

PHARO User Configuration Software UCS USER MANUAL



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On the documentation

Please read this chapter carefully before working with this documentation and the User Configuration Software.

1.1 Function of this document

This user manual instructs the machine operator's technical personnel in the operation of the User Configuration Software for Pharo safety laser scanner.

It does not provide instructions on the operation, commissioning and maintenance of the protective devices themselves. Please refer to the documentation enclosed with the protective devices for information on operation, commissioning and maintenance.

1.2 Target group

This software documentation addresses planners, developers and operators of systems that are to be protected by one or more Pharo scanners.

It also addresses people who integrate these protective devices into a machine, carry out machine commissioning, or who are in charge of servicing and maintaining the unit.

1.3 **Depth of information**

This software documentation contains information on the User Configuration Software for protective devices supplied by REER S.p.A. The user manual provides an overview of the basic software functions. Please refer to the online help function for more detailed instructions on the configuration of devices and performing diagnostics.

Planning and using protective devices also require specific technical skills which are not detailed in this documentation.

Abbreviations 1.4

Portable Document Format for Adobe Acrobat[®] Reader™ PDF

UCS **REER User Configuration Software**

1.5 Symbols and formats used

Take action ...

Instructions for taking action are shown by an arrow. Carefully read and follow the instructions for action.

Refer to notes for special features of the software or of a device. Note



Software notes show the location in the UCS where you can make the appropriate settings

and adjustments.



Warning!

Warnings indicate real or potential hazards and risks. They are designed to prevent physical injury or death.

Carefully read and follow the warning notices!



1.6 Accessing the documentation

During the installation of the individual software components the related operating instructions for the device are also installed. You can access the operating instructions from the UCS online help.

In addition, you can also open the operating instructions directly from the installation CD.

How to open a set of operating instructions:

- Start your PC and place the installation CD in your CD-ROM drive. The installation wizard will start automatically.
- First enter the serial number for the UCS. You will find the number on the booklet with the installation CD.
- Then go to the REER User Configuration Software dialog box and select under Read documentation the required operating instructions and click the OK button beside the selection.

Acrobat[®] Reader[™] will open.

> Accept the licence agreement.

The selected operating instructions are opened.

1.7 Using the online help function

The UCS is available with an online help function which provides information on the software functions and which provides a step-by-step description of the individual actions.

The online help has a table of contents and an index. The following sections of the documentation can be opened in the list of contents for the online help:

- user manual on the UCS in Portable Document Format (PDF)
- online help on the UCS
- online help on device-specific subjects (e.g. configuration procedures)
- operating instructions for Pharo in Portable Document Format (PDF)





The online help function can be opened separately using the command **Programs**, **REER Applications**, **Help on REER UCS** or in the UCS in the menu **?** From one of the UCS dialog boxes, click the **Help** button in the dialog box or press the

F1 key. The related description for the dialog box is then displayed automatically.





Fig. 2: Example for the description of a UCS dialog box



The descriptions in the online help explain the functions and relationships in the dialog boxes. Use the **Detailed instructions** button in the descriptions to go to the **step-by-step instructions** of the online help.

Detailed instructions

If several sets of step-by-step instructions are available, the **Topics found** dialog box is opened. Choose there the required topic and click the **Display** button.

Fig. 4: Topics found dialog box

Fig. 3: Detailed instructions

button

	to edit a configuration draft: to export a configuration draft:
	to import a configuration draft:
	to receive the configuration from the devices
HOW	to transfer the configuration to the devices:



The step-by-step instructions describe the related procedure in detail.

Fig. 5: Example step-by-step instructions

- How to receive the configuration from the devices:
 - > Using the right mouse button open the context menu of a device or system.
 - On this menu choose the command Configuration draft, Receive.
 The previous configuration of all devices is read and can be edited in the UCS.

As the UCS is used for the **configuration** and diagnostics on the safey laser scanners of the Pharo series, along with the basic description there are device-specific help subjects.From these basic descriptions you can open the device-specific help subjects using the **Device-specific subjects** link at the end of a dialog box description.

