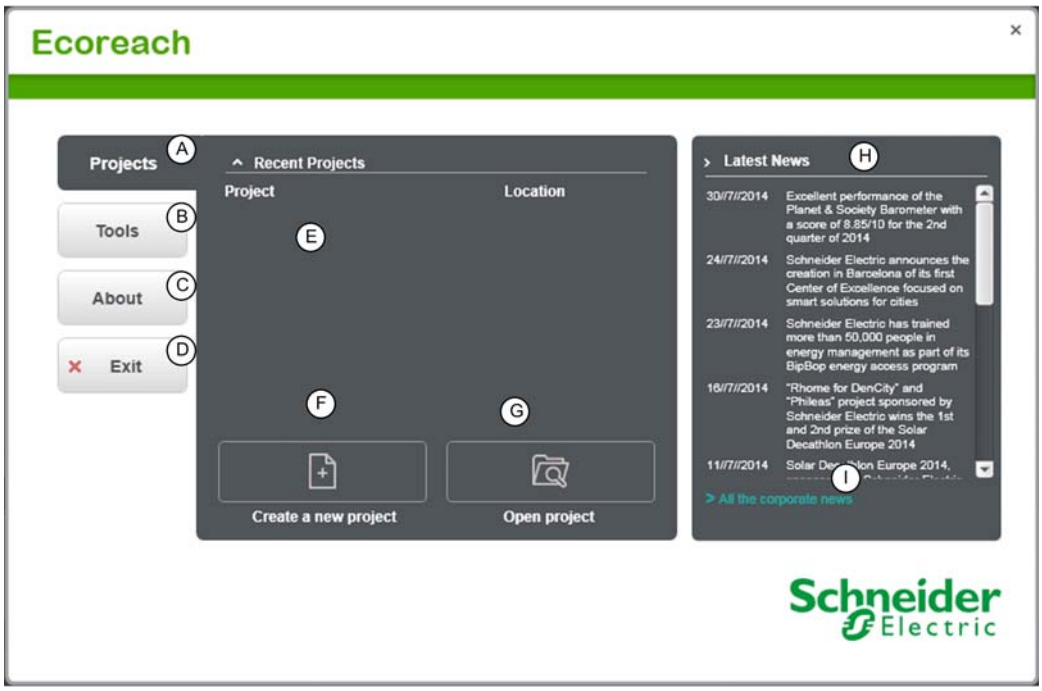
What Is in This Section?

This section contains the following topics:

Projects

Overview

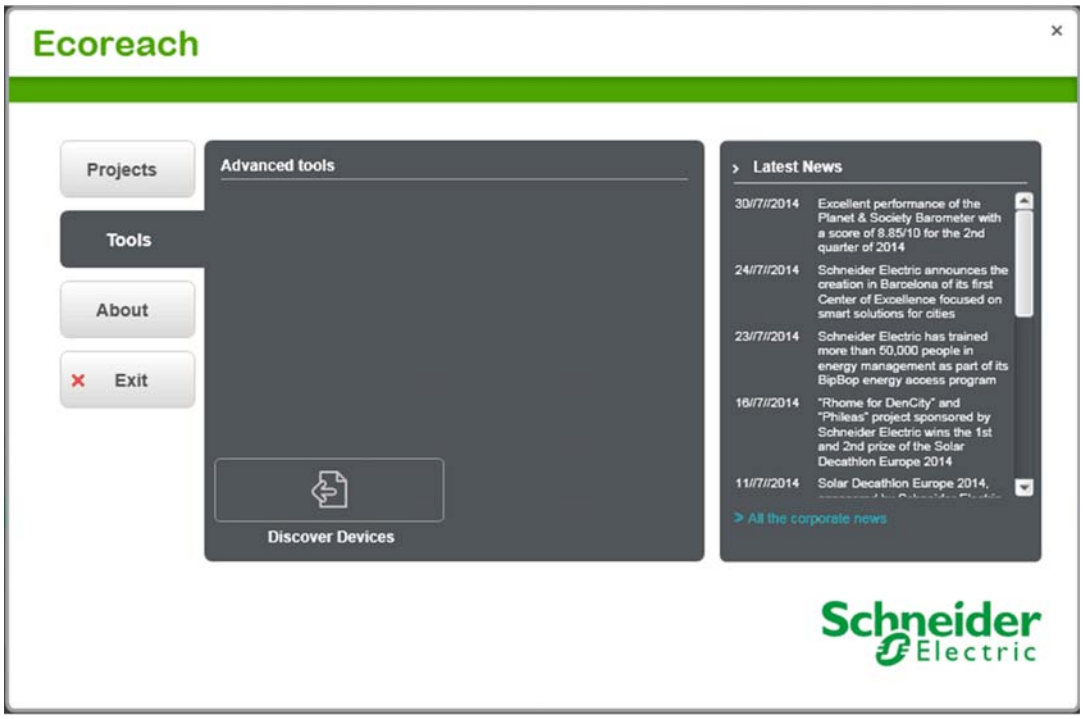
The start page provides access to the Ecoreach main functions.



Legend	Tab/Function	Description
A	Projects	Allows you to access the main project creation page.
B	Tools *(see page 42)*	Allows you to access advanced project creation by device discovery.
C	About	Provides information about software, related agreements, and system details.
D	Exit	Allows you to exit from the software.
E	Display area	Displays the selected tab function.
F	Create a new project *(see page 37)*	Allows you to create a new project.
G	Open project	Allows you to open an existing project.
H	Latest News	Provides information about Schneider Electric's latest news by RSS feeds.
I	All the corporate news	Allows navigation to the Schneider Electric corporate website.

Tools

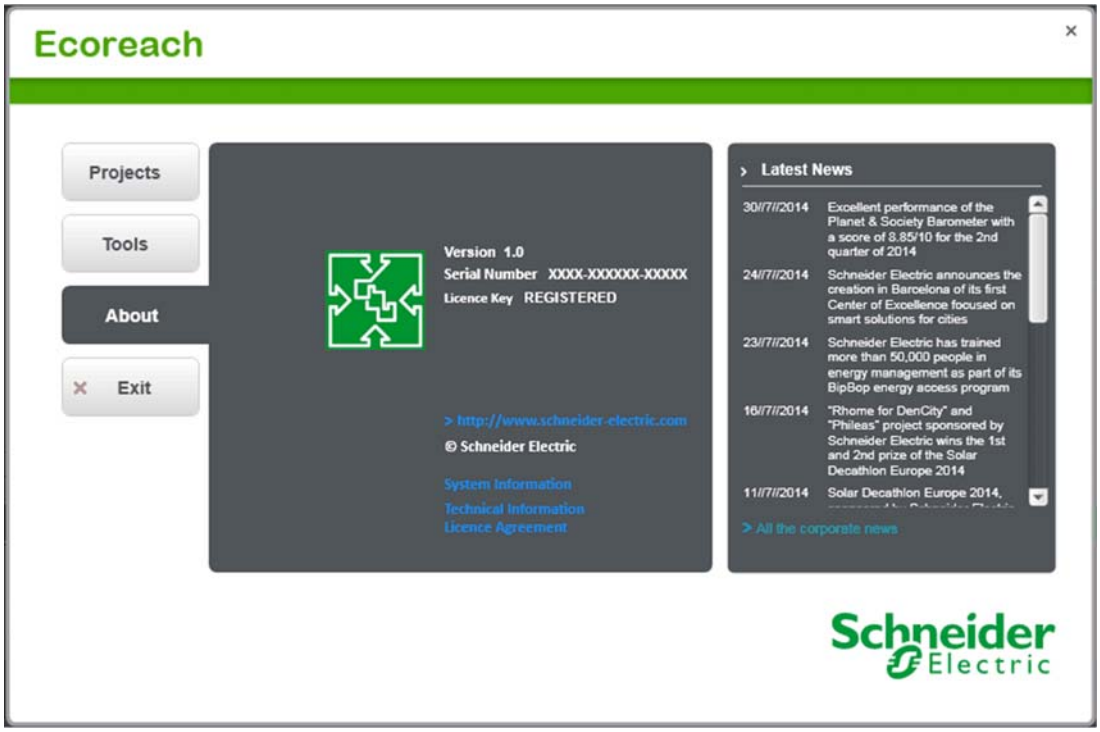
Overview



In the **Tools** tab, you can add the devices to the project architecture by discovering devices *(see page 65)* in the network.

About

Overview



The **About** tab provides the following information about the software and the user PC:

- Software version
- License key of the software
- System information of the user PC
- Technical information about the current software version
- Schneider Electric Improvement Program agreement
- End user licence agreement

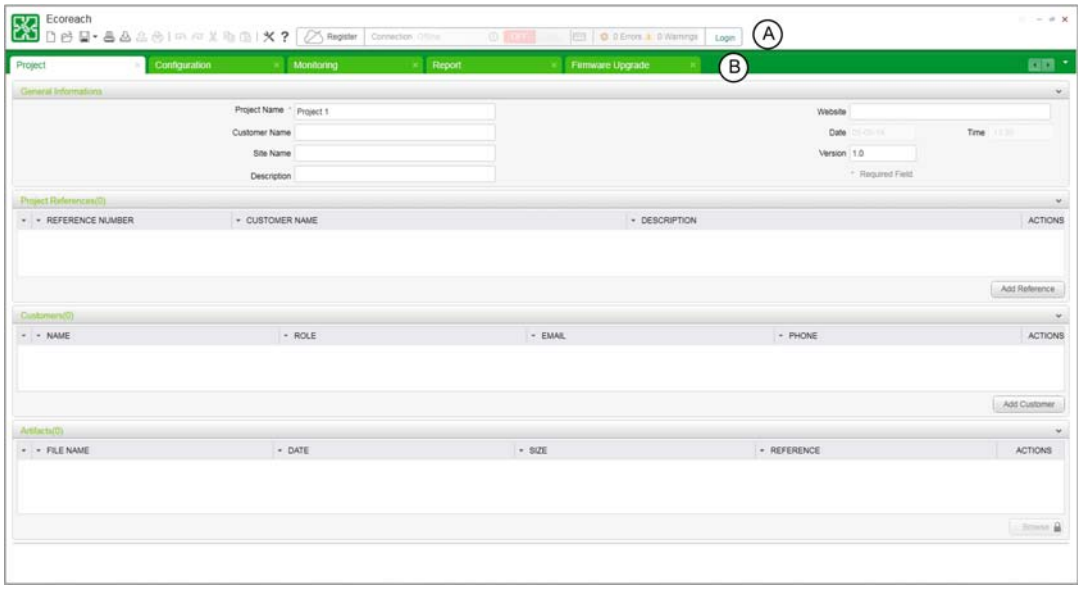
Section 4.2
Main Page

What Is in This Section?

This section contains the following topics:

Toolbar

Overview

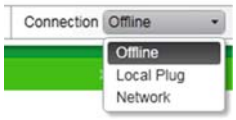


Legend	Zone	Description
A	Toolbar	Displays a set of icons to perform functions.
B	Tab zone	Includes tabs and a display area with content depending on the tab selected.

Toolbar

The toolbar allows you to access the Ecoreach general functions.

Icon	Function	Description
	Start Page	Allows you to access the start page.
	New	Allows you to create a new project. **NOTE:** This function is the same as the **Create a new project function** *(see page 37)* on the start page, of the **Projects** tab.
	Open	Allows you to open an existing project. **NOTE:** This function is the same as the **Open project** function on the start page, of the **Projects** tab.
	Save	Allows you to save the project.
	Import	Allows you to import discovered devices in the network. **NOTE:** This function is same as the import function described in the **Tools** tab *(see page 42)*.
	Export *(see page 89)*	Allows you to export the devices and its configuration details in *.CSV* format.
	Print	Allows you to print the selected device configuration in a preview window.
	Undo	Allows you to cancel or reverse the last function executed.
	Redo	Allows you to reverse the undo action.

Icon	Function	Description
	Cut	Allows you to remove the selection from the active document and places it on clipboard.
	Copy	Allows you to copy the selected items to the clipboard.
	Paste	Allows you to place the content of the clipboard at the insertion point.
	Settings *(see page 58)*	Displays the Ecoreach application settings.
	Help *(see page 76)*	Allows you to access the online help.
	Cloud login	Indicates that the project is a cloud project. *(see page 34)*
	Operating modes *(see page 34)*	Allows you to select the operating modes: **Offline**, **Local Plug** or **Network**.
	OFF/ON button	The **ON** button allows the Ecoreach project to be connected to the device. It turns green when the software is connected to the device. The **OFF** button allows the Ecoreach project to be disconnected from the device. It turns red when the software is not connected to the device.
	Progress bar	Indicates the progress of the connection.
	Error and Warning window *(see page 57)*	Indicates the number of detected errors and warnings detected by Ecoreach.

Tab Zone

The content of the Tab zone depends on the selected tab.

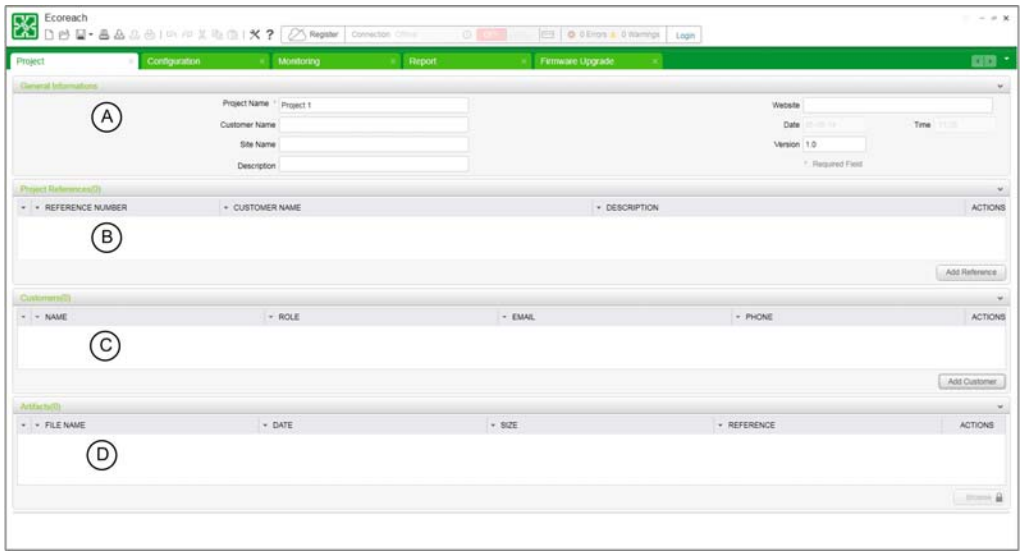
- Project *(see page 47)*
- Configuration *(see page 48)*
- Monitoring *(see page 50)*
- Report *(see page 52)*
- Maintenance *(see page 53)*

Information Icon

You can point to the information icon  to know the description of the fields.

Project

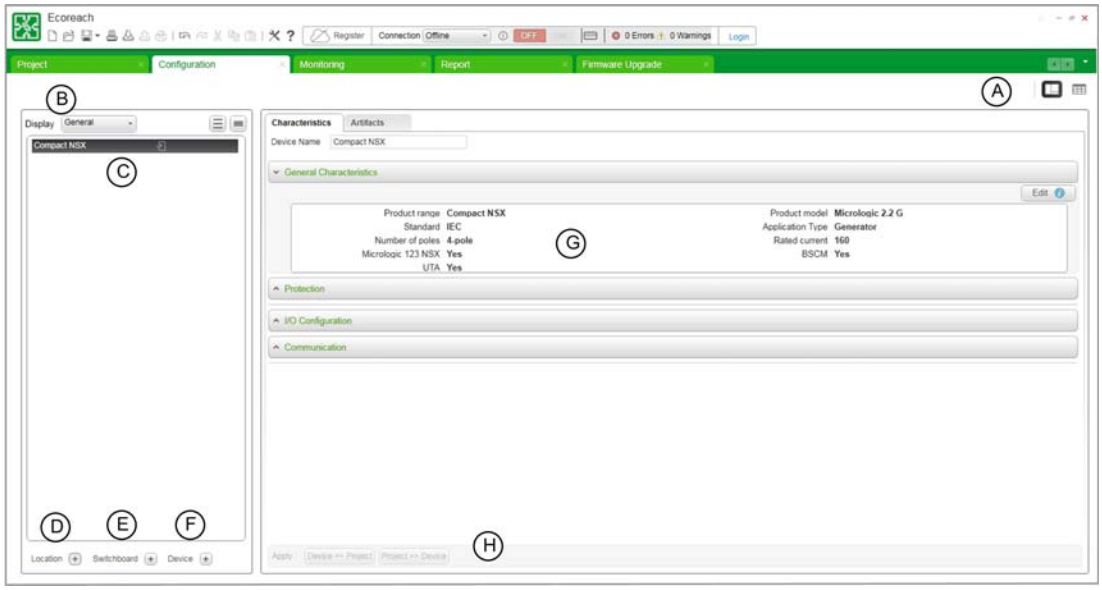
Overview



Legend	Area/Function	Description
A	General Informations	Displays the fields to enter project details such as the project name, customer name, site name, date, time, and version.
B	Project References	Displays the fields to enter the project reference number. The project reference number is used for later retrieval of the project.
C	Customers	Displays the fields to enter the customer details.
D	Artifacts *(see page 77)*	Displays the artifacts section.

