

Application notes

Getting started - USW 3.x



1. Delimitation	
1.1 Scope of Application notes, Getting started - USW 3.x.....	3
2. General information	
2.1 Warnings, legal information and safety.....	4
2.1.1 Warnings and notes.....	4
2.1.2 Legal information and disclaimer.....	4
2.1.3 Factory settings.....	4
3. Cable connections between PC and DEIF controller	
3.1 General information.....	5
3.2 Connection table - flashing.....	5
3.3 Connection table - setting up.....	6
4. PC utility software	
4.1 General information.....	7
4.2 Supported Windows systems.....	7
4.3 Obtain USW from DEIF.....	8
4.3.1 USW.....	8
4.4 Getting connected.....	9
4.4.1 Getting connected.....	9
4.4.2 Password.....	11
5. Multi-line 2 application software	
5.1 General information.....	13
5.2 Reason for upgrade.....	13
5.2.1 Main reasons.....	13
5.3 Precautions.....	13
5.3.1 Warning.....	13
5.3.2 Genset condition.....	13
5.3.3 Protection.....	13
5.3.4 Relay status.....	13
5.4 Application software.....	14
5.4.1 How to obtain ASW from DEIF.....	14
6. Before writing new application software	
6.1 General information.....	17
6.2 How to get a project file for backup.....	17
7. Upgrading application software	
7.1 General information.....	19
7.2 Download of new ASW to unit.....	19

1. Delimitation

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

This document covers the following products:

Product	SW version	USW version
AGC-4 Mk II	6.0x.x and later	3.47.1 and later
AGC-4	4.xx.x and later	3.54.4 and later
AGC-3	3.40.0 and later	3.54.4 and later
AGC 200	3.5x.x and later	3.54.4 and later
AGC 100	4.xx.x and later	3.54.4 and later
CGC 200	1.xx.x and later	3.54.4 and later
CGC 400	1.xx.x and later	3.54.4 and later
ECU 100	1.xx.x and later	3.54.4 and later
GCU 100	1.xx.x and later	3.54.4 and later
GC-1F	1.00.0 and 2.0x.x and later	3.54.4 and later
GPC-3	3.0x.x and later	3.54.4 and later
GPU-3	3.0x.x and later	3.54.4 and later
GPU-3 REC	3.0x.x and later	3.54.4 and later
PPM-3	3.0x.x and later	3.54.4 and later
PPU-3	3.0x.x and later	3.54.4 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.

NOTE 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-4 Mk II		X	X ¹
AGC-4		X	X ²
AGC-3		X	
AGC 200		X	X
AGC 100	X		
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 ²

Note 1: Option N is included in the standard AGC-4 Mk II. There are no SW version requirements.

Note 2: To be able to flash on a TCP-IP connection, the following must be fulfilled:

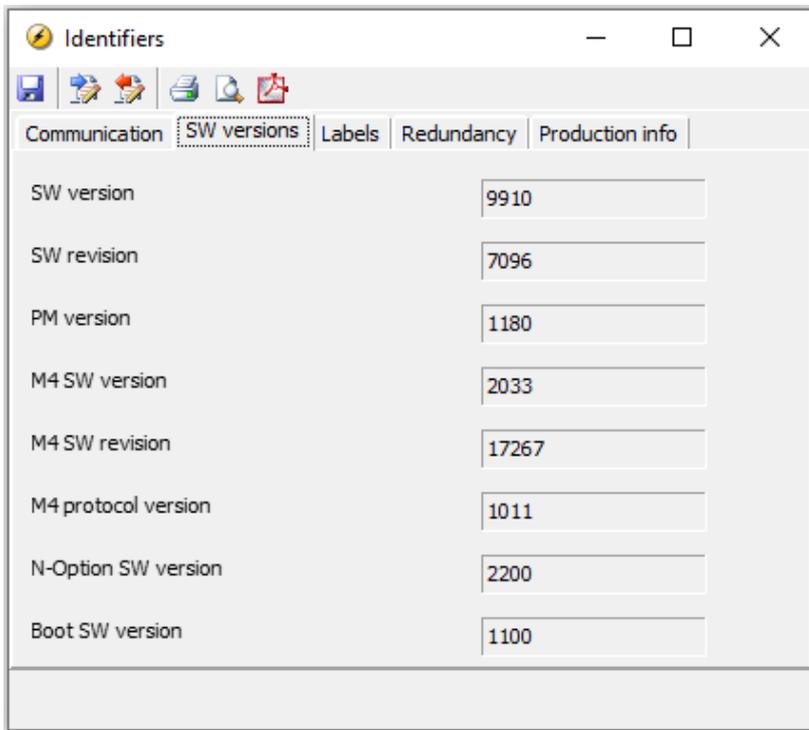
- SW version: AGC-4: 4.40.0 or later; PPU-3: 3.10 or later
- Option N SW version: 2.20.0 or later
- Boot SW version: 1.03.0 or later



