



-power in control



## APPLICATION NOTES, USW MANUAL



## Thyristor Control Module, TCM-2

- Installation instructions
- User guide



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## 1. About this document

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### General purpose

The purpose of this document is to provide guidance on how to

- install TCM-2 utility software.
- use the functions of handling the interface, parameters and internal logging

We recommend that you read this installation instruction in full before you begin installing the programme.

Before starting to install, make sure that the computer is disconnected from the DEIF TCM-2 unit.

### Help

For warranty reasons, we recommend that you contact your TCM-2 supplier before you begin upgrading your software to determine if a software upgrade is necessary.

If there is any doubt about how to perform the upgrade, please contact the responsible TCM-2 supplier or DEIF A/S (support@deif.com).



**The warranty from DEIF A/S will not be lost as a consequence of a software upgrade.**

## 2. Warnings and legal information

This chapter includes important information about general legal issues relevant in the handling of DEIF products. Furthermore, some overall safety precautions will be introduced and recommended.

### Legal information and responsibility

DEIF takes no responsibility for installation or operation of the TCM-2. If there is any doubt about how to install or operate the product, the company responsible for the installation or the operation of the set must be contacted. Please refer to the Designer's Reference Handbook on [www.deif.com](http://www.deif.com).

**The units are not to be opened by unauthorised personnel. If opened anyway, the warranty will be lost.**

### Electrostatic discharge awareness

Sufficient care must be taken to protect the terminals against static discharges during the installation. Once the unit is installed and connected, these precautions are no longer necessary.

### Safety issues

Installing the unit implies work with dangerous currents and voltages. Therefore, the installation should only be carried out by authorised personnel who understand the risks involved in working with live electrical equipment.



**Be aware of the hazardous live currents and voltages. Do not touch any AC measurement inputs as this could lead to injury or death.**

### Definitions

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

#### Notes



**The notes provide general information which will be helpful for the reader to bear in mind.**

#### Warnings



**The warnings indicate a potentially dangerous situation which could result in death, personal injury or damaged equipment if certain guidelines are not followed.**

### 3. How to install the TCM-2 Utility Software

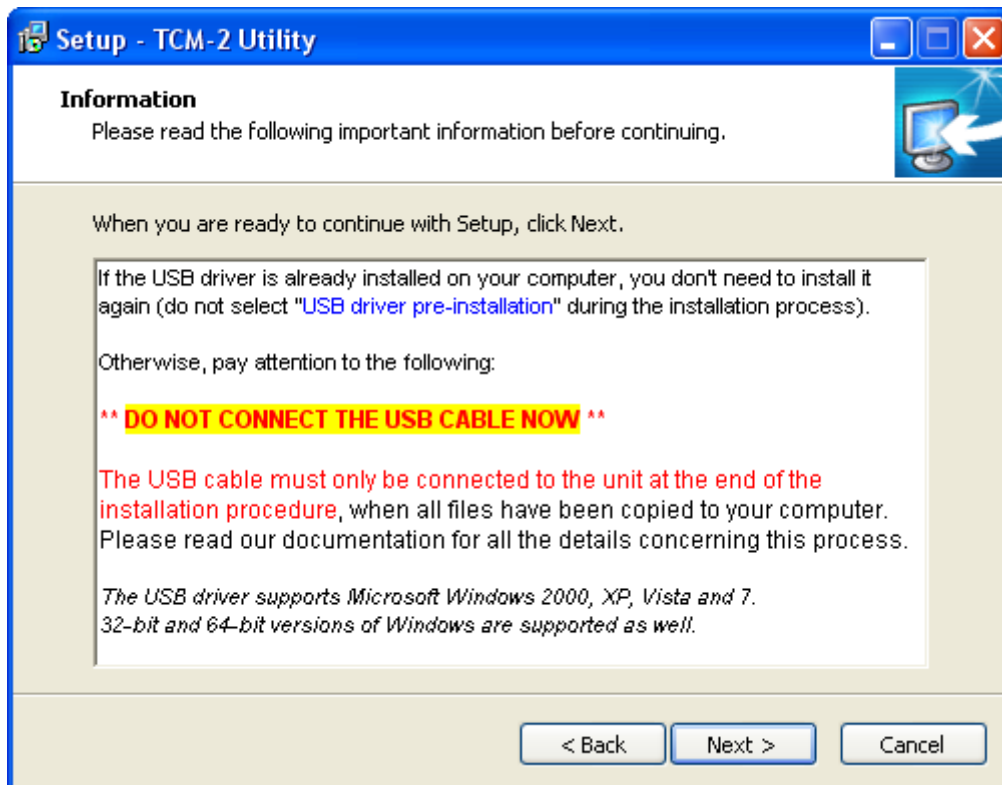
**IMPORTANT!**  
If the TCM-2 is connected with the USB cable, then disconnect now!

#### Install

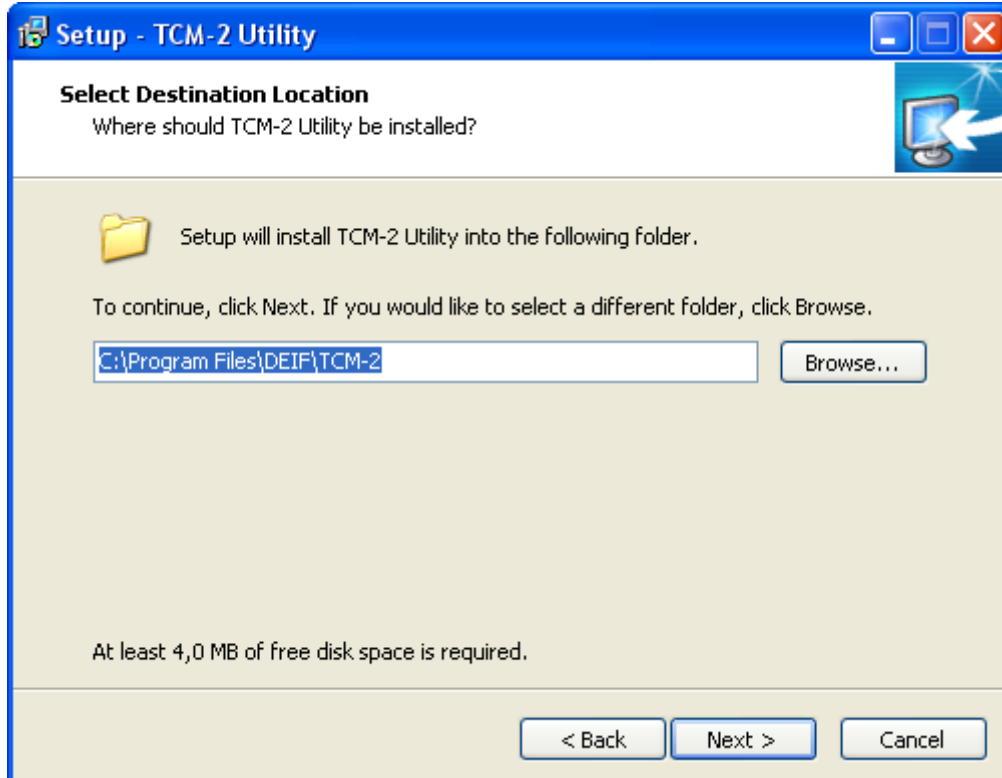
Run the "Setup\_TCM-2\_Utility\_x.x.x.x.exe"

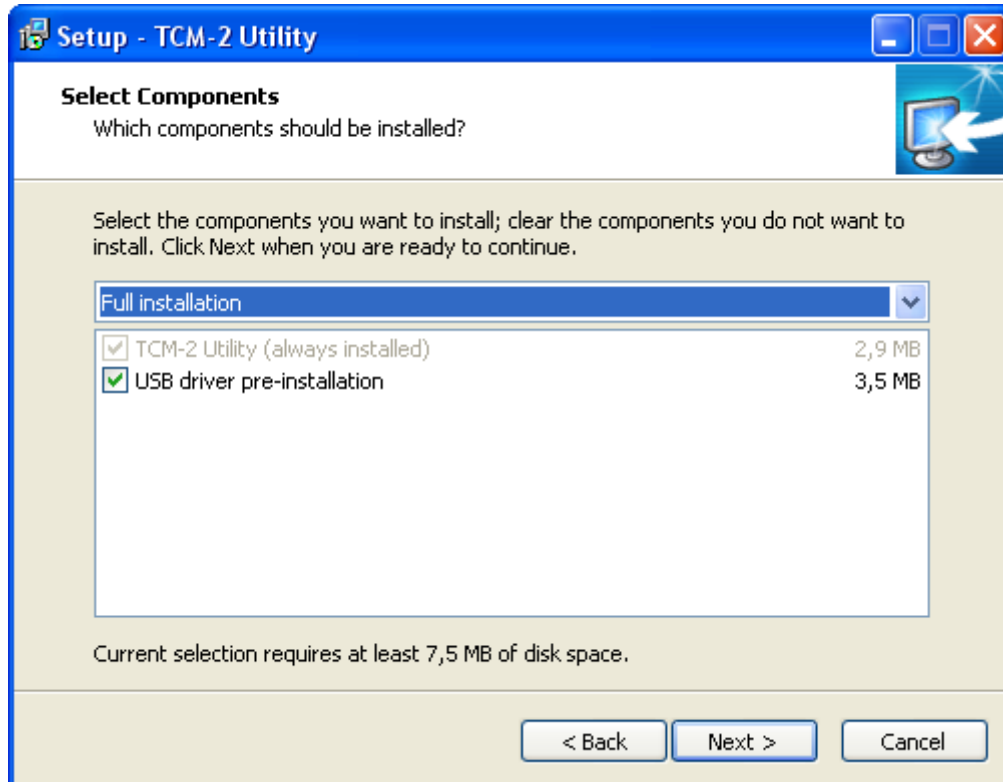


Disconnect the USB-cable if not already done!  
Click next, when ready.



