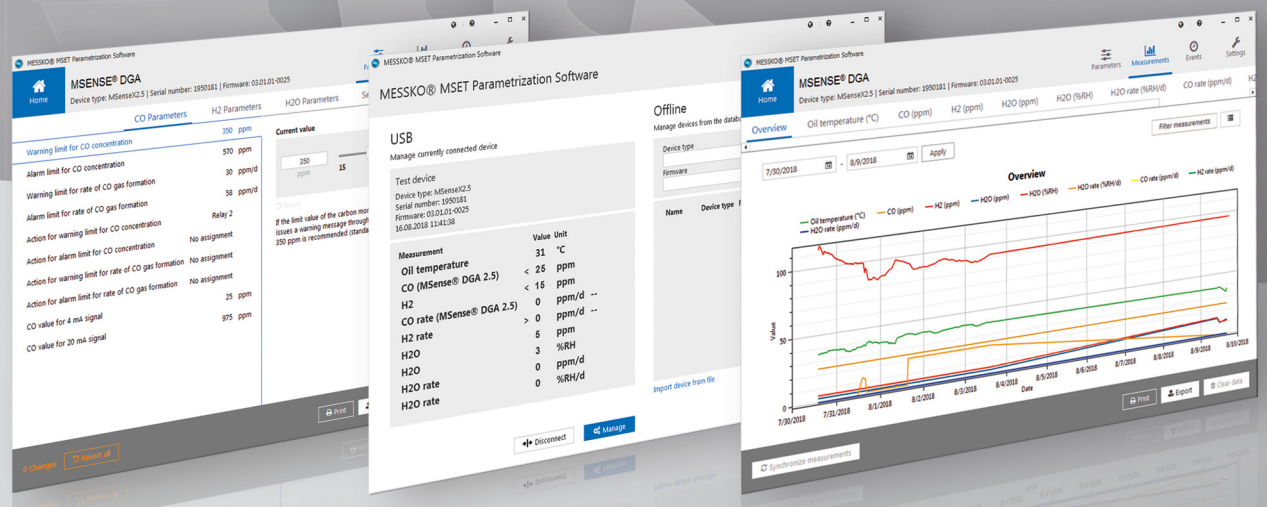
# Parameterization software MESSKO® MSET

## Operating instructions

4773303/08 EN



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The product may have been altered since this document was published.

We reserve the right to change the technical data, design and scope of supply.

Generally the information provided and agreements made when processing the individual quotations and orders are binding.

The product is delivered in accordance with MR's technical specifications, which are based on information provided by the customer. The customer has a duty of care to ensure the compatibility of the specified product with the customer's planned scope of application.

The original operating instructions were written in German.

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# 1 Introduction

This technical file contains detailed descriptions on how to safely and correctly install and operate the product and remedy simple faults yourself. This technical document is intended solely for specially trained and authorized personnel.

## 1.1 Manufacturer

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Germany

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E-mail: sales@reinhausen.com
Internet: www.reinhausen.com
MR Reinhausen customer portal: https://portal.reinhausen.com

Further information on the product and copies of this technical file are available from this address if required.

## 1.2 Completeness

This technical file is incomplete without the following supporting documents:

- MSENSE® DGA 2/3 (BA 4001150) operating instructions or ECOSENSE® ACTIVE PART (BA 8969216) operating instructions

## 1.3 Safekeeping

Keep this technical file and all supporting documents ready at hand and accessible for future use at all times.

## 1.4 Notation conventions

This section contains an overview of the symbols and textual emphasis used.

### 1.4.1 Information system

Information is designed to simplify and improve understanding of particular procedures. In this technical file it is laid out as follows:

Important information.

### 1.4.2 Instruction system

This technical file contains single-step and multi-step instructions.

#### Single-step instructions

Instructions which consist of only a single process step are structured as follows:

Aim of action
✓ Requirements (optional).
► Step 1 of 1.
⇨ Result of step (optional).
⇨ Result of action (optional).

#### Multi-step instructions

Instructions which consist of several process steps are structured as follows:

Aim of action
✓ Requirements (optional).
1. Step 1.
⇨ Result of step (optional).
2. Step 2.
⇨ Result of step (optional).
⇨ Result of action (optional).

### 1.4.3 Typographic conventions

The following typographic conventions are used in this technical file:

| Typographic convention | Purpose | Example |
|---|---|---|
| UPPERCASE | Operating controls, switches | ON/OFF |
| [Brackets] | PC keyboard | [Ctrl] + [Alt] |
| **Bold** | Software operating controls | Press **Continue** button |
| …>…>… | Menu paths | Parameter > Control parameter |
| *Italics* | System messages, error messages, signals | *Function monitoring* alarm triggered |
| [► Number of pages]. | Cross reference | [► 41]. |

Table 1: Typographic conventions

# 2 Safety

This technical document contains detailed descriptions on the safe and proper installation, connection, commissioning and monitoring of the product.

- Read this technical file through carefully to familiarize yourself with the product.
- This technical file is a part of the product.
- Read and observe the safety instructions provided in this chapter in particular.
- Observe the warnings in this technical file in order to avoid function-related dangers.
- The product is manufactured on the basis of state-of-the-art technology. Nevertheless, risks to life and limb for the user or impairment of the product and other material assets may arise in the event of improper use.

## 2.1 Appropriate use

The combination of device and software is designed solely for use in electrical energy systems and facilities. It is designed to detect, report and evaluate potentially harmful emerging trends in the monitored equipment (e.g. transformer) in good time by measuring the concentration of gases and moisture in the equipment's insulating oil.

The product is not designed and is not suitable for detecting rapidly developing faults and therefore is not intended to protect the equipment from such faults (e.g. through shutdown). For this, please use safety devices that have been designed for this purpose.

If used as intended and in compliance with the requirements and conditions specified in this technical document as well as the warning notices in this technical document and those displayed on the user interface, the product does not present any danger to persons, property or the environment. This applies throughout its entire service life, from delivery and installation to operation and even uninstallation.

Intended use refers to the following:

- Operate the software in accordance with this technical document, the agreed-upon delivery conditions and the technical data of the connected devices.
- Ensure that any necessary work is only performed by qualified personnel.
- Only use the data carrier included in delivery for the intended purpose and in accordance with the specifications of this technical document.

# 3 Product description

The MESSKO® MSET parameterization software is designed for the visualization, operation and configuration of the MSENSE® DGA 2/ MSENSE® DGA 3/ECOSENSE® ACTIVE PART as well as for processing measured data and event data. Furthermore, you can backup and export data with the program.

## 3.1 Function description

The range of functions of the MESSKO® MSET software depends on the connected device. Examples of available functions:

- Synchronization with the connected device
- Reading out the saved parameters and data
- Changing parameters
- Classifying and evaluating the data
- Data archiving
- Exporting the parameter configuration or device file with or without password
- Exporting the measured data and the event data in the .csv format
- Importing the parameter configuration or device file in the formats .mpfx, .mpf, .mdfx and .mdf
- Printing out the parameters, measurements and events
- Deleting measured data and event data
- Checking and changing the password of the connected device
- Changing the name of the connected device

## 3.2 System requirements

To install and operate the program, the following system requirements must be satisfied:

- Operating system: Microsoft Windows 7 or later
- Screen resolution of at least 1024 x 768 pixels
- USB interface

