WebLog250/120 Software User Manual

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1. Introduction

This manual describes the setup and operation of the devices of the WebLog family. The WebLog250 V2 and the WebLog120 are M-Bus data loggers and web servers. Up to 250 or 120 meters (= unit loads á 1.5mA) can be connected directly to the internal M-Bus level converter. The devices can manage and read a total of up to 1000 devices if M-Bus repeaters (PW100 / PW250) are used as extensions.

The integrated web server enables complete setup and operation via the network interface (LAN) or the optional WLAN module with a web browser. No additional software is required. Alternatively, the WebLog250 can also be set up and operated via the touchscreen display. Access to the Internet can be implemented via LAN or WLAN with the help of an additional DSL or cellular router. Access to the WebLog via the Internet usually requires port forward or a VPN connection.

The device offers structured user management with different access rights from the administrator to the tenant, who can only read his own meters.

Additional features:

- M-Bus data center for 250 or 120 terminals
- Integrated ARM-NXP i.MX 8M CPU (1.6GHz, Quad-Core) with 1GB RAM and 4GB eMMC Flash
- Operation via integrated 7" colour touch screen (only WebLog250) or a web browser
- Hierarchical access management (administrator, reader, tenant)
- M-Bus remote meter display and data logger
- Automatic export of data to USB memory stick, FTP server or via e-mail
- Various export formats (CSV, XLSX or XML)
- Extensive range of interfaces (RS232, USB device, USB master, Ethernet, opt. WLAN)

Schematic representation:

2. Comparison of the WebLog variants

Feature	WebLog250	WebLog120
Operating voltage	110 to 240 VAC, 47 to 63 Hz	110 to 240 VAC, 47 to 63 Hz
Power consumption	max. 100W	max. 60W
Temperature range	0 .. 45°C	0 .. 45°C
M-Bus voltage	42 V (mark without load)	36V (mark without load)
Number of M-Bus meters	250	120
M-Bus idle current	max. 375 mA	max. 180 mA
Overcurrent threshold	500 mA	250 mA
Housing	Light-grey ABS plastic Protective class IP52 H x W x D: 264 x 234 x 86 mm Mounting on wall, optional on rail TS35	Light-grey and black PC plastic Protective class IP30 H x W x D: 140 x 90 x 60 mm Mounting on rail (TS35)
LED status indicators	Front: 4 Stück Board: 5 Stück	Front: 7 Stück
CPU and memory	Integrated ARM-NXP i.MX 8M CPU (1.6GHz, Quad-Core) with 1GB RAM and 4GB eMMC Flash. The log database uses up to 750 MB of this memory.	
Display	7“ LED display with capacitive touch, 1024 x 600 pixel	Not available
Interfaces	1 x 10/100 Mbit Ethernet 2 x USB-Host, 1 x USB-Device, RS232C, **optional:** WLAN	2 x 10/100 Mbit Ethernet 2 x USB-Host, 1 x USB-Device, RS232C M-Bus Repeater **optional:** WLAN

3. User Manual

3.1 Administrator Mode

After applying the supply voltage, the WebLog loads its operating system and starts the application program. The WebLog can be operated via the touchscreen on the device (only WebLog250) or via a web browser (e.g. Firefox) with HTTP or HTTPS protocol over the network. The two user interfaces are almost identical. After setting up the network configuration, any PC from the network can connect to the WebLog via the configured IP address.

To operate and set up the device via the Ethernet interface, connect your PC to the Ethernet interface of the WebLog or LAN1 of the WebLog120 in a 1:1 connection with a network cable for the initial setup. For easy configuration, the WebLog offers a so-called link-local IP address, under which you can always reach the device in the local network or directly in a 1:1 connection. Start the browser on your PC and enter this IP address in the address line of the browser:

https://weblog250-SN.local or https://weblog120-SN.local

(SN = 5-digit serial number of the device)

Here example for the WebLog250 with the serial number 10002: https://weblog250-10002.local.

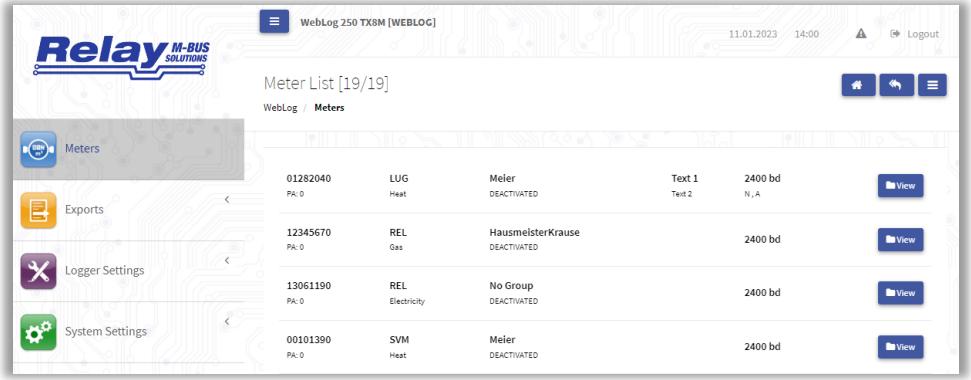
The WebLog250 displays the serial number (SN) and a user definable name (ID) on the login screen.

In the browser, enter the administrator password here and click on Login. If you are working on the WebLog250 screen, tap the relevant input field on the touchscreen and then enter the administrator password using the virtual input keyboard that opens and then click the "Login" button.

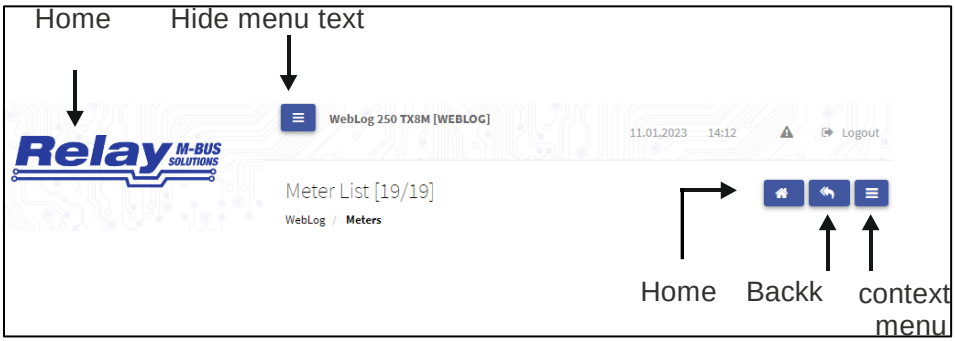
The factory default password is as follows: **00001767**

If you operate the WebLog250 via the touch display, a virtual keyboard for entering the password is displayed after you tap into the input field. Switching the keyboard to capital letters is done with the ⇧ – key.
If necessary, you can switch to a second level of the virtual keyboard by tapping &123 the key. This level essentially contains the digits and other special characters. The backspace key is located in the top right corner of the keypad on both levels. The entry on the virtual keyboard of the touchscreen is confirmed with ↵ the Enter key or cancelled with the ✖ key.

Then the WebLog initiates the verification of the password. After successful login, the administrator gets to the main menu. It serves as a starting point for starting one of the four items in the main menu: meters, exports, logger and system settings.



You can see the most important controls for operating the interface in the graphic below:



Depending on the active menu, the context menu offers further actions / menu items.

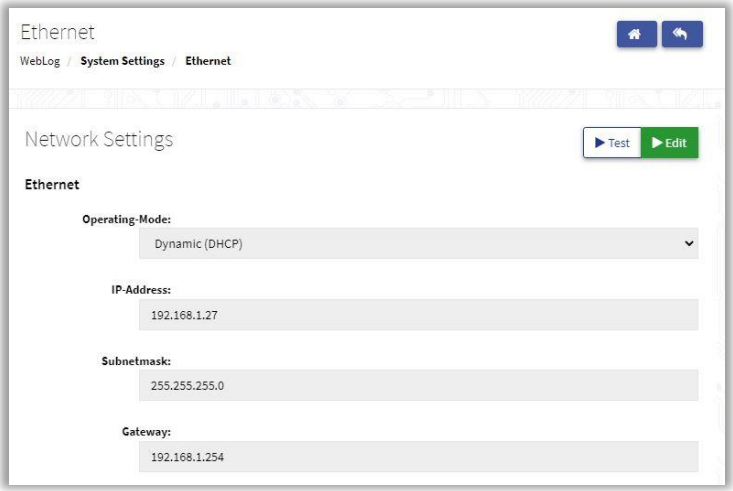
Attention: If the user does not make any more entries for 5 minutes, an automatic logout takes place for security reasons! After an additional waiting time, the WebLog250 screen is completely switched off. A new login can then only be initiated by tapping on the black screen.

