ifm electronic

Operating instructions

UK

LINERECORDER SENSOR
Version 4.2

706400 / 00 11 / 2016

Contents

1 Preliminary note

This document serves for setup and use of the LINERECORDER SENSOR software from ifm.

1.1 Symbols used

► Instructions
> Reaction, result
[…] Designation of keys, buttons or indications
→ Cross-reference

Important note
Non-compliance may result in malfunction or interference.

Information
Supplementary note

2 Safety instructions

Please read the operating instructions before using the software.

Ensure that the software is suitable for your application / sensors without any restrictions.

If the operating instructions or the technical data are not adhered to, personal injury and/or damage to property can occur. That is why installation, set-up and maintenance of the article must only be carried out by qualified personnel authorised by the machine operator.

Non-observance of the instructions, operation which is not in accordance with use as prescribed below, wrong installation or incorrect handling can affect the safety of operators and machinery.

The installation and connection must comply with the applicable national and international standards. Responsibility lies with the person installing the software.

3 System requirements

3.1 PC hardware

– Min. 2 GB working memory
– Min. 5 GB freely available hard disc memory
– 1 free USB 2.0 port
– CPU Intel dual core 2.0 GHz

3.2 PC software

- Operating system Microsoft Windows XP SP3, Windows Vista SP2, Windows 7 SP1, Windows 8 and Windows 10.
- Windows Server 2008 SP2 or higher, Windows Server 2008 R2 SP1, Windows Server 2012.
- Webbrowser Chrome, Firefox, Internet Explorer 11, Microsoft Edge.

3.3 Hardware accessories

- USB IO-Link master (incl. plug-in power supply and M12 connection cable).

4 Functions and features

Use of the LINERECORDER SENSOR software offers the following possibilities:

- Online and offline setup of ifm IO-Link sensors
  - Parameter setting
  - Loading of parameters from an IO-Link sensor
  - Saving and loading of sets of parameters in / from a file
  - Writing of parameters to IO-Link devices
  - Support of IO-Link actuators
- Graphic representation of process values
  - Evaluation of measured values
  - Export of displayed measured values

The LINERECORDER SENSOR software (called "LR SENSOR" in the following) can be used for simple and efficient parameter setting of IO-Link sensors. Use of the software is to reduce set-up costs, increase the uptime of systems and ensure an easy display / evaluation of measured value curves during set-up or maintenance interventions.

5 Software

The LR SENSOR program is installed on the PC by means of the "Linerecorder Sensor.exe" file.

Administrator rights are required for set-up and operation of the software. Contact your administrator or responsible IT staff.

5.1 Install program on the hard disk

► Start the file "Linerecorder Sensor.exe" with a double click.

> The start menu opens. The licence conditions are displayed.

► Agree to the licence conditions, start the installation of the program and follow the instructions of the installation routine.

> The program is installed.

► End the installation dialogue after successful installation.

5.2 Software upgrade

► Ask your ifm contract partner for available upgrades.

► Follow the installation routine as in → 5.1.

> The licence key remains valid.

Installation of LR Sensor and LR DEVICE on an operating system is not possible. The system signals an error while trying to install the LR DEVICE.

5.3 Language selection

The interface language depends on the language selected in your browser. The following example shows how to change the language in Firefox (recommended browser):

► Click on "Open menu" in the browser bar.

► Select "Options".

► Open the "Content" tab.

► Click on [Choose] in the "Languages" category.

► Select a language (which is then shown in blue).

► Place the selected language in the 1st line using [Move Up].

► Click on [OK].

► Restart the browser.

Language versions of operating instructions → www.ifm.com

6 Program start

6.1 Limited software

The LR SENSOR Software can be used in a limited environment without a licence key.

Functions of the limited environment:

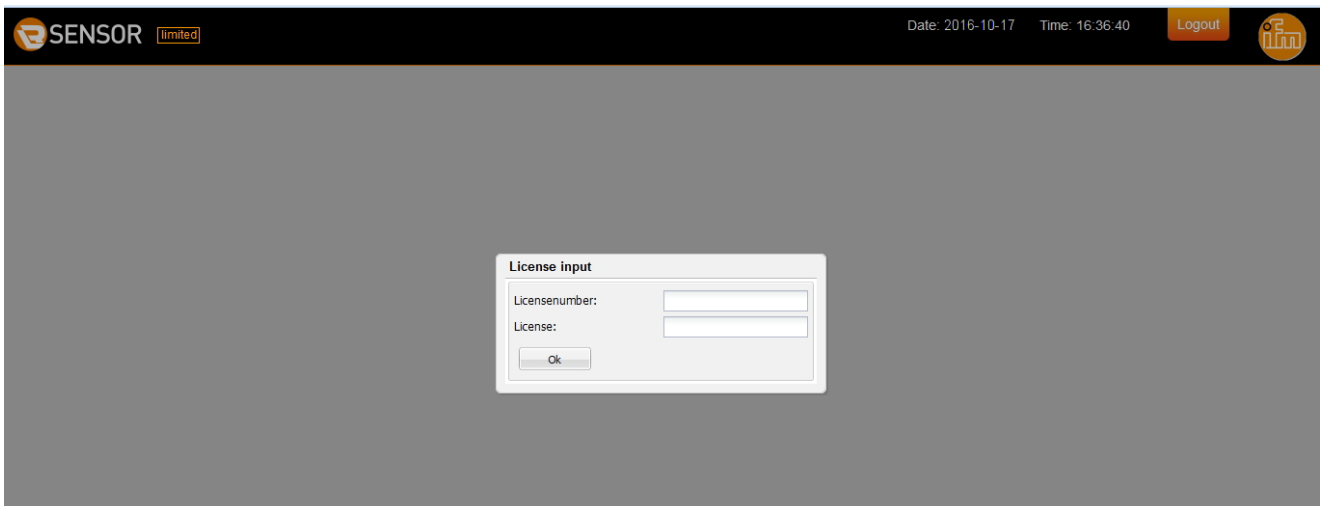
- Read parameters from device
- Edit parameters on the LR SENSOR surface (offline)
- Write data to a device not possible
- Cockpit functions for monitoring devices are provided without any restrictions.

