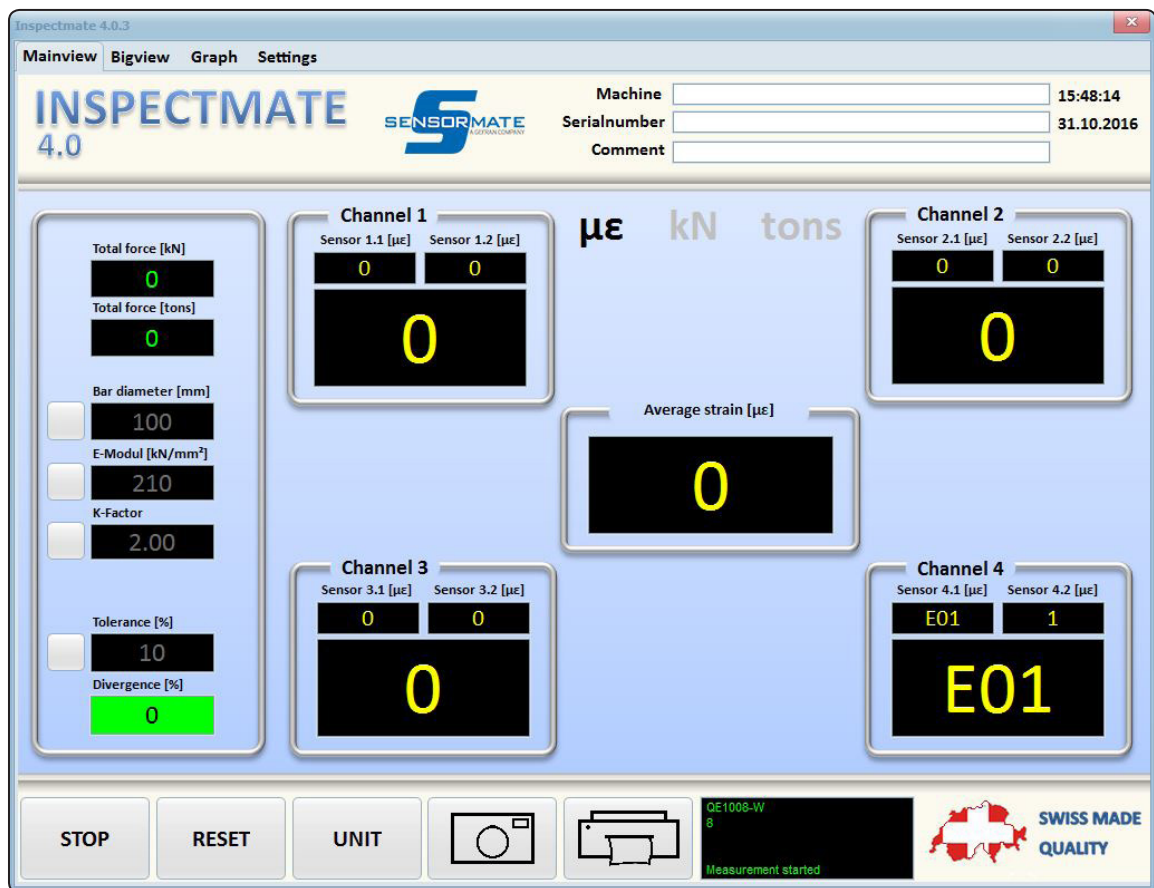


Operation Manual



Display Software INSPECTMATE Version: 4.0.3.34



Preface



Dear Customer

Sensormate AG would like to thank you most sincerely for choosing a sensor system with the display software Inspectmate.

This operation manual is intended for sales partners, customers and skilled service personnel.

We seek to ensure that the product works to your full satisfaction. Adherence to this operation manual ensures optimum function and service life of the products with Inspectmate.

The graphics and photos in this operation manual are purely schematic examples. Your product may look different to what is illustrated.

We are continually improving our products. If you should have any questions concerning your product or this operation manual, please contact our Customer Service department or visit our homepage.

Original language: German



SENSORMATE AG

Steigweg 8
CH-8355 Aadorf TG
Switzerland

Tel. +41 (0)52 242 18 18
Fax +41 (0)52 364 32 72
Email: info@sensormate.ch
www.sensormate.ch

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1. Installation & Driver

Minimum system requirements

- Windows XP / 7 / 8
- Administration rights
- Resolution 1024x800
- USB 2.0 connection

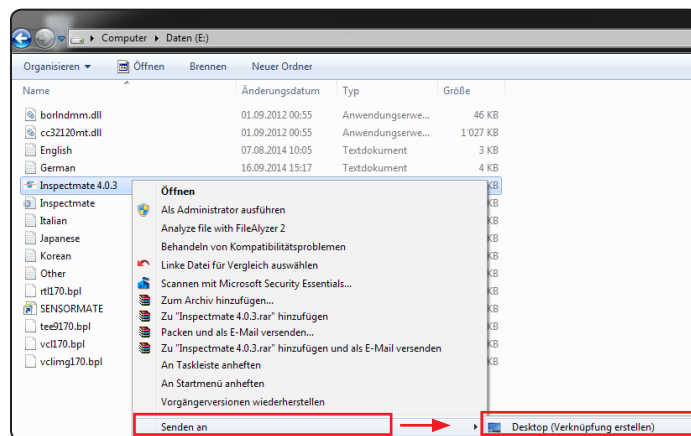


If the screen resolution is too low, the display software is not displayed fully.

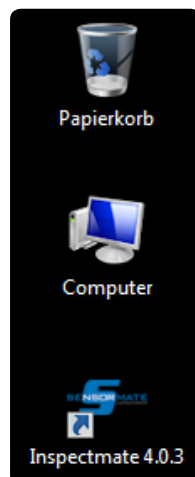
1.1. Installation of display software Inspectmate 4.0

The display software Inspectmate 4.0 does not need to be installed in the strict sense but merely copied from the memory stick to the computer. In theory, it is therefore also possible to use the display software from the memory stick.

The following steps illustrate the copying of the software and how to create a desktop link on the computer.



1. Connect the memory stick supplied by Sensormate to the computer and open the respective drive.
2. Select and copy the folder „INSPECTMATE BUNDLE 4“.
3. Select the storage location on the computer and insert it.
4. Open the folder which has just been copied.
5. Open the folder Inspectmate.
6. Select the application file „Inspectmate“ with the right mouse button.
7. Send to „Desktop“ (Senden an „Desktop“).



