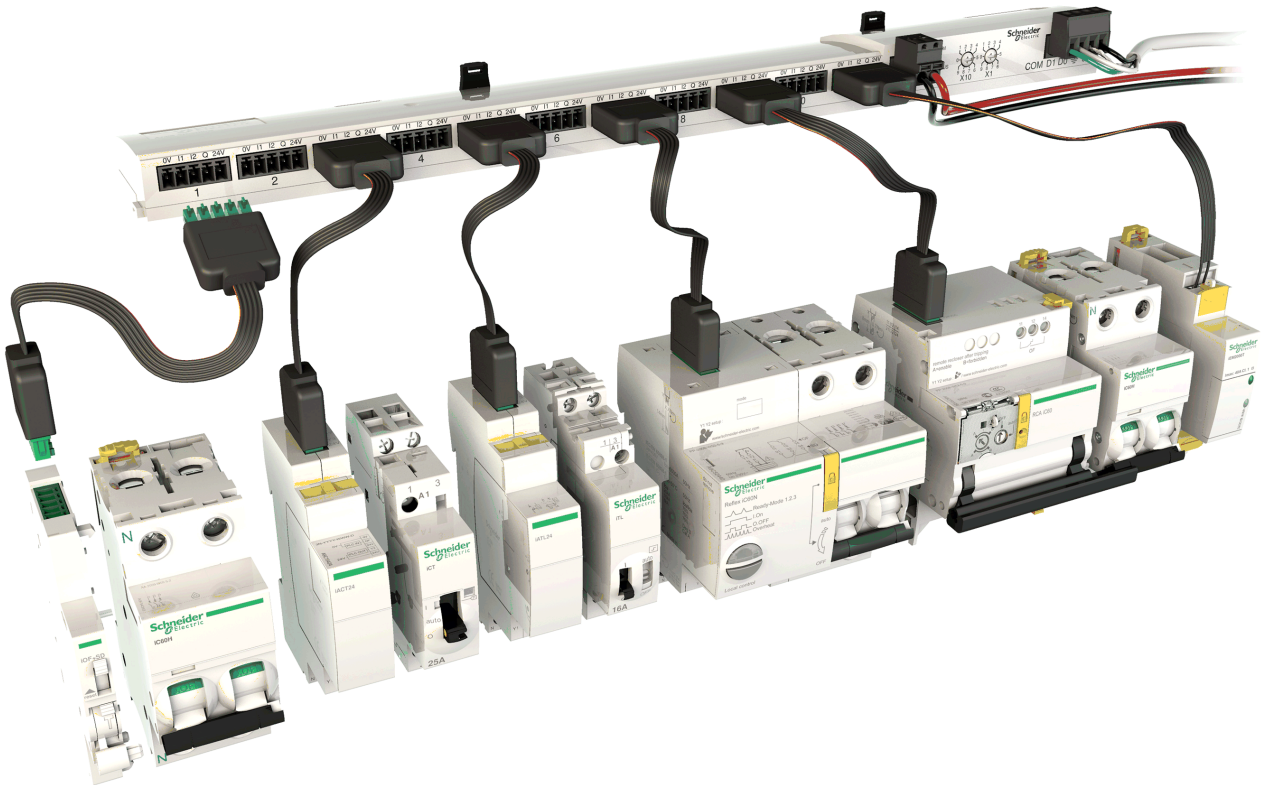# Acti 9 Smart Test Software
User Manual

11/2012

Schneider Electric

The information provided in this documentation contains general descriptions and/or technical character-istics 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 that is contained herein. If you have any suggestions for improvements or amendments or have found errors in this publication, please notify us.

No part of this document may be reproduced in any form or by any means, electronic or mechanical, including photocopying, without express written permission of Schneider Electric.

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

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

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

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

Table of Contents

Safety Information

Important Information

NOTICE

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

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

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

⚠ DANGER

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

⚠ WARNING

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

⚠ CAUTION

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

NOTICE

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

PLEASE NOTE

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

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

About the Book
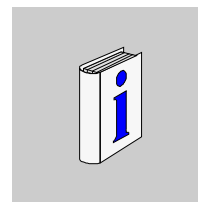
At a Glance

Document Scope

The scope of this manual is to provide the users, installers and maintenance personnel, with the necessary technical knowledge to install and use the Acti 9 Smart Test software.

Validity Note

The Acti 9 Smart Test software is used to:
- Test the electrical connections of the products connected to the Acti 9 Smartlink devices.
- Display the status of each product connected to the Acti 9 Smartlink devices.
- Test the status of the Modbus communication in a Modbus network of up to 10 Acti 9 Smartlink devices.

Related Documents

Title of Documentation	Reference Number
Acti 9 Communication System User Manual	DOCA0004EN

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

User Comments

We welcome your comments about this document. You can reach us by e-mail at techcomm@schneider-electric.com.

Presentation

1

What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
Packaging	10
Requirements	11
Description	12

Packaging

Installer

The Acti 9 Smart Test software is packaged in an installer.

The installer is composed of:
- Acti 9 Smart Test software
- .Net framework 3.5 SP1
- USB to RS485 converter driver for Windows XP/Vista
- USB to RS485 converter driver for Windows 7 32/64 bits
- Modbus driver (for Windows XP, Windows Vista and Windows 7)

The Acti 9 Smart Test software is compatible with:
- Windows XP SP3
- Windows Vista (32 bits and 64 bits)
- Windows 7 (32 bits and 64 bits)

Languages

The Acti 9 Smart Test software is available in 9 languages:
- Chinese
- Dutch
- English
- French
- German
- Italian
- Portuguese
- Russian
- Spanish