6.2 Licensing procedures

The licence key is required for first-time writing of data to the device or by click on [limited] information.

The licence key consists of:

– Licence number
– License



The licence key is included with the delivery.
For the version QA0001, it is indicated on the inside of the packaging.
The licence key of the download version QA0002 is advised by email.

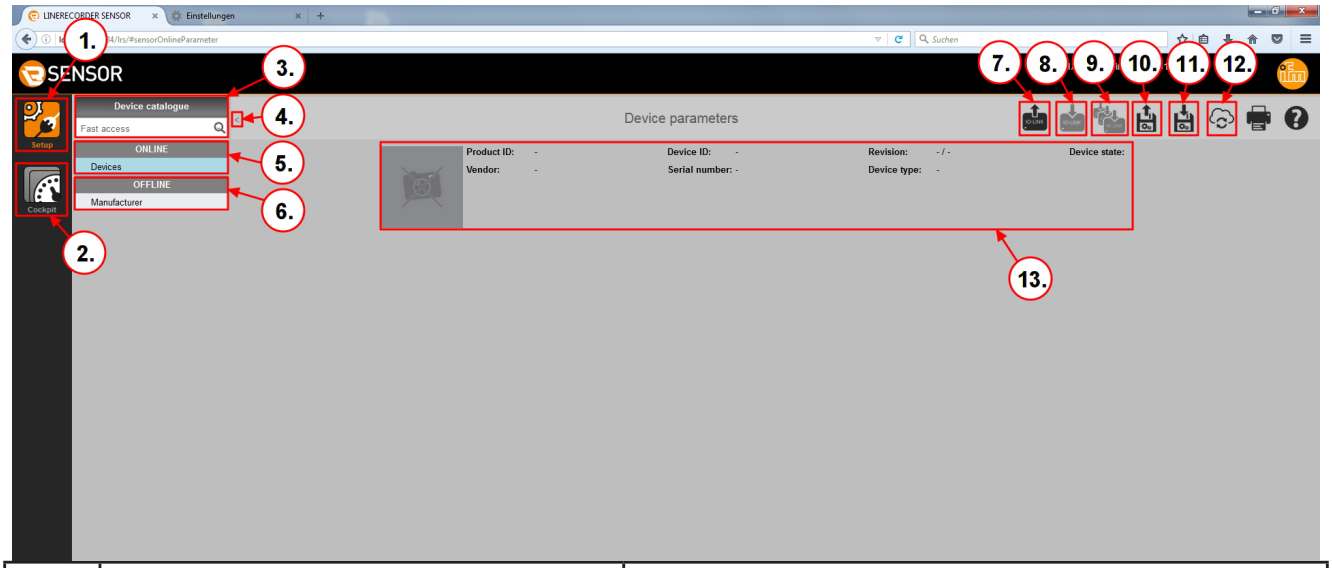
6.3 Connection of the hardware

► Connect the USB IO-Link master to the PC and the plug-in power supply.
► Connect the USB IO-Link master to the IO-Link sensor via the M12 connection cable.
► For sensors with display or indication of the readiness for operation, check whether the unit is in operation.

The voltage supply of the respective device is established via the USB IO-Link master.

6.4 Start screen

> The start screen is displayed according to the language settings in the browser (language selection → 5.3)



①	Parameter setting:	Parameter setting of devices via USB IO-Link master.
②	Cockpit:	Display mode of all measured values available online.
③	Device catalogue:	Fast access to IODD files for offline parameter setting via article no.
④	< : >:	Hide menu catalogue, ONLINE and OFFLINE Show menu
⑤	ONLINE:	Detected interface / detected device is displayed
⑥	OFFLINE:	Selection list from manufacturer to article no. Activate IODD file for offline parameter setting
⑦	Read from device:	Reading of parameters from the connected device.
⑧	Write to device:	Writing of set parameter values to the device.
⑨	Write to multiple selected selected devices:	Function like (8), additionally writing to a connected and identified device in the offline mode is possible. Writing to several devices only possible with LR DEVICE software.
⑩	Load parameters from a file:	Upload of stored parameter settings with the file extension ".lrp" from a directory.
⑪	Save parameters to a file:	Saving of parameter values to a file in the format .lrp.
⑫	Searching for updates:	When the icon is pink, new IODD files are available and can be downloaded from the internet.
⑬	Header with information and an image of the read device:	device name; manufacturer, device ID; serial no.; device type; hardware / firmware revision (internal version ID), device status (only for online setup).