Fig. 6: Device-specific subjects link

Device-specific subjects

The **Contents** button in the dialog box descriptions and in the step-by-step instructions will **always** take you back to the list of contents.

Fig. 7: Contents button



Once back in the **list of contents** and in the appropriate dialog box descriptions, you can also open the operating instructions for the desired protective devices.

To do so, you must have the related file in PDF format and Adobe Acrobat[®] Reader™ installed on your PC. If this is not the case, a warning is displayed.

1.8 How to use this document

After you have carefully read the above sections, please note the following notes on the document.

- If the software is as yet not installed, please read the chapter **Installation** in this user manual.
- If you are working with the software for the first time, please read the chapter **Product** description.
- If you are familiar with the software and want to configure devices, please read the chapter **Configuration**.
- If you are familiar with the software and want to perform diagnostics on devices, please read the chapter **Diagnostics**.

2 Installation of the software

An installation wizard will guide you through the installation of the software. Before beginning the installation, close all other programmes.

The minimum system requirements for the operation of the User Configuration Software are:

- standard Intel Pentium PC, 233 MHz, 64 MB RAM
- spare hard disk space (UCS = 15 MB/documentation \approx 100 MB)
- graphics resolution 800 \times 600 pixels with High Color (16 bit)
- RS 232 serial interface that is not used by any other programs
- operating system MS Windows 95/98/NT4.0/2000/XP
- a printer driver of your choice must be installed.

During the installation you can install Acrobat[®] Reader[™]. Using this program you can read the user manual for the UCS and the operating instructions of PHARO.

How to install the UCS:

Start your PC and place the installation CD in your CD-ROM drive.

The installation wizard will start automatically. It allows you to open the documentation and to install the software.

- First enter the serial number for the UCS. You will find the number on the booklet with the installation CD.
- Then, go to the dialog box REER User Configuration Software and select Install software, REER UCS and click the OK button beside the selection.
- Follow the instructions in the installation wizard.
- The UCS and the installation wizard for the UCS are available in two languages. The software detects the regional settings in your operating system and starts the wizard in the related language. However, if your operating system is set for another country than the available languages (e.g. Dutch), the Select language dialog box appears before the REER User Configuration Software dialog box. Select the desired language (e.g. English).
 - During the installation of the UCS, choose the software components to be installed. Components that have already been installed with a previous version of the UCS are selected automatically and updated as necessary.
 - If Windows does not start the installation wizard automatically: Click Run... in the Start menu.
 Enter the following command line in the Open field: [Drive letter for your CD-ROM drive]:\setup.exe
 The Serial number dialog box will open.

Note

3 Product description

PHARO safety laser scanner can be configured differently depending on the application and operating mode.

The User Configuration Software has a graphic user interface which allows you to configure and diagnose PHARO. The para-meters for a configuration are transferred to the device and saved there.

Note The software is not suitable for the configuration and diagnostics of devices supplied by other manufacturers.

The devices in the UCS are always displayed in so-called projects. The User Configuration Software allows you to ...

- create a **new** project, configure the devices and later transfer the configuration to the devices. You can then save the project created.
- identify devices connected to the PC and receive the existing configuration of the devices, and then transfer it back to the devices. In this way a new project is created in the UCS that you can save.
- **open** a project saved previously and transfer the configuration to devices of the same type (with the same type code) and for the same application.

The configuration of the devices is password-protected, with the effect that only the members of the appropriate **user groups** will be able to transfer configurations to the devices.

You can also use the User Configuration Software to perform diagnostics on connected devices (e.g. in the case of an error). The diagnostics data will be displayed on the monitor.







Test the devices for operational readiness!

The software is unable to determine if a device is mounted operationally or not. Once you have successfully transferred the configuration drafts, check to see if the Pharo safety laser scanner actually monitor your machine or system the way you intended.

In this case pay attention to the instructions on commissioning and for the daily check in the operating instructions for the related device!

All values have been computed by the PC on which the UCS runs. REER S.p.A. is therefore unable to warrant that no computer-specific computing errors will occur.

