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1 Introduction

The program "Commander" is the PC software for the parametrization and data transfer of sensors and data loggers manufactured by the company Sommer GmbH.

The following tasks can be performed:

- Parametrization of sensors and loggers
- Transfer of data from loggers
- Display of measurement values of sensor and loggers
- Recording and display of radar spectrums
- Terminal to parametrize sensors using the sensor menu and to check the data output
- Management of Stations and connections

The following types of connections are supported:

- Serial connection
- Modern connection
- Bluetooth connection
- Socket connection
- IP-Call
2 System requirements

Supported operating systems

- Windows 7 SP1 (32-bit and 64-bit)
- Windows 8 (32-bit and 64-bit)
- Windows 8.1 (32-bit and 64-bit)
- Windows 10 (32-bit and 64-bit)
- or later

Required Software

- Microsoft® .NET Framework 4.5
- or later
3 Installation

There are different installations of "Commander" available, which have an impact on the automatic generation of the data structure.

Per User

Rights

No admin rights are necessary. Updates are only available for the user who performed the installation.

Installation folder

- **User program folder** (Users\User\AppData\Local\Programs\Sommer\Commander):
  Data structure is located in the parent folder (Users\User\AppData\Local\Programs\Sommer)

- **Specific folder** (i.e. c:\Sommer\Commander):
  Data structure is located in the parent folder (i.e. c:\Sommer)

Admin

Rights

Admin rights are necessary. Updates may only be performed by admins.

Installation folder

- **Standard program folder** (Program Files (x86)\Sommer\Commander):
  Data structure is located in the folder "Public documents" (Users\Public\Public documents \Sommer)

- **Specific folder** (i.e. c:\Sommer\Commander):
  Data structure is located in the parent folder (i.e. c:\Sommer)
4 Quick Start

In this chapter guidelines to the following topics are presented:

User Interface
Descriptions of the components on the main page.

Language
Instruction how to change the program language.

Communication with devices
Instructions how to communicate with devices.

Parametrization of devices
Instruction how to parametrize devices.

Update
Information about the update of Commander.

4.1 User Interface

The Commander window has three main components: The Menu, the Toolbar and the Working Area.

Menu
The menu items execute commands, change the program mode, or open special pop-up windows.

<table>
<thead>
<tr>
<th>Menu item</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>File</td>
<td>Execute commands for the selected program mode</td>
</tr>
<tr>
<td>Pages</td>
<td>Change the page according to the program mode and activate pages</td>
</tr>
<tr>
<td>Options</td>
<td>Open the options window with global settings</td>
</tr>
<tr>
<td>Extra</td>
<td>Execute special commands and start external programs</td>
</tr>
<tr>
<td>Help</td>
<td>Open the online help</td>
</tr>
<tr>
<td></td>
<td>Perform an update</td>
</tr>
<tr>
<td></td>
<td>Show program information</td>
</tr>
</tbody>
</table>

Toolbar
With the toolbar the program mode and the page are changed and in the working area the windows are adjusted according to the program mode. The visibility of the buttons can be changed with the menu "Pages" or globally in the options on the tab "Pages".

<table>
<thead>
<tr>
<th>Button</th>
<th>Mode</th>
<th>Shortcut</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter</td>
<td>Parameter mode</td>
<td>F2</td>
<td>Parametrization of sensors and data loggers</td>
</tr>
<tr>
<td>Measurement</td>
<td>Measurement mode</td>
<td>F3</td>
<td>Display of measurement values received from devices, record and display radar spectrums</td>
</tr>
<tr>
<td>Data</td>
<td>Data mode</td>
<td>F4</td>
<td>Transfer and management of data</td>
</tr>
<tr>
<td>Stations</td>
<td>Station mode</td>
<td>F7</td>
<td>Management of stations</td>
</tr>
<tr>
<td>Connections</td>
<td>Connection mode</td>
<td>F8</td>
<td>Management of connections</td>
</tr>
<tr>
<td>Terminal</td>
<td>Terminal mode</td>
<td>F9</td>
<td>Working with the device menu and checking of data strings (only with authorization &quot;Expert&quot;)</td>
</tr>
</tbody>
</table>

Working Area
In the working area all available windows related to one program mode are displayed. Here commands
are performed, displays are visualized and modification can be edited.

Special window are located in the communication area, which is displayed in all program modes. It is located on the right hand side of the working area and controls the communication using the defined stations and connections.

4.2 Language

The program language is defined in the common part of the program options. It can be changed by opening the options window using the menu "Options" and the tab "Common".

