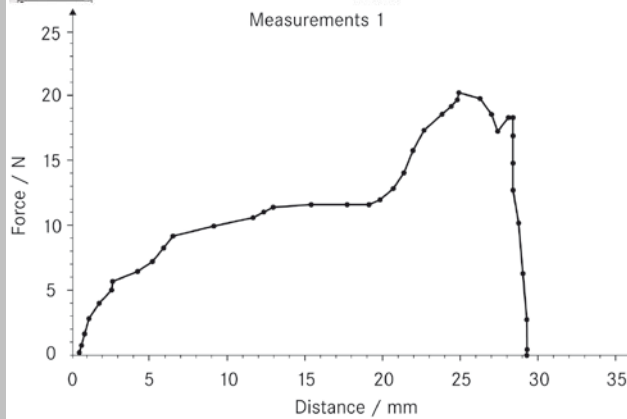
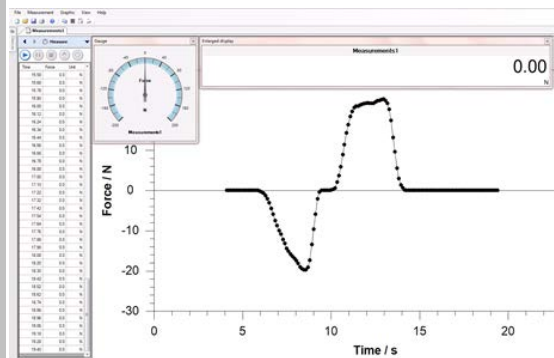


Instruction Manual Software

SAUTER AFH LD / AFH FGT

V. 1.1
10/2018
GB



PROFESSIONAL MEASURING

AFH-LD_AFH-FGT-BA-d-1811



SAUTER AFH LD / FGT

V. 1.1 10/2018

User Manual

Software AFH LD / AFH FGT

Welcome to AFH LD and AFH FGT

The program AFH LD / AFH FGT is developed for repetitive testing, this means, e.g. for fatigue testing. Here it is possible to pre-set and administrate the number of repetitions. The relative reversal point can be simulated either based on the displacement (in mm) or based on the force (in N). At cycles in force / displacement, the software can deactivate the testing cycle automatically by indicating a max. force reduction (in N). This means “non-destructive testing”).

It serves to transfer the data from a SAUTER force measuring instrument to a PC.

It enables you to save the measurement data as an XML file and thus to import them to any software compatible with XML. Additionally, it allows for a graphic presentation of the measurement data and for saving them as a graphic file.

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1 What's new?

This program enables you to control the test stand through AFH LD and AFH FGT software (only for FH and FL devices), to search for newly connected measuring instruments and define the emergency stop.

Furthermore, the graphic can be flipped horizontally and you can define an activity when exceeding a limit value, set before.

The software serves to use SAUTER length measuring devices of LD series (with AFH LD) and LB series (with AFH FGT). The software allows you to trigger repetitive functions by force or displacement.

So you can do following:

- perform activities when exceeding a limit value
- to flip graphics horizontally
- to look for connected devices
- safety stop
- to operate the test stand
- force reduction

2 System requirements

AFH LD / AFH FGT is designed for Microsoft Windows and has got special requirements to the software and hardware equipment of the system. The software is distributed as a standard installation package. For more information on software installation, see chapter "Installation".

Hardware Equipment:

- computer compatible with IBM,
- minimum one serial port (RS-232) or USB-to-serial port converter,
- 256 MB RAM,
- 10 MB of available disk space,
- SAUTER test stand, LD distance meter and dynamometer.

Operating system:

Microsoft Windows 2000/XP/Vista/7/8/10 (32 or 64 bits)

Other requirements:

NET Framework 2.0

First steps...

- Installation

- Preparations

- Main product features

- The context-sensitive help can be always indicated in appropriate situations by pressing F1- button.

3 Installation

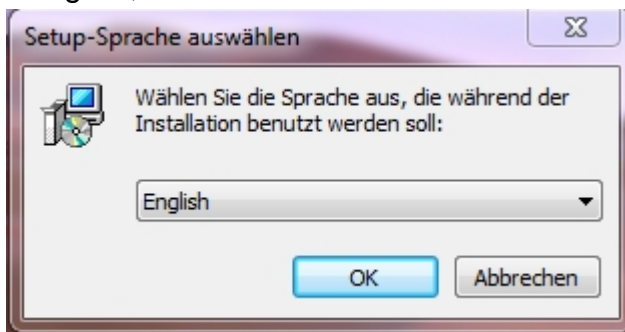
The AFH LD, as well as AFH FGT software are distributed as a standard installation package. The product is designed for Microsoft Windows (Windows XP, Windows 7, Windows 8, Windows 10) and requires special system software and equipment (see “System requirements”).

How is AFH LD / AFH FGT installed?

Start the setup program (“Setup”) on the CD and proceed as per the instructions given by the Setup Assistant. In Windows Vista/7/8/10, the user account must have administrator authorisation. When the installation program is started, you will see a request to select the software installation language of AFH LD respectively AFH FGT.

Options:

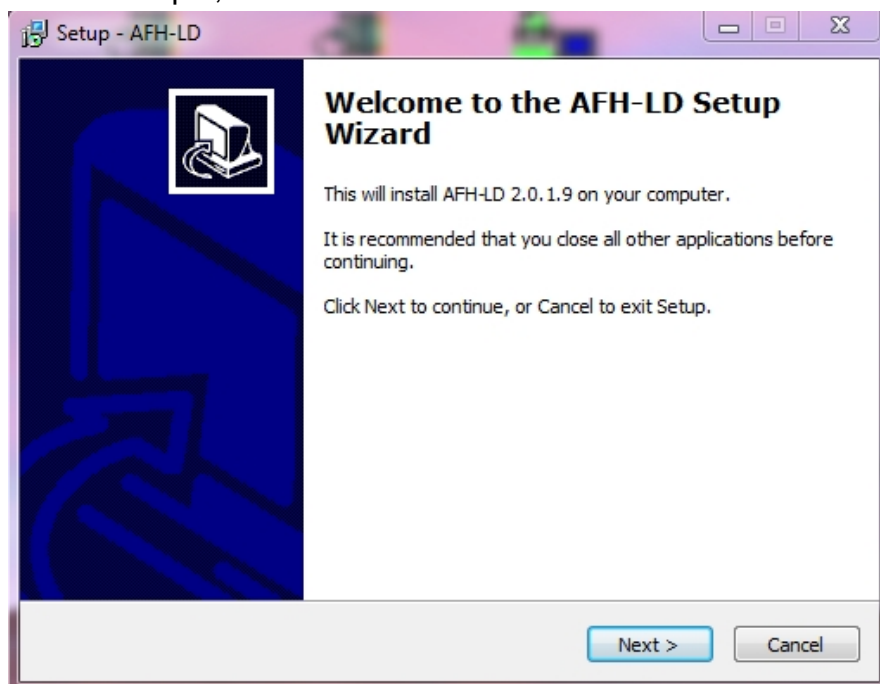
- English, German



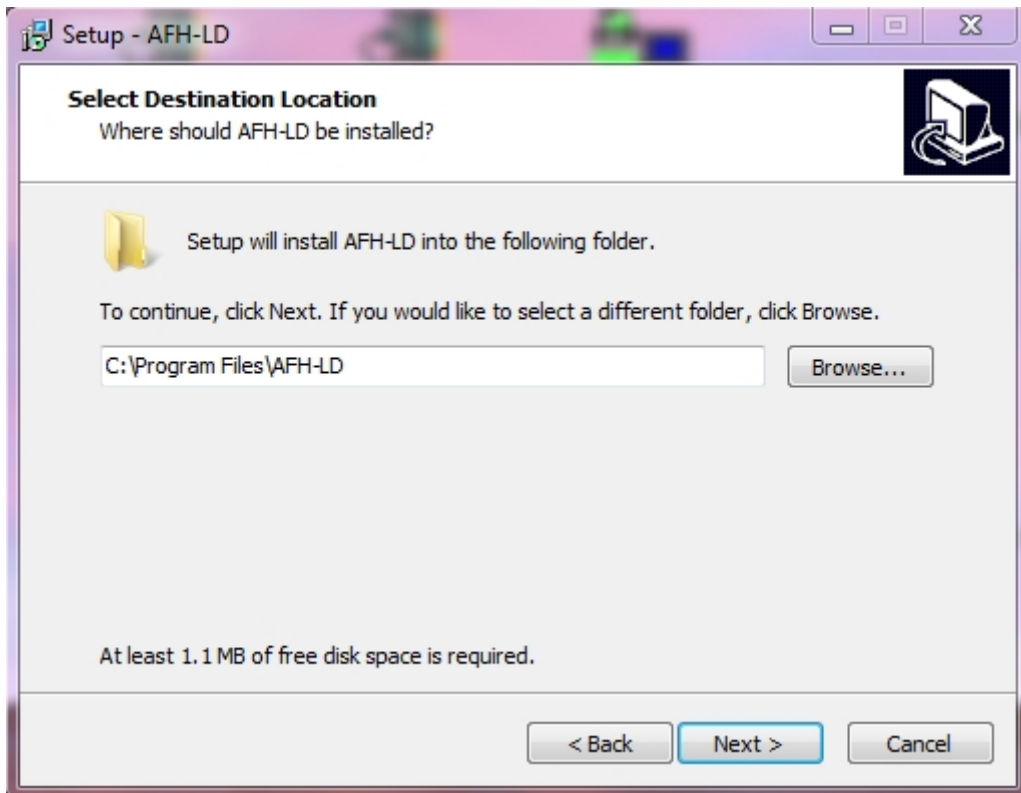
Choose the desired language and press OK.

Then you will see the Setup Assistant configuration window.

In this example, installation of AFH LD will be demonstrated:



Press “Next” to view the dialog box with target folder selection. Here you can change the folder where the **AFH LD** (AFH FGT) software will be installed.

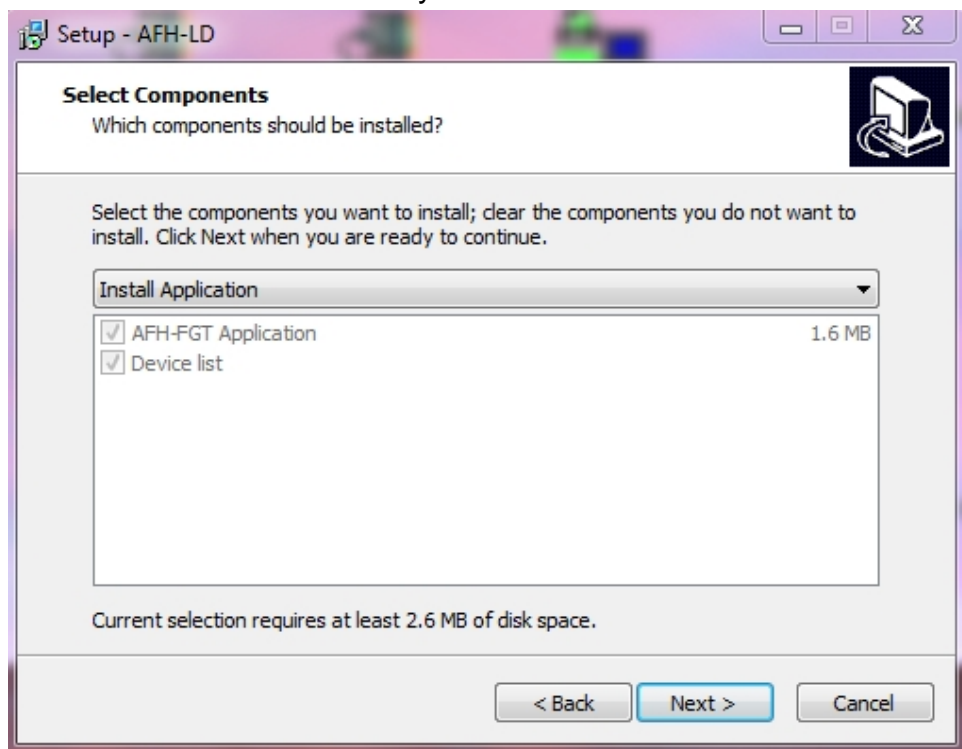


In the next window, you can choose the type of installation.

