

# PRNetBox light

## User manual

Version v1.13

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# 1 Introduction

## 1.1 Version

This document is dated from the 8-Jul-14 and refers to the version v1.6.13 of the PRNetBox light.

## 1.2 PRNetBox light

The PRNetBox light is a simplified version of the PRNetBox. The biggest difference is that the PRNetBox light is built on a virtual machine which you can download separately at VMware (VMware Player).

The PRNetBox is an autonomous industrial PC

## 1.3 Purpose of this document

This document has been made for operators of the PRNetBox light and describes its basic functionalities.

It covers the data archive, trending, handling and display of alarms, setpoints, machine values, protocols, operating hours counter, data export, Meters, I/O values, password change and change of events.

Admin users, please consolidate the admin manual for details on the administration.

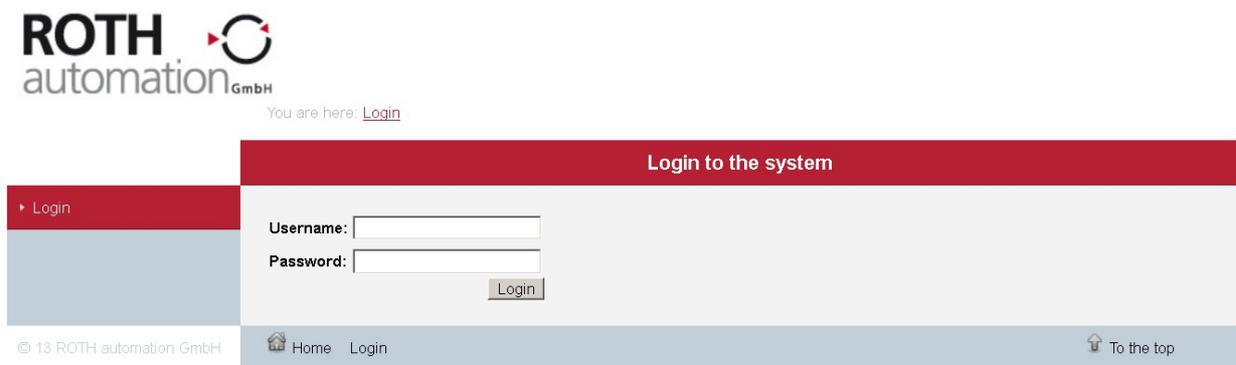
The declaration of conformity 21CFR Part 11 is also separately available.

## 2 Navigation

### 2.1 Login

Depending on the network configuration of the VMware Player the user interface of the PRNetBox light can have different addresses available. Generally, the user interface can be operated by using standard browsers like Mozilla Firefox, Microsoft Internet Explorer or the Google Chrome browser. To get the best result we suggest using the current Firefox version. You can reach the PRNetBox light as default on the website <http://192.168.2.40>.

In the following figure you see the login screen of the PRNetBox light. As operator you will be asked to enter a user name and password. You can change the languages in the upper right corner by clicking on the flags.



The screenshot shows the login interface for ROTH automation GmbH. At the top left is the company logo. Below it, a breadcrumb trail reads 'You are here: Login'. A prominent red banner across the top of the main content area says 'Login to the system'. On the left side, there is a vertical navigation menu with a 'Login' link. The central part of the page contains a login form with two input fields: 'Username:' and 'Password:'. Below the password field is a 'Login' button. The footer of the page contains the copyright notice '© 13 ROTH automation GmbH', a 'Home' link, a 'Login' link, and a 'To the top' link.

Figure1: Login

#### Note:

- ✦ If the password has been entered three or more times wrong the operator login will be locked for a timeframe of 30 minutes. This rule does also apply for the administrator.
- ✦ After the first login to the system the password needs to be changed.
- ✦ The administrator sets the aging of the password and he chooses if the password can be reused.
- ✦ The administrator sets after how much time of inactivity the operator will automatically be logged out from the system.
- ✦ Every attempt will be logged in the audit trail of the system and cannot be removed or changed.

## 2.2 Homepage (Home)

After a successful login at the system, the user with the privileges of an operator is going to see this homepage and menu:

You are here: [Home](#)

The screenshot shows the operator homepage. At the top, a red banner says "Welcome oper". Below it, the text "You are logged in as Operator." is displayed. A table lists system modules with their status and logfile information. The table has three columns: Module, Status, and Logfile. The modules listed are Driver, Harddisk, Remaining disk space, IP address PLC, IP address PRNetBox, Driver cycle, and Software version. The Driver and Harddisk modules show a green checkmark in the Status column. The Driver cycle module shows a red warning icon. The Software version section is a sub-table with columns for the component name and its version/date.

Module	Status	Logfile
Driver	✓	
Harddisk	✓	
Remaining disk space		0 Days
IP address PLC		192.168.2.30
IP address PRNetBox		PLC: 192.168.2.72 Client: 192.168.106.128
Driver cycle	!	Last cycle on 01/01/1970 01:00:00, seconds ago
Software version	web	v1.6.13 2014-06-18
	fs	2014-06-18
	db	v3.6
	treiber	v1.6.2
	System-ID	VM

At the bottom of the page, there are navigation links: Home, Logout, and To the top.

Figure 2: Homepage (Home)

### 2.2.1 Content

On the homepage you see the recent health status of the system.

You get an overview how much disk space you still have and how long this capacity will last without deleting any old data archives.

Errors with the mentioned modules would be displayed here, too. Therefore you can consolidate the error log. Please contact your administrator in this case.

### 2.2.2 Navigation header

On the very top of the webpage you can find the navigation header with some important features.

The screenshot shows the navigation header of the website. It includes the following elements: "Logged in as: oper", a "Logout" button, a search bar, a magnifying glass icon, and a row of flags representing different languages. Below the navigation header is the ROTH automation GmbH logo and the text "You are here: Home". At the bottom of the header area, a red banner says "Welcome oper".

Figure 3: Navigation header

### 2.2.3 Username and logout

On the left side you see the name of the current user. Next to it is the logout link where you can logout in case you are not at the machine to prevent any abuse.

### 2.2.4 Language

The language can be selected by clicking on one of the flag icons on the top of the page. The selected language will be active through the whole session. The selection will be saved when logging out. With the next login the language will be the same as in the moment the user has been logged out.

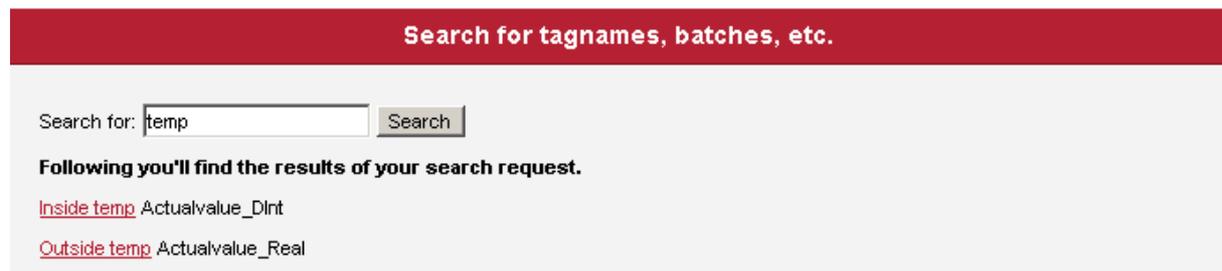
You can choose out of the following languages:

- German
- English
- French
- Spanish
- Portuguese
- Italian
- Dutch
- Polnisch
- Norwegian
- Czech
- Russian
- Chinese
- Swedish
- Serbian

English and German are provided in each version. Because of the continuous improvement of this system some texts are not translated into every language. If this is the case, the text will be shown in English.