Requirements

Materials

Communication between the PC and the Acti 9 Smartlink devices can be done by 2 ways:
Ethernet TCP-IP wiring: through an EGX••• gateway with a Ethernet cable with 2 RJ45 connectors
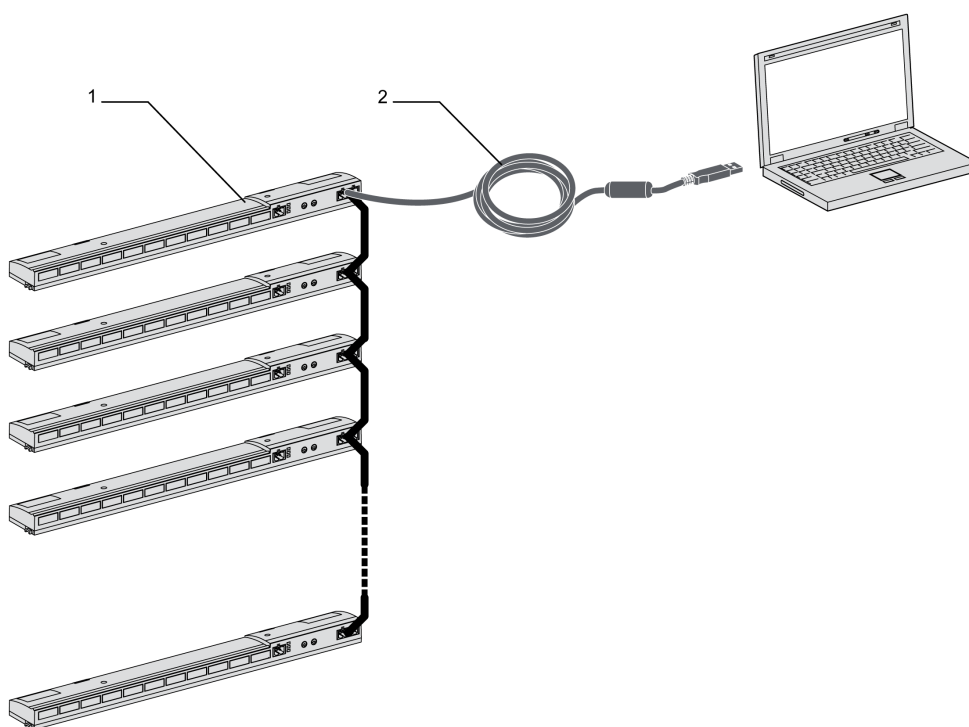**Modbus Serial Line wiring:** through a specific link with a USB-Modbus Serial Line cable (A9XCATM1 reference)

Ethernet TCP-IP wiring

EGX100 / EGX300
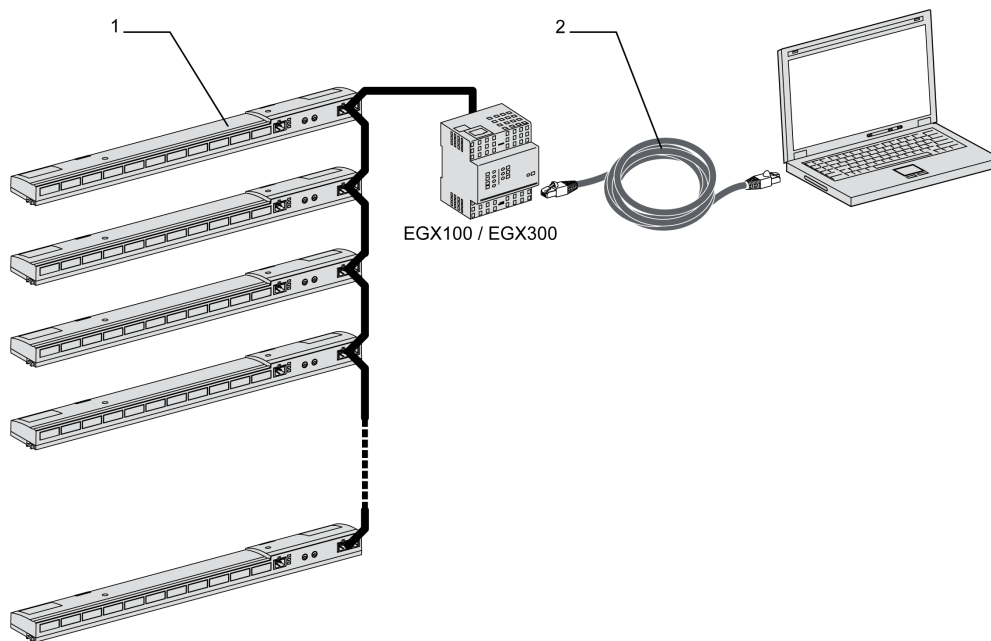
1 Acti 9 Smartlink
2 Ethernet cable with 2 RJ45 connectors

RS485 Serial Line wiring

1 Acti 9 Smartlink
2 USB-RS 485 converter cable for Modbus SL (A9XCATM1 reference cable)

Description

Purpose

The main purpose of the Acti 9 Smart Test software is to help technical personnel to check that all devices are correctly wired and function properly after installation.

Acti 9 Smart Test software offers a quick test process based on a very intuitive Graphical User Interface.

This software has the ability to deal with multiple Acti 9 Smartlink devices at the same time. They can be chained and only one is connected to the computer. However, the fixed limit of connected Acti 9 Smartlink devices is 10.

The Acti 9 Smart Test software is used to update the Acti 9 Smartlink firmware.

Main Functions

The Acti 9 Smart Test software has 3 main functions:
- testing the installation
- editing test reports
- updating the firmware on Acti 9 Smartlink

In order to test the installation, the software:
- Tests the communication network (Modbus SL / Modbus TCP-IP).
- Tests the connection and the status of the electrical devices connected to Acti 9 Smartlink.

Also, the software provides the following reports:
- list of tested devices (*.pdf* file)
- Acti 9 Smartlink channels assignment (*.dxf* file)

Installation

<div style="text-align:right">

2

</div>

Downloading and Installing

Presentation

There are two ways to install the Acti 9 Smart Test software.

Using the Schneider Electric web sites:

Step	Description
1	Go to the Schneider Electric web sites: *www.schneider-electric.com* or Schneider Electric country web site.
2	Search for the Acti 9 Smartlink range.
3	Go to the software associated with this range.
4	Download the Acti 9 Smart Test software.
5	Install the Acti 9 Smart Test software.

Using the Power Launcher software:

Step	Description
1	Download the Power Launcher software.
2	Install the Power Launcher software.
3	Launch the Power Launcher software.
4	Power Launcher allows the installation of Acti 9 Smart Test software. Start the installation of Acti 9 Smart Test software.

Registration

The software can be started 10 times before registration is required.

The software is always free of charge even after on-line registration.
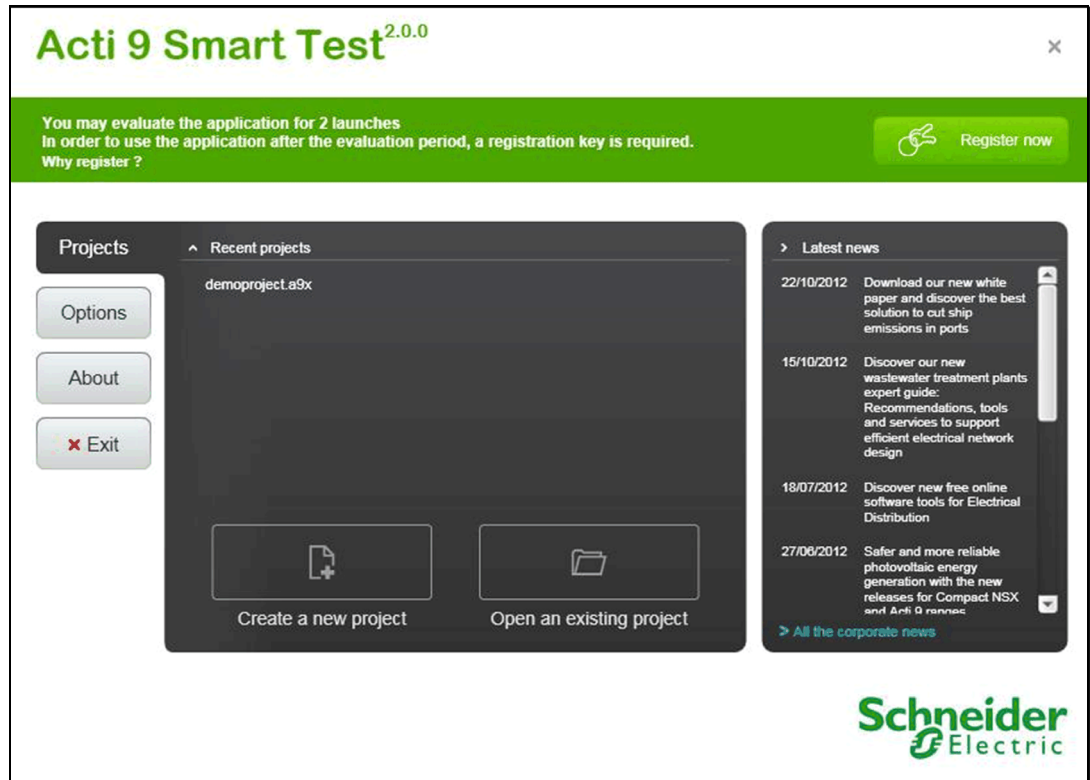
Use

