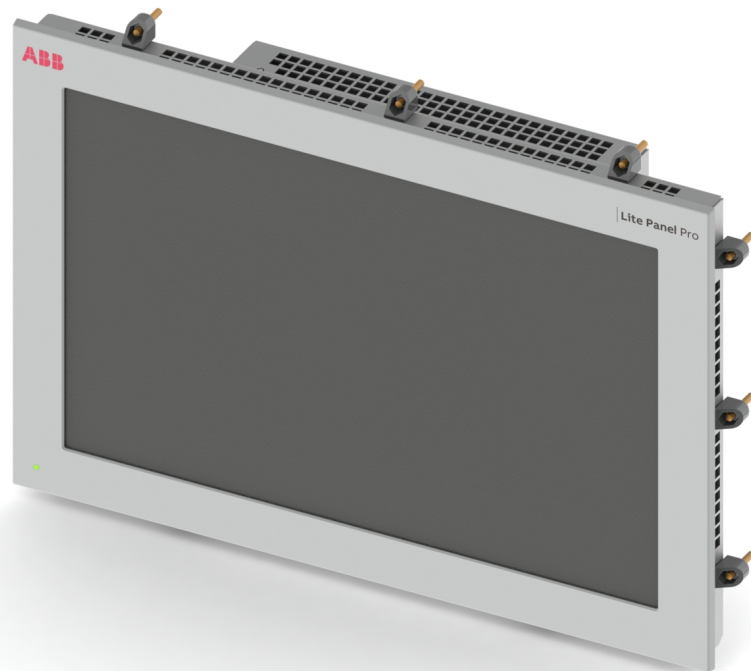


Lite Panel Pro

User Manual



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1 - Introduction

1.1 - Introduction to this manual

Purpose of the document	The purpose of this manual is to guide the user step by step through the installation and commissioning of Lite Panel Pro. The manual includes general information such as cyber security, product description, instructions for installing, configuring and using Lite Panel Pro.
Key to messages	 Note: <i>neutral and positive information that emphasises or adds information to points in the main text. Provides information that can only be applied in special cases.</i> NOTICE: <i>Indicates obligations which, if not observed, may result in damage to the equipment.</i>  CAUTION! indicates a hazardous situation which, if not avoided, may result in minor injury.  WARNING! indicates a hazardous situation which, if not avoided, could result in death or serious injury.

1.2 - Safety information

General information



WARNING! Dangerous voltage that can cause electric shock, burns or death. Do not handle, install, use or service this product until you have read the instructions.



WARNING! READ THIS DOCUMENT CAREFULLY BEFORE INSTALLING OR USING THIS SOFTWARE WITH THE DEVICES THAT CAN BE MONITORED.

These instructions must be filed along with any other instructions, drawings and descriptive documents. Keep this document in an accessible place for consultation when required.

Lite Panel Pro must be used by qualified personnel who have read all installation instructions. Follow the safety procedures indicated by your company and make sure to make devices safe according to regulations.

Do not remove covers, open doors, or work on equipment connected to the device unless the power supplied to the switchboard in which it is housed has been disconnected and before all the circuits have been de-energised.



WARNING!

- Detailed descriptions of standard installation, use and maintenance procedures and principles for safe operation are not included. It is important to note that this document contains safety and cautionary warnings against certain methods (of installation, use and maintenance) that could harm people, damage devices or make them less safe.
- These notices and alarms do not include all possible methods of installation, use and maintenance recommended or not recommended by ABB that might be applied and the possible consequences and complications of each conceivable method. ABB will not investigate all such methods.
- Anyone using maintenance procedures or devices, whether or not recommended by ABB, should carefully check that neither personal safety nor safety devices are endangered by the method of installation, use, maintenance or tools used. For further information, clarification or specific problems contact your nearest ABB facility.
- This manual has been written for qualified persons only and is not intended as a substitute for proper training or experience with safety procedures for this equipment.
- The purchaser, installer or end customer is the person responsible for affixing safety warnings and notices and for securely locking all access points and operating devices when the switchgear is left unattended.
- All information in this document is based on the latest information available at the time of publication. We reserve the right to make changes to the document at any time and without prior notice.
- This software is the property of ABB and is warranted for use with ABB devices only. Duplication and distribution, unless previously authorised by ABB, are strictly prohibited. Any disassembly, modification or manipulation of this software is prohibited.

Cyber security legal disclaimer

Lite Panel Pro is designed to be connected and to communicate information and data via a network interface, which should be connected to a secure network. It is the sole responsibility of the customer to provide and continuously ensure a secure connection between the product Lite Panel Pro and the network. The customer is responsible for establishing and maintaining all appropriate measures (e.g. installation of firewalls, application of authentication measures, data encryption, installation of anti-virus software, etc.). The user must protect the Lite Panel Pro product, the network, its systems and interface against any type of security breach, unauthorised access, interference, intrusion, loss and/or theft of data or information. ABB and its affiliates are not liable for damages and/or losses related to such security breaches, unauthorized accesses, interference, intrusion, loss and/or theft of data or information.

TCP/IP-based protocols and IP ports used

If it is necessary to set up an IP firewall, connect the IP ports to the device according to the table below:

Interface	Port	Type	Default status	Description
ETH1	22	TCP	Closed/Inbound	SSH (access for ABB maintenance)
ETH1	53	TCP/UDP	Closed/Outbound	DNS (Domain Name System)
ETH1	67	UDP	Closed/Outbound	DHCP (Dynamic Assignment of IP Addresses)
ETH1	80	TCP	Closed/Inbound	HTTP (web interface)

Interface	Port	Type	Default status	Description
ETH1	123	UDP	Closed/Outbound	NTP (Network Time Protocol)
ETH1	443	TCP	Open/Inbound	HTTPS (secure web interface)
ETH1	502	TCP	Closed/Inbound	Modbus TCP (reading of data from the device)
ETH1	502	TCP	Closed/Outbound	Modbus TCP (reading of data from field devices)
ETH2	22	TCP	Closed/Inbound	SSH (access for ABB maintenance)
ETH2	53	TCP/UDP	Closed/Outbound	DNS (Domain Name System)
ETH2	67	UDP	Closed/Outbound	DHCP (Dynamic Assignment of IP Addresses)
ETH2	80	TCP	Closed/Outbound	PKI certificate updating
ETH2	80	TCP	Closed/Inbound	HTTP (web interface)
ETH2	123	UDP	Closed/Outbound	NTP (Network Time Protocol)
ETH2	443	TCP	Closed/Inbound	HTTPS (secure web interface)
ETH2	443	TCP	Closed/Outbound	User authentication, device provisioning and telemetry
ETH2	502	TCP	Closed/Inbound	Modbus TCP (reading of data from the device)
ETH2	502	TCP	Closed/Outbound	Modbus TCP (reading of data from field devices)
WLAN0*	80	TCP	Closed/Inbound	HTTP (web interface)
WLAN0*	443	TCP	Closed/Inbound	HTTPS (secure web interface)
WLAN0*	68	UDP	Closed/Inbound	DHCP (dynamic IP assignment)



Note*: this interface is only available if the Wi-Fi dongle is connected to Lite Panel Pro.

Standards for secure communication

The Modbus protocol does not provide encryption, authentication or integrity checking of the transmitted data.

By default, the web server uses the HTTPS secure protocol. If you decide to enable the HTTP protocol, it will send data in plain text and can therefore be subject to interception by unauthorised persons. For these reasons, communication between Lite Panel Pro and the control system is not totally secure.

To protect Lite Panel Pro and ensure it works as intended, connect Lite Panel Pro to a reliable network, i.e. one that is strictly limited and controllable. In addition, restrict access to Lite Panel Pro to personnel authorised to make changes to the configuration.

Lite Panel Pro certifications and approvals

CE	Emissions	- EN IEC 61326-1. Electrical equipment for measurement, control and laboratory use. - EMC requirements - General requirements, EMC Directive 2014/30/EU.
	Immunity	- EN IEC 61326-1 Electrical equipment for measurement, control and laboratory use. - EMC requirements - General requirements, EMC Directive 2014/30/EU.
RoHS	- EN IEC 63000:2018 - Technical documentation for the evaluation of electrical and electronic products with respect to the restriction of hazardous substances. - RoHS Directive 2011/65/EU - Delegated Directive 2015/863/EU.	
cULus Listed	- ANSI/UL 61010-1, "Electrical equipment for measurement, control and laboratory use - Part 1: General requirements" and ANSI/UL 61010-2-201, "Safety requirements for electrical equipment for measurement, control and laboratory use - Part 2-201: Particular requirements for control equipment." - CAN/CSA-C22.2 N. 61010-1 (2012), "Safety requirements for electrical equipment for measurement, control and laboratory use - Part 1: General requirements" - CAN/CSA-C22.2 N. 61010- 2-201 (2014), "Safety requirements for electrical equipment for measurement, control and laboratory use - Part 2-201: Particular requirements for control equipment".	

**Wi-Fi Dongle certifications
and approvals**

- CE / RED (Europe)
- FCC (U.S.)
- IMDA (Singapore)
- NCC (Taiwan)
- BSMI (Taiwan)
- RCM (Australia & New Zealand)
- Anatel (Brazil)

For further information, please refer to https://www.edimax.com/edimax/merchandise/merchandise_detail/data/edimax/global/wireless_adapters_ac1200_dual-band/ew-7822ulc/.

2 - Lite Panel Pro

2.1 - Main features and supported devices

Functions of Lite Panel Pro

Lite Panel Pro is an industrial control panel for monitoring and controlling ABB and third-party devices. The main functions of Lite Panel Pro are shown in the following table.

Functions	Details	Note
Communication configuration	RTU Modbus	Maximum 90 devices with the following limits: - Maximum 30 devices in Modbus RTU (15 for each COM port) - Maximum 20 third-party devices regardless of protocol
	Modbus TCP	
Third-party devices	Addition of third-party devices (Modbus RTU and TCP) using a template approach	
Protocol Translator	Modbus TCP requests sent to the Lite Panel Pro with slave address greater than 1 are forwarded to the Modbus RTU devices connected to the panel.	-
Device search	Automatic scanning for compatible field devices. Manual addition of third-party devices.	-
Remote operation	Remote opening and closing	Only for circuit-breakers and TruOne
	Communication status of the device	-
Measures	Real-time monitoring	Voltages, currents, power, energy, device information, harmonics, network analysis, measurement history, trip history, event log, frequency, power factor, alarms, warnings
	Historical data logging	Voltages, currents, power, energies, alarms and warnings When using the maximum number of supported devices, at least one year's data logging is guaranteed. Logging capacity increases as the number of connected devices decreases.
Reports	Individual	-
	Scheduled	Daily, monthly, weekly
Diagram	Ability to load an image to tag assets	-
Web server	Possibility to use the Lite Panel Pro interface directly from a PC	See chapter "Access from computer" on page 48
Cloud	Connecting monitored devices to the ABB Ability™ Energy Manager cloud platform	See chapter "Cloud connectivity" on page 40
Languages	Italian, English, Chinese, French, Spanish, German	-



Note: available sizes vary depending on device family and type of connected device unit.

Communication architecture

Lite Panel Pro enables several devices to be monitored by means of Modbus RTU and Modbus TCP/IP protocols.

Lite Panel Pro supports a maximum of 90 devices with the following limits:

- Maximum 30 that communicate via Modbus RS485 serial network (Modbus RTU protocol – 15 for each RS485 COM port)
- Maximum 20 third-party devices regardless of protocol

WARNING: Lite Panel Pro and Modbus TCP devices must be connected to the same private network as the customer.

Supported ABB devices

Lite Panel Pro Supports various ABB low-voltage devices. A list of all supported devices is available at the following link:

<https://search.abb.com/library/Download.aspx?DocumentID=1SDH002324A1001&LanguageCode=en&DocumentPartId=&Action=Launch>

Supported third-party devices

Lite Panel Pro also supports third-party devices. At the following link you can find a list of available templates and the corresponding Modbus map exposed by Lite Panel Pro:

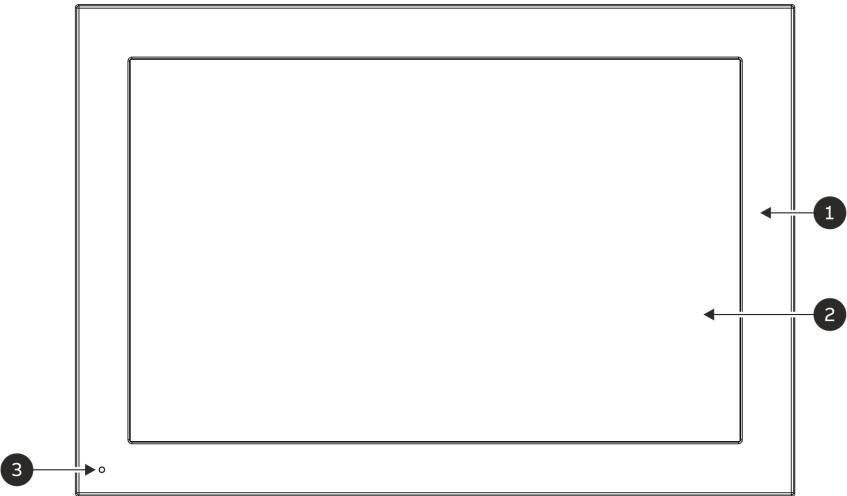
<https://search.abb.com/library/Download.aspx?DocumentID=1SDH002322A1001&LanguageCode=en&DocumentPartId=&Action=Launch>



Note: for monitoring third-party devices, see *Page Devices* and *Page Device models*.

