MULTI-LINE 2

Getting started - USW 3.x

- Software download from internet
- Software installation
- Device setup
- Data backup

DEIF A/S · Frisenborgvej 33 · DK-7800 Skive
Tel.: +45 9614 9614 · Fax: +45 9614 9615
info@deif.com · www.deif.com

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1. Delimitation

1.1 Scope of Application notes, Getting started - USW 3.x

This document covers the following products:

- AGC 100 from SW version 4.xx.x
- AGC 200 from SW version 3.5x.x
- AGC-3 from SW version 3.40.0
- AGC-4 from SW version 4.xx.x
- CGC 200 from SW version 1.xx.x
- CGC 400 from SW version 1.xx.x
- ECU 100 from SW version 1.xx.x
- GCU 100 from SW version 1.xx.x
- GC-1F from SW version 1.00.0 and 2.0x.x
- GPC-3 from SW version 3.0x.x
- GPU-3 from SW version 3.0x.x
- GPU-3 REC from SW version 3.0x.x
- PPM-3 from SW version 3.0x.x
- PPU-3 from SW version 3.0x.x

Utility Software USW version 3.45.4 and later.

2. General information

2.1 Warnings, legal information and safety

2.1.1 Warnings and notes

Throughout this document, a number of warnings and notes with helpful user information will be presented. To ensure that these are noticed, they will be highlighted as follows in order to separate them from the general text.

Warnings

DANGER!
This highlights dangerous situations. If the guidelines are not followed, these situations could result in death, serious personal injury, and equipment damage or destruction.

CAUTION
This highlights potentially dangerous situations. If the guidelines are not followed, these situations could result in personal injury or damaged equipment.

Notes

INFO
Notes provide general information, which will be helpful for the reader to bear in mind.

2.1.2 Legal information and disclaimer

DEIF takes no responsibility for installation or operation of the generator set or switchgear. If there is any doubt about how to install or operate the engine/generator or switchgear controlled by the Multi-line 2 unit, the company responsible for the installation or the operation of the equipment must be contacted.

INFO
The Multi-line 2 unit is not to be opened by unauthorised personnel. If opened anyway, the warranty will be lost.

Disclaimer

DEIF A/S reserves the right to change any of the contents of this document without prior notice.

The English version of this document always contains the most recent and up-to-date information about the product. DEIF does not take responsibility for the accuracy of translations, and translations might not be updated at the same time as the English document. If there is a discrepancy, the English version prevails.

2.1.3 Factory settings

The Multi-line 2 unit is delivered from factory with certain factory settings. These are based on average values and are not necessarily the correct settings for matching the engine/generator set in question. Precautions must be taken to check the settings before running the engine/generator set.

3. Cable connections between PC and DEIF controller

3.1 General information

Different cables are used for connection, depending on type of the ML-2 unit.

Connection table - Flashing describes the connections to load new application software into the unit.

Connection table - Setting up describes the connections to configure the unit (that is, set up and change functions and parameters).

3.2 Connection table - flashing

This table gives an overview of the different connection possibilities if flashing of the unit is desired.

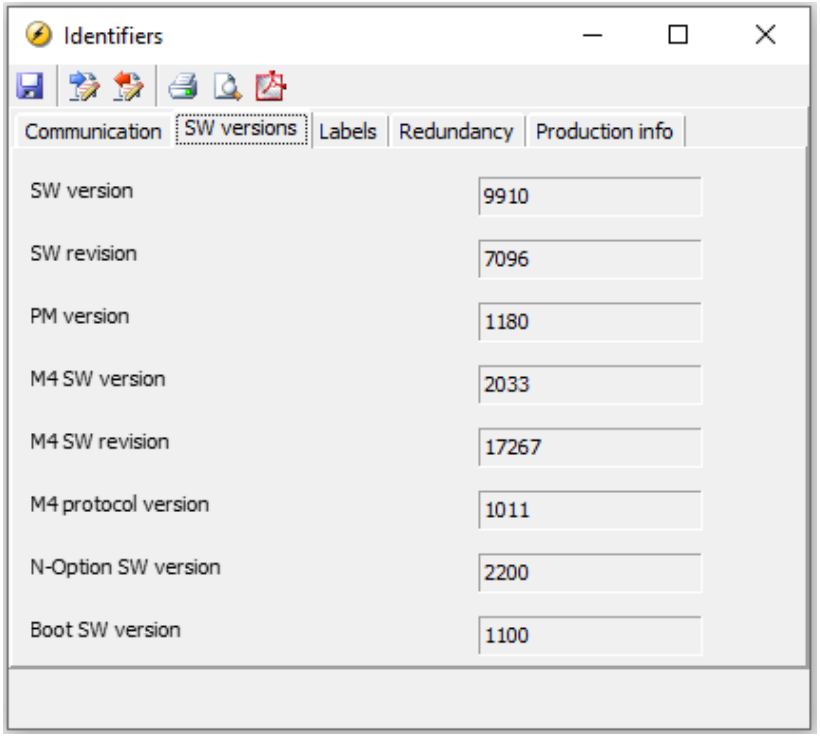
Product name	TTL service port cable: option J9	USB service port cable: option J7	Ethernet service port: option N cable: option J4
AGC 100	X		
AGC 200		X	X
AGC-3		X	
AGC-4		X	X[1]
CGC 200		X	
CGC 400		X	
ECU 100	X		
GCU 100	X		
GC-1F	X		
GPC-3		X	
GPU-3		X	
GPU-3 REC		X	
PPM-3		X	
PPU-3		X	X[1]

[1]To be able to flash on a TCP-IP connection, the following must be fulfilled:

- SW version: AGC-4: 4.40.0 or later; PPU-3: 3.10 or later
- Option N SW version: 2.20.0 or later
- Boot SW version: 1.03.0 or later

INFO
If the boot SW version is prior to 1.03, only 0 is shown in *Identifiers*.

The boot SW version can be found by connecting to the unit and opening the *Identifiers* window, as shown below.



3.3 Connection table - setting up

This table gives an overview of the different connection possibilities if change of parameters or other settings in the unit are desired.

