

## User Manual

### Flow and Pressure Meter TDM 300

#### Mess- und Ortungstechnik Measuring and Locating Technologies

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Elektrizitätsnetze  
Power Networks



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Kommunikationsnetze  
Communication Networks



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Rohrleitungsnetze  
Water Networks



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Abwassernetze  
Sewer Systems



---

Leitungsortung  
Line Locating





## 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.

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## 1 Safety Instructions

### 1.1 General Safety Instructions and Warnings



- There is a risk of injury when dealing with water under high pressure! Always be prudent and careful.
- Special hygienic requirements apply when working on the drinking water network. Pay attention to the relevant rules and regulations.
- 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.
- The indicated degree of protection can only be ensured if plugs or the provided protection caps are put in all sockets of the device.
- The plugs of the supplied connection cables are only compliant to the indicated degree of protection as long as they are plugged in. Plugs which are not connected or which are connected in a wrong way are not protected from water and dust ingress.
- If the O-ring seal of a socket is obviously damaged, it must be replaced in order to ensure the total protection against water and dust ingress.
- Due to the high pressure under which the TDM 200 is operated, all movable parts (e.g. tubes) have to be properly fastened to the device. The device must not be operated if parts are loose.
- Under no circumstances disassemble the machine while it is under pressure.
- Turn off the power before cleaning the device.
- Do not clean the device with aggressive products such as solvents or spirits to avoid damaging the measuring electrode.
- Two persons are required to transport the device. Both must wear safety shoes with steel toe cap.





People who have been recommended to avoid being near strong magnetic fields for health reasons (e.g. because of a pacemaker) are not allowed to operate the device / system.

### 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
<b>CAUTION</b>	Indicates a potential hazard which may result in moderate or minor injury if not avoided.
<b>NOTICE</b>	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 Function

With the TDM 300 measuring system from SebaKMT, you can determine the flow rate and pressure of the water in a pipe system. The device can be used for inflow measurements, night minimum measurements and load measurements, among other applications.

With the internal pressure sensor, in addition to the standard measurement of water pressure in the pipe, it is also possible to document sudden rises and drops in pressure (hereinafter referred to as “pressure surges”).

Communication with the TDM 300 is wireless. The device has an interface for short-range radio and an integrated GSM modem for cellular networks.

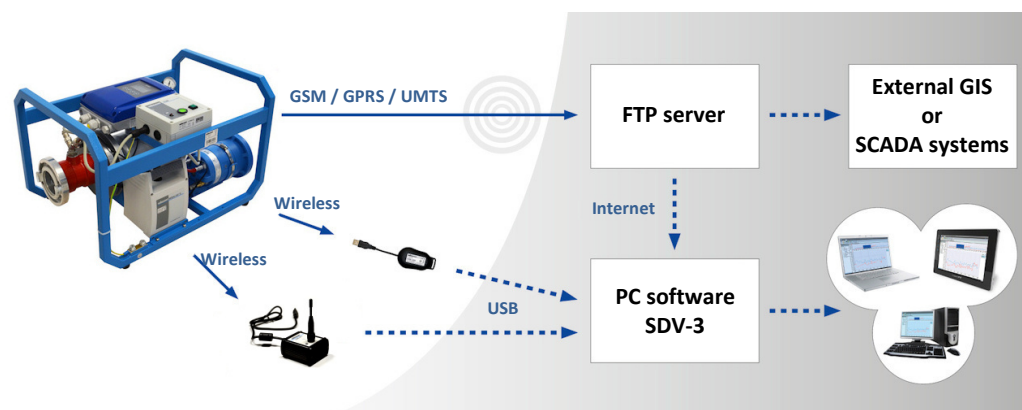
The recorded measured data is stored in the device. From there it can be read out over the short-range radio, either with the laptop or with a reader from SebaKMT.

Thanks to the integrated GSM module, the TDM 300 can regularly send the measured data to an FTP server over the cellular connection. From there the data can be downloaded and processed further. In addition, the data can be evaluated “online” using the SebaCLOUD or transferred to an external SCADA system.

Programming of the device before the measurement is performed with a PC/laptop and SebaDataView 3 software over short-range radio. It is also possible to change the programming “online” from an office.

The device can send alarm notifications via SMS or e-mail when defined thresholds are exceeded during the measurement. It is thus suitable for “monitoring” tasks.

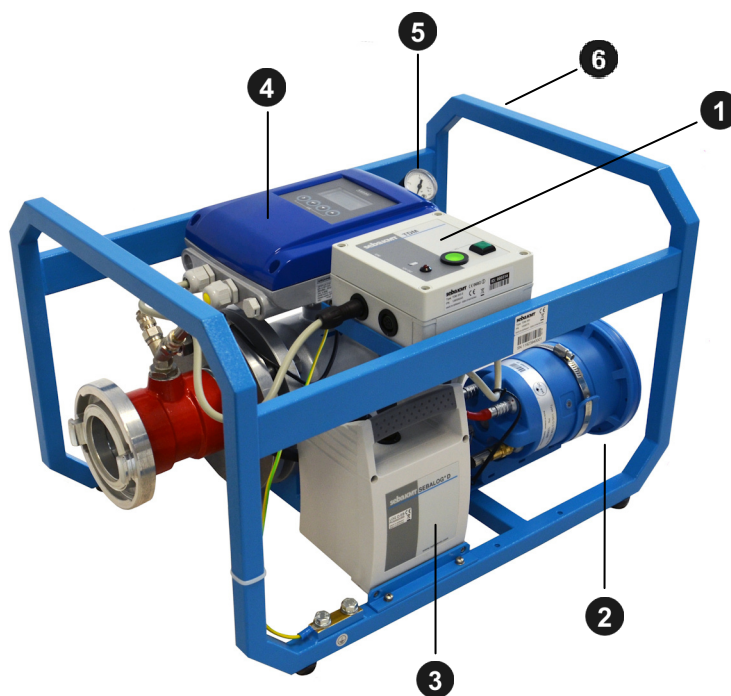
Using the “real-time measurement” function, a measurement can be carried out and observed “live” on a computer.



## 2.2 Design

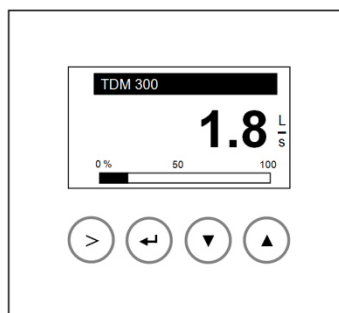
**Modules** The TDM 300 is available as a “portable” measuring system or also permanently installed in testing vehicles. The individual components of the system do not differ in both variants.

The following figures shows the portable version of the TDM 300, in which all modules are housed in a carrying frame.



Element	Description
1	<b>Electronics module</b> with on/off button, charging indicator light and 12 V socket
2	<b>Logger module (contains data storage and GSM modem)</b> with SIM card slot and socket for the GSM antenna
3	<b>Battery module</b>
4	<b>Flow sensor with transducer</b>
5	<b>Analogue pressure gauge</b>
6	<b>Carrying frame</b>

*Flow sensor with transducer* The transducer **4** of the TDM 300 has its own display and controls. By default, the display shows the current flow in litres/second.

**NOTE**

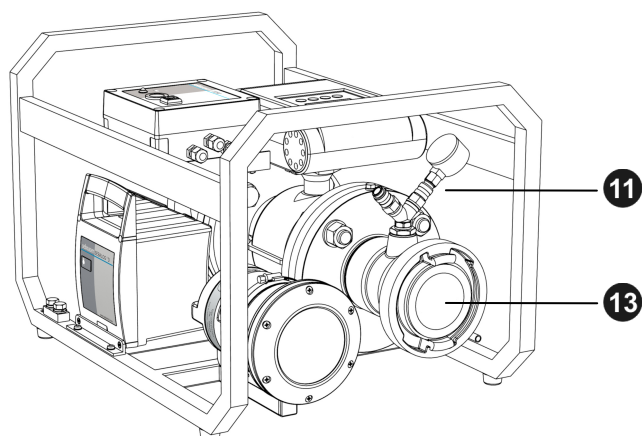
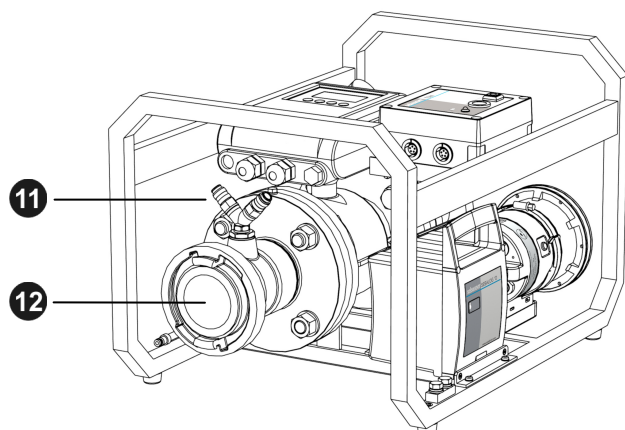
Do not make any changes to the pre-set parameters! This would distort the output measurements.

*Electronics module* The following excerpt shows the electronics module of the TDM 300 with the connections and the control and display elements:



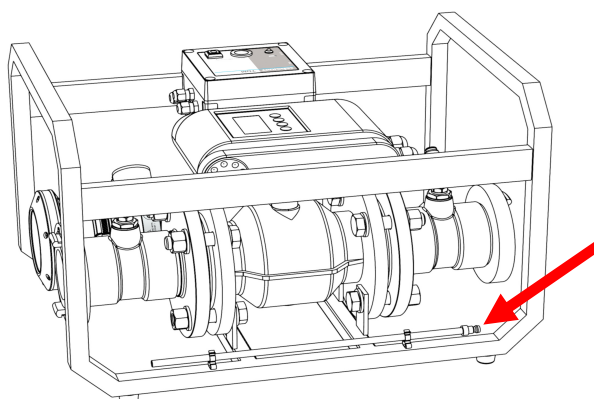
Element	Description
<b>7</b>	<b>On/off switch (I/O)</b> For switching the device on/off
<b>8</b>	<b>On/off indicator light (I/O)</b> Does not go on ... Device is switched off Turns green ... The device is switched on
<b>9</b>	<b>Battery indicator light</b> Does not go on ... Battery OK! Turns red ... Battery empty! The battery must be recharged. ... Charging operation ongoing
<b>10</b>	<b>12 V DC socket</b> For connecting the device to the mains voltage via the supplied charger

**Connections** The following excerpts show the connection options of the TDM 300:



Element	Description
11	Connection options for pressure gauge and venting hose
12	Inflow of the device (coupling: size B for hoses)
13	Drain of the device (coupling: size B for hoses)

**Venting hose** A venting/drain hose is included in the scope of delivery. This can be secured for storage of the carrying frame.