## 3.3 Program interface

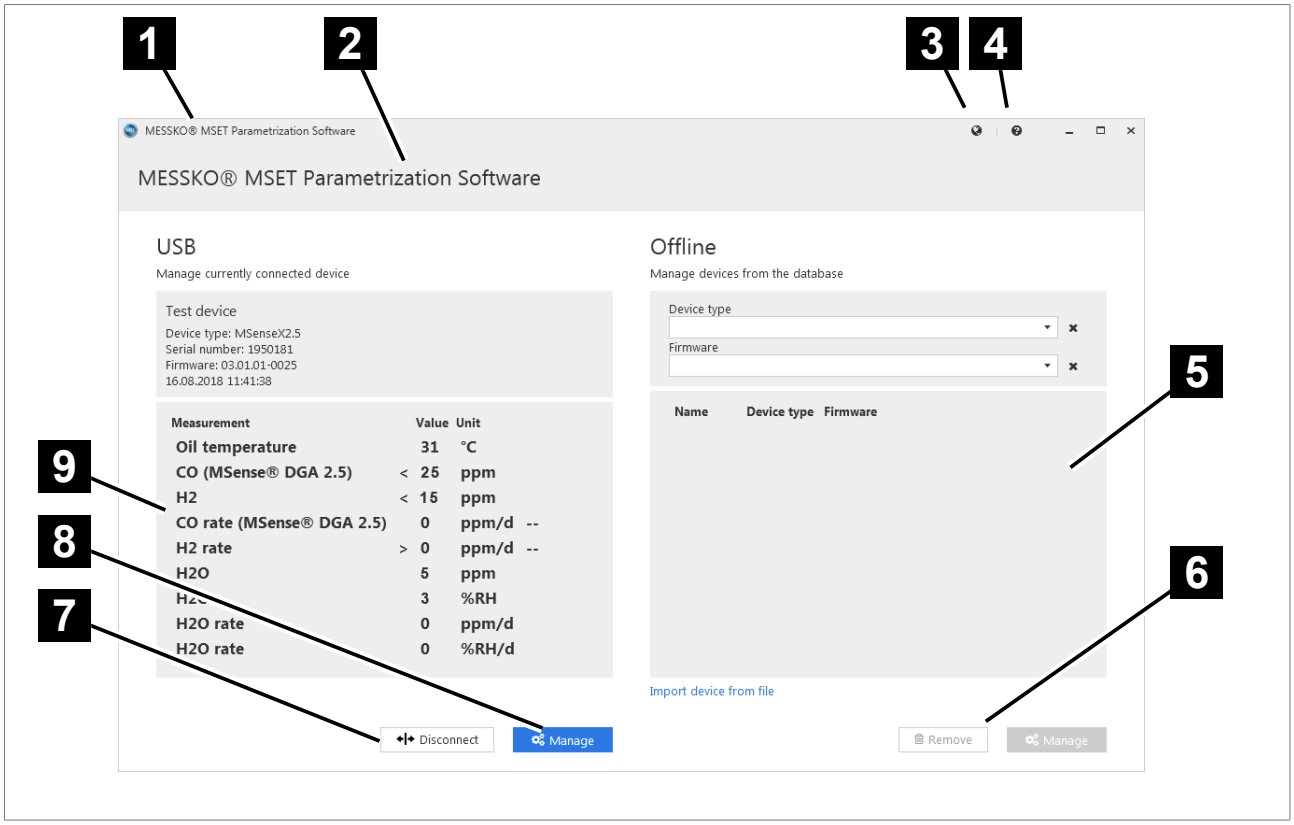



Figure 1: Main screen

| | | | |
|---|---|---|---|
| 1 | Title bar | 2 | Header |
| 3 | Language selection | 4 | Documentation/about |
| 5 | Selection of device from the offline database | 6 | Deletion of the selected device from the offline database or management of the device |
| 7 | Disconnection or connection of device and software | 8 | Managing the device connected via USB |
| 9 | Displaying device data and current measured values of the device connected via USB | | |

### 1 Title bar

Program name "MESSKO® MSET parameterization software" and MR logo.

### 2 Header

Depending on the active window, the program name or the name of the connected device will be shown.

### 3 Language selection

For selecting the program interface language.

### 4 Documentation/about

Displays the operating instructions or publication information.

### 5 Selection of device from the offline database

A device can be selected from the internal database so that data can be deleted or managed.

### 6 Deletion of the selected device from the offline database or management of the device

Via the **Manage** button, the parameters of the selected device can be changed. As soon as the respective device is connected, the changed parameters can be synchronized with the device. The selected device can be deleted from the database via the **Delete** button.

### 7 Disconnection/connection

Via this button, you can disconnect the device from the MSET software when the device is online, or connect it when the device is offline.

### 8 Managing the device connected via USB

Via **Manage**, the parameters of the device connected via USB can be changed and subsequently synchronized. Measured data and the event data can be evaluated and output.

### 9 Displaying device data and current measured values of the device connected via USB

The device data and the current measured data of a device connected via USB is displayed here.

# 4 Operation

This chapter describes the functions and setting options for the software.

## 4.1 General information

The software can be used both in offline mode and in online mode. "Offline" means that a device is not connected. "Online" means that a device is connected via USB connection and is in communication with the MSET software. If there are any differences in operating the software depending on the mode, this is described in these operating instructions.

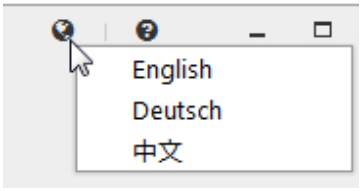
### Access authorization

You can protect the parameter sets and data of your device with passwords.

There are various security levels available for this. The passwords can be issued and changed in online mode by the administrator, see section Checking/changing the password (Online only) [▶Section 4.3.6, Page 20].

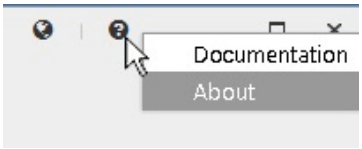
| User level | Display text | Password |
|---|---|---|
| Service technician | Service technician | Passwort2 |
| Administrator | Administrator | Passwort3 |

### Language selection




The language for the MSET software can be set via this action button.

### Documentation and software update




The MSET documentation and the current version of the MSET software with publication information can be displayed via this action button.

## 4.2 Starting the MSET parameterization software

To start the MSET parameterization software, go to **Start > All programs > MSET parameterization software**. The MSET software starts.

If a device is connected, the software establishes a connection to this device. This is displayed via an animation icon on the left-hand side of the screen.

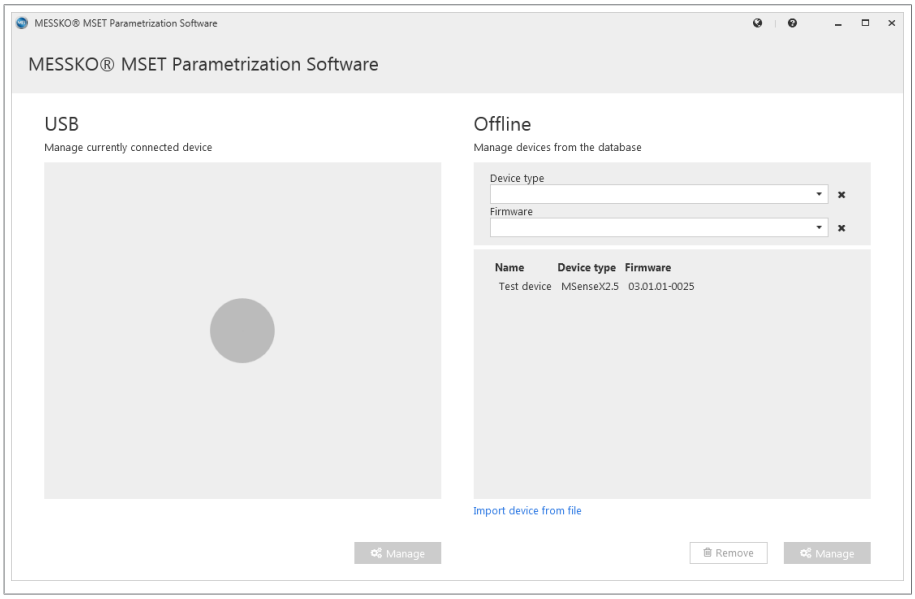



Figure 2: Establishing a device connection

Once the connection is successfully established, the device data is displayed on the left-hand side of the screen under **USB**. This data includes:

- Device name
- Device type
- Serial number
- Firmware version
- Current date and time
- List of the current measured values

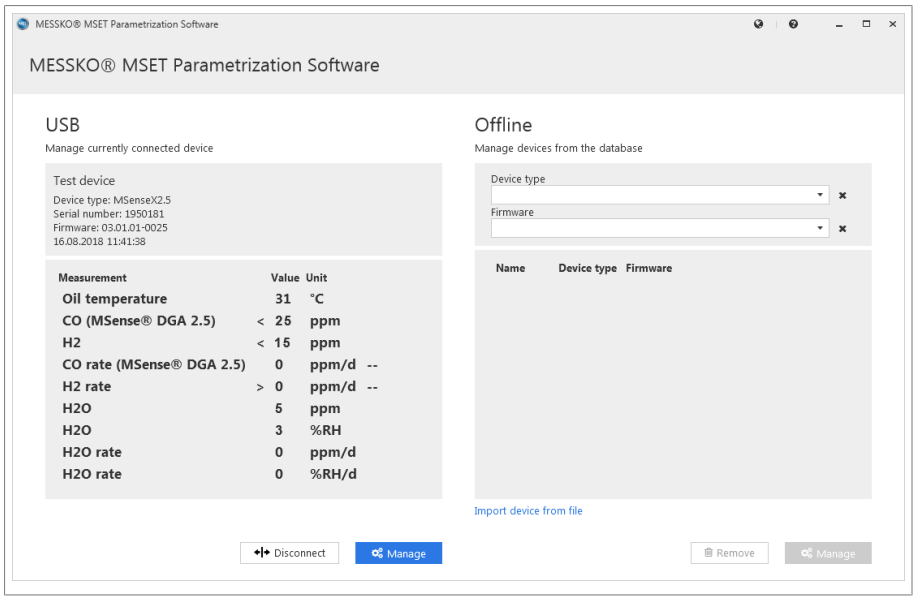



Figure 3: Device connected

Clicking on **Manage** enables you to change the parameters of the connected device and to evaluate the measured data and events (see section Parameters [▶Section 4.3, Page 15]).