INFO

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

For an AGC-4 or PPU-3, 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-4 Mk II		X	X	X*
AGC-4		X	X	X
AGC-3		X	X	X
AGC 200		X	X	X
AGC 100	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

*Note: Option N is included in the standard AGC-4 Mk II.

4. PC utility software

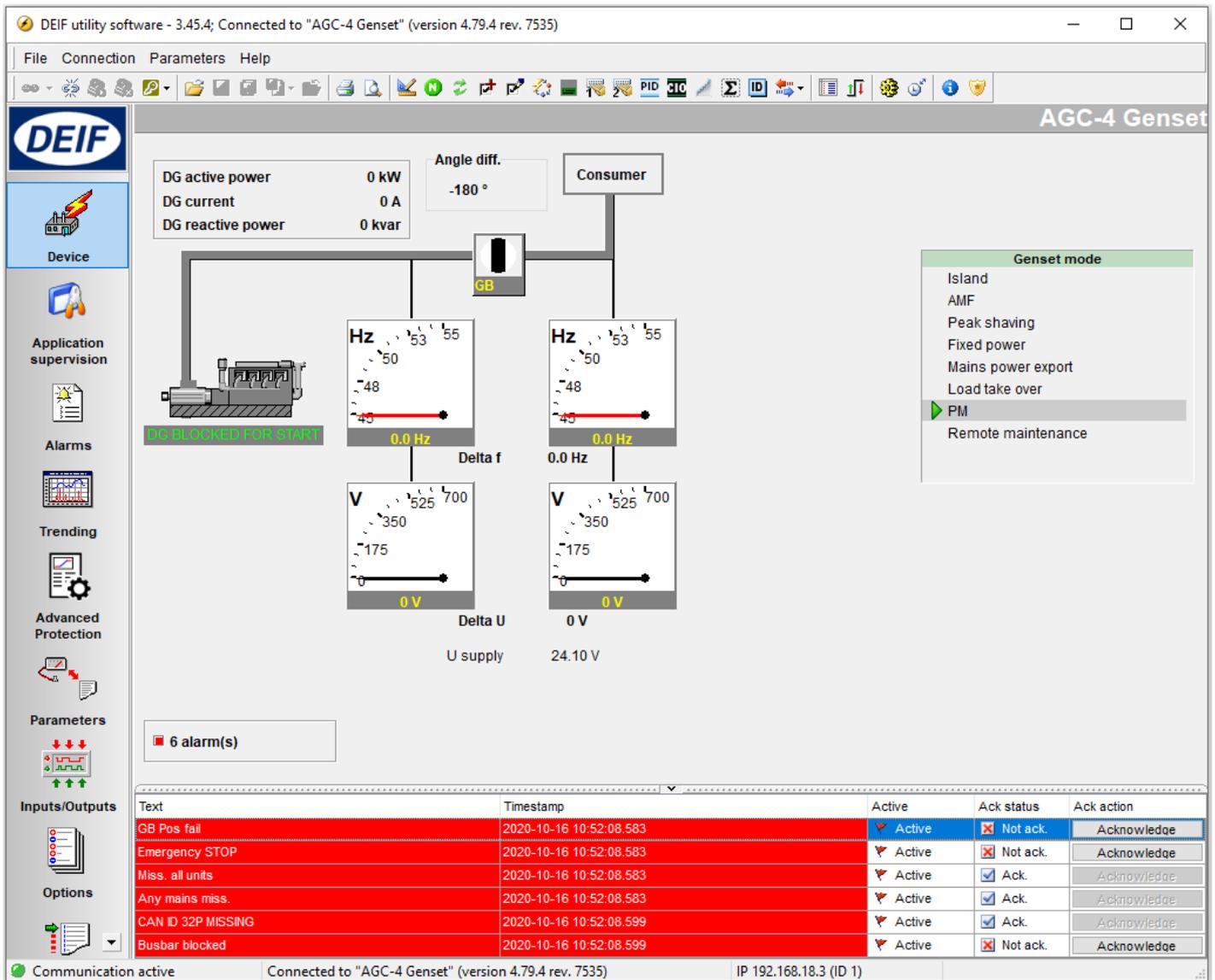
4.1 General information

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

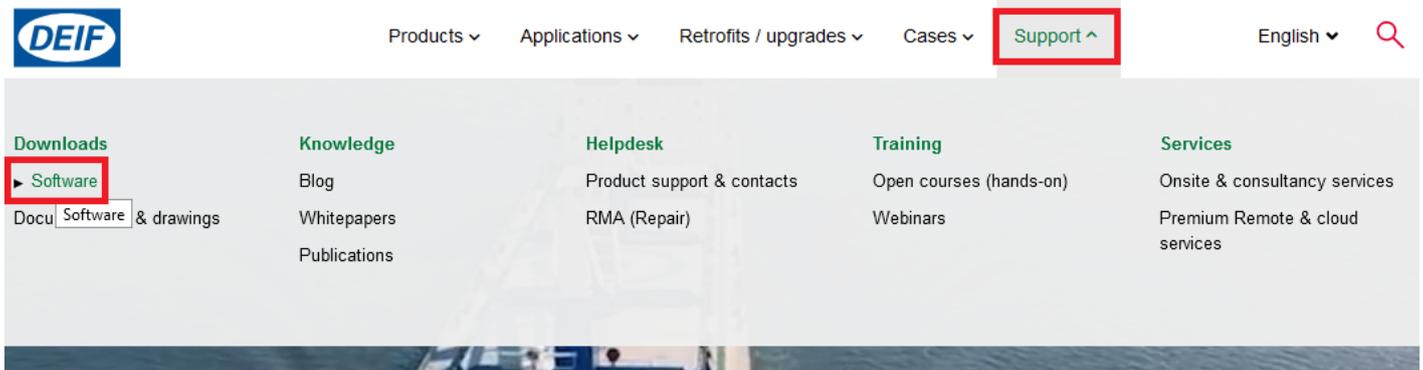