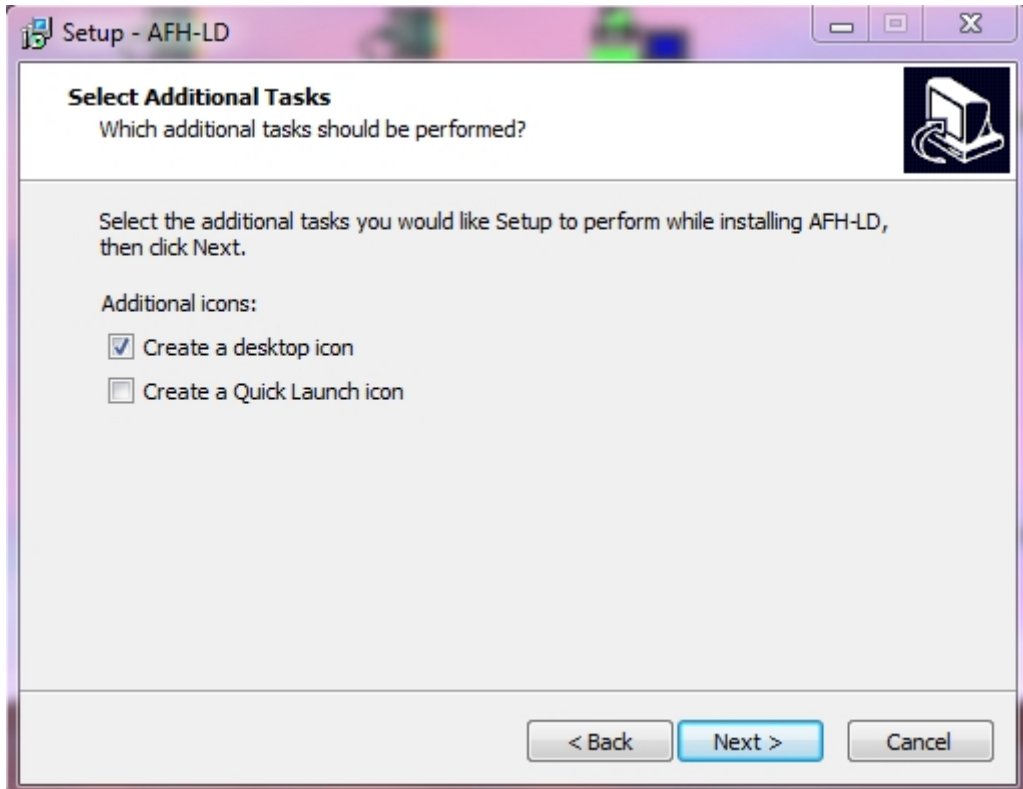
Options:

Installation of the application and an appropriate list of devices.

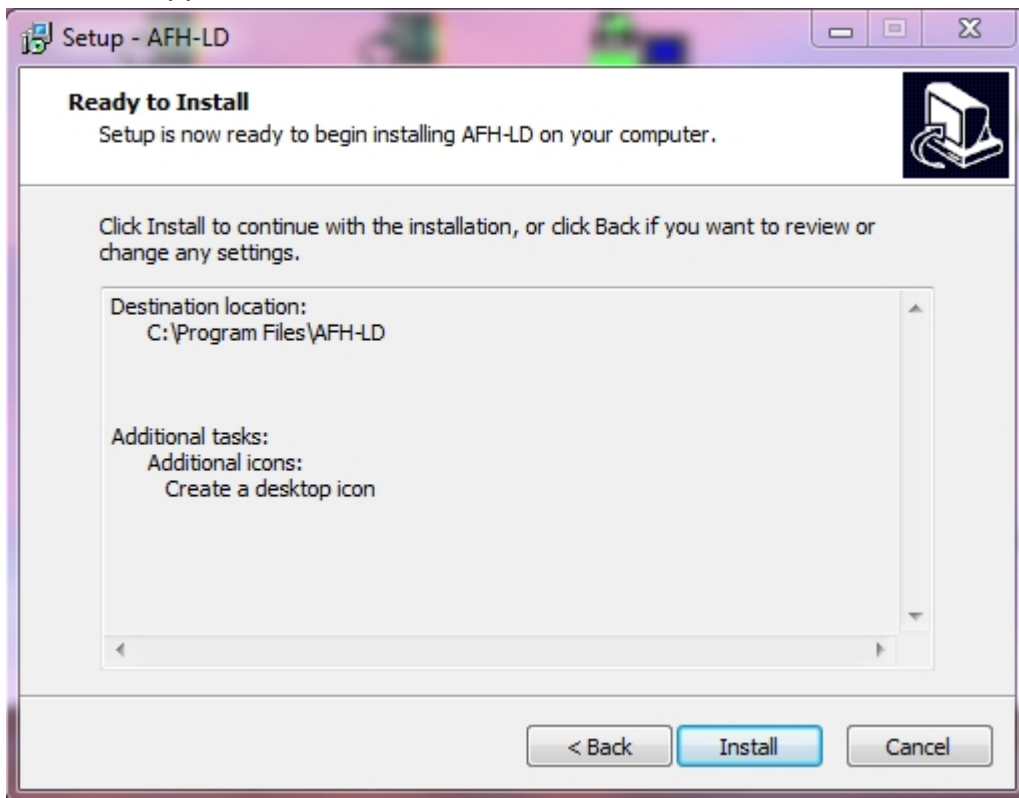
Device List Installation → only the device list will be installed.



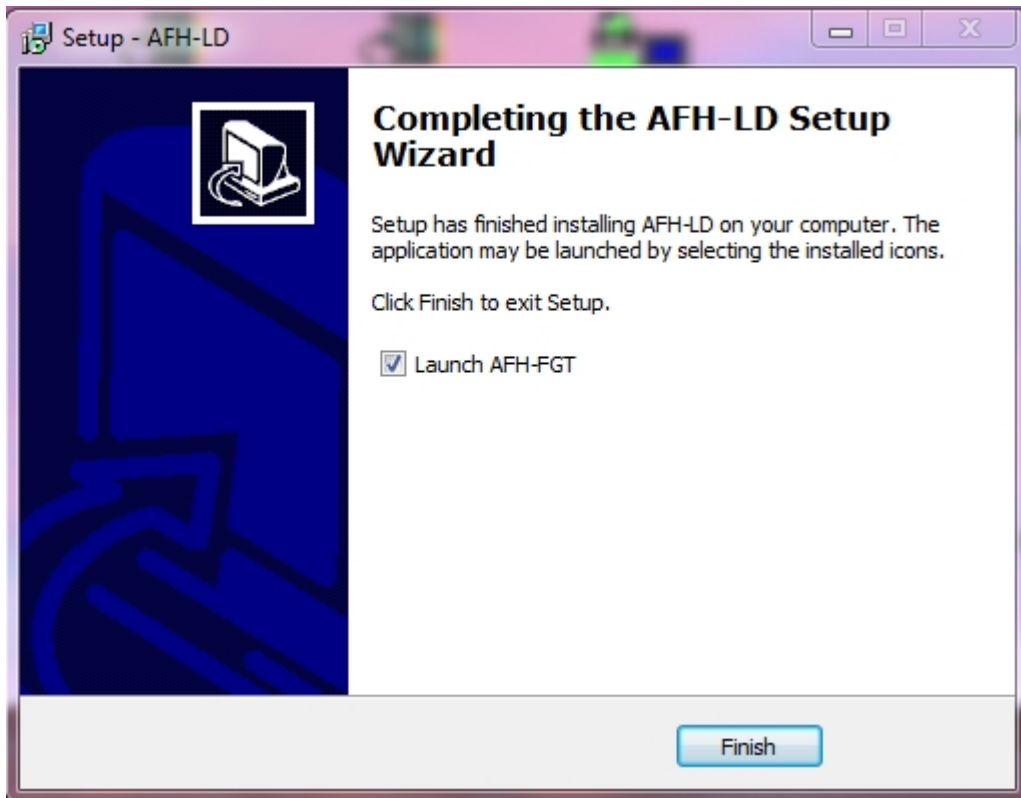
Press “Next” and choose if you want to create the desktop and/or task bar icon.



In the next window, you will see the summary of installation options. Press “Install” to install the application.



Once installed, you can start AFH LD (AFH FGT) to complete the setup procedure.



Click "Finish" to complete the installation process.

4 Hardware installation



Preparations:


Before registering any measurement values of a SAUTER force gauge, there will be some steps to perform.

- Install the software on the computer.
- Connect: **the force gauge** (or the test stand and length meter) by a serial cable to a PC, (either directly to a serial interface or each with a USB serial converter for length meter and test stand)
- **the length meter** directly to the computer by a USB cable;
- **the test stand** to the computer by a serial cable. If the COM 1 port is not available, you can use the RS-232 / USB converter.

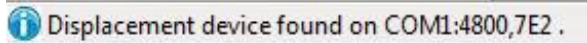
- Switch on all devices.

- Start the software.

During start-up, the application will search the computer's serial ports to detect SAUTER force gauges and length meters. If no length meter is found, a message will be shown in the status bar.

 Displacement device found on USB-Port . (not calibrated)

Otherwise, if a distance meter is found, the following message will be shown:



Annotation:

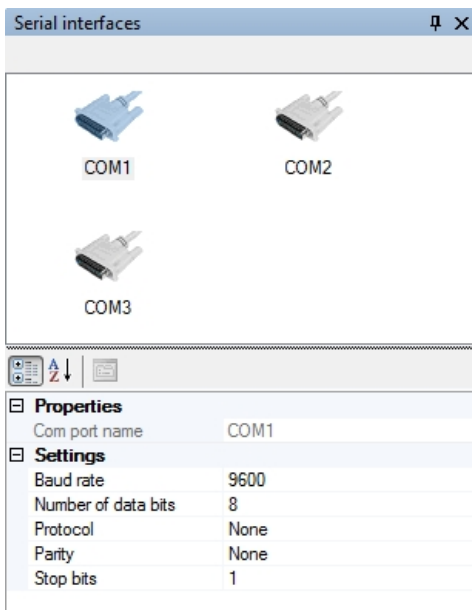
If you don't have a test stand with a length meter, you will not be able to perform force- displacement measurements. Otherwise you can only perform force- time measurements. If you connect the devices after starting the software AFH LD (or AFH FGT), you will have to close the corresponding software and start it again, to enable the search for the connected devices again.