General icons:

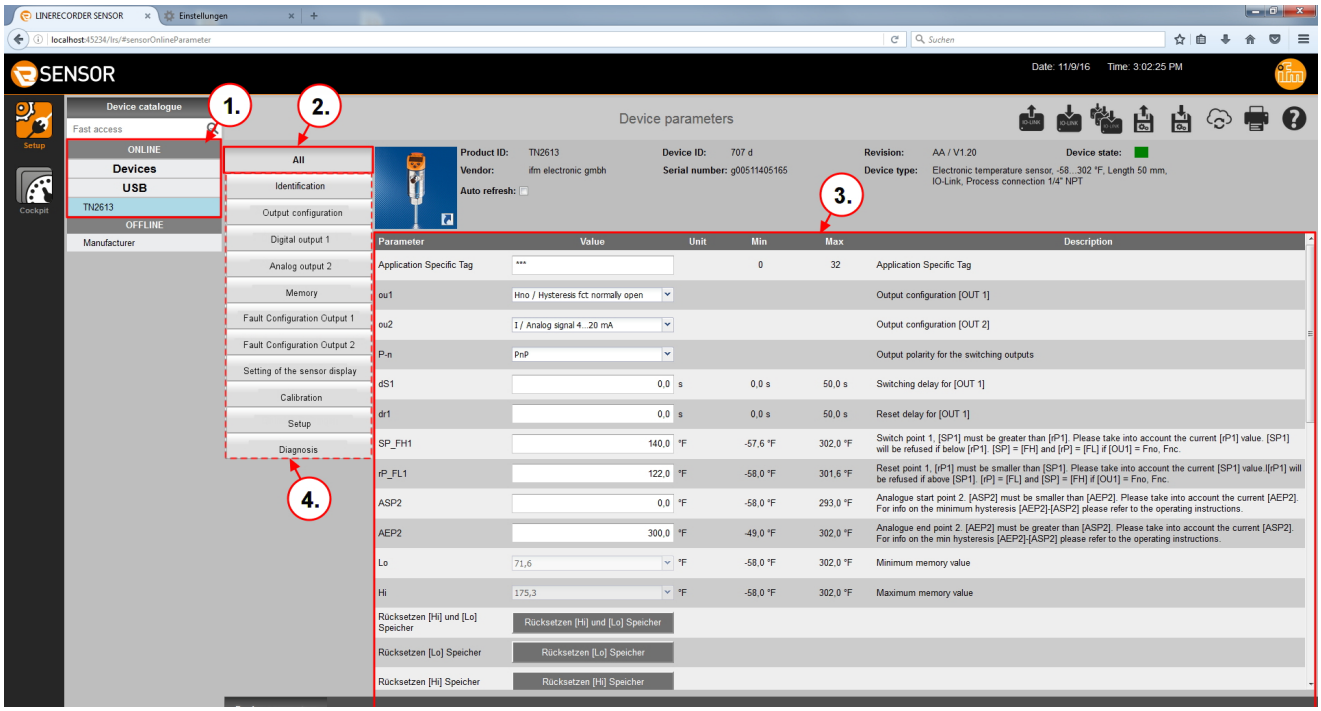
	A print preview of the displayed parameters is opened in a separate browser window. It contains the name of the parameter, the current and preset (factory set) parameter value, min and max setting value of the parameter and the short description of the parameter. In the print preview, remarks can be added and printed.
	Access the online user manual in a separate browser window.

7 Online setup

> The IO-Link device was connected to the PC via the IO-Link master.

► Click on [ ].

> Parameters of the connected sensor are loaded into the software.



> ONLINE ① shows the used interface / the detected devices

> The setting [All] ② is always preset.

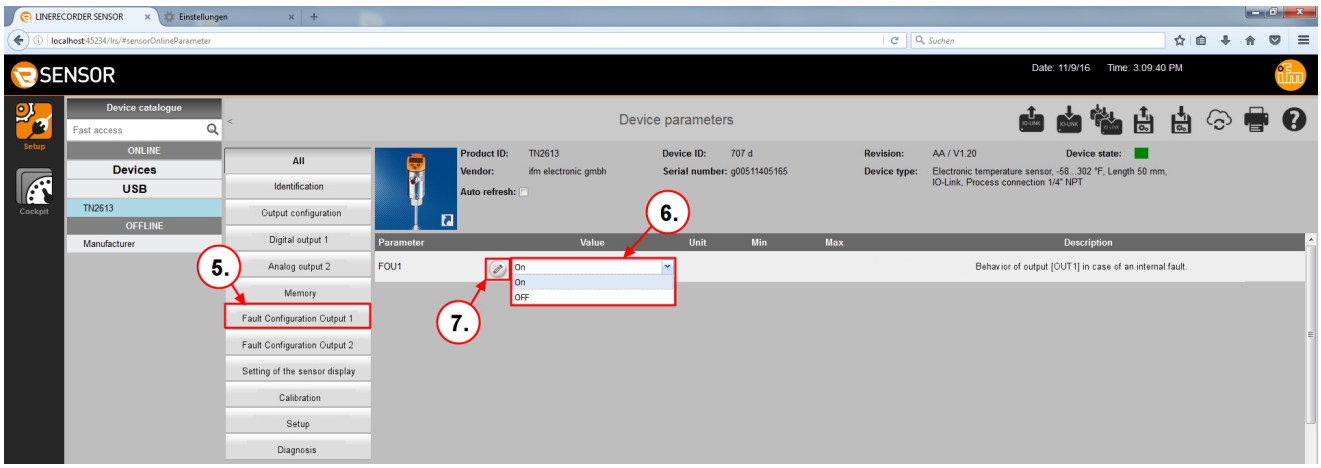
> All parameters ③ are displayed and can be edited.