3.1.1 Important system settings

Important system settings should now be made during the initial installation. To do this, use the "System Settings" button to switch to the corresponding submenu.

Hint: As a rule, you must first click on the "Edit" button in all sub-menus in order to be able to edit the settings!

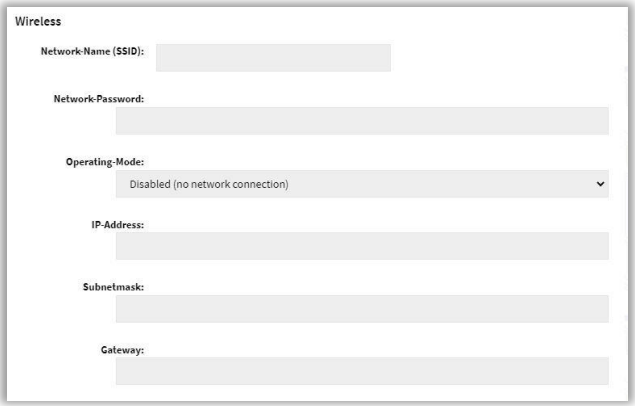
First, the network configuration should be done so that the WebLog can be integrated into a network and export destinations for the logged data are available via FTP or e-mail.



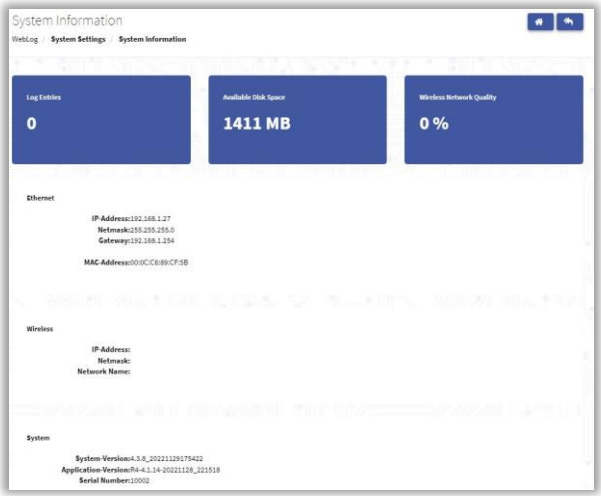
With wired Ethernet (RJ45 socket), a fixed IP address or address assignment by a DHCP server can be selected. A fixed IP address, which can be assigned by the network administrator, is advantageous. The WebLog can then always be accessed via the web browser using the same known IP address (e.g. the URL address for the above setting is: https://192.168.1.127).
In most cases, the gateway address should be set to the IP address of the DSL router. External access to the WebLog250 can then be enabled using port forward in the router. The "Nameserver" entry is set to the IP address of a DNS server. It is usually sufficient to enter the IP address of the router here.

You can test the network connection by pressing the "Test" button. To do this, a ping test is carried out on the website www.relay.de or a host name or an IP address of your choice.

Optionally, the WebLog can be equipped with a WLAN module, which must then be configured in the "Wireless" area. Here we recommend first setting the operating mode to DHCP and using the "SCAN" button to search for available WiFi networks. Then select a WLAN access point (AP) from the list and enter the password. The other fields correspond to the network configuration described above.

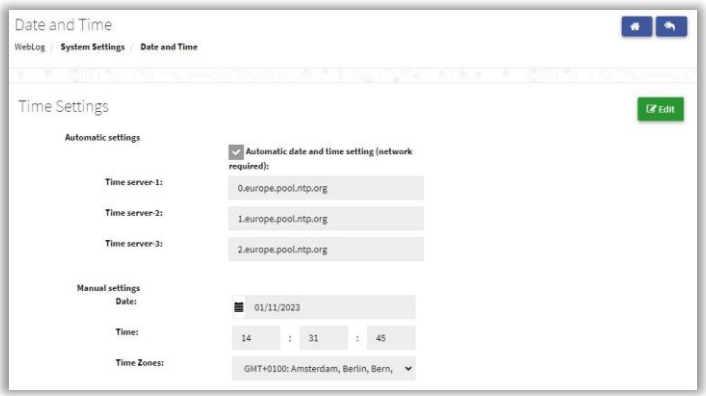


The "Information" menu item provides information about the firmware version used, the network configuration and the internal memory for the M-Bus database.



Now the time of the internal clock of the WebLog should be set:

The "Date and Time" button leads to the time setting, the exact setting of which is important for the log and export times of the WebLog.



If the checkbox "Automatic date and time setting (network required)" is ticked, the WebLog clock will be synchronized with the clock of a time server from the Internet once a day. The preset three time servers can be changed if, for example, you operate the device in a network with its own time server. The "Save" button saves the time settings.

3.1.2 Important Logger Settings

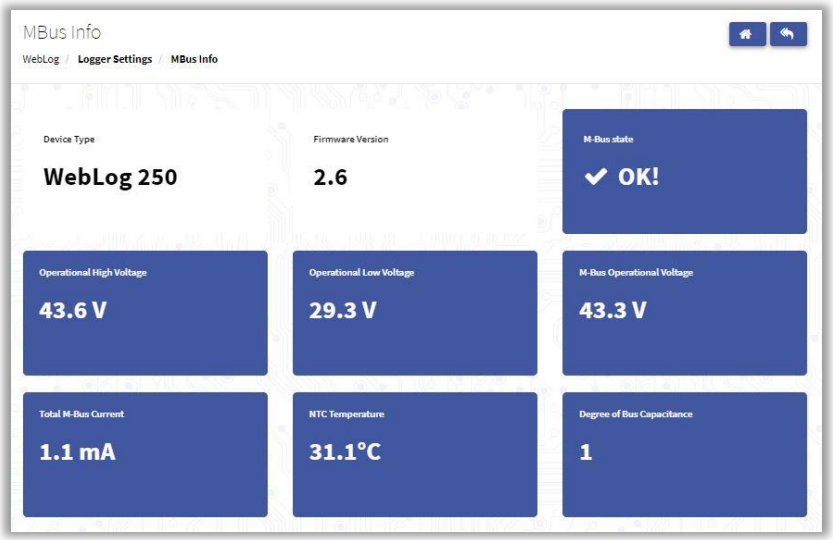
The M-Bus baud rate should be set before starting an automatic meter search by the WebLog,. To do this, use the "Back" or "Home" button to navigate back to the main menu.

With the "Logger Settings" button you reach the menu of the same name, which leads to the M-Bus basic settings. From here you can also branch to user administration or to create the M-Bus log intervals.

The "MBus Settings" button takes you to the setting of the serial M-Bus interface and to the global definition of the M-Bus base units:

The logger ID is used as a system identifier and to identify the export files. The master interface for the internal M-Bus level converter is "/dev/ttymxc1". The standard baud rate of an M-Bus meter is generally 2400 baud. Some older meters can only communicate at 300 baud. There are also meters that can additionally communicate with 9600 baud. Please note that selecting a high baud rate can significantly limit the range of the M-Bus installation. Several search baud rates can be selected. The “Master Timeout” is the time in milliseconds that the master waits for a meter response. The “Collision Timeout” specifies the time in milliseconds that the master waits after detecting a parity or break error (collision) before communicating with the meters again. There is also a global setting option for the M-Bus units to be exported so that the export data can be processed further without conversion. The "Source" unit passes on the unit specified by the meter. Save stores the settings made.

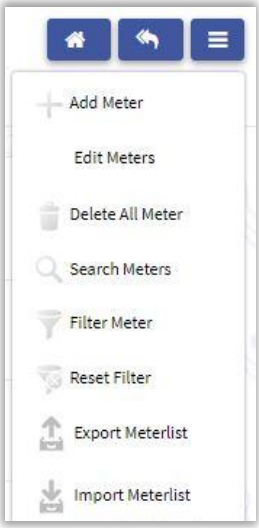
The "MBus Info" button shows, among other things, an overview of the M-Bus voltages. The bus current should be approximately equal to the number of meters multiplied by one standard load (1.5mA). Warning current or overcurrent is displayed in addition to the LEDs in the "M-Bus Status" field.