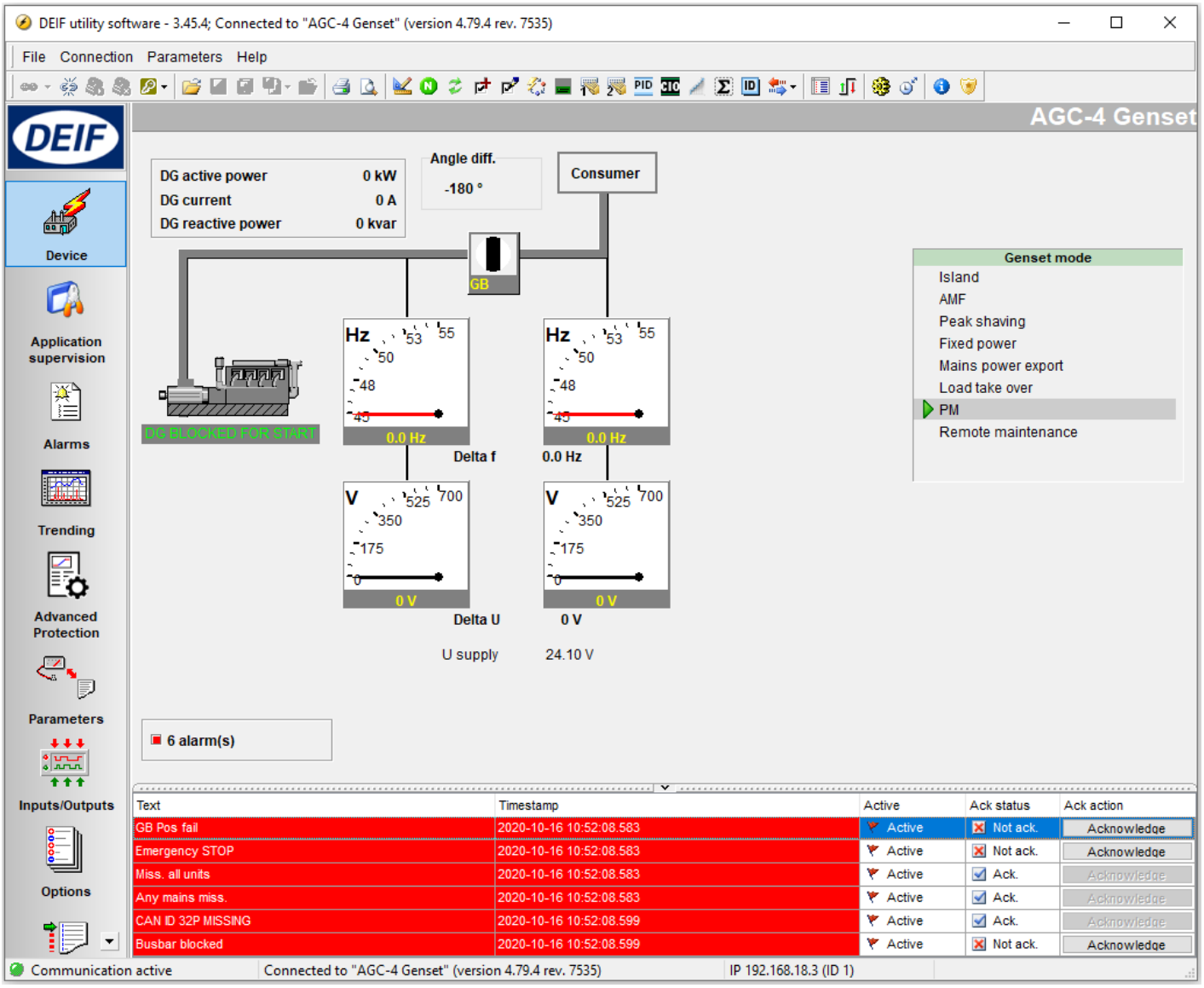
Product name	TTL service port cable: option J9	USB service port cable: option J7	Modbus RTU on RS-485 option H2	Ethernet service port: option N cable: option J4
AGC 100	X		X	
AGC 200		X	X	X
AGC-3		X	X	X
AGC-4		X	X	X
CGC 200		X		
CGC 400		X	X	
ECU 100	X		X	
GCU 100	X		X	
GC-1F	X		X	
GPC-3		X	X	X
GPU-3		X	X	X
GPU-3 REC		X	X	X
PPM-3		X	X	X
PPU-3		X	X	X

4. PC utility software

4.1 General information

The PC utility software (hereafter called USW) is a software programme that can be used for configuration of the Multi-line 2 products. There are two versions, 1.x and 3.x. This document only describes USW 3.x.

INFO
The utility software is the software that is installed on the PC, notebook or desktop computer.



4.2 Supported Windows systems

The supported Windows versions are (32 and 64 bit variants):

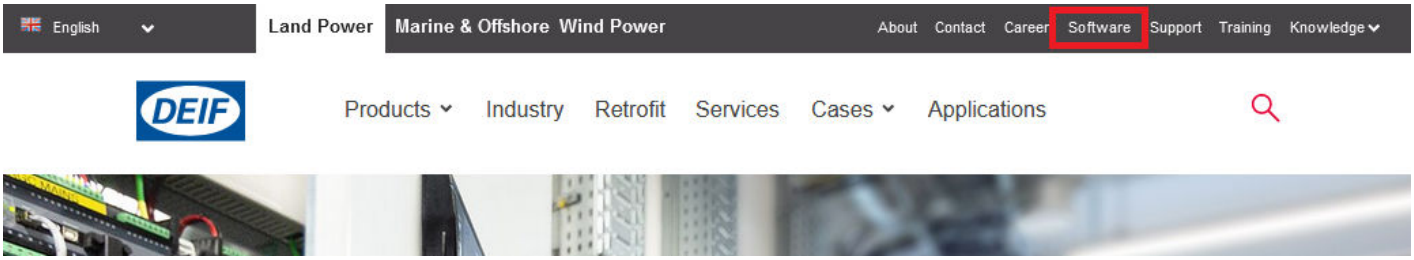
- Windows 10
- Windows 8/8.1
- Windows 7

4.3 Obtain USW from DEIF

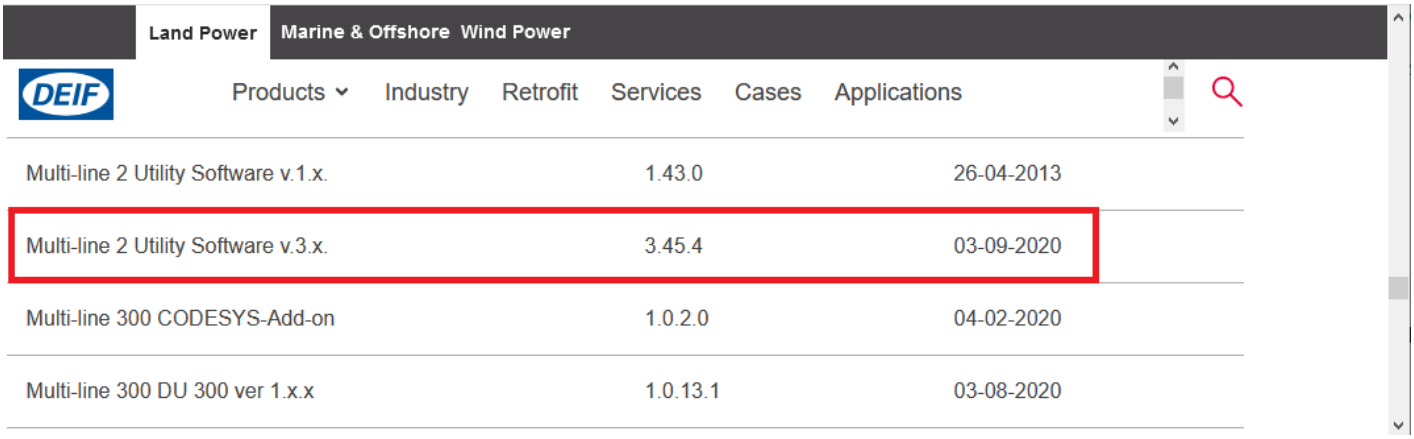
4.3.1 USW

The USW is normally obtained from DEIF via the internet. Visit www.deif.com.