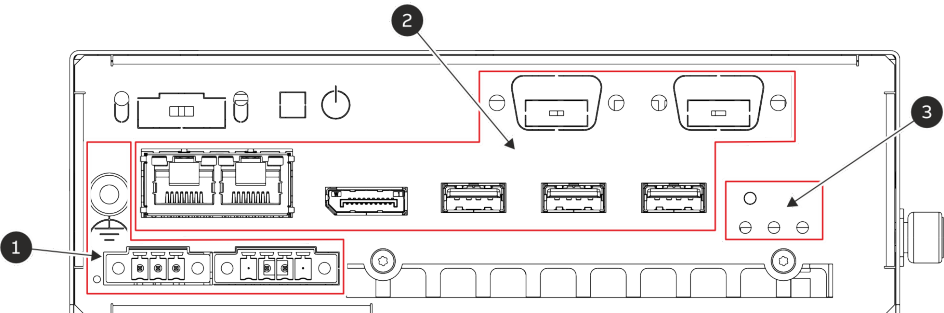
2.2 - Structure of Lite Panel Pro

Front view



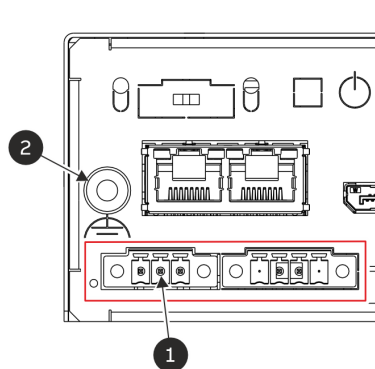
Part	Description
1	Aluminium front panel (12.1 inches with 16:10 ratio)
2	Resistive touchscreen
3	On/Off/Standby LED

Rear View



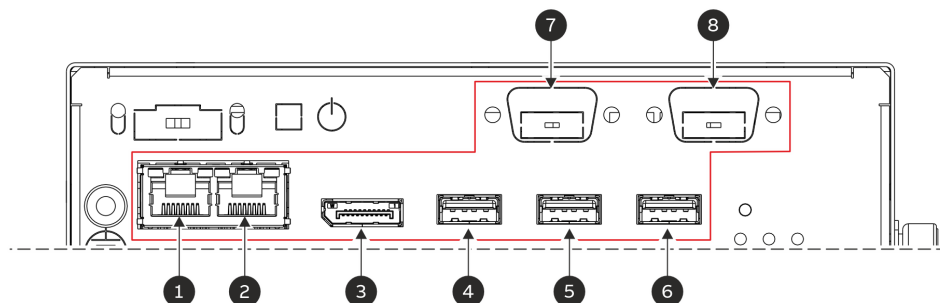
Part	Description
1	Power supply area
2	Connections area
3	LED and pushbuttons area

Power supply area



Part	Description
1	DC power input terminal block
2	Earth connection screw

Connections area



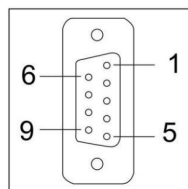
Part	Description
1	ETH 2 (10/100/1000 Mbps)
2	ETH 1 (10/100/1000 Mbps)
3	Display port – not used
4	USB 3.0
5	USB 3.0
6	USB 3.0
7	RS485 COM 2 port
8	RS485 COM 1 port

RS485 port pinout

COM ports 1 and 2 are 9-pin communication interfaces supporting Modbus RTU communication via RS485. This type of port supports the Half Duplex transmission system.



Note: the Lite Panel Pro package does not include the adapter to connect the COM1/COM2 ports of Lite Panel Pro to the serial bus to which the Modbus RTU devices are connected.

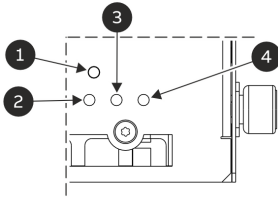


Pins	RS 485
1	
2	
3	RTX+

Pins	RS 485
4	
5	GND
6	
7	RTX-
8	
9	

 **Note:** for more information on electrical wiring, please refer to the kit sheet.

LED and pushbuttons area



Part	Description
1	Reset button for forced and immediate restart of the device. Data saved in the Lite Panel Pro will not be lost. Fore more information on reset, see Device reset.
2	Overheating or low battery LED. The LED states are listed below: - Flashing red: Battery voltage is below 2.5V. Replace the battery, see Replacement of the battery. WARNING: if the battery is low, the device time may not be reliable and may have a negative impact on data logging. - Steady red: system overheating. Switch Lite Panel Pro off and check cooling and power consumption.
3	Mass storage LED. When the LED is lit (yellow), it indicates that data is being transferred between the device and the SSD.
4	Power supply LED. The LED states are listed below: - off: the system is not powered - yellow: the shutdown procedure is complete, it is safe to remove the power - steady green: the system is in operation - flashing green: the system is in a low-power state, current session information is held in RAM

Labels

The following labels can be found on the rear panel:

- Label indicating connections
- Label showing trademarks

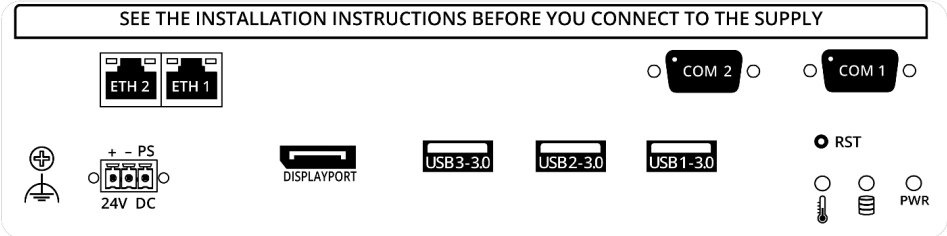


Figure 1 Label indicating connections

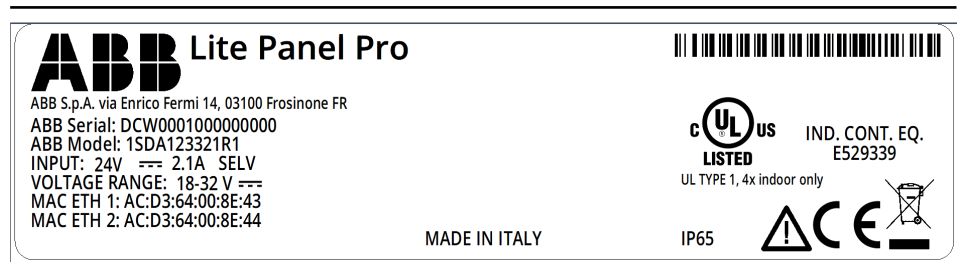


Figure 2 Label showing trademarks

2.3 - Installation

Important installation information



WARNING! Live parts Heart attack, burns and other injuries.

- Do not install Lite Panel Pro in environments with explosion hazards, such as the presence of flammable gases, steam or dust.
- Keep main AC power supply cables, PLC output modules, contactors, starters, relays, and other types of electrical interface equipment away from the back of Lite Panel Pro.
- Keep Lite Panel Pro away from inverters and switching power supplies. The input and output of these types of equipment must be shielded and connected to the star point of the system.
- Before commissioning the device, ensure that the system where Lite Panel Pro is to be installed complies with all applicable EU and international regulations.
- Only trained and authorised personnel may access the cabinet in which Lite Panel Pro is installed.
- Make sure that the system is properly (ergonomically) accessible to the operator.
- Choose a suitable mounting height
- Lite Panel Pro may only be used by personnel qualified for the specific task and in accordance with the instructions in this manual.
- Always switch off the power supply before opening the cabinet: opening the cabinet may expose high-voltage parts.
- To access the cabinet where Lite Panel Pro is installed, use a key or tool.

WARNING:

- Install in environments that respect the temperature and humidity limits indicated in Installation.
- Do not install in environments with heavy mechanical vibration.
- Avoid direct exposure to sunlight.
- Install Lite Panel Pro only in indoor environments (e.g., assembly cabinets, switchboards, control panels, consoles).
- To avoid electrical noise interference, connect the earth correctly.
- Check that the wiring is correct before applying voltage again. The DC power supply must be properly isolated from the main AC power supply.

Wiring diagrams

Refer to the kit sheet included in the package for installation instructions and wiring diagrams.

Technical data

Environment	Internal
LCD	12.1 inches – 1280x800 (16:10)
Touchscreen	5-wire resistive
Degree of protection	IP65 – front panel*
Processor	Intel® Atom® x7-E3950 •1.60 GHz (2.00 GHz Turbo), 4 cores / 4 threads, 2MB L2 cache, 14nm
RAM (soldered)	8GB LP-DDR4
Mass storage	60GB SSD M.2 2242 SATA III - 3D TLC
Interfaces	2x Ethernet 10/100/1000Mbps (RJ45) 3x USB 3.0 (Type-A) 1x Display Port V1.2 2x RS 485 (DB9M)
Power supply	24V DC (18÷32V DC) isolated
Battery	3 V CR2032 lithium button
Operating temperature	0°C ÷ 50°C
Storage temperature	-5°C to 60°C
Operating and storage relative humidity	90% non-condensing

Certifications	CE, UL 61010-1, UL 61010-2-201 (for further details, see Safety information)
Cyber security	TPM 2.0
Earthing cable	Cable cross-section (not included): 2.5 mm ² (AWG14) Copper conductor, certified to operate at least at 75°C.

WARNING: **the Lite Panel Pro front panel provides IP65 protection if the following conditions are met:*

- *installation panel thickness of 2 to 6 mm*
- *maximum limit of deformation on the plane of the installation panel equal to 0.5 mm*
- *permissible surface roughness on the installation panel in the gasket adhesion area ≤ 120 microns (Rz 120) to ensure proper operation of the installation gasket.*

2.4 - User management

User types

There are five user types: Administrator, Developer, Engineer, Operator and Guest. By default, only the Administrator user is enabled. To enable the other users, see First steps.

The following table shows the functions enabled for each user.

Functions	Administrator	Developer	Engineer	Operator	Guest
View, edit and reset user profile passwords	X	-	-	-	-
View and edit Lite Panel Pro settings	X	X	X	-	-
Scan, add, remove and edit devices	X	X	-	-	-
Remotely control devices	X	-	X	X	-
View information on devices connected to Lite Panel Pro	X	X	X	X	X
View reports	X	X	X	X	X
Edit reports	X	X	-	-	-
View diagrams	X	X	X	X	X
Edit diagrams	X	X	-	-	-
View and edit the template-based model	X	X	-	-	-
Adding and removing devices to and from the cloud platform	X	X	-	-	-

Administrator user

The administrator is the person responsible for Lite Panel Pro. The administrator is responsible for ensuring that all persons who connect to Lite Panel Pro are authorised to do so. Only the administrator has the permissions to enable or disable other users and can change the passwords of all users. The administrator is advised to change all default passwords (see User management) after the first login. Please take care of the password and inform the relevant user after making any changes.

WARNING: if the administrator user forgets the password, the device will have to be reset, see Device reset.

Default user passwords

The default passwords for each user are as follows:

- Administrator: Administrator#1
- Developer: Developer#1
- Engineer: Engineer#1
- Operator: Operator#1
- Guest: Guest#1

When the Administrator user resets a password, it is reset to its default value.

Resetting the administrator password

If the administrator user forgets the password, it can be reset to the default value, without having to initialise Lite Panel Pro, by using the following procedure:

1. Click on the **Login** button at the top right.
2. Select the *administrator* user profile and click on the **Reset password** button

here'. At the very bottom of the page, there is a footer with copyright information, SN: 0002485377957897, IP: 192.168.2.1, and a status 'Disconnected from ABB Ability™ Energy Manager'."/>

Reset password

Upload the file to reset your password

Choose File No file chosen

Reset password

To reset your password, please open a reset password request [here](#)

© 2024 ABB. All rights reserved. - SN: 0002485377957897 - IP: 192.168.2.1 - Disconnected from ABB Ability™ Energy Manager

3. Click on the link to generate a password reset request: a new tab will appear on the browser.
4. Enter the credentials of your myABB account. If you do not have a myABB account, you must create one.
5. Enter the MAC address of the Lite Panel Pro ETH1 LAN shown on the rear label of the device and click on **Raise reset password request**.
6. Within a few days, you will receive an e-mail containing a file to upload in the password reset screen.
7. Click on **Reset password**: Lite Panel Pro will restart, resetting the administrator user password to the default value.



Note: the file received via e-mail can only be used once.



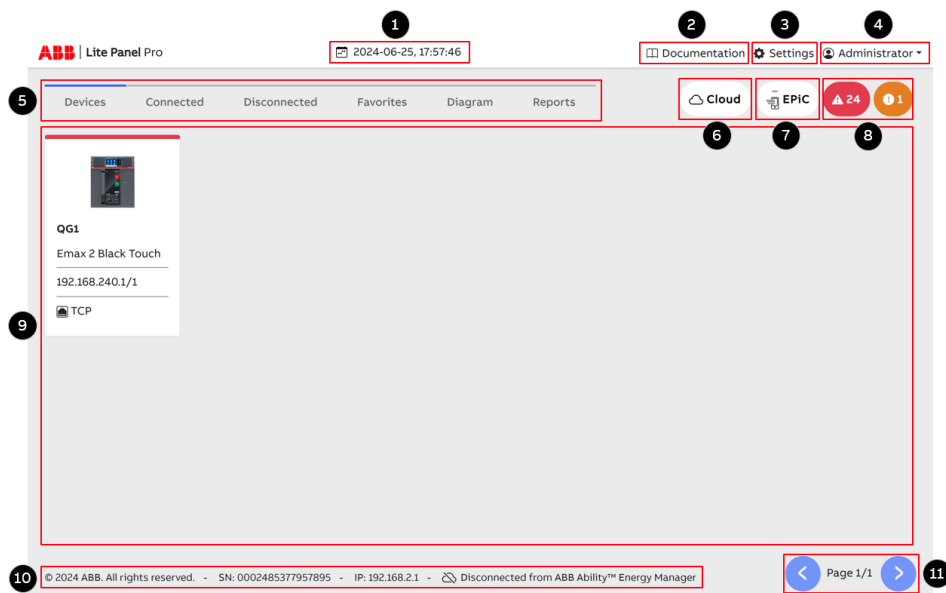
Note: It is not possible to perform this procedure directly from the panel. Instead, you must access the web server via your computer.

