



# WEBLOG 250



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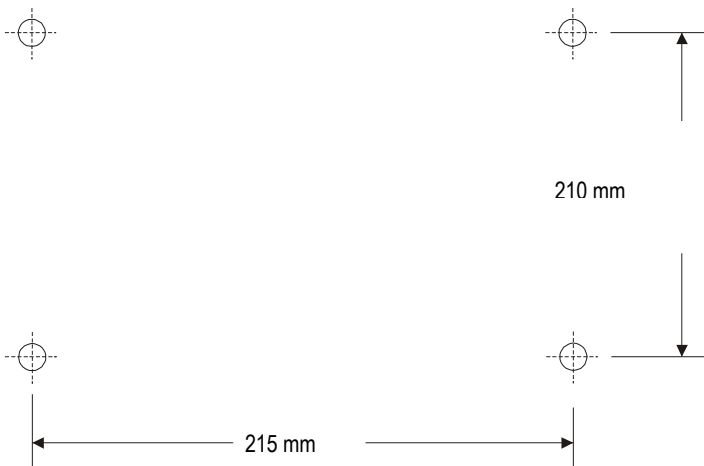
## 1. Features

- M-Bus Data Central for 250 meters
- Integrated ARM-Freescale-CPU (454 MHz) with 128 MB RAM and 128 MB Flash
- Operation by integrated 7" colour touchscreen or by a web browser
- Hierarchic access control (administrator, reader, tenant)
- M-Bus remote display for meters
- Automatic datalogger for meters
- Automatic export of data to USB memory stick, FTP server or by email  
Several file formats (CSV, XLSX or XML)
- Extensive range of interfaces (RS232, USB device, USB host, Ethernet)  
Optional internal WIFI module

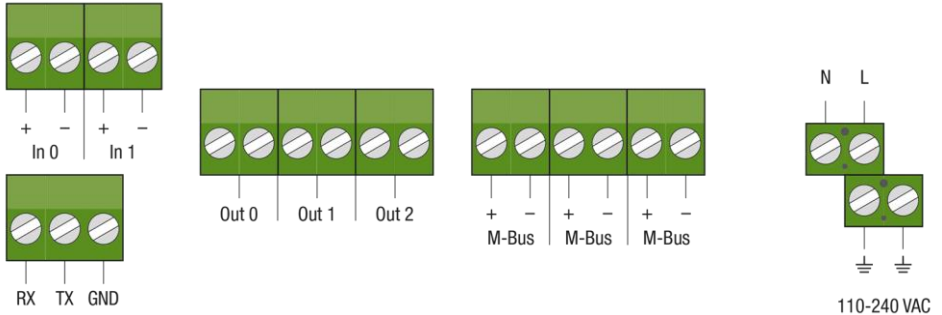
## 2. Installation

### 2.1 Mounting

The case of the WebLog can be attached to a wall with four screws. The drill pattern is rectangular (215 mm horizontal, 210 mm vertical). The drillings shall have a diameter of 5 mm. You can alternatively fix a special rail holder to the case to enable the mounting on a rail of the type TS 35.



## 2.2 Connection



There are three equivalent two-pole pluggable screw terminals to connect the M-Bus. An electrician shall connect the main supply to the screw terminals on the right (110 to 240 VAC). Phase, neutral and earth (PE) are marked with L, N and earth symbol. The remaining pluggable terminals are reserved for future extensions.

## 2.3 LED indicators

### 2.3.1 LEDs on the front



Four LED's on the front side of the WebLog show status information about the power supply of the CPU and important system events.

CPU			
<b>Power</b>	<b>M-Bus</b>	<b>Logbook</b>	<b>M-Bus Overcurrent</b>
green	yellow	orange	red

**Power**

supply voltage of the CPU

**M-Bus**

CPU uses the M-Bus communication channel

**Logbook**

the log protocol (logbook) contains new unread error message(s)

**M-Bus Overcurrent**

overcurrent / short circuit on the M-Bus

### 2.3.2 LEDs in the terminal area

M-BUS				
<b>ON</b>	<b>MASTER</b>	<b>SLAVE</b>	<b>MAX</b>	<b>SHORT</b>
green	green	yellow	orange	red

There are five LEDs in the upper middle of the terminal area showing the present status of the M-Bus. The individual LEDs have the following meaning (if lighted):

- ON**                    the M-Bus output voltage is switched on
- MASTER**            the Master transmits data
- SLAVE**                at least one meter replies with data
- MAX**                  the maximum number of connectable meters has been exceeded (warning current)
- SHORT**                M-Bus overcurrent / short circuit (LED flashes twice per second)

## 2.4 RESET button and acoustic signal generator



In the unlikely event that the WebLog is operable neither by touchscreen nor by web browser, the user can initiate a restart of the system by pushing the RESET button in the upper left corner of the terminal area. If there are still problems with the firmware of the WebLog, resulting for example from a corrupted operating system or application program in the FLASH memory. You can press the RESET button several times to start a minimum so-called RESCUE operating system. This system permits programming the FLASH memory with a firmware image file from a USB memory stick.

The flashing procedure will be detailed described in chapter 4.1.10.

The piezo buzzer below the RESET button in the terminal area emits a short beep after a click on a button of the touchscreen.

## 2.5 Interfaces at the housing



RS232

USB-  
Device

USB-  
Master

Ethernet

Modem  
(optional)

Cable glands

for mains supply, M-Bus and I/Os

### RS232

RS232 D-SUB 9-pin jack (female) for use of the WebLog as a level converter.

Attention: The logger function of the device should be deactivated!

### USB-Device

USB connector of the integrated USB-to-RS232 converter (FTDI). This interface can be used to operate the WebLog as a level converter (see RS232C).

A USB cable of type A/B is required to connect this port to a notebook or PC. The driver for the virtual comport can be either installed from our CD "Tools&Docs" or downloaded from the website of the chip manufacturer: [www.ftdichip.com](http://www.ftdichip.com)

### USB-Master

USB master interface to be used e.g. to connect a USB memory stick for transferring exported logger data or performing a firmware update

### Ethernet

10/100 MBit RJ45 Ethernet jack for a network connection

### Modem

available only if an optional internal analog modem is integrated

### Cable glands

for connection to mains supply, M-Bus and I/O lines

## 3. Technical Data

Operating voltage	110 to 240 VAC, 47 to 63 Hz
Power consumption	max. 100W
Operating temperature range	0 to 45°C
M-Bus voltage	42 V (mark)
M-Bus basic current	max. 375 mA (= 250 unit loads of each 1.5mA)
Overcurrent threshold	500 mA

Internal bus resistance	8 Ohm
Communication speeds	300 to 9600 Baud
Galvanic isolation	included
Housing	Lightgrey ABS plastic, protective class IP52 H x W x D: 264 x 234 x 86 mm Mountable on a rail TS35 or wall, optional cylinder lock
LED indicators	Front: power, M-Bus, event, overcurrent M-Bus Terminal area: Power, TXD Master, TXD Slave, warning current, overcurrent M-Bus
CPU and memory	Freescal ARM-CPU i.MX287, 454 MHz, 128 MB RAM and 128MB FLASH memory, 1 GB micro SD card. The logger database uses up to 512 MB of the SD card.
Display	7" LED display with resistive touch 800 x 480 pixel, 262144 colours
Interfaces	10/100 Mbit Ethernet, USB-Host, USB-Device, RS232 <b>optional:</b> WIFI, analog- or GSM-Modem
Terminals	3 plug terminals for M-Bus, 3 plug terminals for relay outputs and 2 plug terminals for floating contacts, screw terminals for mains supply

### 3.1 Ordering information

Article number	Description
WEBLOG250	M-Bus Central for 250 meters
GHZ TSH35-2	DIN rail holder TH35 for WebLog250 housing incl. screws
GHZ LOCK	Cylinder lock for front lid of WebLog housing incl. 2 keys
KA003	Power cable (German connector), length 2m
IWLAN	WIFI Adapter, internally installed

## 4. Operating instructions

### 4.1 Administrator mode

The WebLog starts the operating system and then the application software after the power has been supplied to the device. After the boot procedure the login screen appears on the display. The WebLog can be operated either by the touchscreen on the device or a web browser (e.g. Firefox) using the network interface. The graphical user interfaces are designed similar, however the initial setup of the network configuration must be done by the touchscreen to enable an access from a browser to the WebLog. Please click on the touchscreen into the input field for password and enter the administrator password (factory default: 00001767) using the virtual keyboard, which opens automatically.

The WebLog shows the serial number (SN) and a user definable identification string (= ID) on the login screen.



