SAUTER CASE Sensors

Version 2.2

Parameterising sensors

Manual

7010081003 C

Content

1 Preface

Congratulations on choosing Sauter software. SAUTER CASE Sensors Software Version 2.2 is intended for use with the following SAUTER sensors/transducers:

- EGP100 differential pressure transducer
- SGU100 sash sensor
- EGQ181SF203 air quality sensor (VOC)
- EGH681SF233 humidity and temperature transducer

These items are quality products from a leading manufacturer of technical control equipment for heating, ventilation and air conditioning.

This manual describes the SAUTER CASE Sensors configuration software, which was specifically developed for simple and cost-optimised parameterisation of the sensors mentioned above. The SAUTER CASE Sensors software tool offers menu guidance so that you can make all the settings required for this sensors to operate perfectly. The most important parameters for input and output configuration are also preset in the factory so that commissioning will be efficient. Special functions for online monitoring and troubleshooting complete the functional scope.

1.1 Most important features

- Extremely simple parameterisation for complex applications
- Configurable units for country-specific adaptation
- Overview page for rapid entry of the most important parameters
- Tree view for rapid navigation through the individual configuration pages
- Export function for commissioning parameters
- Service functions for speedy troubleshooting
- Structured user guidance
- Online monitoring of main operating parameters
- Graphic presentation and documentation of measurement results in a .csv file for analysis purposes

2 Introduction

This manual takes you step by step through the individual functions of the SAUTER CASE Sensors software. Installation of the software on your PC is described, as well as the connection of the PC to a device via the RS485 interface. You will find the accessories required for these purposes in the relevant product documentation (PDS 32.02 and PDS 37.100) as well as in section 6 of this document.

You can find a general introduction to the topic of the demand-based ventilation using volume flow control in chapter 10.

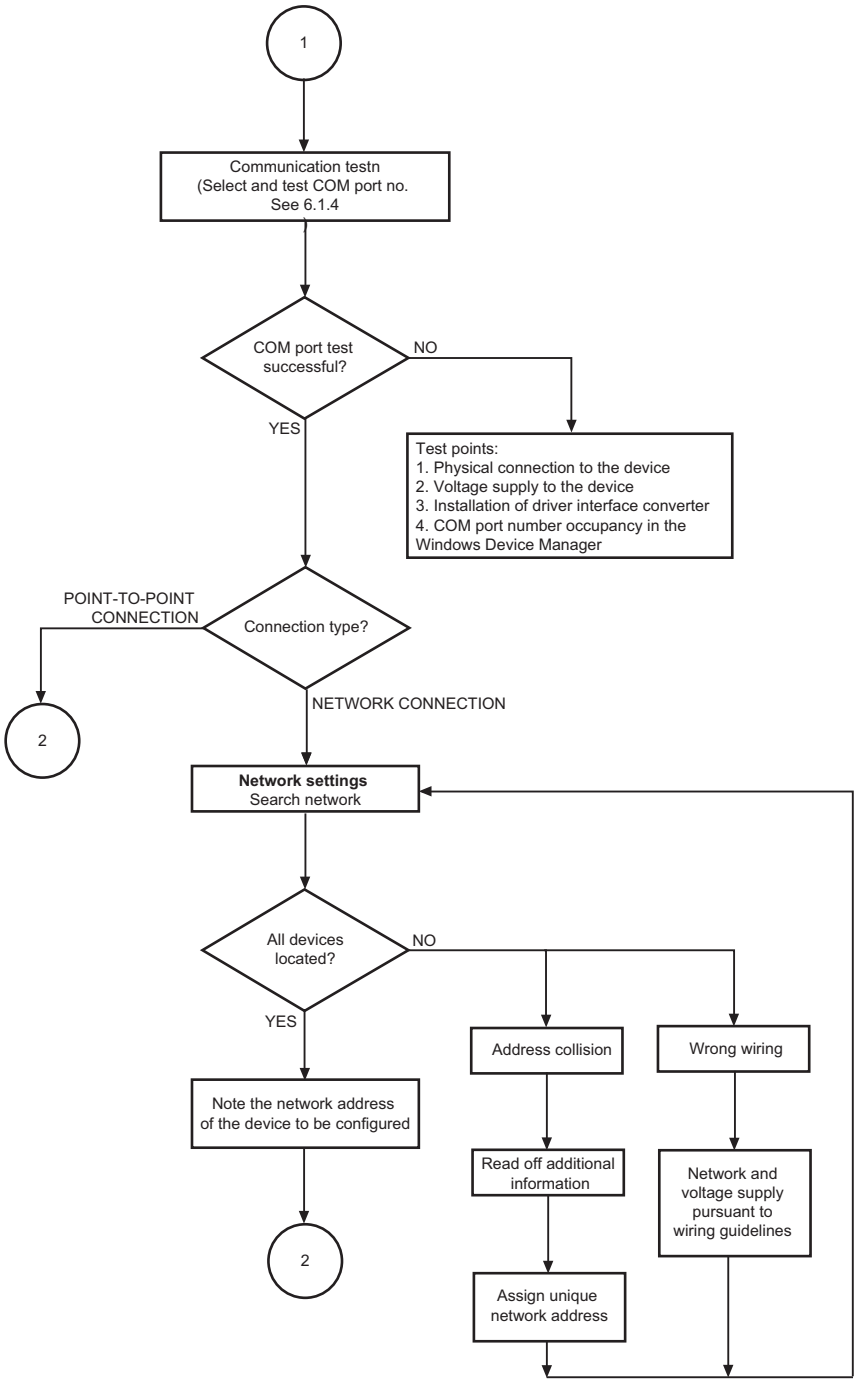
2.1 Information on use

In general, this manual gives no separate descriptions of the usual Microsoft Windows functions such as TAB for navigating through menus, CTRL-C for 'copy' or CTRL-V for 'paste', unless they can be used to carry out a special function.
Key combination ALT-↓ can be used to open up list boxes inside combo-boxes.
If functions can be performed with different sequences of commands, separate descriptions are given in each case.

In some cases, the value for a parameter can be entered on different pages. In this case, note that the values are automatically transferred into the other parameter fields, so there is no need for multiple entries.

3 Overview

3.1 General configuration process



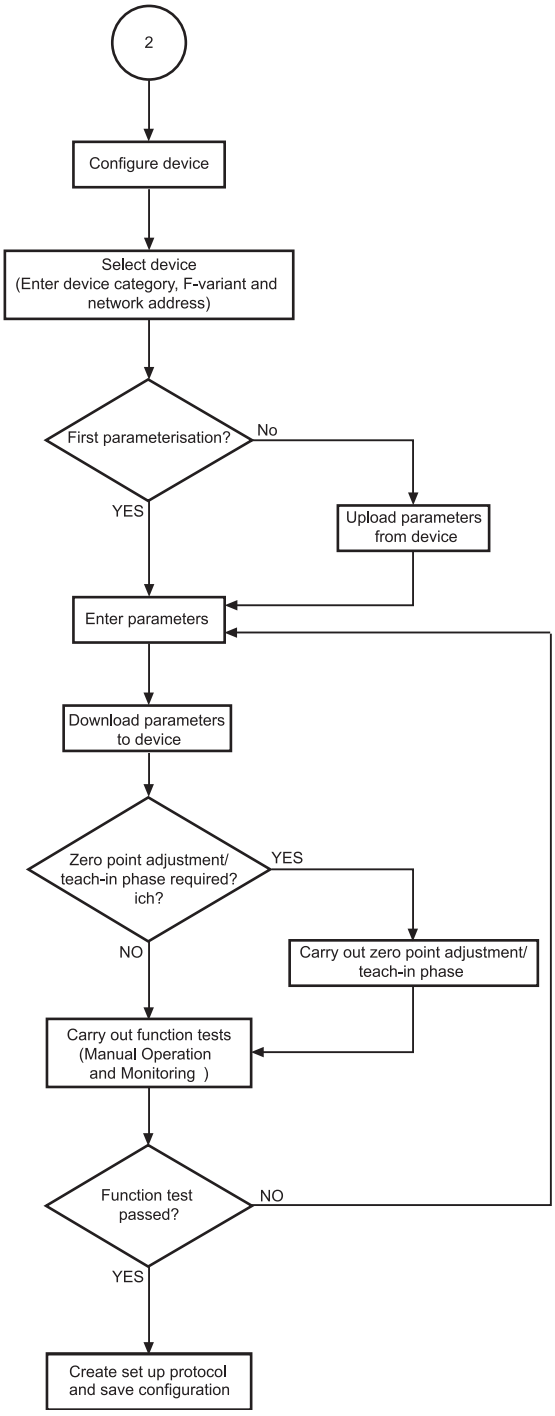


Fig. 1 Configuration flowchart

3.2 Program structure

SAUTER CASE Sensors
- Start page
    - I. Configure device
        - Select device
            - Device category, device, network address
        - Parameter settings
            - Overview
                - Project data
                - Parameters
                - Device information
                - Monitoring
                    - Status (SGU100 only)
                - Drawings
            - Upload from device
            - Download to device
            - Tools
            - Manual operation (SGU100 only)
            - Monitoring
    - II. Network settings
        - Scan network
        - Get additional information (Read out the serial number and house address of the device if this information was entered previously)
        - Change address
- File
    - Create setup protocol
    - Import configuration
    - Export configuration
    - Exit
- Tools
    - Select device
    - Options
        - Units
        - Language
        - Communication
- Help
    - Help SAUTER CASE Sensors
    - About
- Exit

4 Safety warnings

Never put a damaged transducer into operation. In case of doubt, please contact your local Sauter Service. You can find the contact address for your nearest Sauter representative in section 10 Customer Service or on the Internet at www.sauter-controls.com.

- The EGP100 must only be used for the specified purpose: measuring differential pressure or air volume flow in the ventilation systems of air-conditioning plants.
- The SGU100 must only be used for its specified purpose: measuring the front sash position on a laboratory fume cupboard.
- The EGH681SF233 may only be used for the specified purpose, measuring the room temperature and the relative humidity for energy-efficient regulation of the room climate.
- The EGQ181SF203 may only be used for the specified purpose, measuring the air quality for energy-efficient regulation of the room climate.
- It is prohibited to measure explosive gases.
- This transducer is not approved for use in potentially explosive areas.

5 Installation

5.1 System requirements

To operate the software, you need:

Hardware:
- Processor: Intel Pentium, 1.5 GHz or higher
- RAM: min. 1 GB
- Hard disk: min. 5 GB free memory
- DVD-ROM drive: for installing programs and drivers
- USB 2.0 connection: for interface converters
- Monitor resolution: min. 1024 × 768

Software:
- Framework: .Net Framework 4.0 or higher
- Database: Microsoft SQL Server Compact 3.5 Service Pack 2
- Supported operating systems:
    - Windows XP Home Premium
    - Windows 7 32 Bit and 64 Bit
    - Windows 7 Starter

5.2 Scope of delivery

One DVD-ROM with SAUTER CASE Tools installation and configuration software, including SAUTER CASE Sensors, CD-ROM with RS485-USB driver, .net 4.0 Framework, SQL Server Compact, manual and Adobe Acrobat Reader for reading the manual.

To make the hardware connection between the transducer and the PC, you need additional components which must be ordered separately as applicable.

Order number	Order text
0300360001	CASE Sensors incl. USB connection set

Tab. 1 Accessories for connecting to a PC

5.3 Software installation

NOTICE Do not connect the transducer to be configured with the PC until software installation is complete.

5.3.1 Installation of SAUTER CASE Sensors

NOTICE Parallel installations are not supported.

SAUTER CASE Sensors offers you three installation options:

- Stand-alone installation via a zip file. The zip file is available for downloading from the SAUTER Extranet, on the corresponding product pages, section "Software".
- Installation via the SAUTER CASE Tools DVD-ROM.
- Installation via the SAUTER CASE Suite DVD-ROM.

General installation procedure

1. Start the installation wizard. Carry out one of the following two steps:
   - If you want to run the installation from the SAUTER CASE Tools or SAUTER CASE Suite DVD-ROM, please insert the DVD-ROM into the appropriate drive. The installation wizard should start automatically. If not, locate your DVD-ROM drive and double-click the program **Setup.exe.**
   - If you want to run the installation via the zip file, first unzip the zip file and then double-click the program **Setup.exe**.