4.3 Obtain USW from DEIF

4.3.1 USW

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

You can find the USW in the software list, or listed under the product software. Finding the USW in the software list is shown here. See [How to obtain ASW from DEIF](#) for finding the product software.

Select *Support* then *Software* from the top bar on the web page:



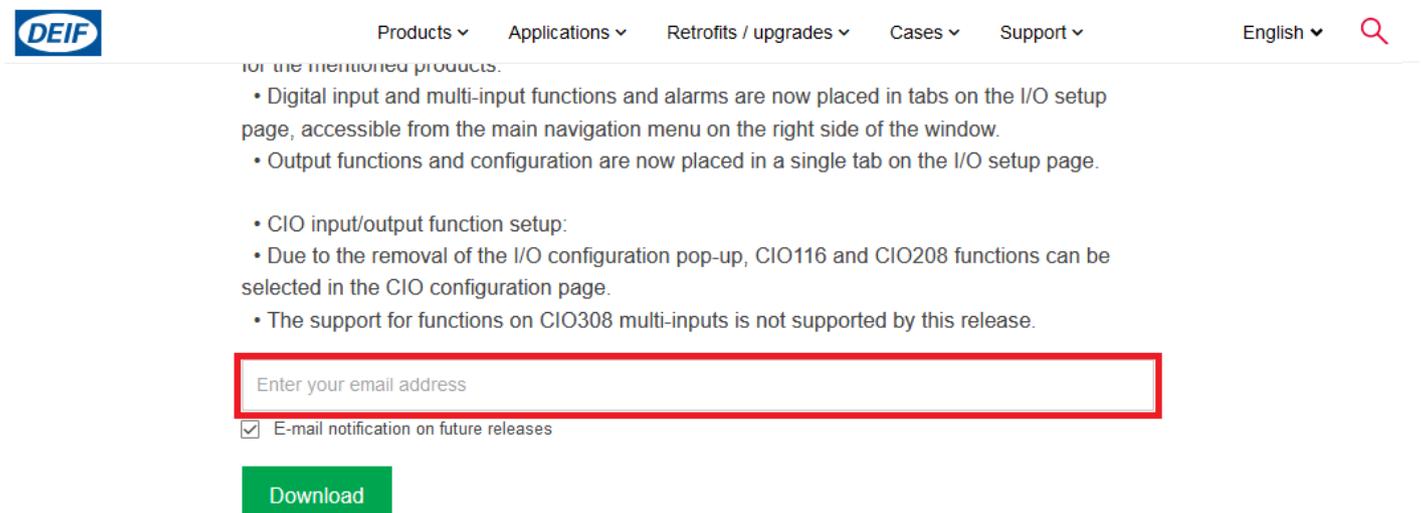
Scroll down and select *Multi-line 2 Utility Software v.3.x.*