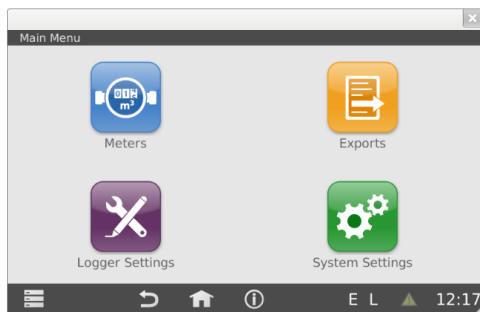
The input from the virtual keyboard of the touchscreen will be accepted with the "OK" button and the entered string will be written into the input field.



You can switch the virtual keyboard to a second layer by clicking on the shift symbol (up arrow left to the “z”). This layer basically contains the capitals and some more special characters. The backspace key is on both layers in the upper right corner of the key panel.



After the user has clicked on “Login” the WebLog checks the password. The administrator will see the main menu after a successful login. The main menu is the starting point to launch the four main configuration categories: Meters, Logger Settings, Exports and System settings.



Attention: The user will be automatically logged off for security reasons if he has not made any inputs for 10 minutes. The display will be switched off after another standby time. A new login can then be initiated by clicking on the unlighted display.

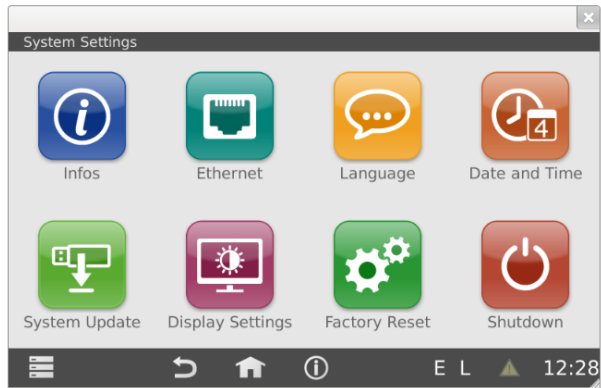
### 4.1.1 Important system settings



You should now make some important system settings to complete the initial setup. Please enter the submenu "System settings" by clicking on the respective button.

**Note:**

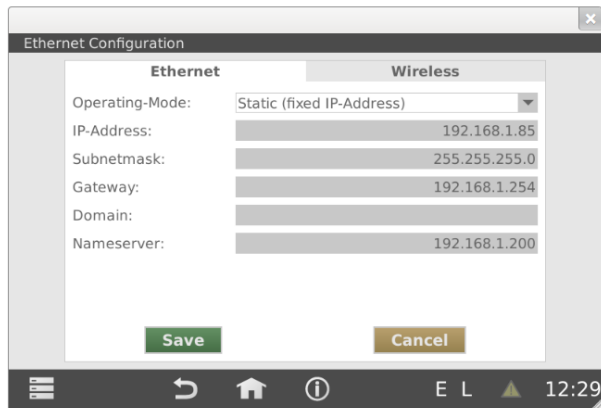
The button "factory reset" is not available in the web browser.



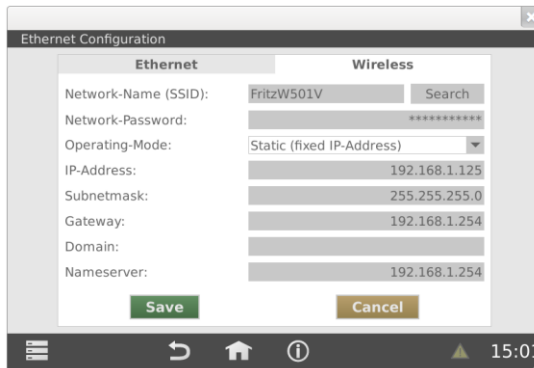
First perform the network configuration (button "Ethernet") so that the WebLog can be alternatively operated by a browser and export targets for the logged data via FTP or email become available.

**Note:**

The WebLog250 has an additional permanent IP address **192.168.111.11**, where it is always reachable.



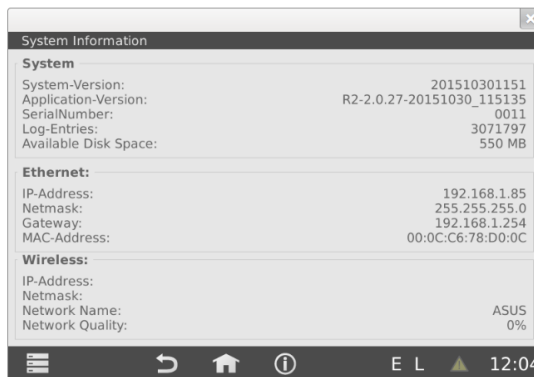
You can select a fixed IP address or dynamic IP address which will be assigned by a DHCP server. You can ask your network administrator for a fixed IP address. This allows your web browser to always access the WebLog at the same, known IP address (e.g. the URL address for above setting is: <http://192.168.1.85>). In most cases the gateway address has to be set to the IP address of the DSL router. The router can enable an external access by internet to the WebLog by using port forwarding. Please enter the IP address of a DNS server into the entry „Nameserver“. In most cases it is enough to use the IP address of the router. The WebLog can be optional delivered with an internal WIFI module, which must be configured in the sheet “Wireless”.



The “Wireless” configuration is similar to the “Ethernet” (RJ45) configuration. There is an additional search for WIFI networks followed by a selection of the WIFI access point (AP) and an input field for the password.



The button “Infos” provides information of the current firmware version, the network configuration and the internal memory usage of the M-Bus database.

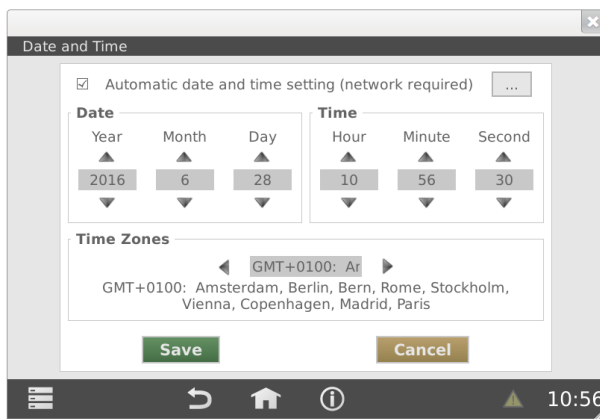


If the WebLog contains an optional WIFI module, the signal quality (0 to 100%) is shown in the wireless information area. A web browser can access the WebLog via network after the network configuration has been done correctly. From this point you can continue the configuration using a web browser (e.g. Firefox).

Now you should set the internal real time clock in the WebLog:



The button “Date and Time” leads to the time menu, whose exact settings are important for the time points for the logging and exports of the WebLog.



If the option “automatic date and time setting (network required)” is activated, the WebLog synchronizes the internal clock once per day with the clock of a time server in the Internet. By a click on the button with the three points you can change the predefined time server - for example if the device is operated in a local network with its own time server. The button “Save” stores the time settings.

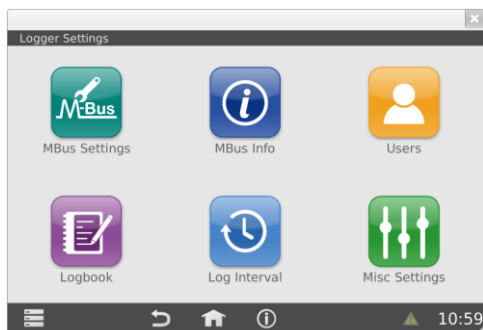


### 4.1.2 Important logger settings

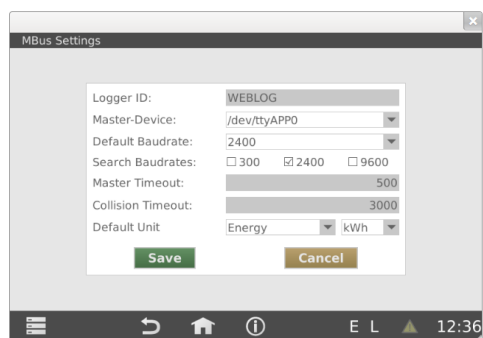
You should set the M-Bus baudrates before starting the automatic search for connected meters in the WebLog. Please go back to the main menu with the “Back” or “Home” button in the status line.



You can go to the M-Bus basic settings with the button “Logger settings”. The menus for management of users and log intervals can be also be started from this submenu.



The button “M-Bus Settings” leads to the settings of the serial M-Bus interface and global definition of default values for basic M-Bus units.