Languages
- English
- Deutsch/German
- Français/French

4.3 Communication with devices

To communicate with a device a corresponding connection has to be created. Some connection types demand the creation of a station as well. These connection types are: Bluetooth connections, IP calls and modem connections.

The simplest possibility to create connections and stations is the usage of the "Communication assistant", which guides you step by step through the setup of connections and stations.

Communication assistant

1. Open the communication assistant with the button in the communication area.
2. Follow the steps in the assistant and provide the necessary information.
3. Connections will be created automatically and stations can be saved.

A second possibility is the manual setup of connections and stations.

Create a connection

1. Switch to the connection mode with the toolbar button "Connections".
2. Create an empty connection with the button "New connection". This connection is displayed in the window "Connection".
3. Assign a unique name.
4. Select the desired connection type. This causes the connection parameters to switch to the setting of the selected connection type.
5. Edit the connection parameters.
6. Save the connection with the button "Save connection".

Create a station

Stations can either be created completely new or they can be created after a device scan for a connection.

Create a new station

1. Switch to the station mode with the toolbar button "Stations".
2. Create an empty station with the button "New station". This station is displayed in the window "Station".
3. Enter the station number and the Sommer ID and assign a unique name.
4. Activate the connections you want to perform communications with using the square-shaped checkboxes. Define one default connection with the circle-shaped checkboxes.
5. By activating connections special connection parameters for connection types may be displayed (i.e. for Bluetooth, IP Call and Modem). Edit these connection parameters.
6. If the devices of the station have a known system key, enter this system key. Otherwise use the
system key 99.
7. Save the station with the button "Save station".

Create a station after a device scan for a connection
1. Select a connection either in the communication area by setting the mode to "Connection" and selecting the connection in the checkbox "Connection" or in the connection mode by selecting the connection in the list
2. Perform the procedure "Scan devices".
3. Create a new station with the found devices using the button "Create station"
4. Complete missing information for the station.
5. Save the station with the button "Save station".

If the connection and eventually a station are created the communication can be established.

Communication with a connection
The communication with a connection is only possible for serial connections and socket connection.

Communication with a single remote device
1. Select a connection either in the communication area by setting the mode to "Connection" and selecting the connection in the checkbox "Connection" or in the connection mode by selecting the connection in the list.
2. Establish the communication either with the button "Connect" or by a command such as "Load parameters".

Communication with several remote devices
1. Select a connection as described above.
2. Perform the procedure "Scan devices". The found devices are displayed in the communication area in the field "Devices".
3. Select the desired device.
4. Establish the communication either with the button "Connect" or by a command such as "Load parameters".

Remark: The saving of found devices is only possible for stations.

Communication with a station
The communication with a station is only possible for all connections.

1. Select a station either in the communication area by setting the mode to "Station" and selecting the station in the checkbox "Station" or in the station mode by selecting the station in the list.
2. Select a connection by selecting the connection in the checkbox "Connection" in the communication area.
3. On the first connection perform the procedure "Scan devices". The found devices are saved in the station and are displayed in the communication area in the field "Devices".
4. Select the desired device.
5. Establish the communication either with the button "Connect" or by a command such as "Load parameters".

4.4 Parametrization of devices
To parametrize a device the communication with connection and eventually station has to be defined.

Parametrize device
1. Select the desired communication in the communication area.
2. Switch to the parameter mode with the toolbar button "Parameter".
3. Transfer the parameters from the device with the command "Load parameters". The parameters are
displayed in the menu structure in the window “Parameter”.
4. If desired, save the unchanged parameters in a local file with the command “Save parameter file”.
5. Make the changed in the menu structure in the window "Parameter". Changes are marked pink.
6. Send the changed parameters to the device with the command “Send modified parameters”.

Remark: When transferring the parameters from a device for the first time the procedure may last a little longer, as automatically the schema is transferred, if it is not available in the internet.

4.5 Update

If an update of "Commander" is available, a field with information is automatically shown in the main bar.
The information field is closed by opening the first communication.
The update is started either by the button in the information field or by the menu item "Update" in the menu “Help”.

Attention: You have to close all other instances of Commander, RQ-Commander and RP-Commander before you perform the update.
5 Program concepts

In this chapter the following concept are introduced:

**Communication concept**

Concept of the communication.

**Parameter and schema concept**

Concept of parameters and schema.

5.1 Communication concept

The communication in Commander is carried out between two endpoints: The local endpoint initiating the communication and the remote endpoint (or endpoints) accepting the communication.