Product Name	Version	Release Date
Multi-line 2 Standard Application Software series 2.3x and 2.4x	2.42.8	30-03-2015
Multi-line 2 Standard Application Software series 3.x.	3.22.2	05-08-2019
Multi-line 2 Utility Software v.1.x.	1.43.0	26-04-2013
Multi-line 2 Utility Software v.3.x.	3-47-1	12-01-2021

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

Enter email address and click *Download*.

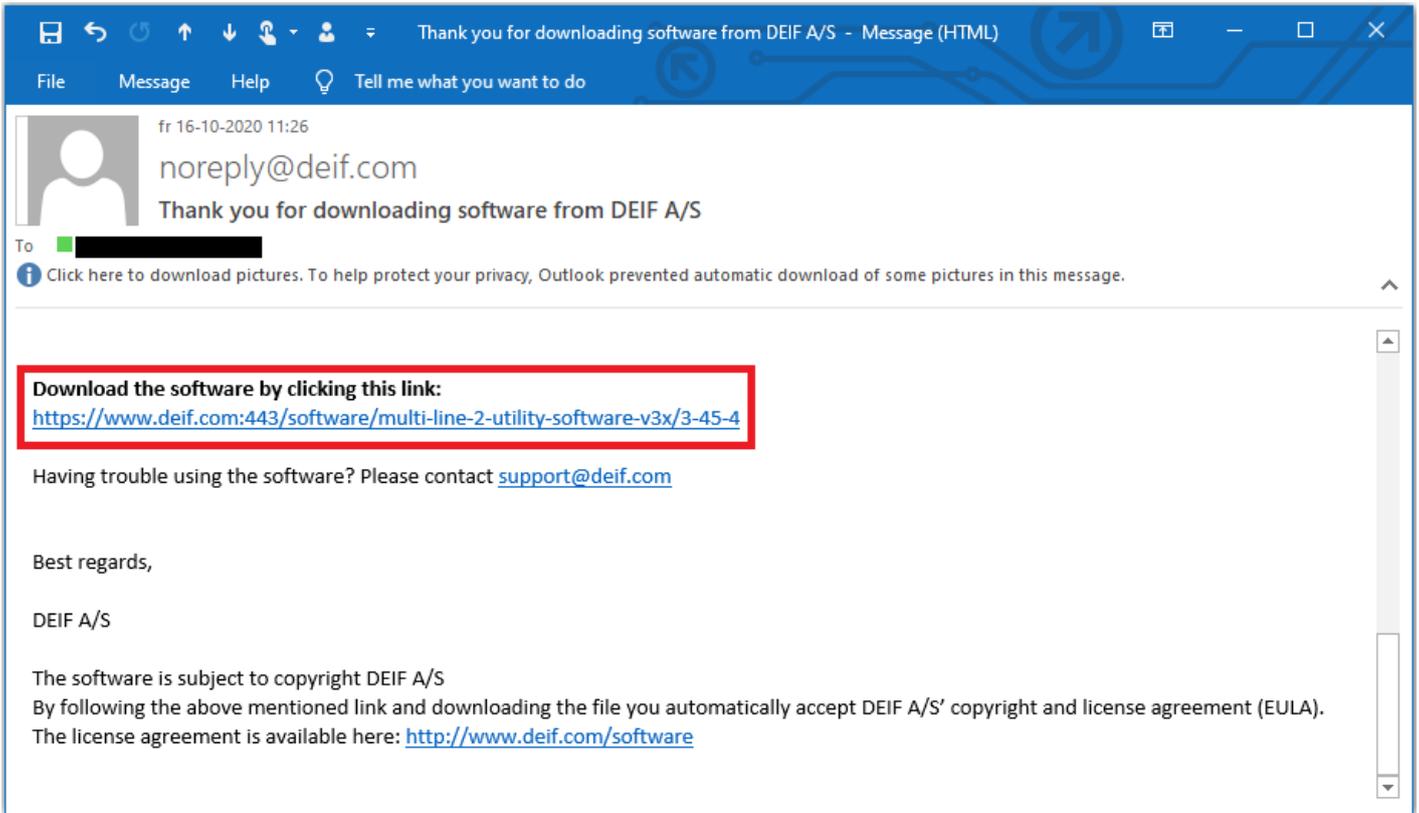




