

CIS Single Load (with Dimming Function)

Menu

- 1. Select CIS Controller
- 2. Night Light Function
- 3. SOC / LVD
- 4. Night Detection Threshold
- 5. Battery Type
- 6. Print

Error OK Transmit

Test Send

Evening (h)

Morning (h)

SOC (V/D/M)

Night Detect (V)

Dimming (h)

Timer Reference

h based on middle of night

h based on Dusk & Dawn

A B

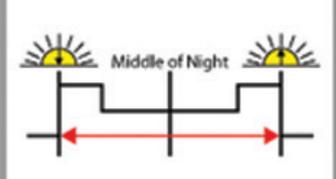


Light ON

Turn light ON from Dusk to Dawn (Entire night)
based on dusk and dawn

Turn light ON at dusk. Turn light OFF 1 hours after dusk.

Turn light ON 0 hours before dawn. Turn light OFF at dawn.



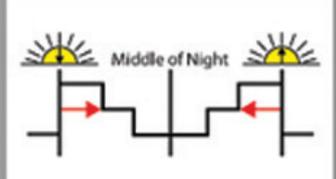
Dimming

based on dusk and dawn

Full brightness at Dusk. Dim Light 4 hours after dusk.

Full brightness 2 hours before dawn.

Brightness while light is dimmed 60 %



Light ON

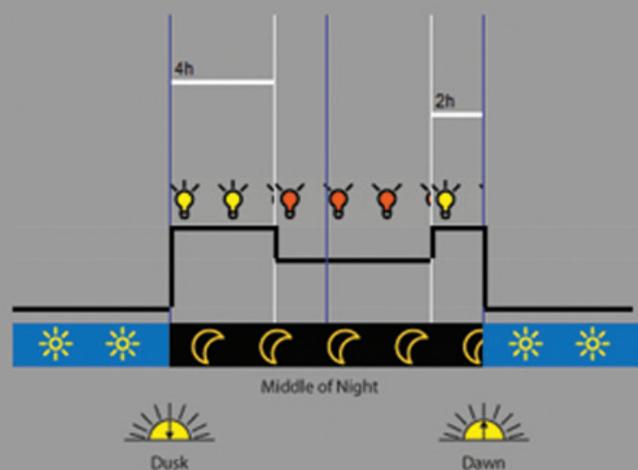
Dimming

Light ON / Dimming / OFF
Light 100% ON

Brightness 60%

Light OFF

Day / Night



CISCOM Manual

Software for Phocos CIS Controller Series:

Single Load: CIS, CIS-N, CIS-LED, CIS-MPPT

Dual Load: CIS, CIS-N

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Please note: All settings apply to a 12 V system. Settings of a 24 V system are the same as in a 12 V system.

1. Software Installation

Dear customer,
Please double click on the setup.exe file and follow the setup instructions.
If the Microsoft dotnet framework 4.0 is not installed on your PC the setup will request you to install the framework.

2. Software Features/Controller

Not every software feature is available for all CIS controllers. Please find below a list stating which feature is available for which controller type.

For CIS single load and CIS dual load

CIS single Load: CIS, CIS-LED

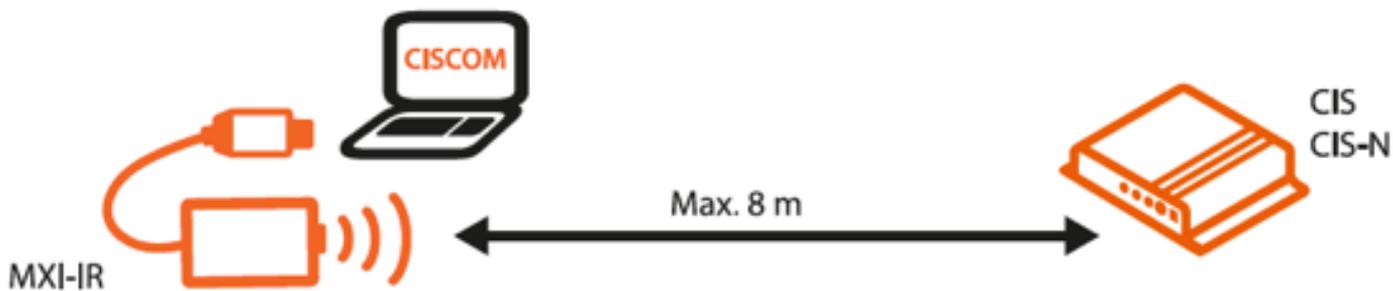
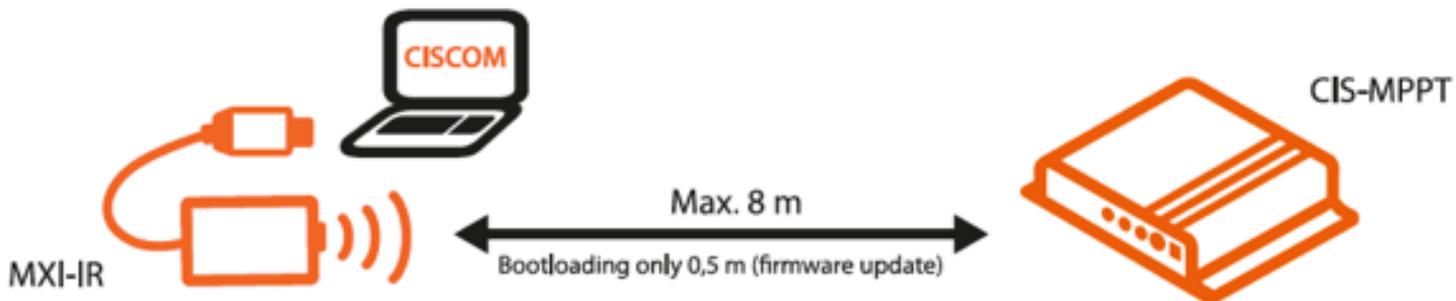
- Settings:
 - nightlight function settings
 - SOC/LVD settings
 - battery type
- Save and load settings again

For CIS-MPPT:

- Settings:
 - nightlight function settings
 - SOC/LVD settings
 - battery type
- Save and load settings again
- Datalogging:
 - last 30 days (dataset per day)
 - last 24 months (dataset per month)

3. Drivers for the Interface MXI-IR

Please connect the MXI-IR to your PC/laptop and install the USB driver and the virtual RS232 driver.

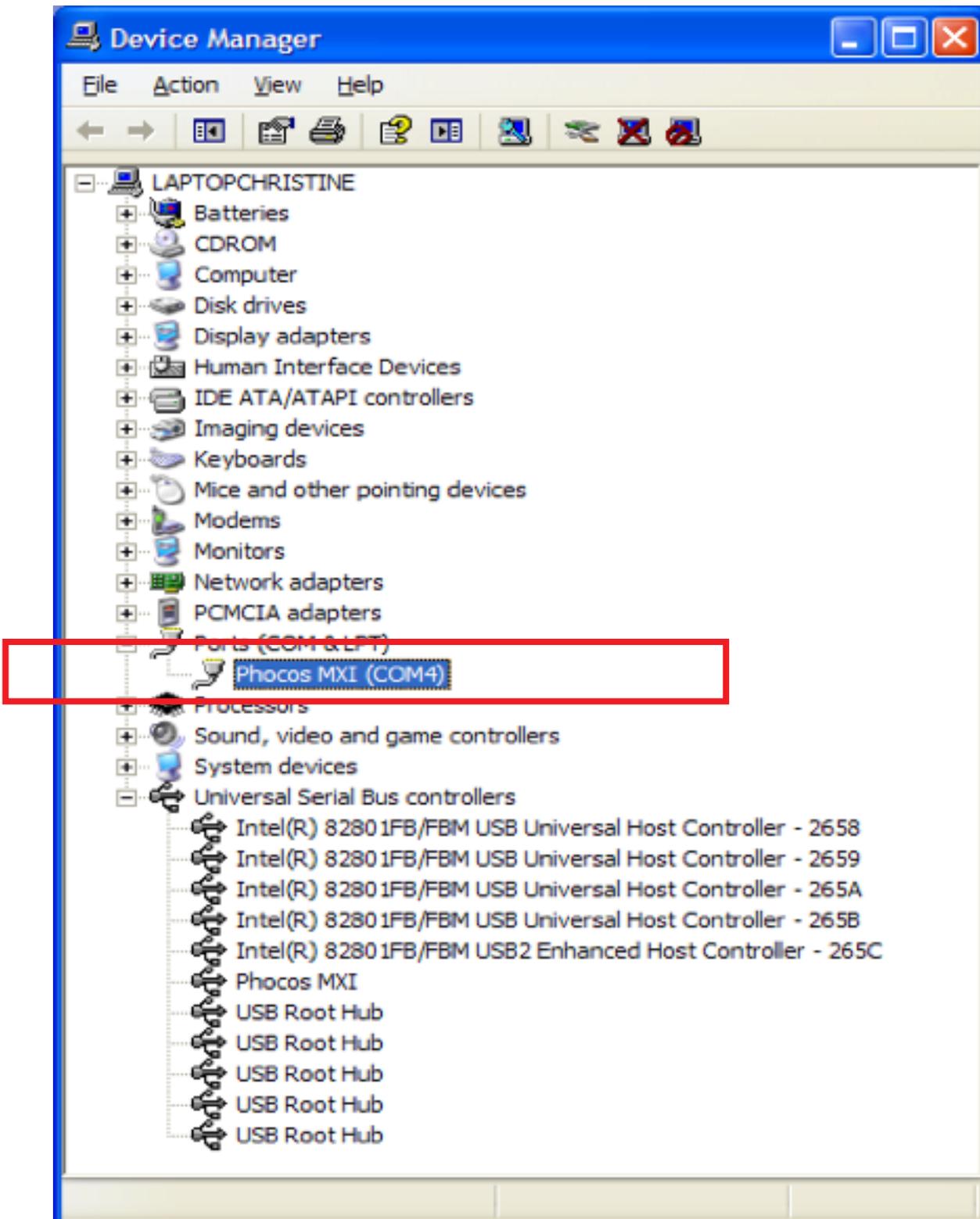


Both MXI-IR drivers can be found in the following folder:

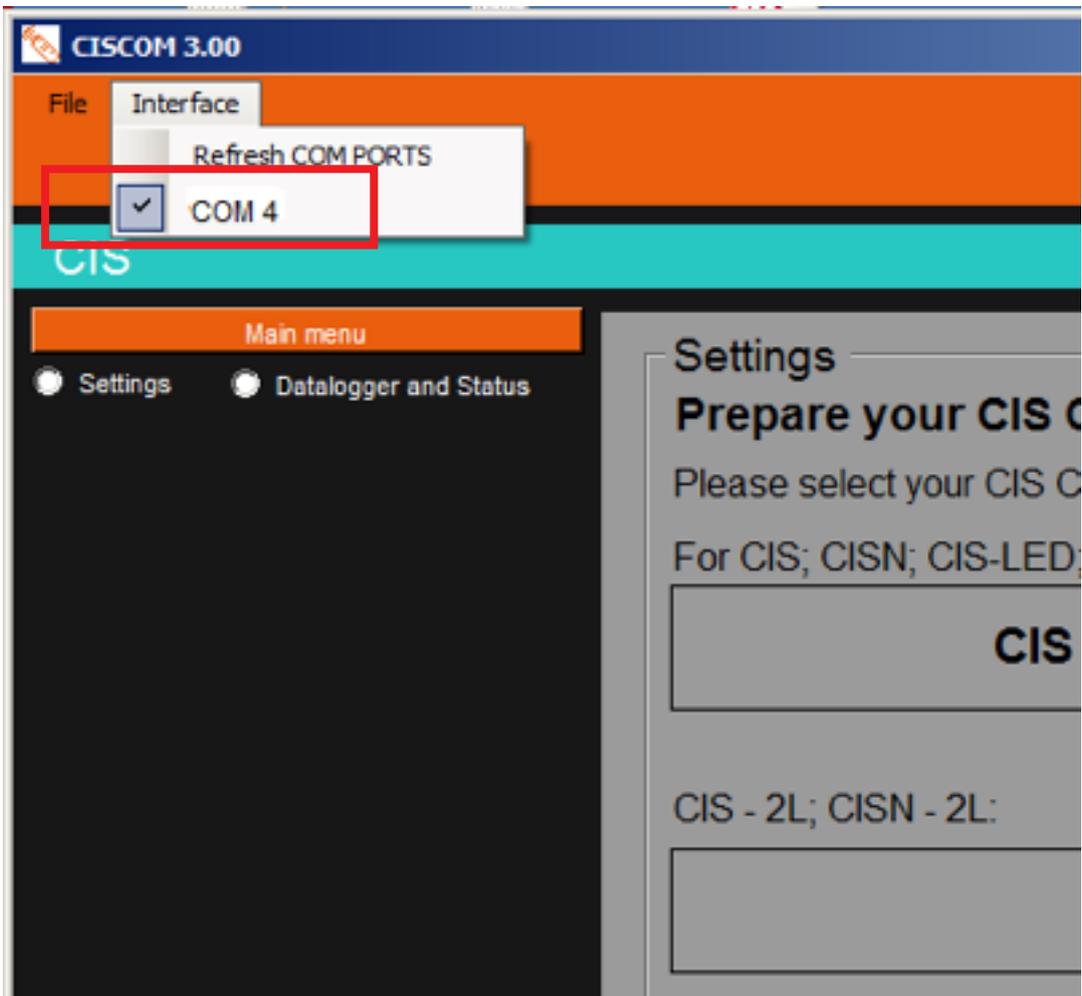
- MXI-IR/Windows_7
- MXI-IR/Windows_Vista
- MXI-IR/Windows_XP

depending of your operating system.

Please select the number of your COM port in the CISCOM software under the menu item „Interface“.



Please select the number of your COM Port in the CISCOM software under the menu point „Interface“.



4. Software Features

Start page of the CISCOM software

File Interface phocos

CIS

Main menu

- Settings
- Datalogger and status

Settings

Prepare your CIS CU settings by following the steps:
Please select your CIS Controller
For CIS; CISN; CIS-LED; CIS-MPPT select:

CIS single load (with dimming function)

CIS - 2L; CISN - 2L:

CIS dual load

Read settings from controller:

Read settings from controller

The expert mode allows to select more than the standard features: Expert mode disabled

Datalogger

Read data and status values from CIS-MPPT (only CIS-MPPT possible):

Read data, status and settings from controller

Import system data

Import from file

Communication

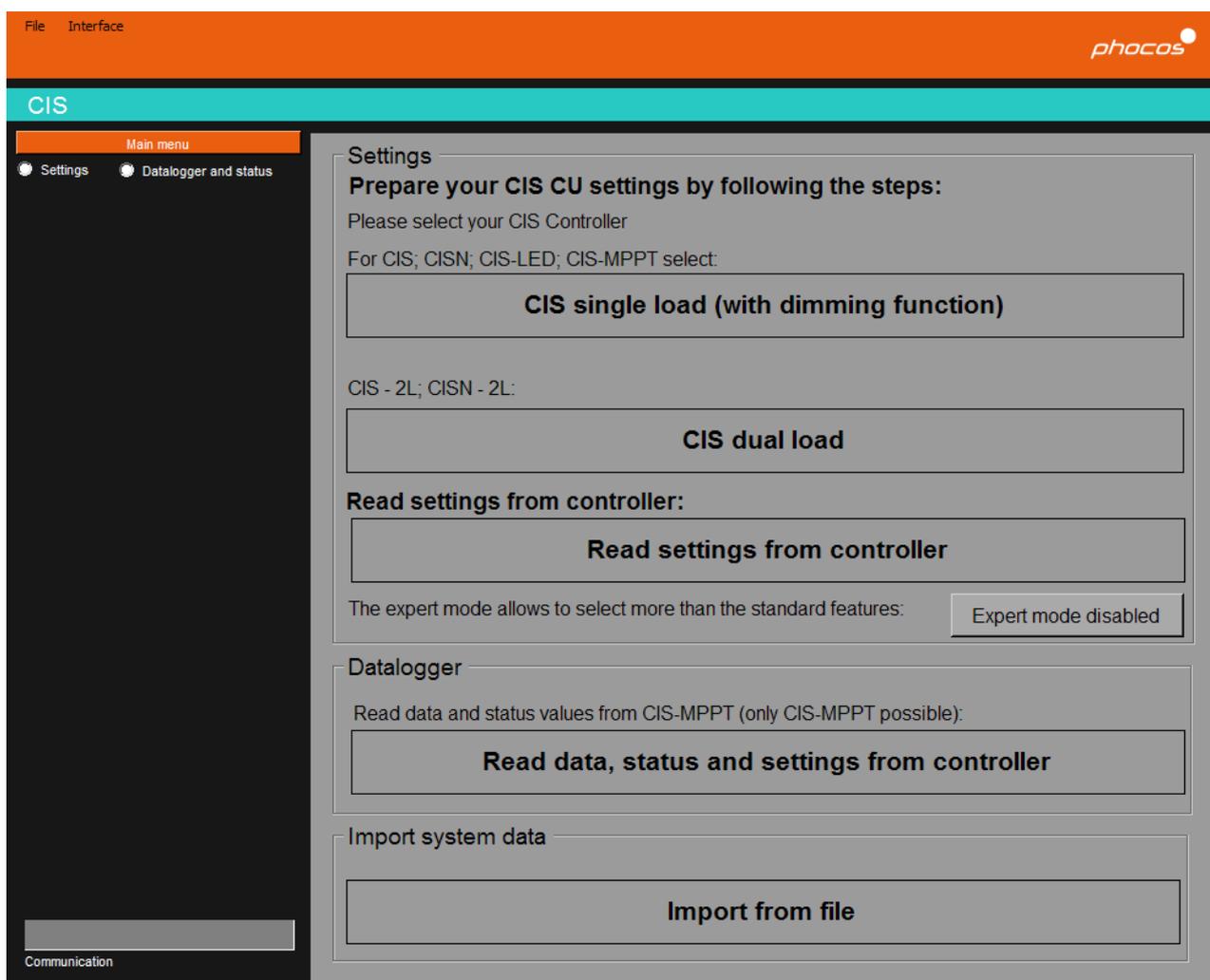
4.1. Expert Mode and Non-Expert Mode

4.1.1. Non-Expert Mode:

The default setting is the „non-expert mode“.