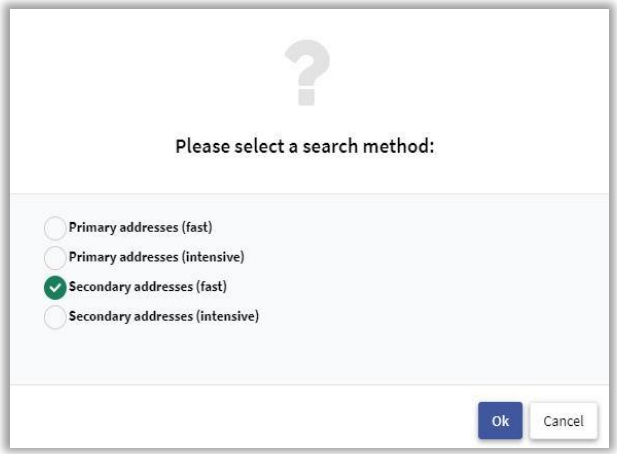
3.1.3 Search for Meters

From the main menu, you can access the M-Bus meter list by pressing the "Meters" button. This list does not contain any entries when it is installed for the first time. The administrator should first start an automatic meter search. Meters which have not been found can be added later.

After pressing the menu button in the upper right corner of the screen, a context menu opens. The "Search for meters" entry leads to an automatic meter search.

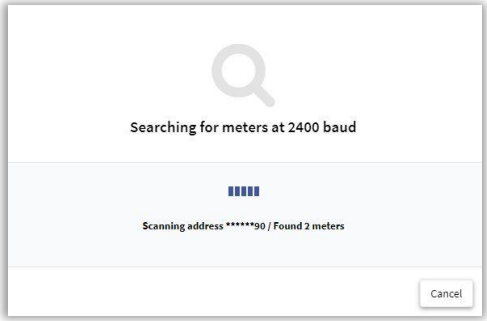


Before starting the search, you can select whether you want to search for secondary or primary addresses. A fast search and an intensive search with more repetitions and more tolerant timing (slower but more promising, especially in extensive M-Bus networks with many meters) are available for both methods.



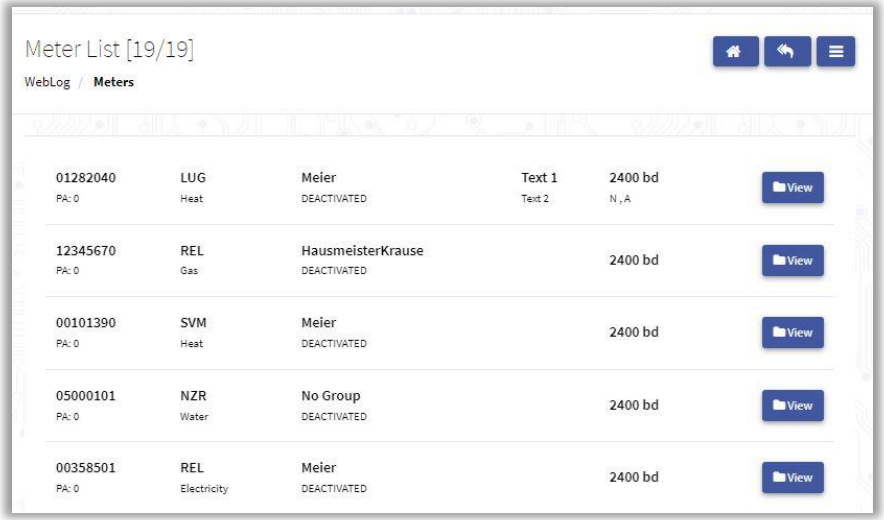
If the installed M-Bus meters have not been programmed with a unique primary address, a secondary address search must be performed.

The progress of the search for meters is displayed in a window.

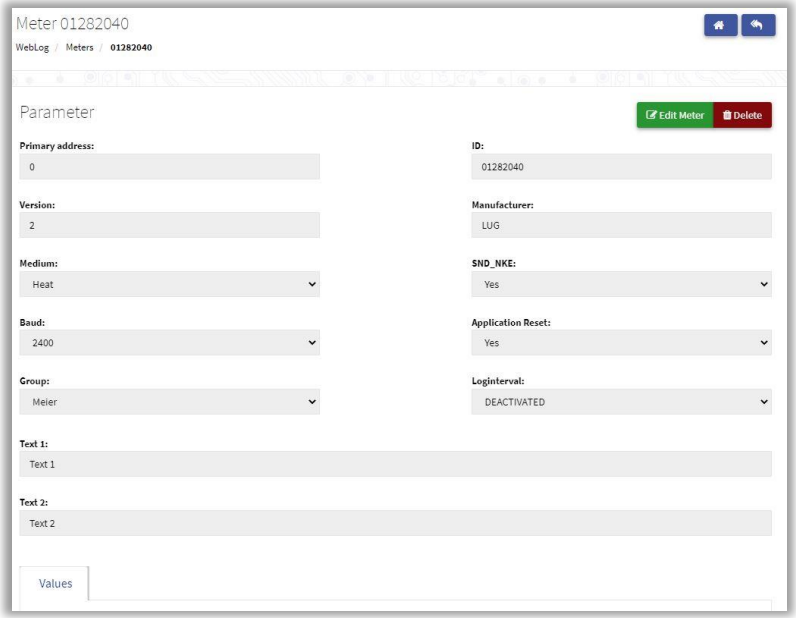


After the end of the meter search, all detected meters are entered into the meter table. Meters found during a secondary address search are shown with primary address (PA) 0. The first column contains the 8-digit ID (part of the secondary address) and the primary address. This is followed by a column with the manufacturer code (MAN) and the medium (device type). The third column shows a possible affiliation to a group of meters and the log interval. The fourth column is initially empty for new meters, but shows two freely editable text fields Text1 and Text2. The rightmost column provides information about the M-Bus baud rate of the meters and two optionally selectable additional M-Bus commands:

N: SND-NKE activated A: Application-Reset activated



The meter list can be scrolled with the web browser as usual. Likewise on the touch display of the WebLog250, e.g. by clicking and then moving the finger up or down.
A click on the "View" button opens a detailed view of the selected meter with the "Parameter" and "Values" tabs. The parameters can be edited after clicking on the "Edit Meter" button. Texts that describe the meter in more detail can be entered in the "Text 1" and "Text 2" fields under Parameter. In the selection field "Group" e.g. the affiliation to a tenant can be specified. A defined log interval can be selected under Loginterval. The selection fields "SND_NKE" and "Application-Reset" determine whether a corresponding command is sent to the meter before reading. In the case of multi-telegram meters, it is then ensured that the basic telegram is available for the following reading. "Save" writes the changed settings to the configuration database. The meter can be removed from the meter list with the "Delete" button.



Attention: The variables are only changed in the meter list of the WebLog. The meters themselves are not programmed with that variables such as the primary address, the baud rate or the medium!

Selecting the value sheet and pressing the "Read values" button provides a current readout of the meter's data records.

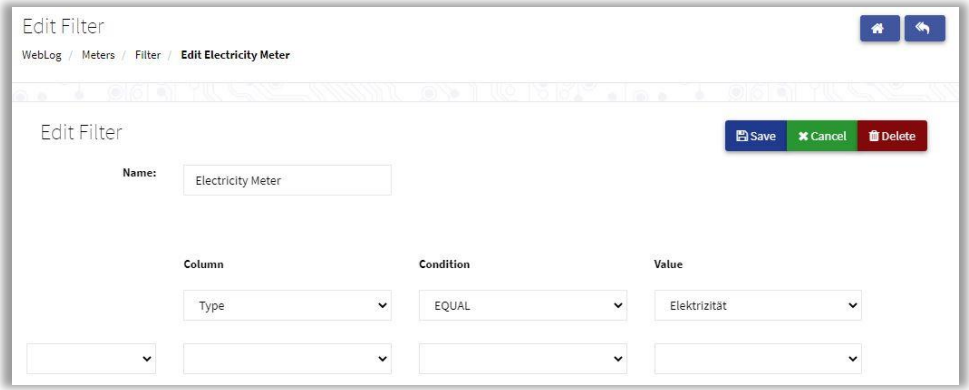
Name	Value	Unit
Energy	40	kWh
Date	2000-12-31 00:00:00	
Volume flow	0	m^3/h
Return temperature	0	C
Temperature difference	0	K
Power	0	kW
Volume	0.7	m^3
Operating time	0	h
M-Bus state	0x10	
Raw telegram	68 3D 3D 68 08 00 72 33 67 20 64 68 50 25 04 BC 10 00 00 0C 07 04 00 00 00 4C 07 00 00 00 00 02 6C 1F 0C 0B 3D 00 00 00 0A 5F 00 00 0B 61 00 00 00 0C 2D 00 00 00 00 0C 15 07 00 00 00 02 26 00 00 EE 16	

