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Winsol

Version 2.14

Program description

Manual Version 2.14

English

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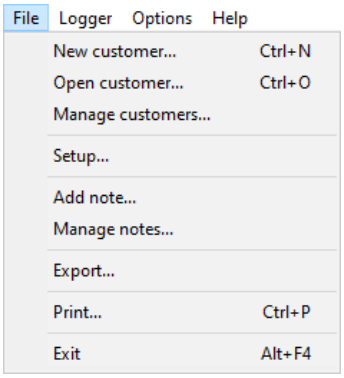
Winsol

The program ***Winsol*** is used for the acquisition and evaluation of measured values recorded by the datalogger.

To be able to capture the data from several systems or dataloggers, ***Winsol*** enables the creation and management of "**Customers**".

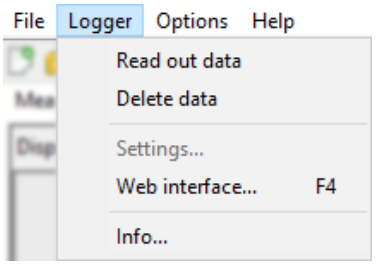
Menu overview

Menu „File“



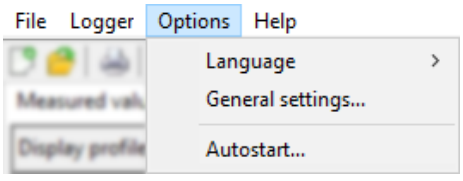
New customer...	Creation of a new customer
Open customer...	Open an existing customer
Manage customers...	Rename or delete a customer, upgrade older files to the current file format
Setup...	Selection of the datalogger, the interface, specification of the logger configuration and entry of the device designation and the logged values.
Add note...	Add a new Note. Notes can also be used to log changes in the system. Notes appear chronologically in the diagram.
Manage notes...	View and edit all notes.
Export...	Output of the measured values to a .csv file
Print...	Prints the displayed graphic
Exit	Ends the program

Menu „Logger“



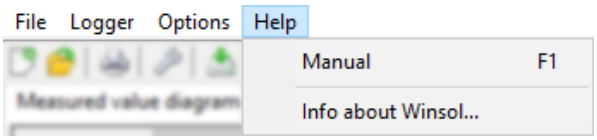
Read out data	Reads data stored on the logger
Delete data	Deletes data on the logger‘s data storage
Settings	Configuration of the Ethernet interface of the **Bootloader**
Web interface	Opens the **C.M.I.** web interface
Info...	Version information about the logger

Menu „Options“



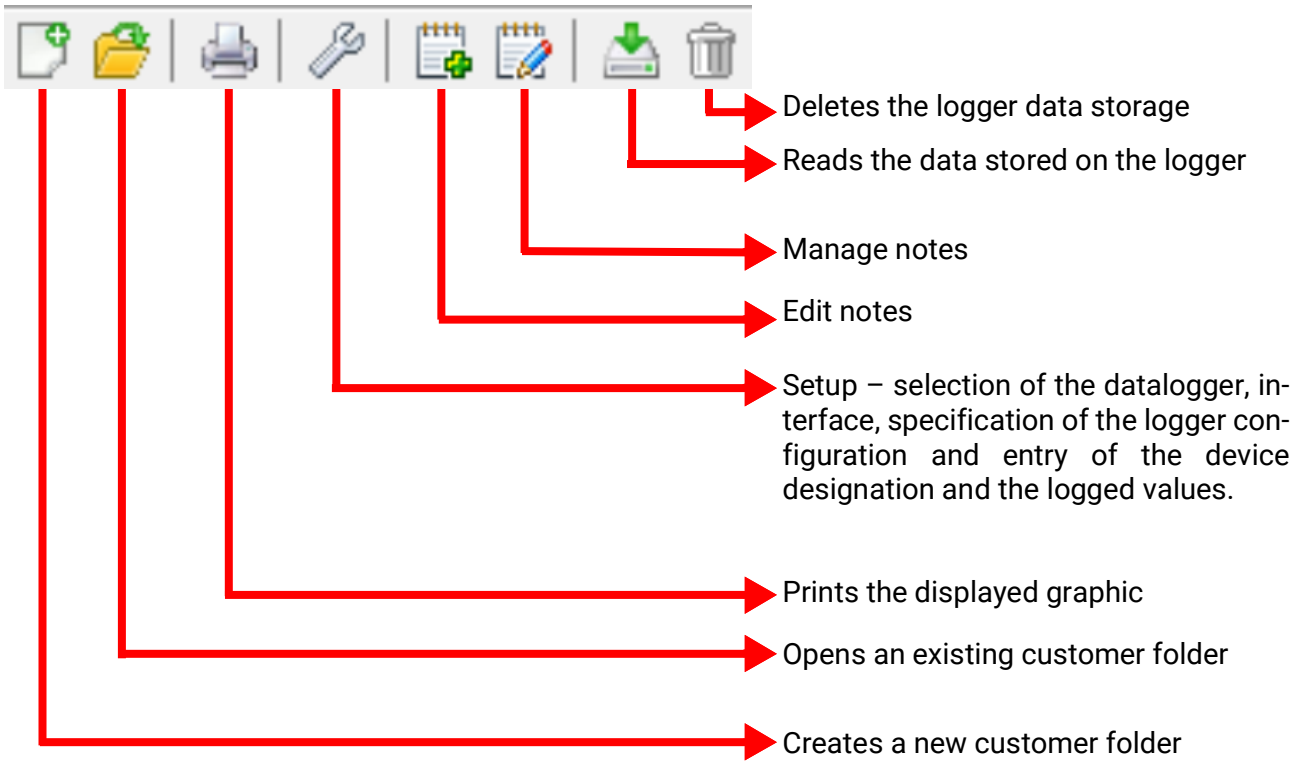
Language	Language selection
General settings	Specifications of the data path for ***Winsol***
Autostart	Selection of the customers who are to be read out automatically

Menu „Help“



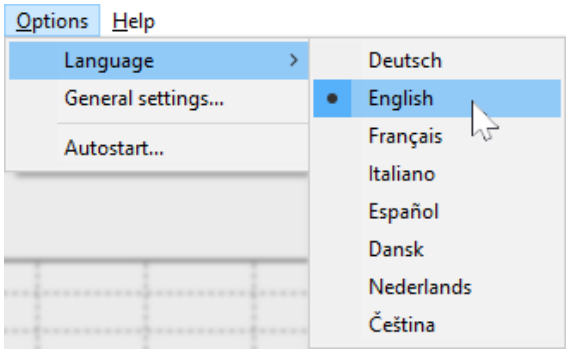
Manual	Shows the manual
Info about Winsol...	Information about ***Winsol*** version

General toolbar



Language

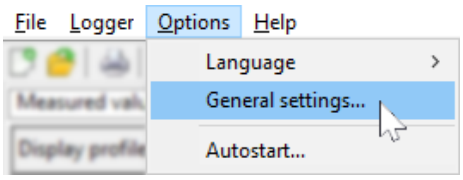
A number of languages are available. Select the menu **„Optionen / Sprache“** (= Options / Language) and click on the desired language. ***Winsol*** must be restarted for the changed language to take effect.



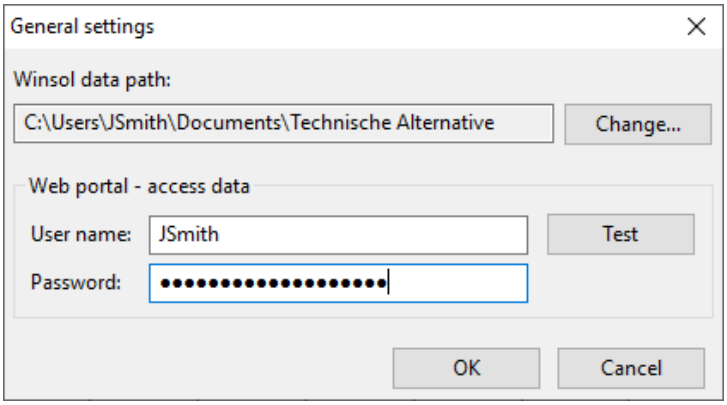
General settings

Data path setting

Winsol‘s data path can be changed in the menu ***„Options / General settings...“*** We recommend creating a data path outside the program‘s folder.



Existing data must be manually copied into the new data path **before** the setting is changed in Winsol and new data is read in from the logger!

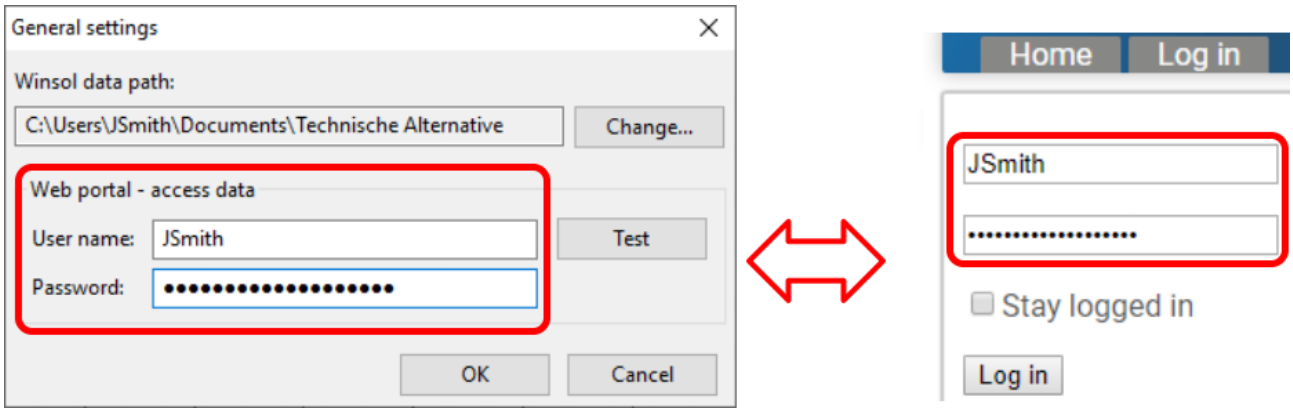


Procedure for transfer of existing data to a new data path:

1. Create new data path (e.g. using Windows Explorer).
2. Copy the existing files and folders from the existing data path (e.g. installation path „C:\Programme\Technische Alternative\Winsol\“) to the new path.
3. In the Winsol general settings, set the new path as a data path.

Setting the web portal access data

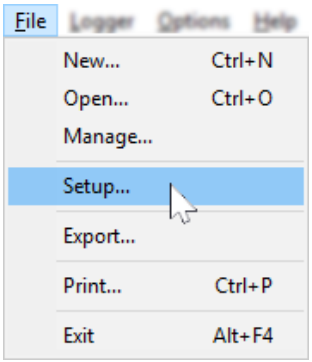
If one or more C.M.I.s are to be read out via the web portal, then the access data for the web portal must be entered here (identical to username/e-mail or password during login to the web portal).



With **„Test“**, access to the web portal can be checked

Setup dialogue

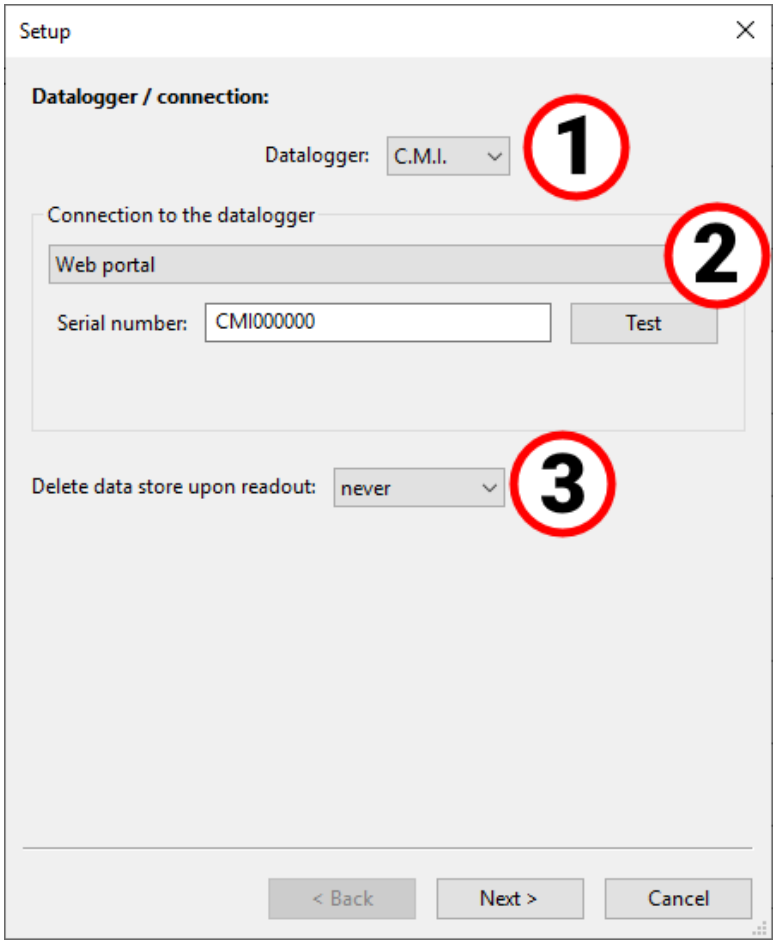
Selection of the datalogger, interface, specification of the logger configuration and entry of the device designation and the logged values takes place in the menu **„File / Setup“.**



„Next“ is used to move to the next setup window, while **„Cancel“** is used to cancel the setup without changing the logger‘s configuration.

C.M.I.: if the settings for the source and/or the data record of a source are changed in the web interface, then **setup** process must be carried out in Winsol and completed with **„OK“** for the C.M.I. to log data with the modified settings.

1st Window: datalogger/connection



Summary:

Selection of the datalogger:

BL-NET, C.M.I., D-LOGG or SD card (UVR16x2, UVR65, UVR67)

Connection selection: serial interface (USB, RS232), Ethernet (LAN, Internet), web portal or local data media (e.g. SD card). Only connections that are possible for the selected datalogger are displayed.

Selection of how the data store should be deleted:

automatically, manually or never (“never” only possible for C.M.I., SD card or BL-NET).

1 Selection of the datalogger

The datalogger type can be specified here. The **„SD card“** option refers to reading out logged data from the SD card of controllers **UVR16x2** and **UVR65/UVR67.**

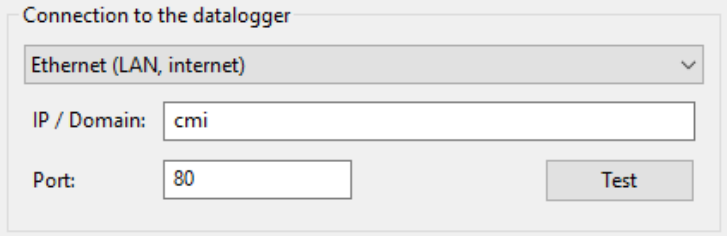
2 Selection of the connection to the datalogger

C.M.I. (Control and monitoring interface)

Connection via Ethernet

When using access via LAN or port-forwarding, the IP address of domain name of the C.M.I. and its TA port (factory setting: 80) must be entered.

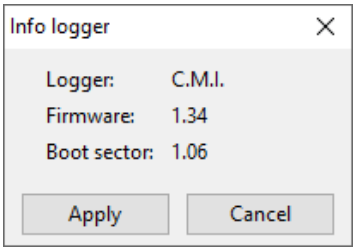
When using access via internet, the C.M.I. must be configured accordingly by a IT expert. For this, the essential security measures must be taken (router with firewall, VPN, etc.)



The **first start-up** of the Ethernet interface is described in the C.M.I. manual.

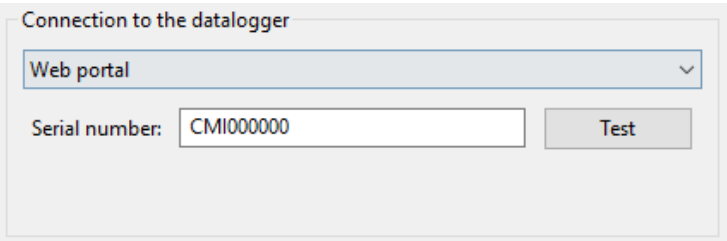
„**Test**“ checks the communication with the C.M.I. Information about the connected logger is displayed. **„Apply“** is used to specify the logger type in the setup.

