User Manual

Ultrasonic Flow Monitoring System

SebaFlow

Mess- und Ortungstechnik
Measuring and Locating Technologies

Elektrizitätsnetze
Power Networks

Kommunikationsnetze
Communication Networks

Rohrleitungsnetze
Water Networks

Abwassernetze
Sewer Systems

Leitungsortung
Line Locating

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Consultation with SebaKMT

The present system manual has been designed as an operating guide and for reference. It is meant to answer your questions and solve your problems in as fast and easy a way as possible. Please start with referring to this manual should any trouble occur.

In doing so, make use of the table of contents and read the relevant paragraph with great attention. Furthermore, check all terminals and connections of the instruments involved.

Should any question remain unanswered or should you need the help of an authorized service station, please contact:

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Terms of Warranty

SebaKMT accept responsibility for a claim under warranty brought forward by a customer for a product sold by SebaKMT under the terms stated below.

SebaKMT warrant that at the time of delivery SebaKMT products are free from manufacturing or material defects which might considerably reduce their value or usability. This warranty does not apply to faults in the software supplied. During the period of warranty, SebaKMT agree to repair faulty parts or replace them with new parts or parts as new (with the same usability and life as new parts) according to their choice.

This warranty does not cover wear parts, lamps, fuses, batteries and accumulators.

SebaKMT reject all further claims under warranty, in particular those from consequential damage. Each component and product replaced in accordance with this warranty becomes the property of SebaKMT.

All warranty claims versus SebaKMT are hereby limited to a period of 12 months from the date of delivery. Each component supplied by SebaKMT within the context of warranty will also be covered by this warranty for the remaining period of time but for 90 days at least.

Each measure to remedy a claim under warranty shall exclusively be carried out by SebaKMT or an authorized service station.

This warranty does not apply to any fault or damage caused by exposing a product to conditions not in accordance with this specification, by storing, transporting, or using it improperly, or having it serviced or installed by a workshop not authorized by SebaKMT. All responsibility is disclaimed for damage due to wear, will of God, or connection to foreign components.

For damage resulting from a violation of their duty to repair or re-supply items, SebaKMT can be made liable only in case of severe negligence or intention. Any liability for slight negligence is disclaimed.

Since some states do not allow the exclusion or limitation of an implied warranty or of consequential damage, the limitations of liability described above perhaps may not apply to you.

Contents

1 Safety Instructions

1.1 General Safety Instructions and Warnings

- Do not drop the device / the system's components or subject it / them to strong impacts or mechanical shocks.
- The limits described under Technical Data may not be exceeded.
- The device / system must be in a technically perfect condition for measurement.

1.2 General Notes

Safety precautions

This manual contains basic instructions for the commissioning and operation of the device / system. For this reason, it is important to ensure that the manual is always available to the authorised and trained operator. He needs to read the manual thoroughly. The manufacturer is not liable for damage to material or humans due to non-observance of the instructions and safety advices provided by this manual.

Locally applying regulations have to be observed!

Labelling of safety instructions

The following signal words and symbols are used in this manual and on the product itself:

Signal word / symbol	Description
CAUTION	Indicates a potential hazard which may result in moderate or minor injury if not avoided.
NOTICE	Indicates a potential hazard which may result in material damage if not avoided.
	Serves to highlight warnings and safety instructions. As a warning label on the product it is used to draw attention to potential hazards which have to be avoided by reading the manual.
	Serves to highlight important information and useful tips on the operation of the device/system. Failure to observe may lead to unusable measurement results.

Check contents

Check the contents of the package for completeness and visible damage right after receipt. In the case of visible damage, the device must under no circumstances be taken into operation. If something is missing or damaged, please contact your local sales representative.

Working with products from SebaKMT

It is important to observe the generally applicable regulations of the country in which the device will be operated, as well as the current national accident prevention regulations and internal company directives (work, operating and safety regulations).

Use genuine accessories to ensure system safety and reliable operation. The use of other parts is not permitted and invalidates the warranty.

Repair and maintenance

Repair and maintenance work has to be carried out by SebaKMT or authorised service partners using original spare parts only. SebaKMT recommends having the system tested and maintained at a SebaKMT service centre once a year.

SebaKMT also offers its customers on-site service. Please contact your service centre if needed.

Electromagnetic radiation

This device is designed for industrial use. When used at home it could cause interference to other equipment, such as the radio or television.

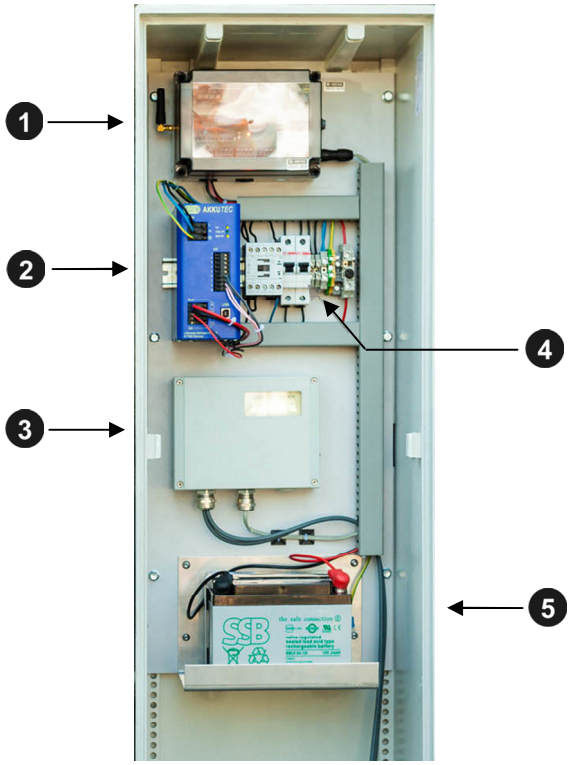
The interference level from the line complies with the limit curve B (living area), the radiation level complies with the limit curve A (industrial area) according to EN 55011. Given that living areas are sufficiently far away from the planned area of operation (industrial area), equipment in living areas will not be impaired.

2 Technical description

2.1 Construction of the unit

All components

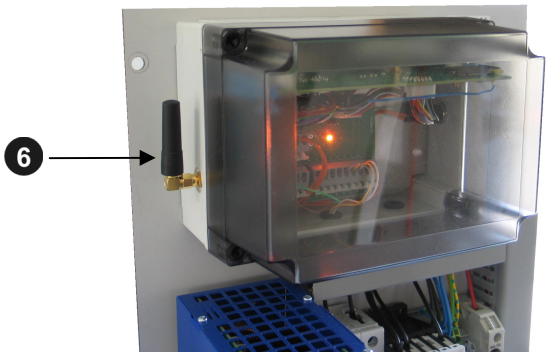
The SebaFlow system consists of the following components:

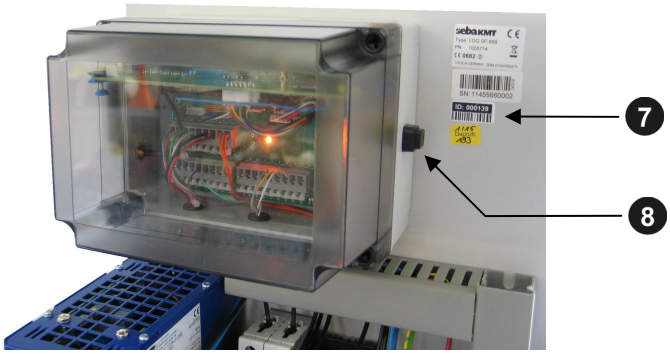


Element	Description
1	**Control unit**
2	**Universal power supply**
3	**Ultrasonic flowmeter**
4	**230 V terminal**
5	**Battery (emergency power supply)**

Not pictured: Ultrasonic sensors with installation hardware and connection cables

The pictures below show the SebaFlow control unit.





Element	Description
6	**GSM antenna**
7	**Type plate and identification number (ID)**
8	**On/off switch**

Indicator lights

Two LEDs can be seen inside the control unit.

The **on/off LED** indicates whether the SebaFlow unit is turned on. The LED is centrally located in the middle of the control unit, where it is easily visible.

LED Status	Description
lit	Unit is turned on
not lit	Unit is turned off

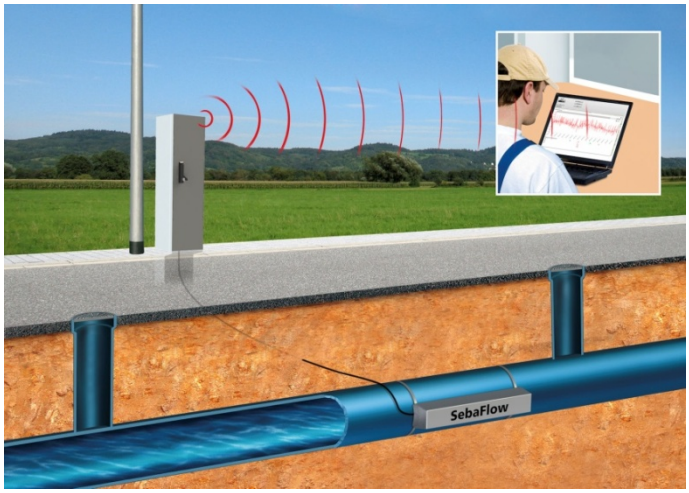
The **status LED** indicates the current activity or state of the SebaFlow unit. The status LED is located above the on/off LED. The following states are possible:

LED Status	Description
green (1x per second)	Unit is turned on
red (regular flash)	Unit is measuring (frequency indicates log interval)
blue (1x every 10 seconds)	Unit is searching for radio signal
blue (blinking fast)	Data transfer via radio

LED Status	Description
blue (steady)	Unit is receiving radio signal
green (irregular flash)	after successful data transfer via GSM
green (steady)	Connecting to mobile network
red (steady)	Error! • general GSM error, e.g. modem failed to turn on, SIM card not recognized, connection process failed, error during data transfer to/from FTP server (LED goes out when the internal modem has turned off) • PIN code incorrect (blinks 3x red, then steady red light) • SIM card blocked, PUK needed (blinks 3x white, then steady red light)

2.2 Function

SebaFlow is a measurement system for stationary, continous flow monitoring in pipe sections via ultrasound technology.



The system's ultrasonic sensors are installed on the outside wall of the pipe. Measurement can be performed on all types of pipes, and at pipe diameters up to 2500 mm.

The measurement data are recorded and sent through a cable to the distribution box of the SebaFlow system on the ground surface.

The data collected are sent to an FTP server over a mobile network. From there, the data can be:

- displayed online with the SebaKMT Cloud, or
- downloaded to a computer and displayed with the SebaDataView-3 software, or
- downloaded as CSV file and processed with your SCADA system.

An alternative option is to use a laptop right on-site to read the measurement data from the SebaFlow unit and process them further.

Together with the SebaKMT Cloud, SebaFlow allows for remote monitoring of data collection. Remote configuration of the unit is also possible.

2.3 Communication

2.3.1 Mobile networks

The SebaFlow unit contains an internal GSM module for mobile networks which is necessary for:

- Measurement data upload from the SebaFlow unit to the FTP server
- Transmission of notifications via email/SMS
- Re-programming of the unit from the office (via download from the FTP server or via SebaKMT Cloud)

2.3.2 Short range radio

The SebaFlow unit contains an internal radio module for short-range radio which is necessary for:

- Programming the unit with a laptop and SDV-3 user software
- Reading the recorded measurement data with a laptop and SDV-3 user software

For short range radio, a wireless interface must be connected to the computer.

'Log RI' The compact 'Log RI' is the standard radio interface for communicating with SebaKMT devices.

'Log RI+' The radio interface 'Log RI+' is available as accessory from SebaKMT. Compared to the Log RI the device has a higher-performing radio module which allows a higher radio range.

Use Simply connect the 'Log RI' / 'Log RI+' to a USB port of the computer. The device switches itself on. The device is automatically detected by the computer and immediately ready to establish the radio link. There are no further adjustments to be done.

Status LED The device has a status LED:

- flashing 1x red, 1x green … switching on
- blue light … data transfer in progress
- red light … malfunction

Update We recommend that the device is always operated with the latest firmware. A firmware update can be performed using the SebaDataView-3 software. More exact information on how to update the firmware is available in the SebaDataView-3 chapter (see page 38).

2.4 Power supply

AC power grid The SebaFlow distribution box must be connected to the 230 V power grid (see page 20) at the operation site by a certified electrician.

Battery The SebaFlow system includes a lead acid battery 5. The battery acts as a backup power supply when a connection to the AC power grid is temporarily unavailable, or during a power outage.

SebaFlow automatically switches from AC power to battery power when the AC power supply is interrupted. The unit automatically switches from battery power back to AC power as soon as the AC power supply becomes available again.

With a fully charged battery, SebaFlow can operate for up to 48 hours before the system shuts down. However, actual battery life is heavily dependent on which / how many sensors are attached to the device, and which functions are actually being used.

The battery is automatically charged whenever the unit is drawing power from the grid.

When the battery level is low, the SebaFlow unit will shut down.

→ The unit must be turned on again on-site.

→ Measurement data that were recorded but not yet uploaded to the FTP server are kept in the unit's internal storage, and are sent to the FTP server as soon as the unit is turned back on.

→ The unit's programming is preserved.

→ If a measurement was interrupted when the unit was turned off, a new measurement is automatically started when the unit is turned back on.

2.5 Firmware-Update

We recommend to keep the internal operating software (also called "firmware") of the SebaFlow unit up to date. SebaKMT makes improved versions of the firmware available in the download area of www.sebakmt.com on a regular basis. The update-files can be downloaded to a laptop from where they then will be transferred to the SebaFlow unit via short range radio.

To perform a firmware update, the following requirements must be met:

- Laptop with SebaDataView-3 user software
- LOG RI radio interface for the laptop
- In the office, you need access to the Internet for update-file download
- On site, you must be within the SebaFlow unit's radio range and the SebaFlow unit must be turned on

More exact information on how to update the firmware is available in the SebaDataView-3 chapter (see page 38).

2.6 Technical data

SebaFlow is specified by the following technical parameters:

Parameter	Value
Operating range	max. DN 2500
Recording	1 s … 24 h
Flow speed	0,001 … 25 m/s
Resolution	0,025 cm/s
Reproducibility	0.25% of measured value ±1 cm/s
Volumetric flow	+/- 1,8% of measured value +/- 1 cm/s
Communication	short range radio; 868 MHz (in Europe) 913 / 916 MHz (country-specific) mobile network; GSM / GPRS / UMTS 850 / 900 / 1800 / 1900 / 2100 MHz
Configuration	on site via laptop using SebaDataView-3 software, or from office via FTP server using SebaKMT Cloud or SebaDataView-3 software
Alarm	via SMS and email; data upload to FTP server
Power supply	230 V external;
UPS	lead acid battery operating time up to 48 h charging time 5 h
Operating temperature	-30 … +100 °C (-22 … 212 °F)
Dimensions	distribution box without base 350 x 272 x 1300 mm distribution box with base 350 x 272 x 1710 mm measurement unit max. 560 x 126 x 120 mm
Weight	approx. 50 kg (incl. distribution box)
Protection class	distribution box IP 43 measurement unit with ultrasonic sensors IP 68*; longitudinally watertight

* Test conditions: 3 months / 2 bar (20 m) / 20 °C

2.7 Scope of delivery

The SebaFlow system comprises:

- fully equipped distribution box
- pair of ultrasonic sensors
- mounting rail for the sensors
- protective housing for the sensors

3 Preparing for installation

3.1 Introduction

The SebaFlow measurement system is installed at the operation site in cooperation with a SebaKMT service technician. He or she carries out all necessary steps to adapt the system to conditions at the site, from professional installation and connection of the sensors, to activation and initial programming of the unit, through to final clearance for measurement operations.

For this reason, the SebaFlow installation process is not shown in detail in this user guide. Only the broad outlines of the process are shown.

For any questions about initial installation, please contact your SebaKMT service partner.