Select *Software* from the top line on the web page:

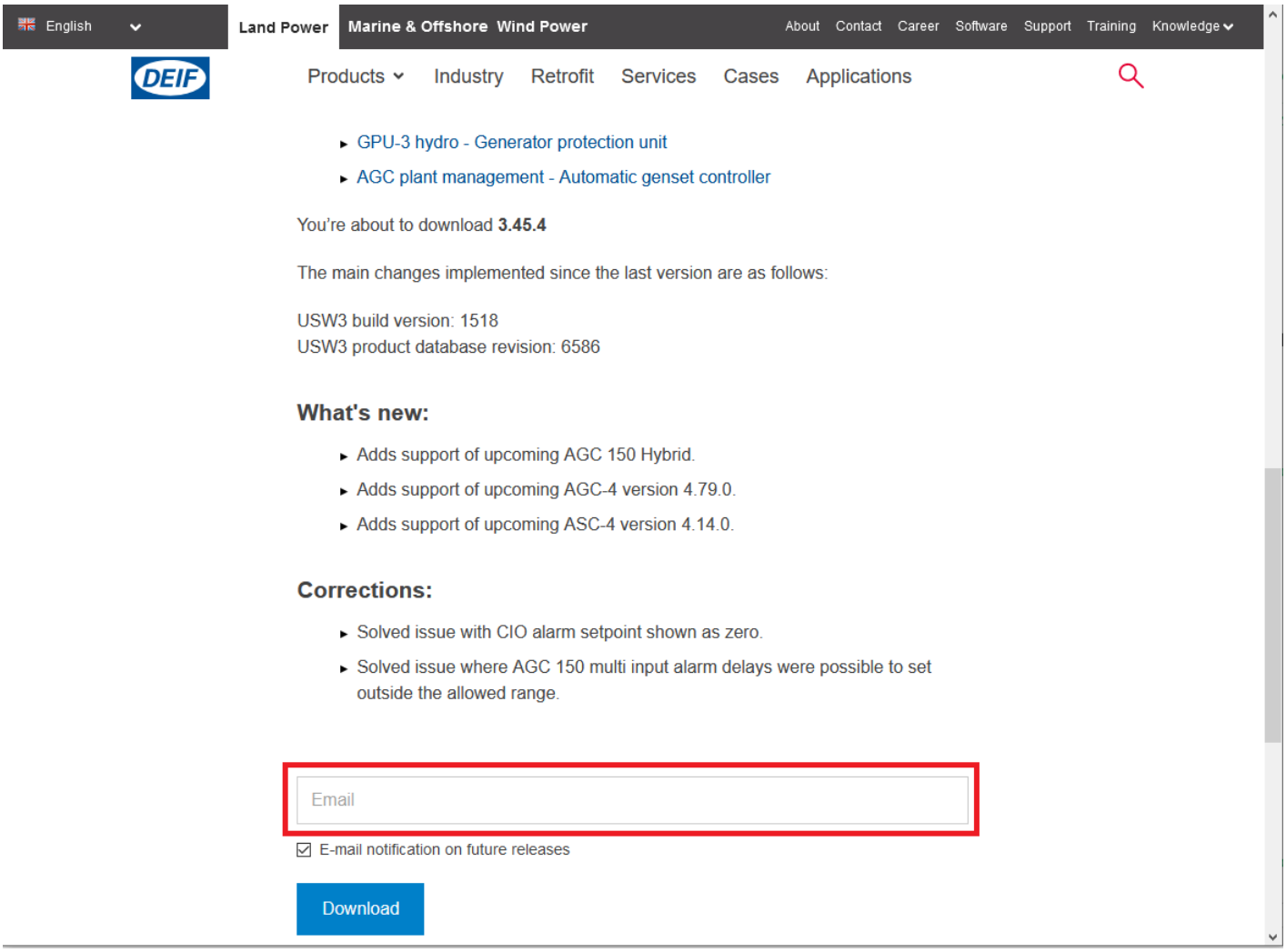


Scroll down and select *Multi-line 2 Utility Software v.3.x*.



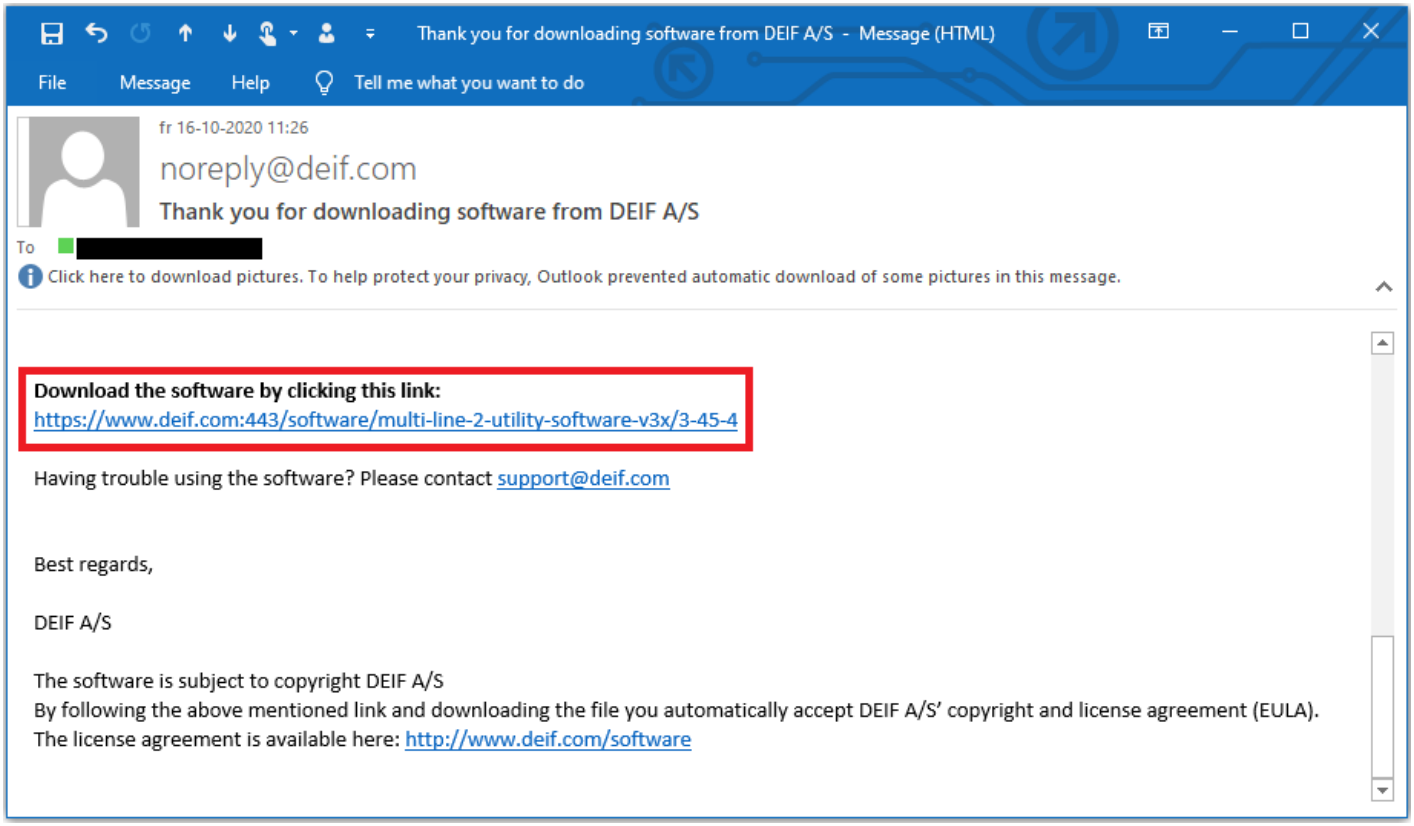
Scroll down to the field where you can enter your email address.

Enter email address and click *Download*.