„**Test**“ only leads to a valid result if the C.M.I. is correctly integrated into the LAN network (see C.M.I. manual) and its connectivity information has been correctly entered in the Winsol setup.



Connection via web portal

For connectivity, **„Web portal“** gewählt und die Seriennummer des C.M.I. eingegeben werden.



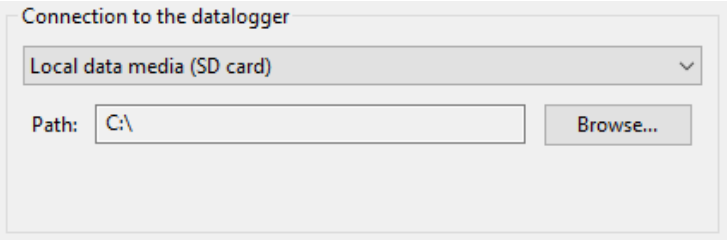
„**Test**“ checks the communication with the C.M.I. Information on the connected C.M.I. is displayed. **„Transfer“** defines the type of logger during the setup.

Caution: for connection via web portal, the credentials must first be entered in the **„General settings“.**

Connection via local data media

This method is used to read out an SD card from the C.M.I., UVR16x2 or UVR65/UVR67.

It is also suitable for reading out a directory on the PC (see chapter „Recording measured values of a customer system with C.M.I.“).



The example shows an SD card in the drive C:\.

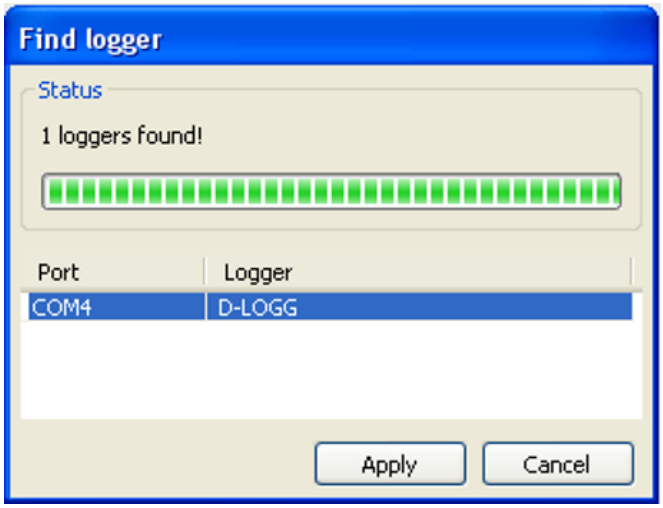
Data converter D-LOGG

As the D-LOGG has no Ethernet interface, only the serial interface is enabled for selection of the COM port.

„**Test**“ checks the communication with the logger at the selected interface. Information about the connected logger is displayed. **„Apply“** is used to specify the logger type in setup.

If the COM port is not known, **„Find logger“** is used to search all COM interfaces of the computer for connected loggers.

The COM port and type of logger found are displayed. **„Apply“** is used to set the highlighted logger type in the setup.

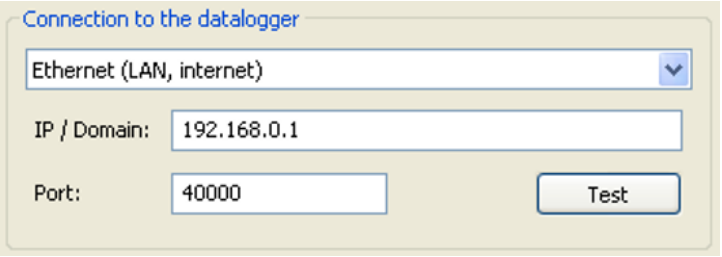


Bootloader BL-NET

The BL-NET can be connected to the PC both via the serial interface and also via Ethernet.

The procedure of checking the COM port‘s specification is the same as with the D-LOGG.

For connectivity via Ethernet, **„Ethernet“** must be selected. Moreover, the IP address or the domain name of the BL-NET and its TA port must be specified. The Ethernet interface is only active if the BL-NET is supplied via the CAN bus or a 12V power supply (CAN-NT).



The **initial setup** of the Ethernet interface is described in the chapter **„Integration of the BL-NET into a LAN network“** in the BL-NET manual.

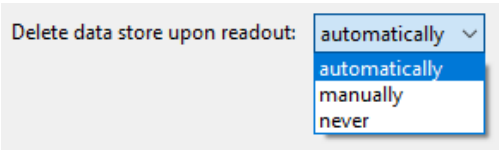
„**Test**“ checks the communication with the logger. Information about the connected logger is displayed. **„Apply“** is used to specify the logger type in the setup.

„**Test**“ only leads to a valid result, if the BL-NET is correctly integrated into the LAN network (see BL-NET manual) and its connection data has been correctly entered in the Winsol setup.

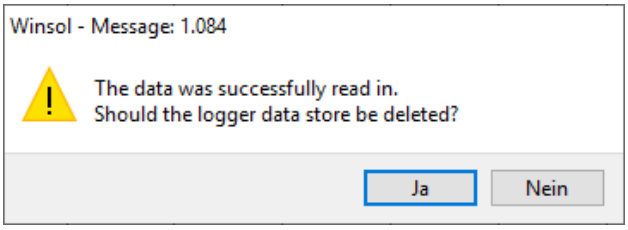
3 Clearing the data storage

3 options are available:

automatically After reading out of the memory, it is automatically deleted (recommended).



manually After reading out the memory, a query is displayed, asking whether or not the memory should be deleted.

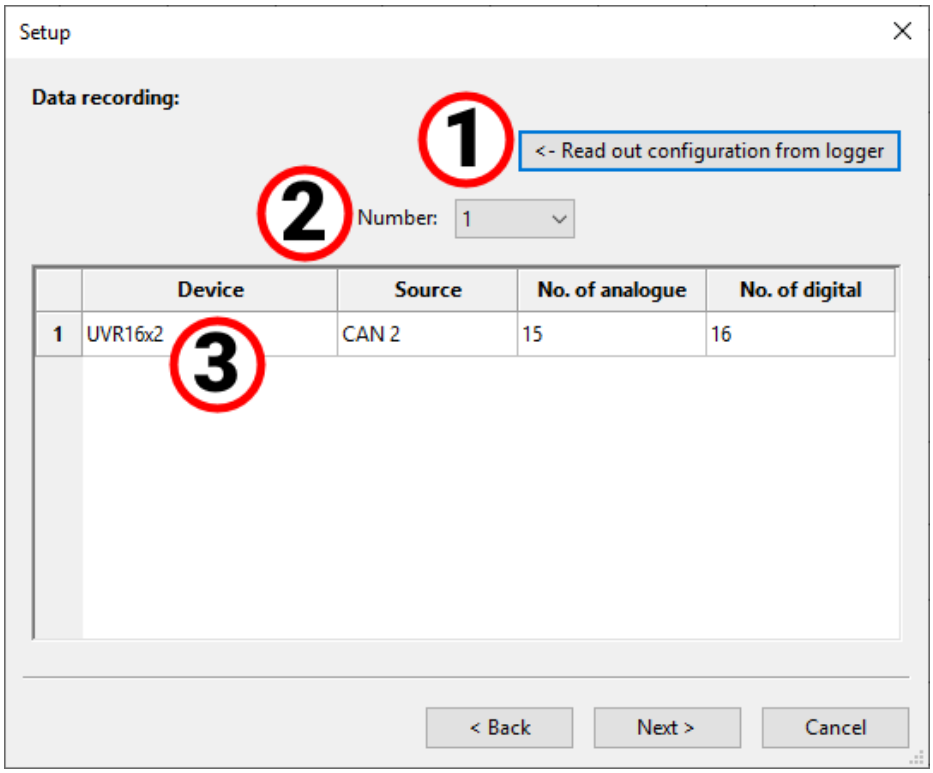


never The memory is not deleted after reading out (not available for D-LOGG).

2nd Window: data recording

Datalogger: C.M.I. or SD card (UVR16x2, UVR65/UVR67)

Example: Datalogging of a UVR16x2 (version > 1.21) **via C.M.I.**



1 Reading of the stored configuration

With this command, the configuration of the connected C.M.I. or the UVR16x2/UVR65/UVR67 SD card is read out and displayed-

For the **C.M.I.,** these settings are made in the C.M.I. web interface (Menu Settings/Data logging). If changes are made in Winsol, they are not adopted by the C.M.I.

The configuration can only be read out **after the first point in time of logging.**

2 Number of data records

"**Number**" is used to specify the number of data records to be logged. Up to 8 data records for several devices can be configured in the C.M.I.

Display of device type and source

Source: CAN-Bus

Display of the CAN node number for the device that‘s to be logged.

The desired values for CAN data logging must be defined **at the controller** under the menu **„Network/ Data logging“** or in the program ***„TAPPS2“*.**

Devices with x2 technology

UVR16x2 up to version 1.20, RSM610 up to version 1.07, CAN-I/O module 45 up to version 1.03 and CAN-EZ2 up to version 1.03:

The number of the data record (1 or 2) is displayed.

When logging the data for these X2 devices, please note the following: either only 1 **data record** or 2 **data records** are displayed and logged, depending on the settings in the **controller** menu Settings/ Data logging. When reading out the datalogger configuration, all X2 devices are displayed as "UVR1611".

UVR16x2 from version 1.21, RSM610 from version 1.08, CAN-I/O module 45 from version 1.04, CAN-EZ2 from version 1.04 and CAN-BC2 from version 1.04:

The **number** of logged analogue and digital values is displayed. Up to **64 analogue** values and **64 digital** values can be logged per device. The device type is displayed correctly.

There are no longer special cases, such as speed stages of the triac outputs or heat meters being automatically incorporated in the data record. Every measured value which is to be recorded in the log can and must be specified directly in the data record.

When updating older firmware and loading older function data, the settings of the previous two data records are **converted** to the new data record.

If only the **first** data record was used, i.e. a maximum of 16 analogue and 13 digital measured values and a maximum of 2 heat meters were logged, there is complete compatibility with previous logs in Winsol.

If the **second** data record was also used, the number of devices in the log is reduced, meaning compatibility is **not** possible. Measured values from the second data record are added to the measured values from the first. In this case, setting up a **new customer** for the modified log in Winsol is strongly recommended. The following procedure is recommended for doing this:

1. Read out the data logged by the C.M.I. up until now.
2. Carry out updates.
3. Delete the logging data from the C.M.I.
4. Set up a new customer in Winsol.

UVR1611

Minimum version of the UVR1611 controller operating system: **A3.18**

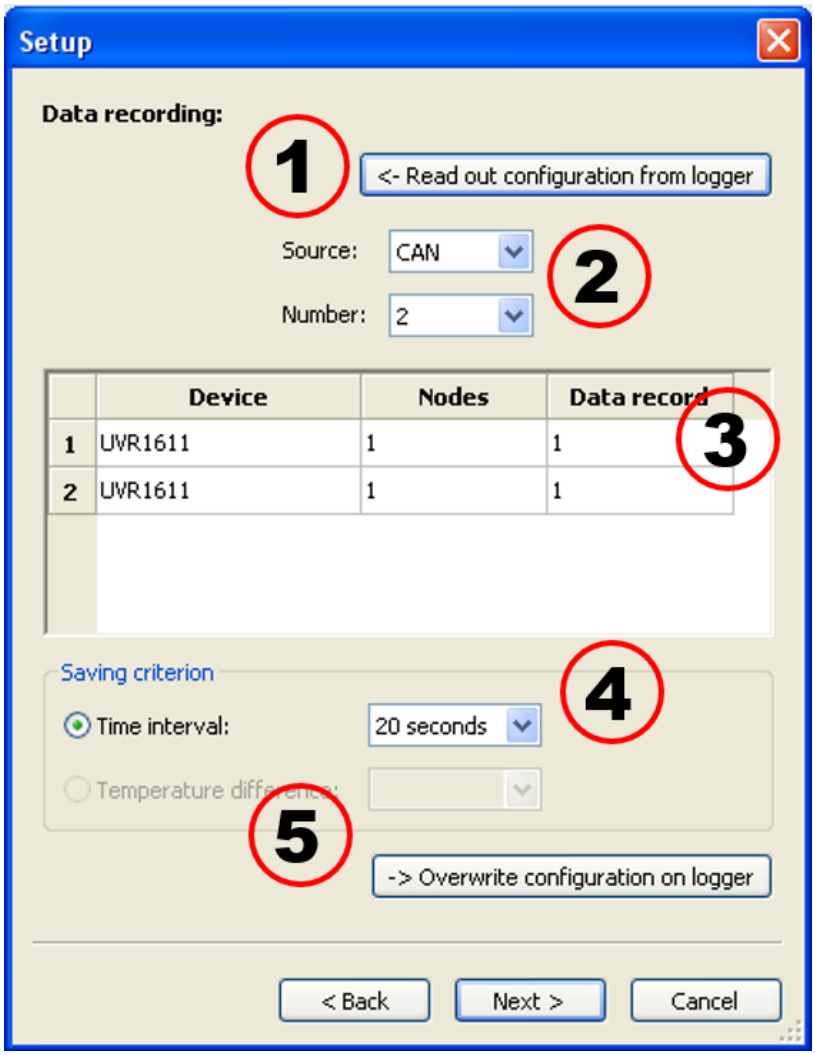
The number of the data record (1 or 2) id displayed.

Source: DL-Bus

The C.M.I. displays the DL connected where the device that‘s to be logged is connected.

The values for each data record are firmly specified in this process. Up to 2 data records can be displayed and logged.

Datalogger: D-LOGG or BL-NET



Summary:

Read out of the configuration stored on the logger

Specification of the **Source** (CAN, DL) and number of data links or data records.

Specification of the device typed; additionally with CAN data logging, specification of the node number and the data record.

Selection of the saving criterion

Overwriting of the configuration in the logger

1 Reading of the stored configuration

Using this command, the configuration of the connected logger is read out and displayed.

2 Anzahl der Datensätze

Source: CAN-Bus

The desired values for CAN data logging must be defined **at the controller** under the menu "**Network/ Data logging**" or in the program "***TAPPS***" (requires UVR1611 controller operating system version **A3.18** or greater). Devices with x2-technology cannot be logged by these loggers via CAN bus.

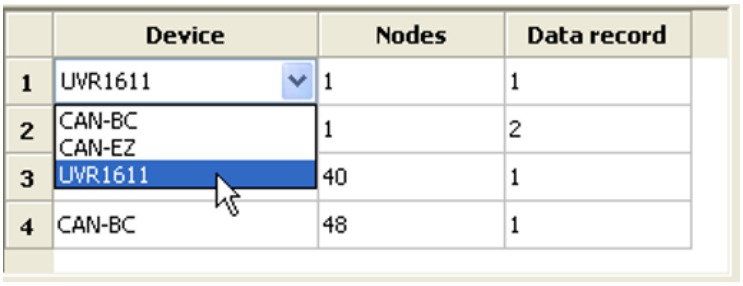
"**Number**" is used to specify the number of data records to be logged. Up to 8 data records from several devices can be configured.

Source: DL-Bus

The values for each data record are firmly specified in this process. Up to 2 data records can be displayed and logged.

3 Specification of device types, node number, data record

Following this, the devices and, in the case of CAN data logging, the corresponding node numbers and selected data record are selected. Double clicking in the respective fields allows the required settings to be selected.



Source: CAN-Bus

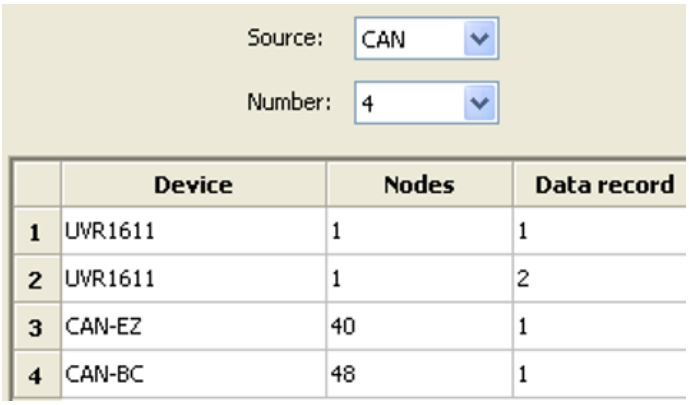
A maximum of 26 digital and 32 analogue values can be output via 2 data records for each UVR1611. They are defined in the UVR1611 menu "**Network\Data logging**" or in the program "***TAPPS***". Each data record comprises 13 digital values, 16 analogue values and 2 heat meters.