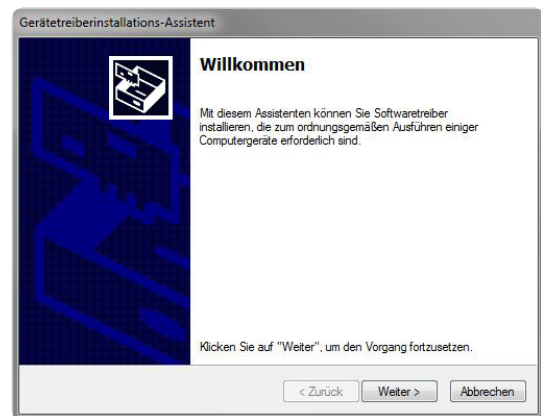
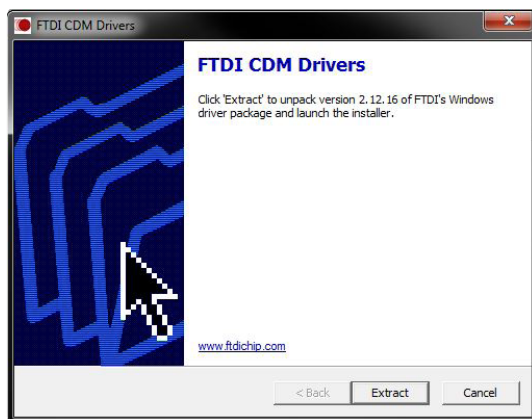
The installation of Inspectmate on the computer has been completed.

1.2. Driver

The driver installation ensures the detection of the connected device on the Computer and should be carried out in any case.

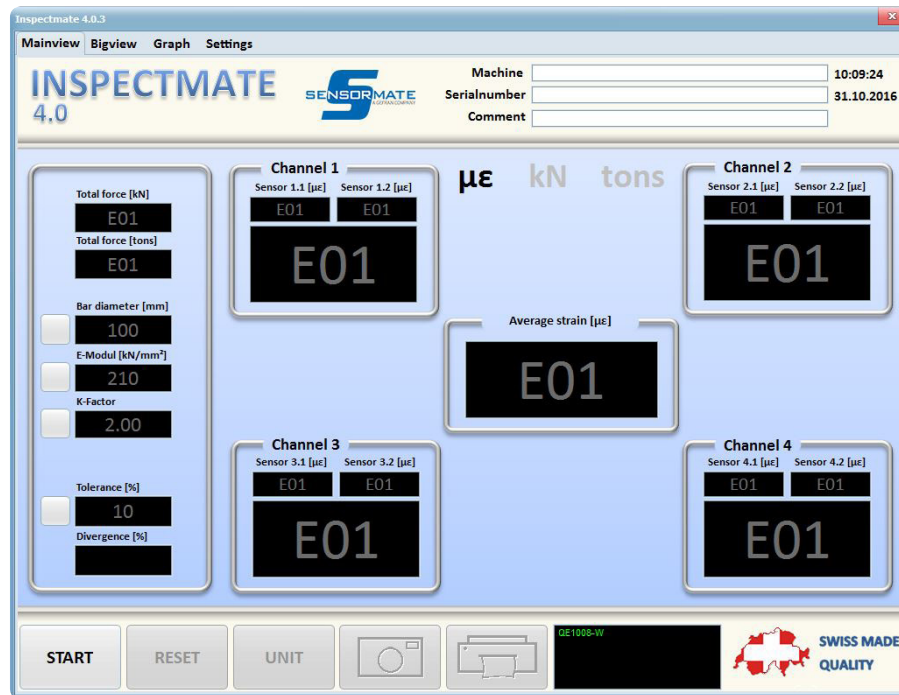
Installation

- Open the folder „Driver“
- Run the contained setup program.
- A window appear. Press the „Extract-Button“ to extract the file.
- A installation wizard appear and takes through the installation steps.
- After installation of the driver, run the application „Inspectmate“.



Runs Inspectmate for the first time (for example, if the application was installed on a new computer) please note chapter 3 „First use“.

2. Operation



Important information

The software Inspectmate is designed for the devices of Sensormate AG and allow the full range of control and evaluation.

Operation is divided into four areas, which can be selected using the corresponding tab.

→ „Mainview, Bigview, Graph and Settings“



Runs Inspectmate for the first time (for example, if the application was installed on a new computer) please note chapter 3 „First use“.

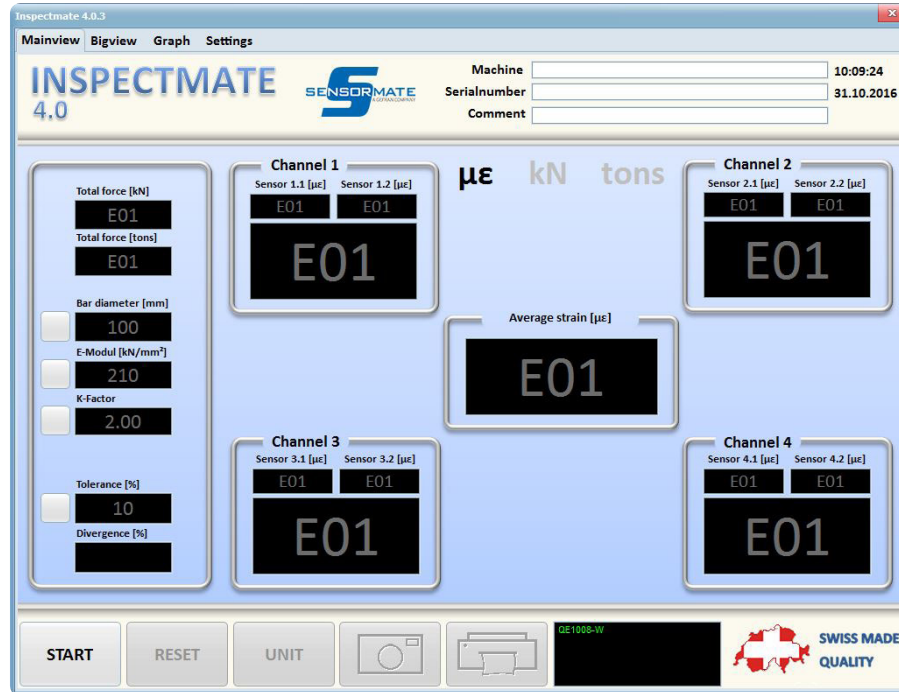


Basically:

- Measured values are calculated always from the connected device, and not from the Software Inspectmate.
→ **Exception: Tolerance calculation and conversion into US-tons.**
- Settings with locking button are only active when they are locked.