If a device is not connected, the following is displayed:

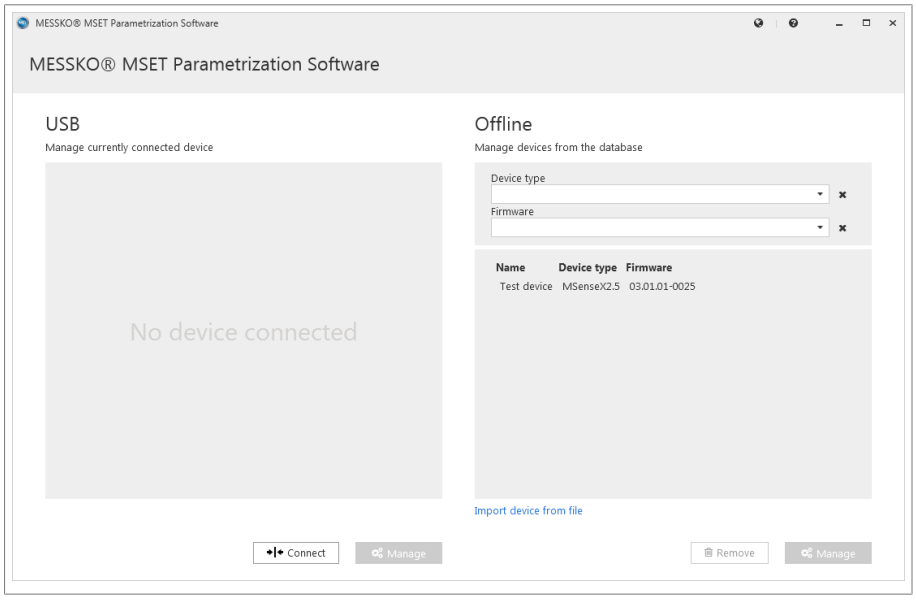



Figure 4: No device connected

On the right side of the start screen, all devices that have already been stored in the offline device database are displayed in a selection list. Two filters for the device type and firmware version appearing above this selection list simplify the selection in the event that a large number of devices are stored in the database.

You can add a new device file to the database via the button **Import device from file**.

***NOTICE!*** If a device file is already contained in the database, then all previous data for this device will be overwritten.

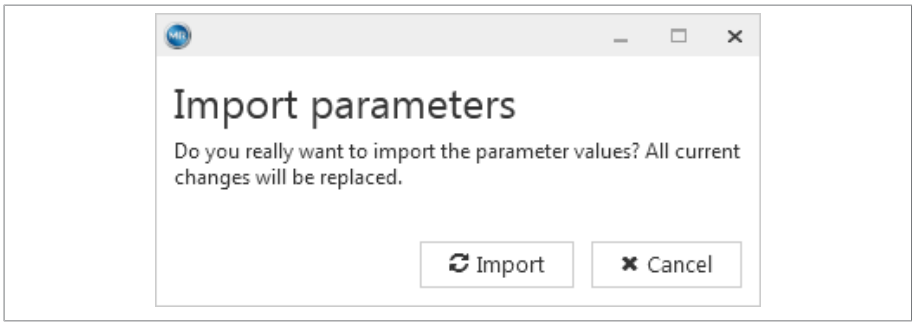



Figure 5: Import parameters

You can delete devices from the database via the **Delete** button. When doing so, the following information appears:

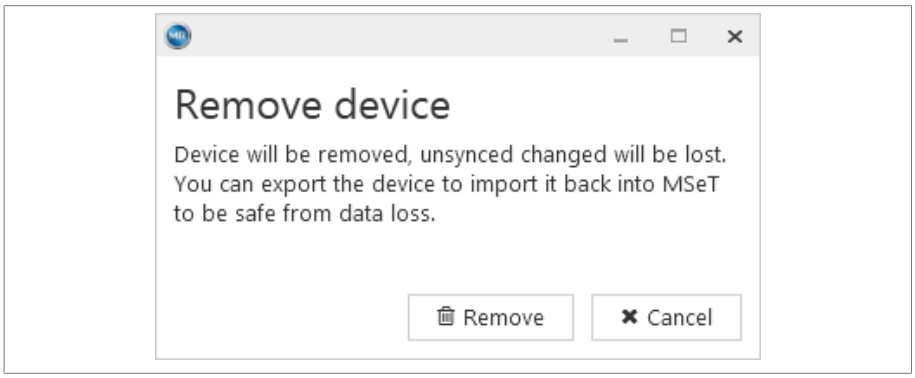



Figure 6: Deleting a device from the database

Via the **Manage** button, you can change the respective parameters and evaluate the measured data and events, see section Parameters [▶ Section 4.3, Page 15].

## 4.3 Parameters

### Manage: Start screen for device connected via USB (Online mode)

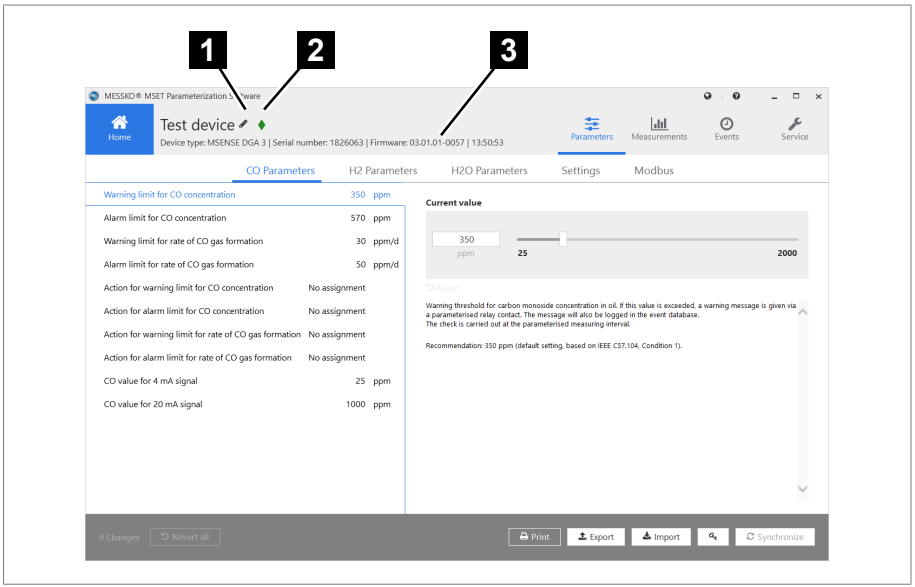



Figure 7: Connected device online parameters

| | | | |
|---|---|---|---|
| 1 | Action button: Pen for editing the device name | 2 | Green diamond: Device connected via USB |
| 3 | Basic device data and current date | | |

### Manage: Start screen for device from the database (Offline mode)

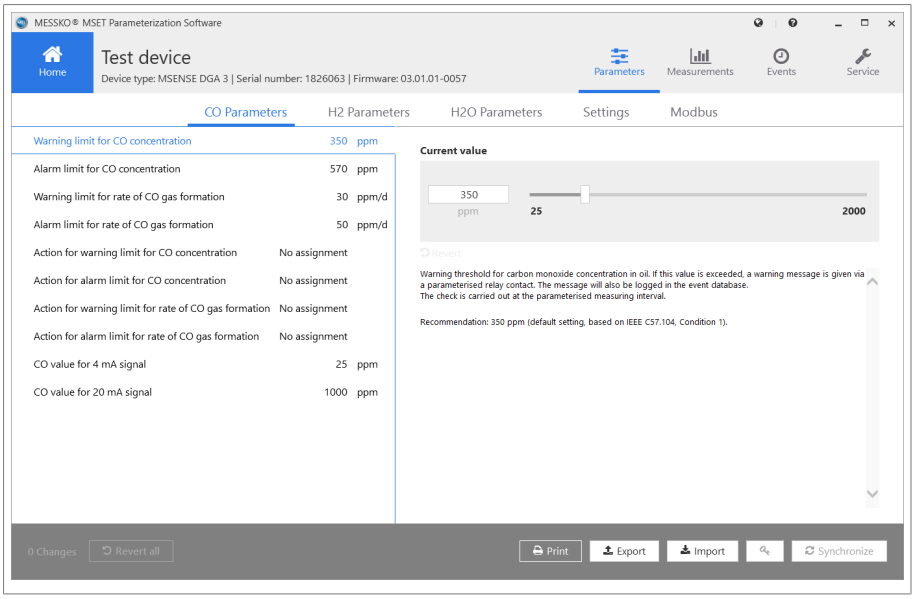



Figure 8: Managing a device from the database

### 4.3.1 Parameter selection

To edit the parameters, in the menu bar 1, go to **Parameters**.