#### Select location

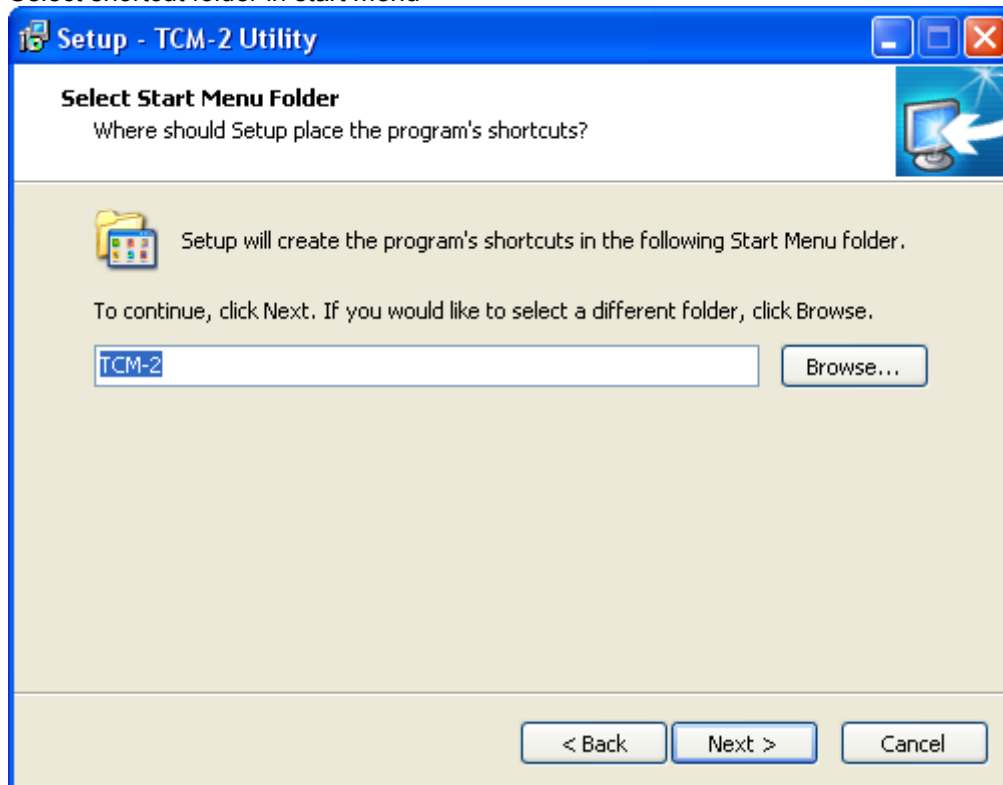


**Select the applications to install**

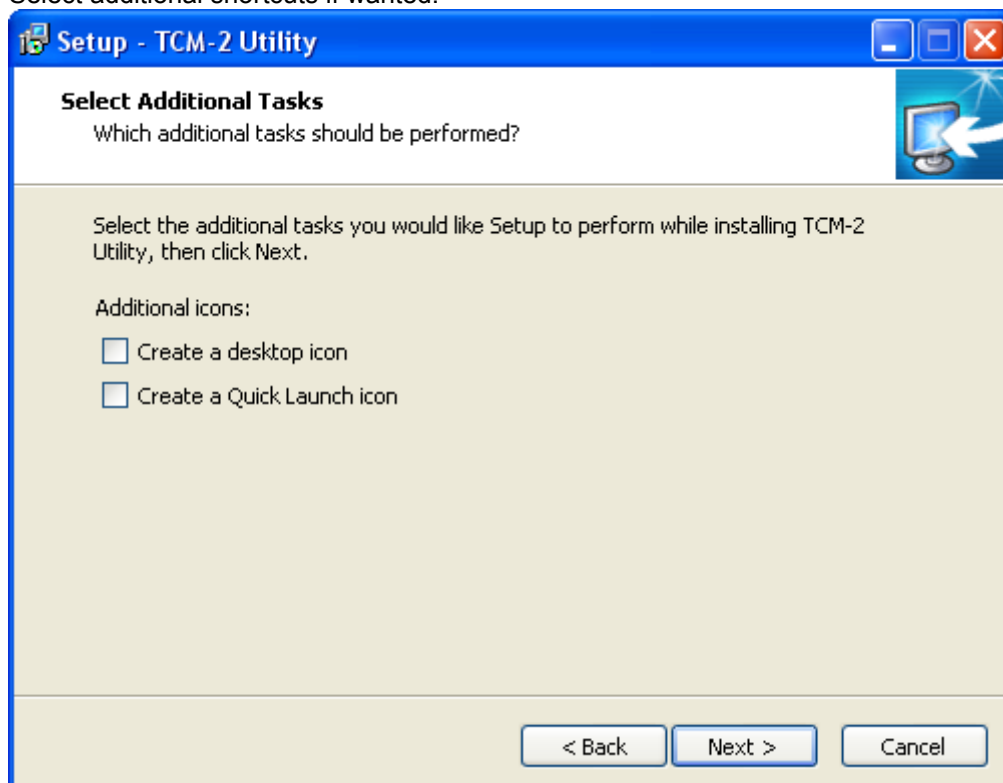
For the first installation, always select USB driver pre-installation. The driver will finally install when the TCM-2 is connected by the USB cable.