► For a targeted input of parameters, select the requested category ④

Example:

► Select [Fault Configuration Output 1] ⑤

> Parameters in the category Fault Configuration Output 1 are shown and can be edited.



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► Select [FOU1] parameter from the list ⑤ (other parameters are edited via input fields).

> The pen symbol ⑥ indicates an edited parameter which has not yet been transferred onto the device.

7.1 Memory plug parameter setting

A memory plug (E30398) serves for storage and transfer of parameter values of various devices. The parameter values can be directly copied from the sensor to the memory plug, or written to it by the LR SENSOR. For further details refer to the operating instructions of the memory plug.

If a memory plug is connected, the following additional information is shown in the header:

	No parameters are stored on the memory plug, no write protection activated. or Parameters are stored on the memory plug, they can be edited, no write protection activated.Attention! Inconsistent data may be generated!
	Parameters are stored on the memory plug, they cannot be edited, write protection is activated.
	After reading of a memory plug which contains data,  appears. By clicking on the icon, the parameters of the stored device are displayed. (→ Display of the data stored on the memory plug)
	 appears after clicking on  . By clicking on  the parameter list of the memory plug is displayed again The icon changes again to  (→ 7.2)

The memory plug only provides memory space for the parameters of one device.

Writing to the memory plug:

► Read IO-Link parameters from a device using the LR SENSOR software or select offline setup.

► Edit parameters

► Connect the memory plug to the USB IO-Link master.

► Click on [ ] to save data on the memory plug.

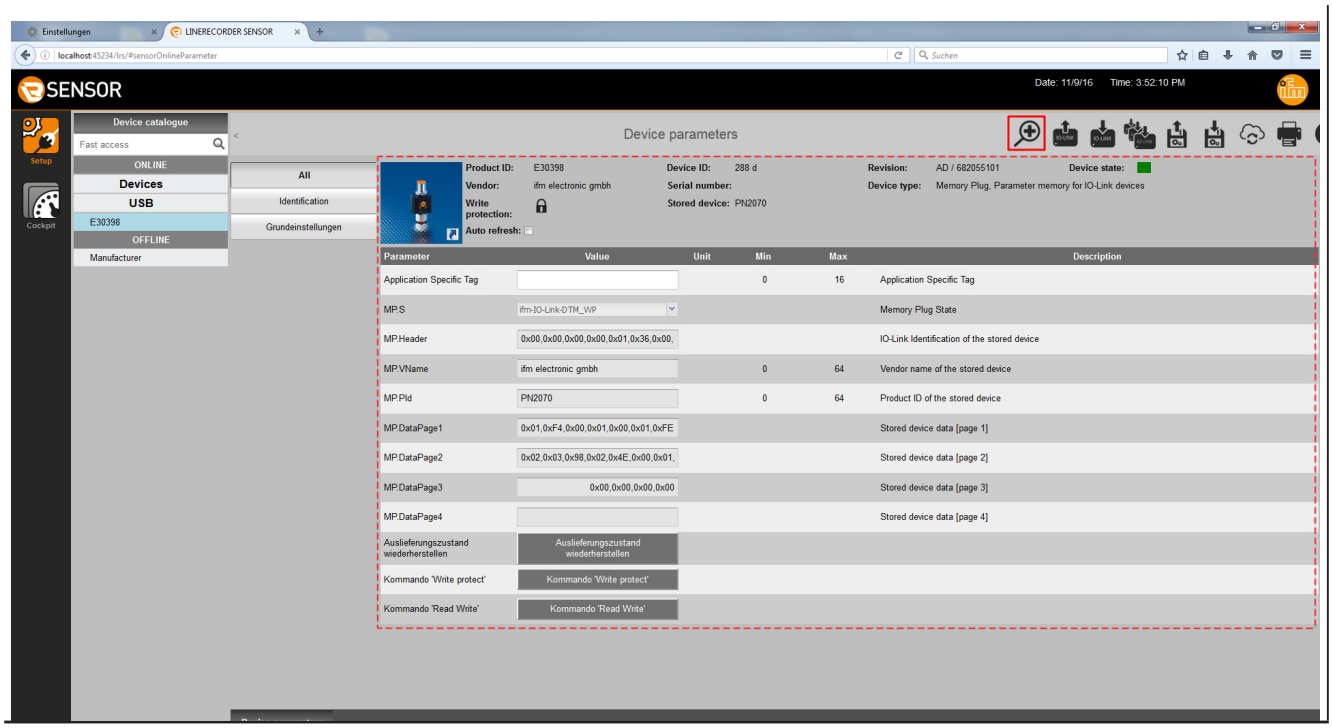
The write protection is activated via the system command [Write protect]. The system command [Read Write] deactivates the write protection.