2.1. Main view

The main view is the standard view for measurements and also contains the key settings and control options.



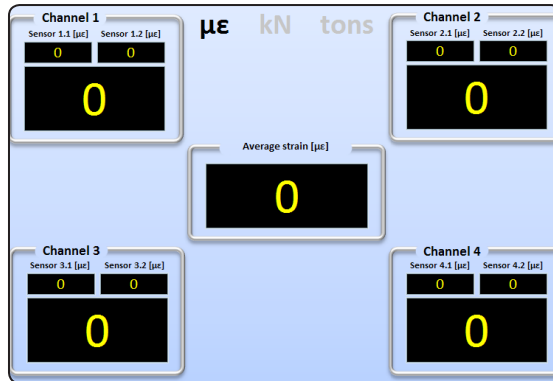
Device information and time stamp

The information fields (Machine, Serial number and Comment) are saved in the configuration file and CSV file in addition to the measurement values and are used as additional information for separate documentations.

The time stamp is saved along with the measurement values.



Numerical illustration of the measurement



Channel 1 to 4 Shows the current measurement values in the set unit.

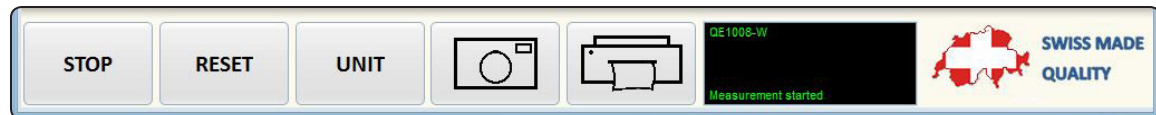
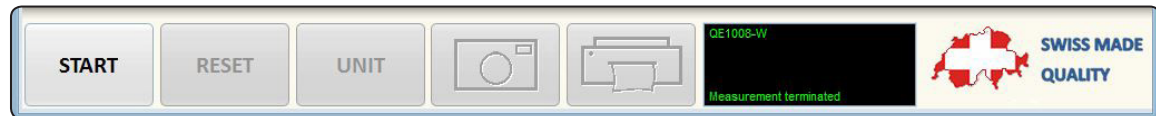
(The two smaller displays above can be activated in the setting. They show the measurement value of the individual strain measurement sensor. → only QE1008-W)



Unit The set unit appears in black.

Main value The value in the middle is calculated depending on the current unit (see table below)
Only valid measurement values are included. → No E01.

Unit	Calculation
Average strain [$\mu\epsilon$]	Average value
Total force [kN]	Total
Total force [tons]	Total

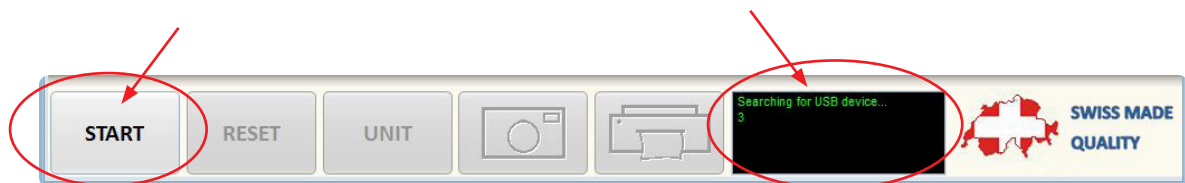
Control console



Start	Starts the measurement and activates the measurement settings in the main view.
Stop	Stops the measurement and locks the measurement settings in the main view.
Reset	Sends a reset command to the connected device so that it starts the taring process.
Unit	Switches to the next unit ($\mu\epsilon$ -> kN -> tons).
	Creates a screenshot of the main view as a BMP file. Select the storage location as you wish.
	Prints the current main view via the selected printer.
Information display	Provides ongoing information about the current connection status and actions.

Back to mainview

When switching back from settings to mainview the „START“ button may already be active. But in the information display the connection status shows „Searching for USB device...“. This means that the receiver is detected, but not ready for measuring.

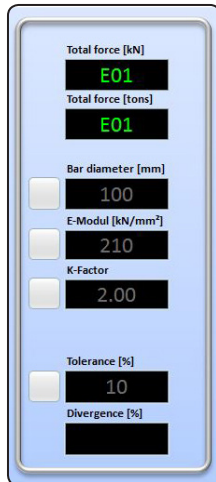


When the status of the device changes, the system is ready. This will take normally a few seconds.



Measurement settings

The four buttons on the left next to the respective input field are used to lock and unlock the configured values.



Note:

The young's modulus (E-Module) is a material constant which can calculated the clamping force based on the measured strain and the tie bar cross-section.

The strain is a priority, because regardless of the tie bar material can be measured the effective strain =maschine parallelism.

To calculate the clamping force it should be used a standard modulus of 210kN/mm².



It is recommended **not to change** the values in the input fields E-module and K-Factor (gauge factor).

Total force [kN]	Simultaneous display of the main value in the unit kN.
Total force [tons]	Simultaneous display of the main value in the unit tons.
Bar diameter [mm]	A numerical value between 1 and 999 can be entered. If the numeric keypad cannot be used, this only means that the connected version of the device does not support this function.
E-module [kN/mm ²]	A numerical value between 1 and 999 can be entered. If the numeric keypad cannot be used, this only means that the connected version of the device does not support this function.
Tolerance [%]	A numerical value between 1 and 100 can be entered.
Divergence [%]	The divergence of the minimum value to the maximum value is displayed in this field. If the value exceeds the preset tolerance, changes the display from green to red. The maximum displayable divergence is the numerical value of 99. Higher values are displayed with >99.

E-Module:

The elastic modulus or Young's module E is a measure of the stiffness. It's defined as the ratio of the stress to the strain.

