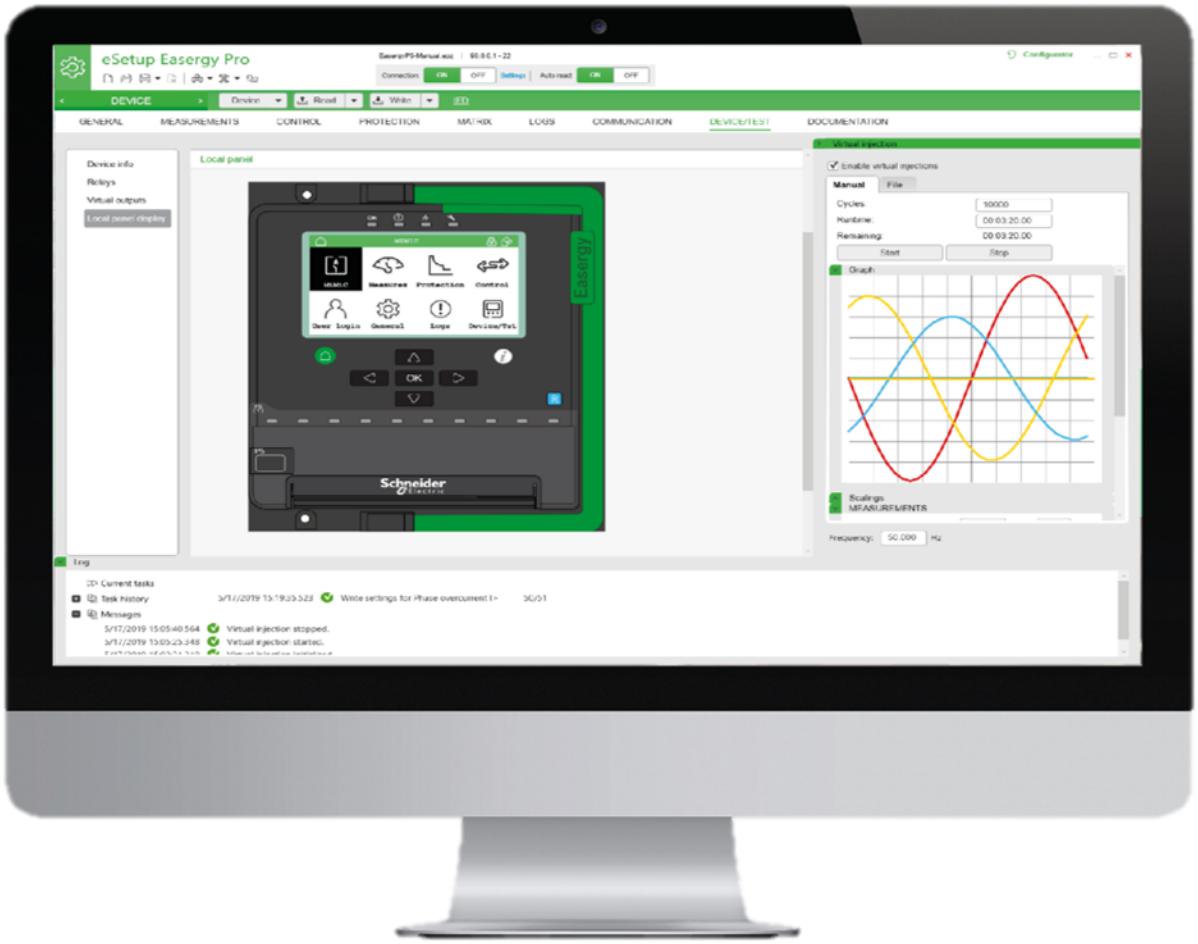
eSetup Easergy Pro

User manual

Setting tool

eSetupEP/EN M/03A
Release date 01/2020



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Legal Information

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Hazard categories and special symbols

Important Information

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

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

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

⚠DANGER

DANGER INDICATES AN IMMINENTLY HAZARDOUS SITUATION

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

⚠WARNING

WARNING INDICATES A POTENTIALLY HAZARDOUS SITUATION

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

⚠CAUTION

CAUTION INDICATES A POTENTIALLY HAZARDOUS SITUATION

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

NOTICE

NOTICE IS USED TO ADDRESS PRACTICES

Failure to follow these instructions can result in equipment damage.

Protective grounding

The user is responsible for compliance with all the existing international and national electrical codes concerning protective grounding of any device.

Please Note

Use the device's password protection feature to prevent untrained persons from interacting with this device.

⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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

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

Legal notice

Disclaimer

No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this document. This document is not intended as an instruction manual for untrained persons. This document gives instructions on device installation, commissioning and operation. However, the manual cannot cover all conceivable circumstances or include detailed information on all topics. In the event of questions or specific problems, do not take any action without proper authorization. Contact Schneider Electric and request the necessary information.