Therefore the data is divided into 2 data records if more than 16 analogue or 13 digital values or 2 heat meters are to be logged per controller, or if values with numbers corresponding to the 2nd data record are entered:

	Digital	Analogue	Heat meter
Data record 1	1 - 13	1 - 16	1 - 2
Data record 2	14 - 26	17 - 32	3 - 4

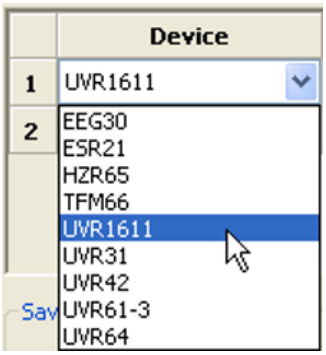
The data record of CAN-EZ and CAN-BC are described in the respective manuals.

Example: 2 data records UVR1611, 1 CAN-EZ data record and 1 CAN-BC data record



Important instruction about CAN data logging: one UVR1611 controller must be assigned **node number 1** in the CAN network, so that the time stamp of this controller can be accepted from the bootloader.

Source: DL (data line)



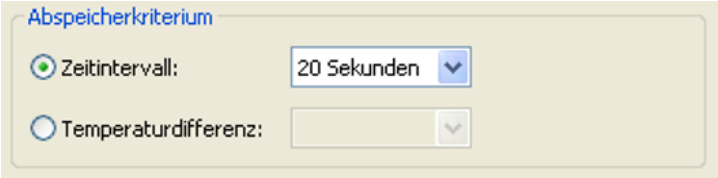
The parameters contained in the data records (devices) are firmly specified in this process. Up to 2 data records (devices) can be recorded.

The number of devices to be logged is specified under **„Number“.**

The logged devices are then selected by double clicking the respective fields. An ESR31 controller specified as an „ESR21“; UVR63 and UVR63-H controllers are specified as „UVR61-3“.

If "**`NETW.IP.=>DL.:`**" under Output 14 of the UVR1611 is set to "**`yes`**", the measured values from the network inputs are output as a **2nd device** on the DL bus. If "**`NETW.IP.=>DL.:`**" is switched from "**`yes`**" to "**`no`**", the datalogger must be briefly switched off (cut power supply) so that it can reinitialise.

4 Saving criterion



The saving criterion is used to specify when the datalogger is to save a point in time with all captured measured values.

Two **optional** criteria are available for data logging via the **DL bus.**

When logging data via **CAN bus, only** the time interval can be selected.

- **Time interval**

  Entry of a time interval between 20 seconds and 40 minutes is possible.
- **Temperature difference (only for data logging via DL)**

  For fault analysis, a saving criterion of 3.0 K is recommended. Each time a temperature measured value changes by more than 3.0 K **or** an output status changes, a "Measured value time point" is saved. In this respect the maximum time resolution is 10 seconds. Adjustment range: 0.5 – 12.0 K

Memory capacity

The maximum number of points in time that the datalogger can store depends on the type and number of controllers to be recorded.

Max. number of points in time (Data logging using the DL bus)	Controller type:	using 1 x DL:	using 2 x DL:
	UVR1611, UVR61-3, UVR63, UVR63H	8000	4000
	ESR21 ESR31	16000	8000
	all others	32000	16000

Max. number of points in time when logging data via CAN-Bus	1 data record	2 data records	...	8 data records
	8000	4000	...	1000

A memory overflow leads to the oldest data being overwritten.

5 Overwriting the configuration on the logger

Important: The changed settings are only save and transferred as a configuration if this button is clicked.

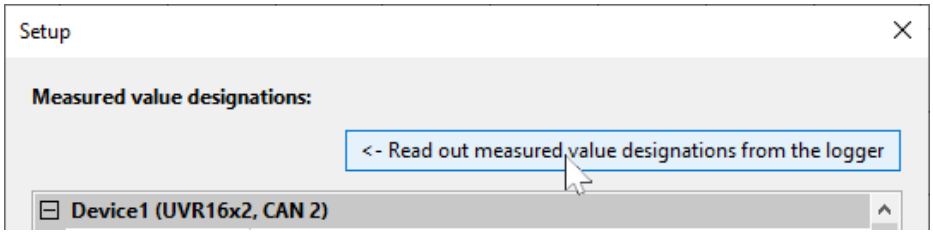
3rd Window: Designations of devices and measured values

Datalogger: C.M.I. or SD card

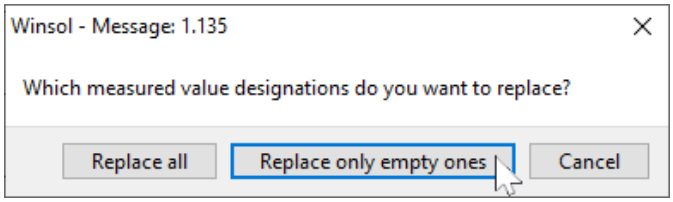
Designations for devices and measured values can be entered for all specified devices.

The measured value designations for x2 devices (UVR16x2 > version 1.20, RSM version > 1.07, CAN-I/O module 45 > version 1.03, CAN-EZ2 > version 1.04 and CAN-BC2 > version 1.03) can be adopted by the devices.

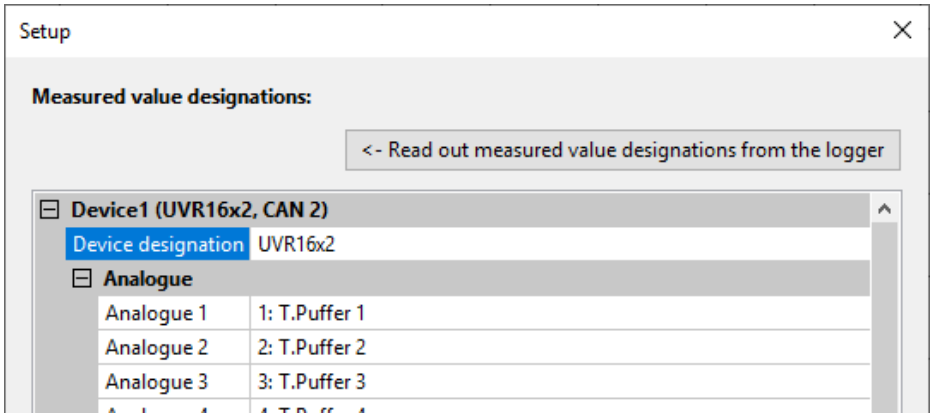
The measured value designations for x2 devices with a lower version and for devices without x2 technology (e.g. UVR1611) can only be entered **manually** after selecting the device.



The measured value designations should be adopted from all x2 devices (with appropriate versions).



You will be prompted to specify whether all designations or only unavailable („empty“) ones should be replaced.



The designations of the controller‘s measure values will now be displayed and incorporated into Winsol. These designations can be changed manually.

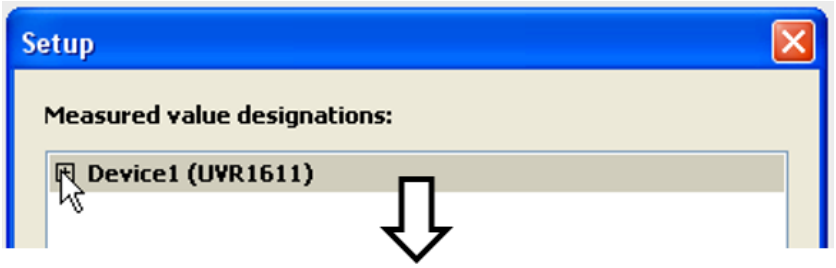
Example: device 1 (UVR16x2); the device designation is entered manually.

Important: Setup is only confirmed once **„OK“** is clicked.

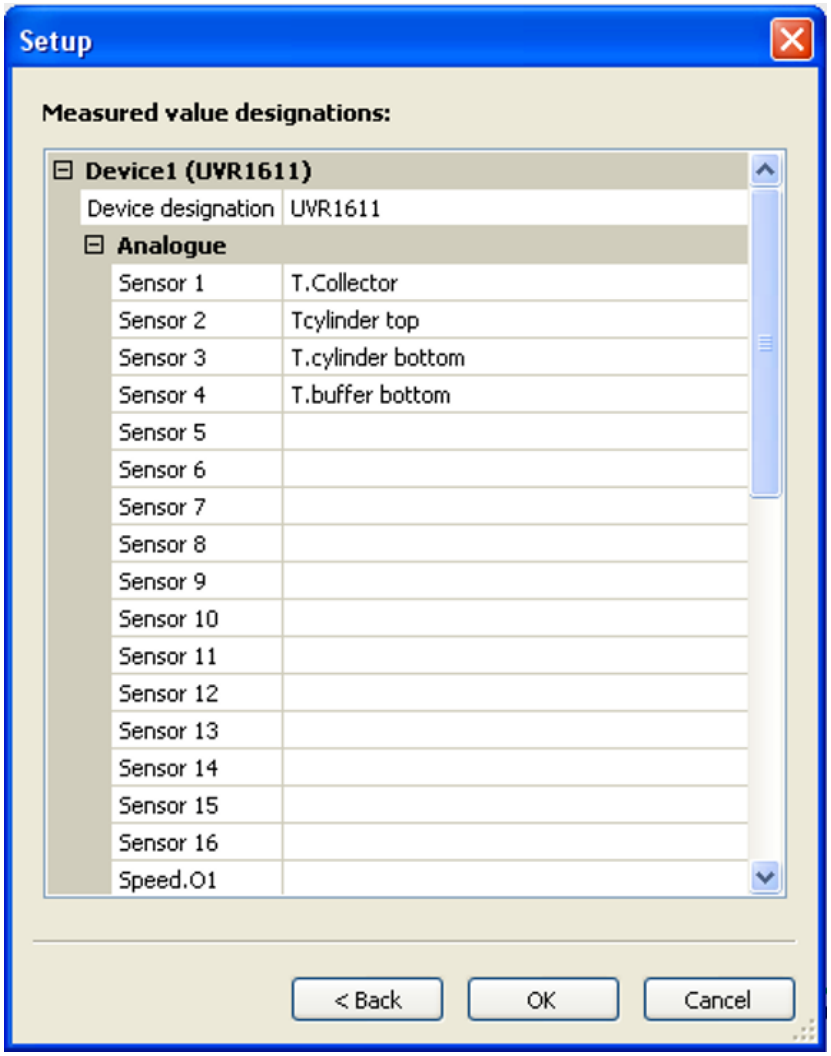
Datloggers: BL-NET, D-LOGG

The measured value designations of the devices are not incorporated.

Device and measured value designations can be entered manually for all specified devices.



The device is selected.



Device designations and the analogue and digital values are inserted.

Important: setup is only confirmed once "**OK**" is clicked.

Current measured values

Current measured values are displayed only with dataloggers D-LOGG and BL-NET.

This tab is not available for the **C.M.I.**

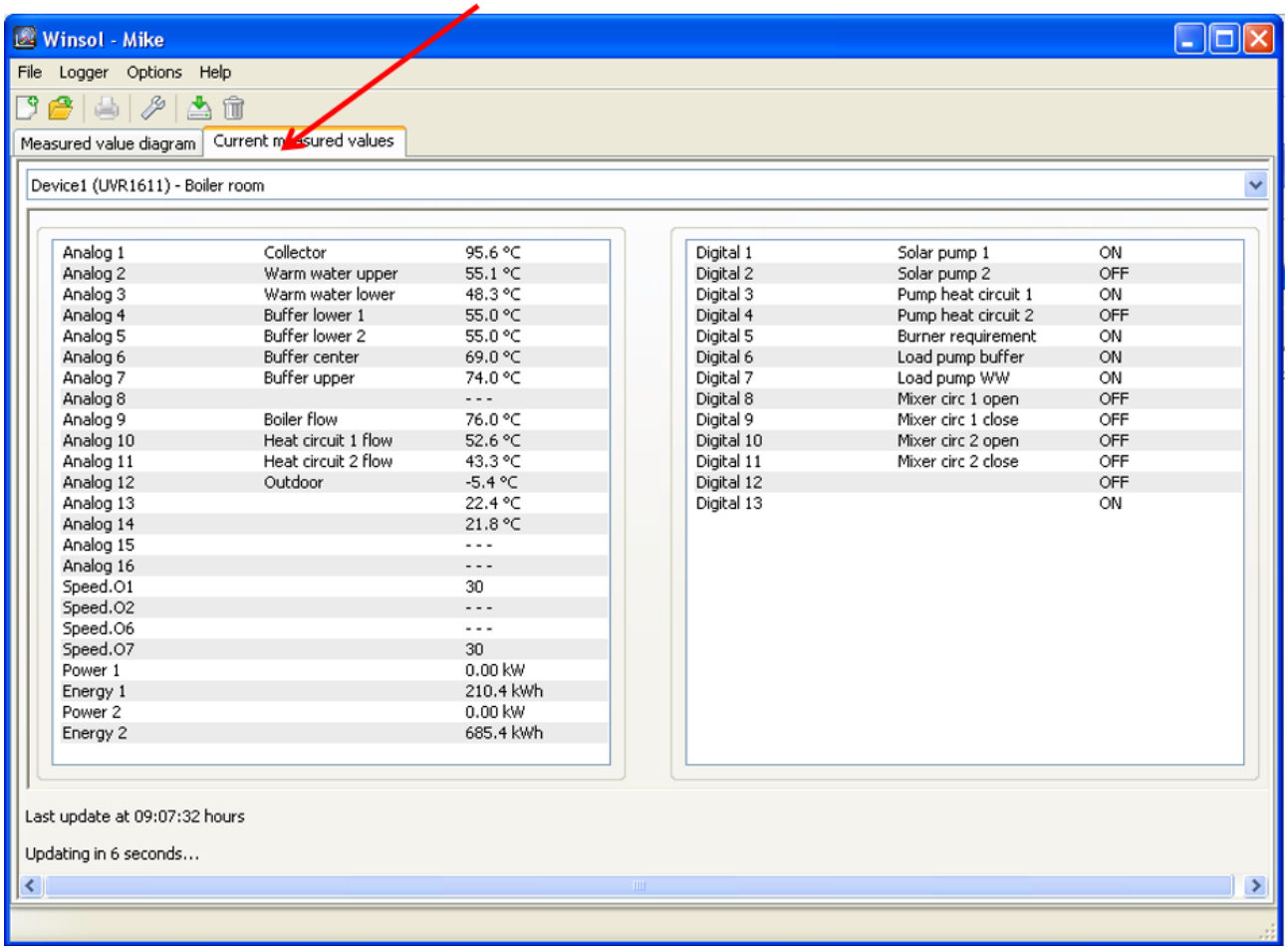
In this tab, the actual measured values of the devices linked to the datalogger are displayed in tabular format.

The tab "**Current measured values**" is the quickest and simplest option for testing the "Controller → datalogger" data connection.

Each data record (device) is displayed on its own page. The selection is made using a dropdown list in the top part of the window.

The time point of the displayed measured values is shown in the bottom part of the window (last update). The time shown here corresponds to the computer's time. The duration to the next display update is likewise displayed.

Example: CAN data logging via BL-NET

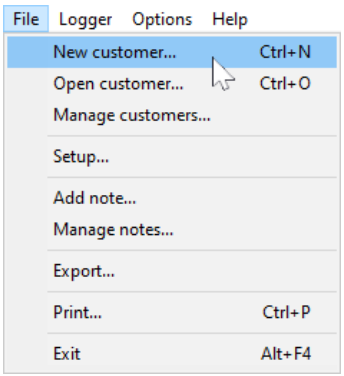


Customer mode

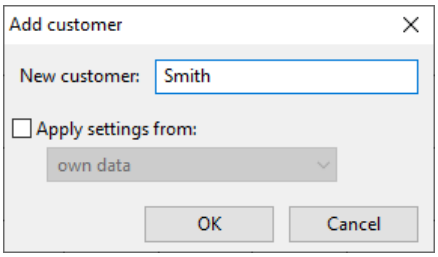
Winsol not only allows you to manage and analyse your „own“ data, but also enables you to analyse data of other systems. This is an important tool for technicians to monitor and troubleshoot customer‘s systems.