5 Main features

The description below is a summary of important and interesting characteristics of AFH LD / AFH FGT.

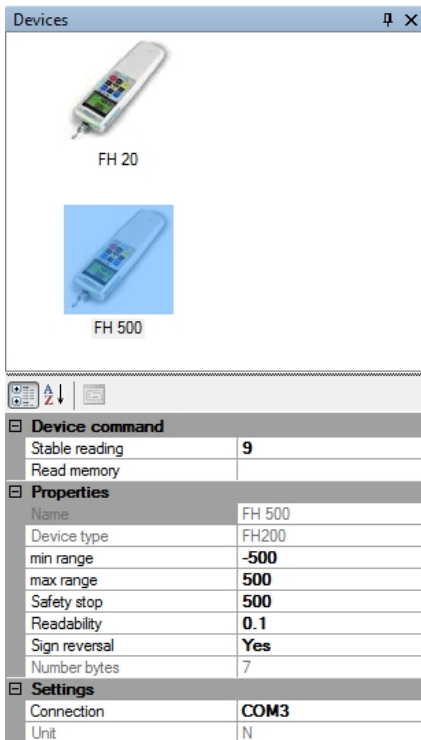
5.1 Managing serial interfaces

This window shows the information on the interfaces detected. It allows you to modify the parameters. However, this is not necessary, as the parameters are automatically adjusted to the peripherals. Incorrect parameters may affect the software functions.

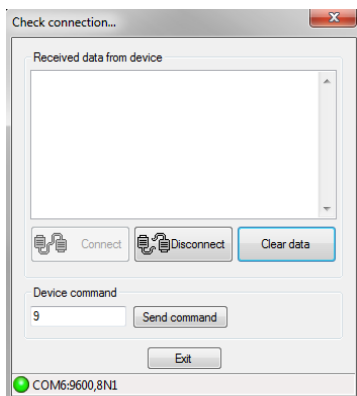


5.2 Measuring Instruments window

View the "Measuring Instruments" window to manage the measuring instruments. It allows you to create or remove measuring instruments, to change their parameters, or to control the connection with a measuring instrument. If the measuring instrument management window is not shown, you can view it by clicking View→Measuring Instruments.



5.3 Control of connection with measuring instrument



To check the connection with a measuring instrument, view the “Check connection” dialog box. You can do it by double-clicking the equipment icon or by right-clicking the equipment icon and choosing “Check connection” from the context menu.

5.4 Control of measuring station



To enable a manual control of the test stand using AFH LD, view the dialog box “Control of Test stand”. The dialog box can also be viewed by clicking → view Test stand in the main menu.

5.5 Measurement series recording

To record a series of measurements, create a new measurement document by clicking File→New.

After the application records a measurement series containing over 500.000 measuring points, no new measurement series should be opened.

6 List of all features

The following list includes all characteristic features of the AFH LD software. Detailed description of all individual features is provided in section “User interface”.

6.1 Basic features

- Recording of several series of measurements: force/time and / or force-displacement
- Management of serial interfaces
- Management of measuring instruments
- Viewing and printing of the recorded measurement data in a single chart
- Saving the recorded measurement series as an XML
- Multilingual user interface (see “Installation”) with contextual help
- - Modern user interface, simultaneous work with several charts using tabs — see “User interface”

6.2 Measurement series recording

- - Possibility to record several series of measurements (force-time and/or force-path) — (measurement series of up to 500,000 measured values must be recorded individually)
- Printing and print preview of displayed measurement data
- Analogue view of the current value
- View of the chart including all measurement series with the zoom function

6.3 Saving/export

- XML: Click “Save” or “Save As” to save the measurement data as an XML file.
- EMF: Click “Save Image As” to save the measurement data as an EMF file.
- PNG: Click “Save Image As” to save the measurement data as a PNG file.
- BMP: Click “Save Image As” to save the measurement data as a BMP file.

License

This product is distributed as a licence for one user (see “License Agreement”).

7 User interface

The objective of this section is to provide summarised information on the way of using and the functionality of the application depending on the menu.

If you do not find the needed support in this section, try to find it in section “How to...?”.

Basic elements of user interface

- Main menu
- Tab bar
- Status bar

Other windows and dialog boxes

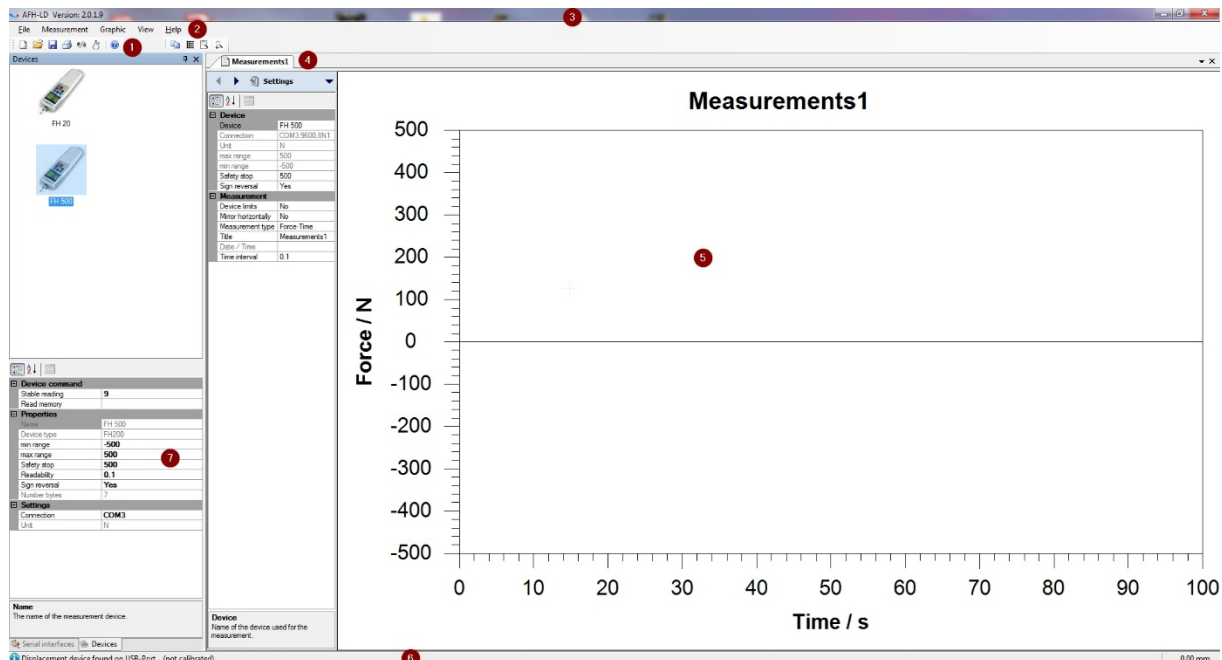
- Control of Measuring Station
- Serial Interfaces
- Devices
- Settings
- Analogue Display
- Large-Size Display
- "About the Application..." dialog box

Add-ins

The way of interpreting different device protocols is managed in separate parts of the software (add-ins). An add-in is available for each special type of device. Use the "Settings" dialog box to download the current add-ins.

8 Basic elements of user interface

The picture below presents the basic elements of the user interface in AFH LD.



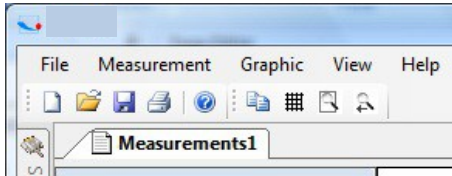
Review of user interface elements

- Main menu
- Toolbars
- Tab bar

- Graphic region
- Properties window
- Status bar

8.1 Main menu

The main menu consists of the following submenus:



- File
- Measurement Series
- Image
- View
- Help

8.1.1 File

The “File” menu includes the following commands:

- New — creates a new document
- Open — opens an existing document
- Close — closes an existing document
- Save — saves the current document under its file name
- Save As — saves the current document under a different name
- Page Settings — allows you to choose a print format
- Print — prints out the current document
- Print Preview — allows you to preview the document to be printed
- Exit — closes the AFH LD application

8.1.2 New

New command (“File” menu)

Use this command to create a new document in AFH LD. Use the command “Open” to open an existing document.

Shortcut

Toolbar: → 

Keyboard: → Ctrl+N


8.1.3 Open

Open command (“File” menu)

Use this command to open an existing document in a new window. You can open several windows at the same time. The “Window List” menu is used to switch between documents.

You can open new documents by clicking “New”.

Shortcut:

Toolbar: → 

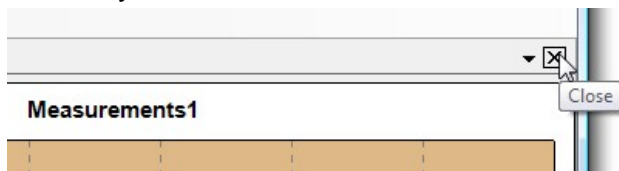
Keyboard: → Ctrl+O

8.1.4 Close

Close command (“File” menu)

Use this command to close all windows showing the current document. Before the document is closed, AFH LD will recommend saving all changes made in the document. If you save the document without saving the changes, you will lose all the changes made after the last saving. Before closing a document without a name, AFH LD will show a dialog box where you can give a name to the document and then save it.

You may also use the icon “Close” as shown below:




8.1.5 Save

Save command (“File” menu)

Use this command to save the current document under its current name. If the document is saved for the first time, AFH LD will display the dialog box “Save As”, where you can name the document. To change the name or folder of an existing document, click “Save As”.

Shortcut

Toolbar: → 

Keyboard: → Ctrl+S

8.1.6 Save As

Save As command (“File” menu)

Use this command to give a name to the current document and then save it. AFH LD will show the dialog box “Save As”, which allows you to enter the document name. To save the document under its current name, click “Save”.

“Save As” dialog box

You can specify the location and name of a document to be saved using the following data entry fields:


- File Name: Enter a new name to save the document under a different name. AFH LD will supplement the file name by the extension shown in “File Type”.
- Drive: Choose the drive where the file is to be saved.
- Folder: Choose the folder where the file is to be saved.
- Network: Use this option to enable connection to your own network.

8.1.7 Search Measuring Instruments

Search Measuring Instruments command (“File” menu)

Use this command to search newly connected measuring instruments and serial interfaces.