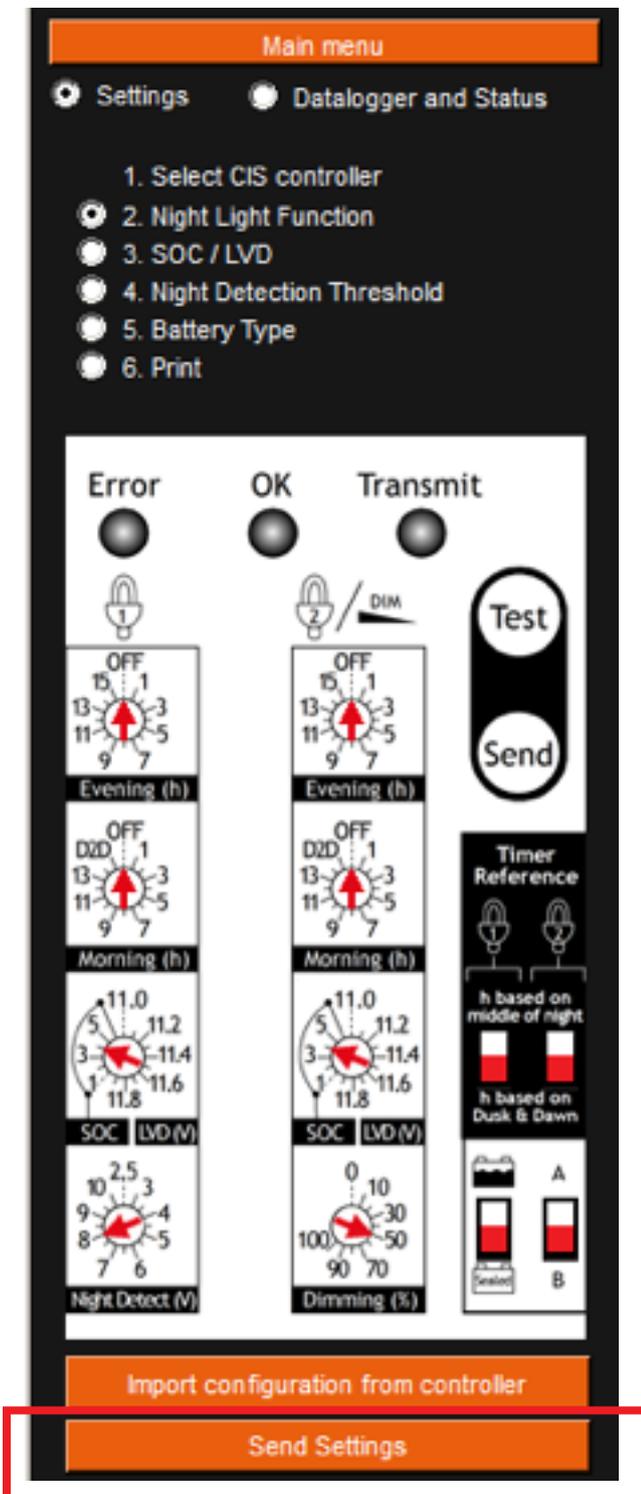
The window below shows the non-expert mode with the same setting possibilities as with the remote control (CIS CU).

The non-expert mode offers different setting possibilities for the CIS single und dual loads.

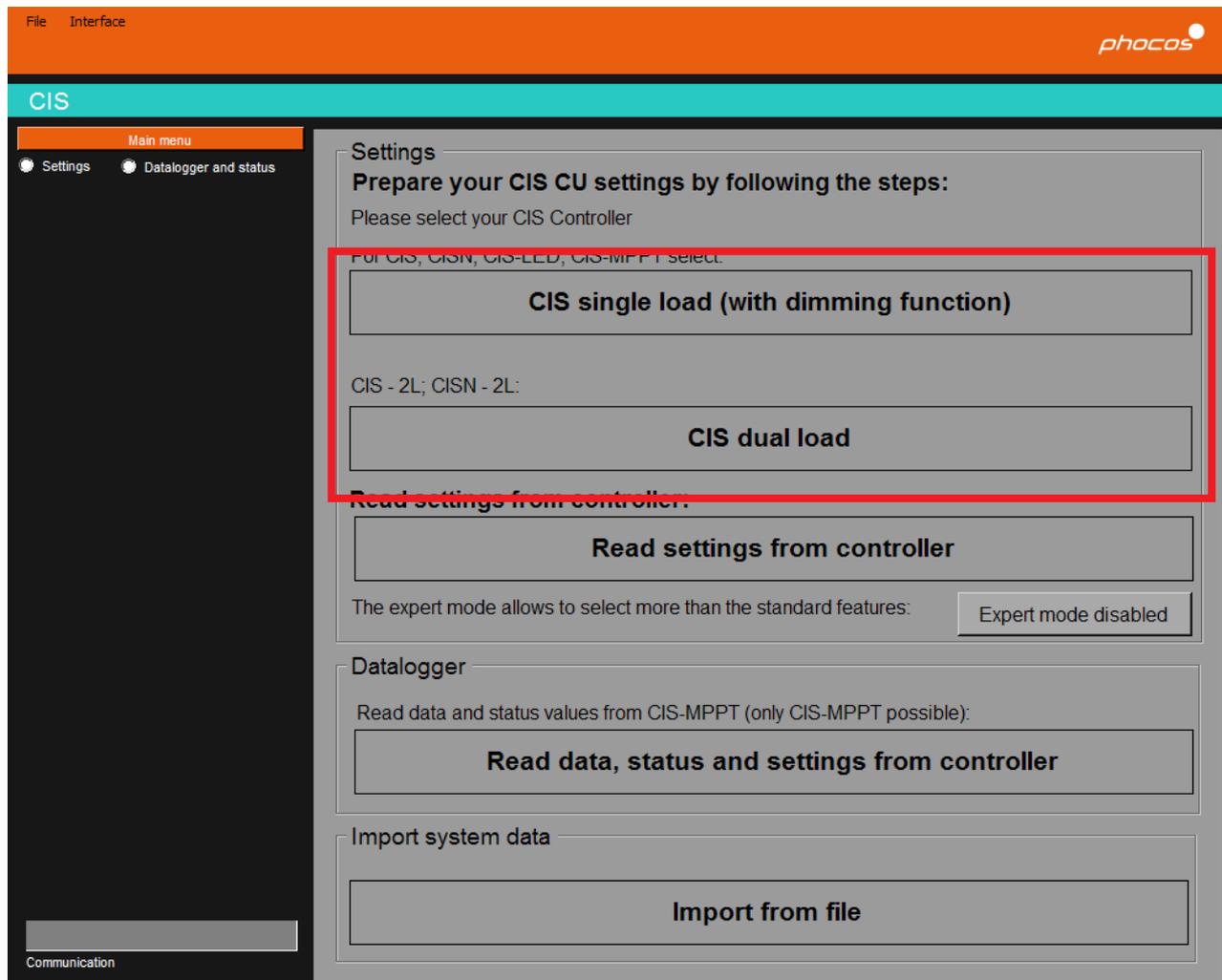


The non-expert mode should help you easily set your CIS remote control or transmit the settings via the MXI-IR Interface to your CIS-controller.

By clicking on „Send Settings“, the settings will be sent to your controller via MXI-IR.



Select your CIS Controller Type



Nightlight Function

The „Back“ and „Next“ buttons enable you to go through the whole setting possibilities of the single load CIS controller.

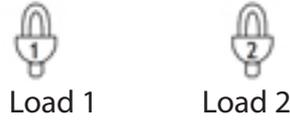
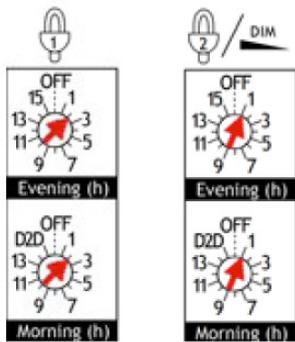
Please select your nightlight program. Results of the settings can be directly visualized on the graphic.

The screenshot displays the CISCOM 3.00 software interface for configuring the Nightlight Function. The interface is divided into several sections:

- Header:** CISCOM 3.00, File, Interface, and the phocos logo.
- Section:** CIS Single Load (with Dimming Function)
- Main menu:** Settings (selected), Datalogger and Status. A list of steps includes: 1. Select CIS controller, 2. Night Light Function (selected), 3. SOC / LVD, 4. Night Detection Threshold, 5. Battery Type, 6. Print.
- Light ON:** Includes checkboxes for "Turn light ON from Dusk to Dawn (Entire night)", "Turn light ON at dusk. Turn light OFF 1 hours after dusk.", and "Turn light ON 0 hours before dawn. Turn light OFF at dawn." A dropdown menu is set to "based on dusk and dawn".
- Dimming:** Includes checkboxes for "Full brightness at Dusk. Dim Light 1 hours after dusk." and "Full brightness 0 hours before dawn." A dropdown menu is set to "based on dusk and dawn". The "Brightness while light is dimmed" is set to 50%.
- Visualization:** A timeline showing "Light ON / Dimming / OFF" and "Light 100% ON", "Brightness 50%", and "Light OFF". It includes icons for "Day / Night" (sun and moon) and "Middle of Night". A slider at the bottom indicates "Length of Night 12 hours" with "Dusk" and "Dawn" markers.
- Buttons:** "Back" and "Next" buttons are highlighted with red boxes at the bottom of the interface.