3.2 Mobile network contract, FTP server, E-mail account

UMTS / GPRS For data transfer via mobile radio you have to close a suitable contract with a mobile phone service provider, in order to get a SIM card enabled for data transfer via UMTS / GPRS.

FTP server For measuring data uploads, free memory space on an FTP server is needed. You can ask your administrator to set up an FTP server using the server infrastructure of your company or you can rent a server from a commercial internet service provider.

You can also rent FTP space from SebaKMT. Please contact your SebaKMT distributor.

Under certain conditions the demo server run by SebaKMT can be used.

E-mail messages If you wish to receive alarm messages or status messages via e-mail, an e-mail account is needed from which the messages are to be sent. If the mail server of your company is not capable for this task (e.g. due to a firewall), a webmail account from an internet service provider (e.g. Yahoo or Google) can be used instead.

Under certain conditions the demo account run by SebaKMT can be used.

3.3 Choosing a location

The SebaFlow system requires certain conditions at the installation site. Therefore, you must carefully consider the appropriateness of the desired location in the earliest stages of planning.

Important criteria for the SebaFlow installation site:

- Access to a 230 V power grid must be available (e.g. through a streetlamp, etc.).
- The distance between the SebaFlow unit and the measurement points must not be too great: consider the cable length to the ultrasonic sensors!
- A stable connection to a mobile network must be available (see next section).

3.4 Checking mobile network availability on site

Before you begin the actual installation work, you should check whether mobile network coverage is adequate at the intended installation site.

Simply take the SIM card that will later be used in the SebaFlow unit and insert it in a mobile telephone, then use it to check the network quality on site. If necessary, you can instead use a different SIM card from the same network provider.

To ensure error-free transfer of measurement data from the SebaFlow unit to the FTP server, mobile network quality at the installation site must be consistently in the "good" to "very good" range.

4 Installation and activation

4.1 Schematic procedure for on-site installation

The following procedure shows the sequence of actions that must be performed when installing and activating the SebaFlow system.

All actions described in this chapter will typically be carried out by the SebaKMT service partner who handles the on-site installation of the SebaFlow system.

Step	Description
1	Test the quality of mobile network reception at the intended installation site. To do this, take the SIM card that is to be used in the SebaFlow unit and insert it into a mobile phone, then use the phone to test mobile network reception on-site.
2	Set up the distribution box.
3	Place the SIM card in the control unit.
4	Connect the distribution box to the power grid in accordance with all professional standards. **CAUTION** The unit must only be connected to the power grid by a certified electrician.
5	Expose the measurement site on the pipe (excavation).
6	Determine pipe attributes (material, diameter, lining etc.)
7	Affix the mounting rail of the ultrasonic measurement unit to the pipe using the mounting bands. 
8	Position the ultrasonic sensors in the mounting rail and tighten. (The exact position in the rail depends on the pipe attributes.) 

Step	Description
9	Extend the sensor cable from the measurement unit to the distribution box. (Avoid damage. Whenever possible, run the cable through protective tubing.)
10	Connect the sensor cable to the flowmeter module ❸ in the distribution box. 
11	Configure the flowmeter module ❸, i.e. adjust all settings to match the pipe attributes.
12	Turn on the SebaFlow unit and program it (see page 43) using the SDV-3 software on a laptop.
13	Perform a mobile network test ('GSM test') (see page 58).
14	Perform a test measurement. To do this, use the SDV-3 software to perform a real-time measurement (see page 65) on-site. Compare the measurement values on the laptop with the values that are displayed directly on the flowmeter module of the SebaFlow unit. The values must match.
15	Affix the enclosure for the ultrasonic measurement unit. 
16	Fill in the excavated area.

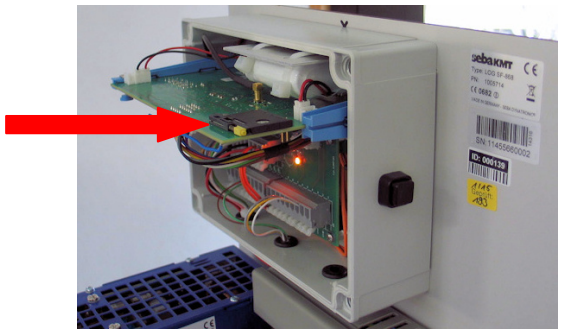
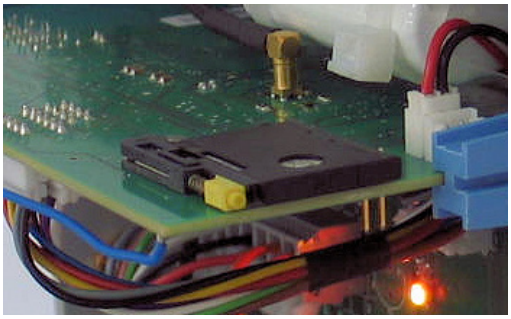
4.2 Explanation of individual installation and activation steps

All actions described in this chapter will typically be carried out by the SebaKMT service partner who handles the on-site installation of the SebaFlow system.

4.2.1 Inserting the SIM card

To prepare the unit for mobile network access, the SIM card must be inserted. You will have received this card from your mobile network operator when you concluded the mobile phone contract.

Proceed as follows:

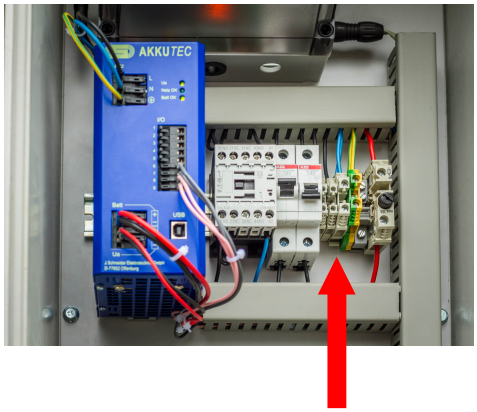
Step	Description
1	Remove the transparent plastic cover from the control unit (1). To do this, loosen the four screws and take off the cover.
	Result: You now have access to the SIM card tray inside the unit. 
2	Insert the SIM card. **NOTE** Take care to avoid damaging the components. Do not use force. In order to detach the SIM card tray from its fixture, push on the yellow spring mechanism to the left of the card tray, e.g. by using a pen or similar item. Pull out the tray and insert the SIM card. Then slide the tray back into the fixture until it clicks into place. 
3	Replace the plastic cover.

4.2.2 Connecting the unit to the power grid

CAUTION
The unit must only be connected to the power grid by a certified electrician.

The SebaFlow distribution box must be connected to the 230 V power grid at the operation site.
Use the following terminals for the connection to the power grid:

Terminal	Assigned to
L1	Hot
N	Neutral
PE	Ground



4.2.3 Connecting the ultrasonic sensors to the unit

The system's ultrasonic sensors are connected to the flowmeter module ❸ in the control cabinet.

The SebaFlow unit must then be turned on, and the flowmeter module must be programmed. This means inputting the pipe parameters at the measurement site into the flowmeter module.

4.2.4 Connecting additional sensors to the unit

4.2.4.1 Introduction

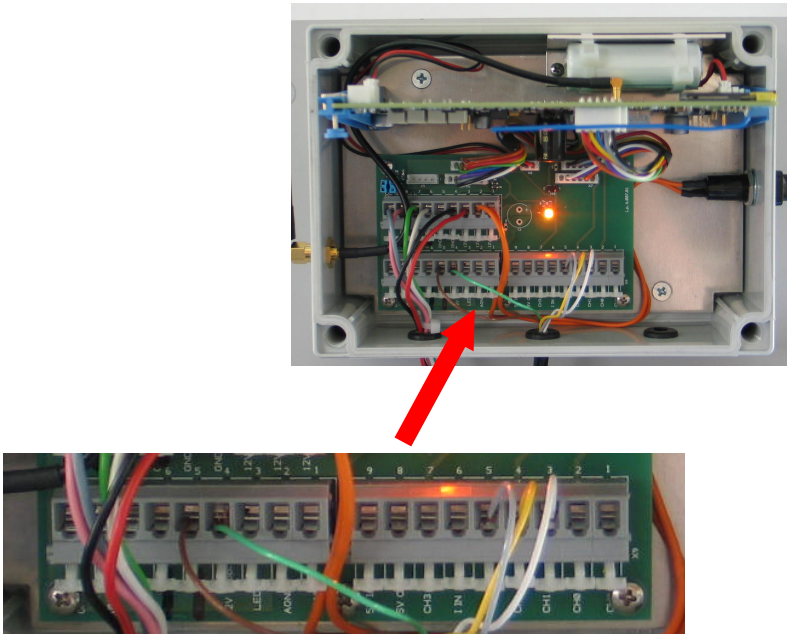
SebaFlow has four measurement channels.

→ The system's ultrasonic sensors, connected to the flowmeter module ❸, occupy measurement channel 2 of the SebaFlow unit.
→ Measurement channels 1, 3 and 4 are available for connections from additional sensors.
→ A sensor with a 4–20 mA current loop output can be connected to measurement channel 4.

4.2.4.2 Assigning connection terminals

The SebaFlow unit's control unit includes a terminal block. This is where sensors can be connected to measurement channels 1, 3 and 4 of the unit.

NOTE
The flowmeter's test lead is pre-wired by SebaKMT to measurement channel 2, and must not be rewired.



Sensors can be connected to the unit according to the following scheme:

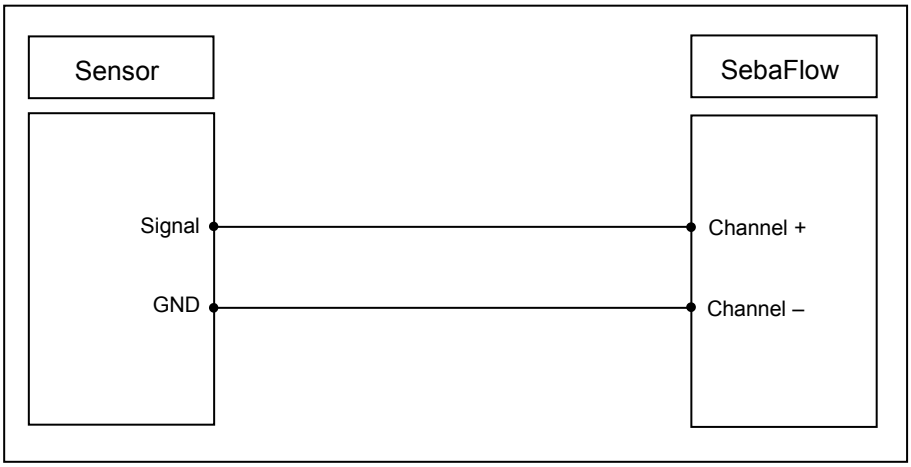
Terminal	Measurement channel	Assigned to
CH 0+	Channel 1	Additional external sensor
CH 0-		
CH 1+	Channel 2	Ultrasonic flow sensor (Factory pre-wired. Do not modify!)
CH 1-		
CH 2+	Channel 3	Additional external sensor
CH 2-		
CH 3+	Channel 4	Additional external sensor (Current loop possible)
CH 3-		

4.2.4.3 Wiring diagram example

In the following, some connection examples are described. Depending on the sensor, the actual wiring diagram and the terminal designation may differ. Please refer to the respective sensor manual for detailed information.

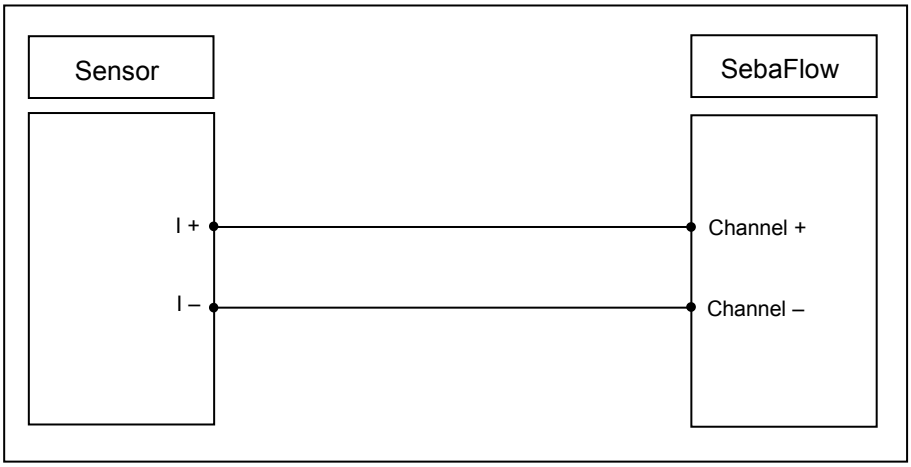
Output signal type ***voltage/frequency/ pulse***

The following example describes how to connect a sensor with a 0 - 5 V voltage output or 0 Hz - 6000 Hz frequency output or pulse output:



Output signal type ***current loop***

The following example describes how to connect a sensor to a 4 … 20 mA current loop:



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A current loop can only be connected to channel 4.

4.2.5 Switching the unit on and off

The unit is switched on and off with the **on/off switch** 8, located at the right of the control unit 1. The **on/off LED** inside the control unit is lit whenever the unit is switched on. It goes out when the unit is turned off.

When the unit is switched off with the on/off switch, all measurement data recorded since the last FTP upload are lost.

If an ongoing measurement was interrupted when the unit was switched off, the SebaFlow unit will automatically start a new measurement when turned back on. The unit does not need to be reprogrammed for this to occur.

5 SebaDataView-3 software

SebaDataView-3 (abbreviation: SDV-3) is the multifunctional application software for working with devices in the 'Sebalog' series. You can use it to configure the majority of devices and read out the measurement data from the devices. The measurement data can be displayed and analysed in greater detail using various functions on the computer.

5.1 Installation

System requirements Your machine must meet the following minimum system requirements in order to run the SebaDataView-3 software:

- PC or notebook with Windows 7® or higher
- min. Pentium IV compatible CPU (at least 2 GHz)
- min. 2 GB memory
- USB interface
- CD ROM drive

Installation To install the software insert the provided CD, execute the installation file and follow the instructions on the screen. The application is installed to the following folder: *C:\Program Files\SebaKMT\SebaDataView*.

Furthermore, a database is created in the Windows standard folder for application data (see page 35).

Software start Start the application by double-clicking on the desktop icon created during the installation process. Alternatively, the application can be started via the Windows start menu.

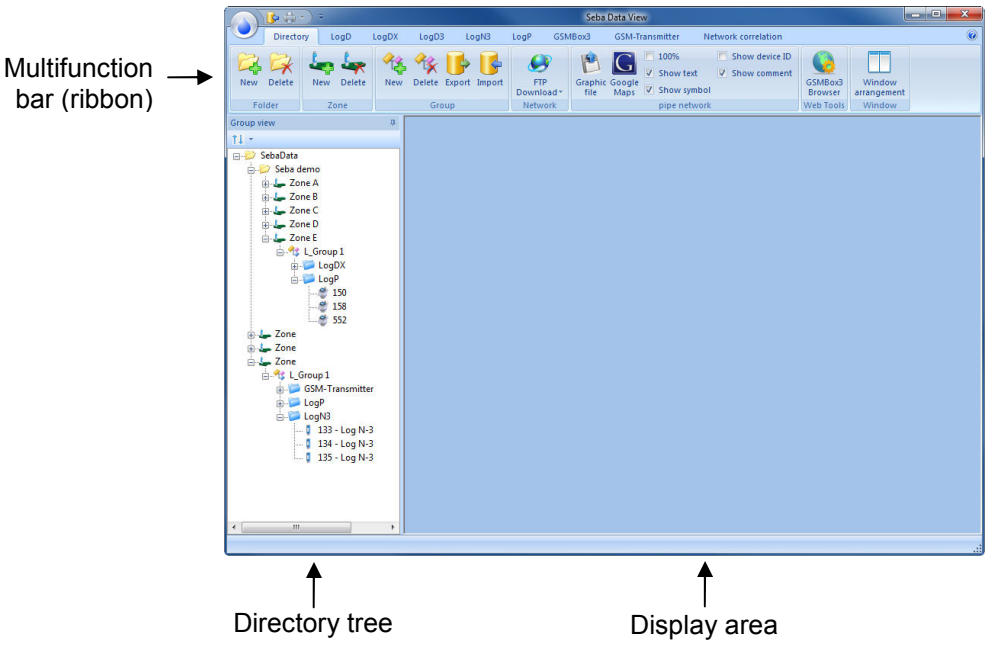
Language selection During start-up you are asked to select the language of the user interface. Make your choice from the drop-down-list and click on **OK**.