Also in the navigation header you find the search field where you can enter the name of a data value, comment or description.

You are here: [Home](#)

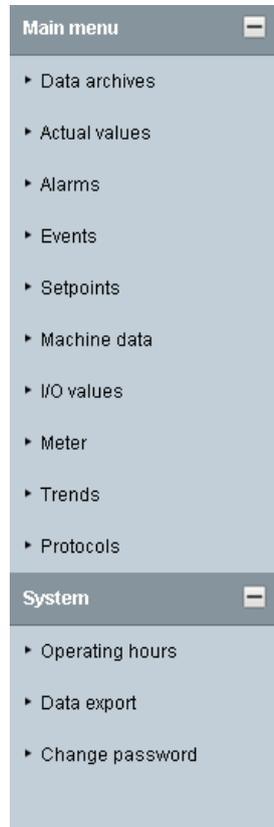


*Figure 4: Searching for „temp“*

You get a list of results. In the case shown below it has been searched for „temp“. Now you can click on the name of the data value in the result list and that brings you automatically to this data value in the data archive.

## 2.2.5 Navigation via the menu

The menu is on the left side of the webpage. Via the links listed you get to the specific themes. By clicking on the “+” or “-“ you can open and close the submenu.



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Figure 5: Main menu

## 2.2.6 Breadcrumbs navigation line

By clicking on the fields in the breadcrumbs navigation line you can get to the specific themes, too (You are here ...) and you can see where you are, respectively, how you get there. This is useful in cases you are already in the 4<sup>th</sup> or 5<sup>th</sup> level.

## 2.2.7 Footer

In the footer you find a link to the start page „home“, a logout button and an arrow to get back to the top of the page.



Figure 6: Footer

### 3 The data archive

Here you find all data values (tags) which have been setup by your administrator. For further information about how new data values will be collected automatically by the system, please refer to the admin manual.

#### 3.1 The data archive overview

Go to “Main menu” -> “data archives” to get the list of all tags and values (see also figure). Here you can see the name of the tag, its recent value in the PLC, its data type, its address in the PLC and a description of the tag.

You are here: [Home](#) > [Data archives](#)

Data archives				
Please click on the name to see details and statistics for the tag.				
				Search <input type="text"/>
Name	Address	Datatype	Act. value	Description
<a href="#">Actualvalue_Byte_3</a>	DB20.DBB0	Byte	12.0	N/A
<a href="#">Aktualwert_Byte</a>	DB20.DBB0	Byte	120 °C	Aktualwert_Byte
<a href="#">Aktualwert_Byte_4</a>	DB20.DBB0	Byte	0.000120	N/A
<a href="#">Aktualwert_DInt</a>	DB20.DBD4	Dinteger	1	Aktualwert_DInt
<a href="#">Aktualwert_Int</a>	DB20.DBW2	Integer	1	Aktualwert_Int
<a href="#">Aktualwert_Real</a>	DB20.DBD8	Real	1	Aktualwert_Real
<a href="#">Ausgang_Bit</a>	DB20.DBX49.1	Boolean	0	Ausgang_Bit
<a href="#">Event_1</a>	DB20.DBX48.0	Boolean	0	Event 1
<a href="#">Event_2</a>	DB20.DBX48.1	Boolean	0	Event 2
<a href="#">Event_3</a>	DB20.DBX48.2	Boolean	0	Event 3
Name	Address	Datatype	Act. value	Description

<< < 1 2 3 4 > >> Results per page: 10 ▼

Figure 7: Data archive- overview

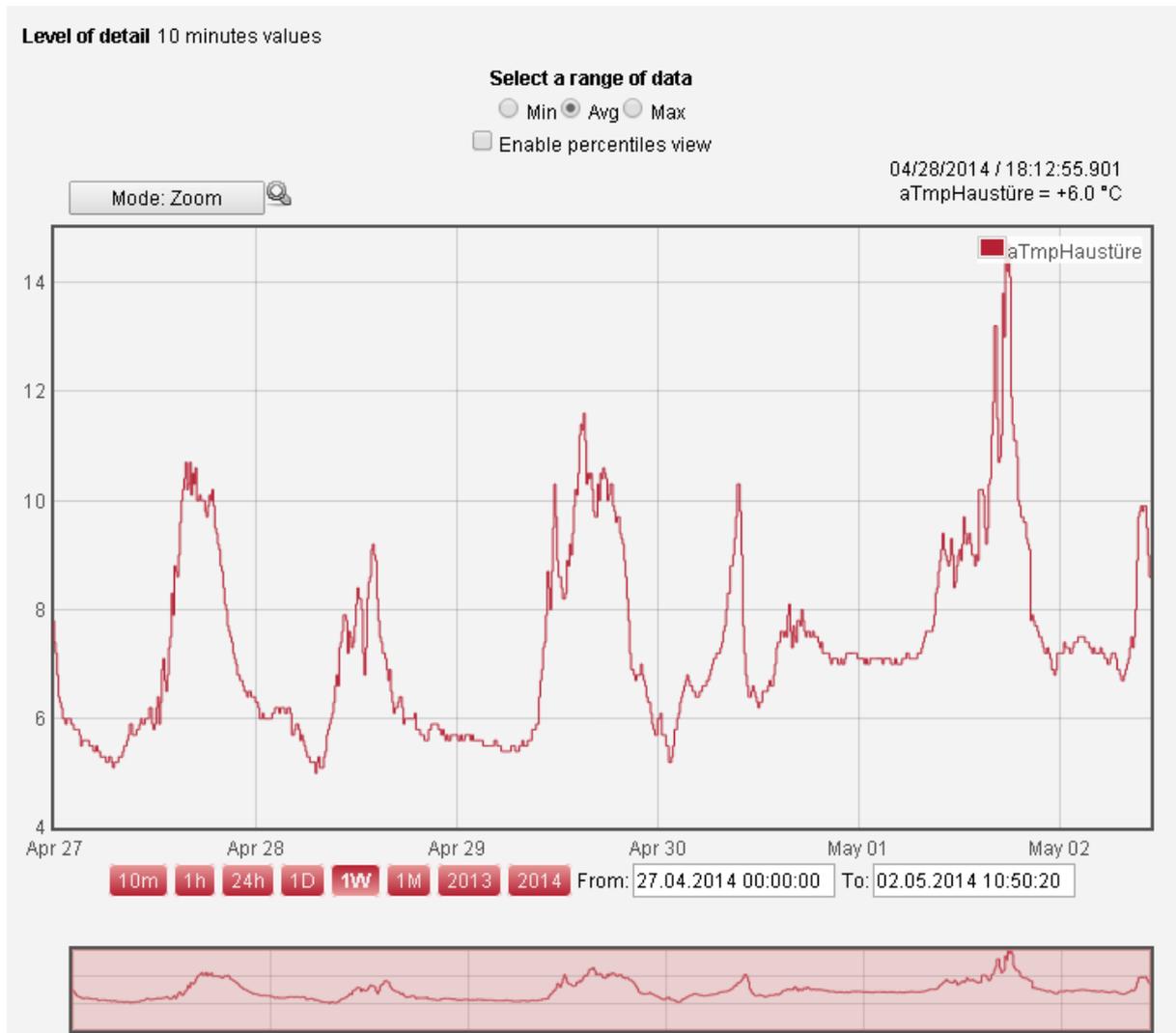
In the first column of the table you find a drop down menu. You can choose between different filters. You can filter the values by “setpoints”, “machine data”, “actual values”, “alarms”, “input/output” or “events”.