2.5 - Main page

Page function

After adding at least one device, the main page provides an overview of scanned devices, alarms and warnings present and access to settings for Lite Panel Pro.

What it looks like



Area	Label	Description
1	Timetable	Current date and time
2	Documentation	Button to access the user manual and FAQ directly from Lite Panel Pro
3	Settings	Button to access the settings for Lite Panel Pro.
4	Administrator	Button for user login and logout. If logged in, it shows the currently logged in user and the button to restart and shut down the device.
5	Menu bar	Menu of Lite Panel Pro functions: Devices: overview of scanned devices Connected: list of devices that are currently connected to Lite Panel Pro Disconnected: list of devices that are not connected to Lite Panel Pro Favourites: list of devices saved as favourites Diagram: electrical drawing of the installation Reports: report generation and display
6	Cloud	Button to access the connection screen to the ABB Ability™ Energy Manager cloud platform.
7	EPiC	Button to access the Epic Mobile app configuration screen. Available only if the Wi-Fi dongle is connected.
8	Alarms and warnings	Buttons to access the following sections: : Alarms : Warnings
9	Display area	Dynamic area that changes content according to the item selected in the menu bar.

Area	Label	Description
10	Status bar	The following information is displayed: • Serial number of Lite Panel Pro • IP address of port ETH1 (local) • Cloud connection status
11	Change page	Shows the current page and the total number of pages. Buttons allow you to navigate between pages.

2.6 - First steps

Overview of installation and commissioning of Lite Panel Pro

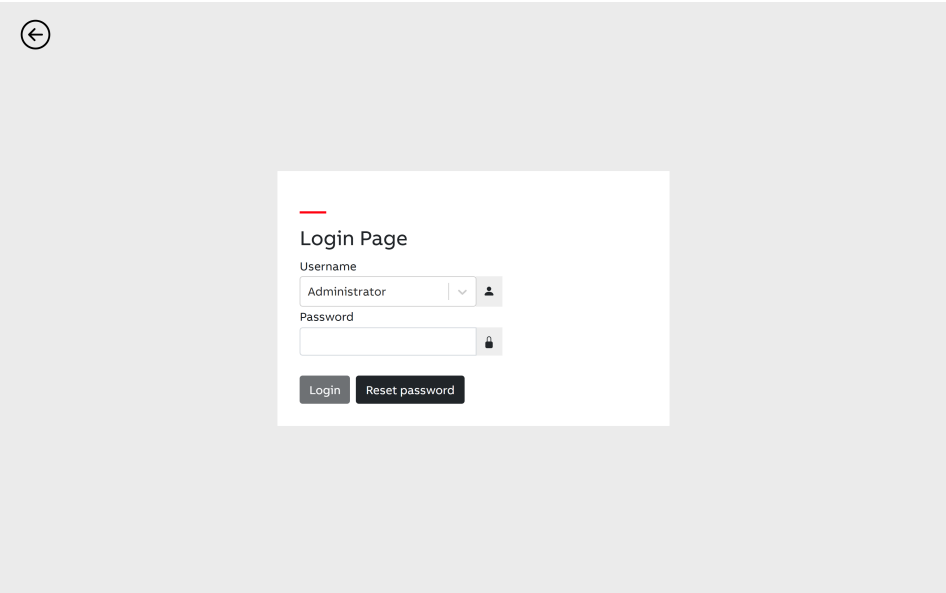
The following are the steps required to make the best use of Lite Panel Pro:

Step	Action
1	Consult the safety notes
2	Check that the actual conditions of use are compatible with the device specifications.
3	Check the contents of the package, refer to the kit sheet in the package.
4	Install Lite Panel Pro. See Installation.
5	Carry out commissioning of Lite Panel Pro. See First login and commissioning.
6	Configure the parameters. See Settings.
7	Monitor the scanned devices. See Monitoring a device.

Login

When Lite Panel Pro is switched on or restarted, the main page is shown. Click on the login button at the top right and log in by selecting the desired user.

When switched on for the first time, the only user available is **Administrator**. Once logged in, other users can be enabled (see User management).

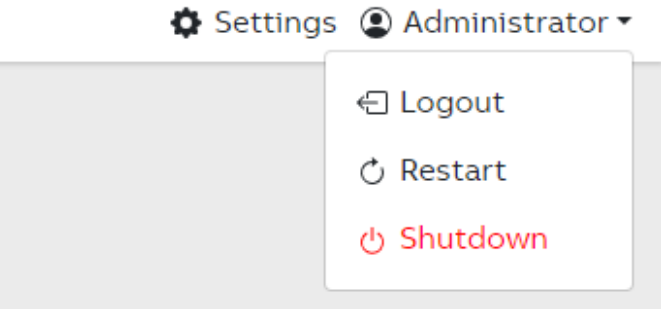


Logout

Click on the current user at the top right and select the **Logout** button: you will be automatically directed to the main page.



Note: logout occurs automatically after 3 hours of inactivity.



First login and commissioning

1. Log in with user **Administrator** (this is the only user available) and change the password as required.
2. Log in again with user **Administrator** using the new password that has been set.
3. At the message warning that no devices have been found and asking whether to start the initial provisioning procedure, click on **Yes**.
4. Click on **Next**: the **Settings** page appears.
5. Set the date and time and the language.
6. Set the Ethernet 1 (local) communication parameters as shown below:

If...	Then...
There is a DHCP server on the network	Click on DHCP enabled : Lite Panel Pro it obtains the IP address automatically.
There is no DHCP server on the network	Enter the static IP address for communication with Modbus TCP devices connected to the Lite Panel Pro. The default network configuration is static IP address 192.168.2.1 and subnet mask 255.255.255.0.

7. Click on **Next**: the next **Settings** page appears.

The screenshot shows the 'Settings' page of the Lite Panel Pro configuration interface. At the top, a progress bar indicates four steps: 1. Welcome, 2. Settings (current), 3. Devices, and 4. Summary. The 'Settings' section is divided into 'Main settings' and 'Ethernet 1 (Local) settings'. Under 'Main settings', there are fields for 'Date' (2024-02-16 11:44:59), 'Timezone' (Europe/Rome), and 'Language' (English). Under 'Ethernet 1 (Local) settings', there is a checkbox for 'DHCP enabled' (unchecked), and fields for 'Address' (192.168.2.1), 'Subnet mask' (255.255.255.0), 'Gateway address' (192.168.2.2), 'DNS primary' (8.8.8.8), and 'DNS secondary' (8.8.4.4). At the bottom right, there are 'Previous' and 'Next' buttons. An 'Exit' button is located in the top right corner of the interface.

8. Set the communication parameters for RS485 ports COM1 and COM2 dedicated to Modbus RTU communication.

9. Click on **Next**: the **Devices** page appears.

1 Welcome 2 Settings 3 Devices 4 Summary

Settings

COM 1 settings

Baud rate: 19200 Parity: E

Data bits: 8 Stop Bits: 1

COM 2 settings

Baud rate: 19200 Parity: E

Data bits: 8 Stop Bits: 1

Previous Next

Exit

10. Set the scan parameters as shown below:

If you want to run a scan of type...	Then...
TCP	Enter the IP address from which and the IP address up to which you want to scan, also specifying the range of slave addresses
RTU	Enter the slave addresses or range to be scanned.

11. Click on **Start Scan**: the devices found appear.



Note: Lite Panel Pro it will only search the selected network for supported ABB devices (see Main features and supported devices). To manually add third-party devices or devices not included in the list, see Page Devices. .

1 Welcome 2 Settings 3 Devices 4 Summary

Devices

TCP scan

IP range from: to:

Slave addresses and/or ranges

Enter addresses and/or ranges separated by commas (e.g. 2,4,5-10,15-20)

RTU scan

Slave addresses and/or ranges

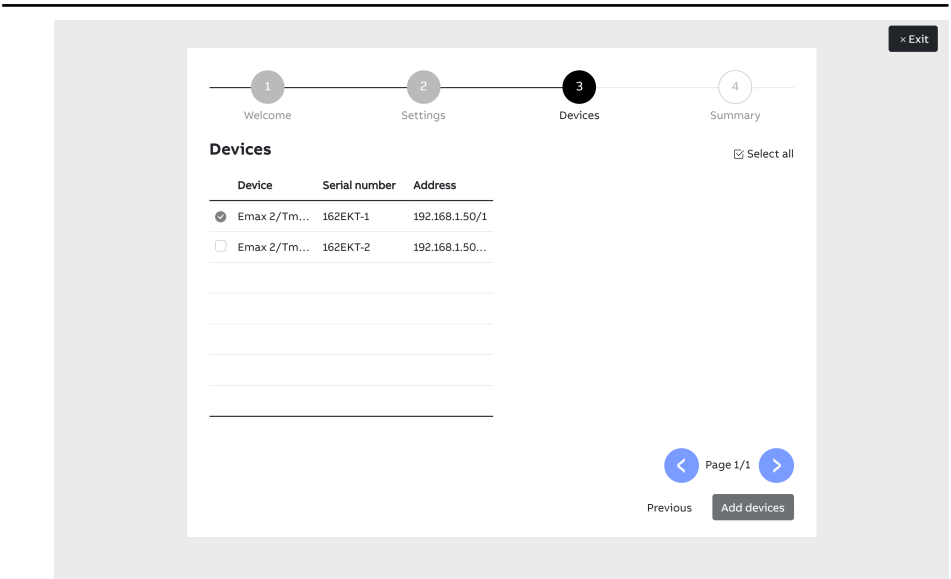
Enter addresses and/or ranges separated by commas (e.g. 2,4,5-10,15-20)

Start scan

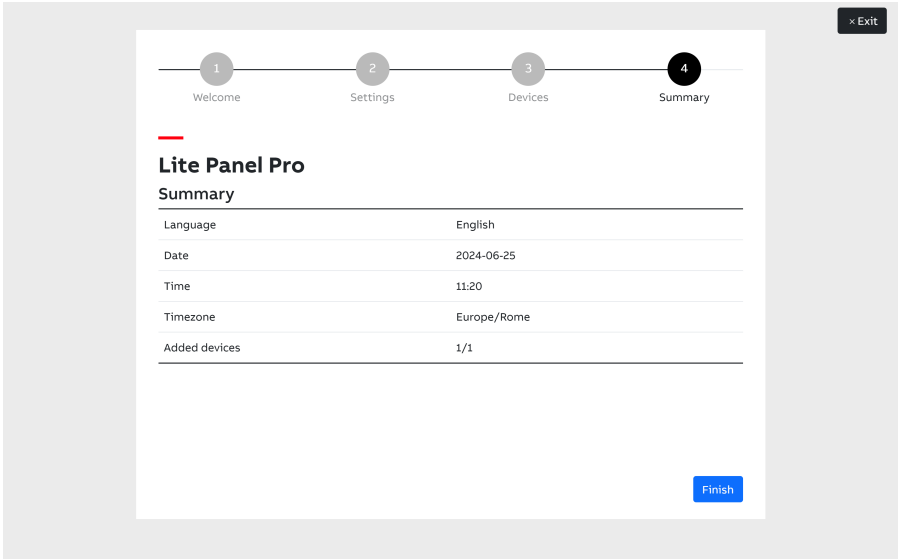
Previous Next

Exit

12. Select the desired devices to be monitored. Click on **Add devices** and then **Finish**: a summary screen appears.



13. Click on **Finish** to complete the commissioning procedure.



3 - Settings

The following chapters describe the setting pages for Lite Panel Pro.

 **Note:** access to some areas and the way they are displayed may be different depending on the user profile selected (see User management).