The Logger ID is used as a site / plant description and to identify of the export files. The master-device for the internal M-Bus level converter is “/dev/ttyAPP0”. The default baudrate for the M-Bus meters is in general 2400 baud, but some old meters only support 300 baud. There are also meters communicating additionally with 9600 Baud. Please mind that the total length of an M-Bus installation is substantially limited by choosing a high baudrate. You can select more than one search baudrate if you expect to have meters with different baudrates on the bus. The master timeout is the time in milliseconds the master waits for a reply of a meter. The collision timeout indicates the time in milliseconds the master waits before sending a new telegram after it has detected a parity and break error (collision). There is also a global setting for the default units in the export files to get same values of different meters always with the required unit. This allows a direct processing of the export data without recalculation. The button “Save” stores the changed settings.



The button “M-Bus Info” gives an overview of the M-Bus voltages and other properties. The total M-Bus current shall be about the number of meters multiplied by one unit load (1.5 mA). Some meters may consume more than one unit load. A state of “warning current” or “overcurrent” will be shown in the field „M-Bus Status“ and in the LED’s.



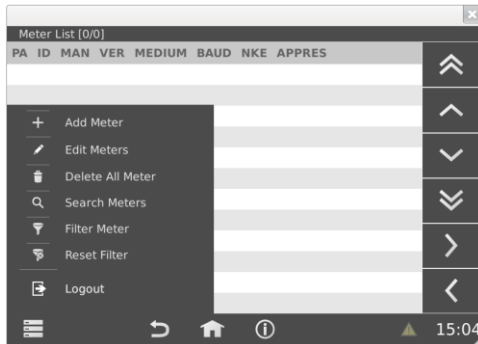
### 4.1.3 Search for meters



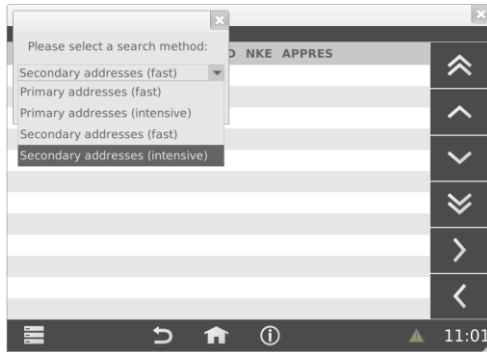
The meter list can be accessed from the main menu by clicking the button “Meters”. This list does not contain entries during the initial installation. The administrator shall first start an automatic search for meters. He can add undetected meters later.



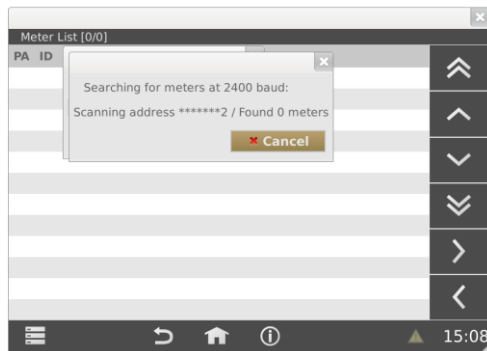
After clicking on the menu button in the lower left corner of the display a context menu appears. The menu entry “Search Meters” starts the automatic search for meters.



First you specify whether the search shall be done by primary or secondary addressing. There is a fast method and an intensive method with more retries and more tolerant timing (slowly but safer in case of wide M-Bus networks with many meters). If the installed M-Bus meters have not been programmed with a unique primary address, you must perform a search for secondary addresses.



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



All detected meters will be entered into the list of meters after the search for meters has finished. Meters which have been found during a search for secondary addresses get the primary address (PA) 0 in the list. The column ID contains the identification which is part of the secondary address. The following columns are: manufacturer (MAN), version number (VER) and medium. BAUD indicates the baudrate of each meter on the M-Bus. The navigation buttons on the right side can be used to navigate within the list of meters. The right arrow shows more settings (columns) of the visible meters (log interval, group, Text1, Text2). You can scroll up and down with the single arrows by 12 and with the double arrows by 120 meter entries.

PA	ID	MAN	VER	MEDIUM	BAUD	NKE	APPRES
0	00000000	HYD	54	Gas	2400	No	No
0	90101010	REL	32	Other	2400	No	No
0	99145030	LSP	3	Heat	2400	No	No
0	97404260	HYD	54	Warm water	2400	No	No
0	96415960	REL	16	Warm water	2400	No	No
0	12135601	REL	65	Electricity	2400	No	No
0	11111111	REL	17	Other	2400	No	No
0	98128171	REL	8	Water	2400	No	No
0	97003981	REL	16	Heat (inlet)	2400	No	No
0	12135602	REL	65	Gas	2400	No	No
0	22222222	REL	17	Reserved (consumption)	2400	No	No
0	09806172	ABB	7	Heat	2400	No	No

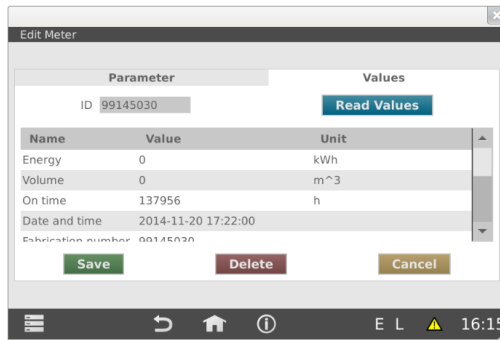
The selection of a single meter by touch or click opens a detailed view for that meter with the two tabs "Parameter" and "Values". You can enter free text into the fields „Text 1“ and „Text 2“ to add a detailed description for that meter. The meter can be assigned to a group or tenant with the drop down box "Group". One of the predefined log intervals for automatic logging of this meter can be selected with the field "Loginterval". The selection fields "SND\_NKE" and "Application Reset" define whether the master sends a respective command to the meter before the readout is done. This ensures that meters with multi telegram responds send their base telegram on the next readout. The button "Save" writes the modified settings into the configuration database. The button "Delete" removes the meter from the list of meters.

Parameter		Values	
Primaryaddress	0	ID	99145030
Version	3	Manufacturer	LSP
Medium	Heat	SND_NKE	No
Baud	2400	Application Reset	No
Group	Meier	Loginterval	1Stunde
Text 1	Wärmezähler		
Text 2	Heizungsraum		

Save Delete Cancel

Please change to the tab "Values" and click on "Read Values" to get an immediate readout of the data records of that meter. "Cancel" returns to the list of meters.





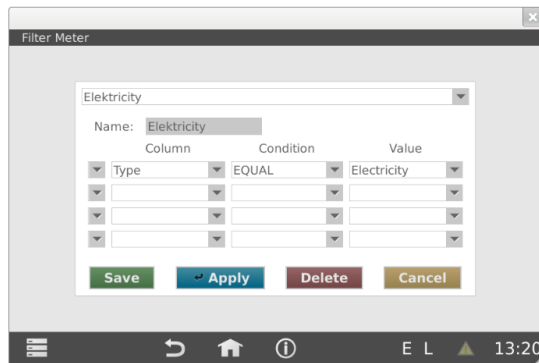
#### 4.1.4 Filter meter view

There may often be the requirement to reduce the meter entries shown in the list of meters to meters with special criteria. The possible criteria are for example:

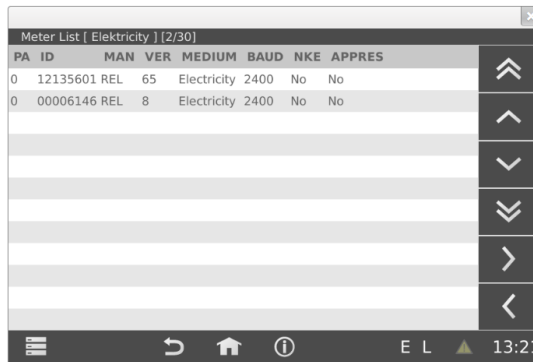
- Meter type (medium e.g. electricity meter)
- Meters of a selected manufacturer
- Meters of a selected primary address range



The filter view is invoked from the context menu in the lower left corner of the status line by the menu entry "Filter Meter". You can add up to four filter criteria line by line in the following display mask. The example shows a filter for electricity meters.



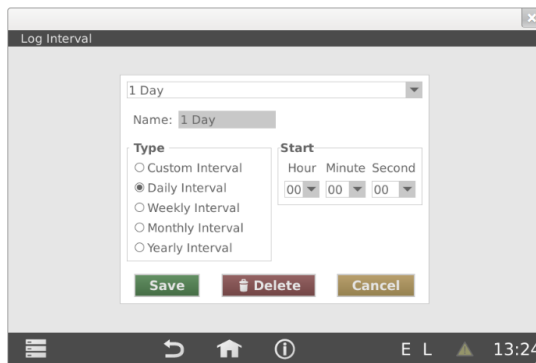
“Save” additionally stores the new filter with a name. A stored filter can be used again later or utilized during definition of exports. “Apply” uses the filter to temporary reduce the view to the list of meters. Only the electricity meters are displayed in the following example. The title line shows additional information about the filter ([name] [no. of displayed meters / no. of total meters without filter]). “Erase” removes the filter. The filtered view in the list of meters is resetted to an unfiltered view by the context menu entry „Reset Filter“.