INFO
There is information about changes in the recent software on this page. The entire change log can also be found on the top of this page.

After clicking *Download*, an email is sent with a download link.



Follow the instructions in this email carefully.

When the USW has been saved to your PC, the software can be installed by executing the file you just downloaded. Follow the instructions on the screen.

INFO
If you do not receive the email, check your spam folder.

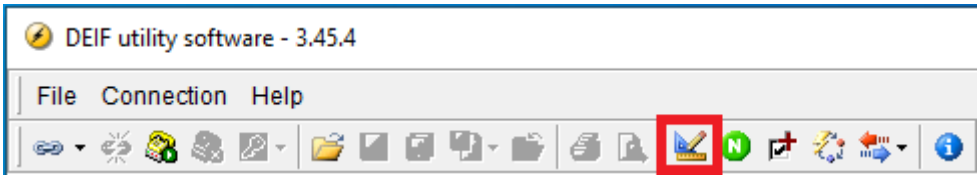
4.4 Getting connected

4.4.1 Getting connected

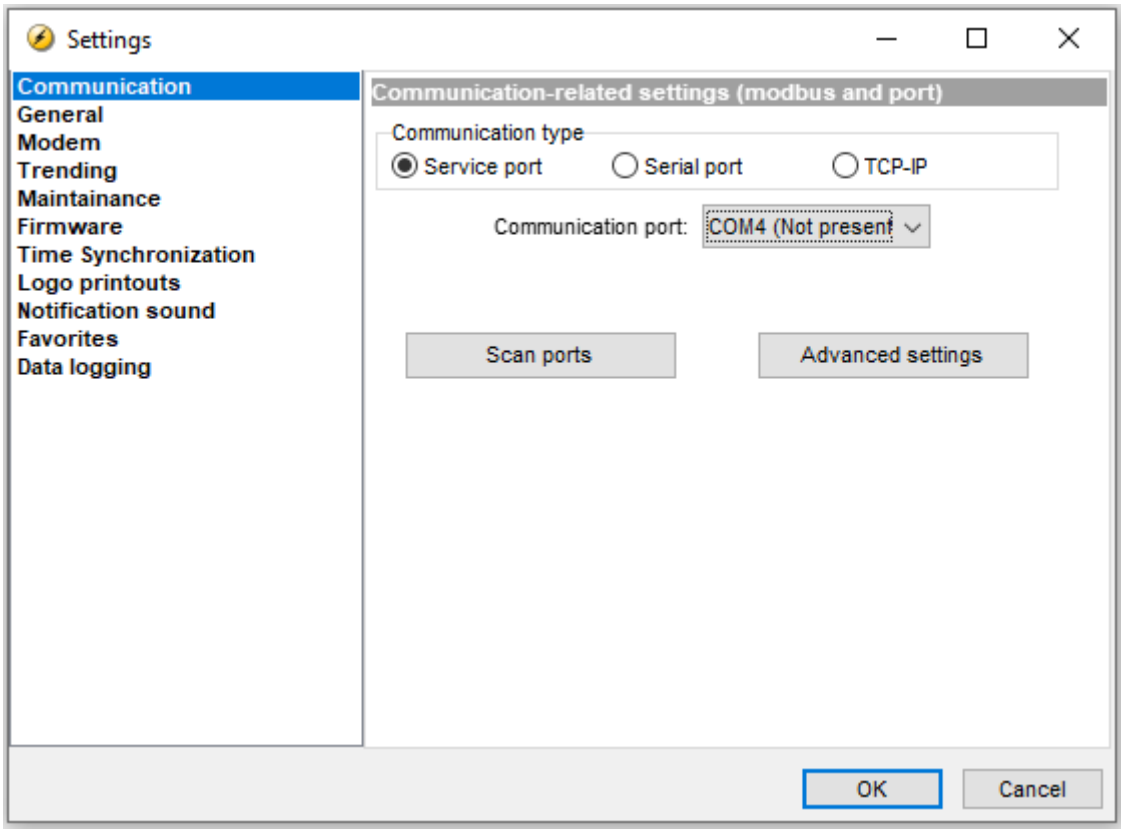
Connect the service port to the USB on the computer.

Click the *Utility Software 3* icon on the desktop or in the Windows Start menu.

The software opens, with the top bar shown below. Open the application settings by clicking the *Application settings* icon:



The *Setting* window opens.



In the *Communication* tab, you can select the type of communication:

- *Service port* is USB port or TTL port
- *Serial port* is for an RS-485 connection
- *TCP-IP* is for an Ethernet connection

The screenshot above shows *Service port* selected.

Select *Scan ports* to scan the system for new COM ports. Note that this may take some time. Choose the *COM port* of the desired DEIF controller on the drop-down menu. Click **OK**.

The Settings window closes. In the top bar, click the *Connect* icon*:

*Note: You can select the drop down arrow on the *Connect* icon to choose the communication settings.

You are now online with the unit.

INFO
The USW has an integrated help function (press F1).

4.4.2 Password

The unit typically includes three password levels: Customer, Service and Master. The passwords corresponding to these levels can be adjusted in the PC software.

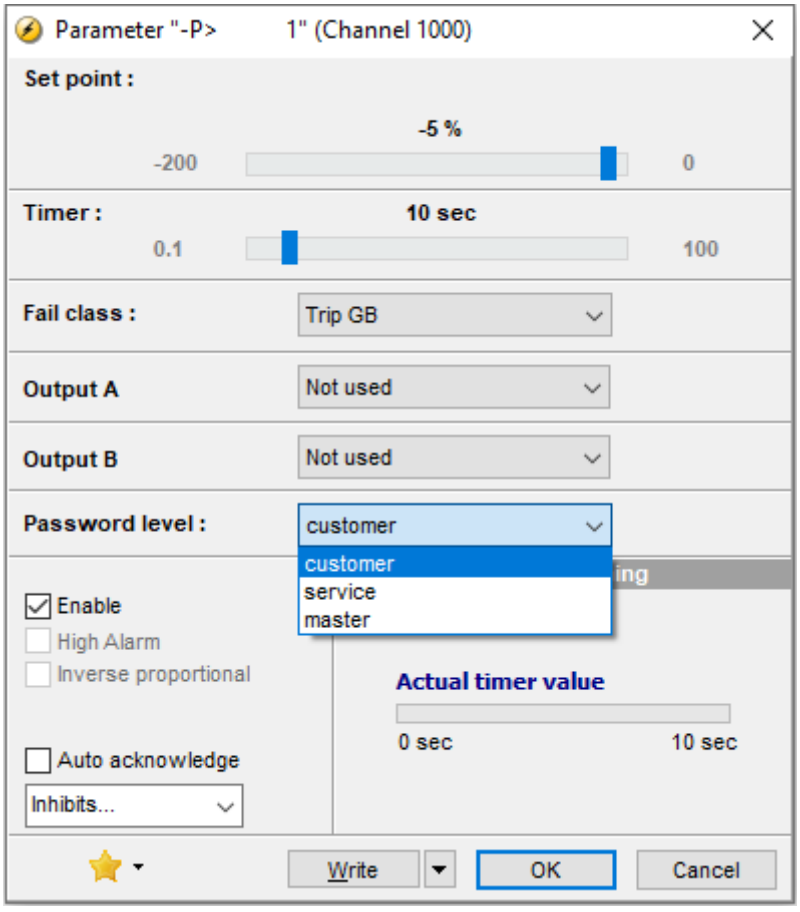
INFO
CGC 200 only has one password level, and GC-1F/2 only has two password levels.