Also you can filter in the next drop down menu by data type. These two filters can also be combined. For example you could filter to see only “setpoints” with the type “Integer”.

In the search field you can search a tag by name or data block. In the drop down menu of the field “results per page” you can select your view of results.

### 3.2 Data archive – display of a data value

By clicking on the name of the data value you get to the detailed view where you can see all values as a trend. You can choose between minimum, maximum, average and actual values (see figure).



*Figure 8: Details for a temperature data value*

To every data value which has been configured, the archived data values can be shown. “Integer”, “Real”, “Byte” and “Boolean” values are displayed as trend in addition. Data values with the data type “String” are written as text.

The possibilities of this feature are explained in the next chapters.

### 3.2.1 Selection of the time frame

The observation time frame can be chosen by clicking on the different buttons. You have the following possibilities:

- The last 10 minutes
- The last hour
- The last 24 hours
- One day
- One week
- One month
- Last year
- This year
- Choose time frame manually

If you choose to choose the time frame manually, you can enter a start data and an end date in the calendar. You only have to click on the date to see the calendar. You also have the option to define the timeframe down to seconds as you can see in the next figure.

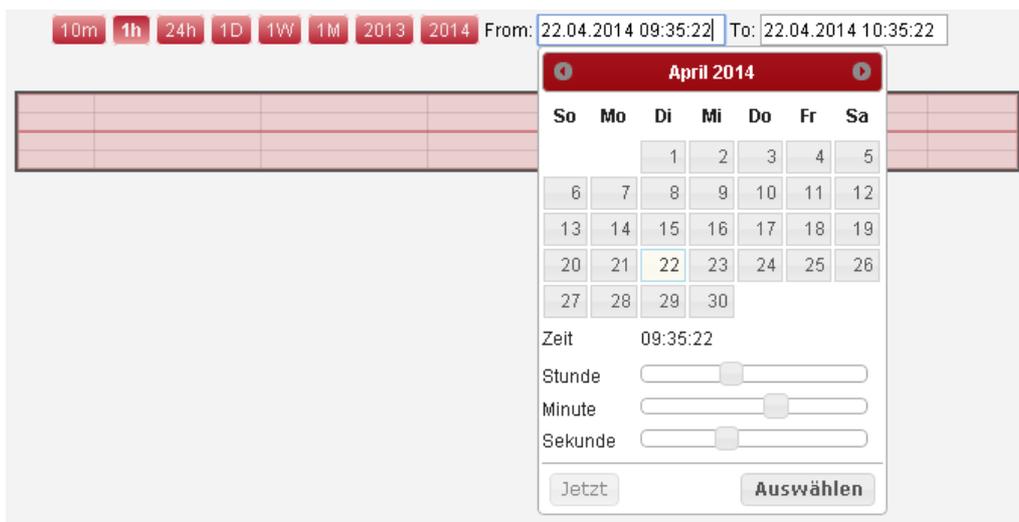


Figure 9 : Choose the date out of the calendar

Once the timeframe has been chosen, this time frame stays active also for the pages alarms, events, protocols and trends to prevent you from reentering the data all over again.

The shorter the timeframe is chosen the more precise is the display of the trend.

Following basic display settings are available and will be used automatically depending on the selected time frame.

The following table can only be used as reference how the data will be read. This can be different depending on the quantity of data in the chosen timeframe.

Just on top of the trend you can see which view is recently used.

### Timeframe

0 seconds – 60 seconds  
61 seconds – 60 minutes  
1 hour – 24 hours  
1 day – 7 days  
1 week – 1 month  
Longer than 1 month

### View

All available and recorded values in milliseconds.  
Average per second  
Average per minute  
Average of 10 minutes  
Average of 1 hour  
Average of a day

## 3.2.2 Selection of the timeframe with the „zoom“mode

Alternatively you can choose the timeframe also within the trend.  
Please note that you first have to make sure that you've select the „Zoom“ mode. In the figure you can see the button on the top of the trend on the left side.

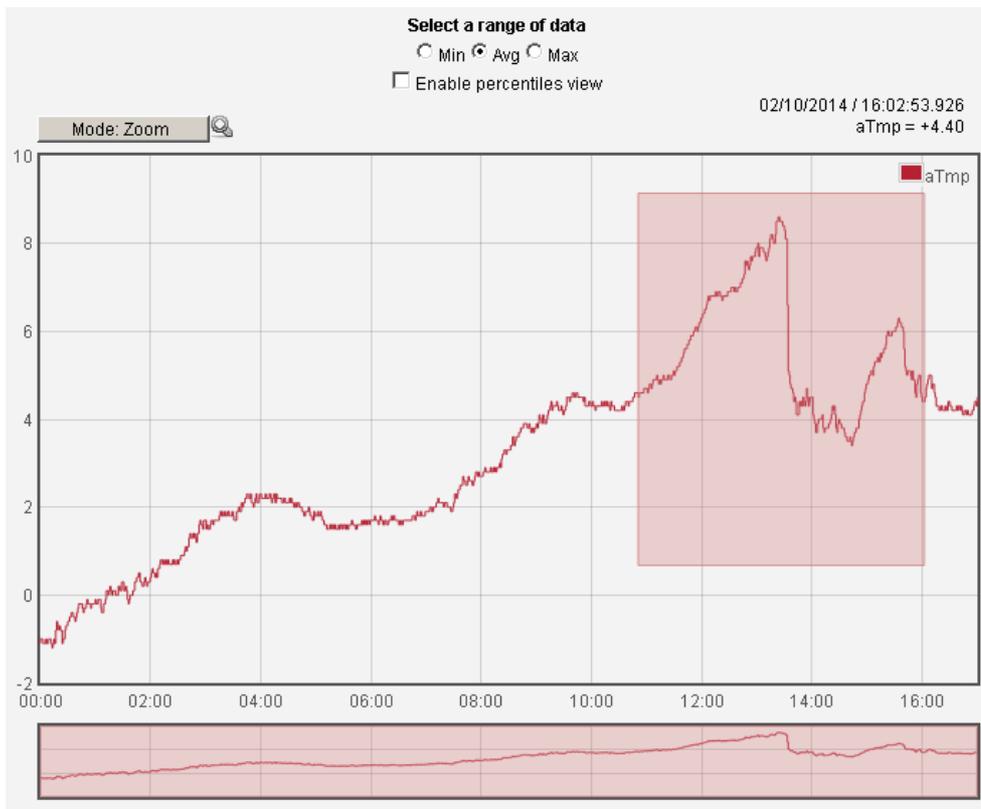


Figure 10: Select timeframe manually

First you choose a larger timeframe than you need and then you select the timeframe in the trend while holding the left mouse button. As soon as you loosen the mouse button the trend will be refreshed into the chosen selection.

On the top right side of the trend you can see the current date and the current value referring to the cursor position.

Alternatively you can select the timeframe in the overview on the bottom of the trend. Here you can only choose the timeframe not the scale.

## 3.2.3 Selection of the timeframe with the “move“ mode

As soon as you have clicked on the button “zoom” mode the “move“ mode function is going to be enabled. That means that you can swipe the trend left and right as you can on recent smart phones. You just have to click on the left button of your mouse and move it left or right.