## 2.3 Communication

### 2.3.1 Short-range radio

Programming of the TDM 300 before the measurement, accessing and evaluating the measured data with a PC or laptop is done with PC or laptop takes place with the help of the SebaDataView 3 software. Communication between the computer and the TDM 300 takes place via short-range radio. For this purpose, a radio interface must be connected to the computer.

*Log RI & Log RI+* The compact “Log RI” radio interface is included in the scope of supply of the TDM 300.

The “Log RI+” wireless interface is available as an accessory from SebaKMT. Compared to the Log RI, the device has a more powerful wireless module that has a greater wireless range.



**Log RI**



**Log RI+**

*Handling* The Log RI / Log RI+ is simply connected to the computer via a USB port. This turns it on automatically. The device is automatically recognized by the computer and is immediately ready for establishing a radio link. No other settings need to be made.

*Status LED* The Log RI/Log RI+ device is equipped with an LED as a status indicator:

- Flashes 1x red, 1x green ... When being switched on
- Turns blue ... During radio operation
- Turns red ... Malfunction

*Update* We recommend that the device is always operated with the latest firmware. Information on updating the firmware can be found in its own section in these operating instructions (see page 59).

### 2.3.2 Mobile communication

The TDM 300 is equipped with a GSM modem.

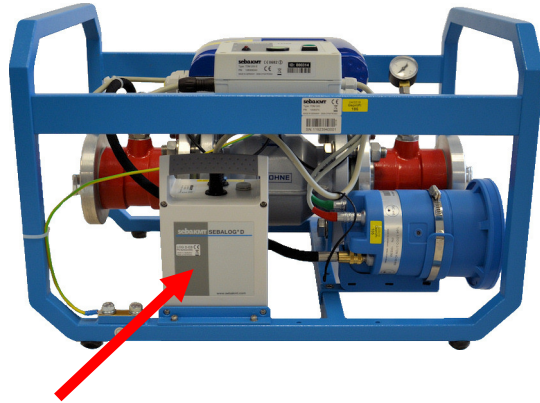
The GSM modem allows:

- Alarm and status messages via e-mail or SMS
- Measured data upload to an FTP server for online or offline analysis
- Measured data transfer to a GIS or SCADA system
- Remote programming of the device from an office

In order to use the GSM features, the TDM 300 must be prepared (see page 17) and properly configured for cellular use (see page 40).

## 2.4 Power supply

The TDM 300 is supplied with energy through an internal NiMH battery.



Battery module

**Battery runtime** With a fully charged battery, the TDM 300 can be operated for up to 24 hours.

Once the supply voltage drops below a minimum value, the battery indicator light **9** on the electronics module goes on. At the same time, the current measurement is aborted. The previously recorded measured data are securely saved.

The TDM 300 remains switched on initially. However, it is not possible to start a new measurement in this state.

In order to continue to operate the TDM 300 and/or to charge the battery, the device must be connected to the electricity grid. Before the next measurement it is also necessary to restart the device.

**Charging the battery** To connect the TDM 300 to the mains, please always use the supplied charger.

Insert the round connector of the charger into the **12 V DC 10** socket on the electronics module of the TDM 300. Observe the guides on the connector and socket. You must feel the plug engage.

Once the connection is made to the mains voltage, the battery is charged. Charging takes approximately 13 hours.

The charger has a status LED.

LED flashes green	...	Charging operation ongoing
LED turns green permanently	...	Charging is complete

When using the supplied charger, overcharging the battery is not possible.

## 2.5 Technical data

The TDM 300 is specified by the following parameters:

Parameter	Value
Flow sensor	
Accuracy	0.3%
Repeatability	0.1%
Flow rate	Approx. 3.5 ... 143 m <sup>3</sup> /h
Pressure sensor	
Measurement range	0–16 bar
Accuracy	1%
Resolution	0.006 bar
Communication	
Wireless	868 MHz (in Europe) 913 / 916 MHz (country-specific)
GSM/GPRS/UMTS	850 / 900 / 1800 / 1900 / 2100MHz
Recording interval	
Standard measurement	adjustable from 1 s to 24 h
Pressure surge measurement	0.1 s or 1 s adjustable
Memory	4 MB internal memory (ring buffer or linear storage selectable)
Alarm	Alarm triggering by threshold monitoring; Alarm notifications via SMS/e-mail; Measured data upload to FTP server in case of alarm
Power supply	Internal, rechargeable NiMH battery
Operating temperature	-10 °C ... +50 °C
Operating time	approx. 24 h
Dimensions	530 x 380 x 350 mm
Weight	approx. 25 kg
Protection class	IP66

## 2.6 Scope of delivery

The scope of deliver for the TDM 300 flow meter has the following components:

Accessory	Description	Item no.
TDM 300	Flow meter	128309241
	Analogue pressure gauge	106011048
ES HYDRO-2	Venting hose	118303361
LOG RI	Radio interface for PC/laptop	830025783
LG LOG-D-EB	Charger	830021240
	GSM antenna with connection cable, 2 m	830020888
CSW Dataview 3	“SebaDataView 3” user software for programming the device and for reading and evaluating measured data	118302210





### 3 Start-up

#### 3.1 Cellular services contract, FTP server, e-mail account

The TDM 300 is equipped with an internal GSM modem.

**UMTS / GPRS / GSM** For data transfer via the cellular network, a contract with a mobile service provider must be concluded. You need a **SIM card** that is enabled for data traffic over UMTS.

**FTP server** You need free space on an **FTP server** to upload data there. You can use your company's own server environment for this purpose or conclude a license agreement with a commercial provider on the internet.

You can also rent storage space on an FTP server from SebaKMT. Please contact your SebaKMT sales partner in this regard.

Under certain conditions, it is also possible to access the company's own "demo server" from SebaKMT.

**E-mails** You need an **email account** that is used as the sender for alarm and status messages. You can use your company's own e-mail server for this purpose or conclude a license agreement with a commercial provider on the internet.

Under certain conditions, it is also possible to access the company's own "demo account" from SebaKMT.



Please note that establishing and using a mobile connection increases the power consumption of the TDM 300 and thus affects battery life.

#### 3.2 Preparing the device for mobile use

The GSM modem is installed in the logger module **2** of the device.



Logger module


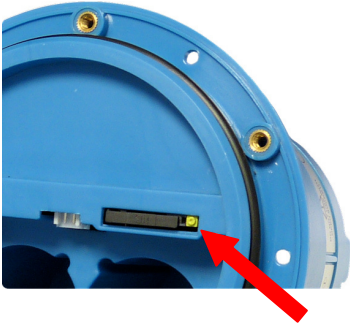

To prepare the device for mobile use, the SIM must be inserted and the GSM antenna connected. You received the SIM card from your mobile operator when you concluded the mobile contract.



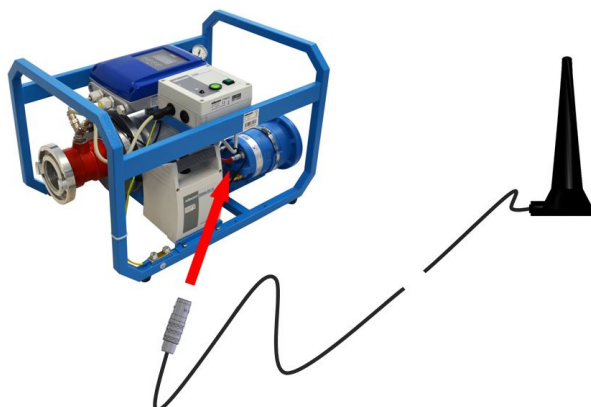
#### NOTE

Proceed carefully in order not to damage any components in the logger. Do not apply excessive force.

Inserting the SIM card Proceed as follows:

Step	Description
1	The TDM 300 must be switched off.
2	Loosen the six screws on the data logger of the TDM 300. 
3	Loosen and remove the cover of the logger module. To do so, do not use tools, even if the cover is extremely tight. <b>Result:</b> Inside the device you can access the SIM card slot.
4	Insert the SIM card. To remove the tray for the SIM card from its fastener, press the yellow spring mechanism next to the card tray (using a screwdriver or a similar tool).  Remove the tray and insert the SIM card. Then push the tray into the bracket until it locks into place.
5	Close the device again with the cover.   Please note: The rubber seal of the cover is not glued on and can fall out of the cover.  During assembly, please note the following: <ul style="list-style-type: none"> <li>• The rubber seals and the housing and cover surfaces which touch each other must be free of dirt.</li> <li>• Do not jam cover when putting it on the housing.</li> <li>• Tighten screws crosswise.</li> <li>• Carefully tighten the screws finger-tight. Do not overtighten!</li> </ul>

**Connecting the GSM antenna** The device does not have a fixed internal or external antenna. For GSM functionality, the included external GSM antenna must be connected to the device.



Connect the GSM antenna to the **GSM** socket of the logger. When doing so, note the guides on the plug and socket. You must feel the plug engage.

### 3.3 Connecting the analogue pressure gauge

In addition to the integrated pressure sensor of the device, an analogue pressure gauge is included that can be used to read the water pressure directly on the TDM 300.