$\epsilon = \frac{F}{A \cdot E}$	Higher force effects higher strain
	Higher cross section or E-module effects lower strain

K-Factor (gauge factor):

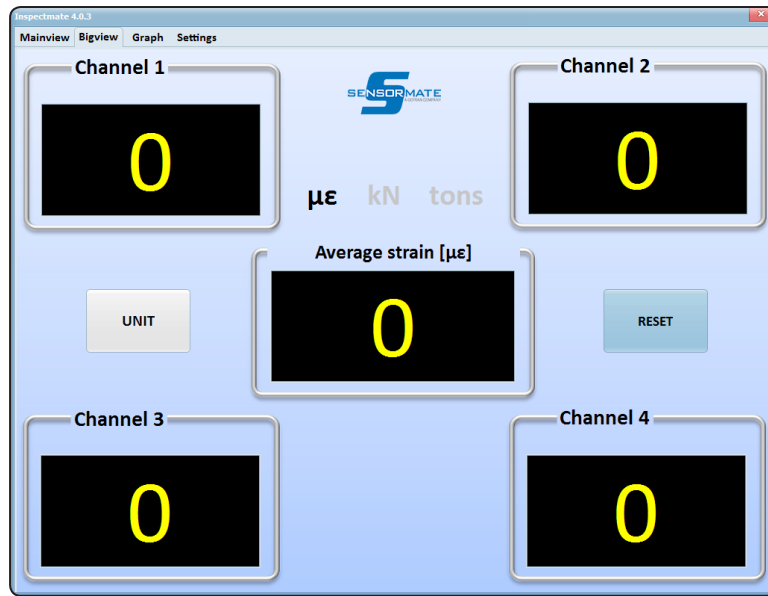
The K-Factor is the ratio of relative change in electrical resistance R, to the mechanical strain ϵ .

$\frac{\Delta R}{R} = k \cdot \frac{\Delta l}{l}$

The K-Factor is determined by the strain gauge grid material.

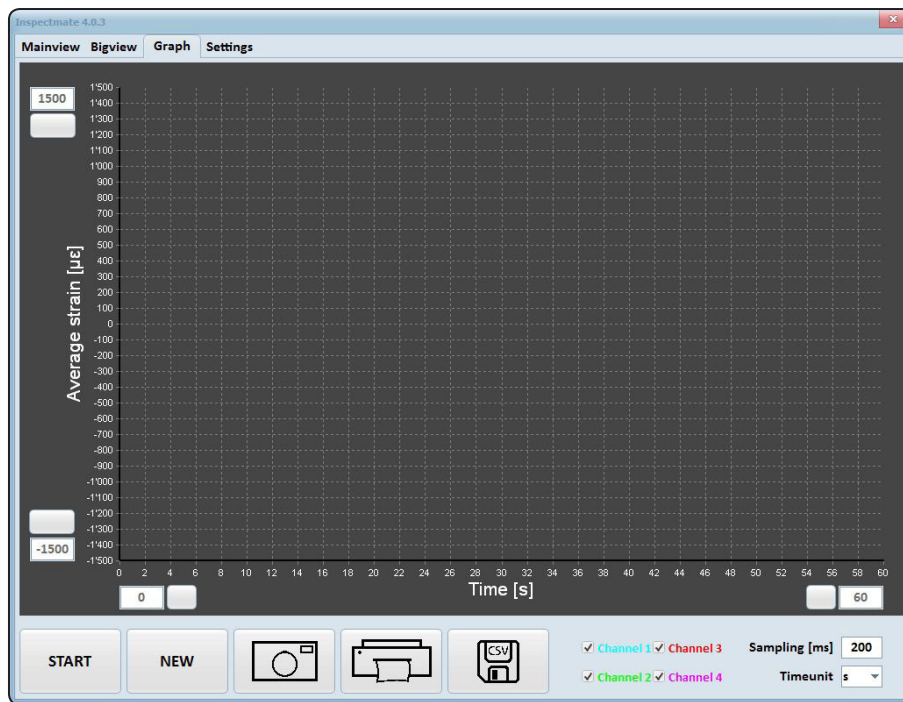
2.2. Big view

The big view, in comparison to the main view, only displays the main functions and is specifically designed for being able to recognise the measurement results from a greater distance. The functionality of the displays is the same as that of the main view.



2.3. Graph

The graph is used to graphically display the measurement. A measurement must be saved each manually. The measurement is stored in the CSV format.



Save



With this button, the recorded measured values can be stored. If an existing file is selected, the new readings would be added. The data would not be overwritten. If a new file name is entered, the measurements would be stored in a new file. The file is saved in CSV format.

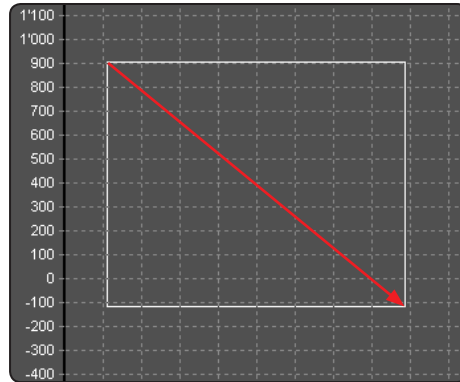
Grid

Y-axis	The axis corresponds to the height of the measurement value shown in the current unit which has been defined on the main view. The limit values for Min and Max, and the scale, can be defined directly, and confirmed, using the two buttons which in turn enable the input field.
X-axis	The axis corresponds to the time for the measurement (unit can be changed using the control console). The limit values for Min and Max, and the scale, can be defined directly, and confirmed, using the two buttons which in turn enable the input field.

Zoom

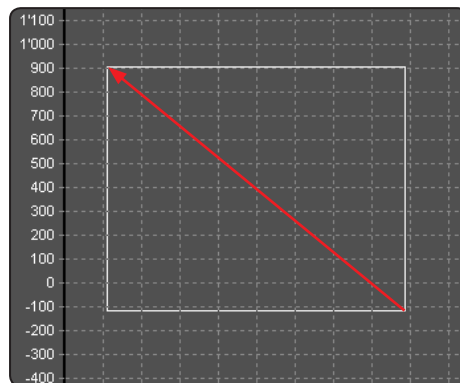
Enlarge

By creating a frame with the mouse from top left to bottom right, the selected area is enlarged.