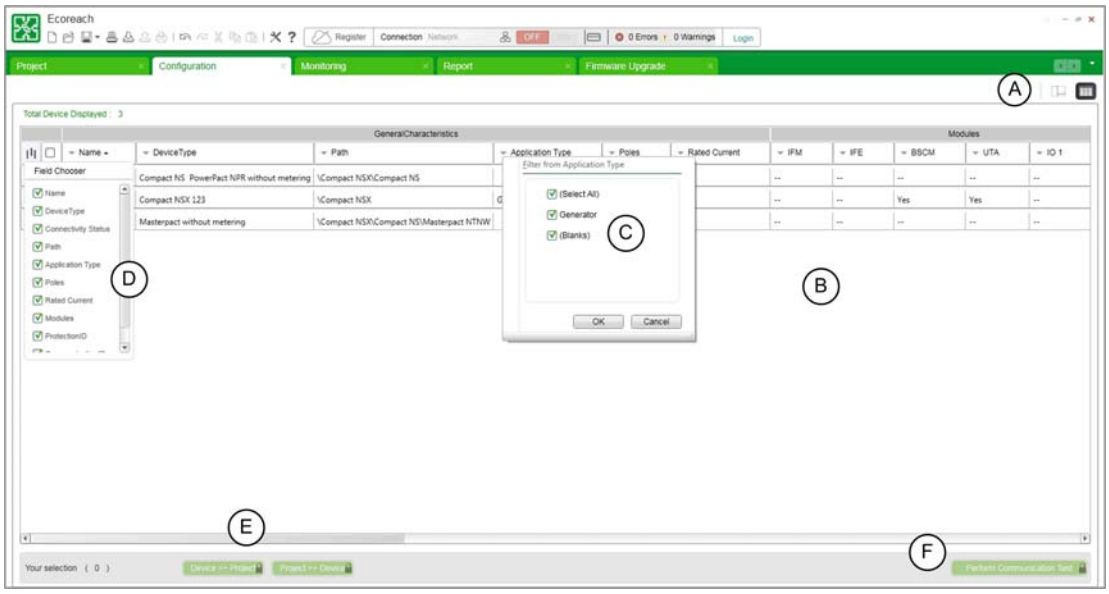
Configuration

TreeView



Legend	Tab/Function	Description
A	View selection button	Allows you to select the view: TreeView or TableView.
B	Display	Selects the type of display for the TreeView: **General** or **Communication**.
C	TreeView Architecture *(see page 61)*	Displays the working area to manage the project architecture.
D	Location button *(see page 61)*	Allows you to add a location to a project architecture.
E	Switchboard button *(see page 61)*	Allows you to add a switchboard to a project architecture.
F	Device button *(see page 61)*	Allows you to add a device to a project architecture.
G	Display area	Displays the properties of a selected element.
H	Setting Transfer buttons *(see page 88)*	Allows you to transfer the settings from device to project and project to device.

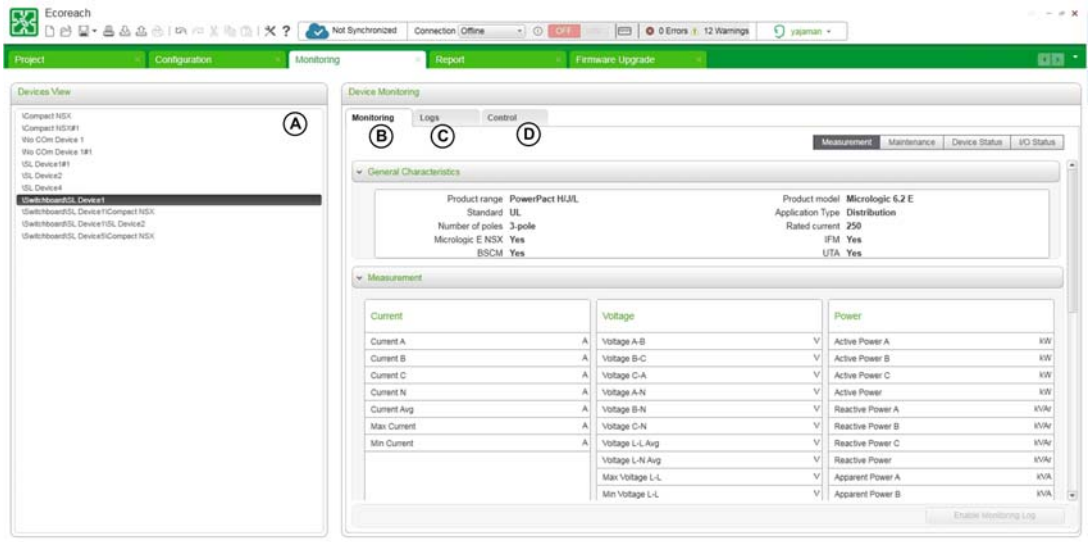
TableView



Legend	Tab/Function	Description
A	View selection button	Allows you to select view: TreeView or TableView.
B	Display area	Displays the device characteristics.
C	Column selector	Selects the columns to be displayed.
D	Filter	Allows you to apply filter criteria on columns.
E	Setting transfer buttons *(see page 88)*	Allows you to transfer the settings from device to project and project to device.
F	Perform Communication Test button *(see page 89)*	Allows you to generate the communication test report.

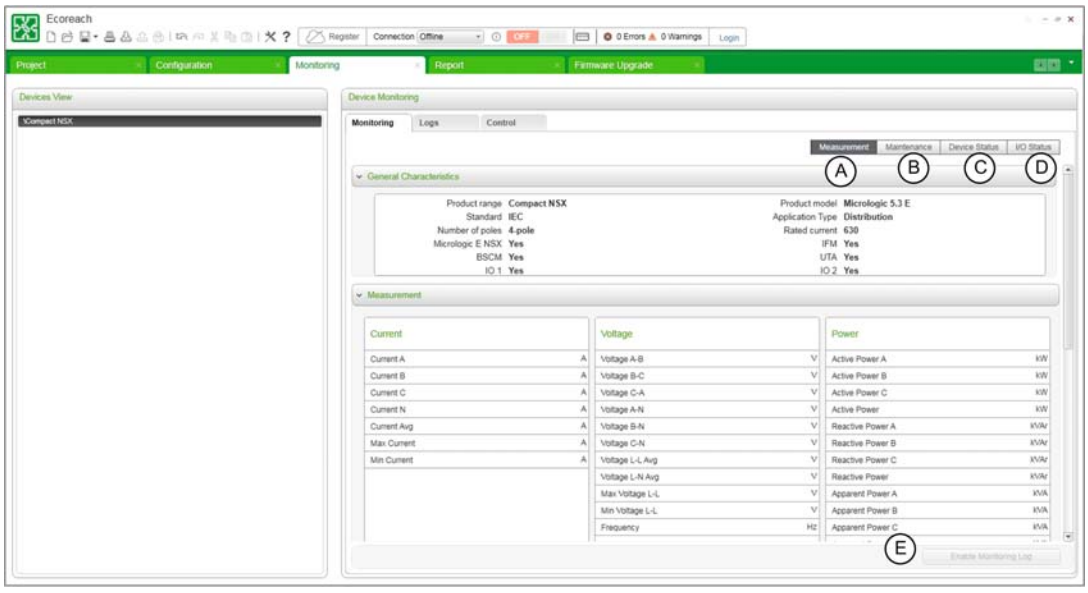
Monitoring

Overview



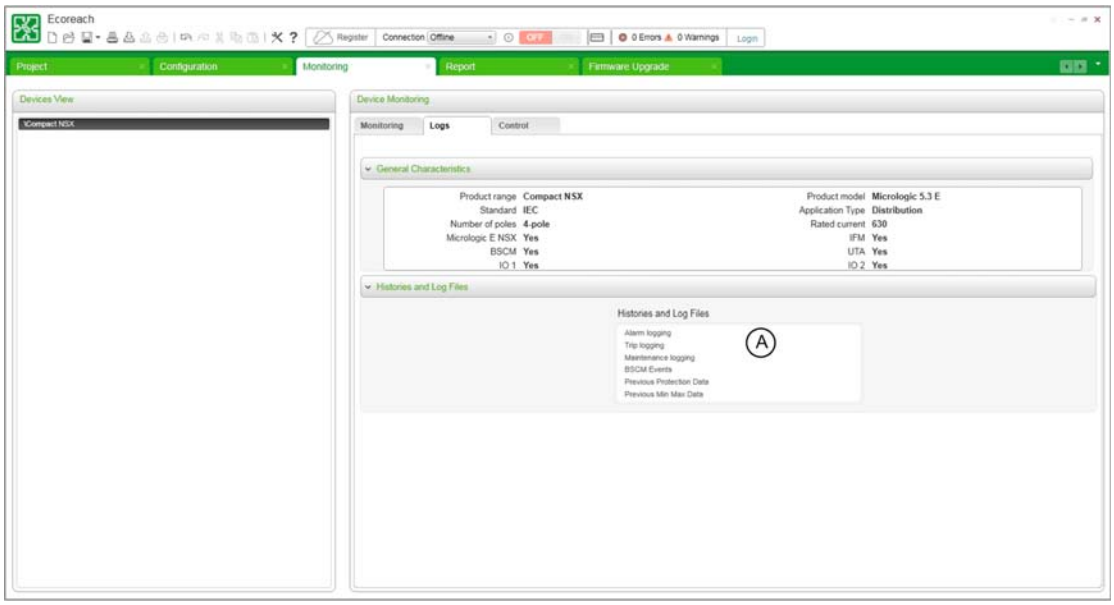
Legend	Area/Subtab	Description
A	Device list	Lists the devices of the project.
B	Monitoring *(see page 91)*	Displays the monitoring parameters like real-time measurement, maintenance indicators, device, and I/O status.
C	Logs *(see page 94)*	Allows you to retrieve and display the logs stored in the device.
D	Control *(see page 95)*	Allows you to control the circuit breaker.

Monitoring Tab



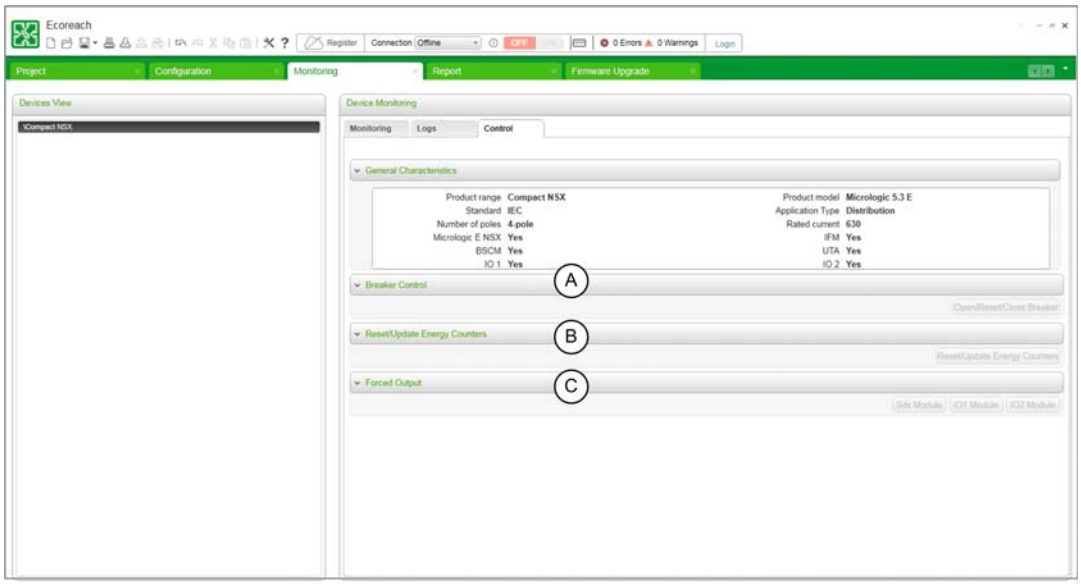
Legend	Tab/Function	Description
A	Measurement *(see page 91)*	Displays measurement values.
B	Maintenance *(see page 91)*	Displays maintenance values.
C	Device Status *(see page 91)*	Displays device status.
D	I/O Status *(see page 91)*	Displays I/O status.
E	Enable monitoring Log *(see page 91)*	Allows you to save the data in *.CSV* format.

Logs Tab



Legend	Area/Subtab	Description
A	Histories and Log files *(see page 94)*	Lists the histories and log events.

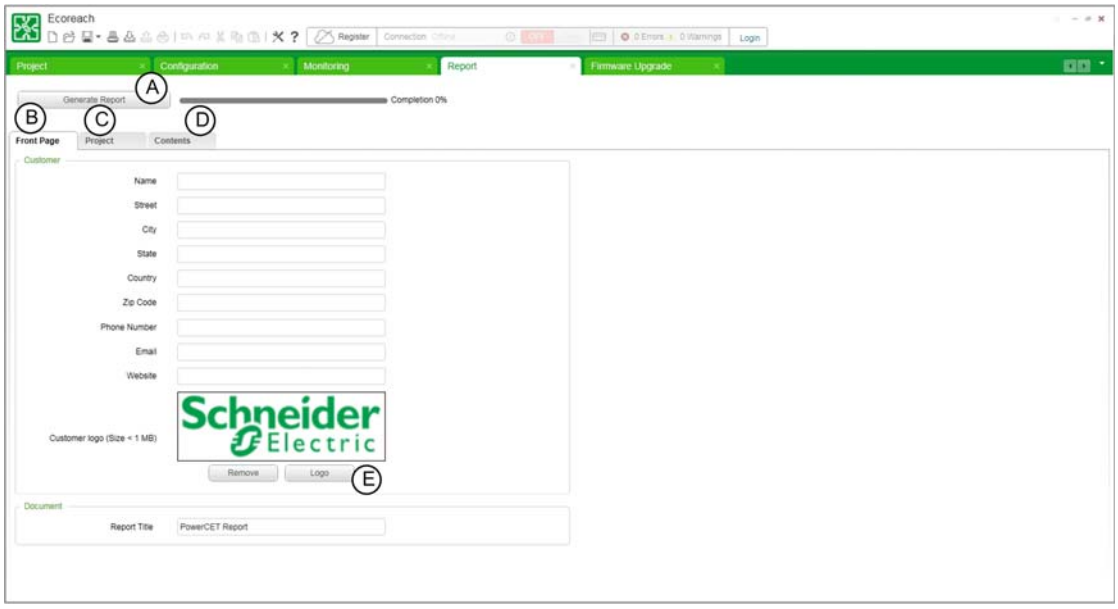
Control Tab



Legend	Tab/Function	Description
A	Breaker Control *(see page 95)*	Allows you to control the circuit breakers.
B	Reset/Update Energy Counters *(see page 96)*	Allows you to reset or update the circuit breakers energy counters.
C	Forced Output *(see page 96)*	Displays the forced output.

Report

Overview



Legends	Button/Tab	Description
A	Generate Report Button	Allows you to generate and print a configuration report.
B	Front Page	Allows you to record the user details.
C	Project	Allows you to record the project details.
D	Contents	Provides selection options for specific project details for the report header, footer, front page, and so on.
E	Logo button	Allows you to replace the current logo with new logo.

Front Page Tab

This tab allows you to enter or modify the user details. The details entered in this tab appears on the front page of the report.

Project Tab

This tab allows you to modify the project details. The details entered under this tab appears in the report.