Plug the pressure gauge to one of the connections **11** of the TDM 300. The connection is a quick-release system. You must hear and feel the pressure gauge engage. For disassembly, push the securing ring of the coupling down and pull the pressure gauge back out of the connection without using force.

### 3.4 Switching the device on/off.

The TDM 300 is enabled or disabled with the **on/off switch** **7** on the electronics module. When switched on, the **on/off indicator light** **8** of the device will turn permanently green. In the display area of the flow sensor **4**, a start screen appears. The current measured values are then displayed.



## **4 SebaDataView-3 software**

### **4.1 Introduction**

SebaDataView-3 (abbreviation: SDV-3) is the multifunctional application software for working with devices in the 'Sebalog' series. You can use it to configure 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.

### **4.2 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.

*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.

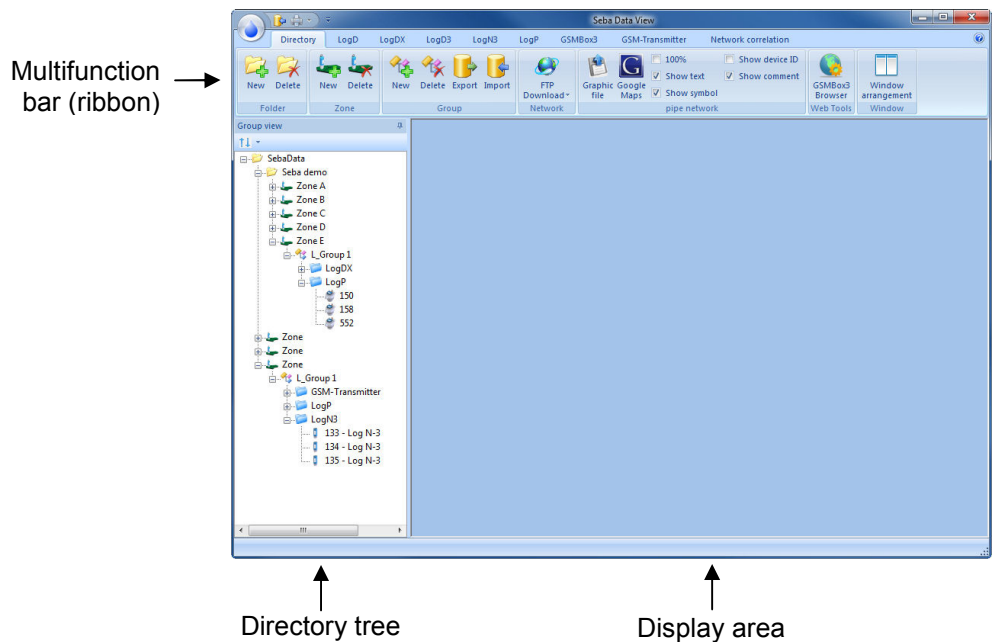
*Language selection* During start-up you are asked to select the language of the user interface. Make your choice from the drop-down-list and click on **OK**.

*Software update* During start-up, the current version of the software is displayed on the screen. Please check [www.sebakmt.com](http://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.

### 4.3 Function and structure

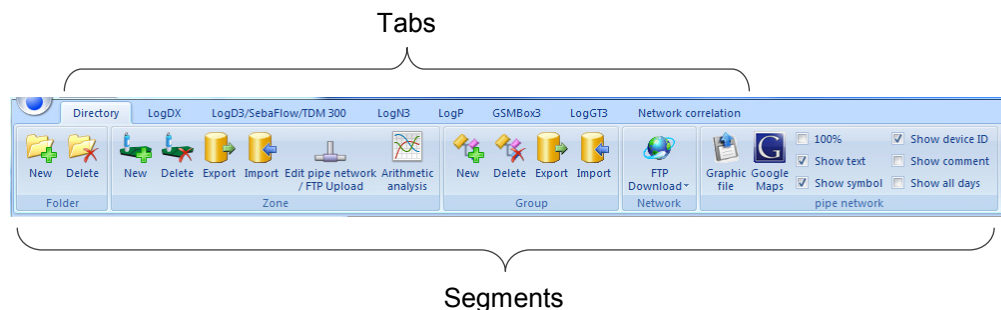
**Introduction** SebaDataView-3 (SDV-3) is the multifunctional user software for working with devices of the Sebalog series. Using the software, loggers can be programmed prior to the measurement. After measurement the recorded data can be queried from the loggers, displayed and analyzed.

**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:



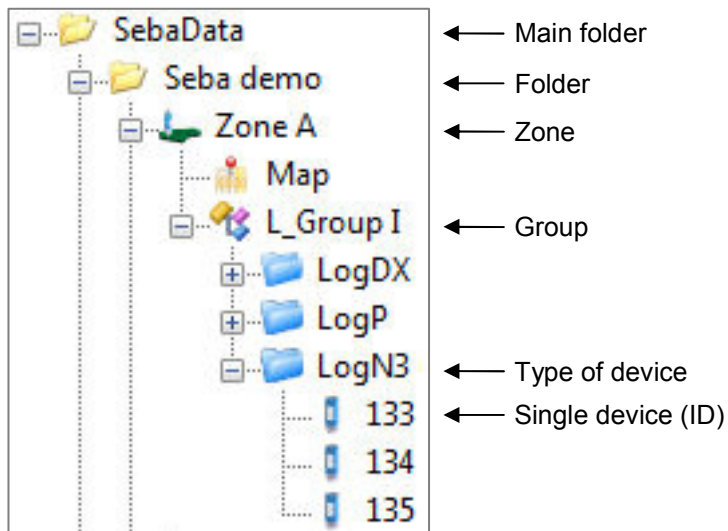
**Multifunction bar** All function and command buttons are arranged in a panel, called 'ribbon', as it is known from Microsoft Office applications.

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.

## 4.4 Device administration

### 4.4.1 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 <b>Directory</b> in the multifunction bar.
3	In the segment <b>Folder</b> , click on <b>New</b> .
4	In the window which opens, enter the <b>Name</b> and a <b>Comment</b> for the new folder and confirm the entries by pressing <b>OK</b> .
	<b>Result:</b> 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 <b>Directory</b> in the multifunction bar.
3	In the segment <b>Folder</b> , click on <b>Delete</b> .
4	Answer the security query with <b>Yes</b> .
	<b>Result:</b> 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.

### 4.4.2 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 <b>Directory</b> in the multifunction bar.
3	In the segment <b>Zone</b> , click on <b>New</b> .
4	In the window which opens, enter the <b>Name</b> and a <b>Comment</b> for the new zone and confirm the entries by pressing <b>OK</b> .
	<b>Result:</b> 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 <b>Directory</b> in the multifunction bar.
3	In the segment <b>Zone</b> , click on <b>Delete</b> .
4	Answer the security query with <b>Yes</b> .
	<b>Result:</b> 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.

#### 4.4.3 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 <b>Directory</b> in the multifunction bar.
3	In the segment <b>Group</b> , click on <b>New</b> .
4	In the window which opens, enter the <b>Name</b> and a <b>Comment</b> for the new group and confirm the entries by pressing <b>OK</b> .
	<b>Result:</b> 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 <b>Directory</b> in the multifunction bar.
3	In the segment <b>Group</b> , click on <b>Delete</b> .
4	Answer the security query with <b>Yes</b> .
	<b>Result:</b> 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.

#### 4.4.4 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:

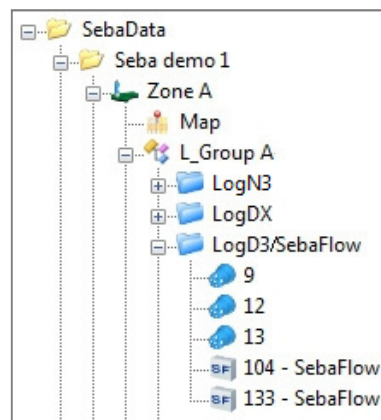
Step	Description
1	Mark the group in the directory tree to which the device should be added.
2	In the multifunction bar, open the tab <i>I</i> .
3	In the segment <b>Administration</b> , click on <b>New</b> .
4	<p>In the window which opens, enter the Identification Number (ID) of the device or use the "Automatic detection" (find more information below in the text). Furthermore, add a <b>comment</b> for the new device or change the automatically created one, if necessary.</p> <p>Click on <b>OK</b> to add the device to the group.</p> <p><b>Result:</b> The new device has now been created in the database and will appear in the directory tree.</p>

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 A" has Log N3, LogDX, Log D3 and SebaFlow devices:



*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.
3	In the multifunction bar, click on <b>Delete</b> .
4	Answer the security query with <b>Yes</b> .
	<b>Result:</b> The corresponding device with all its measuring data is removed from the directory tree.

## 4.5 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.

### 4.5.1 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 <b>Directory</b> in the multifunction bar.
3	In the segment <b>Pipe network</b> , click on <b>Graphic file</b> .
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 <b>OK</b> .
	<b>Result:</b> The image file is imported into the software and now appears in the directory tree in the form of a sub-folder called <b>Map</b> . 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.

*Create 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:

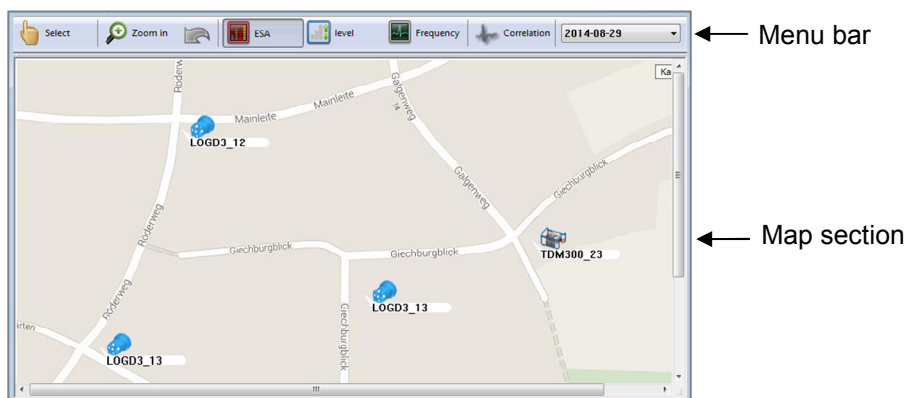
Step	Description
1	Mark the zone in the directory tree to which the map should be added.
2	Open the tab <b>Directory</b> in the multifunction bar.

