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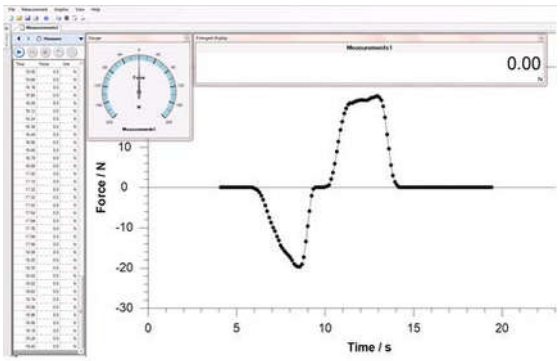
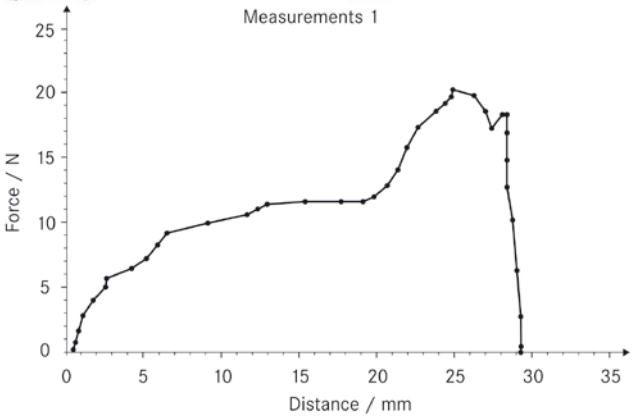
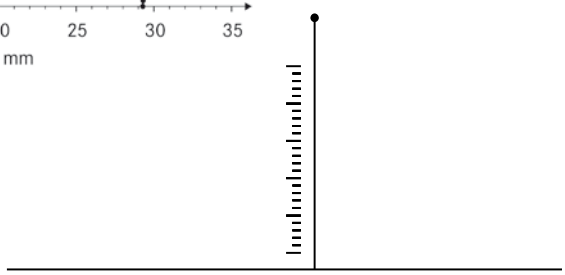
# Instruction Manual Software

# SAUTER AFH-FAST/FD

V. 1.4
11/2015
GB



**PROFESSIONAL MEASURING**

**AFH-FAST/FD-BA-e-1514**

GB

# SAUTER AFH-FAST/FD

V. 1.4 11/2015

**Instruction Manual Software AFH-FAST/FD**

**Welcome to AFH-FAST/FD**

AFH FAST/FD is a tool for transferring measurement data from a SAUTER force gauge to a PC. The connection is established via a serial cable which is connected to one of the RS-232 interfaces of the PC or with the included USB→RS-232 converter. The received measurement values can be saved as XML-file and therefore be imported in every XML compatible software.

**What is new?**

Version 1.0.8.7 offers the ability to control the test stand within AFH-FAST/FD (only FH and FL devices). You can search for new connected measurement devices and define a safety stop. Furthermore, the graphic can be flipped horizontally and you can define an action that is executed if the limit values are exceeded.

- Flip graphic horizontally
- Search for connected measurement devices
- Safety stop
- Control Test Stand

**Getting started the software**

1. Installation
2. Preparations
3. See the mains product features
4. How to work with AFH-FAST/FD is described in the user interface chapter.
5. The context sensitive help for the specific situations is always displayed with F1 key.

## Installation

AFH-FAST/FD is distributed as a standard setup package. The product is designed for Microsoft Windows platform and has special hardware and software requirements (see System requirements)

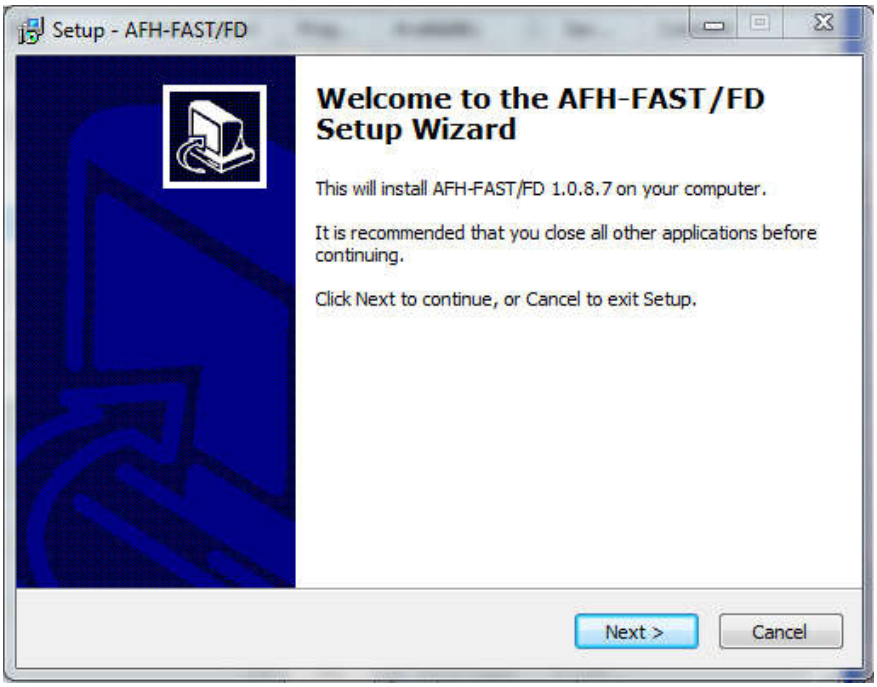
**How to install?**

Execute the downloaded installer and follow the setup wizard instructions.
On Windows Vista/7 you must allow the user rights elevation to administrative rights during installation. When setup is starting, you will be asked to choose the language of AFH-FAST/FD to be installed. Possible choices are: German and English

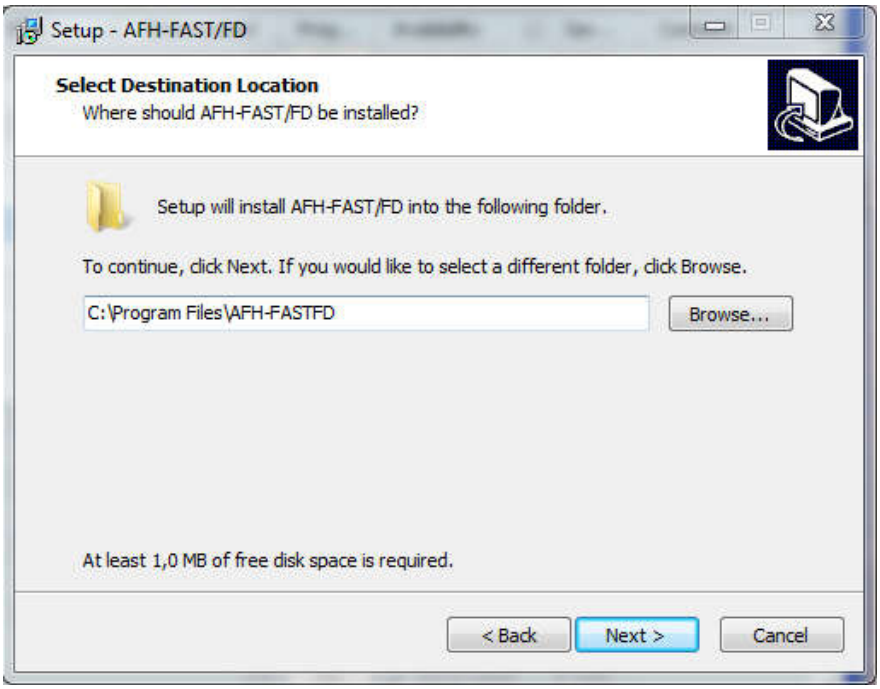



Choose the desired language and click o.k.