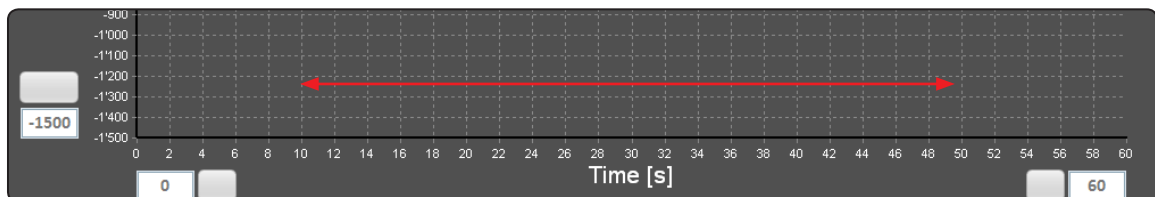
Reset enlargement

To restore the original scale (no zoom), a frame must be drawn as when enlarging, but from bottom right to top left.



Time axis

The time axis is scaled via the Min and Max entries (see X-axis) but you can scroll through the measurement values by holding down the right mouse button and moving the mouse to the left or right.




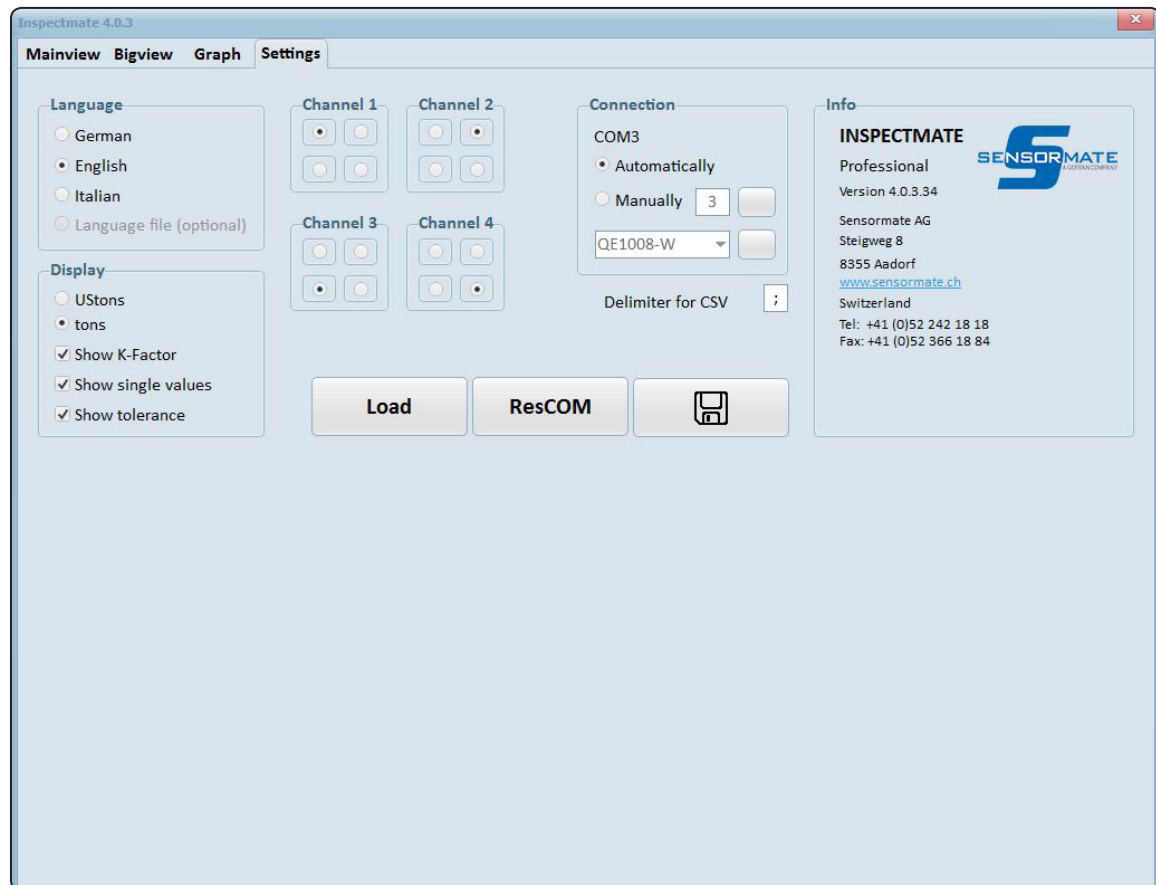
2.4. Settings

Under Settings, you can adapt the user interface and perform the necessary configuration in order to be able to communicate with each Sensormate device which supports Inspectmate 4.0.



Basically settings are applied and stored when changing the TAB.
Expection: Connection settings must be locked before (activate).

If other configurations are tested, we recommend creating a new configuration file first (→ Button ).



Language

You can switch between the three languages - German, English and Italian. The language file option (in the example: "Korean") is only available for special versions of Inspectmate with an additional language.

If a language is missing, please contact Sensormate AG to request a special version.

Channel arrangement

The arrangement of the channels in the main view and big view can be changed.

Display

US-tons	Starting with Inspectmate version 4.0.3.28 the measured values will be converted in US-tons. Devices which measure and calculate in US-tons are no longer supported.
Show K-Factor	Show the K-Factor on the main view.
Show single values	On the main view, show the two single measurement values of the strain gauge for each channel. Caution! Only works if the connected device supports this option.
Show tolerance	Show the tolerance in the main view.

Connection (Verbindung)

Automatically	Automatic search and connection to a connected device which supports Inspectmate 4.0. When switch back to mainview, the system need a few seconds to be ready.
Manually	Using the specified COM port number, Inspectmate tries to establish a connection to a connected device which supports Inspectmate 4.0. The connection takes place only when the input is confirmed with the locking button.
Select device type	Inspectmate 4.0 can only communicate with devices which support Inspectmate 4.0 and which match the selection. The connection takes place only when the input is confirmed with the locking button.

Delimiter for CSV

Depending on the language version of the operating system on the user's computer, other delimiters may be required in order for the created CSV file to be recognised as such and processed correctly.

Control panel (Windows) → region & language → further settings → list separator.
Adapt Inspectmate to the existing character.

Load

Loads and applies a saved configuration file.

ResCOM

By pressing the button „ResCOM“ all the used COM port's of the computer will be ignored by Inspectmate for future. This ensures a reliable device detection by Inspectmate when connecting a device. This COM registration affects only the Inspectmate software and no other programs on the computer.