CIS Dual Load

Lights for load 1 and 2 are on
 - based on the middle of the night
 - based on dusk and dawn



CISCO V1.08 phocos

CIS Dual Load

Menu

- 1. Select CIS Controller
- 2. Night Light Function
- 3. SOC / LVD
- 4. Night Detection
- 5. Battery Type
- 6. Print

Error **OK** **Transmit**

Test **Send**

Timer Reference

- h based on middle of night
- h based on Dusk & Dawn

phocos

Light 1

Turn light ON from Dusk to Dawn (Entire night)

based on dusk and dawn

Turn light ON at dusk. Turn light OFF 2 hours after dusk.

Turn light ON 2 hours before dawn. Turn light OFF at dawn.

Light 2

Turn light ON from Dusk to Dawn (Entire night)

based on dusk and dawn

Turn light ON at dusk. Turn light OFF 3 hours after dusk.

Turn light ON 3 hours before dawn. Turn light OFF at dawn.

Light 1

Light ON

Light 1

Light OFF

Light 2

Light ON

Light 2

Light OFF

Middle of Night

Dusk Dawn

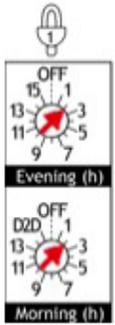
Length of Night 12 hours

Back **Next**

CIS Single Load (with Dimming Function)

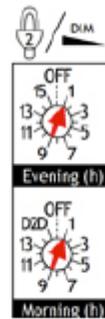
Light on for Load 1

- based on middle of the night
- based on dusk and dawn

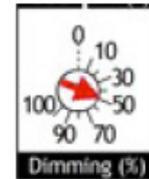


Dimming

- Time when the controller starts to dim
- based on middle of the night
- based on dusk and dawn

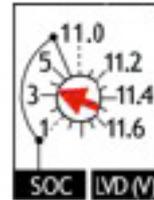
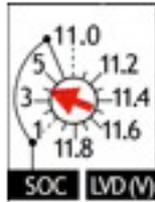


- Brightness while light is dimmed



SOC (State of Charge) / LVD (Low Voltage Disconnect)

Changing the Low Voltage Disconnect Levels



File Interface phocos

CIS single load (with dimming function)

Main menu

Settings Datalogger and status

1. Select CIS controller
2. Nightlight function
3. SOC / LVD
4. Night detection threshold
5. Battery type
6. Print

Error OK Transmit

Evening (h)

Evening (h)

Morning (h)

Morning (h)

Timer Reference

h based on middle of night

h based on Dusk & Dawn

Test

Send

Low battery behavior

Light OFF below SOC / battery voltage 4

Battery voltage

Percentage of nominal current

Low battery behavior

Dim light below SOC / battery voltage 4

Battery voltage

Percentage of nominal current

Example

If the battery voltage falls below the LVD / SOC level (e.g. 11.0 V), the light will be switched OFF. When the LVD / SOC of the dimming function is set to a higher level (e.g. 11.6 V), it will reduce brightness if the battery goes down. This extends the time before the light is switched OFF completely.

Battery voltage

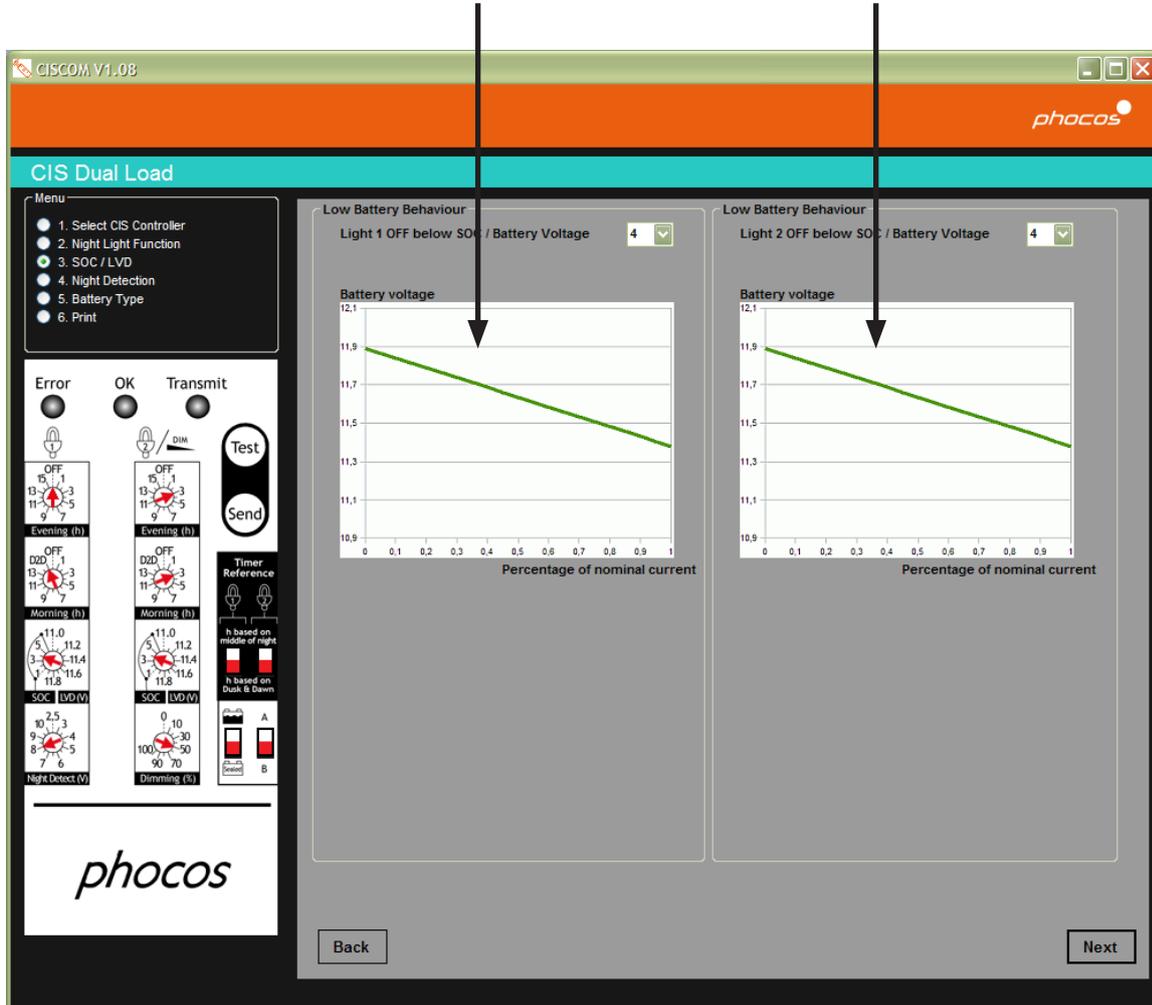
Extended Time

Back
Next

CIS Dual Load

Graph 1: Disconnect level for light 1

Graph 2: Disconnect level for light 2



CIS Single Load with Dimming Function

Graph 1: Disconnect level for light

Graph 2: Dimming level

The screenshot displays the CISCOM V1.08 interface for a CIS Single Load (with Dimming Function). The interface includes a menu, control buttons (Error, OK, Transmit, Test, Send), and several graphs illustrating battery voltage behavior.

Graph 1: Disconnect level for light
 This graph shows the battery voltage (Y-axis, 10.9 to 12.1 V) versus the percentage of nominal current (X-axis, 0 to 1). A green line indicates the battery voltage decreasing as the current increases. A vertical arrow points to the point where the voltage reaches approximately 11.8 V, which is the disconnect level for the light.

Graph 2: Dimming level
 This graph shows the battery voltage (Y-axis, 10.9 to 12.1 V) versus the percentage of nominal current (X-axis, 0 to 1). A green line indicates the battery voltage decreasing as the current increases. A vertical arrow points to the point where the voltage reaches approximately 11.6 V, which is the dimming level.

Example:
 If the battery voltage falls below the LVD / SOC level (e.g. 11.0 V), the light will be switched OFF. When the LVD / SOC of the Dimming function is set to a higher level (e.g. 11.6 V), it will reduce brightness, if the battery goes down. This extends the time before the light is switched OFF completely.

The interface also features a menu with the following options:
 1. Select CIS Controller
 2. Night Light Function
 3. SOC / LVD
 4. Night Detection
 5. Battery Type
 6. Print

Control buttons include Error, OK, Transmit, Test, and Send. There are also several timer and reference settings, such as Evening (h), Morning (h), SOC LVD (V), and Dimming (%).

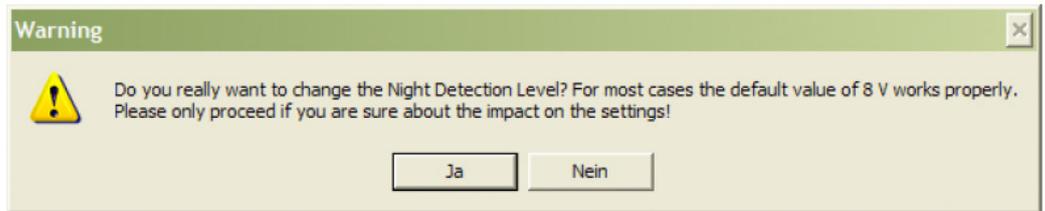
Navigation buttons for Back and Next are located at the bottom of the interface.