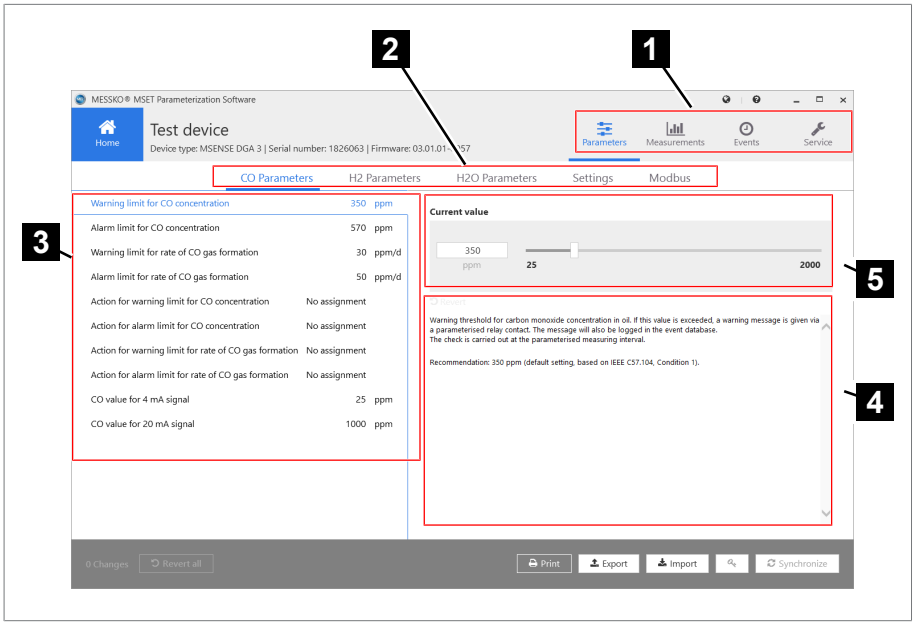



Figure 9: Parameter selection

| | | | |
|---|---|---|---|
| 1 | Menu bar | 2 | Parameter bar (parameter groups) |
| 3 | Parameter value table | 4 | Help |
| 5 | Parameter setting field | | |

You can select the following parameter groups via the parameter bar 2.

- CO parameters
- H2 parameters
- H2O parameters
- Settings
- Modbus

Once selected, the individual parameters and their set values are displayed in the parameter value table 3.

Selecting an individual parameter will display the current value in the parameter setting field 5, and this value can then be edited.

Help text 4 is displayed under this field which explains the parameter.

### 4.3.2 Editing parameters

The value table includes all parameters with parameter name, parameter value and the unit of measure. Furthermore, help text 7 for the selected parameter is displayed next to the table.

If parameter values are changed, these are identified on the left-hand side with a diamond 2. Hovering the mouse over this diamond displays the corresponding values 1:

- In Offline mode = Parameter default value (factory setting)
- In Online mode = Current parameter value in the device

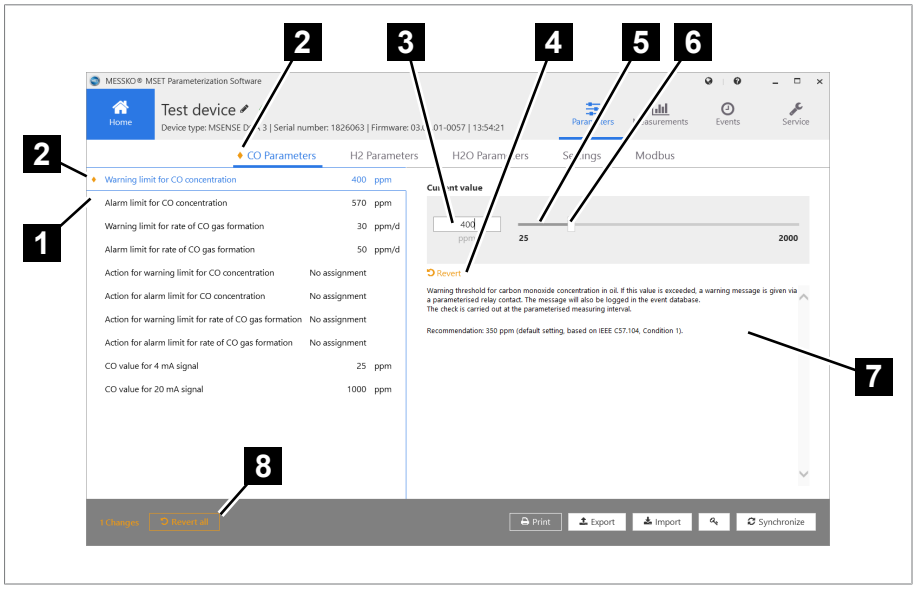



Figure 10: Editing values

| | | | |
|---|---|---|---|
| 1 | Hovering the mouse over a diamond displays the changed parameters | 2 | Diamond as an indicator for a changed parameter |
| 3 | Entry field | 4 | Resetting the parameter |
| 5 | Parameter value range | 6 | Slide bar |
| 7 | Help text | 8 | Reset all |

### Editing values

The value can be edited in the parameter setting field. This field includes:

- Entry field 3 for the current parameter value and unit of measurement
- Slider bar 6 for setting the parameter value
- **Revert** button 4
- Value range with minimum value and maximum value 5

The minimum and maximum values are checked during the entry.

The value can be edited in the entry field depending on its type (floating decimal, integer, Boolean, text).

If a value that is beyond the specified limits is entered, a warning is displayed and the value entered is ignored.

Clicking on the **Revert** button 4 resets the displayed parameter:

- In Offline mode to the default value (factory setting)
- In Online mode to the current parameter value in the device

In the parameter bar, a changed but not yet adopted value is indicated via a diamond 2 to the left of the parameter group name.

Clicking on the **Revert all** 8 button will reset all changed parameters together.

### 4.3.3 Parameter report

If you would like to print the parameters out, proceed as follows:

► Click on the **Print** button.

⇨ A preview of the parameter values report is displayed on the screen.

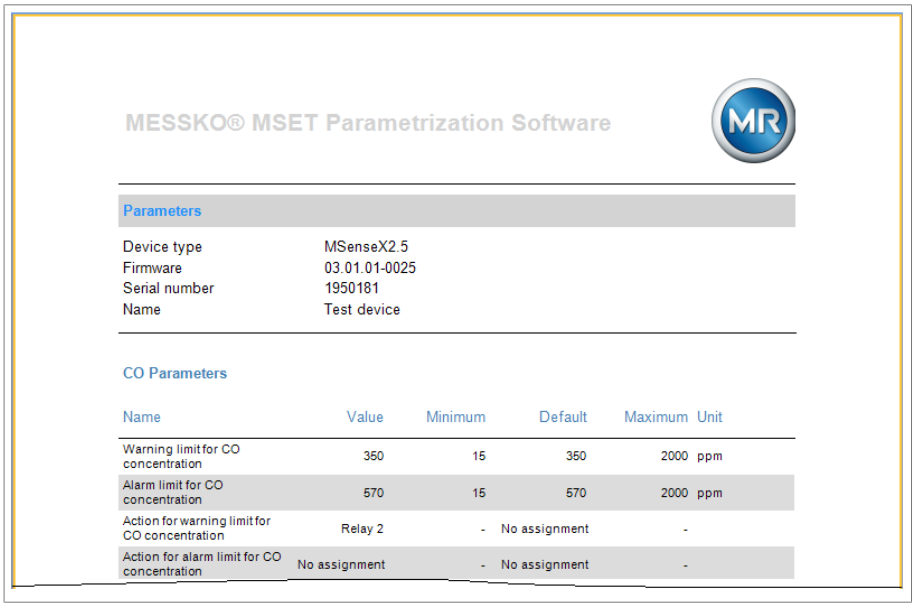



Figure 11: Report preview

The following actions can be performed via the buttons on the Parameter action bar:

- Printing
- Open (files of the type *.fpx)
- Save as (files of the types *.fpx, *.xml, *.docx, *.pdf, additional formats)
- Send via e-mail

### 4.3.4 Exporting parameter sets

If you would like to export and save a complete parameter file, select the **Export** button that follows.

