


USER MANUAL  
**WebSensys**

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- Carefully read and fully understand these instructions before using WebSensys. Wireless Value accepts no responsibility for any malfunction of and/or trouble with this product or with a computer that is caused by the improper handling of this product and will deem such trouble or malfunction as falling outside the conditions for free repair of the warranty.
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-  Usage of this symbol indicates a warning that should carefully be observed.

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# 1 Introduction

## 1.1 How to read this manual

This user manual is written to be as easy to understand as possible. The manual uses colors in text to indicate interactive content. If you want to print out this manual, please use a color printer.

The following colors are used in the text:

- **Bold Sky Blue**: indicates a clickable link on the website. The color in the text is approximately the same as on the website.
- **Bold Black**: indicates a button or a page (a tab in the tab bar).
- *Italic*: indicates a text on the webpage.

## 1.2 WebSensys, WiSensys® web interface

WebSensys is the web interface of WiSensys®, the wireless sensing platform. WebSensys consists of a web interface, internet application in PHP and internet database in MySQL format.

## 1.3 Sensors

Available sensors are:

- Any available sensor in the WiSensys® system (updates may be required for newer types).

The sensors measure input values and transmit data to the base station. Sensing is done using a variety of sensors.

The intervals for sensing and transmission are set at installation time. Values can be changed using the WiSensys® PC software or WebSensys.

Each sensor has a unique identity in a system. Optionally the following values can be provided for each sensor: friendly name, minimum trip value and maximum trip value. Trip values are used to signal an alarm condition to the base station when these values are exceeded.

Most sensors also have additional settings available, but these settings can be specific to a sensor type.

## 1.4 Base station

WS-BU is the base station that receives the data from all WiSensys® sensors. The received data is either stored in the base station's optional non-volatile memory or is forwarded to the WebSensys internet application.

WS-BU is also used when installing and changing the WiSensys® network. The base station receives settings for the sensors from the WiSensys® PC software SensorGraph and forwards these settings to all sensors in the network.

The base station is available in several versions with different communication capabilities. For WebSensys you need one of the following:

- WS-BU-ethernet-03 with TCP/IP communication
- WS-BU-gprs with GPRS communication

## **1.5 Compatibility**

This version of the manual is compatible with release R3 of the WiSensys® system and describes version R2Cx of WebSensys.

## **1.6 Limitations**

Because of the nature of the application, WebSensys can not be used to pair and remove sensors from base stations. You must use SensorGraph to perform these tasks.

Also, some base station settings, like the GPRS connection settings are disabled in WebSensys for security reasons. A wrong value for one of these settings could result in a base station failing being able to connect to WebSensys. This would make further configuration without PC software impossible.

## **2 Installing the WiSensys Platform**

Please refer to the WiSensys user manual for installation and configuration of your base stations, range extenders and sensors.

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## 3 Installing WebSensys

WebSensys is a web application and does not require installation on your PC but runs on a server.

### 3.1 Requirements for the client

You need a recent web browser to run the WebSensys application. The WebSensys application relies on JavaScript for a lot of its functionality, so JavaScript must be enabled in your browser to be able to use all features.

The following browsers were tested and found to be compatible with the WebSensys application:

- Microsoft Internet Explorer 7+
- Mozilla Firefox 3+
- Google Chrome 10+
- Opera 9+

JavaScript can be resource intensive in some older browsers. To have the best possible performance, use a recent browser.



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## 4 Using the website

### 4.1 Logging in

The WebSensys application requires you to login. You will have to obtain the required information from your distributor. Go to the URL supplied by your distributor. A login page will be presented to you.

Fill in you username and password to login. It is possible to retrieve your password if you lost it. Just enter your username and click on the **Retrieve password** button. Your password will be sent to your e-mail address within a couple of minutes.

### 4.2 WebSensys website

After login you will be redirected to the WebSensys main website. Each user can select the page which will be loaded directly after logging in, on the **Personal settings** page as discussed in 4.16. The website is arranged in multiple tabs in the top, called pages. **Personal settings** can be found on the **Administrator** page (see 4.16.1). A description of the different pages follows.

## 4.3 Summary

The **Summary** page (see Figure 1) is a personal page that can display various items like last sensor values, triggered alarms and triggered rules. The page can be configured in **Personal preferences** under the **Administrator** page (see 4.16.1).

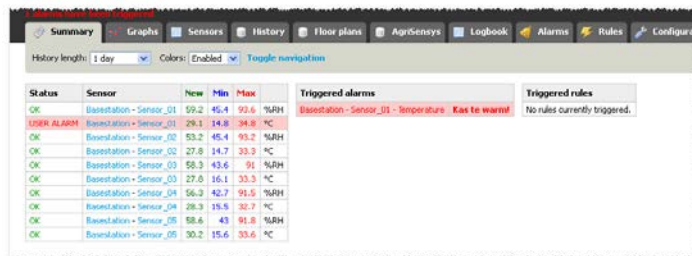


Figure 1: The summary page

### 4.3.1 Sensor status

In the summary, you can see the current sensor status. The following messages can be displayed:

- **RANGE**: the sensor went out of range. The sensor did not send a message to the base station in a while. You should check if there are no obstacles blocking the communication or replace the battery.
- **SENSOR ALARM**: the most recent measurement exceeded one (or more) of the configured trip values.
- **USER ALARM**: the most recent measurement exceeded one (or more) of the user configured sensor alarms.

### 4.3.2 Triggered alarms

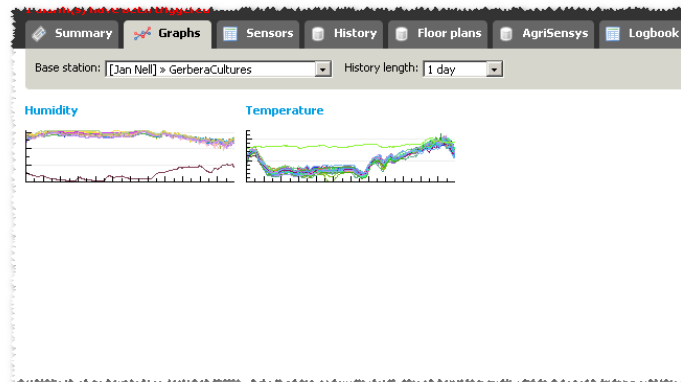
The triggered alarms table shows all currently triggered alarms in red.

### 4.3.3 Triggered rules

If you use rules on sensors equipped with a relay, you will see the currently triggered rules in the triggered rules table. The table is similar to the triggered alarms table, except it lack coloring.

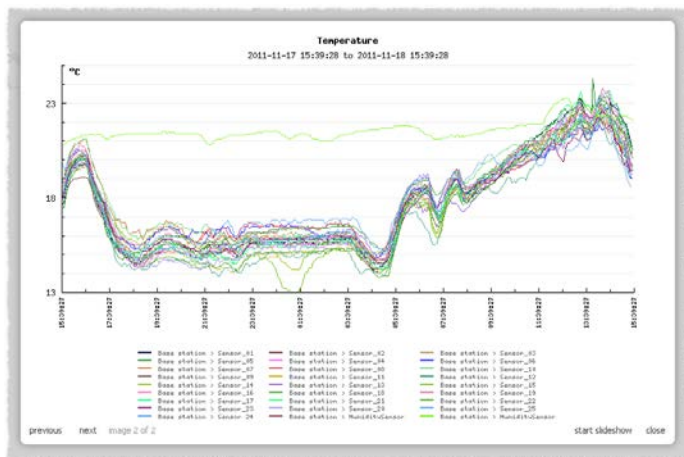
## 4.4 Graphs

On the **Graphs** page, you will see the most recent measurements of your sensors presented in graphs (see Figure 2). The graphs are arranged in thumbnails and are updated every minute.



**Figure 2: The graphs page**

If you click on a thumbnail, a larger and more detailed graph will appear. You can scroll through the graphs by clicking on the arrows or by clicking on the graph itself.



**Figure 3: Graph after clicking thumbnail**

Click on the graph title to open the graph in a new window or tab. An authentication string is passed on to the link, so you can bookmark the graph and view it without having to log in.

### 4.4.1 Filters and settings

On the top of the page, page specific filters and options are available. The following filters and settings are available:

- *Base station*: select a base station to show only sensors of the selected base station. Select *ALL* to see all sensors.
- *History length*: select the maximum amount of time to show values from. This setting is only used for the real-time graphs in the **Graphs** page.