4 User interface

How to start the software:

Go to the Start menu and select the command Programs, REER Applications, REER UCS. The User Configuration Software will now be started.

Once the program has started, the screen is initially blank. Device combinations saved or identified will thereafter be shown graphically in the user interface. These can then be used to configure or perform diagnostics on Pharo.

Title bar Menu bar Toolbar

The user interface includes title bar, menu bar, toolbar, the navigation area, the viewing area and the status bar.

How to close the software:

- > On the Project menu choose the Quit command.
 - The program window will be closed. If, at this point, you have as yet not saved the data of an open project, you will be prompted to do so.

4.1 Menu bar, toolbar, and status bar

The menu bar and the toolbar are found at the top of the software window. The menu bar includes the commands for the fundamental operation of the software, whereas the toolbar provides the most important commands in the shape of buttons. Moving over a button will open a brief information tag (tool tip) on the function of the button.

Fig. 8: User interface of the UCS



Fig. 9: Menu bar with tool tip



The status bar is at the bottom of the software window. There the following is displayed:

- the status of the program execution and progress if the action is protracted
- the user group to which you currently belong
- the name of the project or device in the navigation area
- whether the UCS is connected to a device
- whether the configuration has been verified

Fig. 10: Status bar with symbols for "connected" and "configuration verified"

Fig. 11: Status bar with symbols for "not connected" and "configuration not verified"

The toolbar and the status bar can be shown or hidden.

4.2 Navigation and viewing area

The navigation area shows the devices in a device cluster hierarchically in a project tree. This project tree consists of a project symbol and one or several device symbols.

In the navigation area you can open various commands using the context menus for the project or the devices.

Fig. 12: Example of a context menu



Note If some commands are only displayed in grey, then the commands are currently not available (because the UCS, for example, is not connected to a device) or your access rights are inadequate.



Fig. 13: Navigation area (left) and viewing area (right) of the UCS

Project Edit View Extras ?		
♣ Project 1 ⋳-ੳ Pharo system	Genera	
 Pharo [1] P General P Control inputs P Outputs P Field sets P Monitoring cases 	Parameter Application name Serial number (Scanner) Serial number (I/O module) Serial number (System plug) Software version (Counter) Software version (Controller) Software version (Interface) Device classes control category Mechanical design Sensor head Software package I/O module I/O module software package Housing type Special housing	Value Safety Solution 01010001 01010001 00.00 00.00 Laser scanner Type 3 Standard housing Range (4.0 m) Basic package Pharo PHR 332 Basis device incorrect

The viewing area is located to the right next to the navigation area and is initially blank. In the viewing area of the UCS ...

- the diagnostics data is displayed when you have performed diagnostics.
- the configuration protocol is displayed when you have transferred a configuration to a device.
- the parameters for a device are displayed when you click one of the device parameter nodes.

Only when it is indicated in the status line that the UCS is linked to the connected devices

and that the configuration draft is verified, it is ensured that the data displayed for a

• the configuration data currently in the UCS is displayed when you display the configuration draft for a device.

Note

Fig. 14: Status bar with symbols for "connected" and "configuration verified"



You can change the size ratio of navigation area and viewing area.

4.3 Selecting the language

The UCS can be operated in two languages: Italian or English. Select the appropriate language in the **Extras** menu.

Note The project tree and the context menu of the project tree will change its associated language only after a new project is generated or after a project has been identified or opened.



4.4 **Keyboard commands**

The UCS allows you to execute frequently used functions via function keys or with key shortcuts.

Function key or shortcut	Description
Ctrl+N	Create new project
Ctrl+O	Open existing project
Ctrl+S	Save project
F1	Open the help utility
F3	Identify connected project
Shift+F3	Select communication connection
F4	Link connected project with open project
F6	Display properties of a project or device
F7	Open the context menu
F8	Change user group
Alt+F4	End UCS
Esc	Close dialog box without saving Cancel

4.5 Directory structure for the program

To make it easier for you to navigate through created projects, device configurations, diagnostics reports, etc., the program creates a directory structure in the directory chosen during installation.