3.1.4 Filter Meter View

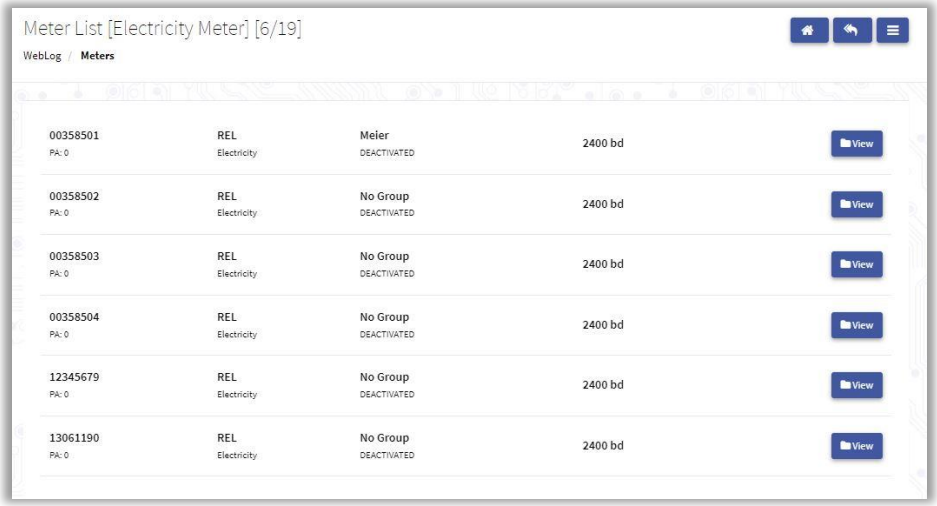
There is often a request to reduce the meter list to a selection of meters that meet certain criteria. Possible selection criteria are, for example:

- meter type (e.g. electric meter)
- meters from a specific manufacturer
- meters of a specific primary address range

For this purpose, select the entry "Filter meter" in the context menu of the meter list. Up to four selection criteria can then be created line by line in the displayed mask. The following example shows a filter for electric meters.



„"Save" also the created filter with a name. It can then be used as required or when creating the exports. After saving, one of the existing filters can be applied to the meter list with "Apply". In the example, the name of the active filter and the number of meters selected by it (here: 6/19 = 6 of 19 meters correspond to the active filter) are displayed in the title bar. The button "Delete“ deletes the filter. The item "Reset filter" in the context menu of the meter list resets the filtered view.

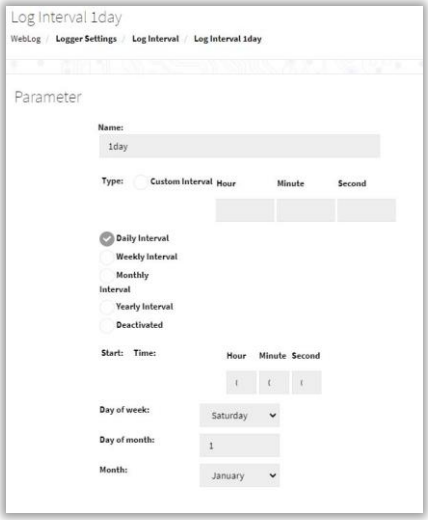


The context menu entry “Remove filter” resets the filtered view back to the unfiltered view

3.1.5 Log Interval

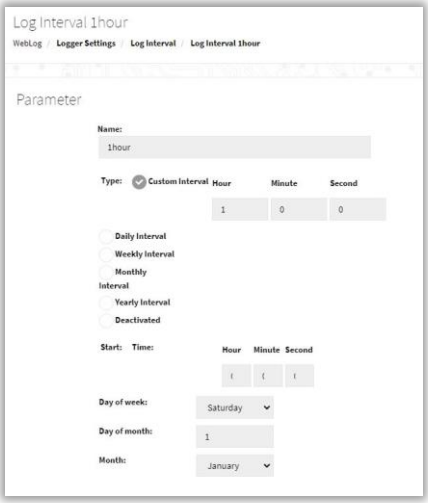
The “Log Interval” button in the “Logger settings” submenu leads to the configuration of the readout times.

This example shows a daily log interval. The reading takes place at midnight.

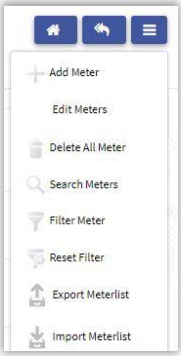


In addition to the daily, weekly, monthly or yearly interval, a user-defined interval (manual interval) can also be created.

The 2nd example shows an hourly log interval. In this example, logging takes place on the hour.

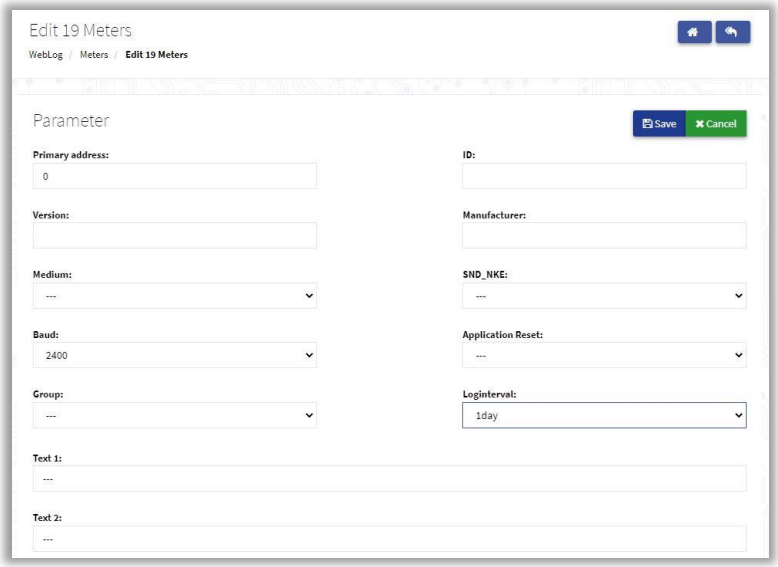


The created log intervals can now be assigned individually to each meter (meters -> parameter -> log interval). In most cases, the same log interval is assigned to all meters or a group of meters. By selecting an already defined filter (example: electricity meter) it is easily possible to assign the same log interval to these meters. This operation can be performed in one step. To do this, open the context menu in the meter list and execute the entry "Edit meter". Here you can also make use of the defined filters, e.g. to assign a log interval to all electrical meters.



Attention: Please use this function carefully, because the changes apply to all displayed meters!

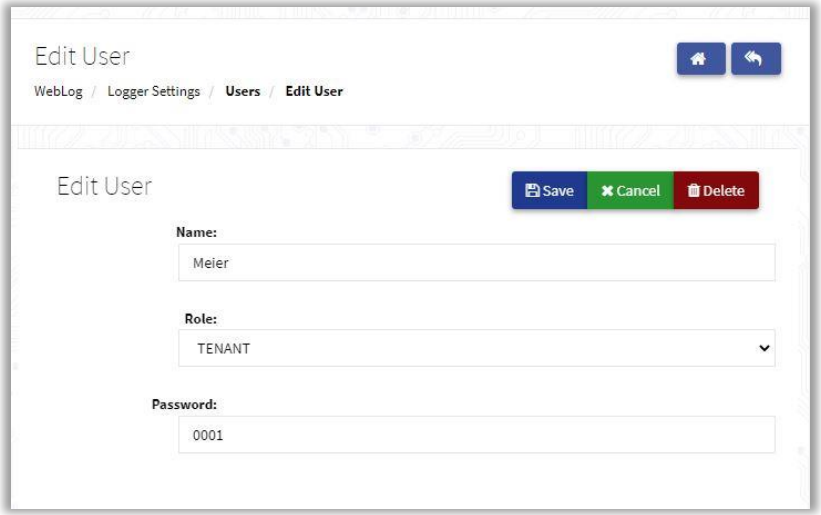
Then the meter parameter mask with wildcard entries opens. An interval that has already been created is selected in the "Loginterval" field. A click on the "Save" button activates this setting for all meters. An "L" in the status line above indicates an active logging.



3.1.6 User groups

The user groups are configured in the submenu “Users” within the menu “Logger Settings”.

The user “Admin” with the highest rights is already pre-defined. The administrator can add new users for example tenants, which is the role with the lowest rights.



User belonging to the group of inspectors are able to read all meters from the tenants and can use predefined exports of the administrator. The tenants only see their own meters and have no rights to generate or start exports. The distinction between administrator, inspector and tenant is done by the entered password in the login screen. If the admin wants to change passwords he must erase the respective group and then generate the goup again with the new password. Inspectors and tenants are not able to change their passwords.