An export window opens.

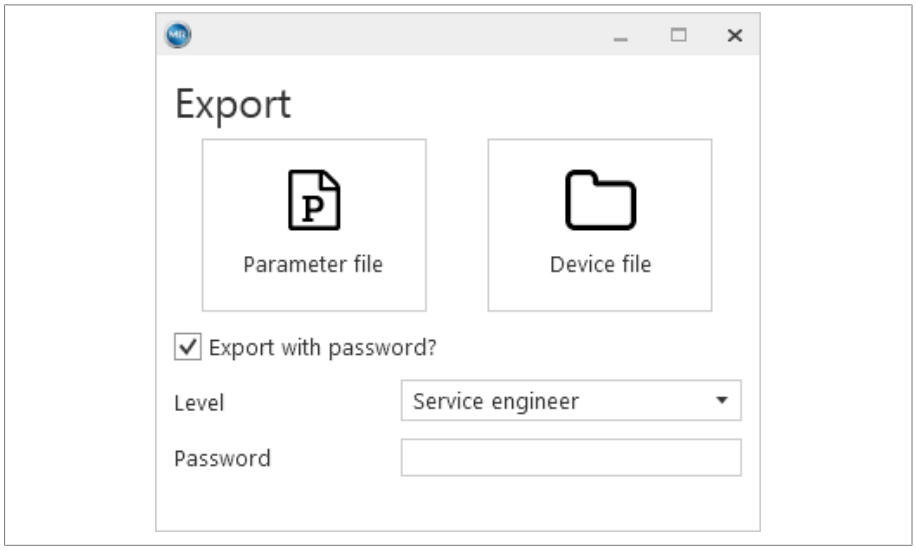



Figure 12: Export window

If you only want to save the parameters, select the button **Parameter file** (format *.mpfx).

If, along with the parameters, you also want to save the measurement and event data in an archive file, select the button **Device file** (*.mdfx). A window opens for entering the file name and for selecting the file location.

By selecting **Export with password**, the password level can be selected and a password entered. This password will be entered in the export file and can be used once after importing. Therefore, entering the password when importing the data is not necessary.

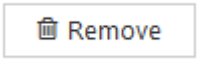
### 4.3.5 Importing parameters

Clicking on the **Import** button opens up a file selection window. In this window, select a MDF, MDFX, MPFX or MPF file and import it by clicking on the button **Open**.

It is required that the device type and firmware version match.

Upon successful importing, the following message appears: *The parameter file will be validated by the program.*

Should the device associated with the file be known already, i.e. it has already been connected to the software or a different parameter set for this device has already been imported, the file will not be imported. A message will be displayed informing you of this.




If however, you would still like to import new parameters for this device, you must delete the current parameter file in your PC for this device by clicking on the **Delete** button. Once completed, the parameters can be imported via the usual method.

If you would like to import a parameter file while the software is connected with a device, you may only import files for other devices. To be able to view the newly imported parameters, break off the current connection and select the parameter file in the drop-down menu "Devices available in the database" as usual.

**Importing a password-protected parameter file**

A special case is importing a parameter file in which a password has been saved. When importing such a parameter file, you are automatically logged in and can transfer changed values to the device once.

The password, however, only remains valid until a parameter is changed, the device is disconnected or until data is transferred to the device.

### 4.3.6 Checking/changing the password (Online only)

In the Online mode, the administrator can check and change the passwords for all user levels. Upon delivery, the administrator password is "Passwort3".

Access rights to the device via the MSET software are managed via the user registration. The user names cannot be changed. The passwords can be freely set and should be changed to user-individual passwords. The passwords are case-sensitive.

The rights of the users are specified in the following table:

| Functions | User | |
|---|---|---|
| | Service technician | Administrator |
| Changing passwords | 0 | x |
| Warnings | x | x |
| Alarms | x | x |
| Alarm delay | x | x |
| Measurement interval | x | x |
| Analog outputs (4...20 mA) | x | x |
| Baud rate | x | x |
| Modbus address | x | x |
| Field calibration and Default calibration | x | x |

| Functions | User | |
|---|---|---|
| | Service technician | Administrator |
| Converting humidity %RH to ppm | x | x |
| Transmission of the "Service Codes" | x | x |
| Deleting device databases | 0 | x |

Table 2: User rights (0 = read-access, X = read and write access)

To check the passwords, click on the **Password** button. The password window appears.

1. Select a user and enter the password. Then click on **Check**.

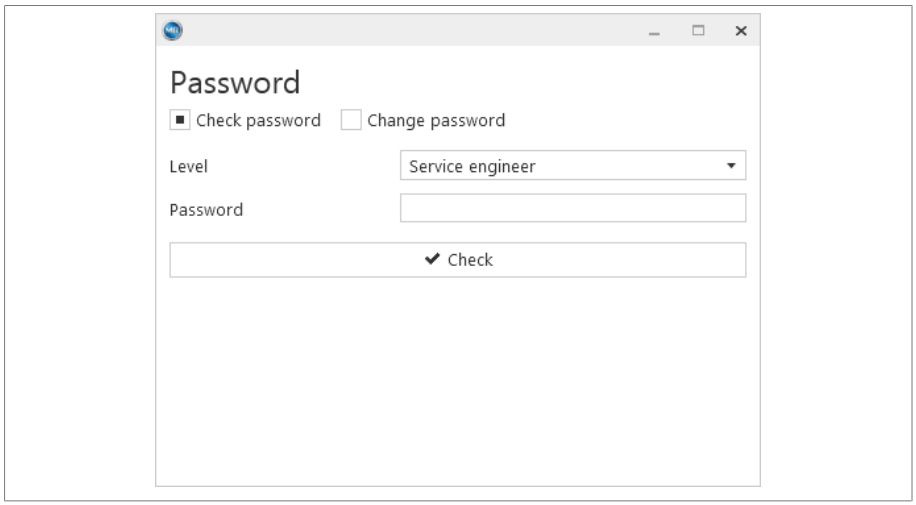



Figure 13: Checking a password

⇨ If the password is valid, you are granted the write-access rights associated with this user level, see above.

2. In the same way, to change a password select **Change password**.

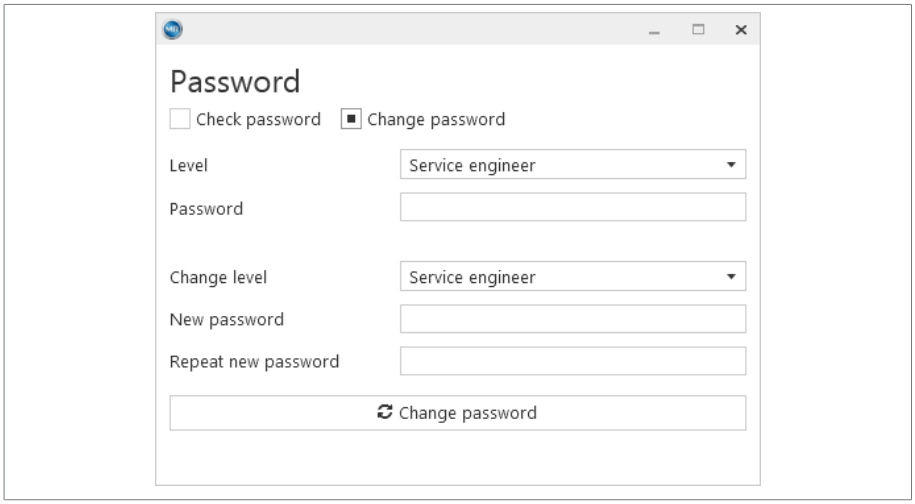



Figure 14: Changing the password

3. Select the user level for which you want to change the password.
4. Enter the new password and repeat the entry.
   ⇨ If both password entries match, the button turns blue and by clicking on the button, the new password is adopted by the system.

### 4.3.7 Synchronizing parameters (Online only)

This button is only active if parameters have been changed and the system is in Online mode.