This directory structure consists of sub-directories for the individual types of files that you are allowed to save in the UCS:

backup

This directory holds the program files of an earlier version saved after an update. You must not save any other files in this directory!

· device-specific directories

This directory includes sub-directories that are suggested as the directory when saving device-specific files, e.g. diagnostics report or configuration protocol.

import-export

UCS defaultfor importing and/or exporting configuration drafts.

projects

UCS default for saving project files.

system

This directory holds the system-specific UCS files. You must not save any other files in this directory!

Tab. 2: Function keys and key shortcuts

5 Working with projects

The devices which you configure, maintain or perform diagnostics with the UCS are managed in projects and shown in a project tree.

Using the UCS you can assemble projects offline, and then configure and save them. In this way, for example, for the initial configuration of laser scanners for a plant, you can first plan the configuration on the screen and later transfer it to one or more Pharo scanners. When the project is created, it is given a **name** that you can **change**. Add devices to the project tree of a new project.

A second way of creating a project is to have the UCS **identify** devices already wired up. In this way a project with all identified devices is displayed in the navigation area of the UCS.



The commands necessary to carry out the above-described functions are found in the **Project** menu. Please refer to the online help for a device-specific description and detailed instructions.

Notes

- During project identification, the software only identifies the type of devices connected and identifies these. To ensure that you receive the configuration of the connected devices in the UCS, the software will prompt you to receive the current configuration. This is important as otherwise an "empty" configuration draft is displayed by the UCS, and not the configuration draft that was transferred to the device connected during earlier configuration.
 - Once the configuration has been received, you are prompted as to whether you want to **change to a different user group**. You can only later transfer a new or changed configuration draft if you change to the **Authorised client** user group.



Check identification of the devices!

Check to make sure that all devices in the project have been correctly identified. Compare the devices connected with the data in the viewing area for the UCS.

You can **save** the projects in files and **open** them again later. Only one project at any one time can be opened in the UCS. If a project is open while opening or creating another project, the original project will be closed.

When you open an existing project or add a new project, then you should **connect** the devices displayed to the devices connected. By connecting you will be able to verify that the connected devices and the devices shown in the project tree have matching type code.

You can also compare a project saved and/or opened in the UCS with a saved **project file**. In addition, you can open a list showing the **properties** of a project or of a single device.



How to connect the PC to PHARO:

Connect the 9-pin SubD plug of the connecting cable to a serial interface of your PC.

Fig. 15: Connection of the PC to PHARO



- Remove the protective cap on the configuration socket of Pharo.
- Connect the M 8×4 plug to the configuration socket of the device and/or the device cluster.
- Ensure that the configuration cable is not laid in close proximity to high power electrical drives or cables carrying high power. In this way you will avoid EMC effects on the configuration cable.

5.1 The project tree

The project tree of the devices is shown in the navigation area.

The devices existing in the project tree can be displayed in the "active" or in the "passive" mode:

Example symbols	Meaning
Ē	Active devices are shown in colour. Active means that the device has a complementary unit to which a connection has been made via the interface and that the comple- mentary unit has been identified by the UCS.
ġ.	Passive devices are shown in grey. Passive means that there is at present no connection to this device, either because it is currently disconnected or because it could not be identified.
	You can identify the device to which the PC is connected by the device symbol showing a PC.
2	Unknown or unidentified devices are shown with a question mark.

The device status is symbolised by the colour of the lettering:

Font colour	Meaning	
[REER protective device]	Configured devices are shown with blue lettering.	
[REER protective device]	Non-configured devices or devices in which a malfunction has occurred are shown with red lettering.	
[REER protective device]	Devices where the UCS is unable to identify their status (not connected, not identified) are shown with grey lettering.	

5.2 Changing project names

You can change the name of a project. When a project is saved, the UCS uses the project name as the default file name. For the project name, use names, for instance, with which you can allocate your projects to the machines or plant that are protected.

5.3 Comparing with a project file

You can also compare a project saved and/or opened in the UCS with a saved project file. A dialog box will show the saved project on the left and on the right a comparison protocol. In this dialog box you can **open** the project file compared with the open project.