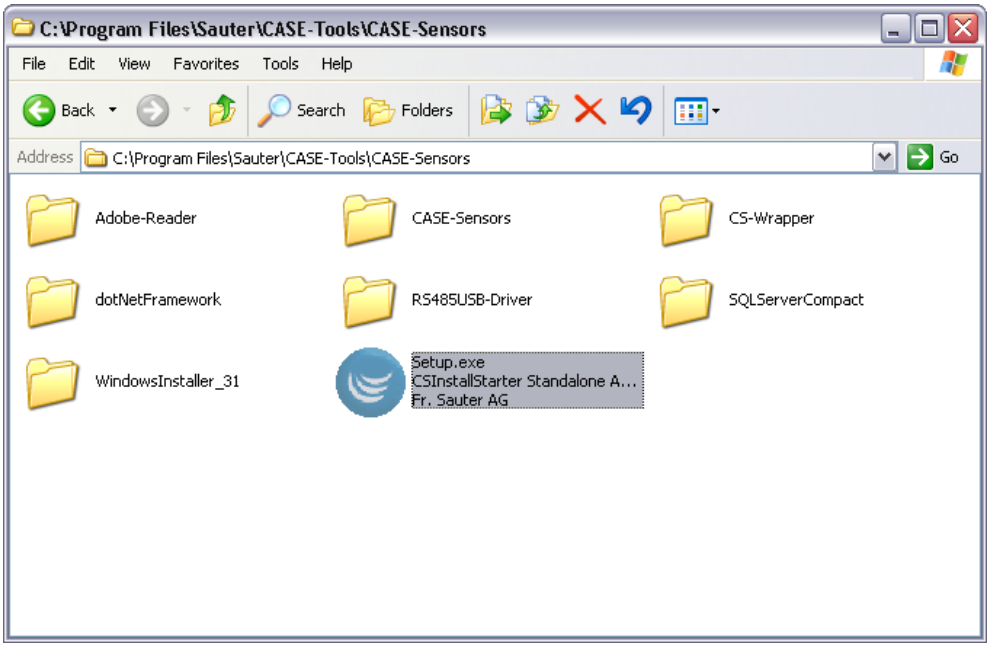


Fig. 2 Setup.exe in the SAUTER CASE Sensors Tools DVD

2. Select the language in which SAUTER CASE Sensors is to be installed.

NOTICE You can change the language at any time after installation using the menu item **Tools** → **Options** in the SAUTER CASE Sensors software.

3. Read and accept the licence agreement and click **Continue**.

4. You can select an installation directory for SAUTER CASE Sensors in the next step. If you choose not to specify an installation directory SAUTER CASE Sensors will be installed in the standard directory C:\Program\Files\ Sauter. Click **Next**.

5. This step only applies to installation via the SAUTER CASE Tools DVD-ROM: Choose the tools that you want to install. You must select CASE Sensors as the bare minimum. Click **Next**.

➲ The installation program installs the software in the selected directory.

➲ After successful installation, the message **Installation successfully completed** appears.

6. Click **Close** to finish the installation procedure.

5.3.2 Installation of driver for interface converter

The connection between the PC and the transducer is via the supplied USB-to-RS485 interface. To address this via the PC, the interface converter must be set up on the PC you are using. The drivers you need will be found on the CD-ROM (ADA, USB driver software) supplied in the connection set.

NOTICE The procedure for installing the drivers can be found in the enclosed instructions ADA-I9140, USB-to-RS-485 / RS-422 converter). The language of the instruction manual is English.

When installing the drivers, follow the instructions in the instruction manual and if you have problems contact technical support. Contact data can be found in Chapter 1 “General Information”.

Check the Device Manager as described in section 6.1.4 „Setting the COM port“ to see whether the drivers were properly installed.

The initial installation of a new interface converter on a PC always requires the installation of a new driver. We recommend that you always work with the same interface converter to avoid having to reinstall drivers.

5.3.3 Check installation

If the installation was successful, the SAUTER CASE Sensors configuration software is now available and the icon for the SAUTER CASE Sensors software is present on your desktop.

1. Double-click on the icon to launch the software.

➲ Click on **Start**, **Programs** and select under **CASE Tools** the CASE Sensors Program.

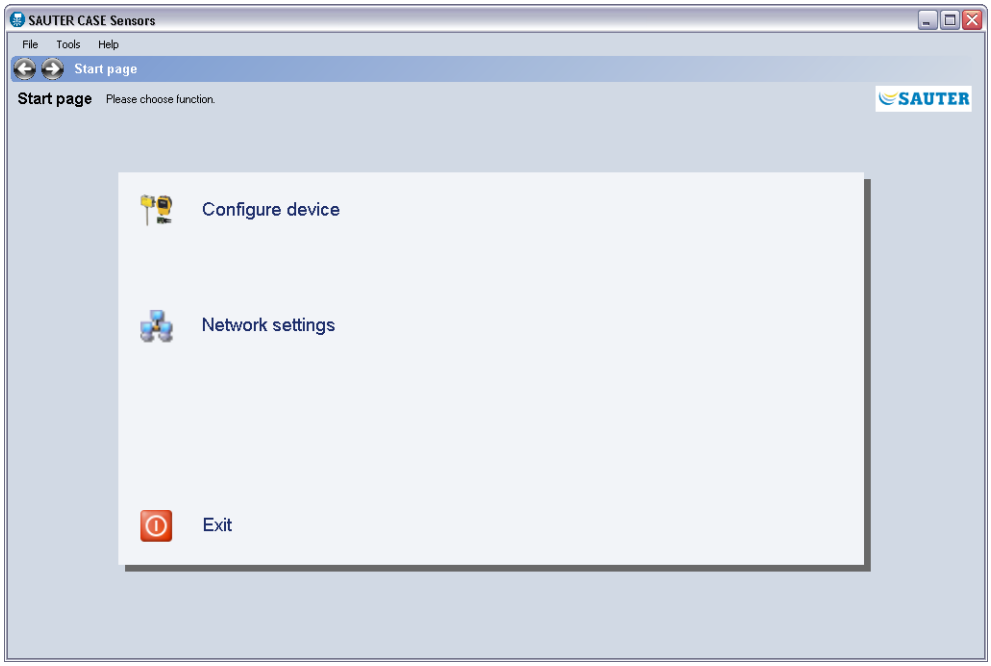


Fig. 3 GUI: SAUTER CASE Sensors start screen

If the start screen is not shown or if an error message appears, the installation was probably faulty.

2. Uninstall the software; see section „5.3.4 Uninstalling the software“.

3. Install the software again as described in section „5.3.1 Installation of SAUTER CASE Sensors“ . If your software installation is still unsuccessful, please contact your local Sauter representative for further support. You will find this representative in the 'Customer service' section.

4. After successfully installing the software, connect the necessary cable and interface converter to your PC as described in section „6.1 Conect the interface converter“.

5.3.4 Uninstalling the software

It may be necessary to uninstall the SAUTER CASE Sensors software because:

- An error occurred during the installation;
- The SAUTER CASE Sensors software is not working correctly and the problem could not be rectified;
- you have a more recent software version and uninstalling the old version is recommended;
- you no longer need the SAUTER CASE Sensors configuration software and you want to release hard disk storage.

To uninstall the SAUTER CASE Sensors software, perform these steps in order:

1. Remove the connected hardware components from your PC.

2. Close all programs that are running.

3. Select **Start** → **Settings** → **Control Panel** → **Add or Remove Programs**.

4. In the list of installed programs, find the entry for **CASE Sensors** and click on it.

➲ In the advanced view, you will now see the 'Remove program' option.

➲ After you select this option, the uninstall process will start to remove the SAUTER CASE Sensors configuration software from your PC.

6 Connection and configuration

Before you can configure a transducer supported by SAUTER CASE Sensors you must first connect and configure the network accessories. Furthermore common configuration parameters can be set.

6.1 Connect the interface converter

Select the appropriate cables for the connection to the PC and connect them.

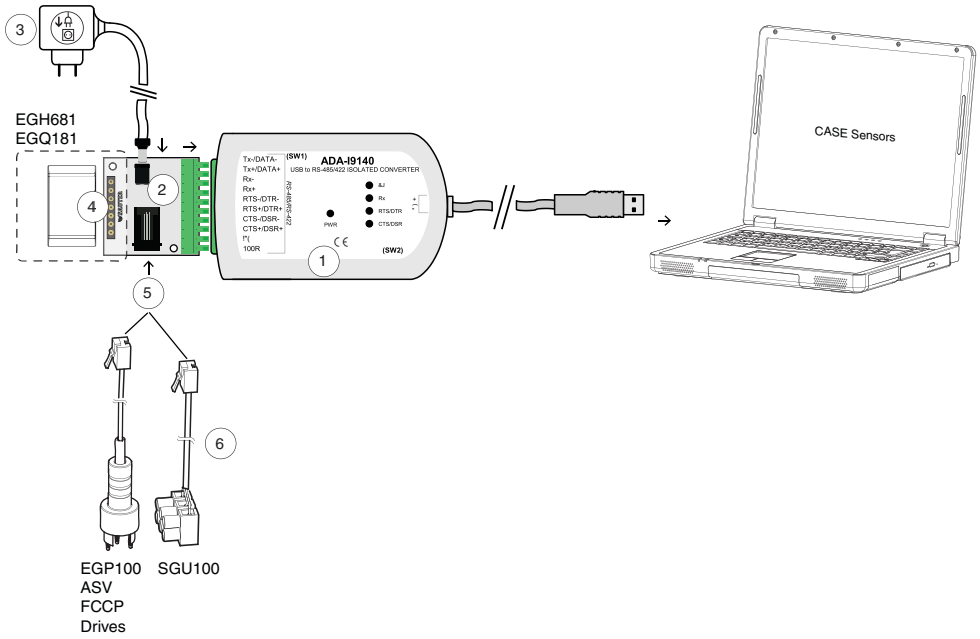


Fig. 4 Connection USB / RS 485 interface converter to PC

1 USB / RS 485 converter with galvanic disconnection. Connection to PC via USB cable.
2 Universal adaptor to connect SAUTER sensors
3 230 VAC / 24 VDC external power supply unit with audio plug
4 Slot for EGH681 and EGQ181
5 Slot for EGP100, ASV, FCCP, drives and SGU100
6 Power cable for EGP100, ASV, FCCP, drives and SGU100

6.1.1 Connection with an EGP100

A connection to an EGP100 is made via the SLC port on the circuit board using a 3-pin plug. This operating mode only supports a point-to-point connection with the EGP100.

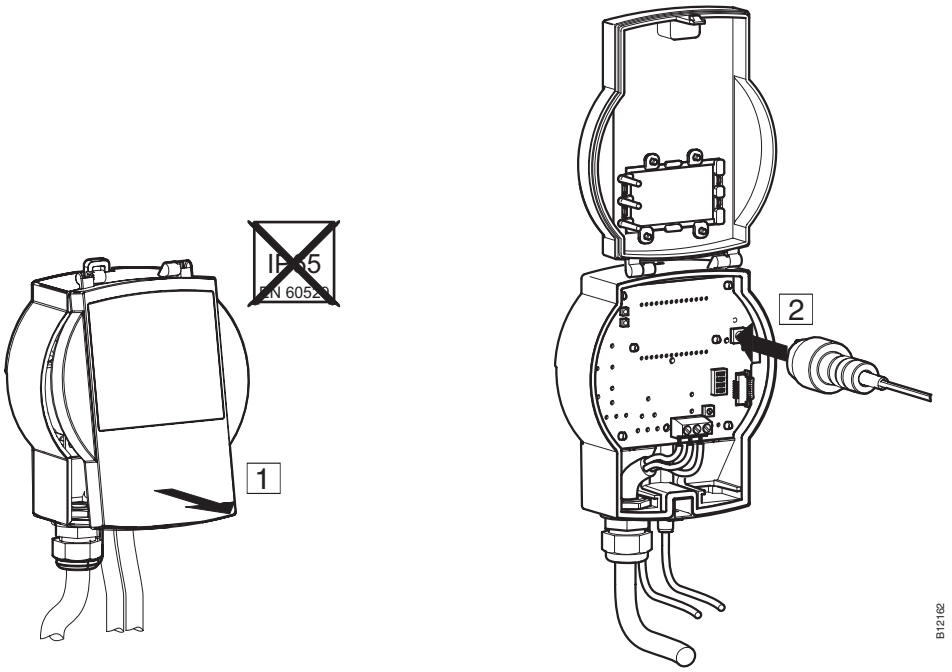


Fig. 5 Connection with an EGP100 via 3-pin plug connection

6.1.2 Connection to an SGU100

Connections to an SGU100 are made via terminals D+ and D- for the SLC bus connection.