7.2 Display of the data stored on the memory plug

► Connect the memory plug to the USB IO-Link master.

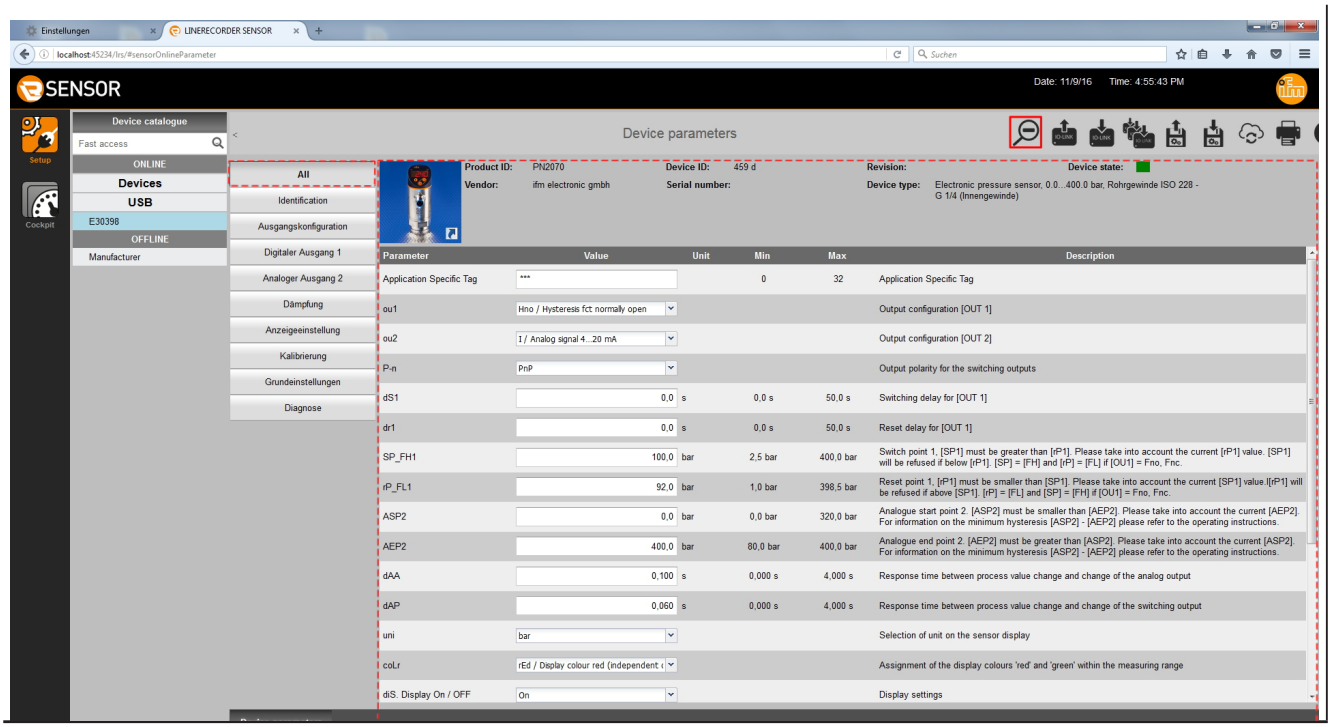
► Click on [ ].

> The parameter list of the connected memory plug is loaded into the software.



► Click on [ ].

> All stored parameters are displayed and can be edited.



► Click on [ ].

> The parameter list of the connected memory plug is displayed.