Next the setup wizard welcome window appears



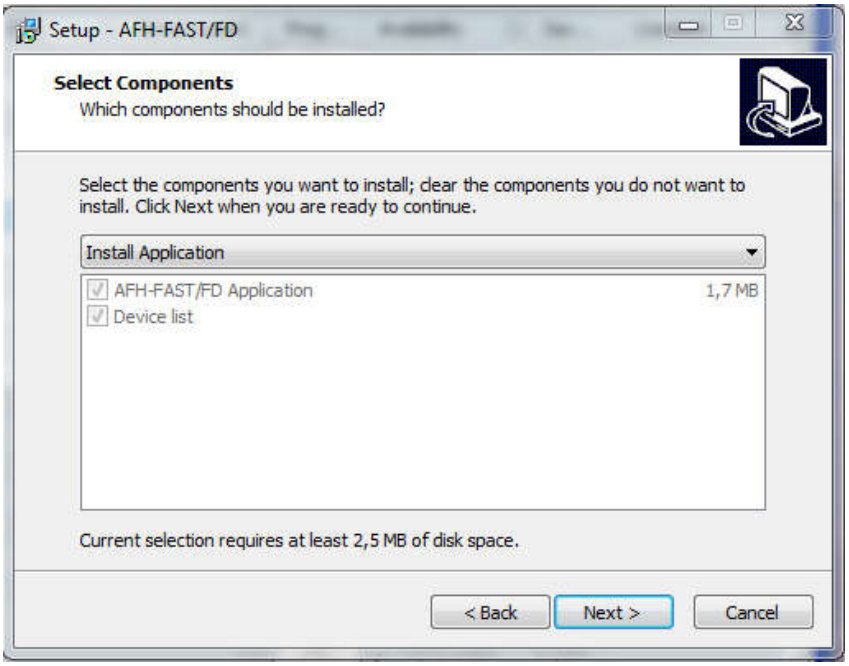

Click the next button to display the Destination Location dialogue. Here you have the possibility to modify the location where AFH-FAST/FD will be installed:



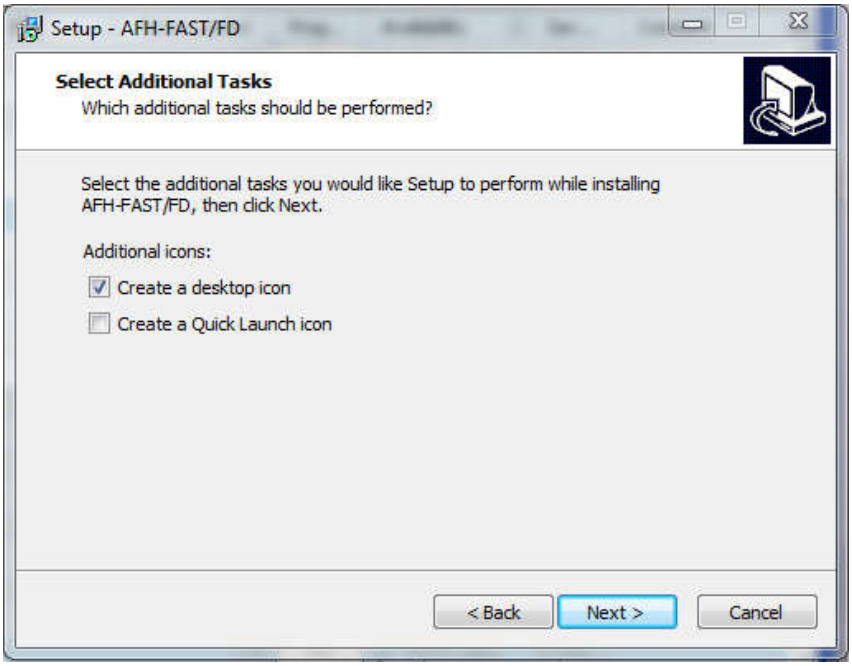

The next window gives you the opportunity to choose the installation type.

Possible choices are: The application and the appropriate device list will be installed

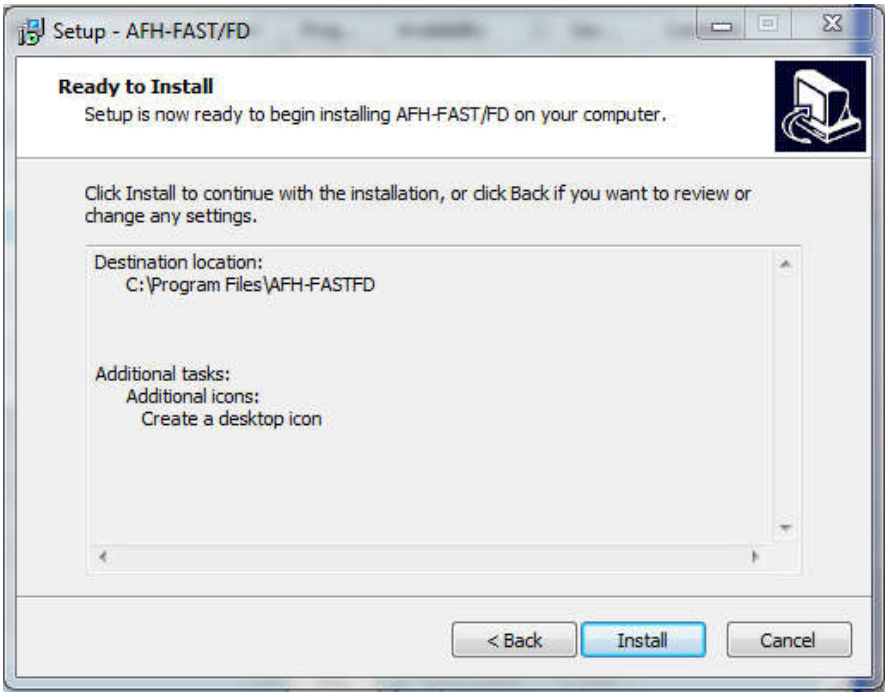
Install device list → only the device list will be installed



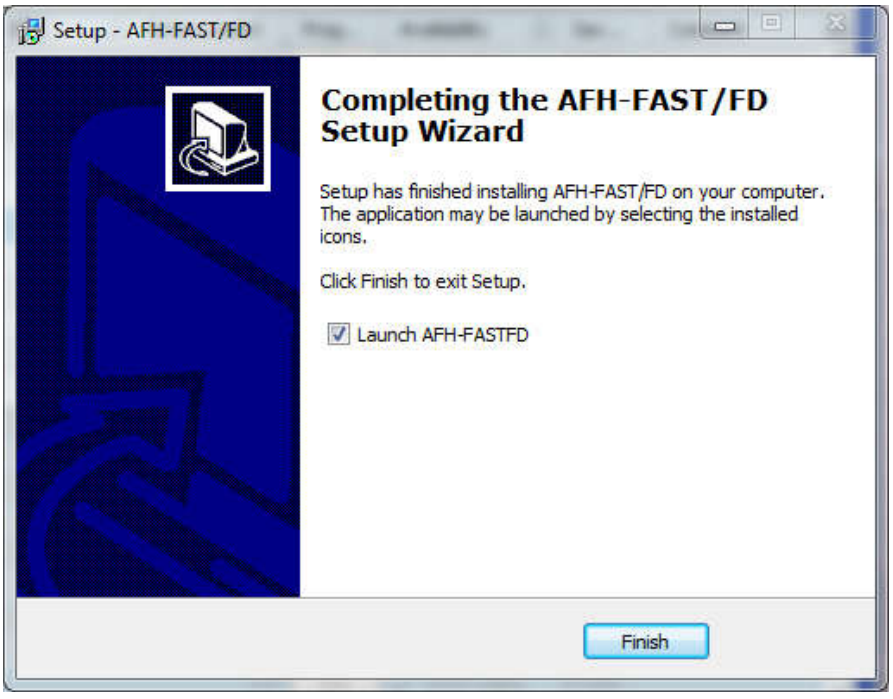

Click “Next” button to choose if a desktop icon or a Quick Launch icon should be created



The next window shows a summary of the installation options.
Click “Install” button to install the application.