Software update During start-up, the current version of the software is displayed on the screen. Please check *www.sebakmt.com* regularly for updates. To install a new version of the software, store the respective file on your PC, execute it and follow the instructions on the screen.

5.2 Function and structure

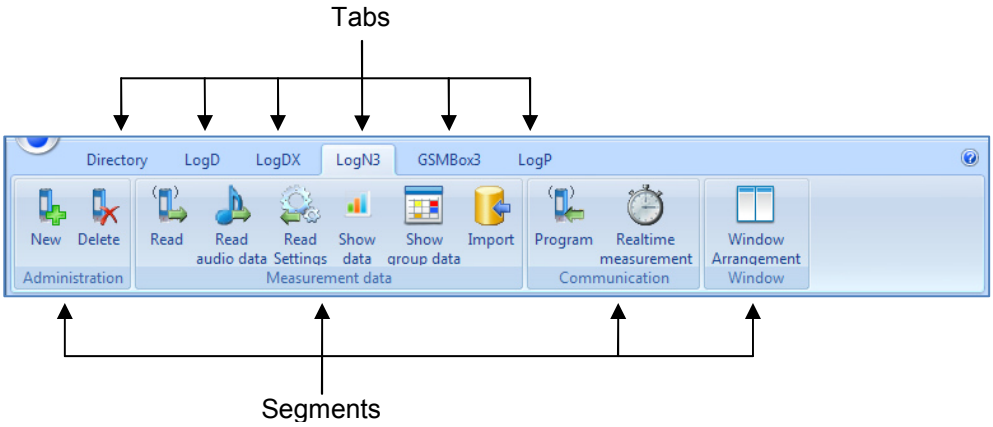
Introduction SebaDataView-3 (SDV-3) is the multifunctional user software for working with devices of the Sebalog series. Using the software, loggers can be programmed prior to the measurement. After measurement the recorded data can be queried from the loggers, displayed and analyzed.

User interface The SDV-3 user interface is based on the Microsoft Office suite (2007 and later). In all menu levels the display shows the following structure:



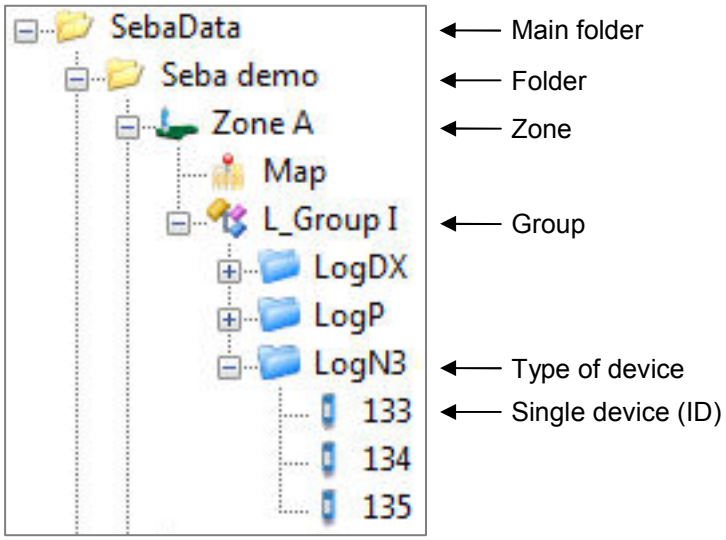
Multifunction bar All function and command buttons are arranged in a panel, called ‘ribbon’, as it is known from Microsoft Office applications.

Every Sebalog device series that can be managed using the SDV-3 software has its own ‘tab’. All the commands needed when working with this device are grouped in the ‘segments’ of this tab.



Directory tree On the left of the screen the directory structure of the software database is displayed. All the devices added to the database by means of their identification number can be found in this so called 'directory tree'.

The directory tree shows the following structure of folders and sub-folders:



Display area All dialogue and display windows of the various functions appear in the display area.

5.3 Device administration

5.3.1 Creating / deleting folders

Create a folder To create a new folder in the directory tree, proceed as follows:

Step	Description
1	Mark the folder ‘SebaData’, or any other existing folder which the new folder should be added to as a sub-directory.
2	Open the tab **Directory** in the multifunction bar.
3	In the segment **Folder**, click on **New**.
4	In the window which opens, enter the **Name** and a **Comment** for the new folder and confirm the entries by pressing **OK**.
	Result: The new folder has now been created in the database and will appear in the directory tree.

Delete a folder To remove a folder from the directory tree, proceed as follows:

Step	Description
1	Mark the folder to be deleted.
2	Open the tab **Directory** in the multifunction bar.
3	In the segment **Folder**, click on **Delete**.
4	Answer the security query with **Yes**.
	Result: The corresponding folder is removed from the directory tree.

If a folder is deleted, all loggers/devices assigned and all the collected data are deleted, too.

5.3.2 Creating / deleting zones

Create a zone To create a new zone in the directory tree, proceed as follows:

Step	Description
1	Mark the folder in the directory tree in which the new zone should be created.
2	Open the tab **Directory** in the multifunction bar.
3	In the segment **Zone**, click on **New**.
4	In the window which opens, enter the **Name** and a **Comment** for the new zone and confirm the entries by pressing **OK**.
	Result: The new zone has now been created in the database and will appear in the directory tree.

Delete a zone To remove a zone from the directory tree, proceed as follows:

Step	Description
1	Mark the zone to be deleted.
2	Open the tab **Directory** in the multifunction bar.
3	In the segment **Zone**, click on **Delete**.
4	Answer the security query with **Yes**.
	Result: The corresponding zone is removed from the directory tree.

If a zone is deleted, all loggers/devices assigned and all the collected data are deleted, too.

5.3.3 Creating / deleting groups

Create a group To create a new group in the directory tree, proceed as follows:

Step	Description
1	Mark the zone in the directory tree in which the new group should be created.
2	Open the tab **Directory** in the multifunction bar.
3	In the segment **Group**, click on **New**.
4	In the window which opens, enter the **Name** and a **Comment** for the new group and confirm the entries by pressing **OK**.
	Result: The new group has now been created in the database and will appear in the directory tree.

Delete a group To remove a group from the directory tree, proceed as follows:

Step	Description
1	Mark the group to be deleted.
2	Open the tab **Directory** in the multifunction bar.
3	In the segment **Group**, click on **Delete**.
4	Answer the security query with **Yes**.
	Result: The corresponding group is removed from the directory tree.

If a group is deleted, all loggers/devices assigned and all the collected data are deleted, too.

5.3.4 Adding / deleting single devices

Add a device

To add a device to a group in the directory tree, e.g. a logger, proceed as follows:

Step	Description
1	Mark the group in the directory tree to which the device should be added.
2	In the multifunction bar, open the tab **LogD3**.
3	In the segment **Administration**, click on **New**.
4	In the window which opens, enter the **Identification Number (ID)** of the device or use the "Automatic detection" (find more information below in the text). Click on **OK** to add the device to the group.
	Result: The new device has now been created in the database and will appear in the directory tree.

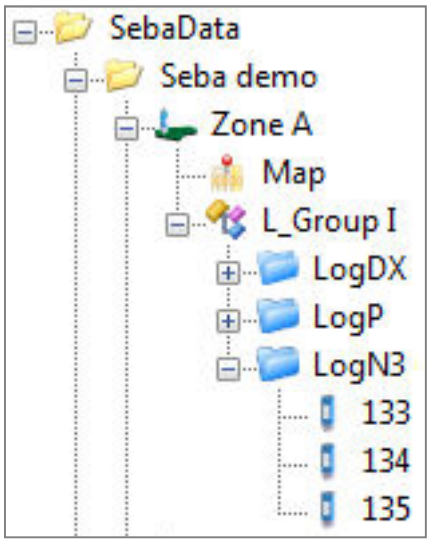
If you entered the unit's ID manually, in the directory tree a Log D-3 icon may be shown instead of a SebaFlow icon. If this is the case, perform the following steps in addition.

5	In the directory tree, mark the device in question.
6	Make sure the device is switched on and within the computer's radio range.
7	In the multifunction bar, click on **Program** in the **Communication** segment.
8	In the window that appears, click on **Read**.
	Result: The device will be recognized from the computer as a SebaFlow unit. The unit's icon in the directory tree changes from a Log D-3 to a SebaFlow icon.

Add more devices to the group successively or close the window.

There is the possibility to add devices of different types to the same group. Then, automatically new sub-directories are created by the software to which the various devices are added according to their type.

Example: "Group I" has LogDX, Log P and Log N3 loggers:



Automatic detection

A radio interface (e.g. Log RI) needs to be connected to the computer in order to be able to use the „Automatic detection“ when signing on devices.

Tick the checkbox „Automatic detection“ in the window which opens. Then bring the device which has to be turned off near the computer and switch it on. The identification number of the device will be recognised and displayed on the screen.

Click **OK** or **Insert** in order to accept the ID and to add the device to the group.

If you tick the checkbox „Automatic insertion“, the recognised devices will be added automatically to the group.

Delete a device

To remove a device from the directory tree, proceed as follows:

Step	Description
1	Mark the device to be deleted.
2	In the multifunction bar, open the tab **LogD3**.
3	In the segment **Administration**, click on **Delete**.
4	Answer the security query with **Yes**.
	Result: The corresponding device with all its measuring data is removed from the directory tree.

5.4 Map function

You have the opportunity to mark the location of installation of each of your devices on a virtual map. Thus, you obtain an overview of the zone and all the devices used.

5.4.1 Creating a map

Introduction

You have the chance to import any image file into the software - e.g., a sector of a pipe network plan or a detail of a map, etc.

If you have access to the Internet, the software also provides the possibility to call up the ‘Google Maps’ web service, in order to create a map of the respective zone.

Import an image file

To import an image file and add it to a zone in the directory tree, proceed as follows:

Step	Description
1	Mark the zone in the directory tree to which the map should be added.
2	Open the tab **Directory** in the multifunction bar.
3	In the segment **Pipe network**, click on **Graphic file**.
4	Use the window that opens to navigate to the source folder, from where the image file is to be imported (‘jpg’, ‘bmp’ and ‘png’ format are possible). Select the file and click on **OK**.
	Result: The image file is imported into the software and now appears in the directory tree in the form of a sub-folder called **Map**. A new window opens, where the newly created map is shown.
5	To mark the place of installation of a device, in the directory tree click on the device concerned, keep the left mouse button pushed and drag the device to the point desired on the map displayed. Proceed in the same way to place the other devices of the zone on the map.

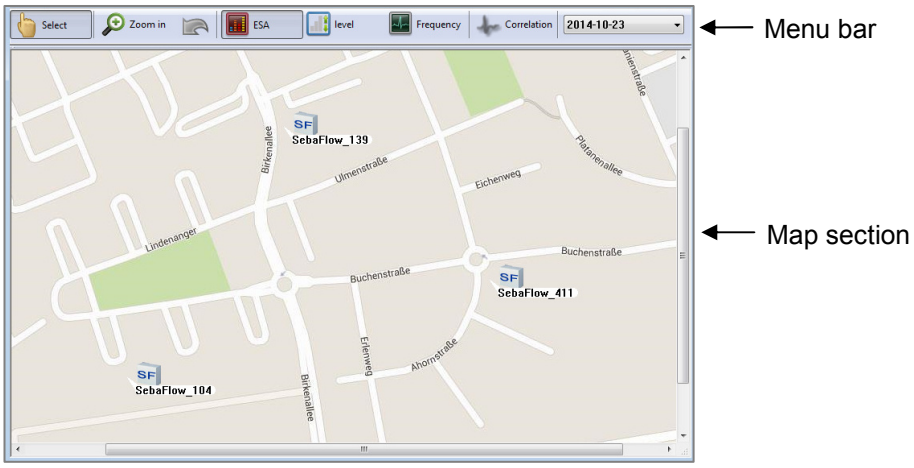
Creating a map using 'Google Maps'

To create a map using the ‘Google Maps’ web service and add it to a zone in the directory tree, proceed as follows:

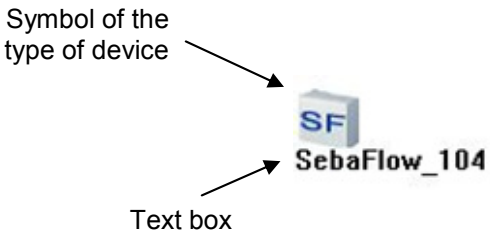
Step	Description
1	Mark the zone in the directory tree to which the map should be added.
2	Open the tab **Directory** in the multifunction bar.
3	In the segment **Pipe network**, click on **Google Maps**.
	Result: A connection to ‘Google Maps’ is established. A new window opens, showing the known ‘Google Maps’ user interface. Aditionally, you find some input fields and controls.
4	To get a certain destination area displayed, use one of the following options: • Mark the checkbox **Address** and enter the destination adress desired into the field right beside, or • mark the checkbox **Coordinate** and enter a GPS position, using the fields **Latitude** and **Longitude**. Confirm your entry by pressing the ENTER key on your keyboard.
5	Use the known tools of the ‘Google Maps’ user interface (moving, zooming, etc.) to customize the map section displayed.
6	Click on **OK**.
	Result: The adjusted map section is stored as an image file and now appears in the directory tree in the form of a sub-folder called **Map**. A new window opens, where the newly created map is shown.
7	To mark the place of installation of a device, in the directory tree click on the device concerned, keep the left mouse button pushed and drag the device to the point desired on the map displayed. Proceed in the same way, in order to place the other devices of the zone on the map.

5.4.2 Executing a map

To open the map window of a zone, in the directory tree double-click on the **Map** sub-folder of the zone concerned.



The markings, indicating the positions of the single devices on the map, show the following design:



Thanks to the pictogram (symbol), the type of device marked can easily be recognized.

The text box shows ‘type & identification number’ or the ‘comment’ of the device marked - depending on the settings made in the **Pipe network** segment of the multifunction bar (see page 33).

Create a marking

To mark the place of installation of a device, in the directory tree click on the device concerned, keep the left mouse button pushed and drag the device to the point desired on the map displayed.

Move a marking

To move a marking on the map, proceed as follows:

Step	Description
1	In the menu bar of the window, click on **Select**.
	Result: The mode of the cursor changes from ‘show’ to ‘select’.
2	Click on the marking concerned, keep the left mouse button pushed and move it to a new position.
3	Finally, click on the **Select** button once again in order to deactivate it.

Zoom function

You have the chance to get a section of the map magnified in an extra window. Proceed as follows:

Step	Description
1	In the menu bar of the window, click on **Zoom**.
	Result: The cursor changes from mode „show“ to mode „enlarge“ .
2	On the map, mark the area that is to be magnified. (For this, click on the map, keep the left mouse button pressed and move the cursor diagonally across the area of interest.)
	Result: The map section selected is magnified.

Undo last step

In order to undo the last steps click the arrow button in the menu bar.

In order to leave the magnified map view click once again the **Zoom** button.

Costumize the view

You have the chance to costumize the map view. For this purpose, open the **Directory** tab of the multifunction bar. There, in the **Pipe network** segment, the following checkboxes are available:

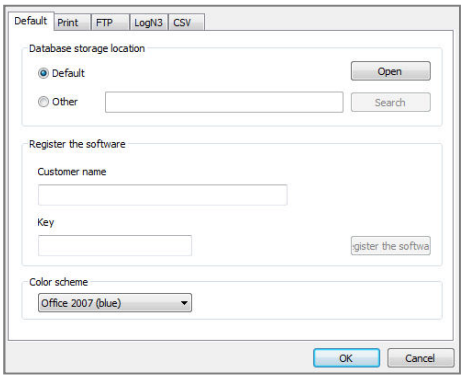
Option	Description
100 %	If this checkbox is enabled, the map section is scaled up or down corresponding to the size of the window displayed If it is disabled, the size of the map remains static.
Show text	If this checkbox is disabled, the text box of the markings is hidden.
Show symbol	If this checkbox is disabled, the pictogram of the markings is hidden.
Show device ID	If this checkbox is enabled, the text box of a marking shows the type and the identification number” of the device.
Show comment	If this checkbox is enabled, the text box of a marking shows the comment/name of the device.