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8 Cockpit

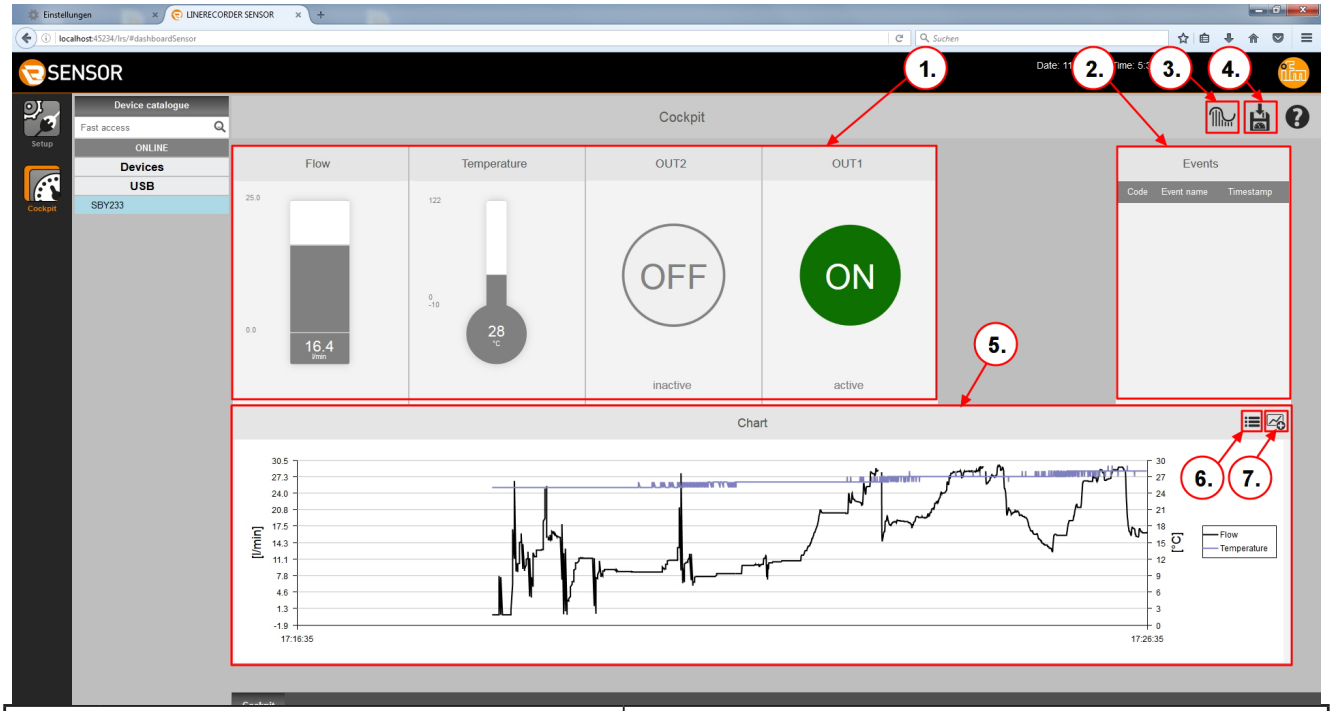
The cockpit features:

– Display instruments: Measured values and switching states are displayed in the form of display instruments in the respective current condition.

– Chart: Representation of the measured values / switching states in a time diagram.

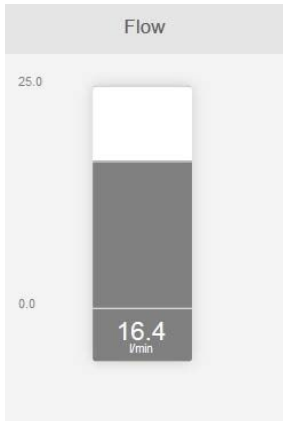
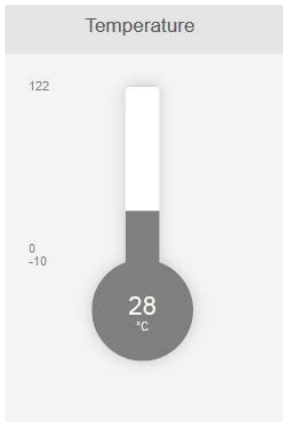
► Click on [Cockpit].

> The cockpit is displayed with current measured values and output response.



①	Display instruments	Simplified graphical representation of the outputs.
②	Events	Events are displayed with code, name and time.
③	Set the device sampling rate	Setting of the transmission rate of new measured values (number of measured values detected per time unit).
④	Export	Measured values of the chart are stored in a csv file.
⑤	Chart	The measured values and switching states over a defined period of time are visualised. The legend illustrates which characteristic curve refers to which measured value.
⑥	Edit / Configuration	Editing of the diagram labelling Definition of the time range of the X axis. Activation or deactivation of the legend.
⑦	Add / remove data sources	The display of detected data sources in the chart can be activated or deactivated.