**Select shortcuts**

Select shortcut folder in start menu

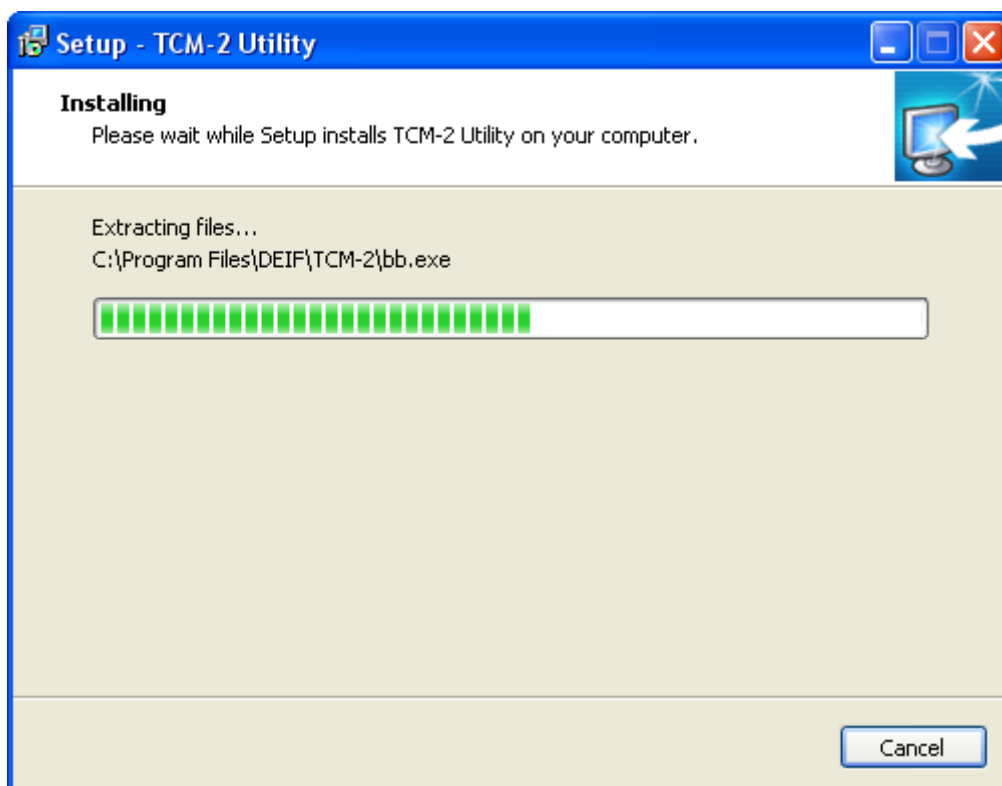
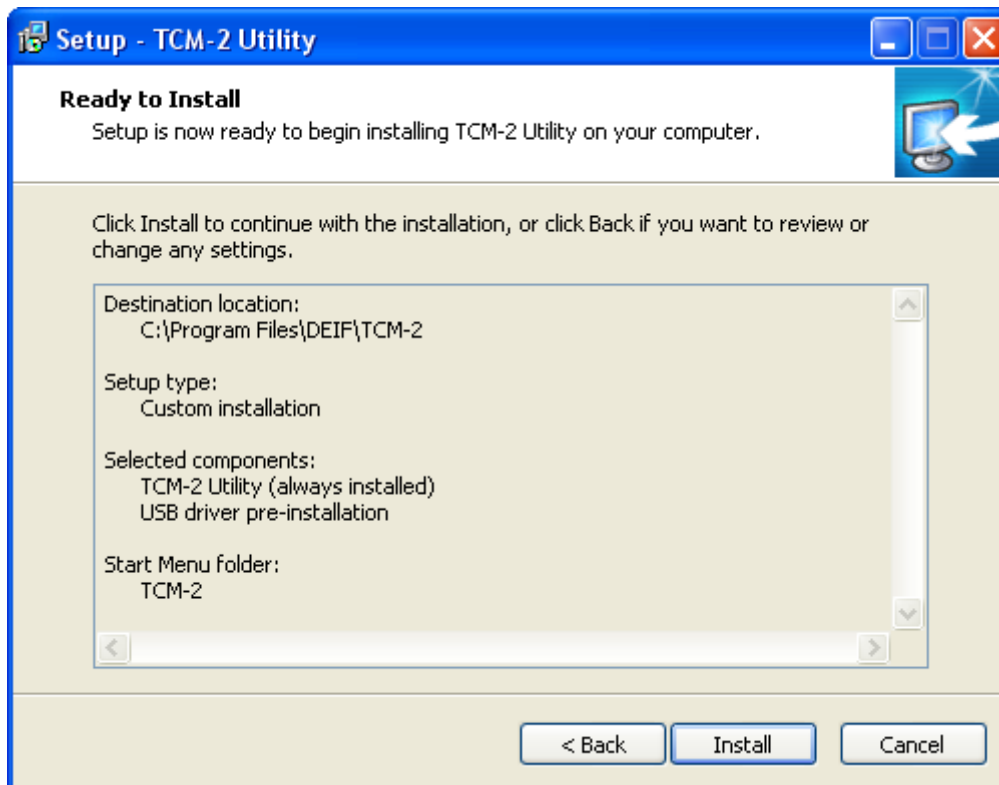


Select additional shortcuts if wanted.



### Verify and start installation

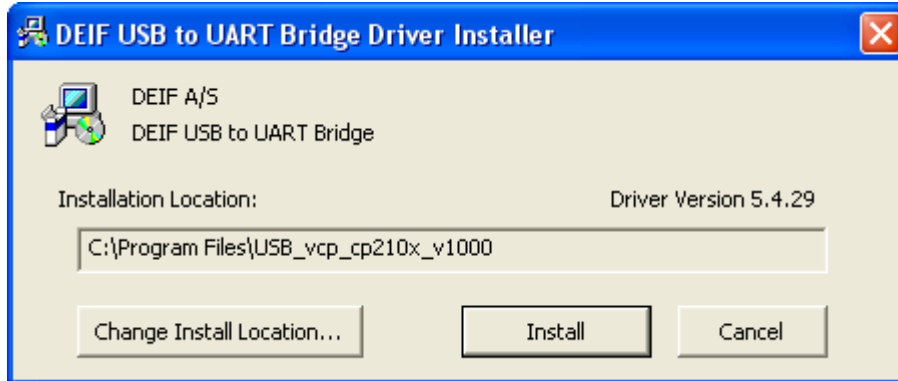
Verify installation setup, and click "Install" when ok.



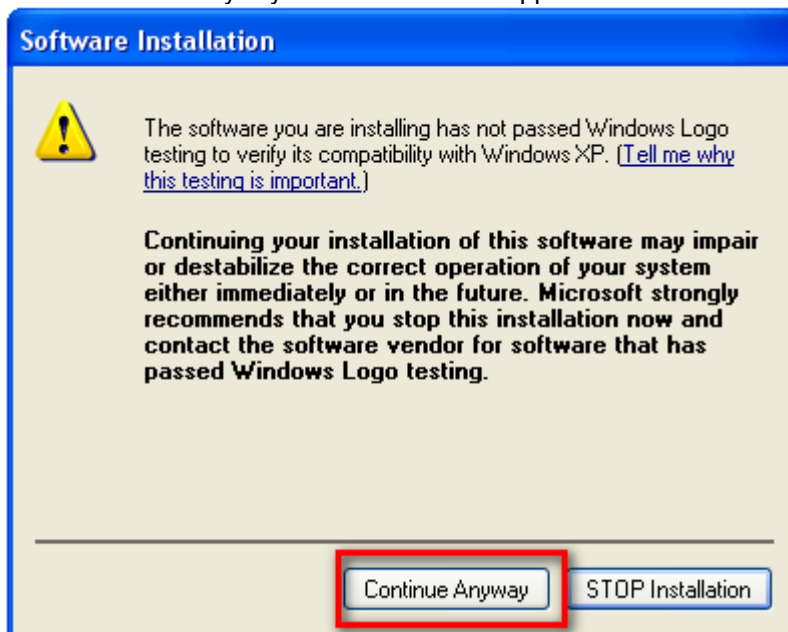
## USB-Driver installation

This chapter is only relevant if the USB-driver is selected to be installed. Otherwise skip this chapter.

Press install

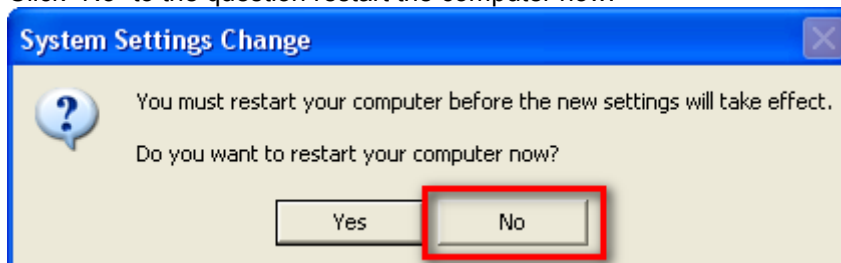


Click "Continue Anyway" when this screen appears.



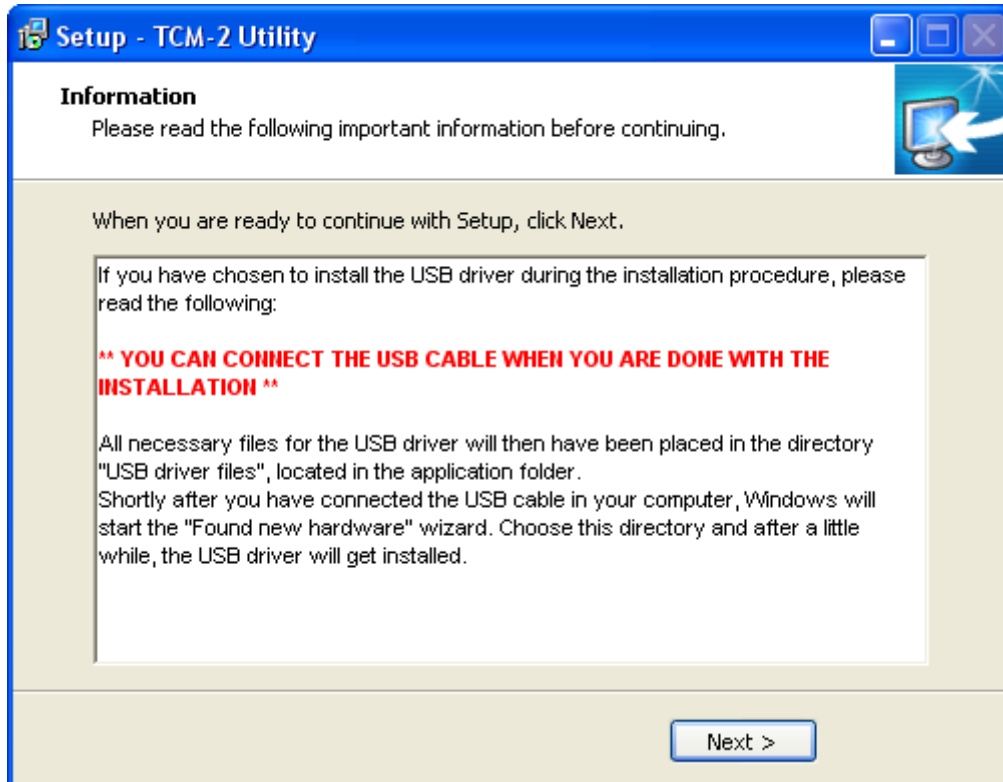
Wait restarting the computer until install wizard is completed.