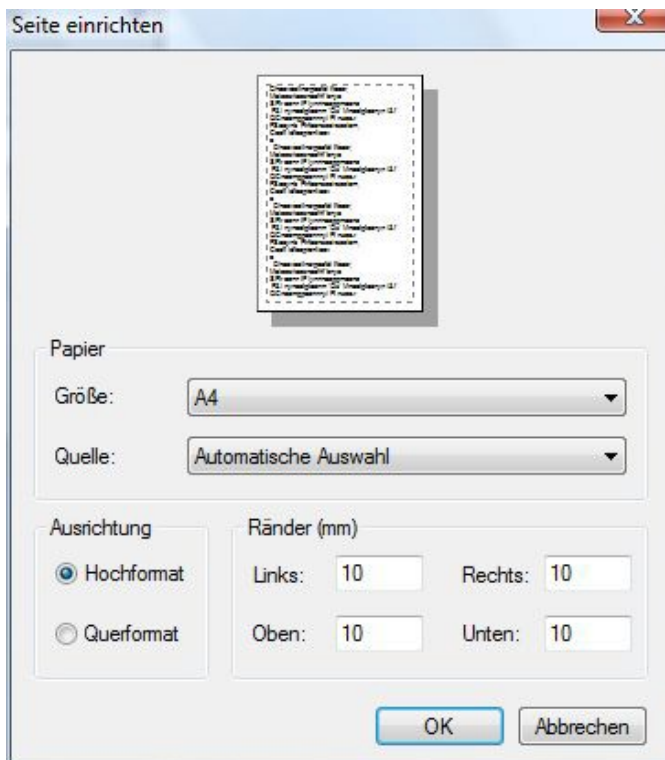
Shortcut

Toolbar: → 

8.1.8 Page Settings

Page Settings command (“File” menu)

This dialog box is used to change the settings of the printer and paper format.



8.1.9 Print

Print command (“File” menu)

Use this command to print the document. If you click this option, the application will show the printer dialog box, where you can select the number of pages, printer and its settings.

Shortcut

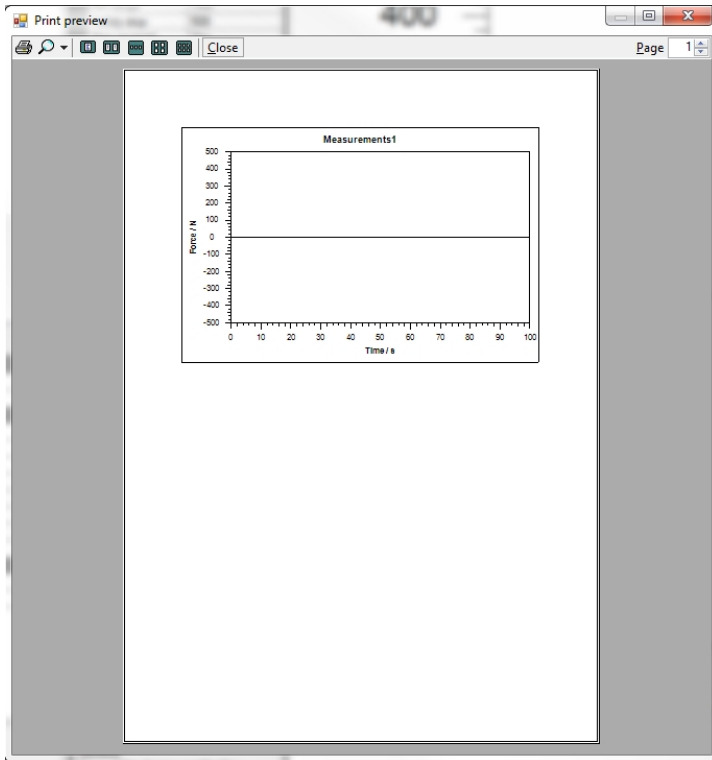
Toolbar: → 

Keyboard: → Ctrl+P

8.1.10 Print Preview

Print Preview command (“File” menu)

Use this dialog box to see what the printed document will look like on the page.

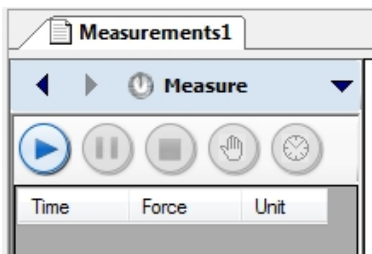


8.2 Measurement series

The **Measurement Series** menu includes the following commands:

- **Start**: starts the recording of measurement data
- **Stop**: stops the recording of measurement data
- **Finish**: completes the recording of measurement data
- **Manual Dispatch**: sends defined device control commands to the measuring instrument
- **Time-Controlled Dispatch**: sends defined device control commands to the measuring instrument at regular intervals

The commands are also available on the “Measurements” toolbar:



Force / Time measurements



Force / Displacement measurements

8.2.1 Graphic

The **Graphic** menu includes the following commands:

- **Show Tab:** shows and hides the tab in the graphic window
- **Save graphic As:** saves the image as a file (EMF, PNG, BMP)
- **Copy:** copies the graphic region to the *Windows* clipboard

8.2.2 View

The **View** menu includes the following commands used to manage the serial interfaces and measuring instruments, and to change the program settings:

- **Serial Interfaces:** shows or hides the window for serial interface management
- **Measuring Instruments:** shows or hides the window for serial interface management
- **Settings:** opens the window for program settings management
- **Status Bar:** shows or hides the status bar
- **Test stand:** shows or hides the “Test stand” dialog box

8.2.3 Help

The **Help** menu includes the following commands:

- **Contents:** shows the contents of the help file
- **Index:** shows the index of the help file
- **Find:** allows you to search specific entries in the help file
- **About the Application...:** shows further information about AFH LD

9 Toolbars

The software provides two different toolbars. One includes the main menu commands, and the other one – graphic commands.



9.1 Main menu commands

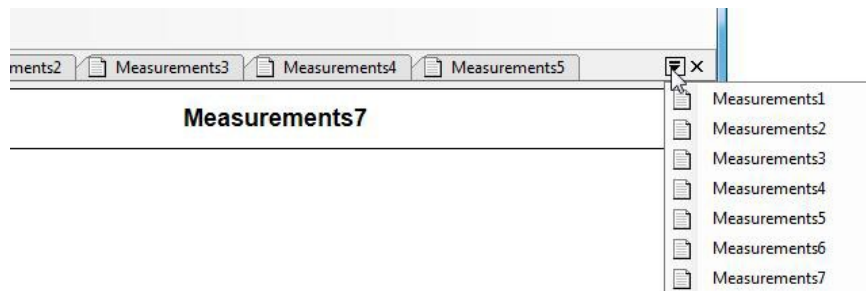
- - **New** — creates a new document
- - **Open** — opens a new document
- - **Save** — saves the active document under its file name
- - **Print** — prints the active document
- - **Search Measuring Instruments** — searches the recently connected measuring instruments
- - **Help** — shows the help file

9.2 Graphic commands

- - Copy — copies the image to the Windows clipboard
- - Tab — shows or hides the tab in the image window
- - Show All — shows the whole measurement series in the image window
- - Show Previous — restores the previous image size

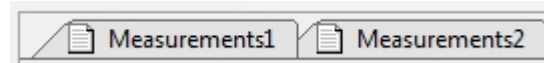
9.3 Window bar

Use this menu to switch between different windows.



9.4 Tab bar

The tab bar is used to switch between the opened documents with measurement series.



It allows you to switch between the visible tabs (screens) or to remove them from the window list (close).

You can switch between documents with the mouse or using the keyboard, by clicking **Ctrl+Tab** or **Shift+Ctrl+Tab**.

Use **Ctrl+F4** to close a tab (screen). You can change the order of tabs by dragging them with the mouse.

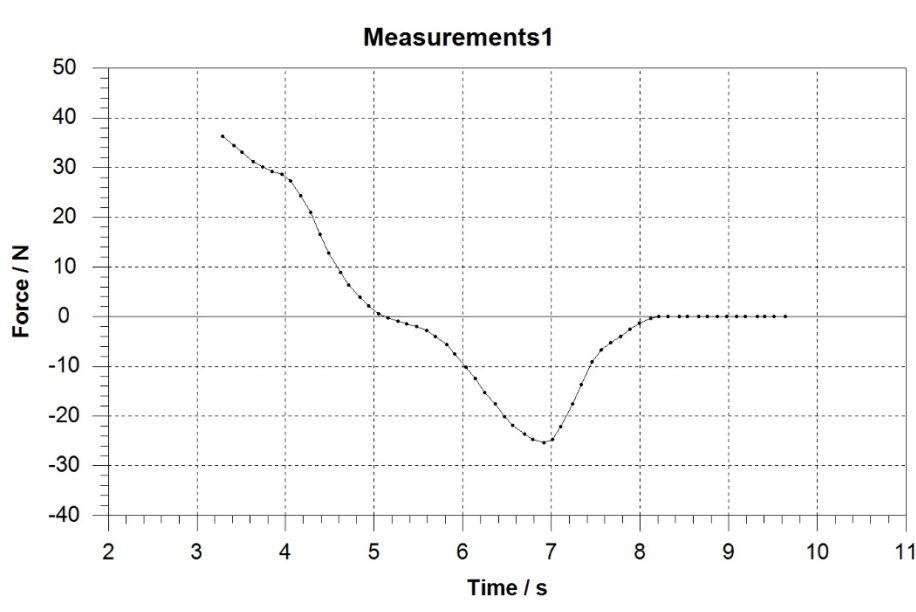
Right-clicking a tab will open the context menu, where you can display the current measured value in the analogue or enlarged view.

- – Measuring Instrument: shows the current measured value as an indication of the analogue measuring instrument
- – Large-Size Display: shows the current measured value in its own window, with zoom

9.5 Graphic view



In the graphic view, the measurement series is shown as a chart. The appearance can be changed using the “Settings” dialog box. It allows you to adjust the background colour, chart colour, etc.



9.6 Status bar

The status bar is displayed by the bottom edge of the AFH LD / FGT window. You can show or hide the *status bar* command by clicking “Status Bar” in the “View” menu.

9.7 Other windows and dialog boxes

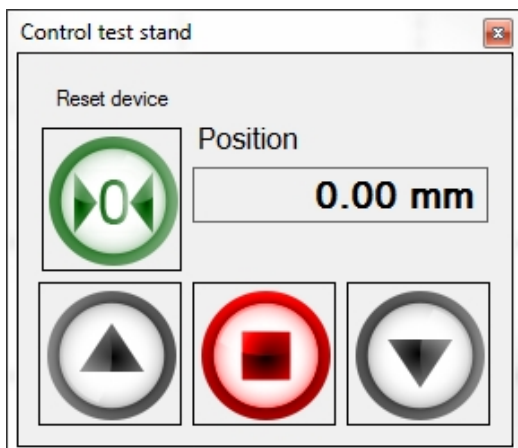
The application includes other windows and dialog boxes, which are not described in the previous sections. Here you will find the links to appropriate sections.

You should pay a particular attention to the dialog box “Settings”.

9.8 List of windows and dialog boxes

- Test stand dialog box
- Serial Interfaces
- Measuring instruments
- Settings
- “About the application” dialog box

9.9 Dialog box for controlling the Test Stand



This dialog box is used to control the test stand. It is only available if a length meter is detected during software start-up.