INFO

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

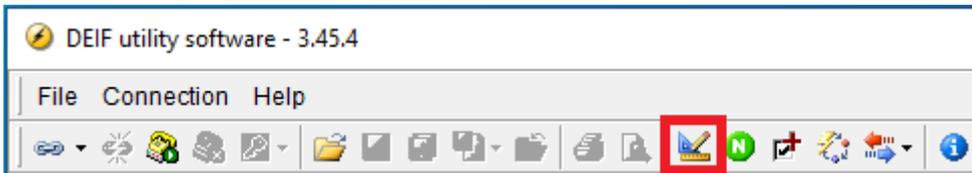
Connect the service port to the USB on the computer.

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

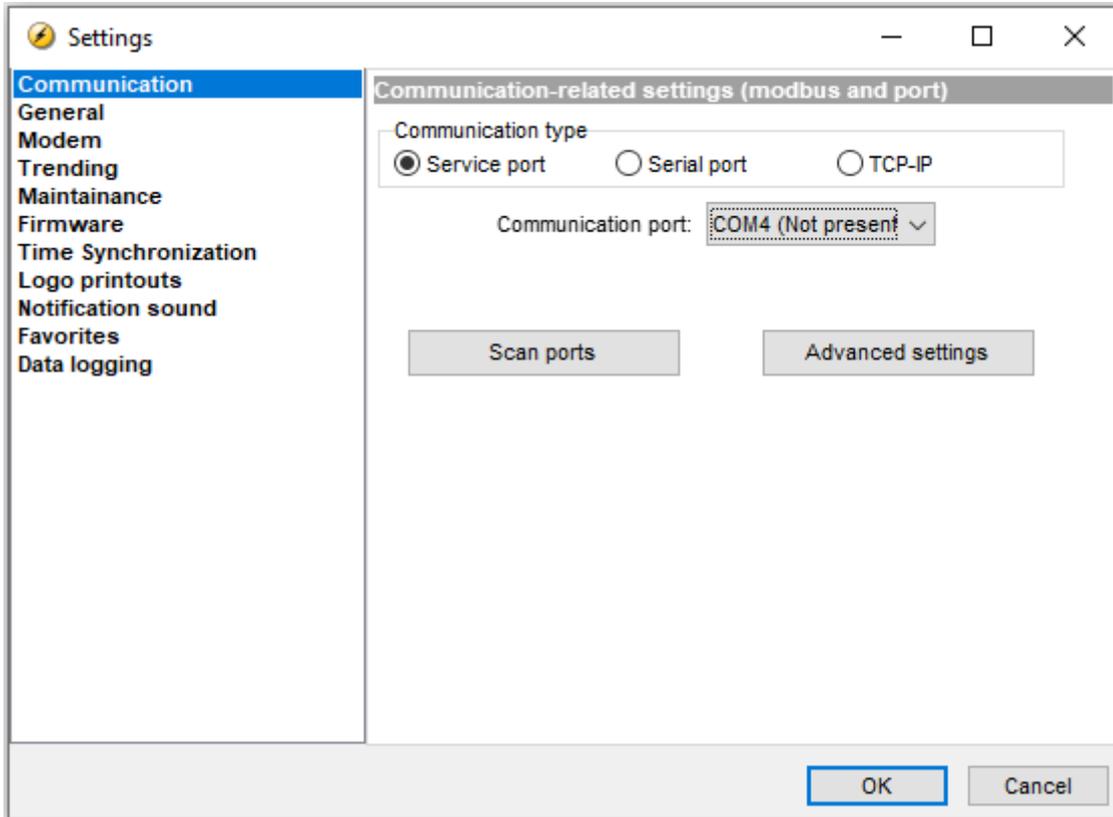


The software opens, with the top bar shown below. Open the application settings by clicking the *Application settings* icon:





The *Setting* window opens.