Night Detection

Standard setting



Default standard value: 8.0 V



File Interface phocos

CIS single load (with dimming function)

Main menu

- Settings (selected)
- Datalogger and status

- Select CIS controller
- Nightlight function
- SOC / LVD
- Night detection threshold (selected)
- Battery type
- Print

Error OK Transmit

OFF 13 11 9 7

Evening (h)

OFF 13 11 9 7

Evening (h)

OFF 11.0 11.2 11.4 11.6 11.8

Morning (h)

OFF 11.0 11.2 11.4 11.6 11.8

Morning (h)

SOC LVD (V)

Night Detect (V)

Dimming (h)

Timer Reference

h based on middle of night

h based on Dusk & Dawn

Import configuration from controller

Send settings

Communication

Night detection

Night detection level V (default value is 8 V)

If the PV panel voltage falls below the "night detection level", the controller starts the nightlight program within two minutes.

Day detection level 9.5 V

If the PV panel voltage rises above the "day detection level", the controller stops the nightlight program within two minutes.

Recommendation:
In most cases the default value of 8 V works properly. For accurate settings measure the PV panel voltage at night at the location before changing the night detection level.

PV Voltage

Time

8.0 V

9.5 V

Back Next

Battery Type

Please select the battery type (in this case a sealed battery is selected)
Display on the remote control (CIS CU):



Lead acid battery

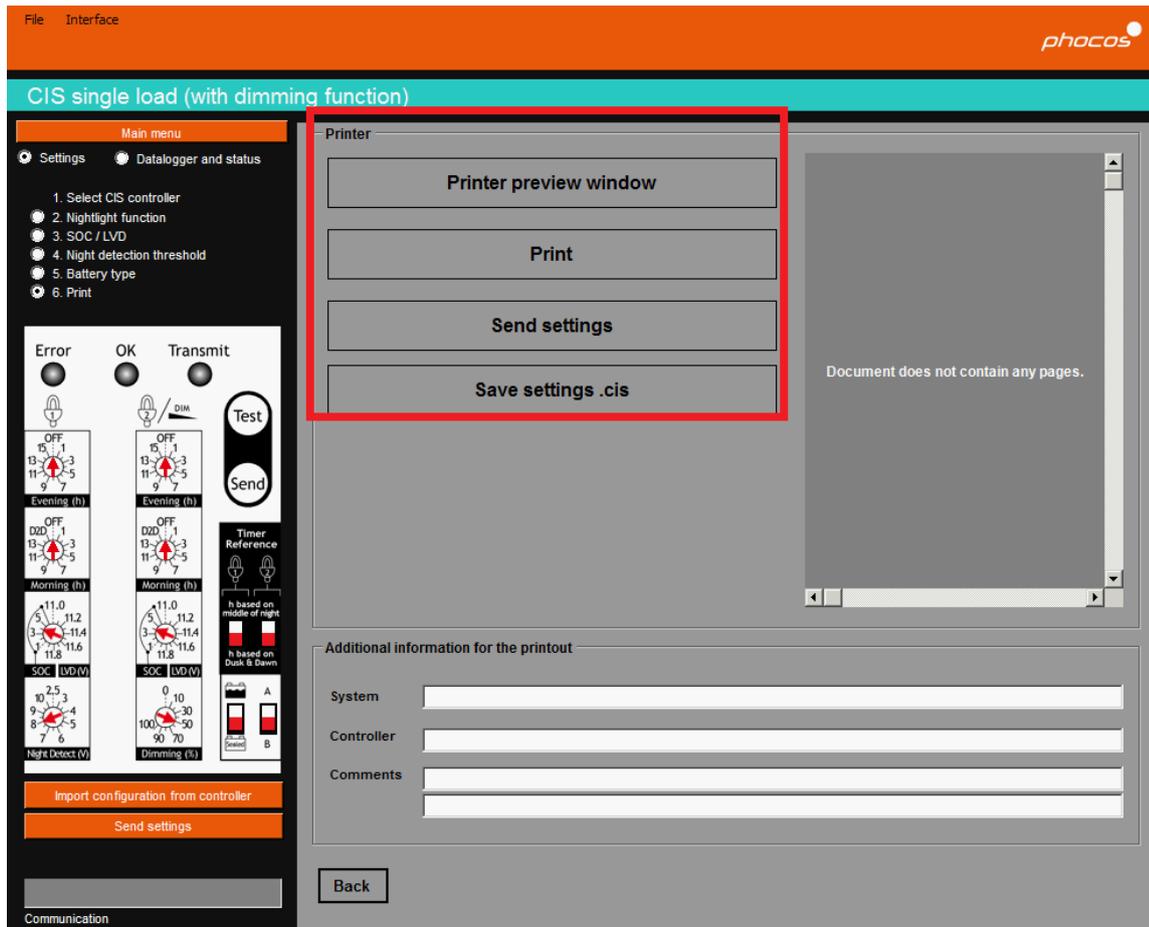


Sealed battery

The screenshot shows the 'phocos' remote control interface. At the top, there is a menu bar with 'File' and 'Interface' options. Below it, a teal header reads 'CIS single load (with dimming function)'. The main area is divided into a left sidebar and a main content area. The sidebar contains a 'Main menu' with options for 'Settings' (selected) and 'Datalogger and status'. Below this is a numbered list of settings steps: 1. Select CIS controller, 2. Nightlight function, 3. SOC / LVD, 4. Night detection threshold, 5. Battery type (selected), and 6. Print. The sidebar also features several control panels: 'Error', 'OK', and 'Transmit' buttons; a 'Test' button; a 'Send' button; a 'Timer Reference' section with two radio buttons for 'h based on middle of night' and 'h based on Dusk & Dawn'; and a 'Dimming (%)' panel with a slider. At the bottom of the sidebar are buttons for 'Import configuration from controller' and 'Send settings'. The main content area is titled 'Battery type' and contains two radio button options: 'Lead acid battery' (unselected) and 'Sealed battery' (selected). The 'Sealed battery' option includes the text 'All other lead acid battery types (VLRA, AGM, GEL, sealed...) Includes float and boost mode'. At the bottom of the main area are 'Back' and 'Next' buttons. A black arrow points from the 'Sealed battery' option back to the sidebar.

Print, Send and Save Settings

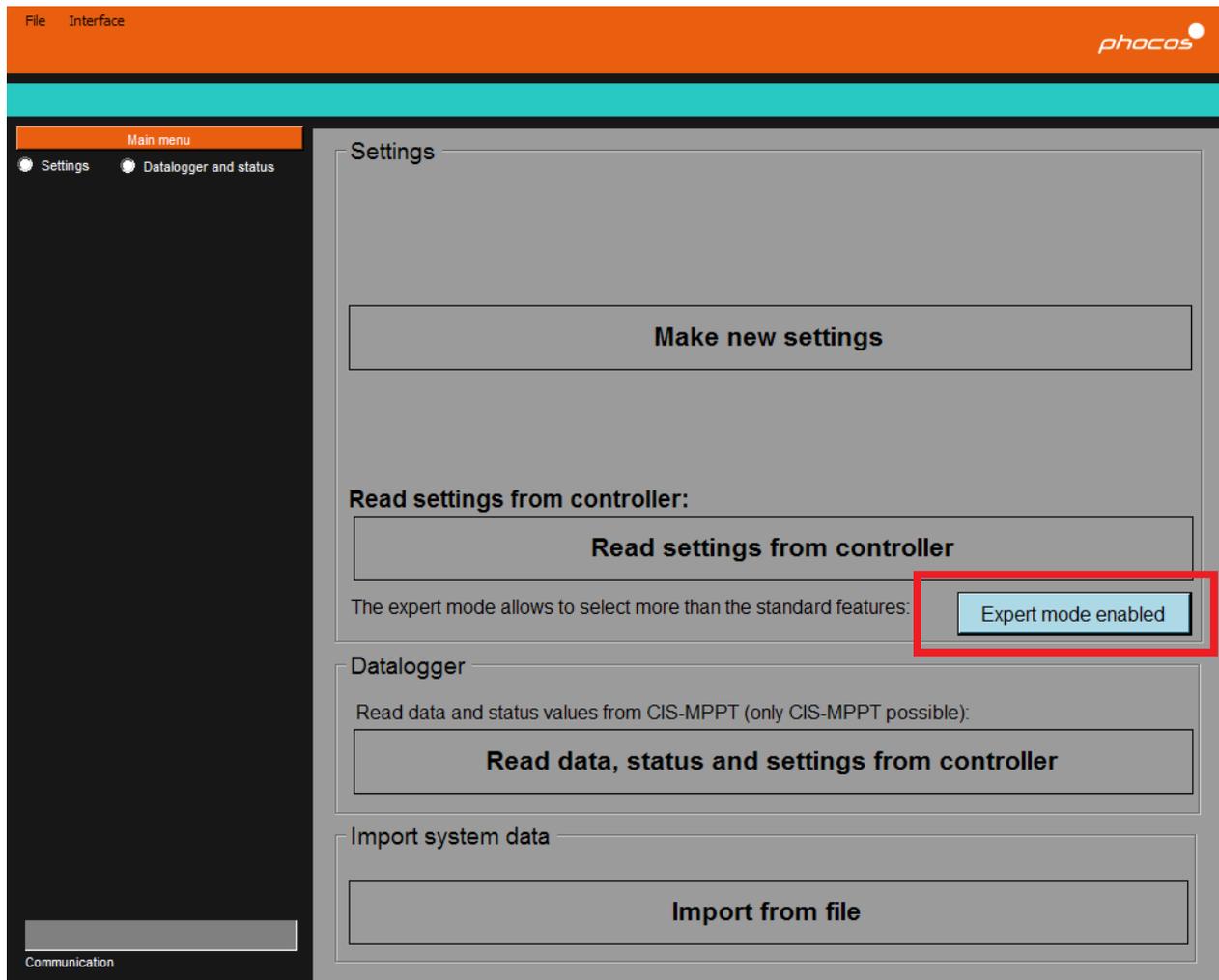
You can select a printer and print your individual CIS settings. You can also send them to the CIS Controller via MXI-IR or save the settings on your computer.