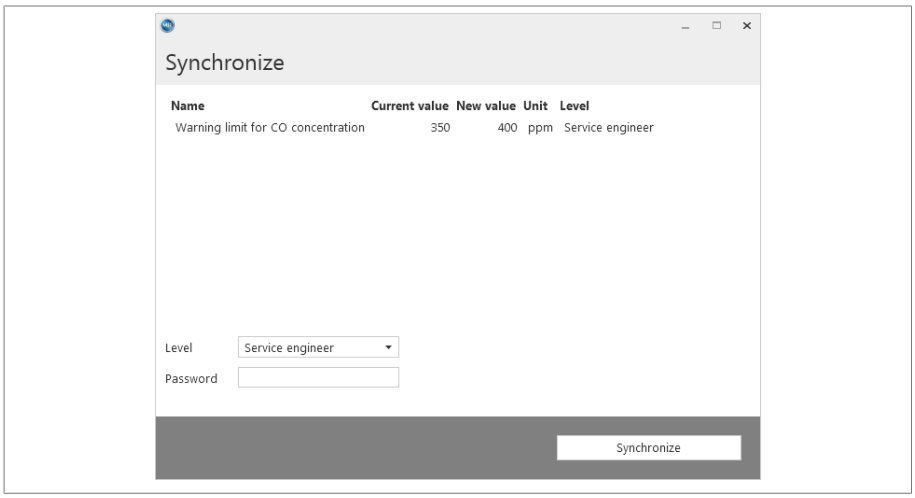



Figure 15: Synchronizing parameters

The program requires the entry of the password level and the password. The password must be validated in the device.

At least the password level "Service technician" is required, see **Access rights** in General information [▶Section 4.1, Page 11]. Should the entered password be invalid, this is displayed with **Authentication failed**.

You will be logged out again in the following cases:

- If the device is disconnected
- Once data has been transmitted
- If a parameter has been changed

It is not possible to log out manually. If you do not register, you only have read access.

If parameters have been changed and transmitted or the MSET software has been closed, the device switches to the normal operating mode after 10 minutes.

### 4.3.8 Resetting parameters

With **Revert all**, you can reset all parameters as follows:

- In Offline mode, the parameters are reset to the last applicable values.
- In Online mode, the parameters are reset to the current parameter values in the device (values that were present upon connection).

The following pop-up opens before the values are reset.

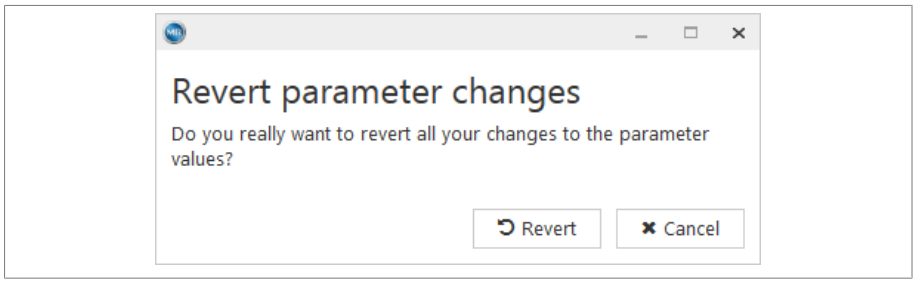



Figure 16: Reset parameter changes

The identifier for values that have been changed but not yet transferred to the device is a diamond 1 to the left of the parameter value and a diamond 2 alongside the parameter group.

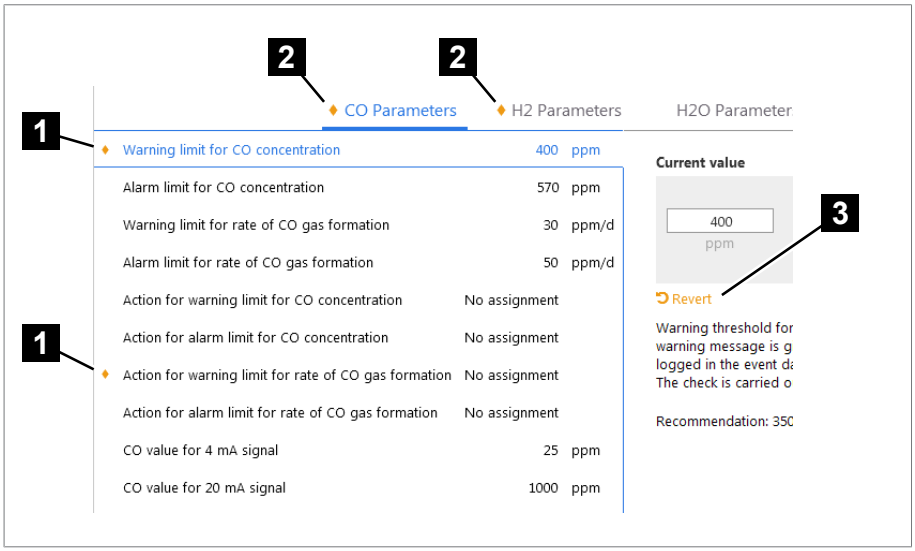



Figure 17: Changed parameters

| | | | |
|---|---|---|---|
| 1 | Changed parameter | 2 | One or more values changed in the parameter group |
| 3 | Revert button | | |

As an alternative to resetting all values at the same time, you can also reset 3 individual values when editing.

## 4.4 Measurements

To evaluate the measurements, in the menu bar **5** go to **Measurements**.

Figure 18: Measurements

| | | | |
|---|---|---|---|
| 1 | Time period filter | 2 | Home button |
| 3 | Basic device data and date | 4 | Measured values |
| 5 | Menu bar | 6 | Display type selection |
| 7 | Graph or table | 8 | Print, export, clear data |
| 9 | Load data from device | | |

### 4.4.1 Displaying measured data

If you would like to set the measured data time period, proceed as follows:

1. Select the start date.
2. Select the end date.

3. Click on the **Apply** button to adopt the selected time period.
   ⇨ The measured data is displayed in a graph.

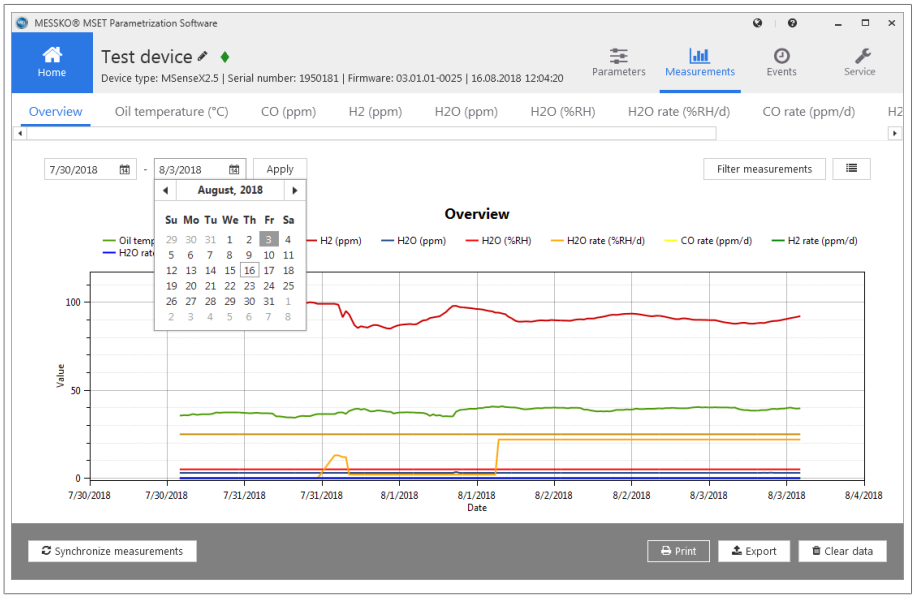
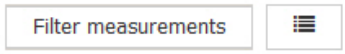



Figure 19: Measured data time period




4. If you only want to display selected measured data, limit the display via the **Filter measurements** button.
5. If you would like to display the measured data in a table, select the **List** button to the right.
   ⇨ The measured data is displayed in a table.