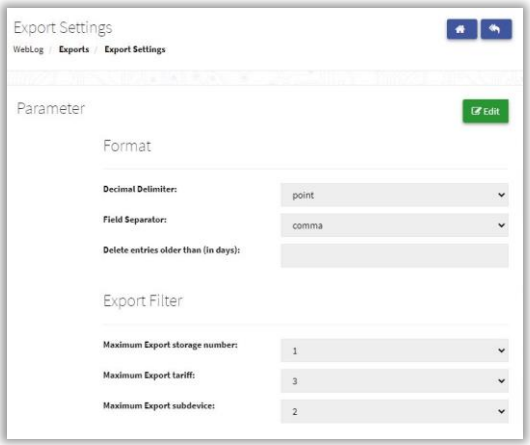
Attention: Never delete the last user with admin rights or downgrade his rights! Otherwise you will no longer have access to the configuration of the device.

3.1.7 Export setup

Exports are used to transfer meter data, which have been logged for a specific time interval, to a USB memory stick, to an FTP server, to an e-mail address or by download in the browser.

You can access the exports submenu by using the button “Exports” in the main menu.

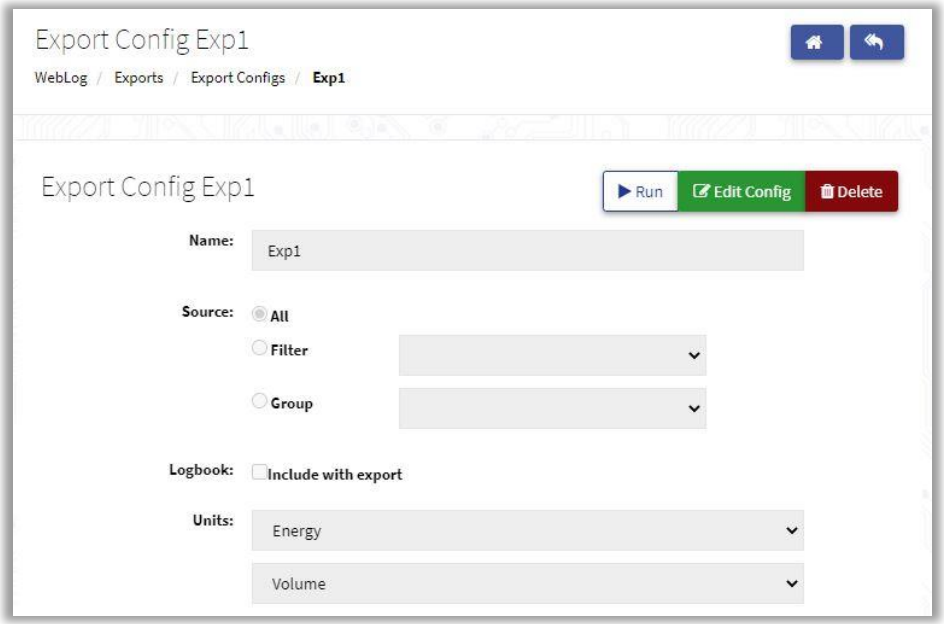
The button “Export Settings” opens a dialog where you can select in the section “format” the decimal delimiter for numbers, which can be either a “comma” or a “point / dot”. Please select the correct settings for your country for the decimal separator (DE: comma) and the field separator (DE: semicolon).



You can also limit the size of the database to a specified number of days. The device then automatically erases older entries from the database. Please make use of this in order to avoid that the database becomes too large and therefore the SQL queries and the execution of the exports of the logged data become too slow.

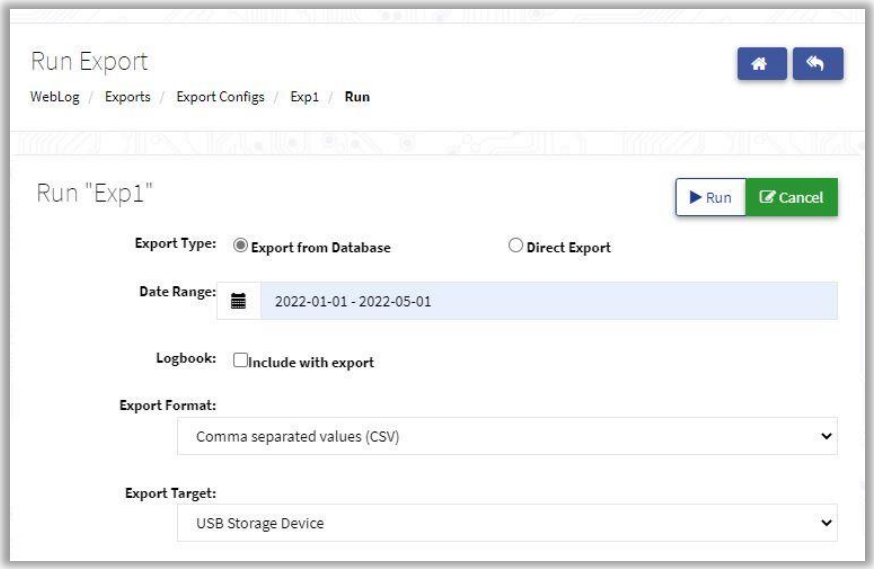
In the section “Export Filter” you can set the maximum numbers for the data in the exports by defining the maximum storage number, the maximum tariff number and the maximum subdevice to be included in the export files. The default value for the storage number is 1, which implies that only data with storage number 0 (actual value) and 1 (normally the yearly due-date value) are exported. The default value for tariff is 3 and for subdevice it is 2.

The button “Export configs” leads to the configuration of exports. Here you define which data shall be exported.



The most important values energy and volume are selected in the above example. There are further possibilities to choose the data of all meters (All) or meters from a predefined filter (Filter, e.g. all electricity meters) or meters from a specific group or tenant.
There is an option to activate the creation of an additional file with the messages from the event log, which is then transferred when exporting. The created export can be saved under a name with "Save". A click on the "Run" button executes the export immediately.

If you start an export manually by clicking the button “Run” you can either export the logged data from the database (Export from Database) or perform a direct (immediate) readout of all meters (Direct Export) with a following export of the actual data.



The following steps describe the manual export from the data base:

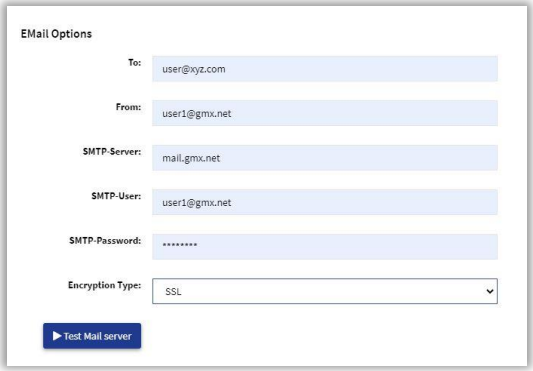
You can select the start and end time in the calendar view for the logged data which shall be exported.

Then you choose the required export file type from the options comma separated CSV format, Microsoft Excel XLSX format, a structured XML format or a specific CSV format (Ecosmart).

Then the export destination is defined (USB stick, FTP server, e-mail transfer or download in the web browser). No further entries are required for the export to a USB stick or via download in the browser and a click on the "Start" button executes the export with the selected options immediately.

An export via e-mail or FTP transfer requires additional input:

You have to enter the destination e-mail address and the SMTP server in case of an e-mail transfer. If you want to use your internal Microsoft exchange server, please enter the IP address of that server and the exchange user with password. The encryption type for MS Exchange is “Plain” (unencrypted).
The example shows the settings for a GMX account using the GMX SMTP server. The e-mail sending with GMX needs encryption (Encryption Type = “SSL”).

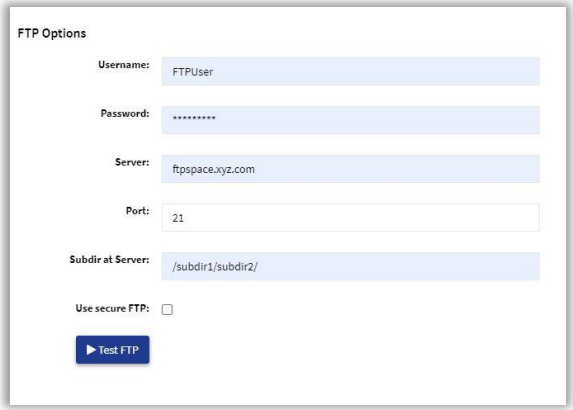


Port 587 is used by default to send the e-mail. If the SMT server to be used requires a different port, e.g. 465, write this after the SMTP server, separated by a colon, e.g. "mail.gmx.net:465".

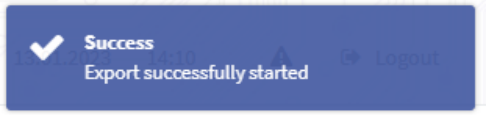
A click on the "Test Mail Server" button sends a test e-mail without a file attachment with the entered settings and provides feedback as to whether the e-mail could be sent successfully.