Add new customer

New customers can be added in the menu **„File / New...“.** A personal folder in the ***Winsol*** file system is created for every customer, and the associated configurations (setup.xml) and log files are saved here. The directory **„Infosol“** in the ***Winsol*** file system contains all these customer folders.

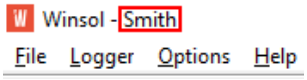


There is also an option to apply the setup settings of another customers.



After creating a customer, the **Setup** settings must be set.

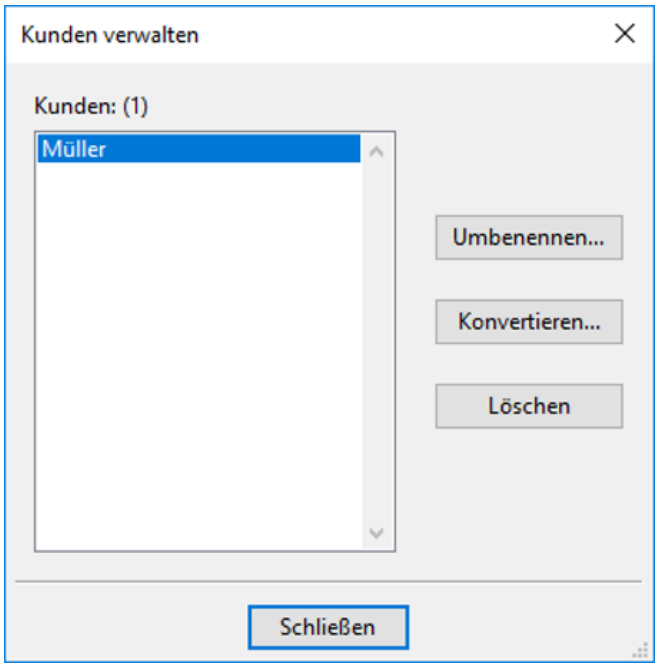
The currently selected customer is displayed in the ***Winsol*** title bar. If no customer designation is shown in the title bar, the "own data" is selected.

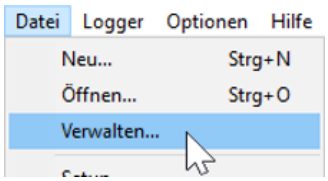


Open customer

An already created customer can be opened in the menu "**File \ Open...**".

Manage customer





Customers can be renamed or deleted via the menu "**File \ Manage...**".

In addition, subsequently added data in the old format can be converted to the current data format. This may be necessary if the log data is being transferred from an existing system, which is read out with an older Winsol version.

Recording measured values of a customer‘s system via C.M.I.

There are several options for recording the measured values of a customer system:

a) The C.M.I. is read out **via internet or web portal**.

b. The C.M.I. is installed into the system and read out **locally** by the service technician using a laptop.

c. If no C.M.I. is permanently installed in the system and an on-site readout is not possible, the measured values can be recorded as follows:

Preparation for data recording in the C.M.I.:

1. In the web interface (menus "Settings/Data logging" and "Settings/Time"), set the desired configuration and the source for the system time.

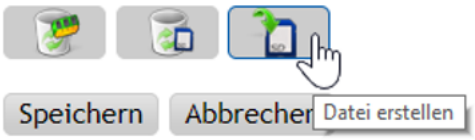
Data acquisition at the customer‘s premises:

2. Connect the prepared C.M.I. to the controller (observe polarity!). With a UVR1611, data output via the DL bus must be activated (output 14 defined as "data link"). For output over the CAN bus, the values to be logged must be set in the menu "Network/data logging".
3. Ensure power supply: power pack (or 12 V supply of the CAN bus)
4. During the data logging of controls without a separate system time (e.g. UVR64, HZR65), "**WEB**" must be set as the reference source in the time setting of the C.M.I. **and** an internet connection must be available.
5. As long as the C.M.I. is connected to the controller, the measured values are recorded.

Reading out of the recorded data:

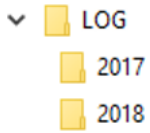
6. Connect the C.M.I. with PC or network via Ethernet.
7. Ensure power supply: power pack (or 12 V supply of the CAN bus)
8. In ***Winsol,*** create the corresponding customer for the data to be recorded and perform setup.
9. The data stored in the C.M.I. can now be read in with "**Read out logger**" and then analysed.

d. If customers record the measured values of their systems themselves, they will first use the C.M.I. menu "**Setting / Data logging**" with "**Create file**" to create the current day log file on the SD card.



In the C.M.I. menu **„Status“**, the customer should then copy the daily log files in the respective year‘s sub-folder of the folger ***log*** and the file ***infoh.log*** to the PC and **e-mail** them to the technician.

The technician loads these files into a directory in his computer that precisely matches the structure on the SD card:



The daily ****.log*** files are copied to the associate year‘s sub-folder and the file ***infoh.log*** to the folder ***LOG*.**

In the **Winsol setup, „Local data medium“** is set as the connection to the datalogger and the data path of the folder of the **highest hierarchy** is selected under **„Path“** in the Winsol setup. The values can then be read in with **„Read out logger“.**

Recorded measured values of a customer‘s system with BL-NET or D-LOGG

There are four options for recording the measured values of a customer‘s system:

a. The bootloader is read out **via the internet.**
b. The datalogger is installed by the system and regularly read out **locally** by the service technician using a laptop.
c. If customers themselves record the measured values of their systems, then they can **e-mail** the log files to the technician.
d. If the reading out of the recorded data is not possible **locally,** the measured values can be recorded as follows:

Preparation for data recording:

1. Connect the datalogger **without** a DL or CAN bus connection (CAN-L or CAN-H) to the PC.
2. Ensure a reliable power supply: BL-NET bootloader via battery, power supply (CAN-NT) or CAN bus 12 V supply; D-LOGG set the switch into the position „USB“
3. Create and select a customer to be recorded in ***Winsol.***
4. Specify the desired configuration in the setup and overwrite the datalogger.
5. Using D-LOGG: set the switch into the position „DL“.

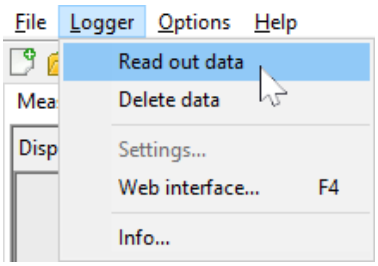
Data acquisition at the customer‘s premises

6. Connect the datalogger to the controller (mind the polarity!). With a UVR1611, data output via the DL bus must be activated (output 14 set as „data line“). For output over the CAN bus, the desired values must be set in the menu „Network/data logging“.
7. As long as the datalogger is connected to the controller, the measured values are recorded according to the selected save criterion.
8. When disconnecting the datalogger from the controller, the date and time must be noted, because ***Winsol*** needs these so that when reading data in, the correct time can be allocated to it. This is not necessary with the UVR1611, UVR61-3, UVR63 or UVR63-H.

Reading out of the recorded data:

9. Connect the datalogger **without** a DL or CAN connection (CAN-L or CAN-H) to the PC.
10. Ensure a reliable power supply: BL-NET bootloader via battery, power pack (CAN-NT) or CAN bus 12 V supply; set the D-LOGG‘s switch to the position „USB“.
11. Select the corresponding customer in ***Winsol***.
12. The data stored in the datalogger can now be read in with **„Read out logger data“** and then analysed.

Read out logger data



Reading out of the logger's is initiated in the menu **„Logger / Read out data".**

The data recorded and stored in the datalogger is read out and saved as a log file in the ***Winsol*** file system on the PC.

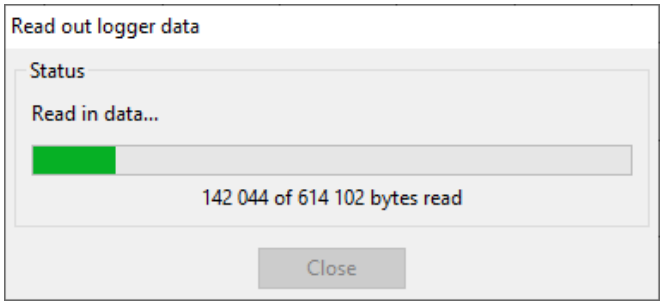
For every day that is logged, a separate log file is created in a sub folder („.../**LogX**/*Year*"). The file name of a log file includes the date. **Example:** the file **D2016-10-04.log** contains the recorded measurement data of October 4th, 2016.

Warning: If the data of several systems is recorded, then before reading in the data, ensure that the correct **„Customer"** (see ***Customer mode***) is selected.

Reading out the C.M.I. or the SD card

(UVR16x2/UVR65/UVR67)

If the recorded data is available for a period of **up to 8 days**, it is read out immediately. During readout the status is displayed:

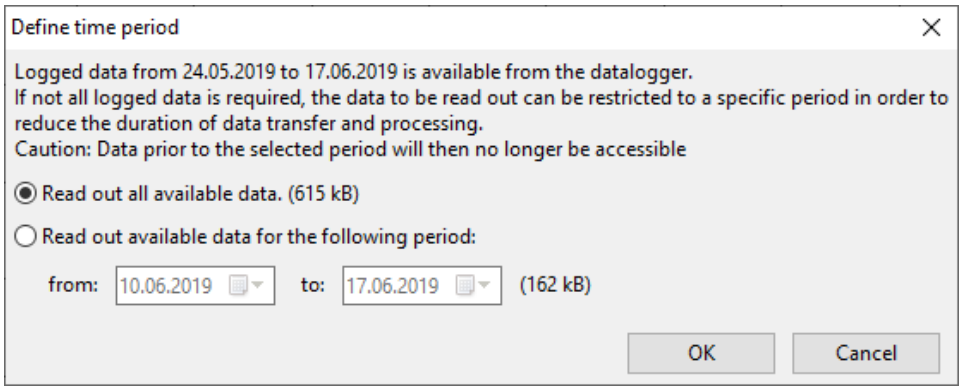


If the recorded data covers a period of **more than 8 days,** a prompt asks from which period data should be read out. This enables the duration of data transfer and processing to be reduced.

Caution: Data prior to the selected period will then no longer be accessible.

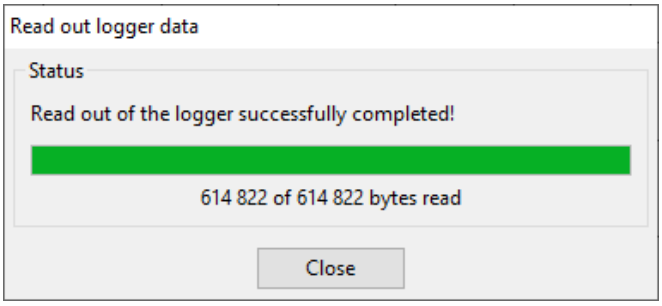
If the data memory is wiped following the readout, **all** data will be deleted regardless of the period of the read data.

Example:

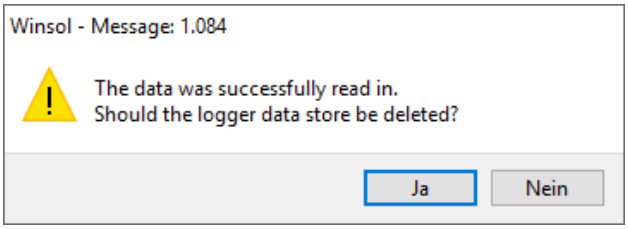


When restricting the period, the last week will be suggested. This can naturally be adjusted. The of the available data is displayed.

Once the readout has finished, a message shows whether it was successful:



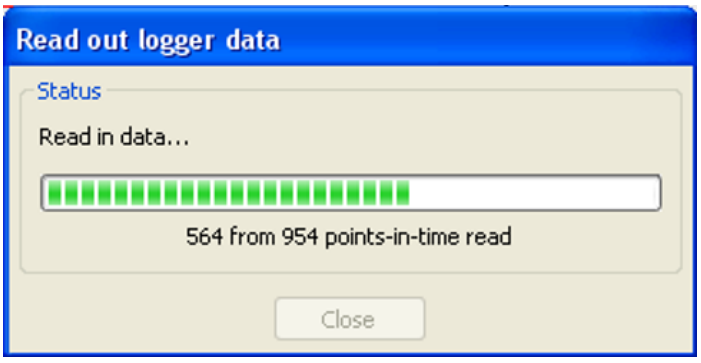
If in the setup settings, the manual clearing of the memory was selected, the following query is displayed:



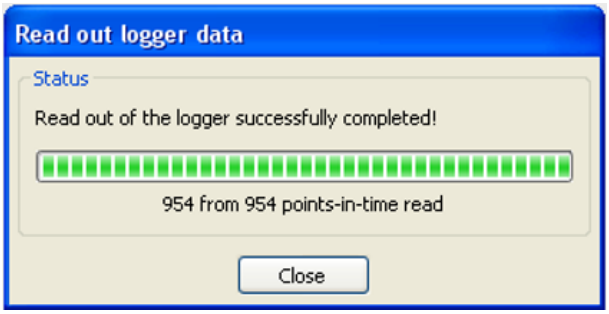
It is recommended that the logger data storage is deleted after a successful readout.

Reading out dataloggers BL-NET or D-LOGG

There is no option to restrict the readout period of these dataloggers.
Other than that, the procedure the same as for the C.M.I.
During readout, the status is displayed.



Once the readout has finished, a message shows whether it was successful:



Reading out devices without a timestamp (only using BL-NET or D-LOGG)

Devices without a timestamp are the following:

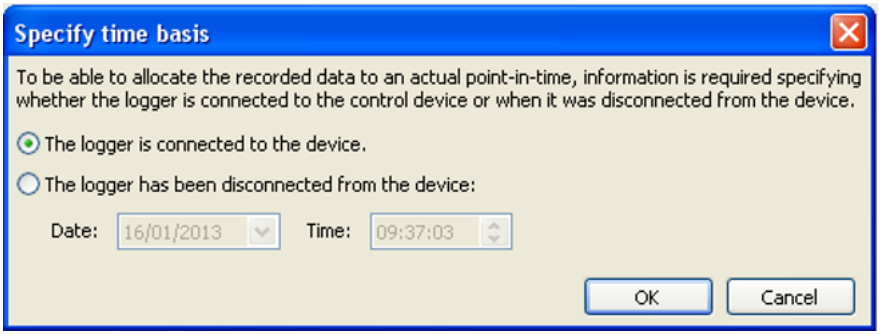
EEG30, **ESR21**, **ESR31**, **HZR65**, TFM66, UVR31, UVR42 and **UVR64**.

These devices do not have an internal clock with time **and** date.

When reading out from these devices, a differentiation is made as to whether the datalogger remains connected to the device or not during readout.

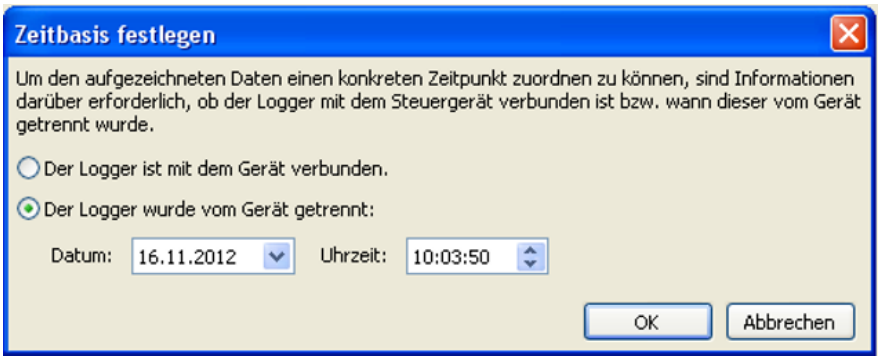
1. **The logger is connected to the device**

   In this case, the PC‘s time is adapted as the point in time for reading out..