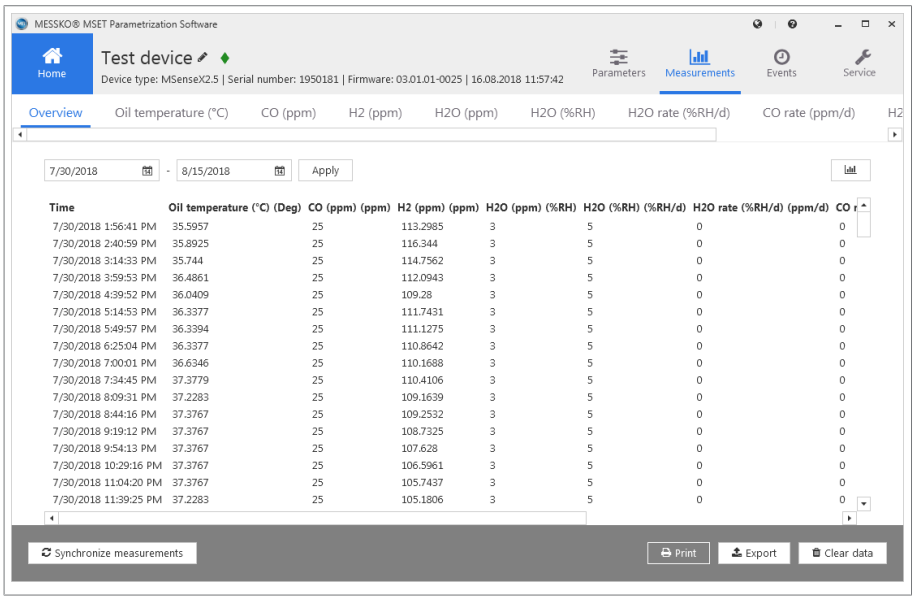



Figure 20: Measured data table

6. If you would like to display the measured data in a graph again, then switch back via the **Graph display** button:

### 4.4.2 Printing/opening/saving/mailing measured data

If you would like to print the measured data out, proceed as follows:

► Select the Print button, and select whether you want to **print** just the graphs, just the tables, or both:

⇨ A preview of the measured values report is displayed on the screen.

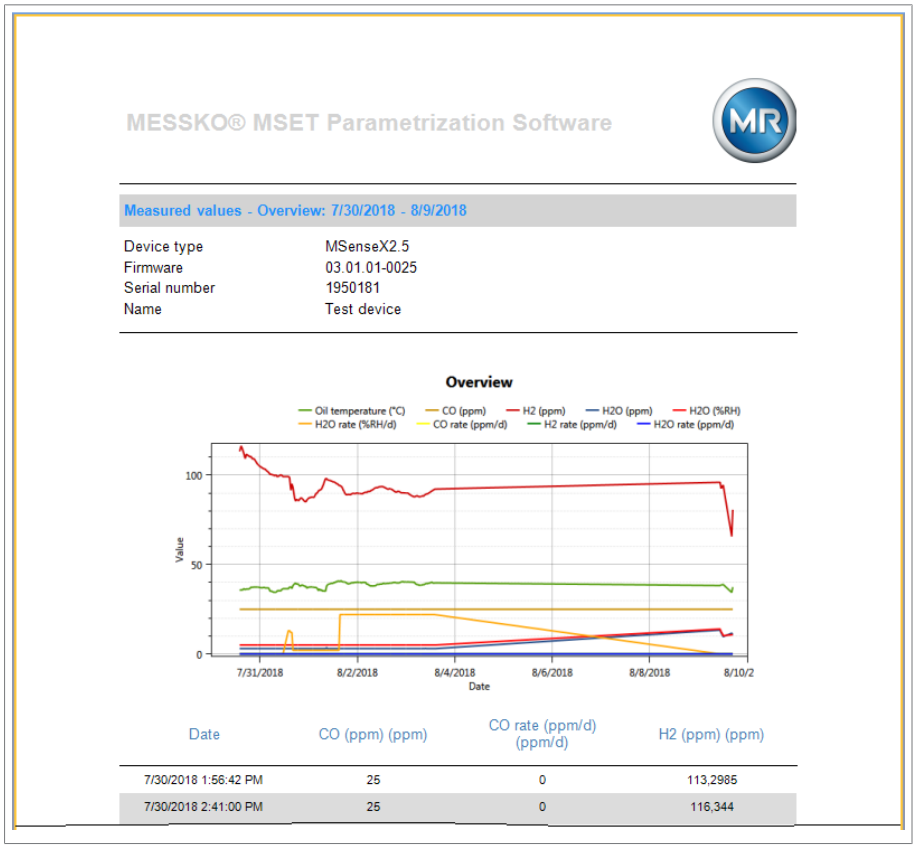



Figure 21: Measured data preview

The following actions can be performed via the buttons on the action bar:

- Printing
- Open (files of the type *.fpx)
- Save as (files of the types *.fpx, *.xml, *.docx, *.pdf, additional formats)
- Send via e-mail

### 4.4.3 Exporting measured data

If you would like to export and save the measured data, proceed as follows:

1. Click on the **Export** button.
   ⇨ A data selection window for exporting opens.
2. Select a name and specify the file location.
3. Click on **Save**.
   ⇨ The file is saved in the .csv format.

### 4.4.4 Synchronizing measurements (device connected via USB)

To transmit the measured data from the device to the MSET software, click on the **Synchronize** button.

## 4.5 Events

To evaluate the events, go to **Events** in the menu bar 3.

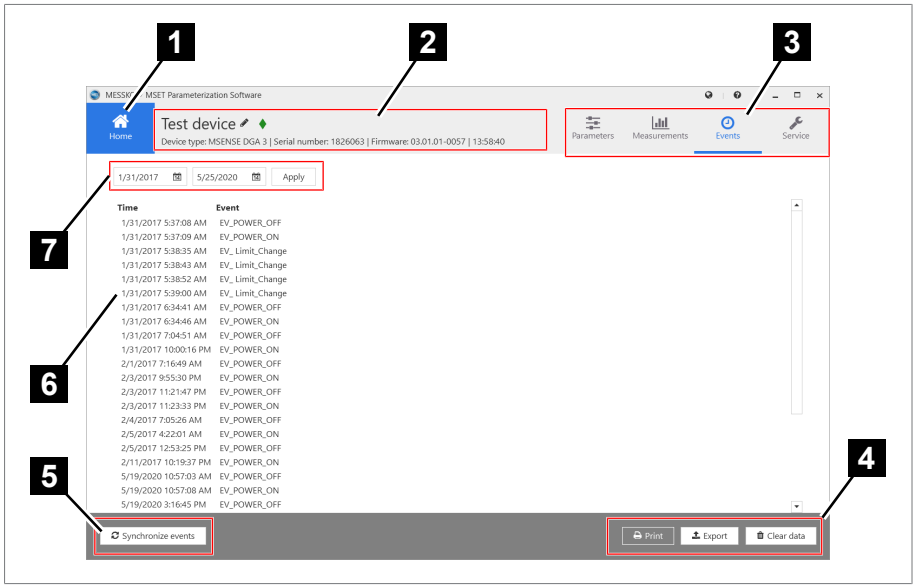



Figure 22: Events

| | | | |
|---|---|---|---|
| 1 | Home button | 2 | Basic device data and date |
| 3 | Menu bar | 4 | Print, export, delete event data |
| 5 | Load event data from the device | 6 | Event table |
| 7 | Time period | | |

### 4.5.1 Displaying event data

Select the time period for which the events are to be displayed.

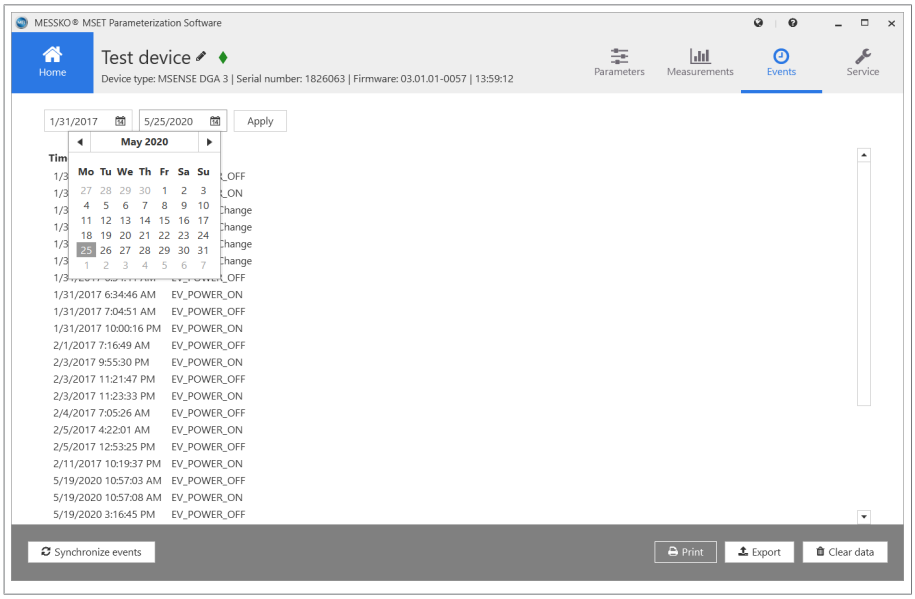



Figure 23: Event time period

The events will be displayed in a list with information on the time of occurrence and the error cause.