Contents Subtab

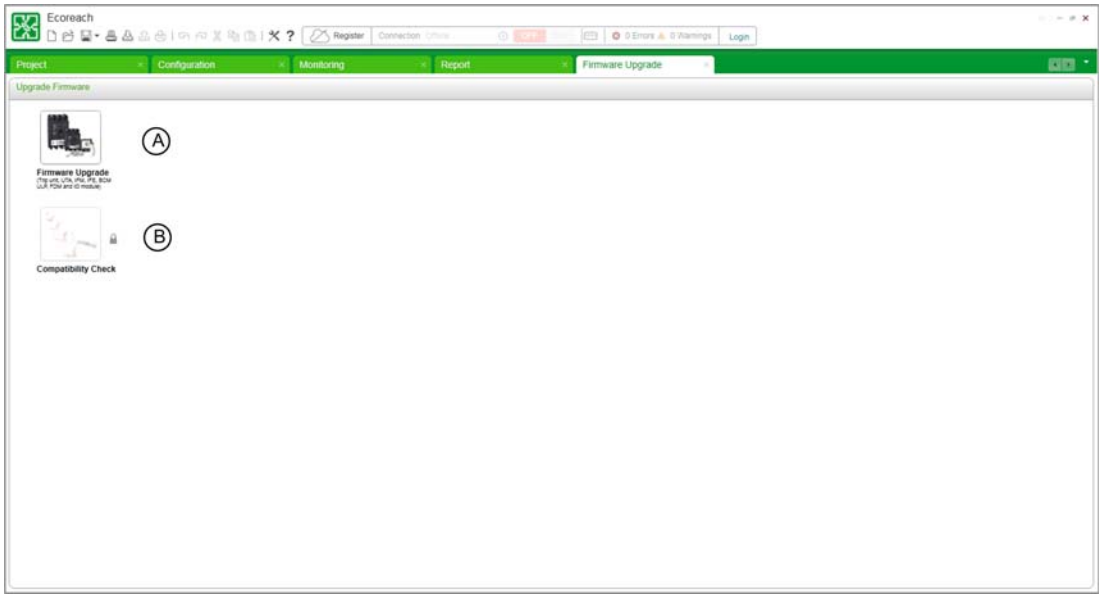
This tab provides the selection option for the required format of header, footer, front page, and project details to be included in the report. This tab includes:

- Report Header
- Report Footer
- Front page
- Advanced sections

Each of these sections includes a check box to select the options.

Maintenance

Overview



Legend	Function	Description
A	Firmware Upgrade (Trip unit, UTA, IFM, IFE, BCM ULP, FDM, and IO module) *(see page 100)*	Allows you to upgrade the firmware of the Micrologic trip unit for the Compact NSX and PowerPact H-, J-, and L-frame circuit breakers, UTA maintenance module, IFM, IFE, BCM ULP, FDM121, and IO modules.
B	Compatability Check *(see page 103)*	Allows you to diagnose and corrects all discrepancy issues in the ULP modules.

Section 4.3
Application Option

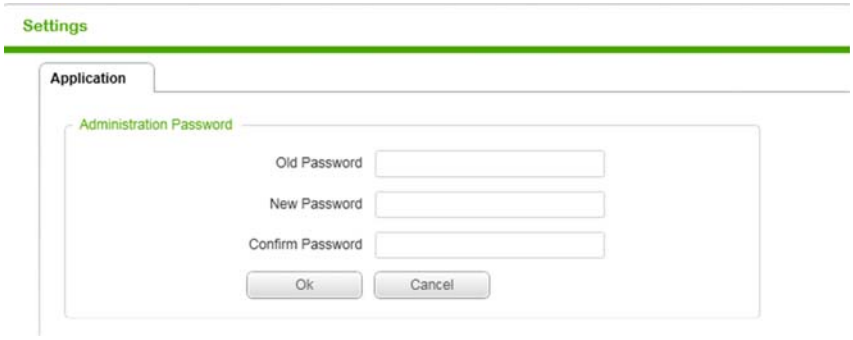
What Is in This Section?

This section contains the following topics:

Administration Password

Overview

You can change the administration password by clicking the **Settings** icon *(see page 58)* in toolbar *(see page 45)*.



NOTE: The administration password cannot be retrieved if you lose the existing password. Reinstall and register the software to create a new password.

Language

Overview

You can select the language by clicking the **Settings** *(see page 58)* icon in the toolbar *(see page 45)*.

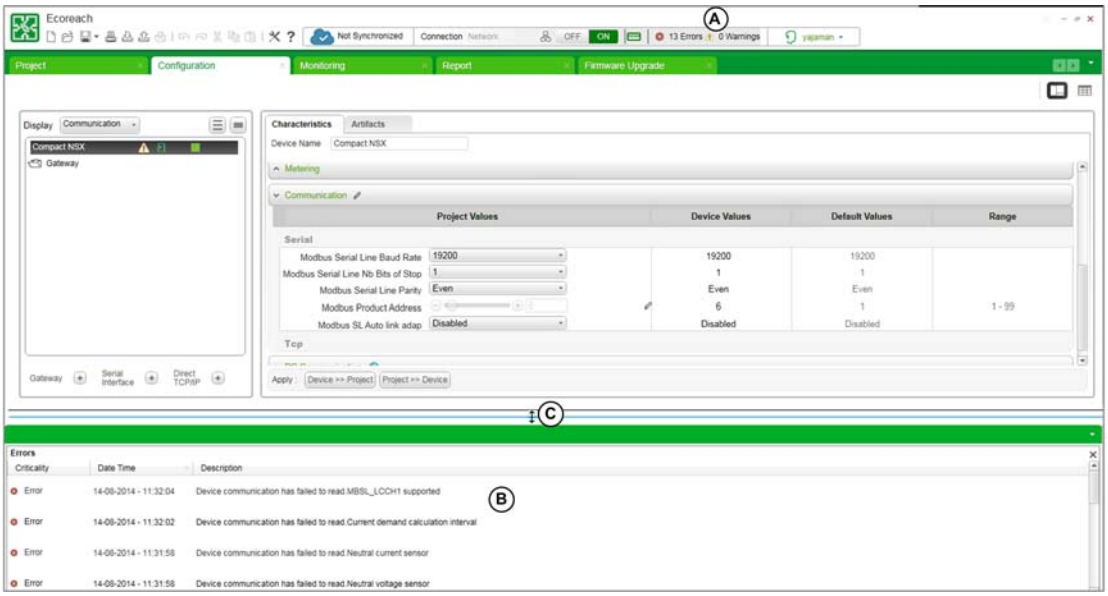
You can select any of the following languages from the **Supported Languages** drop-down list:

- English
- French
- German
- Spanish
- Chinese
- Italian
- Russian

Error and Warning Window

Description

You can view the details of the errors and warnings only in the **Configuration** tab *(see page 48)* and **Monitoring** tab *(see page 50)*.



Legend	Zone	Description
A	Error and warning status	Indicates the number of errors and warnings which occurred during the project session.
B	Error and warning window	Displays the errors and warnings with the time and description.
C	Vertical drag icon	Allows you to increase or decrease the Error and Warning window.

You can view the status of the errors and warnings in toolbar *(see page 45)*.

Error and Warning Window

The error and warning window displays at the bottom pane of the **Configuration** tab *(see page 48)* and **Monitoring** tab *(see page 50)* in two cases:

- when you click the error and warning status icon in the tool bar
- when a new error or warning occurs

The window can be drag and dropped or closed. The error window can be sorted based on criticality, date and time, or by description.

The window displays the following information:

Criticality	Date Time	Description
• Error • Warning	Date and time of occurrence	Reason for occurrence

Error Log Display and Management

The recently occurred errors and warnings are displayed at the top of the error and warning window.

The window displays a maximum of 512 errors or warnings.

Examples of Errors and Warnings

The examples of errors and warnings are:

- Connection has failed.
- Device communication has failed to read....
- Device communication has failed to write....

Settings

Overview

The **Settings** icon  is available in the toolbar *(see page 45)*. You can modify the basic tool settings from this page.

Application

Application tab consists of the following settings:

- **Password Settings:** Allows you to modify the password.
- **Language:** Allows you to select any of these languages: English, French, German, Spanish, Chinese, Italian, and Russian.
- **Date & Time Format**: Allows you to set the date and format time according to local practices.
- **General:** Allows you to set the limit of maximum number of subhierarchy levels in the TreeView *(see page 48)* in the configuration tab.
- **Default Directory:** Allows you to set the default directory to save the project and for firmware downloads.

Chapter 5
Project Management

What Is in This Chapter?

This chapter contains the following sections:

Section 5.1
Project Architecture

What Is in This Section?

This section contains the following topics:

Project Architecture

Introduction

A project architecture can be created, modified, or redefined in the TreeView *(see page 48)*. The project elements such as location, switchboard, and device can be added or modified in the project architecture. The project architecture provides a clear representation of the switchboard location, grouping, and feeder identification. The devices that are added to communication access points such as gateways and serial interfaces can be grouped as per the physical connections and can be used as the project reference architecture. The changes made at the site can be tracked using the reference architecture.

Definition of Project Elements

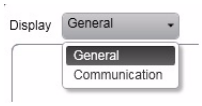
Location: A location is a place where one or more switchboards are installed. A location can be a site or a building.

Switchboard: A switchboard is an assembly of single or multiple columns, which contains devices and their wiring system.

Device: A device is a single product such as a circuit breaker or power meter which is assembled in a switchboard.

TreeView Toolbar

The TreeView toolbar on the left pane of the **Configuration** tab *(see page 48)* displays the desired project elements and allows you to modify the view of the project architecture:

Pull-down menu/Button	Function	Description
	**Display**	Displays two architectures: ● **General**: Enables you to create a project architecture where the location, switchboard, and devices are organized in a logical order. ● **Communication**: Enables you to add communication gateways into the project architecture. You can associate the slave devices to the respective gateways.
	**Expand_All**	Expands the complete project hierarchy to display all elements.
	**Collapse_All**	Collapses the project architecture to display elements in level 1 only.

Creating a New Project Architecture

The table shows the steps to create a new project architecture:

Step	Action
1	Click the **Configuration** tab *(see page 48)*, and then click **General** in the **Display** list.
2	Click the **Location** button in the left pane. **Result:** A list appears with the following options: ● **Site** ● **Building** ● **Floor** ● **Electrical Room** ● **Custom**
3	Click the desired option from the list. **Result:** ● Adds the location in the left pane. ● Display area displays the characteristics of the selected location item in the **Characteristics** tab.
4	Edit the location characteristics.
5	Click the **Switchboard** button. **Result:** ● Adds the switchboard under the selected location in the left pane. ● Display area displays the characteristics of the switchboard.
6	Edit the switchboard characteristics.

Step	Action
7	Click the **Device** button. **Result:** Opens the **Select Device Characteristics** dialog box.
8	Select the required device from the device catalog, and then click **Ok**. **Result:** ● Adds the device in the left pane. ● Display area displays the characteristics of the device.

Editing a Project Architecture Item

Right-click on the project architecture item in the TreeView *(see page 48)* to perform the following functions:

- **Rename**
- **Delete**
- **Cut**
- **Copy**
- **Paste**
- **Copy Settings**
- **Paste Settings**
- **Print**

The **Copy** and **Paste** function allows you to copy and paste an item to create a duplicate instant of it in the project architecture.

The **Copy Settings** and **Paste Settings** function allows you to copy and paste only the settings from one item to another item in the project architecture.

When performing the copy and paste setting action, you may get a discrepancy window if the settings of both devices do not match. Parameters that are highlighted in yellow color are dependant parameters which may be copied to the destination devices and parameters that are highlighted in red color are not matching and will not be copied to the destination devices.

NOTICE

RISK OF PARTIAL OR WRONG CONFIGURATION

Copy the settings of a device and paste the settings only to a similar device type (Example: Masterpact to Masterpact) with same current rating.

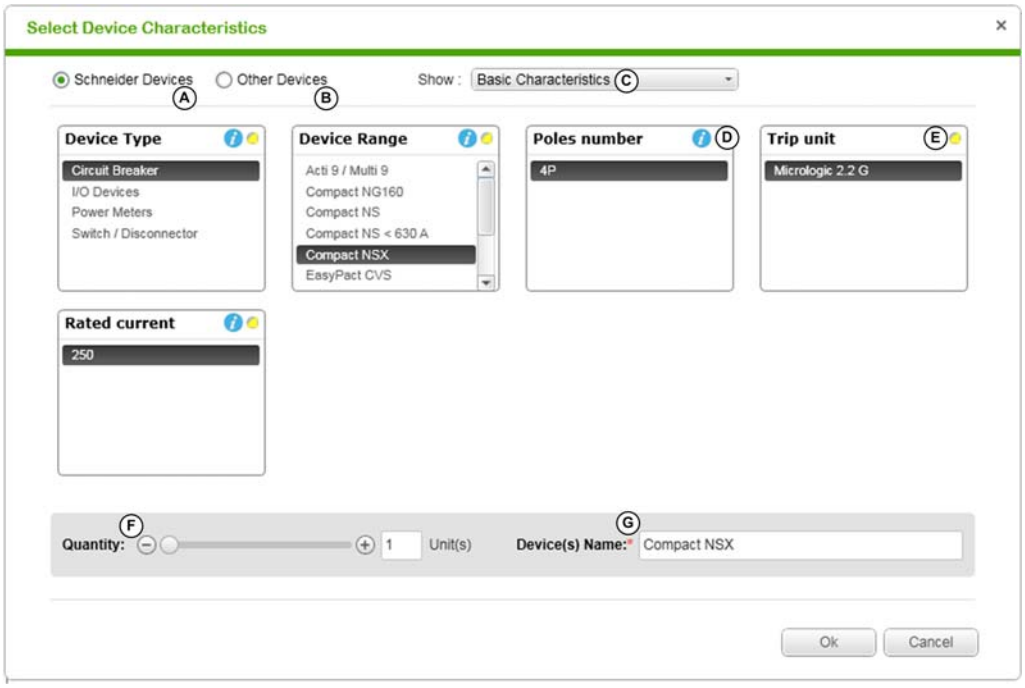
Failure to follow these instructions can result in equipment damage.

Selecting a Device

Introduction

You can select a device from Schneider Electric catalog. You can also add a third-party device *(see page 64)* into the project.

Adding Schneider Electric Devices



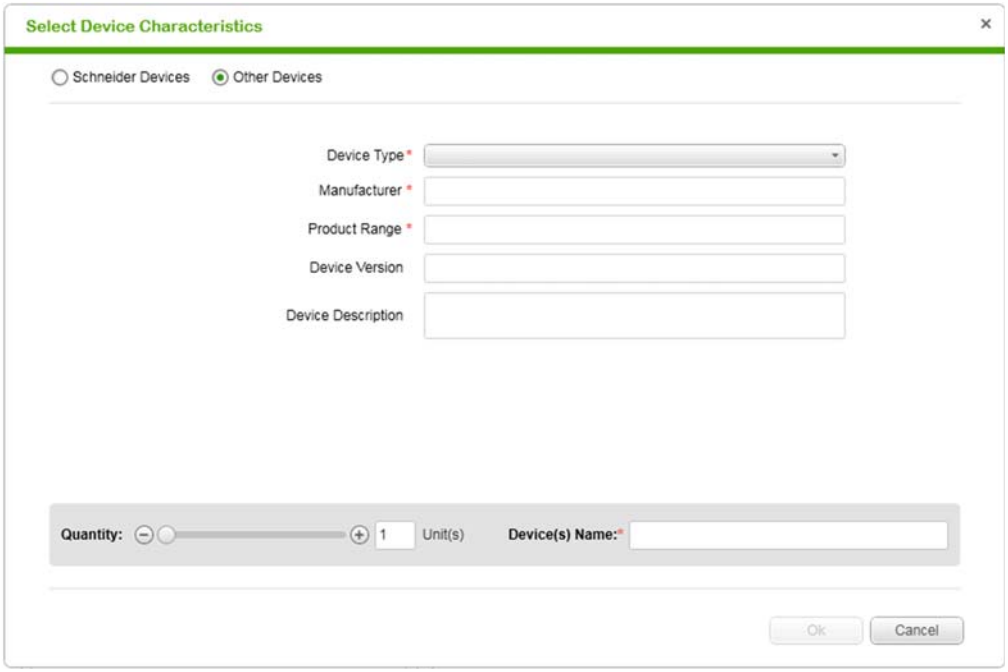
Legends	Tab/Function	Description
A	Schneider Devices	Allows you to add Schneider Electric devices.
B	Other Devices	Allows you to add third-party devices.
C	Show	Allows you to choose devices based on **Basic Characteristics** or **Basic and Advanced Characteristics**.
D	Information icon	Provides information about the selected item in the list.
E	Clear	Clears the selection.
F	Quantity	Allows you to enter the required quantity of the selected device.
G	Device Name	Displays the name of the selected device. It also allows you to modify the device name.

The table shows the steps to add Schneider Electric devices:

Step	Action
1	Click the **Device** button in the left pane of the **Configuration** tab *(see page 48)*. **Result:** Opens the **Select Device Characteristics** dialog box.
2	Click either **Schneider Devices** or **Other Devices**.
3	Click either **Basic Characteristics** or **Basic and Advanced Characteristics** in the **Show** list. **NOTE:** The **Basic and Advanced Characteristics** option enables you to select additional modules or accessories.
4	Select the device from the **Device Type** window.
5	Select the required options from subsequent lists.
6	Enter the **Quantity**.
7	Modify the device name if needed.
8	Click **Ok**. **Result:** Adds the device in the Project Architecture *(see page 61)* area.