### 3.2.4 Automatic update rate

You can choose the option to automatically refresh your data in a defined rate if you choose one of the following timeframes:

- The last 10 minutes
- The last hour

On top of the trend you can check a box with the description “enable monitoring view”. It is not possible to zoom in the “monitoring view”

If you would like to zoom into a timeframe, you can zoom before you choose this option.

If you check this box, you can choose how quick the PRNetBox will run an automatic update. The rates you can choose are 1, 2, 5 or 10 seconds.

If you go into the diagram with the mouse cursor, the value of its position will be shown. Depending on the update rate, the value will be overwritten as soon as the new value appears.

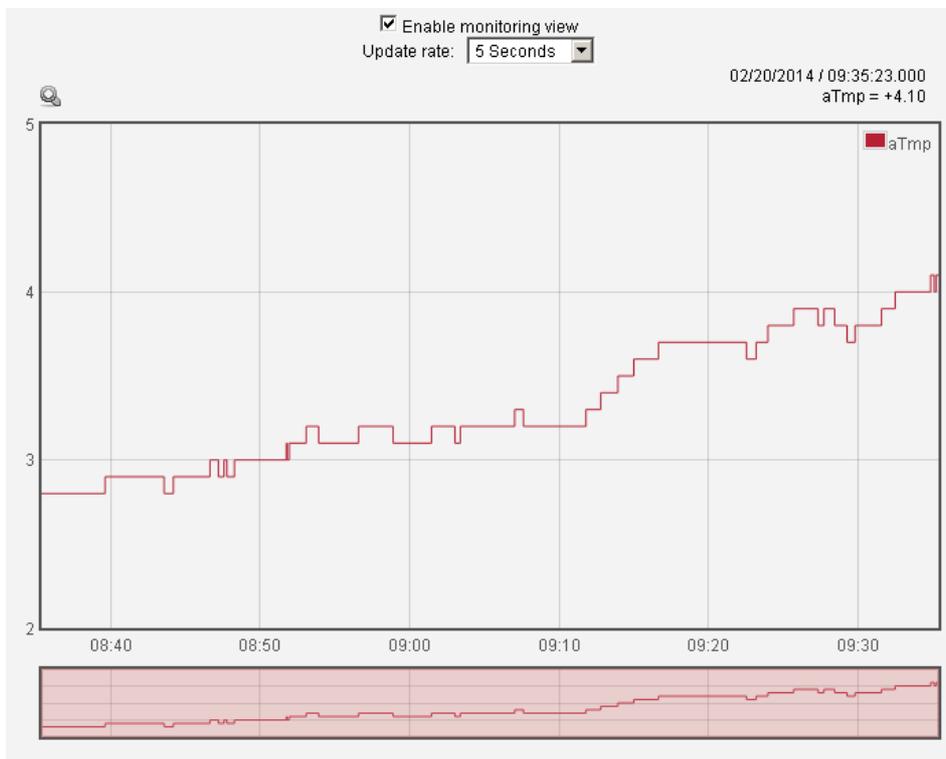


Figure 11: Monitoring view

### 3.2.5 Statistics of the chosen timeframe

The minimum, maximum, actual, and averages of the values that have been recorded in a timeframe are displayed in text form.

Additionally these values can be displayed in the trend according to the selection you've made (see figure)

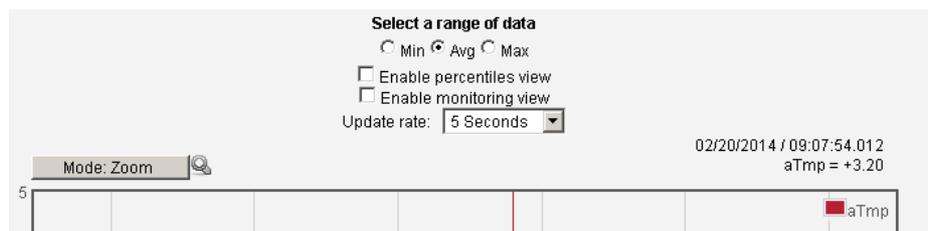


Figure 12: Different options to display the values in the statistic

### 3.2.6 Visualize the minimum – maximum section (“percentiles” view)

If you set the check the box “enable percentiles view“ you can see in which section the data has been recorded in a large timeframe (between the minimum and maximum values).

In the following figure you see a timeframe of +/- 8 days in the activated “percentiles” view. The red curve displays the average value of the data. The shadow shows where the data has been recorded.

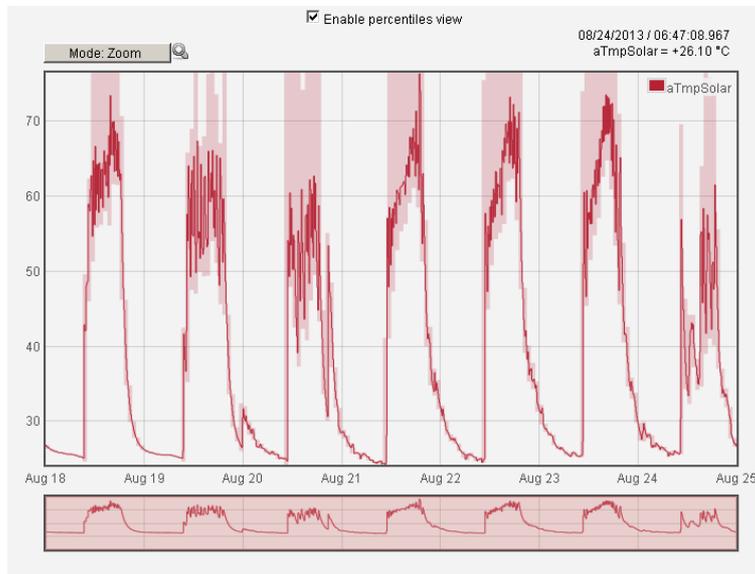


Figure 13: Percentiles view activated

If you zoom in to approx. one day, the data will be refreshed automatically and displayed as shown below.

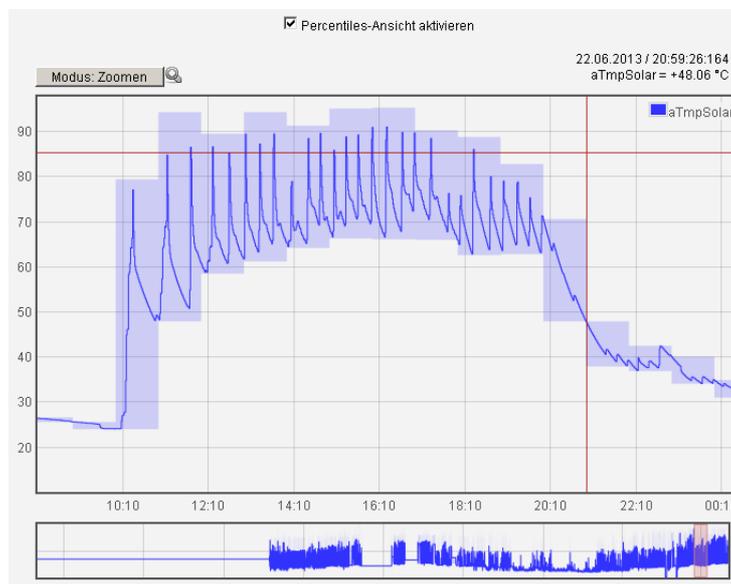


Figure 14: Zoom on day basis

### 3.2.7 Magnified view

With a click on the magnifier  you can enlarge the trend display for optimization of the print layout with the printer function of the web browser.