**Figure 4: Filters on the Graphs page**

## 4.5 Sensors

You will find more information about each of your sensors on the **Sensors** page (see Figure 5).

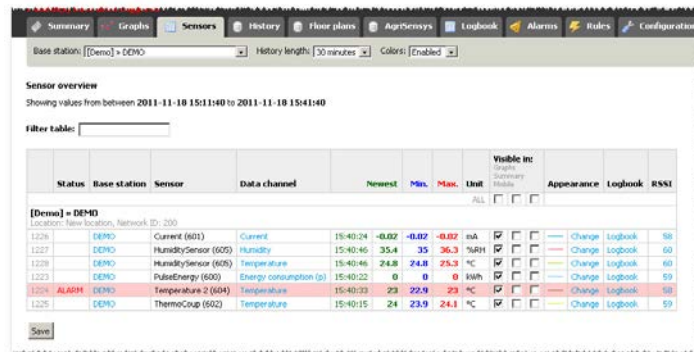


Figure 5: The sensors page

### 4.5.1 Sensors table

The following columns are visible in the sensors table:

- **Status:** shows the sensor status. It can be one of the following:
  - **RANGE:** the sensor went out of range. Check for obstacles or replace the battery.
  - **ALARM:** the sensor is in alarm mode. Either an user alarm could have been triggered or a trip value configured in the sensor.
- **Sensor:** the name of the sensor. If the sensor has more than one data channel, the sensor name is not repeated in the following rows.
- **ID:** the device ID of the sensor.
- **Data channel:** the name of the data channel shown. This can also be the name of a custom equation if any.
- **Graph:** the graph the data channel is shown in. By clicking the link, you will be presented with a graph with only the selected data channel.
- **Newest:** the most recent value and the timestamp of the value. History length is taken into account and when no value is available in the chosen history length, nothing is shown. Hover above the value with the mouse to show the timestamp of the value.
- **Min:** the lowest value within the selected history length. Hover above the value with the mouse to show the timestamp of the value.
- **Max:** the highest value within the selected history length. Hover above the value with the mouse to show the timestamp of the value.
- **Unit:** the unit of the data that the data channel represents.

- *Visible in*: settings for visibility of the data channel. You can toggle visibility of each data channel for the following places:
  - *Graphs*: the real-time graphs on the **Graphs** page.
  - *Summary*: the sensor table on the **Summary** page.
  - *Mobile*: your personal mobile page.
- *Appearance*: the appearance of the data channel in all graphs. You can change the appearance by clicking **Change** (see 4.5.3).
- *Logbook*: link to the logbook items of the particular sensor. By clicking **Logbook**, you can add a logbook item directly.
- *Signal strength*: if available, the most recent RSSI value is shown in this column. By clicking, a graph with the values of one week appears.

## 4.5.2 Filters and settings

On the top of the page, page specific filters and options are available. The following filters and settings are available:

- *Base station*: select a base station to show only sensors of the selected base station. Select *ALL* to see all sensors.
- *History length*: select the maximum amount of time to show values from. This is also used for the graphs accessible under the Graphs column.
- *Colors*: if *enabled*, colors some of the columns for more clarity.

### Figure 6: Filters on the Sensors page

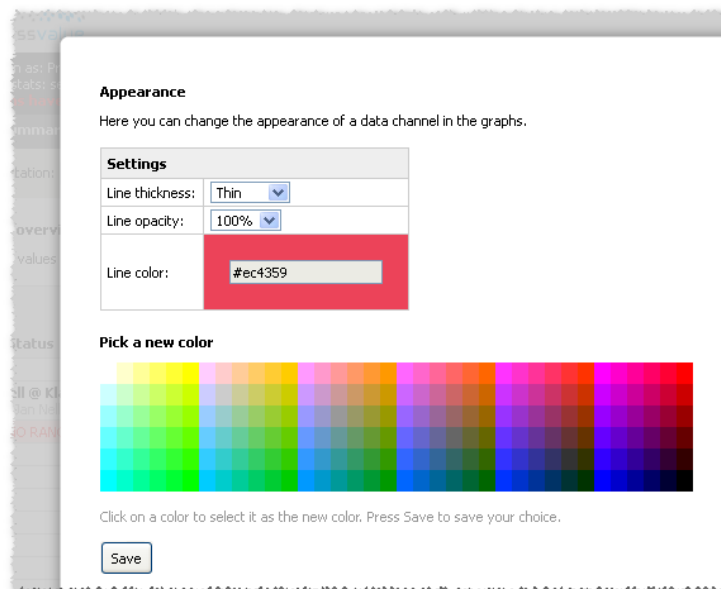
Use the table filter to instantly filter the table by typing a part of a sensor name, time or other words. Only the rows containing the phrase will be displayed.

## 4.5.3 Changing the appearance of the data channels

To change the appearance of a data channel, go to the **Sensors** page and find the data channel you want to change. Click **Change** under the *Appearance* column in the sensors table to show the appearance dialog.

You can change the following:

- *Line thickness*: the thickness of the lines in the graph.
- *Line opacity*: the opacity of the lines in the graph. 100% is fully opaque or visible. 10% is barely visible.
- *Line color*: the current color is shown in the box around the text field. By clicking a color in the color swatch, you can select a new color.



**Figure 7: Changing the appearance of data channels**  
Press **Save** if you are satisfied with the appearance.

## 4.6 History

On the **History** page, you can access archived data in different presentation forms: images or downloadable files.

You can select for which period the data has to be retrieved and with what interval (when retrieving average data of graphs). You can also fully control what data channels or sensors you want to retrieve the data for.

### 4.6.1 Available export types

You can view or download historical data in the following formats:

- *Graphs (.png)*: graphs will be generated which you can download or view directly. Graphs can be generated with or without an interval.
- *WebSensys tabular (.csv)*: downloadable CSV file. Sensor data is presented with values for each selected data channel in a separate column. You must choose an interval for this export type.
- *WebSensys detailed (.csv)*: downloadable CSV file. Sensor data is presented with 1 measured value per row, including other data like flags, sequence number and the timestamp of measurement.

Depending on the version, other specific export formats may be available. These export files can be used by specific third party tools and are out of context of this manual.

#### 4.6.1.1 Graphs

Graph export files can be viewed directly in the browser or downloaded for archive purposes to the PC. When an interval is selected, the graphs show the average values over the selected interval period and a point in the graphs is drawn every interval period.

#### 4.6.1.2 WebSensys tabular

WebSensys tabular files can only be generated with an interval period. The two left most columns contain the end timestamp of each interval. The next interval begins at the previous timestamp period + 1 second.

Columns next to the timestamp column contain the average value for each selected data channel for each interval.

The right most columns contain the accumulated flags for each data channel in the current interval. The following flags are available:

- **A[12]**: An alarm has been triggered in the interval period.

#### 4.6.1.3 WebSensys detailed

WebSensys detailed files can only be generated without an interval. These files contain detailed information for each single measurement for each selected data channel. The following columns are available:

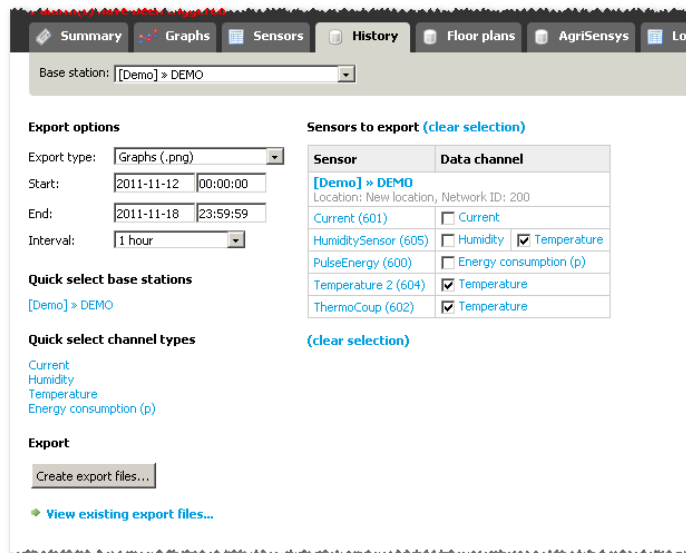


- **Column 1 - date:** the date of the sample.
- **Column 2 - time:** the time of day of the sample.
- **Column 3 - network ID:** the network ID of the sensor.
- **Column 4 - device type:** the device type of the sensor.
- **Column 5 - device ID:** the device ID of the sensor. Together with the network ID and device type this forms a sensor address unique for each base station.
- **Column 6 - sensor:** the sensor name.
- **Column 7 - data channel:** the name of the data channel the value is for. Some sensor types have more than one data channel (for example the WS-DLTc, which has a Relative Humidity and a Temperature data channel).