(continued on next page)

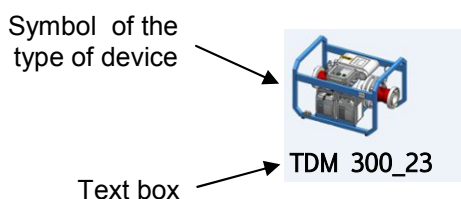
Step	Description
3	<p>In the segment <b>Pipe network</b>, click on <b>Google Maps</b>.</p> <p><b>Result:</b> A connection to 'Google Maps' is established. A new window opens, showing the known 'Google Maps' user interface. Additionally, you find some input fields and controls.</p> <p>If there are GPS position data stored for the devices of the zone, the appropriate map section is displayed automatically.</p>
4	<p>To get a certain destination area displayed, use one of the following options:</p> <ul style="list-style-type: none"> <li>• Mark the checkbox <b>Address</b> and enter the destination adress desired into the field right beside, or</li> <li>• mark the checkbox <b>Coordinate</b> and enter a GPS position, using the fields <b>Latitude</b> and <b>Longitude</b>.</li> </ul> <p>Confirm your entry by pressing the ENTER key on your keyboard.</p>
5	<p>Use the known tools of the 'Google Maps' user interface (moving, zooming, etc.) to customize the map section displayed.</p>
6	<p>Click on <b>OK</b>.</p> <p><b>Result:</b> 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 <b>Map</b>.</p> <p>A new window opens, where the newly created map is shown.</p>
7	<p>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.</p> <p>Proceed in the same way, in order to place the other devices of the zone on the map.</p>

### 4.5.2 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 menu bar (see page 29).

**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 <b>Select</b> . <b>Result:</b> 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 <b>Select</b> button once again in order to deactivate it.

**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.

*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 <b>Zoom</b> .  <b>Result:</b> 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.)  <b>Result:</b> The map section selected is magnified.

*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:

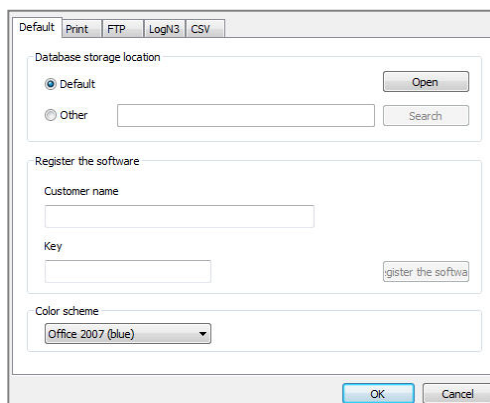
Option	Description
<b>100 %</b>	If this checkbox is enabled, the map section is scaled up or down corresponding to the size of the window displayed If it is disabled, the size of the map remains static.
<b>Show text</b>	If this checkbox is disabled, the text box of the markings is hidden.
<b>Show symbol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

## 4.6 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:



### 4.6.1 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.

## 4.6.2 Saving access data for FTP server and email account

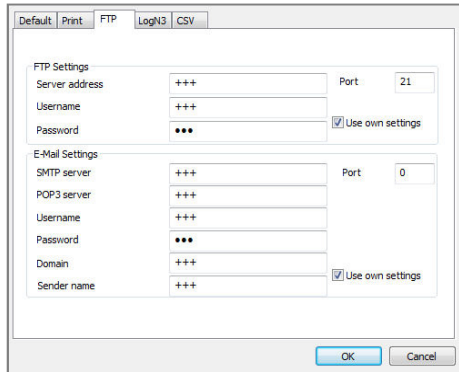
**Introduction** Various devices in the Sebalog series are equipped with an integrated GSM modem. This means that they can

- 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	<p>In system settings open the <b>FTP</b> tab.</p> <p><b>Result:</b> The following entry screen then appears in the window:</p>  <p>The <b>FTP Settings</b> 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.</p> <p>The <b>Email Settings</b> 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 <b>Sender name</b> field, you can enter any name, which will subsequently be used to identify the device which is the sender of the alarm message.</p>
2	Click the relevant <b>Use own settings</b> checkbox.
3	Enter the access data in the input fields.
4	<p>Click on <b>OK</b> to confirm the details and to close the window.</p> <p><b>Result:</b> 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.</p>



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 Programming the device

### 5.1 Programming prior to measurement

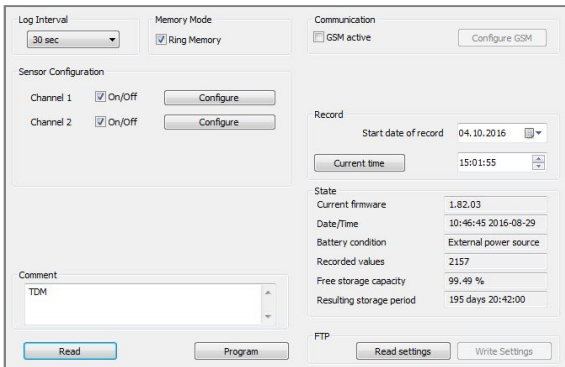
Before use, the TDM 300 has to be properly configured. In doing so, you can specify the logging interval and the measuring time, among other things. In addition, alarm thresholds can be defined and the necessary settings must be defined for GSM operation if transfer of data and messaging is desired for the measurement.

Programming is performed on the computer using SebaDataView 3 software.

**Requirements** To be able to program the TDM 300 on site before installation, the following requirements must be met:

- Laptop with SebaDataView-3 software
- A wireless interface (e.g. Log RI) must be connected to the computer
- The TDM 300 must be switched on
- The TDM 300 must be within the wireless operating range of the computer

**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	<p>In the menu bar, click on <b>Program</b>.</p> <p><b>Result:</b> The window for programming opens.</p> 
3	<p>Query the current configuration of the device.</p> <p>To do so, click <b>Read</b> at the bottom of the window.</p> <p>(This step is not absolutely necessary in all cases, but it is recommended to nevertheless always perform the step instead of skipping it.)</p> <p><b>Result:</b> The current configuration data is read wirelessly from the TDM 300 and displayed. All input fields are now editable.</p>
4	Change the configuration data or enter new data (see the following sections).
5	<p>To do so, click <b>Program</b> at the bottom of the window.</p> <p><b>Result:</b> The new configuration data is transferred wirelessly to the TDM 300 and installed there. The device is now ready for the measurement. It starts the recording at the programmed start time.</p>
6	If the GSM functionality of the TDM 300 will be used (measuring data upload and alarm messaging), perform a GSM test at the end to check the cellular connection (see page 46).

**The individual steps in detail** You find detailed information about the necessary programming steps in the following sections.

### 5.1.1 Selecting the logging interval

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

### 5.1.2 Configuring the Measuring Channels

Using the two checkboxes in the **Sensor Configuration** segment you can activate / deactivate the TDM 300's sensors for the upcoming measurement.

**Channel 1:** Pressure sensor

**Channel 2:** Flow sensor

Each measuring channel activated has to be configured. Click the respective **Configure** button. A new window appears providing an entry mask. You find detailed information about how to enter the sensor settings in the following sections.

#### 5.1.2.1 Configuring the Pressure Sensor (Channel 1)

After having clicked on **Configure** the configuration dialogue of the TDM 300's pressure sensor opens.

The screenshot shows the 'Sensor Configuration' dialog box. It contains the following fields and options:

- Type of sensor:** A dropdown menu showing 'Seba StandardPressure 16bar'.
- Input type:** A dropdown menu showing 'Ratiometric'.
- Unit:** A dropdown menu showing 'bar'.
- Start Value:** Two input fields. The first contains '10.013' and the second contains '0.000'. Between them is the text '% is equal'.
- End Value:** Two input fields. The first contains '90.013' and the second contains '16.000'. Between them is the text '% is equal'.
- Record Press Shocks:** A checkbox that is currently checked. To its right is an input field containing '1.99' with the unit 'bar/s'.
- High resolution (10 Hz):** An unchecked checkbox.

**Unit** You have the chance to select the **Unit** for the recorded pressure. Use the drop-down list.

**Recording pressure surges** If you want sudden pressure fluctuations, known as pressure surges, to be recorded in addition to the standard pressure measurement, select the **Record Press Shocks** checkbox

Using the input field to the right of the checkbox, you specify how much a measuring value has to differ from the previous value in order to classify a pressure fluctuation as a 'pressure surge'.

**Example:** If '0.5' is set, pressure surge recordings start as soon as a measuring value is min. 0.5 bar higher or lower than the preceding value.

By means of the **High resolution** checkbox you can specify which sampling interval should be used for the 60 second pressure surge recordings:

- checkbox de-selected: 1 sec sampling interval
- checkbox selected: 0.1 sec sampling interval

Using the short 0.1 sec interval allows a more detailed recording.



Please note that the high resolution recording of pressure surges requires more energy and, thus, has a strong negative impact on the logger's battery life.

The recording of pressure surges is parallel to the standard pressure measurement and has no effect on this.

### 5.1.2.2 Configuring the Flow Sensor (Channel 2)

After having clicked on **Configure** the configuration dialogue of the TDM 300's flow sensor opens.

The screenshot shows a 'Sensor Configuration' window with the following fields and options:

- Type of sensor:** A dropdown menu showing 'Seba StandardFlowmeter TDM'.
- Input type:** A dropdown menu showing 'Pulse'.
- Unit:** A dropdown menu showing 'l'.
- Unit selection:** Two radio buttons: 'Cubic meter per hour' (unselected) and 'Liter per second' (selected).
- 1 Pulse is equal:** A text input field containing '0.010000'.
- Counter reading:** A text input field containing '0.00'.