3

What Is in This Chapter?

This chapter contains the following topics:

Start Page

Overview

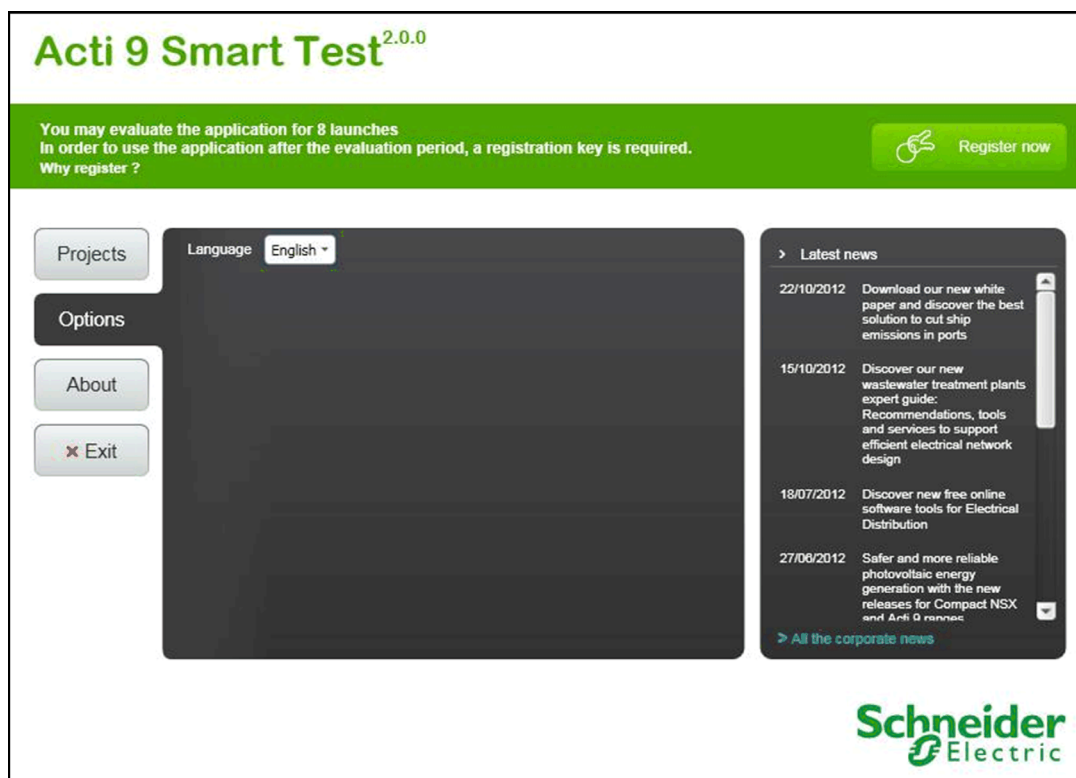The Start page is displayed after the program is loaded.

The main elements of the start page are the following 3 tabs:
- **Projects** tab *(see page 19)*
- **Options** tab
- **About** tab

The **Exit** button is used to quit the program.

The right panel provides some information about Schneider Electric latest news by RSS feeds.

Options Tab

This tab is used to change the interface language.

When a new language is selected, restart the software to apply this change.

About Tab

This tab provides 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
- licence agreement
- participation in the Schneider Electric customer experience improvement program