If a custom equation has been set, the data channel name will contain the name of the equation.

- **Column 8 - data flags:** the data flags of each value (see below for explanation).
  - **Bit 7 (decimal value 128):** If set, the value is a real-time value. If not set, the value is a missed value that has been retransmitted later.
  - **Bit 5 (decimal value 32):** If set, the built-in alarm has been triggered in the sensor.
- **Column 9 - sequence number:** the sequence number of the value. Values from the same but different data channels that have the same sequence number, have been sampled at the same time. The range is 0-65535. When the maximum sequence number is reached, the sequence number is reset.
- **Column 10- value:** the actual sample for the data channel.

## 4.6.2 Viewing logged data



**Figure 8: History page**

Do the following to view previously logged data:

- Go to the **History** page.
- Choose the type of export you want to generate (see 4.6.1) by choosing the desired *Export type*.
- Choose a *Start* and *End* date and time you want to generate the export for.
- Choose an *Interval*. The interval is only available for graphs or tabular CSV files. If you choose an interval, data point will be generated at the specified interval times. The data points will be the average of all samples found each interval. If no interval is selected, all samples will be shown.
- Select the data channels you wish to export. All data channels are grouped together. You can make the selection faster with the following additional links:
  - You can select all data channels of the same type by clicking the name of the data channel (for example: [Temperature](#)).
  - You can select all data channels from a particular sensor by clicking on the sensor name (for example [Sensor 1](#)).
  - You can select all sensors and data channels from a particular base station by clicking the name of the base station.
- Press the **Create export files...** button. A new browser window appears where you can see the files being generated.
- When the files are generated, they will appear in a table on the bottom of the page. You can then [Download](#) or [View](#) files, depending on the type.

You can also select particular channels by using quick selection links on the left of the page under the export options.

The selected data channels, export type and other options (with the exception of start and end date) are saved for easier consecutive exporting.

### 4.6.3 Viewing previously generated exports

If you want to view the generated export files again, you can go to the **History** page and press the [View existing export files...](#) link on the bottom of the page.

After viewing or downloading, the export files are removed from the system after a certain time (this is configured by the administrator).

### 4.6.4 Filters and settings

On the top of the page, page specific filters and options are available. The following filters and settings are available:

- *Base station*: select a base station to show only sensors of the selected base station. Select *ALL* to see all sensors.

## 4.7 Alarms

The **Alarms** page shows an overview of all alarms and gives access to functions for managing alarms. The alarms visible on the **Alarms** page are created by the user and are not directly related to the trip values that can be configured in the sensor configuration on the **Configuration** page.

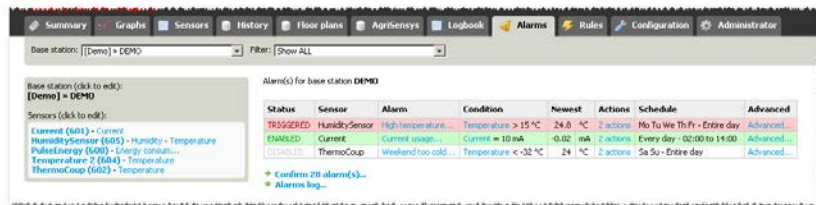


Figure 9: Alarms page

You can filter the shown alarms by selecting one of the devices in the tree:

- **Sensor:** click to show alarms set on data channels of the selected sensor only.
- **Data channel:** click to show alarms only set on the selected data channel.

Press **Alarms** in the tab bar to reload all alarms.

From here you can also access a page to confirm alarms by clicking the **Confirm *n* alarms...** link (where *n* is the number of alarms to confirm) on the bottom of the page (see 4.7.5).

To see all logged alarms, click the **Alarms log...** link (see 4.7.6).

### 4.7.1 Filters and settings

On the top of the page, page specific filters and options are available. The following filters and settings are available:

- **Base station:** select a base station to show only sensors of the selected base station. Select *ALL* to see all sensors. This will also limit the displayed alarms to that base station.

### 4.7.2 The alarms table

The status of all available alarms is displayed using a color (see Figure 9):

- **[RED]:** The alarm is triggered.
- **[ORANGE]:** The alarm is pending (alarm value has been exceeded but the configured time-out has not yet passed).
- **[GREEN]:** The alarm is not triggered.

The following columns are available in the alarms table:

- **Status:** indicates the status of the alarm.
  - **DISABLED:** the alarm is disabled.

- *ENABLED*: the alarm is enabled but not triggered.
- *PENDING*: the alarm is triggered but the delay has not passed yet.
- *TRIGGERED*: the alarm is triggered and alarm actions (for example: sending an e-mail) have been performed.
- *Sensor*: the sensor of the data channel where the alarm is set on.
- *Alarm*: the name of the alarm. By click the name of the alarm, the alarm edit dialog appears where you can modify or delete the alarm (see 4.7.3).
- *Condition*: the alarm condition with the data channel. Clicking the name of the data channel opens the graph for that data channel.
- *Newest*: the newest measured sample for the data channel.
- *Actions*: the action that are performed when the alarm is triggered.
- *Schedule*: the schedule for when the alarm is active.
- *Advanced*: opens the dialog where you can perform batch options on alarms.

### 4.7.3 Editing alarms

You can add a new alarm by choosing a data channel in the tree on the **Alarms** page and clicking [Create a new alarm...](#) link.

To edit an alarm, press the [Edit alarm...](#) link in the alarms table for the alarm you want to edit.

For both, a dialog appears where you can configure the alarm. The following can be configured:

- *Description*: the description for the alarm that allows for easy identification on the website.
- *Active*: indicates if the alarms is enabled or disabled. A disabled alarm will not be used.
- *Active from – to*: the time of each day on which the alarm should be evaluated. For example: you can turn the alarm off during the night.
- *Active on*: the days of the week on which the alarm should be evaluated. For example: you can turn the alarm off during the weekend.
- *Trigger value*: the value on which the alarm should be triggered.
- *Alarm delay*: the delay before the first measurement that exceeds the set trigger value and the time the first action (e-mail, sms) should be performed. If the delay has not yet passed but the value exceeds the configured triggered value the alarm will be set to 'pending' state. If the alarm falls below set trigger value, the alarm will be reset immediately.
- *Consecutive delay*: the delay between the actions after the first action has been performed.

- *Consecutive delay maximum*: the maximum number of repeated actions after the first action has been performed.

You can also configure which actions should be performed when the alarm is triggered:

- *E-mail*: an e-mail message is sent to the configured e-mail addresses.
- *SMS*: a SMS message is sent to the configured phone number. SMS is only available using a third-party SMS provider and a driver. Driver for Mollie is provided and can be configured with a username and password. Other providers need custom drivers which can be made available against additional costs.

You can create multiple actions of the same type for each alarm.

You can save the alarm by pressing the **Save alarm** button.

By pressing the **Delete** button you can remove the alarm.

## 4.7.4 Advanced settings

By clicking the [Advanced...](#) link next to an alarm on the **Alarms** page, you can perform batch options for all alarms. Existing alarms and options will not be overwritten unless you specify that. Also, similar alarms or actions will not be recreated if already existing.

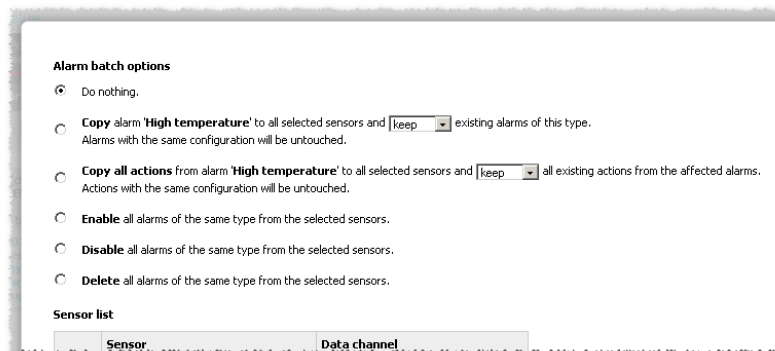


Figure 10: Advanced alarm options

## 4.7.5 Confirming alarms

By clicking the [Confirm \*n\* alarms...](#) links on the **Alarms** page, you can confirm alarms that are or were triggered in the past. By confirming alarms, you can add a reason for why the alarm was triggered and how it was fixed. This can be useful for future reference.