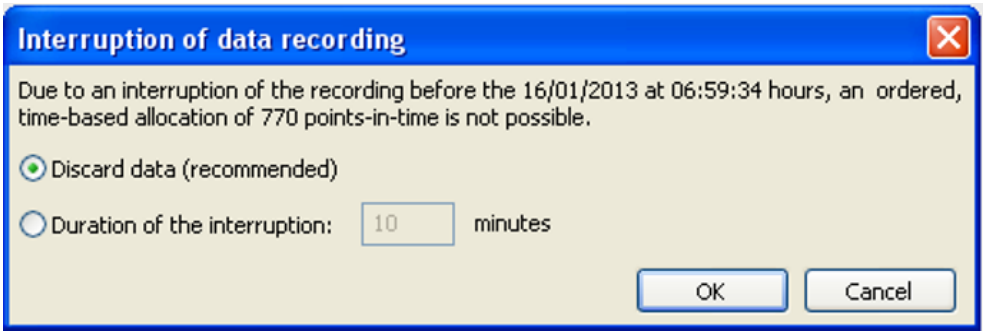
2. **The logger has been disconnectedfrom the device.**

   Winsol will now prompt you to enter the point in time at which the disconnection occured.



3. **Interruption of data recording**

   If the logging has been interrupted because the logger lost power, ***Winsol*** cannot allocate the values logged prior to the power outage to a particular time. The following prompt will be displayed:

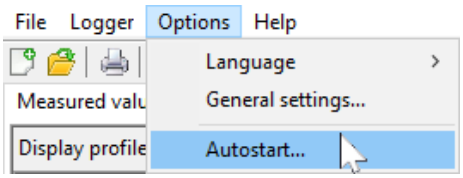


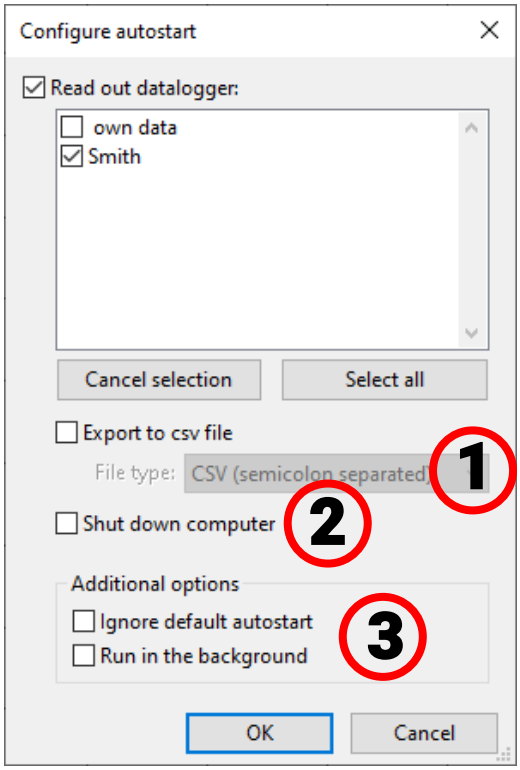
„Discard data“ means that all data prior to the power failure is discarded, and only the data after the interruption is evaluated by Winsol.

If the display of all data is required and correct time allocation is not relevant, the duration for the interruption of recording can be entered, assuming that the data is to processed by Winsol.

Autostart

An automatic readout of the data when **booting the PC** can be implemented using the options in the menu **„Options / Autostart“.**





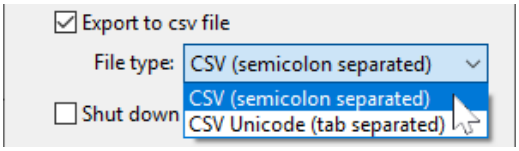
Selection of the customers that are automatically read out when booting the PC.

The logger data store is then deleted if in the customer set-up, delete has been set to automatic or manual.

A report is created in the file Autostarts.txt in the Winsol data path to monitor the automatic readout.

Setting changes take effect only when the program is terminated.

1 **Autostart - Export to .csv file**



After reading out the data, .csv files are automatically created in the selected format. These files are saved in the folder <*Data path*>\Infosol\Customer\csv. Existing files are overwritten.

2 **Shut down computer**

With this option enabled, the PC boots up, the data is automatically read in (including optional .csv conversion) and then the PC shuts down after the subsequent countdown.

This function is intended for computers that are used solely for data acquisition. In this case, the PC must be automatically booted in a time-dependant manner. For example, this is possible using an external time switch, which supplies the computer with power at certain times, and with appropriate BIOS settings the PC will boot up once a power supply is present.

3 **Additional options**

Ignore default autostart

The default autostart takes place when the computer is started up (user login).

With this option, the default autostart can be ignored in order to run only user defined autostarts (see "User defined autostarts").

Run in the background

The autostarts then run in the background without visible program window.

User defined autostarts

To automatically read out something on a datalogger, users can also define autostarts (e.g. using the Windows Task Scheduler).

The program must then be run with startup parameter "-a" (Winsol.exe -a).

Caution!

The autostart function is intended for automatically reading out the datalogger once or twice a day.

A permanently set autostart interval that is too short (less than 2 hours) is not permissible, as this would significantly reduce the datalogger's service life.

Autostart as console application under Linux

To be able to carry out Autostarts from Winsol under Linux outside the desktop environment (e.g. via Cronjob), the additional startup parameter „**`--console`**“:

```
Winsol --console -a
```

Autostart with alternative selection of clients

With the optional "`-c`" startup parameter, an autostart can be performed with an alternative list of clients: `Winsol.exe -a [-c clients]`

Other than the selected clients, all settings in the Autostart configuration continue to apply.

Syntax for the client list:

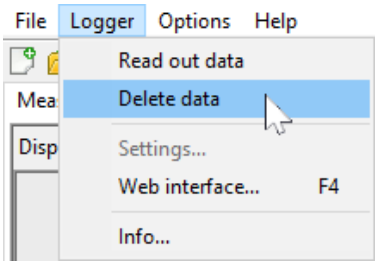
- If there are spaces in the client name, the entire client list must be enclosed in quotation marks.
- For "own data", an empty text entry must be given.
- The clients must be separated by hyphens.
- A hyphen in the client name must be preceded by a backslash (escaped). Otherwise, it will be interpreted as a separator.

Examples:

Program start	Autostart for
`Winsol.exe -a -c Smith`	Client „Smith“
`Winsol.exe -a -c "Smith"`	Client „Smith“
`Winsol.exe -a -c ""`	„own data“
`Winsol.exe -a -c ",Smith"`	„own data“ and client „Smith“
`Winsol.exe -a -c ,Smith`	„own data“ and client „Smith“
`Winsol.exe -a -c "Smith John"`	„Smith John“
`Winsol.exe -a -c "Smith\, John"`	Client „Smith, John“
`Winsol.exe -a -c ",Smith\, John"`	„own data“ and client „Smith, John“

Delete logger data

Using the menu **„Logger \ Delete data“**, the data stored on the logger can be manually deleted. In the C.M.I., the data in the internal memory as well as on the SD card is deleted.



Measure value diagram

This tab presents the recorded data (log files) over the course of the day.

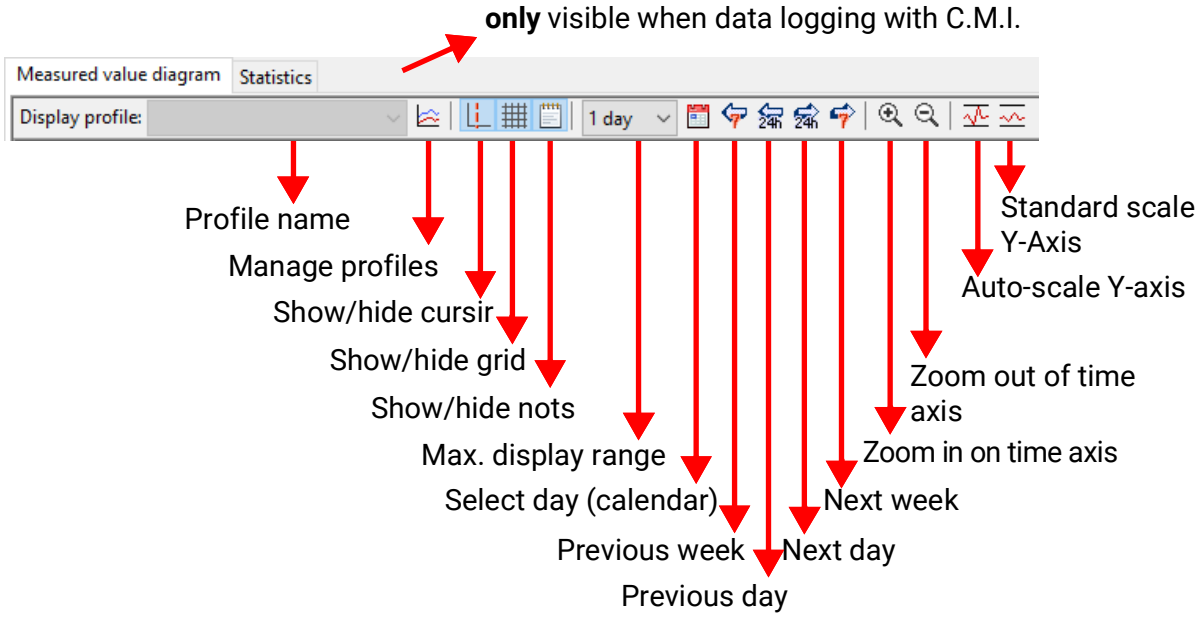
The measurement diagram allows the display range to be moved on a continual basis **spanning across several days.**

Optimal display of the graphic is possible using the comprehensive adjustment and operating options. A maximum of 16 analogue and 16 digital values from all the logged values can be displayed simultaneously.

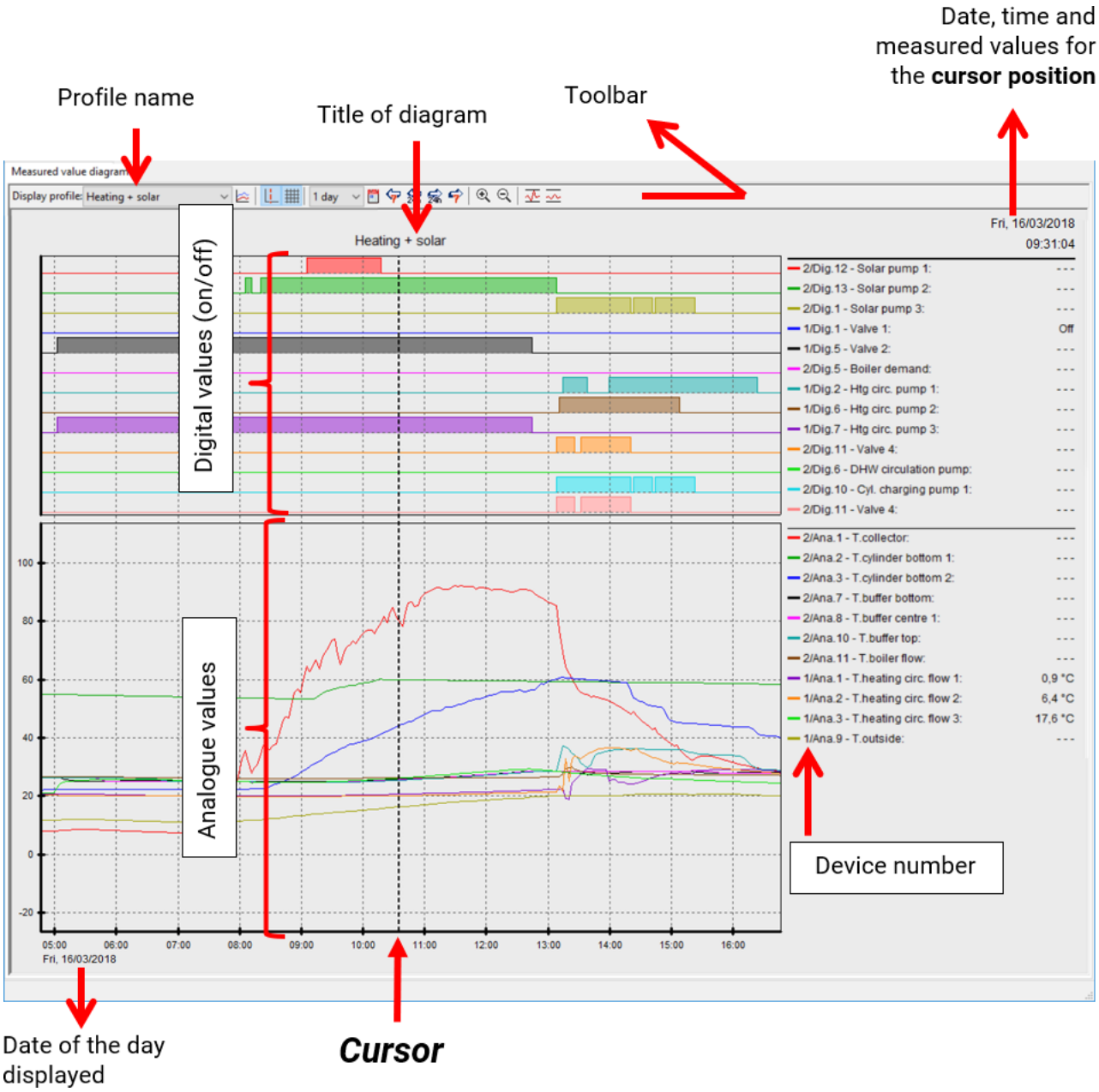
The menu option „Manage profiles“ is used to select the values to be displayed and the colour of the curves.

Individual profiles can be created, amended or deleted for various system areas.

Measured value diagram toolbar

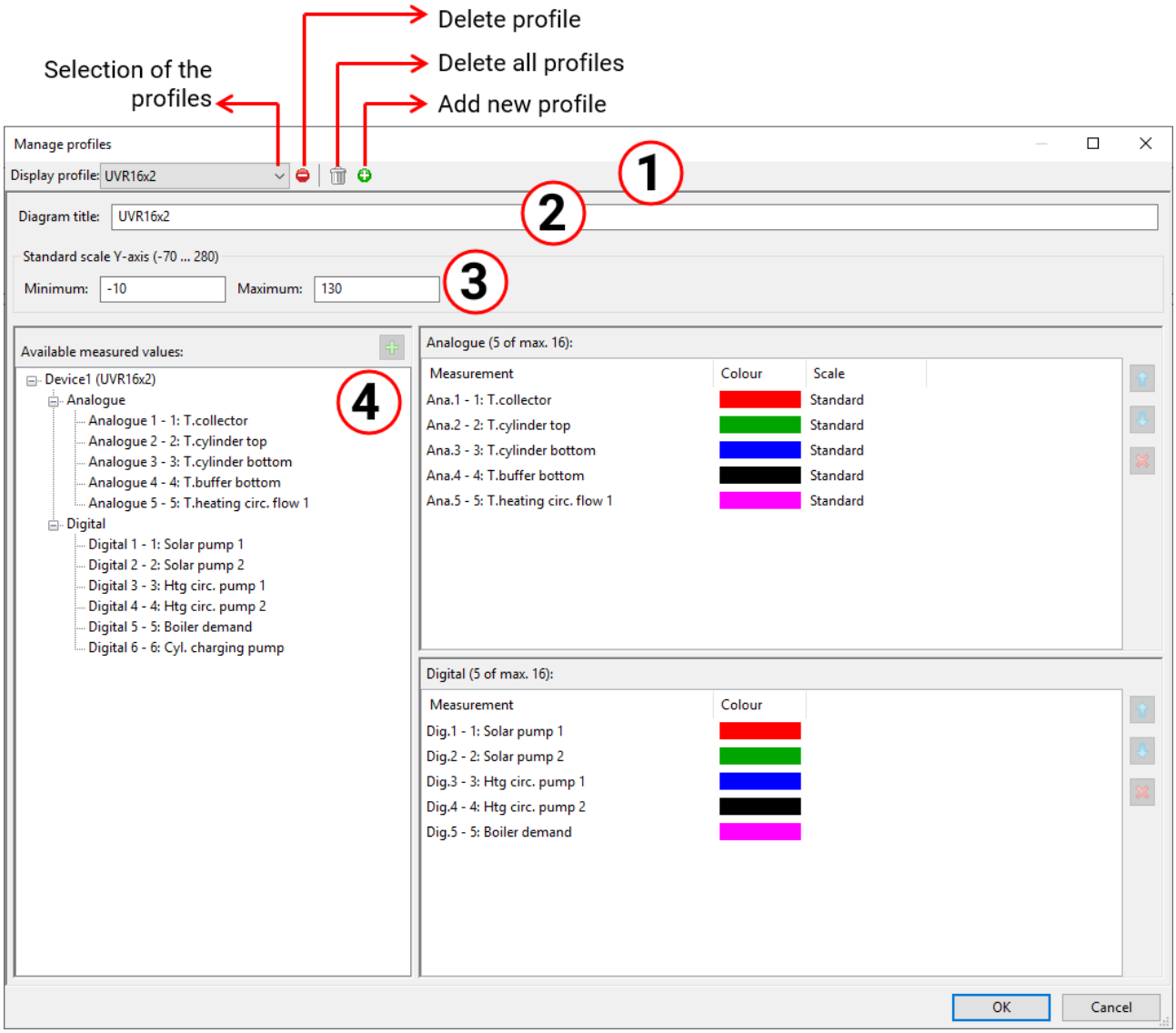


Realistic example of a system using a UVR16x2; display profile:

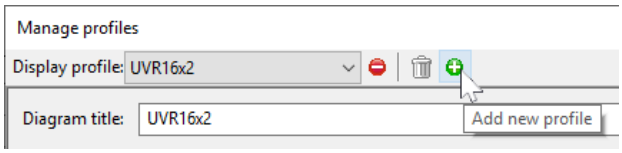


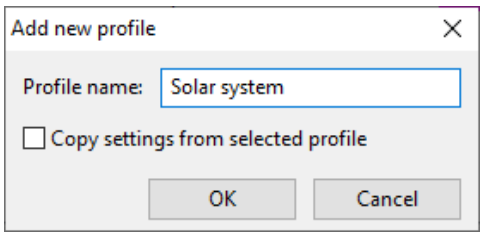
Manage profiles

The menu item **„Manage profiles“** is used to select the values to be displayed, as well as the colours and scale of the graphs. Moreover, independent profiles



1 Add new profile



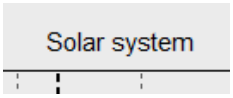


New profiles can be added in this menu. The settings of the currently selected profile can be transferred to the new profile. The settings of the new profile can then be adjusted.