Therefore the Commander separates between connections and stations. Connections describe the local endpoint initiating the communication. Stations on the other hand describe the remote endpoint accepting the communication. If the communication can be accepted by several endpoints, these are additionally described in devices.

Connections

As described above a connection describes a local endpoint initiating the communication. It can be of several types:

**Connection types**

- Serial connection
- Bluetooth connection
- Socket connection
- IP call
- Modem connection

In a connection all the parameters of a connection type are defined, that are necessary to initiate a communication.

But for a part of the connection types these settings are not sufficient to establish the communication with the remote endpoint. Additional information related to the remote endpoint is necessary. This can be illustrated for the example modem connection. Additional to the local connection settings the telephone number at the endpoint is needed. These settings of the remote endpoint are defined in stations.

Therefore communication with a part of the connection type can only be established with stations.

**Communication of connection types**

<table>
<thead>
<tr>
<th>Connection type</th>
<th>Connection</th>
<th>Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Bluetooth</td>
<td>yes*</td>
<td>yes</td>
</tr>
<tr>
<td>Socket</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>IP Call</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td>Modem</td>
<td>no</td>
<td>yes</td>
</tr>
</tbody>
</table>

* All available Bluetooth devices are searched and displayed for selection.

Stations

A station describes the remote endpoint accepting the communication initiated by a local endpoint.
That is why the settings of the local endpoint have to be present for a successful communication. For that stations have links to one or more predefined connections. In this way the settings of the local endpoint are described in the connection, which could be linked to other stations too. The settings for the remote endpoint are defined in the station.

**Devices**

In the simplest case only one remote endpoint (or device) is present for the communication. But there could also be more endpoints (devices) available, which can be arranged in any BUS system. For example a data logger could be connected to one or more sensors. So that the Commander can communicate with any of these devices, the BUS system must be known. In the Commander the BUS system is designated as devices and managed in the stations.

**Investigate the devices in a BUS system**

This is available with an automatic procedure to scan the devices. Thereby connected devices are searched. If a device is found, it is switched off. The searching for devices continuous until no device is found any more. Then the found devices, as long as they are data loggers, are searched for devices, that might be connected to interfaces. The result of the device scan is a complete image of the BUS system with all its devices, types and protocol addresses.

The device scan does take some time. To avoid performing this procedure for every communication, the found devices are saved in the station.

**Routing and Unrouting**

For every communication with a station one device has to be assigned, with which the communication should be performed. When the connection is established, all devices located on the path to the assigned device are set transparent. All other devices are temporarily switched inactive. This process is referred to as routing.

During disconnecting the routing has to be undone. All devices are switched active and the transparencies are finished. This is referred to as unrouting.

**5.2 Parameter and schema concept**

In the parameter mode all parameters are loaded from a device and can therefore locally be displayed, changed and saved.

Thereby a differentiation is made between parameters and schema.

**Parameters**

Under parameters only the actual numeric values, texts and selections of combo boxes are understood. All further information to the parameters is in the schema.

**Schema**

A schema is the image of the complete menu structure of a device and is the base for the parameters. For all parameters the labels, units, formatting, upper and lower boundaries, selection parameters and much more are present. The schema is different for every device, even more its usually different for every software version.

Therefore no schema is automatically installed with the Commander. But during any first communication with a device with a specific software version the related schema is automatically transferred from the internet or the device and saved locally. Now this schema is available for the future and does not have to be transmitted again.
6 Communication area

The communication area is displayed on all program modes. It consists out of settings, commands and a terminal.

Communication settings

The settings define, if the communication is performed using a connection or a station, and the station, the connection and the device is selected.

Commands

The commands establish and close communications and special procedures can be started.

Terminal

In the terminal the communication is tracked and the sensor menus of connected devices can be operated.

6.1 Communication settings

Mode

the communication mode define, if the communication is performed using a connection or a station.

Station

In the communication mode "Station" the station for the communication is selected from the stations managed in the stations mode. Stations can be selected in the list of the station mode too.

Connection

The connection for the communication is selected from the connections managed in the connection mode and activated for the selected station. Connections can be selected in the list of the connection mode too.

Devices

The device for the communication is selected. The devices are determined with the command "Scan devices" and are saved in stations. Additionally the displayed parameters can be switched between different devices, if they have been transferred from the devices before.

Logging

The communication can be logged in a log file. With the checkbox the logging is activated. The file name of the log file is either set in the text box or can be selected in a dialog opened by the button with the folder icon. The folder selected in this dialog is saved and used for any log file.

6.2 Commands

The available communication commands depend on the program mode and the selected connection type.

General commands

These commands are always available.

