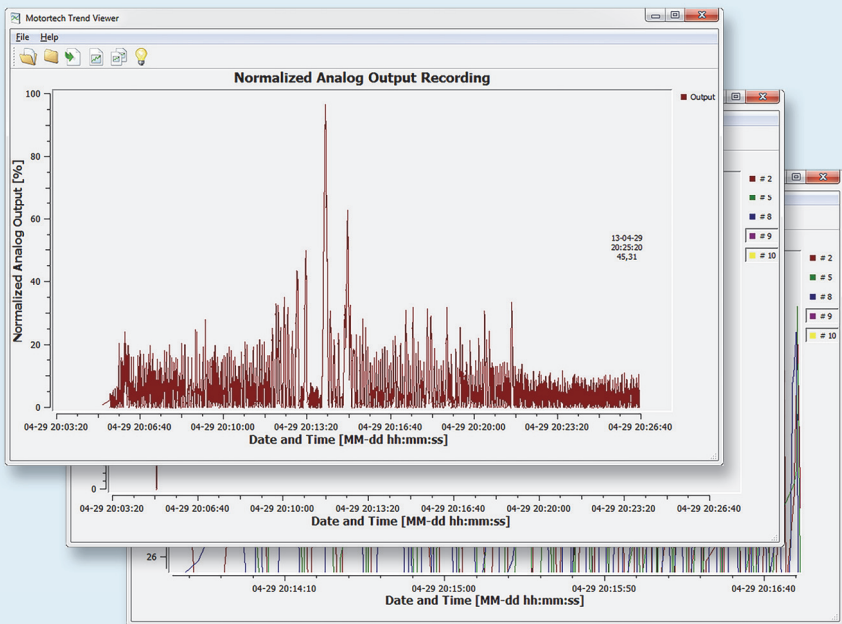


# MOTORTECH TREND VIEWER – VISUALIZATION SOFTWARE

## OPERATING MANUAL



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# 1 GENERAL INFORMATION

Read through this operating manual carefully before use and become familiar with the product. Installation and start-up should not be carried out before reading and understanding this document. Keep this manual readily available so that you can reference it as needed.

## 1.1 What Is the Purpose of this Operating Manual?

This manual serves as an aid for the installation and operation of the product and supports the technical staff with all operating and maintenance tasks to be performed. Furthermore, this manual is aimed at preventing dangers to life and health of the user and third parties.

## 1.2 Who Is this Operating Manual Targeted to?

The operating manual provides a code of conduct for personnel tasked with the set-up, operation, maintenance, and repair of gas engines. A certain level of technical knowledge with respect to the operation of gas engines and basic knowledge of electronic ignition systems are necessary. Persons who are only authorized to operate the gas engine shall be trained by the operating company and shall be expressly instructed concerning potential hazards.

### 1.3 Which Symbols Are Used in the Operating Manual?

The following symbols are used in this manual and must be observed:



#### **Example**

This symbol indicates examples, which point out necessary handling steps and techniques. In addition, you receive additional information from the examples, which will increase your knowledge.



#### **Notice**

This symbol indicates important notices for the user. Follow these. In addition, this symbol is used for overviews that give you a summary of the necessary work steps.



#### **Warning**

This symbol indicates warnings for possible risks of property damage or risks to health. Read these warning notices carefully and take the mentioned precautionary measures.



#### **Danger**

This symbol indicates warnings for danger to life, especially due to high voltage. Read these warning notices carefully and take the mentioned precautionary measures.

## 2 INTENDED USE

### 2.1 Functional Description

The MOTORTECH Trend Viewer visualizes files with engine operating data that have been recorded with a PowerView3 HMI module from MOTORTECH. The visualized data can be exported as CSV and graphics files.

### 2.2 Application Range

The MOTORTECH Trend Viewer can open files with engine operating data that have been created by a PowerView3 HMI module from MOTORTECH.

Any use other than the one described in the operating manual shall be considered improper use and will result in the voiding of all warranties.

## 3 INSTALLATION

The MOTORTECH Trend Viewer runs on Windows XP and Windows 7.

The software for the installation of the MOTORTECH Trend Viewer is on the storage device included with the PowerView3.

How to install the MOTORTECH Trend Viewer:

1. Start the installation.
  - via the menu:  
Start the file *Start.exe* on the storage device. Start the installation routine for the MOTORTECH Trend Viewer via *Software -> MOTORTECH Trend Viewer -> Install MOTORTECH Trend Viewer*.
  - directly from the storage device:  
Start the installation routine for the MOTORTECH Trend Viewer directly from the storage device. It is located in subdirectory *Software\MOTORTECH\_Trend\_Viewer* on the storage device and has a name such as *MOTORTECH Trend Viewer X.X setup.exe*.
2. Run the installation.

Follow the instructions of the installation routine. Note that the license agreement terms must be accepted before using the MOTORTECH Trend Viewer.