8.1 Symbols used for measurement locations / data sources

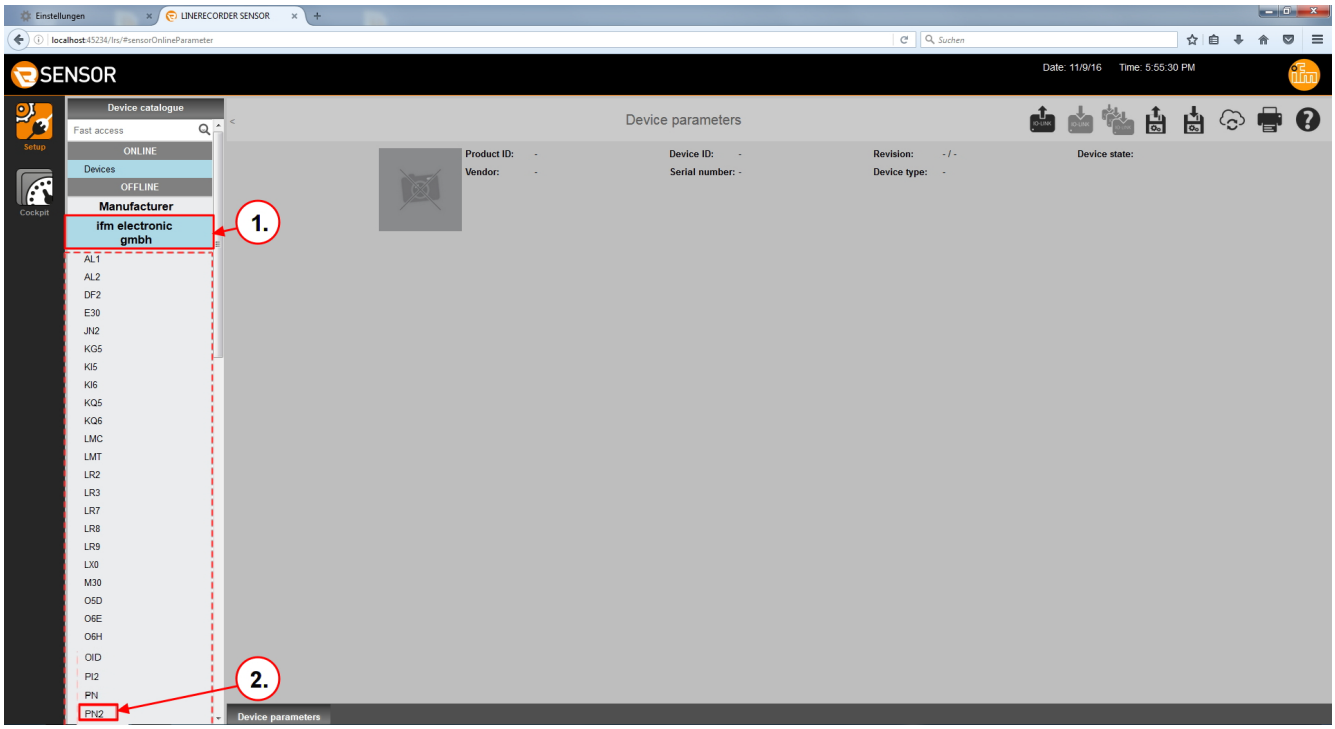
Type of display	Description	**Symbol**
Pointer instrument	Display form typically used for pressure measurements in bar / psi / MPa ... Based on measurement equipment in manometer design.	
bar graph	Display form for process values typically not displayed on a manometer or thermometer.	
Thermometer	Display form typically used for temperature measurements in °C / °F ... . Based on measurement equipment in thermometer design.	
Output status	Display of digital I/O signals. Only one display mode is shown. ● Display "ON" = active / output "high" or ● Display "OFF" = inactive / output "low"	

9 Offline setup

Offline setup allows editing of a set of parameters without connecting the corresponding device. Only the IODD is required for the device to be set. For ifm units, these are stored in the LR Sensor.

► Click on [Offline setup].

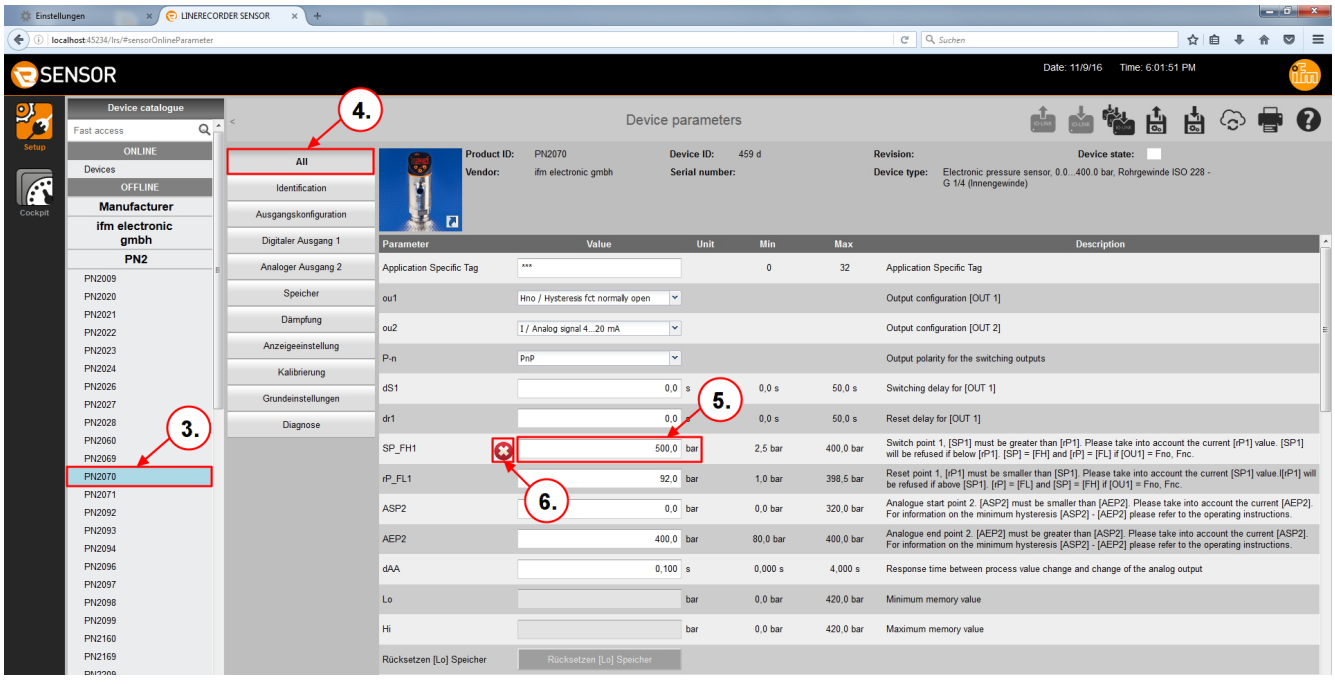
> The offline setup environment appears.



► Click on [ifm electronic gmbh] ①.