Communication assistant

The communication assistant is opened which guides you step by step through the setup of connections and stations.
Connect
The selected communication is established and necessary routing is performed.

Disconnect
The communication is closed with performing necessary unrouting.

Route device
The selected device is routed for the open communication.
Remark: This command is only available for open communications with multiple devices, if no device is routed.

Special commands
These commands are only available in connection and station mode depending on the selected connection type.

Scan devices
All available devices at the endpoint of the communication are searched. In the station mode all found devices are automatically saved in the station.

Create station
After devices have been scanned for a communication with a connection the information can be saved in a new station.
Remark: This command is only available with the communication mode "Connection".

Scan port
For the port of the selected serial connection the connections with all possible baud rates and combinations of parity and stop bits are sequentially established and checked, if a Sommer devices answers. If a device is found, the procedure is finished.
Remark: This command is only available for serial connections in the communication mode "Connection".

Scan Bluetooth devices
All available Bluetooth devices are searched. the found devices are displayed in a list and one device can be selected for the station.
Remark: This command is only available for Bluetooth connections.

6.3 Terminal
The window "Terminal" is displayed right at the bottom in the communication area and can be hidden in the options.

Purpose
Working with the sensor or device menu
Any device has a menu, which can be directly edited in the terminal. The sensor or device menu is opened with three question marks (???).

Checking of data strings
Data strings transmitted from devices can be check are displayed in the terminal and can be checked.
7 Parameter mode

The parameter mode supports the parametrization of devices (sensors and data loggers). If multiple devices are available for a station or communication, the devices can be switched and one device can be selected for the parameter mode. This is performed with the selection list "Devices" in the communication area or with the header in the parameter or measurement mode.

There are three windows available.

Parameter

Here all parameters of a device are displayed in a menu structure. The parameters can be transferred from a device or are opened from a parameter file.

Information

In this window information to the device is displayed.

Commands

The commands perform the transfer of data from or to a device as well as the opening and saving of parameter files.

7.1 Information

Information to the selected device is displayed.

Information

Device

The type of the selected device is displayed.

Protocol address

The protocol address is displayed. It consists out of the "Complex key" and the "Device number".

Parameter

The state of the local parameters is displayed. If a button is present, a synchronization with the device can be performed. This is equal to the command "Download parameters".

Parameter

Synchronized

The local parameters correspond with the parameters on the connected device.
The parameters are synchronized.

Not synchronized

The local parameters do not correspond with the parameters on the connected device.

Changed locally

The local parameters have been changed manually and do not correspond with the parameters on the connected device.

From file

The local parameters have been opened from a file and do not correspond with the parameters on the connected device.

File name

The name of the file is displayed from which the parameter have been opened.

Serial number

The serial number of the device is displayed.
Setup version
The setup version of the device is displayed.

Software version
The software version of the device is displayed.

Time
The date and time on the device are displayed.

7.2 Commands
In parameter mode following commands are available:

File commands

Open parameter file
The parameters of the selected device are loaded from a local parameter file.

Save parameter file
The parameters of the selected device are saved in a local parameter file.

Open devices parameter file
The parameters of all devices are loaded from a devices parameter file. If the station the devices are based on is known, the station is selected. Otherwise the connection mode is used.

Save devices parameter file
The parameters of all devices are saved in a devices parameter file.

Device commands

Download parameters (Synchronize)
All parameters are downloaded from the device and are displayed. Thereby the parameters are synchronized.

Download parameters of all devices
All parameters are downloaded sequentially from all devices. Thereby the parameters are synchronized.

Upload modified parameters
All modified parameters are uploaded to the device.
Remark: Modified parameters are marked with a pink background.

Upload all parameters
All parameters are uploaded to the device.
Attention: The station number and the Sommer ID are not transferred.

Special commands

Set device time
A dialog to set the date and time of the device is opened.
Select APN

A dialog with predefined APN settings is opened. These modem settings can be selected and adopted for the device. The settings consist out of APN, user and password.
Remark: This button is only available for devices with modem functionality.

Analog inputs assistance

Below the parameters a window is displayed, which supports the configuration of the analog inputs.
Remark: This button is only displayed with the authorization "Expert" and is only available for devices with analog inputs.

7.3 Parameter

In a menu structure all parameters of a device are displayed.

Device bar

On the top a bar is located, which allows to switch between the devices of the bus system of a station or connection.
Remark: The bar is only visible if multiple devices are available.