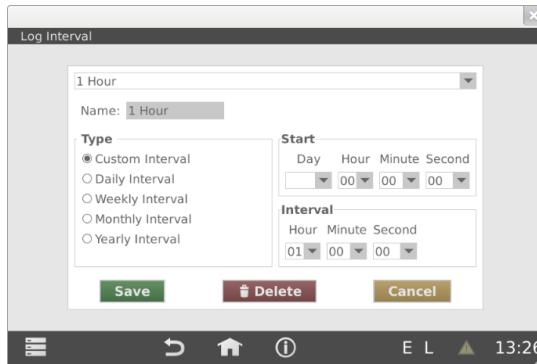
#### 4.1.5 Log intervals



You can start the configuration of the time point for automatic readout of meters with the button “Log Interval” from the submenu “Logger settings”.

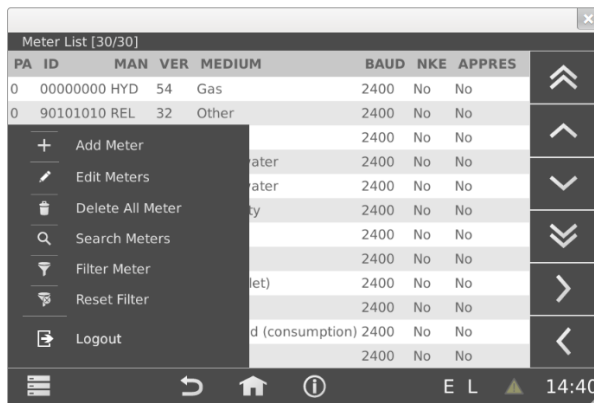


The above example shows a daily log interval. The readout is here done at 00:00 clock. The user can add beside daily, weekly, monthly or yearly intervals also a customized interval (Custom Interval).

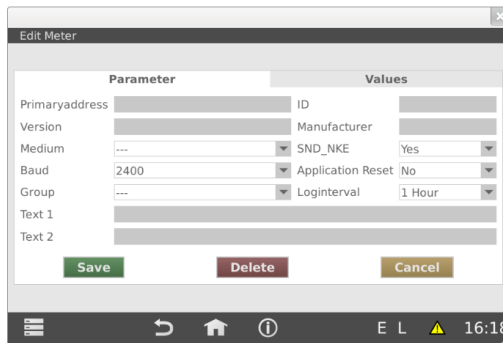


The second example shows an hourly log interval. The logging is done every full hour.

The created log intervals can be individually assigned to the meters (Meters → Parameter → Log interval). In most cases all meters shall get the same log interval. This can be done in one step. Please open the context menu in the list of meters view and start the menu “Edit Meters”



This opens a new window “Parameter” with wildcard entries. Entries in grey colour are individually for each meter and cannot be edited in this topic. Please select a predefined log interval from the drop down box “Loginterval”. Then store this setting for all meters with the “Save” button. The character “L” in the status line notifies that a logging is activated.

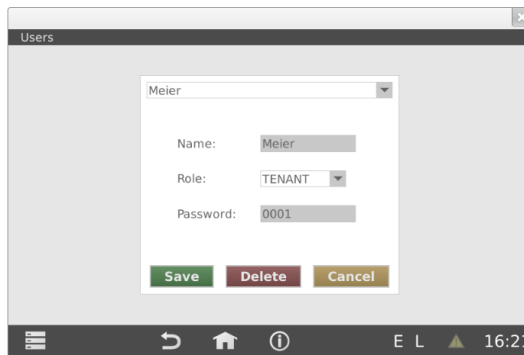


#### 4.1.6 User groups



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

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



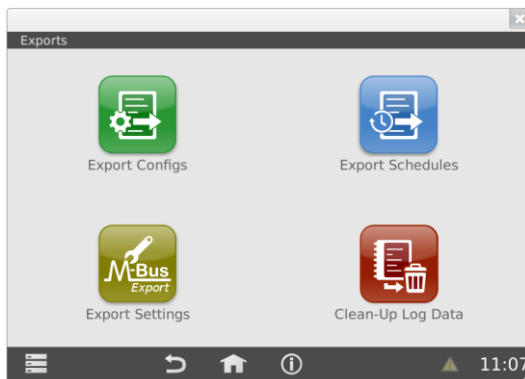
User belonging to the group of inspectors are able to read all meters from the tenants and can use predefined exports of the administrator. The tenants only see their own meters and have no rights to generate or start exports. The distinction between administrator, inspector and tenant is done by the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

#### 4.1.7 Export setup

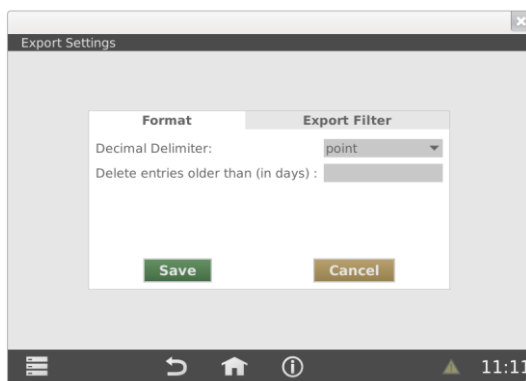
Exports are used to transfer meter data, which have been logged for a specific time interval, to a USB memory stick, to an FTP server or to an e-mail address.



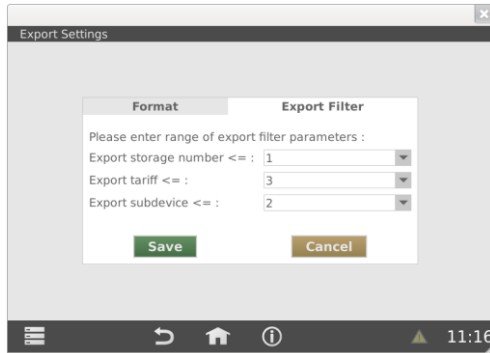
You can access the exports submenu by using the button “Exports” in the main menu.



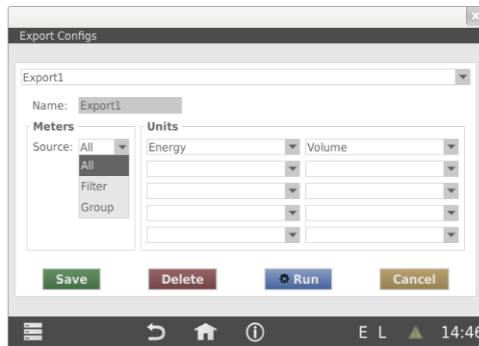
The button “M-Bus Export Settings” opens a dialog where you can select in the sheet “format” the decimal delimiter for numbers, which can be either a “comma” or a “point / dot”. You can also limit the size of the database to a specified number of days. The device then automatically erases older entries from the database.



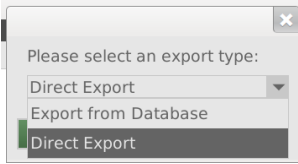
In the sheet “Export Filter” you can set the maximum numbers for the data in the exports by defining the maximum storage number, the maximum tariff number and the maximum subdevice to be included in the export files. The default value for the storage number is 1, which implies that only data with storage 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.

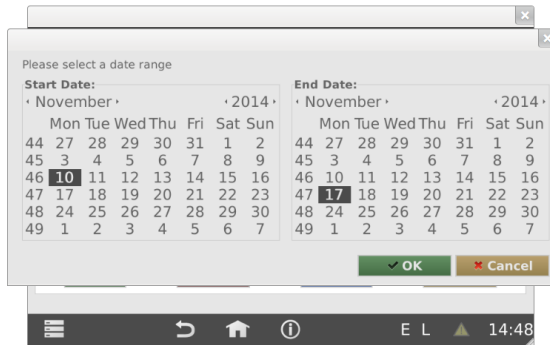


The most important values energy and volume are selected in the above example. There are further possibilities to choose the data of all meters (All) or meters from a predefined filter (Filter, e.g. all electricity meters) or meters from a specific group or tenant. The created export config can be saved under a name for further use with “Save”. The button “Run” starts the export immediately:

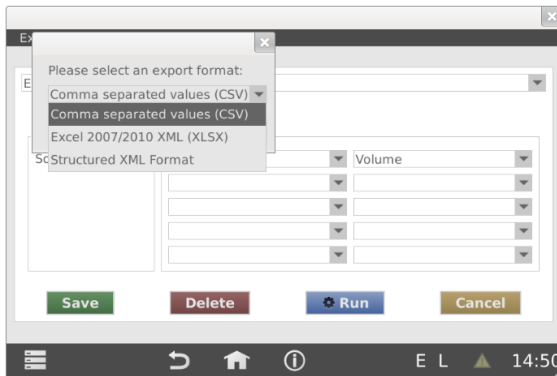


If you start an export manually by the button “Run” you can either export the logged data from the database (Export from Database) or perform a direct (immediate) readout of all meters (Direct Export) with a following export of the actual data.