When using e-mail service providers such as GMX, you must allow access via POP3 and IMAP in the settings of your e-mail account:

The export to a FTP server requires settings for the URL of the FTP server, the user name and the respective password. Port 21 is used for the FTP service by default, but can be changed if required. There is an additional input line for the destination subdirectory on the server.
If you want to send to an SFTP server, you normally enter port 22 and activate the "SFTP" switch. An encrypted SSH connection to the server is then established. Please note that FTPS is not supported.
Here you also have the opportunity to test the FTP access with entered access data (button: Test FTP).



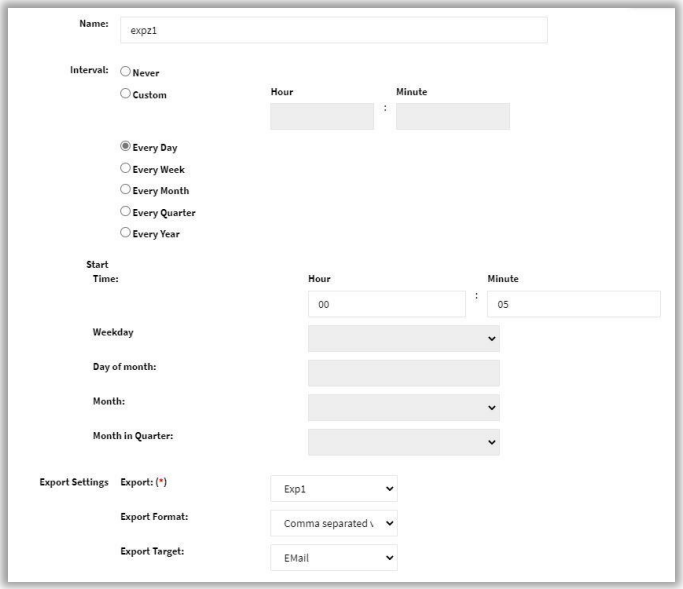
During the export to an FTP server or when sending the data by e-mail, a pop-up window opens with the export notification:



3.1.8 Export schedules

The user can define and activate export schedules to automatically export data at predefined time points.

The button “Export Schedules” leads to the settings of a time point when an already defined export shall be automatically executed

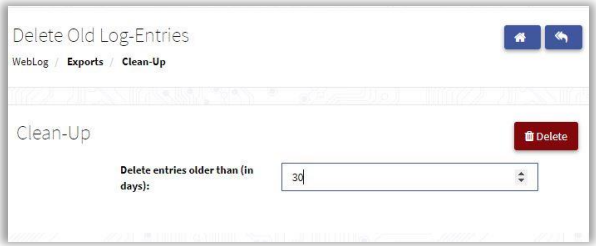


The intervals for repeated exports can be selected from: every day, every week, every month, every quarter or every year. The interval “Custom” offers shorter intervals down to 15 minutes. Please select an existing export from the drop down list in the field “Export”. Please select the required time for automatic execution of the export so that this time is suitably behind the log time. The possible export file formats are: text file with comma separated data (CSV), a Microsoft Excel XLSX file and a structured XML file. The target for the export can be a USB memory stick, a FTP server or an e-mail address. Please use the button “Configure” to enter the required access data for the FTP server or the e-mail account. This FTP and e-mail configuration is described in the chapter “Exports setup”

After the first export schedule has been stored with the button “Save” the status line shows the character “E” to indicate that the export schedule is activated. The character “L” notifies that a logging is activated.

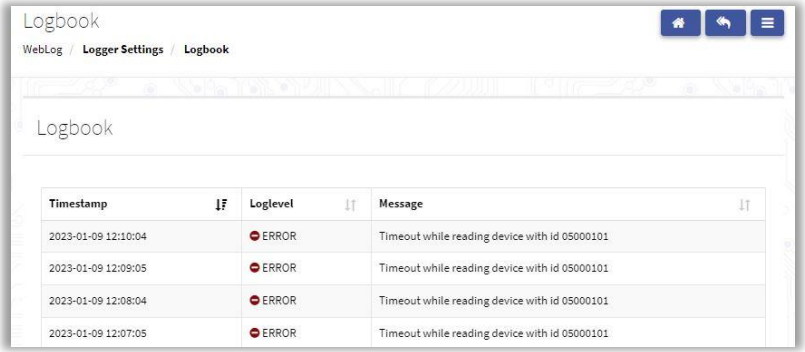
3.1.9 Delete old data entries

You can delete unneeded data from the log database by clicking on the button “Clean-up log data”. Please enter a period of days. Data older than this period will be erased. Please note that the data base size will not be reduced if the period is > 0 days, because the memory of the erased data is just marked as “deleted” and will be later overwritten by new data. But if you enter 0 days then the complete database is erased and the memory is cleared.



3.1.10 Logbook

A lighted yellow warning triangle in the status line indicates that the WebLog has written a new entry (or more) into the logbook.

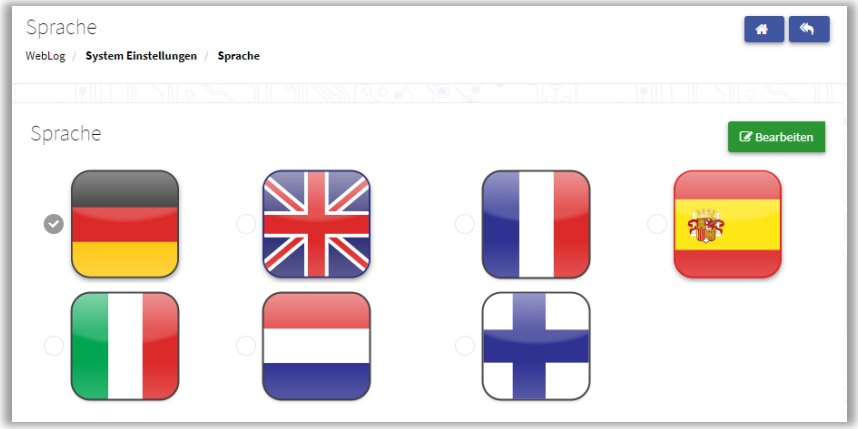


The logbook can be opened for reading by clicking on the warning triangle or the menu item "Logbook" in the "Logger settings". The entries in the logbook can, for example, indicate M-Bus errors. The example above shows two M-Bus meters that could not be read several times during logging. Another possible error would be a short circuit (overcurrent) on the M-Bus. But a failure to synchronize the system time with the clock of a time server on the Internet could also be displayed here.

3.1.11 More system settings

Only user with administrator rights can change system settings!

The button "**Language**" opens the menu for the language setting. Here you can choose the required language by clicking on the button with the respective country flag. The device automatically restarts the application software after the language has been changed.



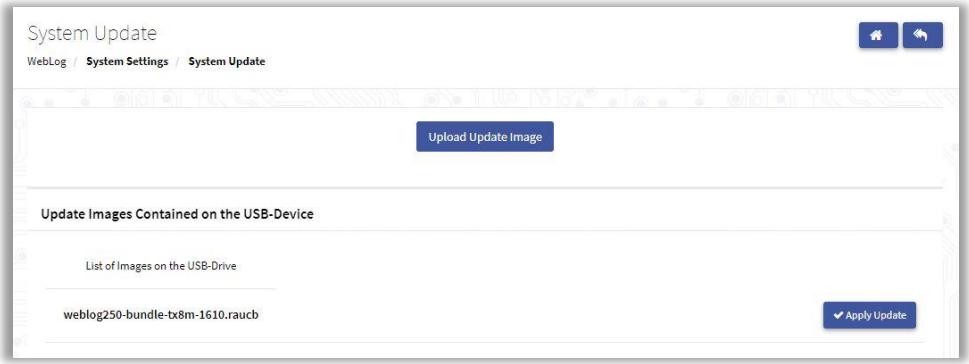
Switching takes some time. Please wait at least 30 seconds before refreshing the browser content!

Please note that the "Dutch" language is not yet available and temporarily uses the English texts.

From time to time it may be necessary to do firmware updates on the WebLog in order to eliminate software errors and to introduce new features. **Firmware updates** are available as approx. 75 MB image files from the Relay company on our homepage:
WebLog250: https://www.relay.de/en/products/m-bus-master/weblog-250.
WebLog120: https://www.relay.de/en/products/m-bus-master/weblog-120.

You will need a username and password to access these files, which you can request from us. The update can be imported either by uploading it from the browser or using a USB stick via one of the two USB-A sockets. If the update shall be done using a memory stick, the image file must first be transferred to an empty FAT32 formatted USB stick. The USB stick is then plugged into the USB master socket on the front of the WebLog.