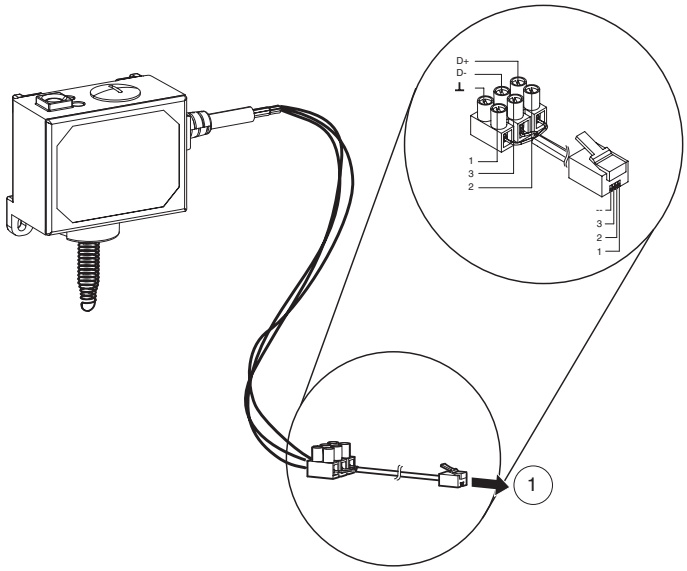


Fig. 6 Connection of SGU100 with clamp terminal

1 Connection at slot (5), fig. 4, of the universal adapter.

Remote access via the 3-pin plug connection on the FCCP100F0x1 is also possible in this operating mode.

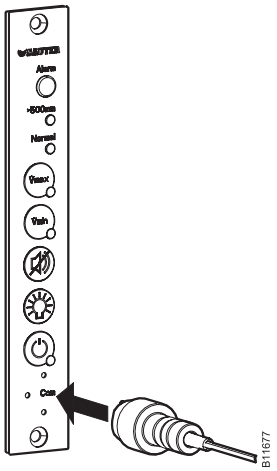


Fig. 7 Connection with an SGU100 via 3-pin plug connection on the FCCP

6.1.3 Connection to the EGQ181 and EGH681

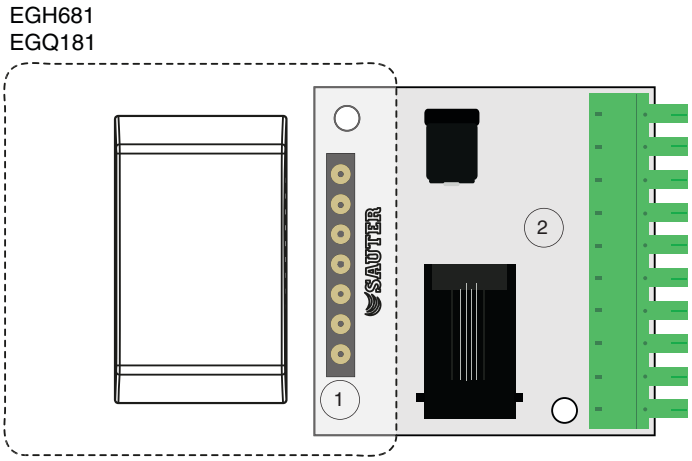


Fig. 8 Plug-in connector for universal adapter

The connection to the EGQ181 and EGH681 is by means of slot (1) of the universal adapter (2) supplied.

1. Insert the device in question to the slot (1) of the universal adapter (2).

➲ The device is connected to the universal adapter.

6.1.4 Setting the COM port

To connect the transducer to the PC, you have to set the correct COM port. The following procedure is recommended for this purpose:

1. Open the control panel using **Start** → **Settings** → **Control panel**.

2. Click on **Control panel**. Double-click on **System**. In the System properties dialogue which opens now, select the **Hardware** tab and click on **Device Manager**.

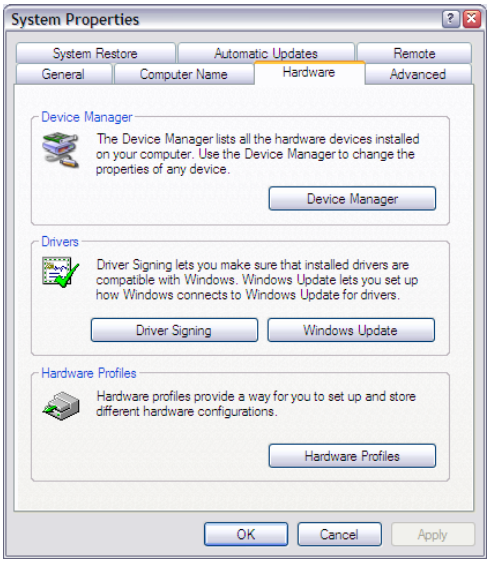


Fig. 9 Windows system setting

➲ It will open the overview of all available devices on your PC. The connected interface converter now appears under **Ports (COM & LPT)**.

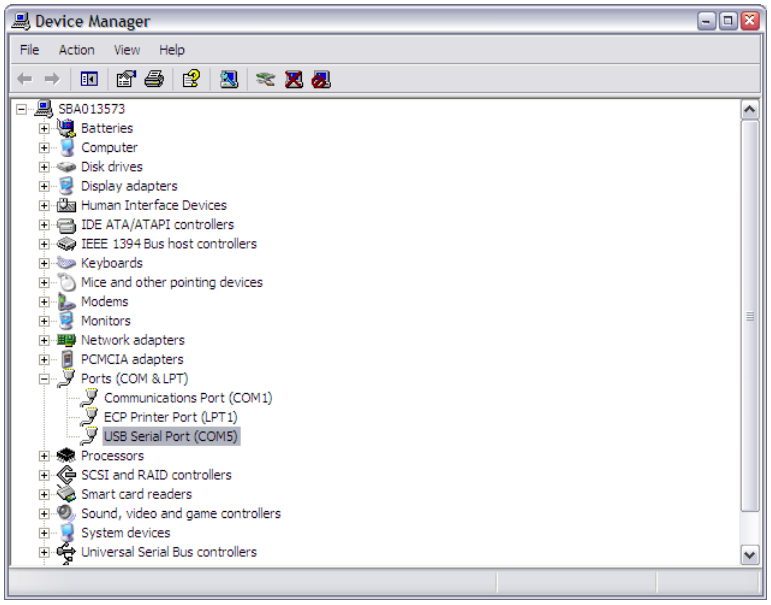


Fig. 10 Windows device manager

3. Note down the number of the COM port shown (USB Serial Port) and then start the SAUTER CASE Sensors tool.

4. In the menu bar under **Tools**, open the **Options** dialogue and select the **Communication** tab.

5. Set the relevant COM port via the pull-down menu.

➲ For example, COM ports nos. 1, 3 and 5 are available. However, this may vary from one computer to another due to the individual configuration and hardware equipment.

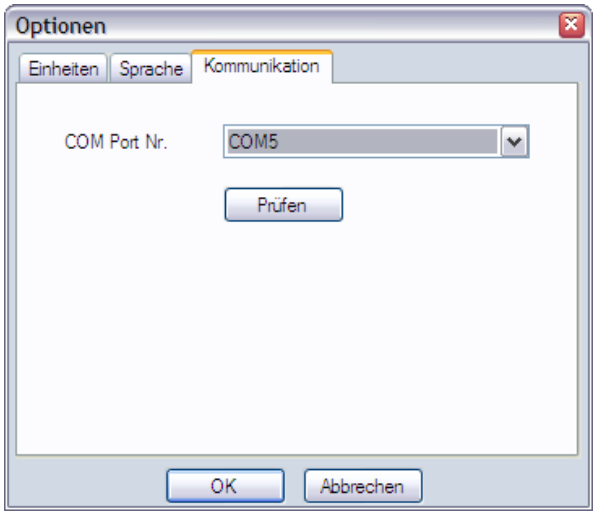


Fig. 11 Dialogue box: setting for COM port

6. Check the setting, as described in „6.1 Connect the interface converter“.

7. Verify the communication of your connection. To do so, carry out one of the following two steps:
   - Verifying the communication of a point-to-point connection (only one device is connected): in the **Options** dialogue box click **Check**.
     ➲ SAUTER CASE Sensors tries to communicate with the device and verifies that data can be sent and received. If communication with the device is successful, the system will report back the device type and firmware version.
   - Verifying the communication of a network connection (a number of devices are connected):
     1. Click **OK** to close the **Options** dialogue box.
     2. Click **Configure device** on the start page.
     3. Select the device to be tested in the **Select device** dialogue box.
     4. Select the option **Communication address**.
     5. Enter the network address of the device that you want to verify.
     6. Click **Check**

     ➲ SAUTER CASE Sensors tries to communicate with the device and verifies that data can be sent and received. If communication with the device is successful, the system will report back the device type, the firmware version and the communication address.

➲ If correct communication could be established, the field **Communication** in the status bar turns green.

8. Click **OK** to close the options dialogue box.

These system messages may appear:

Message	Meaning / action
Identification {} successful **Identification {} with address {} successful**	All settings are OK and parameterisation can proceed.
Identification failed Error: TimeoutError on port COM {}	The connection settings are OK but no device could be found at the connection. ► Please connect a device, check the COM port settings, the type of connection (point to point or network) or check the connection cables.
Identification failed Port Open Error on port COM {}	1. Wrong COM port number selected. ► Set the COM port number as described in „6.1.4 Setting the COM port“. 2. The COM port of your computer could not be addressed. ► Another application is using the COM port with the selected address. Check the addresses in the Device Manager and modify the COM port if necessary.

Message	Meaning / action
Identification failed CrCError for communication address: {}.	1. The connection settings are OK, but two or more devices are using the same connection address. ▶ Check the addresses in the network settings and adapt the device's connection addresses so that no address is assigned twice. 2. The wrong connection type was selected when verifying communication. ▶ Verify communication as follows: 1. Click **Configure device** on the start page. 2. Select the device to be tested in the Select device dialogue box. 3. Select one of the following options: • **Point to point connection (PP)** option if you have set up a point-to-point connection. • **Communication Address** option if you have set up a network and additionally enter the network address of the device you want to check. 4. Click **Check**
Identification failed TimeoutError for communication address {}.	The connection settings are correct, however no device corresponding to the selected address has been found. Please check that this address exists: 1. Click on **Network settings** on the start page 2. Click on **Scan network** to find the devices connected to the network. 3. Note the communication address of the device to configure

Tab. 2 System messages, connection test

6.2 Ending the configuration

Disconnect the transducer from the PC when parameterisation is complete. Make sure you close the transducer's cover to reinstate IP protection.

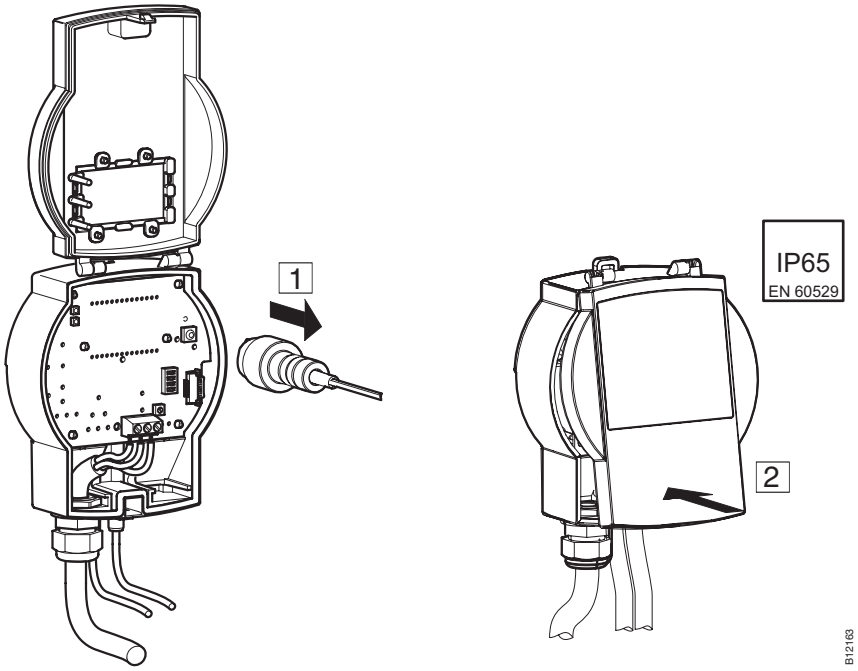


Fig. 12 Separating the connection between EGP100 and PC (connection via 3-pin plug connection)