To confirm an alarm, type a message in the *Message* box and check the *Confirm* checkbox for each alarm you want to confirm. Press the **Confirm alarm(s)** button to save.

You can select multiple alarms quickly, by clicking one of the quick select links on the top of the page.

### 4.7.6 Alarms log

To view the full alarm log, click the [Alarms log...](#) link on the bottom of the **Alarms** page. A dialog appears with an initial selection of all alarms triggered in the last week.

You can change the visible alarms by providing a *Start date* and *End date*. Pressing the **Retrieve alarms for selected period** button reloads the alarms.

## 4.8 Rules

Used for managing rules. The page is similar to the alarms page. The main difference is that the actions that can be configured are different from actions that can be configured for alarms.

The rules can only be used when you have energy sensors with a programmable relay connected to the system.

## 4.9 Configuration

You can configure the settings of your base stations and sensors on the **Configuration** page (see Figure 11).

For more information about the different setting, refer to the WiSensys installation manual.

The red comment box can be used to store a comment with the reason of the change. This can be useful for audit logging.

### 4.9.1 Most important base station settings

Refer to the WiSensys installation manual for a complete list of the available settings for base stations and I/O boards.

- *Display name*: the name used on the website.
- *Friendly name*: the name of the base station. This is a setting saved in the base station but because it is limited to 30 characters, it is not used in the application.
- *Sensor out of range time-out*: the number of messages missed from the sensor after which the base station marks the sensor as out of range.
- *HTTPDB post interval*: the maximum interval on which the base station sends sensor data to the website. This setting will be ignored when the memory of the base station is filled. In that case the base station sends the data ignoring this setting.
- *HTTPDB post interval during alarm*: the maximum interval on which the base station sends sensor data to the website if one of the sensors is in alarm. For this to work, trip values have to be configured for the sensors.

## 4.9.2 Most important sensor settings

Refer to the WiSensys installation manual for a complete list of settings available for each sensor.

- *Display name*: the name used on the website.
- *Ignore out of range time-out*: if enabled, no alerts will be sent if the sensor is marked as out of range. This can be useful for sensors that are placed out of range deliberately.
- *Friendly name*: the friendly name of the sensor. This is a setting saved in the sensor but because it is limited to 15 characters, it is not used in the application.
- *Transmit interval*: the number of measurements the sensor should collect before sending them to the base station. Higher values can save battery life. Lower values will make the system more responsive and data will be visible on the website faster.
- *Sample interval*: the interval on which the measurements should be performed. Higher values will save battery life. Lower values will be make the system more responsive but will also introduce more data usage.
- *Retransmit missed data*: if enabled, the sensor will attempt to send data not received by the base station when the sensor is in range (again).
- *Extended sample interval*: if enabled, the sample interval as specified is read in minutes instead of seconds. This feature also enables a fast recovery of stored sensor data (about 100 sensor values per minute, depending on the sensor. The setting is only available in FastTX sensors.

Calibration values cannot be changed in WebSensys. You need SensorGraph for that.



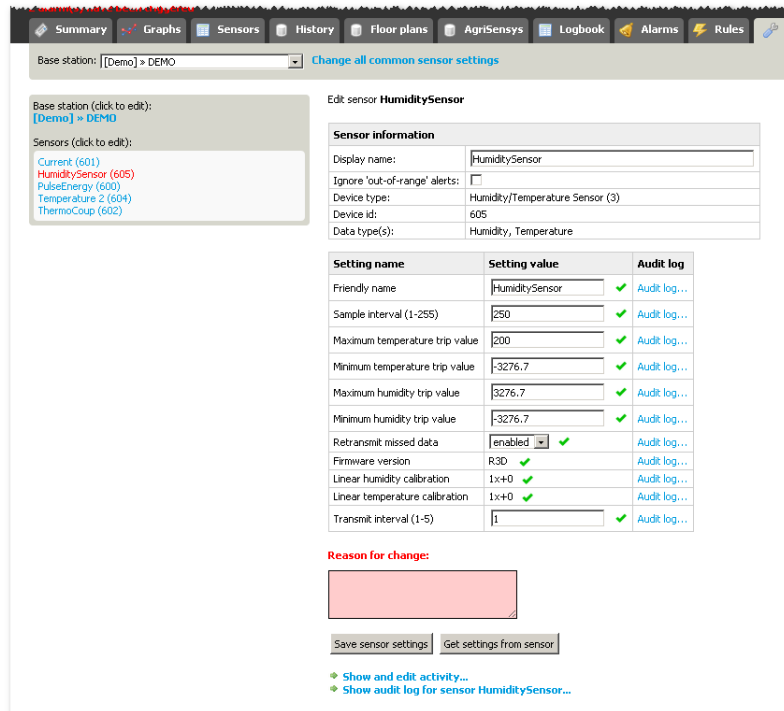


Figure 11: Settings of a sensor on the configuration page

### 4.9.3 Changing settings of multiple sensors

It is possible to change common settings of multiple sensors at once, without having to go through all your sensors and saving new setting values manually. This can be done under the **Common sensor settings** page.

- Press the [Change common sensor settings](#) link on the **Configuration** page next to the base station filter.
- Check the sensors you want to change settings for in the sensors table. New setting values will be only sent to the selected sensors.
- Check the settings you want to change and change the value as desired. Only the selected settings will be considered. The setting will be only updated if a sensor actually supports it.
- Read the warning and *select I understand the warning above and want to proceed* when you verified your input.
- Press **Save** sensor settings to save the new values.

The new setting values will be sent to the base station as soon as the base station communicates with WebSensys.

See the screenshot below for an example: a new sample interval of 10 minutes is set for sensors *Sensor\_01* through *Sensor\_06*. Note that *Extended sample interval* is enabled which will make the sensor read the sample interval in minutes instead of seconds.

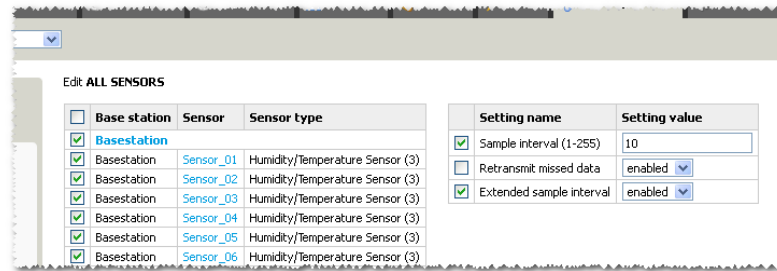


Figure 12: Changing common sensor settings

## 4.10 Custom graphs and equations

With WebSensys it is possible to present certain data different from the standard presentation. You can present temperature data, which is measured in Celsius normally, in Kelvin or Fahrenheit for example. You can create custom graphs and equations to do this.

Managing of custom graphs and equation is done on the **Administrator** page under [Custom graphs and equations](#).

On the [Custom graphs and equation](#) page you will see an overview of all the available custom graphs and equations.

### 4.10.1 Managing graphs

In the [Custom graphs and equations](#) section of the **Administrator** page you can create a new customized graph by clicking on the [Create a new graph...](#) link or edit an existing customized graph by clicking the [Edit graph...](#) link.

By pressing the [Create a new graph...](#) a dialog window will popup with the graphs configuration (see Figure 13).

**Edit graph "Humidity Office PrGr/HaHo"**

**Graph title (required):**  
Give a descriptive title for the graph. It will be shown in the header and on the rest of the website.