Click "No" to the question restart the computer now.

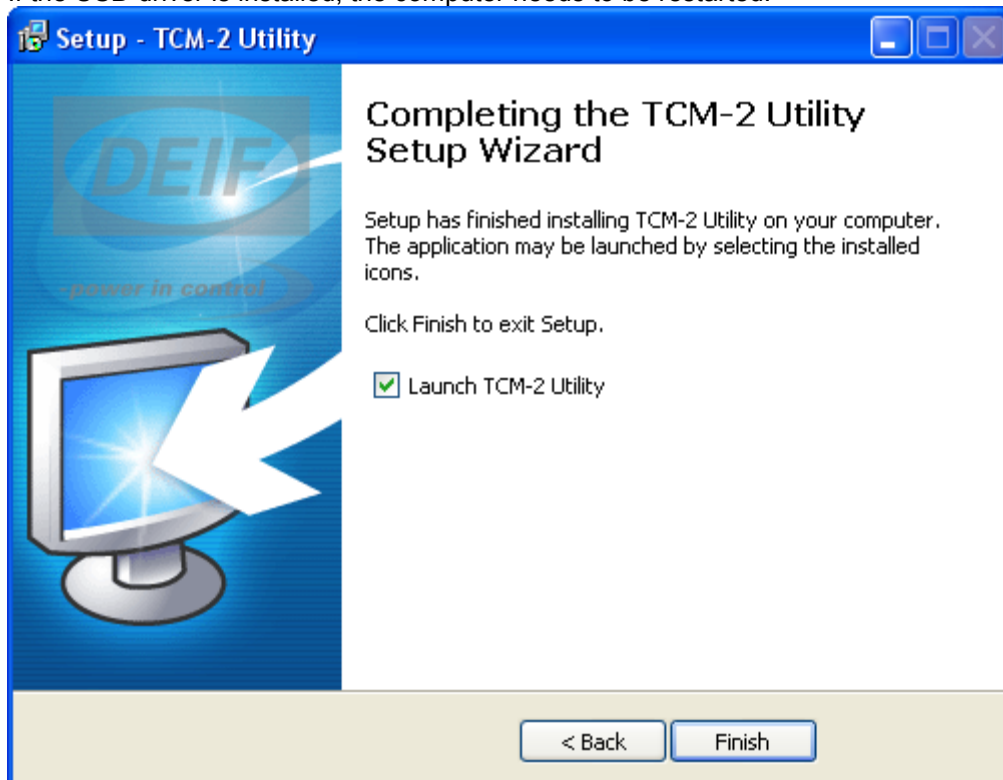


### Complete installation wizard

The USB-driver must be installed at this time!



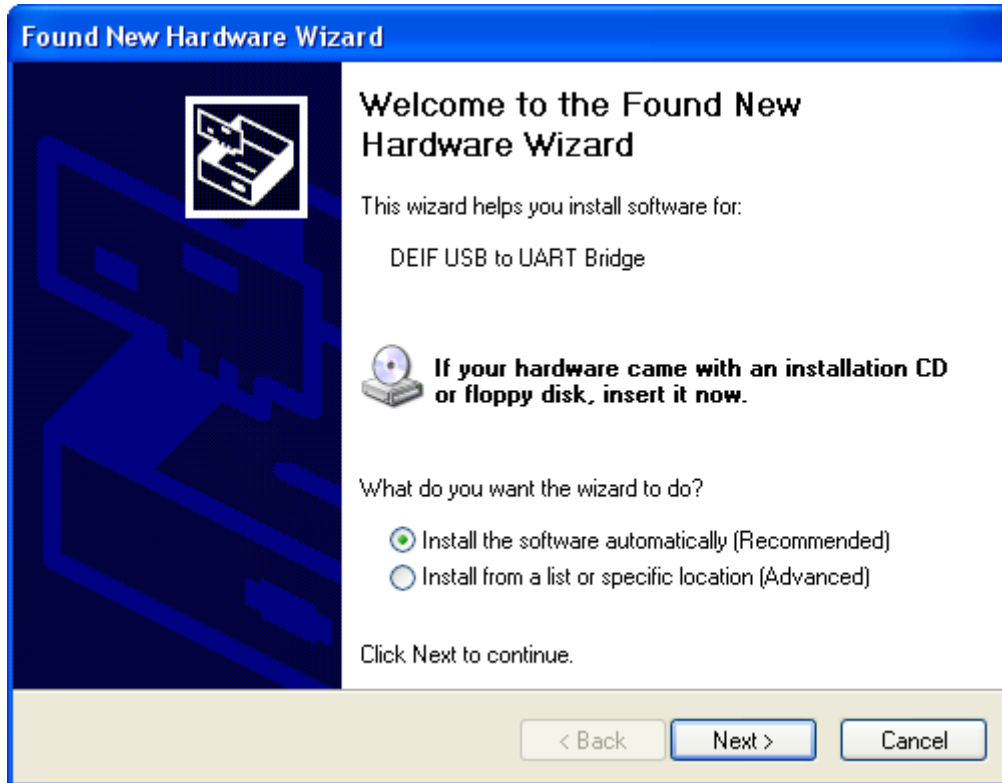
The installation is now complete. Select if you want to start the Utility Software.  
If the USB-driver is installed, the computer needs to be restarted.



### Connect to TCM-2 – first time

This step is only relevant the first time you connect the TCM-2 using the USB-cable.

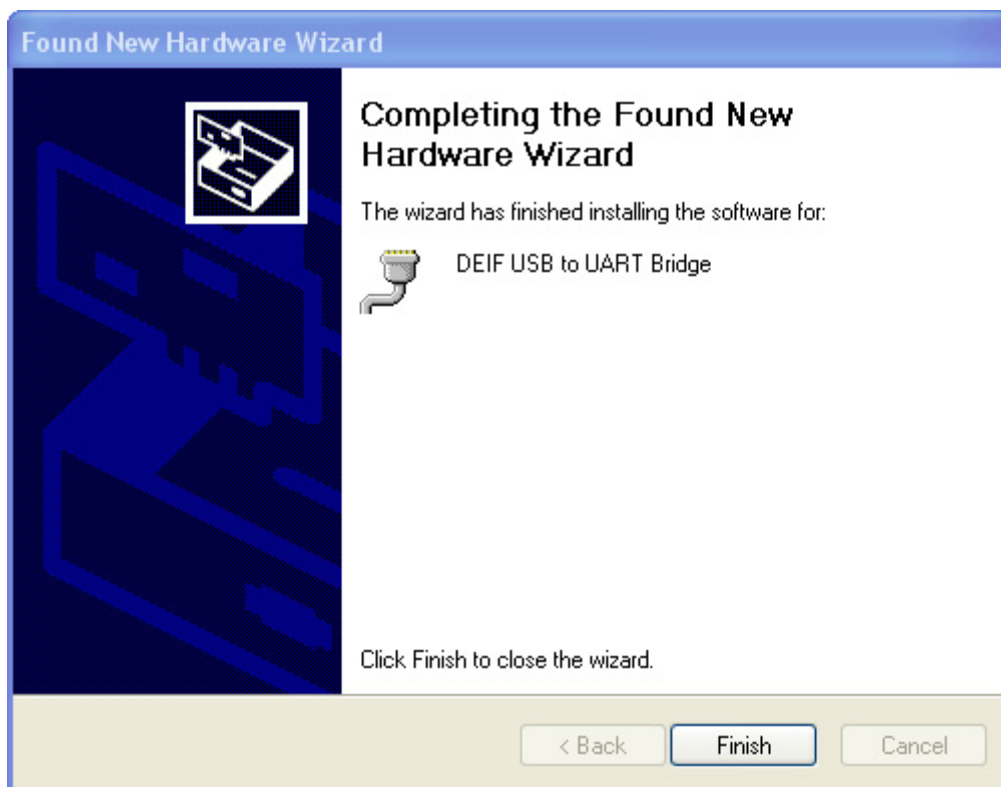
- Make sure the computer restarted after installation.
- Connect the USB-cable to TCM-2
- Follow the Found New Hardware Wizard below:



After searching a while, the following will appear:  
Select "Continue Anyway".