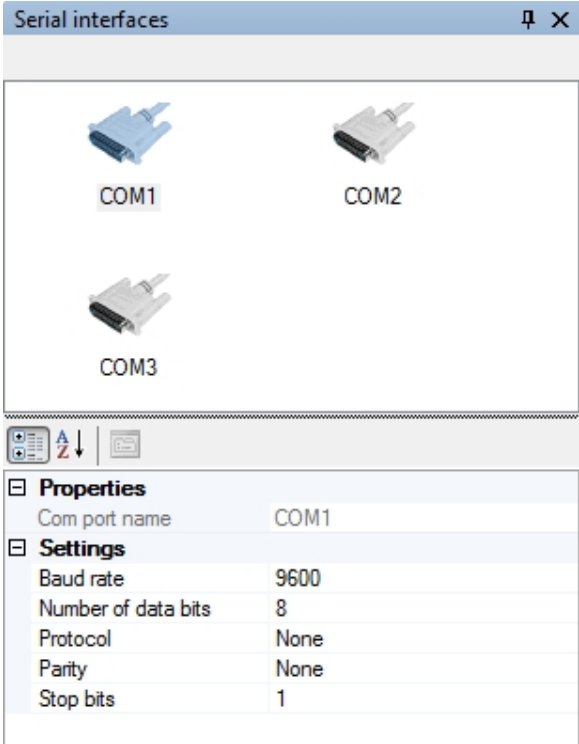
The dialog box contains three keys used to control the movement of the test stand, one key to reset the dynamometer, and an indicator showing the current direction of the test stand. Additionally, it displays the test stand's position and calculated speed.

Note:

After you have connected the device and have started AFH LD / AFH FGT, close and restart the program or select "Search Measuring Instruments" in the menu to detect the measuring instruments.

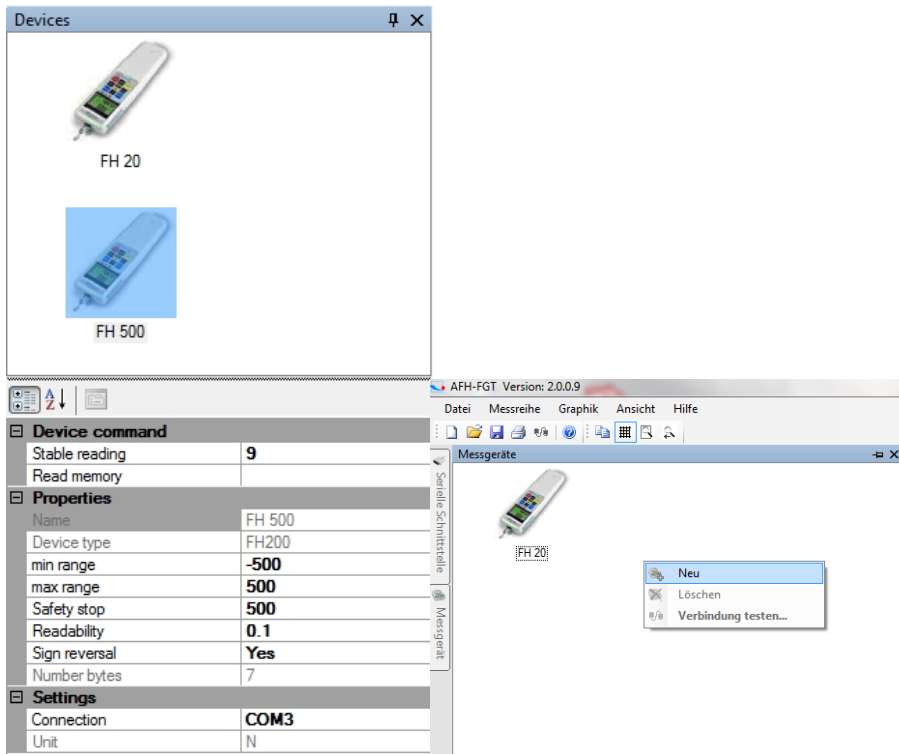
9.10 Serial Interfaces

This window shows all available serial interfaces of your computer. Select the appropriate interface to view or change the settings. This will allow you to adjust the corresponding settings in the lower window.



9.11 Measuring Instruments

This window shows all the measuring instruments created. To change the properties of an individual device, select the device and adjust its properties. By right-clicking the window you can add a new measuring instrument.



9.12 Settings

In the “*Settings*” dialog box, you can change the **application parameters**. Some parameters (e.g. the ones used to change the device properties) are saved automatically, and other (chart appearance) are available additionally from the AFH LD / FGT toolbar. However, all the most important settings can be found in this dialog box.

The dialog box is divided into different categories (**Graphic, View, Add-In**) depending on the contents and parameter importance. This section contains the descriptions of each category and parameter.

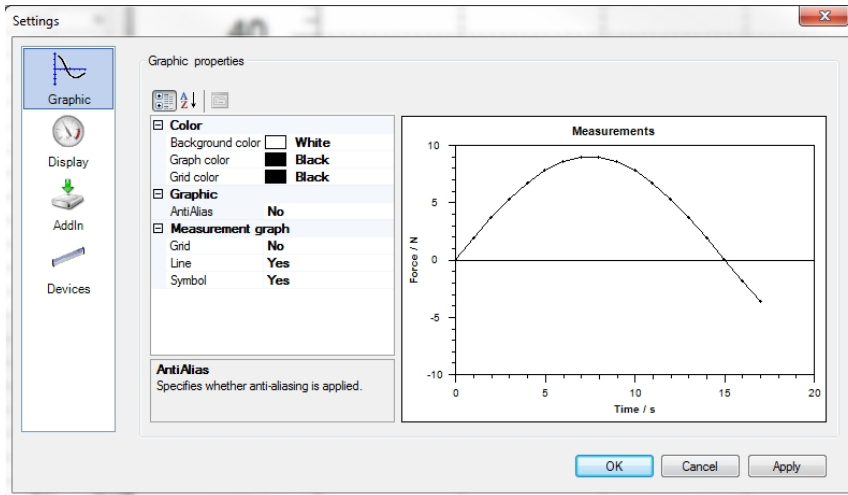
9.13 Graphic



Graphic

Colour— Used to change the background of graphic image, the colour of the measurement curve or of the grid.

- **Graphic** — switches on/off the edge smoothing function to improve the quality of the measurement curve
- **Measurement Curve** — shows / hides the grid, shows / hides the lines between measurement points, shows the measured values as spot symbols

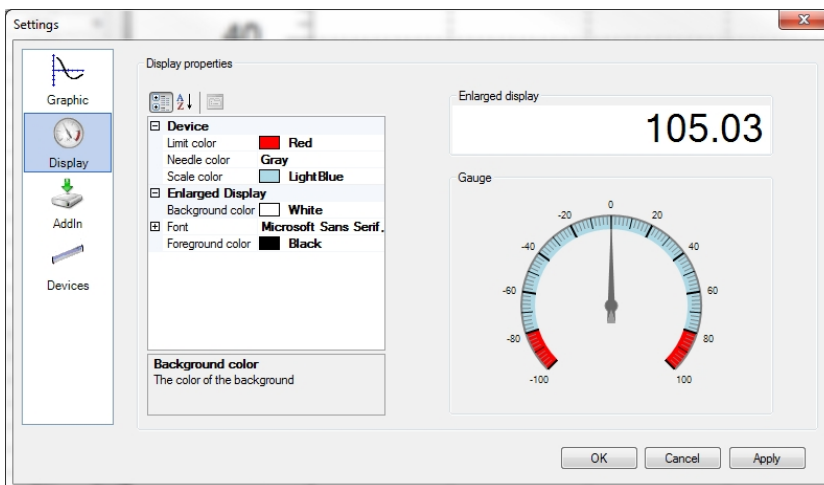


9.13.1 Display



Display

- **Measuring Instrument** — adjusts the colour of the limit value, scale and the hand of the analogue measuring instruments
- **Large-Size Display** — used to choose the background colour, type and size of font on the large-size display

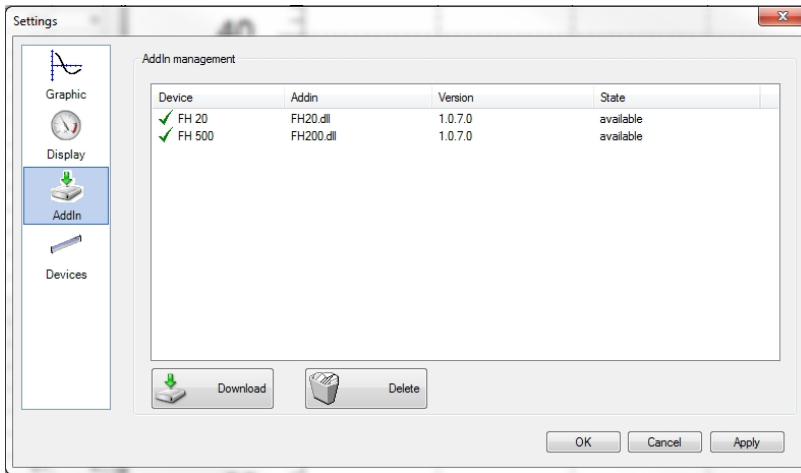


9.13.2 Add-In



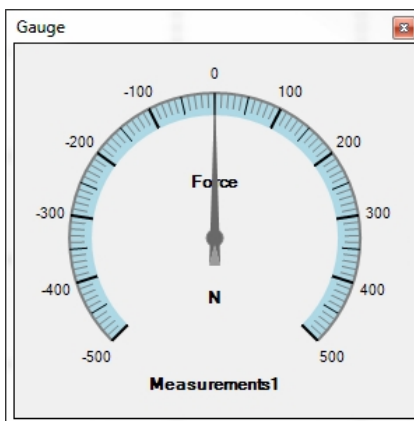
AddIn

- **Load** — downloads the current add-ins to interpret the measuring instruments' protocols (Internet connection required)
- **Delete** — deletes the unnecessary add-ins from the hard disk

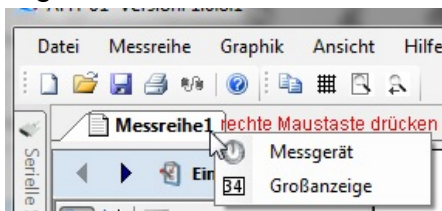


9.13.3 Analogue Indication

In this window, the current measured value is shown as an analogue measuring instrument. You can mark the range of limit values by choosing a different colour in the “Settings” dialog box.

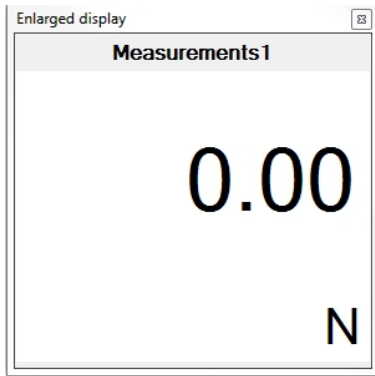


Right-click the measurement series to activate the window.



9.13.4 Enlarged Indication

In this window, the current measured value is shown in the enlarged form. You can change the font type and colour in the “Settings” dialog box.