**Always show 0:**  
Always shows zero value on the y-axis. ☐

**Max. range:**  
Maximum range of the y-axis.

**Min. range:**  
Minimum range of the y-axis.

**Max. target:**  
Upper limit of the colored target band.

**Min. target:**  
Lower limit of the colored target band.

**Interval:**  
Interval will be used when no interval is selected otherwise Can be used to smooth out the graph.  sec.

**Show tick marks:**  
Shows tick marks on each value. ☐

**Reason for change:**

[Show audit log for graph...](#)  
[Show audit log for graph settings...](#)

**Figure 13: Custom graph configuration**

The following options are available for each graph:

- *Graph title*: the title of the graph. It is wise to choose a short but descriptive name for the graph title.
- *Always show 0*: if enabled, the Y-axis will always show the 0 value. This can help to better compare values.
- *Maximum and minimum range*: the fixed maximum and minimum range of the Y-axis.
- *Maximum and minimum target value*: if provided, a colored band will be drawn in the graph between the provided values. This can help to see if the measured values fall between the targeted band.

By pressing the **Save** button, you can save the graph.

By pressing the **Delete** button, you can remove the graph. The graph can only be removed if no equation is assigned to it, so make sure that you remove any equations first.

**You always need to create an equation to use a custom graph. See 4.10.3 for more information.**

## 4.10.2 Managing equations

In the [Custom graphs and equations](#) section of the **Administrator** screen you can create a new customized equation by clicking on the [Create a new equation...](#) link or edit an existing customized equation by clicking on the [Edit equation...](#) link.

By pressing the **Create a new equation...** a dialog window will popup with the equation configuration (see Figure 14).

The screenshot shows a dialog window titled "Edit graph 'Humidity Office PrGr/HaHo'". It contains the following fields and options:

- Graph title (required):** A text field with the value "Humidity Office PrGr/HaHo". Below it, a note says: "Give a descriptive title for the graph. It will be shown in the header and on the rest of the website."
- Always show 0:** A checkbox that is currently unchecked. Below it, a note says: "Always shows zero value on the y-axis."
- Max. range:** A text field with the value "100". Below it, a note says: "Maximum range of the y-axis."
- Min. range:** A text field with the value "0". Below it, a note says: "Minimum range of the y-axis."
- Max. target:** A text field with the value "100". Below it, a note says: "Upper limit of the colored target band."
- Min. target:** A text field with the value "30". Below it, a note says: "Lower limit of the colored target band."
- Interval:** A text field with the value "1" followed by "sec.". Below it, a note says: "Interval will be used when no interval is selected otherwise Can be used to smooth out the graph."
- Show tick marks:** A checkbox that is currently unchecked. Below it, a note says: "Shows tick marks on each value."
- Reason for change:** A large red rectangular area for a note.
- Buttons:** "Save" and "Delete" buttons.
- Links:** "Show audit log for graph..." and "Show audit log for graph settings..." with green diamond icons.

**Figure 14: Custom equation configuration**

The following options are available for each equation:

- *Description:* the description of the equation. It is wise to choose a short but descriptive equation description.
- *Graph:* the graph that the data from this equation will be shown in. You can only choose custom graphs so create one first if you do not see any choices.
- *Data type:* the original data type that will be converted with the equation. Only sensors that contain that data type will be available for the equation later.
- *Unit:* the unit of the data (for example K (Kelvin), °F, kW, l/sec).
- *Input and output 1 and 2:* to convert a value to another value, a linear formula has to be generated. To do that you have to provide 2 input values (the original values measured by the sensor) and the 2 corresponding output values. See 4.10.3 for examples of input and output values.
- *Differential time base:* used for displaying cumulative values (energy and pulse sensor) per given time interval (1 for x/per second, 60 for x/per minute or 3600 for x/per hour).

By pressing the **Save** button, you can save the equation.

By pressing the **Delete** button, you can remove the equation. The equation can only be removed if no data channels are assigned to the equation. Make sure

you unassign any data channels from the equation before you want to remove it. See 4.10.4 for more details.

**You always need to create an equation to use a custom graph. See 4.10.3 for more information.**

## 4.10.3 Input/output examples

To convert a default temperature of a temperature sensor (in °C) to a temperature in °F you can use the following values:

Input 1: 0 → Output 1: 32

Input 2: 10 → Output 2: 50

To convert a default temperature of a temperature sensor (in °C) to a temperature in K you can use the following values:

Input 1: 0 → Output 1: 273

Input 2: 1 → Output 2: 274

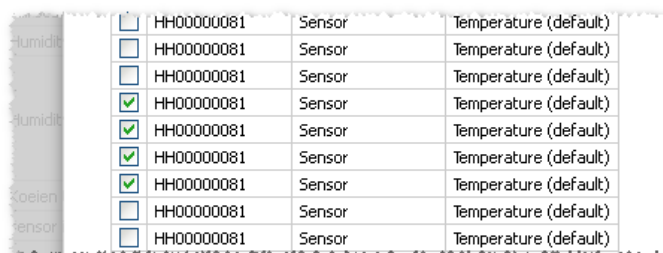
If you want to create an equation just for the purpose of using a custom graph without the need for converting any values you can provide following values:

Input 1: 0 → Output 1: 0

Input 2: 1 → Output 2: 1

## 4.10.4 Assigning data channels to an equation

After you converted custom equations and graphs, you need to assign at least 1 data channel to the equation to make the graph visible. You can do that by clicking the [Assign sensors...](#) link in the [Custom graphs and equations](#) section of the **Administrator** page (see Figure 15).



**Figure 15: Assign data channels to an equation**

You will see all available data channels that can be assigned to the equation. Check the data channel to assign it to the equation or uncheck to unassign it from the equation.

Press the **Save** button to save the changes.



- *Report type*: daily, weekly or monthly are available for reports that can be sent automatically. The custom report type can be only generated manually and a download link is shown when the report is saved.
- *Report title*: the title for the report.
- *Start and end time*: only available for the custom reports.
- *Generate automatically*: check if the report should be sent automatically to the configured e-mail address.
- *Show alarms*: check if the report should contain a page with all generated alarms for the reported period.
- *Show energy consumption table*: check to show a page with the total energy consumption for every selected energy sensor.
- *Interval*: the interval to use per column in the table.
- *Show measurements in table*: check if sensor measurements should be shown in table form. The table can be customized in the Measurement table settings:
  - *Show lowest measurement*: check to show the lowest available measurement for each interval.
  - *Show average measurement*: check to show the average of the values for each interval. If energy sensors are show, this shows the total of the energy usage.
  - *Show maximum measurement*: check to show the highest available measurement for each interval.
- *Show graphs*: check to show the measurement data in graphs similar to the graphs on the **Graphs** page. The graphs can be customized in the Graphs settings:
  - *Use measurement table interval*: check to show average data over the same interval as in the measurements tables. Uncheck to show all data in the graphs.
- *Sensors*: the sensors that should be shown in the report.
- *Target*: the users that the report should be sent to if Generate automatically is selected. A custom e-mail address can also be provided.

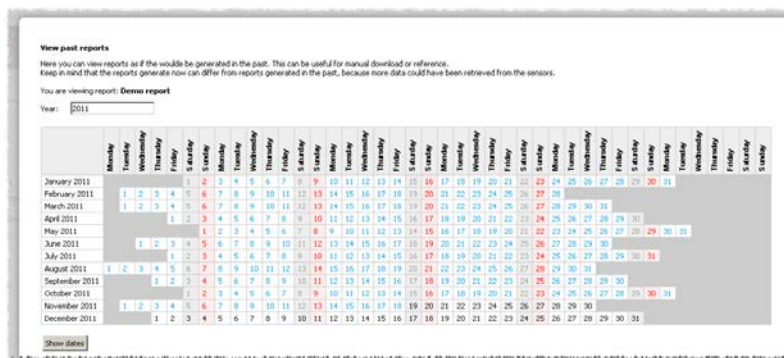
Press the **Delete** button to remove the report.

By clicking the [Edit report...](#) link you can edit an existing report in a similar dialog.

## 4.11.2 Viewing reports

To generate a report directly you can press the [View report...](#) link. A new dialog appears with a calendar in which you can press any of the available days to view the report for that day (see Figure 18).

The report is displayed directly if it is a custom report.



**Figure 18: View report dialog**

The reports are generated “on-the-fly” what means that each time you generate a report for the same date, the report can differ due to amount of data available for that report (for example when a sensor has retransmitted missed data).



## 4.12 Floor plans

It is possible to create floor plans with an overlay of the latest sensor data on them. This is useful when monitoring buildings or other location specific points like a collection of refrigerators.