3.1 - Page System	26
3.2 - Page Connectivity	27
3.3 - Page Users	28
3.4 - Page Devices	29
3.5 - Page Device models	32

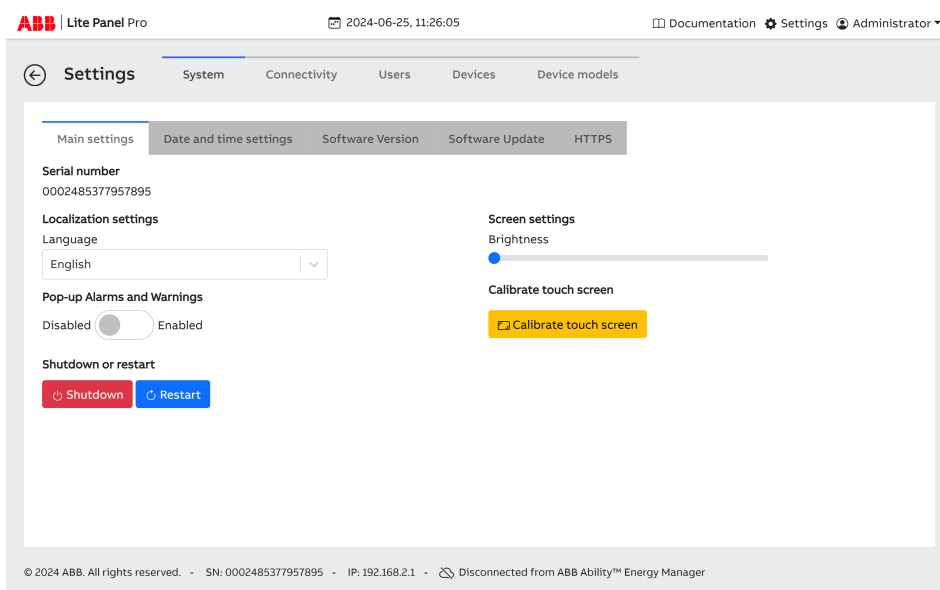
3.1 - Page System

 >> Main page >  Settings > System

Page function

- View and edit the general parameters of Lite Panel Pro.
- Find out the device serial number and current software version
- Update the software
- Upload HTTPS certificate
- Restart or shut down the device

What it looks like



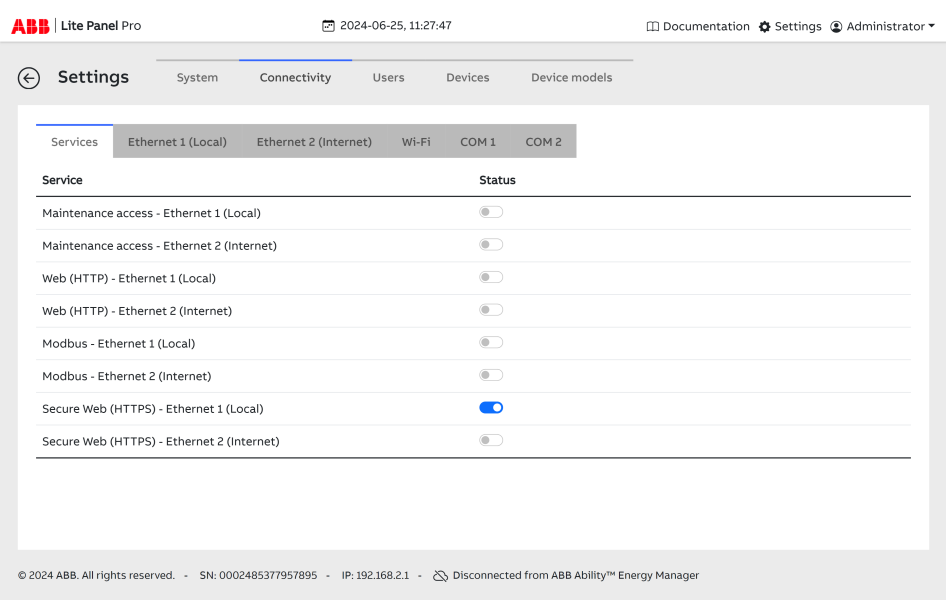
Board	Function
Main settings	• Shows the serial number of the device • Allows the following actions: ◦ configure the time, date and language ◦ change the brightness and calibrate the screen ◦ enable or disable all windows related to alarms and warnings (which will still be logged) ◦ restart or shut down Lite Panel Pro
Date and time settings	• Configure the date and time • Configure an NTP server (see chapter "ServerNTP" on page 54)
Software Version	Show software components with their version. All open source software components used and their licences are also shown.
Software Update	Allows you to upload the .zip file for the software update of Lite Panel Pro (see Updating the software).
HTTPS	Allows you to upload the .pxf file containing the HTTPS certificate.  Note: by default, a self-signed certificate is present. It is strongly recommended to replace this with a certificate issued by a trusted PKI.

3.2 - Page Connectivity

 >> Main page >  Settings > Connectivity

- Page function
- Set the communication configuration parameters.

What it looks like



Board	Function
Services	Enable and disable the various services
Ethernet1 (Local)	Configure Ethernet communication for the local network
Ethernet2 (Internet)	Configure Ethernet communication for the Internet network
Wi-Fi	Enable Wi-Fi to connect to the EPiC Mobile smartphone application. A special dongle is required.
COM1	Configure serial port COM1 for Modbus RTU communication
COM2	Configure serial port COM2 for Modbus RTU communication

3.3 - Page Users

 >> Main page >  Settings > Users

Page function

- Enable/Disable users.
- Change the password of a user
- Reset a user's password to the default setting.

What it looks like

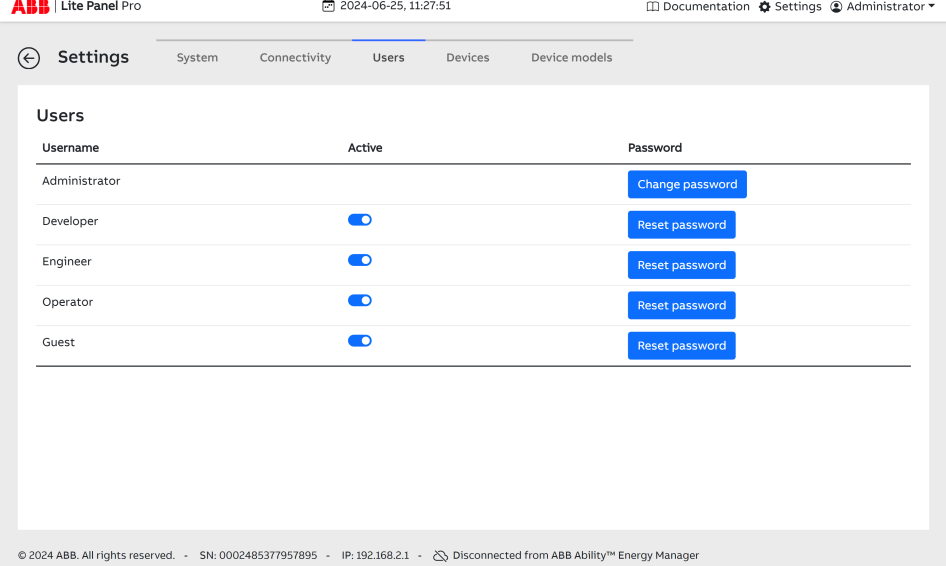


ABB | Lite Panel Pro 2024-06-25, 11:27:51 Documentation Settings Administrator

Settings System Connectivity Users Devices Device models

Username	Active	Password
Administrator		Change password
Developer	☒	Reset password
Engineer	☒	Reset password
Operator	☒	Reset password
Guest	☒	Reset password

© 2024 ABB. All rights reserved. - SN: 0002485377957895 - IP: 192.168.2.1 -  Disconnected from ABB Ability™ Energy Manager

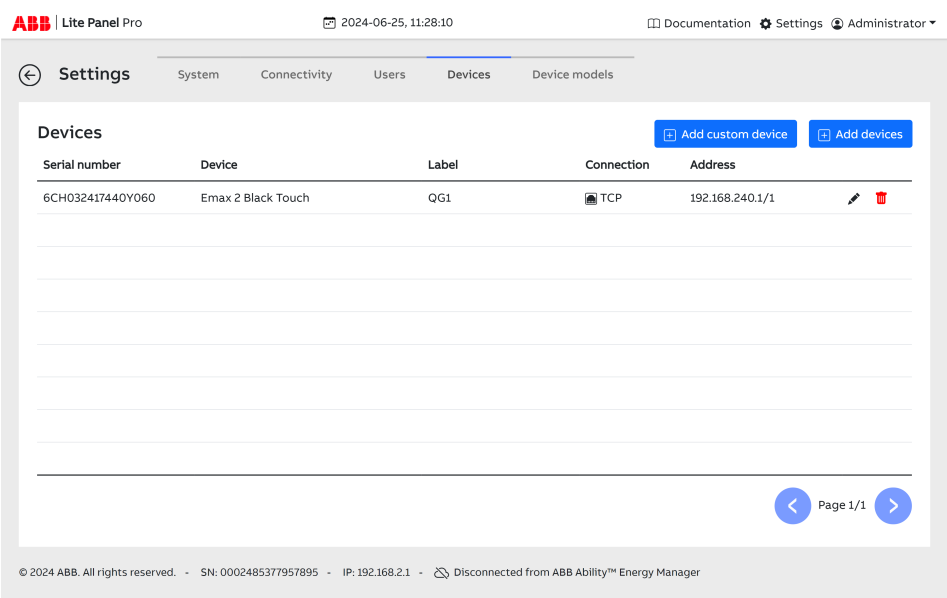
3.4 - Page Devices

>> main page > Settings > Devices

Page function

- Add new devices to the Lite Panel Pro.
- Change the parameters of scanned devices.
- Remove saved devices..

What it looks like



Edit a device

1. Click on : an edit screen opens.
2. Make the desired changes.
3. Click on **Edit** to save the changes.

Remove a device

Click on and then on **Remove**.

Add an ABB device

1. Click on **Add devices**: a dedicated screen opens.
2. Set the scan parameters as shown below:

If you want to run a scan of type...	Then...
TCP	Enter the IP address from which and the IP address up to which you want to scan, also specifying the range of slave addresses
RTU	Enter the slave addresses or range to be scanned.

3. Click on **Start scan**: Lite Panel Pro Search the selected network for devices among the supported ABB devices (see Main features and supported devices) and those found will be displayed.
4. Select the desired devices, click on **Add devices** and then **Finish**.
5. The newly added device will be displayed on the main page.

Note: to manually add other devices not included in the list, see Page Devices.

Add a third-party device

1. On the page **Settings > Device models** create a model from template, see Page Device models.
2. On the page **Settings > Devices** click on **Add customised device**.
3. Select the previously created model.
4. Select the connection type, IP address and/or slave address and click on **Confirm device address**

ABB Lite Panel Pro 2024-06-26, 17:21:18 Documentation Settings Administrator

Add custom device

Model
Select...

Select a model

Device type
TCP RTU

TCP parameters

IP address
Enter device IP address

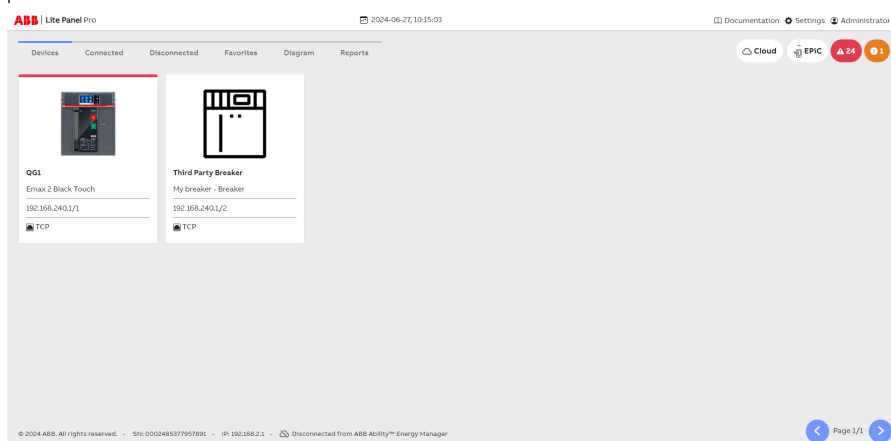
Slave address
Enter device slave address

Confirm device address

Page 1/1

© 2024 ABB. All rights reserved. - SN: 0002485377957890 - IP: 192.168.2.1 - Disconnected from ABB Ability™ Energy Manager

5. Select the device and click on **Add devices**: the new device will be visible in the device list and on the main page, and if the configuration parameters entered are correct, it will be possible to display its parameters.

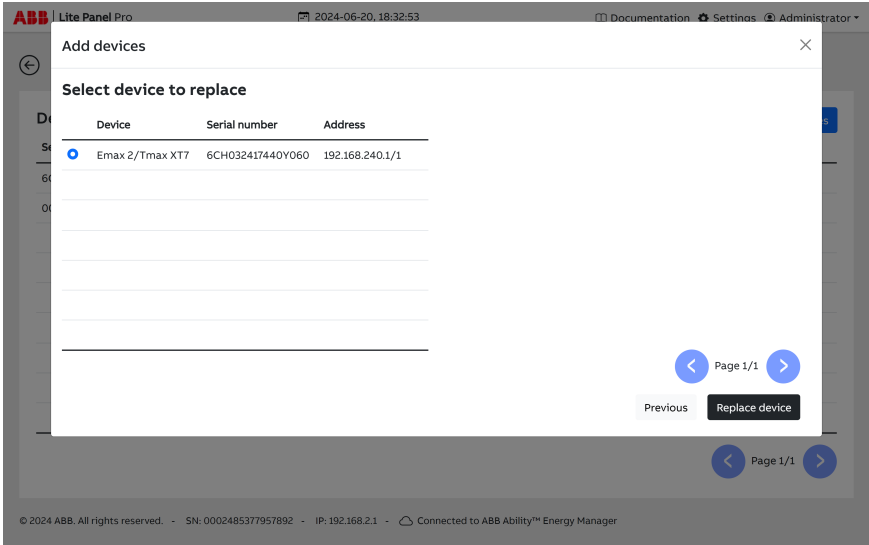


Replace a device with a new one

It is possible to replace an old device with a new one so as not to lose the historical data of the device to be removed.

1. Click on **Add devices**: a dedicated screen opens.
2. Set the scan parameters and click the **Start scan** button.
3. Select the device you want to add and click the **Replace device** button.

4. Select the device you want to replace and click on **Replace device**. This device will be removed from Lite Panel Pro and all its historical data will be associated with the new device.



The same procedure can be performed to replace two third-party devices.



Note: the two devices can be replaced only if they are the same product.