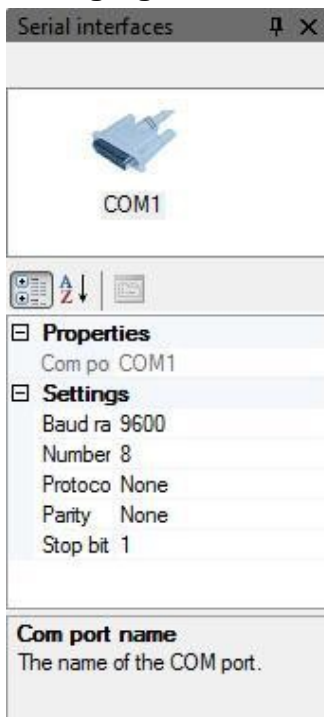
10 AFH FGT /LD Help Menu: How can I...?

In this dialog box you can find some examples, which will help you to understand the tasks you can realize with the **AFH LG / AFH FGT** product. The list down below contains assignments to these examples.

Exporting measuring results

You can export test series to EXCEL

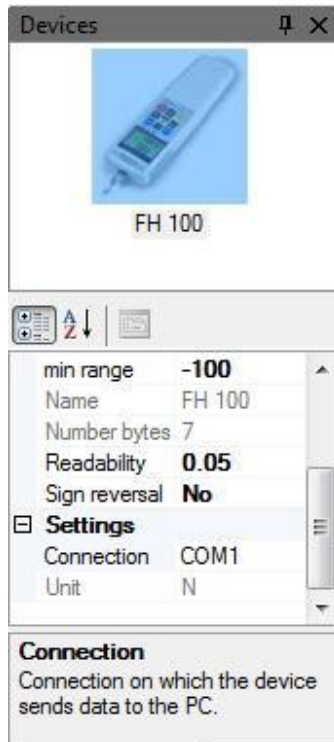
Managing serial interfaces



The program indicates all existing serial interfaces. To change the settings of an interface, please select the symbol of the interface and then enter the appropriate values (baudrate, parity etc.) and adapt them in the lower part of the window.

If the window for managing the serial interfaces cannot be seen, it can be indicated by using the menu function view → serial interfaces.

Managing measuring instruments



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.

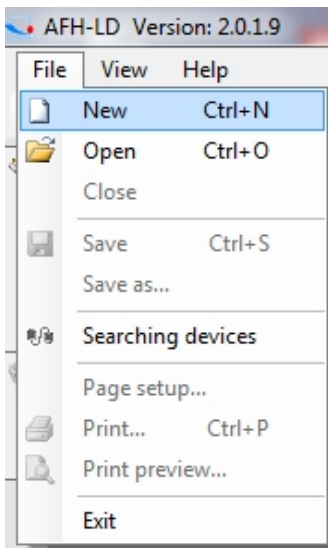
Measurement series

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

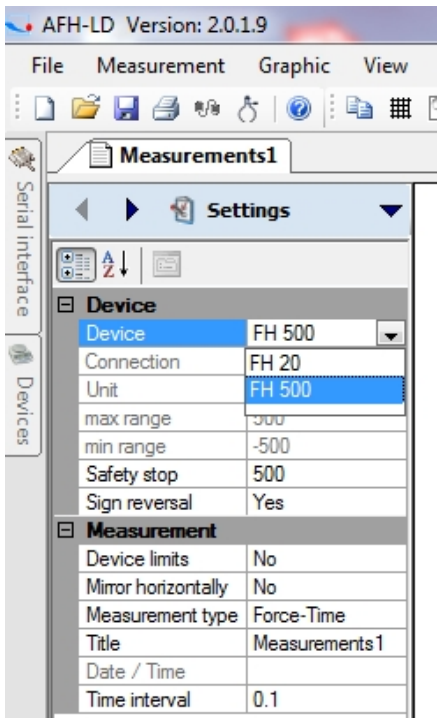
- create a new measurement document by closing *File* → *New* within the main menu
- choose the device where you want to receive data from
- modify the properties of the device and measurement to fit your needs
- switch to measurement menu
- start measurement, record measurement data either manually or timer controlled
- stop measurement and save or print data
- close measurement document

Recording a measurement series

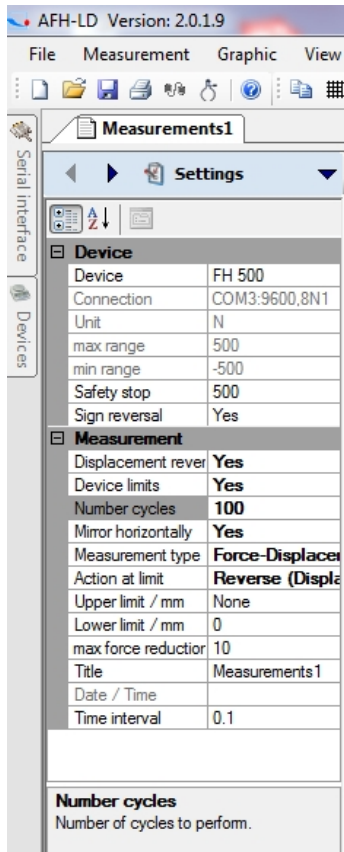
Create a new measurement document



Choose device from the list of all previously defined devices



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



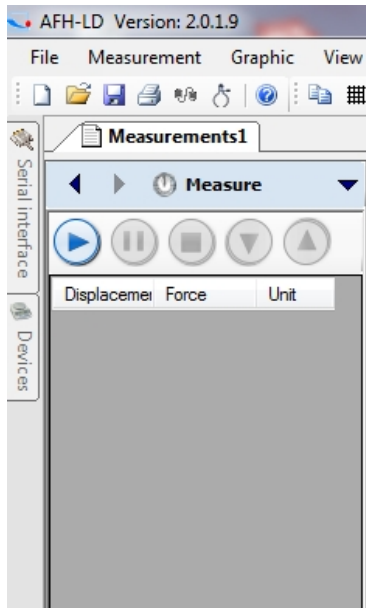
The only device property to modify is Sign reversal. If this property is set to Yes, the sign of the measurement data will be inverted, e.g. if device sends 40N the measurement value will be -40N.

All other device properties are taken from the device defined in the device window .

Following measurement properties can be modified:

- *Action at limit* will be used to stop the test stand or to reverse the movement of the test stand
- *Date/Time* will be entered automatically when 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 equally on 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 for long-term measurements and thus the maximum 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 is equally on yes)

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:



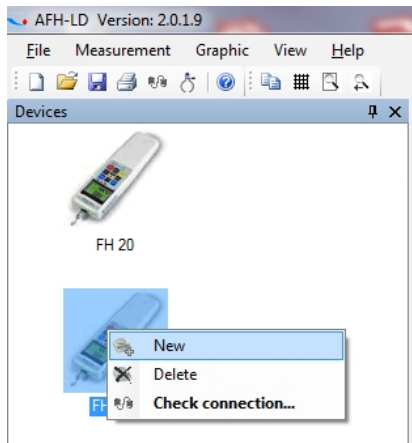
Force / Displacement:



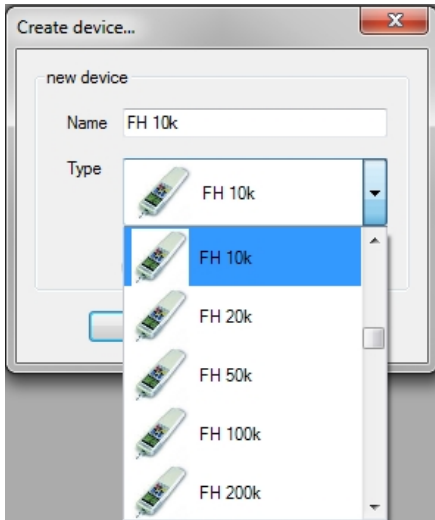
Export measurement data to Excel

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.

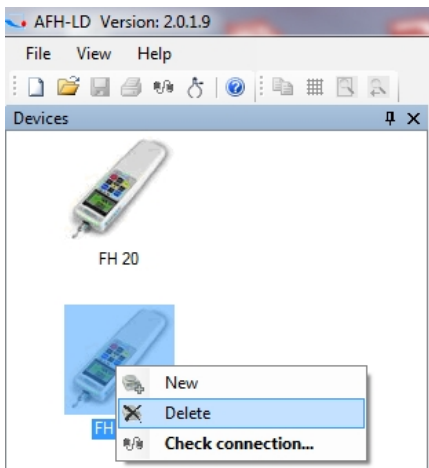
Create a device



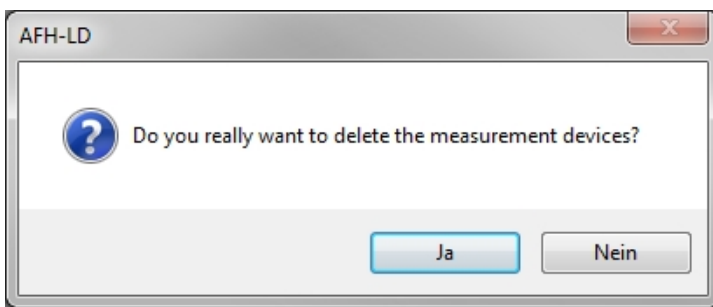
To create a new device, right click within the Devices window for displaying the context menu. Then select New. The Create device dialog appears
 Choose the device type from the drop down list, enter name (or accept default name) of the device and click OK. The new device should appear in the device window .



Delete a device



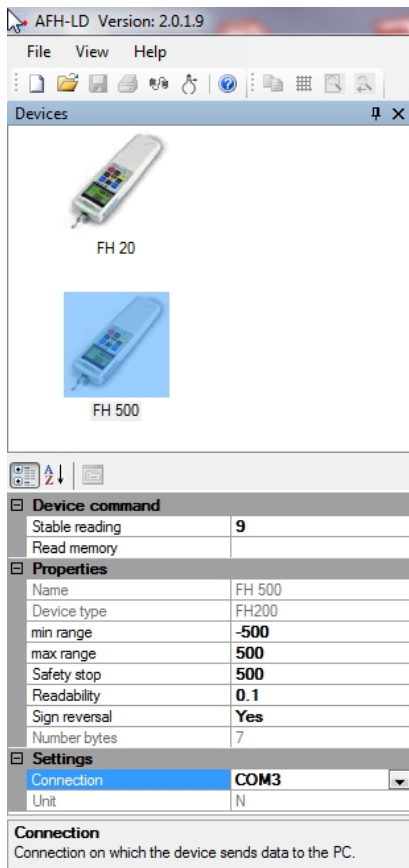
To delete one or multiple devices, select the devices to be deleted then right click within the device icon for displaying the context menu. Then select *Delete*.
 To confirm deletion, press *ok* in the message box.