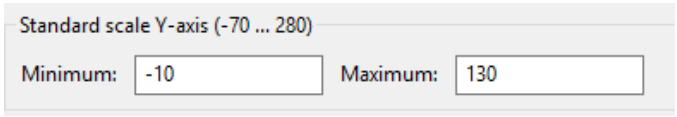
2 Diagram title

The title, which will subsequently be displayed above the diagram, can be entered here.

Example:

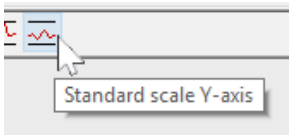


3 Standard scaling Y-axis



The displayed temperature range in the „Standard scale“ is specified here.

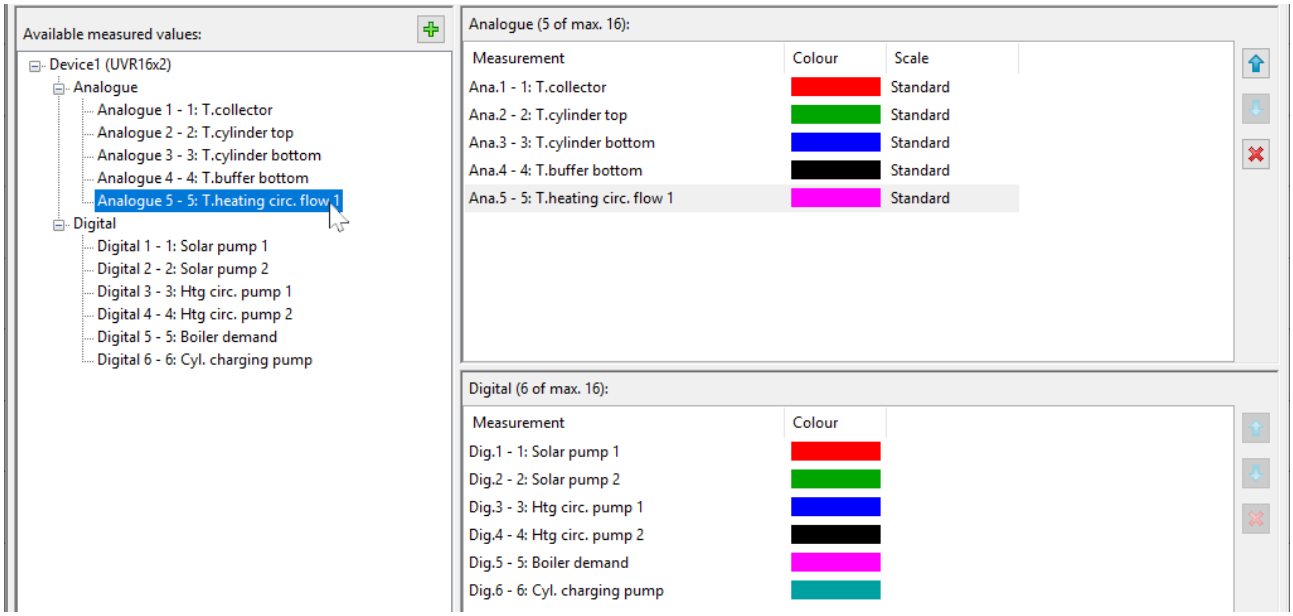
Adjustment range: -70°C to +280°C (minimum difference: 5K)



Changes to this setting will only take effect once the standard scale icon has been clicked.

4 Selecting the graphs, colours and scale

A maximum of 16 analogue and 16 digital values of all logged values can be displayed simultaneously.



Selected device values on the left are inserted into the profile (on the right) using either **drag & drop** or the button. Several available measured values can be selected and inserted into the profile together by using the Shift or Ctrl key.

It is also possible to insert values from different devices into one single profile.

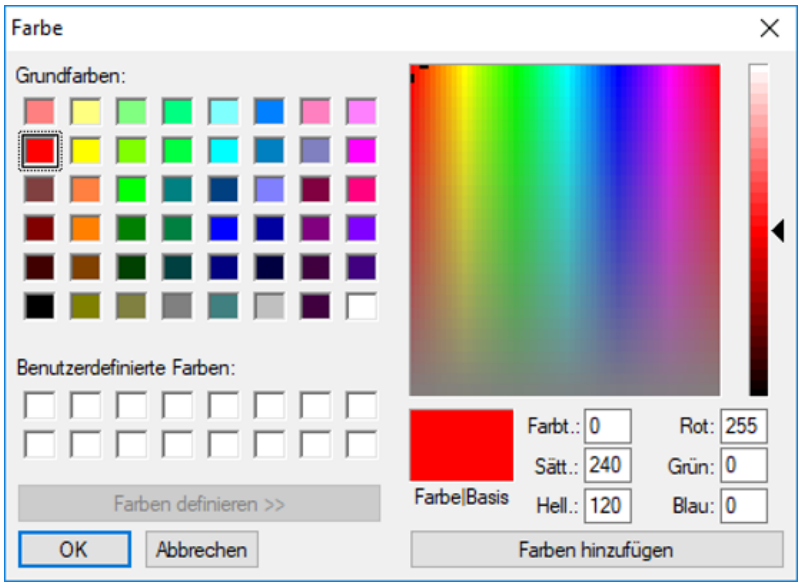
The **order** of values within the profile (on the right) is changed by moving a selected value using the arrow keys or drag & drop.

A selected value is deleted from the profile by clicking the X icon or pressing the Delete key.

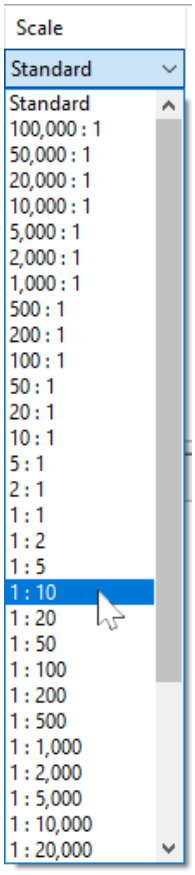
Changing the graph colour

Clicking the colour icon opens up a colour selection window. User defined colours are also possible; these remain saved.

The language in this window depends on the language settings in the PC operating system.



Changing the scale



A standard scale is preset for every value. The scale can be adjusted to make the values easier to identify on the graph.

Double clicking the value scale opens up a dropdown menu from which the required scale can be selected.

Example: the settings „**1 : 10**“ shows 1/10 of the value in the graph. Therefore, a value of 500 is displayed as 50.

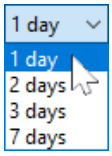
Cursor on/off

If the cursor is switched off, no measurements are listed at the side, and the date and time on the top right are hidden.

Grid on/off

Show or hide the grid.

Maximum display range

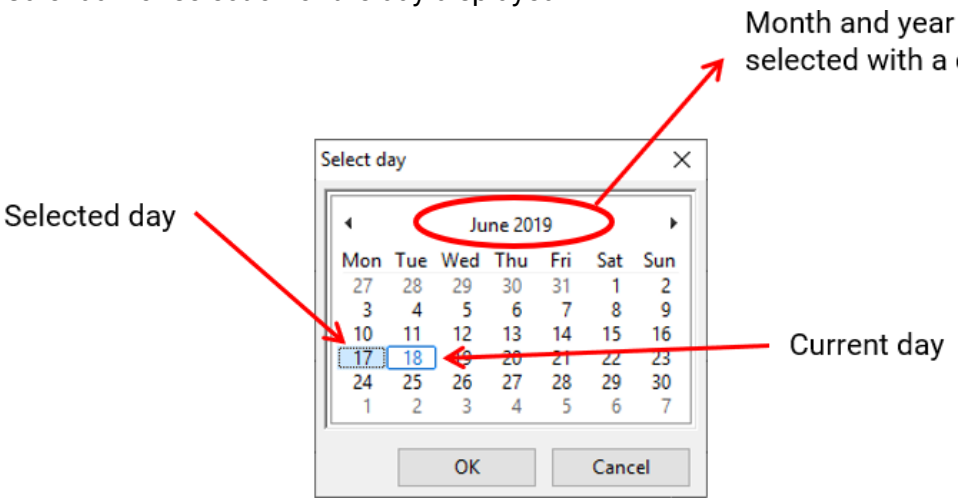


Selecting the max. display range. Selecting a period of more than one day reduces the time resolution in which the measurements a shown.

Period	Maximum resolution
2 days	5 seconds
3 days	10 seconds
7 days	20 seconds

Select day

Calendar for selection of the day displayed.



Navigation

In the data record, navigate forward or backwards by one day or one week.

Only days on which measured values have been recorded are displayed here, days without any data are skipped.

Time axis zooming

Extending or shortening of the time axis. The fixed point is the position of the cursor (if visible) or the middle of the diagram.

Scaling the Y-axis

For an optimal representation, clicking „Autoscale Y-Axis“ matches the scale of the Y-axis to the values.

Clicking „Y-axis standard scale“ resets the scale to the default values that are set in the profile.

Navigation methods

There are various options methods for optimally configuring or changing the graphic display to meet your individual requirements.

Navigating in the graphic can be done using keyboard and mouse commands, as listed in the following tables:

Shifting the display window

Navigation	*Keyboard*	*Mouse*
Shifting the display window along the **X-axis**	Only when the cursor is hidden: ← and →. Shifts by 1/48 of the display window per key press	Move the mouse while the **right** mouse button is pressed
Shifting the display window along the **Y-Axis**	Page up and Page down Shifts by 1/40 of the display window per key press	Move the mouse while the **left** mouse button is pressed

X-axis zooming

Navigation	*Keyboard*	*Mouse*
X-axis zooming (+)	Z The fixed point is the position of the cursor (if visible) or the middle of the diagram	Scroll „forward“ (fixed point is the position of the cursor), or button on the toolbar (fixed point is the cursor position (if visible) or the middle of the diagram)
X-axis zooming (-)	U The fixed point is the position of the cursor (if visible) or the middle of the diagram	Scroll „back“ (fixed point is the position of the cursor) or button on the toolbar (fixed point is the cursor position (if visible) or the middle of the diagram)

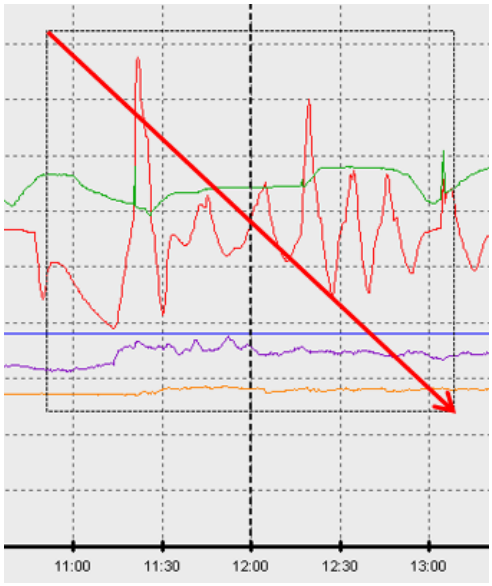
Y-axis zooming

Navigation	*Keyboard*	*Mouse*
Y-axis zooming (+)	Ctrl + Z Fixed point is the middle of the diagram	Scroll „forward“ while the Ctrl key is pressed Fixed point is the position of the cursor
Y-axis zooming (-)	Ctrl + u Fixed point is the middle of the diagram	Scroll „backwards“ while the Ctrl key is pressed Fixed point is the position of the cursor

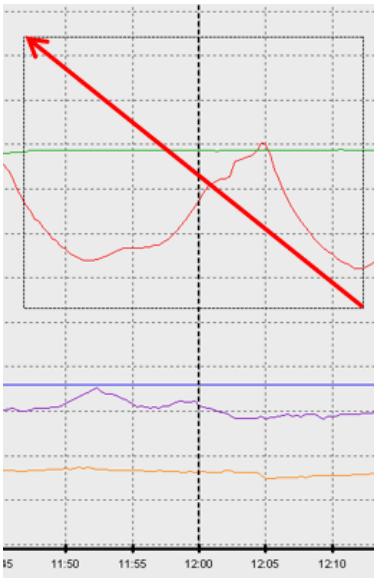
Zooming in on the X- and Y-axes

Navigation	*Keyboard*	*Mouse*
Zoom in on X and Y-axis (+)	-	Zoom window while **left** mouse button is pressed (see figure)
Zoom out of X and Y-axis (-)	-	**Negative** zoom window while **left** mouse button is pressed (see figure)

Example: Zoom in (draw zoom window from top left to bottom right)



Zoom out (draw zoom window from bottom right to top left)



Move cursor on X-axis

Navigation	*Keyboard*	*Mouse*
Set cursor	-	Double-click with left mouse button (positioning at the closest measuring point)
Measuring point / step forward	→	-
Measuring point / step back	←	-
Min. 1/24 of the display pane / step forward	Ctrl + →	-
Min. 1/24 of the display pane / step back	Ctrl + ←	-
1 day / step forward	↑	Toolbar:
1 day / step backwards	↓	Toolbar:
1 week / step forward	Ctrl + ↑	Toolbar:
1 week / step backwards	Ctrl + ↓	Toolbar:
Start day	Pos1	-
End day	End	-
Start recording	Ctrl + Pos1	-
End recording	Ctrl + Ende	-