Available password levels:

Password level	Factory setting	Access		
		Customer	Service	Master
Customer	2000	X		
Service	2001	X	X	
Master	2002	X	X	X

An example is that a parameter cannot be changed with a password level that is too low. The settings can be displayed without a password.

Each parameter can be protected by a specific password level. To do so, the PC utility software must be used. Enter the parameter to be configured and select the required password level.



In the following steps of this guide, it can be necessary to acquire project-specific passwords to access the different functions.

5. Multi-line 2 application software

5.1 General information

INFO
The application software (hereafter called ASW) is the software in the ML-2 device.

When you receive the unit from the factory (DEIF A/S), ASW software has already been installed. The unit is ready to be configured.

5.2 Reason for upgrade

5.2.1 Main reasons

There are various reasons for upgrading the ML-2 device. The main reasons are:

1. To get new functions available in the latest ASW version.
2. The software has an error (bug) that needs to be fixed.
3. To prepare several ML-2 units with the same software, so they are identical prior to forwarding.

Information about functions and bugs can be found on www.deif.com.

INFO
In most cases, it is not necessary to upgrade the units.

5.3 Precautions

5.3.1 Warning

DANGER!
Read this section carefully before attempting to upgrade your units.

5.3.2 Genset condition

All software downloading to the ML-2 device must be carried out while the genset is at standstill.

5.3.3 Protection

All protections are deactivated during download.

5.3.4 Relay status

All relays are de-energised during download. Check your diagrams carefully to understand the effect of this.

Status relay

Check relay on terminals 3 and 4 (AGC 100, AGC-3, AGC-4, GC-1F, CGC400, GPC, GPU and PPU only).

Check relay on terminals 16 and 17 (AGC 200).

5.4 Application software

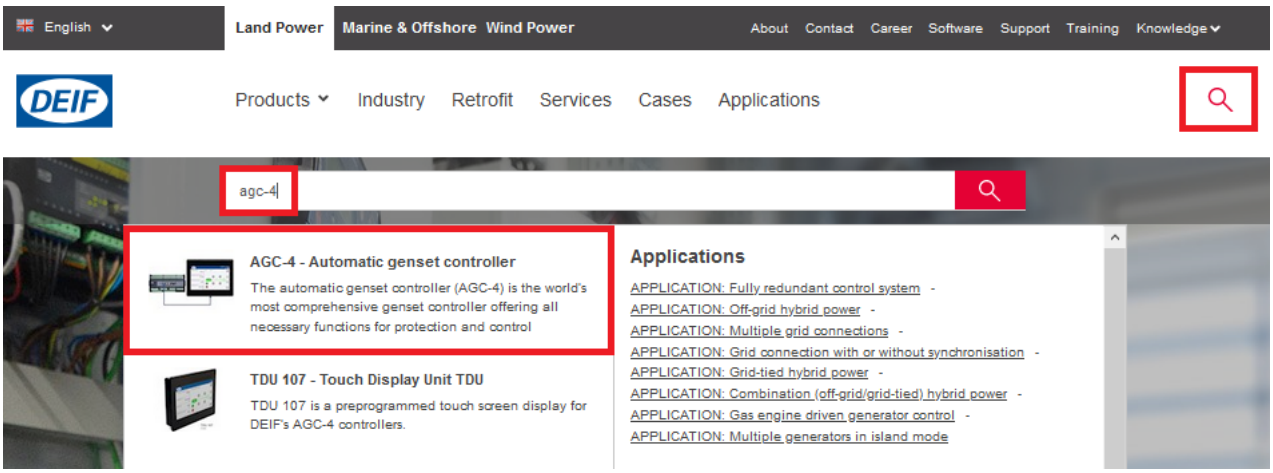
5.4.1 How to obtain ASW from DEIF

Finding and downloading ASW is similar to the process for obtaining USW from DEIF.

Finding a product

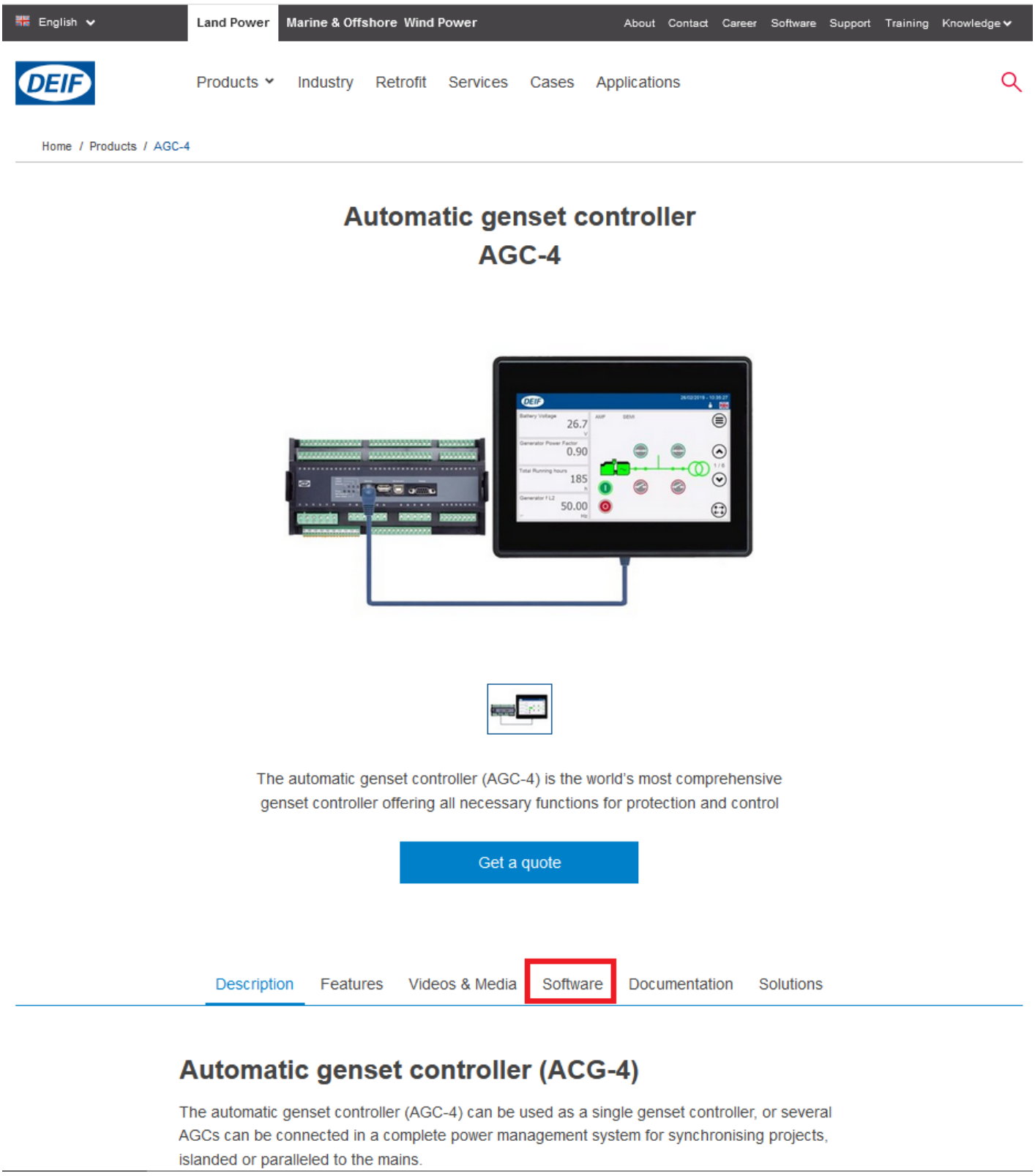
Use the website search function to find the product page.