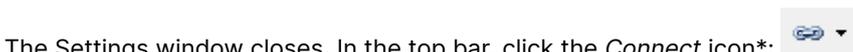
In the *Communication* tab, you can select the type of communication:

- *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-4 Mk II, AGC-4, AGC-3, AGC 100, GC-1F, CGC400, GPC, GPU and PPU only).

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

5.4 Application software

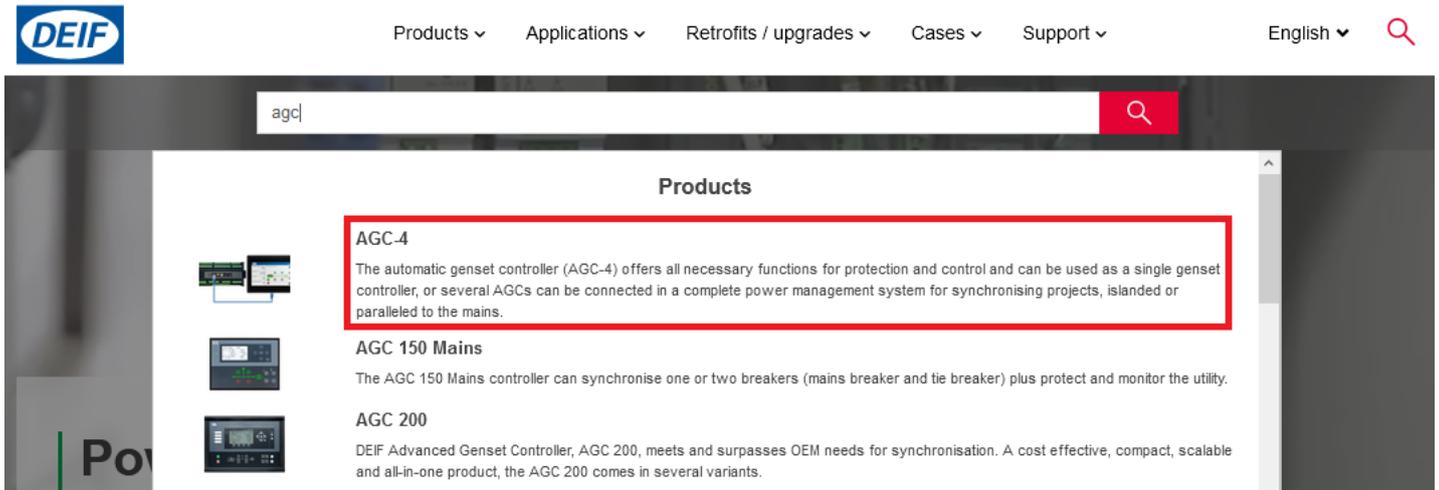
5.4.1 How to obtain ASW from DEIF

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.

AGC-4

Automatic genset controller

The automatic genset controller (AGC-4) offers all necessary functions for protection and control and can be used as a single genset controller, or several AGCs can be connected in a complete power management system for synchronising projects, islanded or paralleled to the mains.



[Contact us](#)

WE RECOMMEND YOU THE AGC-4 Mk II

Based on the well-known AGC-4 controller, this new [AGC-4 Mk II](#) controller is faster, more powerful and easier to set up than the traditional AGC-4 controller. The AGC Mk II comprises new and enhanced features such as N+X configuration and easy and safe transformer station that make it the perfect fit for, e.g., rental and critical power applications.

- [Features](#) >
- [Documentation](#) >
- [Training](#) >
- [Software](#) >
- [Webinar](#) >

Selecting the application software

On the product software page, scroll down, then select the application software link.

Software downloads

Name	Latest Version	Date
Multi-line 2 AGC Application Software series 4.x.	4-80-1	18-12-2020
Multi-line 2 Profi-Bus GSD-file	1.00	20-11-2001
Multi-line 2 Utility Software v.3.x.	3-47-1	12-01-2021
N-options firmware	2.41.0	07-11-2017

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.