Adding Other Devices

Ecoreach allows you to add and configure the third party devices also.



The table shows the steps to add other devices:

Step	Action
1	Click the **Device** button in the left pane of the **Configuration** tab *(see page 48)*. **Result:** Opens the **Select Device Characteristics** dialog box.
2	Click **Other Devices**. **Result:** Displays the fields to enter the device details.
3	Enter the device details.
4	Enter the **Quantity**.
5	Modify the device name if needed.
6	Click **Ok**. **Result:** Adds the device in the Project Architecture *(see page 61)* area.

Create Project Architecture - Advanced Options

Overview

In addition to creating a project architecture *(see page 61)* manually, you can also create a project by device discovery.

Device Discovery

Device discovery enables you to discover the devices in the network. It also provides an option to generate and save the report of the devices discovered in the network in a .pdf format.

Device discovery supports the communication network architecture when:

- Devices are connected to a Modbus TCP/IP network
- Devices are connected to a Modbus serial line network
- Devices are connected in a network, which includes both Modbus TCP/IP network and Modbus serial line network through gateway devices

Discovering Devices on a Modbus TCP/IP Network

Step	Action
1	Click the **Device Discovery** icon either in the **Tools** tab *(see page 42)* or in the toolbar *(see page 45)*.
2	Click **IP** in the **Communication Type** list. **Result:** Displays the Modbus TCP/IP **Scan Configuration**.
3	Enter the **Start IP Address**.
4	Enter either **Number of Devices** or **End IP Address**.
5	Click the **Discover Devices** button. **Result:** Displays the list of devices discovered in the TCP/IP network.
6	Select the required device.
7	Click the **ADD** button. **Result:** Adds the discovered device to the project architecture *(see page 61)*.

Discovering Devices on a Modbus Serial Network

Step	Action
1	Click the **Device Discovery** icon either in the **Tools** tab *(see page 42)* or in the toolbar *(see page 45)*.
2	Click **Serial** in the **Communication Type** list. **Result:** Displays the Modbus serial **Scan Configuration**.
3	Select one or more **COM Port**.
4	Use one of the following methods to select **Addresses**: ● Click the specific address in the **Addresses** list. ● Hold **CTRL** to select multiple addresses in the **Addresses** list. ● Click the **1...31** button to select the addresses from 1 to 31. ● Click the **1...247** button to select the addresses from 1 to 247.
5	Select one or more **Baud rate** listed.
6	Select one or more **Parity**.
7	Click **Discover Devices** button. **Result:** Displays the list of devices discovered in the serial network.
8	Select the required device.
9	Click the **ADD** button. **Result:** Adds the discovered device to the project architecture *(see page 61)*.

Discovering Devices on a Combination of IP and Serial Network

Step	Action
1	Click the **Device Discovery** icon either in the **Tools** tab *(see page 42)* or in the toolbar *(see page 45)*.
2	Click **IP** from the **Communication Type** list. **Result:** Displays the Modbus TCP/IP **Scan Configurations**.
3	Select the **Include deep scanning for serial network** check box. **Result:** Enables the **Addresses** list
4	Enter the **Start IP Address**.
5	Enter either **Number of Devices** or **End IP Address**.
6	Use one of the following methods to select **Addresses**: ● Click the specific address in the **Addresses** list. ● Hold **CTRL** to select multiple addresses in the **Addresses** list. ● Click the **1...31** button to select the addresses from 1 to 31. ● Click the **1...247** button to select the addresses from 1 to 247.
7	Click the **Discover Devices** button. **Result:** Displays the list of devices discovered in both IP and serial network.
8	Select the required device.
9	Click the **ADD** button. **Result:** Adds the discovered device to the project architecture *(see page 61)*.

Saving Device Discovery Report

The table shows the steps to save the device discovery *(see page 65)* result:

Step	Action
1	Click the **Save Report as PDF** button. **Result:** Opens the **Save As** dialog box.
2	Choose the location to save the report.
3	Click **Ok**. **Result:** Saves the device discovery report in the desired location.

Adding Discovered Devices into Project

The table shows the steps to add devices from the device discovery *(see page 65)* result into a project architecture *(see page 61)*.

Step	Action
1	Select one or more devices from the device discovery result. **Result:** Displays a progress bar indicating the status of adding devices.
2	Click the **Add** button. **Result:** Adds the discovered device in the project architecture *(see page 61)* and the progress bar disappears.

General Principles - Configuring in Offline Mode

Overview

When Ecoreach is not physically connected to a device or to a communication network, it is referred as an offline mode. In this mode, you can configure the project elements like location, switchboard, devices, and communication elements in Tree View under the **Configuration** tab *(see page 48)*.

Location Characteristics

For a selected location in TreeView *(see page 48)*, you can see the configurable parameters under **General Characteristics**. The **General Characteristics** allows you to modify the location name and select the location type. It also allows you to enter the description of the location.

Switchboard Characteristics

For a selected switchboard in TreeView *(see page 48)*, you can see the configurable parameters under different characteristics group.

The parameters can be modified according to your need.

Device Characteristics Group	Description
General Characteristics	Allows you to modify the switchboard name, description, and certification. The certifications are: ● **IEC** ● **UL** ● **Bi Standards**
Physical Characteristics	Allows you to set the location dimension and weight. Also allows you to select switchboard topology. The topologies are: ● **Drawout (Disconnectable)** ● **Fixed Position**
Connection Type	Allows you to select the cable and the busbar.
Electrical Data	Allows you to set the switchboard voltage, frequency, nominal current, Icc, and Ipk. Also allows you to select the auxiliary voltage.
Protection	Allows you to set IP and IK.
Others	Allows you to select the form and cable type.

Device Characteristics

For a selected device in TreeView *(see page 48)*, you can see the configurable parameters under different characteristics group.

The parameters can be modified according to your need.

Device Characteristics Group	Description
General Characteristics	Displays the selected device trip unit, ranges, communication modules, and accessories.
Protection	Allows you to modify the protection settings supported by a device like instantaneous overcurrent, short time overcurrent protection, long time overcurrent protection, ground fault protection, and neutral protection depending on the selected device.
I/O Configuration	Allows you to set the IO configuration and the alarm name for output configuration.
Metering	Displays device metering values.
Communication Parameters	Allows you to select the baud rate, parity, stop bits, device address, and auto speed sensing or IP settings if the device is of TCP/IP type.
PC Communication(1)	Allows you to select the communication type. The communication type options are: ● **Modbus Serial** ● **Modbus TCP/IP via Gateway**
Communication	Displays device communication values.
(1) This group is available only when you select **Communication** from the **Display** list in TreeView *(see page 48)*.	

The device characteristics group contains four columns which are as follows:

Device Values	Description
Project Values	You can configure these parameters according to the application needs. When you add the device for the first time, the Project values will be same as Default values.
Device Values	You can view these parameters when Ecoreach is connected with device. The values are updated periodically on the background when connected with the device.
Default Values	You can view the default value of a parameter when the device is added into the project.
Range	You can view the range applicable for each setting parameter in this column.

Setting Characteristics

Step	Action
1	Select the project element from TreeView *(see page 48)* under the **Configuration** tab *(see page 48)*. **Result:** The display area displays the general characteristics details of the selected element in the left pane.
2	Set the parameters under the characteristics group using: ● Direct entry of the numerical value. ● Select value using slider control and text field. ● Edit a string. ● Select values from the drop-down list. **Result:** Displays the  icon next to the parameters and at the characteristics group level.
3	Click the **Save** button. **Result:** The Modified parameters are saved.

Icons

Icons are displayed in front of the elements in the TreeView.

-  In front of the element indicates that artifact is attached to that element.
-  In front of the device indicates that device is connected.
-  In front of the device indicates the warning message.

Configuring Acti 9 Smartlink Device in Offline Mode

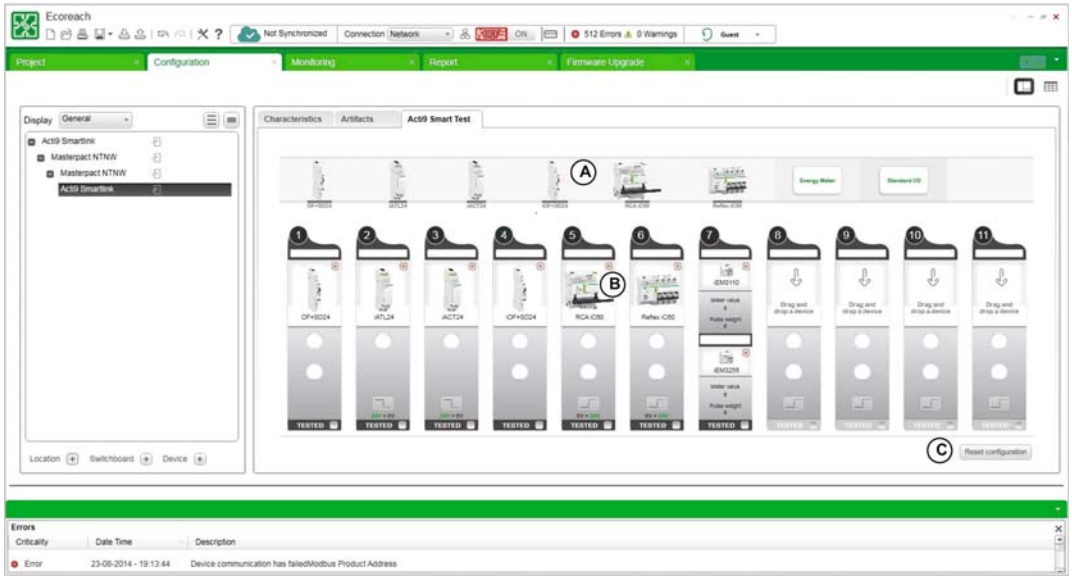
Introduction

The **Acti 9 Smart Test** tab appears only when you select the **Acti 9 Smartlink** device in the TreeView *(see page 48)*.

The **Acti 9 Smart Test** tab allows to:

- Configure devices connected to the channels.
- Test devices connected to the channels.

The figure shows the **Acti 9 Smart Test** tab:



Legend	Area
A	Device Toolbox
B	Channels ● **Smartlink IP** displays seven I/O channels and one analog channel. ● **Smartlink RS485** displays 11 I/O channels.
C	**Reset configuration** button is used to reset channel configuration

Device Toolbox

The Device Toolbox is used to select the devices logically in the Ecoreach.

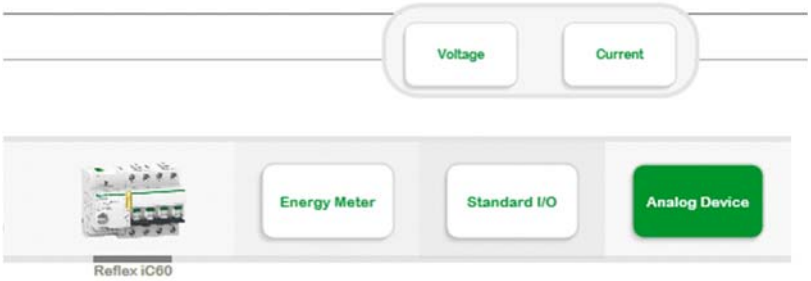
The device toolbox consists of images of devices that can be connected to the Acti 9 Smartlink devices. A device is selected by a drag action from the Device toolbox to the Smartlink channels.

Energy Meter Tooltip and Analog Device Tooltip

The figure shows the Device Toolbox with the **Energy Meter** tooltip:

The Analog Device is displayed only for **Smartlink IP**.

The figure shows the Device Toolbox with the **Analog Device** tooltip:

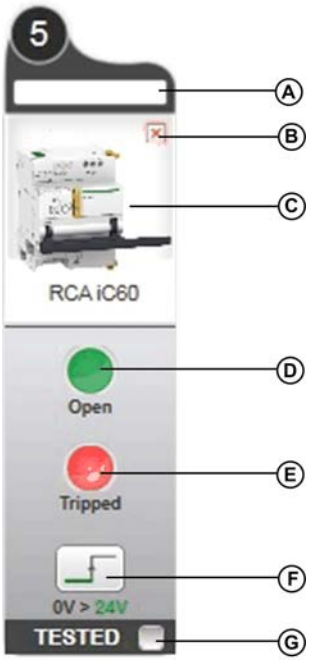


Adding a Channel

Step	Action
1	Drag the device from the Device Toolbox to the channel.
2	Enter the name in the channel name field.
3	Click the **Save** button on the toolbar and create a project file.
4	Repeat steps 1 to 3 for each Acti 9 Smartlink device.

Channel with Single Device

The following figure shows the representation of a channel when a device is connected:



Legend	Description
A	Device function label
B	Remove the device
C	Selected device type
D	Input 1 register value
E	Input 1 register value
F	Output register value
G	Enables behavior check of each device

The device function label text box is used to set a user-friendly name to the channel (up to 20 characters). If this name is too long to fit in the text box, it appears truncated. However, a mouse point on the name displays the complete name.

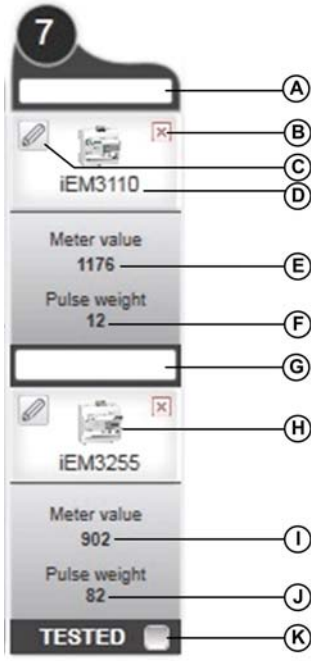
Input 1 and Input 2 register values are 0 or 1, regardless of the connected device. Commands (Open/Close) work the same way.

The following table shows the different displays depending on the type of connected device:

Register	Value	IOF+SD24	OF+SD24	RCA Ti24	Reflex iC60 Ti24	iACT24	iATL24	Standard I/O
Input 1	1	Close 	Close 	Close 	O/C = 1 	O/C = 1 	O/C = 1 	I1 = 1 
	0	Open 	Open 	Open 	O/C = 0	O/C = 0	O/C = 0	I1 = 0
Input 2	1	Not tripped	Not tripped	Not tripped	auto/off = 1	–	–	I2 = 1 
	0	Tripped 	Tripped 	Tripped 	auto/off = 0 	–	–	I2 = 0
Command button		–	–	X	X	X	X	X
Pulse weight configuration		–	–	–	–	–	–	–

Channel with Two Counters

Two counters can be connected on a single channel (one per input). When an energy counter device is dragged, the channel representation changes based on the connectivity of the device.

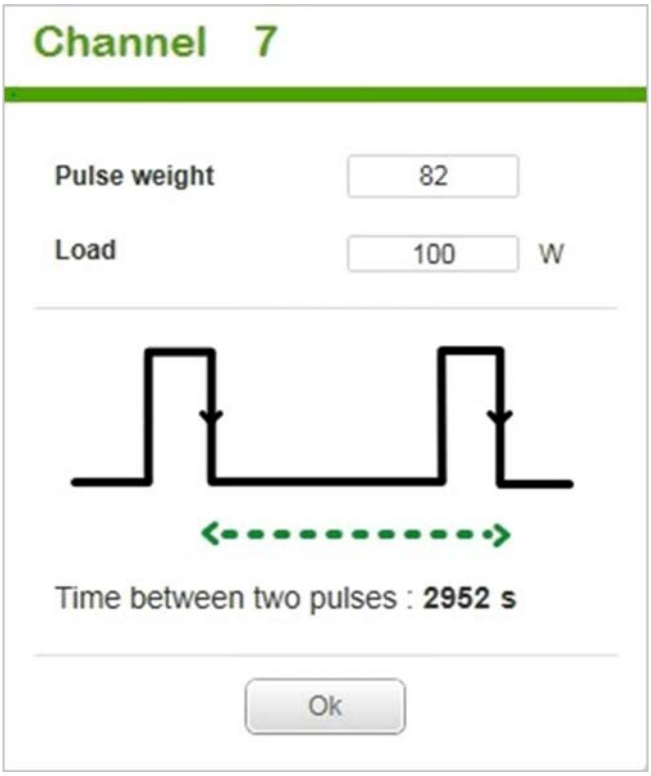


Legend	Description
A	Device function label on input 1
B	Remove the device
C	Connected counter on input 1
D	Input delta pulse calculator
E	Input 1 meter value
F	Input 1 pulse weight
G	Device function label on input 2
H	Connected counter on input 2
I	Input 2 meter value
J	Input 2 pulse weight
K	Enables behavior check of each device

For the energy counter devices, you can read and/or configure the pulse weight and Meter value of an input only if Acti 9 Smartlink is connected.