Parameter menu

The parameters of a device are displayed in parameter menu. The structure of the menu correlates with the according device menu. This structure is named as schema and is automatically transferred during the first communication with the device.
The parameters are either transferred from a device or opened from a file. Sub-menus can be expanded. Parameter can be edited and are highlighted with a pink background. The changed parameters have to be send to the device with a command. Selected commands can directly be executed from the menu.
Remark: The language of the menu is based on the selected language of the device. It can be changed in the menu "Technics".

Analog inputs assistance

In the window at the bottom all analog inputs are listed. For every input all sensor types and sensors are available, which can be connected to the input. Related PDF documents with detailed information and calculation assistants for mult and offset can be opened.
8 Measurement mode

In the measurement mode measurement values received from devices (sensors and data loggers) are displayed as text or in a measurement graph. The measurement values are either requested per commands or they are sent automatically by the device in a defined interval. Additional spectrums from radar devices can be recorded and displayed.

The following windows are available.

**Measurement values**

Here the measurement values transmitted or requested from a device are displayed.

**Measurement data graph**

In the measurement data graph the values from the device are displayed as time series.

**Spectrum graph**

In the spectrum graph the spectrums from a radar device are displayed. It is possible to switch between spectrums and to display additional information to a spectrum.

**Information**

In this window information to the device is displayed.

**Commands**

With the commands measurement values can be requested from a device.

8.1 Commands

The following measurement commands can be performed. Most of these are only available after the parameters of the device have been requested.

**Polling commands**

**Start polling of measurement values**

A polling sequence is started, that requests the measurement values in a defined interval.

**Start polling with measurements**

A polling sequence is started, that continuously performs measurements and requests these values in a defined interval.

*Attention: During this polling the saving of data in the device is deactivated.*

*Remark: This command is only displayed with the authorization "Expert".*

**Start polling of storage values**

A polling sequence is started, that requests the storage values in a defined interval.

**Stop polling**

The polling sequence is stopped.

**Parameter commands**

**Download parameters (Synchronize)**

All parameters are downloaded from the device and are displayed. Thereby the parameters are
synchronized.

**Download parameters of all devices**

All parameters are downloaded sequentially from all devices. Thereby the parameters are synchronized.

**Measurement data commands**

**Clear measurement data**

The time series in the measurement graph are deleted.

**Save measurement data**

The measurement data are saved in a data file.

**Radar spectrum commands**

*Remark: These commands are only displayed if the setting "Show radar spectrum" is activated in the options "View".*

**Start spectrum mode**

The connected radar device is set into the spectrum mode. The output spectrums are recorded and displayed in the spectrum graph.

**Stop spectrum mode**

The spectrum mode is stopped and the radar device is set back into the normal mode.

**Open spectrum file**

Spectrums are opened from a local spectrum file.

**Save spectrum file**

Spectrums are saved in a local spectrum file.

**Clear spectrums**

All spectrums are deleted and removed from the spectrum graph.

**Create PDF file**

A PDF file with the spectrum graph and information is created.

### 8.2 Measurement values

In a list the measurement values of a device are displayed.

**Device bar**

On the top a bar is located, which allows to switch between the devices of the bus system of a station or connection.

*Remark: The bar is only visible if multiple devices are available.*

**Measurement values list**

All valid transferred measurement values are displayed in a list. The name and the unit of the measurement values are adopted from the related parameters. Therefore the parameters have to be downloaded before.
8.3 Measurement data graph

In the measurement data graph the values from the device are displayed graphically as time series and can be saved in data files.
There are mouse- or keyboard actions available.

8.4 Spectrum graph

In the spectrum graph the spectra from a radar device are displayed.

Commands

Arrows
With the arrows below the spectrum graph the selected spectrum is switched.

Number of spectrums
The number of the displayed spectrums in the spectrum graph can be selected.

There are mouse- or keyboard actions available.

With the bar right of the spectrum graph a window can be expanded, which displays additional information to the selected spectrum.
9  Data mode

In the data mode data can be transferred from data loggers and can be opened from data files.

Purpose

Transferring of data
Data can be transferred from data loggers.

Displaying of data
In a graph the transferred data or data from a data file can be displayed.

There are three windows available.

Commands
With the commands data can be transferred from data loggers, special commands for data loggers can be performed and data file can be opened and archived.

Stations
In this window all stations are displayed in a list. The list can be filtered and sorted using the fields in the header row.
If a station is the list is selected, the station is selected for the communication and data transfer.

Station settings
In this window the station parameters of the selected or a new station are displayed. The settings can be edited and saved with the command "Save station".

Data graph
In the graph the transferred data or data from data files are displayed.