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Purpose

This manual gives you an overview of the PowerLogic eSetup Easergy Pro setting and configuration tool (later called Easergy Pro) and instructions on how to set up the connection and use the tool to create configurations for Easergy P3 and Easergy P5 protection relays (later called protection relays).

Abbreviations and terms

This section defines some abbreviations and terms used in this manual.

Abbreviations and terms

Term	Definition
Access level	The access levels restrict the rights to modify the protection relay settings in eSetup Easergy Pro.
Commissioning	A phase during which the the product installation and configuration is tested and verified.
DI	Digital input
Download	To read data from a protection relay to eSetup Easergy Pro
Engineering	A phase during which the protection relay is set and programmed to meet the functional specification of its intended application.
IEC	International Electrotechnical Commission. An international standardization organisation

Term	Definition
IEC 61850	IEC 61850 is a standard for vendor-agnostic engineering of the configuration of intelligent electronic devices for electrical substation automation systems to be able to communicate with each other.
Latching	Output protection relays and indication LEDs can be latched, which means that they are not released when the control signal is releasing. Releasing of latched protection relays is done with a separate action.
LED	Light-emitting diode
Protection relay	Easergy P3 protection relay
RMS	Root mean square
Setting file	An EPZ file that stores the configuration of one protection relay.
Setting view	A view in eSetup Easergy Pro that opens from a sub-menu, for example **General > Objects** where you can view and edit the protection relay settings.
USB	Universal serial bus

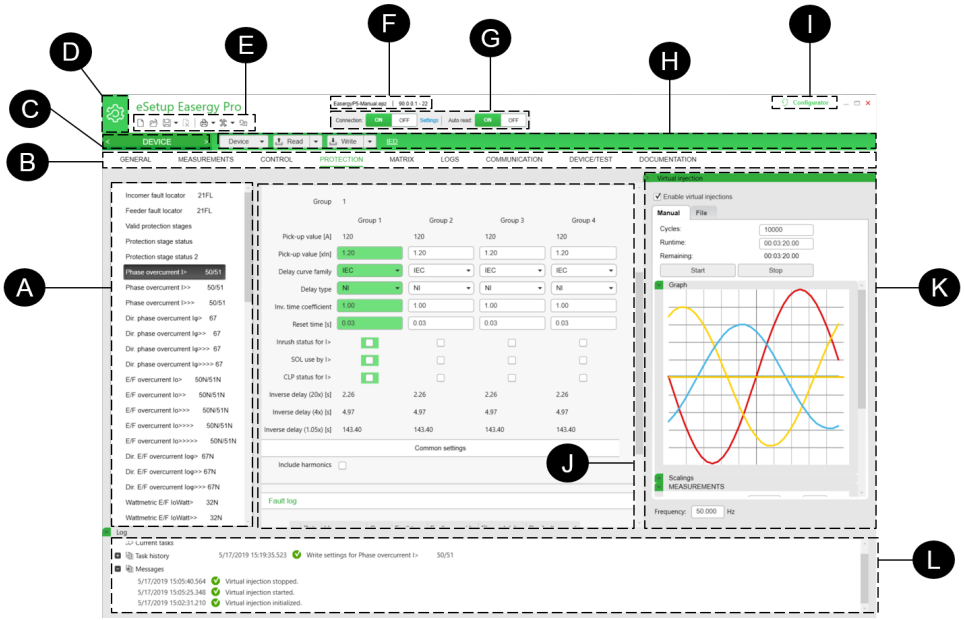
2 eSetup Easergy Pro overview

This chapter gives you an overview of eSetup Easergy Pro, the system requirements for the tool, a brief description of the access levels and an overview of how you can use eSetup Easergy Pro in different phases of the protection relay's lifetime.

Menu overview

This section gives a Menu overview of the eSetup Easergy Pro. Picture below shows the names of menus, views and buttons.

Device View and File View tab



A List of IED sub menus
B List of main IED menus
C List of Viewer
D List of main action
E Quick access toolbar
F File/Device connected identification
G Connect commands
H Toolbars : Group of commands + Name of Device/File
I Access level – Login
J Workspace
K Auxiliary tools space
L Log of action into the software

Tool overview

eSetup Easergy Pro is a software tool for setting up and configuring Easergy P3 and Easergy P5 protection relays. You can use it:

- during engineering to prepare the configuration
- during commissioning to adjust the settings and to test the protection relay
- during operation to retrieve data from the protection relays and to update the system.

eSetup Easergy Pro has a graphical interface with a toolbar and menu where the protection relay settings and parameters are grouped:

NOTE: The contents of the menus depend on the protection relay type and the selected application mode.

eSetup Easergy Pro working principles

eSetup Easergy Pro stores the protection relay configuration in a setting file. The configuration of one physical protection relay is saved in one setting file. The setting file can be saved for later use.
When starting to work with eSetup Easergy Pro, you have three options:

- create a new setting file without connecting to a protection relay
- open an existing (previously saved) setting file without connecting to a protection relay
- connect to a protection relay and read the settings from the protection relay

eSetup Easergy Pro can be connected to a single protection relay via the USB port in the protection relay's front panel or to a group of protection relays via Ethernet. For more information on how to set up the connection, see *Chapter Setting up the connection, page 11*.