## 4 Actual values

Go to “Main menu” -> “Actual values” to see all current values for the actual value tags. In the overview you will see the name of the tag, the value, the unit and the description of the tag.

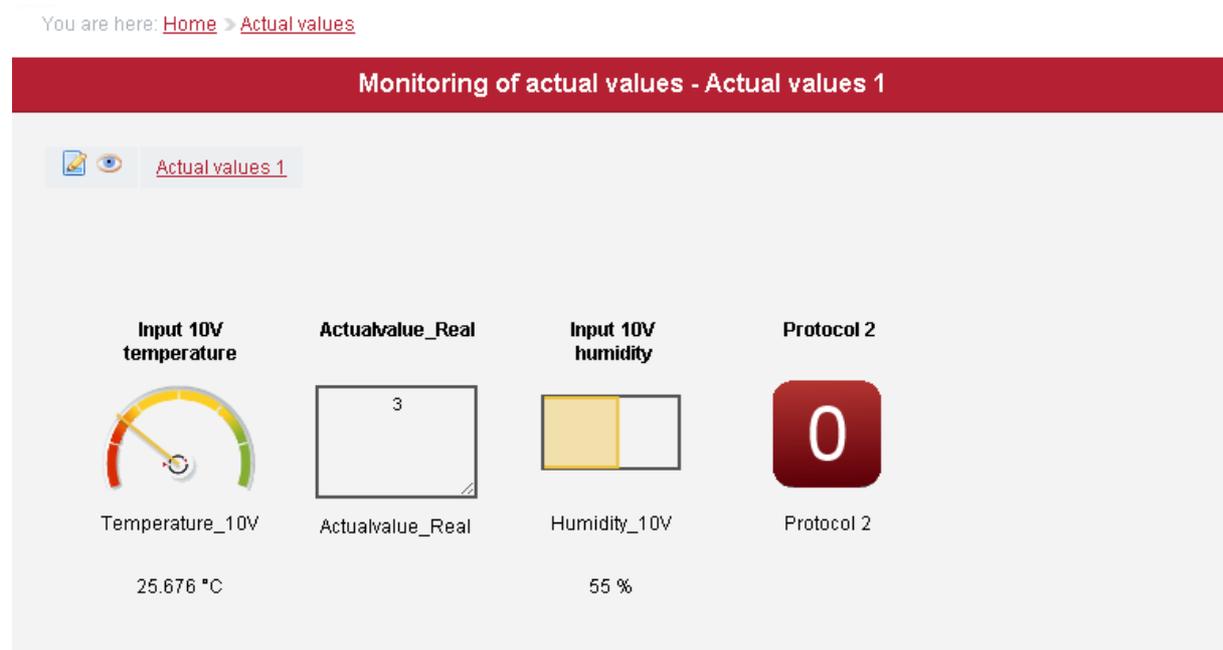


Figure 15: Actual values overview

The exceptionality of this page is, that the values are refreshing constantly automatically. So you do not have to press any refresh button to see the most current value of the tag!

The administrator defines which actual values will be displayed in this view. He can also decide which layout will be used for which actual value.

## 5 Alarms

Go to “Main menu” -> “Alarms” to get to the page where all the defined alarms are listed.

### 5.1 All errors of the timeframe

Similar to the data archive you can choose here a time frame of interest. Like this you can track the emerged alarms.

On the bottom of the page the alarms will be listed. At the moment the alarm raises the time will be logged and a red arrow will appear in front of the listed tag.

As soon as the alarm goes, the time will be logged again and a green arrow will appear in front of the listed tag.

Click on the red buttons for timeframe selection or enter a relevant date and time manually.

You are here: [Home](#) > [Alarms](#)

**All current errors and their last entries**

Here you can see the most recent errors and their last occurrence.

**Display type**  All errors of the timeframe  Actual errors

10m 1h 24h 1D 1W 1M 2013 2014 From:  To:

0 Seconds Search

Event	Alarm	Time
↓	<a href="#">Störung 2</a>	06/20/2014 07:46:34.416
↓	<a href="#">Störung 1</a>	06/20/2014 07:46:32.945
↓	<a href="#">Störung 3</a>	06/20/2014 07:46:32.209
↑	<a href="#">Störung 2</a>	06/20/2014 07:45:55.676
↑	<a href="#">Störung 1</a>	06/20/2014 07:45:55.361
↑	<a href="#">Störung 3</a>	06/20/2014 07:45:55.46

Results per page:

Figure 16: All errors of the timeframe

You have the following display options:

- Results per page
- Refresh rate: 5,10,30,60 seconds (0= no refresh)
- Search: by tag name
- Sort table: By clicking on the arrows in the table you can sort the content of the column decreasing or descending
- Link to diagram: Click on the red shaded text to go directly to the diagram of the tag

Note: Maximum 250 changes will be listed. You will get a message if you selected a time frame with more than 250 alarm messages.

### 5.2 Actual errors

If you only want to see all current alarms, select „Actual errors“ as display type.

## 6 Events

Go to “Main menu” -> “Events” to get to the page where all events are listed.

Events are defined by a rising or a falling edge of a bit. The administrator can define which bit should raise the event. Also he can define whether it should be raised with the rising or the falling edge of the bit. The log of the parameter can be defined separately for the rising or the falling edge. To one event an almost unlimited number of parameters can be defined.

For example a motor start or the start of a function could be defined as an event.

Sometimes it makes sense to define an alarm as event and to add a parameter.

For example if you would have an alarm defined for “temperature too high” it would make sense to log the temperature as parameter. Like this you see when the temperature went to high and what the value was.

### 6.1 All events in the timeframe

If you select this option you’ll see all events that have been logged in a specific time frame. Green “ON” icons illustrate the rising edge of the event. Red “OFF” icons illustrates the falling edge of the event.

You are here: [Home](#) > [Events](#)

### Events

Here you can see the last events occurred.

Display type  All events of the timeframe  Actual events

**10m** 1h 24h 1D 1W 1M 2013 2014 From: 07/08/2014 10:43:35 To: 07/08/2014 10:53:35

0 Seconds

E	Date	Description	Parameter
	07/08/2014 10:53:48	Valve water	
	07/08/2014 10:53:47	Valve water	
	07/08/2014 10:52:44	Steam injection	temperature: 60 °C
	07/08/2014 10:52:38	Motor machine 1	Rotation: 200 rpm

<< < 1 > >> Results per page: 25

Figure 17: All events of the timeframe

You have the following display options:

- Results per page
- Refresh rate: 5,10,30,60 seconds (0= no refresh)
- Search: by tag name
- Sort table: By clicking on the arrows in the table you can sort the content of the column decreasing or descending

Note: Maximum 250 changes will be listed. You will get a message if you selected a time frame with more than 250 alarm messages.

### 6.2 Actual events

If you select “Actual events” as display type, only the current event will be listed.

## 7 Setpoints

Go to “Main menu” -> “Setpoints” to get to the page for setpoints where you get an overview of all changed setpoints in a time frame of your choice.

Any tag (data value) can be set as a setpoint by the administrator. A setpoint is a tag which has a standard value in a specific function but can be changed sometimes to get different results in production. P.ex. the rotation of the motor.