Modify device settings

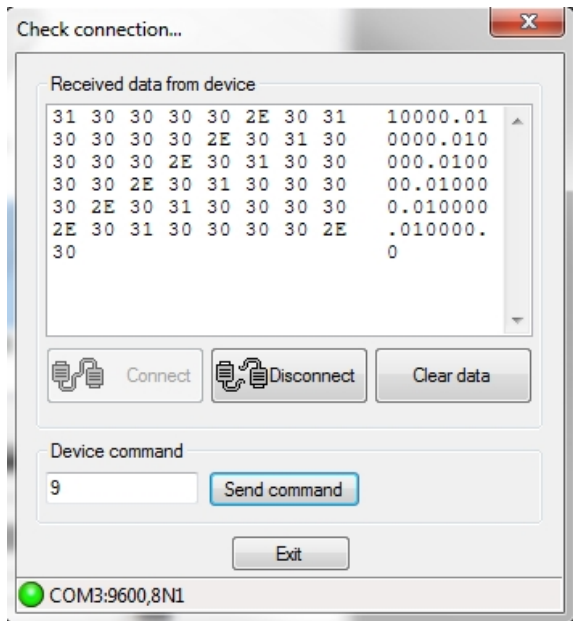
In this property panel you can display or rather modify all device related settings. On the left is the name of the property and on the right the corresponding value. The lower panel show s a short description for the property.

The devices have the following properties:



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

Check device connection



With this dialog you can check if a device is connected to the PC and is able to communicate with AFH-FGT / AFH LD.

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 besides on the right.

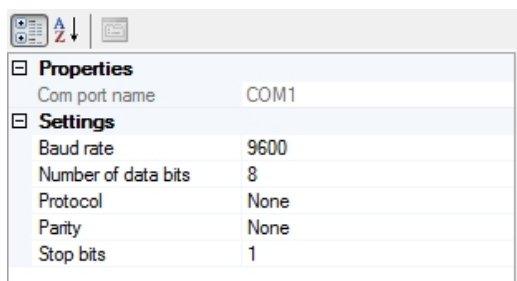
If the device is sending data, it is displayed in the *Received data* window in both ASCII and HEX.

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 dialog, 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 the movement of the test stand



With these three buttons you can let 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 gauge



Use this button to reset the force gauge to “zero”.


Display the current movement of the test stand



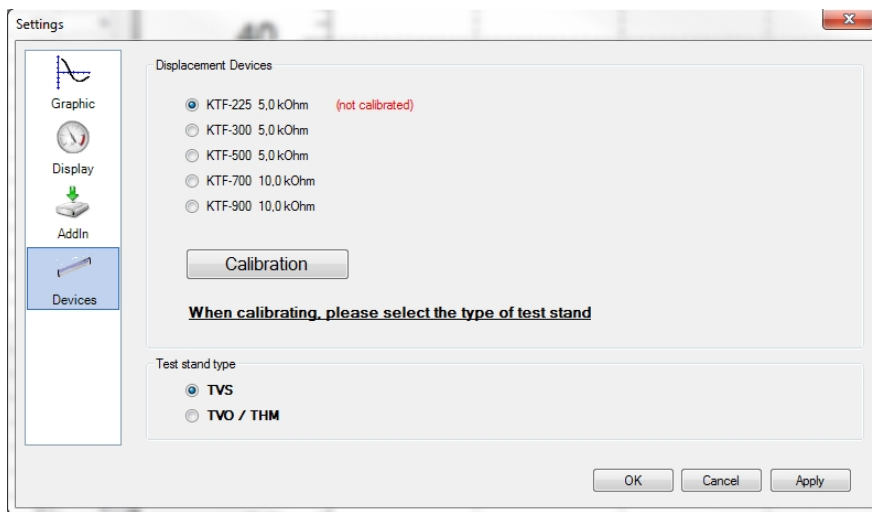
This movement indication shows if the test stand is moving upward, downward or if it rests.

11 AFH LD: Calibration of the linear potentiometer

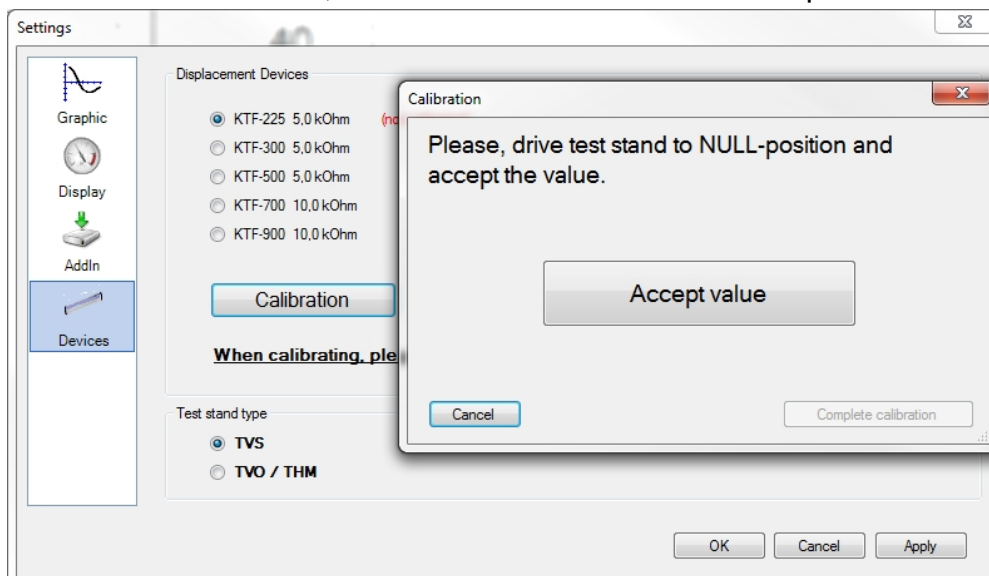
Before measuring, you must calibrate the distance meter, if using AFH LD software. To this end, the delivered package includes a 100 mm reference bar, which has to be used for calibration.

 Displacement device found on USB-Port . (not calibrated)

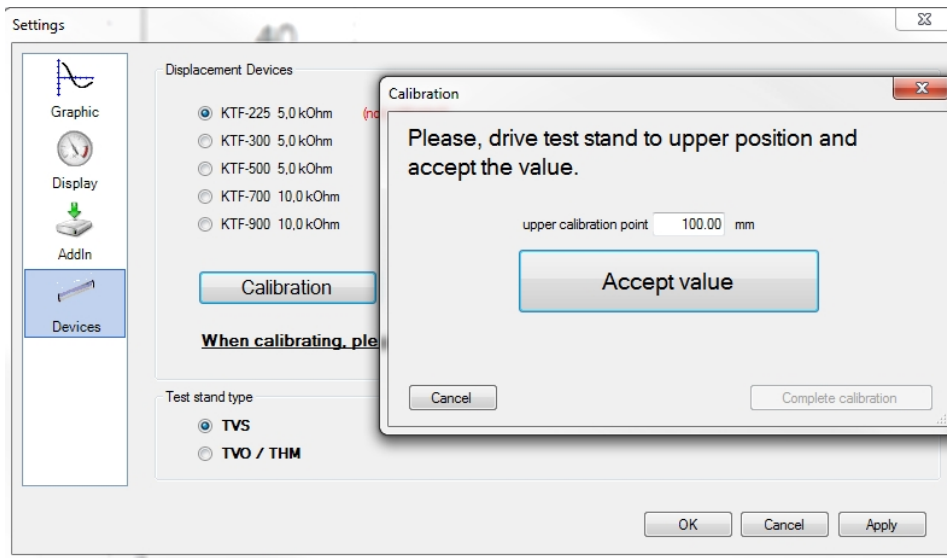
To perform the calibration, proceed as follows.
In View --> Settings, go to the following table.



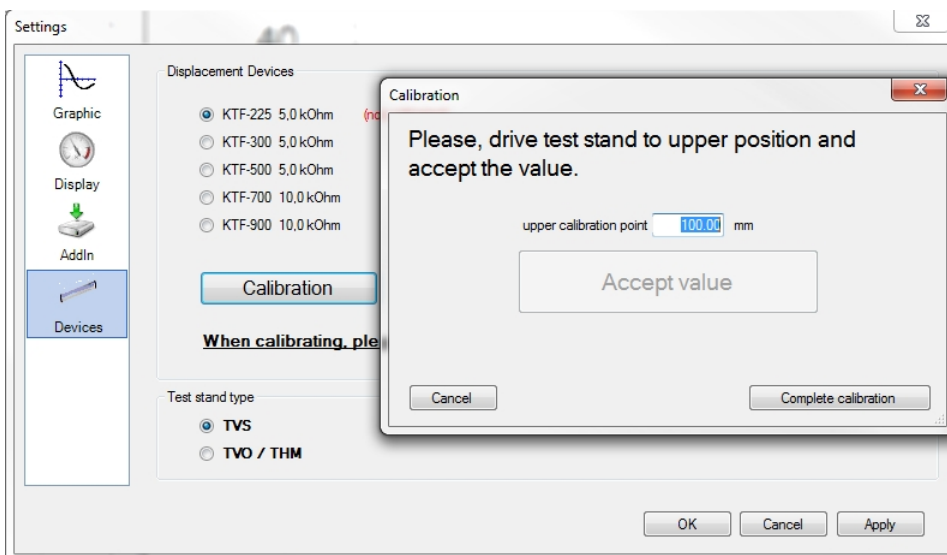
In "Measuring Instruments" select the appropriate length meter. The number indicates the length in [mm] for which the distance meter can be used.
To start the calibration, move the test stand to its lowest position.



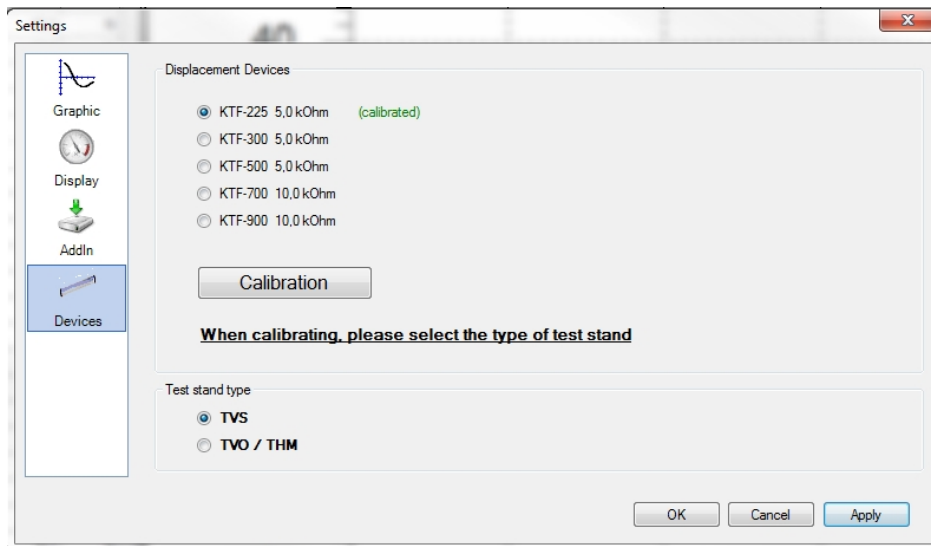
Then press "Apply Value".



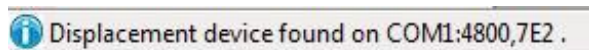
Then move the test stand up for 100 mm. While the test stand is slowly lowered down, position the calibration bar in such a way at the lower adjusting ring, that, after being moved for 100 mm, it causes the lower limit switch to power off the motor. (Caution! Risk of crushing)
Press “Apply Value”.



Press “Finish Calibration”. Remove the calibration bar.



Press OK. The calibration is completed.



You will see the status on the lower left side.