(For example: A USB port is a COM port.)

Save

Basically settings are applied and stored when changing the TAB. Using the memory button saves all current settings (including main view) in a separate configuration file.

3. First use

Is running the Inspectmate software the first time (for example when the application was installed on a new computer) following the next steps to ensure a reliable device detection.

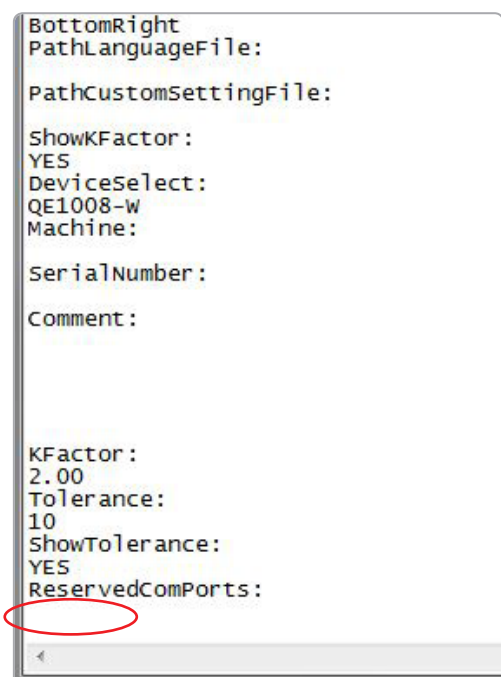
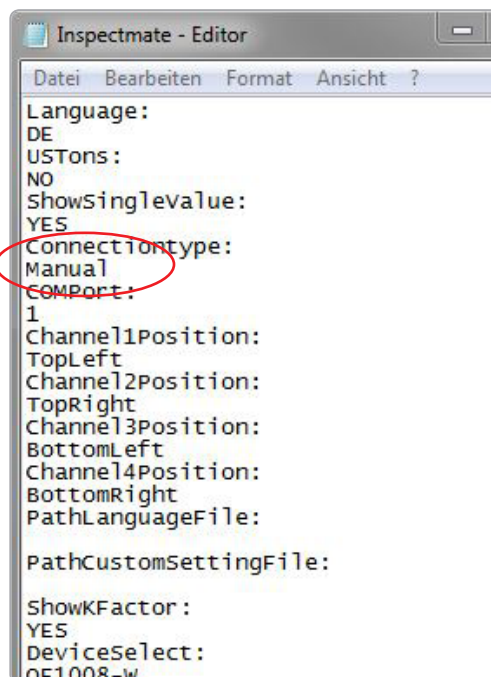
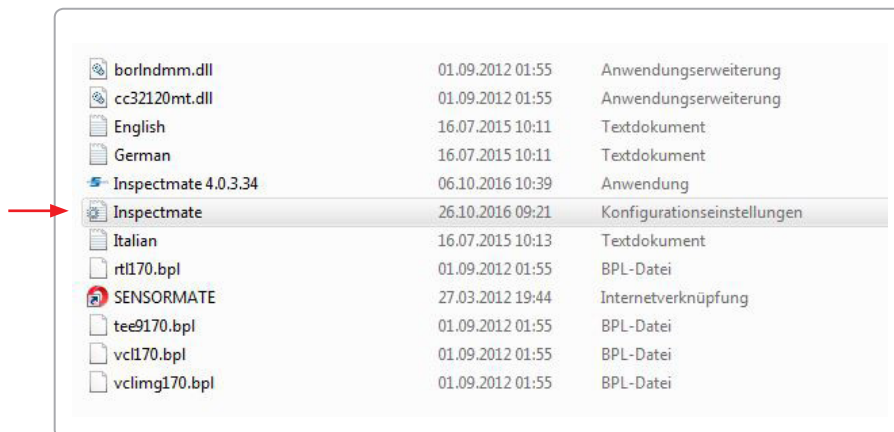
1. Configuration settings:

The configuration file should be accord the factory settings.

Particular: - Setting „Connectiontype“: Should be set to manual.

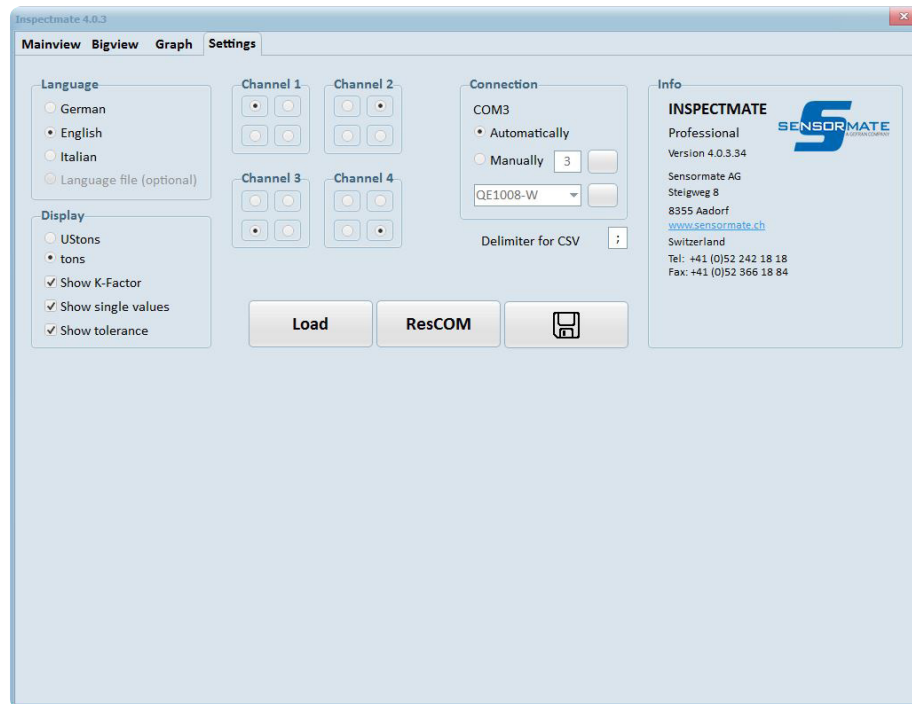
- Setting „ReservedComPorts“: The line underneath should be empty.

(If the setting „Connectiontype:“ is at the first use set with „Auto“, it can happen in very rare cases that the program crashes.)