Tab. 3: Meaning of the symbols

Tab. 4: Meaning of the font colours



5.4 Adding devices

If you have created your own project in the UCS, you can also **add** one or several devices. The device selection wizard will assist you in this step.

Added devices can be **deleted** again from the project.

The commands necessary to carry out the above-described functions are found in the context menu of the project. Please refer to the online help for detailed instructions.

5.5 Properties

To check the type codes and the serial numbers of the devices, you can display the **properties** of a project and/or the properties of a single device. The list shows all type codes and the serial numbers of the devices.

Communication

The software communicates with the devices via a cable link. To make sure that the data communication between your PC and the connected laser scanners functions correctly, you must select a communication protocol.



On the **Extras** menu of the UCS, you will find the **Communication connection...** command. Please refer to the online help for detailed instructions.

Fig. 16: Selecting the communication protocol

|--|

Choose the communication protocol Serial communication (RK 512).

In addition, you must specify one COM port of your PC as the connection for the devices.

Also, from the connections available on your PC, select the one where the devices are connected.

Note The connection you select must not be used by any other peripheral (e.g. a mouse). If you do, the system will not function correctly.



7 Configuration

Using the UCS you can configure the Pharo safety laser scanners.



Plan your configuration carefully!

The configuration of Pharo must be carried out with the greatest accuracy and must match the status and the condition of the machine or system to be monitored.

Incorrect configurations can result in injury or death.

Always begin the configuration by creating a new configuration draft in the UCS or by **editing** a configuration draft received from the devices.

Generate or edit the configuration draft either with the help of the **configuration wizard** or in a **configuration dialog box with file cards**.

For the actual configuration of Pharo, transfer the configuration draft to the connected devices. After sending the configuration draft, a **configuration protocol** will be displayed which you must first release before the configuration is enabled in the devices.

Note You can transfer the configuration draft to devices or a device system only if your PC is connected to the devices and if you are registered as user in the appropriate user group of the devices.

The configuration draft of a single device can also be **exported** and **imported** to other Pharo devices with the same type code.

Verified configuration draft

As soon as a configuration draft has been sent and released by an Authorised client, it is deemed to be **verified**. You can see this by a green tick or check in the status bar.

Fig. 17: Status bar with check mark for "configuration verified"



The project with the verified configuration draft can then be saved and later be opened and sent also to other devices by the machine maintenance personnel.

Note

When a project is opened the green check mark in the status line is only displayed after the UCS is linked to the related device.

If the open configuration draft is changed, a red cross appears in the status line. The configuration draft can no longer be transferred by machine maintenance personnel.



The commands necessary to carry out the above-described functions are found in the context menus of the device symbols. Please refer to the online help for a device-specific description and detailed instructions.

7.1 File cards or wizard

You can create the configuration draft either with the help of the **configuration wizard** or with the **file cards**.

- The configuration wizard will guide you step-by-step through the configuration, from the first to the last setting. You will find explanatory text on the individual configuration steps in the related dialog box.
- The file cards allow you to specifically change one or several configuration parameters.



Check the content of all file cards!

Unlike the configuration wizard, in the file card view you are not automatically guided through all configuration points.

For this reason check the content on all file cards to ensure that the configuration data matches your application.



The commands necessary to carry out the above-described functions are found in the **View**, **Dialog box** menu.

Note

A system with several devices (for example a cascaded system) is in general configured in **one single** configuration wizard or **one single** dialog box with file cards. Several runs through the setting dialog boxes will be completed, resp. the file cards will be repeatedly offered.

-B	Entering the type code With wizard
	C Direct entry
	Using the wizard you define step by step the type code, with direct entry you enter the code manually.

Fig. 18: Dialog box for the configuration wizard

7.2 Configuration protocol

Note As soon as the configuration protocol or the view containing the configuration draft is displayed, the standard menus in the software are hidden. Only the **Project** menu with the appropriate buttons will then be available. The navigation area of the UCS can no longer be used.

After the configuration data has been transferred to one or several devices, the configuration protocol will be shown automatically. During this process the actual data is read out from the device and displayed.