5.5 System settings

In the System settings menu you can make various basic settings for use of the SDV-3 software or specify frequently recurring parameters etc.

To open the menu, first click the water drop symbol  in the top left. Then, click the **Settings** button in the appearing context menu.

A new window appears showing the system settings menu:



5.5.1 Managing the storage location of the measurement database

During installation of the software, a directory with the name ‘data’ is created on the computer by default. All recorded data is saved to this directory.

In the system settings of the software, you have the option to display the current storage location of the measurement data or set up another storage location.

To get access to the storage location management tools, you have to open the **Default** tab.

Displaying the storage location

To display the current storage location of the measurement data, click **Open** in the **Database storage location** segment. The current target directory opens in an Explorer window. (With the default setting, it is the ‘data’ directory mentioned above.) The precise target path is displayed in the address line.

Changing the storage location

You have the option to define another storage location in place of the standard target directory of ‘data’.

Select the **Other** radio button in the **Database storage location** segment. Then click **Search (Browse)** and use the Explorer window that opens to set a new target directory. After the next restart of the software, all newly saved measurement data will be saved in this folder. All previously saved measurement data remains in the previous target folder. There is no longer access to this data from SDV-3.

If you define a new storage location and want to still have access to the previously saved measurement data, you need to first move the entire previous target directory to the new storage location. Only after you do this should you set the new target path, as described above, by selecting the **Other** checkbox and defining the new target path by pressing the **Search (Browse)** button.

5.5.2 Saving access data for FTP server and email account

Introduction

Various devices in the Sebalog series are equipped with an integrated GSM modem. This means that they can

- send messages per SMS or email (e.g. alarm messages), as well as
- upload measurement data to an FTP server.

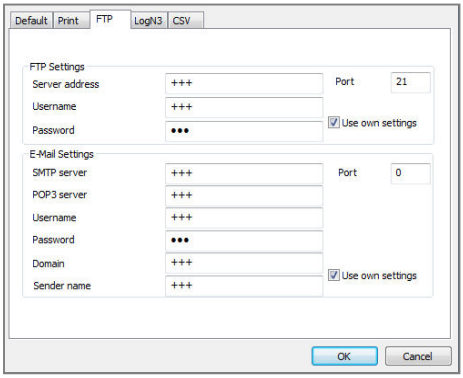
Every time the devices are programmed the access data for the sending email account or the access data for the FTP server being used must be entered.

If you wish you can save the data for an email account as well as the FTP server data permanently in the software. When programming the saved access data can then simply be accepted into the input screen 'with a click of the mouse'.

Procedure

To store access data in the software, proceed as follows:

Step	Description
1	In system settings open the **FTP** tab.
	Result: The following entry screen then appears in the window:
	The **FTP Settings** segment contains boxes for entering access data for your FTP server. You can ask your company's system administrator or the server operator for this data or it is available in your FTP usage agreement. The **Email Settings** segment contains boxes for entering the access data for the sender email account, if messages are to be sent per email. The data will be assigned to you by the operator of the mail account, or by your system administrator. In the **Sender name** field, you can enter any name, which will subsequently be used to identify the device which is the sender of the alarm message.
2	Click the relevant **Use own settings** checkbox.
3	Enter the access data in the input fields.
4	Click on **OK** to confirm the details and to close the window.
	Result: The access data are now permanently stored in the software. When programming the devices a checkbox is shown for each of the steps in the entry area, with which the stored access data can then be inserted.

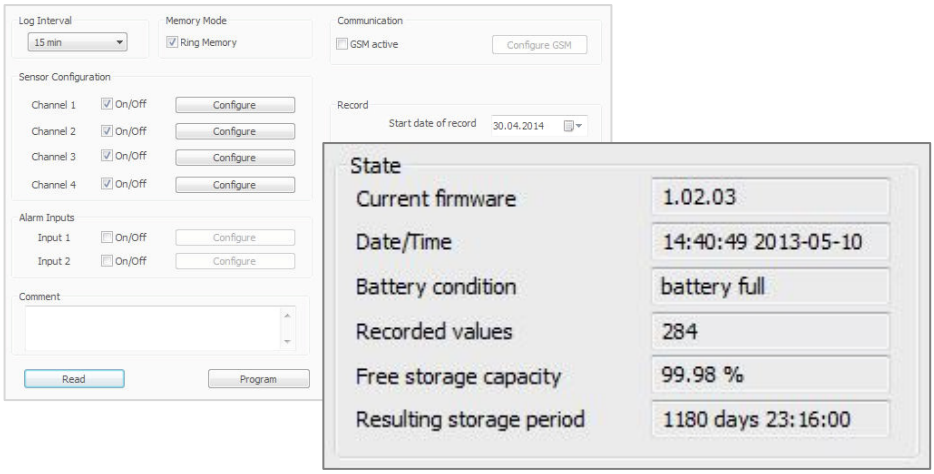


Only when the **Use own settings** checkbox has been activated will it be possible at a later stage to access the stored data for programming purposes.

If the checkbox has not been activated, the user is then offered a choice of using a SebaKMT demo FTP server and/or a demo email account.

5.5.3 Getting information about the current device state

When programming a device, in the configuration window the **State** segment can be found. This segment provides various information about the device's current state, e.g. the battery level, the system date and time or the firmware version used.



The data refer to the time of the last data readout.

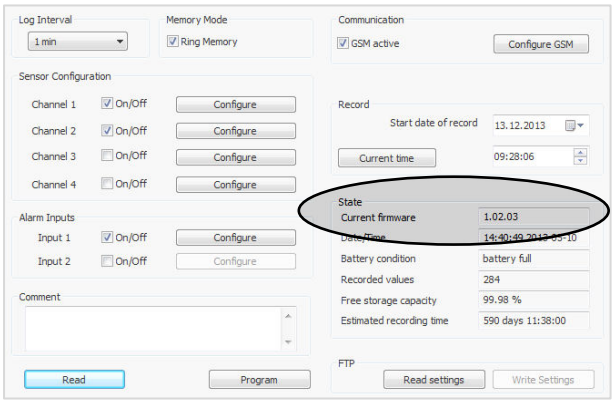
In order to get the latest information, you can read the device's configuration. (For this, locate the switched on device within the computer's radio range, select the device in the directory tree of the SDV-3 software, click on **Program** in the multifunction bar and then on **Read** in the appearing configuration window.)

5.6 Updating the firmware of a device

Introduction SebaKMT makes improved versions of the firmware available in the download area of www.sebakmt.com on a regular basis. We recommend that you keep the firmware of all devices current at all times.

In order to determine which firmware version is currently installed on a device, you can read the device's configuration. (For this, the switched on device must be within the computer's radio range. Select the device in the directory tree of the SDV-3 software, click on **Program** in the multifunction bar and then on **Read** in the appearing configuration window.)

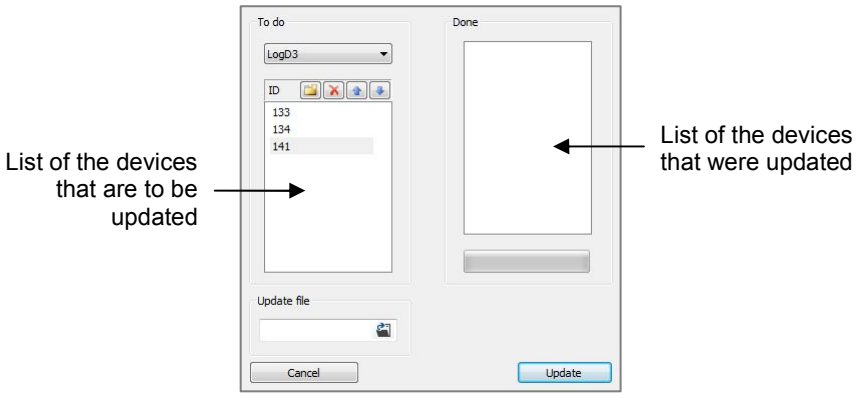
The version of the firmware is displayed in the **State** segment of the configuration window.



CAUTION	All data stored in the device's internal memory may be deleted by the firmware update. Therefore, retrieve all data from the device before carrying out an update.

Procedure To update the firmware of one or more devices, proceed as follows:

Step	Description
1	Download the file for the update from the download area of www.sebakmt.com onto your computer. **NOTE** SebaFlow is operated with the same firmware as **Sebalog D-3** data loggers from SebaKMT. Therefore, not look for particular SebaFlow update files, but for Log D-3 firmware update files for download.
2	Open the SebaDataView-3 software.

Step	Description
3	Click the water drop symbol on the top left of the window and select the option **Firmware Update** in the window that opens.
	Result: The following window opens. 
4	In the drop-down list in the top left, select the type of devices whose firmware is to be updated. If the type "SebaFlow" is not available, please select **LogD3** instead. Several devices can be updated at the same time. However, they all need to be of the same type – just LogN3 loggers or just LogDX loggers, for example.
5	At the top of the list on the left, click the folder symbol . A new input field opens. There, enter the identification number (ID) of the relevant device, and confirm with the ENTER key on your keyboard. Repeat the process until all devices to which the firmware update is to be transferred are in the list. If you want to remove a device from the list, select the relevant ID and click the symbol for 'Delete' at the top of the list. If you want to change the position of a device within the list, select the relevant ID and move it up or down with the arrow keys .
6	In the **Update file** segment on the lower left of the window, enter the location where you saved the update file that you downloaded to your computer in step 1. To do this, click the folder symbol and use the Explorer window that opens.
7	Click **OK** to start the firmware update.
	Result: The update file is transferred to the devices and installed there. A bar under the list on the right shows the progress of this process. After the file is installed, each device restarts automatically. The IDs of the successfully updated devices switch from the left to the right side on the screen. As soon as the firmware update is successfully completed for all devices, a corresponding message appears in the update window.

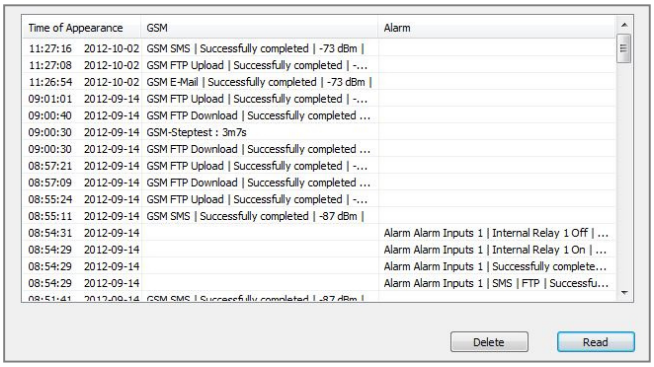
5.7 Receiving an ‘Event List’

Introduction

By the help of the **Event List** function you get information about

- a device's alarm events up to now,
- a device's GSM connection establishments up to now.

These events are listed in a table on the screen.



If measuring data have been sent from the device to a FTP server, the event list is part of these data and is available right after the download.

For energy saving reasons, the event list is not part of the data transferred to the computer via radio. In this case, the event list still needs to be retrieved from the logger, before it can be displayed on the screen.

A maximum of 600 events can be listed. After 600 entries have been reached, the respective oldest values are overwritten.

Requirements

The device must be switched on and a connection between the device and the computer is needed.

For a radio link

- a radio interface must be connected to the computer (e.g. Log RI),
- the device must be within the computer’s wireless range.

Procedure

Proceed as follows to call the event list of a device:

Step	Description
1	Select the relevant device in the directory tree.
2	In the menu bar in the segment **Event list** click on **Show**.
	Result: The event list window opens (see picture above). If the list is empty, there are no events stored for this logger in the software database. Maybe the list has not yet been read out from the device.
3	In order to retrieve the current list from the device now, click the **Read** button.
	Result: The transfer of the event data from the device starts. A small window indicates the progress. After data transfer is finished, all alarms and GSM establishments of the respective device are shown in the event list. If the list still is empty, no events have been stored by the device.

Deleting events

You can remove events from the list and delete them in the software database by selecting them in the window and clicking the **Delete** button.

5.8 Exporting data in CSV format

Introduction

The data collected from a device and stored in the SDV-3 database can be exported in CSV ('Comma Separated Values') format. In doing so a file containing all logged value-time pairs line by line is saved to the hard disk or any other memory. The saved file can be accessed using any CSV-capable application (e.g. Microsoft Excel).

Export all data records

To export all the stored measurement data of one device, proceed as follows:

Step	Description
1	Select the device whose data you want to export in the directory tree.
2	In the multifunction bar in the segment **Measurement data** click on **Export**.
	Result: An Explorer window opens.
3	Browse to the desired target folder and save the data set there.

Export one data record

To export the data of one individual measurement, proceed as follows:

Step	Description
1	Select the device whose data you want to export in the directory tree.
2	In the multifunction bar in the segment **Measurement data** click on **Show data**.
	Result: A new window shows all measurement data records saved for this device (see page 67).
3	Select the relevant data record and click on **Export**.
	Result: An Explorer window opens.
4	Browse to the desired target folder and save the data record there.

6 Programming the unit using the SebaDataView-3 software

Introduction

Before use, the SebaFlow unit has to be properly configured. In doing so, you can specify the mobile network settings, the measuring channel assignment, the logging interval, the measuring time and the alarm conditions, among other things.

The first programming of the unit, before use, can only be done using the SebaDataView-3 Software and short-range radio. Later, the unit can be re-programmed from afar via the FTP server.

Requirements

To program the SebaFlow unit via short-range radio, the following requirements must be met:

- laptop with SebaDataView-3 software
- a radio interface must be connected to the computer (e.g. Log RI)
- the computer must be within the SebaFlow unit's wireless range
- the SebaFlow unit must be switched on

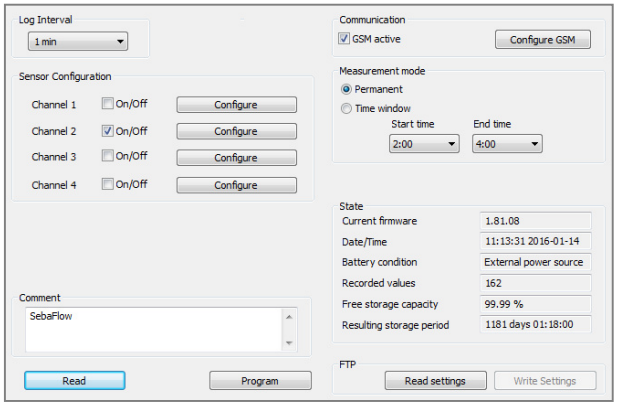
To program the SebaFlow unit from afar via FTP, the following requirements must be met:

- computer with SebaDataView-3 software
- Internet access
- the FTP access information must have been stored in the SDV-3 settings (see page 36)
- there must have been at least one data upload to the FTP server before
- the SebaFlow unit must be switched on

Procedure

In order to program the device, proceed as follows:

Step	Description
1	In the SDV-3 software, select the relevant device in the directory tree.
2	In the menu bar, click on **Program**.
	Result: The window for programming opens.



(continuation on next page)

Step	Description	
3	Retrieve the effective configuration data from the device. (This step is always necessary and must not be skipped.) ↙ ↘	
	If you want to read the data from the SebaFlow unit via short-range radio, click on **Read**.	If you want to download the data from the FTP server, click on **Read settings**.
	Result: The effective configuration data is read and displayed. Formerly inactive input fields are now available.	**Result:** The effective configuration data is downlloaded and displayed. Formerly inactive input fields are now available.
4	Enterthe required data or change it where necessary (see the following sections).	Change the configuration data where necessary (see the following sections).
5	To finish the entry, click on **Program**.	To finish the entry, click on **Write settings**.
	Result: The new configuration data will be transferred via radio to the SebaFlow unit and installed there immediately.	**Result:** The new configuration data is uploaded to the FTP server. From there, it will be downloaded to the SebaFlow unit at the next scheduled contact, where it will be immediately installed.