Projects Tab

Overview
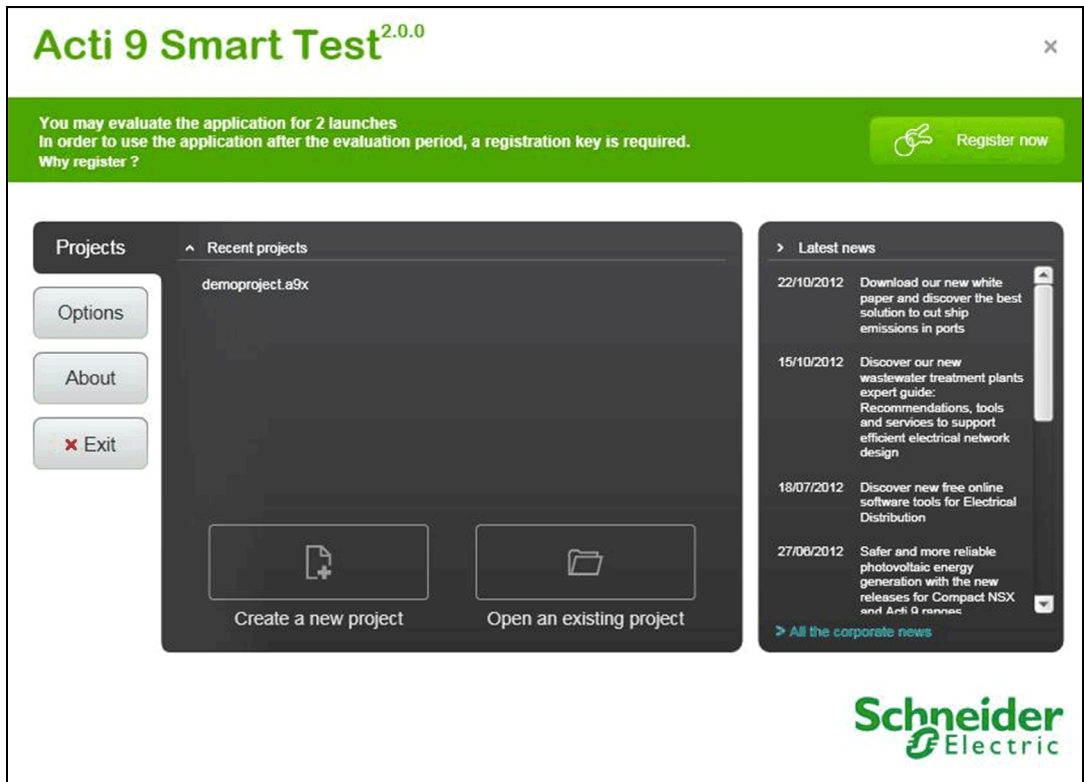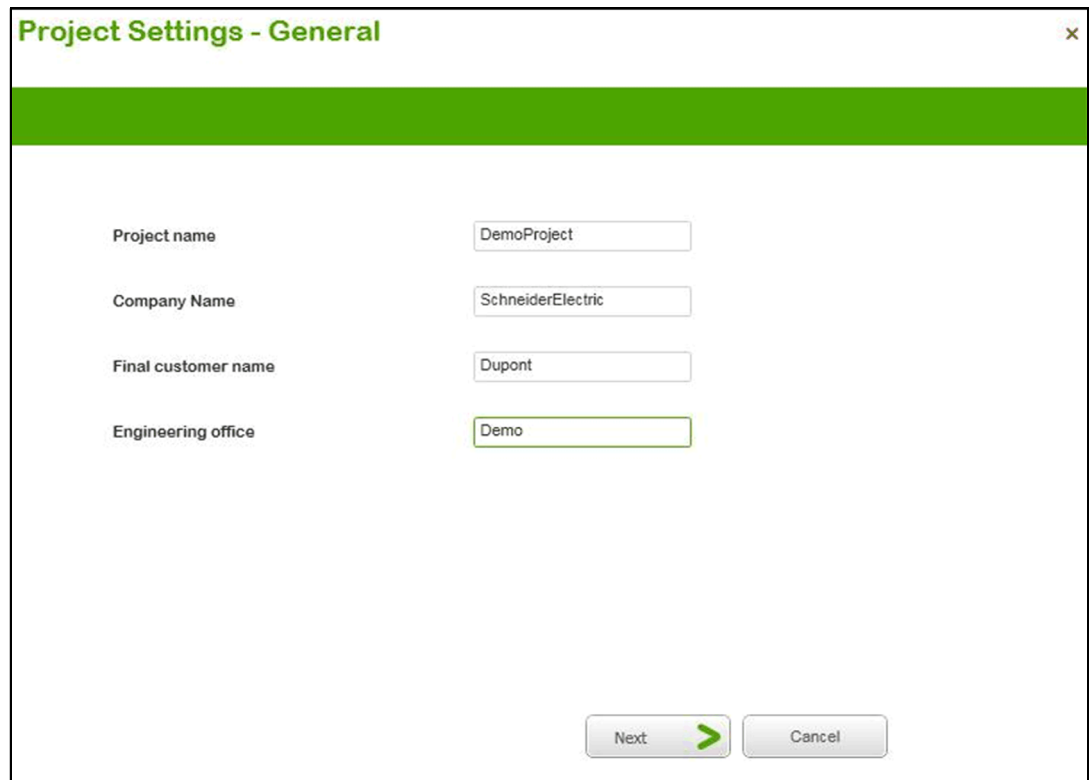
This tab is used to open an existing project and to create a new one.

Create a New Project

There are 2 ways to create a new project:

- by clicking the **Create a new project** button on the **Projects** tab
- by clicking the new project button on the toolbar

The following screen appears:
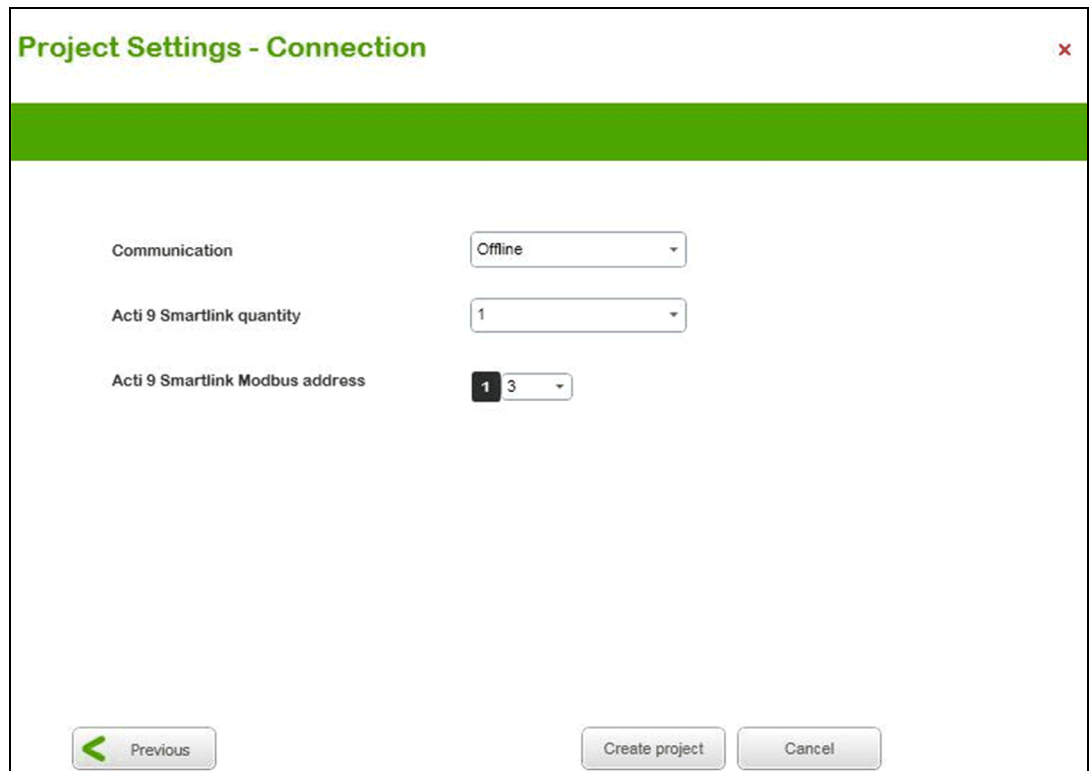
Complete all fields and then click the **Next** button to display the following screen:

There are 3 types of communication:

- Offline *(see page 21)*
- Modbus SL *(see page 22)*
- Modbus TCP/IP *(see page 23)*

Create a New Project with Offline Communication

The following table presents the procedure to configure a new project:

Step	Action
1	In the **Communication** list, choose **Offline**.
2	In the **Acti 9 Smartlink quantity** list, select the number of connected Acti 9 Smartlink devices (up to 10).
3	In each available **Acti 9 Smartlink Modbus address** box, select the address (1 to 99) of each connected Acti 9 Smartlink device. **NOTE:** All addresses have to be unique and unused (used addresses will be displayed but not available).
4	Click the **Create project** button.

NOTE: All fields in this user interface are mandatory.