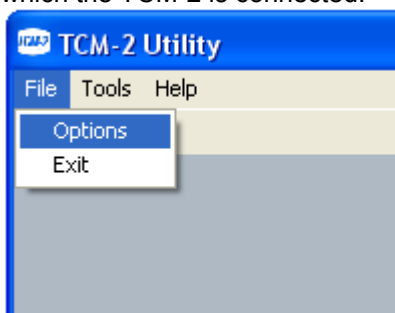
## Complete installation



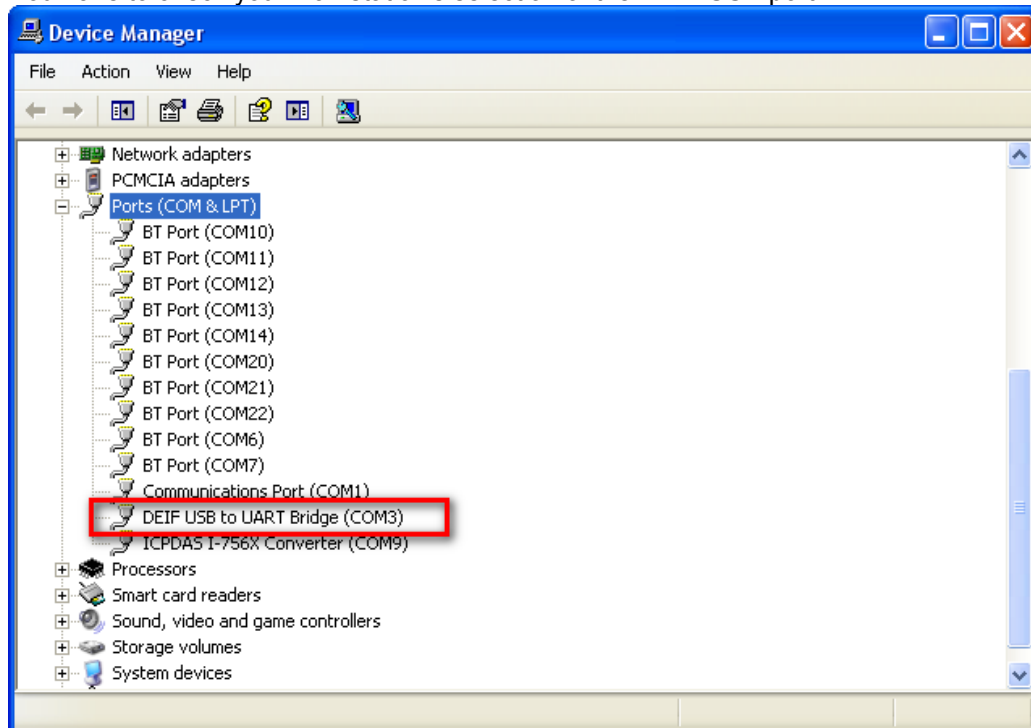
## Setup USB connection

Start the TCM-2 utility software.

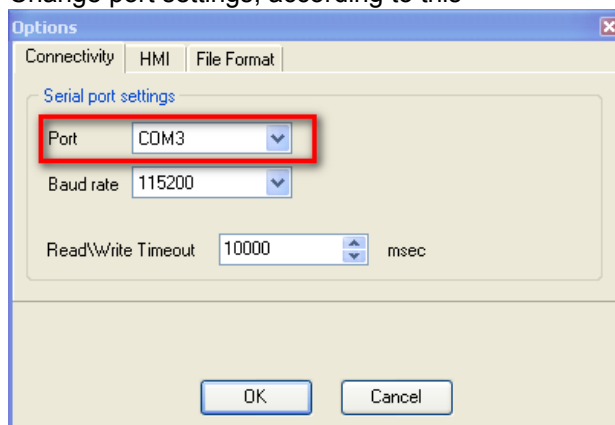
Go to the "File" menu and select "Options", and select the USB COM port on the workstation to which the TCM-2 is connected.



You have to check your workstation's selection of the DEIF USB port:



Change port settings, according to this

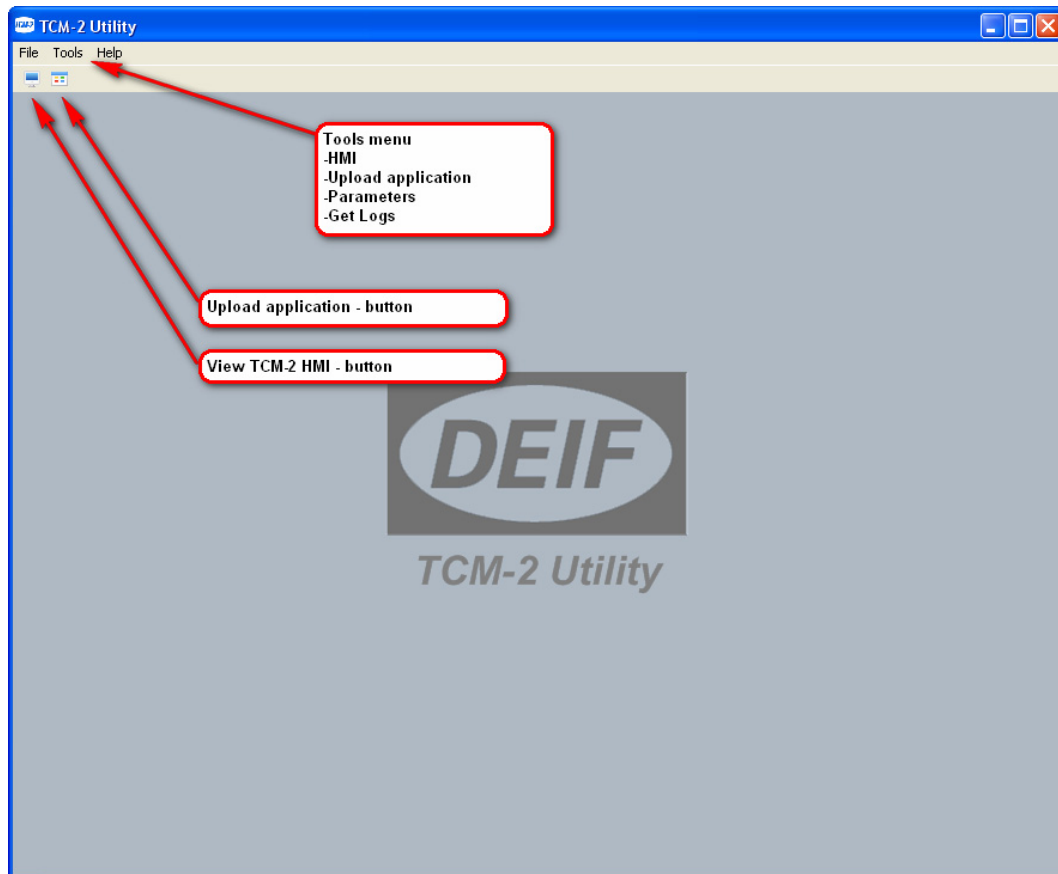


## 4. Users Guide

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The TCM-2 utility software is used with the TCM-2 module to operate the user interface and manage parameters and internal loggings for debugging and optimising the performance.

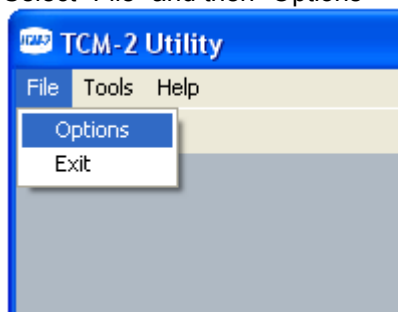
### Overview



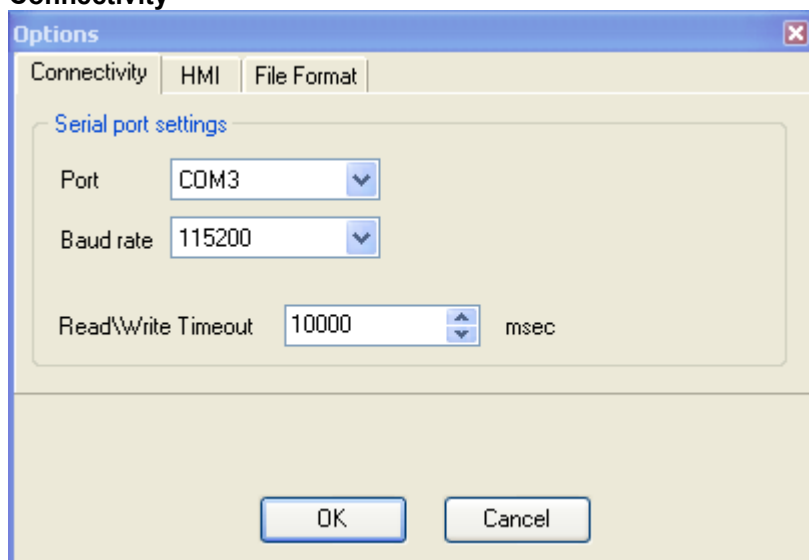
### File – option menu

Adjusting different settings as communication parameters and various settings is done through the Options menu. The different options are described here in details.