4.1.2 Expert Mode

With the button “expert mode enabled” / „Expert mode disabled“ you can enable and disable the expert mode.

The expert mode offers you more possibilities to add settings.



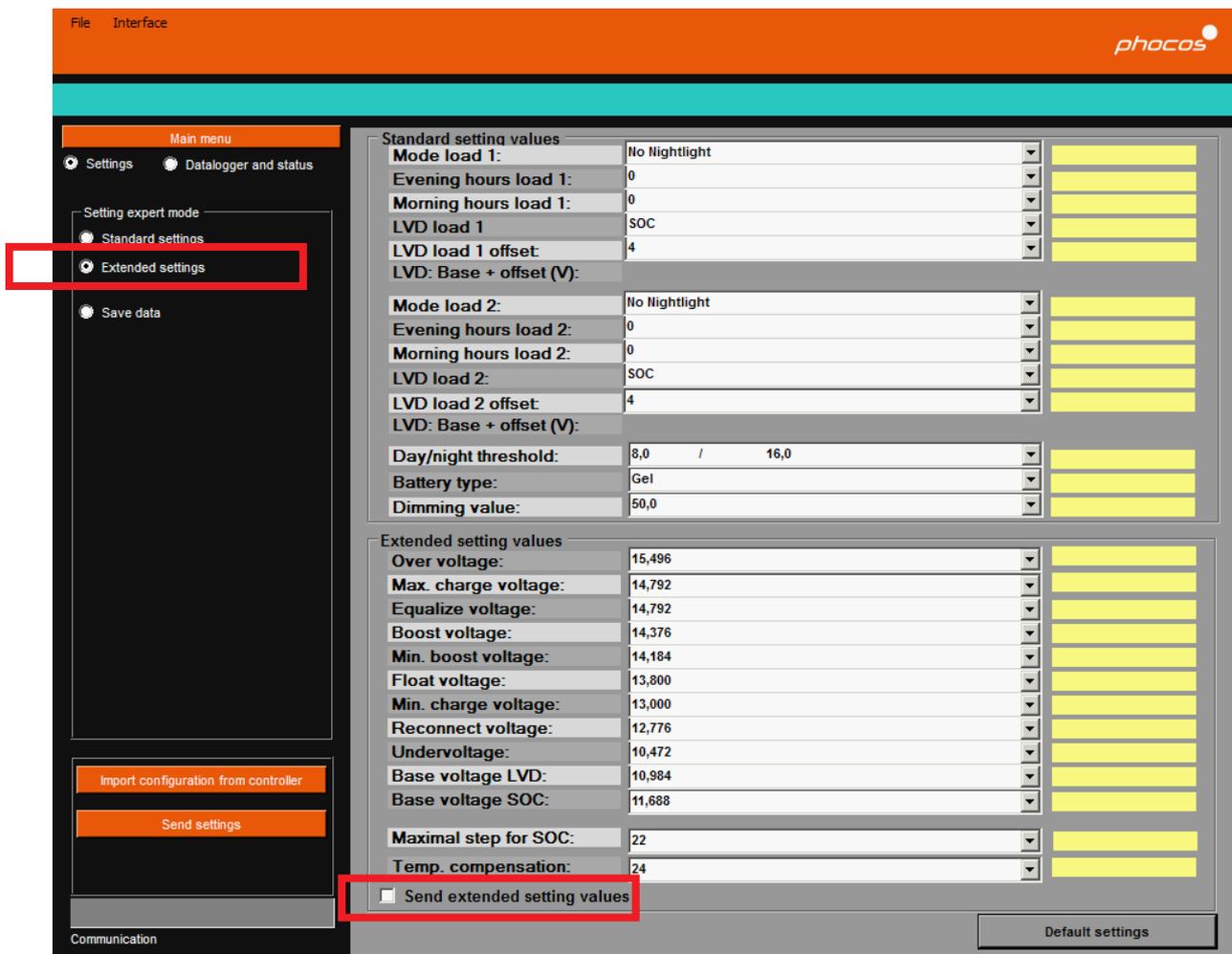
Settings in the Expert Mode

Standard settings: Here you can modify the same settings as in the non-expert mode but in an extended range.

Extended settings: Here you can modify even more than the standard settings.

If you want to also transmit the extended settings, please check the box „send extended settings“.

Note: Temperature compensation will not affect behavior of CIS (positive grounded) controllers.



4. 2. Daily / Monthly Datalogger Values

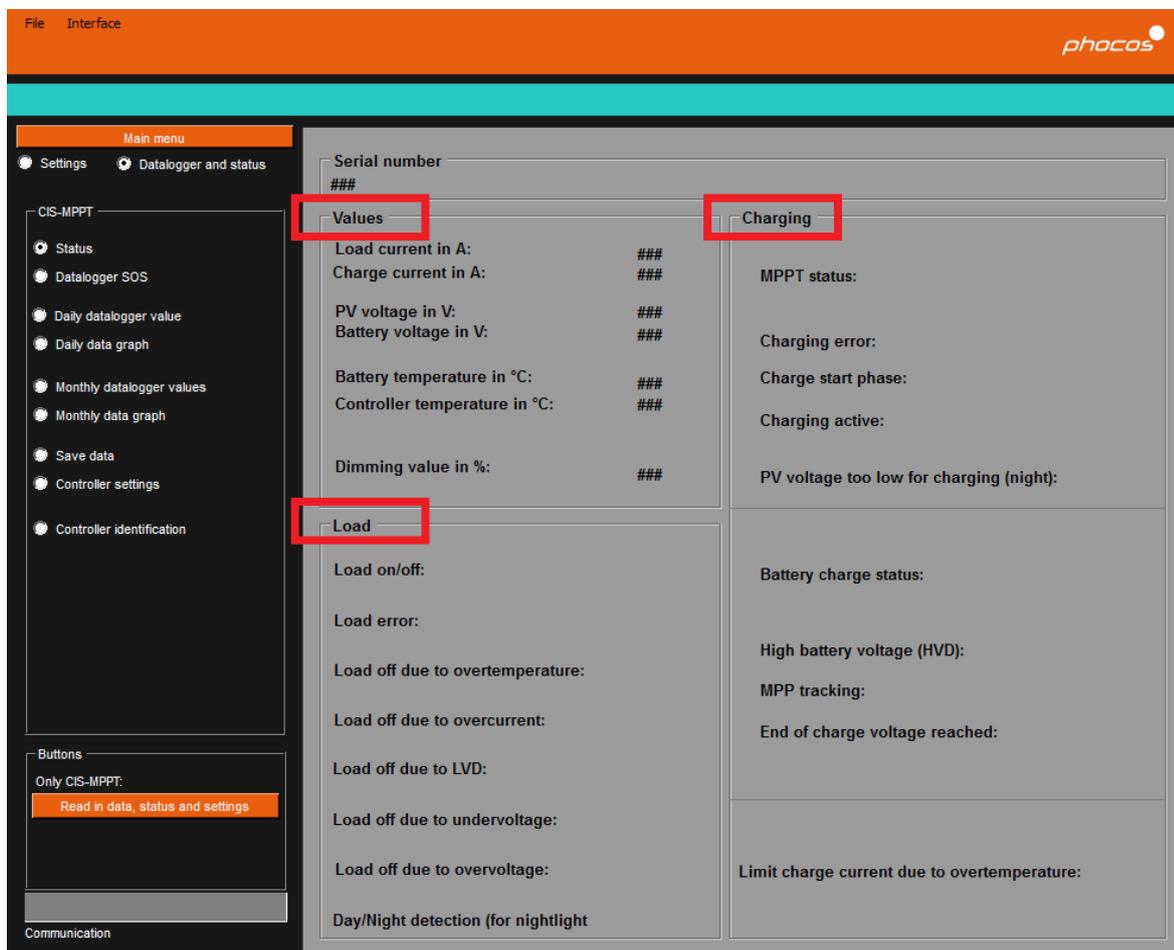
In the menu you can switch between „Settings“ and „Datalogger and status“. Please note that the „Datalogger and status“ values feature is only possible with the CIS-MPPT controller.

The screenshot displays the Phocos software interface. At the top, there is a navigation bar with 'File' and 'Interface' menus. Below this is a 'Main menu' section where 'Settings' and 'Datalogger and status' are listed. The 'Datalogger and status' option is highlighted with a red box. An arrow points from the text above to this menu item. The main content area is divided into several sections: 'Settings' (with instructions to prepare CIS CU settings and buttons for 'CIS single load (with dimming function)', 'CIS dual load', and 'Read settings from controller'), 'Datalogger' (with a button for 'Read data, status and settings from controller'), and 'Import system data' (with a button for 'Import from file'). The Phocos logo is visible in the top right corner.