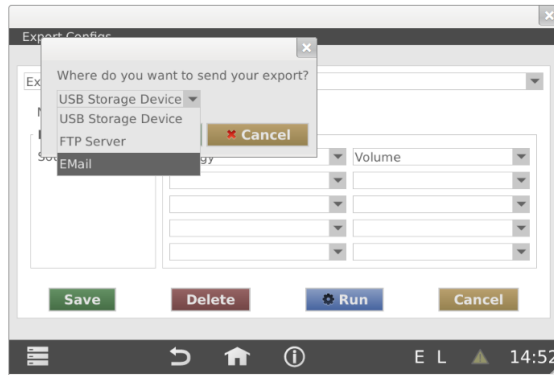
The following steps describe the manual export from the data base:



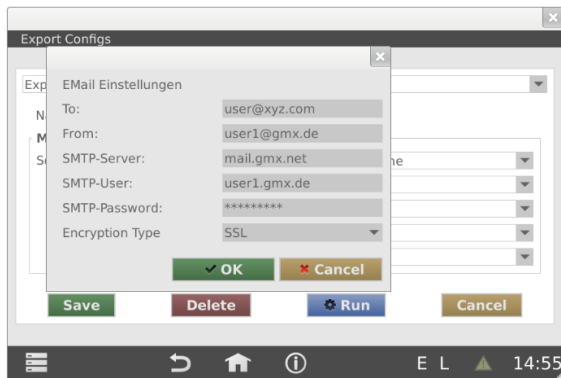
A calendar view appears where you can select the start and end time point for the logged data which shall be exported.



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



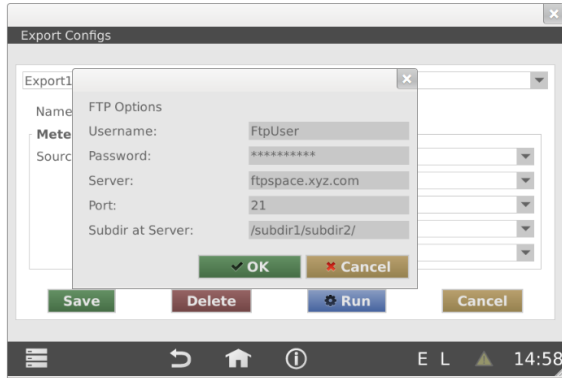
The next step is the definition of the export target (USB memory stick, FTP server or e-mail address).



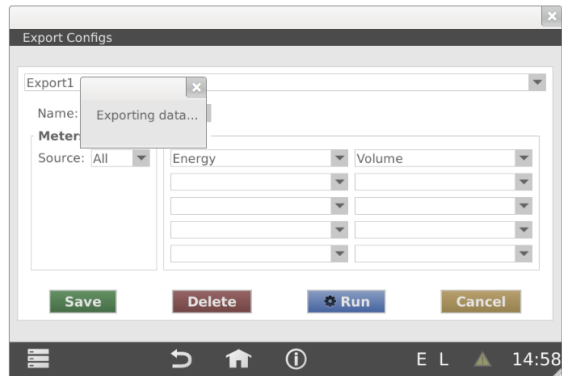
You have to enter the destination e-mail address and the SMTP server in case of an e-mail transfer. If you want to use your internal Microsoft exchange server, please enter the IP address of that server and the exchange user with password. The encryption type for MS Exchange is "Plain" (unencrypted). 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").



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.



A notify window ("Exporting data") pops up during the running export to a FTP server and during transmit of data by e-mail.

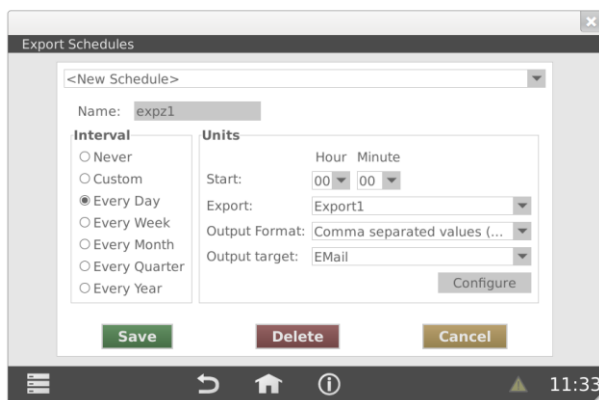


### 4.1.8 Export schedules

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.



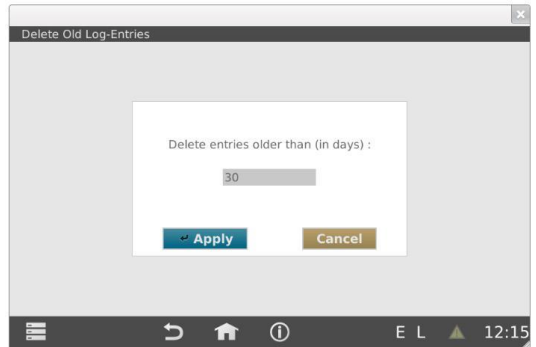
The intervals for repeated exports can be selected from: every day, every week, every month, every quarter or every year. The interval “Custom” offers shorter intervals down to 15 minutes. Please select an existing export from the drop down list in the field “Export”. Please select the required time for automatic execution of the export time is suitably behind the log time. The possible export file fomats 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 “Setting up exports”

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.

### 4.1.9 Delete old data entries



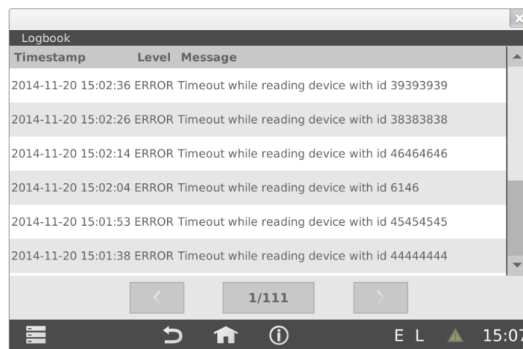
You can delete unneeded data from the log database by clicking on the button “Clean-up log data”. Please enter a period of days. Data older than this period will be erased. Please note that the data base size will not be reduced if the period is > 0 days , because the memory of the erased data is just 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.



### 4.1.10 Logbook

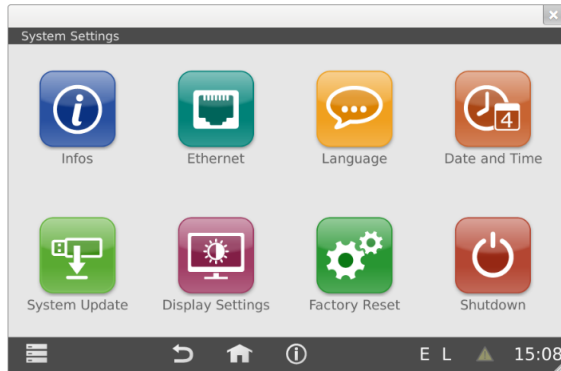


A lighted yellow warning triangle in the status line indicates that theWebLog has written a new entry (or more) into the logbook. You can open the logbook by a push or a click on the warning triangle to read the entries.



The entries in the log book can show for example errors occurred during communication in M-Bus. The above example shows a meter which could not be read several times during logging. A short circuit on the M-Bus is also a possible error message. Another example of possible error messages is that the device could notify a failed synchronisation of the clock from a time server in the internet.

#### 4.1.11 More system settings



Only user with administrator rights can change system settings!

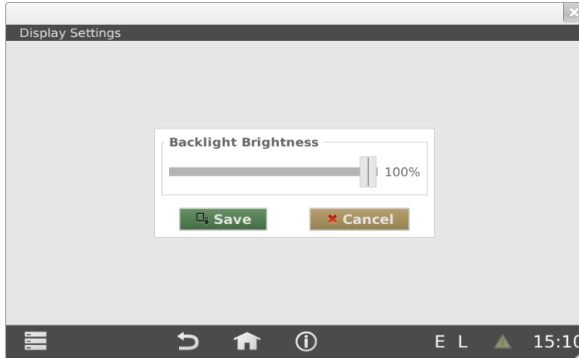


The button “Language” opens the menu for the language setting. Here you can choose the required language by clicking on the button with the respective country flag. The device automatically restarts the application software after the language has been changed. Please note that some of the selectable languages are not yet available and will be temporarily in English.