Create a New Project with Modbus SL Communication

The following table presents the procedure to configure a new project:

Step	Action
1	In the **Communication** list, choose **Modbus SL**.
2	Connect the Schneider Electric USB-RS485 converter (A9XCATM1) to the laptop. The field **USB / Modbus link** is updated with the text: **Schneider-Electric USBRS485 converter connected**. **NOTE:** Another USB-RS485 converter could be used, then select in the **Advanced option** the right COM port.
3	In the **Acti 9 Smartlink quantity** list, select the number of connected Acti 9 Smartlink devices.
4	In each available **Acti 9 Smartlink Modbus address** box, select the address (1 to 99) of each connected Acti 9 Smartlink device. **NOTE:** All addresses have to be unique and unused (used addresses will be displayed but not available).
5	Click the **Create project** button.

NOTE: All fields in this user interface are mandatory.

Create a New Project with Modbus TCP/IP Communication

The following table presents the procedure to configure a new project:

Step	Action
1	In the **Communication** list, choose **Modbus TCP/IP**.
2	Connect an Ethernet cable with 2 RJ45 connectors to the laptop.
3	In the **IP Address** field, enter the IP address of the Modbus TCP gateway. **NOTE:** By default, the TCP port is 502. This port could be changed in the **Advanced option** field.
4	In the **Acti 9 Smartlink quantity** list, select the number of connected Acti 9 Smartlink devices.
5	In each available **Acti 9 Smartlink address** box, select the address (1 to 99) of each connected Acti 9 Smartlink device. **NOTE:** All addresses have to be unique and unused (used addresses will be displayed but not available).
6	Click the **Create project** button.

NOTE: All fields in this user interface are mandatory.

Open an Existing Project

There are 3 ways to open an existing project:
- by clicking the project name in the **Recent projects** list on the **Projects** tab.
- by clicking the **Open an existing project** button on the **Projects** tab.
  A file selection dialog box opens. It is used to select the project file to load.
- by clicking the open project button on the toolbar.
  A file selection dialog box opens. It is used to select the project file to load.

Toolbar

Presentation

The following figure presents the toolbar:

1 Acti 9 Smart Test logo
2 New project button
3 Open project button
4 Save project button
5 Settings button
6 Help button
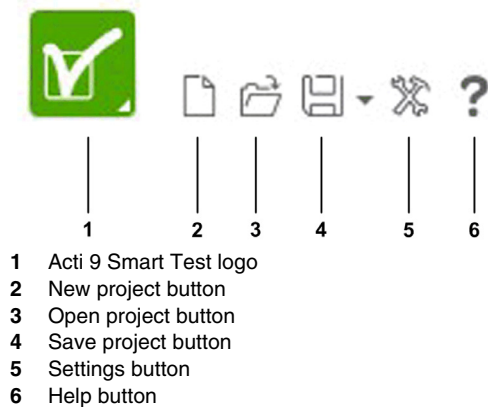
Acti 9 Smart Test Logo

Click the Acti 9 Smart Test logo to display the start page. If the project has been modified since the last save, a message arises to warn that the latest modifications will be lost if another project is selected.

New Project Button

Clicking the New project button closes the current project. If the current project has been modified since the last save, a dialog box warns the user that the latest modifications will be lost. Cancel the action or create a new project.
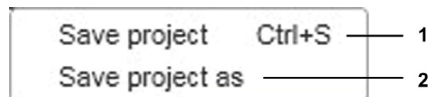
Open Project Button

Click the Open project button to open an existing project.

Save Project Button

Click the Save project to save the current project data.

The following submenu appears:

1 Save option is used to update the project.
2 Save as option opens a dialog box to select a location and a filename to save into.

NOTE: If the project has not previously been saved, the two options behave as a *Save as* action.

The project data is stored in a file on the local file system. Information stored in this file is:
● project name
● Modbus communication type (SL or TCP-IP)
● the number of Acti 9 Smartlink devices and their respective addresses
● for each channel of each Acti 9 Smartlink device, the channel name and the type of connected device

Settings Button

Click the settings button to modify current project information.

The Project Settings interface appears in the foreground. All information present in the interface can be updated.

This interface differs from the creating a new project interface by the replacement of the **Create project** button by a **Finish** button.

All information is updated once the **Finish** button is clicked.

● Click the settings button to initialize the communication or to activate again the communication between the laptop and the Acti 9 Smartlink network.
● Click the settings button to change the communication type.

Acti 9 Smart Test Tab

Overview

Once a project is created and configured, or opened, the test tool tab is displayed.
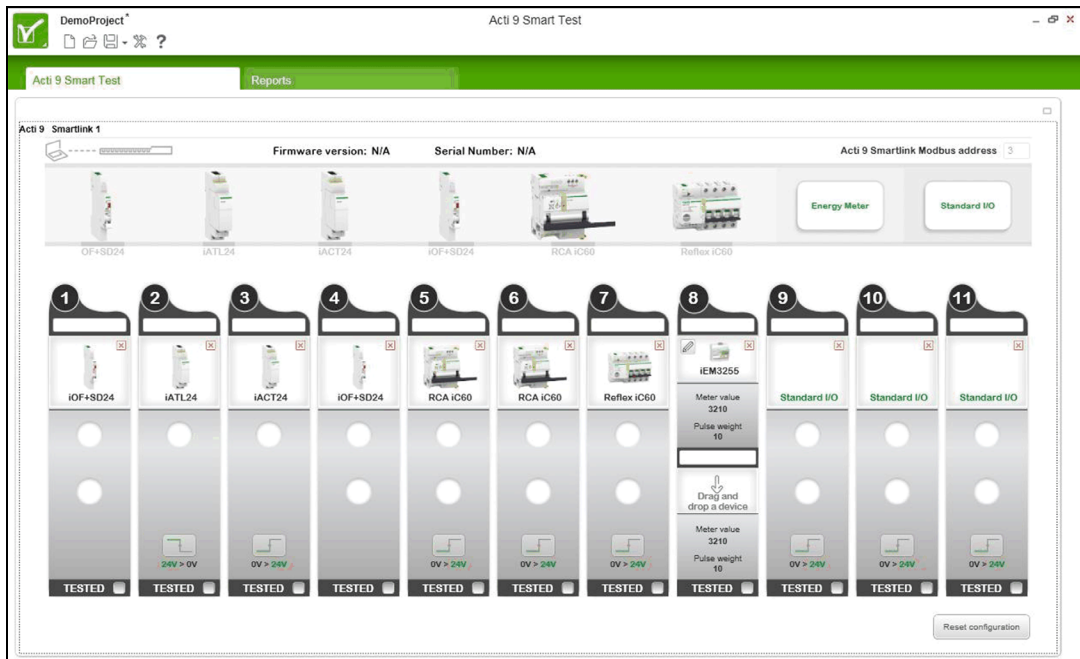
The interface is composed of 4 main parts:
- The top part with tabs, representing the number of connected Acti 9 Smartlink devices.
- The second part represents the communication configuration (connection state and slave address).
- The third part is a horizontal list of connectable devices (device toolbox), represented by an image.
- The last part is a graphical representation of each Acti 9 Smartlink channel, depending on the type of device which is connected.