3.5 - Page Device models

 >> main page >  Settings > Device models

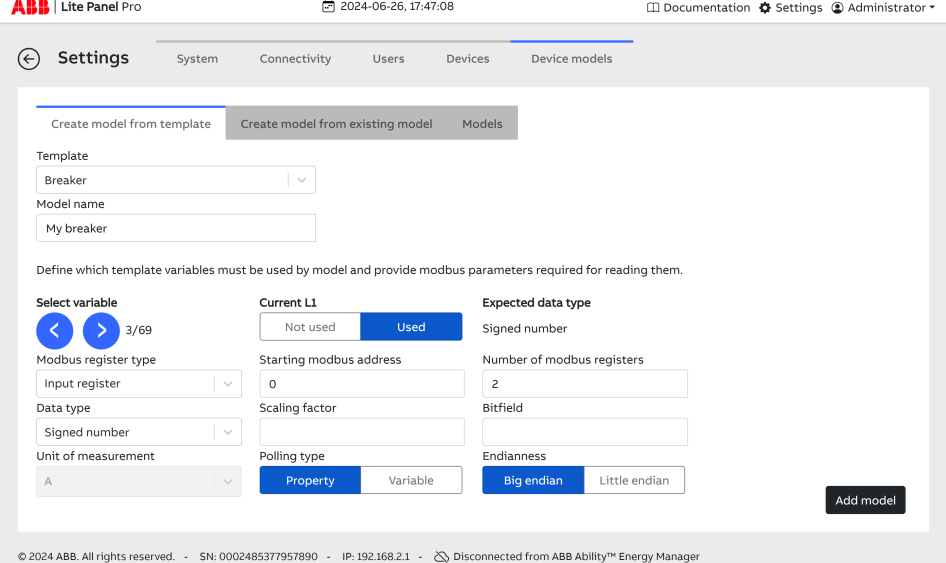
Page function

- Generation of data models from predefined device families, referred to as templates, to communicate Lite Panel Pro with third-party devices.



Note: for more information on templates, see *Management of third-party devices*

What it looks like



Create a model from a template

1. Click on **Create model from template**.
2. From the drop-down menu, select the desired template and enter a name for the model.
3. Use the arrows to scroll through the variables. To enable the monitoring of a variable, click on **Used**.
4. For each variable monitored, set the Modbus configuration parameters (see Page Device models).
5. Click on **Add model**.



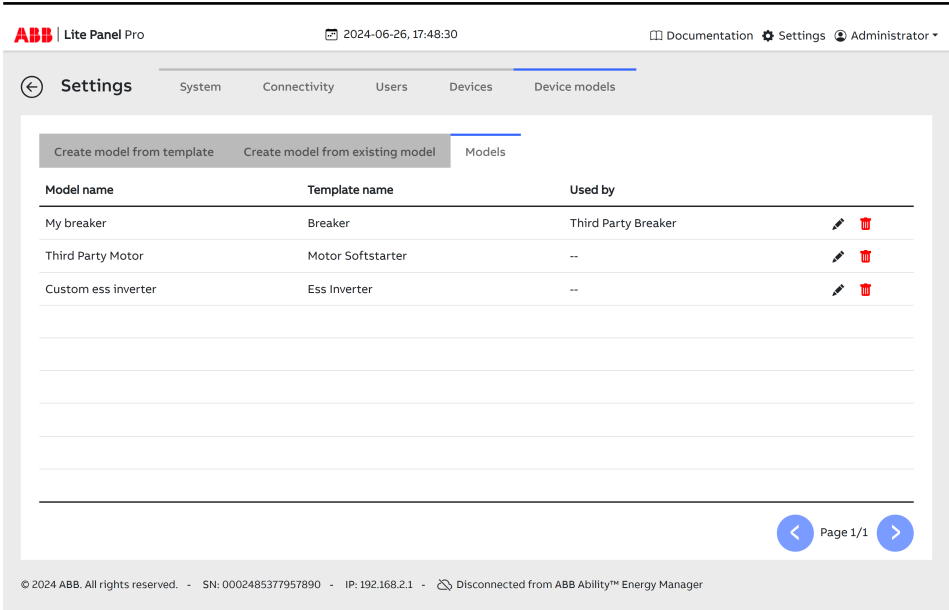
Note: if the Modbus parameter configuration differs from the template selected, correct display of data in the cloud platform and correct display of data in the Lite Panel Pro Modbus map cannot be guaranteed. However, locally the data will be correctly displayed.

Create a model from an existing model

1. Click on **Create model from existing model**.
2. Select a previously created model and edit the data to generate the new model.
3. Click on **Add model**

Manage models

1. Click on **Models**.
2. To edit the parameters of a model, click on .
3. To remove a model, click on .



Configuration parameters of a variable

The parameters to be configured for variables to be monitored are shown below:

- type of register to be read
- type of data contained in the register
- unit of measurement
- starting address
- scaling factor
- number of registers to be read
- number of Bits
- type of sampling:
 - **Property**, if the variable does not change often or is fixed
 - **Variable**, if it changes frequently
- type of Byte order

4 - Monitoring a device

The following chapters describe the pages for monitoring a device.

 **Note:** access to some areas and the way they are displayed may change depending on the device selected.

4.1 - Page Overview	35
4.2 - Page Monitoring	36
4.3 - Page Alarms and warnings	37
4.4 - Page Network analyser	38
4.5 - Page Diagnostics	39

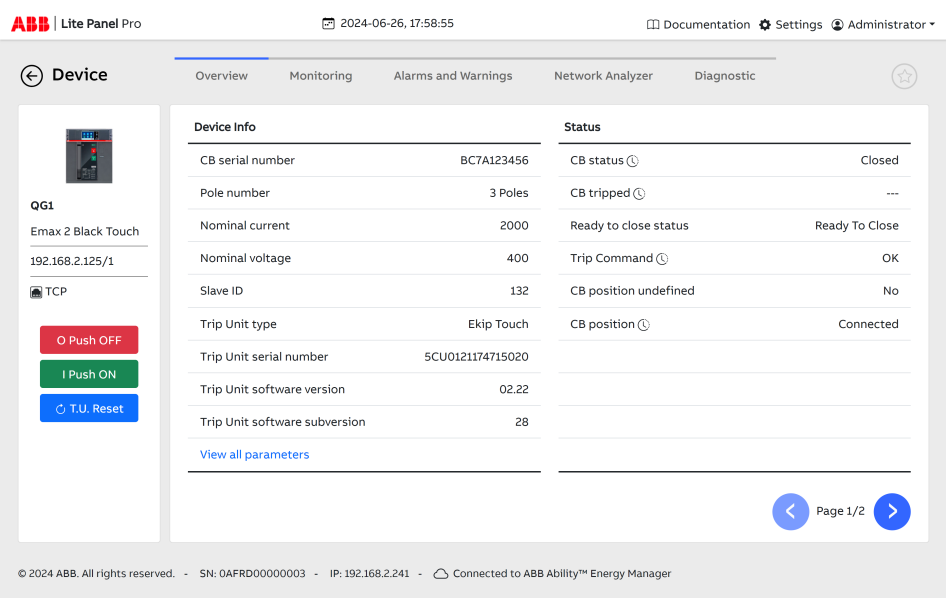
4.1 - Page Overview

 >> Main page > **Devices** > select a device > **Overview**

Page function

- Display information, status and real-time data of the selected device.

What it looks like



Display all the device parameters

Click on **View all parameters**.

Add the device to favourites

Click on  : the device is added to the list on Main Page > **Favourites**.



Note: the device can also be added to favourites from the Monitoring, Alarms and Warnings, Network Analyser and Diagnostics pages.

4.2 - Page Monitoring

 >> Main page > **Devices** > select a device > **Monitoring**

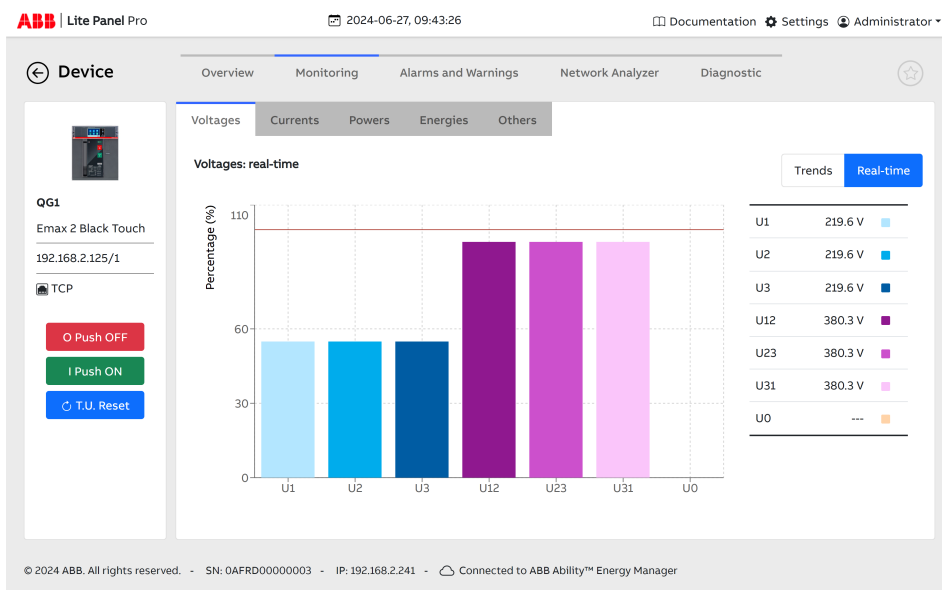
Page function

- Monitor data in real time
- View historical data trends.



Note: to find out which variables are being monitored for each supported device, see Main features and supported devices.

What it looks like



Display data

1. Click on the tab for the measurement to be displayed (e.g. **Powers page**): by default, data read in real time are displayed.
2. To view the historical data trend, click on **Trends**: by default, historical data from the last hour are displayed. From the side filter, select the desired interval (last hour, last day, current week, current month, current year or a customised period).

Data logging

WARNING: if the battery is low, the device time may not be reliable and may have a negative impact on data logging.

Data logging changes depending on the variables concerned:

Variable	Logging
Voltages, currents, powers	Average value in the interval
Energy	Actual consumption in the interval

4.3 - Page Alarms and warnings

 >> main page > **Devices** > select a device > **Alarms and warnings**

- Page function
- Display alarms and warnings for the selected device.

What it looks like

ABB | Lite Panel Pro

2024-06-26, 17:59:40

Documentation Settings Administrator

← Device

OverviewMonitoringAlarms and WarningsNetwork AnalyzerDiagnostic



QG1

Emax 2 Black Touch

192.168.2.125/1

TCP

Push OFF

Push ON

T.U. Reset

Alarms and Warnings

TrendsReal-time

Date	Type	Status	Description
2024-06-19 11:15:08.993	Alarm	Activated	THD voltage over threshold
2024-06-19 11:15:08.992	Alarm	Activated	Single harmonic voltage over threshold
2024-06-19 11:15:08.867	Alarm	Activated	Any alarm
2024-06-19 11:15:08.864	Warning	Activated	Any warning

Page 1/1

© 2024 ABB. All rights reserved. - SN: 0AFRD00000003 - IP: 192.168.2.241 - Connected to ABB Ability™ Energy Manager

Display alarm history

1. By default, current alarms and warnings are displayed (**Real-time**).
2. To view the alarm history, click on **Trends**. From the side filter, select the desired interval (last hour, last day, current week, current month, current year, all or a customised period).

37 | © 2024 ABB | 1SDH002289A1002 - Rev. B

Lite Panel Pro - 4 - Monitoring a device | 4.3 - Page Alarms and warnings

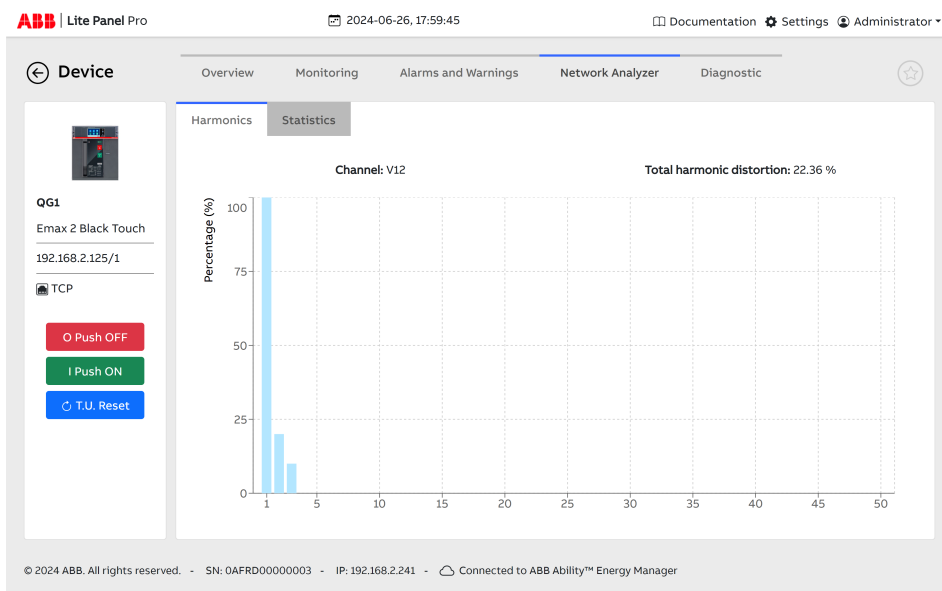
4.4 - Page Network analyser

 >>main page > **Devices** > select a device > **Network analyser**

Page function

- Show monitoring of power quality in terms of harmonics, micro-breaks or voltage dips.