Status Values

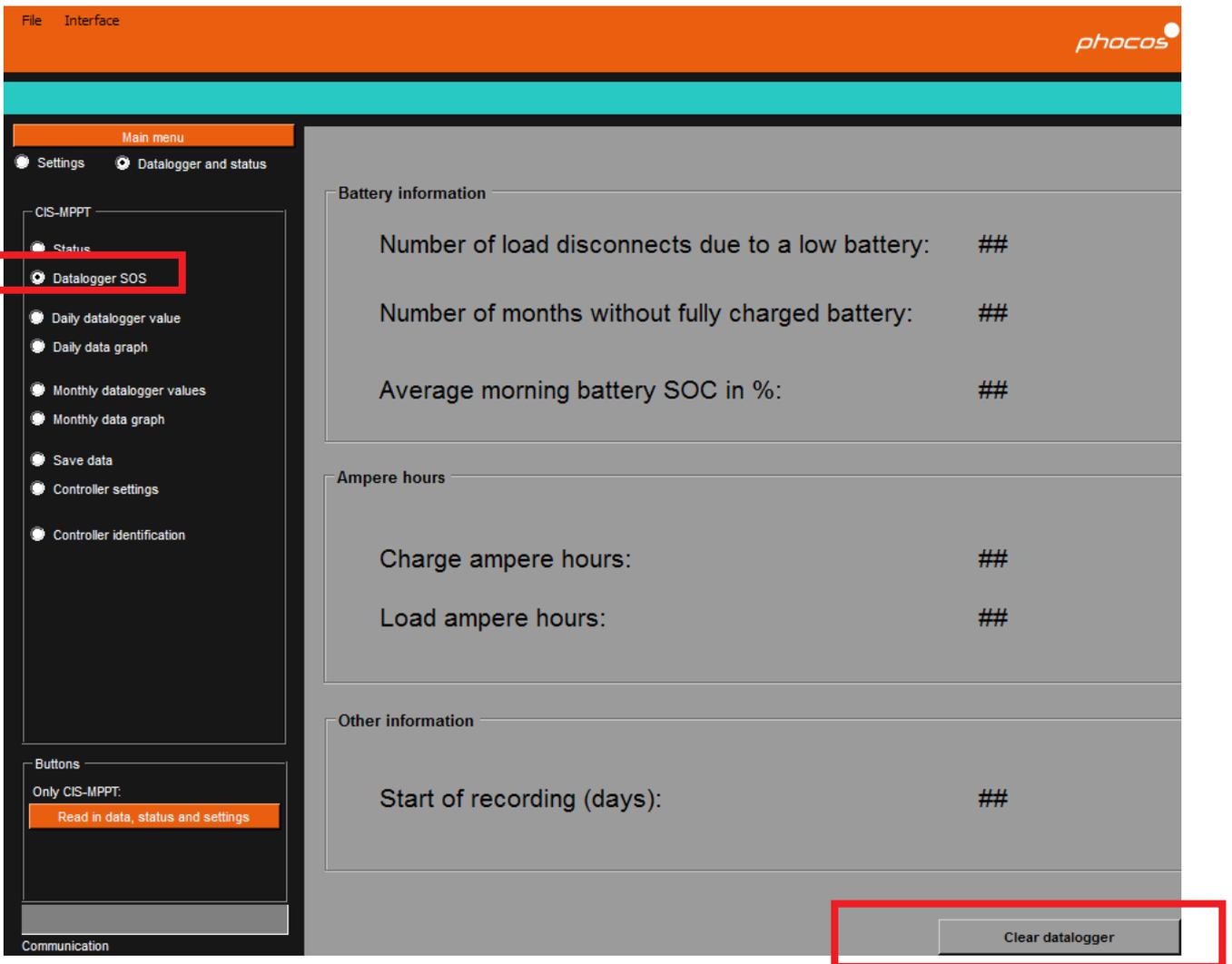
The status value settings display many different values of your current system such as:

- Load and charge currents
- Battery voltage
- Loading error messages
- Charging error messages, etc.



Datalogger Values

By selecting „Datalogger SOS“ in the menu, the State Of System (SOS) values will be displayed. These are the collected datalogger values since the last clearing of the datalogger. You will find the button „Clear datalogger“ at the bottom on the right.



Daily / Monthly Datalogger Values

If you select the menu point „Daily datalogger values“ or „Monthly datalogger values“ you will get more detailed values.

The screenshot shows the Phocos interface with the following data:

| | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 |
|--------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Max. battery voltage (V): | 14,40 | 14,40 | 14,50 | 14,50 | 14,40 | 14,40 | 14,50 | 14,50 | 14,40 | 14,50 |
| Min. battery voltage (V): | 12,40 | 12,40 | 12,40 | 12,40 | 12,40 | 12,40 | 12,40 | 12,40 | 12,40 | 12,40 |
| Charge ampere hours (Ah): | 3,32 | 2,78 | 2,70 | 2,93 | 2,83 | 2,78 | 2,91 | 2,75 | 2,70 | 3,04 |
| Load ampere hours (Ah): | 0,19 | 0,23 | 0,25 | 0,18 | 0,21 | 0,22 | 0,21 | 0,23 | 0,23 | 0,23 |
| Max. load current (A): | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| Max. PV current (A): | 1,50 | 1,00 | 0,50 | 1,00 | 1,00 | 0,50 | 1,00 | 1,00 | 1,00 | 0,50 |
| Max. PV voltage (V): | 49,00 | 52,00 | 48,50 | 53,00 | 50,00 | 52,00 | 51,00 | 51,50 | 51,50 | 50,50 |
| Min. PV voltage (V): | 0,50 | 0,50 | 0,50 | 0,50 | 0,50 | 0,50 | 0,50 | 0,50 | 0,50 | 0,50 |
| SOC (State Of Charge) (%): | 67 | 60 | 60 | 60 | 60 | 60 | 60 | 67 | 67 | 60 |
| Max. battery temperature | +22 | +21 | +22 | +21 | +22 | +22 | +22 | +21 | +21 | +21 |
| Min. battery temperature (°C): | +17 | +21 | +17 | +12 | +15 | +17 | +15 | +21 | +21 | +17 |
| Night length (h): | 9,7 | 11,7 | 12,2 | 11,7 | 11,5 | 11,5 | 11,3 | 11,3 | 11,5 | 11,7 |

Below the table, there are several status indicators:

- Fully charged battery: 100% (10 icons)
- Load off due to low battery: (empty)
- PV overcurrent: (empty)
- Load overcurrent: (empty)
- High battery voltage: (empty)
- Overtemperature (PV off): (empty)
- Overtemperature (load off): (empty)
- Overtemperature (PV limit): (empty)

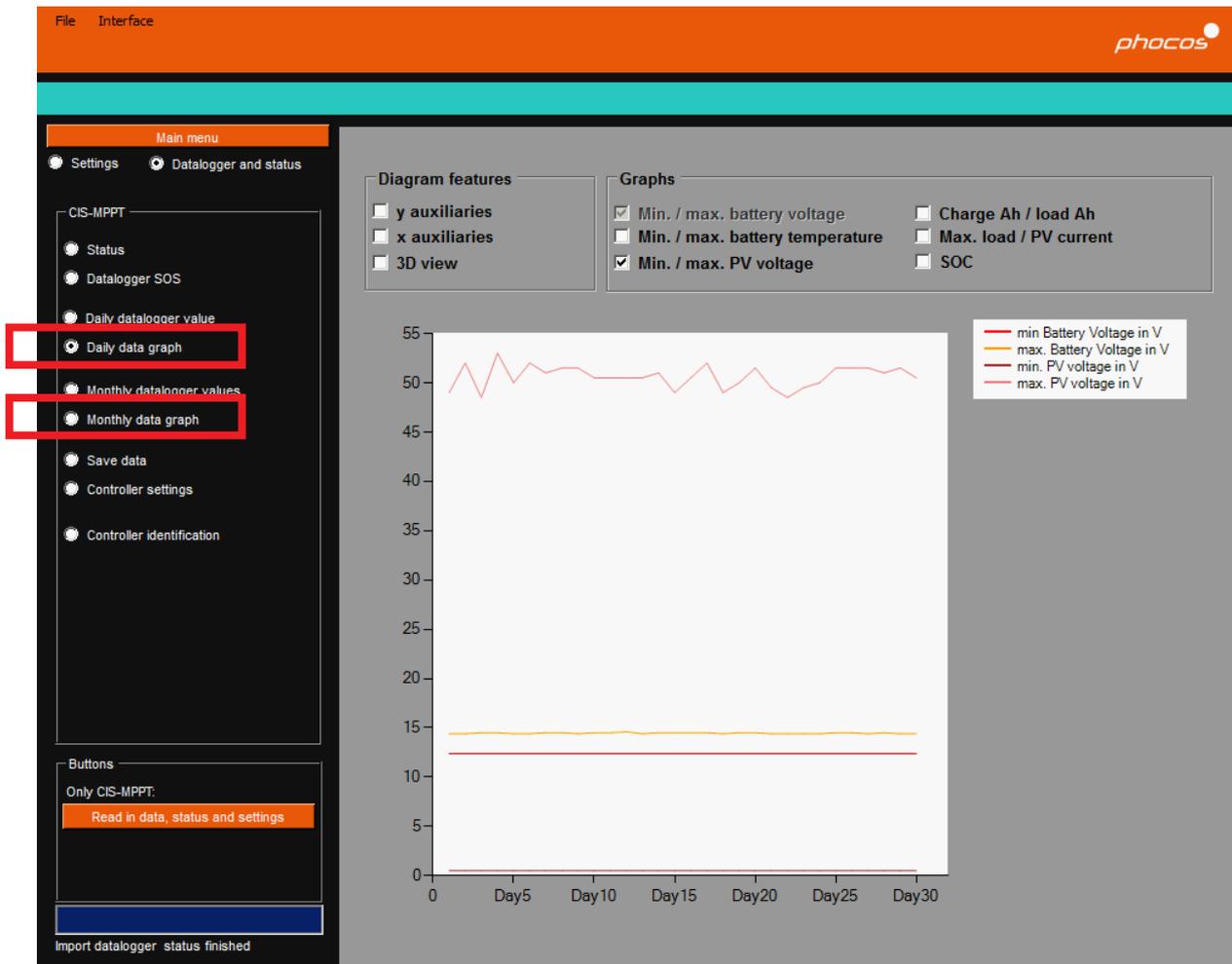
The left sidebar menu includes:

- Settings
- Datalogger and status
 - CIS-MPPT
 - Status
 - Datalogger SOS
 - Daily datalogger value** (highlighted)
 - Daily data graph
 - Monthly datalogger values** (highlighted)
 - Monthly data graph
 - Save data
 - Controller settings
 - Controller identification
- Buttons
 - Only CIS-MPPT:
 - Read in data, status and settings

At the bottom left, a status bar reads: "Import datalogger status finished".