You find detailed information about the necessary programming steps in the following sections.

6.1 Selecting the logging interval

You can select the time interval in which the measured values are logged from the **Log Interval** drop-down list.

6.2 Configuring a measuring channel

Introduction

The unit has 4 measuring channels. The ultrasonic sensors of the system are always connected and assigned to measuring channel 2. The other channels are free for further sensors to be connected to the SebaFlow unit.

Depending on its configuration, up to 4 sensors can be connected to a logger. In order to evaluate the logged data in the right way, the logger needs to know which type of sensor is connected to which channel.

Make sure that the sensor configuration is consistent with the effective connection setup.

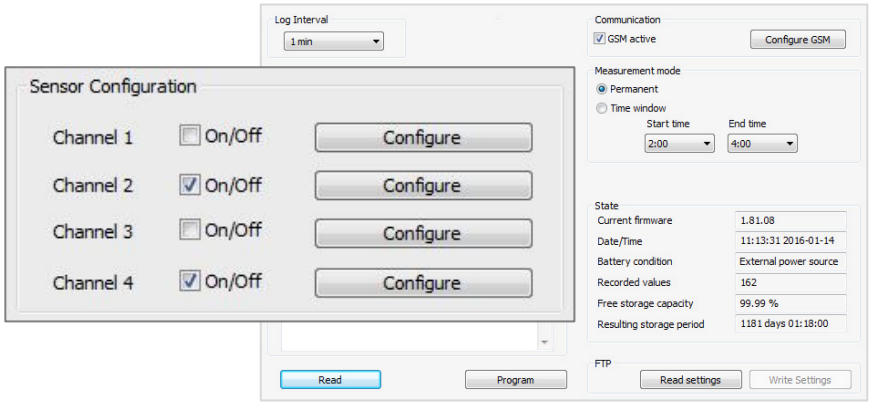
Make sure you enter the values in the same format as shown in the figures.

Activating channels

In the **Sensor configuration** segment the measuring channels are listed.

Specify which channels are in use ((connected to a sensor) during the upcoming operation. A channel can be activated by marking the respective **On/Off** checkbox exemplified by the figure below.

Only the measuring data of 'activated' channels will be recorded by the SebaFlow unit. De-activated channels will not be recorded.



Configuring a channel

After a channel has been activated, it has to be specified which type of sensor is connected to the channel.

Click the respective **Configure** button. A new window appears (see next page).

This step only applies to the channels 1, 3 and 4.

This step does not apply to channel 2, to which always the ultrasonic sensors of the SebaFlow system are connected.

NOTE

The measuring channel 2 has already been configured during the SebaFlow installation by a SebaKMT service partner.

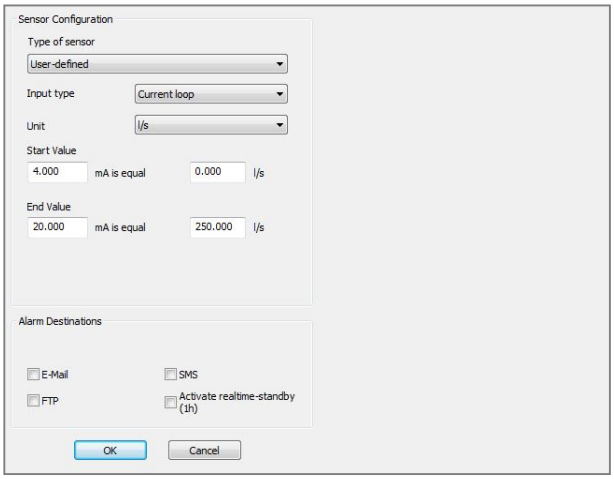
Once set, the configuration of the ultrasonic sensors usually must not be changed.

For questions about this topic, please contact your SebaKMT service partner.

6.2.1 Selecting the type of sensor

Introduction The physical value measured by the sensor is transformed into an electrical signal (e.g. voltage, pulses, frequency) which is used to transmit the data to the SebaFlow unit. In order to transform this carrier signal back into the original physical values, SebaFlowneeds to know how the ranges are correlated to each other.

Procedure Select the sensor connected to the channel from the drop-down list on the upper left of the window. If your sensor type is not contained in the drop-down list, select the **User-defined** entry (see next section).



The sensors contained in the list are parameterized. The signal conversion data are already populated and cannot be edited. Usually, no further configuration is required.

In some cases you have the chance to specify the unit for the recorded values - e.g. ‘m3/h‘ or ‘l/sec‘.

Furthermore, with some flow sensors you have the chance to compare your results to the values of a water meter. For this purpose, enter the water meters’ meter reading into the displayed field prior to the measurement. The SebaFlow unit will then accept this count as a starting point for the measurement.

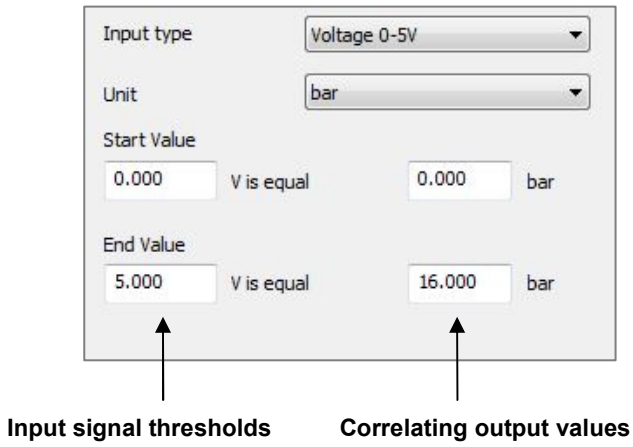
6.2.1.1 Configuring a ‘user defined’ sensor

Introduction

In the case of a ‘user defined’ sensor which is not contained in the mentioned Sensor type list, the input type (carrier) and the unit of the physical value have to be specified manually. Furthermore, the upper and lower thresholds of the input signal and the correlating measurement values have to be specified.

Configuring the input type

Perform the following steps to configure the input type of a ‘user defined’ sensor:

Step	Description
1	Select the type of input signalfrom the **Input type** drop-down list, e.g. ‘Voltage 0-5V'.
2	Select the unit of the physical value measured by the sensor from the **Unit** drop-down list, e.g. ‘bar’.
3	Depending on the selected input type and value, some additional fields may need to be populated with the upper and lower thresholds of the input signal and the correlating output values.  For detailed information about the input type and the ranges, please refer to the manual of the connected sensor.

Negative sign

O**utput values with a negative sign** are possible.

Example (temperature sensor): 0,0 V is equal to -20°C / -4°F
5,0 V is equal to 50°C / 122°F

With flow sensors, the positive/negative sign indicates the flow direction.

- Positive sign = forward flow
- Negative sign = backward flow

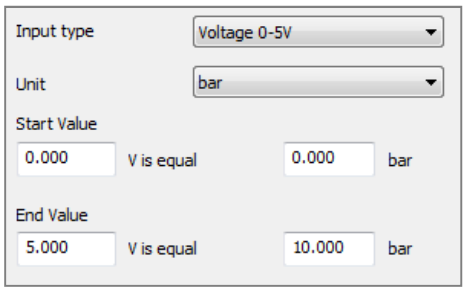
Example: 4 mA is equal to -5 l/s (means 5 l/s backward flow)
20 mA is equal to 5 l/s (means 5 l/s forward flow)

6.2.1.2 Input type examples

Input type ***Voltage*** A 10 bar pressure sensor with voltage output is connected to a channel of the logger.

Input type: Voltage 0-5V
Unit: bar

The lower limit of the measuring range (0 bar) is indicated by a voltage value of 0 V while the upper limit (10 bar) correlates with 5 V. As a result, the fields must be populated as follows:

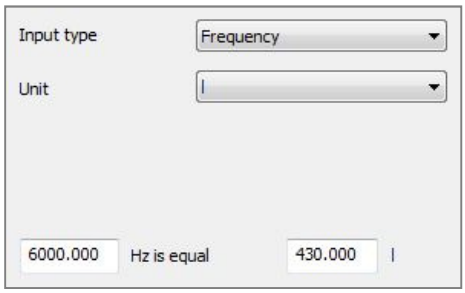


NOTE
The maximum permissable input voltage is 5 V.

Input type ***Frequency*** A level meter with frequency output is installed in a 430 l tank.

Input type: Frequency
Unit: l

The maximum level of 430 l is indicated by a frequency of 6000 Hz. As a result, the fields must be populated as follows:

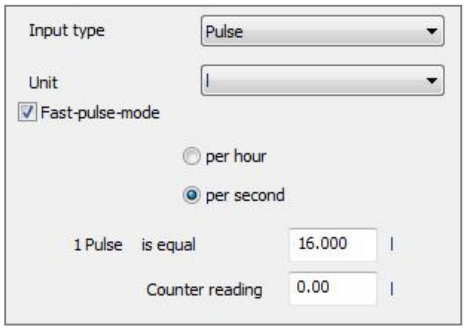


The maximum permissable frequency is 6000 Hz. If the connected sensor transmits higher frequencies, a frequency divider must be interconnected.

*Input type **Pulse***

A flowmeter with a digital pulse output is connected to a channel of the logger. The flowmeter transmits one pulse per 16 litres.

Input type: Pulse
Unit: l



The checkbox **Fast-pulse-mode** must be activated if a sensor is used with a pulse rate >50 Hz (ie, more than 50 pulses per second). Otherwise, it may result in inaccurate measurements.

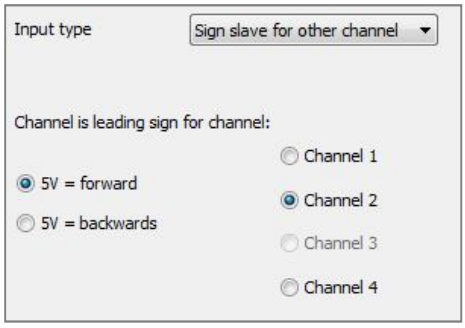
Select whether the flow shall be measured **per hour** or **per second**.

If you want to compare your results to the values of a water meter, you have the chance to enter the water meters' **counter reading** into the respective field prior to the measurement.

Determining the flow direction

Channel 2 is metering a fluids flow. In addition to the flow rate itself, the flow direction shall be determined. For this purpose, a sensor which indicates the flow direction by means of voltage values is connected to channel 3 of the logger.

Input type: Sign slave for other channel



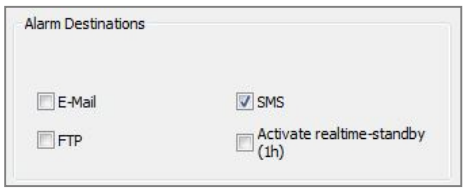
First of all, it has to be specified which direction is indicated by the 5 V value. A voltage value of 0 V automatically indicates the opposite direction.

Furthermore, the channel (flow), the determined flow direction applies to, has to be selected (in this case channel 2).

6.2.2 Configuring alarm conditions (Threshold monitoring)

Introduction SebaFlow can trigger certain alarm actions whenever a specified minimum or maximum threshold is crossed.

Configuring alarm destinations Specify under **Alarm Destinations** what is to happen once a threshold is crossed.



E-Mail … It will be sent an alert via e-mail to the stored destination addresses (see page 55).

SMS … It will be sent an alert via SMS to the stored phone numbers.

FTP … There will be an unscheduled measurement data upload to the FTP server.

1h Standby … After the alarm, the SebaFlow unit can be accessed via mobile radio for one hour. During this time, a real-time measurement (so called 'FTP StepTest‘) can be performed via the SebaKMT Cloud.

This option is interesting only for such SebaFlow units which are not connected to the mains.

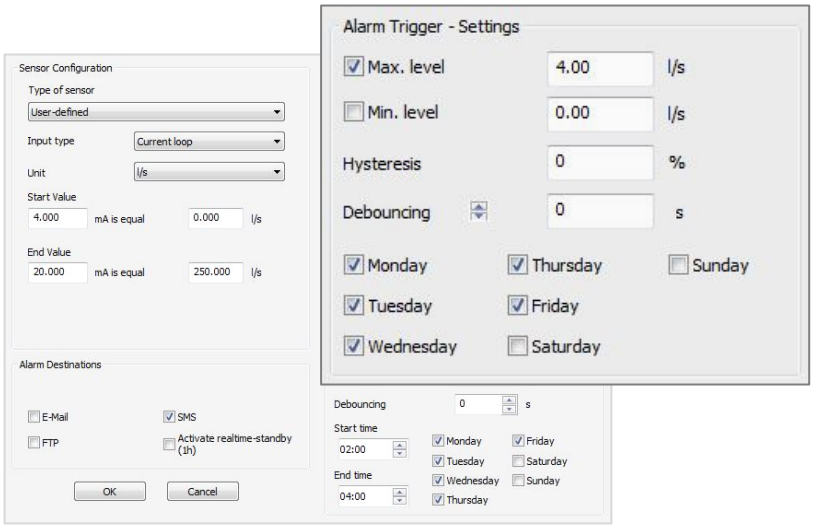
Explanation: SebaFlow units which are connected to the mains or any other permanent power supply, are ready for reception via mobile radio around the clock.

SebaFlow units which are not connected to a permanent supply, are for energy saving reasons not permanently available.

Only when this box is checked, it is ensured that the device is available after an alarm and a real-time measurement can be performed.

Configuring alarm trigger

Perform the following steps to configure the alarm thresholds:

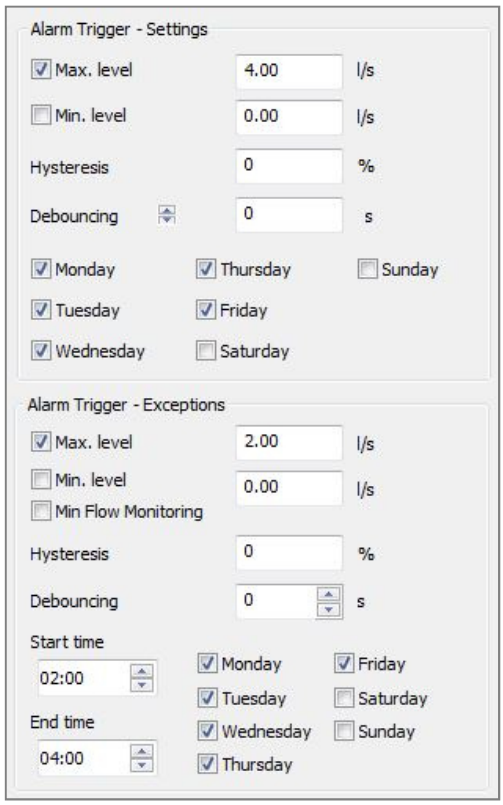
Step	Description
1	In the segment **Alarm Trigger – Settings**, specify whether there is a minimum and / or a maximum threshold to be monitored by activating the respective checkbox(es). 
2	Enter the minimum and / or the maximum threshold into the respective field(s). Entering values with a negative sign is possible. (e.g.: Min. level: -20°C / -4°F for a temperature sensor) With flow sensors, the sign indicates the direction of fluid flow. (e.g.: entering 5 l/s means 5 l/s forward flow, entering -5 l/s means 5 l/s backward flow)
3	A hysteresis can be defined for alarm input preventing a constant triggering of the alarm by measuring values fluctuating marginally around the threshold. Enter a **Hysteresis** value. The Hysteresis value in percent designates a symmetrical range around the specified threshold the input signal can fluctuate in without having an impact on the current alarm status. **Example:** (for a flow sensor) Max. level: 4.0 l/s Hysteresis: 10 % The alarm does not switch on until the input signal exceeds 110 % of the specified threshold (here 4.4 l/s). After this, the alarm does not switch off until the input signal falls below 90 % of the threshold (here 3.6 l/s). Select a **Debounce** value. The input signal must cross the specified threshold not only one time in order to switch an alarm on or off, but two times more after specific periods of time. These periods of time, called ‘debounce’, always are a multiple of the specified logging interval. **Example:** (for a flow sensor) Logging interval: 5 sec Max. level: 4.0 l/s Debounce: 15 sec The alarm does not switch on until the input signal crosses the specified threshold (4.0 l/s) three times in succession (15 seconds).