### 4.5.2 Synchronizing events (device connected via USB)

To download the current event data from the device, click on the **Synchronize events** button.

The event data will be downloaded. This process will be illustrated via the following animation and can take a few minutes.

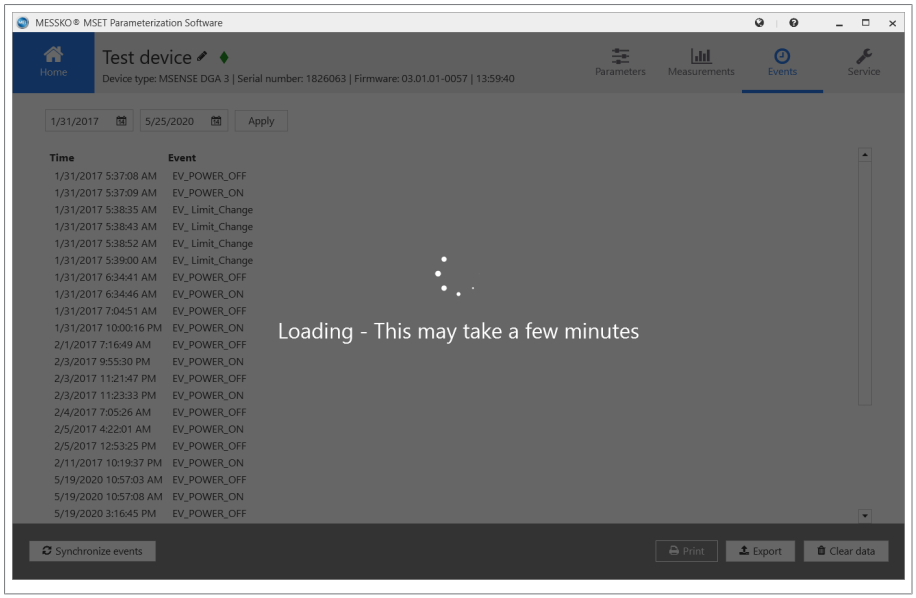


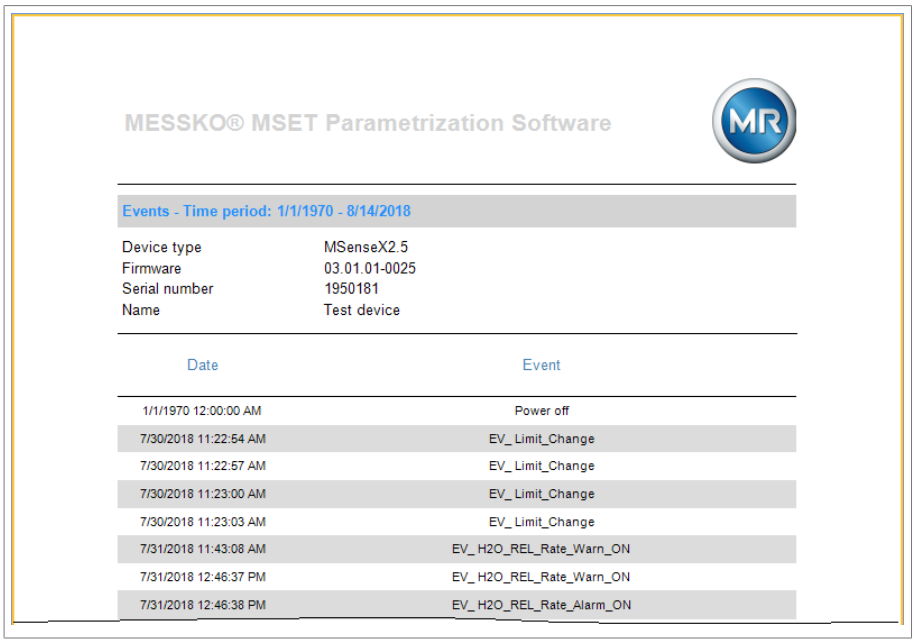

Figure 24: Loading event data

### 4.5.3 Printing/opening/saving/mailing event data

If you would like to print the event data out, proceed as follows:

► Click on the **Print** button.

⇨ A preview of the event data report is displayed on the screen.



MESSKO® MSET Parametrization Software

Events - Time period: 1/1/1970 - 8/14/2018

| | |
|---|---|
| Device type | MSenseX2.5 |
| Firmware | 03.01.01-0025 |
| Serial number | 1950181 |
| Name | Test device |

| Date | Event |
|---|---|
| 1/1/1970 12:00:00 AM | Power off |
| 7/30/2018 11:22:54 AM | EV_ Limit_Change |
| 7/30/2018 11:22:57 AM | EV_ Limit_Change |
| 7/30/2018 11:23:00 AM | EV_ Limit_Change |
| 7/30/2018 11:23:03 AM | EV_ Limit_Change |
| 7/31/2018 11:43:08 AM | EV_ H2O_REL_Rate_Warn_ON |
| 7/31/2018 12:46:37 PM | EV_ H2O_REL_Rate_Warn_ON |
| 7/31/2018 12:46:38 PM | EV_ H2O_REL_Rate_Alarm_ON |

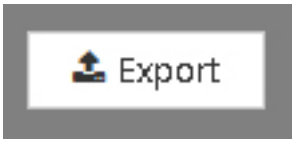
Figure 25: Printing events

The following actions can be performed via the buttons on the action bar:

- Printing
- Open (files of the type *.fpx)
- Save as (files of the types *.fpx, *.xml, *.docx, *.pdf, additional formats)
- Send via e-mail

### 4.5.4 Exporting event data

If you would like to export and save the event data, proceed as follows:

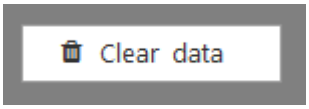



1. Click on the **Export** button.
   ⇨ A data selection window for exporting opens.
2. Select a name and specify the file location.
3. Click on **Save**.
   ⇨ The file is saved in the .csv format.

## 4.6 Deleting all data (device connected via USB)

It is only possible to delete the entire device database from the device. This will delete all measured data and event data on the device. The parameter data remains unaffected. You need the administrator password level to do this.

If you would like to completely delete the measured data and event data on the device, proceed as follows:




1. Click on the **Delete data** button.
   ⇨ The window for deleting the measured data and event data opens.

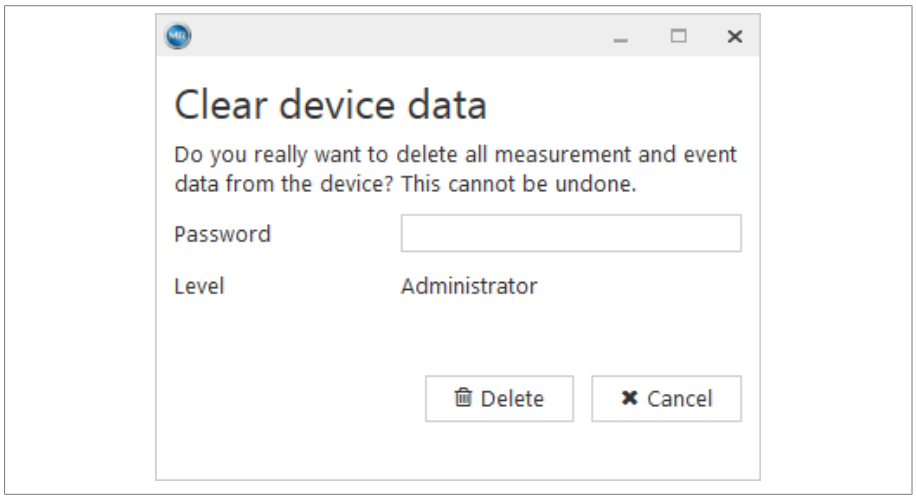



Figure 26: Deleting events

2. Enter the administrator password.
3. Click on the **Delete** button.
   ⇨ A pop-up window appears asking for confirmation of the delete procedure.
4. Click on **Yes** to confirm the delete procedure, or on **No** to cancel the procedure.

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4773303/08 EN - MESSKO® MSET -
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