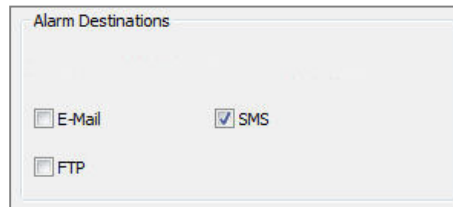
You have the chance to specify the unit for the recorded values ('m<sup>3</sup>/h' or 'l/sec').


Furthermore, 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 device will then accept this count as a starting point for the measurement.

### 5.1.2.3 Configuring alarm conditions (Threshold monitoring)

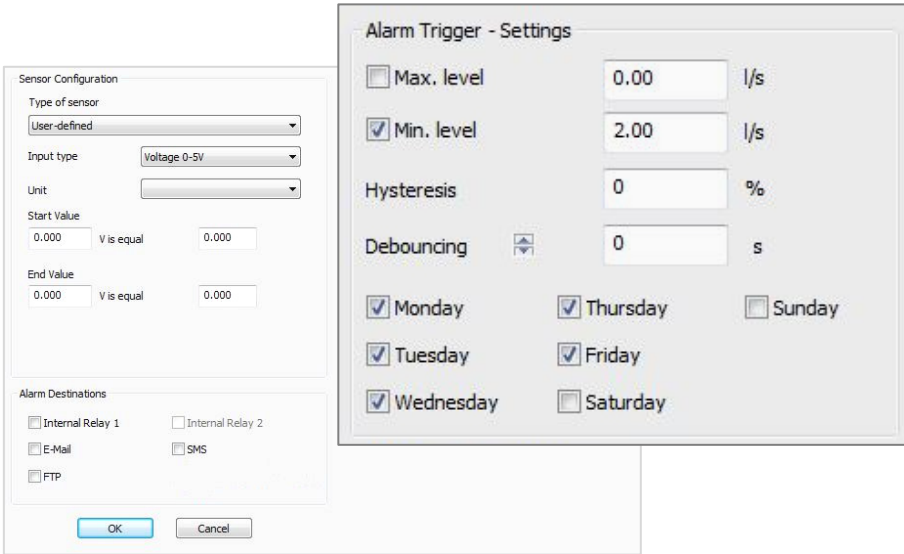

The TDM 300 can trigger certain alarm actions whenever a specified minimum or maximum threshold is crossed. The threshold values must be specified for each measuring channel individually.

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



Checkbox	Description
E-Mail	It will be sent an alert via e-mail to the stored destination addresses.
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	<p>For one hour after the alarm, the device is available over the cellular network. In this period, a real-time measurement ("FTP step test") can be performed with the device via the SebaKMT Cloud.</p> <p>To save energy, the device is not permanently ready to receive messages. Only when this box is checked it is ensured that the device is available via the cellular network after an alarm and a real-time measurement can be performed.</p> <hr/> <div>  <p>Note: There is a conflict of interest between the function "1h standby" and the function "CSV upload" in the cellular network settings.</p> <p>This means: The alarm target "1h standby" only works if the checkbox "CSV upload" is disabled in the cellular network settings.</p> <p>If the "CSV upload" box is checked, the alarm target "1h standby" can be selected, but when an alarm occurs it does not go into effect, meaning no real-time measurement can be performed.</p> </div> <hr/>

*Configuring alarm trigger* Perform the following steps to configure the alarm thresholds:

Step	Description
1	<p>In the segment <b>Alarm Trigger – Settings</b> specify whether there is a minimum and / or a maximum threshold to be monitored by activating the respective checkbox(es).</p> 
2	<p>Enter the minimum and / or the maximum threshold into the respective field right beside the checkbox.</p> <hr/> <div>  <p>Entering values with a negative sign is possible. (e.g.: Min. level: -20°C / -4°F for a temperature sensor)</p> <p>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)</p> </div> <hr/>
3	<p>A hysteresis can be defined for alarm input preventing a constant triggering of the alarm by measuring values fluctuating marginally around the threshold.</p> <p>Enter a <b>Hysteresis</b> 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.</p> <p><b>Example:</b> (pressure sensor) Min. level: 2.0 bar Hysteresis: 10 %</p> <p>The alarm does not switch on until the input signal reaches 90 % of the specified threshold (here 1.8 bar). After this, the alarm does not switch off until the input signal exceeds 110 % of the threshold (here 2.2 bar).</p>

(continued on next page)

Step	Description
	<p>Select a <b>Debounce</b> 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.</p> <p><b>Example:</b> (pressure sensor)            Logging interval: 5 sec            Min. level: 2.0 bar            Debounce: 15 sec</p> <p>The alarm does not switch on until the input signal crosses the specified threshold (2.0 bar) three times in succession (15 seconds).</p>
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 above, 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:

The image shows two configuration windows for an alarm system.

**Alarm Trigger - Settings**

- ☐ Max. level: 0.00 l/s
- ☒ Min. level: 2.00 l/s
- Hysteresis: 0 %
- Debouncing: 0 s
- Days of the week:
  - ☒ Monday, ☒ Tuesday, ☒ Wednesday, ☒ Thursday, ☒ Friday
  - ☐ Saturday, ☐ Sunday

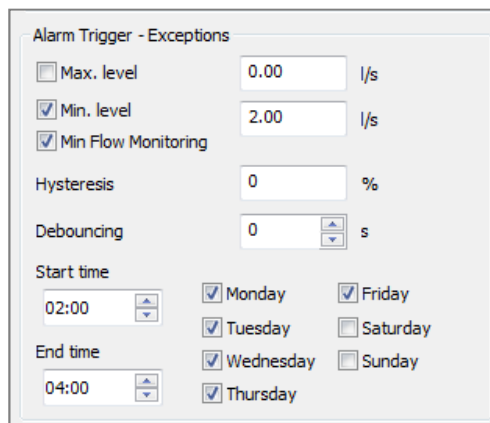
**Alarm Trigger - Exceptions**

- ☐ Max. level: 0.00 l/s
- ☒ Min. level: 4.00 l/s
- ☐ Min Flow Monitoring
- Hysteresis: 0 %
- Debouncing: 0 s
- Start time: 02:00
- End time: 04:00
- Days of the week:
  - ☒ Monday, ☒ Tuesday, ☒ Wednesday, ☒ Thursday, ☒ Friday
  - ☐ Saturday, ☐ Sunday

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

### 5.1.2.7 Finishing the sensor configuration

Confirm and save the configuration of a channel by clicking the **OK** button.  
Perform the configuration for the remaining channels.

### 5.1.3 Configuring the mobile communication

In the **Communication** segment, you specify whether you want to use the GSM functionality of TDM 300 for the upcoming measurement.

The screenshot shows the TDM 300 configuration interface. On the left, the 'Sensor Configuration' panel includes a 'Log Interval' dropdown set to '30 sec', a 'Memory Mode' section with 'Ring Memory' checked, and two channels (Channel 1 and Channel 2) both set to 'On/Off' with 'Configure' buttons. Below this is a 'Comment' field containing 'TDM'. At the bottom of this panel are 'Read' and 'Program' buttons. On the right, the 'Communication' panel has a 'GSM active' checkbox checked and a 'Configure GSM' button. Below this, a 'Record' section shows 'Start date of record' as '04.10.2016' and 'Current time' as '15:01:55'. A 'State' section displays various system metrics: 'Current firmware' (1.82.03), 'Date/Time' (10:46:45 2016-08-29), 'Battery condition' (External power source), 'Recorded values' (2157), 'Free storage capacity' (99.49 %), and 'Resulting storage period' (195 days 20:42:00). At the bottom of the Communication panel are 'Read settings' and 'Write Settings' buttons.

The integrated GSM modem allows:

- Measured data upload to an FTP server
- Alarm messaging via SMS/e-mail
- Remote programming of the device

**Measurement without GSM** If you DO NOT wish to use the GSM function, deactivate the **GSM active** checkbox. No further specifications are needed regarding “GSM configuration”. You can continue to the next programming step (see page 45).

**Measurement with GSM** If you wish to use the GSM function, activate the **GSM active** checkbox. It will then be necessary to specify various configuration data for mobile operation. Proceed as follows:

Step	Description
1	Click the <b>Configure GSM</b> button. <b>Result:</b> The GSM configuration dialogue appears.
2	Enter all the requested data. (You find more information about the configuration dialogue below in the text).
3	Confirm and save the settings by clicking the <b>OK</b> button.



*Explanations about the  
GSM config. dialogue*




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.


The picture shows the GSM configuration dialogue:

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


Segment	Parameter
<b>SIM Card Settings</b>	Enter the PIN code of the SIM card which is being used in the device (see mobile communication contract or ask your provider).
<b>FTP transfer</b>	<p>If you want the logged data to be transferred to a FTP server daily, select the <b>Active</b> checkbox.</p> <p><b>Daily upload time</b> Here you have the chance to specify the time at which the daily measuring data upload to the FTP server should take place. Select a time from the drop-down menu. Each upload includes the measured data that has been newly recorded since the previous upload.</p> <p>If you wish a second measuring data upload every day, select the <b>2nd upload</b> checkbox. Select the desired time for this second upload from the second drop-down menu.</p>

(continued on next page)

Segment	Parameter
	<p><b>Send Event List</b></p> <p>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 58).</p> <p><b>CSV Upload</b></p> <p>When you check this box, the recorded measured data is uploaded to the FTP server in CSV format.</p> <p><u>Explanation:</u> Data in CSV format can be further processed, for example with SCADA systems.</p> <p>The upload does not take place at certain times, rather it is performed in regular data packets.</p> <p>A drop-down list appears. Select there how many measurement data points each CSV data packet should include.</p> <p>The daily standard upload of the measured data is not influenced by the CSV upload. It is performed without any change. The measured data are then in fact stored on the FTP server twice, once in the standard data format for all SebaKMT applications and once in CSV format.</p> <p><u>Requirement:</u> Uploading the measured data in CSV format is only possible when the device is connected to a working external power supply.</p> <p><b>FTP Step Test</b></p> <p>If the pending measurement should be a Step-Test measurement, check this box.</p> <p><u>Explanation:</u> Immediately after receiving the configuration data, the device starts recording data. This is forwarded directly to the FTP server so that the progress of the measurement can be followed via the internet in real time.</p> <p>If the device is connected to an external power supply, the step-test measurement continues to run until it is stopped by the user. Without an external power supply, the step-test measurement is automatically stopped after 6 hours.</p> <div>  <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>Due to system constraints, the two options <b>FTP Step Test</b> and <b>CSV Upload</b> cannot be used simultaneously.</li> <li>The step-test measurement places a significant load on the battery, unless the device is connected to an external power supply.</li> </ul> </div>