Select “File” and then “Options”

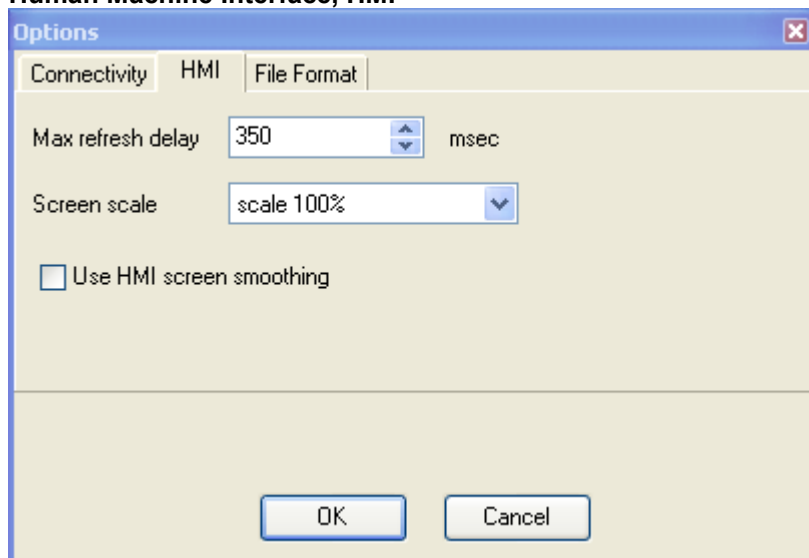


### Connectivity



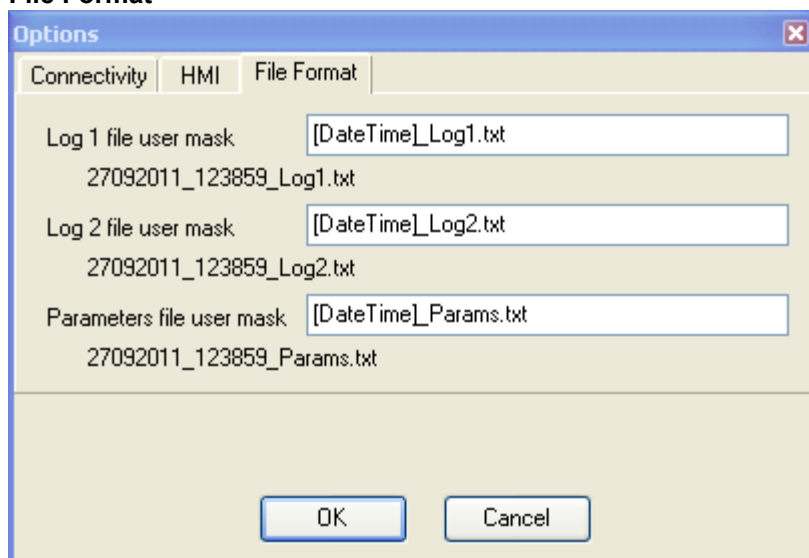
Port:	Actual Comport Used. See “Setup USB connection” for details on how to find comport
Baud rate	Only Baud rate 115200 is supported.
Read/write timeout	The timeout is used for compensate the serial port communication speed in different environments.  Default value are 10000 [msec]

## Human Machine Interface, HMI



Max refresh delay	Refresh rate for the graphical interface
Screen scale	Used for adjusting the graphical user interface.
Use HMI screen smoothing	Use windows smoothing option.

## File Format




Possible to adjust default suggested file names on log and parameter files.

**[DateTime]** gets the time from the PC.

**\_Logx.txt** is default text for the file name but can be adjusted during the save operation.

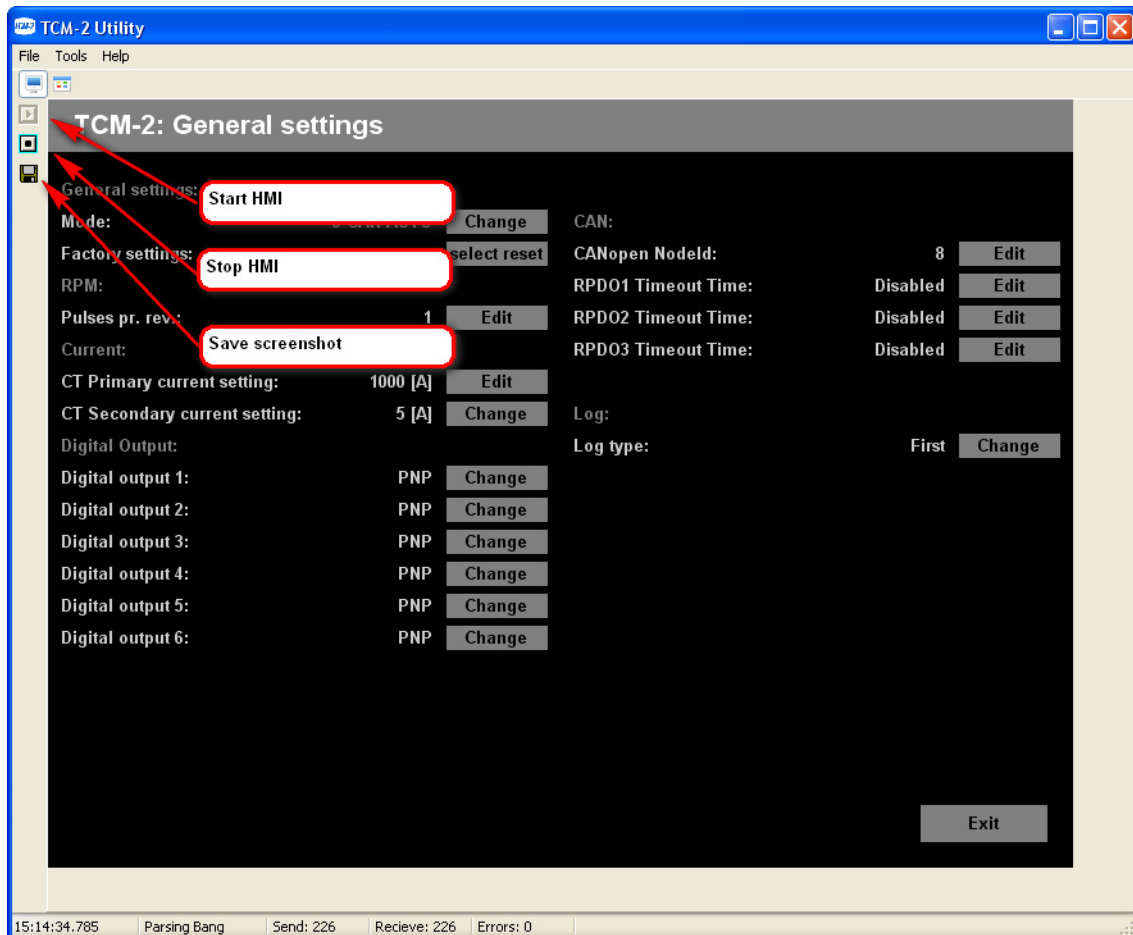
## Tools menu

### HMI

HMI can be selected from button  or “tools menu”.

If you choose the buttons, there are following opportunities:

- Start HMI communication
- Stop HMI communication – notice that the screen is kept, but not updated.
- Save screenshot



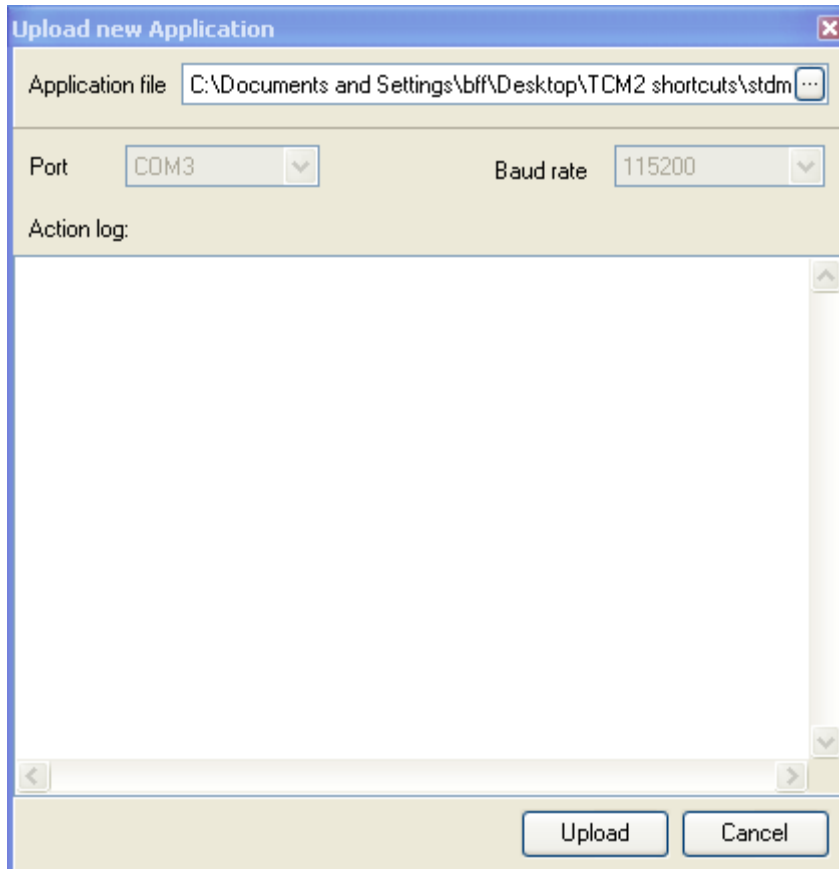
**IMPORTANT NOTE:** The HMI should be stopped when using other tools, since they are sharing USB-connection.