Step	Description
4	Select the days of the week alarming should be active on by marking the respective checkbox(es).

Defining exceptions

The segment **Alarm Trigger – Exceptions** offers the possibility to modify the alarm setting, entered under **Alarm Trigger - Settings**, for specific periods of time (certain days of the week or even periods of time in a day).

Example: The following picture shows a possible setting:

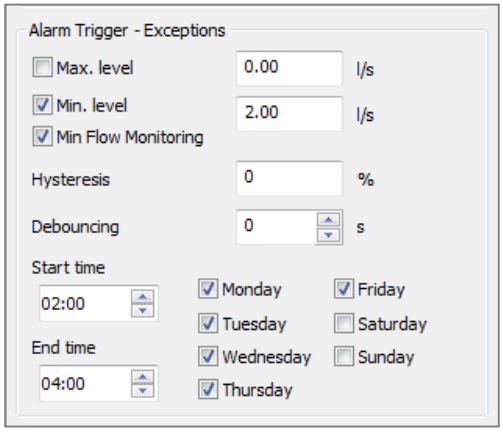


Here, from Monday to Friday an alarm is switched on as soon as the input signal exceeds a value of 4.0 l/s (set in **Alarm Trigger – Settings** segment), but from 2 to 4 o'clock in the morning a threshold of 2.0 l/s is valid (set in **Alarm Trigger – Exceptions** segment).

Minimum flow monitoring

If you mark the checkbox **Min Flow Monitoring** in the **Alarm trigger – Exceptions** segment, an alarm will be triggered at the end of a measuring period in the case that the flow rate has not been fallen below the specified minimum level throughout the entire measuring period.

Example: At the measuring point, in your experience, the flow falls below the value of 2.0 l/s between 2 and 4 o'clock in the morning. An alarm is to be triggered if the flow rate has not been fallen below 2.0 l/s throughout this period.



Procedure:
- mark the **Min Flow Monitoring** checkbox
- enter the value 2.0 to the **Min. level** input field
- select 2:00 as **Start time** from the drop-down list
- select 4:00 as **End time** from the drop-down list
- select the days of the week on which this monitoring should apply by marking the relevant checkboxes (here: Monday to Friday)

Result: If the flow rate falls below 2.0 l/s between 2 and 4 o'clock once or more often, no alarm will be triggered.

If the flow rate does not fall below 2.0 l/s, an alarm will be triggered at 4 o'clock.

6.2.3 Finishing the sensor configuration

Confirm and save the configuration of a channel by clicking the **OK** button.

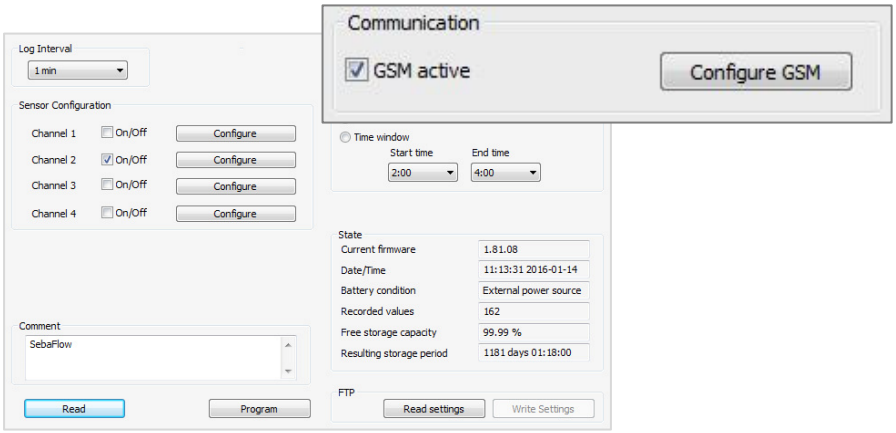
Perform the configuration for the remaining channels.

6.3 Configuring the mobile communication

SebaFlow sends data and alarm messages via mobile network. For that, a number of settings must be made.

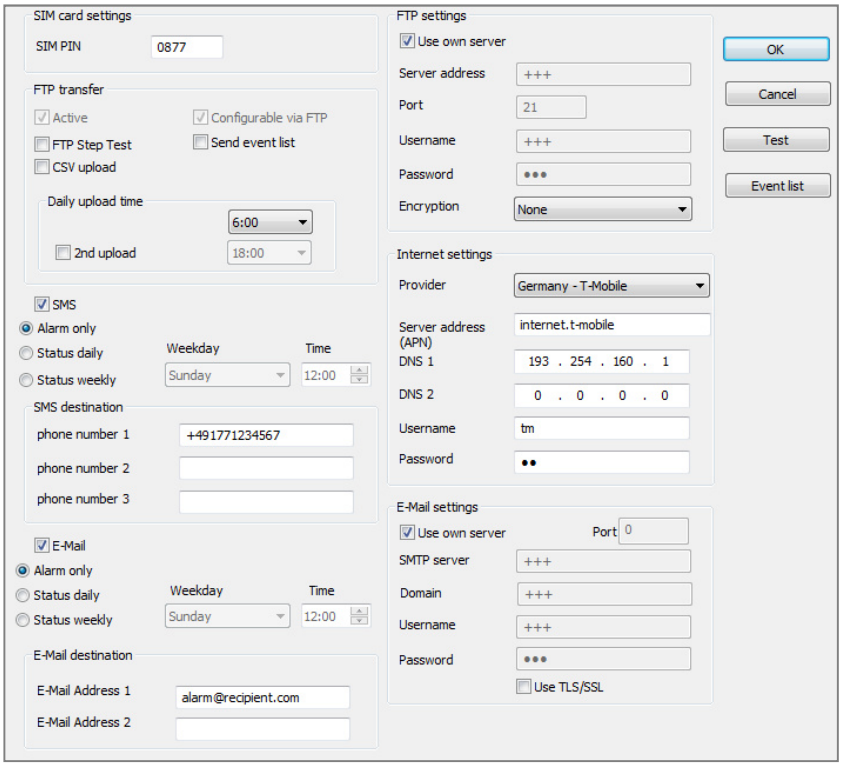
Usually, all the data required to set up mobile data transfer is provided within the mobile network contract. Further information can be obtained from the website or the hotline of the mobile network operator. If necessary, request guidance for setting up data communication in particular. SebaKMT cannot provide any specific technical advice in this case.

Procedure Proceed as follows:

Step	Description
1	Make sure that the SebaFlow unit is properly prepared for mobile communication (SIM card inserted, power supply established, network quality checked etc.).
2	In the **Communication** segment, select the **GSM active** checkbox. 
3	Click the **Configure GSM** button.
	Result: The mobile configuration dialogue appears.
4	Enter all the requested data. (You find more information about the configuration dialogue below in the text).
5	Carry out a mobile test (‘**GSM test**’) to check the functionality of the mobile connection. (You find more information about testing the GSM connection below in the text).
6	Confirm and save the settings by clicking the **OK** button.

6.3.1 Explanations about the mobile configuration dialogue

The picture shows the mobile configuration dialogue:



You find explanations on the individual segments of the configuration dialogue in the following table:

Segment	Parameter
SIM Card Settings	Enter the PIN code of the SIM card which is being used in the device (see mobile communication contract or ask your provider).
FTP transfer	**Daily upload time** Here you have the chance to specify the time at which the daily measuring data upload to the FTP server should take place. The time for the upload should be after the end of the measuring period. If you wish a second measuring data upload every day, select the **2nd upload** checkbox and select the time for it from the second list. **Send Event List** If you select this checkbox, simultaneously with the measuring data upload another file is sent to the FTP server containing the last 100 alarm events and GSM connection establishments of the device. These information can then be added to the device's 'event list' (see page 40).

Segment	Parameter
	CSV upload If you select this checkbox, in addition to each measurement data upload another upload takes place which contains the measuring data in CSV-format. Data in CSV format can be processed further, for example, using SCADA systems. A drop-down list appears. There, select how many readings each CSV data package should comprise. **FTP Step Test** This checkbox is not directly relevant when programming a SebaFlow unit. Keep it disabled. (The checkbox will automatically switch itself to 'active' once a so called 'StepTest' is in progress, which is a real-time measurement via the Internet. The StepTest is a SebaKMT-Cloud feature. The checkmark disappears once the StepTest is finished.)  **NOTE** For system reasons, the two options **CSV upload** and **FTP Step Test** cannot be used at the same time.
SMS checkbox and **E-Mail** checkbox	To enable the alarm messaging service via SMS (regular status messages and/or alarm messages), select the **SMS** checkbox. To enable the alarm messaging service via e-mail (regular status messages and/or alarm messages), select the **E-Mail** checkbox. Use the radio buttons to select, which messages you want to receive: • **Alarm only** You will receive alarm messages only (Each alarm message contains the ID of the sender device, sending date and time, number of the measuring channel concerned, alarm reason and alarm value.) • **Status daily** You will receive alarm messages and, beyond, a status message once a day (Each status message contains the ID of the sender device, sending date and time, the highest and the lowest measured values of each measuring channel (since the last message), flow rate (since the last message).) • **Status weekly** You will receive alarm messages and, beyond, a status message once a week Furthermore, specify the point in time and, if required, the day of the week, the status message shall be sent. (Time values are specified in 24-hour format.)
SMS Destination	Specify up to three mobile phone numbers here to which summary or alarm messages should be sent.
E-mail Destination	Specify up to two e-mail addresses here to which summary or alarm messages should be sent.

Segment	Parameter
FTP Settings	Enter the access data (**Server address, port, user name** and **password**) for the connected FTP server. These information can be found in your FTP usage contract or requested from the operator. SebaFlow supports encrypted data transmission to FTPS server. Select the desired **Encryption** from the drop-down list. Make sure that the correct Port is set in the FTP settings. If an encryption is used, the Port may probably need to be adjusted. The FTP server must support the selected encryption and be configured by the administrator accordingly. Maybe the access data for your FTP server are already stored in the database of the SebaDataView-3 software (see page 36). To use these stored data, select the **Use own server** checkbox. The data are then filled in automatically. The **Seba Demo Mode** checkbox offers the chance to use a demo FTP server run by SebaKMT. The respective data are filled in automatically. The logged measuring data will be transferred to this server. However, the Seba Demo Server is for short-term use and demonstration purposes only!
Internet Settings	Enter the data required for internet access (see mobile communication contract or ask your provider). If you can find your **Provider** in the drop-down list and you select it, then the aforementioned data will be entered automatically.
E-mail Settings	Enter the access data (**SMTP server address**, **user name** and **password**) for the e-mail account from which alarm or status messages are to be sent. (Usually, this kind of information can be obtained from the 'How to configure an e-mail client' tutorial on the providers' website. Username and password can be specified during the account setup procedure or can be requested from the operator of the mail account or from your system administrator. SebaKMT does not provide e-mail accounts.) SebaFlow supports encrypted e-mail transmission (TLS / SSL) via an SMTPS e-mail account. If you want to use encryption, select the checkbox **Use TLS / SSL**. Make sure that the correct Port is set in the email settings. If an encryption is used, the Port may probably need to be adjusted. The mail server must support the selected encryption and be configured accordingly. Maybe the access data for your e-mail account are already stored in the database of the SebaDataView-3 software (see page 36). To use these stored data, select the **Use own server** checkbox. The data are then filled in automatically.

Segment	Parameter
	The **Seba Demo Mode** checkbox offers the chance to use a demo account run by SebaKMT. The respective data are filled in automatically. However, the Seba Demo Account is for short-term use and demonstration purposes only!

6.3.2 Testing the mobile connection

By means of the so called 'GSM test' you have the chance to check the functionality of the mobile communication.

Requirements In order to perform a GSM test,

- the mobile configuration must have been already finished (see previous sections),
- a radio interface has to be connected to the computer (e.g. Log RI),
- the computer must be within the SebaFlow unit's wireless range,
- the SebaFlow unit must be switched on.

Procedure Proceed as follows to carry out a GSM test:

Step	Description
1	In the SDV-3 software open the mobile configuration dialogue of the respective device (see previous sections). (select the unit in the directory tree >> click on **Program** >> click on **Configure GSM**)
2	On the upper right of the window, click on the **Test** button.
	Result: The device dials into the mobile network. It sends a test SMS or e-mail respectively. Furthermore, it tries to create a test file in the target folder of your FTP server.

Test FTP file If the transmission has been successfully completed, you find a test file with the name *"ftp-test.txt"* on your FTP server. It contains date and time of the test.

Test SMS / e-mail All addressees should receive a SMS or e-mail containing the following information:

- Type of device and identification number
- Date and time of the test
- Signal quality
  0-1 … bad
  2-15 … average
  16-30 … good

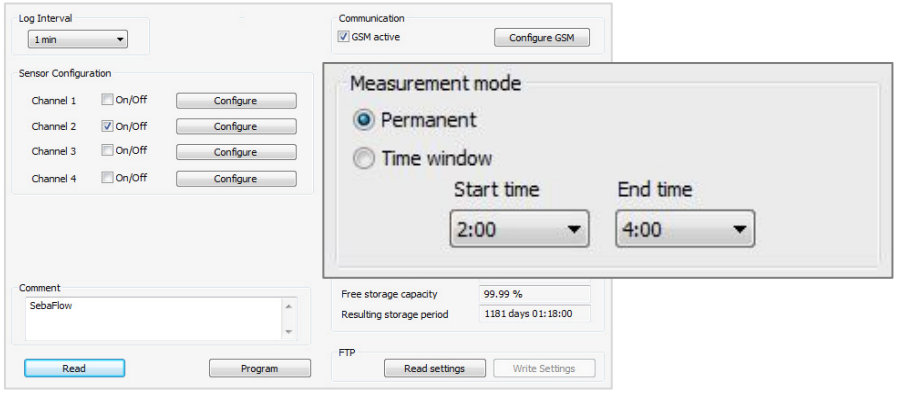
Debugging If no file is created in the folder of the FTP server or no SMS / e-mail has been received, the test failed. Then, use the **Event list** button to retrieve the event list (see page 40) from the device. There, information can be found which can help to identify the problem.

6.4 Adjusting the measuring period

Under **Measurement mode** you can specify the measuring period for the SebaFlow unit.

Select the **Permanent** radio button if the unit is intended to measure continously, without interruption.

Select the **Time window** radio button if you want to specify a daily measuring period. Use the two drop-down menus to select the **Start** and **End** of this period.



6.5 Device status

Some characteristic data about the device are listed under **State** (e.g. firmware version, system time etc.).

6.6 Finishing the programming

Adding a comment

By adding a comment to the **Comment** field you can take some notes, e.g., on the location of the device.

Transmitting the configuration data

In order to finalize the configuration…

… click on **Program** if you are programming the unit on site via short-range radio.

Result: The new configuration data will be transferred to the SebaFlow unit and installed immediately. A success message appears on the screen of the computer.

… click on **Write settings** if you are programming the unit from afar via the FTP server.

Result: The new configuration data is uploaded to the FTP server. From there it will be downloaded by the SebaFlow unit at the next scheduled contact, and then installed on the device.