Segment	Parameter
	<p><b>Configurable via FTP</b></p> <p>If you select this checkbox, the TDM 300 checks the FTP server for new configuration data after every measuring data upload. The new configuration data is downloaded and immediately installed on the device.</p>
<b>SMS checkbox</b> and <b>E-Mail checkbox</b>	<p>To enable the alarm messaging service via SMS (regular status messages and/or alarm messages), select the <b>SMS</b> checkbox.</p> <p>To enable the alarm messaging service via e-mail (regular status messages and/or alarm messages), select the <b>E-Mail</b> checkbox.</p> <p>Use the radio buttons to select, which messages you want to receive:</p> <ul style="list-style-type: none"> <li>• <b>Alarm only</b> 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.)</li> <li>• <b>Status daily</b> 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).)</li> <li>• <b>Status weekly</b> You will receive alarm messages and, beyond, a status message once a week</li> </ul> <p>Furthermore, specify the point in <b>time</b> and, if required, the <b>day</b> of the week, the status message shall be sent. (Time values are specified in 24-hour format.)</p>
<b>SMS Destination</b>	Specify up to three mobile phone numbers here to which summary or alarm messages should be sent.
<b>E-mail Destination</b>	Specify up to two e-mail addresses here to which summary or alarm messages should be sent.
<b>FTP Settings</b>	<p>Enter the access data (<b>Server address, port, user name</b> and <b>password</b>) for the connected FTP server. These information can be found in your FTP usage contract or requested from the operator.</p> <p>The TDM 300 supports encrypted data transmission to FTPS server. Select the desired <b>Encryption</b> from the drop-down list.</p> <hr/> <div>  <p>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.</p> <p>The FTP server must support the selected encryption and be configured by the administrator accordingly.</p> </div> <hr/>

(continued on next page)

Segment	Parameter
	<p>Maybe the access data for your FTP server are already stored in the database of the SebaDataView-3 software (see page 32). To use these stored data, select the <b>Use own server</b> checkbox. The data are then filled in automatically.</p> <p>The <b>Seba Demo Mode</b> 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!</p>
<b>Internet Settings</b>	<p>Here the data for access the internet must be entered.</p> <p>Open the <b>Provider</b> drop-down list and select your cellular network provider. The access data is then entered automatically.</p> <p>If your cellular network provider is not included in the list, enter the data manually. You can find the necessary information in the material included with your cellular network contract. Otherwise, please ask your cellular network provider.</p>
<b>E-mail Settings</b>	<p>If you want to receive messages via e-mail, enter the access data 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.)</p> <p>The device supports encrypted e-mail transmission (TLS / SSL) via an SMTPS e-mail account. If you want to use encryption, select the checkbox <b>Use TLS / SSL</b>.</p> <hr/> <div>  <p>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.</p> <p>The mail server must support the selected encryption and be configured accordingly.</p> </div> <hr/> <p>Maybe the access data for your e-mail account are already stored in the database of the SebaDataView-3 software (see page 32). To use these stored data, select the <b>Use own server</b> checkbox. The data are then filled in automatically.</p> <p>The <b>Seba Demo Mode</b> 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!</p>

### 5.1.4 Adjusting the start time of data recording

The point in time, the device shall start logging, has to be defined under **Record**.

Use the controls to specify a start date and time or click on the **Current time** button to get the system date and time of the computer filled in.

If the entered recording start lies in the past, seen from the point in time the device is receiving the configuration data, the device starts data storage immediately.

### 5.1.5 Adjusting the memory mode

The device has 4 MB internal memory.

By checking the **Ring memory** checkbox under **Memory Mode**, the logger can be set to 'ring buffer' mode. As the memory fills up with data in this mode, the device keeps logging and the respective oldest value is overwritten.

If the **Ring memory** checkbox is not selected, measuring data storage stops as soon as the logger's memory is full.

### 5.1.6 Adding a comment

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

### 5.1.7 Sending the configuration data to the TDM 300

Finally, the data must be transferred to the TDM 300.



#### NOTE

Keep in mind that the data memory of the device is reset by programming, i.e. all measurement data is deleted.

*Data transfer via radio* To send the data wirelessly to the TDM 300, click the bottom of the window on **Program**. The device must be switched on and within the wireless operating range of the computer.

The new configuration data is sent to the device and installed there immediately. A success message appears on the computer screen.

*Data transfer via FTP server* If you are remotely programming the TDM 300, click the bottom of the window on **Write settings**. The access data to the FTP server must be stored in the system settings of the SDV-3 software (see page 32).

The new configuration data is upload to the FTP server. From there, it is downloaded by the TDM 300 at the next planned contact and installed immediately

## 5.2 Testing the mobile connection

You have the chance to check the functionality of the GSM connection.

- Requirements* In order to perform a GSM test,
- the GSM configuration must have been already finished (see previous sections),
  - a radio interface has to be connected to the computer (e.g. Log RI),
  - the TDM 300 must be within the computer's wireless range
  - the TDM 300 has to be switched on.

*Procedure* Proceed as follows to carry out a GSM test:

Step	Description
1	In the SDV-3 software open the GSM configuration dialogue of the respective device (see previous sections). (Select device in directory tree >> click on <b>Program</b> >> click on <b>Configure GSM</b> )
2	On the upper right of the window, click on the <b>Test</b> button.  <b>Result:</b> 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

In the case of bad signal quality (**SignalQ** 0 or 1), it may help to move the GSM antenna in a better position.

*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 58) from the device. There, information can be found which can help to identify the problem.

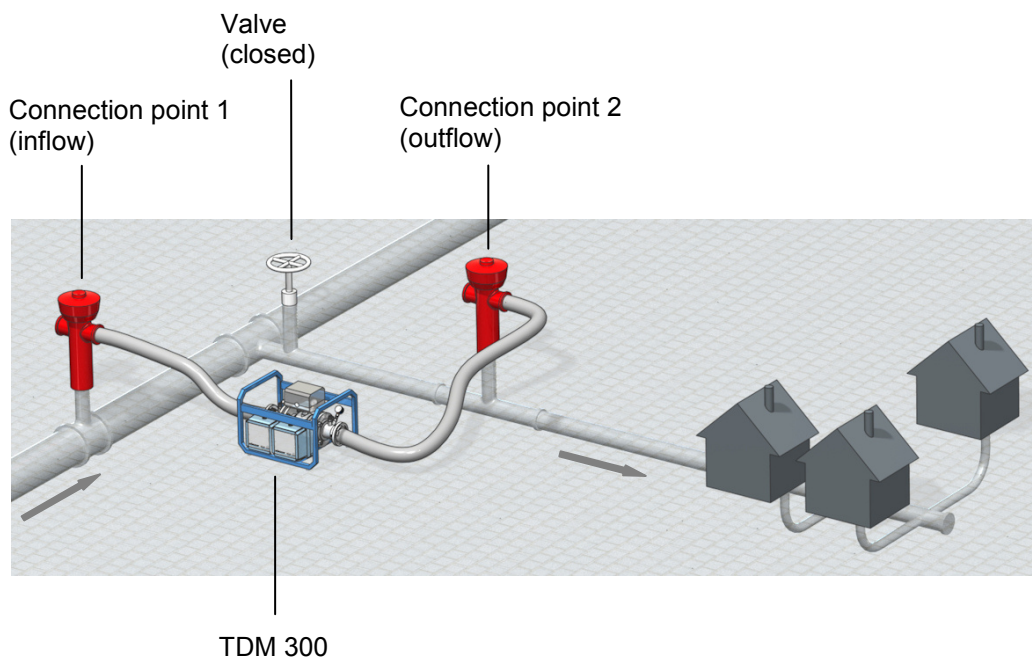
## 6 Performing measurements

### 6.1 Installing the device on site

**Introduction** The TDM 300 must be incorporated into the relevant pipe system for the measurement. To do so, a section of the line is separated from the grid and a “bypass line” is installed using hoses. The TDM 300 is integrated into this bypass.

**Requirements** Two connection points to the pipe network (for example, two hydrants) and a shut-off device (line valve) are needed that can be used to interrupt the original water flow between the two connection points.

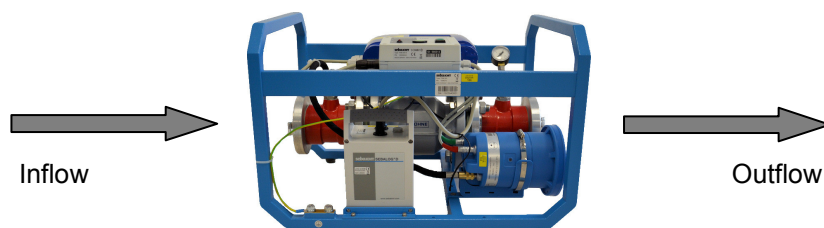
The following diagram provides an idealised depiction of how the TDM 300 is integrated into the line network for the measurement.



#### NOTE

The device must be cleaned and disinfected with suitable agents before use!

**Direction of flow** The TDM 300 has an inlet and an outlet side. We recommended always installing the device as shown in the following figure.



In general, the TDM 300 can also be backwards, that is “opposite to the direction of flow”. The measured values would then however be output and displayed with negative values.