9.1  Commands

Transfer commands

Transfer data
Data beginning with the last transfer position is downloaded from the data logger. The transferred data is archived and the last transfer position is saved.

Transfer data manually
The complete data range available on the data logger is displayed. With help of a slider the data range for the transfer from the logger is selected. Thereby only older data can be ignored as data are always transferred until the end of the available data range.
Attention: The last transfer position is not saved for this data transfer mode.

Logger commands

Clear data memory
The data memory on the logger is completely deleted.
Attention: No data is available on the logger any more.

Data file commands
Import assistant
The assistant supports the importing and archiving of data files.

Open data file
A data file can be opened and displayed in the data graph.

Station commands

New station
A new empty station is created.

Delete station
The selected station is deleted completely.

Save station
The selected station is saved. If the station number or the Sommer ID of a saved station is changed, the station can either be overwritten or it can be created new.

Extra commands

Remark: Additional data commands are available in the menu "Extra".

Download data dump
A copy of the complete data memory is downloaded from the logger.

Delete all data pointers
All data pointer and consequently the saved transfer positions are deleted on the logger.
Attention: Deleting the data pointers causes the deletion of the last data positions for all other users, which load data from the data logger.

9.2 Stations
All stations are displayed in a list. The list can be filtered and sorted with the fields in the header. By selecting a station it is selected for data download.

Name
The unique name of the station.

Station ID
The unique ID to identify the station and its data.

Last data
The last time-stamp in the data or the last time-stamp of data transferred.

Connections
All connections available for communication are listed in a combo box and can be selected for communication. Filtering selects stations with any connection of the filtered connection type.

Buttons

Transfer data Transfer the actual data from the logger.
Open data archive folder Open the folder with the data archive.
9.3 Data graph

In the data graph transferred data and data opened from data files are displayed. Displaying of failure values can be activated or deactivated in the options. There are mouse- or keyboard actions available.
10 Station mode

In the station mode stations are managed.

Purpose

Communication with a station
Stations are used to communicate with devices using the activated connections.

Managing devices of a BUS system
Opposed to connections stations can manage the devices in a BUS system.

Managing of data
Stations are required to manage data in the data archive.

There are three windows available.

Commands

With the commands a new station can be created and the selected station can be saved or deleted.

Stations
In this window all stations are displayed in a list. The list can be filtered and sorted using the fields in the header row.
If a station is the list is selected, the station parameters are displayed in the window "Station" and the station is selected for the communication as well.

Station settings
In this window the station parameters of the selected or a new station are displayed. The settings can be edited and saved with the command "Save station".

10.1 Commands

Station commands

New station
A new empty station is created.

Delete station
The selected station is deleted completely.

Save station
The selected station is saved. If the station number or the Sommer ID of a saved station is changed, the station can either be overwritten or it can be created new.

10.2 Stations

All stations are displayed in a list. The list can be filtered and sorted with the fields in the header. By selecting a station it is selected for communication.

Name
The unique name of the station.
Station ID
The unique ID to identify the station and its data.

Last data
The last time-stamp in the data or the last time-stamp of data transferred.

Type
The type of the station. Data transfer and archiving is only possible for stations of the type "logger".

10.3 Station settings
The station parameters define a station and can be edited in the station mode.

Identification parameters

Station ID
The Station ID is the unique ID of the station used to identify data. Usually it is the station number but it may include the Sommer ID too.

Type
The setting defines the type of the station.

Type
- Logger The station has a data logger in its devices and therefore has a station number. Data transfer and archiving is not possible.
- Station The station has only sensors as devices. Data transfer and archiving is not possible.

Entire ID
The entire ID uses the station number and the Sommer ID for the Station ID.

Station number
The unique number of the station, to identify the logger

Sommer ID
The Sommer ID is preset in the device and corresponds to the serial number of the device. It is used additionally to the station number in case identical station numbers occur more than once.

Name
The unique name of the station.

Connection parameters
All available connections are displayed in a list. Check-boxes define if connections are activated for stations and which connection is used as default connection.

Activation
The square-shaped check-box defines if the connection is activated for the station.

activated
not activated
Default connection

One connection can be defined as default connection using the circle-shaped check-box. This connection is preselected when changing to the station.

- default connection
- not default connection
- connection not activated and default connection not possible as

Bluetooth parameters

Remark: These parameters are only available if a Bluetooth connection is activated for the station.

Address

Pin

IP Call parameters

Remark: These parameters are only available if an IP Call is activated for the station.

IMSI number

Modem parameters

Remark: These parameters are only available if a modem connection is activated for the station.

Number

The number is the telephone number for the modem connection.