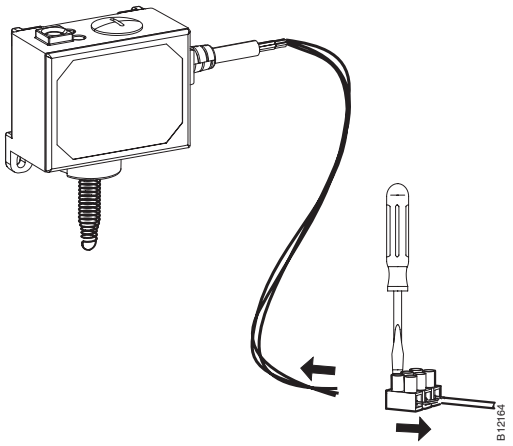


Fig. 13 Separating the connection between SGU100 and PC (connection via terminal block)

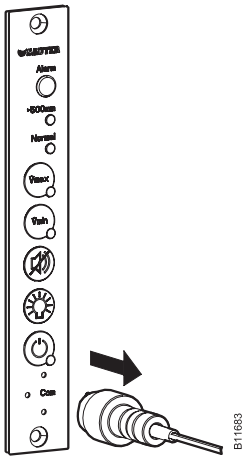


Fig. 14 Separating the connection between SGU100 and PC (connection via 3-pin plug connection on the FCCP)

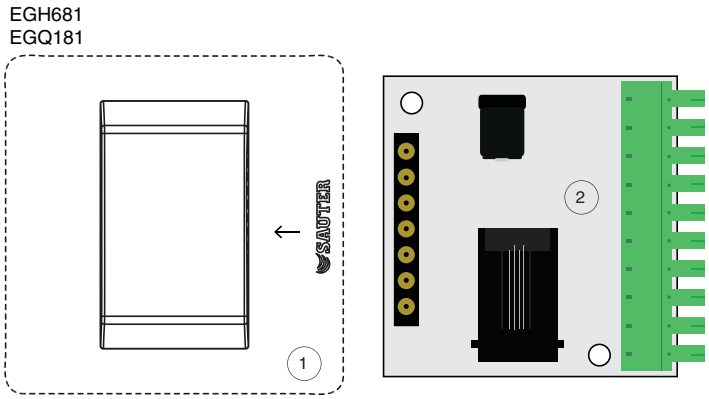


Fig. 15 Separating the connection between EGQ181SF203 and universal converter, separating the connection between EGH681SF233 and universal converter

Pull the device (1) out of the slot of the universal converter (2).

6.3 Extras

6.3.1 Select communication address

You can establish a connection to the device of your choice. This can be useful if you want to:

- Read the parameters of a device located in the network
- Adopt parameters that are identical for all devices for each device

NOTICE

The network address that you have entered always refers to the device type displayed in the information bar. To communicate with the network address of a different device type, you must first enter the device type. To do so, click **Configure device** on the start page.

Carry out the following steps in order to establish communication with a device:

1. Select the menu item **Tools** → **Select Address**

2. Select one of the following options:
   - Select the **Point to point connection (PP)** option if you want to set up connection to a device in a point-to-point scenario.
   - Select the **Individual address** option and additionally enter the network address of the device if you want to establish communication with a device in a network.

3. Click on **OK**.

➲ SAUTER CASE Sensors establishes communication with the selected network address or device.

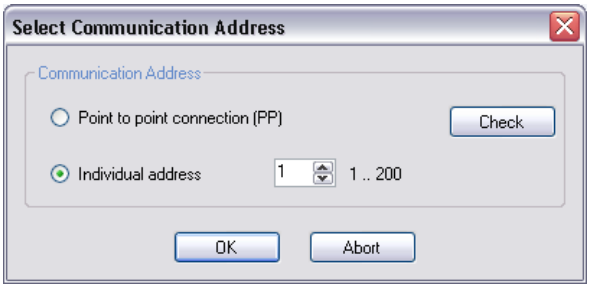


Fig. 16 Dialogue box: Select communication address

6.3.2 Options

You can make country-specific adjustments and set the COM port via the menu item **Tools** → **Options**.

6.3.2.1 Units

On the **Units** tab, you can adjust the units to be used by the software to your personal circumstances.

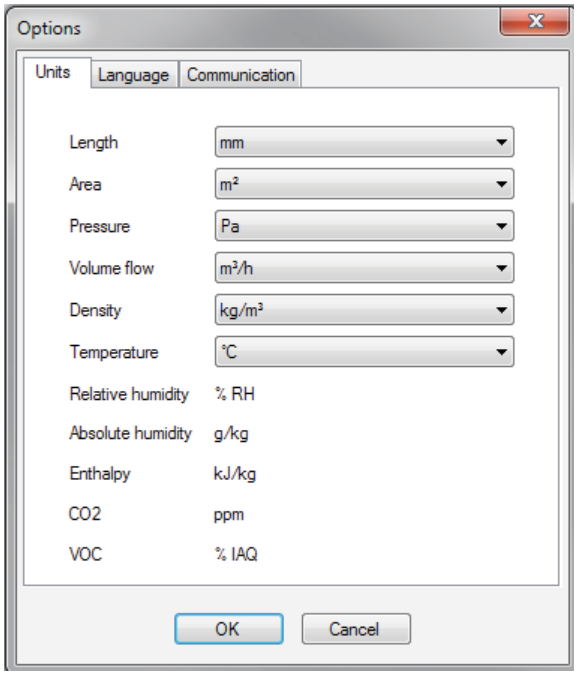


Fig. 17 Dialogue box: Options → Units

The following options are available here.

Physical unit	Units	
Length	mm, inch, ft	Adjustable units
Cross-section	m^2, $inch^2$, ft^2	
Pressure	Pa, mpsi	
Volume flow	m^3/h, l/s, cfm, cim	
Density	kg/m^3, pci, pcf	
Temperature	°C, °F, K	
Relative humidity	% rh	Specified units
Absolute humidity	g/kg	
Enthalpy	kJ/kg	
CO_2	ppm	
VOC	% IAQ	

Tab. 3 Adjustable and fixed units

6.3.2.2 Language

The **Language** settings tab enables you to change the program language. You can choose between English, French and German.

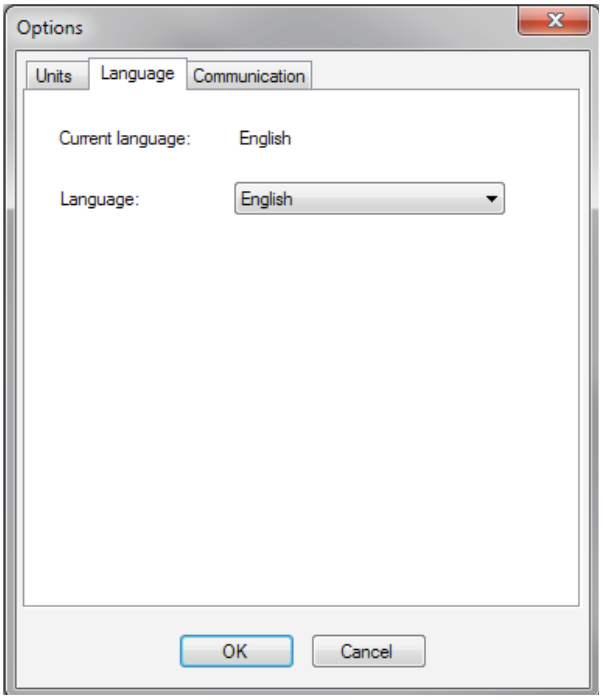


Fig. 18 Dialogue box: Options → Language

6.3.2.3 Communication

The Communication tab shows the available COM ports. Here you can enter the COM port number that SAUTER CASE Sensors should use to communicate with the devices and verify point-to-point communication. Set the COM port number as described in „6.1.3 Setting the COM port“ .

Fig. 19 Dialogue box: Options → Communication

7 User interface

The program is designed so that simple and structured user guidance is ensured. After starting the program, the Start page is called. This page is used to call up the configuration items for **Network settings** and to enter the device configuration, **Configure device**.

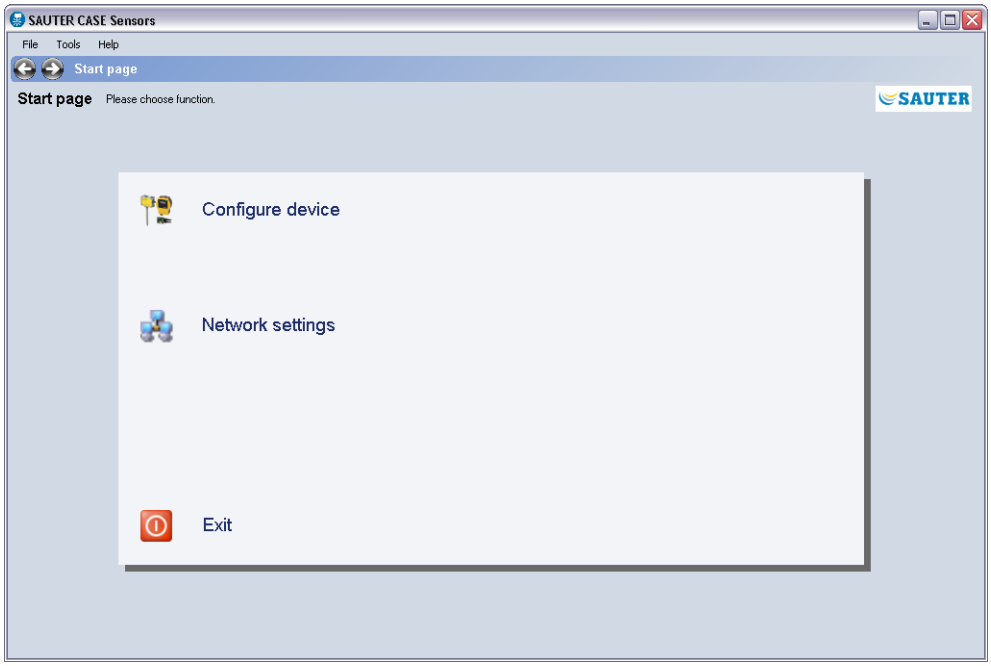


Fig. 20 GUI: SAUTER CASE Sensors start page

7.1 General structure of the user interface (example: SGU100)

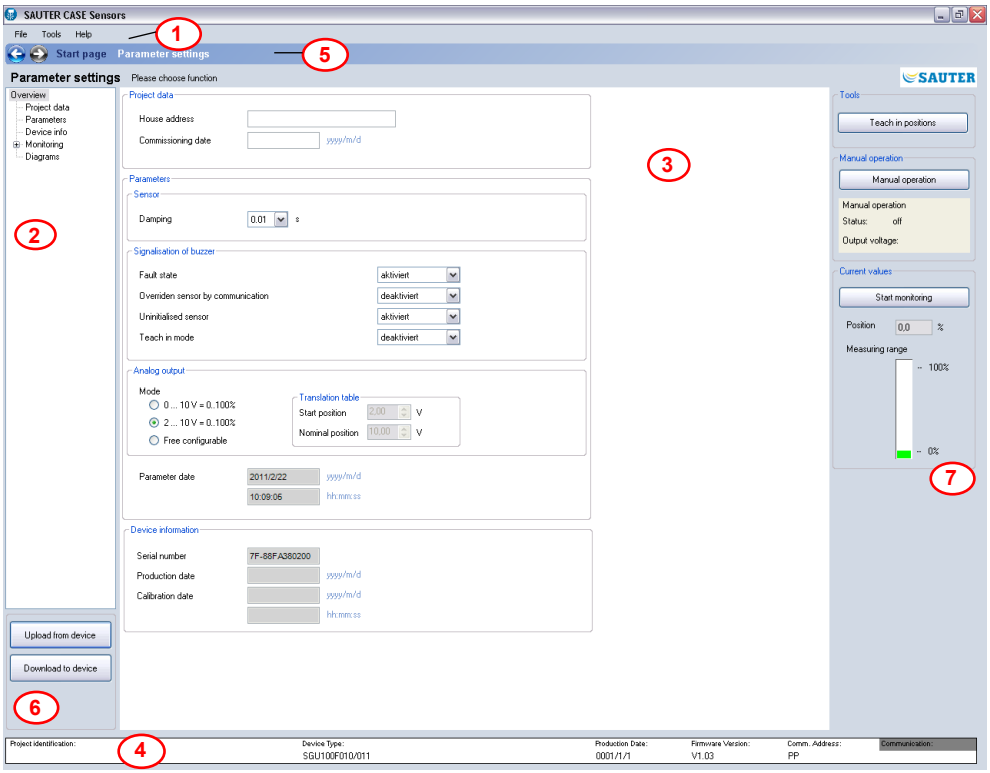


Fig. 21 GUI: User interface, SAUTER CASE Sensors

1	Menu bar
2	Navigation tree
3	Input mask
4	Information line
5	Navigation bar
6	Upload and download control
7	Service functions

The user interface is divided into different areas. Basically, these can be separated into the information and navigation areas, and the areas for data entry.