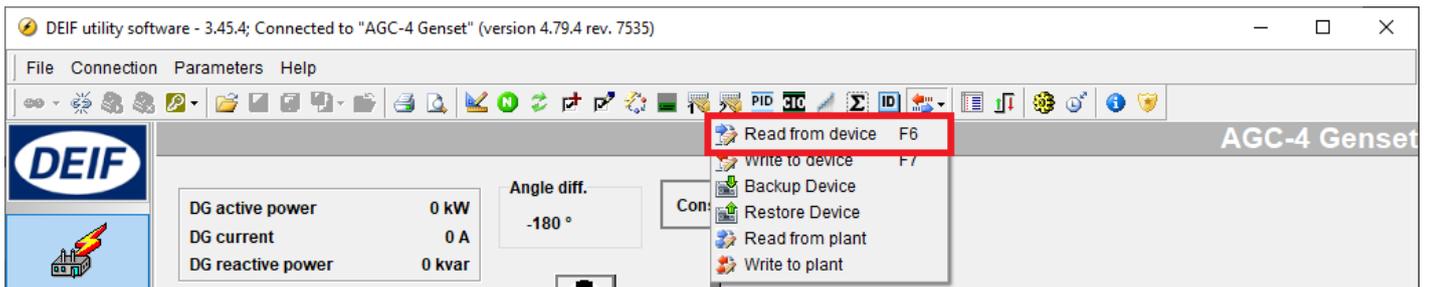
*Note: You can only reuse the controller configuration if none of the parameters have been changed, moved or removed in the new ASW. Check the configuration carefully after installing the new software.

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*):

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

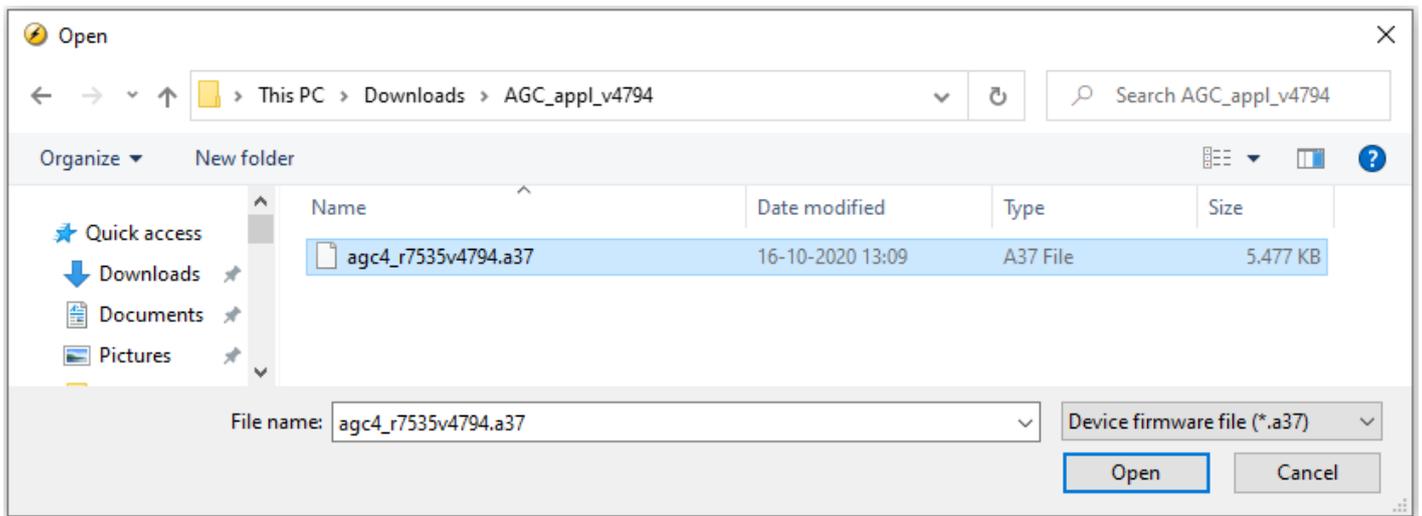
The ASW download to the unit resets all the parameters. If you do not save the parameter configuration before downloading the ASW to the unit, it will be lost, and cannot be recovered.

7.2 Download of new ASW to unit

Select the *Write a firmware* icon.



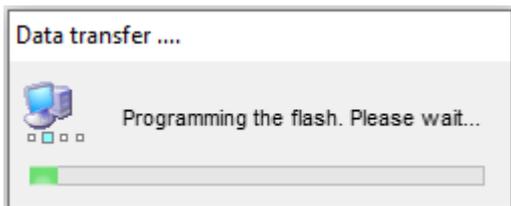
Find the new ASW on the PC.



INFO

File type: AGC-4 Mk II = file.a4x, AGC-3/4 = file.a37, AGC 200 = file.2xx, AGC 100 = file.1ax, 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.