Device parameters

System key

The system key is used for the command "Scan devices" in the communication area. Only devices with this system key are accepted as devices for the station. With the system key 99 all devices are accepted.

Devices

In the hierarchic list all devices of the station are listed. (see Communication concept)

Data parameters

Last data

The last time-stamp in the data is displayed. In a menu, opened with a click of the right mouse button, the time-stamp can be determined manually.

Archive type

The setting controls the file system of the data archive.

Archive types

- None Data is not archived.
- Month Data is archived in monthly files.
- Year Data is archived in yearly files.
Archive sub folder

All data is automatically saved in the data folder "Data". With this setting a sub-folder for the data of the station can be created.
11 Connection mode

In the connections mode connections are managed.

Purpose

Communication with a connection
Connections are used to communicate directly with devices using the connection.

Usage in stations
The managed connections are used in stations. Stations communicate with these links connections. Thereby connections can be used in several stations.

There are three windows available.

Commands
With the commands a new connection can be created and the selected connection can be saved or deleted.

Connections
In this window all connections are displayed in a list, which can be filtered by the type of the connections.
If a connection is the list is selected, the connection parameters are displayed in the window "Connection" and the connection is selected for the communication as well.

Connection settings
In this window the connection parameters of the selected or a new connection are displayed. The settings can be edited and saved with the command "Save connection".

11.1 Commands

Connection commands

New connection
A new empty connection is created.

Delete connection
The selected connection is deleted completely.

Save connection
The selected connection is saved. If the name of a saved connection is changed, the connection can either be overwritten or it can be created new.

11.2 Connection settings

The connection parameters define a connection and can be edited in the connections mode.

Common parameters

Name
Every connection has to have a unique name to identify the connection.
Type
The parameter sets the type of the connections.

Connection types
- Serial connection
- Bluetooth connection
- IP Call
- Socket connection
- Modem connection

Attention: The establishing of IP Call and modem connections is only possible with station communications.

Default connection
One connection can be defined as default connection, which will be preselected for communications in the mode "Connection".

Connection parameters
The connection parameters are displayed according to the selected connection type.

Serial parameters

Port
The port for the connection is selected. Only available ports are displayed in the selection. To update the list of ports click the right button.

Baud rate
The baud rate is selected from a select list.

Baud rates
- 1200
- 2400
- 4800
- 9600
- 19200
- 38400
- 57600
- 115200

RTS/CTS handshake
The switching of the RTS/CTS control line (hardware-handshake) is activated or deactivated.

XON/XOFF
The XON/XOFF software-handshake is activated or deactivated.

Parity and stop bits
The parity and the number of stop bits are selected using predefined combinations:

Parity and stop bits
- No par., 1 stop bit
- No par., 2 stop bits
- Even par., 1 stop bit
- Odd par., 1 stop bit
Bluetooth parameters

IP Call parameters

Server
The switching server controlling the communication set.

Port
The port of the switching server is set.

Waiting time
The waiting time defines, how long to wait for the answer of a device after sending a command. For poor internet connections the waiting time possibly must be increased to prevent the communication to be closed due to time-outs.

Socket parameters

Server
The switching server controlling the communication set.

Port
The port of the switching server is set.

Waiting time
The waiting time defines, how long to wait for the answer of a device after sending a command. For poor internet connections the waiting time possibly must be increased to prevent the communication to be closed due to time-outs.

Modem parameters

Port
The port for the connection is selected. To update the list of ports click the right button.

Baud rate
The baud rate is selected from a select list.

Baud rates
- 1200
- 2400
- 4800
- 9600
- 19200
- 38400
- 57600
- 115200

RTS/CTS handshake
The switching of the RTS/CTS control line (hardware-handshake) is activated or deactivated.

XON/XOFF
The XON/XOFF software-handshake is activated or deactivated.
**Parity and stop bits**

The parity and the number of stop bits are selected using predefined combinations:

- No par., 1 stop bit
- No par., 2 stop bits
- Even par., 1 stop bit
- Odd par., 1 stop bit

**Initialization string**

The initialization string consists of modem specific commands.

**Dialing prefix**

The dialing prefix is output prior to the dialing number. It is for example used to set the prefix of a telephone system, which is usually 0.

**Configuration string**

The configuration string consists of modem specific commands.

**Data transfer parameters**

**Type**

The data transfer can be performed in different ways. Usually a streamed transfer is recommended.