Menu bar The menu bar contains basic functions for parameter printing or application configuration and to provide information about how the individual functions work. The product documentation can also be accessed from the Help area.

Navigation tree The navigation tree shows all the pages that are available to configure the volume-flow compact controller in a clear form. Click on the relevant page to activate it.

Input mask The parameters for the transducer are entered via the input mask.

Information line The information line and status bar provide the most important data about the connected volume-flow compact controller in a clear form.

Navigation bar Navigation buttons in the navigation bar allow you to move between the Start page and the area for device parameterisation.

Upload and download control

In this section you can read out the parameterisation data from the device (upload from the device) or write them to the device (download to the device).

Service functions

Special functions such as sensor calibration, manual mode or online monitoring to support commissioning are provided in the service area.

8 Parameterisation

The following section gives a step-by-step description of the functions available within the SAUTER CASE Sensors software to parameterise a transducer volume-flow compact controller. Before parameterisation, an transducer must first be physically connected and configured as described in section 5.

8.1 Starting the program

1. Start the program from the Start menu **Start** → **Programs** → **CASE Tools** or **CASE Suite** → **CASE Sensors** in order to start it.

➲ A Welcome screen appears briefly at first, and then the Start page is displayed.

8.2 Start page

The following functions are available for you to choose from the Start page.

Icon	Function	Description
	**Device configuration**	Click on the function to configure a device that is not yet configured, or to change the configuration of a parameterised device. Directly after the overview page appears, you can select the Upload from device function to do this; the data stored in the device will then be loaded. After selecting the function, the **Parameter settings** – **Overview** page is shown.
	**Network settings**	The Network settings can be used to read in a section of the network automatically in order to determine which devices are available in the network segment. In the event of an address collision, it is possible to configure the network addresses in the Network settings area.
	**Exit**	Select this function to end the program.

Tab. 4 Start Page functions

When the SAUTER CASE Sensors program is closed, all the data that was entered are lost. If you want to save data for later configurations of other devices, you can use a transducer by downloading all the data into it and then restoring this data for use at a later stage in the program by uploading it.

8.3 Export configuration

You can export and save the configuration of the transducer to a file to back up the device configuration or to document the project. When you do so, you can choose which configuration data you want to save (the default selection is all data):

- Project information
- Parameters

Carry out the following steps to export the data to a file:

1. Select **File** → **Export configuration**.

2. You can add a description of the export file in the **Description** and the **Name** fields to enable unambiguous identification. The default name consists of the device type.

3. Click **Browse** and select the directory where you want to save the file. Change the file name if needed.

4. Click **Details** if you want to select individual data for export. The default setting is to export all of the data in a file.

5. Click **Export** to export the selected data to a file.

8.4 Import configuration

The Import configuration function allows you to import the configuration from a file into SAUTER CASE Sensors. This function can be useful for uploading or restoring a previously-saved device configuration, for instance.

Note: To avoid conflicts between the device type and the configuration file selected in CASE Sensors, it is advisable to import a configuration file from the home page.

Carry out the following steps to import a configuration into CASE Sensors: 1.

1. Select **File** → **Import configuration**.

2. Click **Browse** to locate the directory where the file is archived.

3. In the **Select file** table, select the line with the file that you want to import.

4. Click **Details** if you want to select individual data for import. The default setting is to import all of the data in a file.

5. Click **Import** to import the selected data to CASE Sensors.

8.5 Print configuration

This function is not available on the sensors EGH681SF233 and EGQ181SF203.

All configuration data can be printed to a file using the Print function: go to the **File** menu **Create set-up protocol**. After calling up the function, you first see an input dialogue where you can add a comment.

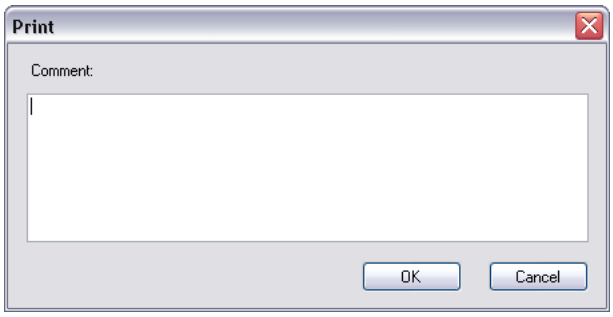


Fig. 22 Dialogue box: Print configuration

Confirm the dialogue with **OK** and the protocol is generated, with all the available data. To store or continue processing the data, or to print them out later on, you are offered a large number of different formats.

8.6 Network settings

In the **Network Settings** function, the devices connected in the network are shown and configured if necessary.

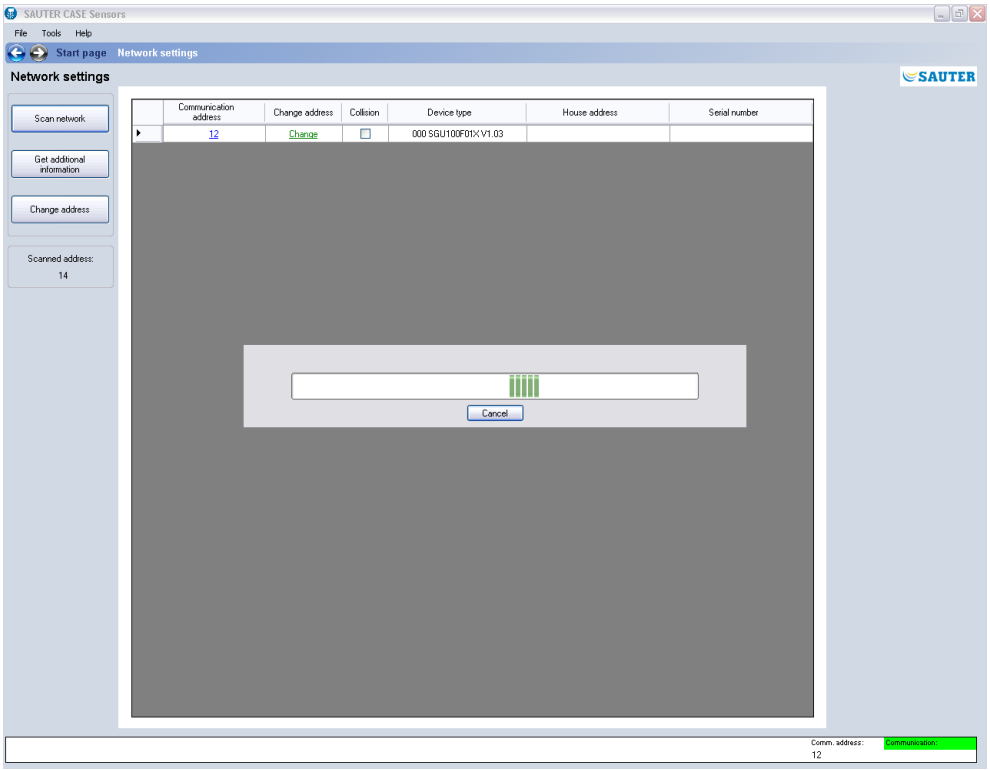


Fig. 23 GUI: Network settings

To configure connected devices, you must first click on the Scan network button to start a search. To do so, carry out the following steps:

1. Select **Network Settings** on the start page.

2. Click **Scan network**.

➲ The program then checks whether there are any devices in the network and lists them in table form, after a timeout of 30 s. at most. During the search, the searched address appears in the **Current address** field with the network address of the device in the list.

3. Once all the devices in the network segment have been listed, you can terminate the search by clicking **Abort**.

The following information is shown:

Parameters	Description
Communication address	On delivery, every device has been given an individual network address in the range from 1….200. This could be modified manually if necessary.
Change address	Click on the address shown to reconfigure it in the menu.
Collision	If two or more devices attempt to communicate on one address, there will be an 'address collision'. This is shown by a red symbol.

Parameters	Description
Device type	The device type is shown as per the labelling on the nameplate
House address	The house address is shown, if it is parameterised. The house address is displayed after pressing the Get additional information button.
Serial number	The serial number uniquely identifies a particular device. It is issued by the factory. On clicking the **Additional information** button, it is read in via the network.

Tab. 5 Parameters for network configuration

If a device is explicitly selected, you can press the Change address button to call up the **Change communication address** dialogue.

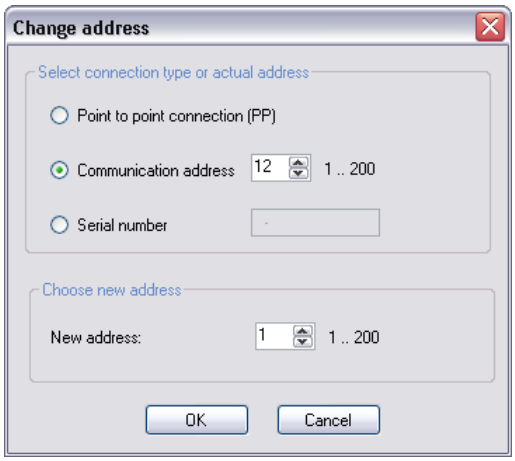


Fig. 24 Dialogue box: Change address

The following options are available:

- If only one device is connected, it is mandatory to select the **Point to point connection (PP)** function. The volume-flow compact controller is then addressed directly.
- If two or more devices are present in the network, the address of the desired device must be selected via the **Communication address** function.
- If you know the device's serial number you can enter it into the field **Serial number**. This enables you to differentiate between two devices with the same address (collision) and to assign a new address to one of the two devices without having to disconnect it from the network.
- The **New address** function allows manual assignment of a new network address. This may be selected from the 1…200 range.

8.7 Configure device

To configure a new device, please select the **Configure device** menu item. You can then select the device you want to configure. To do so, first select the category and then the device.

Allocation of devices to device categories and device descriptions:

Device category	Device	Description
Differential pressure transducer	EGP100F102/F112	Measurement range: ±75 Pa Characteristic curve: linear
	EGP100F202/F212	Measurement range: ±150 Pa Characteristic curve: linear
	EGP100F302/F312	Measurement range: 0…150 Pa Characteristic curve: linear or square root
	EGP100F402/F412	Measurement range: 0…300 Pa Characteristic curve: linear or square root
Sash sensor	SGU100F010/F011	Max. spring stroke: F010: 0…1000 mm F011: 0…2000 mm
Air quality sensor (VOC)	EGQ181SF203	Measurement range: 0...100 % IAQ (indoor air quality)
Humidity and temperature transducer	EGH681SF233	Measuring ranges: Temperature 0...50 °C Relative humidity 0...100% rh Calculated variables: Absolute humidity 0...50 g/kg Dew point -5...30 °C Enthalpy 0...100 kJ/kg

Tab. 6 Supported devices in SAUTER CASE Sensors V2.2

NOTICE

Make sure you select the correct device. An incorrect assignment can cause an error message when downloading the parameters into the device, because the software does not allow parameterisation of devices with values that do not match the sensor's measuring range.

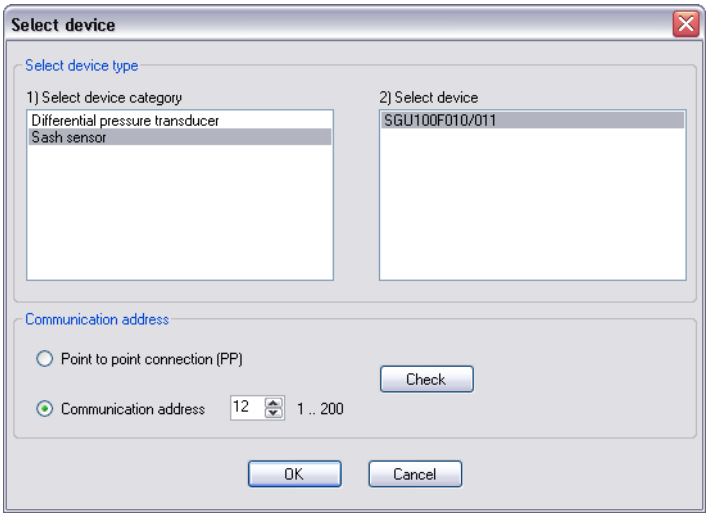


Fig. 25 Dialogue box: Device selection

In the **Communication address** area, you can select the Point to point connection (PP) or Individual address functions. The individual address can be determined in the Network settings area. After setting the address, you can test communication with the **Check** button.

If only one device is connected, the Point-to-point function must be selected.