7 Evaluating data via SebaKMT Cloud

7.1 Accessing measurement data

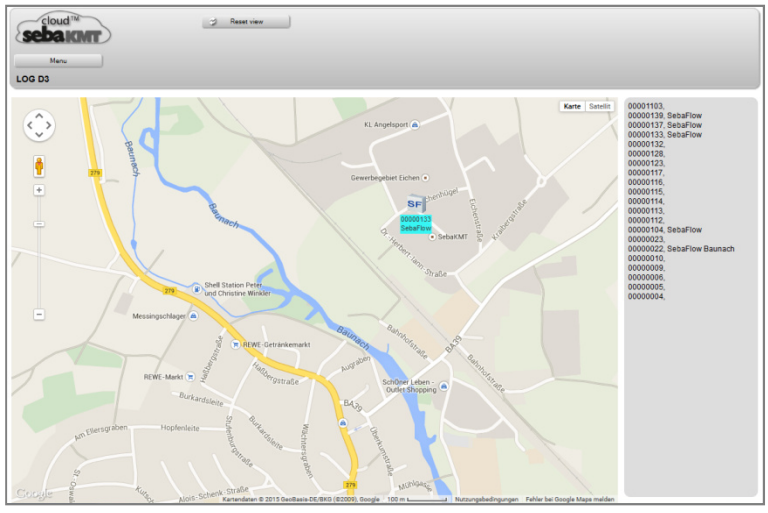
Measurement data that have been uploaded from the SebaFlow unit to an FTP server can be displayed online. This is done with the help of SebaKMT Cloud, SebaKMT's online analysis tool.

Requirements The following requirements must be met:

- computer with Internet access
- access to the SebaKMT Cloud (URL, username, password)

Procedure To access your SebaFlow unit in the SebaKMT Cloud, proceed as follows:

Step	Description
1	Open the webpage for the SebaKMT Cloud. (Your SebaKMT service partner will have provided you with the URL.)
2	Log in to the SebaKMT Cloud. (Your SebaKMT service partner will have provided you with a username and password.)
3	Under **LOG D3 / SebaFlow** in the start menu, choose the **Data** option.
	Result: The menu for administration of Log D-3 and SebaFlow units will open.



The map shows all units for which measurement data are available.

The same units are listed again to the right of the map.

You can enlarge and move the map around with the usual Google Maps tools.

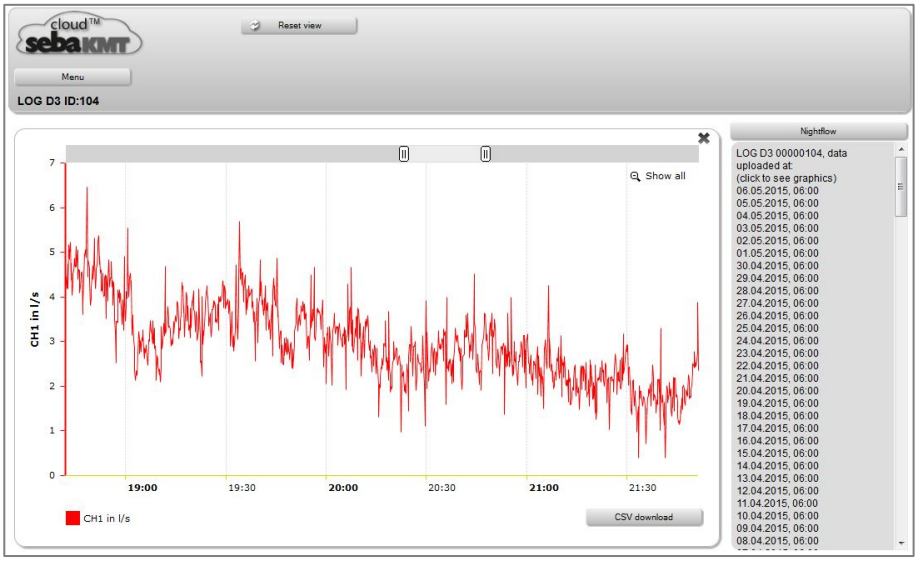
Use the **Menu** button to return to the main menu.

Use the **Reset View** button to go back to the previous menu.

4	To access the measurement data for a particular unit, click on the unit you want, either on the map or in the list.
	Result: The measurement data display screen will open.

7.2 About the measurement data display screen

The picture below shows the user interface for the display of measurement data.



Up to four traces can be shown, each in its own color. Each trace represents the measurement data from one of the unit's measurement channels.

CH1 ... Channel 1
CH2 ... Channel 2
CH3 ... Channel 3
CH4 ... Channel 4

The X axis represents the time course of each measurement. The Y axis displays the measured values.

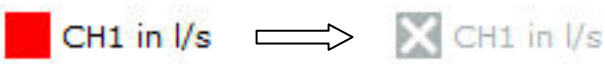
All available measurement datasets are listed to the right of the diagram. Each dataset represents one day's measurements, and is represented in the list by the date and time at which its measurement data were uploaded to the FTP server.

Accessing measurement data

In order to access the measurement data for a particular day, click on the corresponding date in the list at the right of the diagram.

Hiding a measurement channel

You can hide the trace for an individual measurement channel from the diagram view. To do this, click on the colored button for that channel (CH1 / CH2 / CH3 / CH4) under the diagram. The button is "grayed out".



To make the trace visible again, click on the grayed-out button.

Moving the cursor

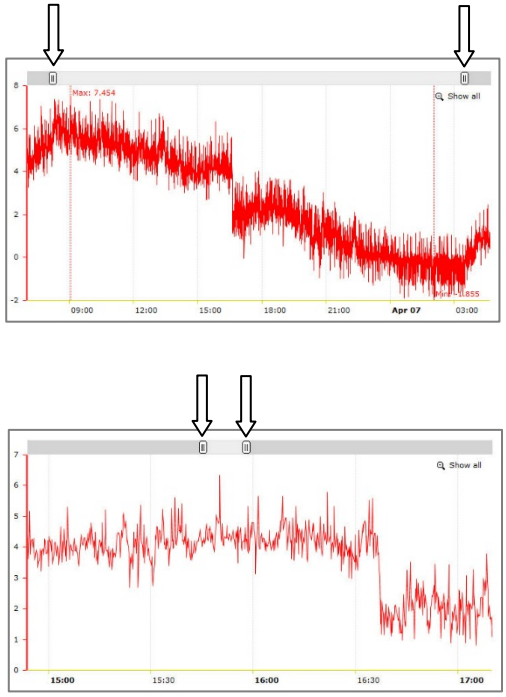
You can display the exact measurement value and the timestamp for each individual measurement in the trace.

When you move the mouse pointer into the diagram area, a vertical line called the cursor appears. Use the mouse to move this line along the measurement trace. The date and time of a single measurement is displayed at the bottom of the line. The exact measurement value for that measurement appears in a text field.

Zooming in

You can choose to restrict the diagram view to only part of the trace, i.e. to "zoom in" on that part.

Move the two sliders above the diagram left or right to indicate the part of the trace you want to display.



Click on **Show all** at the top of the diagram to "zoom out" and return to viewing the entire trace.

Exporting data

You can export the displayed measurement data from the SebaCloud as a CSV file and save it to a local storage device. The data can then be examined in any CSV-capable software tool, such as Microsoft Excel.

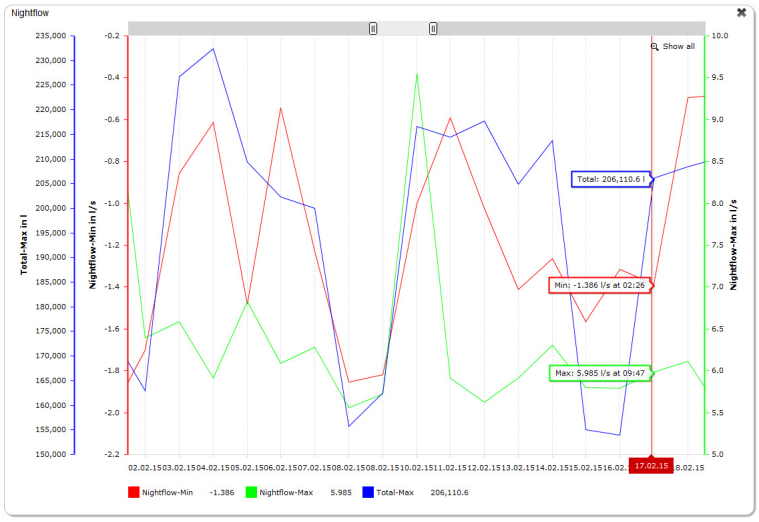
Nightflow

The highest and lowest measurement value for each day is saved separately by the internal data logger of the SebaFlow unit and then uploaded to SebaCloud.

Click on the **Nightflow** button. The measurement data display changes in Nightflow mode (see the next section).

7.3 About the Nightflow display

To view the time course of minimum and maximum flow values recorded by a SebaFlow unit, click on the **Nightflow** button at the top right of the measurement data display. The interface changes to Nightflow mode.



Three traces are shown in the diagram area:

Nightflow-Min	...	This trace is generated from the minimum values of the previous days' measurements.
Nightflow-Max	...	This trace is generated from the maximum values of the previous days' measurements.
Total-Max	...	This trace is generated from the total flow volumes of the previous days' measurements.

When you move the mouse pointer into the diagram area, a vertical line called the cursor appears. You can move this line along the traces, from one day to another.

The date of the measurement is displayed at the bottom of the line. The following three values are displayed in text fields:

Min	...	Lowest measurement value from this day's measurements.
Max	...	Highest measurement value from this day's measurements.
Total	...	Total flow volume from this day's measurements.

8 Evaluating data via computer with SebaDataView-3 software

8.1 'Realtime Measurement' function via short range radio

Using a laptop you have the chance to carry out a **real-time measurement** via short range radio on site and observe the data recording 'live'. Also a current measurement can be observed.

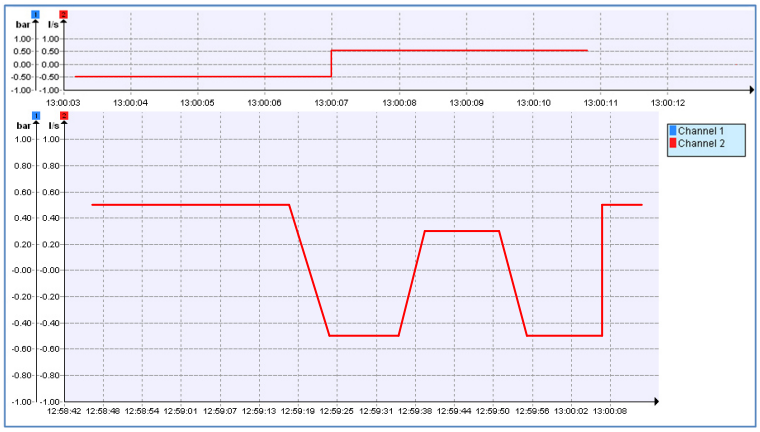
Requirements

The following requirements must be met:

- laptop with SebaDataView-3 software
- a radio interface must be connected to the computer (e.g. Log RI)
- the computer must be within the SebaFlow unit's wireless range
- the SebaFlow unit must be switched on

Procedure

Proceed as follows to retrieve and display live data:

Step	Description
1	Select the relevant device in the directory tree of the SDV-3 software.
2	In the menu bar in the segment **Communication**, click on **Realtime measurement**.
3	From the context menu select if the 'live' measuring values should be displayed numerically (select: **digital**) or graphically (select: **graph**). In the **digital view** the measured value of each active channel is displayed numerically in a table. In the **graphical view**, the continuous curves in the top diagram show the last 10 taken values. The bottom diagram shows the entire realtime measurement:  **Result:** If a measurement already is in process, the values of this recording are displayed. Otherwise, a new measurement is started and the taken 'live' data is shown.

You finish the realtime measurement function using the **Stop** button or by closing the display window.

Storing the data set

After having closed the graphical view, a dialogue appears asking if you'd like to store the data set of this realtime measurement. If you answer with **Yes**, the measuring data is stored in the software database and can from now on be found in the data records list. (see page 67).

8.2 Retrieving measurement data

The SebaFlow device uploads the recorded measuring data to an FTP server that has been set up for this purpose before. From there, the data can be downloaded to a computer and further processed using the SebaDataView-3 software.

If necessary, the measuring data can also be read directly from the SebaFlow device with a laptop via short range radio.

8.2.1 Downloading data from the FTP server

Measuring data uploaded to a FTP server can from there be downloaded to your computer.

Requirements The following requirements must be met:

- computer with SDV-3 software and Internet access
- the FTP access data must have been entered and stored in the database of the software (see page 36)

Procedure Proceed as follows to download data from the FTP server:

Step	Description
1	Select the relevant device in the directory tree of the SDV-3 software.
2	In the menu bar in the segment **Measurement data**, click on **Read**.
3	Select **FTP** from the appearing context menu.
	Result: The download starts. In a small window the progress of the data transfer is displayed.
4	As soon as the download is finished, click the **OK** button.
	Result: The small window closes. Measuring data and event list data of the respective device are now available in the software database and can be displayed.

8.2.2 Reading out data directly from the SebaFlow unit

Measuring data can be read from the SebaFlow device with your laptop .

Requirements The following requirements must be met:

- laptop with SebaDataView-3 software
- a radio interface must be connected to the computer (e.g. Log RI),
- the computer must be within the SebaFlow unit's wireless range
- the SebaFlow unit must be switched on

Procedure Proceed as follows:

Step	Description
1	Select the relevant device in the directory tree of the SDV-3 software.
2	In the menu bar in the segment **Measurement data**, click on **Read**.
3	Select **RF** from the appearing context menu.
	Result: The connection between the computer and the device is established and the data readout starts. In a small window the progress of the data transfer is displayed. As soon as the transfer is completed, a new window opens and the measuring data is displayed (see page 68).

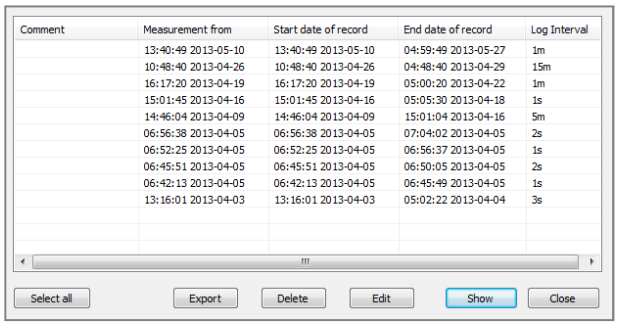
8.3 Managing saved measurement data ('Record list')

In the database of the software, a large number of measurement data records can be saved for each device.

You can display all measurement data records of a device in a list. Proceed as follows:

Step	Description
1	Select the relevant device in the directory tree of the SDV-3 software.
2	In ihe menu bar in the segment **Measurement data**, click on **Show data**.
	Result: A new window opens. It shows a table where all measurement data records of the device are listed (see figure). If only one measurement data record is saved for the device, this window does not appear. Instead, the measurement data display opens immediately.

Data records list The window contains a table in which all measurement data records saved for this device in the database of the software are listed. These are results from standard measurements as well as recordings of real-time measurements.



Functions Using the buttons at the bottom of the window, you can call up and manage the individual measurement data records.

Select the relevant line in the list and click the desired button:

Show ... The measurement data is shown. (Alternatively, you can simply double-click the respective line in the table.)

Edit ... A window that can be used to edit the comment text for this measurement opens.

Delete … The data record is deleted from the database of the software. Answer the confirmation prompt with **Yes**.

Export … The data record can be exported and stored in CSV format to the hard disk or any other memory. The saved file can be accessed using any CSV-capable application (e.g. Microsoft Excel).

8.4 Displaying measurement data

8.4.1 Calling up a measurement

Calling up the most recent measurement

To call up the most recently saved measurement data of a device, double-click this device in the directory tree of the software. The window for displaying the measurement data opens (see below).

