Thyristor Control Module, TCM-2

- Installation instructions
- User guide
Table of contents

1. ABOUT THIS DOCUMENT .................................................................................................... 3
   GENERAL PURPOSE .............................................................................................................. 3
   HELP .................................................................................................................................... 3

2. WARNINGS AND LEGAL INFORMATION ......................................................................... 4
   LEGAL INFORMATION AND RESPONSIBILITY .................................................................... 4
   ELECTROSTATIC DISCHARGE AWARENESS ......................................................................... 4
   SAFETY ISSUES .................................................................................................................. 4
   DEFINITIONS ....................................................................................................................... 4

3. HOW TO INSTALL THE TCM-2 UTILITY SOFTWARE .................................................... 5
   INSTALL ............................................................................................................................... 5
   USB-DRIVER INSTALLATION .............................................................................................. 10
   COMPLETE INSTALLATION WIZARD ................................................................................ 11
   CONNECT TO TCM-2 – FIRST TIME .................................................................................. 12

4. USERS GUIDE .................................................................................................................. 15
   OVERVIEW .......................................................................................................................... 15
   FILE – OPTION MENU ........................................................................................................ 16
   TOOLS MENU ...................................................................................................................... 18
1. About this document

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.

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"

![Setup - TCM-2 Utility](image)

**Welcome to the TCM-2 Utility Setup Wizard**

This will install TCM-2 Utility version 2.0.0 on your computer.

It is recommended that you close all other applications before continuing.

Click Next to continue, or Cancel to exit Setup.
Disconnect the USB-cable if not already done!
Click next, when ready.

**DO NOT CONNECT THE USB CABLE NOW**

The USB cable must only be connected to the unit at the end of the installation procedure, when all files have been copied to your computer. Please read our documentation for all the details concerning this process.

The USB driver supports Microsoft Windows 2000, XP, Vista and 7. 32-bit and 64-bit versions of Windows are supported as well.

Select location

Setup will install TCM-2 Utility into the following folder.

To continue, click Next. If you would like to select a different folder, click Browse.

At least 4.0 MB of free disk space is required.
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

Setup will create the program's shortcuts in the following Start Menu folder.

To continue, click Next. If you would like to select a different folder, click Browse.

Select additional shortcuts if wanted.

Select Additional Tasks
Which additional tasks should be performed?

Select the additional tasks you would like Setup to perform while installing TCM-2 Utility, then click Next.

Additional icons:
- Create a desktop icon
- Create a Quick Launch icon
Verify and start installation

Verify installation setup, and click “Install” when ok.

![Setup - TCM-2 Utility]

**Ready to Install**

Setup is now ready to begin installing TCM-2 Utility on your computer.

Click Install to continue with the installation, or click Back if you want to review or change any settings.

- **Destination location:** C:\Program Files\DEIF\TCM-2
- **Setup type:** Custom installation
- **Selected components:**
  - TCM-2 Utility (always installed)
  - USB driver pre-installation
- **Start Menu folder:** TCM-2

![Setup - TCM-2 Utility]

**Installing**

Please wait while Setup installs TCM-2 Utility on your computer.

Extracting files...

C:\Program Files\DEIF\TCM-2\bb.exe

[Progress bar]

[Cancel button]
USB-Driver installation

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

Press install

![DEIF USB to UART Bridge Driver Installer]

Installation Location: C:\Program Files\USB_vcp_sp210c_v1.0.0

Click "Install" button.

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

![Software Installation]

The software you are installing has not passed Windows Logo testing to verify its compatibility with Windows XP. [Tell me why this testing is important]

Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the software vendor for software that has passed Windows Logo testing.

Click "Continue Anyway" button.

Wait restarting the computer until install wizard is completed. Click "No" to the question restart the computer now.

![System Settings Change]

You must restart your computer before the new settings will take effect.

Do you want to restart your computer now?

Click "No" button.
Complete installation wizard

The USB-driver must be installed at this time!

**Information**
Please read the following important information before continuing.

When you are ready to continue with Setup, click Next.

If you have chosen to install the USB driver during the installation procedure, please read the following:

**YOU CAN CONNECT THE USB CABLE WHEN YOU ARE DONE WITH THE INSTALLATION**

All necessary files for the USB driver will then have been placed in the directory "USB driver files", located in the application folder.

Shortly after you have connected the USB cable in your computer, Windows will start the "Found new hardware" wizard. Choose this directory and after a little while, the USB driver will get installed.

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.

Completing the TCM-2 Utility Setup Wizard

Setup has finished installing TCM-2 Utility on your computer. The application may be launched by selecting the installed icons.

Click Finish to exit Setup.

- [ ] Launch TCM-2 Utility
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:

![Found New Hardware Wizard]

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

![Hardware Installation]

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

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

<table>
<thead>
<tr>
<th>Serial port settings</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Port</td>
<td>COM3</td>
<td></td>
</tr>
<tr>
<td>Baud rate</td>
<td>115200</td>
<td></td>
</tr>
<tr>
<td>Read/Write Timeout</td>
<td>10000</td>
<td>msec</td>
</tr>
</tbody>
</table>

| Port:                  | Actual Comport Used. |
|                       | See “Setup USB connection” for details on how to find comport |
| Baud rate             | Only Baud rate115200 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

Log 1 file user mask: [DateTime]_Log1.txt
- 27032011_123859_Log1.txt

Log 2 file user mask: [DateTime]_Log2.txt
- 27032011_123859_Log2.txt

Parameters file user mask: [DateTime]_Params.txt
- 27032011_123859_Params.txt

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 3rd 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:

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

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