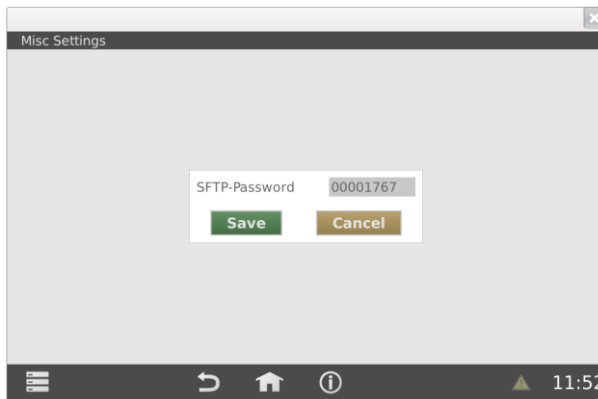
The button “Display Settings” starts a menu for the adjustment of the backlight brightness of the touch screen. The brightness can be changed by pulling the control or clicking left or right of the control.



“Save” stores and activates the new backlight brightness. “Cancel” withdraws the changes and restores the former setting



The button „Misc Settings“ in the „Logger Settings“ allows a change of the predefined password for the SFTP access (see chapter 6 „Database queries for experts“).



The WebLog may need **firmware updates** to solve software issues or add new features from time to time. The Relay GmbH supplies firmware updates with image files of about 50 MByte size for download from our homepage:

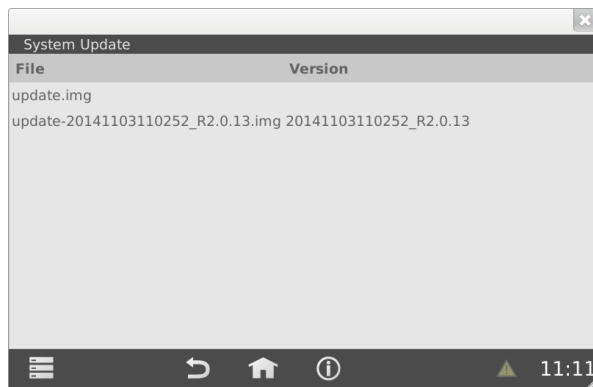
<http://www.relay.de/de/produkte/m-bus-master/weblog-250.html>.

You will have to ask us for a user name and a password to be able to access that files.

The first step is to copy the image file to an empty USB memory stick. Then please connect the USB stick to the USB master jack in the front of the Weblog device.



A click on the button "System Update" shows the content of the connected USB stick.



Please push or click on the filename of the update image. The update is started after the administrator has confirmed the safety query. The update file is automatically copied from the USB stick to the internal SD card and the software sets a notification for a pending update in the bootloader. After an automatic restart of the system the bootloader detects the notification and starts a minimal rescue system used to flash the new firmware image. The flash procedure takes some minutes. A progress bar on the touch screen of the WebLog shows the current status of the update procedure. The device will automatically restart the system after finishing the flash process. The user is then requested to calibrate the touch screen. After calibration the login screen of the application 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. If the application does not start correctly because of a corrupted flash content, you can use an alternative flash method: Please press the reset button minimum

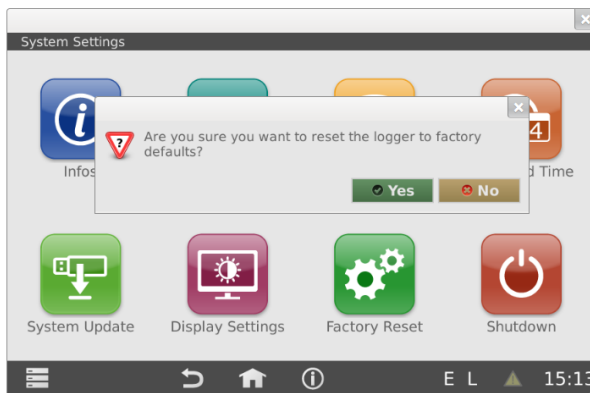
four times with about one second pause between each operation. Then connect the USB memory stick to the front USB of the WebLog. The WebLog searches for a file on the stick with the name "update.img".

If the message appears that the USB stick has not been recognized, you should remove the stick and connect it again. The following flashing procedure works similar to the above described procedure.

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 speeds up the system due to less database operations need to be performed by the CPU.

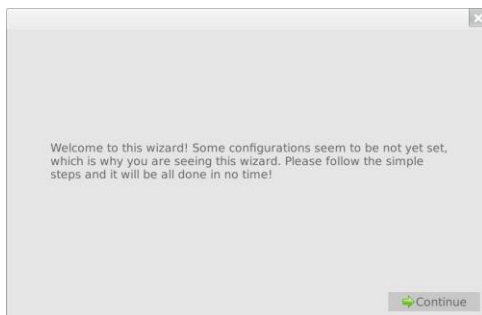


The button "Factory Reset" resets the configuration of the WebLog to factory defaults.

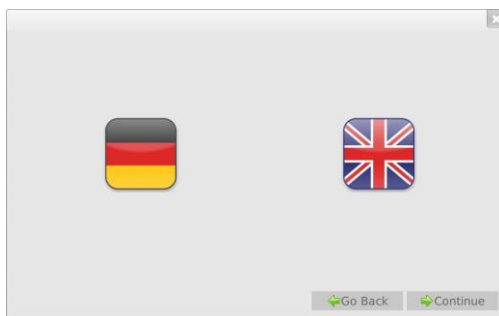


Please note that the button "Factory Reset" is not available in the Web browser interface!

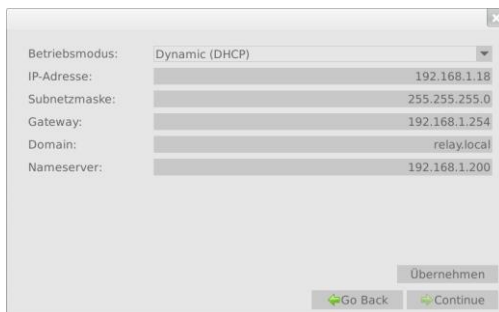
The system reboots after an additional safety query and the decision whether the complete log database shall be deleted. Directly after the restart a setup wizard is executed which leads the administrator through the most important system settings.



The first step of the wizard is the setting of the language. After a change of the language the wizard will be restarted.



Pressing the button "Continue" leads to the network settings.





The button “Accept” stores the settings and enables the “Continue” button. You can return to the previous step of the wizard with “Go Back”.



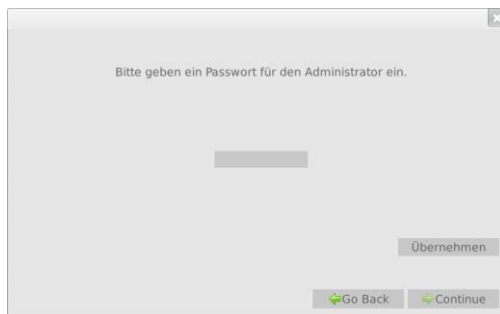
The configuration of the automatic time setting can be repeated later from the menu “System Settings” if this produces an error due to a missing internet connection.



Then follow the M-Bus settings:

- Logger ID:** Name of the WebLog, which is part of the file name and header of export files
- Master Interface:** “/dev/ttyAPPO” for the internal M-Bus level converter (default)  
“/dev/ttyAPP1” for an external level converter connected to the RS232C terminals  
“/dev/ttyUSB0” for an external level converter RS232C-to USB connected to the USB master jack
- Default Baudrate:** M-Bus baudrate used for meters which are manually added to the list of meters
- Search Baudrate:** Baudrate(s) used for the automatic search for meters

- Master Timeout:** time in ms the master waits for a reply from the meter
- Collision Timeout:** time in ms the master waits after a collision has been detected
- Default Unit:** global settings for the required units within the data exports  
Please select the value type in the left dropbox and the required unit for this type in the right dropbox. You can choose "Source" as unit to export the data with the same unit as it is used by the specific meter in the M-Bus telegram.



The next step is to specify the password for the administrator.



Now you have done the most important system settings. The button "Apply" leads the administrator directly to the empty list of meters. He can now start the search for meters using the context menu.



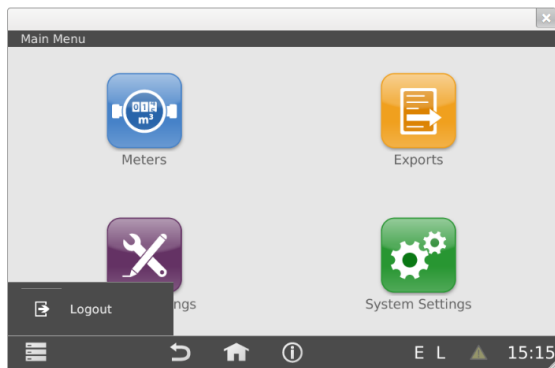
The “Shutdown” button is used to safely stop the running application tasks and following shut down of the operating system.