1. Select the search icon to bring up the search bar.
2. Type in the product name. For example: "agc-4". This search is not case-sensitive.
3. The website offers a number of products. Select the required product.



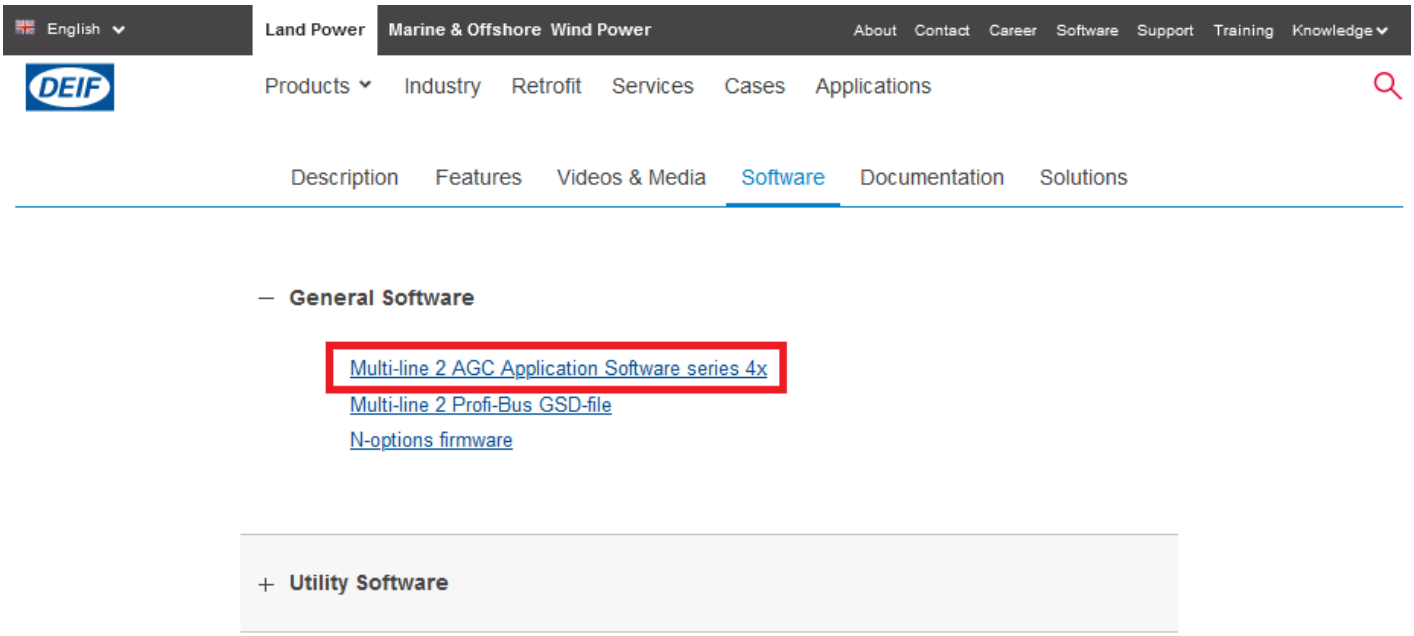
Finding product software

The product page includes a tab for the product software.



Selecting the application software

Select *General Software*, then select the application software link.



Downloading the software

This is similar to the process for downloading the utility software.

INFO
After downloading the application software to your computer, unpack the zip file. You can then see the application software file, and a readme file (if present).

6. Before writing new application software

6.1 General information

When new application software (hereafter called ASW) is installed, the controller is reset. If you want to reuse the controller configuration*:

1. Before installing new ASW, save the configuration to a project file.
2. Install the new ASW in the controller.
3. After installation, write the project file to the controller.

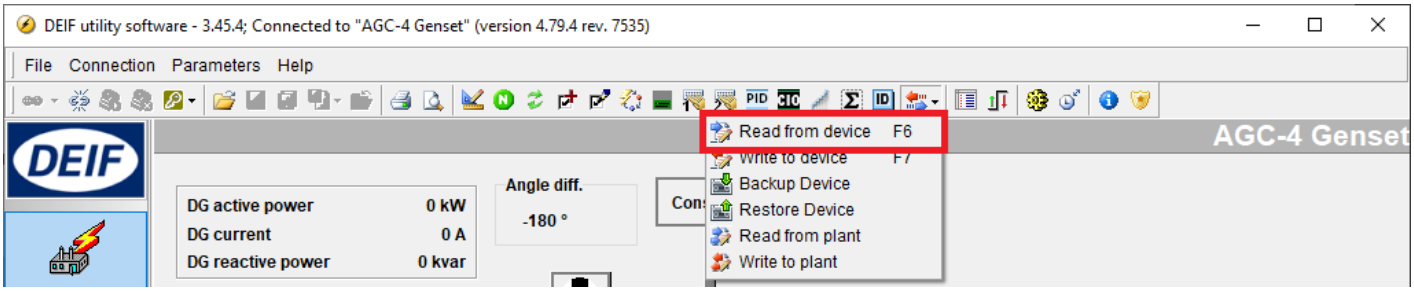
*Note: You can only reuse the controller configuration if none of the parameters have been changed, moved or removed in the new ASW. Check the configuration carefully after installing the new software.