*Connecting the device* To connect the TDM 300, proceed as follows:

Step	Description
1	Connect the TDM 300 to hydrant 1 using a hose. Use the connection 12 on the device on the inflow side.  (If you want to use the optional shut-off valve, first mount it to the connection 12 and then connect the hose to the fitting.)
2	Connect the TDM 300 to hydrant 2 using a hose. Use the connection 13 on the device on the outflow side.
3	Open both hydrants (and, if present, the optional shut-off valve on the TDM 300).
4	Switch on the TDM 300.
5	Interrupt the direct pipe connection between the two hydrants, for example by closing a line valve (see figure).  Beside the bypass line, there must no other open connection between hydrant 1 and hydrant 2.

## 6.2 Measurement

The sensors of the TDM 300 are already operational shortly before switching on the device. Recording measured values starts at the programmed start time (see page 45).

## 6.3 Uninstalling the device

Once the last measurement is completed, you can remove the bypass including the TDM 300 and restore the original supply of the test area. Proceed as follows:

Step	Description
1	Close hydrant 1 (on the inflow side of the TDM 300).
2	Close hydrant 2 (on the outflow side of the TDM 300).
3	Switch the TDM 300 off.
4	Use the venting/drain hose to depressurise the TDM 300. (To do so, attach the hose with one of the connections 11; allow air and water to escape; later for disassembly of the hose, push the securing ring of the coupling downward and pull the hose down from the connection without force)



### NOTE

Under no circumstances should the device be disassembled while it is still pressurised.

5	Only now uninstall the hoses from the TDM 300 to hydrants 1 and 2 and thus remove the bypass.  To avoid corrosion, remove any remaining water from the TDM 300. The device should also be cleaned and freed of dirt and deposits.
6	Open the line valve between hydrant 1 and 2 to restore the original water supply configuration.



## 7 Retrieving and evaluating data

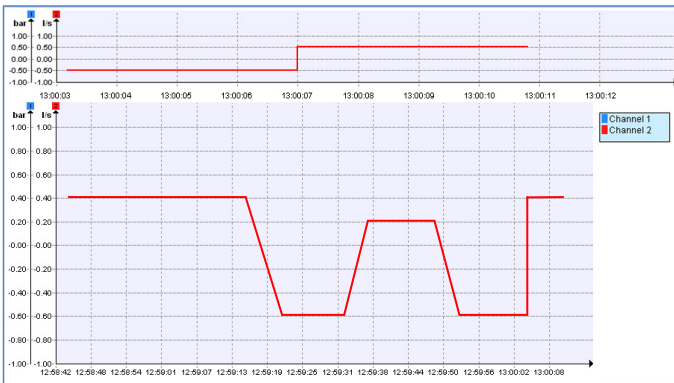
### 7.1 'Realtime Measurement' with SDV-3 software

Using the **real-time measurement** function of the SebaDataView-3 software you have the chance to carry out a measurement and observe the data recording in real-time. Also a current measurement can be observed.

**Requirements** The following requirements must be met:

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

**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, click on <b>Realtime measurement</b> .
3	<p>From the context menu select if the 'live' measuring values should be displayed graphically (select: <b>graph</b>) or numerically (select: <b>digital</b>).</p> <p>In the <b>digital view</b> the measured value of each active channel is displayed numerically in a table.</p> <p>If you select <b>graph</b>, the measured data of the active channels is shown as the curves of a graph:</p>  <p>The continuous curves in the top diagram show the last 10 taken values. The bottom diagram shows the entire realtime measurement:</p> <p><b>Result:</b> 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.</p>

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 51).

## 7.2 Retrieving measurement data

The measuring data is stored in the memory of the device. It can be read out via short range radio using the computer.

If measuring data have been transmitted from the device via mobile radio to a FTP server, it can be downloaded from there to your computer. In addition, it is possible to access this data in the SebaKMT Cloud "online" and to further process it.

### 7.2.1 Reading out data using the PC/Laptop

You can read out the measuring data from the device using your computer with SebaDataView-3 software.

*Requirements* The following requirements must be met:

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

*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, click on <b>Read</b> .
3	Select <b>RF</b> from the appearing context menu.  <b>Result:</b> 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 52).

### 7.2.2 Downloading data from a 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 SebaDataView-3 software and Internet access
- the FTP access data must have been entered and stored in the database of the software (see page 32)

*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, click on <b>Read</b> .
3	Select <b>FTP</b> from the appearing context menu.  <b>Result:</b> The download starts. In a small window the progress of the data transfer is displayed.

Step	Description
4	As soon as the download is finished, click the <b>OK</b> button.
	<b>Result:</b> 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.

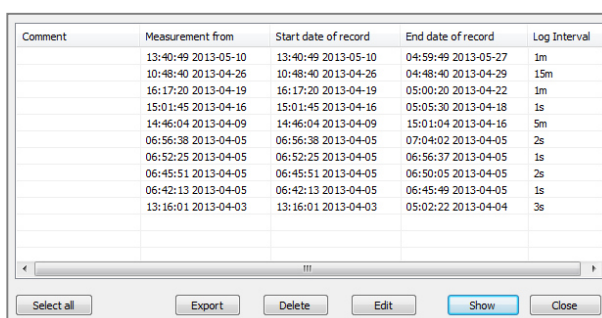
### 7.3 Managing saved measurement data

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 the menu bar, click on <b>Show data</b> .
	<b>Result:</b> 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 (see page 52).

*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.



Comment	Measurement from	Start date of record	End date of record	Log Interval
	13:40:49 2013-05-10	13:40:49 2013-05-10	04:59:49 2013-05-27	1m
	10:48:40 2013-04-26	10:48:40 2013-04-26	04:48:40 2013-04-29	15m
	16:17:20 2013-04-19	16:17:20 2013-04-19	05:00:20 2013-04-22	1m
	15:01:45 2013-04-16	15:01:45 2013-04-16	05:05:30 2013-04-18	1s
	14:46:04 2013-04-09	14:46:04 2013-04-09	15:01:04 2013-04-16	5m
	06:56:38 2013-04-05	06:56:38 2013-04-05	07:04:02 2013-04-05	2s
	06:52:25 2013-04-05	06:52:25 2013-04-05	06:56:37 2013-04-05	1s
	06:45:51 2013-04-05	06:45:51 2013-04-05	06:50:05 2013-04-05	2s
	06:42:13 2013-04-05	06:42:13 2013-04-05	06:45:49 2013-04-05	1s
	13:16:01 2013-04-03	13:16:01 2013-04-03	05:02:22 2013-04-04	3s

*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).

## 7.4 Displaying measurement data

### 7.4.1 Calling up a measurement

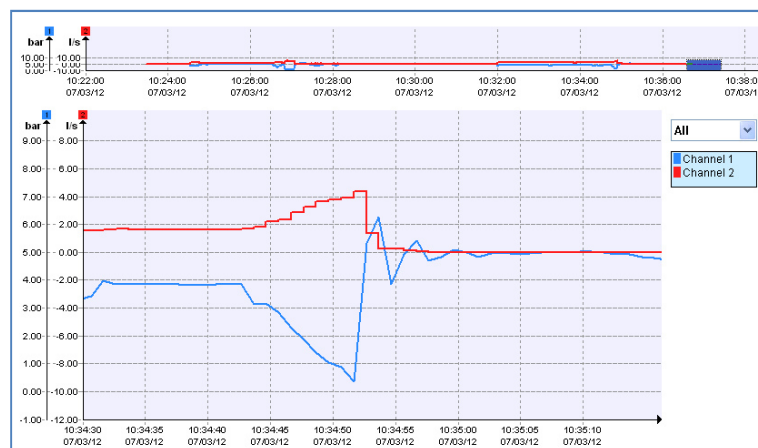
*Calling up the most recent measurement* To call up the most recently saved measurement data of a device, double-click this device in the directory tree of the software. The window for displaying the measurement data opens (see below).

*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, click on <b>Show data</b> .  <b>Result:</b> The data records list opens (see page 51). 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 <b>Show</b> or double-click the concerning line.  <b>Result:</b> The measurement data is shown.

### 7.4.2 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. Each curve is representing the results of one of the device's measuring channels.

Channel 1 (blue) ... Pressure measurement

Channel 2 (red) ... Flow measurement

The bottom diagram is used for viewing enlarged subareas of the measurement curves (see below).

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
<b>Zoom in</b>	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.
<b>Pan</b>	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.
<b>Select</b>	Use this command to end the functions <b>Zoom in</b> and <b>Pan</b> .
<b>Measure</b>	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.

(continued on next page)

Function	Description
<b>Insert label</b>	<p>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.</p> <p>Edit text ... Double-click the text field – input text – then click once outside of the field</p> <p>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</p> <p>Delete label ... Click the text field once – then press the “Delete” key on your keyboard</p>
<b>Hide / Show grid</b>	You can use this option to decide whether there should be a grid shown in the bottom diagram’s background or not.

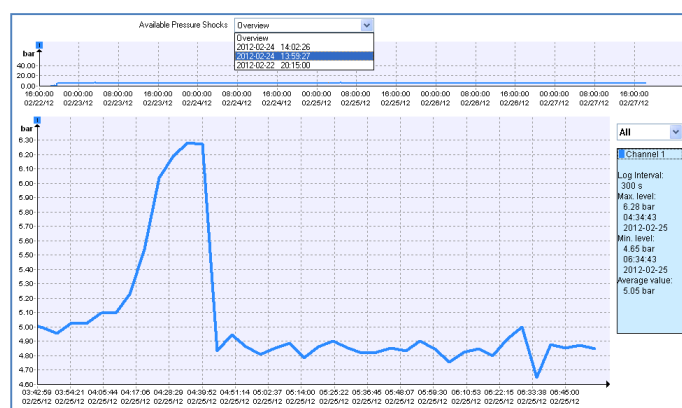
**Print** If you want to print the actual diagram view, right-click in the bottom diagram and select **Print** from the appearing context menu.

**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.

### 7.4.3 Displaying pressure surges

If pressure surges were recorded in addition to the standard pressure measurement, you will see 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.