You are here: [Home](#) > [Setpoints](#)

The screenshot shows the 'Setpoints' interface. At the top, there's a red header with the title 'Setpoints'. Below it, there are filter buttons for time intervals: 10m, 1h, 24h, 1D, 1W, 1M, 2013, 2014. To the right, there are input fields for 'From: 05/30/2014 11:38:59' and 'To: 05/30/2014 12:38:59'. Below the filters, there's a refresh icon and a dropdown menu set to '0 Seconds'. To the right, there's a search box. The main part of the page is a table with the following data:

Time	Name	From	To	User
05/30/2014 12:24:04	<a href="#">Setpoint Byte</a>	1 °C	50 °C	rafael

At the bottom of the table, there are navigation arrows: << 1 >>. To the right, there's a 'Results per page: 10' dropdown menu.

Figure 18: Changes in setpoints

You have the following display options:

- Results per page
- Refresh rate: 5,10,30,60 seconds (0= no refresh)
- Search: by tag name
- Sort table: By clicking on the arrows in the table you can sort the content of the column decreasing or descending
- Link to diagram: Click on the red shaded text to go directly to the diagram of the tag

Note: Maximum 250 changes will be listed. You will get a message if you selected a time frame with more than 250 alarm messages.

## 8 Machine values

Go to “Main menu” -> “Machine values” you get an overview about all changed machine values in a specific time frame of your choice.

Any tag (data value) can be set as a machine value by the administrator. A machine value is a tag which is a specific system setting which should normally only set once in the startup procedure of the machine.

You are here: [Home](#) > [Machine data](#)



The screenshot shows a web interface titled "Machine data". At the top, there are filter buttons for time intervals: 10m, 1h, 24h, 1D, 1W, 1M, 2013, and 2014. Below these are input fields for "From" (05/30/2014 12:32:02) and "To" (05/30/2014 12:42:02). A refresh button with a green arrow and a dropdown menu set to "0 Seconds" are on the left. A search bar is on the right. The main content is a table with columns: Time, Name, From, To, and User. The table contains one row with the following data:

Time	Name	From	To	User
05/30/2014 12:41:32	<a href="#">Machinevalue_Int</a>	20	30	admin

Figure 19: Changes in machine values

You have the following display options:

- Results per page
- Refresh rate: 5,10,30,60 seconds (0= no refresh)
- Search: by tag name
- Sort table: By clicking on the arrows in the table you can sort the content of the column decreasing or descending
- Link to diagram: Click on the red shaded text to go directly to the diagram of the tag

Note: Maximum 250 changes will be listed. You will get a message if you selected a time frame with more than 250 alarm messages.

## 9 I/O values

Go to “Main menu” -> “I/O values” to get an overview about all changed I/O values in a specific time frame of your choice.

Any tag (data value) can be set as an I/O value by the administrator.  
I/O values are used for observation of inputs and outputs of the PLC.

You are here: [Home](#) > [I/O values](#)

### I/O values

10m 1h 24h 1D 1W 1M 2013 2014 From: 07/01/2014 00:00:00 To: 07/01/2014 00:01:00

0 Seconds

Time	Tagname	Values
07/01/2014 00:00:23.077	<a href="#">Temperature_10V</a>	24.591 °C
07/01/2014 00:00:23.182	<a href="#">Temperature_10V</a>	24.626 °C
07/01/2014 00:00:40.822	<a href="#">Temperature_10V</a>	24.615 °C
07/01/2014 00:00:40.927	<a href="#">Temperature_10V</a>	24.626 °C

<< < 1 > >>

Results per page: 25

Figure 20: I/O values

You have the following display options:

- Results per page
- Refresh rate: 5,10,30,60 seconds (0= no refresh)
- Search: by tag name
- Sort table: By clicking on the arrows in the table you can sort the content of the column decreasing or descending
- Link to diagram: Click on the red shaded text to go directly to the diagram of the tag

Note: Maximum 250 changes will be listed. You will get a message if you selected a time frame with more than 250 alarm messages.

## 10 Meter

Go to “Main menu” -> “ Meter” where you can see the configured meters in certain time ranges. Any data can be added to the meters and any meters can be configured. Therefore you need admin rights. Please also look up the admin user guide.

You are here: [Home](#) > [Meter](#)

### Meter

This page shows the configured meters for a chosen timeframe. Loading this data might take a long time depending on the chosen timeframe and the interval.

**10m** **1h** **24h** **1D** **1W** **1M** **2013** **2014** From:  To:

Load data:   
Download as CSV file: 

#### Meter group Machine 1

Search

Time	Actualvalue_Byte [°C]	Actualvalue_Byte Difference [°C]
05/30/2014 13:43:50	50	0
05/30/2014 13:43:00	50	10
05/30/2014 13:42:00	40	0
05/30/2014 13:41:00	40	0

Figure 21: Data list meter

On this page you can lookup easily important data and the differences of values.

Therefore choose the range in the drop down menu and click on refresh. To lookup the data on the screen click on “Load data”. You can also choose to download the data as CSV file.

# 11 Trends

## 11.1 Add a new trend

Go to “Main menu” -> “Trends“ to get to the page where you can add and edit trends. You can now choose a name for your trend. This name will be used in the listings. If you choose a name which already exist you’ll get a warning. The entry of a name is obligatory.

You are here: [Home](#) > [Trends](#)

**Create new trends**

Here you can add new trend names. Please choose a name under which you can access this trend later.

**Name**

**Share trend**

**Comment**

Figure 22: How to add a trend

If you check the box “Share trend” every user can see your trend configuration. If not, only you will have access to the trend.

Also you can add a comment to explain the trend further.

To save the new trend, hit “Create”.

Now that the trend has been added you’ll get a table below the entry fields.

Here you see the name, the comment and also whether the trend is shared or not.

Sie sind hier [Home](#) > [Trends](#)

**Trends zusammenstellen**

Hier können Sie den Namen eines neuen Trends festlegen. Legen Sie hierfür einen Namen fest um später auf diesen Trend zugreifen zu können.

**Name**

**Trend freigeben**

**Kommentar**

	Name	Kommentar	Teilen
	New trend		

Figure 23: The first trend

This new trend does not have any data values linked to it.

To add data tags to the trend, click on the edit icon on the left side of the trend name. This is explained in the next chapter in more detail.

To delete the trend click on the delete icon left to the name of the trend. You will be asked if you really want to delete the trend.

To display the trend, just click on the trend name. If no data tags are linked yet you can’t click on the name, because the trend is still inactive.

## 11.2 Link tags to a trend

After clicking on the „edit“-icon left to the name of a trend configuration an input form to add new tags will be shown.

You are here: [Home](#) > [Trends](#) > [Configuration of trends](#)

**Configuration of trends**

<b>New value</b>	<input type="text" value="-- Please choose --"/>	Please choose the tag you want to see on the trend.
<b>Color</b>	<input type="text" value="00FF00"/>	The color of this curve
		
<b>Multitrend group</b>	<input type="text" value="0"/>	Shall the values of this tag be viewed on the same trend as other tag values? Do you want to have more than one tag on the chart? If yes, please enter a value between 1 and 20 which represents the multitrend group. Enter 0 in case you want to have only this tag on one chart.
<b>Y-Scale Minimum</b>	<input type="text" value="0"/>	Do you want to scale the value range? Please enter a minimum value where the data range should end.
<b>Y-Scale Maximum</b>	<input type="text" value="0"/>	Do you want to scale the value range? Please enter a maximum value where the data range should end.
<input type="button" value="Add value to trend"/>		

Figure 24: Link tags to a trend

In the drop down "New value" menu you get a list of all configured tags in the system (except data values of data type „String“).