Calling up a particular measurement

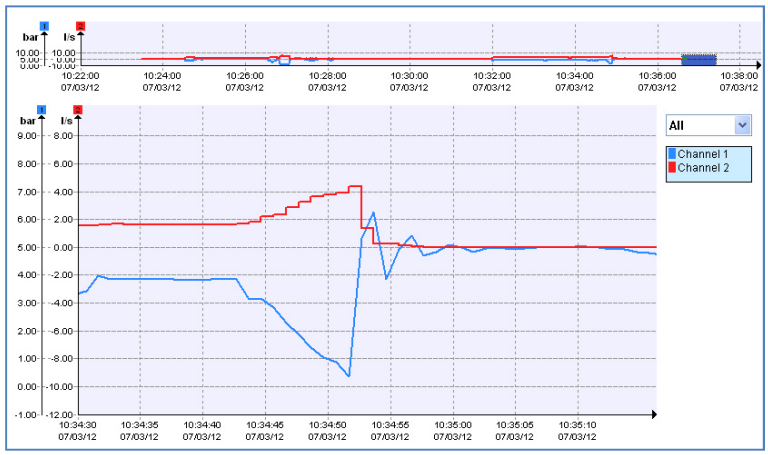
To call up the results of a particular measurement, proceed as follows:

Step	Description
1	Select the relevant device in the directory tree.
2	In the menu bar in the segment **Measurement data**, click on **Show data**.
	Result: The data records list opens. If only one measurement data record is saved for this device, this list does not appear. Instead, the measurement data display opens immediately.
3	Select the required data record in the list and click **Show** or double-click the concerning line.
	Result: The measurement data is shown.

8.4.2 Using the measurement data display

Design

The following figure shows the window for displaying measurement data:



In the top diagram the entire measurement is displayed.

Up to four different coloured curves can be seen. Each curve is representing the results of one measuring channel.

The bottom diagram is used for viewing enlarged subareas of the measurement curves .

The **X-axis** corresponds to the chronological sequence of a measurement. The **Y-axis** corresponds to the measured values.

Selecting a channel

To focus on the data of one measuring channel you can either select the channel from the blue info window on the right or click directly on the respective curve in the bottom diagram.

The curve is shifted to the foreground. If there are alarm thresholds set for this channel, they are indicated by horizontal black lines.

If the curve represents a pressure measurement, all recorded pressure surges are indicated by vertical black lines.

Some important characteristics of the measurement are displayed in the blue window. The information relate exclusively to the section of the measurement that is currently displayed in the bottom diagram.

Click anywhere in the diagram to end focusing on one individual channel.

Specifying the zoom area

You have the following options for displaying an enlarged subarea of the overall measurement curve:

- **Free selection of a section of the curve**

  Select the desired area of the measurement in the top diagram. To do this, click inside the diagram, hold down the left mouse button and guide the cursor diagonally across the relevant area. The selected area will be displayed in the bottom diagram.

  If you click the coloured area that was selected and hold down the left mouse button, you can freely move the selection within the top diagram. This function is practical for use as a “magnifying glass”.

- **Selecting time frames from the list**

  Using the drop-down list on the right next to the diagram, you can restrict the time frame of the displayed area to a month, a week, a day or an hour. By means of the "User-defined" option you have the the chance to specify the start and end time of the span to be displayed.

Moving in the diagram

Using the mouse wheel (if available), you can move within the diagram along the axes:

- **Mouse wheel** … Movement along the X-axis
- **Shift key + mouse wheel** … Movement along the Y-axis

Other functions

A **context menu** opens after you right-click in the diagram view. A number of other functions for working with the diagram are available here:

Function	Description
Zoom in	You can use this function to select an area in the diagram for enlarged display. The cursor symbol switches from ↖ to +. Left-click in the diagram, hold down the button and guide the cursor to the desired area.
Pan	You can use this function to grab and move the displayed measurement area. The cursor symbol switches from ↖ to ✣. Left-click in the diagram, hold down the button and freely move the image section in all directions.
Select	Use this command to end the functions **Zoom in** and **Pan**.
Measure	You can use this function to display the time span and pressure difference between any two points on the displayed measurement curve. Left-click in the diagram on the desired starting point, hold down the button and guide the cursor to the desired ending point. The time span between the two points is displayed.

(continuation on next page)

Function	Description
Insert label	You can use this function to create text fields (labels) within the diagram. These fields can be used to add comments to any points in the diagram. Labels remain saved after the diagram display is closed. Edit text … Double-click the text field – input text – then click once outside of the field Move label … Click the text field once – then "grab onto it" (click it and hold down the left mouse button) and move it wherever you would like Delete label … Click the text field once – then press the "Delete" key on your keyboard
Hide / Show grid	You can use this option to decide whether there should be a grid shown in the bottom diagram's background or not.

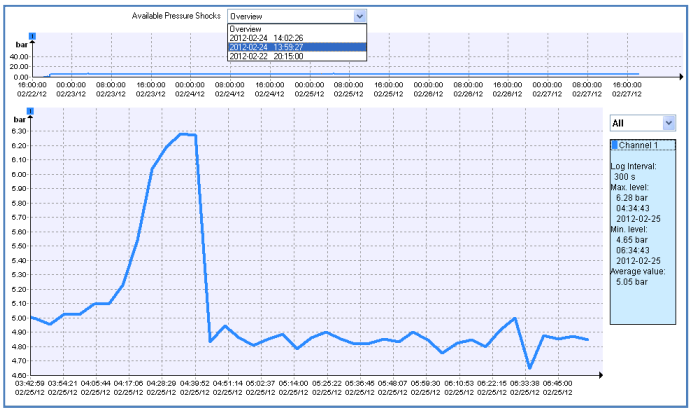
Reset initial view If you want to cancel all active functions in the window and return to the initial diagram view, right-click in the bottom diagram and select **Reset** from the appearing context menu.

Print If you want to print the actual diagram view, right-click in the bottom diagram and select **Print** from the appearing context menu.

8.4.3 Displaying pressure surges

If a pressure sensor of the type "Seba StandardPressure" is connected to the SebaFlow device, there may have been recorded pressure surges in addition to the standard pressure measurement. You will find a **drop-down list** at the very top of the displayed window. All recorded pressure surges are in this list.

In order to display the one-minute recording of an individual pressure fluctuation, click the desired recording time point in this list. The corresponding measurement curve will be displayed in the bottom diagram.



With the tools described above, you can view the recording in detail and carry out a closer analysis.

To return to the standard measurement display, click **Overview** in the drop-down list.

Tento symbol indikuje, že výrobek nesoucí takovéto označení nelze likvidovat společně s běžným domovním odpadem. Jelikož se jedná o produkt obchodovaný mezi podnikatelskými subjekty (B2B), nelze jej likvidovat ani ve veřejných sběrných dvorech. Pokud se potřebujete tohoto výrobku zbavit, obraťte se na organizaci specializující se na likvidaci starých elektrických spotřebičů v blízkosti svého působiště.

Dit symbool duidt aan dat het product met dit symbool niet verwijderd mag worden als gewoon huishoudelijk afval. Dit is een product voor industrieel gebruik, wat betekent dat het ook niet afgeleverd mag worden aan afvalcentra voor huishoudelijk afval. Als u dit product wilt verwijderen, gelieve dit op de juiste manier te doen en het naar een nabij gelegen organisatie te brengen gespecialiseerd in de verwijdering van oud elektrisch materiaal.

This symbol indicates that the product which is marked in this way should not be disposed of as normal household waste. As it is a B2B product, it may also not be disposed of at civic disposal centres. If you wish to dispose of this product, please do so properly by taking it to an organisation specialising in the disposal of old electrical equipment near you.

Този знак означава, че продуктът, обозначен по този начин, не трябва да се изхвърля като битов отпадък. Тъй като е B2B продукт, не бива да се изхърля и в градски пунктове за отпадъци. Ако желаете да извърлите продукта, го занесете в пункт, специализиран в изхвърлянето на старо електрическо оборудване.

Dette symbol viser, at det produkt, der er markeret på denne måde, ikke må kasseres som almindeligt husholdningsaffald. Eftersom det er et B2B produkt, må det heller ikke bortskaffes på offentlige genbrugsstationer. Skal dette produkt kasseres, skal det gøres ordentligt ved at bringe det til en nærliggende organisation, der er specialiseret i at bortskaffe gammelt el-udstyr.

Sellise sümboliga tähistatud toodet ei tohi käidelda tavalise olmejäätmena. Kuna tegemist on B2B-klassi kuuluva tootega, siis ei tohi seda viia kohalikku jäätmekäitluspunkti. Kui soovite selle toote ära visata, siis viige see lähimasse vanade elektriseadmete käitlemisele spetsialiseerunud ettevõttesse.

Tällä merkinnällä ilmoitetaan, että kyseisellä merkinnällä varustettua tuotetta ei saa hävittää tavallisen kotitalousjätteen seassa. Koska kyseessä on yritysten välisen kaupan tuote, sitä ei saa myöskään viedä kuluttajien käyttöön tarkoitettuihin keräyspisteisiin. Jos haluatte hävittää tämän tuotteen, ottakaa yhteys lähimpään vanhojen sähkölaitteiden hävittämiseen erikoistuneeseen organisaatioon.

Ce symbole indique que le produit sur lequel il figure ne peut pas être éliminé comme un déchet ménager ordinaire. Comme il s'agit d'un produit B2B, il ne peut pas non plus être déposé dans une déchetterie municipale. Pour éliminer ce produit, amenez-le à l'organisation spécialisée dans l'élimination d'anciens équipements électriques la plus proche de chez vous.

Cuireann an siombail seo in iúl nár cheart an táirgeadh atá marcáilte sa tslí seo a dhiúscairt sa chóras fuíoll teaghlaigh. Os rud é gur táirgeadh ghnó le gnó (B2B) é, ní féidir é a dhiúscairt ach oiread in ionaid dhiúscartha phobail. Más mian leat an táirgeadh seo a dhiúscairt, déan é a thógáil ag eagraíocht gar duit a sainfheidhmíonn i ndiúscairt sean-fhearas leictrigh.

Dieses Symbol zeigt an, dass das damit gekennzeichnete Produkt nicht als normaler Haushaltsabfall entsorgt werden soll. Da es sich um ein B2B-Gerät handelt, darf es auch nicht bei kommunalen Wertstoffhöfen abgegeben werden. Wenn Sie dieses Gerät entsorgen möchten, bringen Sie es bitte sachgemäß zu einem Entsorger für Elektroaltgeräte in Ihrer Nähe.

Αυτό το σύμβολο υποδεικνύει ότι το προϊόν που φέρει τη σήμανση αυτή δεν πρέπει να απορρίπτεται μαζί με τα οικιακά απορρίμματα. Καθώς πρόκειται για προϊόν B2B, δεν πρέπει να απορρίπτεται σε δημοτικά σημεία απόρριψης. Εάν θέλετε να απορρίψετε το προϊόν αυτό, παρακαλούμε όπως να το παραδώσετε σε μία υπηρεσία συλλογής ηλεκτρικού εξοπλισμού της περιοχής σας.

Ez a jelzés azt jelenti, hogy az ilyen jelzéssel ellátott terméket tilos a háztartási hulladékokkal együtt kidobni. Mivel ez vállalati felhasználású termék, tilos a lakosság számára fenntartott hulladékgyűjtőkbe dobni.Ha a terméket ki szeretné dobni, akkor vigye azt el a lakóhelyéhez közel működő, elhasznált elektromos berendezések begyűjtésével foglalkozó hulladékkezelő központhoz.

Questo simbolo indica che il prodotto non deve essere smaltito come un normale rifiuto domestico. In quanto prodotto B2B, può anche non essere smaltito in centri di smaltimento cittadino. Se si desidera smaltire il prodotto, consegnarlo a un organismo specializzato in smaltimento di apparecchiature elettriche vecchie.

Šī zīme norāda, ka iztrādājumu, uz kura tā atrodas, nedrīkst izmest kopā ar parastiem mājsaimniecības atkritumiem. Tā kā tas ir izstrādājums, ko cits citam pārdod un lieto tikai uzņēmumi, tad to nedrīkst arī izmest atkritumos tādās izgāztuvēs un atkritumu savāktuvēs, kas paredzētas vietējiem iedzīvotājiem. Ja būs vajadzīgs šo izstrādājumu izmest atkritumos, tad rīkojieties pēc noteikumiem un nogādājiet to tuvākajā vietā, kur īpaši nodarbojas ar vecu elektrisku ierīču savākšanu.

Šis simbolis rodo, kad juo paženklinto gaminio negalima išmesti kaip paprastų buitinių atliekų. Kadangi tai B2B (verslas verslui) produktas, jo negalima atiduoti ir buitinių atliekų tvarkymo įmonėms. Jei norite išmesti šį gaminį, atlikite tai tinkamai, atiduodami jį arti jūsų esančiai specializuotai senos elektrinės įrangos utilizavimo organizacijai.

Dan is-simbolu jindika li l-prodott li huwa mmarkat b'dan il-mod m'għandux jintrema bħal skart normali tad-djar. Minħabba li huwa prodott B2B , ma jistax jintrema wkoll f'ċentri ċiviċi għar-rimi ta' l-iskart. Jekk tkun tixtieq tarmi dan il-prodott, jekk jogħġbok għamel dan kif suppost billi tieħdu għand organizzazzjoni fil-qrib li tispeċjalizza fir-rimi ta' tagħmir qadim ta' l-elettriku.

Dette symbolet indikerer at produktet som er merket på denne måten ikke skal kastes som vanlig husholdningsavfall. Siden dette er et bedriftsprodukt, kan det heller ikke kastes ved en vanlig miljøstasjon. Hvis du ønsker å kaste dette produktet, er den riktige måten å gi det til en organisasjon i nærheten som spesialiserer seg på kassering av gammelt elektrisk utstyr.

Ten symbol oznacza, że produktu nim opatrzonego nie należy usuwać z typowymi odpadami z gospodarstwa domowego. Jest to produkt typu B2B, nie należy go więc przekazywać na komunalne składowiska odpadów. Aby we właściwy sposób usunąć ten produkt, należy przekazać go do najbliższej placówki specjalizującej się w usuwaniu starych urządzeń elektrycznych.

Este símbolo indica que o produto com esta marcação não deve ser deitado fora juntamente com o lixo doméstico normal. Como se trata de um produto B2B, também não pode ser deitado fora em centros cívicos de recolha de lixo. Se quiser desfazer-se deste produto, faça-o correctamente entregando-o a uma organização especializada na eliminação de equipamento eléctrico antigo, próxima de si.

Acest simbol indică faptul că produsul marcat în acest fel nu trebuie aruncat ca şi un gunoi menajer obişnuit. Deoarece acesta este un produs B2B, el nu trebuie aruncat nici la centrele de colectare urbane. Dacă vreţi să aruncaţi acest produs, vă rugăm s-o faceţi într-un mod adecvat, ducând-ul la cea mai apropiată firmă specializată în colectarea echipamentelor electrice uzate.

Tento symbol znamená, že takto označený výrobok sa nesmie likvidovať ako bežný komunálny odpad.Keďže sa jedná o výrobok triedy B2B, nesmie sa likvidovať ani na mestských skládkach odpadu. Ak chcete tento výrobok likvidovať, odneste ho do najbližšej organizácie, ktorá sa špecializuje na likvidáciu starých elektrických zariadení.

Ta simbol pomeni, da izdelka, ki je z njim označen, ne smete zavreči kot običajne gospodinjske odpadke. Ker je to izdelek, namenjen za druge proizvajalce, ga ni dovoljeno odlagati v centrih za civilno odlaganje odpadkov. Če želite izdelek zavreči, prosimo, da to storite v skladu s predpisi, tako da ga odpeljete v bližnjo organizacijo, ki je specializirana za odlaganje stare električne opreme.

Este símbolo indica que el producto así señalizado no debe desecharse como los residuos domésticos normales. Dado que es un producto de consumo profesional, tampoco debe llevarse a centros de recogida selectiva municipales. Si desea desechar este producto, hágalo debidamente acudiendo a una organización de su zona que esté especializada en el tratamiento de residuos de aparatos eléctricos usados.

Den här symbolen indikerar att produkten inte får blandas med normalt hushållsavfall då den är förbrukad. Eftersom produkten är en så kallad B2B-produkt är den inte avsedd för privata konsumenter, den får således inte avfallshanteras på allmänna miljö- eller återvinningsstationer då den är förbrukad. Om ni vill avfallshantera den här produkten på rätt sätt, ska ni lämna den till myndighet eller företag, specialiserad på avfallshantering av förbrukad elektrisk utrustning i ert närområde.