NOTE: The configuration can be reset by clicking the **Reset configuration** button. All channels are set to **Standard I/O** after user confirmation.

Smartlink Tabs

Information on only one Acti 9 Smartlink device is displayed.

The tabs can be used to switch between the different connected Acti 9 Smartlink devices (up to 10).

The selected Acti 9 Smartlink device is displayed in bold characters.

Communication State

When the test tool interface is displayed, a communication attempt with the Acti 9 Smartlink device is done. In case of the Modbus SL protocol, the plug & play system is activated to determine if a COM port (real or virtual) is connected to an Acti 9 Smartlink device.

NOTE: Even if there is no connection to an Acti 9 Smartlink device, it is possible to select devices, save a project, and generate reports.

When a connection is made (by SL or TCP), the COM LED lights up in orange (as on the physical Acti 9 Smartlink device). At this time, data is retrieved and displayed at regular intervals. Polling is then stopped when the user leaves the **Acti 9 Smart Test** tab.

When the channel status changes, a beep is emitted by the PC's speaker.

Move the cursor over the COM LED to display a tooltip showing a more detailed representation (as on the physical Acti 9 Smartlink).

- Click the settings button to initialize the communication or to activate again the communication between the laptop and the Acti 9 Smartlink network.
- Click the settings button to change the communication type.

There are 4 statuses for the communication between the laptop and an Acti 9 Smartlink:

● communication initialization

● Acti 9 Smartlink connected

● Acti 9 Smartlink disconnected

● Acti 9 Smartlink not connected

Each of the 4 status is displayed in the upper left corner of the Acti 9 Smartlink Test screen:
● communication initialization
● Acti 9 Smartlink connected
● Acti 9 Smartlink disconnected
● Acti 9 Smartlink not connected

Firmware Version

The firmware version of the selected Acti 9 Smartlink device is indicated on the upper part of the interface.

Device Toolbox

This list is used to select the connected devices.

A device is selected by a drag-and-drop action from the device toolbox to the channel representation.

Move the cursor over a device to view its representation and name highlighted in green.

The counter type devices appear on mouse over **Energy Meter**.

The following graphics presents the device toolbox with the Energy Meter tooltip.
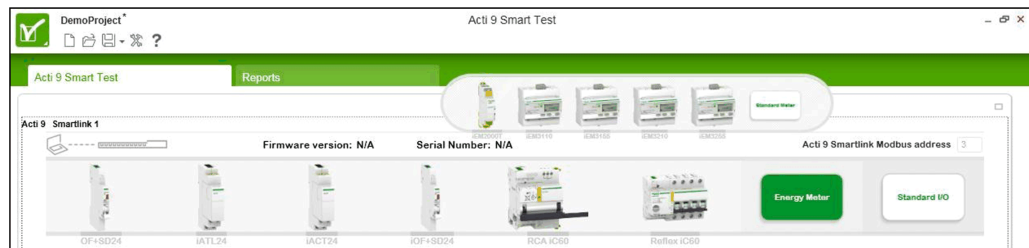
Project Configuration: Setting Devices

The first time a project is opened, or after a reset configuration action, all channels are configured with **Standard I/O** devices. Follow the procedure below to set the connected devices.

Step	Action
1	Drag-and-drop all connected devices from the device toolbox to the channels representations.
2	Type meaningful names in the channel name fields.
3	Click the save button on the toolbar and create a project file.
4	Repeat steps 1 to 4 for each Acti 9 Smartlink device.

NOTE: To remove a channel, click the red cross at the right top of this channel.

Representation of Devices (Except Counters) Connected to a Channel

The following graphics presents one channel of the channel representation part:
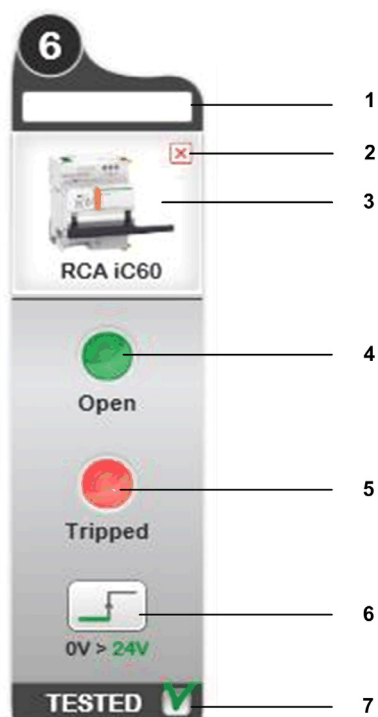
1 Device function
2 Remove the device
3 Type of connected device
4 Input 1 register value (read value)
5 Input 2 register value (read value)
6 Output register value (written value)
7 Enables behavior check of each device

The device name 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, on mouse over, the complete name is displayed.

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 presents 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 = 1
Input 2	1	Not tripped	Not tripped	Not tripped	auto/off = 1	–	–	I2 = 1
	0	Tripped	Tripped	Tripped	auto/off = 0	–	–	I2 = 1
Command button		–	–	X	X	X	X	X
Pulse weight configuration		–	–	–	–	–	–	–

Representation of Counters Connected to a Channel

Two counters can be connected on a single channel (one per input).

When an energy counter device is dropped on a channel, the representation changes as per the following graphic:
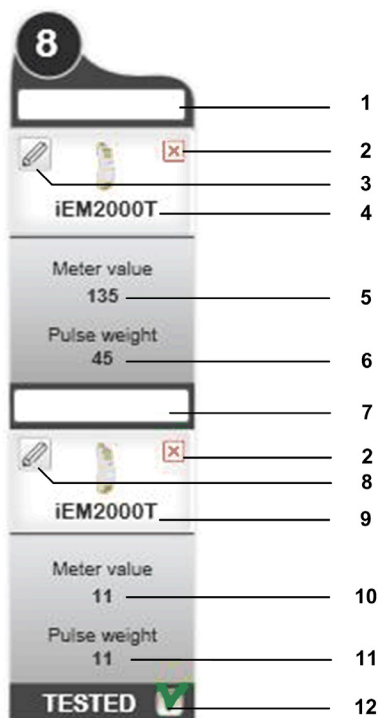
1 Input 1 counter
2 Remove the device
3 Input 1 delta pulse calculator
4 Type of connected counter on input 1
5 Input 1 meter value
6 Input 1 pulse weight
7 Input 2 counter
8 Input 2 delta pulse calculator
9 Type of connected counter on input 2
10 Input 2 meter value
11 Input 2 pulse weight
12 Enables behavior check of each device

For energy counter devices, the user can get/set the pulse weight of an input only if Acti 9 Smartlink is connected.