If more than one device is present in the network, the PP connection function must not be used. The valid address in each case must be set at Individual address so that the desired device is addressed directly.

8.8 Parameter settings

Once you have selected a device you will see the **Parameter settings** page.

The available functions relating to **Parameter settings** are described in the following sections. You can navigate through the various parameter setting options using the navigation tree on the left. The service functions are located to the right of the user interface.

8.8.1 Overview

The most important parameters for configuring the transducer are bundled together and accessible in the **Overview** section.

All the parameters provided on this page can be reached on the respective detail pages, via the navigation tree. However, they only need to be entered once.
The program automatically copies the parameters. For the same reason, these parameters are also described twice in the manual, with more in-depth information on the detail pages as necessary or appropriate.

8.8.2 Project data

You can enter the house address for unique transducer localisation and the date of commissioning in the Project data section.

Parameters	Description
Plant device identification	Enter the transducer's plant device identification. You can enter a maximum of 12 characters. This information is also recorded in the **Set-up protocol.**
Commissioning date	Enter the date on which the plant was commissioned. The date must have the format YYY/M/D. This information is also recorded in the **Set-up protocol.**

Tab. 7 Parameter input in the “Project data” section

8.8.3 Parameters

In the **Parameters** section you can enter the parameter settings for the measurement signal, the characteristic curve and the device's special functions. The parameters available here are dependent on the transducer. You can find a device-specific description of the available parameters in chapter „9 Device-specific parameterisation“.

8.8.4 Device data

The transducer's identification details for support purposes are displayed in the **Device data** section:

Parameters	Description
Device EGQ181 / EGH681	Unique parts no. of device. EGH681SF233 or EGQ181SF203
Serial number EGQ181 / EGP100 / SDX100 / EGH681 / SGU100 /	Unique device number, assigned during manufacture of the volume-flow compact controller and used for tracing back to production.
Production date EGQ181 / EGP100 / SDX100/ EGH681 / SGU100	Production date of the transducer.
Plant calibration EGQ181 / EGP100 / SDX100/ EGH681 / SGU100	Date and time an which the transducer was calibrated in the factory.
Measuring range EGP100 / SDX100	Measurement range (fs) in Pa of the differential pressure transducers in use.
Firmware data EGP100 / SDX100 / SGU100	Factory code consisting of the device type and firmware version

Tab. 8 Parameter device information

8.8.5 Monitoring

In the **Monitoring** area, the measured values are displayed graphically and numerically. Before you start a visualisation, we recommend you read out the device's current configuration via an upload.

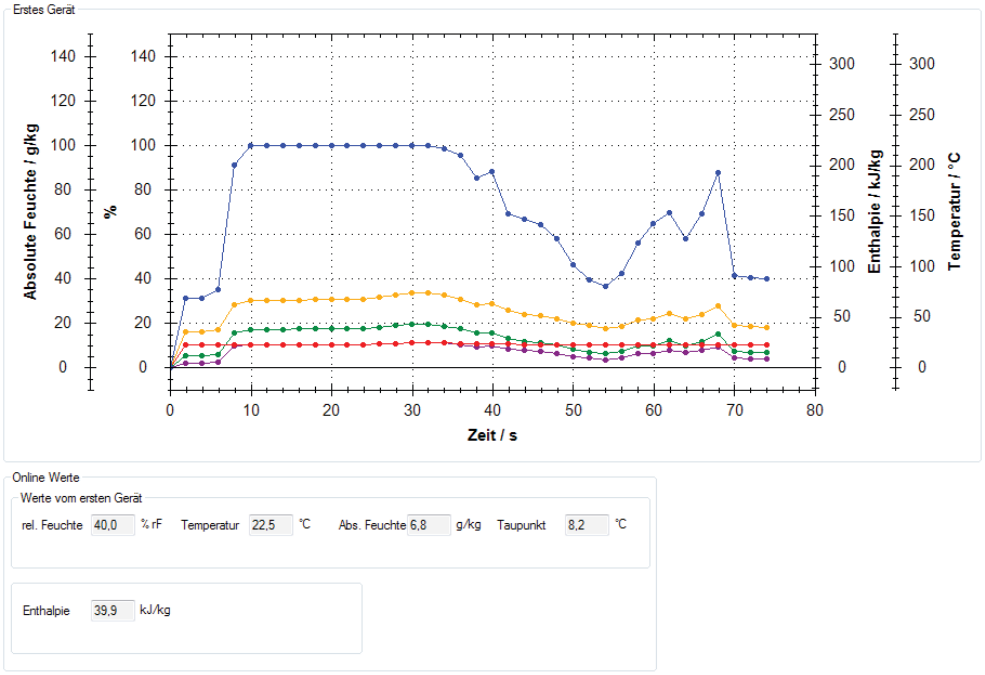


Fig. 26 Graphical and numerical display using the example of EGH681

To display the values in the area **Current values** and start a visualisation, click **Start monitoring** in the right-hand column of the GUI in the **Monitoring** area.

You can display the measurement values for two transducers in parallel. To do so, you must select a second transducer (sash sensor or differential pressure transducer) by entering the network address and selecting the device type (F variant). Simultaneous visualisation of two transducers allows you to collect valuable information and correlations relating to the following processes during commissioning:

- Duct pressure or volume flow control for supply and return air
- Fluctuations in room pressure in relation to fluctuating supply or return air pressure
- Variations in room pressure and return air flow in a laboratory when opening or closing a laboratory fume cupboard

To visualise a secondary device, select the option **Visualize a second device** in the section **Graph settings**.

NOTICE It is not possible to visualise two transducers for a point-to-point connection.

Adjust the settings for the visualisation display in the **Graph settings** section.

You can adjust the colour for the displayed parameters of a device under **First device**. You can also define the parameter colours for a second controller if you have selected the option **Visualize a second device**.

You can adjust the time interval for recording measurement values under **Timing settings**. The number of entries is limited to 32,000.

You can save the graphic data in a .csv file under **Log settings** and use the data for further plant diagnosis purposes.

NOTICE

The **Monitoring** section has an additional sub-section named **Status** for SGU100 sensors. It is used to display operating, error and maintenance statuses for the SGU100. Further information is available under „9.2.4 Status display“.

The following additional functions are also available for the visualisation display:

- Zoom-in/zoom-out: Left-click in the visualisation area and simultaneously scroll with the mouse.
- Editing the visualisation: Right-click in the visualisation area. You have the following options:
    - **Copy**: Copy the visualisation to the clipboard.
    - **Save Image As**: Save the current visualisation to a data carrier.
    - **Page Setup**: Show the print settings for the visualisation.
    - **Print…**: Print the visualisation (with prior selection of the target printer).
    - **Show Point Value:** Hover the mouse cursor over a curve to display the measurement values.
    - **Un-Zoom**: Zoom out one level.
    - **Undo all Zoom/Pan**: Restore the original size of the visualisation and scale after zooming.
    - **Set scale to default**: Display recorded measurement values over the entire recording period.

8.9 Diagrams

The **Diagrams** area is purely for information purposes and is intended to give on-the-spot support for installation or troubleshooting. The diagrams shown indicate the control signal flow in the application and the assignment of cable connections (Wiring diagram).

9 Device-specific parameterisation

This section describes device-specific parameter settings and service functions under **Start page → Configure device**.

9.1 Differential pressure transducer EGP100

9.1.1 Adjustable device parameters

You can set the measurement range and the analogue output for the EGP100.

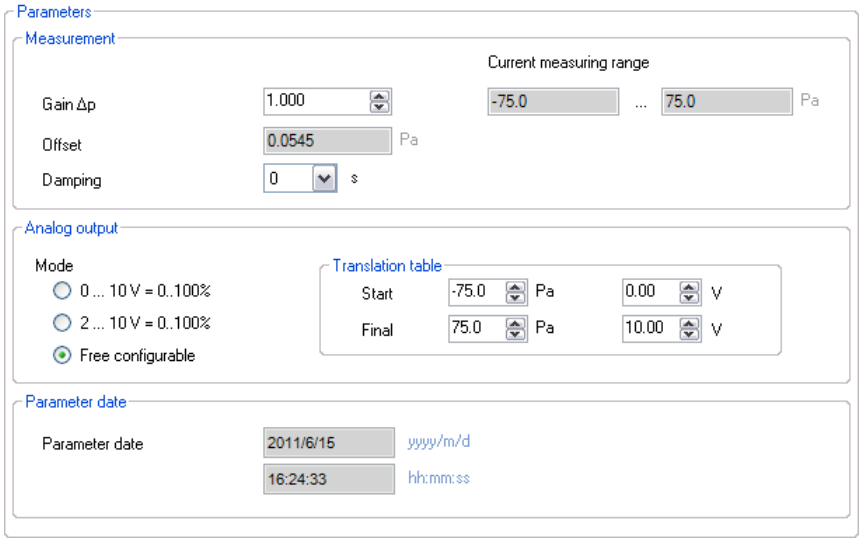


Fig. 27 GUI: Parameters for an EGP100 with a symmetrical measurement range

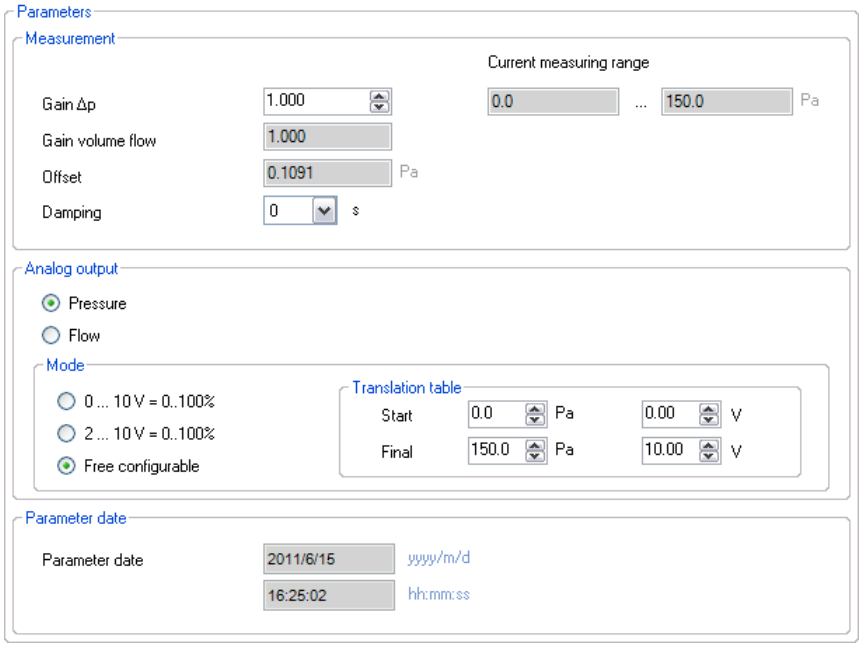


Fig. 28 GUI: Parameters for an EGP100 with an asymmetrical measurement range

Parameter settings in the **Measurement** section

Parameters	Description
Gain ΔP	Sets the amplification for measurement range adjustment. The amplification ΔP value can be set from 1 to 3. Formula: $$Gain\ \Delta P = \frac{\Delta P_{max}\, sensor}{Current\ measuring\ range}$$ Values for ΔP_{max} sensor see Tab. 6.
Gain volume flow (only for F3xx and higher)	Displays volume flow amplification. Formula: $$Gain\ \vec{vol}. = \sqrt{Gain\ \Delta P}$$
Offset	Displays the sensor's zero point drift in Pa. Zero point drift is only recalculated in the event of zero point balancing.
Damping	Measurement signals subject to significant fluctuation or electronic interference can be attenuated using an adjustable damping time constant. Setting range: • 0.000 s • 0.010 s • 0.020 s • 0.041 s • 0.082 s • 0.163 s • 0.326 s • 0.650 s • 1.300 s • 2.600 s • 5.220 s Increasing the time constant filters heavily fluctuating signals; the measurement signal will, however, become more sluggish in the event of pressure variations.

Tab. 9 EGP100 parameters: Measurement

Parameter settings in the **Analogue output** section

NOTICE

Only the differential pressure (linear characteristic curve) is detected for systems with a symmetrical measurement range (F1xx and F2xx).

Parameters	Description
Pressure (only for F3xx and higher)	Select the **Pressure** option if you want to measure the pressure (linear characteristic curve).
Flow (only for F3xx and higher)	Select the **Flow** option if you want to measure the volume flow (square root characteristic curve).
Mode	Setting the voltage range for the analogue output. Select one of the three options: • **0…10 V = 0…100 %** • **2…10 V = 0…100 %** • **Free configurable**: enter the **Start** and **Final** points of the measurement value and the output voltage in the field Start and End to set the transducer's characteristic curve. The maximum output voltage for an EGP100 is 10.5 V. The % values relate to the values displayed in the field **Current measurement range**.