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.

#### 4.1.12 Logout procedure



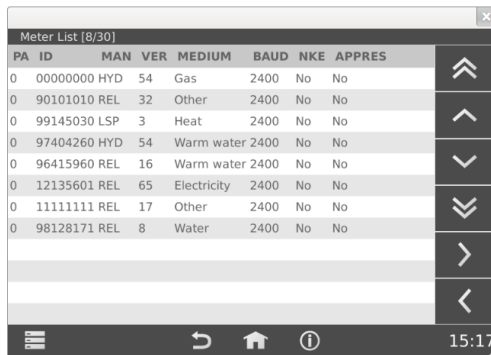
The user will be automatically logged out after he has not operated the WebLog for 10 minutes. The logout can also be invoked manually by the user by starting the “Logout” entry from the context menu.



## 4.2 Tenant mode

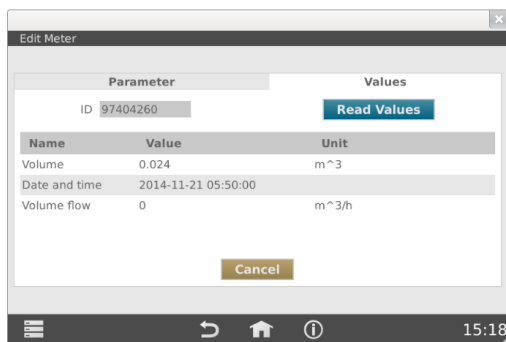
Tenants which have been added as a user by the administrator can login the WebLog by the touchscreen or a web browser (e.g. Firefox) with their password. The login by web browser is also limited to just one user at a time. A second user cannot have access the WebLog by a web browser at the same time.

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



PA ID	MAN	VER	MEDIUM	BAUD	NKE	APPRES
0	00000000	HYD	54	Gas	2400	No No
0	90101010	REL	32	Other	2400	No No
0	99145030	LSP	3	Heat	2400	No No
0	97404260	HYD	54	Warm water	2400	No No
0	96415960	REL	16	Warm water	2400	No No
0	12135601	REL	65	Electricity	2400	No No
0	11111111	REL	17	Other	2400	No No
0	98128171	REL	8	Water	2400	No No

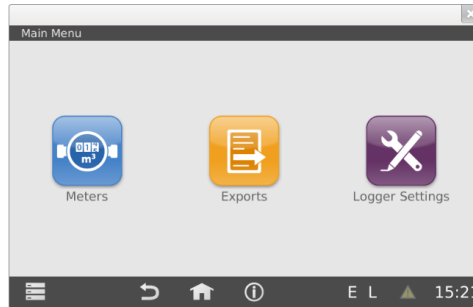
He can start the view of single meters by pushing or clicking on an entry in this list. All options for changing settings are locked. The only action he can do is reading the current data of the meter by clicking on the button “Read Values” in the “Values” tab.



Parameter		Values	
ID	97404260	<a href="#">Read Values</a>	
Name	Value	Unit	
Volume	0.024	m <sup>3</sup>	
Date and time	2014-11-21 05:50:00		
Volume flow	0	m <sup>3</sup> /h	

### 4.3 Inspector mode

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



He gets a list of all meters which have been assigned to tenants after a click on the “Meters” button.

PA	ID	MAN	VER	MEDIUM	BAUD	NKE	APPRES
0	00000000	HYD	54	Gas	2400	No	No
0	90101010	REL	32	Other	2400	No	No
0	99145030	LSP	3	Heat	2400	No	No
0	97404260	HYD	54	Warm water	2400	No	No
0	96415960	REL	16	Warm water	2400	No	No
0	12135601	REL	65	Electricity	2400	No	No
0	11111111	REL	17	Other	2400	No	No
0	98128171	REL	8	Water	2400	No	No
0	97003981	REL	16	Heat (inlet)	2400	No	No
0	12135602	REL	65	Gas	2400	No	No
0	22222222	REL	17	Reserved (consumption)	2400	No	No
0	09806172	ABB	7	Heat	2400	No	No

By push or click on a single meter he can read the current data of this meter by clicking on the button “Read Values” in the “Values” tab.

The inspector can also execute exports which have been defined by the administrator. From the menu “Logger settings” he can have a view to the logbook.

## 5. 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	m³/3
12	2014-09-23 00:00:00	00000000	0	Gas	Gaszähler	Keller	00	0	0	1			999990.81	m³/3
13	2014-09-23 00:00:00	00000000	0	Gas	Gaszähler	Keller	00	0	0	2			999990.96	m³/3
14	2014-09-23 00:00:03	59145030	0	Wärme	Wärmezähler	Heizungsraum	00	0	0	0		kWh	0	m³/3
15	2014-09-23 00:00:03	59145030	0	Wärme	Wärmezähler	Heizungsraum	00	0	1	0		kWh	0	m³/3
16	2014-09-23 00:00:03	59145030	0	Wärme	Wärmezähler	Heizungsraum	00	0	2	0		kWh	0	m³/3
17	2014-09-23 00:00:04	97404260	0	Warmwasser			00	0	0	0			0.024	m³/3
18	2014-09-23 00:00:04	97404260	0	Warmwasser			00	0	1				0.024	m³/3
19	2014-09-23 00:00:04	97404260	0	Warmwasser			00	0	2				0.024	m³/3
20	2014-09-23 00:00:04	96415960	0	Warmwasser			00	0	0	0			2	m³/3
21	2014-09-23 00:00:04	96415960	0	Warmwasser			00	0	1				2	m³/3
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	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	1		1.1e-05	kWh		
26	2014-09-23 00:00:06	98128171	0	Wasser			80	0	0	0			0.004	m³/3
27	2014-09-23 00:00:07	97003981	0	Wärme Vorlauf			00	0	0	0		kWh		
28	2014-09-23 00:00:07	97003981	0	Wärme Vorlauf			00	0	1	0		kWh		
29	2014-09-23 00:00:07	12135602	0	Gas	Gaszähler	Keller	00	0	0	0			1239	m³/3
30	2014-09-23 00:00:07	12135602	0	Gas	Gaszähler	Keller	00	0	1				100	m³/3