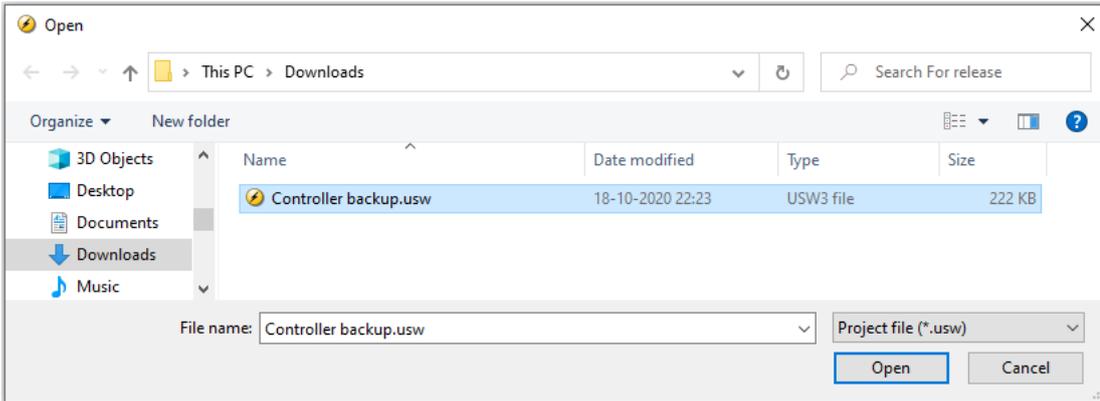
INFO

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.

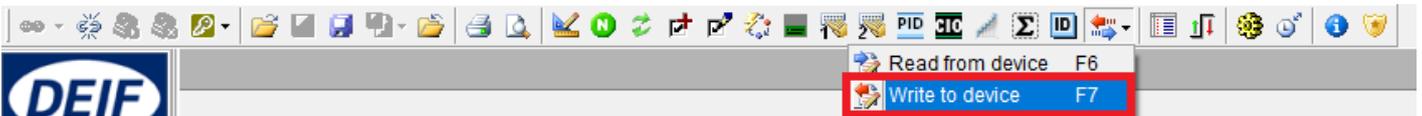
After download of new firmware, parameters saved in the project file (file.usw) can be downloaded to the unit.

Open a saved project file from the PC.

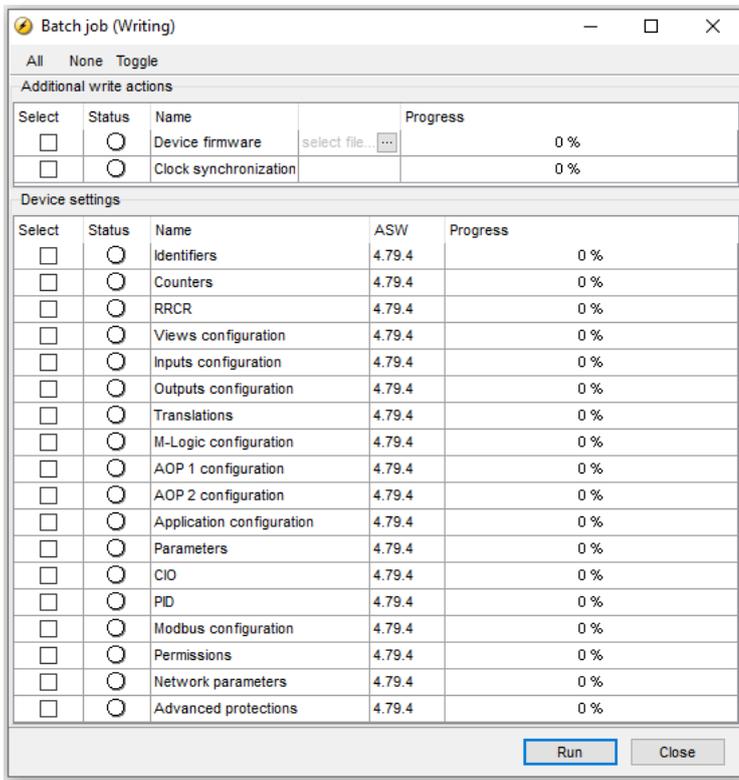
DEIF utility software - 3.45.4; Connected to "AGC-4 Genset" (version 4.79.4 rev. 7535)



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.