Tab. 10 EGP100 parameters: Analogue output

Parameter settings in the **Parameter date** section

Parameters	Description
Parameter date	Date and time of the last download are set automatically and stored. The data is taken from the PC which the program is installed on. If no download has been carried out the system will display the date and time when the **Parameter settings** function was called up.

Tab. 11 EGP100 parameters: Parameter date

9.1.2 Application examples

Application example 1: Volume flow measurement

Specifications:

- Maximum volume flow in the plant: 1150 m^3/h
- Ventilation duct diameter: DN = 250
- Volume flow of the measurement device: XAFP100F001 in combination with EGP100
- Air density: 1.2 kg/m^3

➲ Calculation of the resulting differential pressure in accordance with:

$$\Delta P = \left(\frac{\dot{V}}{c} \right)^2$$

- C-factor (in accordance with the installation instructions for the flow sensor XAFP100, document number: P100003790) = 154.6
- Differential pressure measured at 1150 m^3/h: ΔP = 55 Pa

➲ Device selection: EGP100F302 or EGP100F312 (ΔP_{max} sensor = 150 Pa)

Parameter settings for EGP100F3x2:

- Gain ΔP = 2.5 (current measurement range = 0…60 Pa)
- Analogue output: 0…100 % = 0…10 V or 2…10 V

The analogue signal relates to the new measurement range setting 0…60 Pa, i.e. 100% of the set measurement range equates to 60 Pa. The resulting volume flow when taking the C-factor into account is 1200 m^3/h.

NOTICE The output signal on devices whose measurement input is not adequately "sinkable" should parameterised at 2…10 V. This will prevent errors in the lower measurement range area.

Application example 2: Differential pressure measurement

Specifications:

- Maximum differential pressure in the plant: 200 Pa

➲ Device selection: EGP100F402 or EGP100F412 (ΔP_{max} sensor = 300 Pa)

Parameter settings for EGP100F4x2:

- Gain ΔP = 1.5 (current measurement range = 0…200 Pa)
- Analogue output: 0…10 V = 0…100 % or 2…10 V = 0…100 %

The output signal now relates to the new measurement range setting 0…200 Pa.

NOTICE

- You will need to reduce the gain ΔP to measure values greater than 200 Pa.
- The output signal on devices whose measurement input is not adequately "sinkable" should parameterised at 2…10 V. This will prevent errors in the lower range area.

9.1.3 Service functions

The following functions are available in the right-hand column under **Configure device** for commissioning and servicing an EGP100:

- **Zero point adjustment**: Mouse-click on **the Zero point adjustment** button to force a sensor adjustment. First, you see a window indicating that the two measuring connections must be removed. After confirming with **OK**, a sensor adjustment is performed. Only the zero point of the sensor is reset in this case, i.e. the offset of the sensor is changed. This procedure is not a calibration.

- **Current values**

The measured differential pressure is displayed numerically in the **Current values** section in Pa and as a percentage of the current measurement range.

Click on **Start monitoring** to update the values.

NOTICE

These measurement values are also displayed graphically in the **Monitoring** section in the form of a bar chart. You can also save a historic record of measurement values in the form of a .csv file.

Further information about the **Monitoring** is available under „8.6.5 Monitoring“.

9.2 Sash sensor SGU100

9.2.1 Adjustable device parameters

The SGU100 allows you to set the sensor, the acoustic signal and the analogue output.

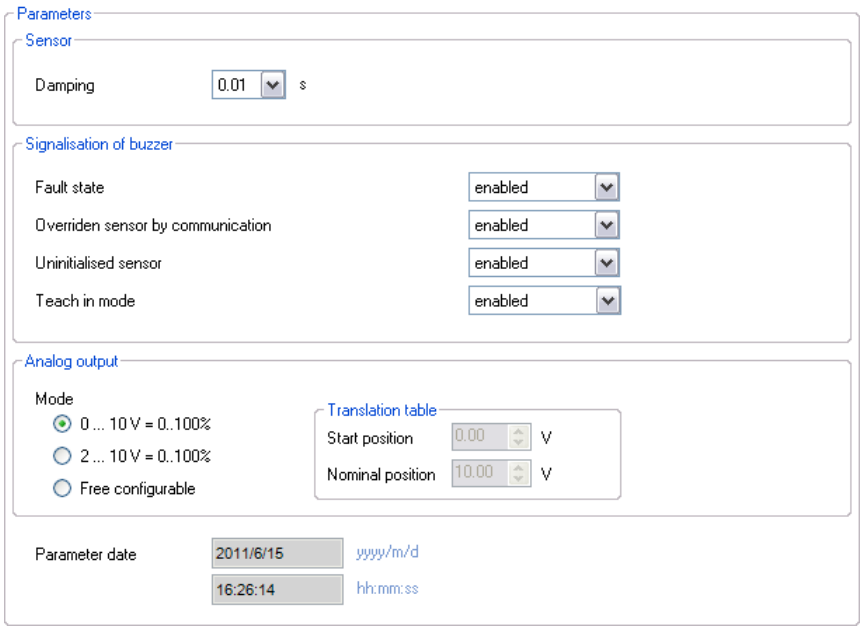


Fig. 29 GUI: Parameters SGU100

Parameter settings in the **Sensor** section

Parameters	Description
Damping	Measurement signals subject to significant fluctuation or electronic interference can be attenuated using an adjustable damping time constant. Setting range: • 0.000 s • 0.010 s • 0.020 s • 0.041 s • 0.082 s • 0.163 s • 0.326 s • 0.650 s • 1.300 s • 2.600 s • 5.220 s Increasing the time constant filters heavily fluctuating signals; the measurement signal will, however, become more sluggish in the event of pressure variations.

Tab. 12 SGU parameters: Sensor

Parameter settings in the **Buzzer-Settings** section

NOTICE All acoustic signals are activated by default.

Parameters	Description
Fault state	Alarm indication in the event of the following faults: The fault states are: • Supply voltage too low • Measurement error
Sensor overridden by communication	Alarm indication if the measurement signal is overridden. This is only possible in manual operating mode. In this case the value measured at the transducer's analogue output is overridden by a specified value. Override can be used for test purposes and indicated by an acoustic signal.
Uninitialised sensor	Alarm indication if the SGU100 is not initialised and valid teach-in values are therefore not available. For more information on the teach-in process see „9.2.3 Service functions“.
Teach in mode	Alarm indication during the teach-in process after completion of the following teach-in phases (for successful or unsuccessful completion): • Front sash closed (measurement of start position, P1) • Position change • Sash open (measurement of nominal position, P2)

Tab. 13 SGU parameters: Buzzer-Settings

NOTICE You can find a detailed list of the acoustic and visual signals of the SGU100 in the SGU100 product data sheet (PDS37.100) in the "Signalisation" section.

Parameter settings in the **Analogue output**section

Parameters	Description
Mode	Sets the voltage range of the analogue output in dependence on the teach-in range. The teach-in range relates to the sash stroke between start position and nominal position or between 0% and 100%. Select one of the three options: • **0…10 V = 0…100 %** • **2…10 V = 0…100 %** (factory setting) • **Free configurable**: you can set the output voltage between 0 and 11.5 V in accordance with the teach-in range.
Start position	Defines the position at which the sash is closed, i.e. has travelled 0% of the teach-in range.
Nominal position	Defines the position at which the sash is open, i.e. has travelled 100% of the teach-in range.

Tab. 14 SGU parameters: Analogue output

NOTICE You can find further information on the teach-in range in the product data sheet for the SGU (PDS 37.100) in the "Function diagram" section.

Parameter settings in the **Parameter date** section

Parameters	Description
Parameter date	Date and time of the last download are set automatically and stored. The data is taken from the PC which the program is installed on. If no download has been carried out the system will display the date and time when the **Parameter settings** function was called up.

Tab. 15 SGU parameters: Analogue output

9.2.2 Application examples

Application example: Measurement of the sash position on a bench-mounted fume cupboard

Specifications:

- Maximum permissible open range of the sash: 500 mm

➲ Device selection: SGU100F010 (max. stroke 1000 mm)

Parameter settings for the SGU100F010:

- Analogue output: 2…10 V = 0…100 %
- Implementation of the teach-in process: device learns the start position (sash closed) and the nominal position (sash opened to 500 mm). You can carry out the teach-in process by clicking on **Teach in positions** see „9.2.3 Service functions“.

The analogue output signal 2...10 V relates to the new teach-in range setting. This means that the output signal is 2 V when the sash is closed; when the sash is open (500 mm) the output signal is 10 V. The excess-stroke alarm signal of the SGU100 will trigger if the maximum permissible opening range is exceeded.

9.2.3 Service functions

The following service functions for commissioning and servicing the SGU100 are available under **Configure device** in the right-hand column:

- **Teach in positions**
- **Manual operation**
- **Current values**

Teach in positions

- ▶ Click on **Teach in positions** to start the teach-in process. SAUTER CASE Sensors will guide the user through every step of the process.
- ➲ A message appears at the end of the teach-in process to confirm the SGU100 has learned each position correctly.

NOTICE

You can also start and carry out the teach-in process by pressing the internal or external button on the SGU100. You can find a general description on how to carry out the teach-in process in the product data sheet for the SGU100 (PDS 37.100) in the section "Adapting the operating range (Teach in)".

Manual operation

You can enter a value to override the current measurement value at the sash sensor's analogue output by clicking on **Manual operation**. This function is required for testing and inspection purposes. You can, for instance, test the volume flow control of the fume cupboard without having to open or close the sash by entering an output value for the SGU100.

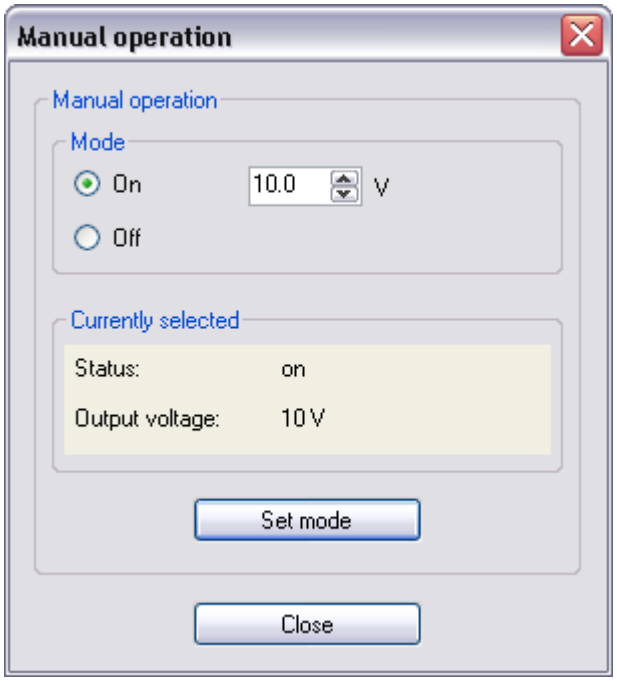


Fig. 30 Dialogue box: SGU100 Manual operation active

Activating manual operation:

1. Select the option **On** in the **Manual operation** dialogue box.

2. Enter the analogue output value.

3. Click on the button **Set mode.**

➲ The status and the active output voltage are displayed in the field **Currently selected** of the dialogue box and in the right-hand column of the service functions. The **Communication** field in the status bar is green when manual operation is active.

Deactivating manual operation:

Manual operation will be deactivated if you

- select the **Off** option in the **Manual operation** dialogue box and then click on **Set mode**,
- close CASE Sensors, or
- communication with the device is interrupted.

NOTICE If you have selected the option "activated" in the **Manual operation** field under **Buzzer-Settings**, the SGU100 will emit an acoustic signal when manual operation is activated.

Current values

The currently measured sash position is displayed as a numerical value in the section **Current values**.

▶ Click on **Start monitoring** to update the values.

NOTICE These measurement values are also displayed graphically in the **Monitoring** section in the form of a bar chart. You can also save a historic record of measurement values in the form of a .csv file.

Further information about the **Monitoring** is available under „8.8.5 Monitoring“.

9.2.4 Status display

You can call up the current operating, fault and services statuses of an SGU100 in the **Status** section of the **Monitoring**.

- ▶ To update the display, click on **Start monitoring** in the **Current values** section of the right-hand column on the GUI.
- ➲ A tick in the Status column indicates the current status of the SGU100.