6.2 How to get a project file for backup

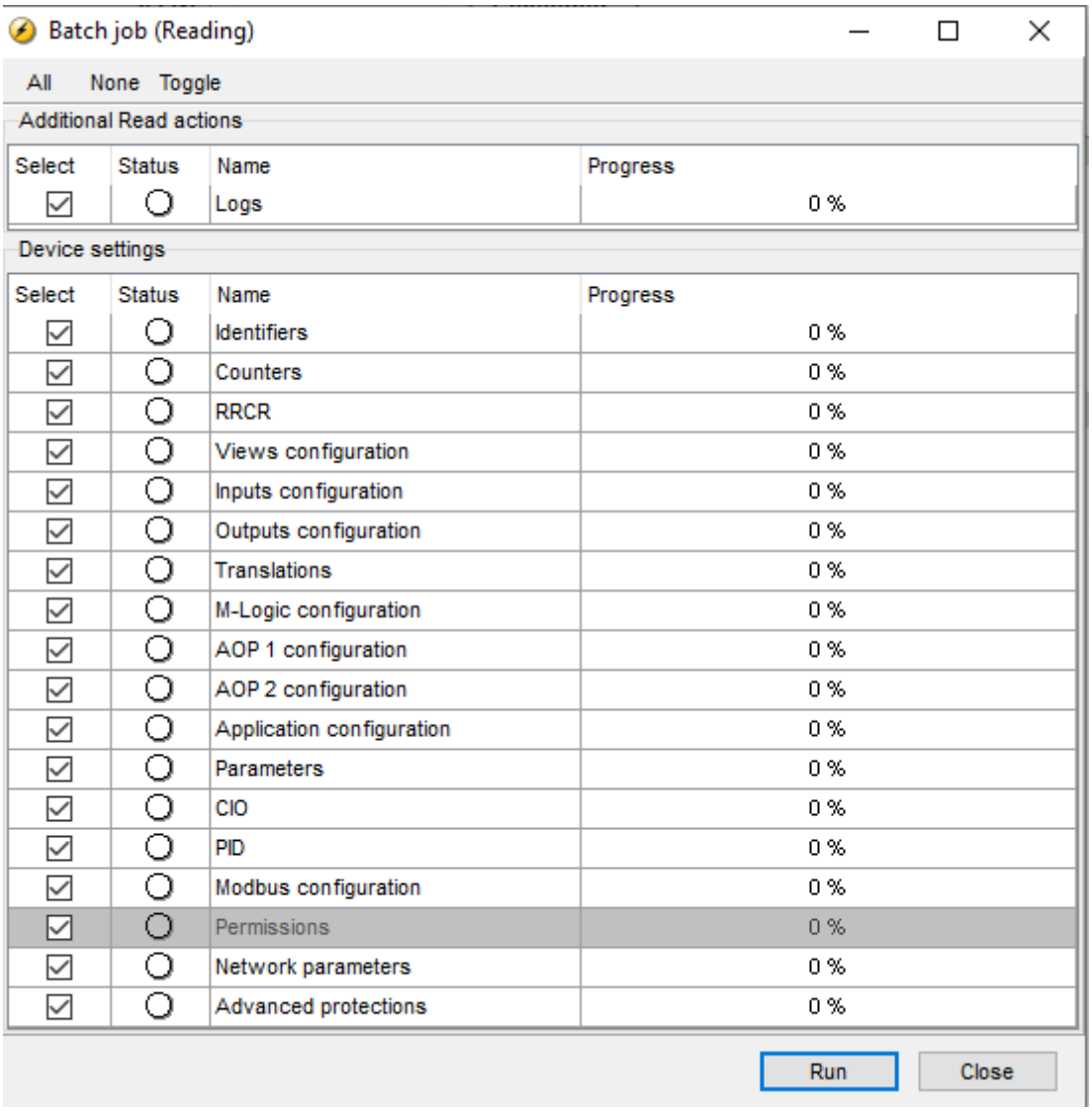
Once the project configuration is complete, save the project file from the Multi-line 2 unit. This project file is a backup of the configuration. DEIF recommends saving the file somewhere easy to remember, for example, together with other project files.

Open the USW and connect to your device.

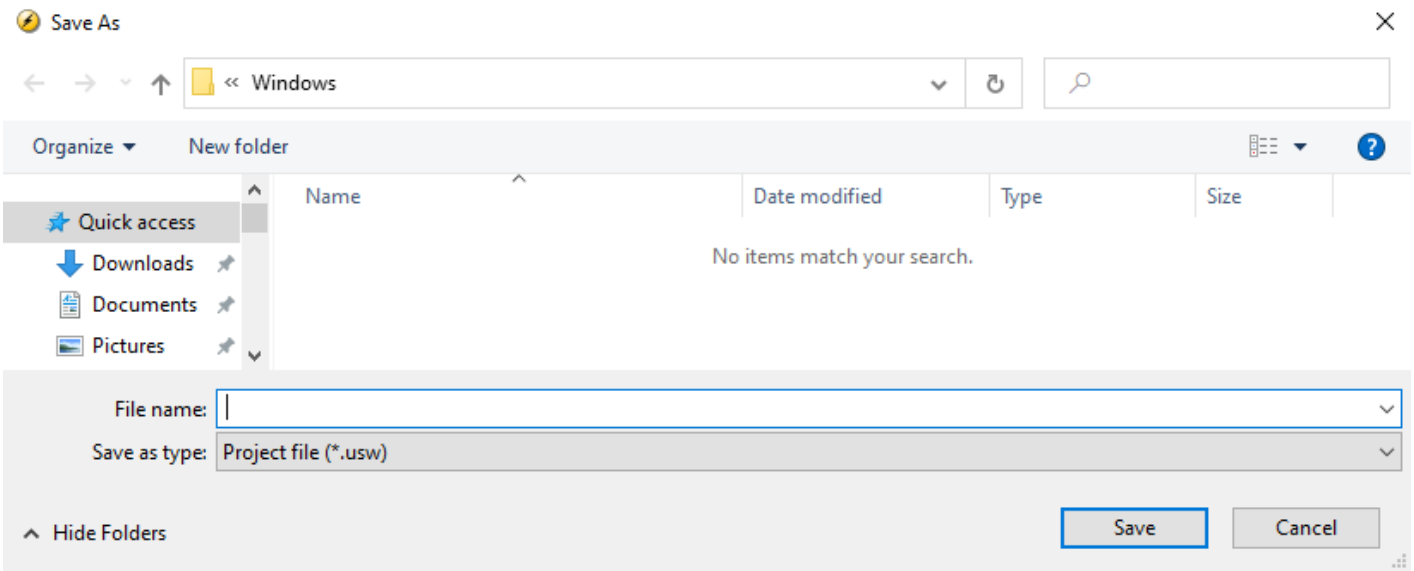
Read parameters from the unit using the *Batch read and write* function. Select *Read from device*:



Select the parameters to be saved in the USW project file (*file.usw*):



Choose file name and where to save the project file on the PC:



7. Upgrading application software

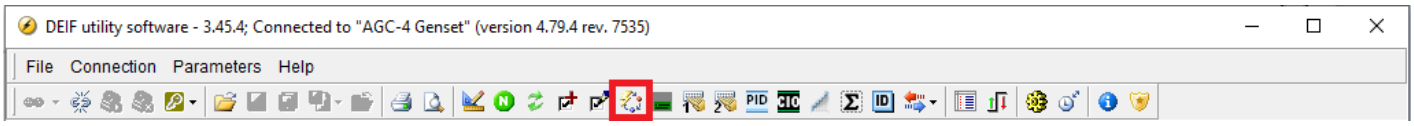
7.1 General information

Before attempting to download application software to the unit, make a backup of the configuration. See How to get a project file for backup.

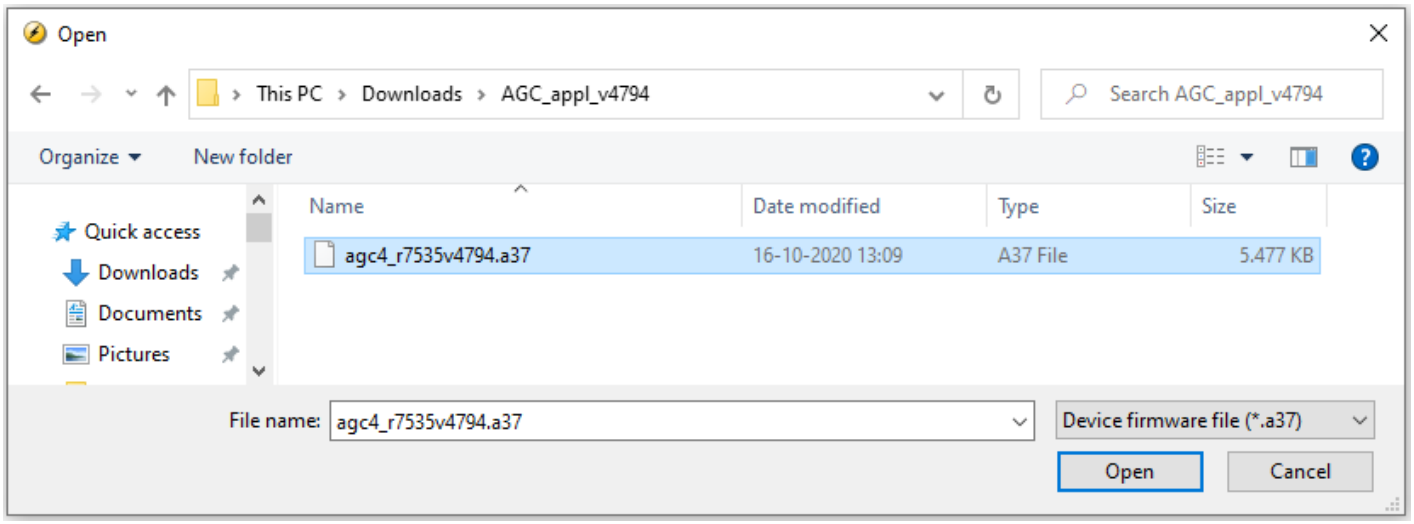
INFO
The ASW download to the unit resets all the parameters. If you do not save the parameter configuration before downloading the ASW to the unit, it will be lost, and cannot be recovered.