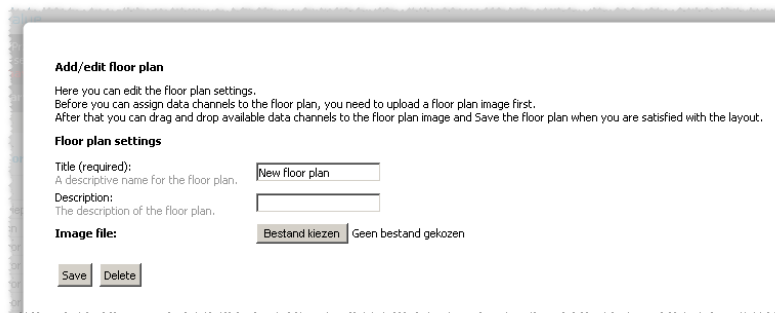
A floor plan image in .JPG or .PNG format is required for this.

### 4.12.1 Managing floor plans

In the [Floor plans](#) section of the **Administrator** page you will find an overview of floor plans available to you.

Click the [Create floor plan...](#) link to create a new floor plan or the [Edit floor plan...](#) to edit an existing floor plan.

After clicking the [Create floor plan...](#) link a new dialog appears (see Figure 19).



**Figure 19: Creating a new floor plan**

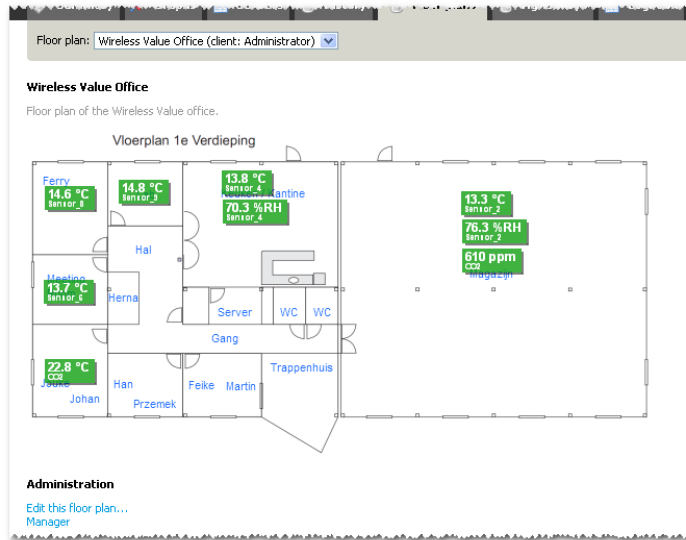
In the dialog you will have to provide the following:

- *Title*: the title of the floor plan.
- *Description*: you can provide an optional description for the floor plan.
- *Image file*: a file for the floor plan in .JPG or .PNG (recommended) format. This image file can not be changed later without removing the floor plan first.

Press the **Save** button after providing the values. When all provided values were correct more options for the floor plan appear (see **Error! Reference source not found.**).

In this screen you can drag-and-drop the different data channels available to the just uploaded floor plan image. If you are satisfied with the positions you can press the **Save** button to commit the changes.

When one or more data channels are assigned to a floor plan you can remove them by checking the checkboxes under *Delete sensors from the floor plan* and press the **Save** button.



**Figure 20: Floor plan with assigned data channels**

## 4.13 Heat charts

You can monitor the temperature of an entire area without losing the position data of the sensors by creating a heat chart. See Figure 21 to see a heat chart showing the temperature in a greenhouse.

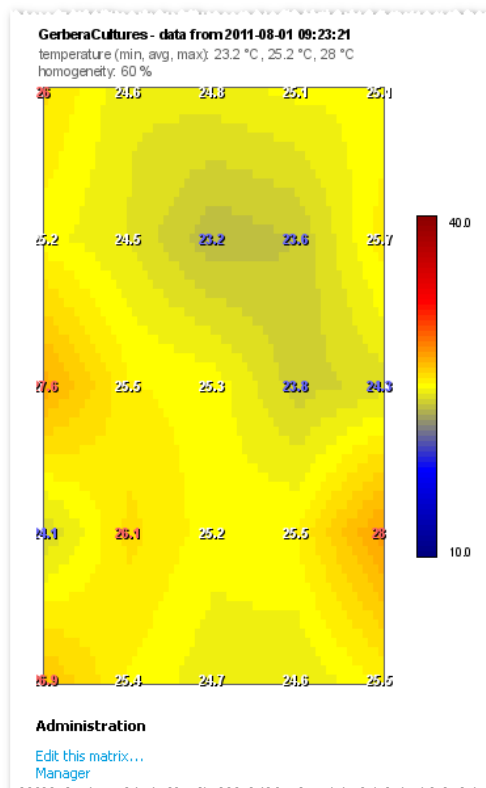


Figure 21: A heat chart

### 4.13.1 Filters and settings

On the top of the page, page specific filters and options are available. The following filters and settings are available:

- *Heat chart*: select the heat chart to view. This setting is saved automatically.
- *Date and time (or realtime)*: If realtime is enabled, the heat chart is generated with the most recent samples. You can also specify a specific date and time show. Press **Update date and time** for the changes to take effect.

### 4.13.2 Creating a new heat charts

You can create a new heat chart by clicking **Manager** on the **Heat charts** page. You can also access the **Heat chart manager** in the **Administrator page**.

Click [Create a new heat chart...](#) to open the dialog where you can configure your new heat chart.

**Add/edit a matrix for contour plotting**

**Title (required):**  
The title of the matrix.

**Description:**  
Optional description for the matrix.

**Maximum value:**  
The maximum value shown in the matrix. Higher values are shown in deep red.

**Minimum value:**  
The minimum value shown in the matrix. Lower values are shown in deep blue.

**Interpolation factor:**  
Higher values give smoother images, but can be slow to load.

**Dimensions:**  
Measurement area (width x length)  x

**Measurement points:**  
Measurements points in the area (width x height)  x

**Figure 22: New heat chart dialog**

Before you can assign sensors to your heat chart, you must first configure the following:

- *Title*: a descriptive title for the heat charts. This is shown in the generated images.
- *Description*: you can provide an optional description for the heat chart. This is shown on the Heat charts page.
- *Minimum and Maximum value*.: the value range of the heat chart. Values above max. are shown as a red area. Values under min. are shown as a blue area.
- *Interpolation factor*: choose a higher interpolation factor for a smoother heat chart.
- *Dimensions*: the approximate width and length of the area to show on the heat chart. This setting is needed for determining the dimensions of the heat chart and should be set in meters.
- *Measurement points*: the number of sensors that should be shown per side of the heat chart.

Press **Save** to save the initial settings. After pressing the **Save** button, the page is reloaded and a table appears on the bottom of the page with the amount of rows and column you chose in the initial setup. Now you can select a sensor for each cell of the heat chart. Only sensors that measure temperature can be selected. You can assign a sensor to multiple cells at once.

**Reference sensor:**  
Choose a reference sensor for comparing the system with an existing sensor.

**Assign sensors**  
Assign a sensor to each available position in the matrix. You can use the same sensor for multiple positions.

	1	2	3
1	AE10090020: 053	AE10090020: 053	AE10090020: 053
2	AE10090020: 053	AE10090020: 053	AE10090020: 053
3	AE10090020: 053	AE10090020: 053	AE10090020: 053
4	AE10090020: 053	AE10090020: 053	AE10090020: 053
5	AE10090020: 053	AE10090020: 053	AE10090020: 053

Save Delete

**Figure 23: Assigning sensors to cells of the heat chart**

Also, you can choose a *Reference sensor*. This should be the sensor closest to an already existing temperature sensor of a third-party. The setting is optional. The sensor does not have to participate in the matrix so any sensor available in the system can be chosen.

Press the **Save** button when you are done with the assignment. The heat chart is now visible on the **Heat charts** page.

### 4.13.3 Managing heat charts

To edit the heat chart, select the chart on the **Heat charts** page and click [Edit this heat chart...](#). You can also access the page in the [Heat chart manager](#) on the Administrator page.

The same options are available as described in 4.13.2.

You can delete an existing heat chart by pressing the **Delete** button in the edit dialog.

## 4.14 Logbook

You can use the logbook to save general comments about your system for later reference. The comments are also readable by other users.