System requirements

To use eSetup Easergy Pro, you need:

- 1 computer type PC with:
  - Windows 7 (32/64 bits) or newer operating system
  - 512 MB RAM
  - Dot net framework 4.7.2 must be installed
  - 200 MB disk space
- eSetup Easergy Pro downloaded to the PC
- USB cable, type B (order code REL52822 to connect with Easergy P3 device) and Mini USB cable (order code 59700 to connect with Easergy P5 device)

  NOTE: Download the latest version of eSetup Easergy Pro from *http://easergy.schneider-electric.com*.

Access levels

At the first use of the Easergy protection device, the default password must be changed.

Easergy P3 devices

Easergy has three access levels. The purpose of the access levels is to prevent accidental or unwanted modification of the configurations, parameters or settings.

Access levels

Access level	Description	Default password
User	Possible to read for example parameter values, measurements and events.	No password required
Operator	Possible to control objects and to change for example the protection stages settings.	1
Configurator	The configurator level is needed during the commissioning of the protection relay, for example, for setting the scaling of the voltage and current transformers.	2

NOTE: Change the password after logging in for the first time.

The setting file remembers the access level that is used when the settings are read from the protection relay for the first time. For example, if the setting file was

created with the user access level, it cannot be changed to configurator level setting file later.

Easergy P5 devices

The Easergy P5 protection relays has one of the two following cybersecurity levels:

- Basic CS: basic cybersecurity rules as default configuration
- Advanced CS: cybersecurity option, proposed as a firmware option to be selected at the ordering

When delivered from factory, the Easergy P5 protection relay's RBAC has the following configuration:

Factory cybersecurity configurations

Role	User name	Levels	Password	Time-out	Access lockout	Lockout period
VIEWER	DefaultUser	Basic /Advanced	No password	10 min	3 times	3 min
OPERATOR	OperatorLevel	Basic /Advanced	AAAA			
ENGINEER	EngineerLevel	Basic /Advanced	AAAA			
INSTALLER	InstallerLevel	Basic /Advanced	AAAA			
SECADM	SecurityLevel	—	AAAAAAAA			
SECAUD	—	—	—	—	—	—

3 Setting up the connection

This section contains instructions on how to set up the connection between eSetup Easergy Pro and a protection relay or multiple protection relay.

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Only qualified personnel should operate this equipment. Such work should be performed only after reading this entire set of instructions and checking the technical characteristics of the protection relay.

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

Connecting to a single Easergy P3 protection relay using USB cable

1. Connect the USB cable between the PC running eSetup Easergy Pro and the local port of the protection relay.
2. On the eSetup Easergy Pro toolbar, click the **ON** connection button. The Login pop-up window opens.
3. Select the right USB serial port and connection speed.
4. Click **Connect**. A new window showing the protection relay information opens.
5. Enter the desired operating level: **User**, **Operator** or **Configurator**. eSetup Easergy Pro main view opens.

Connecting to protection relays via Ethernet for Easergy P3

You can connect to a single protection relay or multiple protection relays via Ethernet for Easergy P3.

1. On the eSetup Easergy Pro toolbar, click the **ON** connection button. The **Login** pop-up window opens.
2. Click **ETHERNET**.
3. Enter the right IP address in the **IP address** field.
   - For the protection relay's IP address, see the protection relay front panel menu **Bus/ETHERNET**.
   - To save the defined connection settings, click the disk icon.
4. Click **Connect**. A new window showing the protection relay information opens.
5. Enter the desired operating level: **User**, **Operator** or **Configurator**. eSetup Easergy Pro main view opens.

Connecting to a single Easergy P5 protection relay using USB cable

1. Install the USB driver from the eSetup Easergy Pro file package for the first time, connecting the Easergy P5 protection relay to a PC running eSetup Easergy Pro (see Installing the USB driver, in the user manual of Easergy P5.)
2. Connect the USB cable (reference 59700) between the PC running eSetup Easergy Pro and the local port of the Easergy P5 protection relay, with the

mini-USB type B connector of the cable plugged into the protection relay and the type A connector to the PC (see Connecting a PC to the Easergy P5 using a USB cable, in the user manual of Easergy P5.)