Project Configuration: Pulse Weight

The following pop-up is used to configure the time between 2 pulses.

Field	Description
Pulse weight	Pulse weight unit is Wh.
Load	Power of 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

The following table presents the procedure to configure the time between 2 pulses for one channel.

Step	Action
1	In the **Pulse weight** box, type the pulse weight value for the counter.
2	In the **Load** field, type the load of the channel (in W).
3	Click the **OK** button to validate.

Report Tab

Overview

The report tab is composed of 2 pages:
- **List of tested devices**
- **Acti 9 Smartlink channels assignment**

Click the page name in the top left corner of the screen to switch between the 2 pages.

Common Functions

The **Language** box is used to select a language for the report which differs from the one used in the interface.

The document viewer is used to navigate into the displayed report and to zoom in/out.

The **Print** button is used to publish the displayed report through a printer without saving it into a file beforehand.

List of Tested Devices

The **List of tested devices** page displays the list of connected devices.

This report contains the following information:
- the date of the report
- the project name
- for each Acti 9 Smartlink in the panel:
  - channel number
  - channel name
  - device type
  - test information of each channel (tested or not)
  - main Modbus addresses of the device

The **Save (.Pdf)** button is used to create a *.pdf* format file of the report. Click the button to open a dialog window, and then select the file name and the folder in which to save the file.

Acti 9 Smartlink Channels Assignment

The **Acti 9 Smartlink channels assignment** page displays the schematics of connected devices.
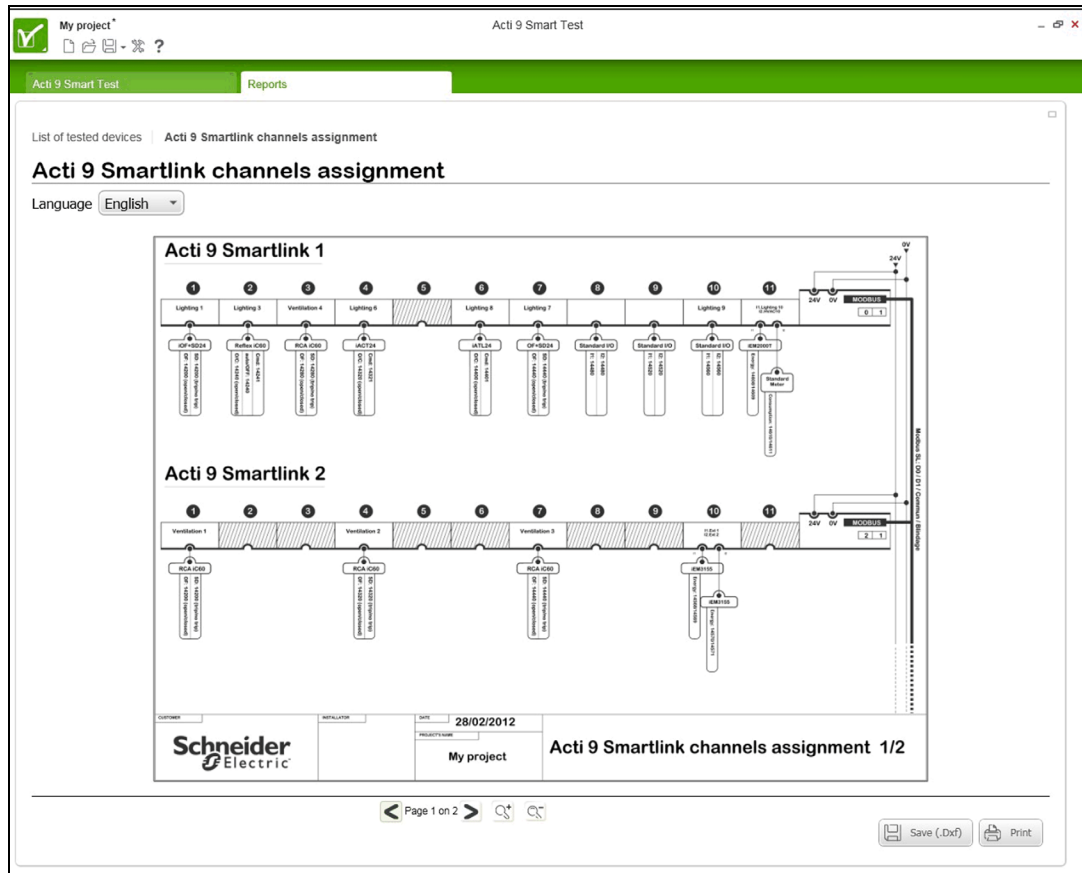
This schematics represents the connections between the different devices and the different Acti 9 Smartlink devices.

The **Save (.Dxf)** button is used to generate a file that can be opened in AutoCAD. Click the button to open a dialog window, and then select the file name and the folder in which to save the file.

The file of this schematics is created as a multi-page layout with 2 Acti 9 Smartlink devices displayed per page.

Updating the Firmware on Acti 9 Smartlink

Why Should the Firmware be Updated?

The firmware on Acti 9 Smartlink is updated taking into account new functions or application updates.

Download the latest version of the firmware to use the latest functions of Acti 9 Smartlink.

Operating Mode

Before performing any tests (on-site or in factory) on an Acti 9 Smartlink device, the Acti 9 Smart Test software must be activated on a PC connected to the Internet. Then the Acti 9 Smart Test software downloads the latest version of the Acti 9 Smartlink firmware without any user-intervention.