After installation you have the option to launch **AFH-FAST/FD** while finishing the setup procedure.




Click “Finish” button to complete installation.

## Preparations

Before recording measurement data from the SAUTER force gauge, there are some preliminary steps to be done.



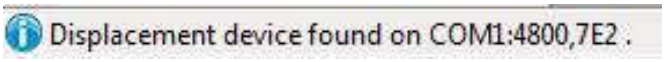
Connect the force gauge (or test stand and displacement measuring device, the length meter) with original interface cable to your PC (either directly to a serial port or to each of the included USB-To-Serial converter for displacement device and test stand.

- Turn on the gauge
- start **AFH-FAST/FD** program

While starting, the program scans all serial ports for a SAUTER FH and a displacement measuring device.
If no displacement measuring device could be found, there is a message displayed in the bar:




Otherwise, if a displacement measuring device is found, the following message is displayed:




**Note:** If you don't have a test stand with a displacement measuring device, you will not be able to perform Force-Displacement measurements. You can only perform Force-Time measurements then. If you connect the devices after starting AFH-FAST/FD, you do have to close AFH-FAST/FD and restart once again to scan for the devices.

## System requirements

**AFH-FAST/FD** is designed for Microsoft Windows platform and has special hardware and software requirements. It is distributed as a standard setup package. More about installation can be found in the Installation Help topic.

**Hardware:**

- IMB-compatible PC
- at least one serial port (RS-232) a a USB-to-Serial converter
- 256 MB RAM
- 5 MB free disc space
- SAUTER force measurement device (optional test stand with displacement measuring device).

**Operating system:**

Microsoft Windows 2000/XP/Vista/7 (32 or 64 bit)
Other requirements:
NET framework 2.0

## Main features

The following is an overview of important or interesting features of AFH-FAST/FD.
The full list of product features can be found here:

**Manage serial interfaces**

To manage serial interfaces, you have to display the serial interfaces window. You can modify the settings of an interface like baud rate, parity etc.
If the window for managing the interfaces is not visible, you can show it with the menu *View→Serial interfaces.*

**Managing measurement devices**

To manage devices, you have to display the *devices* window. You can create new devices, change their properties or check the connection to a device. If the window for managing the devices is not visible, you can show it with the menu *View→Devices.*

**Check device connection**

To check the connection to a measurement device, you have to display the *check device connection* dialogue. You will achieve this by a double click onto a device icon or by right clicking inside the device window and choosing *check connection* from the context menu.

**Control test stand**

To control the test stand from within the AFH FAST/FD program, you have to display the Control test stand dialogue. You can do this by selecting *View→ Test stand* in the main menu.

**Recording measurement series**

To record a new measurement series, you have to create a new measurement document by choosing main menu item *File→ New.*
If recording a measurement series with more than 500.000 measurement values, no other document should be opened.

## Full features list

Down below you find the full features list of AFH-FAST/FD product. Detailed description of individual features can be found in the User interface chapter and its topics.

**Basic features**

- Record of multiple *Force-Time* and /or *Force-Displacement* measurement series
- Management serial ports
- Management measurement devices
- Display or print of the recorded measurement data in a chart
- saves the recorded measurement series to an XML-file

- Multi-lingual user interface (see Installation) including context sensitive help
- Modem look and feel, working with multiple charts in tabs, see User interface.

Recording measurement series

- Possibility to record multiple measurement series (*Force-Time* and/or *Force-Displacement).* Measurement series with up to 500.000 values should be recorded individually)
- Printing and previewing the displayed measurement data
- Analogues display of current measurement value
- Chart display of whole measurement series with full zooming capability

**Save / Export**

- XML: Use the Save or Save as command for saving the measurement data to an XML-file
- EMF: Use the Save picture as command for saving the Chart to an EMF-file
- PNG: ‘Use the Save picture as command for saving the Chart to a PNG-file
- BMP: Use the Save picture as command for saving the Chart to a BMP-file

**User interface**

- Modem user interface; wide set of options for setting the colored panel layouts etc.
- Working with multiple documents in tabs
- Wide support for clipboard and mouse dragging functionality

**Miscellaneous**

- Context-sensitive help in the application is always displayed by pressing **F1** key.
- Product has special requirements for hardware and for software; see System requirements.

**License**

This product is distributed as **single user license** (see License agreement)

## The User Interface

The aim of topics in this chapter is to briefly inform about use and functionality of application elements in those areas where the user is currently located.
If you cannot find the necessary information in this chapter, try to search such a topic in *How to do it?*