**Upload software**

Make sure the HMI communication is stopped.

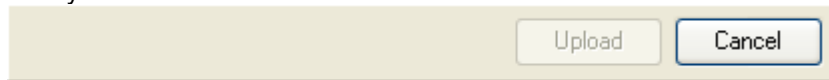
Can be selected from button  or from "tools menu".

- Select TCM-2 application file \*.a79
- Press upload button.

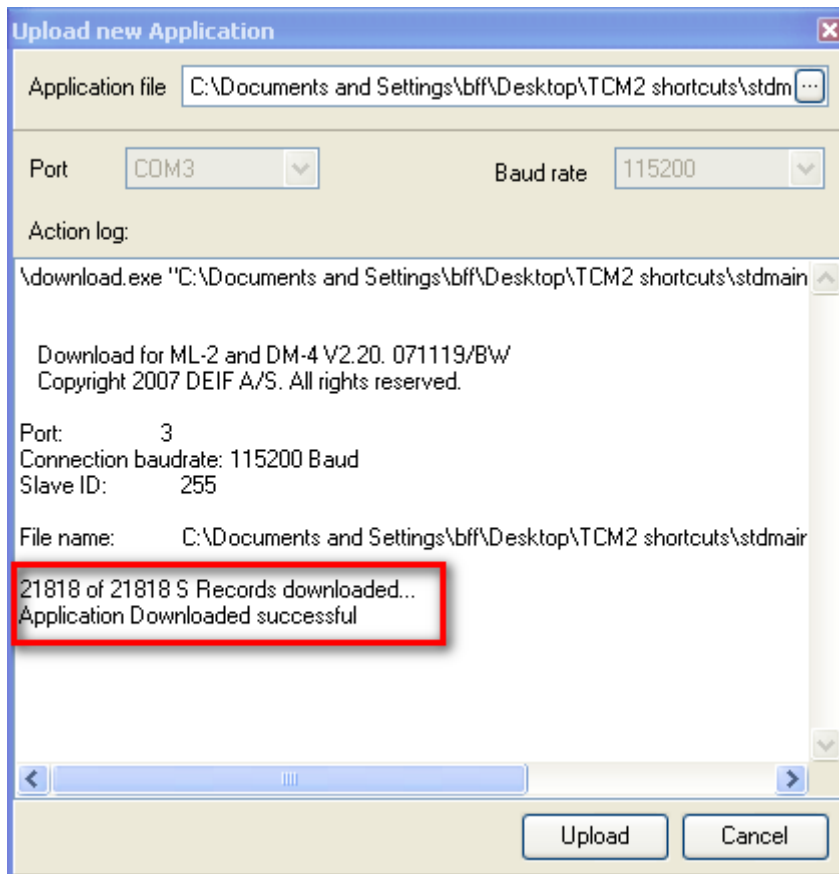


**Upload in progress**

While uploading, the upload button will appear faded out, and text window will be updated, but slowly.

**Upload complete**

When upload completed, it will be displayed in text window.



The TCM-2 application software is now updated and stored and will automatically do a reboot sequence.

The Cancel button will now just close this window and TCM-2 will remain updated!

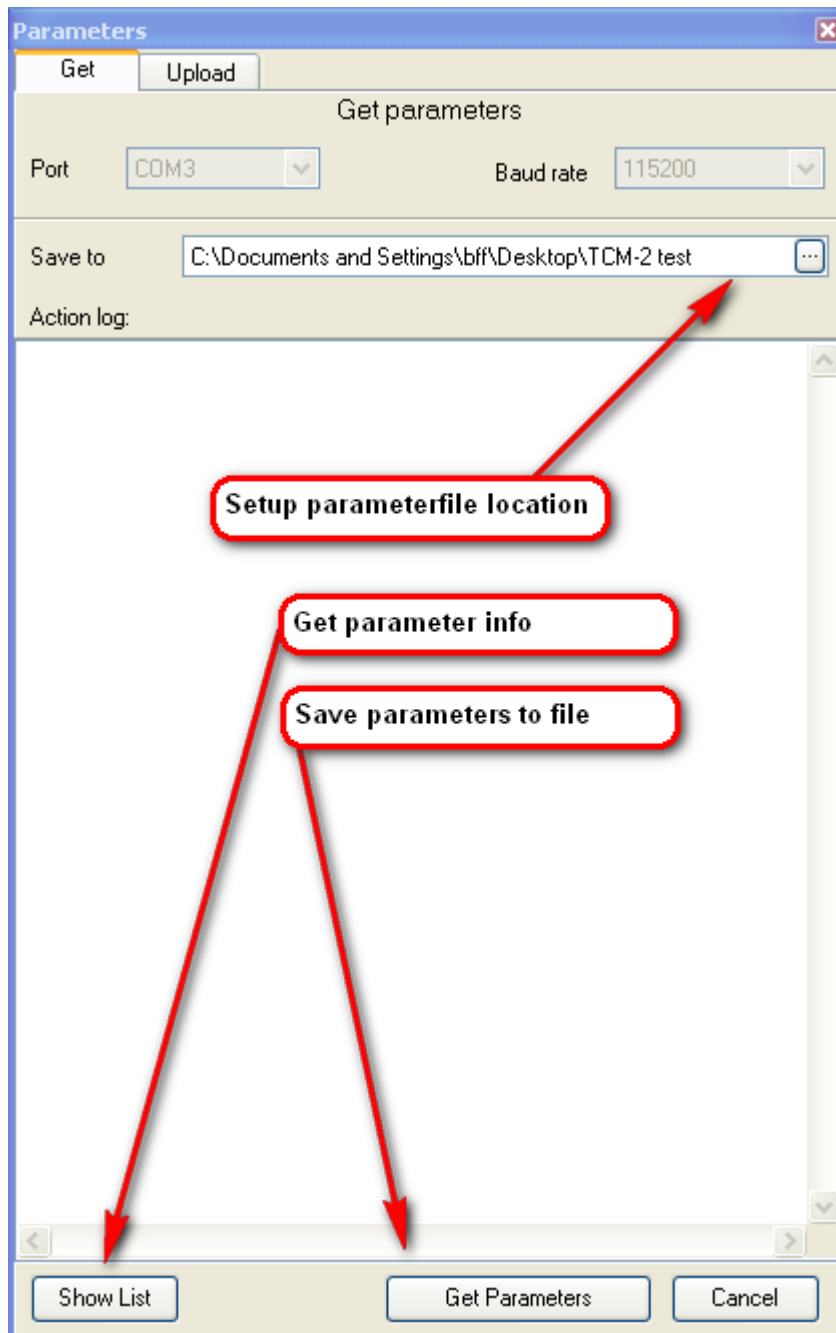
## Parameters

Make sure the HMI communication is stopped!

Get parameters

There are 3 opportunities, as displayed below.