3. On the eSetup Easergy Pro toolbar, click the ON connection button. The Login pop-up window opens.

The connection buttons on the tool bar

4. Select the right USB serial port name P5 USB.
5. Click Connect.
   A new window showing the protection relay information opens.
6. Enter the user name (OperatorLevel, EngineerLevel or InstallerLevel) and password to login.
   eSetup Easergy Pro's main view opens.

Connecting to protection relays via Ethernet for Easergy P5

You can connect to a single protection relay or multiple protection relays via Ethernet for Easergy P5.

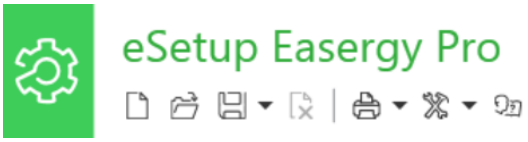
1. On the eSetup Easergy Pro toolbar, click the **ON** connection button. The **Login** pop-up window opens.
2. Click **ETHERNET**.
3. Enter the IP address in the **IP address** field or select the right IP address from the **Easergy P5 devices found** frame.
   - For the protection relay's IP address, see the protection relay front panel menu **General/Ethernet port**.
   - To save the defined connection settings, click the disk icon.
4. Click **Connect**. A new window showing the protection relay information opens.
5. Enter the desired operating level: **OperatorLevel**, **EngineerLevel** or **InstallerLevel**. eSetup Easergy Pro main view opens.

4 Menus, toolbar and buttons

This chapter contains an overview of the eSetup Easergy Pro menus, setting views and toolbar.

Toolbar

Toolbar



The toolbar contains icons with easy access to some of the most common tasks in eSetup Easergy Pro, for example creating new, opening, saving, saving as a setting file or print-out. The icon functions are explained in *Table Toolbar, page 13*.

Toolbar table

Icon	Name	Description
	Create setting file	Create a new setting file.
	Open file	Open a previously saved setting file.
	Save / Save as	Save the setting file on your PC.
	Close file	Close the currently open setting file.
	Print	Export a view or all settings to PDF file.
	View help	Open help for the currently displayed view.

Connection and auto read/write buttons

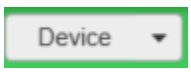
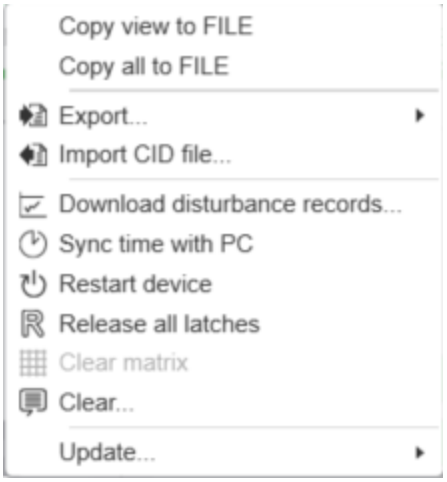
Use the **Connection on/off** buttons to open and shut down the connection to a protection relay and the **Settings** link to view and modify the connection settings. After connecting to a protection relay, the **Auto read/write** buttons appear. The auto read/write function is off by default.

Connection and Auto read/write buttons

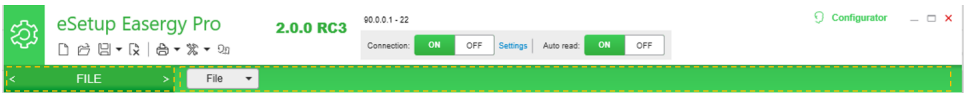
Activate the auto read/write function by clicking the **on** button. When auto read/write is on, changes are automatically read from the protection relay to eSetup Easergy Pro and written from eSetup Easergy Pro to the protection relay.

Device tab view / Device Action Menu

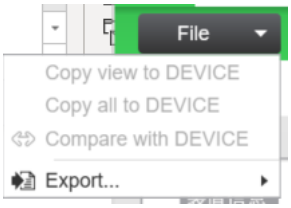
The “Device Tab View” is active when eSetup Easergy Pro is connected to device. It also enables the user to perform specific actions such as reading and writing parameters in addition to other actions described in Table *below*.

Icon	Named	Description
	Read settings	Read View – Read from device only settings displayed Read All – Read from device all settings. Read Events – Read from device all events in.
	Write settings	Write View - Write to device only settings displayed Write All - Write to device all settings. (*) White Changes - Write to device only settings changed
	**Device Tools**	
		• “Copy View to File” – Command used to move the displayed parameters to the "FILE" view • “Copy All to File” – Command used to move all parameters from device to the "FILE" • “Export…” - Command used to export files like: CID/SCL,ICD/SCL, EDS - Ethernet IP, EDS – DeviceNet, etc • Import CID file from IEC61850 system tools. • “Download Disturbance records” – Allow the user to do the download/ delete or visualize the disturbance record from device. • “Sync Time with PC” – command to send the actual time/date from PC to Device. • “Release all latches” – command to release the events, contacts and LEDs into Device. • “Clear Matrix” – command to remove all connections into all Matrix present in the device. • “Clear…” – command to clear events locally, events from device, disturbance records, start and trip counters, protection fault logs and diagnostic fault logs. The user has a possibility to choose with item they want to clear. “Update…” – command to execute two types of update a) firmware update only for Easergy P3; b) Language update into Device.