What it looks like

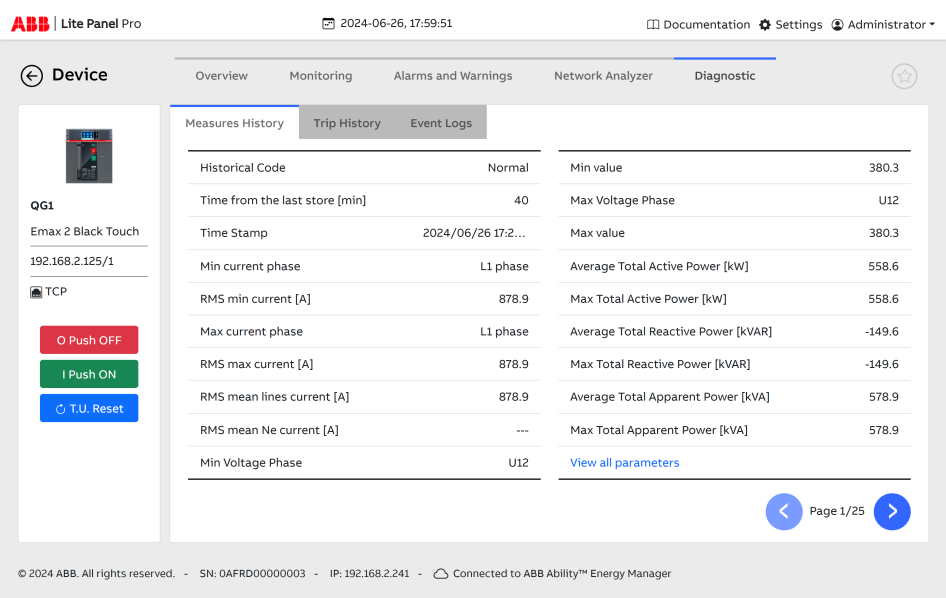


4.5 - Page Diagnostics

 >> main page > **Devices** > select a device > **Diagnostics**

- Page function
- Show diagnostic information on measurements, device trips and event logs.

What it looks like



Part	Function
Measurement history	• Displays the measurements (e.g. average power, maximum power, maximum and minimum current, maximum and minimum voltage) for the last 25 time intervals over a programmable time period.
Trip history	Shows all the information on device trips, for example: • type • currents • time • trip data.
Event log	Shows the following types of information: • application errors • control events related to the circuit-breaker • certain trip/time/alarm histories  Note: the last 200 device events are displayed.

5 - Cloud connectivity

5.1 - Introduction

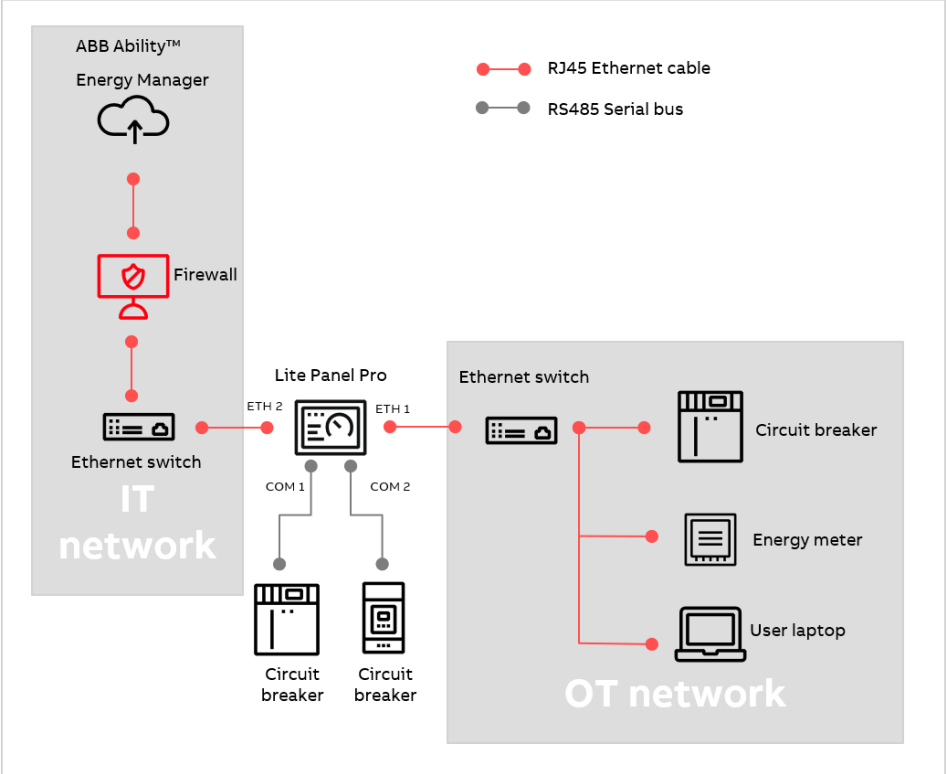
Lite Panel Pro also acts as a gateway, allowing the various monitored devices to be connected to the ABB Ability™ Energy Manager platform. This is the ABB cloud-based platform for monitoring, optimising and constantly controlling your installation.

5.2 - Guidelines for safe deployment

The following is a list of procedures, hints and tips that will facilitate the provisioning of devices on the platform ABB Ability™ Energy Manager.

Architecture

Example of application with Lite Panel Pro connected to the ABB Ability™ Energy Manager cloud platform.



General requirements

Internet connectivity via Ethernet 100/1000 Mbit with an RJ45 CAT.6 SFTP cable (or higher).
The site IT network administrator must also provide the following:

- A network with DHCP enabled.
- A valid, not yet assigned IP address, subnet class, gateway address and an accessible DNS server (port 53/UDP).
- An external or internal NTP server.

A typical example is:

- IP: 10.0.10.123
- SUBNET: 255.255.255.0
- GATEWAY: 10.0.10.1
- DNS SERVER: 10.0.10.254 (the DNS server can be on a different subnet).

Restrictions

The network used to connect Lite Panel Pro to the Internet (**IT network**) must be on a different subnet than the network used to connect the local devices (**OT network**).
The default IP address used by the Lite Panel Pro OT network interface (ETH1) is 192.168.2.1 wit subnet 255.255.255.0.
The Lite Panel Pro IT network interface (ETH2) is configured in DHCP mode.

Firewall configuration

- Any firewall configured on the IT network should allow communications FROM and TO the DNS server configured on port 53/UDP.

- Any firewall configured on the IT network should allow communication FROM and TO the NTP server configured on port 123/UDP.

URL	Port	Purpose	Environment
pki-scep.symauth.com	80/TCP [1]	PKI certificate updating	ROW & China
Abilityrel12EunPrd.b2clogin.com	443/TCP	User authentication	ROW & China
login.microsoftonline.com	443/TCP	User authentication	ROW & China
api.electrification.ability.abb	443/TCP	Provisioning of devices	ROW
electrificationapi-ams-prod-01.azure-api.cn	443/TCP	Provisioning of devices	China
AbiGtwyDpsgpr01EuwPrd.azure-devices-provisioning.net	443/TCP	Provisioning of devices	ROW
global.azure-devices-provisioning.cn	443/TCP	Provisioning of devices	China
Abigtwyithiel12eunprd.azure-devices.net	443/TCP	Telemetry	ROW
AbiGtwylthci06Ce2Prd.azure-devices.cn	443/TCP	Telemetry	China

ROW: Rest of World

[1] RFC 8894 - Simple Certificate Enrolment Protocol (ietf.org)

It is recommended to run a whitelist based on FQDN in the firewall. If this option is not possible, the Microsoft Azure team provides a list of IP addresses associated with API endpoints at the following URL:

- ROW: <https://www.microsoft.com/en-us/download/details.aspx?id=56519>
 - AzureloTHub.NorthEurope for Abigtwyithiel12eunprd.azure-devices.net
 - AzureloTHub for AbiGtwyDpsgpr01EuwPrd.azure-devices-provisioning.net
- China: <https://www.microsoft.com/en-us/download/details.aspx?id=57062>
 - AzureloTHub.ChinaEast2 for AbiGtwylthci06Ce2Prd.azure-devices.cn
 - AzureloTHub for global.azure-devices-provisioning.cn

Additional notes

Proxy servers are currently not supported by ABB IoT devices, therefore a direct connection to the Internet must be provided.

5.3 - Procedure

Prerequisites

Before proceeding, ensure that:

- Lite Panel Pro is updated to the latest version available. See "Updating the software" on page 56.
- Lite Panel Pro is synchronised with an NTP server. See "ServerNTP" on page 54
- Have a myABB account.



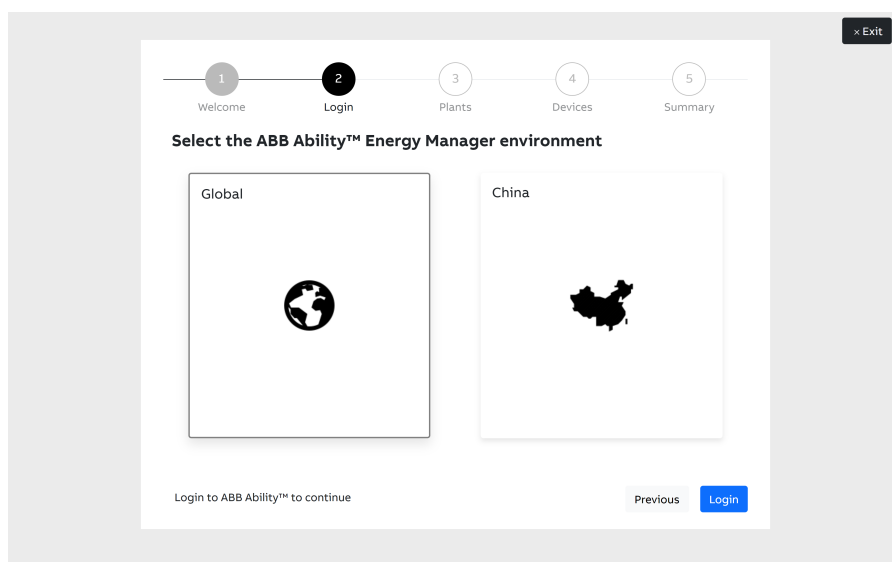
Note: these steps are essential for correct provisioning and correct display of data in the platform.

Access to ABB Ability™

1. On the main page, click on the  button.
2. Click on **Next**, and confirm that you meet the prerequisites by clicking on **Proceed**.
3. Select the desired ABB Ability™ environment. If Lite Panel Pro has already been added to the platform, you will not be able to select the environment.
4. Click on **Login** to access ABB Ability™ by entering the myABB account credentials.



Note: the myABB account credentials must be entered directly from the panel. This step is the only one that cannot be performed from the web browser.



5. Once you have logged in to ABB Ability™, click on **Next**.

Selecting or creating the installation

6. Select the desired installation on which devices will be added and/or removed and click on **Next**.

If there are no installations in the myABB account or you wish to create a new installation:

- Click on **Add installation**.
- Enter the data of the new installation.
- Click on **Next**.

Adding and/or removing devices

7. In the table select the devices you want to connect and/or remove from the installation and click on **Next**.

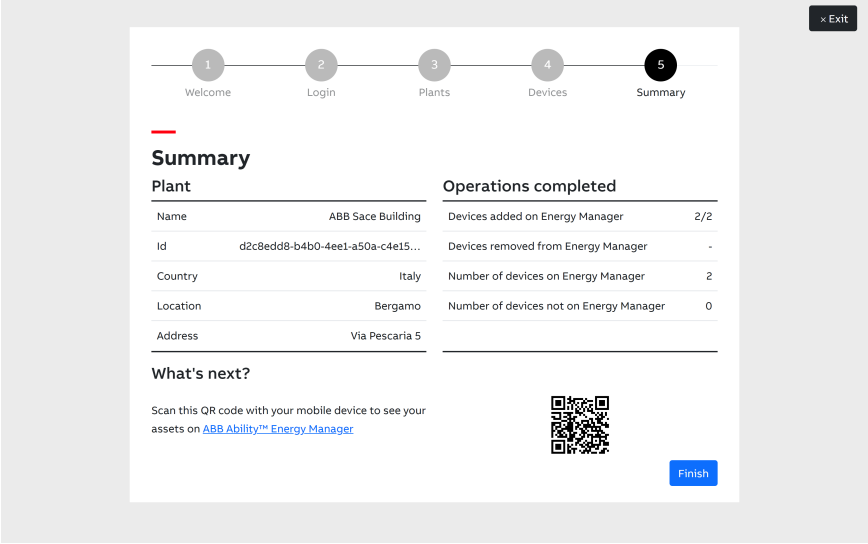
 **Note:** this operation may take several minutes

Key:

-  Device not supported by ABB Ability™ Energy Manager
-  Device already added to the installation
-  Device added successfully

-  Error while adding the device to the system
-  Device removed successfully
-  Error while removing the device

8. Click on **Next**: a screen summarising the operations performed appears.



6 - Other functions

6.1 - Remote control of the device

Introduction



WARNING!! Remote control of any device should only be carried out by properly trained personnel. ABB declines all liability for damage to property or personal injury caused by failure to comply with the instructions contained in this document.

Circuit-breakers and change-over switches can be controlled remotely. To find out which users are enabled for remote control, see User types.

Requirements

The circuit-breaker must be set in remote mode, and not in local mode. The operating mode status can be seen on the "Information" page of the device being monitored (please refer to the device user manual).

Controlling a device remotely



Note: depending on the device selected, different remote control commands are possible.

1. On the main page, select the device you want to control remotely.
2. To open the circuit-breaker, click on .
3. To close the circuit-breaker, click on .
4. To reset the trip unit, click on .
5. To activate source 1, click on .
6. To activate source 2, click on .
7. To switch the device off, click on .