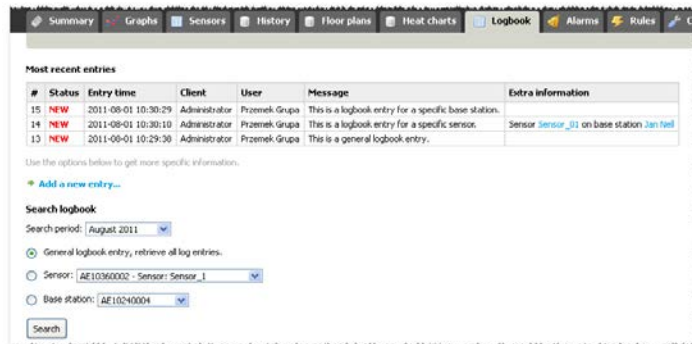


Figure 24: Logbook page with example comments

On the top of the page, the most recent logbook entries are shown. If an entry is added less than 1 week ago, **NEW** is shown in the *Status* column.

### 4.14.1 Adding a logbook entry

To add a logbook entry, go to the **Logbook** page and press **Add a new entry....** A dialog appears where you can add an entry.

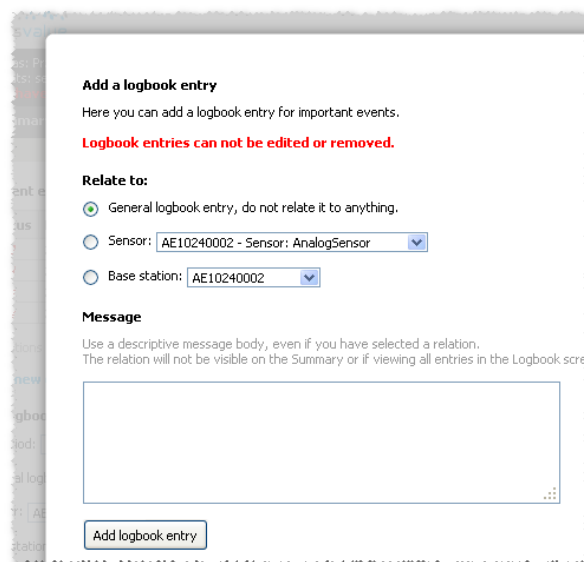


Figure 25: Adding a logbook entry

The following options are available:

- *Relate to:* choose where the entry should relate to. The following is available:

- *General logbook entry*: the entry will not relate to any particular device in the system and can be used for anything.
- *Sensor*: the logbook entry will relate to a particular sensor. These should be used for adding entries specific to the selected sensor.
- *Base station*: the logbook entry will relate to a particulate base station. These should be used for adding entries for a specific base station.
- *Message*: the message you want to save.

Press **Add logbook entry** to save the logbook entry.

## 4.15 Other ways to add a logbook entry

You can add a sensor specific logbook entry from the **Sensors** page. Click on the [Logbook](#) link on the **Sensors** page to add a new logbook entry for that particular sensor.

## 4.16 Administrator

On the **Administrator** page you can find more, less frequently accessed functionality of WebSensys. The screen is divided into the following sections:

- **Personal settings**: user specific settings for WebSensys (see 4.16.1).
- **Personal mobile pages**: user specific summary of all pages available as mobile pages for use on device with small screens (see 4.16.2).
- **Clients and users**: administration of clients and users.
- **Reports**: the reports administration (see 4.11 for more information).
- **Reports (CSV)**: administration of CSV reports.
- **Custom graphs and equations**: user defined graphs and equation (see 4.10 for more information).
- **Heat charts**: administration of heat charts.
- **Floor plans**: user defined floor plans (see 4.12 for more information).
- **Virtual sensors**: virtual sensors manager. Virtual sensors can be used for showing data from other system on the WebSensys website.
- **Base stations and sensors**: the base stations and sensors administration.
- **Trash**: used for undeleting removed resources like sensors, reports and such (see 4.16.11).

Some of these sections have already been discussed in previous paragraphs.

### 4.16.1 Personal settings

In the personal settings you can configure user specific settings on the website (see Figure 26).



**Administrator > Personal settings**

**Common settings**

**Start-up page:**  
Determines which should be shown first after logging in. Sensors

**History length in real-time graphs:**  
Determines the length of the time axis in the real-time graphs. This can be configured on the **Graphs** page also. 1 day

**History length in sensors:**  
Determines the length of the graphs in the sensors tab. 30 minutes

**Visible page elements**

☒ **Show sensor summary on dashboard:**  
If enabled, shows a sensor summary on the dashboard. The sensors that are selected in the table below under the **Summary** column will be shown.

☒ **Show triggered alarms on dashboard:**  
If enabled, shows the currently triggered alarms on the dashboard screen.

☒ **Show triggered rules on dashboard:**  
If enabled, shows the currently triggered rules on the dashboard screen.

**Visible pages**

☒ Show the **Summary** page

☒ Show the **Graphs** page

☒ Show the **Sensors** page

☒ Show the **History** page

☒ Show the **Floor plans** page

☒ Show the **Matrices** page

☒ Show the **Logbook** page

☒ Show the **Alarms** page

☒ Show the **Rules** page

☒ Show the **Configuration** page

Save

**Figure 26: Personal settings**

The following options are available:

- *Start-up page:* the page that should be shown directly after logging in.
- *History length in real-time graphs:* the length of the time axis in all of the graphs on the **Graphs** page.
- *History length in summary:* the length of the time axis in the small graphs on the **Summary** page (if selected as visible).
- *Show sensor summary on dashboard:* shows a table with the most recent sensor information on the **Summary** page. Each sensor is color coded to represent the status of the sensor.
- *Show triggered alarms on dashboard:* shows a table with the currently triggered alarms on the **Summary** page.
- *Show triggered rules on dashboard:* shows a table with the currently triggered rules on the **Summary** page.

## 4.16.2 Personal mobile pages

On the personal mobile pages page you can view the links to the available mobile pages.

For convenience, QR-codes are generated for each available mobile page. Most modern mobile phones can be equipped with software for reading QR-codes using the phones photo camera. The link can then be extracted by the application.


## 4.16.3 Clients and users

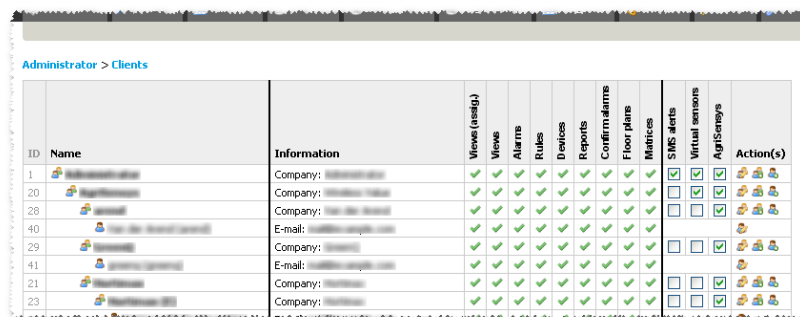
Under **Clients and users** you can manage clients and users.

A user is an individual user, which contains some basic information like name and e-mail address but also holds the login credentials. Users are grouped into clients. A client can be a group of users in the same department, company or just a group of people who have access to the same base stations.

Clients are saved in a tree structure. Clients higher in the tree will have access to base stations below it. The main client is the *Administrator* which has access to all base stations in the system.

### 4.16.3.1 Managing clients

Adding or editing a client can be performed in the **Administrator** screen under **Clients and users**. Then press the *Create new sub-client* icon  to show the user edit dialog. As explained, clients are managed in a tree structure, so every new client must be a child of a parent client. Normally, you will add clients under the *Administrator* client.












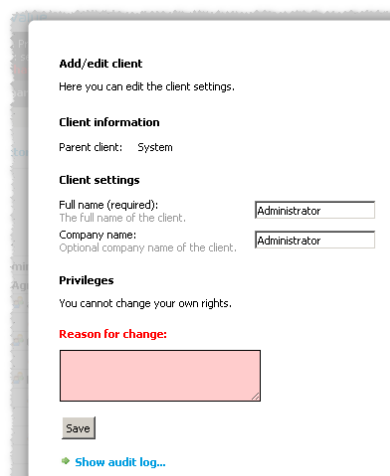
ID	Name	Information	Vinves (assign)	Vinves	Alarms	Rules	Devices	Reports	Confirmations	Floor plans	Matrices	SMS alerts	Virtual sensors	AgriSensys	Action(s)
1	Administrator	Company: Administrator	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
20	Client 20	Company: Client 20	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
28	Client 28	Company: Client 28	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
40	Client 40	E-mail: Client 40	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
29	Client 29	Company: Client 29	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
41	Client 41	E-mail: Client 41	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
21	Client 21	Company: Client 21	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
23	Client 23	Company: Client 23	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Figure 27: Clients and users

To edit an existing client, press the *Edit client icon*  and again, the client edit dialog will appear.