  - ▶ You have installed the MOTORTECH Trend Viewer and can now work with files recorded by the PowerView3.

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### Do not change file names

Renamed recording and configuration files cannot be opened.

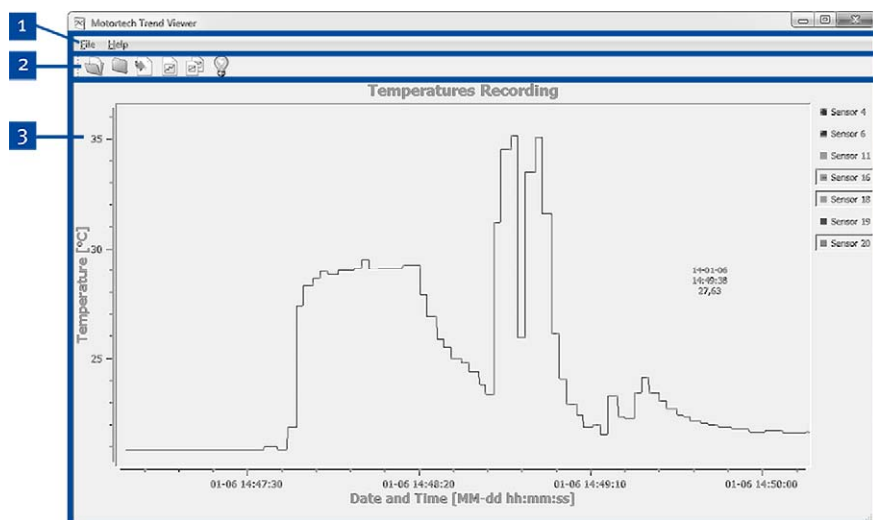


### Configuration file required

You cannot open a recording file (e. g. *temperatures.pv3*, *speed.pv3*, *analog\_output.pv3*) without the correct configuration file (*configuration.pv3*). To open a recording file, the respective configuration file must be in the same folder as the recording file.

## 4.1 User Interface

The user interface of the MOTORTECH Trend Viewer is divided into the following sections:











No.	Section
1	Menu bar
2	Toolbar
3	Main window

## 4.2 Menu Bar and Toolbar

The following functions are available to you via the symbols on the toolbar and the entries in the menu bar:

Symbol	Menu	Function
	<i>File -&gt; Open</i>	Open a recording file.
	<i>File -&gt; Close</i>	Close a recording file.
	<i>File -&gt; Export to CSV</i>	Create a CSV file.
	<i>File -&gt; Export Plot</i>	Create a graphics file.
	<i>Copy Plot to Clipboard</i>	Copy the recording to the buffer memory as a chart.
	<i>Help -&gt; Set Language</i>	Change the language of the user interface.
	<i>Help -&gt; Tips and Tricks...</i>	Open information about the use of the software.
	<i>Help -&gt; About</i>	Open information about the MOTORTECH Trend Viewer.

## 4.3 Opening Files

The MOTORTECH Trend Viewer can open files with the filename extension *pv3* that have been created with a PowerView3 on an SD card or a USB storage medium.

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### Recorded Files

Recorded files (e. g. *temperatures.pv3*, *speed.pv3*, *analog\_output.pv3*) contain trend data that were recorded by the PowerView3.

### Configuration Files

A configuration file (*configuration.pv3*) is automatically created with every recording file that the PowerView3 creates. It contains general information about the recording.

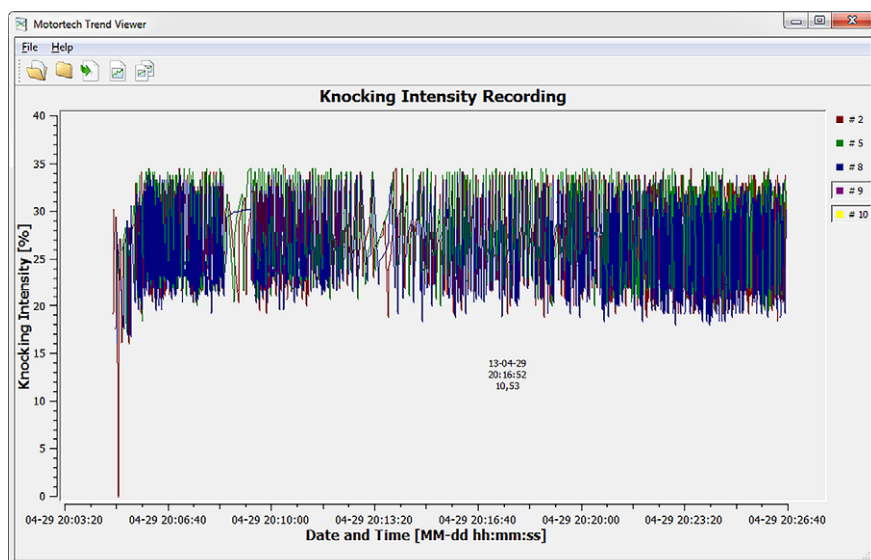
#### 4.3.1 Record files

The PowerView3 can record data from connected MOTORTECH devices (further information can be found in the PowerView3 operating manual). For a detailed analysis and further processing, open the recorded files (e. g. *temperatures.pv3*, *speed.pv3*, *analog\_output.pv3*) in the MOTORTECH Trend Viewer.