Other functions

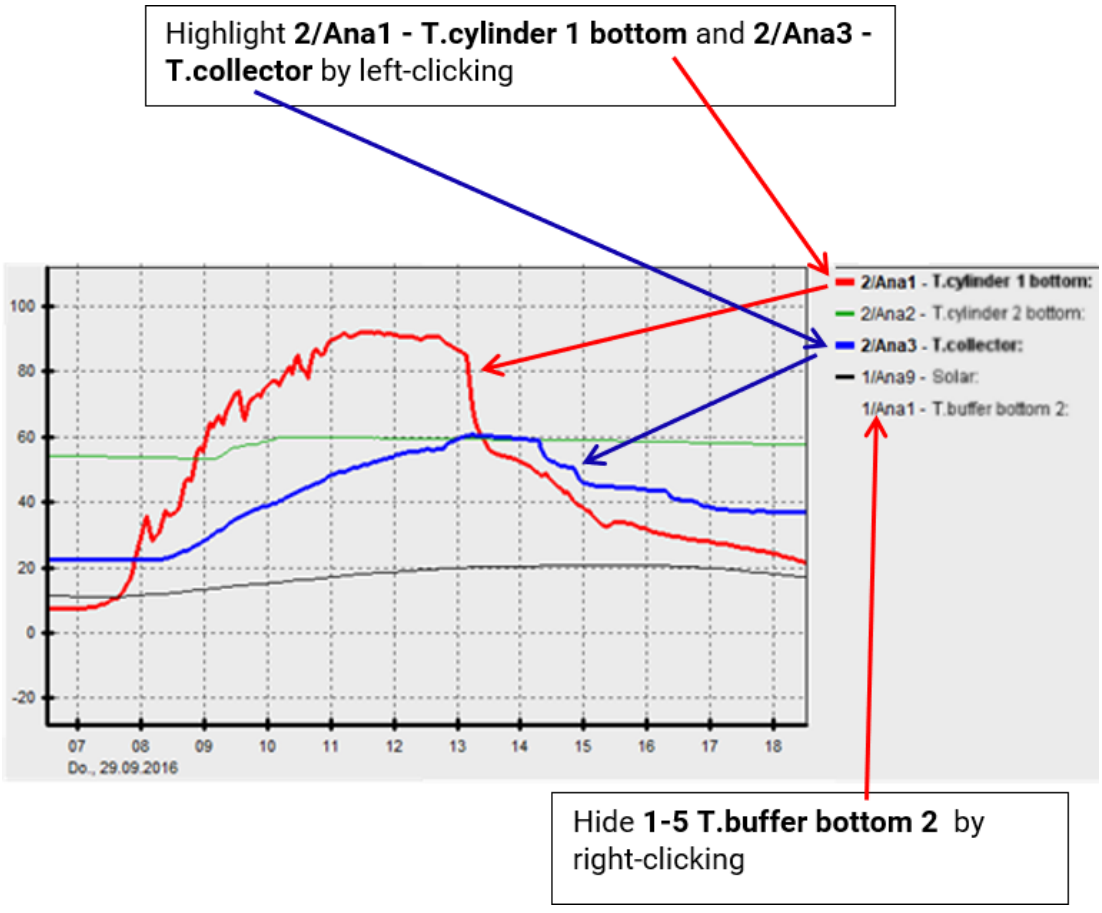
Navigation	*Keyboard*	*Mouse*
Hide cursor	C	Toolbar: 
Auto zoom on Y-axis	A	Toolbar: 
Standard zoom on Y-axis	S	Toolbar: 
Hide/show grid	G	Toolbar: 
Show/hide measurement indices (e.g. "1/Ana1") in the legend	L	-
Add note for the time at the cursor position	Shift + N	-
Print (print dialogue)	Ctrl + P	Menu bar: 

Highlighting or hiding graphs

Clicking a measured value in the right table with the **left** mouse button highlights the value and its graph.

Clicking a measure value in the right table with the **right** mouse button hides the value and its graph.

Example:



Displaying non-logged times

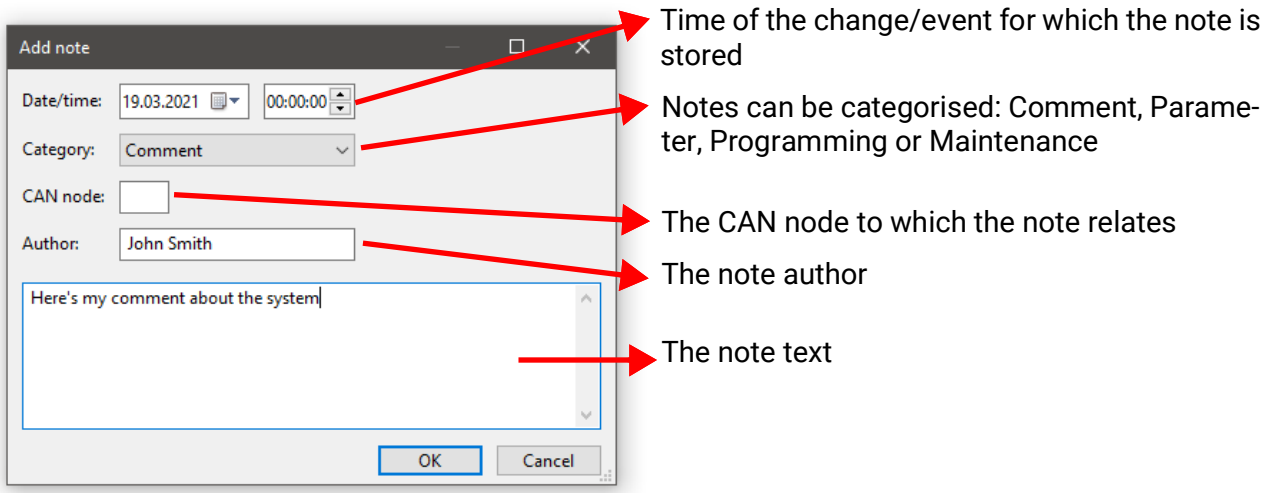
If a day during which no values were logged is selected from the calendar  , the diagram remains empty.

Notes

You can use notes to document changes to the system or save comments chronologically. Your notes then appear at an exact time point on the time axis.

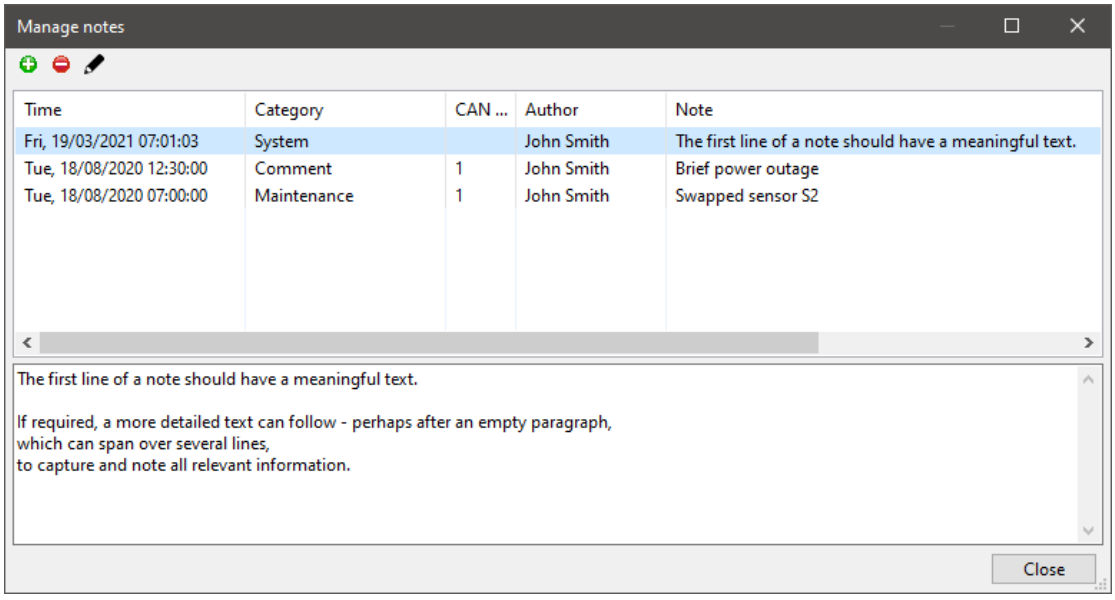
Add note

To add a new note, select **File > Add note...** or tap .
The following dialogue box appears:



Manage notes

With **File > Manage notes...** or with the button, you can call up an overview of existing notes:



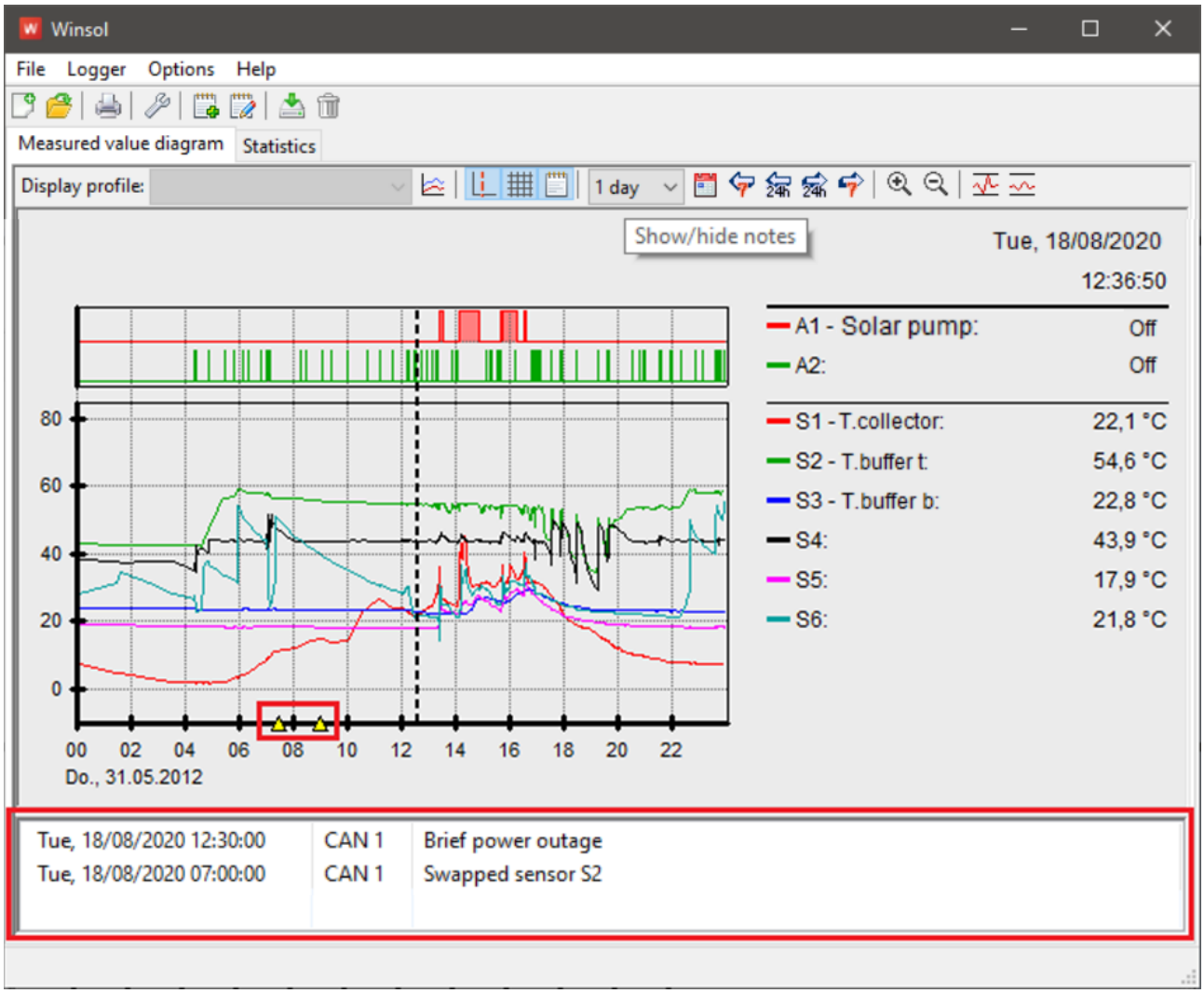
- Add a new note
- Delete the selected note
- Edit the selected note

Viewing notes in the graph

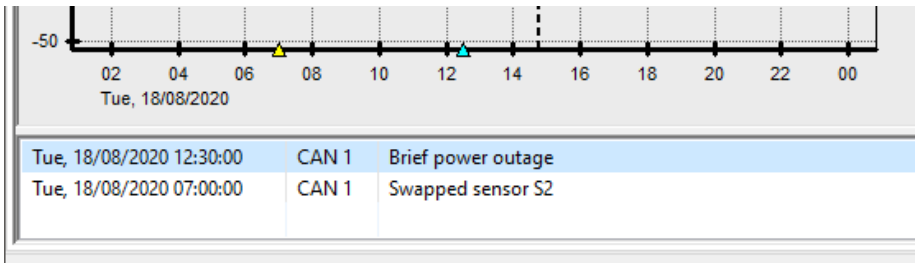
Notes are shown in a field below the measured values graph. You can show and hide them with . This shows the notes for the time span (in days) currently shown partly or in full in the measured values graph, with the most recent note at the top. This field only shows the first line of each note.

You can double-click notes here to call up the "Manage notes" dialog box in which the double-clicked note is highlighted.

The time axis contains markers for the selected notes.



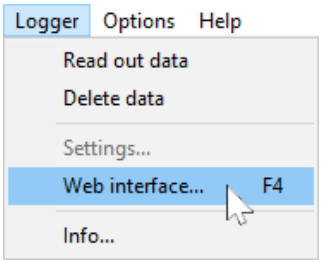
When you select a note in the notes field, the associated marker on the time axis is highlighted.



In the statistics graph, the notes are shown in the same way but without the time line markers.

Opening the web interface of the C.M.I.

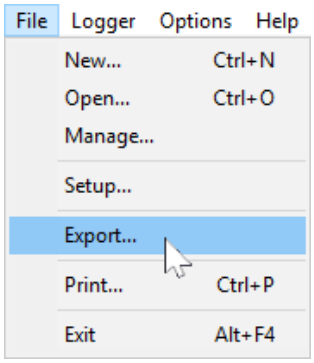
Clicking on **„Web interface“** (or pushing the F4 key) open the web interface of the C.M.I.

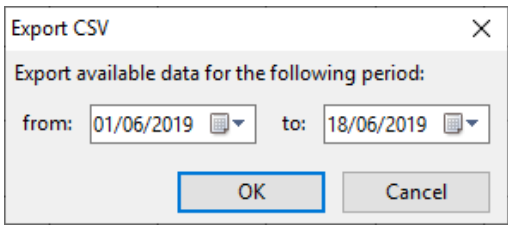


If **„Stay logged in“** was checked during login, then the homepage of the C.M.I. in the setup will be displayed immediately. Otherwise, you must first log in.

Export

In this menu, the log files can be converted into a *.csv file for further processing with any spreadsheet program. In this way you can create your own graphics and statistics with the recorded measuring data.





Select the time period

Confirm with **„OK“**

Thereafter, the path and file type (CSV (semicolon separated) or CSV (Unicode (tab separated))) can be selected.

If the selected *.csv file already exists, you are prompted on the file's replacement.

We recommend naming the file generated with information relating to the time period of the measurement data in the file. Example: a file named **E2016-10-01_2016-10-05.csv** contains measurement data from October 1st 2016 to October 5th 2016.

However, a freely selected description can also be used.

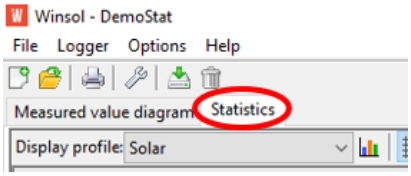
Example:

A1 | Date

	A	B	C	D	E	
1	Date	Time	1/Ana.1 - 1: T.collector	1/Ana.2 - 2: T.cylinder top	1/Ana.3 - 3: T.cylinder bottom	1/Ana.4 - 4:
2	14.11.2017	09:49:15	89	64	45,3	
3	14.11.2017	09:49:25	89	64	45,3	
4	14.11.2017	09:49:35	89	64	45,4	
5	14.11.2017	09:49:45	89	64	45,3	
6	14.11.2017	09:49:55	89	64	45,4	
7	14.11.2017	09:50:05	89	64	45,3	

If no measured value is available (e.g. unused input), then the cell concerned remains empty.

Statistics

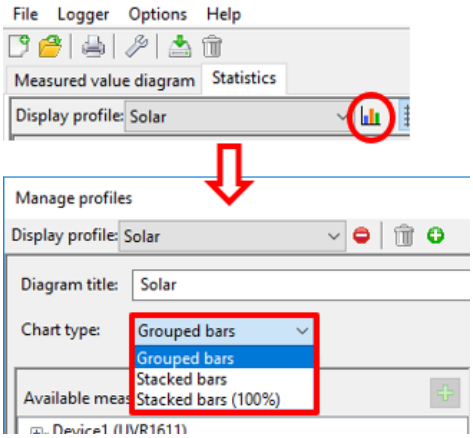


Click **Statistics** (next to "Measured value diagram") to view **Total meter readings** (cumulative values that are never reset) in the form of bar graphs.

Profile management

Profile management is similar to that of the conventional measured value diagrams and must be performed separately for **Statistics**. Only analogue values are available for the statistics.