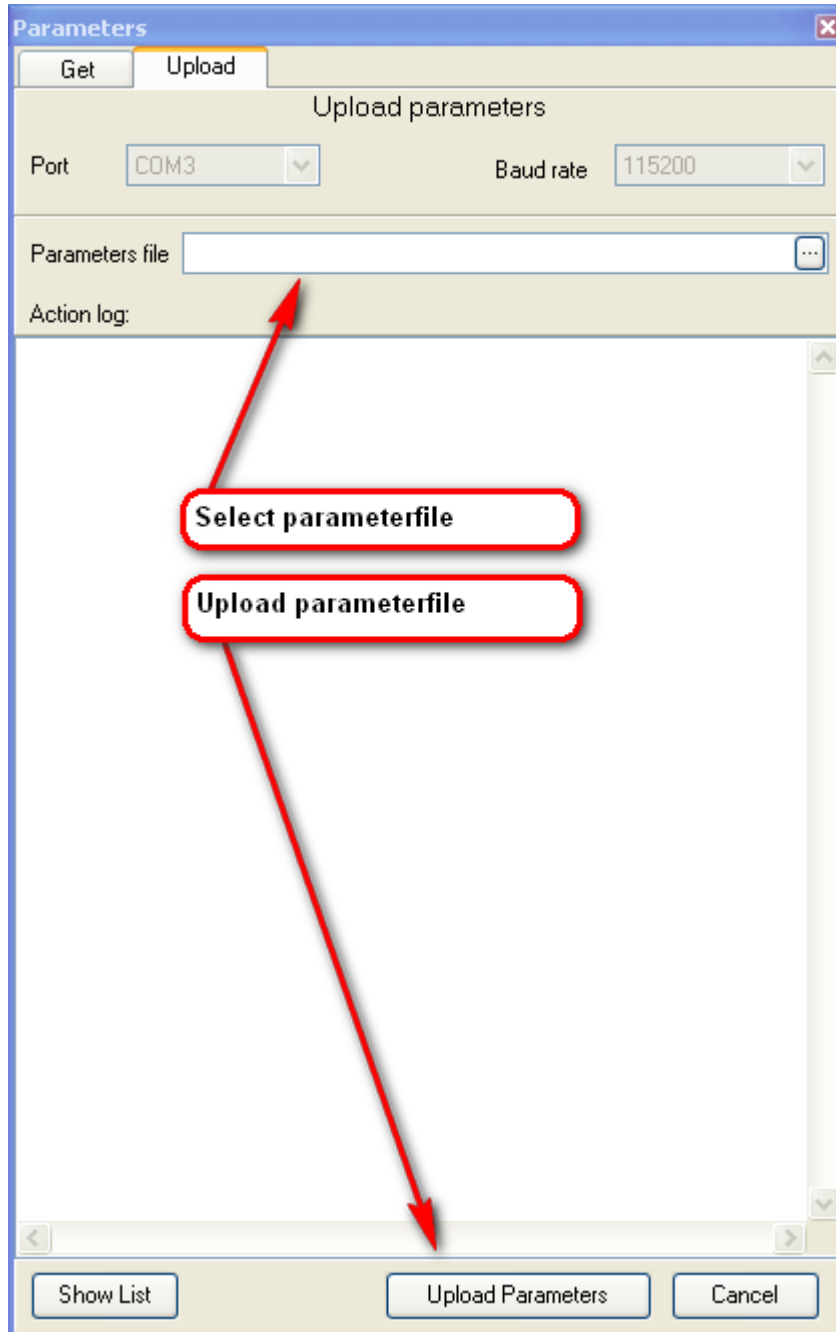
- **Setup parameter** file location
- **Get Parameters** – save parameters to text file which at a later stage can be downloaded.
- **Show list** - get parameter file info and view parameter list with description, min., max., default values



## Upload parameters

The upload procedure consists of two steps:

- Select parameter file through normal Windows browser location
- **Upload parameters** will initiate the parameter upload to the TCM-2



## Logs

The logs in the TCM-2 consist of two buffers that are running one at the time. When a triggering event such as a cut-in sequence or motor start is initiated, the log will be saved to the working memory.

The logs are saved as text files and can be imported to Excel or other 3<sup>rd</sup> party programmes to analyse ignition angles, generator speed and other measurements.

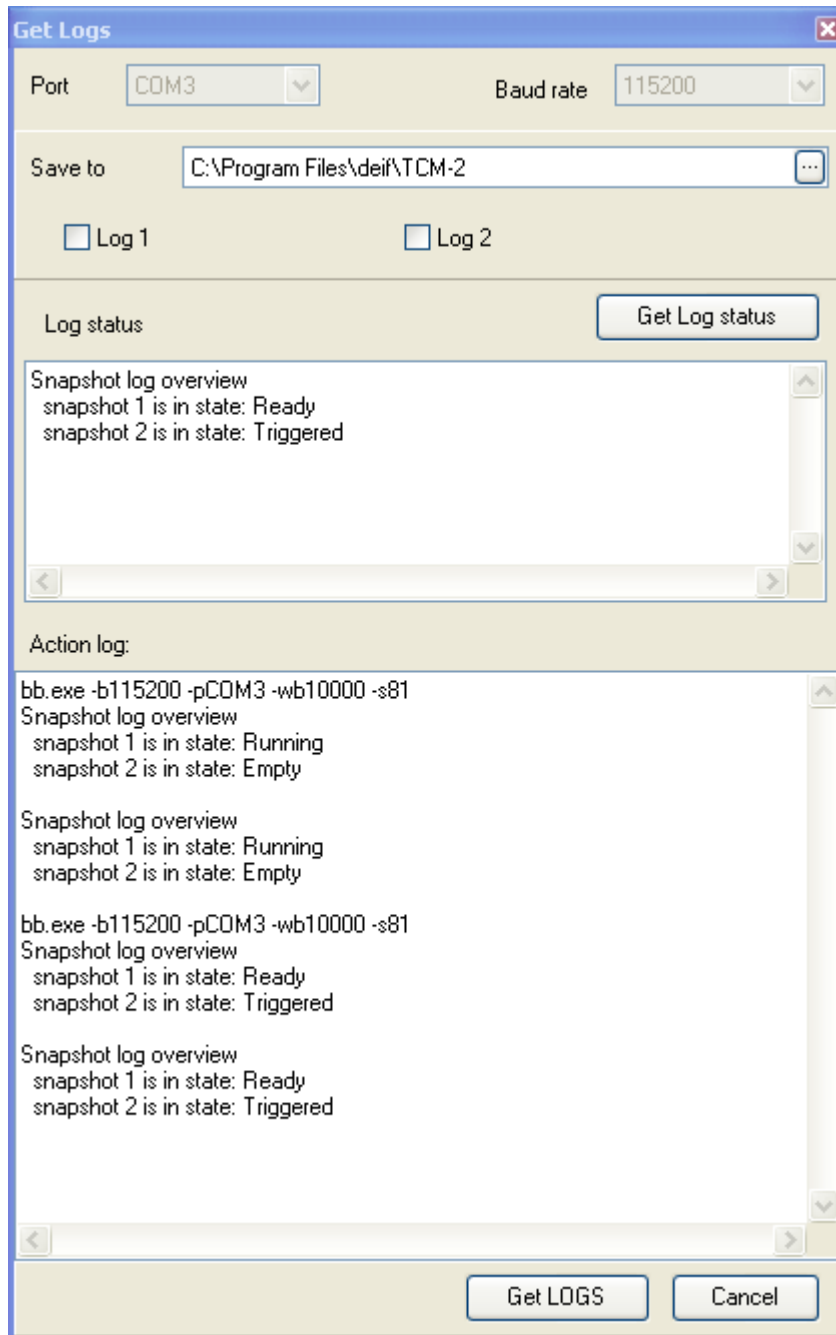
Note: the logs will be lost in case of a power on/off sequence.

Before get logs, make sure that the HMI is stopped.

## Overview

This window consists of three issues:

- **Save to** - Settings regarding log files wanted to receive.
- **Log status** window– showing if there are any log ready to be received.
- **Action log** window - reflecting actions in this window.



## Receiving logs

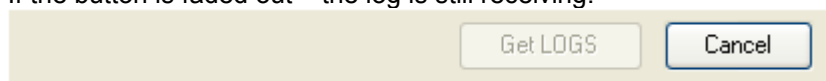
### Important notes:

- When you have got the log once, it is automatically cleared in the TCM-2.
- Logs can only be received when in state “ready”, see log states below.

### Reading the log:

- Set up directory where you want to save to
- In check boxes, click the log you want to receive.
- Press the **“Get Log Status”** button to check if logs are ready.  
Only logs in ready state are possible to receive, otherwise the log will be empty.
- Press the **“Get LOGS”** button.

Be patient, because it could take a while when downloading logs.  
If the button is faded out – the log is still receiving:



- Select filename and placement for the first log file.  
If more than one log file is selected, the next log will be received, and this point repeated.

### Log status and description

Using the button **“Get Log Status”**, the status of the log is refreshed.  
The log can only be received in state: “ready”.

The log consists of 10% historical data before the triggering event and 90% of data after. This is done to secure that it is possible to view the situation just before and after a cut-in sequence. The time interval of the log is 10 ms between each log line.

The log could be in the following states:

<b>Empty</b>	Log in TCM-2 contains no data.
<b>First run</b>	The log is starting to fill data into the buffer, but is not triggered yet.
<b>Running</b>	The log is running and ready to be triggered and saved to memory.
<b>Triggered</b>	The log is triggered and now saving data after the triggering event.
<b>Ready</b>	The log is now filled, and ready to be received. It is only possible to receive the log, when entering this state.

DEIF A/S reserves the right to change any of the above.