Pulse Weight

When connected with the device, the option to configure the time between two pulses is active. Click to open the delta pulse calculator.



Parameter	Description
Pulse Weight	Pulse weight unit is **Wh**.
Load	Power of the devices connected to the circuit that counter measures the energy consumption. Unit is **W**.
Time between two pulses	Calculation of the time between 2 pulses = 3,600 x 1/(number of pulses) with Number of pulses = Load/Pulse weight.

Configure the Time Between Two Pulses

The table shows the procedure to configure the time between two pulses for a channel:

Step	Action	Comment
1	Enter the pulse weight value for the counter in the **Pulse Weight** box.	
2	Enter the load of the channel in the **Load** box.	The time between pulses is displayed in the pop-up.
3	Click **OK.**	• The time between pulses is displayed in the pop-up. • Displays the pulse weight value in the channel.

Adding Other Devices

Overview

You can add third-party devices in TreeView *(see page 48)* under the **Configuration** tab *(see page 48)* as complete customer project.

Characteristics

For a selected device in TreeView *(see page 48)*, you can see the configurable parameters under the characteristics group.

The parameters can be modified according to your need.

Characteristics	Description
General Characteristics	Displays the general information entered by the you like the Device type, Manufacturer details, product range, and so on.

Setting Characteristics

Step	Action
1	Select the device from TreeView *(see page 48)* of the **Configuration** tab *(see page 48)*. **Result:** The display area displays the general characteristics details of the selected element in the left pane.
2	Enter the parameters under the characteristics group.
3	Click the **Save** button. **Result:** Entered parameters are saved.

Setup a Device Online

Overview

Ecoreach operates online with the devices as per the status set by the user (Local Plug or Network). In this mode, Ecoreach is logically connected to one or more devices and you can configure the devices irrespective of the cloud connectivity status.

Setting up a Device in Online

Step	Action
1	To connect the device with Ecoreach, configure the device communication parameters (See **Device Characteristics** *(see page 68)*) and the PC Communication *(see page 86)* details according to the type of communication supported for that device.
2	After configuring the communication parameters and PC communication access points, connect to a device *(see page 86)* either on **Local Plug** or **Network** mode.
3	After connecting to the device, modify the parameters displayed in the **Characteristics tab** in the right pane of the **Configuration** tab *(see page 48)* and transfer them to the device by clicking the **Project**>>**Device** button. **Result:** A popup message with a progress bar indicates the status of the action.
4	You can also click the **Device**>> **Project** button to get the device values into Ecoreach.

Contextual Help for Device Setting

Overview

When configuring the devices, you can understand the settings of the device using the icon. You can click the icon to open the device document pointing to the specific section that describes the settings in detail.

Artifacts

Introduction

The **Artifacts** section allows you to attach files related to the project. You can attach any type of files like *.pdf*, *.excel*, and screenshot in *.jpeg* format. Each file displays with file name, date, size, and reference information.

The examples of files that can be added as project artifacts are:

- Engineering drawings
- Building maps
- Wiring diagram
- Any scanned image

In addition to the project artifacts, you can also add the artifacts for project elements like location, switchboard, device, direct TCP/IP, gateway, and serial interface.

When artifacts are added to devices, it is highlighted with the  icon in TreeView under the **Configuration** tab *(see page 48)* .

NOTE:

- You can attach any number of files to the artifacts, but ensure that the file size do not exceed 20 MB.
- You are not allowed to add executable files *(.exe)* and script files.

Adding an Artifact File

Step	Action
1	• For project artifacts: Click the **Browse** button in the **Artifacts** section under the **Project** tab *(see page 47)*. • For project element artifacts: Click the **ADD** button in the **Artifacts** section under the **Configuration** tab *(see page 48)*. **Result:** Opens the **Open** dialog box.
2	Select the file to be added.
3	Click **Open** to attach the selected file. **Result:** Opens **Adding Artifacts** dialog box with the status.
4	Click the **Close** button. **Result:** Adds the artifact file in the **Artifacts** section.

NOTE: When you add a file with the same name as the existing artifacts, a dialog box appears as **Artifacts already exists**. To replace the file, delete the existing file and add a new file.

Deleting an Artifact File

Step	Action
1	Select the file to be removed in the **Artifacts** section of the **Project** tab *(see page 47)* or **Configuration** tab *(see page 48)*.
2	Click the **Delete** icon. **Result:** Opens the **Do you want to remove selected artifact?** dialog box.
3	Click the **Yes** button. **Result:** Deletes the selected file.

Viewing an Artifact File

Step	Action
1	Select the file to be viewed in the **Artifacts** section of the **Project** tab *(see page 47)* or **Configuration** tab *(see page 48)*.
2	Click the **Open** icon. **Result:** Opens the selected file.

NOTE: Artifacts added into Ecoreach project can be opened and viewed only when there is a suitable windows application available in the user machine.

Section 5.2
Communication Architecture

What Is in This Section?

This section contains the following topics:

Ecoreach to Device - Operating Modes

Device Connection Through Different Modes

You can choose the operation mode to work with the devices from the toolbar *(see page 45)*.

Operating Mode	Description
Offline	In **Offline** mode, you can create a project, add or remove a device, view the settings, configure the communication settings, and create the communication architecture. And also you can modify full device settings(1), and generate the complete project configuration report.
Local Plug	In **Local Plug** mode, you can connect to the device using the front test port connection available in the device. When connected, you can: ● Compare the device settings with the project settings. ● Transfer settings from device to project and project to device. ● Monitor the device status, real-time measurements, maintenance data, and IO status (if any).
Network	In **Network** mode, you can connect to the device through a multipoint communication network, either serial line or TCP/IP. In this mode, you can perform all the functions available in the **Local Plug** mode. Additionally, you can perform the transfer of settings from project to device or device to project in batch-wise operation for multiple devices in TableView *(see page 49)* under the **Configuration** tab *(see page 48)*.
(1) This function is available only if the project is stored in the Ecoreach Cloud. When the project is not stored on Cloud, you can only modify the communication settings. All other settings can be modified only when Ecoreach is connected to the device.	

Network Communication

Overview

You can define the communication network between Ecoreach and the devices on the field by describing the communication architecture.

This is done by clicking **Communication** in the **Display** list, in the TreeView *(see page 48)*.

The supported communication architectures are:
- Devices with direct TCP/IP support
- Devices with serial interface connected to a TCP/IP network through a gateway
- Devices with serial interface connected to a serial line network

The online network connection with a device requires the device to be first attached to a communication access point.

This is done by:
- Creating a communication access point.
- Attaching the device to the communication access point.

NOTE: The products or modules that support both TCP/IP and gateway functionalities automatically add a Embedded Gateway (Emb.Gateway) communication element when changed to the **Communication** display option in TreeView *(see page 48)*.

Example: A compact NSX circuit breaker with an IFE module, which performs both a direct TCP/IP connection and a gateway function for Modbus serial devices.

Device Communication Status

In the communication view, devices that are connected online with Ecoreach are displayed with a specific icon describing the communication status and the type of the communication interface.

The table describes the communication status of the device:

Icon	Description
	Device with serial communication interface.
	Device with serial communication interface, attached to a **Serial Interface** or **Gateway** communication access point, and is ready for communication through this access point.
	Device with serial communication interface, attached to a **Serial Interface** or **Gateway** communication access point, and that has incorrect communication parameters. **Example:** Duplicate Device ID's.
	Device with TCP/IP communication interface.
	Device with TCP/IP communication interface, attached to a **Direct TCP/IP** communication access point, and is ready for communication through this access point.
	Device with TCP/IP communication interface, attached to a **Direct TCP/IP** communication access point, and that has incorrect communication parameters.
	Device whose communication interface is not selected.
	Device without communication interface with Ecoreach.

Communication Access Point

A communication access point is described using a communication element.

The three types of communication elements are:

Communication Elements	Description
TCP/IP	This element is used to describe the access to devices fitted with a TCP/IP communication interface. In this case, Ecoreach uses the IP interface of the PC and the IP address of the remote device to establish the online connection.
Gateway	This element is used to describe the access to Modbus serial devices that are connected to a Modbus TCP/IP gateway. In this case, Ecoreach uses the IP interface of the PC, the IP address of the remote gateway, and the individual Modbus address of the device attached to the gateway to establish the online connection.
Serial Interface	This element is used to describe the direct access to Modbus serial devices through a serial communication interface. In this case, Ecoreach uses a local serial communication port of the PC and the individual Modbus address of the device attached to this communication port to establish the online connection.

Creating a Communication Access Point

You can create a communication access point by adding the appropriate communication element according to the targeted communication architecture in the communication TreeView *(see page 48)*.

In the Communication TreeView, you can delete, rename, and cut/paste an existing communication element using the contextual menu.

When you select a communication element from the TreeView, its parameters are shown under the following sections in the display area:

- **General**
- **Communication**
- **Attached device list**

The table shows the description of the sections:

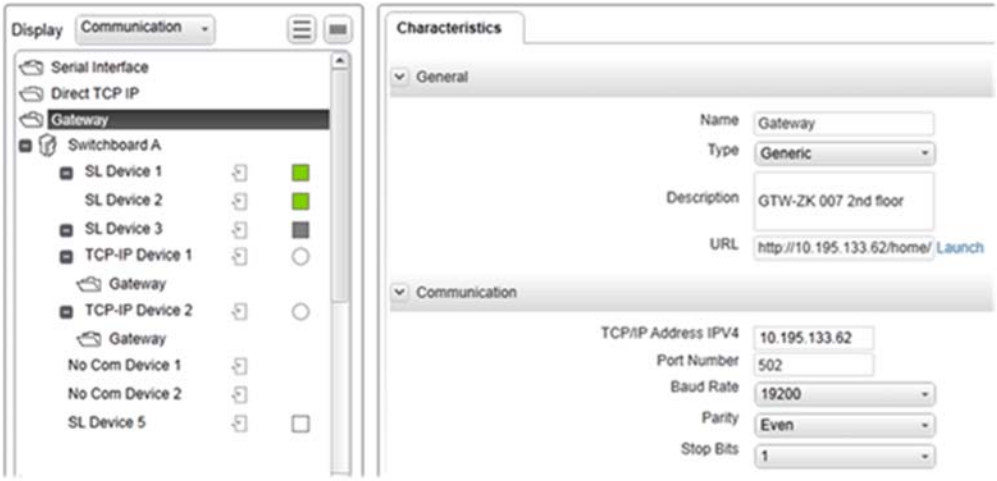
Section	Description
General	This section allows entering a name, type and description. In addition, for a **Gateway**, the parameter URL allows entering the http address to the embedded web server of the gateway.
Communication	This section allows entering the communication parameters specifically for **Gateway** and **Serial Interface** access points.
Attached device list	This section lists the devices that are accessible through the communication access point and that are ready for online network communication with Ecoreach.

Gateway Communication Access Point

For a **Gateway** communication access point, enter the following parameters:

Parameters	Description
TCP/IP Address IPV4	IPV4 address of the gateway.
Serial line parameters: ● Baud Rate ● Parity ● Stop Bits	These parameters are not used to configure the gateway but are used as reference parameters to check the consistency of the SL parameters of all devices attached to the gateway (For details, refer to Communication settings consistency *(see page 84)*).

The following figure shows an example of **General** and **Communication** sections for a **Gateway** communication access point:

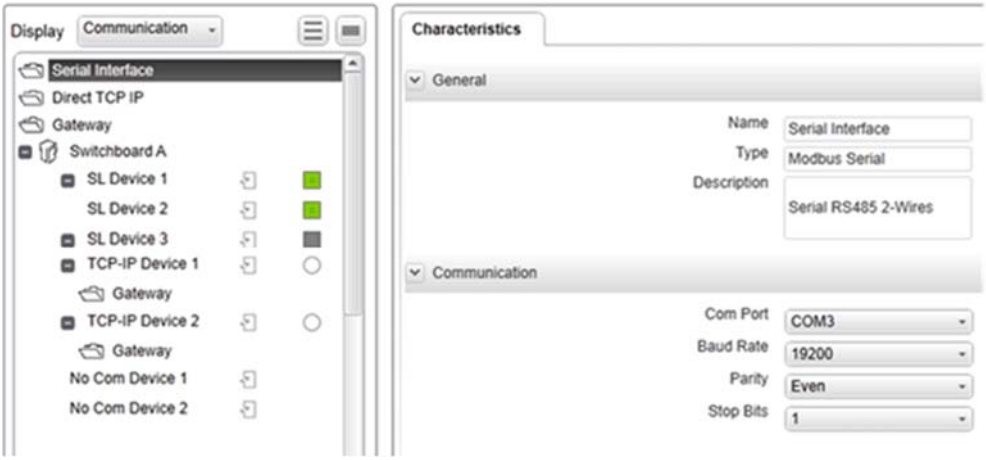


Serial Interface Communication Access Point

For a **Serial Interface** communication access point, enter the following parameters:

Parameters	Description
Com port	This parameter identifies the local serial communication port used on the PC to establish the connection with the devices for online network communication.
Serial line parameters: ● Baud Rate ● Parity ● Stop Bits	These parameters are used to configure the PC local communication port and are used as reference parameters to check the consistency of the SL parameters of all devices attached to the serial communication port (For details, refer to Communication settings consistency *(see page 84)*).

The following figure shows an example of **General** and **Communication** sections for a **Serial Interface** communication access point:



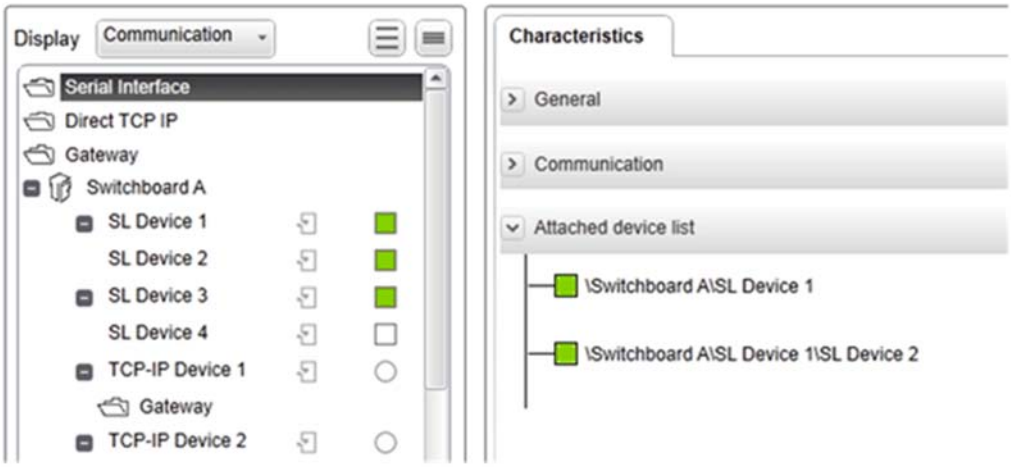
TCP/IP Communication Access Point

For a TCP/IP communication access point you have two sections, **General** and **Attached device** list. The communication settings are managed through the device communication parameters for all the devices connected to this access point.

All the native TCP/IP devices of a project must be attached to this communication access point to group devices with similar subnet ranges under this element. You may use more than one TCP/IP communication access point depending on the number of devices in a project. When devices with different subnet configurations are grouped, Ecoreach warns you about the Communication settings consistency.
(see page 84)

Attached Devices List

The figure shows an example for the list of attached devices:



Attaching a Device to a Communication Access Point

For online network connection with a device, the device must be attached to a communication access point.