2. The device which uses the Inspectmate software must be disconnected.

3. Go to „Settings“ in the application.



4. Press the button „ResCOM“.

5. Connect the device that would be use with Inspectmate.

6. Start the scan automatically.

7. Go back to the mainview. The mainview need a few seconds to be ready for measurement.

Explanation

By pressing the button „ResCOM“ all the used COM port's of the computer will be ignor by Inspectmate for future. This ensure a reliable device detection by Inspectmate when connect a device. This COM registration affects only the Inspectmate software and no other programs on the computer.

(For example: A USB port is a COM port.)

4. Troubleshooting

The display software is not shown fully

- The resolution of the screen is set too low.
(Minimum resolution: 1024x800)

Inspectmate don't detect the connected device

- Is the device connected correctly?
- In the settings is the selected device correctly?
- Is the setup confirmed by the locking button?
- Is the supplied driver installed?
- If the problem persists, follow the steps in Chapter 3 „First use“.
- If the problem persists, install the supplied driver manually according description in chapter 5 „Manually driver installation“.

When starting the program the computer crashes

- Reset the configuration file according description in chapter 3 „First use“.

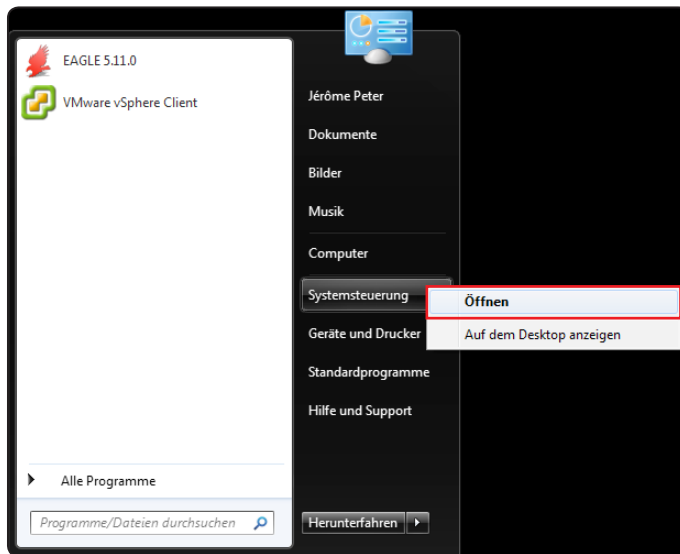
The automatic driver installation has been failed

- Install the driver manually according description in chapter 4.1 „Manually driver installation“.

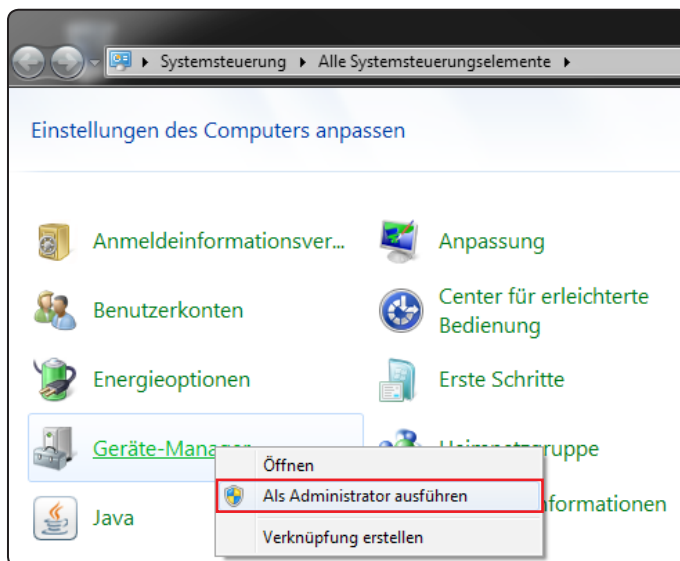
4.1. Manually driver installation

If the driver install has been failed, there is the possibility to install the driver manually.

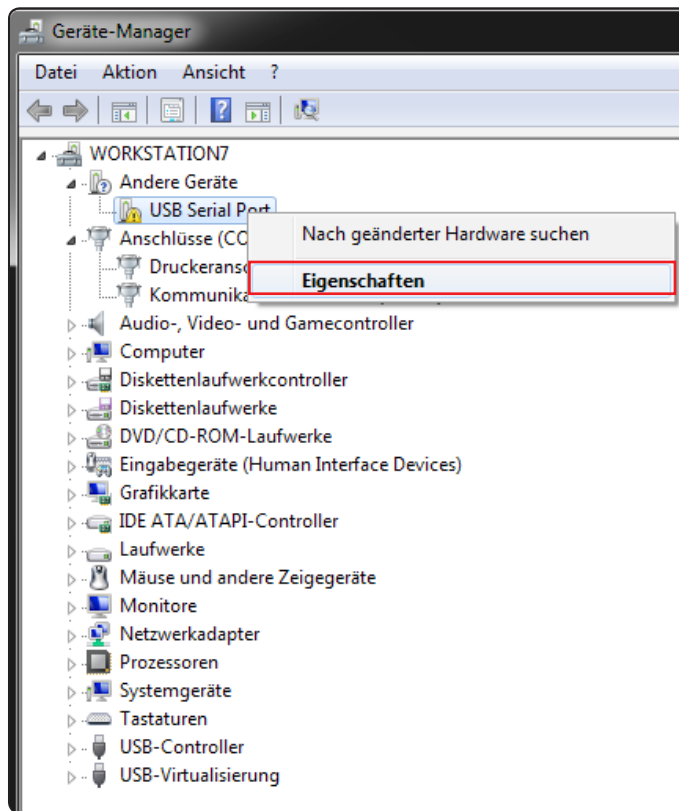
Connect Sensormate USB device and supplied memory stick.