**Basic elements of user interface**

- Main menu
- Tab bar
- Status bar

**Other windows and dialogues**

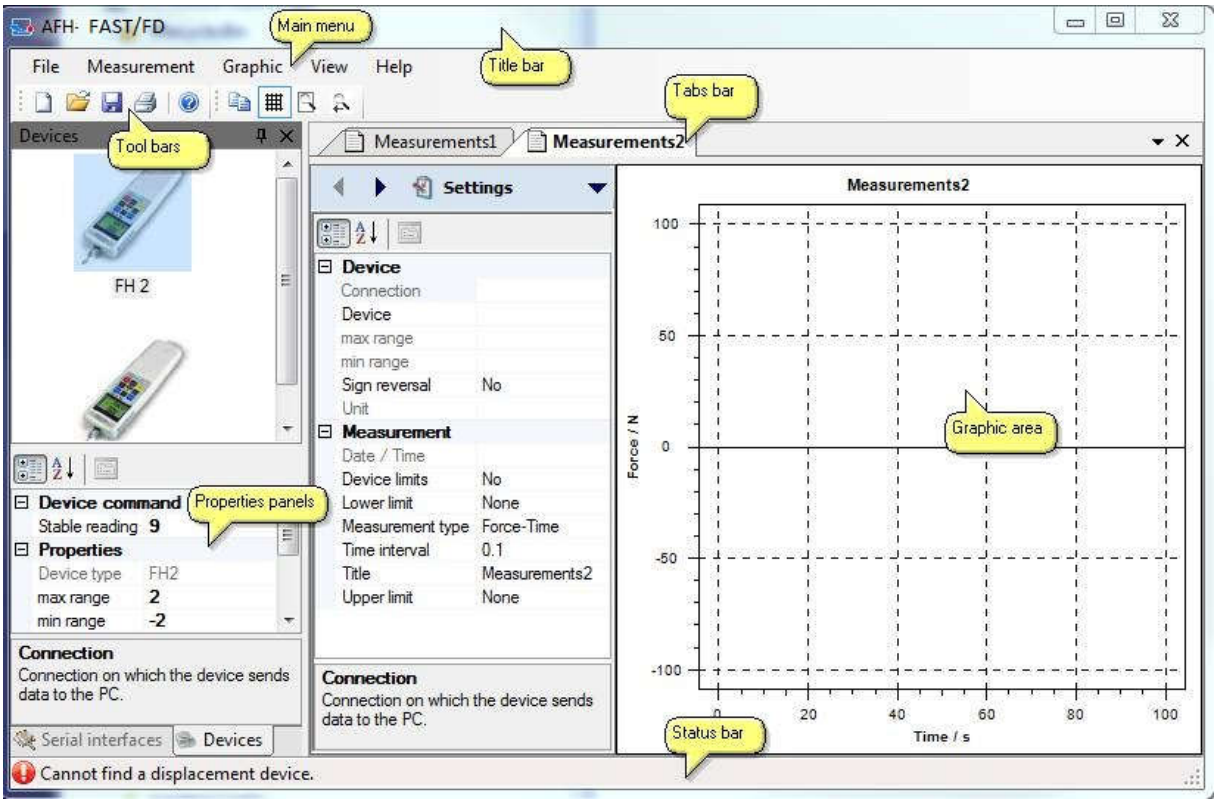
- Control test stand
- Serial interface

- Devices
- Settings
- Analogues display
- Enlarged display
- The About box

**Extensions (Add-ins)**
The interpreting of the device protocol is managed in separate modules (Add-ins). There is an add-in for specific device types. For downloading the latest Add-ins use the settings dialogue.

## Basic “elements” for user interface

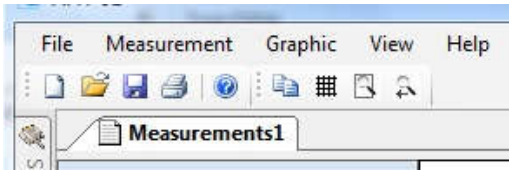
The following picture shows the basic elements of the user interface of AFH-FAST/FD product:




**Overview of the user interface elements:**
- Main menu
- Tool bars
- Tabs bars
- Graphic area
- Properties panels
- Status bar

## Main Menu

The main menu consists of the following sub-menus:




- File menu
- Measurements menu
- Graphic menu
- View menu
- Help menu

### File Menu

File Menu contains the following commands:

- New: creates a new document
- Open: opens an existing document
- Close: closes an open document
- Save: saves an open document with its file name
- Save as: saves an open document with selected file name
- Page setup: enables the selection of a print format
- Print: prints a document
- Print preview: enables preview of the document to be printed
- Exit: quits AFH-FAST/FD

### New

Command **New** (File Menu)

Use this command to create a new document in AFH-FAST/FD**.** To open an existing file, use the *Open* command.

*Shortcuts*

Toolbar: → 

Keyboard: → STRG+N

### Open

Command **Open** (File Menu)

Use this command to open an existing document in a new window. You can open several windows at the same time. Using the window list menu, you can toggle between the open documents.

New documents can be created with the New command.

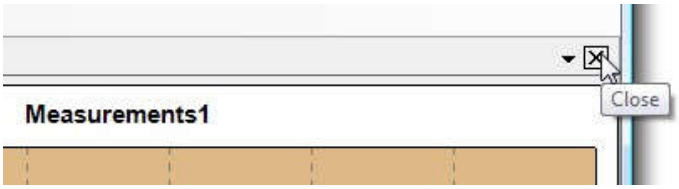
*Shortcuts*

Toolbar: → 

Keyboard: → STRG+O

**Close**
Command **Close** (File Menu)
Use this command to close all windows which contain the active document.
AFH-FAST/FD recommends saving all changes you made to the document before closing it. If you close a document without saving, all changes will be lost you did since the last saving of the document. Before closing an unnamed document, AFH-FAST/FD will display the dialogue filed *Save As* and recommends naming the document and saving it.

You can also user the closing icon to close a document, as shown below:




**Save**
Command **Save** (File Menu)
Use this command to save the document with its current name and directory. When saving a document for the first time, AFH-FAST/FD will display the *Save As* dialogue field, so that you can name your document. If you want to change the name and directory of an existing document, you can also use the *Save As* command.

*Shortcuts*

Toolbar: → 
Keyboard: → STRG+S

**Save as**
Command **Save as** (File Menu)
Use this command to save and name the active document. AFH-FAST/FD will display the dialogue field *Save As,* so that you can enter a name for your document.
To save a document under its existing name and directory, use the *Save* command.

**Save as dialogue**
The following options will enable you to determine the place and the name of the file you want to save:
- File name: Enter a new file name to save the file with a different name.
  AFH-FAST/FD will add the extension you selected in the field *file type* to the name.
- Drives: Select the drive where you want to save the file.
- Directories: Select the directory where you want to save the document.
- Network: Use this button to allocate one of your drives to a network drive.

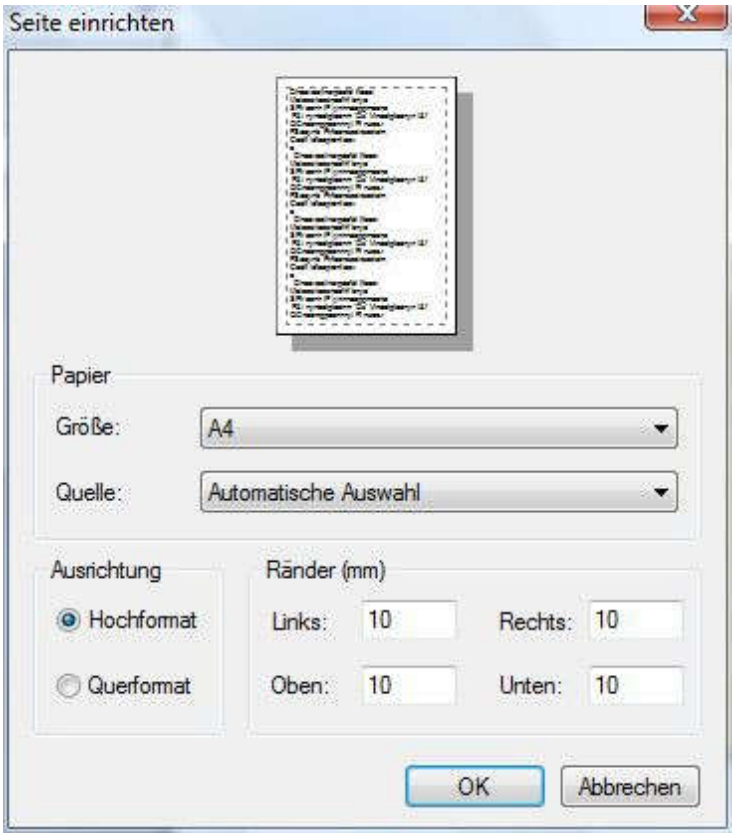
**Search devices**
Command **Search devices** (File Menu)

Use this command to search for new connected measurement devices and serial ports.