If you click in the color field you get a big range of available colors to choose the color for the data of the tag in the trend.

You are here: [Home](#) > [Trends](#) > [Configuration of trends](#)

**Configuration of trends**

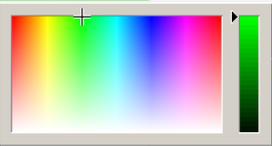
<b>New value</b>	<input type="text" value="-- Please choose --"/>	Please choose the tag you want to see on the trend.
<b>Color</b>	<input type="text" value="00FF00"/>	The color of this curve
		
<b>Multitrend group</b>	<input type="text" value="0"/>	Shall the values of this tag be viewed on the same trend as other tag values? Do you want to have more than one tag on the chart? If yes, please enter a value between 1 and 20 which represents the multitrend group. Enter 0 in case you want to have only this tag on one chart.
<b>Y-Scale Minimum</b>	<input type="text" value="0"/>	Do you want to scale the value range? Please enter a minimum value where the data range should end.
<b>Y-Scale Maximum</b>	<input type="text" value="0"/>	Do you want to scale the value range? Please enter a maximum value where the data range should end.
<input type="button" value="Add value to trend"/>		

Figure 25: Choose a color for the curve of the tag in the trend

For every trend configuration you can add up to 20 tags.

The field "multitrend group" allows to add several tags in one group so you can see them in one trend. You can choose any number in this field. Each tag of "multitrend group" 0 is shown in a single chart.

The fields "Y-Scale Minimum" and "Y-Scale Maximum" set the Y-Scale minimum and maximum values. For automatic scale range determination enter "0" in both fields.

Through clicking on the button "Add value to trend" the trend will be modified and you can access your new trend. The trend you've added will be shown in the list below the mask for the configuration of a trend.

**Configuration of trends**

**New value** -- Please choose -- Please choose the tag you want to see on the trend.

**Color**  The color of this curve

**Multitrend group** 0 Shall the values of this tag be viewed on the same trend as other tag values? Do you want to have more than one tag on the chart? If yes, please enter a value between 1 and 20 which represents the multitrend group. Enter 0 in case you want to have only this tag on one chart.

**Y-Scale Minimum** 0 Do you want to scale the value range? Please enter a minimum value where the data range should end.

**Y-Scale Maximum** 0 Do you want to scale the value range? Please enter a maximum value where the data range should end.

Already configured values for this trend

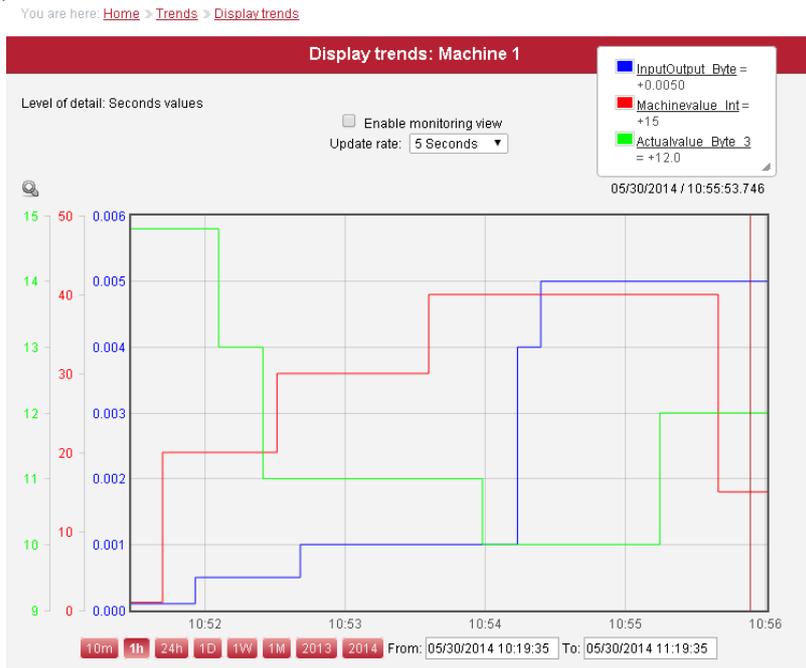
	Tagname	Color	Multi group	Scale minvalue	Scale maxvalue
	InputOutput_Byte		1	0	0

Figure 26: Trend configuration

A tag can be removed from the trend configuration by clicking on the “delete” icon in front of the tag name. A tag configuration can be changed or modified by clicking on the “edit” icon accordingly.

### 11.3 Lookup trends

Through clicking on the configured trend name you get to the display of the trend with all configured tags, their colors, scales and values.



In the example shown in the figure three data tags have been assigned to the same multitrend group, though they are shown in one trend. The timeframe shown can be chosen by changing the “Range” selection or using the zoom functionality of the trend.

## 12 Protocols

Go to “Main menu” -> “Protocols” where the list of all protocols is shown.

Protocols can be issued for different purposes. The main purpose is to make a protocol for an automatic run, for example a recipe of a product or a batch.

The PRNetBox can save an almost unlimited quantity of protocols and several protocols can be saved simultaneously.

The information that is going to be recorded in the protocol is defined by the administrator.

Following details are in disposal for configuration:

- Alarms
- Events
- Changes in setpoints
- Changes in machine values
- All values the system records can be shown in the header of the protocol
  - A certain value at the beginning of the protocol
  - At the end of the protocol
  - The difference between begin and end in case of numeric values
- All kinds of trends for all data values recorded in the system. You can choose to add several data values in one trend or configure different data values in separate trends
- Meter readings in defined time intervals. Also the difference to the last value can be calculated

Since you have the option to issue several different configured protocols simultaneously you have the possibility to get protocols with different details.

### 12.1 Protocol overview

As you can see in this figure you see on the link for protocols the overview over all recorded protocols. This overview shows all protocols of a certain timeframe. The start of the protocol counts for selection.

You are here: [Home](#) > [Protocol](#)

**Batch protocols**

Here you find an overview of all batch protocols of the last time. Please click on the corresponding ID to view the details on this protocol.

10m 1h 24h 1D 1W 1M 2013 2014 From:  To:

Search

ID	Start time	Finish time	# Events	# Errors	
<a href="#">Protokoll 1</a>	05/30/2014 13:54:43	05/30/2014 13:56:30	2	1	
ID	Start time	Finish time	# Events	# Errors	

<< 1 >>

Results per page: 10

Figure 27: protocol overview

In the overview the following information is listed: the batch number, the batch name, the date and time the protocol started and ended. The quantity of events and the quantity of alarms are also shown in the overview.

Through the link of the protocol name, e.g. „mid night” you can see the details of the protocol. By clicking on the pdf icon you can download the protocol as pdf file, save or print it.

All protocols are saved on a network share on the PRNetBox. You can access this drive via the IP address or via the configured name in the system. This share is not password protected. The network share is write-protected, nothing can be changed. The network drive suits perfectly for automated backup of all protocols by a company own data server.

## 12.2 Protocol details

If you click on the red shaded protocol name you get to see all details of your protocol. It contains the same data as if you download your protocol as pdf document. But here you can select in the drop down menu “Show” which information you would like to see (setpoints, events, alarms, actual values). In case of large protocols with many header information, this can be useful.