File tab view / File Action Menu



The “File Tab View” is active when eSetup Easergy Pro create or open a file setting from Easergy P3 or Easergy P5 devices. It also enables the user to perform specific actions such as copy parameters to Device View in addition to other actions described in Table *below*.

Icon	Named	Description
	File	• “Copy View to Device” – Command used to move the displayed parameters to the "Device" View • “Copy All to Device” – Command used to move all parameters from file to the "Device" View • “Comparison with Device" – Command used to execute the function Comparison between DEVICE parameters and FILE parameters in “Comparison” view. • “Export…” - Command used to export ICD/SCL files from off-line file.

5 Configuration without connection to a protection relay

This chapter contains instructions on how to create configurations without connecting to a protection relay.

Setting file

eSetup Easergy Pro stores the protection relay configuration, that is, information about the protection relay settings, events and fault logs in a setting file.
You can save the setting file on your PC and use it later for many purposes, for example:

- Making changes to the settings offline. The file keeps track of changes that are made offline. When the tool is connected to the protection relay, all changes can be transmitted to the protection relay at once.
- Copying settings between protection relays.
- Archiving purposes. Store a copy of the setting files when protection relays are commissioned and reconfigured.
- Troubleshooting.

Creating a setting file

1. On the toolbar, click the **Create setting file** icon. The **Create configuration** pop-up window opens.
2. Select the right protection relay type, firmware version, application mode, voltage measurement, ordering code, and communication protocols.
3. Click **Create**. A new, empty setting file is created.
4. Define the settings in the different menus. See the section Engineering.

   NOTE: Not all eSetup Easergy Pro features are available when working without connection to a protection relay.

Opening a previously saved setting file

You can use a previously saved setting file as the basis when creating the configuration for a protection relay of the same type.
To open a setting file:

1. On the eSetup Easergy Pro toolbar, click the **Open file** icon. The **Open a file** window opens.
2. Browse to the location where the file has been saved, and click **Open**. The setting file opens.

Saving the setting file on your PC

1. On the eSetup Easergy Pro toolbar, click the **Save** icon. The **Save a file** window opens.
2. Browse to the folder where you want to save the file. Type a descriptive file name, and click **Save**.

   NOTE: By default, the setting file *.epz is saved in the eSetup Easergy Pro folder.

6 Configuration with connection to a protection relay

This chapter contains instructions on how to read or write settings when connected to a protection relay or protection relays and how to copy settings from one protection relay to another.

Reading settings from the protection relay

When connected to a protection relay, eSetup Easergy Pro works in on-demand mode, which means that all settings are not automatically read from the protection relay but a menu or view is read from the protection relay only when you open that view. To read all settings from the protection relay, select **Read settings > Read all settings**.
Also, if settings have in a later phase been changed via the protection relay's front panel, you can update the changes to eSetup Easergy Pro with the Read command.
On the eSetup Easergy Pro toolbar, click the **Read settings** icon and select:

- **Read current view** to read the changes only for the currently displayed view.
- **Read all settings** to read all settings from the protection relay.

  NOTE: Before saving a setting file, make sure you have read all settings from the protection relay. Otherwise, the setting file is incomplete and does not contain all the settings.

Writing settings to the protection relay

After you have updated the protection relay settings in eSetup Easergy Pro, write the changes to the protection relay. On the eSetup Easergy Pro toolbar, click the **Write settings** icon, and select:

- **Write changes** to save the changed made in all views.
- **Write current view** to save only the changes made in the currently displayed view.
- **Write all settings** to save all settings in all views.

NOTICE

RISK OF SYSTEM SHUTDOWN

After writing new settings, configurations or firmware to a protection relay, perform a test to verify that the protection relay operates correctly with the new settings.

Failure to follow these instructions can result in equipment damage.

⚠WARNING

LOSS OF PROTECTIVE FUNCTION DURING SETTING CHANGE

- Following a setting change the relay could reboot and equipment protection is unavailable. Ensure all operators are outside the arc flash boundary during relay reboot.
- Use appropriate personal protection equipment (PPE) while making setting changes within the arc flash boundary.
- Do not approach the equipment until the relay reboot is complete.

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

Copying settings between protection relay

You can copy the whole configuration of one protection relay to another protection relay of the same type. This makes it easy to quickly configure several protection relay with the same settings.