In profile management, a chart type can be selected and changed at any time.



You can select one of three chart types:

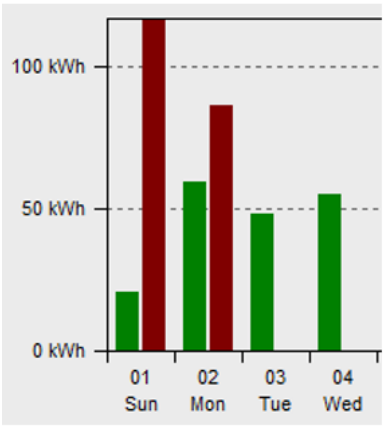
- **Grouped bars**
- **Stacked bars**
- **Stacked bars (100%)**

Grouped bars to show the values from a single meter (e.g. solar thermal system yield) or several meters side by side (e.g. to compare several heat sources).

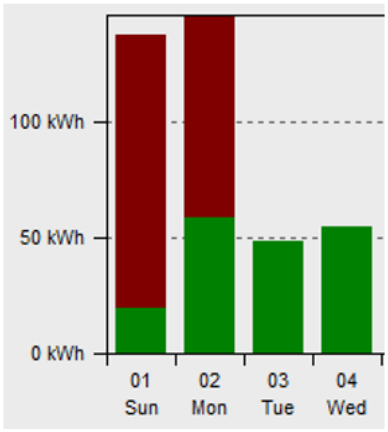
Stacked bars to show several meters. Here, the values are shown stacked one above the other so the cumulative totals can also be visualised.

Stacked bars (100%) to show several meters and their percentage of the cumulative total (e.g. solar coverage of the energy demand).

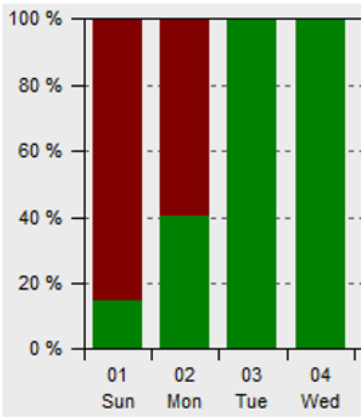
Grouped bars



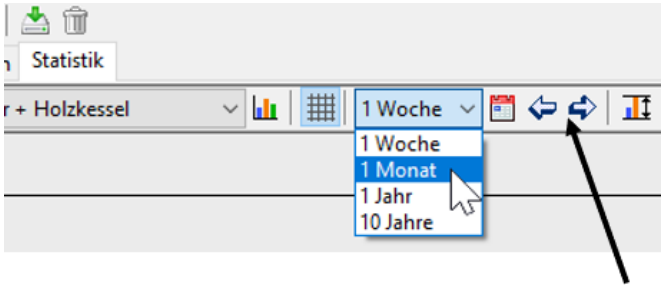
Stacked bars



Stacked bars (100%)



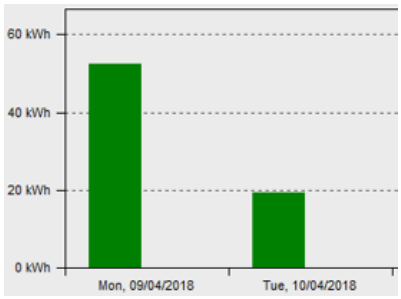
Time axis



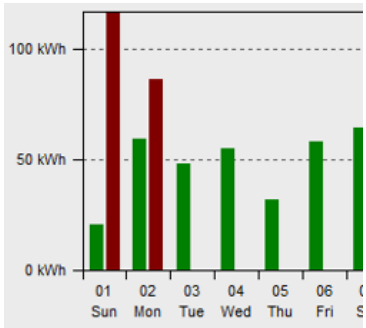
There are four display options:

- **1 week** Daily values for a week
- **1 month** Daily values for a month
- **1 year** Monthly values for a year
- **10 year** Annual values for ten years

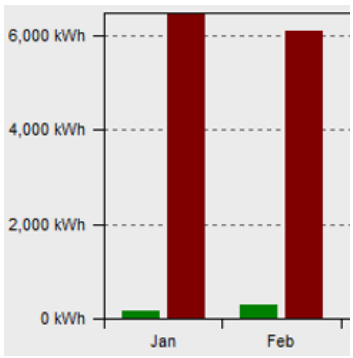
You can switch between periods using the **Up and Down arrow keys** or the **arrow buttons** in the upper toolbar. Each press or click changes to the next or previous period (e.g. the next week) unless there are no statistics to show for that period. If you select **10 years**, the display is advanced by one year.



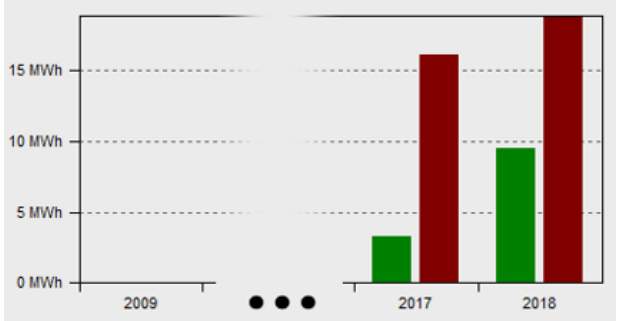
1 week shows each day of a week.



1 month shows each day of a month.

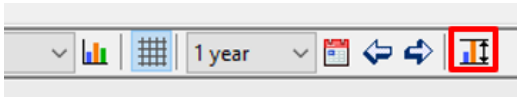


1 year shows each month of a year.



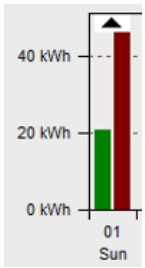
10 years compares values across years.

Y-axis scaling



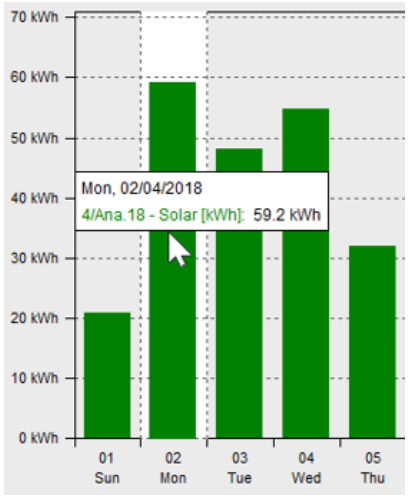
With "Y-axis auto scaling", you can change the scale of the Y-axis, so that all bars are fully visible on the graph.

If you use the arrow keys or buttons to navigate between periods, the scale remains unchanged, so you can compare the meter readings for two months, for example.



If a bar does not fully show in the graph, this is indicated by an arrow symbol.

Indication of values



If you hover the cursor over an entry, the exact readings of the respective meter are shown

Navigating the statistics chart

Navigation

Navigation	*Keyboard*	*Mouse*
Previous period	↑	Toolbar: 
Next period	↓	Toolbar: 
Start recording	Ctrl + Home	-
End recording	Ctrl + End	-

Further functionalities

Navigation	*Keyboard*	*Mouse*
Y-axis auto scaling	A	Toolbar: 
View/hide grid	G	Toolbar: 
Show/hide measurement indices (e.g. „1/Ana1“) in the legend	L	-
Print	Ctrl + P	Menu bar: 

Values that can be displayed

Device(s):	Value(s):
UVR16x2 RSM610 CAN-I/O45 CAN-BC2 CAN-EZ2 CAN-EZ3	**Total meter readings:** Energy [0.1 kWh] Energy [1 MWh] Hours run [1 s] Currency [0.01 euros] Currency [0.01 dollars] Currency [0.01] Pulses [1 pulse] Litres [1 l] Cubic metres [1 m^3]
UVR65 UVR67	3 x HM, energy [0.1 kWh]
UVR1611	HM 1..2, energy [0.1 kWh] *) data record 1 HM 3..4, energy [0.1 kWh] *) data record 2 if logged with C.M.I. as an analogue value: Meter, hours run [1 h] Meter, pulses [1 pulse]
CAN-BC	3 x M-Bus HM, energy [0.1 kWh]
CAN-EZ	3 x HM, thermal energy [0.1 kWh] 1 x EZ, electrical energy [0.1 kWh]
UVR61-3	3 x HM, energy [0.1 kWh]
ESR21	HM, energy [0.1 kWh]
EEG30	HM, energy [0.01 kWh]

If logging with the UVR1611, please note the following:

- Only heat meters which are automatically included in the data records by the device can be evaluated.

  The first two heat meters from the function list are in data record 1; two others are in data record 2.
- If logging with the C.M.I. via CAN bus, hours run meters and pulse meters (e.g. burner starts) can also be evaluated if they have been included in the data record as analogue values, and if the total meter reading does not exceed the maximum value of 65535.

  The UVR1611 must have firmware version A3.18 or higher.
- If logging with BL-NET or D-LOGG, the hours run meter and pulse meter CANNOT be correctly logged and evaluated.

Troubleshooting

- Ethernet connection: **BL-NET** is not recognised when during the **„Test“** in ***Winsol***
    1. For communication over Ethernet, the bootloader must be connected to the CAN bus or supplied with a 12 V power supply (CAN-NT) via its CAN interface.
    2. Ensure that the bootloader is connected via Ethernet to the PC or LAN network. An existing connection via Ethernet is signalled via a green LED in the oval opening on the bottom of the Bootloader. For a direct connection to the PC, a **crossed** network cable must be used.
    3. For a direct connection between BL-NET and PC via Ethernet, a fixed IP address must be assigned to the PC. If the PC is capable of Wifi connections, it must be ensured that the network related part of the IP address differs from the Wifi part.
    4. Check the Ethernet configuration of the BL-NET (see manual for the BL-NET) and note the IP address and TA port of the bootloader.
    5. Ensure that the IP address and the TA port of the bootloader are set correctly in the ***Winsol*** setup.

- Serial interface (USB, RS232): the datalogger (**BL-NET, D-LOGG**) is not recognized during the **„Test“** in ***Winsol*.**
    1. Ensure that the datalogger is connected to the PC via a USB connection.
    2. Check the power supply of the BL-NET or the switch setting of the slider switch of the D-LOGG. If no controller is connected to the datalogger, the D-LOGG slider switch must be in the „USB“ position, whereas the bootloader must have its own power supply (battery, power supply unit).
    3. Check the **device manager** of your computer on whether the USB driver has been correctly installed (Device Manager > Ports (COM and LPT)). In this case, its virtual COM port appears in the list as **„USB Serial Port“.**
        3.1. If the driver has not yet been correctly installed, carry out the installation again (see chapter **„USB driver / Installation“** in the datalogger‘s manual).
    4. If the datalogger is provided with at least one controller, check the data transfer from the controller to the datalogger (*see next point*).

- Data transfer from the controller to the datalogger is not working. (**BL-NET, D-LOGG:** no measured values are displayed in the **„Current measured valued“** of ***Winsol***.)
    1. Ensure that the datalogger is connected to the controller via the DL bus or the CAN bus.
    2. Check the connections and in particular ensure the polarity is correct.
    3. If using a UVR1611, data output must be activated if logging via the data line (DL bus) is intended (output 14 defined as **„data link“**). If using a UVR16x2, data output must be enabled in „DL settings“ in the menu „DL bus“.
    4. Ensure that the datalogger is configured for the corresponding data logging process (DL bus or CAN bus (see chapter ***Setup dialogue***)).
    5. If several controllers are being logged, check the data connections individually to narrow down the possible causes. To do so, connect the data link (DL bus) or CAN bus as appropriate to the other controllers. When doing so it is important that the data line is connected directly to the controller and not the data input of the datalogger, as otherwise no useful results will be obtained.
        5.1. If data transfer works over the DL bus with each individual controller, then the cause of the error is crosstalk between the two data links of the DL bus. In this case, the two data links must be routed separately or at least one data line must be routed in a shielded cable.
        5.2. If data transfer via the CAN bus works with each individual controller, the cause of the error may be the allocation of 2 identical network node numbers or an incorrect network termination.
    6. To narrow down the cause of the error during data transfer to a single data line, carry out tests using a short cable (< 1 metre).
        6.1. If data transfer works using a short cable, then the cause of the error could be crosstalk caused by an external interference source in the data link (DL bus). In this case, the data link must be routed in another way or a shielded cable must be used.
    7. If, in spite of testing all the listed points, the problem persists, please contact your dealer or the manufacturer directly. However, the cause of the error can only be found if a **precise description of the error** is provided.

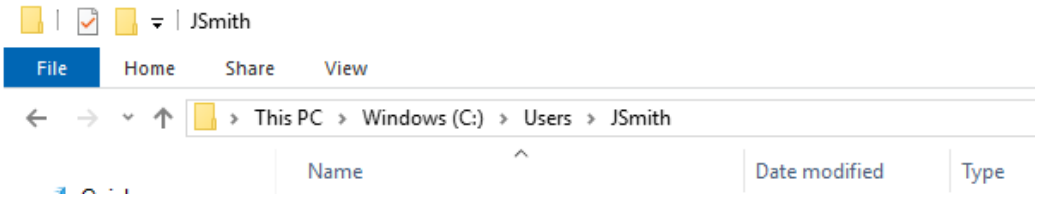
- **BL-NET**, **D-LOGG**: The data is recorded with an incorrect timestamp (time, date).
    1. Since the timestamp is generated by the controller when using a UVR16x2, UVR1611 or UVR61-3, the set time of the controller must be corrected.

       Caution: To ensure a higher time resolution, the datalogger synchronises with the controller during start and thus updates its internal timestamp. Therefore, the datalogger must be switched off (zero volt state) for a few seconds after changing the time settings on the controller (disconnect the DL and/or CAN bus), that it immediately synchronises itself after the restart.
    2. When data logging using controller without an internal time, the time is taken from the PC or the point in time at which the datalogger was disconnected from the controller, so that the time can be allocated to the recorded data.

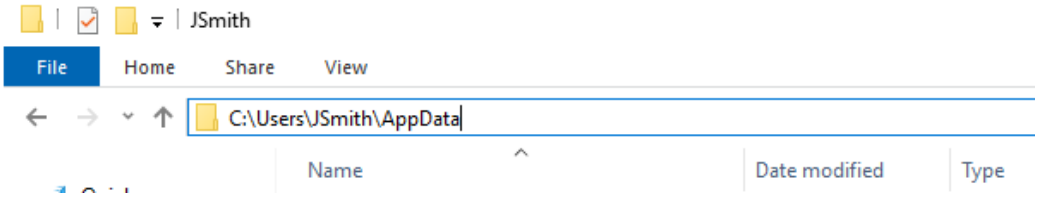
- The log files and .csv files are not displayed in the corresponding directory „C:\Programs\...“ or the desired subdirectory does not exist.

  Under certain circumstance, when using Windows Vista/7/8, the files are saved under a user-specific virtual path.

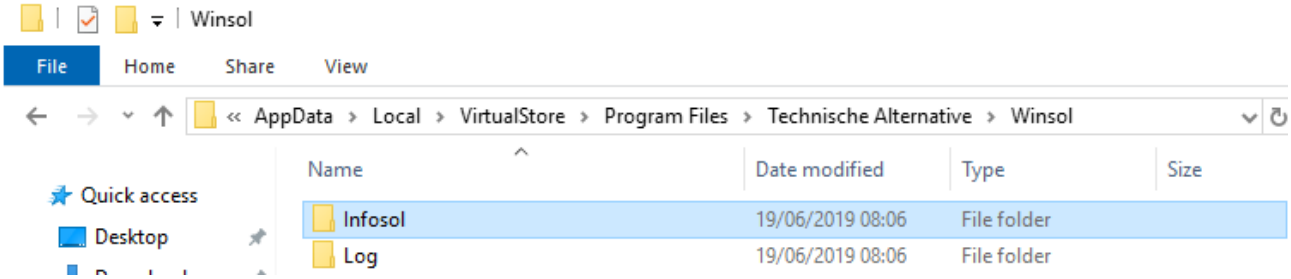
  C:\Users\<USERNAME>\AppData\Local\VirtualStore\Programme\Technische Alternative\Winsol\...



The folder „AppData“ is not displayed by default and must be entered into the input field manually..



This will take to the desired files.



It is generally recommended that the Winsol directory is chosen outside the program folder (default installation path) (see chapter ***General settings***).

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