> A preselection with product ID is shown in the device catalogue.

► Select [PN2] ② to get to the group of pressure sensors PN2xxx.



► Click on [PN2070] ③ .

> The set of device parameters for PN2070 is displayed for editing.

> [All] ④ parameters are activated and can be edited.

Alternatively fast access to IODD files for offline parameter setting via article no. is possible (→ 6.4).

► Edit [SP_FH1] ⑤ ; in this case an invalid value was entered on purpose.

> [ ] ⑥ - invalid - is displayed. The value must lie in the range between min and max value.

► Correct the value [SP_FH1] ⑤ , respect the min / max limits!

► Select [ ] to save the parameters as an ".lpr" file.

> The ".lpr" file is saved in the download directory of the PC. It can be retrieved at any time.

In the offline mode reading with [ ] or writing with [ ] to a connected device is not possible. The saved file with the parameters can only be accessed in the online mode and then be written to the device.

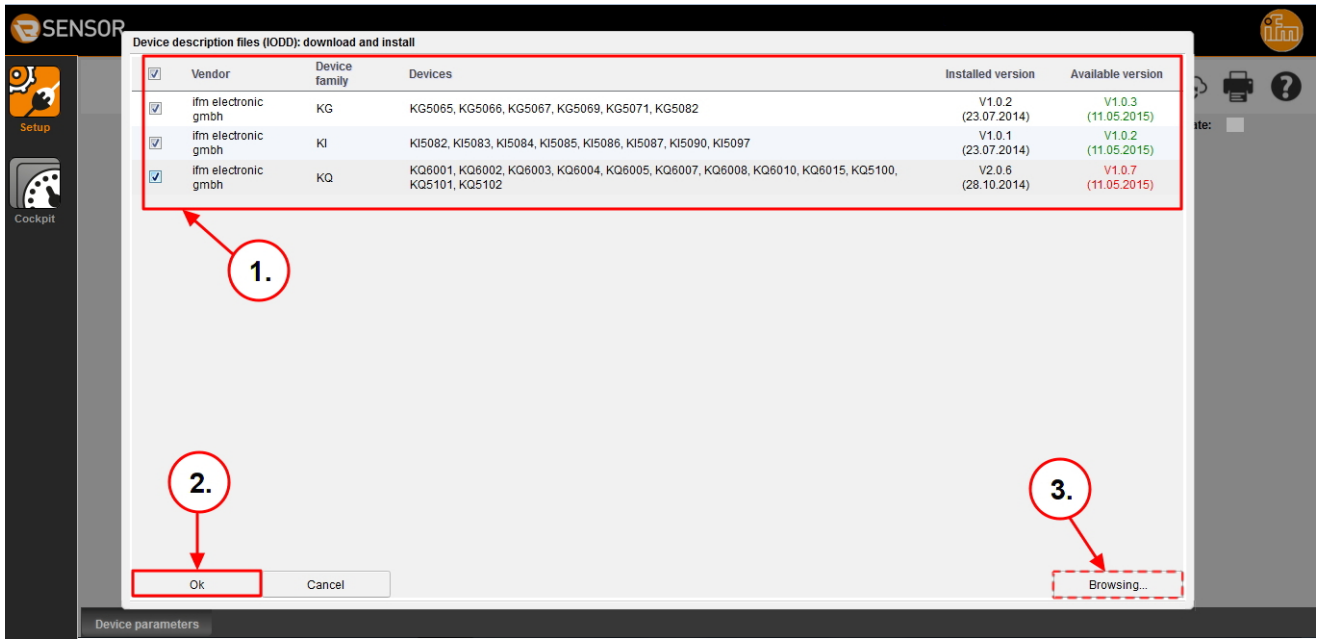
With [ ] (→ 6.4) writing to a connected and identified device in the offline mode is possible.

10 Update IODD / device catalogue

The LR SENSOR software provides an easy way to keep the IODDs / the device catalogue up to date. The symbol [ ] turns pink when there is an existing internet connection. This shows that new IODDs are available.

► Click on [ ].

> The dialogue menu "Device description files (IODD): download and install" is opened.



► Click on [IODDs] ① which are to be installed / updated.

► Click on [OK] ② .

> A dialogue window is opened with the information that the device definitions (IODDs) are updated.

> After completion of the update, the symbol turns grey.

As an alternative, IODDs can be saved as a file on a storage medium and imported later.

► Click on []

► Click on [Browsing...] ③ .

► Select the storage medium in the dialogue window and tick the file.

► Click on [Open]

> A dialogue window is opened with the information that the device definitions (IODDs) are updated.

> After completion of the update, the symbol turns grey.

11 Fault correction

List of frequently asked questions and their solutions
(FAQ and Troubleshooting)

Question	Solution
Software does not start	► Reboot the computer
Sensor is not detected. Error message "No connected device was found!" appears	► Disconnect USB connection PC / USB IO-Link master ► Reconnect after a waiting time of about 30 s ► Restart the procedure
The installation routine is not completed	A module may not have been detected correctly, or a wrong driver may have been selected. ► End the installation ► Start deinstallation ► Reboot the computer ► Restart the installation process
Poor display in the web browser.	► Test an alternative browser (→ 3.2 PC software). > A poor display does not have any impact on the function