1. In eSetup Easergy Pro, open the configuration you want to copy. You can either open a previously saved setting file or connect to a protection relay and read its settings.
2. Connect to the protection relay to which you want to write the settings.
3. To write the settings to the protection relay, from the toolbar, select **Write settings > Write all settings**.

7 Updating the protection relay firmware and language

This chapter contains instructions on how to update the protection relay firmware and language.

NOTICE
LOSS OF PROTECTION OR RISK OF NUISENCE TRIPPING • The protection relay is not functional during updating. Protection functions are not operational and output protection relays may change their status during the updating process. • Communication protocols are not functional during the updating process. Connections to SCADA or any other external system are lost during the firmware update. • Disconnect trip circuits or any other signals that may disturb the protected system from the protection relay. **Failure to follow these instructions can result in equipment damage.**

Updating the firmware for Easergy P3

Preparations before the firmware update

- Download and save the settings from the protection relay before starting the firmware update.
- Ensure that the laptop battery has capacity for at least for 30 minutes or plug in the laptop power supply. Updating the firmware typically takes 10-15 min.

During the firmware update

- Make sure that the laptop does not go to “sleep mode” while the firmware is being updated.
- Do not turn off the supply voltage for the protection relay.
- Do not disconnect the USB cable.

Updating the firmware

1. Start eSetup Easergy Pro.
2. Update the connection settings in eSetup Easergy Pro.

   A.

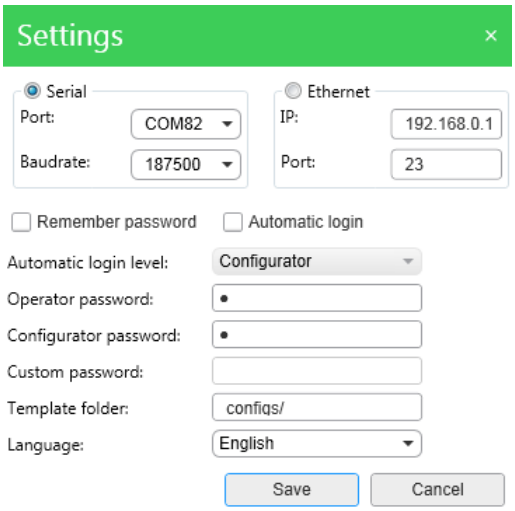
   Settings link

   Next to the connection buttons, click Settings. The Settings window opens.

   B.

Settings window



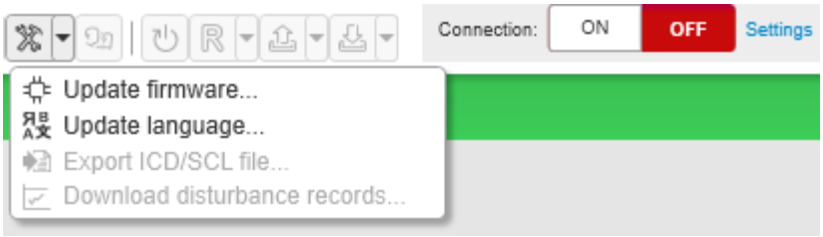
Select **Serial**, and update the connection settings as follows:

- Port: as suggested by PC
- Baudrate: 187500
- Automatic login level: Configurator
- Oparator password: 1
- Configurator password: 2

C. Click **Save** to save the settings. The **Settings** window closes.

3.

Update firmware



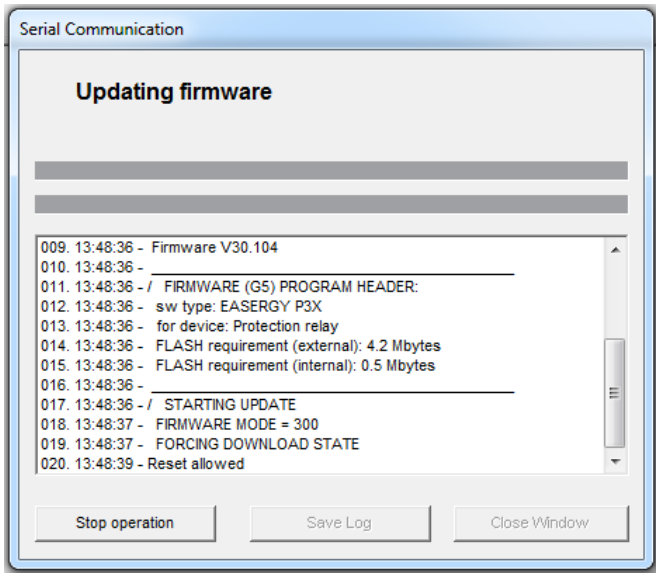
From the toolbar, select **Tools > Update firmware**.

4. Locate and select the file containing the new firmware.

   NOTE: Easergy P3Ux and Easergy P3x3x have separate files.