1. Start
2. Control panel
(Systemsteuerung)
3. Right mouse-click
4. Open (Öffnen)



1. Device Manager
(Geräte-Manager)
2. Run as Administrator
(Als Administrator ausführen)



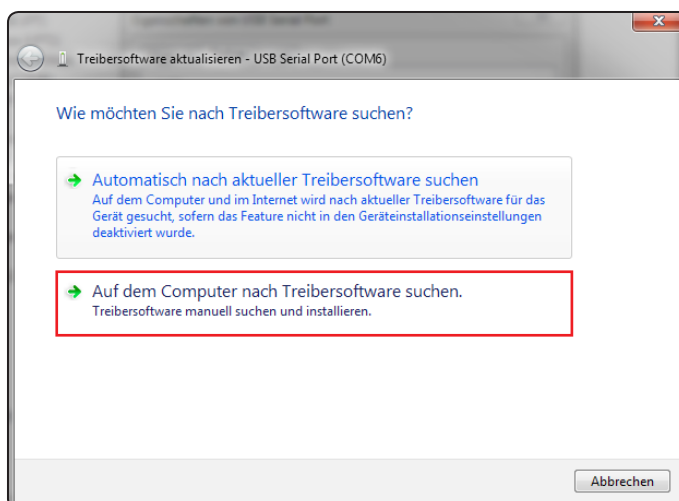
Select unknown USB device or one with the designations below.

- DU-4USB
- DU-4D
- QE1008-W
- QE1008-WE
- VDA-188-W
- USB Serial Port

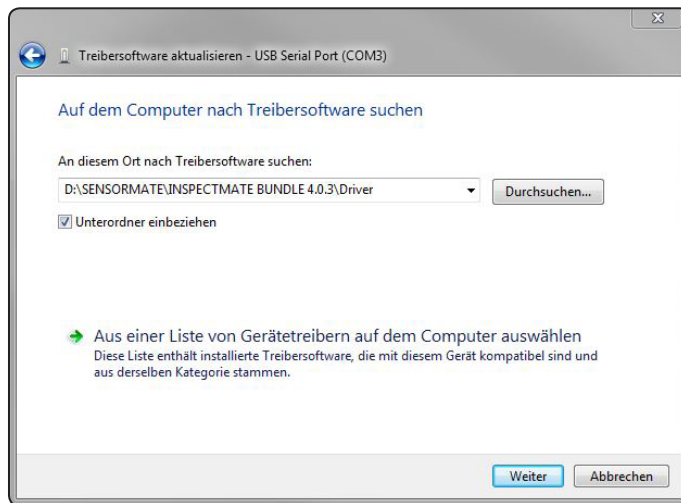
1. Right mouse-click
2. Features (Eigenschaften)



Devices not recognised by the computer are always highlighted with an exclamation mark.



1. Update / install driver
2. Search on the computer for the driver software.



1. Select the folder „Driver“ of the supplied memory stick, and press „OK“.
2. Press the "Next" („Weiter“) button
3. The driver for the USB device of Sensormate is installed.

5. Service



GEFRAN HEADQUARTER

Via Sebina, 74
25050 PROVAGLIO D'ISEO (BS) ITALY
Ph. +39 03098881
Fax +39 0309839063



GEFRAN DEUTSCHLAND GmbH

Philipp-Reis-Straße 9a
D-63500 Seligenstadt
Phone +49 (0) 6182 / 809-0
Fax +49 (0) 6182 / 809-222
vertrieb@gefran.de



GEFRAN UK Ltd

Capital House, Hadley Park East
Telford
TF1 6QJ
Phone +44 (0) 8452 604555
Fax +44 (0) 8452 604556
sales@gefran.co.uk



SENSORMATE AG

Steigweg 8
8355 Aadorf
Phone +41 71 9554020
Fax +41 71 9554024
<http://www.sensormate.ch>



GEFRAN ESPAÑA

Calle Vic, números 109-111
08160 - MONTMELÓ
(BARCELONA)
Phone +34 934982643
Fax +34 935721571



GEFRAN FRANCE SA

4, rue Jean Desparmet - BP 8237
69355 LYON Cedex 08
Phone +33 4 78770300
Fax +33 4 78770320
commercial@gefran.fr



GEFRAN MIDDLE EAST ELEKTRİK VE ELEKTRONİK San. ve Tic. Ltd. Şti

Yesilkoy Mah. Ataturk
Cad. No:12/1 B1 Blok K:12
D:389 Bakirkoy / Istanbul
TURKEY
Phone +90 212 4659 121
Fax +90 212 4659 122
www.gefran.tr



GEFRAN BENELUX N.V.

ENA 23 Zone 3, nr. 3910
Lammerdries-Zuid, 14A
B-2250 OLEN
Phone +32 14 248181
Fax +32 14 248180
info@gefran.be



GEFRAN RUSSIA

Lesnaya Plaza
4th Lesnoy Pereulok 4
125047 Moscow, Russia
Phone +7 (495) 225 86 20
Fax +7 (495) 225 85 00



GEFRAN SOUTH AFRICA Pty Ltd.

Unit 10 North Precinet, West Building
Topaz Boulevard Montague Park,
7411 Cape Town
Phone +27 21 552 5985
Fax +27 21 552 5912



GEFRAN TAIWAN

No.141, Wenzhi Rd., Zhongli City,
Taoyuan County 32054,
Taiwan (R.O.C.)
Phone +886-3-4273697
eddie.liao@gefran.com.sg



GEFRAN SIEI

Drives Technology Co., Ltd.

No. 1285, Beihe Road, Jiading District,
Shanghai, China 201807
Phone +86 21 69169898
Fax +86 21 69169333
info@gefran.com.cn



GEFRAN Inc.

8 Lowell Avenue
WINCHESTER-MA 01890
Phone 1-888-888-4474
Fax +1 (781) 7291468
info.us@gefran.com



GEFRAN SIEI - ASIA

31 Ubi Road 1
#02-07, Aztech Building
Singapore 408694
Phone +65 6 8418300
Fax +65 6 7428300
info@gefran.com.sg



GEFRAN BRASIL

ELETROELETRÔNICA LTDA

Avenida Dr. Altino Arantes,
377 Vila Clementino
04042-032 Sao Paulo - SP - Brasil
Phone +55 11 5585-1133
Fax +55 11 32974012
comercial@gefran.com.br



GEFRAN INDIA Pvt. Ltd.

Survey No: 182/1 KH, Bhukum,
Paud road, Taluka – Mulshi,
Pune-411 042. MH INDIA
Phone +91 20 39394400
Fax +91 20 39394401
gefran.india@gefran.in



SENSORMATE AG

Steigweg 8
CH-8355 Aadorf TG
Switzerland

Tel. +41 (0)52 242 18 18
Fax +41 (0)52 364 32 72
Email: info@sensormate.ch
www.sensormate.ch