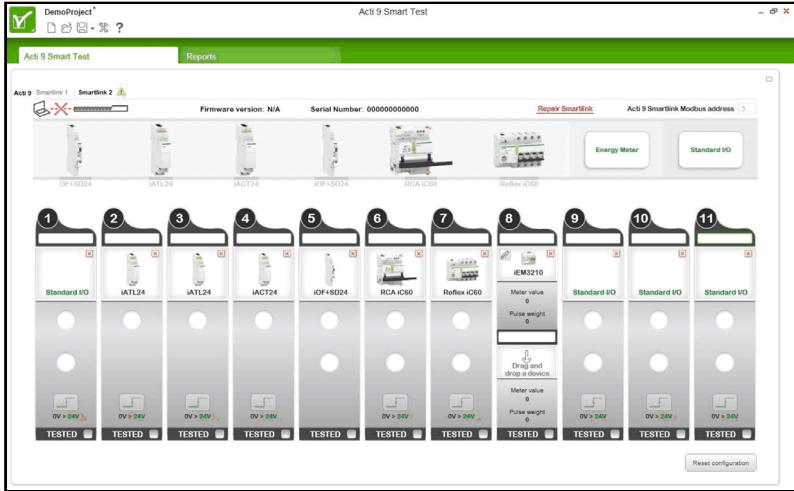| *NOTICE* |
|---|
| **RISK OF DAMAGE TO THE FIRMWARE** |
| ● Do not unplug the A9XCATM1 cable during the Acti 9 Smartlink firmware update.
 ● Do not interrupt the power to the Acti 9 Smart Test software during the Acti 9 Smartlink firmware update. |
| **Failure to follow these instructions can result in equipment damage.** |
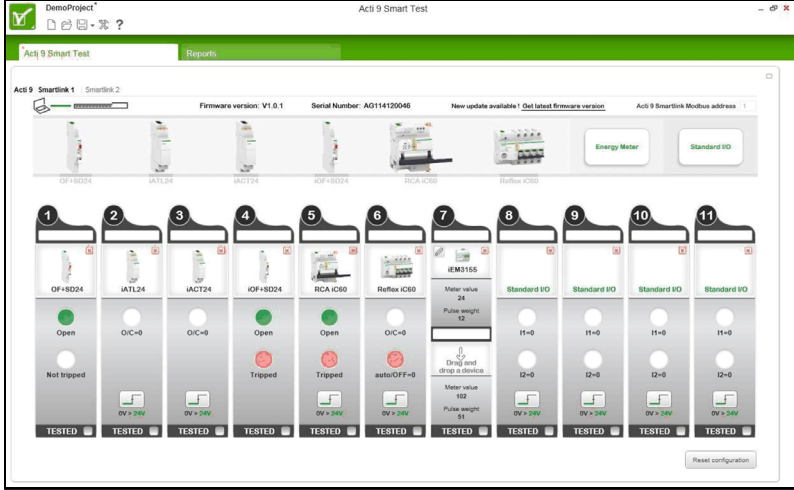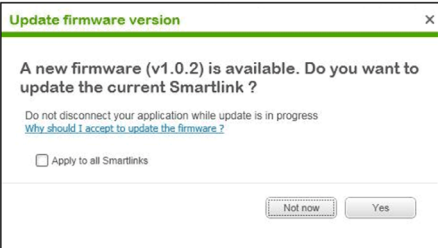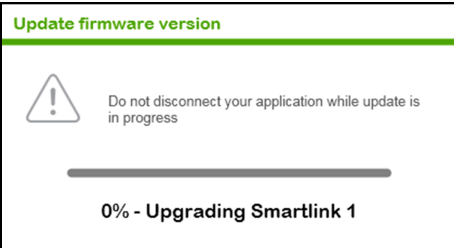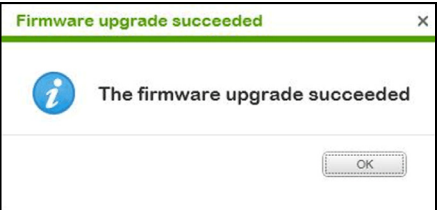
NOTE:

● If the firmware update is interrupted, the Acti 9 Smartlink device will not operate properly.
● To have the Acti 9 Smartlink device operating properly again, the Acti 9 Smartlink firmware must be updated.

Proceed, as follows, to update the firmware from the Acti 9 Smart Test tab:

Step	Action
1	Each connected Acti 9 Smartlink device is represented by a tab.
2	Select an Acti 9 Smartlink by clicking the corresponding tab. If the firmware of the Acti 9 Smartlink is not the latest version available, **New update available!** displays on top of the interface.

Step	Action
3	Click **Get latest firmware version**.
4	The following window displays to confirm the installation of the new firmware version on the Acti 9 Smartlink. **Update firmware version** A new firmware (v1.0.2) is available. Do you want to update the current Smartlink ? Do not disconnect your application while update is in progress Why should I accept to update the firmware ? ☐ Apply to all Smartlinks Not now / Yes ● For details on the need for updating the firmware, click **Why should I accept to update the firmware?** In particular, to use new functions of Acti 9 Smartlink. ● Check the box **Apply to all Smartlinks** to update the firmware for all the Acti 9 Smartlink devices in the project. ● Click the **Yes** button to validate and start the firmware update. **Result:** The following window displays. **Update firmware version** ⚠ Do not disconnect your application while update is in progress 0% - Upgrading Smartlink 1 ● Click the **Not now** button to exit the firmware update without updating.
5	When a message indicates that the firmware update has succeeded, click the **OK** button in the window that displays. The update procedure is now complete. **Firmware upgrade succeeded** ⓘ The firmware upgrade succeeded OK
6	If the firmware update has not succeeded, a window displays: ● The number of the Acti 9 Smartlink devices not updated is indicated. ● Proceed as described in the window below: ● click the **Repair** button to restart the firmware update, or ● click the **Abort** button to exit the update. **Firmware upgrade failure** ⚠ The firmware upgrade failed An error occured during the upgrade process. Following Smartlinks are not operational: ● Smartlink 2 ● Check connection state with Smartlink (USB, gateway...) ● Check that the Smartlink is turned on ● Check that nobody is already communicating with the Smartlink ● If the process still fails, try to reboot the Smartlink Abort / Repair

Troubleshooting

<div style="text-align: right">

4

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Common Problems

Overview

Abnormal behavior might arise when installing or using the Acti 9 Smart Test software.

These problems are classified into 2 groups:
- Communication problems: information is not transmitted.
- Functionality problems: the software does not work as designed.

The following tables describe the abnormal behavior and diagnostics, and provide some corrective actions.

Communication Problems

Fact	Diagnostics	Action
COM, Input 1 and Input 2 LEDs are switched off.	No communication between the Acti 9 Control system and the PC.	Check the 24 VCC supply of each Acti 9 Smartlink device (green LED). Check the Modbus chaining. Check the connection between the Acti 9 Control system and the PC. - Check there is only one Modbus master (Laptop + Acti 9 Smart Test). Check there is no other Modbus master in the RS485 Modbus network. - Switch OFF/ON the 24 VDC power supply of the Acti 9 Smartlink to reinitialize the Modbus communication parameters (auto-adaptation of Baud rate, parity, and number of stop bits). Check that the projects settings are compliant with the physical system.
COM LED is flashing.	Communication problem on one of the Acti 9 Smartlink devices.	Check the 24 VCC supply of each Acti 9 Smartlink device (green LED). Check that the projects settings are compliant with the physical system. Check each Acti 9 Smartlink device address (no address at 0, no identical addresses).
Remote command does not work.	Configuration problem on the software or on the Modbus TCP gateway.	Check that the local command works (if present). Check that the remote command setting is activated on the device. Check that the Modbus TCP gateway settings are compliant with the remote command.

Functionality Problems

Fact	Diagnostics	Action
No beep emitted by the PC's speaker.	Incorrect PC audio settings.	Check the audio volume of the speaker. Check the audio card settings.
No status change nor beep.	Wiring problem Incorrect counter settings	Check the wiring between the Acti 9 Smartlink and the counter. Check that the pulse weight value is not 0. Check the ratio between the pulse weight and the power connected to the counter. **NOTE:** If the power is too low, the time between 2 pulses may be long.
Reports do not print out.	Connection troubles Incorrect printer settings	Check that the printer is switched on and powered. Check the printer wiring. Check that the right printer is set by default.

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