5. Click **Open** to start the update. The **Updating firmware** window opens.

Updating firmware



Wait until the **Updating firmware** window closes indicating that the update is complete even if the protection relay starts and looks operational. After this, the firmware is up and running and the protection relay is ready for testing.

After the update

NOTICE
RISK OF SYSTEM SHUTDOWN After writing new settings, configurations or firmware to a protection relay, perform a test to verify that the protection relay operates correctly with the new settings. **Failure to follow these instructions can result in equipment damage.**

- Verify the protection relay parameters and settings after firmware update.
- Secondary side testing with the protection relay testing equipment is recommended.
- Restore the updated protection relay and all connections to their original state.

Updating the language for Easergy P3

1. From the toolbar, select **Tools > Update language**.
2. Select the language file.
3. Select the language package repository.
4. Click **Download**.
5. Click **Update**.

Updating the firmware for Easergy P5

Preparations before the firmware update

- Download and save the settings from the protection relay before starting the firmware update.
- Ensure that the laptop battery has capacity for at least for 30 minutes or plug in the laptop power supply. Updating the firmware typically takes 10-15 min.

During the firmware update

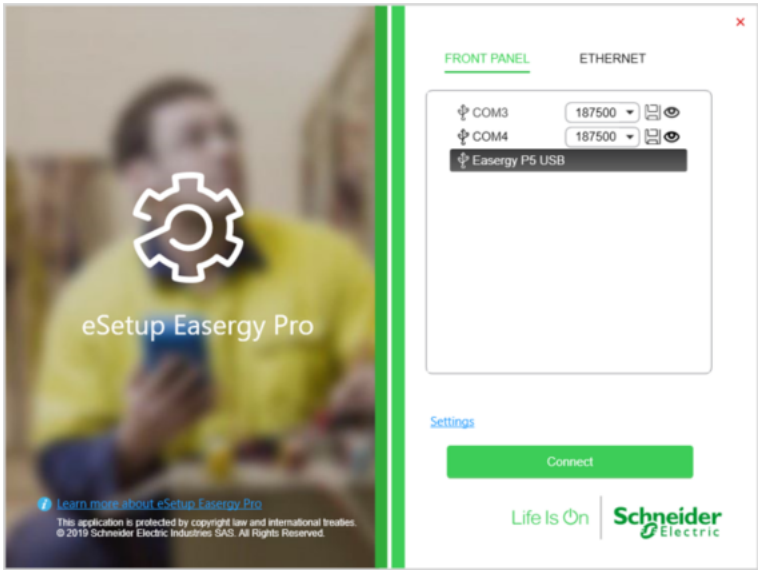
- Make sure that the laptop does not go to “sleep mode” while the firmware is being updated.
- Do not turn off the supply voltage for the protection relay.
- Do not disconnect the USB cable or network cable.

Updating the firmware

1. Start eSetup Easergy Pro.
2. Connect P5 device through P5 USB port or Ethernet port.
3. Click **ON** from the **Connection** field.

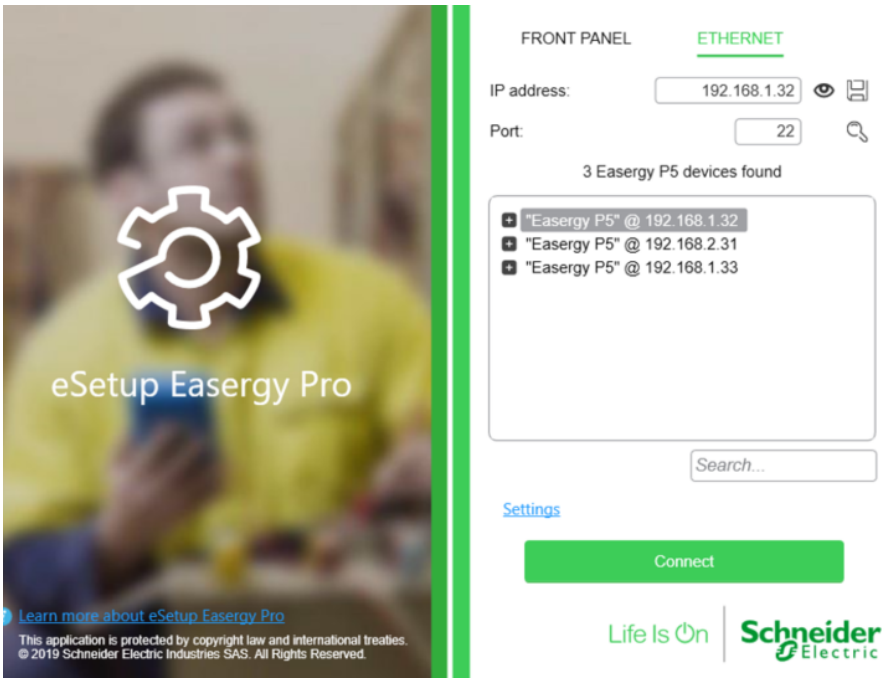
   A. Select FRONT PANEL tab if P5 USB port is used.