Click on the symbol to open a recorded PowerView3 file.

- ▶ The recording file opens in the main window of the MOTORTECH Trend Viewer.



- X-axis: Date and time (MM-DD hh:mm:ss)
- Y-axis: Measured unit and value (e. g. knocking intensity in percent, ignition angle in °crankshaft, temperature in °C or °F)

- Legend on the right side of the window: Assignment of the colors
- The mouse cursor appears as a cross in the MOTORTECH Trend Viewer. The time and value for the position of the cross are displayed next to it (YY-MM-DD hh:mm:ss).



#### **It is not possible to switch between °C and °F**

Temperatures are displayed either in °C or °F. The unit of temperature depends on how the PowerView3 was configured during the recording. It is not possible to switch in MOTORTECH Trend Viewer.

You have the following options:

#### **Enlarging a Section**

Holding down the left mouse button, drag a rectangle across the part of the display to be enlarged. You can repeat this step several times until the desired level of magnification has been reached.

A right click returns you to the starting view.

#### **Moving a Section**

Hold down the *Ctrl* key and left click, and move the view to the desired position with the mouse.

#### **Displaying and Hiding Graphs**

To display or hide a graph, click on the respective item in the legend on the right side of the window.

### **4.3.2 Configuration Files**

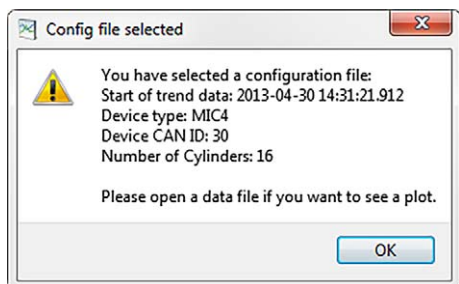
To obtain additional information about a recording file, open the respective configuration file (*configuration.pv3*). This is created automatically by the PowerView3 with every recording file.



Click on the symbol to open a PowerView3 configuration file.

- The configuration file opens in a new window.

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Configuration files contain the following information:

- The starting time of the recording
- Device type
- The node ID of the device whose data was recorded
- The number of cylinders of the relevant engine

Close the message with *OK*.

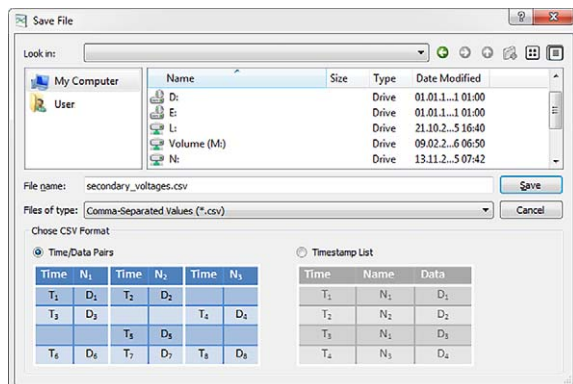
## 4.4 Exporting Data

You have various ways of exporting the data collected by the PowerView3 to other programs.

### Creating a CSV File



Click on the symbol to create a CSV file that contains the data of the recorded file that is currently open.



- To create an individual column in the CSV file for each curve, select *Time/Data Pairs*.
- To sort the values by time only, select *Timestamp List*.

### Creating a Chart



Click on the symbol to save the current view as a chart. The following formats are available: bmp, jpeg, jpg, pbm, pdf, pgm, png, ppm, ps, svg, xbm, xpm.



Click on the symbol to create a screenshot of the current view. You can then insert the screenshot into a suitable program using *Ctrl + v*.

## 4.5 Messages

The MOTORTECH Trend Viewer opens messages with information about pv3 files in a pop-up window.

Message
File xxx.pv3 does not contain any usable data.
Unable to read configuration from configuration.pv3! Configuration is invalid.
Unable to read configuration from configuration.pv3! The configuration file configuration.pv3 must be present in the same folder as the selected data file and it must be readable.
Unknown file name xxx.pv3. Cannot read data! Please do not rename any pv3 files created by your PowerView3.
You have selected a configuration file: Start of trend data: xxx Device type: xxx Device CAN ID: xxx Number of Cylinders: xx Please open a data file if you want to see a plot.

Confirm all messages with *OK*. The pop-up window will then close.

## 5 CUSTOMER SERVICE INFORMATION

You can reach our customer service during business hours at the following phone and fax numbers, or by email:

Phone: +49 5141 93 99 0

Fax: +49 5141 93 99 99

Email: [service@motortech.de](mailto:service@motortech.de)

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