*Shortcuts*

Toolbar: → 

**Page setup**
Command **Page setup** (File Menu)
This dialogue allows you to change the settings for printing paper format



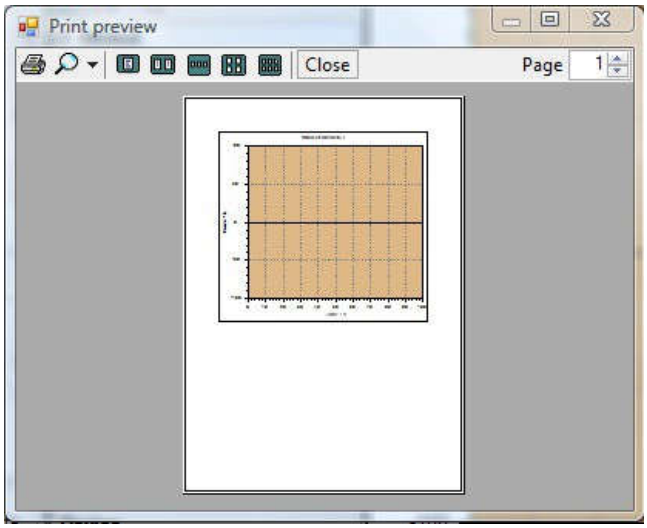

**Print**
Command **Print** (File Menu)
Use this command to print a document. When using this command, *Print dialogue* field appears, where you can enter the page range to be printed, the number of copies, the target printer and other options concerning printer setup.

*Shortcuts*

Toolbar: → 
Keyboard: → STRG+P

**Print Preview**
Command **Print Preview** (File Menu)

Use this dialogue if you want to see how the graphic representation will look like on paper




**Measurements Menu**

*Measurements Menu* contains the following commands:

- Start: Starts the capturing of measurement data
- Pause: Pauses the capturing of measurement data
- Stop: Stops the capturing of measurement data
- Send manually: Sends the defined device command to the device only once
- Send timer: Sends the defined device command to the device in regular intervals

These commands are also available in the measurements toolbar:



Force/Time measurements



Force/Displacement measurements

**Graphic Menu**

The Graphic Menu contains the following commands:

- Display grid: Displays or hides a grid in the graphic view
- Save graphic as: Saves the graphic to a file (EMF, PNG, BMP)
- Copy: Copies the graphic to the Windows clipboard

**View Menu**

The *View Menu* contains the following commands to manage the serial interface, devices and program settings:

- Serial interfaces: Shows or hides the window to manage the serial interfaces
- Devices: Shows or hides the window to manage devices
- Settings: Opens the window to manage the program settings
- Status bar: Shows or hides the status bar
- Test stand: Shows or hides the *control test stand* dialogue

**Help Menu**

The *Help Menu* contains the following commands:

- Contents: Shows the contents of this help file
- Index: Shows the index of this help file
- Search: Enables you to search in the help file for specific terms
- About: Displays more information about the version AFH-FAST/FD.

**Toolbars**

There are two different tool bars in AFH-FAST/FD**:** One for the main program features and one for graphical features.



**Main program features**

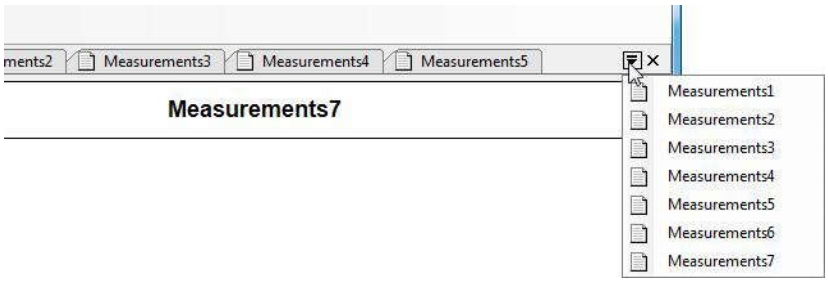
- New - Creates a new document
- Open - Opens an existing document
- Save - Saves an open document with its file name
- Print - Prints a document
- Search devices - Search for recently connected devices
- Help - Shows this help file

**Graphical features**

- Copy - Copy the graphic to the windows clipboard
- Grid - Displays or hides the grid
- Zoom all - Zoom the graphic view that all measurement data is visible
- Zoom previous - Goes back to the last zooming state

**Window list**

Use this menu to toggle between the opened documents




**Tab bar**

The tab bar is designed to switch between currently opened measurement series.



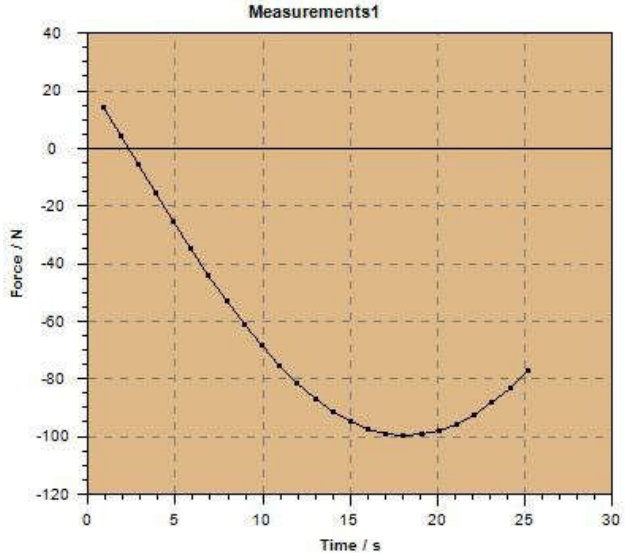

You can **switch** and / or **close** visible tabs (pages) or select them from the windows list.

Switching between documents can be realized (besides mouse click on the tab) by keyboard - via shortcuts **Ctrl+Tab** and **Shift+Ctrl+Tab**. Shortcut for closing current tab (page) is **Ctrl+F4**.
Order of tabs can be changed via **drag & drop** functionality.
By right clicking on the tab of a specific measurement series, a context menu appears to show an analogous and/or enlarged display.

- Gauge - Show an analogous display, which show s the current measurement value
- Enlarged display - Show an enlarged display, which show s the current measurement value.

**Graphic view** 


The graphic view is for displaying the measurement series as a chart representation. You can change the appearance in the Settings dialog. There you can choose the background color, the graph color etc.




**Status Bar**
The status bar is displayed at the bottom of the AFH-FAST/FD window. Using the Status Bar command in the View menu you can show or hide the status bar.

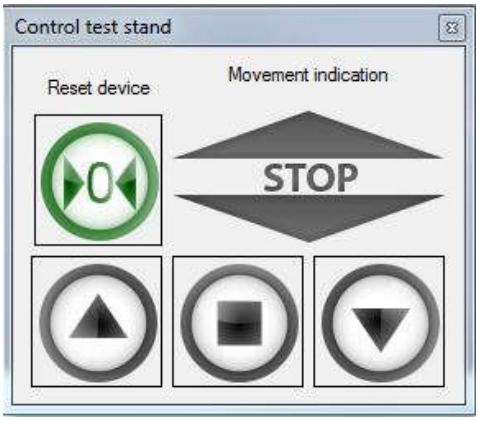
**Other windows and dialogues** 

As part of the application, there are more windows and dialogs, which are not specifically described in the previous help topics. Here are the links to detailed description of these dialogs.
Look especially at Settings dialog.

**List of miscellaneous windows and dialogs**
- Control test stand dialogue
- Serial interfaces
- Devices
- Settings
- About box

### Control test stand dialog

This dialogue is used for controlling the test stand. It is only available if a displacement measurement device has been found at program startup. If no such device has been found, the menu item to display the dialog is disabled.