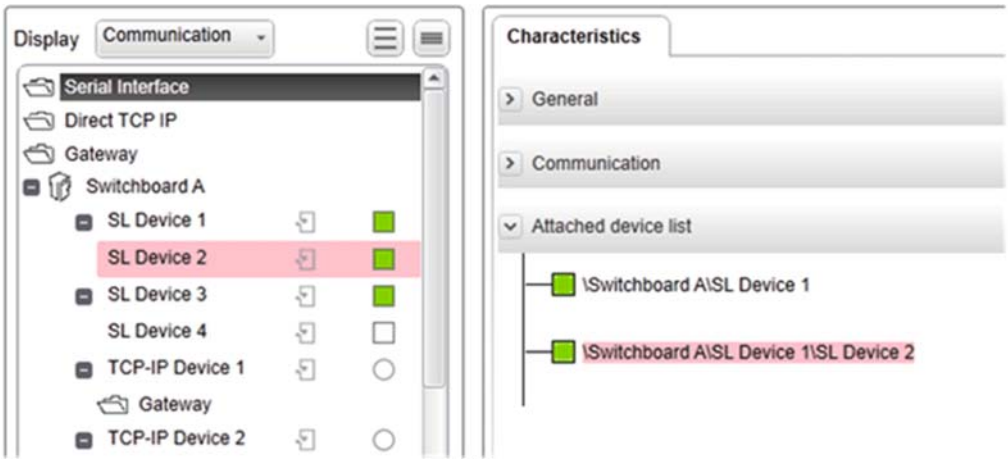
The table shows the steps to attach a device:

Step	Action
1	From the TreeView *(see page 48)*, select the communication element to which you want to attach the device.
2	Click **Attached device list** section in the display area.
3	Drag the device from the Communication TreeView to the **Attached device list** in the display area. **NOTE:** This operation is permitted only if the device communication interface type is compatible with device type of the communication access point. **Result:** The attached device appears in the **Attached device list** section with its full path name from the TreeView.

In project architecture, you can identify the attached devices of any communication access point:

Step	Action
1	From the TreeView *(see page 48)*, select the communication element to which you want to attach the device.
2	Click **Attached device list** section in the display area.
3	Select a device from the **Attached device list**. **Result:** The selected device and the corresponding device in the TreeView are highlighted with the same color.

The figure shows an example for the identified device in the attached device list:



Detaching a Device from a Communication Access Point

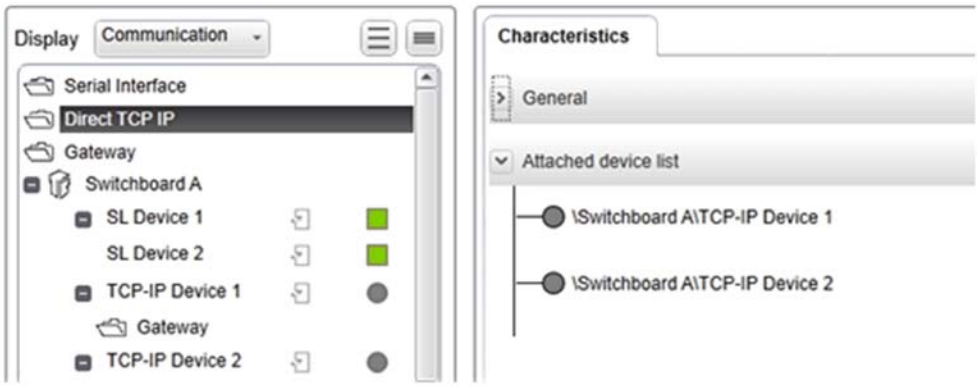
In the **Attached device list**, right-click on a device and then click **Detach** to remove the device from the communication access point.

Communication Settings Consistency

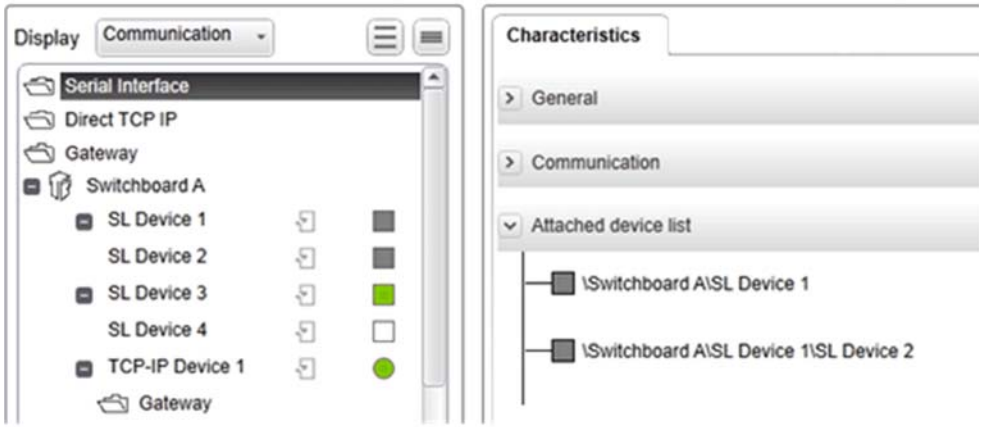
When a device is attached to any communication access point, a consistency check operation is done to check the duplication of device addresses within this access point. When a duplication of address is detected, the communication status of the faulty devices is displayed in gray color in the communication TreeView.

For **Serial Interface** and **Gateway** communication access points, the consistency check also verifies that all the devices attached to the access point have the same communication parameters (baud rate, parity, stop bits). In case of any parameter mismatch, the communication status of the faulty devices is displayed in gray color in the communication TreeView. A warning is also logged in the Error and Warning window *(see page 57)*.

The figure shows an example of duplicate IP addresses detected on **Direct TCP/IP** communication access.



The figure shows an example of inconsistencies detected on **Serial Interface** communication access point.



PC Communication

Overview

When a device is selected from the TreeView *(see page 48)*, the **PC Communication** section in the display area shows the communication interfaces available for the connection with Ecoreach.

The communication interfaces are:

- **Local**
- **Network**

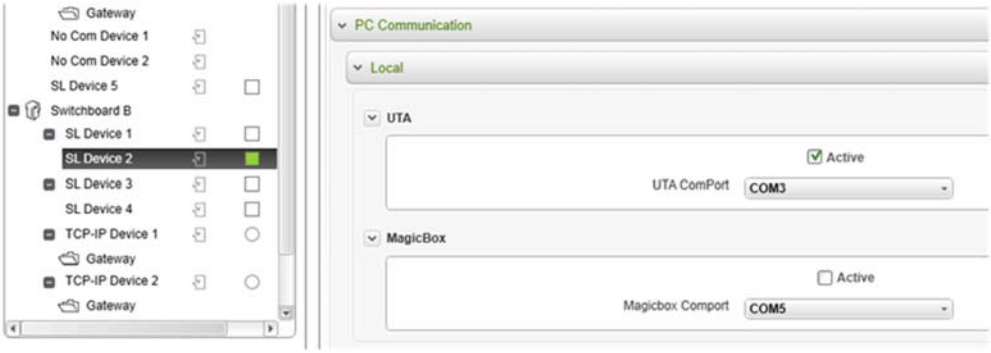
Local

When a device offers a local point-to-point serial interface (front test communication port), this communication interface may be used by the Ecoreach to connect the device and is displayed in the **Local** subsection.

Depending on the device type, the local connection may require appropriate interface modules or cables.

For example, the Compact NSX device connection can be done using a UTA module. For Masterpact devices, it can be established through a **UTA** module or a **MagicBox** module.

The communication parameters are set automatically by Ecoreach according to the type of the device. You must select only the PC communication port that is used to establish the connection. When several local interfaces are possible, you must click **Active** to select the desired local interface to be active.



Network

When a device is attached to a communication access point (ready for **Network** communication), the **Network** subsection gives the summary of the communication settings used to connect with the device.

Connecting to a Device

The table shows the steps to establish a connection with a device using the **ON**/**OFF** button:

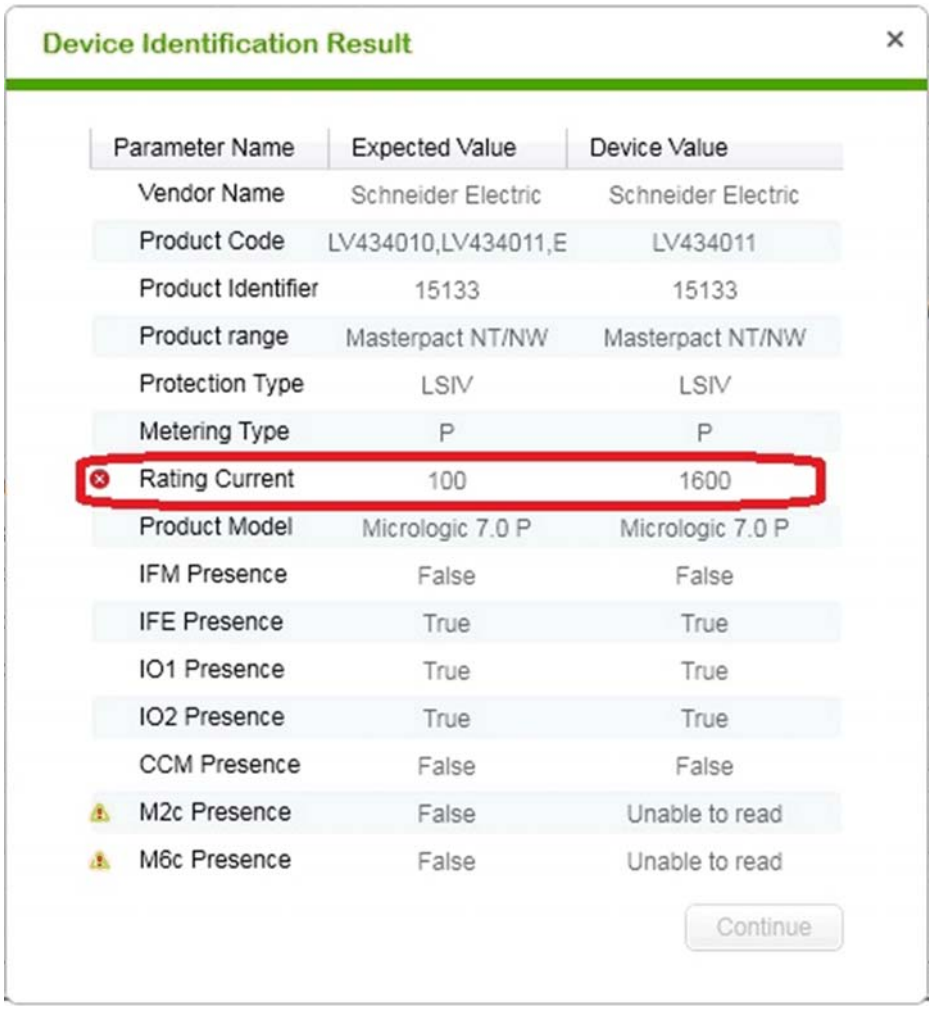
Step	Action
1	Click **Communication** in the **Display** list, in the TreeView *(see page 48)*.
2	Select a device in the TreeView.
3	Click either **Local Plug** or **Network** in the **Connection** list. 

Step	Action
4	Click the **ON** button to connect the device.  **NOTE:** Click **OFF** to disconnect the device from Ecoreach.

Device Identification

When connecting to a device, you see a discrepancy window. This window appears when the device with its optional modules declared in the project and actual device connected are not the same.

Case 1: When the mandatory device characteristics detail declared in the project and the connected device are different, you cannot continue further with the device connection.



NOTICE

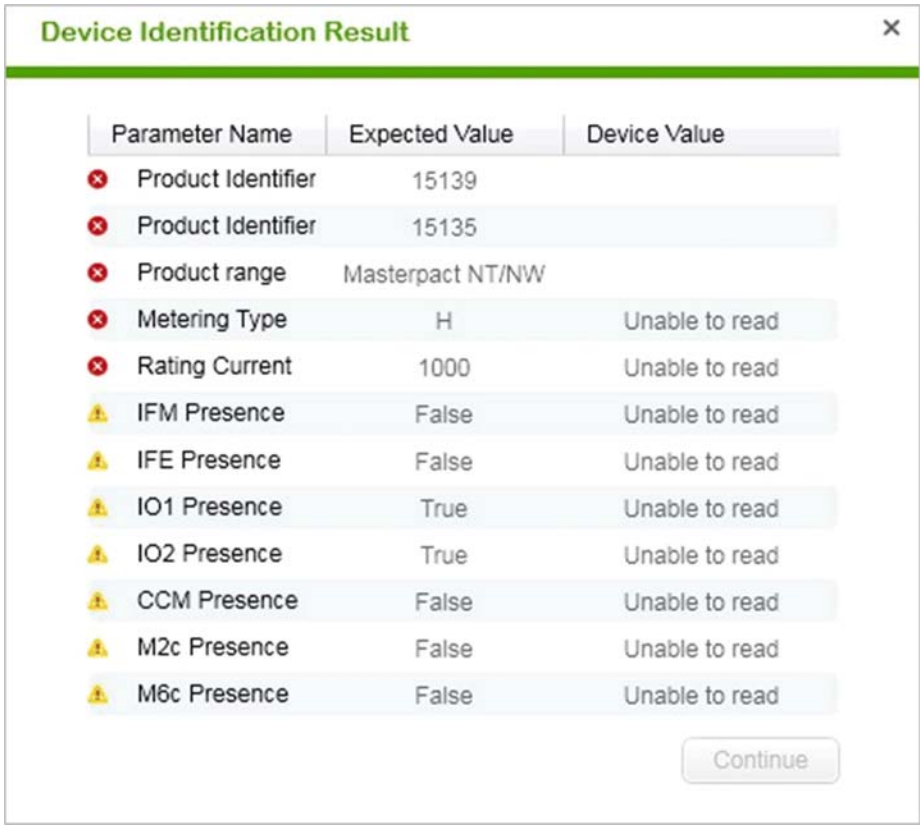
RISK OF PARTIAL CONFIGURATION OR MODULE FAILURE

When discrepancy is detected with one or more devices, perform the Compatibility Check for the device and follow the recommended actions before connecting to the device.

Failure to follow these instructions can result in equipment damage.

Case 2: When some of the optional modules of a device declared in the project architecture and the connected device are different:

In this case, you cannot continue with the device connection.



NOTICE
RISK OF PARTIAL CONFIGURATION OR MODULE FAILURE When discrepancy is detected with one or more devices, perform the Compatibility Check for the device and follow the recommended actions before connecting to the device. **Failure to follow these instructions can result in equipment damage.**

Transfer of Setting for a Single Device

You can transfer the settings between the project and the device as follows:

- Transfer of settings from project to device (Download)
- Transfer of settings from device to project (Upload)

Transfer of Settings for Multiple Devices

You can transfer the settings to multiple devices from the TableView *(see page 49)* of the **Configuration** tab *(see page 48)*. Only the devices that are qualified with communication settings consistency *(see page 84)* are available for the selection to perform these actions:

- Transfer of settings from project to device (Download)
- Transfer of settings from device to project (Upload)

NOTE: Although in TableView only a few groups of settings are displayed, this action results in updating or transferring of all settings of the selected devices.

Communication Test and Its Reports

Ecoreach allows you to perform the communication test on one or more devices from the TableView *(see page 49)* of the **Configuration** tab *(see page 48)*.

You can perform the communication test (Communication wiring check) of the communication network architecture of the complete project devices or few selected devices. A report is produced at the end of the test with both device and its communication settings with the test success or failure status in a *.pdf* format. You can store the report for future needs as an artifact within the project or externally in user PC.

NOTE: Only the devices that are verified with communication settings consistency *(see page 84)* can be tested using this feature.

Export Device Configuration

You can export the devices and their configuration details displayed in the TableView *(see page 49)* of the **Configuration** tab *(see page 48)* as a *.csv* file.

This feature is accessible from the Toolbar *(see page 45)*. When you click the icon, you are prompted to save the *.csv* file, which contains the details of all devices in the project and its settings shown in the TableView *(see page 49)*.

Section 5.3
Monitor and Control

What Is in This Section?

This section contains the following topics:

Monitor

Introduction

You can monitor the real-time values of the selected device from the **Monitoring** tab *(see page 50)*. Ecoreach displays the main electrical parameters of the selected device in four different tabs. You can use this feature while performing the switchboard commissioning and during maintenance period. Ecoreach cannot be used as real-time SCADA software. The values are displayed in four tabs.

The **Monitoring** tab displays the following relevant tabs for the selected device in the **Device Monitoring** area:

- **Measurement**
- **Maintenance**
- **Device status**
- **I/O status**

Measurement

You can monitor the real-time measurements of all the connected devices from the **Measurement** tab *(see page 50)*. It automatically reads and displays the real-time values of the selected device at regular intervals.

You can read the following real-time measurements:

- Current, voltage, and power values at every one second
- Power factor at every 10 seconds
- Harmonics at every 30 seconds

Maintenance

You can monitor the maintenance values of the connected device from the **Maintenance** tab *(see page 50)*. It reads the data from the device at every 10 seconds.

You can read the following maintenance values:

- Breaker Command Counter
- General data
- Load Profile
- Temperature Profile
- Contact Counter
- Device identification data
- Protection trip counter
- Circuit breaker trip counter

Device Status

You can view the hardware status of the device from the **Device Status** tab *(see page 50)*. Depending on the device selected, you see the alarm status, breaker position, trip indicator, time before tripping, circuit breaker status (open or close), spring charge, and/or cradle status.