7.2 Download of new ASW to unit

Select the *Write a firmware* icon.

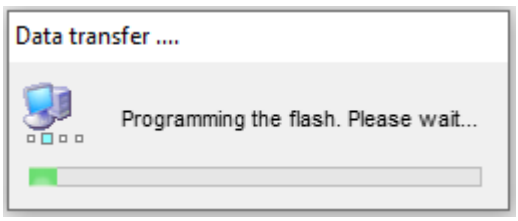


Find the new ASW on the PC.



INFO
File type: AGC 100 = file.1ax, AGC 200 = file.2xx, AGC-3/4 = file.a37, CGC 400 = file.4cx, ECU 100 = file.1ax, GCU 100 = file.1ax GC-1F = file.a79, GPC-3 = file.a37, GPU-3 = file.a37, PPM-3 = file.a37 and PPU-3 = file.a37.

This will force the DEIF unit into boot mode.



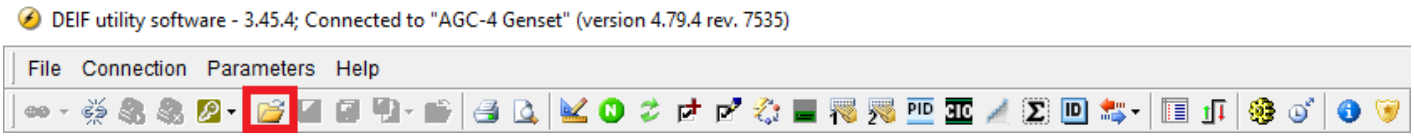
INFO
If the programming is interrupted, disconnect the aux. voltage, connect the aux. voltage, and the unit is in boot mode. Restart the download procedure, the USW will now ask you to choose which product you have.

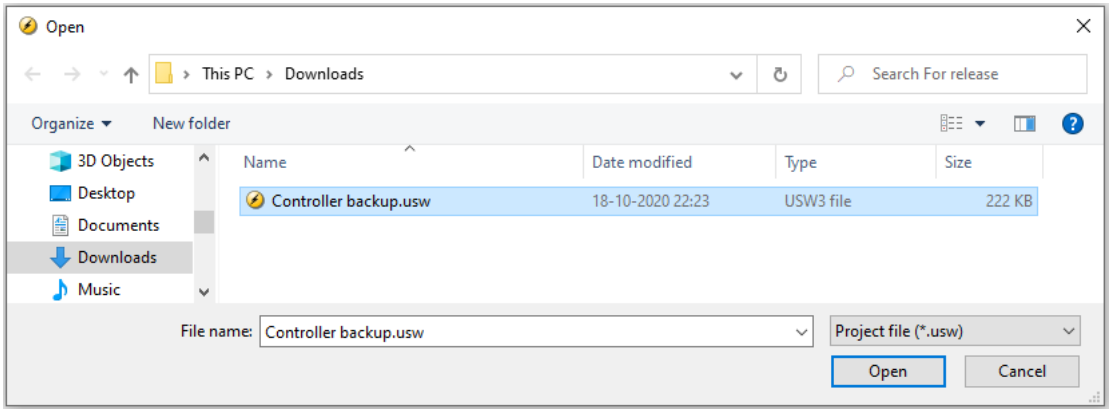
INFO

GC-1F: If the programming is interrupted, you can force the unit back into boot mode by disconnecting the aux. voltage. Press and hold the *Stop* button. Connect the aux. voltage, and the unit is in boot mode.

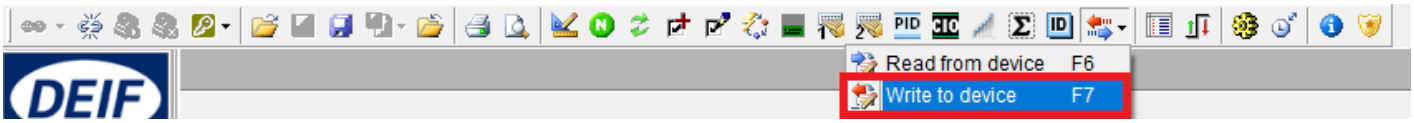
After download of new firmware, parameters saved in the project file (file.usw) can be downloaded to the unit.

Open a saved project file from the PC.

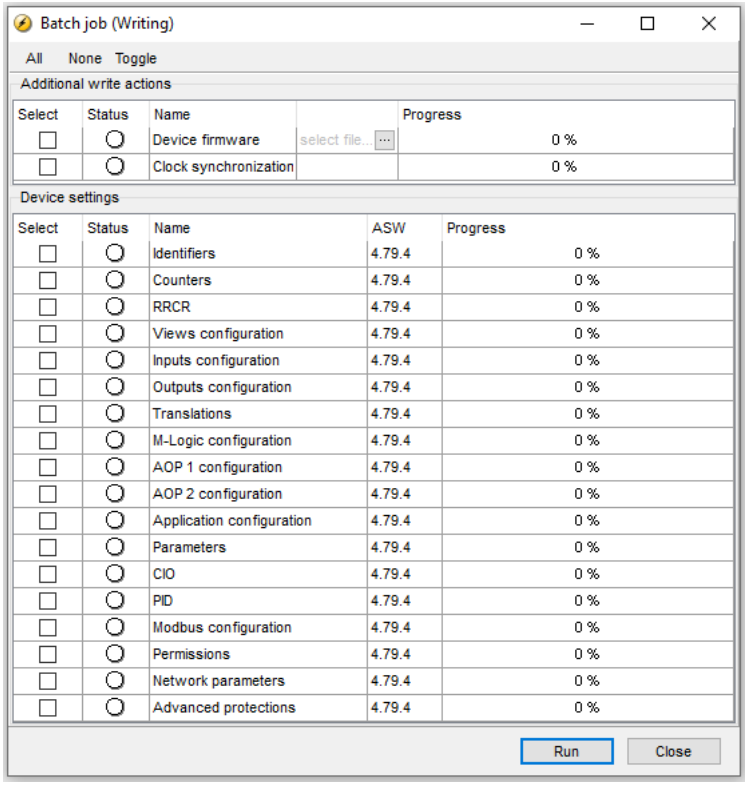




Select *Batch read and write* and select *Write to device*.



Select the parameters you want to download to the unit.



When the configuration is completed, the unit resets. After the reset, the unit is operational again.