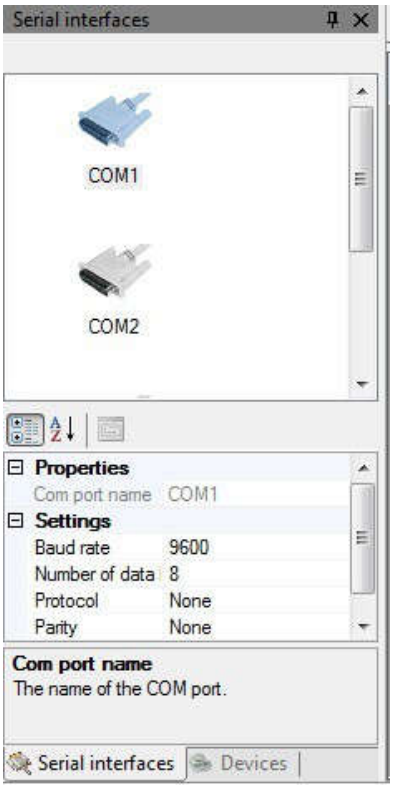

The dialog contains three buttons to control movement of the test stand, one button to reset the force gauge to zero and a movement indication showing the current movement state of the test stand.

**Note:**

If you connect the devices after starting AFH-FAST/FD, you have to close it and restart once again or run the command Search devices, to scan for the recently connected devices.

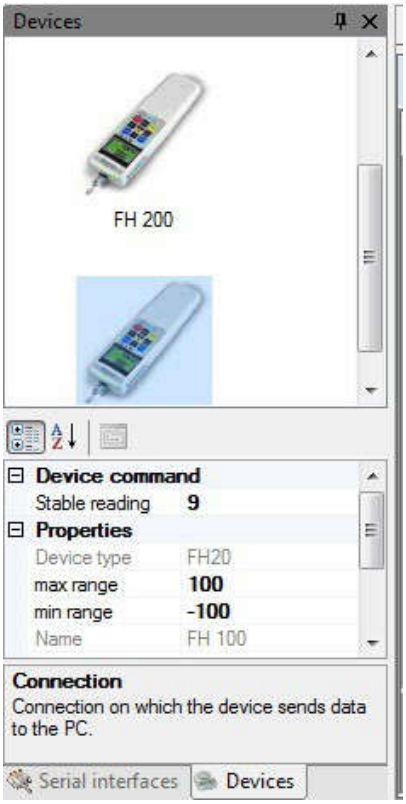
### Serial interfaces

This window shows all serial interfaces available in the computer. To view or modify the settings for a special interface, you have to choose the interface. In the lower window you can then modify the properties.



## Devices

This window displays all created devices. To modify the properties of a specific device, you have to choose the device and customize the properties in the lower window.

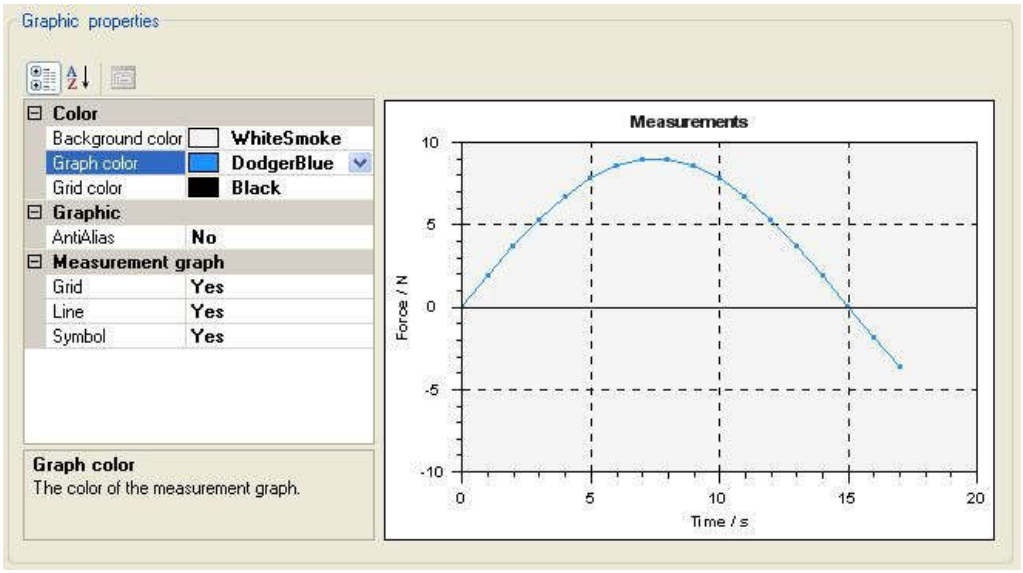



## Settings

The Settings dialogue is the basic place to set or modify application parameters. Some parameters (e.g. changes in device properties) are stored automatically and some (the appearance of the chart view) are additionally available in the toolbars of AFH-FAST/FD. But the essential parameters of the application can be found in this dialog box.
This dialog is divided into categories (Graphic, Display and Addin), according to content and the importance of parameters. In this topic you can find the description of each category and parameter.

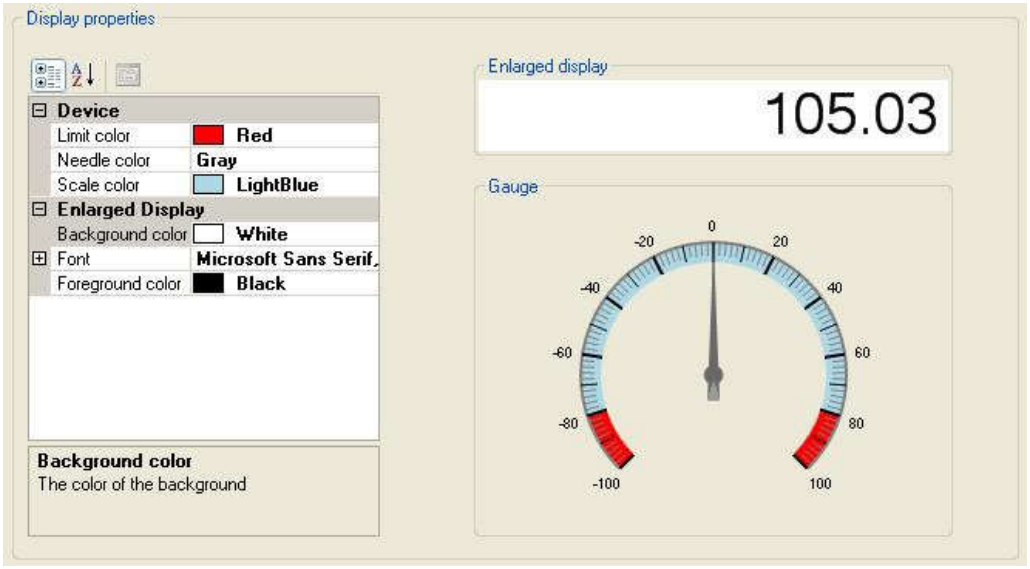
## Graphic

- Color:- change the background color of the chart view, the color of the data graph or the color of the grid.
- Graphic: enables antialiasing to improve the graphic quality
- Measurement graph - selects if grid should be visible or hidden, if there will be lines drawn between measurement points or if the measurement values are represented by points.