   FRONT PANEL tab



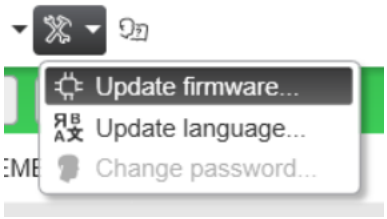
   B. Select ETHERNET tab if Ethernet port is used.

   ETHERNET tab



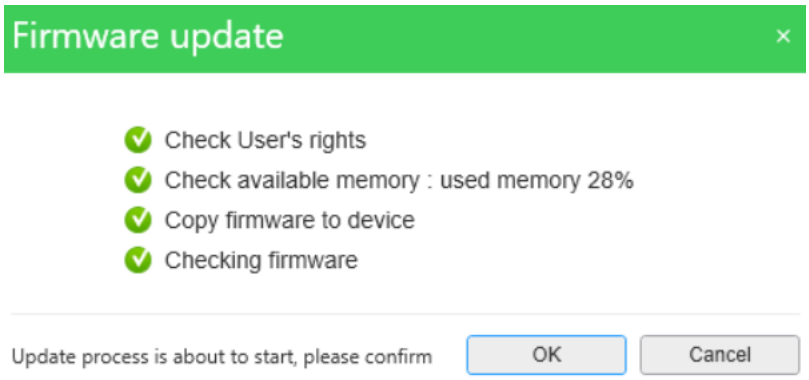
4. Click **Connect**.
5. Enter user name and password.
6. From the toolbar, select **Tools > Update firmware**.

Update firmware by toolbar



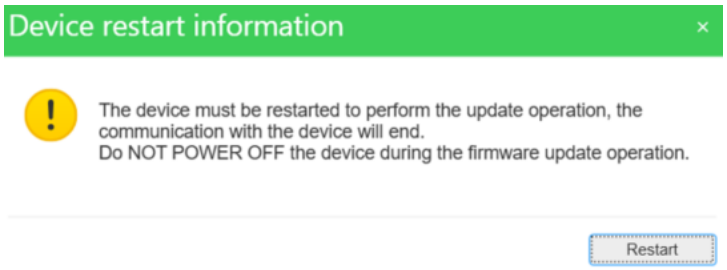
7. Locate and select the file containing the new firmware.
8. Click **Open** to start the update. The **Firemare update** window opens.

Firmware update



9. Click **OK** to confirm the start of update process. A **Device restart information** message box pops up.

Device restart information



10. Click **Restart** to wait for the firmware update completion.

    NOTE: After the firmware update, all the protection relay parameters are restored to default values.

After the update

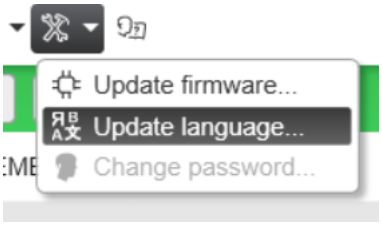
NOTICE
RISK OF SYSTEM SHUTDOWN After writing new settings, configurations or firmware to a protection relay, perform a test to verify that the protection relay operates correctly with the new settings. **Failure to follow these instructions can result in equipment damage.**

- Verify the protection relay parameters and settings after firmware update.
- Secondary side testing with the protection relay testing equipment is recommended.
- Restore the updated protection relay and all connections to their original state.

Updating the language for Easergy P5

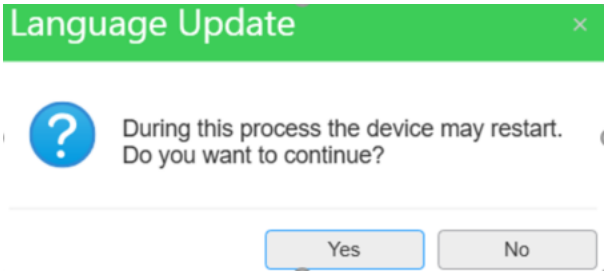
1. From the toolbar, select **Tools > Update language**.

   Update Language

2. Select the language file. A **Language Update** message box pops up.

   Language Update

3. Click **Yes** to continue to restart the device.

8 Revision history

Document version	Description
P3eSetup/en M/A002 2019-02	New creation for user guide about eSetup Easergy Pro Setting tool. SW Release 1.1.0
eSetupEP/EN M/03A 2020-01	Update the section of Updating the protection relay firmware and language Easergy to add the procedure for P5. Update the section of Connection and auto read/write buttons to include the new function of Comparison. Update the section of Setting up the connection and create dedicated procedures for P3/P5 about Connecting to protection relays via Ethernet. SW Release 2.2.0

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