If the data read does not match the data in the configuration draft, it will be shown in black. If the data read out differs from that in the configuration draft, it will be shown in red. In this case the configuration protocol cannot be released.

You can **print** and **save** the configuration protocol. You can also insert a **comment** via an additional dialog box. This comment will also be printed and saved.



Carefully check the configuration protocol!

Carefully check to make sure that the configuration data displayed comply with those you actually wanted to enter. Check for typing and transfer errors!

Once you have successfully transferred the configuration, the machine or plant must be checked and released by specialist personnel.

Notes

• The new configuration will be activated on the device only after release. If you **reject** the configuration, then the device or device cluster receives an invalid configuration.



The commands necessary to carry out the above-described functions are found in the **Project** menu and in the **context menus** of the devices.

- Carefully check each individual item of the configuration protocol.
- Some configuration protocols for devices have several pages. In this case page to the previous/following pages using the buttons at the bottom of the scroll bar or using the Page up/Page down keys.

	▼ ± ∓
	Ŧ

- Also carefully check the following pages of the configuration protocol. The Release button only becomes available when you have paged through to the last page of the configuration protocol.
- Click the Release button.

The configuration data will be loaded to the device/devices and initialised with the new configuration.

If the loading has been successful, an appropriate message will appear.

➢ Click the OK button.

The configuration loaded to the device/devices is now active.

Test whether the device(s) monitor the machine or plant as you expect. Only after completing this step, go to real-time operation.

Fig. 19: Buttons for paging through the configuration protocol

7.3 User groups

There are various user groups in the Pharo safety laser scanners.

These user groups have different authorisations, e.g. for transferring configurations to the devices or to perform diagnostics on the devices.

If the devices in a project have been identified by the UCS, or the UCS is linked to the devices for a project, you can change to these user groups. When the UCS is started, you will automatically belong to the user group Machine operator. To be able to send configurations, log in with the device or the device system as Machine maintenance personnel or as Authorised client, using the appropriate project password.

The factory-set password REERSAFE has been entered for the user group Authorised client. In order to protect the access to the configuration of the devices, you must change this password.

Note

If a Pharo cluster has been assembled using Pharo scanners which have already been configured, the individual devices may have different passwords. In this case you will be asked for your password separately for each device.

Once you have entered the correct passwords for all devices, the password for the first device will be assigned to all devices.



Change to the Machine operator user group!

If you leave the PC unattended when it is connected to Pharo, you must change to the Machine operator user group in order that no unauthorised persons can transfer configurations to the devices!

7.4 Change project password

The user group Authorised client can enter/change the passwords for the user groups Machine maintenance personnel and Authorised client. The passwords will be saved in the devices. This allows the scanners to be protected from being configured by unauthorised persons.

7.5 Reset password

If you have forgotten the password for a device, you can reset the password. To do so, you need what is called a reset password. You will get this password once you have identified yourself in writing to the manufacturer.

For this purpose use the form Faxform.pdf on the UCS CD-ROM. For the identification you will need the serial number of the Pharo and the number of the device counter (Device-counter-nr.). Both numbers can be found in the **Reset password** dialog box.

Note When you reset the password for a device, it is configured as on delivery! For operation to be possible you must re-edit the configuration as delivered, or transfer a suitable previously saved and verified configuration to the device.

8 Diagnostics data

With the aid of the UCS you can perform diagnostics on devices connected and linked to the UCS (or identified by the UCS). To do so, load the diagnostics data to the viewing area of the monitor.

Note As soon as the diagnostics data is displayed, the standard menus of the software will disappear. Then only the **Project** menu and the related buttons are available. The navigation area of the UCS can no longer be used.

You can **print** and **save** the diagnostics data. You can also insert a **comment** via an additional dialog box. This comment will also be printed and saved.

The commands necessary to carry out the above-described functions are found in the context menu of the devices under **Diagnostics**. Please refer to the online help for a specific description and detailed instructions.

8.1 Comments

You can add comments to the reports displayed in the viewing area of the UCS. These comments are also printed with the appropriate report and saved.

9 Annex

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