I/O Status

You can view the input and output status of the devices from the **I/O Status** tab *(see page 50)*. You can see the status for all the digital inputs, digital outputs, and analog inputs.

Data Monitoring Log

You can save the pre-configured measurement data that are logged into a ***.csv*** file for later analysis and reporting.

Step	Action
1	Click the **Enable Monitoring Log** button in the **Monitoring** tab *(see page 50)*. **Result:** Opens the file save window.
2	Choose the path where a file needs to be saved.
3	Enter or modify the file name.
4	Click the **Save** button. **Result:** Saves the *.csv* file.

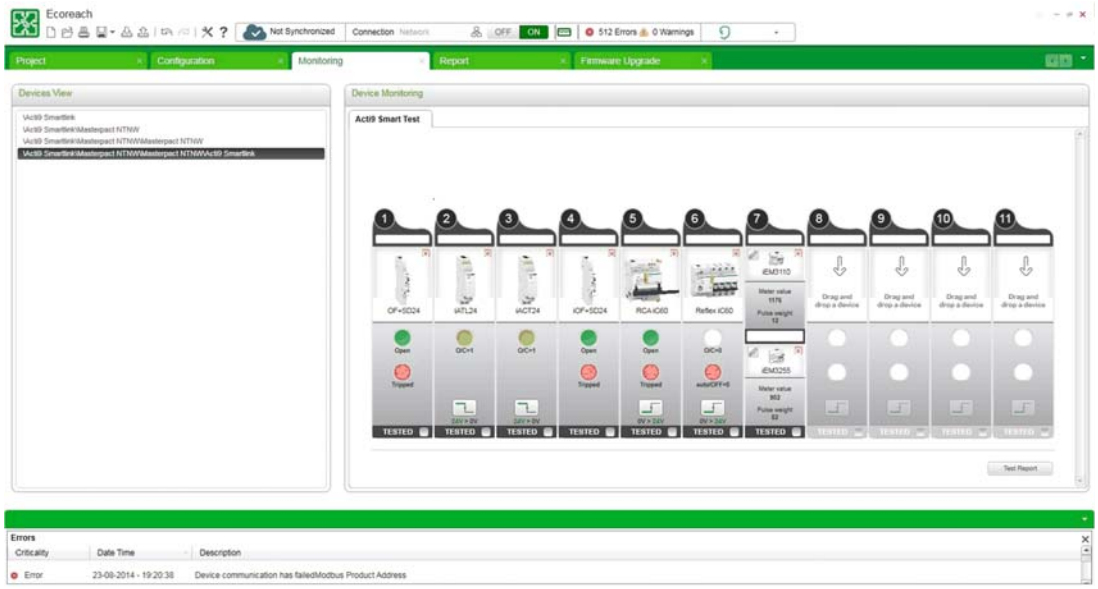
Test

Acti 9 Smart Test and Report

You can check if all devices are assigned and connected properly from the **Monitoring** tab *(see page 50)* of Acti 9 Smartlink.

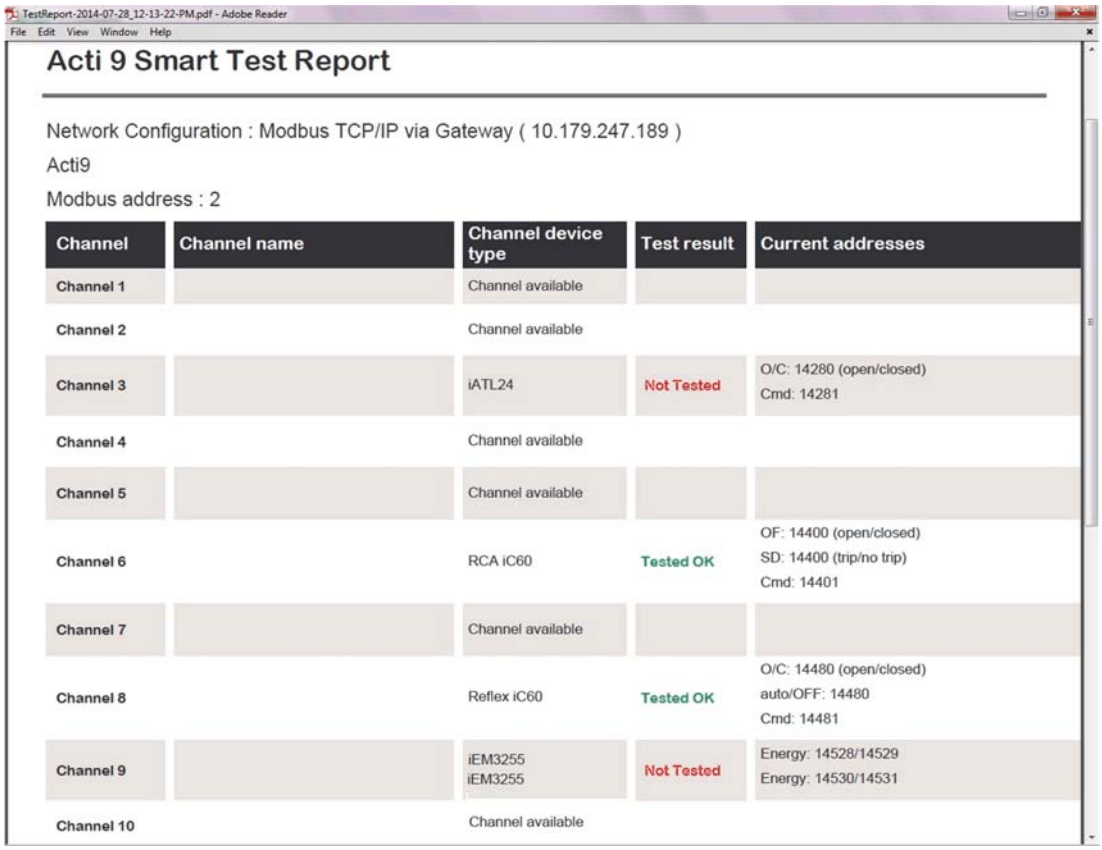
NOTE: The **Acti9 Smart Test** tab is applicable only for Acti 9 Smartlink devices to test the channel inputs or data.

The following figure shows **Acti9 Smart Test** tab:



The **Acti9 Smart Test** tab allows you to generate a report to check the list of tested devices connected to **Acti 9 Smartlink** device. To generate the report, click **Test Report** in the **Acti9 Smart Test** tab.

The following figure shows an example of the **Acti 9 Smart Test Report**:


TestReport-2014-07-28_12-13-22-PM.pdf - Adobe Reader

File Edit View Window Help

Acti 9 Smart Test Report

Network Configuration : Modbus TCP/IP via Gateway (10.179.247.189)

Acti9

Modbus address : 2

Channel	Channel name	Channel device type	Test result	Current addresses
Channel 1		Channel available		
Channel 2		Channel available		
Channel 3		iATL24	Not Tested	O/C: 14280 (open/closed) Cmd: 14281
Channel 4		Channel available		
Channel 5		Channel available		
Channel 6		RCA iC60	Tested OK	OF: 14400 (open/closed) SD: 14400 (trip/no trip) Cmd: 14401
Channel 7		Channel available		
Channel 8		Reflex iC60	Tested OK	O/C: 14480 (open/closed) auto/OFF: 14480 Cmd: 14481
Channel 9		iEM3255 iEM3255	Not Tested	Energy: 14528/14529 Energy: 14530/14531
Channel 10		Channel available		

The report contains the following information:

- Network Configuration type
- Acti 9 Smartlink device type
- Modbus address of the Acti 9 Smartlink device
- Channel number
- Channel name
- Channel device type
- Test information of each channel (tested or not)
- Main modbus address of the device

Logs

Introduction

You can retrieve and view the logs and histories stored in a device in the *.csv* file from the **Logs** tab *(see page 51)*.

List of Histories and Log Files

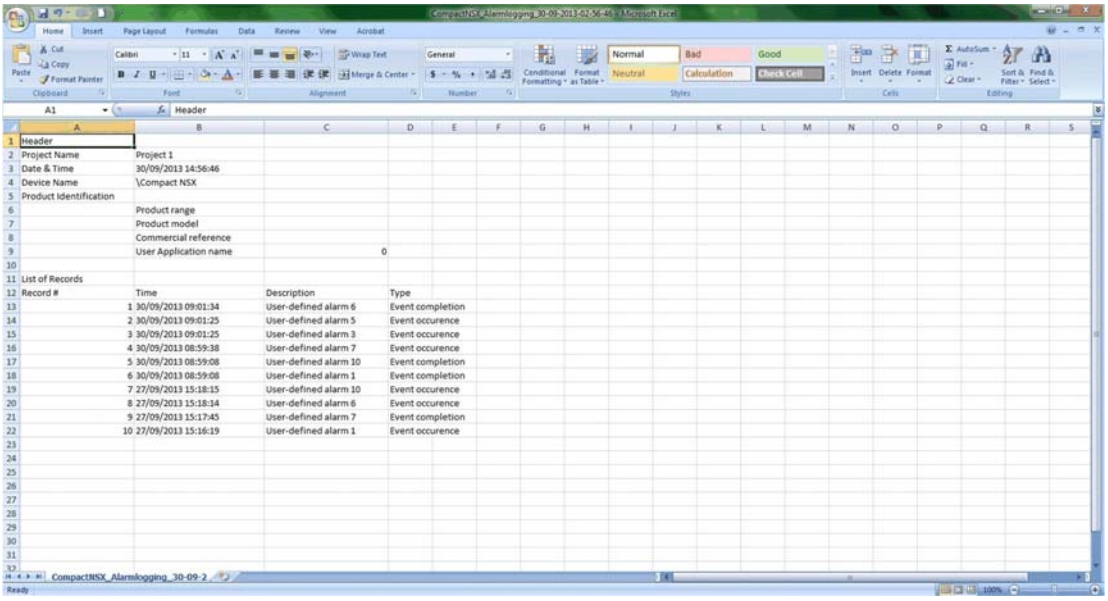
You can view the following event histories and logs depending on the selected device.

- Alarm logging
- Maintenance logging
- Trip logging
- Previous Protection Data
- BSCM Events
- BCM Event log
- PM Event log
- MM Event log
- PM Maintenance Event log
- MM Maintenance Event log
- Previous Min Max Data

NOTE: Histories and log files data can be viewed only after connecting to a device.

Alarm Logging

The following figure shows an example of a log file template for Alarm logging:



1	Header			
2	Project Name	Project 1		
3	Date & Time	30/09/2013 14:56:46		
4	Device Name	\Compact NSX		
5	Product Identification			
6		Product range		
7		Product model		
8		Commercial reference		
9		User Application name	0	
10				
11	List of Records			
12	Record #	Time	Description	Type
13	1	30/09/2013 09:01:34	User-defined alarm 6	Event completion
14	2	30/09/2013 09:01:25	User-defined alarm 5	Event occurence
15	3	30/09/2013 09:01:25	User-defined alarm 3	Event occurence
16	4	30/09/2013 08:59:38	User-defined alarm 7	Event occurence
17	5	30/09/2013 08:59:08	User-defined alarm 10	Event completion
18	6	30/09/2013 08:59:08	User-defined alarm 1	Event completion
19	7	27/09/2013 15:18:15	User-defined alarm 10	Event occurence
20	8	27/09/2013 15:18:14	User-defined alarm 6	Event occurence
21	9	27/09/2013 15:17:45	User-defined alarm 7	Event completion
22	10	27/09/2013 15:16:19	User-defined alarm 1	Event occurence

Depending on the selected device, the ***.csv*** file displays the following device details:

- Project Name
- Date and Time
- Device Name
- Product Identification
- List of Records

The table shows the steps to view or save the alarm logging data:

Step	Action
1	Select a device in the left pane of the **Monitoring** tab *(see page 50)*.
2	Double-click **Alarm logging** in the **History and Log Files** section under the **Logs** tab *(see page 51)*. **Result:** Opens an excel sheet with Alarm logging data.
3	Click the **Save** icon to save the excel file to the desired location. **Result:** Saves the file in *.csv* format.

Control

Introduction

You can control the circuit breaker added in a project from the **Control** tab *(see page 51)*. You can open, close, or reset the connected circuit breaker. You can also reset or update the energy counters and check IO modules function.

Ecoreach will prompt you to enter the administrator password *(see page 55)* and the device password to perform the control operations. Before performing these actions, also refer the corresponding device user manuals

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Do not use the software to Open/Close breakers and electrical circuit, without having a physical feedback mechanism validating the completeness of software action.

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

Opening a Circuit Breaker

Step	Action
1	Select a circuit breaker in the left pane of the **Monitoring** tab *(see page 50)*.
2	Click the **Open/Reset/Close Breaker** button in the **Breaker Control** section under the **Control** tab *(see page 51)*. **Result:** Opens the **Device Name** dialog box.
3	Click the **Commands** tab. **Result:** Displays the **Open**, **Reset**, and **Close** button.
4	Click the **Open** button. **Result:** Opens the **Password** dialog box.
5	Enter the password. **Result:** ● **Open** button turns green color. ● **Submit** and **Cancel** buttons are enabled.
6	Click the **Submit** button. **Result:** Opens the circuit breaker.

Closing a Circuit Breaker

Step	Action
1	Select a circuit breaker in the left pane of the **Monitoring** tab *(see page 50)*.
2	Click the **Open/Reset/Close Breaker** button in the **Breaker Control** section under the **Control** tab *(see page 51)*. **Result:** Opens the **Device Name** dialog box.
3	Click the **Commands** tab. **Result:** Displays the **Open**, **Reset**, and **Close** button.
4	Click the **Close** button. **Result:** Opens the **Password** dialog box.
5	Enter the password. **Result:** ● **Close** button turns green color. ● **Submit** and **Cancel** buttons are enabled.
6	Click the **Submit** button. **Result:** Closes the circuit breaker.

Resetting a Circuit Breaker

Step	Action
1	Select a circuit breaker in the left pane of the **Monitoring** tab *(see page 50)*.
2	Click the **Open/Reset/Close Breaker** button in the **Breaker Control** section under the **Control** tab *(see page 51)*. **Result:** Opens the **Device Name** dialog box.
3	Click the **Commands** tab. **Result:** Displays the **Open**, **Reset**, and **Close** button.
4	Click the **Reset** button. **Result:** Opens the **Password** dialog box.
5	Enter the password. **Result:** ● **Close** button turns green color. ● **Submit** and **Cancel** buttons are enabled.
6	Click the **Submit** button. **Result:** Resets the circuit breaker.

Resetting or Updating Energy Counters

You can reset or update energy counters from the **Control** tab *(see page 51)*. Depending on the circuit breaker selected, you see the values of the following energy counters:

- Reactive energy
- Active energy
- Apparent energy

Step	Action
1	Select a circuit breaker in the left pane of the **Monitoring** tab *(see page 50)*.
2	Click the **Reset/Update Energy Counters** button in the **Reset/Update Energy Counter** section under the **Control** tab *(see page 51)*. **Result:** Opens the **Energy Counters** dialog box.
3	Click the **Update Counters** button to update the values. **Result:** Opens the **Password** dialog box.
4	Enter the password.
5	Click the **Proceed** button. **Result:** Resets or updates the energy counters.

Forced Output - IO Module

You can check the IO module status by forcing its output to High or Low, based on the device and the optional modules available with the device.

The function supports the following IO modules:

- SDx output module
- IO#1 module
- IO#2 module

NOTICE
RISK OF EQUIPMENT DAMAGE Do not force outputs of IO modules when the device is commissioned and in real operation. This function must be performed only when you intend to check the IO status functionality during the installation and testing phase. **Failure to follow these instructions can result in equipment damage.**

Section 5.4
Report

Configuration Report

Introduction

You can prepare the complete project configuration report with all the devices and its settings. You can also customize the report by modifying the front page content, including the project information and logo customization.

Modifying the Report Details

You can enter or modify the user details and project details with the required format from the **Reports** tab *(see page 52)*.

- You can enter or modify the user details from the **Front Page** tab *(see page 52)*. The details entered in this tab appears on the front page of the report.
- You can enter or modify the project details from the **Project** tab *(see page 52)*. The details entered in this tab appear in the report.
- You can select from the options for the required format of header, footer, front page, and project details to be included in the report from the **Contents** tab *(see page 52)*. The available options are:
  - Report Header
  - Report Footer
  - Front page
  - Advanced sections
- You can click the check box to select the options listed.

Adding a Logo

You can add your own logo to be included in the report header from the **Front Page** tab *(see page 52)* and **Contents** tab *(see page 52)*. You will see the Schneider Electric logo, which is a default logo.