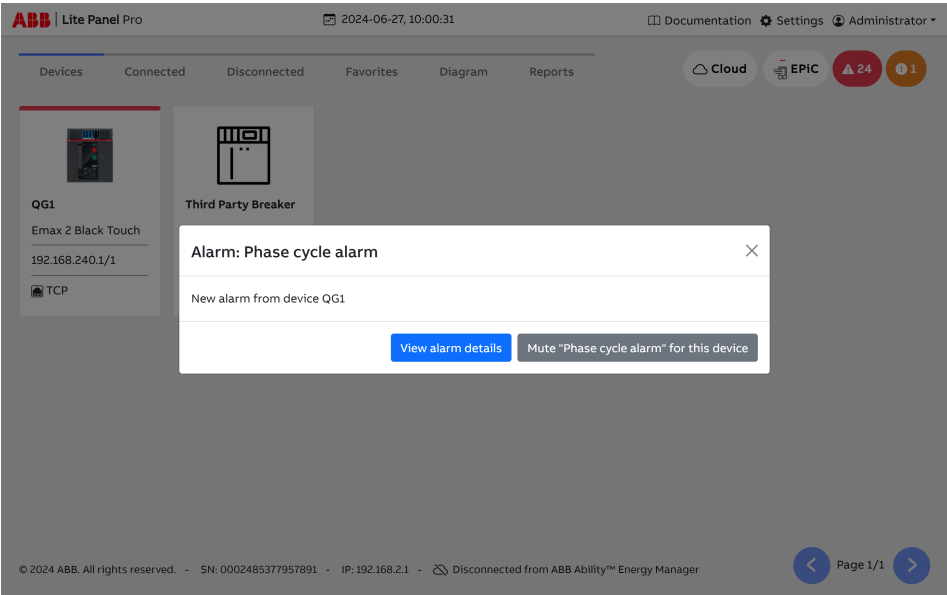
For each command selected, a screen appears to confirm the execution of the command.

6.2 - Real-time display of notices and alarms

Introduction

Whenever an alarm  or a notice  occurs, a message appears with the name of the event, the corresponding device and action buttons.

What it looks like



Manage alarms/notices

1. In the message that appears when an alarm/notice occurs, to access more details, click on **View alarm/warning details**: the Alarms and Notices page of the device appears (see Page Alarms and warnings).
2. To silence the specific alarm/notice for five minutes, click on **Mute <nome allarme/avviso> for this device** for this device.



Note: the message appears even if no user has logged in to the panel.

Enable/disable alarm and notice messages

In **Settings>System>Main settings**, enable/disable the relevant option. For more details, see Page System



Note: even when disabled, alarms and notices are logged in the relevant section.

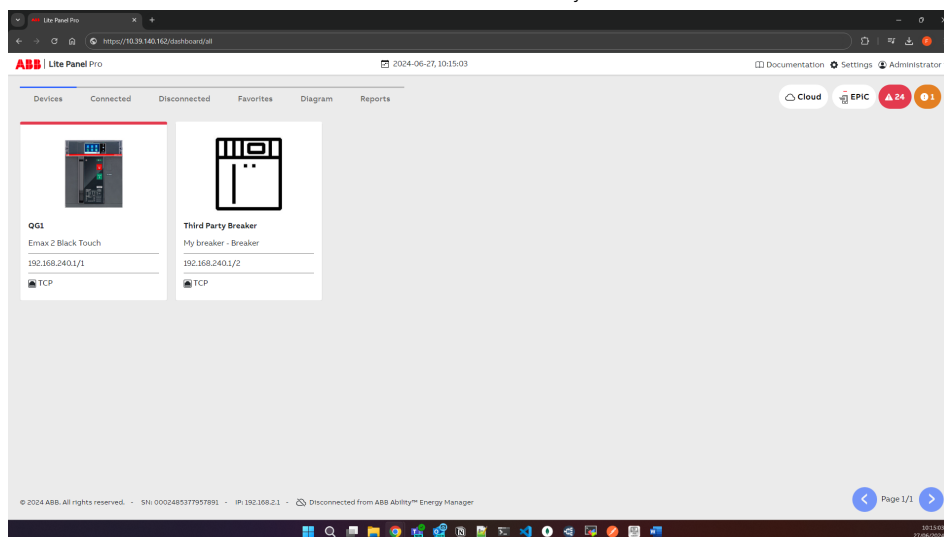
6.3 - Access from computer

Introduction

You can also access the Lite Panel Pro from your own computer and use all its functionalities without having to use the device directly. In fact, Lite Panel Pro it exposes a web server to your IP address.

Accessing Lite Panel Pro from a computer

To access Lite Panel Pro from a computer, you must connect your computer to the same local network as Lite Panel Pro and insert the web address of Lite Panel Pro in any web browser .



6.4 - Diagram function

 >> main page > **Diagram**

Introduction

The Diagram function provides an overview and alternative view of the electrical installation and the devices that Lite Panel Pro monitors. The various electrical devices scanned by the Lite Panel Pro can be positioned on an image of the installation.

Image requirements

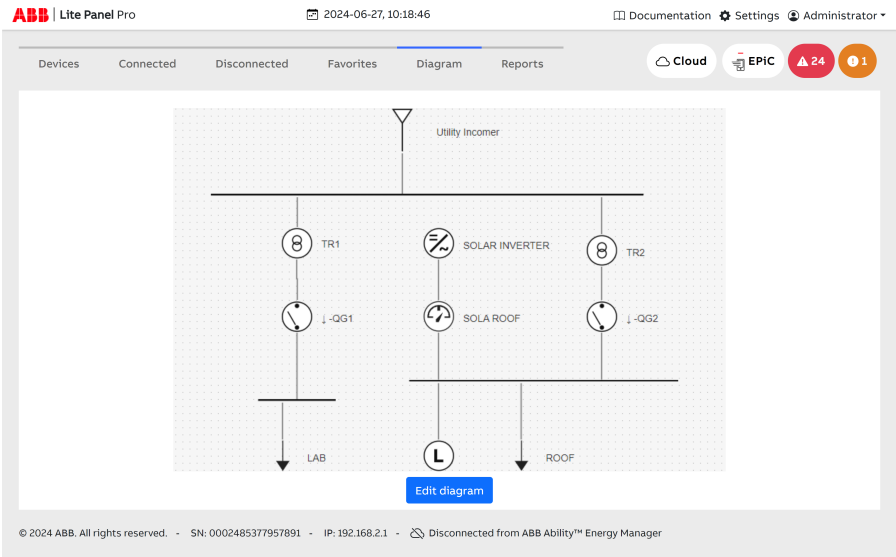
The image used for the diagram must meet the following requirements:

- maximum size: 4 MB
- resolution: between 600x400 and 3000x2000 pixels
- format: jpg, jpeg or png.

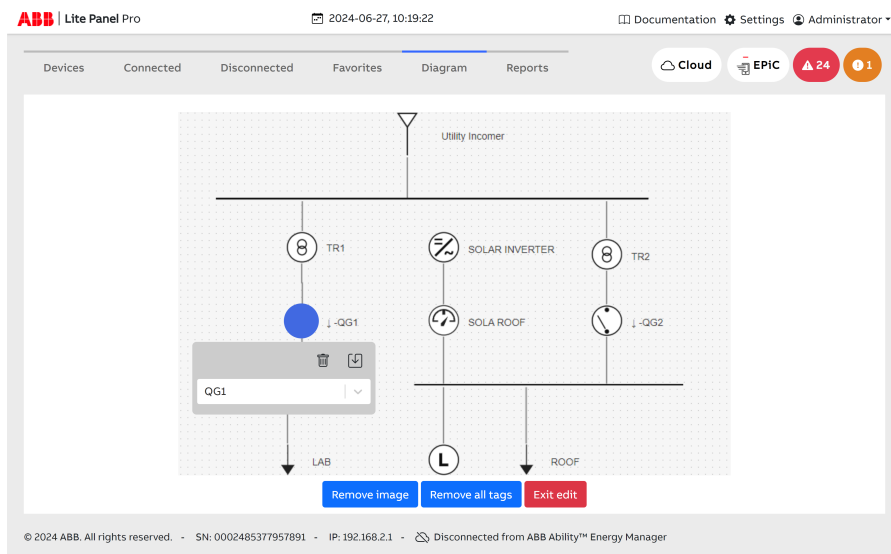
Loading and customising a diagram

1. Connect via computer to the web server exposed by the device (see Access from computer).
2. To load the image of the electrical installation, click on **Choose file**, select the desired image and then click on **Upload image**.
3. To edit the image and add the devices monitored by Lite Panel Pro, click on **Edit diagram**.

 **Note:** to find out which users are enabled for this operation, see User types.

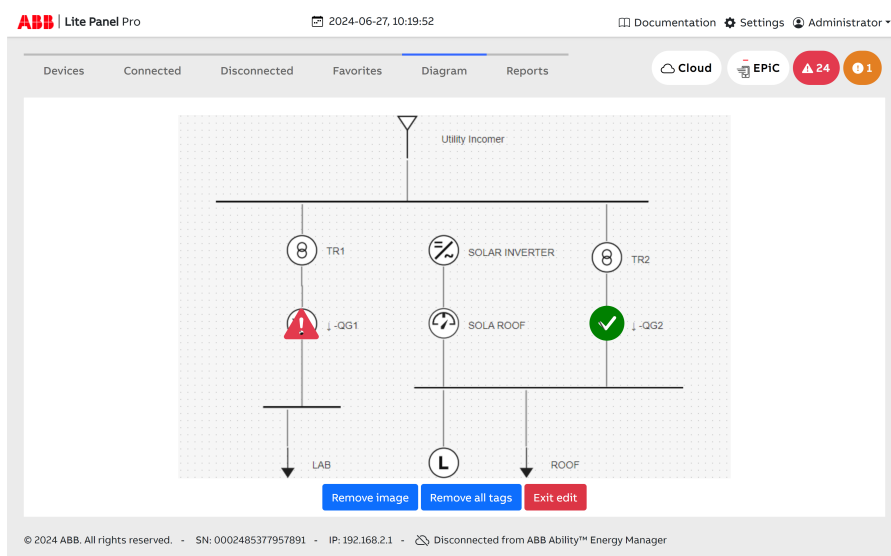


4. Click on the point in the image where you want to insert the device tag.



5. Select the device and click on the  button: a tag appears that indicates the status of the device:

- : there are no alarms and/or warnings for the device.
- : there are alarms and/or warnings for the device



6. Use the three buttons below the diagram to manage changes to the diagram:

To...	...
Remove the inserted image and all its tags	Click on Remove image
Remove all the tags in the diagram	Click on Remove all tags
Save and exit edit mode	Click on Exit edit

7. To view information about a device, click on the tag associated with that device.

6.5 - Report generation

 >> *main page* > **Reports**

Introduction

Lite Panel Pro allows customisable reports to be generated to track historical measurement trends.

List of parameters for generating a report

The parameters for configuring a report are listed below:

- Devices for which the report is to be created
- Start and end date of data collection (for single reports)
- Report frequency – daily, weekly or monthly (for periodic reports)
- Granularity (level of detail for data collection)
- Report format (PDF or CSV)
- Measurements to be included in the report.

Manage reports

To...	...	And...
Generate single reports	Click on Single report	Enter the parameters and click on Generate report
Generate periodic reports	Click on Scheduled reports	Click on Add scheduled report , enter the parameters and click on Generate report
Download the generated reports	Click on Generated reports	1. Connect via computer to the exposed web server, see Access from computer. 2. Click on  or  to download a report

6.6 - Management of third-party devices

Templates and models

To manage third-party devices, a **template** approach is adopted: a data model is defined from pre-defined device families, known as templates, and the relevant Modbus specifications are indicated for each available parameter.

Managing third-party devices

For details and procedures regarding this feature, see Page Device models.

6.7 - Protocol Translator

Introduction	This feature allows external systems (e.g. SCADA) to communicate with RTU devices connected to Lite Panel Pro, using the Modbus TCP connection to the panel.
Operation	1. Modbus TCP requests sent to Lite Panel Pro with slave address greater than 1 are forwarded to the respective Modbus RTU devices connected to the panel. 2. Lite Panel Pro receives the response from the queried device and forwards it via Modbus TCP to the external device. The Protocol Translator function also works for RTU devices connected to one of the panel's two serial (RTU) ports, even though not necessarily commissioned on Lite Panel Pro.

6.8 - ServerNTP

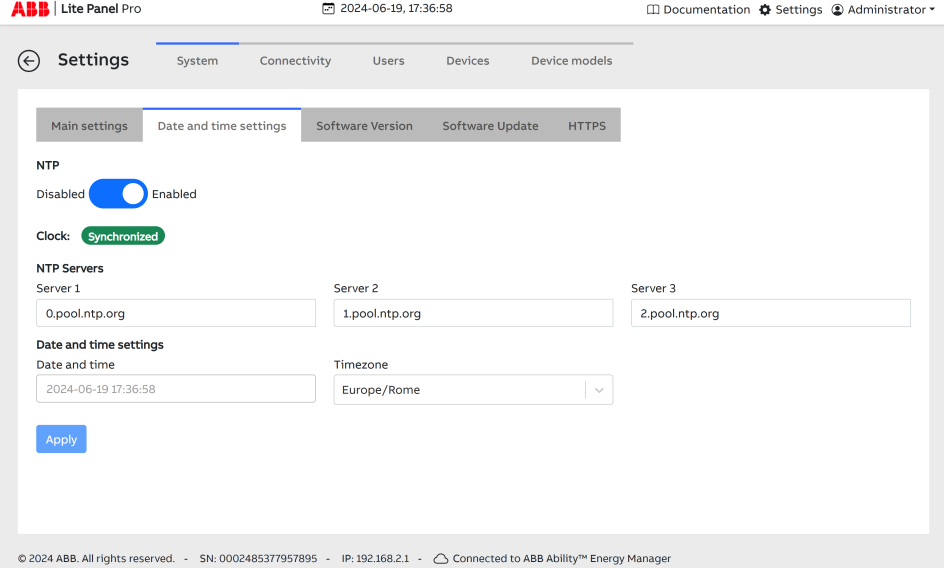
 >> Main page > Settings > System > Date and time settings.

Introduction

Lite Panel Pro can connect to an NTP server to synchronise its date and time, as long as it is connected to the Internet.