The values will be saved and will remain available after the next start-up of the application, until the next calibration will be performed. We recommend a new calibration after a long period of work break or if any deviations are detected. Now everything is ready for initial measurement.

12 Initial measurement (Cycle measurement)

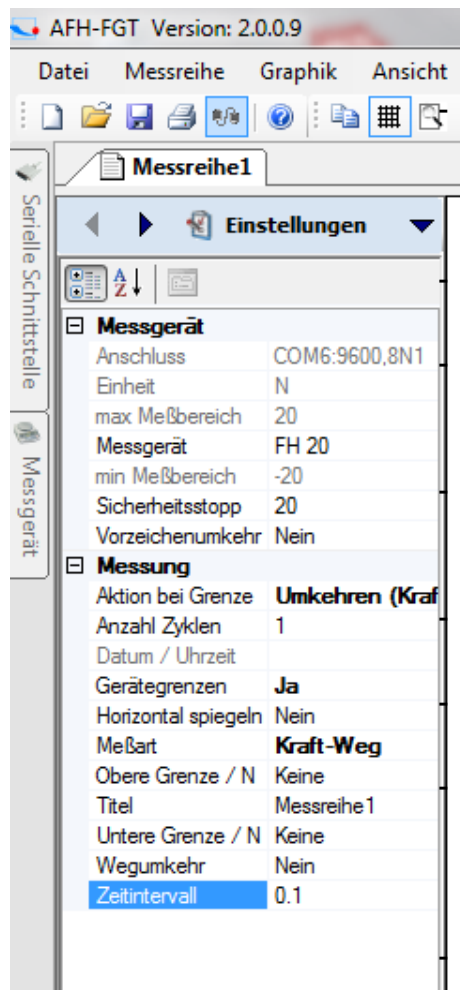
Create a new measurement series document.



Choose the measuring instrument to be used (if the device is not displayed, you can add it in the “Measuring Instruments” window; see section 9.11).



In "Settings" you can set the following parameters.



Measuring Instrument: here you can select the measuring instrument from the drop-down menu.

Emergency Stop: here you can set the value where the test stand will stop in case of emergency (do not set a value that exceeds the maximum load of the dynamometer).

Sign reversal: changes the direction, in which the curve is displayed.

Switch at Limit: here you can force a reversal of the movement direction after passing a certain distance or after reaching a pre-set force.

Cycles: here you can set the number of cycles. In case of high values (> 10,000), the software can run more slowly.

Device Limits: here you can generally specify whether the limit values should be applied.

Horizontal Reflection: activates the reflection of the measurement curve.


Measurement Type: here you can select the Force / Displacement or Force / Time measurements, or memory readout. Force compression measurements will be shown with minus- values, e.g. -50N.

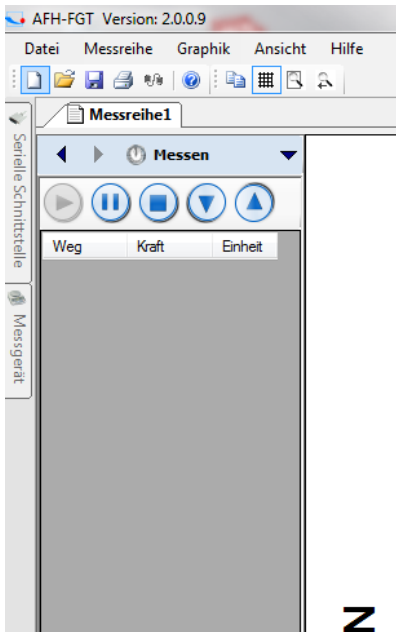
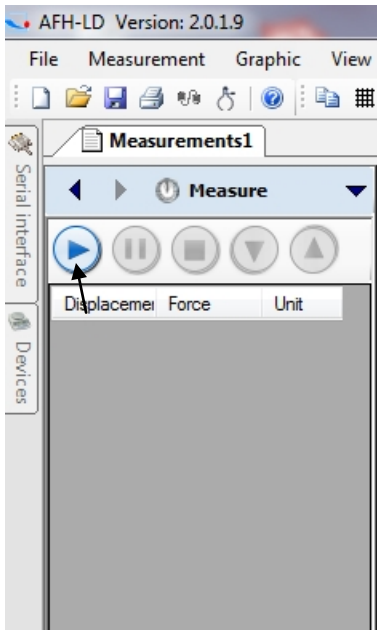
Upper Limit: here you can enter the force or displacement value.

- Title: here you can name the measurement.
- Lower Limit: here you can enter the force or displacement value.
- Displacement Reversal: Yes or No.

- Time Interval: here you can set the value of the recording of measuring data within the scope of the software. (time interval, in which measurement values are requested from the force gauge).

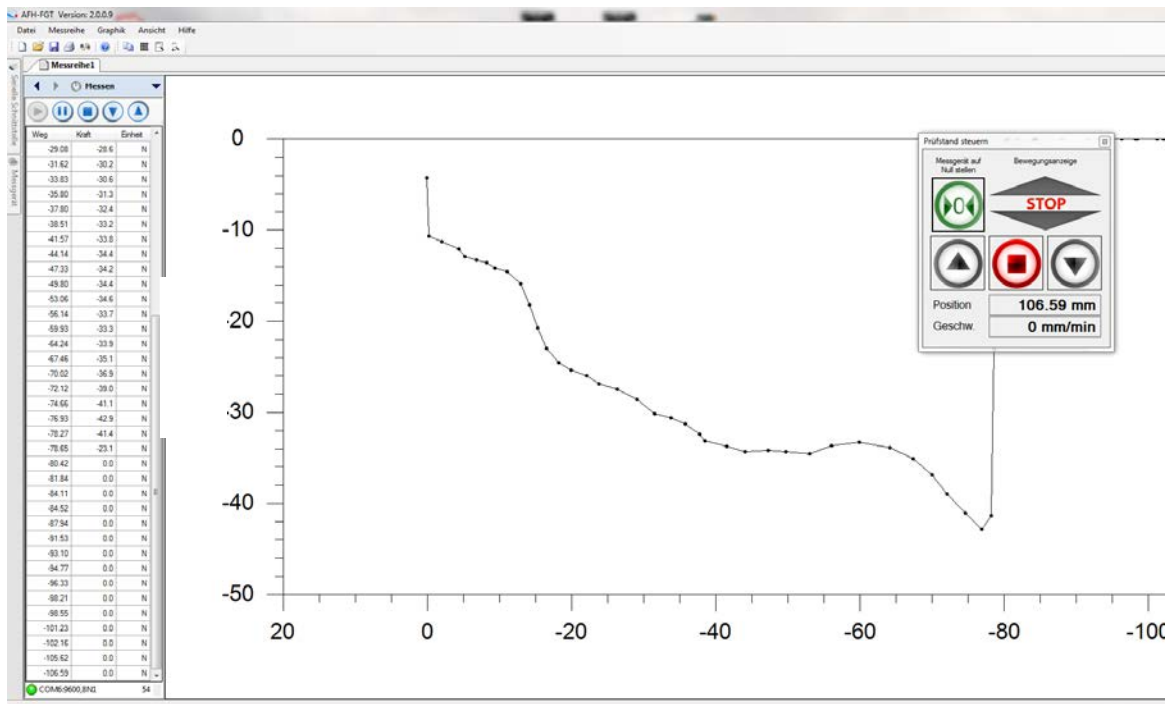
The setting of the time interval as well as the number of cycles has got an influence on the number of the memorised measured valued at long term measurements and with this, also on the max. testing time. You can memorise max. 500.000 measured values at force / displacement or force / time measurements.

Then continue the measurement by pressing the right arrow key .

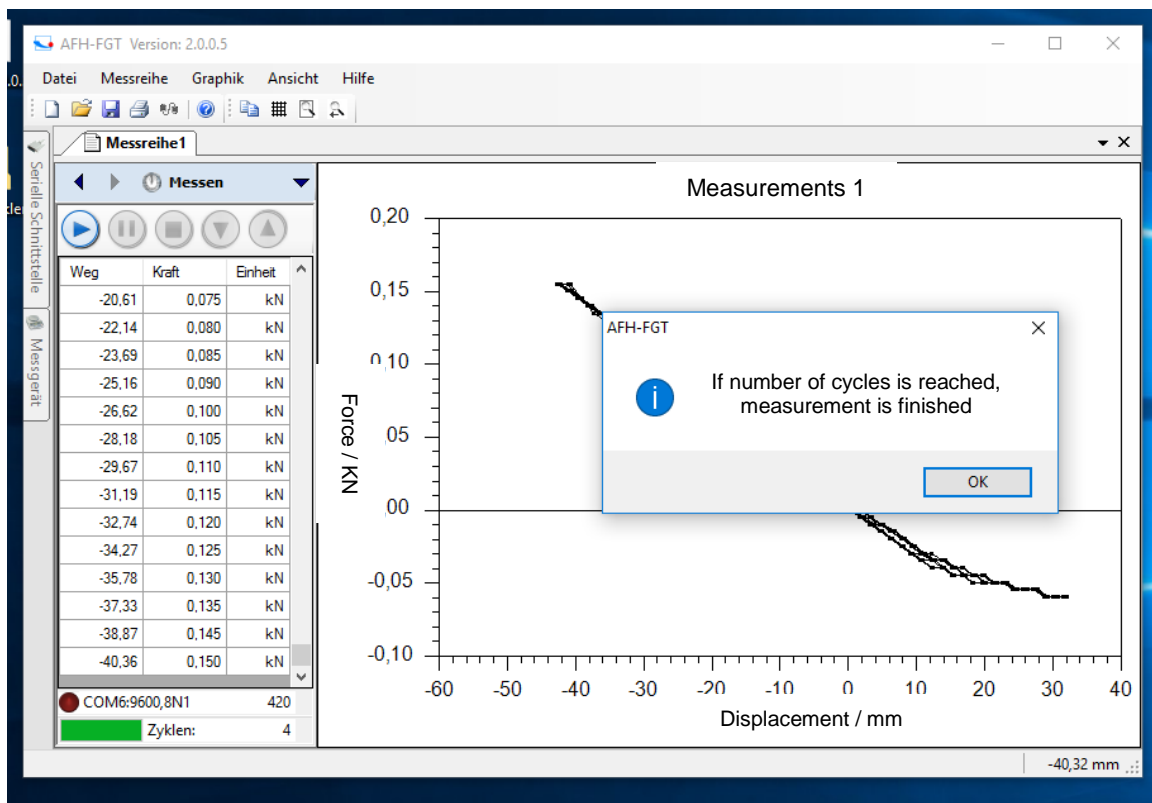


Z

Start the measurement by pressing the up or down arrow key. The test stand will start moving and transmitting the data to the software.



Measurement is completed, if the number of cycles has been achieved.



After finishing the measurement, it can be saved at any desired place. Subsequently close the program and switch off all devices.

13 Further Information

Additional resources

Here you can find links to additional help resources (instruction manuals, technical data sheets etc.).

- **AFH LD / AFH-FGT** documentation

Links:

- Sauter GmbH, <http://www.sauter.eu/>
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13.1 AFH-LD / FGT – License agreement



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