**Add/edit client**

Here you can edit the client settings.

**Client information**

Parent client: System

**Client settings**

Full name (required):   
The full name of the client.

Company name:   
Optional company name of the client.

**Privileges**

You cannot change your own rights.

**Reason for change:**

[Show audit log...](#)

Figure 28: Client edit dialog

The following can be provided for client information:


- *Full name*: the full name is required for each client. This can be a company name or the person responsible for the system.
- *Company name*: an optional company name.
- *Rights*: the privileges for the client, all sub-clients and all users of these clients. See Appendix A: User privileges for more information about privileges.


Press the **Save** button to save the client information.

If you are editing an existing client, you can press the **Delete** button to delete the client. All sub-clients, if existing, will be made children of the next client above the client that is being removed.

### 4.16.3.2 Managing users

To be able to login, a user is needed which provides the login information. Go to **Clients and users** on the **Administrator** page.

To add a user to a specific client, press the *Add a new user icon*  in the table on the same line as the client you want to add the new user to. The user edit dialog will appear.

To edit an existing user, press the *Edit user icon*  for the user you want to edit. The user edit dialog will appear.



**Figure 29: Edit user dialog**

The following can be provided for the user information:

- *Full name*: the required full name of the user. Most ideally, this is a person.
- *E-mail address*: the e-mail address. This should be a valid e-mail address. This e-mail address is used for password retrieval, alarms and reports.

- *Phone numer*: the optional phone number of the user. This can be used for alarms sent by SMS.
- *Login name*: the login name of the user. This should be unique and easy to remember. The format *name.surname* is recommended.
- *Login password*: the login password for the user. If you are adding a new user, or want to change the password, you must enter the the password but also repeat the password in the *Login password (confirm)* field.
- *Rights*: the privileges for the user. The user can only inherit the privileges the client also has defined. But some privileges can be disabled for particular users.

Press the **Save** button to save the user information.

If you are editing an existing user, you can press the **Delete** button to delete the user. Logging will be not possible anymore with the login name.

#### 4.16.4 Reports

See 4.11.

#### 4.16.5 Reports (CSV)

Here you can manage .CSV reports. These can be used for automatic data processing by third-party applications.

#### 4.16.6 Custom graphs and equations

See 4.10.

#### 4.16.7 Heat charts

See 4.13.

#### 4.16.8 Floor plans

See 4.12.

#### 4.16.9 Virtual sensors

Here you can manage virtual sensors. These can be used to feed data from third-party application into WebSensys.

More information can be made available by contacting your distributor.

#### 4.16.10 Base stations and sensors

Here you can manage your base stations and sensors.

Sensors are added automatically to the system, given that the base station is already added and approved.

A new base station can be approved by the *Administrator* user. All new base stations must be configured correctly using the PC software first. When the base

station is configured correctly it will appear in the [Approve new devices](#) page in the **Administrator**. The *Administrator* user can then approve the base station.

To complete adding a new base station, the base station must be assigned to a client, otherwise it will not be visible on the website. This can be done in the [Base stations and sensors](#) page.

#### 4.16.10.1 Manging base stations

To add a base station manually go the [Base stations and sensors](#) page in the **Administrator** and press the [Create a new base station...](#) link. The base station edit dialog will appear.

To edit an existing base station, press the [Edit...](#) link for the base station you want to edit. The base station edit dialog will appear.

**Figure 30: Base station edit dialog**

The following data can be provided for the base station:

- *Worldwide ID*: this is the unique identification number of the base station. The number is assigned by the manufacturer. The worldwide ID should match the serial number as found on the sticker on the back of the base station.

**DO NOT CHANGE THE WORLDWIDE ID IF THERE IS NO NEED TO. CHANGING THE WORLDWIDE ID NUMBER TO A DIFFERENT VALUE WILL LEAD THE BASE STATION TO NOT BE ACCESSIBLE ANYMORE AND NO SENSOR DATA WILL BE RECEIVED ANYMORE.**

- *Name*: the display name of the base station.
- *Location*: optional location information of the base station. This can, for example, be an address.
- *Description*: optional description of the base station.

Press the **Save** button to save the base station information.

If you are editing an existing base station, you can remove the base station by pressing the **Delete** button. Deleting base stations is generally not recommended because the sensor data will not be accessible anymore.

**NO SENSOR DATA WILL BE RECEIVED ANYMORE IF YOU DELETE A BASE STATION.**

**YOU WILL NOT BE ABLE TO VIEW HISTORICAL SENSOR MEASUREMENTS IF YOU DELETE THE BASE STATION.**

#### 4.16.10.2 Changing the owner of the base station

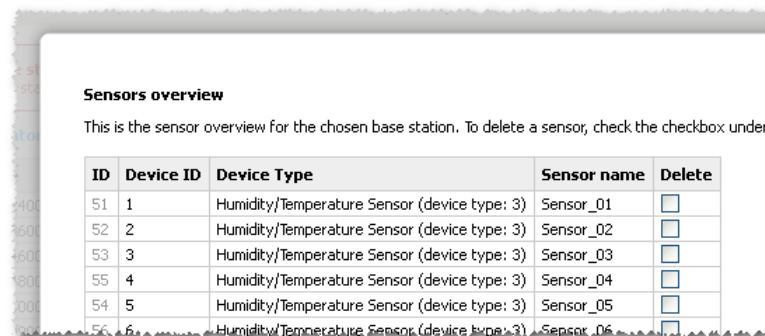
You can change the owner of a base station. This will change which user will be able to see the base station, the sensors and the sample and the configuration of both the sensors and base station.

To change the owner press the current owner of the base station, for example [Administrator...](#) under the *Owner* column in the base stations table. A dialog appears where you can select a new owner for the base station. Press **Save** to save the new owner.

#### 4.16.10.3 Removing sensors from a base station

If you removed a sensor from the base station using the PC application, it will not be removed from the web application automatically. The reason for this is that if you removed the sensor from the web application, the historical sensor data will not be accessible anymore.

You can press the [Sensors...](#) link to open the sensors dialog.



**Figure 31: The Sensors dialog**

To remove a sensor, check the sensor to remove under the *Delete* column, then press **Save** to save the settings.

**YOU WILL NOT BE ABLE TO VIEW HISTORICAL SENSOR MEASUREMENTS IF YOU DELETE THE SENSOR.**

When you remove a sensor from the web application, but not from the base station using the PC application first, the sensor will be re-added automatically and all historical data will be available again.

## 4.16.10.4 Automatically adding a base station

To add a base station automatically, you must configure the base station correctly. The base station then will start to send to the application. The new base station will appear on the [Approve new devices](#) screen in the **Administrator** page. You can then approve a base station, which allows the base station to store data. Do not forget to also assign a client to it.

## 4.16.11 Trash

The trash contains removed items that you can restore if removed accidentally. The trash functionality only is available if audit logging is also enabled.

## 4.17 Audit logging

The WebSensys application supports audit logging. If enabled, it is possible to save comments for most of the changes you make to the configuration of your devices, graphs, reports and so on. You can provide the comments in the red *Reason for change box*-s.



Figure 32: Reason for change box

## 5 Appendix A: User privileges

Only the main administrator can create and administer new clients and base stations. For the other users there are several privileges to define which tasks a user can perform.

- **Sensor settings:** the user can change equations that a sensor uses.
- **Graphs and equations:** the user can create and manage custom graphs and equations.
- **Alarms:** the user can create and manage alarms.
- **Rules:** the user can create and manage rules.
- **Hardware configuration:** the user can change the hardware configuration and sensor activities.
- **Reports:** the user can create and manage reports.
- **Floor plans:** the user can create and manage floor plans.
- **Confirm alarms:** the user can confirm alarms.
- **Floor plans:** the user can create and manage floor plans.
- **Heat charts:** the user can create and manage heat charts.
- **Administrator:** the administrator has all the above privileges and is privileged to create new users.