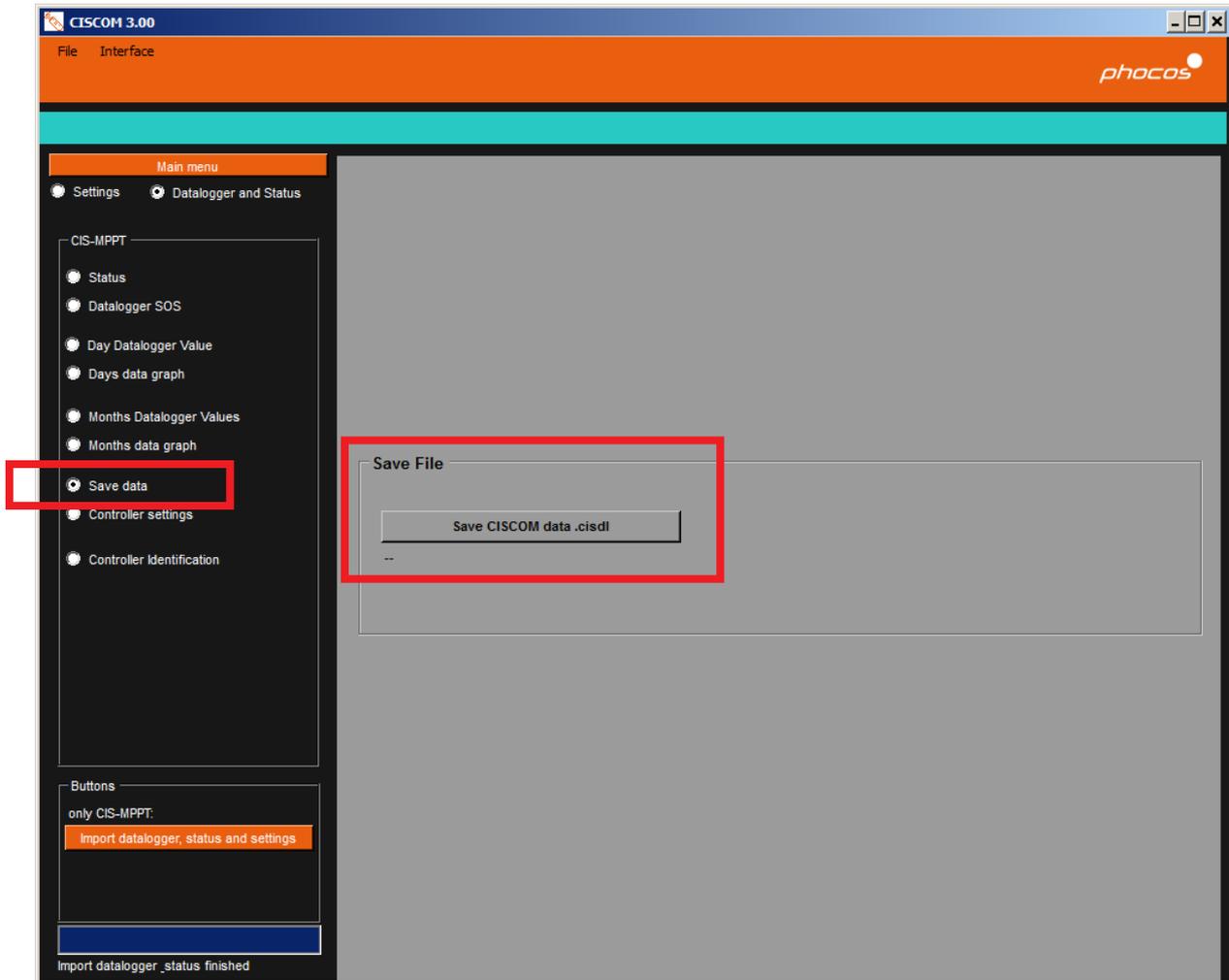
Datalogger Graphs

If you select the menu point „Graph daily values“ or „Graph monthly values“ you will get more detailed values.



Save Datalogger Values

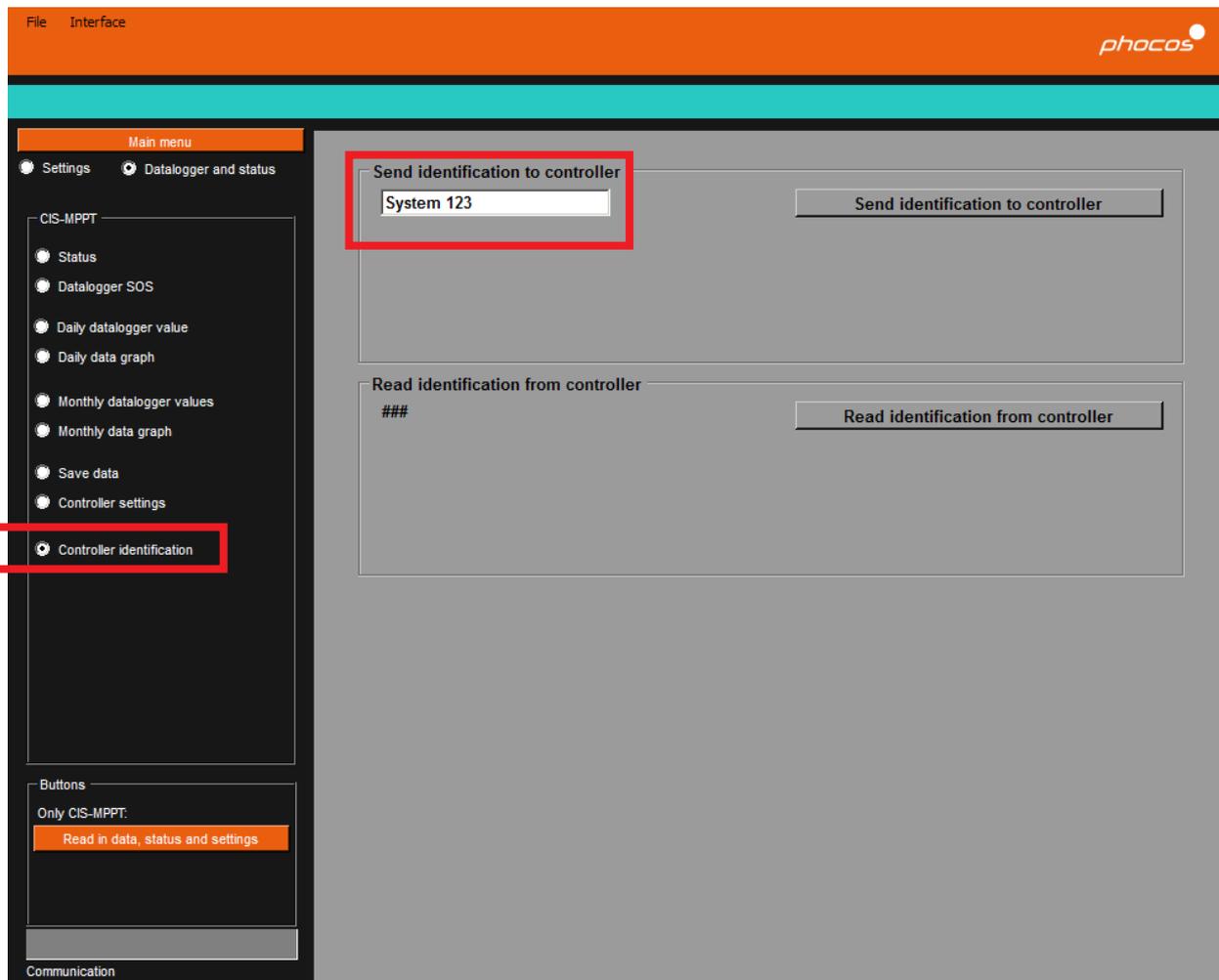
If you want to save the datalogger values please click on the menu point „Save data“. In the opening window click on the button „Save CISCOM data .cisdl“



Controller Identification

You can send an individual text to each CIS-MPPT controller.
Enter the text and click on the button „Send controller individual text“.

If you read in the datalogger values, you will also obtain your controller's identification.



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