**Display**

- Device - set the color of the out of limit area, the needle color or the scale color
- Enlarged Display - choose background color, font and foreground color of the enlarged display

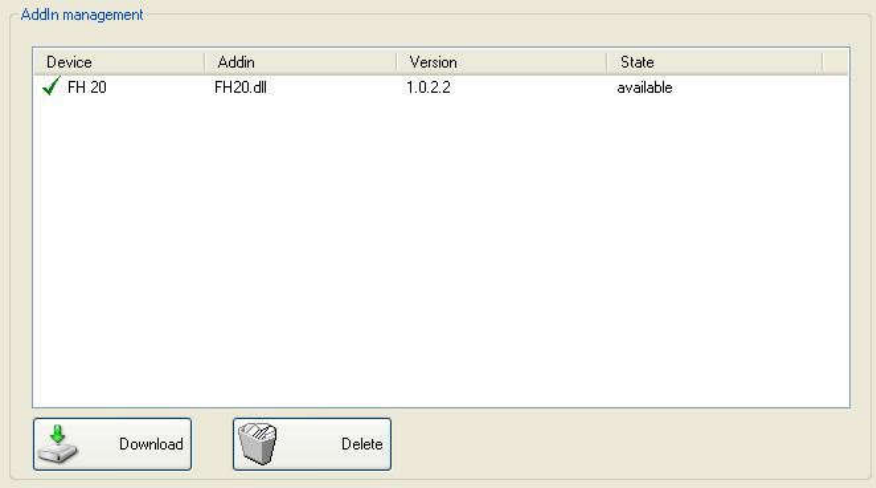






**Add-in**

- Download - download latest add-ins for interpreting measurement device protocols (an internet connection is needed)
- Delete - delete add-ins from hard disk which are not needed

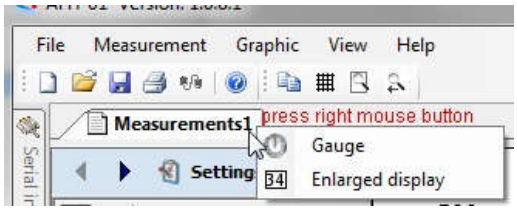



## Analogous display

This dialogue displays an analogous representation of the current measurement value. The out of limits area can be marked with a different color as described in the Settings dialog.

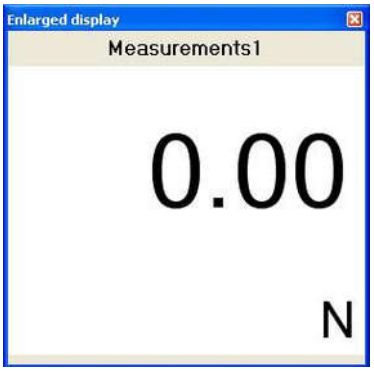



To show this window, press right mouse button




## Enlarged display

This dialog displays the current measurement value in an extra window , which can be enlarged as desired. The font and color can be modified as described in the Settings dialogue.




## About the application

This dialog displays the logo, build version and possibly additional information about the AFH-FAST/FD product.

**How to do it?**

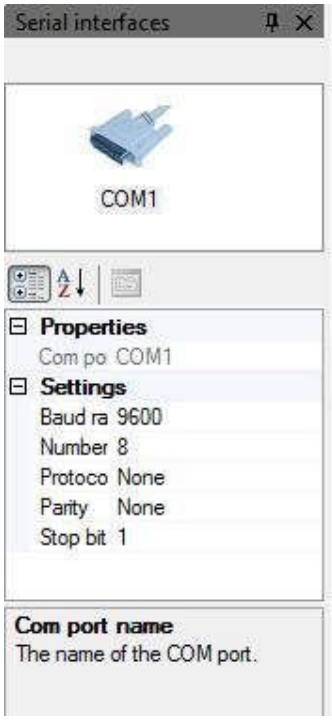
In this help section you can find examples, that can help you in understanding the tasks, which you can perform in the AFH-FAST/FD product. The table of contents below contains links to those examples.

**Exporting measurement data**

You can export the measurement series to EXCEL

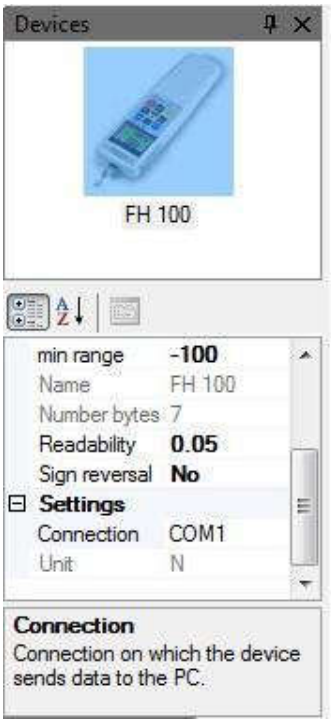
**Manage serial interfaces**

The program displays all the existing serial interfaces. To modify the settings of an interface, you have to choose the icon of the interface and modify the settings (baud rate, parity etc.) in the lower part of the window. If the window for managing the interfaces is not visible, you can show it ith the menu View->Serial interfaces.



**Manage measurement devices**

The program displays all the created devices. In this window you can create new devices, delete devices, change their properties or check the connection to a device. If the window for managing the devices is not visible, you can show it with the menu View->Devices.



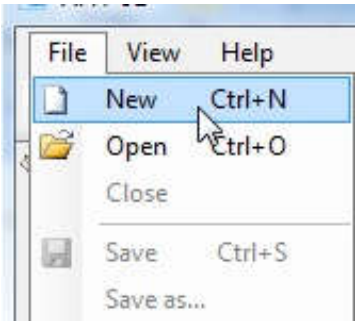

**Recording Measurement series**

To record a measurement series you have to do the following steps:

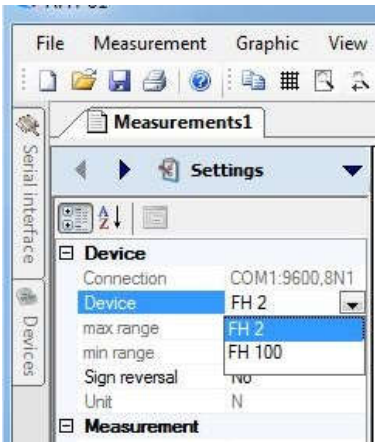
- Create a new measurement document by choosing File->New within the main menu
- Choose the device from which you want to receive data
- Modify the properties of the device and measurement to fit your needs
- Switch to Measurement menu.
- Start measurement, record measurement data either manually or timer controlled
- Stop measurement and save or print data.
- Close measurement document.

**Recording a measurement series**

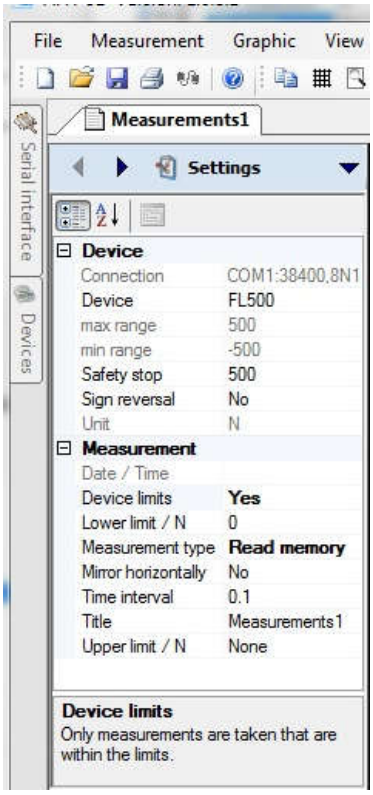
1. Create a new measurement document



2. Choose device from the list of all previously defined devices




3. Modify the properties of the device and/or measurement to fit your needs




The only device property to modify is Sign reversal. If this property is set to Yes, the sign of the measurement data will be inverted, e.g. if device sends 40N the measurement value will be -40N.
All other device properties are taken from the device defined in the device window.