After pressing the "System update" button, both options can be selected. If a USB stick is inserted, valid update images are listed with their file names.



Method 1 (USB memory stick):
The administrator can start the firmware update by clicking on the file name of the update image and confirming an additional security query.

Method 2 (Upload):
With a click on "Upload update image" you can select a file with the browser.

The flash process takes a few minutes. A progress bar on the WebLog250 touchscreen shows the progress of the update. After the flash process is complete, the system restarts and the application program's login screen appears.

In case of the seldom event that the WebLog is no longer operable you can press the reset button on the left side in the terminal area to force a restart of the system.

You can reset an already used WebLog device to **factory defaults** if you want to install it into a new plant or site. This erases all log intervals, exports, exports schedules and the list of meters. The complete log database can also be erased on request if the data records are no longer needed. This accelarates the system due to faster database operations performed by the CPU.

The button “Factory Reset” resets the configuration of the WebLog to factory defaults.

please note that the button “Factory Reset” is not available in the Web browser interface!
The system reboots after an additional safety query and the decision whether the complete log database shall be deleted.

The “**Shutdown**” button is used to safely stop the running application tasks and following shut down of the operating system.

You can start the shutdown function before removing the mains supply for the purpose of service works or location change. The mains supply voltage can be detached once the touch screen is black and the red LED in the front lights up. If you don´t remove the mains voltage the WebLog restarts the operating system and application software.

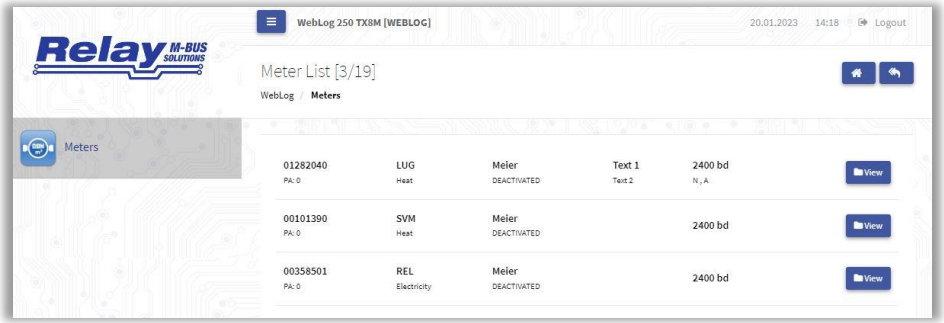
3.1.12 Logout procedure

The user will be automatically logged out after he has not operated the WebLog for 5 minutes. The logout can also be invoked manually by the user by starting the “Logout” entry from the top menu bar.

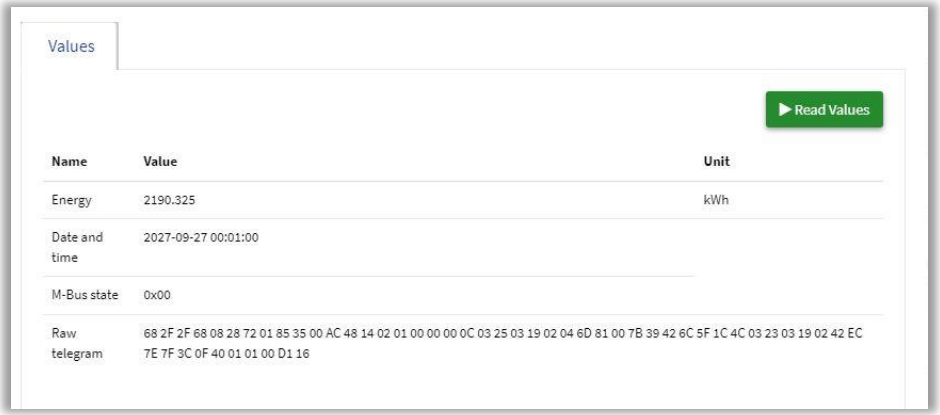
3.2 Tenant mode

Tenants which have been added as a user by the administrator can login the WebLog by the touchscreen or a web browser (e.g. Firefox) with their password. The login by web browser is also limited to just one user at a time. A second user cannot have access the WebLog by a web browser at the same time.

The tenant directly sees the list of his meters (defined by the administrator):



By clicking on the "View" button to the right of a meter, he gets to the view of the individual meter. All setting items are locked. He can only read the current meter data in the "Values" area by pressing the "Read values" button.

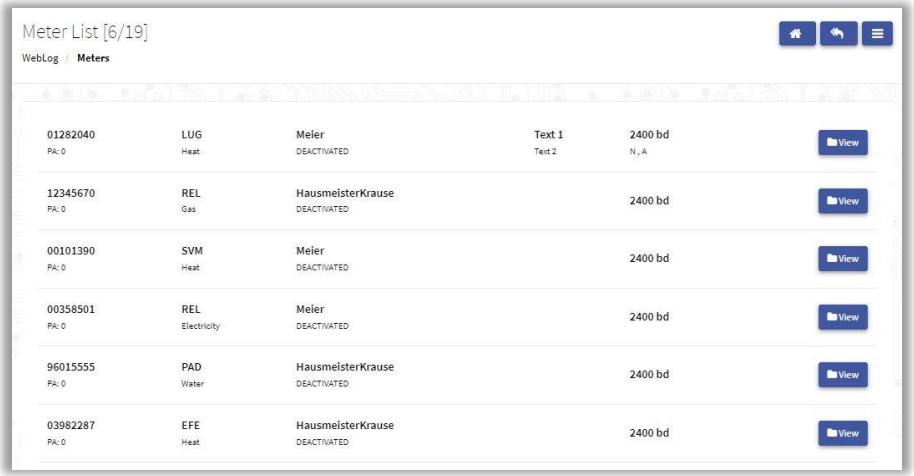


3.3 Inspector mode

After a user with the inspector role has logged in using his password the inspector menu appears:

From the main menu, the inspector can only run exports created by the administrator or view the logbook in the "Logger settings" menu.

In the "Meters" menu he sees all the meters that have been assigned to the tenants or the meter reader.



By clicking on the "View" button to the right of a meter, he gets to the view of the individual meter and can read he data of this meter.

4. Export files

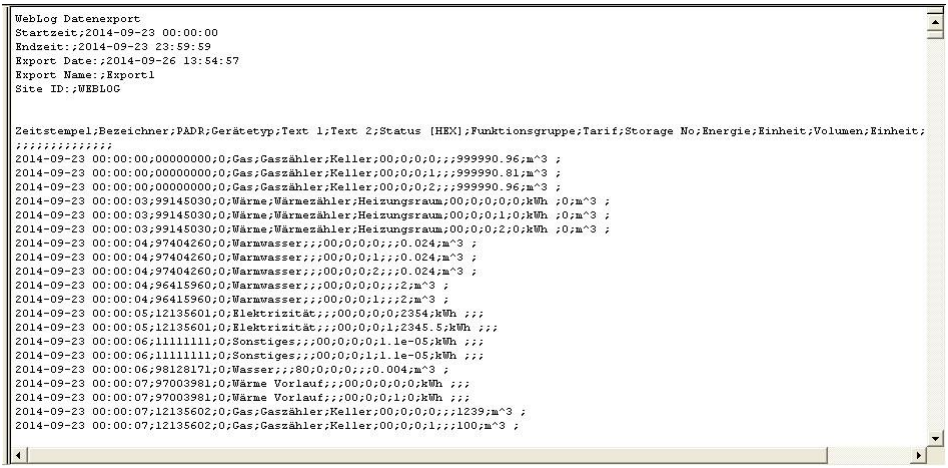
The WebLog is able to export logged M-Bus data with XLSX, CSV or structured XML file format.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	WebLog Datenexport													
2	Startzeit	2014-09-23 00:00:00												
3	Endzeit:	2014-09-24 00:00:00												
4	Export-Datum:	2014-09-24 00:33:40												
5	Export Name:	Export1												
6	Anlagenkennung:	WEBLOG												
7														
8														
9	Zeitstempel	Bezeichner	PADR	Gerätetyp	Text 1	Text 2	Status [HEX]	Funktionsgruppe	Tarif	Storage No	Energie	Einheit	Volumen	Einheit
10														
11	2014-09-23 00:00:00	00000000	0	Gas	Gaszähler	Keller	00	0	0	0			999990.96	m^3
12	2014-09-23 00:00:00	00000000	0	Gas	Gaszähler	Keller	00	0	0	1			999990.81	m^3
13	2014-09-23 00:00:00	00000000	0	Gas	Gaszähler	Keller	00	0	0	2			999990.96	m^3
14	2014-09-23 00:00:03	99145030	0	Wärme	Wärmezähler	Heizungsraum	00	0	0	0	0	kWh	0	m^3
15	2014-09-23 00:00:03	99145030	0	Wärme	Wärmezähler	Heizungsraum	00	0	0	1	0	kWh	0	m^3
16	2014-09-23 00:00:03	99145030	0	Wärme	Wärmezähler	Heizungsraum	00	0	0	2	0	kWh	0	m^3
17	2014-09-23 00:00:04	97404260	0	Warmwasser			00	0	0	0			0.024	m^3
18	2014-09-23 00:00:04	97404260	0	Warmwasser			00	0	0	1			0.024	m^3
19	2014-09-23 00:00:04	97404260	0	Warmwasser			00	0	0	2			0.024	m^3
20	2014-09-23 00:00:04	96415960	0	Warmwasser			00	0	0	0			2	m^3
21	2014-09-23 00:00:04	96415960	0	Warmwasser			00	0	0	1			2	m^3
22	2014-09-23 00:00:05	12135601	0	Elektrizität			00	0	0	0	2354	kWh		
23	2014-09-23 00:00:05	12135601	0	Elektrizität			00	0	0	1	2345.5	kWh		
24	2014-09-23 00:00:06	11111111	0	Sonstiges			00	0	0	0	1.1e-05	kWh		
25	2014-09-23 00:00:06	11111111	0	Sonstiges			00	0	0	1	1.1e-05	kWh		
26	2014-09-23 00:00:06	98128171	0	Wasser			80	0	0	0			0.004	m^3
27	2014-09-23 00:00:07	97003981	0	Wärme Vorlauf			00	0	0	0	0	kWh		
28	2014-09-23 00:00:07	97003981	0	Wärme Vorlauf			00	0	0	1	0	kWh		
29	2014-09-23 00:00:07	12135602	0	Gas	Gaszähler	Keller	00	0	0	0			1239	m^3
30	2014-09-23 00:00:07	12135602	0	Gas	Gaszähler	Keller	00	0	0	1			100	m^3