The table shows the steps to add a new logo:

Step	Action
1	Click the **Remove** button in the **Front Page** tab of the **Reports** tab *(see page 52)* to remove the current logo. **Result:** Removes the current logo.
2	Click the **Logo** button. **Result:** Opens the file selection window.
3	Select the logo to be added.
4	Click **Open**. **Result:** Adds the new logo.

Generating a Report

You can generate and print a configuration report of the project. The user and project details are automatically filled with the details entered in the **Project** tab *(see page 52)*. You can fill the empty fields or modify the existing details.

The table shows the steps to generate a report of the project:

Step	Action
1	Enter the details in the **Front Page** tab under the **Reports** tab *(see page 52)*.
2	Enter the details in the **Project** tab under the **Report** tab.
3	Check the required options in the **Contents** tab under the **Report** tab.
4	Click the **Generate Report** button. **Result:** Opens the **Print** window.
5	Select the printer.
6	Click the **OK** button. **Result:** Generates the report.

NOTE: Report may contain fields marked with '*' indication. This indicates that these parameters values are modified in the project but they are not yet saved into the project.

Section 5.5
Firmware Upgrade

What Is in This Section?

This section contains the following topics:

Upgrade Firmware

Introduction

You can update the firmware of Micrologic trip units of the Compact NSX and PowerPact H-, J-, and L-frame circuit breaker ranges from the **Maintenance tab** : *(see page 53)*

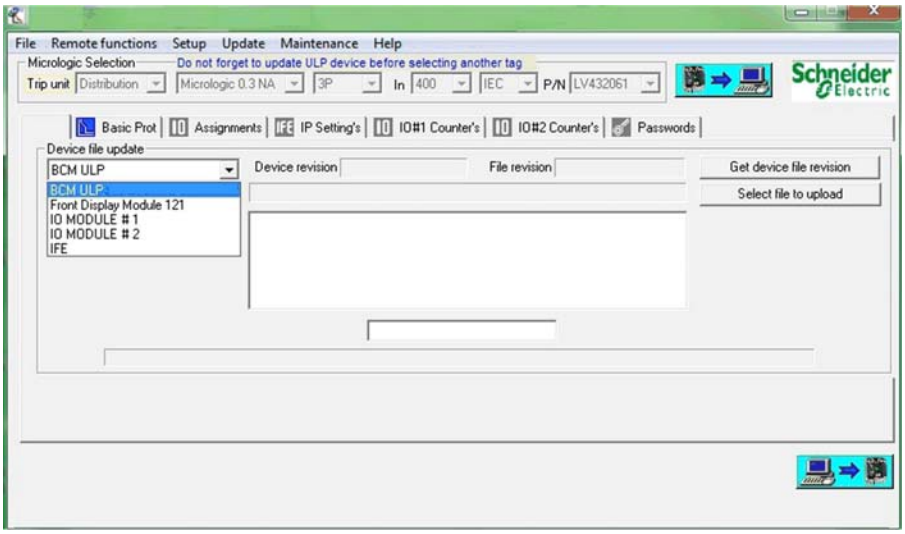
In addition to firmware upgrade of the Micrologic trip unit, you can also upgrade the firmware of other optional modules:

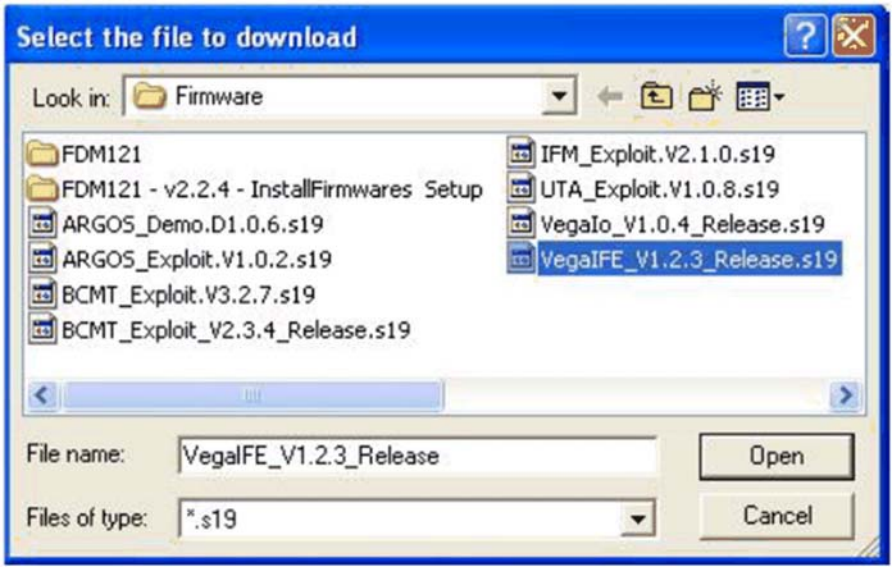
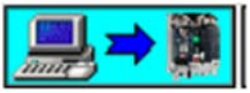
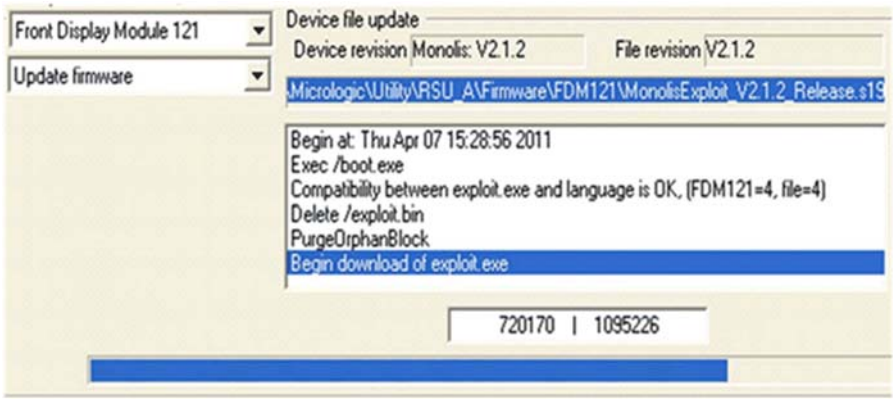
- Micrologic trip unit – ULP based
- IFM
- IFE
- Maintenance module (UTA) – PIC layer
- Maintenance module (UTA) – STR7 layer
- FDM121 display module firmware and languages
- BCM ULP module
- IO modules (two modules).

NOTE: It is recommended to first update the IFM firmware.

Upgrading Firmware - ULP Modules

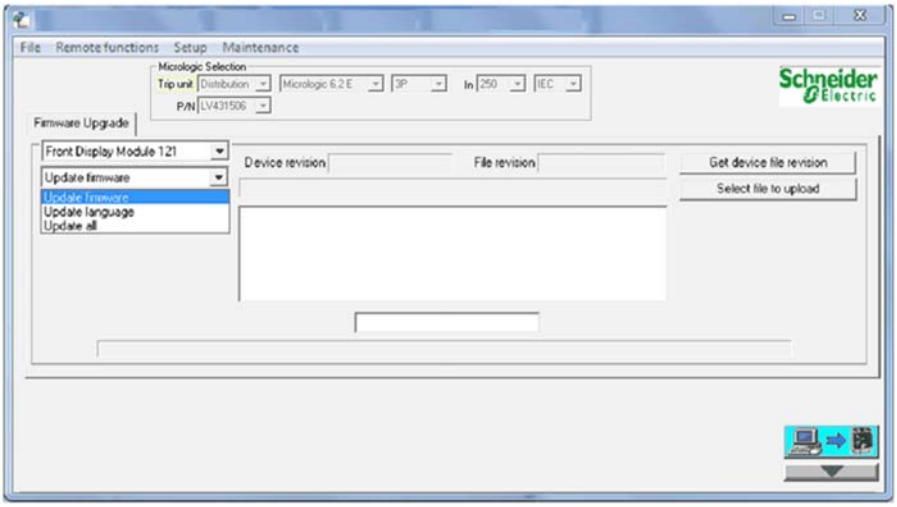
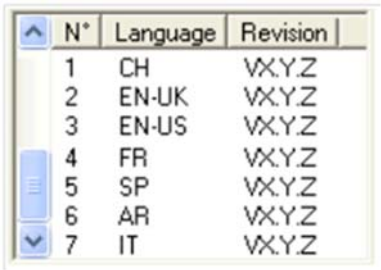
You can upgrade the firmware of all ULP modules. In case of FDM 121, you can upgrade the firmware and change the language *(see page 102)*.

Step	Action
1	Click **Firmware Upgrade (Trip unit, IFM…)** in the **Maintenance** tab *(see page 53)*.
2	Enter the communication details in the **Setup** menu to connect the device.
3	Once successfully connected to the device (as shown in step 4), you can choose the ULP module to which the firmware needs to be updated.
4	Select the desired ULP module from the **Firmware Upgrade** list. 
5	Click the **Get device file revision** button. **Result:** The firmware version of the selected ULP module is displayed:  **NOTE:** This is an optional step to view the current firmware version of the ULP module.

Step	Action
6	Click the **Select file to upload** button. **Result:** Opens the **Select the file to download** dialog box. 
7	Navigate to the path where the firmware upgrade file is present, select the file, and then click **Open**.
8	Click the  icon. **Result:** The **Confirm** dialog box appears. 
9	Click **Yes** to confirm the upgrade of the firmware of IFE. **Result:** The firmware upgrade starts. The progress bar shows the progress of the upgrade. 

Upgrading Firmware and Language Files - FDM121

You can upgrade the language file along with firmware upgrade.

Step	Action
1	Click **Front Display Module 121** in the **Firmware Upgrade** list.
2	You can select: ● **Update firmware** to update only firmware ● **Update language** to update only language file ● **Update all** to update both firmware and language file 
3	You have an option to download only the firmware or language file into FDM121. You can also download both language file and the new firmware together using the **Update all** option. The FDM121 displays the IMU information in 10 languages: ● Five fixed default languages ● Five optional languages The five default languages are: ● Chinese ● English UK ● English US ● French ● Spanish
4	You can add five optional languages and define their order of appearance in the Language menu of FDM121.
5	You can view the configuration of the language menu: 

Compatibility Check of Device/Firmware and Corrective Actions

Introduction

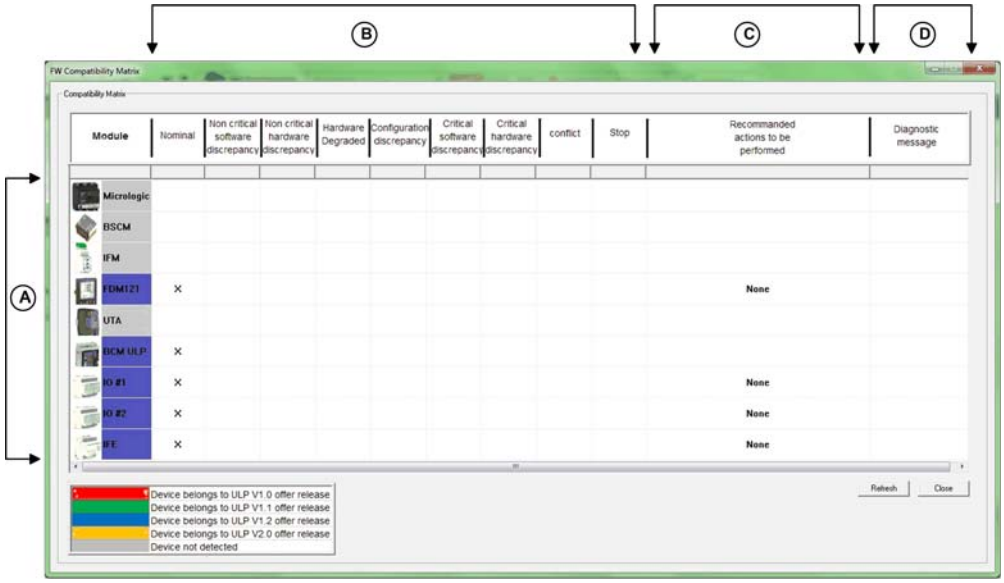
When the ULP modules are upgraded for new functionalities, you may need to check the compatibility of the different modules in the IMU system. Compatibility Matrix is the diagnosis function that helps you to diagnose and identify all discrepancy issues in the ULP modules. This matrix also provides the recommended actions and diagnostics messages relevant to the detected discrepancies.

NOTE: You can perform the compatibility check only in online mode through all the communication channels.

Compatibility Matrix

You can view the compatibility matrix by clicking **Compatibility Check** in the **Maintenance** tab. The Compatibility Matrix window has:

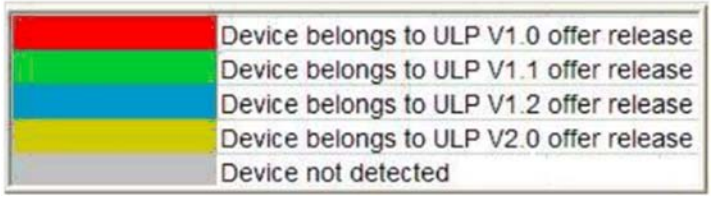
- Four main sections
- Refresh button.



Legend	Description
A	List of modules
B	Operating Mode Diagnostics
C	Recommended Action
D	Diagnostic Message

List of Modules

The list of modules section displays the list of all ULP modules. This is a global list of ULP modules independent of whether they are connected or not. The ULP modules detected in the IMU are identified with one of the following colors listed based on the offer release of the ULP module.



If an ULP module in the list is not detected in the IMU, then the ULP module is identified with gray color. The ULP modules of ULP V1.2 offer release is selected in blue color. If all the devices listed in the section are identified with blue color, then that IMU is free of all discrepancies.

The table shows the ULP module firmware version for each device:

Device List	ULP Module Firmware Version
IFM	≤ 1.0.8 = ULP V1.0 > 1.0.8 = ULP V1.2
FDM121	≤ 2.1.2 = ULP V1.0 = 2.1.3 = ULP V1.1 > 2.1.3 = ULP V1.2
BCM ULP	< 4.0.0 = ULP V1.1 > 4.0.0 = ULP V1.2
NSX Micrologic Trip Unit	≤ 1.0.2 = ULP V1.0 > 1.0.2 = ULP V1.2
Maintenance module	= 1.0.8 = ULP V1.0 > 1.0.8 = ULP V1.2
BSCM	≤ 2.1.8 = ULP V1.0 > 2.1.8 = ULP V1.2
IO module	≥ 2.1.1 = ULP V1.2
IFE	≥ 1.0.8 = ULP V1.2

Operating Mode Diagnostics and Recommended Actions

The Operating Mode Diagnostics and Recommended Action section helps you to identify the discrepancy conditions within the ULP modules. The Firmware Upgrade tool reads the operating mode information from the ULP modules to display the Compatibility Matrix window. In the Compatibility Matrix window, each row is dedicated for a ULP module, and each column is dedicated for an operating mode.

The Recommended Action section provides the information on how to recover from a compatibility discrepancy situation. Each discrepancy has a generic pre-defined recommended action.

The **x** mark indicates the operating mode of a ULP module in the corresponding column with respect to the row.

The table lists the information or recommended actions for different operating modes of the ULP module:

Module Operating Mode	Description	Recommended Action to be performed
Nominal	The ULP module is in nominal mode.	None
Test	The test button is pressed.	None
Non-critical firmware discrepancy	There is a non-critical firmware discrepancy between the ULP module and other modules in the IMU.	Upgrade firmware *(see page 100)* at the next maintenance operation
Non-critical hardware discrepancy	There is a non-critical hardware discrepancy between the UPL module and other modules in the IMU.	Replace module at the next maintenance operation
Hardware degraded	The ULP module is in degraded mode.	Replace module at the next maintenance operation
Configuration discrepancy	A configuration discrepancy is detected by the ULP module. A Configuration discrepancy occurs when: ● The ULP module does not detect the presence of a mandatory component needed for its application ● The ULP module detects a possible wrong configuration of its application	-
Critical firmware discrepancy	There is a critical firmware discrepancy between the ULP module and other modules in the IMU.	Upgrade firmware *(see page 100)*
Critical hardware discrepancy	There is a critical hardware discrepancy between the ULP module and other modules in the IMU.	Replace module
Conflict	The ULP module is in conflict mode.	Remove duplicate module
Stop	The ULP module is out of service.	Replace module
Power OFF		Check power supply

Diagnostic Message

The diagnostic message section provides the additional information about certain discrepancy modes.

You can see more than one diagnostic message for a discrepancy mode.

NOTE: For IMU 1.2, the diagnostics message lists a configuration discrepancy detected by the IO module.

Refresh

After performing a recommended action for a specific discrepancy, you can click the **Refresh** button to update the changes in the **Compatibility Matrix**.

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