Set an NTP server

1. Make sure that Lite Panel Pro can reach the specified NTP server via the Ethernet 2 interface.
2. Enable NTP functionality.
3. Specify up to three NTP servers.
4. Click on **Apply**.



The screenshot displays the ABB Lite Panel Pro web interface. At the top, the header shows the ABB logo, 'Lite Panel Pro', the current date and time '2024-06-19, 17:36:58', and navigation links for 'Documentation', 'Settings', and 'Administrator'. Below the header is a 'Settings' menu with tabs for 'System', 'Connectivity', 'Users', 'Devices', and 'Device models'. The 'System' tab is active, and within it, the 'Date and time settings' sub-tab is selected. The 'NTP' section shows a toggle switch set to 'Enabled'. Below this, a green status indicator shows 'Clock: Synchronized'. The 'NTP Servers' section contains three input fields: 'Server 1' with '0.pool.ntp.org', 'Server 2' with '1.pool.ntp.org', and 'Server 3' with '2.pool.ntp.org'. The 'Date and time settings' section includes a 'Date and time' field showing '2024-06-19 17:36:58' and a 'Timezone' dropdown menu set to 'Europe/Rome'. An 'Apply' button is located at the bottom of the settings area. The footer contains copyright information: '© 2024 ABB. All rights reserved.', serial number 'SN: 0002485377957895', IP address 'IP: 192.168.2.1', and a connection status 'Connected to ABB Ability™ Energy Manager'.

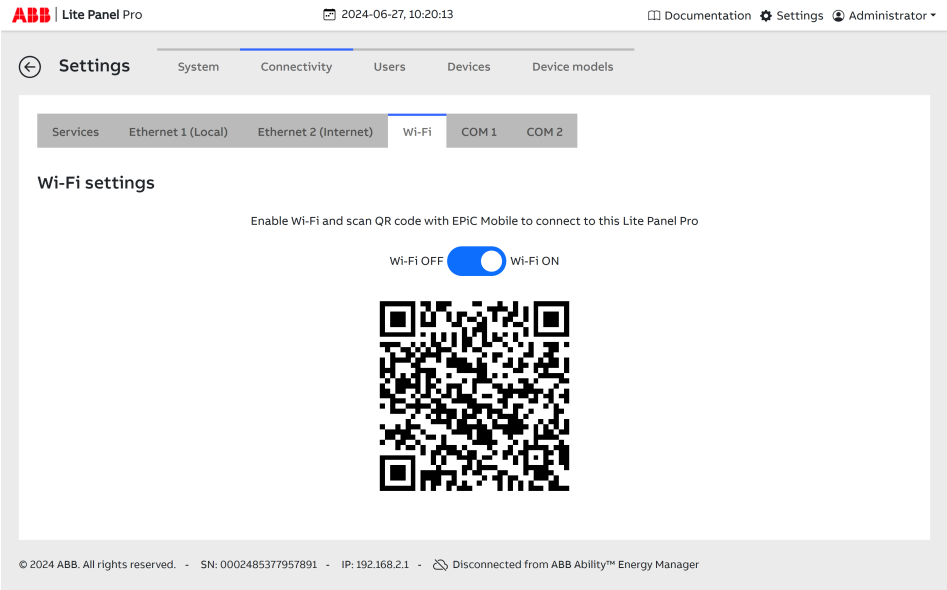
6.9 - Epic Mobile App

Introduction

The [Epic Mobile](#) app allows you to access the Lite Panel Pro interface directly from your smartphone and download reports generated by the device.

Associate Epic Mobile with Lite Panel Pro

- 1. Connect the Wi-Fi dongle to Lite Panel Pro.
- 2. On the Lite Panel Pro main page, click on the  button.
- 3. Activate Wi-Fi as requested.
- 4. Open the Epic Mobile app on your smartphone and frame the QR code displayed on Lite Panel Pro.



7 - Diagnostics and maintenance

7.1 - Updating the software

The guidelines for updating Lite Panel Pro software are available at the following link. Here you can check the latest version available and instructions on how to update the device.

<https://search.abb.com/library/Download.aspx?DocumentID=9AKK108469A524&LanguageCode=en&DocumentPartId=&Action=Launch>

7.2 - Troubleshooting & FAQ

An updated table of the problems most frequently encountered when using Lite Panel Pro and possible solutions can be found at the following link.

<https://search.abb.com/library/Download.aspx?DocumentID=1SDH002325A1001&LanguageCode=en&DocumentPartId=&Action=Launch>

7.3 - Device reset

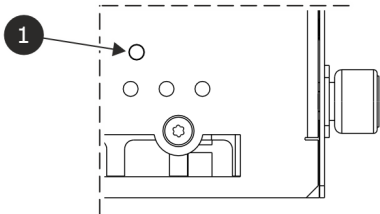
Type of reset

There are two types of reset described below:

Type	Action	Effect on data	When to perform it
Soft reset	Performs a forced and immediate restart of the device.	Data saved in Lite Panel Pro will not be lost	The device needs to be restarted due to problems
Hard reset	Performs a full reset to the factory settings of the device.	Data saved in Lite Panel Pro will be lost and will no longer be recoverable.	The password to access the device has been forgotten

Perform a soft reset

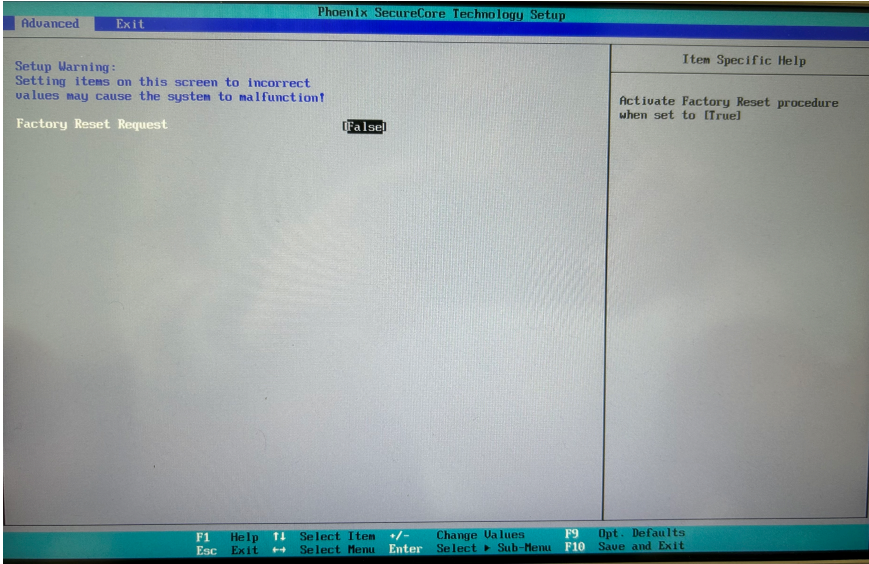
Click the button on the rear of Lite Panel Pro [1].



Perform a hard reset

WARNING: with this procedure, data saved in Lite Panel Pro will be lost and will no longer be recoverable.

- 1. In **Settings > System > Main settings**, click on **Shutdown**: Lite Panel Pro switches off.
- 2. Connect a USB keyboard to the device.
- 3. Power Lite Panel Pro so that it starts up.
- 4. During restart, press the F2 key: Lite Panel Pro it will start up in recovery mode and the **Advanced** page will open.

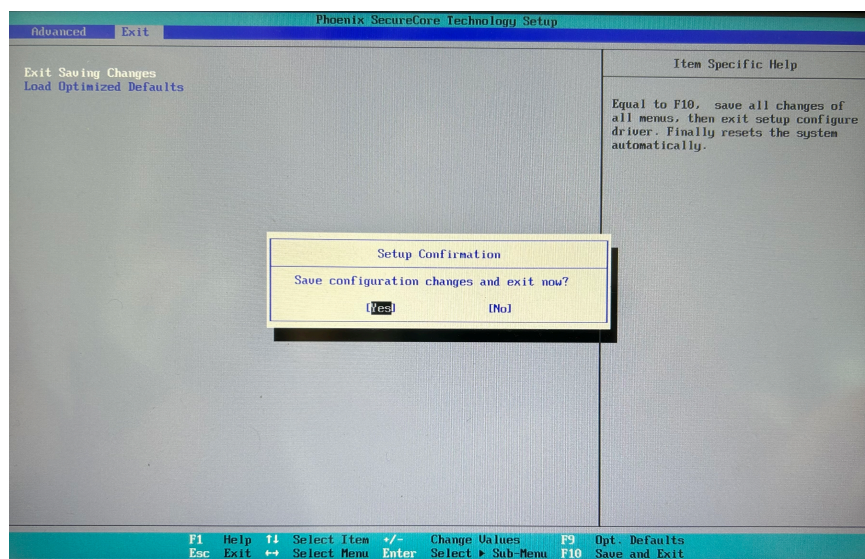


- 5. Use the keyboard arrows to select **Factory Reset Request** and click on **True**.

6. Move to the **Exit** page, click on **Exit Saving Changes** and then on **Yes**: Lite Panel Pro it will restart.



Note: the procedure takes a few minutes.



7.4 - Replacement of the battery

Introduction



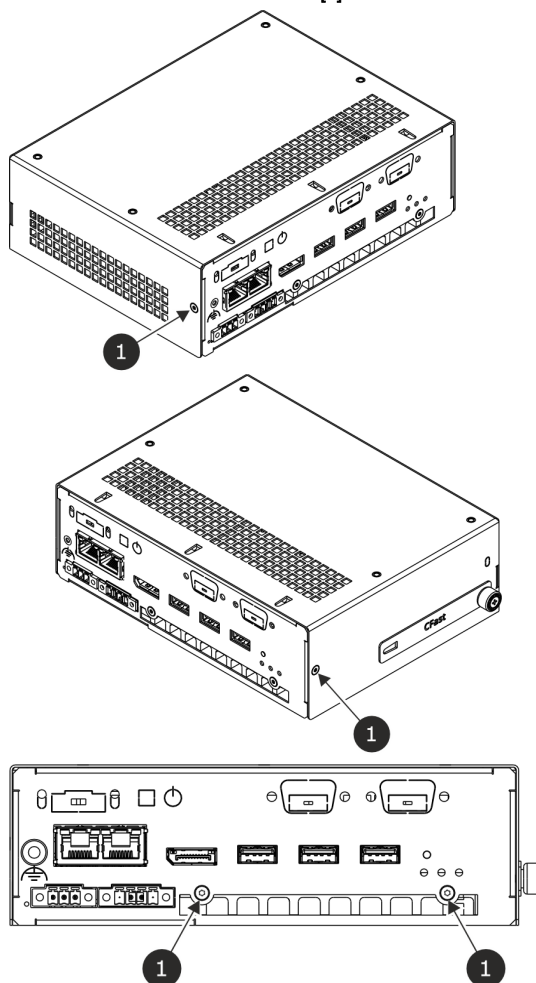
WARNING! Only use batteries of the specified type to avoid explosion and/or damage. The operations described below should only be carried out by qualified personnel.

WARNING: if the battery is low, the device time may not be reliable and may have a negative impact on data logging.

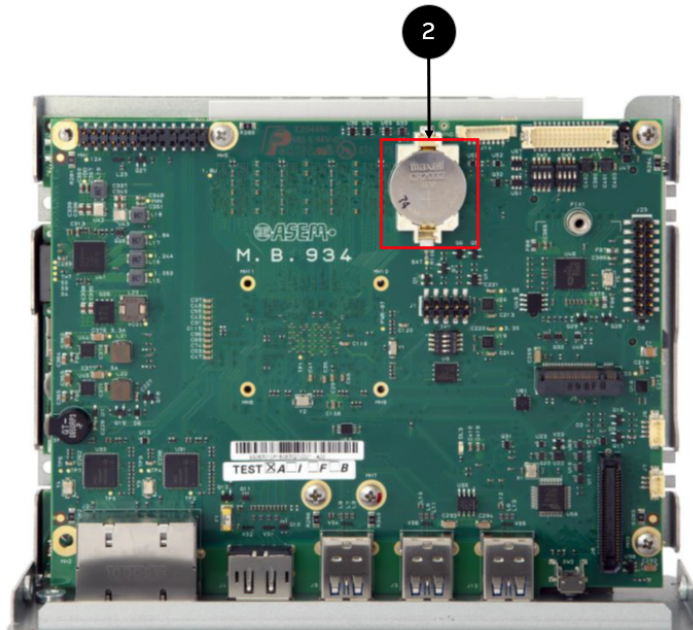
Inside Lite Panel Pro there is a buffer battery that needs to be replaced when its LED flashes red, see Structure of Lite Panel Pro. On average, the battery lasts 6-7 years when used for 8 hours a day.

Replace the battery

1. Switch off the system and disconnect the power supply.
2. Use a 2.5 mm torx screwdriver to remove the 4 screws [1] and remove the cover.



3. Using a plastic screwdriver (not supplied), gently remove the battery holder [2].



4. Remove the battery and replace it with one of the same model (3V CR2032 lithium button).
5. Put the battery holder back in its housing, close the cover and tighten the 4 screws.

7.5 - Disposal

Instructions for disposal



As prescribed by European Directive 2012/19/EU, do not dispose of this product together with unsorted municipal waste.

It is the responsibility of the owner to dispose of both these products and other electrical and electronic equipment through the specific collection facilities designated by the government or local public authorities.

Proper disposal and recycling will help prevent potentially negative consequences for the environment and human health.

For more detailed information concerning disposal, please contact the relevant government agency, waste disposal service or the supplier from whom you purchased the product.

7.6 - Support

If you need help, contact the support centre [ABB global-el.operations.digital@abb.com](mailto:ABB_global-el.operations.digital@abb.com).

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