The following measurement properties can be modified:

Date/Time will be entered automatically w hen starting measurement

Device limits enable you to receive only data within a predefined bandwidth

Displacement reversal will be used to reverse the displacement values (only visible if Measurement type is equal to Force-Displacement)

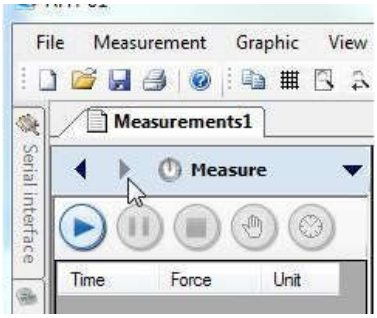
Lower Limit of measurement device (only active if Device limits is equal yes)
Measurement type can be Force-Time, Force-Displacement series or read memory
Mirror horizontally is used to flip the graphic view horizontally
Time interval of sending device command for requesting data (This setting affects the number of stored values â €‹â €‹for long-term measurements and thus the max. measurement period. A maximum of 500,000 Force /Displacement or Force /Time values can be stored)

Title of measurement for saving and displaying data

Upper Limit of measurement device (only active if Device limits are equal yes)

4. Switch to Measurement Menu

After switching to the measurement menu you are able to start recording a measurement series.




Depending on the measurement type this menu looks a little bit different:

- Force-Time



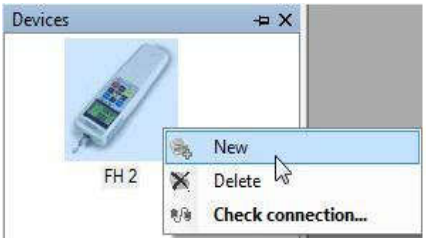
- Force-Displacement



**Export measurement data to EXCEL**

To export a measurement series to EXCEL (or any other software capable to import XML-format) you just save the measurement document by Save or Save as. To import the XML-file into EXCEL you use the EXCEL open command (file menu), select in the file type dropdown list XML Files and choose the desired measurement document.

**Create a device**



To create a new device, right click within the Devices window for displaying the context menu. Then select New. The Create device dialog appears.

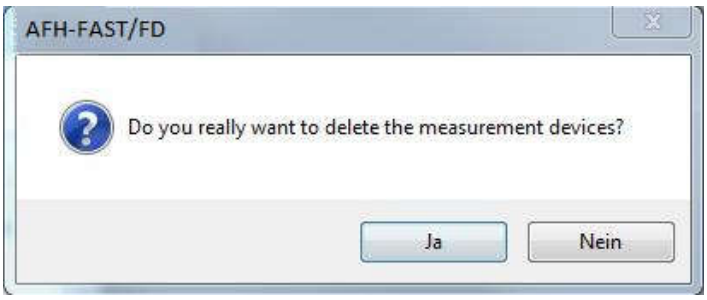
Choose the device type from the drop down list, enter name (or accept default name) of the device and click OK. The new device should appear in the device window.



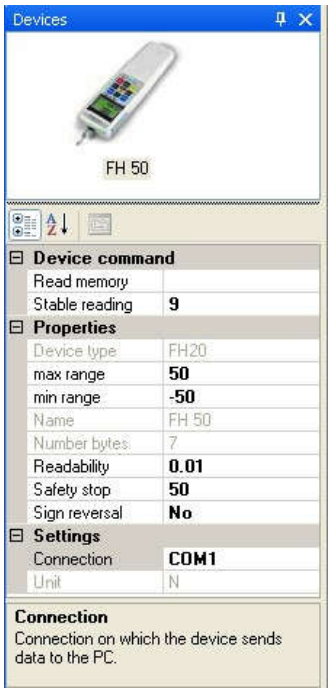

**Delete a device**




To delete one or multiple devices, select the devices to be deleted then right click within the device icon for displaying the context menu. Then select Delete.
To confirm deletion, press ok in the message box.



## Modify Device settings

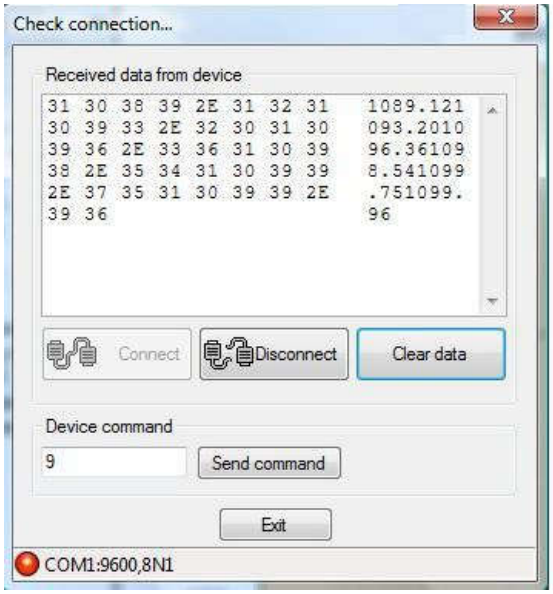



In this property panel you can display or rather modify all device related settings. On the left is the name of the property and on the right the corresponding value. The lower panel shows a short description for the property.

The devices have the following properties:

- Device command for stable reading Device type
- max, min measurement ranges
- Device name
- Number of data bytes the device is sending
- Readability
- Sign reversal (the received data value w ill be inversed) Connection (COM port to which device is **connected**) Unit
- Safety stop

### Check device connection

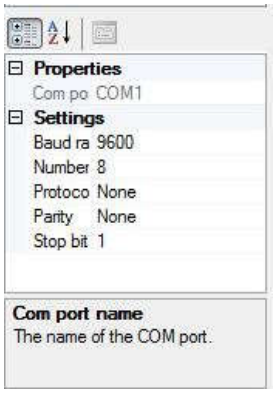



With this dialogue you can check if a device is connected to the PC and is able to communicate with AFH-FAST/FD.
To establish a connection, press the Connect button. If COM port is opened without error, the red LED is highlighted and the communication parameters will be displayed.
If the device is sending data, it is displayed in the Received data window in both, ASCII and HEX.

Use the Clear data button to remove all received data from the window .

Use the Send command button to send the previously defined device command to the device.
Before closing this dialogue, you have to disconnect from the device by pressing the Disconnect button.

### Modify serial settings




In this property panel you can modify all interface related settings. On the left is the name of the property and on the right the corresponding value. The lower panel shows a short description for the property.

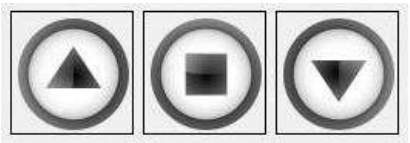
The serial interface has the following properties:
- COM port number
- Baud rate (the transmission speed in bits/sec)
- Number of data bits (number of data bits per byte)
- Handshake protocol
- Parity
- Number of stop bits

**Control test stand**

The Control test stand dialog enables you to control the test stand and to reset the force measurement gauge. It can be displayed only if a displacement measurement device has been found at program start. Otherwise the menu item to show this dialog will be disabled.



**Control movement of the test stand**



With these three buttons you can cause the test stand to move upward, downward or you can stop the movement. The movement display in this dialog will reflect the actual movement.

**Reset force measurement gauge**




Use this button to reset the force measurement gauge to zero.

Display current movement of the test stand




This movement indication shows, if the test stand is moving upward, downward or if it rests.

**Additional help resources**
Here you can find links to additional help authoring resources (reference manuals, etc.).
Reference manuals
AFH FAST/FD documentation
Measurement device manual

**Links**
Sauter GmbH, http://www.sauter.eu/

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