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".

```

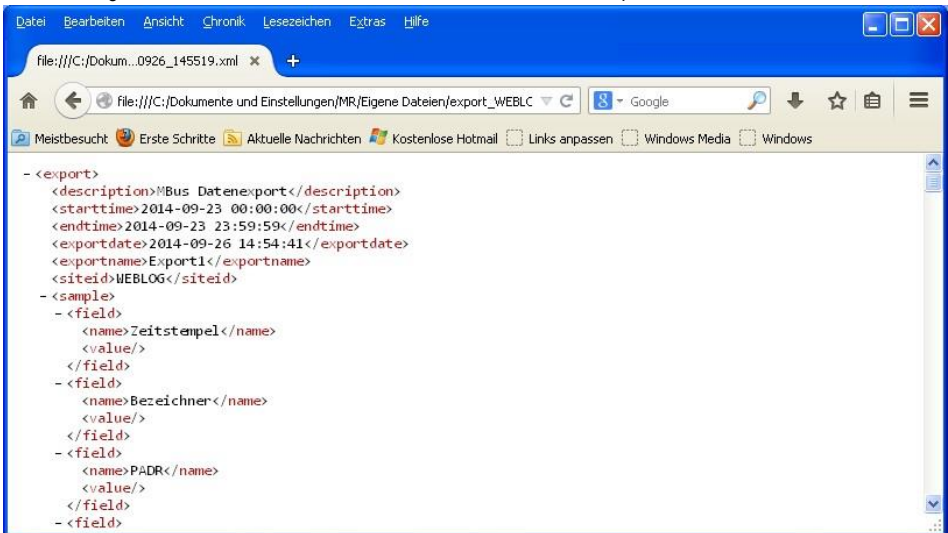
WebLog Datenexport
Startzeit:;2014-09-23 00:00:00
Endzeit:;2014-09-23 23:59:59
Export Date:;2014-09-26 13:54:57
Export Name:;Export1
Site ID:;WEBLOG

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;;999990.96;m^3 ;
2014-09-23 00:00:00;00000000;0;Gas;Gaszähler;Keller;00;0;0;;999990.81;m^3 ;
2014-09-23 00:00:00;00000000;0;Gas;Gaszähler;Keller;00;0;0;;999990.96;m^3 ;
2014-09-23 00:00:05;99145030;0;Wärme;Wärmezähler;Heizungsraum;00;0;0;0;kWh ;0;m^3 ;
2014-09-23 00:00:05;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;;0.024;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;96418960;0;Warmwasser;;;00;0;0;;2;m^3 ;
2014-09-23 00:00:04;96418960;0;Warmwasser;;;00;0;0;1;;2;m^3 ;
2014-09-23 00:00:05;12135601;0;Elektrizität;;;00;0;0;1;2345.5;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;0;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;;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 webbrowser.



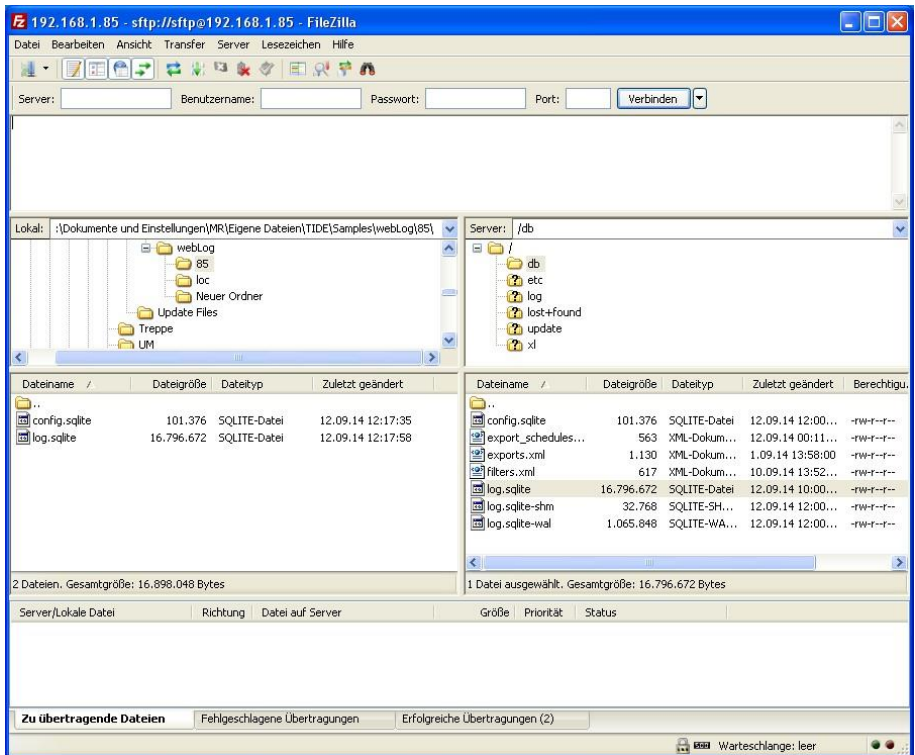
```

- <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>

```

## 6. Database queries for experts

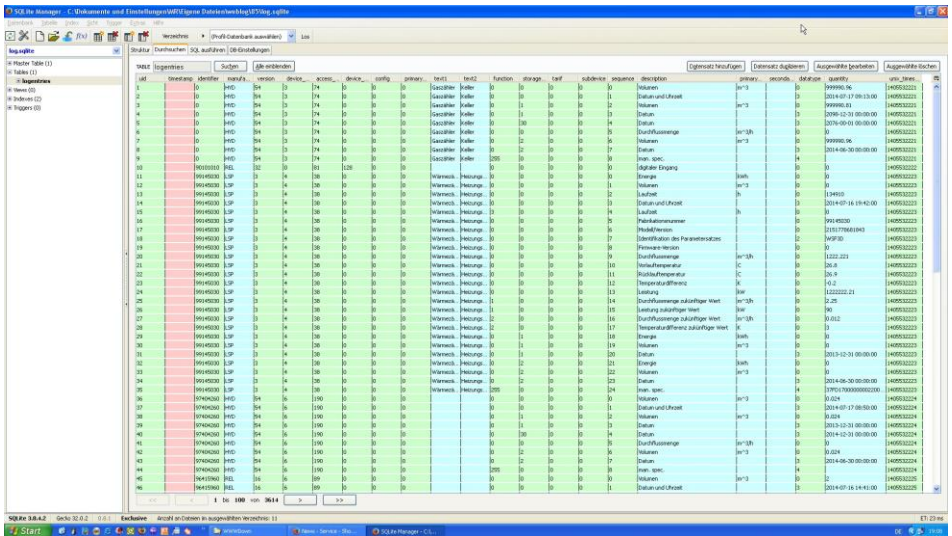
The WebLog allows versatile users to download the current SQLite log database from the device using a secure FTP software and then perform personal analysis with the data. You can use the freeware programs “Filezilla” or “WinSCP” for example. The login name is “sftp” and the password is “00001767”. This password can be changed in the menu “Logger Settings – Misc Settings” (strongly recommended).



Please change after a successful login on the WebLog to the data directory “db” and download the file “log.sqlite” to your local PC. You can additionally download the file “config.sqlite” which contains the configuration and the list of meters.



You can install the Firefox plugin “SQLite Manager” to get a first overview of the log database. The plugin can be started from the firefox menu “Addons”. The next step is to connect to the downloaded database file “log.sqlite”. The table “logentries” shows the logged meter data in the table “Browse”. You can jump to older or newer values in the table by using the navigation buttons below the table.



The last column “unix\_timestamp” contains the time point of logging in the Unix time format. The column “sequence” numbers the position of a data record within the reply telegram of one meter. The value of a data record is located in the column “quantity”.

The tab “Execute SQL” allows the input of individual SQL queries. For example the query „**SELECT datetime(unix\_timestamp,'unixepoch','localtime'),quantity FROM logentries where identifier=32700 and sequence=1**” generates a table with all log time points (date / clock time) and the respective values of the meter with the ID “00032700” from position 1 (record 1) of its data telegram. From the menu “actions” the generated table can be exported to a CSV file. Then you have for example the possibility to import the file into Excel and create a graphical presentation of the values.

MS SQL Server Enterprise Edition - 1: Dokumente und Einstellungen\MSI\Igne Daten\logs\721urling.sqlfile

SQL-Abfrage

```
SELECT distinct(Linr, Identnr, Insepost, Scatnr, quantity, PSCN) from where identnr=32700 and sequenr=1
```

SQL-Abfrage

Abbrechen | Letzte Fehler: not an error

Identnr	Linr	Insepost	Scatnr	quantity	PSCN
2014-03-11 15:26:49	11	15	26	49	1145512
2014-03-11 15:31:41	11	15	31	41	1145512
2014-03-11 15:46:51	11	15	46	51	117747
2014-03-11 16:00:45	11	16	00	45	1145512
2014-03-11 16:16:44	11	16	16	44	1145512
2014-03-11 16:30:33	11	16	30	33	122090
2014-03-11 16:46:44	11	16	46	44	122090
2014-03-11 17:05:41	11	17	05	41	122477
2014-03-11 17:18:53	11	17	18	53	122477
2014-03-11 17:31:45	11	17	31	45	122629
2014-03-11 17:46:44	11	17	46	44	122760
2014-03-11 18:18:12	11	18	18	12	126739
2014-03-11 18:30:42	11	18	30	42	126739
2014-03-11 18:46:53	11	18	46	53	127287
2014-03-11 19:03:59	11	19	03	59	126990
2014-03-11 19:17:14	11	19	17	14	126990
2014-03-11 19:31:48	11	19	31	48	129108
2014-03-11 19:46:19	11	19	46	19	129211
2014-03-11 20:19:14	11	20	19	14	129143
2014-03-11 20:33:44	11	20	33	44	117667
2014-03-11 20:46:41	11	20	46	41	128860
2014-03-11 21:01:45	11	21	01	45	124641
2014-03-11 21:16:54	11	21	16	54	124152
2014-03-11 21:31:49	11	21	31	49	124663
2014-03-11 21:46:54	11	21	46	54	124676
2014-03-11 22:00:08	11	22	00	08	124641
2014-03-11 22:15:38	11	22	15	38	124651
2014-03-11 22:30:06	11	22	30	06	124138
2014-03-11 22:45:17	11	22	45	17	124764
2014-03-11 23:00:05	11	23	00	05	124760
2014-03-11 23:15:16	11	23	15	16	124991
2014-03-11 23:30:11	11	23	30	11	124918
2014-03-11 23:45:08	11	23	45	08	124962
2014-03-12 00:00:39	11	24	00	39	125284
2014-03-12 00:15:07	11	24	15	07	125179
2014-03-12 00:30:29	11	24	30	29	125176
2014-03-12 00:45:12	11	24	45	12	125230
2014-03-12 01:00:13	11	24	00	13	125287
2014-03-12 01:15:30	11	24	15	30	125375
2014-03-12 01:30:07	11	24	30	07	125620
2014-03-12 01:45:24	11	24	45	24	124318