The above example shows an excerpt of an XLSX file opened in Microsoft Excel with the file name "**export_WEBLOG_Export1_20140924_003416.xlsx**". All export files are named using the scheme: „**export_LoggerID_ExportName_ExportDate_ExportTime.Filetype**". The header in the export file itself contains the export date, the export name and the Logger ID (site identification). The start and end time point of the logged data are also part of the header.

The next line gives the column headers for the exported data. The example "Export2" includes the values for energy and volume of all meters. The data for energy and volume and the corresponding units are each in separate rows. If the telegram of a meter contains historic values (storage no. > 0), tariff values (tariff > 0) or values from functional sub devices (subdevice > 0) these values will be in separate lines. You can define the maximum numbers for storage no., tariff and subdevice to be included in the export (see chapter 4.1.7 "Export Filter"). The vertical order of lines is defined by the time points of the logged data.

CSV export files are simple text files. The separator for the columns is a semicolon and the rows are written in single lines. The CSV files can be imported in many programs and MS Excel and can be represented in a table as usual. You can edit big CSV files with the freeware software “CSVED”.

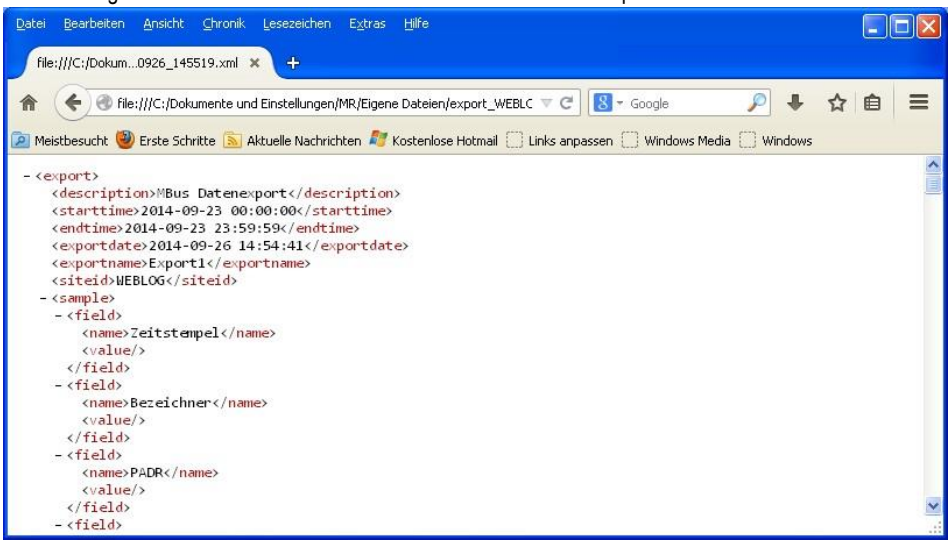


```
WebLog Datenexport
Startzeit;2014-09-23 00:00:00
Endzeit:;2014-09-23 23:59:59
Export Date:;2014-09-26 13:54:57
Export Name:;Export1
Site ID:;WEBLOG


Zeitstempel;Bezeichner;PADR;Gerätetyp;Text 1;Text 2;Status [HEX];Funktionsgruppe;Tarif;Storage No;Energie;Einheit;Volumen;Einheit;
;;;;;;;;;;;;;;;
2014-09-23 00:00:00;00000000;0;Gas;Gaszähler;Keller;00;0;0;0;;;999990.96;m^3 ;
2014-09-23 00:00:00;00000000;0;Gas;Gaszähler;Keller;00;0;0;1;;;999990.81;m^3 ;
2014-09-23 00:00:00;00000000;0;Gas;Gaszähler;Keller;00;0;0;2;;;999990.96;m^3 ;
2014-09-23 00:00:03;99145030;0;Wärme;Wärmezähler;Heizungsraum;00;0;0;0;0;kWh ;0;m^3 ;
2014-09-23 00:00:03;99145030;0;Wärme;Wärmezähler;Heizungsraum;00;0;0;1;0;kWh ;0;m^3 ;
2014-09-23 00:00:03;99145030;0;Wärme;Wärmezähler;Heizungsraum;00;0;0;2;0;kWh ;0;m^3 ;
2014-09-23 00:00:04;97404260;0;Warmwasser;;;00;0;0;0;;;0.024;m^3 ;
2014-09-23 00:00:04;97404260;0;Warmwasser;;;00;0;0;1;;;0.024;m^3 ;
2014-09-23 00:00:04;97404260;0;Warmwasser;;;00;0;0;2;;;0.024;m^3 ;
2014-09-23 00:00:04;96415960;0;Warmwasser;;;00;0;0;0;;;2;m^3 ;
2014-09-23 00:00:04;96415960;0;Warmwasser;;;00;0;0;1;;;2;m^3 ;
2014-09-23 00:00:05;12135601;0;Elektrizität;;;00;0;0;0;2354;kWh ;;;
2014-09-23 00:00:05;12135601;0;Elektrizität;;;00;0;0;1;2345.5;kWh ;;;
2014-09-23 00:00:06;11111111;0;Sonstiges;;;00;0;0;0;1.1e-05;kWh ;;;
2014-09-23 00:00:06;11111111;0;Sonstiges;;;00;0;0;1;1.1e-05;kWh ;;;
2014-09-23 00:00:06;98128171;0;Wasser;;;80;0;0;0;;;0.004;m^3 ;
2014-09-23 00:00:07;97003981;0;Wärme Vorlauf;;;00;0;0;0;0;kWh ;;;
2014-09-23 00:00:07;97003981;0;Wärme Vorlauf;;;00;0;0;1;0;kWh ;;;
2014-09-23 00:00:07;12135602;0;Gas;Gaszähler;Keller;00;0;0;0;;;1239;m^3 ;
2014-09-23 00:00:07;12135602;0;Gas;Gaszähler;Keller;00;0;0;1;;;100;m^3 ;
```

The above screenshot shows the beginning of a CSV export file opened with a text editor.

The following screenshot shows the first lines of a structured XML file opened in a web browser.



```
- <export>
    <description>MBus Datenexport</description>
    <starttime>2014-09-23 00:00:00</starttime>
    <endtime>2014-09-23 23:59:59</endtime>
    <exportdate>2014-09-26 14:54:41</exportdate>
    <exportname>Export1</exportname>
    <siteid>WEBLOG</siteid>
  - <sample>
    - <field>
        <name>Zeitstempel</name>
        <value/>
      </field>
    - <field>
        <name>Bezeichner</name>
        <value/>
      </field>
    - <field>
        <name>PADR</name>
        <value/>
      </field>
    - <field>
```