## 7.5 Exporting data in CSV format

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 menu bar, in the segment <b>Measurement data</b> click on <b>Export</b> . <b>Result:</b> 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 menu bar, in the segment <b>Measurement data</b> click on <b>Show data</b> . <b>Result:</b> A new window shows all measurement data records saved for this device.
3	Select the relevant data record and click on <b>Export</b> . <b>Result:</b> An Explorer window opens.
4	Browse to the desired target folder and save the data record there.





## 8 Miscellaneous functions of the SebaDataView-3 software

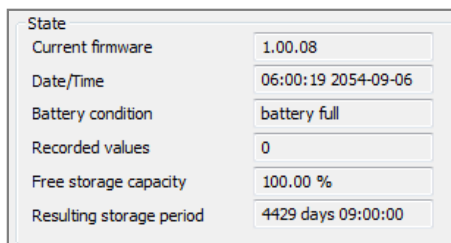
### 8.1 Find out status informationen of a device

Every time data is exchanged between the device and the computer, general information on the status of the device is also transferred to the computer.

Status information include, for example: :

- The device firmware version
- Internal date and time of the device
- Battery status
- Free memory capacity, etc.

*Procedure* To view the status information of a device, proceed as follows:

Step	Description														
1	Select the relevant device in the directory tree.														
2	<p>In the menu bar, click on <b>Program</b>.</p> <p><b>Result:</b> The window for programming opens. The status information can be found in the <b>State</b> segment.</p> <div data-bbox="737 972 1189 1214" data-label="Image">  <table border="1"> <thead> <tr> <th colspan="2">State</th> </tr> </thead> <tbody> <tr> <td>Current firmware</td> <td>1.00.08</td> </tr> <tr> <td>Date/Time</td> <td>06:00:19 2054-09-06</td> </tr> <tr> <td>Battery condition</td> <td>battery full</td> </tr> <tr> <td>Recorded values</td> <td>0</td> </tr> <tr> <td>Free storage capacity</td> <td>100.00 %</td> </tr> <tr> <td>Resulting storage period</td> <td>4429 days 09:00:00</td> </tr> </tbody> </table> </div> <p>The data refer to the time of the last data exchange between device and computer.</p> <p>If you wish more current information, read the configuration of the device (next step). For that, the following requirements must be met:</p> <ul style="list-style-type: none"> <li>• a radio interface must be connected to the computer (e.g. Log RI)</li> <li>• the device must be registered in the SDV-3</li> <li>• the device must be switched on</li> <li>• the device must be within the computer's wireless range</li> </ul>	State		Current firmware	1.00.08	Date/Time	06:00:19 2054-09-06	Battery condition	battery full	Recorded values	0	Free storage capacity	100.00 %	Resulting storage period	4429 days 09:00:00
State															
Current firmware	1.00.08														
Date/Time	06:00:19 2054-09-06														
Battery condition	battery full														
Recorded values	0														
Free storage capacity	100.00 %														
Resulting storage period	4429 days 09:00:00														
3	<p>Click on <b>Read</b>.</p> <p><b>Result:</b> The current configuration data is transferred from the device to the computer. The information on the screen is updated.</p>														

*Explanations* In the **Date/time** line, the internal time of the logger is displayed. Each time data is exchanged, the time of the logger is synchronised with the system time of the computer. After reading out the configuration (see Step 3), the displayed time should match the actual time.

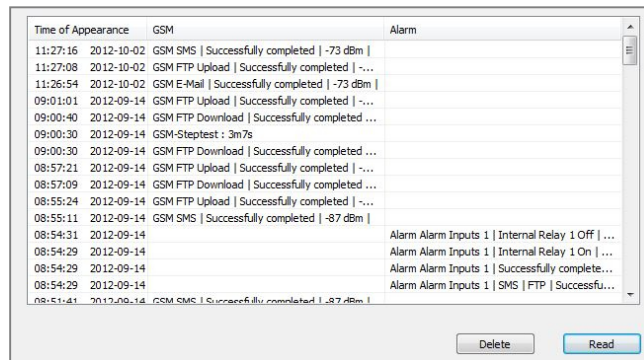
The **Resulting storage periode** line indicates how long the device can continue to measure with the currently set parameters until the device memory is full.

## 8.2 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.

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

Step	Description
1	Select the relevant device in the directory tree.
2	<p>In the menu bar in the segment <b>Event list</b> click on <b>Show</b>.</p> <p><b>Result:</b> The event list window opens. The events up to the time of the last data readout are shown.</p> <p>If the list is empty, there are no events stored for this device in the software database. Maybe the list has not yet been read out from the device.</p> <p>If you wish more current information, read the event data from the device now (next step). For that, the following requirements must be met:</p> <ul style="list-style-type: none"> <li>• a radio interface must be connected to the computer (e.g. Log RI)</li> <li>• the device must be registered in the SDV-3</li> <li>• the device must be switched on</li> <li>• the device must be within the computer's wireless range</li> </ul>
3	<p>Click the <b>Read</b> button.</p> <p><b>Result:</b> The latest event data are transmitted from the device to the computer and added to the Event list on the screen. If the list still is empty, no events have been stored by the device.</p>

**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.

## 9 Firmware update

We recommend that you keep the firmware of the device current at all times. SebaKMT makes improved versions of the firmware available in the download area of [www.sebakmt.com](http://www.sebakmt.com) on a regular basis.


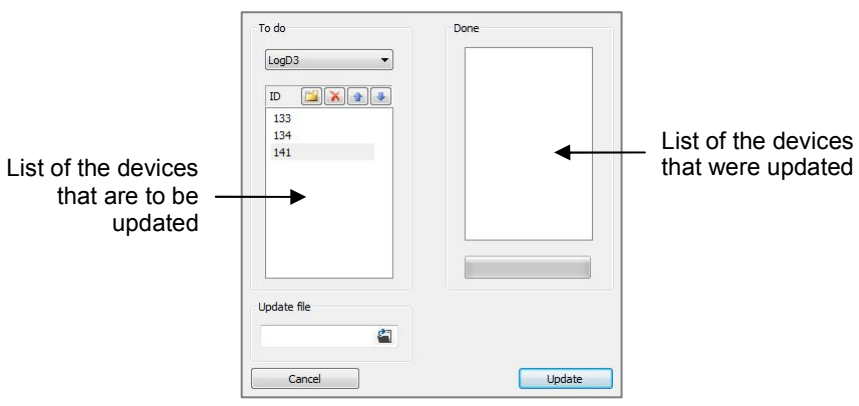

**FW version in use** The firmware version currently used can be found in the status information of the device (see page 57).

**Saving measuring data** 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.



**Requirements** To conduct a firmware update, the following requirements must be met:

- computer with SebaDataView-3 software Internet access
- a radio interface must be connected to the computer (e.g. Log RI)
- the relevant device must be registered in the SDV-3 software
- the device must be switched on
- the device must be within the computer's wireless range

**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 <a href="http://www.sebakmt.com">www.sebakmt.com</a> onto your computer.
2	Open the SebaDataView-3 software.
3	<p>Click the water drop symbol  on the top left of the window and select the option <b>Firmware Update</b> in the window that opens.</p> <p><b>Result:</b> The following window opens.</p> 
4	In the drop-down list in the top left, select the type of device <b>TDM 300</b> . If this type is not available, please select <b>LogD3</b> instead.
5	<p>At the top of the list on the left, click the folder symbol .</p> <p>A new input field opens.</p> <p>There, enter the identification number (ID) of the device you want to update and confirm with the ENTER key on your keyboard.</p> <p>The ID now appears in the list on the left.</p> <p>Several devices can be updated at the same time, provided they are of the same type. If you want to do that, enter the IDs of the relevant devices now.</p>

(continued on next page)

Step	Description
	If you want to remove a device from the list, select the relevant ID and click the 'Delete' symbol  at the top of the list.
6	<p>In the <b>Update file</b> 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.</p> <p>To do this, click the folder symbol  and use the Explorer window that opens.</p>
7	<p>Click <b>OK</b> to start the firmware update.</p> <p><b>Result:</b> The update file is transferred to the device/s 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.</p>



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 působení.



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 изхвърля и в градски пунктове за отпадъци. Ако желаете да изхвърлите 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 tsli 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 dhiúscairthe phobail. Más mian leat an táirgeadh seo a dhiúscairt, déan é a thógáil ag eagraíocht gar duit a sainfheidhmiú in ndiúscairt sean-thearas leictirigh.



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 απορρίματα. 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 hulladékgyűjtőbe dobni. Ha a terméket ki szeretné dobni, akkor vigye azt el a lakóhelyéhez közel működő, elhasznált elektromos berendezések begyűjtésével foglalkozó hulladékezelő 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.



Št zíme noráda, ka izstrādājumu, uz kura tā atrodas, nedrīkst izmest kopā ar parastiem mājstaimniecības 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 įmonei. 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'ghandux jintrema b'hal skart normali tad-djar. Minhabba li huwa prodott B2B , ma jistax jintrema wkoll f'centri civici ghar-rimi ta' l-iskart. Jekk tkun tixtieq tarmi dan il-prodott, jekk joghgbok ghamel dan kif suppost billi tieghdu ghand organizzazzjoni fil-qrib li tispécializza fir-rimi ta' taghmir qadim ta' l-eletriku.



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 deixado fora juntamente com o lixo doméstico normal. Como se trata de um produto B2B, também não pode ser deixado 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 și un gunoi menajer obișnuit. Deoarece acesta este un produs B2B, el nu trebuie aruncat nici la centrele de colectare urbane. Dacă vreți să aruncați acest produs, vă rugăm s-o faceți într-un mod adecvat, ducând-ul la cea mai apropiată firmă specializată în colectarea echipamentelor electrice uzate.



Tento symbol znamená, že takto označený výrobek 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 gospodinjске 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 señalado 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 desear 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 avfallshandla den här produkten på rätt sätt, ska ni lämna den till myndighet eller företag, specialiserad på avfallshantering av förbrukad elektrisk utrustning i ert närområde.