Parameters	Description
	Operation states
Factory	Matches delivery status.
Normal	The transducer is ready for operation.
Manual	Manual operation is active.
Teach in	Teach-in process is active (see also „9.2.3 Service functions“)
Teach in start position	Device learns the start position (front slider closed) during the teach-in process.
Teach in waiting	Temporary phase following the teach-in phase. During this phase (max. 60 seconds) you can place the sash in its nominal position. The SGU100 will remain in the **paused teach-in phase** whilst you position the sash.
Teach in nominal position	Device learns the nominal position (front slider open) during the teach-in process.
Teach in button is pressed	The teach-in button on the SGU100 was pressed
External alarm signal	Overstroke alarm contact was triggered.
Overstroke detected	Overstroke alarm contact was triggered. This means that the nominal position was exceeded.
	Fault states
Data storage	The process of writing measurement values to a file was interrupted.
Measurement	A measurement error has occurred if the internal measured values are outside the expected range. Possible reasons for this include: • Internal error in sensor caused by a shock • The maximum spring stoke has been exceeded or the minimum spring stroke has not been reached • Electrical interference by an external source
Teach in	The teach-in process was not completed successfully or there are no valid teach-in values in the SGU100.
Low voltage	The voltage supply to the SGU100 is insufficient.
	Maintenance states
Teach in positions	Device learns the position during the maintenance states.

Tab. 16 Operation, fault and maintenance states of the SGU100

9.3 Room humidity and temperature sensor EGH681

9.3.1 Adjustable device parameters

In the case of the EGH681, you can carry out settings for the following parameters:

- Humidity measurement
- Temperature measurement
- Humidity output
- Temperature output
- LED

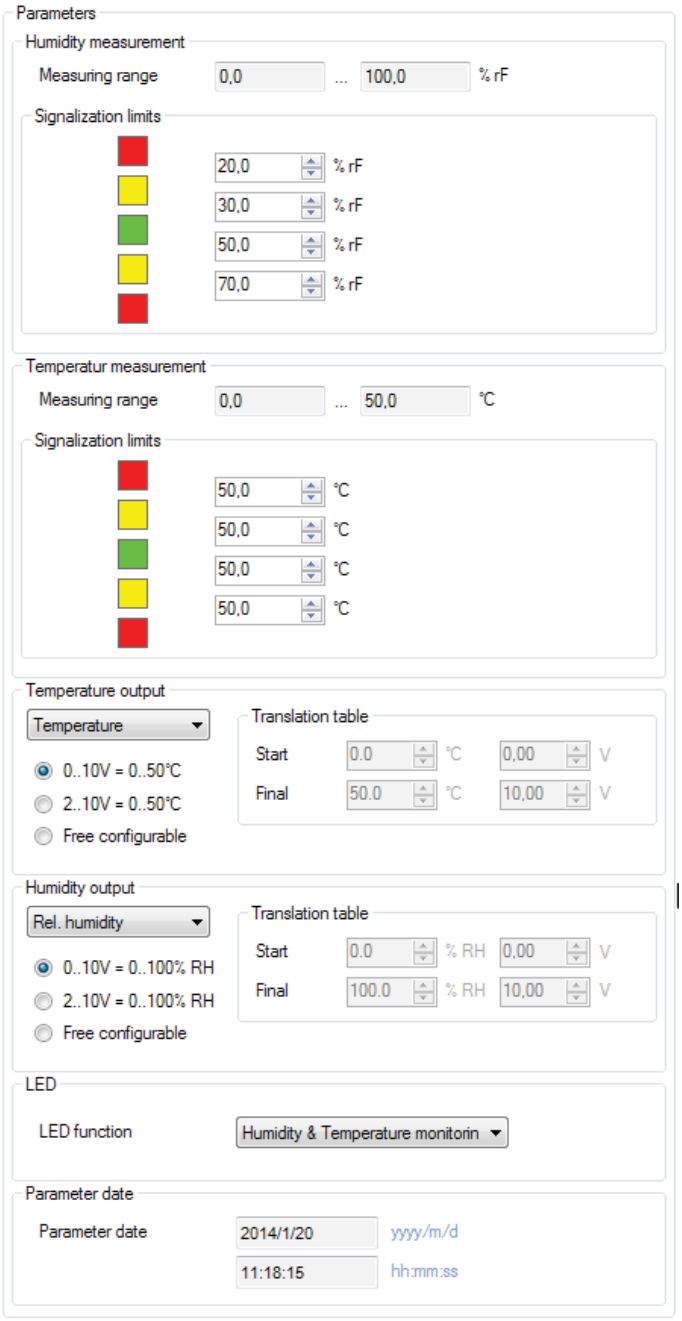
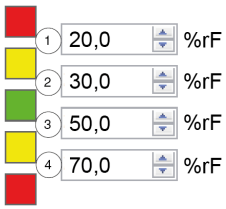


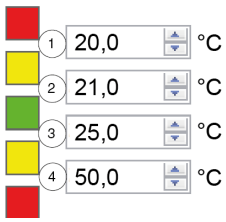
Fig. 31 GUI: EGH681 parameters

Parameter settings in the **Humidity Measurement** area

Parameters	Description
Limit setting	The limits can be set individually. The LED indicator on the sensor visualises: • that the limit value has been exceeded • that the limit value has not been reached • the optimum value
	Measured value < (1) ; LED signal = red Measured value > (1) < (2) ; LED signal = yellow Measured value > (2) < (3) ; LED signal = green Measured value > (3) < (4) ; LED signal = yellow Measured value > (4) ; LED signal = red

Tab. 17 EGH parameters: Humidity measurement

Parameter settings in the **Temperature measurement** area

Parameters	Description
Limit setting	The limits for temperature measurement can be set individually. The LED indicator on the sensor visualises: • that the limit value has been exceeded • that the limit value has not been reached • the optimum value
	Measured value < (1) ; LED signal = red Measured value > (1) < (2) ; LED signal = yellow Measured value > (2) < (3) ; LED signal = green Measured value > (3) < (4) ; LED signal = yellow Measured value > (4) ; LED signal = red

Tab. 18 EGH parameters: Temperature measurement

Parameter settings in the **Output** area.
The EGH681 has two analogue outputs that can be configured according to individual requirements.

Parameters	Description
Main sensor	The following variables can be selected: • Deactivated • Temperature • Relative humidity • Absolute humidity • Dew point • Enthalpy
Setting analogue outputs	Set the voltage range of the analogue outputs. Select one of the three options: • **0…10 V= 0…50 °C** (sample variable: temperature) • **2…10 V= 0…50 °C** (sample variable: temperature) • **Freely configurable**: To set the characteristic curve of the transducer, proceed as follows: In the “Conversion table” area, enter the starting and end points of the measured value and the output voltage in the fields **Start** and **End**.

Tab. 19 EGH parameters: Analogue outputs

Parameter settings in the **LED** area

Parameters	Description
LED function	You can assign the following functions to the LED indicator of the sensor: • Deactivated • Humidity monitoring • Temperature monitoring • Humidity and temperature monitoring

Tab. 20 EGH parameters: LED

9.3.2 Service functions

Before commissioning the EGH681, start monitoring to check the function of the sensor.

In the **Monitoring** area in the right-hand column, all measured values are shown graphically in the form of a bar chart as well as numerically. Before you start a visualisation, we recommend you read out the device's current configuration via an upload.

1. To do so, click the **Upload from device** button.

2. Click on **Start monitoring** to update the values.

NOTICE

These measurement values are also displayed graphically in the **Monitoring** section in the form of a bar chart.. You can also save a historic record of measurement values in the form of a .csv file.

Further information about the **Monitoring** is available under „8.8.5 Monitoring“.

9.4 Air quality sensor (VOC) EGQ181

9.4.1 Adjustable device parameters

In the case of the EGQ181, you can carry out settings for the following parameters:

- VOC measurement
- VOC output
- LED

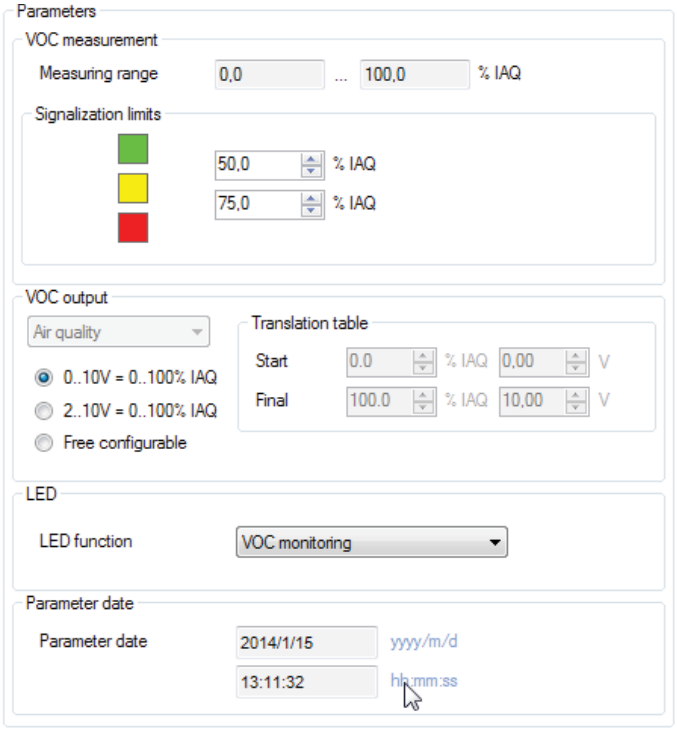
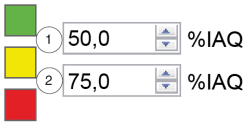


Fig. 32 GUI: EGQ181 parameters

Parameter settings in the **VOC Measurement** area

Parameters	Description
Limit setting	The limits for VOC measurement can be set individually. The LED indicator on the sensor visualises: • that the limit value has been exceeded • that the limit value has not been reached • the optimum value
	Measured value < (1) ; LED signal = green Measured value > (1) < (2) ; LED signal = yellow Measured value > (2) ; LED signal = red

Tab. 21 EGQ parameters: VOC measurement

Parameter settings in the **VOC output** area

Parameters	Description
VOC output	Set the voltage range of the analogue output. Select one of the three options: • **0…10 V= 0…100 %IAQ** • **2…10 V= 0…100 %IAQ** • **Freely configurable**: To set the characteristic curve of the transducer, proceed as follows: In the “Conversion table” area, enter the starting and end points of the measured value and the output voltage in the fields **Start** and **End**. .

Tab. 22 EGQ parameters: VOC output

Parameter settings in the **LED** area

Parameters	Description
LED function	You can assign the following functions to the LED indicator of the sensor: • Deactivated • VOC monitoring

Tab. 23 EGQ parameters: LED

9.4.2 Service functions

Before commissioning the EGQ181, start monitoring to check the function of the sensor.

In the **Monitoring** area in the right-hand column, all measured values are shown graphically in the form of a bar chart as well as numerically. Before you start a visualisation, we recommend you read out the device's current configuration via an upload.

1. To do so, click the **Upload from device** button.

2. Click on **Start monitoring** to update the values.

NOTICE

These measurement values are also displayed graphically in the **Monitoring** section in the form of a bar chart.. You can also save a historic record of measurement values in the form of a .csv file.

Further information about the **Monitoring** is available under „8.8.5 Monitoring“.

10 Customer service

Address of your local SAUTER service points in Europe:

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Tab. 24 Contact information SAUTER subsidiaries Europe

Please refer to www.sauter-controls.com for additional contact information worldwide.

11 Rectifying problems

The following table lists typical problems that may occur during installation, configuration or commissioning.

Fault	Cause	Rectification
SGU100 or CASE Sensors reports "no valid teach-in values available"	The teach-in process was not properly completed.	▶ Repeat the teach-in process. Make sure the stroke between start position and nominal position is at least 200 mm.
The Run/Fault LED on the EGP100 lights up red	The transducer's measurement range has been exceeded.	▶ Acknowledge the alarm signal by pressing the zero point button and then rebalance the zero point. The transducer may be damaged and no longer functional if the maximum permissible pressure was exceeded (see PDS 32.021). ▶ In this case replace the transducer.
The Run/Fault LED on the EGP100 flashes red	Insufficient supply voltage	▶ Check the wiring and voltage supply to the EGP100 (see PDS 32.021).

Tab. 25 Rectifying problems

List of abbreviations

Abbreviation	Term
Δp	Differential pressure in Pascal
AI	Analogue input
AO	Analogue output
DN	Nominal diameter
FS	Full span; maximum measuring range
PC	Personal computer

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