You are here: [Home](#) > [Protocol](#) > [Details on a protocol](#)

Batch protocol

Show All

**Start time** 05/30/2014 13:54:43  
**Finish time** 05/30/2014 13:56:30  
**Runtime** 1 Minutes 47 Seconds

**Actualvalue\_Byte (Begin)** 50 °C  
**Actualvalue\_Byte (End)** 50 °C  
**Actualvalue\_Byte (Difference)** 0 °C  
**InputOutput\_Byte (Begin)** 0.0050  
**InputOutput\_Real (Begin)** 1.111000  
**InputOutput\_Real (End)** 33.333000  
**InputOutput\_Real (Difference)** 32.222000  
**(Begin)** admin  
**(End)** admin  
**N/A (Begin)** 5.0  
**N/A (End)** 5.0  
**Actualvalue\_Byte 4 (End)** 0.000050

Time	Actualvalue_Byte	°C used
Start time	50	0
13:55:00	50	0
13:56:00	50	0
Finish time	50	0

Type	Time	Description	Values
Event	05/30/2014 13:55:07	<span style="color: green;">●</span>	Setpoint_Byte: 100 °C Actualvalue_Byte: 100 °C Output_Bit: 0
Event	05/30/2014 13:55:08	<span style="color: green;">●</span>	Setpoint_Byte: 100 °C

Figure 28: details of a protocol

## 13 Operating hours counter

Go to “System” -> “Operating hours” to see the configured meters.

The operating hours counter help to determine when the next service needs to be done for specific elements. The table shows the tag name, the description, the sum of hours, the set limit and the total of the operating hours.

A green check mark illustrates that the limit which has been set by the administrator has not been reached yet. A red exclamation mark means that the limit has been exceeded.

After that the service has been done, the administrator sets the count of hours (sum hours) back to zero (see admin user manual).

You are here: [Home](#) > [Operating hours](#)

Operating hours counter						
The following table shows the operating hours for several resources. It is advisable to perform maintenance in case the time of operation is above the limit.						
						Search <input type="text"/>
Tagname	Description	Sum hours	Limit	Overall		
Event 1	Event 1	1	5000	1		✓
Event 2	Event 2	0	0	0		!

Figure 29: Operating hours counter overview

## 14 Data export

Go to “System” -> “Data export” to download data of a certain period.

### 14.1 Export configuration

In the drop down menu “**Range**”, you choose which timeframe you would like to look up. For example: The 4th december 2012 until the 5th of december 2012)

The drop down menu “**Timeframe**” sets the data density (e.g. second- or hour- or day averages)

The drop down menu “**Configuration**” gives you the possibility to choose which tags you would like to export. As default you can only choose “Export all tags”. But it is possible to setup configurations which consist user defined „tags“. Those customized definitions would then be available in the drop down menu (see next chapter)

In the section “**Others**” you can choose to export “Setpoints”, “Machine values” or “Actual value” tags by checking the specific box.

Click on “**Start data export**” to run the export.

You are here: [Home](#) > [Data export](#)

**Data export**

10m 1h 24h 1D 1W 1M 2013 2014 From: 01.04.2014 00:00:00 To: 22.04.2014 11:02:47

**Timeframe** Second averages ▼

**Configuration** Export all tags ▼

**Others**

Setpoints

Machine data

Actual values

You've chosen a timeframe from 04/01/2014 00:00:00 to 04/22/2014 11:02:47. Only data recorded in the chosen timeframe will be exported.

Figure 30: Data export configuration

### 14.2 Setup configuration

The configuration setup can be found below the export data fields.

With configurations you can export specific tags. A name has to be specified in order to create a new data export configuration. Click on “Create configuration”.

You are here: [Home](#) > [Data export](#)

**Data export**

10m 1h 24h 1D 1W 1M 2013 2014 From: 01.04.2014 00:00:00 To: 22.04.2014 11:02:47

**Timeframe** Second averages ▼

**Configuration** Export all tags ▼

**Others**

Setpoints

Machine data

Actual values

You've chosen a timeframe from 04/01/2014 00:00:00 to 04/22/2014 11:02:47. Only data recorded in the chosen timeframe will be exported.

**Name**

**Comment**

Figure 31: Setup a new configuration for export

The new configuration appears below the entry fields.

Figure 32: Edit new configuration

If you click on the “edit” icon you can add the tags you wish to add. You can add several tags to the configuration.

You are here: [Home](#) > [Data export](#) > [Setup data export](#)

Figure 33: Add tag to create a new value to the configuration

### 14.3 Download of export files

Once the data export has been started, the export task is shown on the bottom of the page

Start time	From - To	Finished?	Export done	Download
07/01/2014 11:36:52	07/01/2014 10:36:52 - 07/01/2014 11:36:52	Yes	07/01/2014 11:36:53	
07/01/2014 11:37:01	07/01/2014 10:37:01 - 07/01/2014 11:37:01	No	Still running	

Figure 34: Export is running

As soon as the export has been finished, you can download the data. You can see that in the last three columns.

The data is provided in „csv-format“.

## 15 Change password

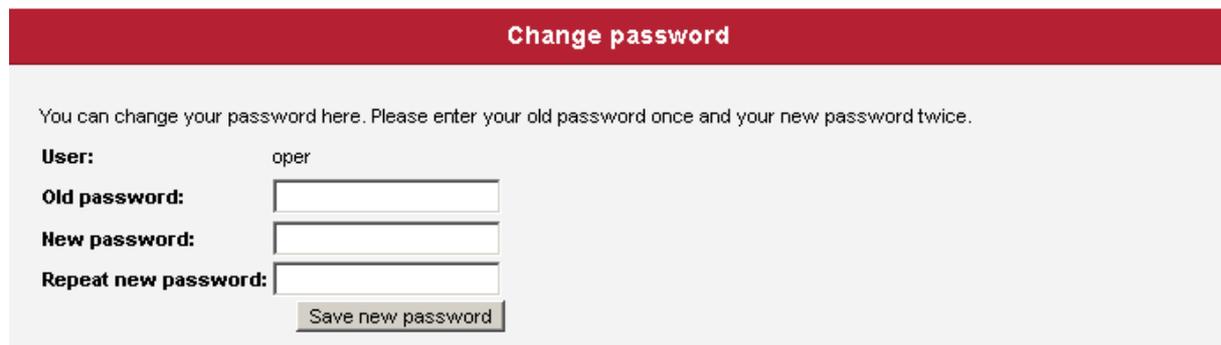
Go to “System” -> “Change password” to get to your password configuration.

It is mandatory to change your password on regular basis to prevent the access of others.

Therefore you can click in the menu on “change password”. As you can see in the following figure you have to enter your old password to be able to define a new password.

In case your password has expired or the system time has been changed, you have to enter a new password. Or sometimes the login gets blocked. Please contact your administrator in case of difficulties.

You are here: [Home](#) > [Change password](#)



The screenshot shows a web interface for changing a password. At the top, there is a red header bar with the text "Change password" in white. Below the header, a light gray box contains the following elements: a paragraph of instructions, a "User:" label with the value "oper", and three input fields labeled "Old password:", "New password:", and "Repeat new password:". A "Save new password" button is located at the bottom of the form.

*Figure 35: Change password*

The new password is activated by clicking on “Save new password”.

## 16 Glossary

Tag	A data value in the plc control which has an address assigned, like DB1.DBX0.1.
PRNetBox	Protocol and recipe management with a PC Box (IPC) which has been plugged into the network
IPC	Industrial PC