**Data transfer types**

- **Block wise** The data is requested block-wise by the Commander. After every block a check sum is output, which is checked. If the check is not successful the block is requested again.
- **Streamed** The data is transferred autonomous and block-wise from the device. After every block a check sum is output, which is checked. If the check is not successful the transfer is aborted.
12 Options

The options are the global settings of the program. The settings can be changed in the window "Options", which is opened using the menu and the menu item "Options".

Common

Language
The language of the program is changed and all texts of the program are displayed in the selected language.

Languages
- English
- Deutsch/German
- Français/French

Attention: The language of the parameters of sensors and data loggers is not influenced by this setting. The setting of the device language is set directly on the device.

Font size
The font size of the program is changed. All texts are displayed in the selected font size.

Authorization
This setting changes the authorization of the user. It defines, if special settings can be edited in the parameter mode. Settings, that cannot be edited, are displayed gray.

Authorizations
- Normal  The user has the normal restricted rights.
- Expert   The user has advanced rights and can edit all settings in the parameter mode.

Communication
These settings control the transfer of commands in the Sommer protocol.

Maximal number of characters
The maximal length of a transmitted protocol string. This setting overrules the maximal number of commands.

Maximal number of commands
The maximal number of commands transmitted together in a protocol string.

Schema from Web
An unknown schema is first requested from the internet. Only if then the schema was not found, it is requested with direct communication.

Polling interval
The value defines the seconds for the interval used to poll measurement values or measurements from a device.

Log outgoing commands
The setting defines, if additionally to the received data the sent commands are logged in the log file too.
Graph

Failure values in data graph
Failure values are displayed in the data graph.

Units
The global settings for the units are defined.

Velocity
The unit of the velocity is set.

Pages
The visibility of the buttons in the toolbar are defined globally.

Show stations page
The button "Station" is displayed in the main toolbar.

Show connections page
The button "Connections" is displayed in the main toolbar.

Show terminal page
The terminal mode is available and the button "Terminal" is displayed in the main toolbar.
Remark: The terminal mode is only available with the authorization "Expert".

Show radar spectrum
In the measurement mode the spectrum graph and the radar spectrum commands are shown.
13 Appendix

13.1 Parameter menu

Shortcuts

The following shortcuts are available in the parameter menu:

<table>
<thead>
<tr>
<th>Keyboard</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \uparrow ) and ( \downarrow )</td>
<td>Change menu item</td>
</tr>
<tr>
<td>( \leftarrow ) and ( \rightarrow )</td>
<td>Expand and collapse sub-menus</td>
</tr>
<tr>
<td>+ and -</td>
<td>Expand and collapse sub-menus</td>
</tr>
<tr>
<td>Tab</td>
<td>Switch into editor</td>
</tr>
</tbody>
</table>

Shortcuts in editors

<table>
<thead>
<tr>
<th>Keyboard</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return</td>
<td>Confirm editor and switch in menu item</td>
</tr>
<tr>
<td>Esc</td>
<td>Dismiss changes and switch in menu item</td>
</tr>
<tr>
<td>Tab</td>
<td>Proceed to next editor</td>
</tr>
</tbody>
</table>

13.2 Graphs

Actions for graphs

In the graphs the following mouse and keyboard actions are available.

Mouse actions

<table>
<thead>
<tr>
<th>Mouse</th>
<th>Label</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Click checkbox in the legend</td>
<td>Visibility of the curve</td>
<td>The labeled curve is shown or hidden.</td>
</tr>
<tr>
<td>Double click with right mouse button</td>
<td>Reset graph</td>
<td>The graph is reset to its origin zoom.</td>
</tr>
<tr>
<td>Drag with pressed right mouse button</td>
<td>Zoom rectangle</td>
<td>The selected rectangle is zoomed.</td>
</tr>
<tr>
<td>Mouse wheel</td>
<td>Zoom</td>
<td>The zoom range is increased or decreased.</td>
</tr>
<tr>
<td>Click with left mouse button and selection of a data point</td>
<td>Show information</td>
<td>Information to the selected data point is displayed.</td>
</tr>
</tbody>
</table>

Keyboard actions

<table>
<thead>
<tr>
<th>Keyboard</th>
<th>Label</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Escape</td>
<td>Reset graph</td>
<td>The graph is reset to its origin zoom.</td>
</tr>
<tr>
<td>+ and -</td>
<td>Zoom</td>
<td>The zoom range is increased or decreased.</td>
</tr>
<tr>
<td>( \leftarrow ), ( \rightarrow ), ( \uparrow ) and ( \downarrow )</td>
<td>Scroll</td>
<td>The graph range is switched in the according direction.</td>
</tr>
</tbody>
</table>
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