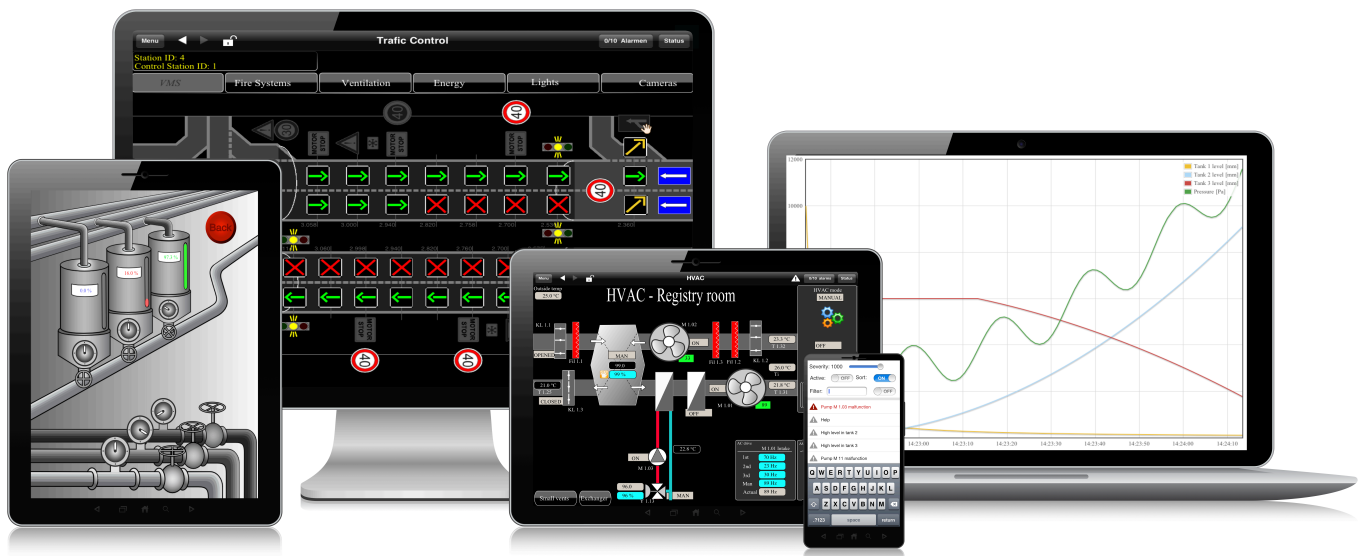


mySCADA User Manual



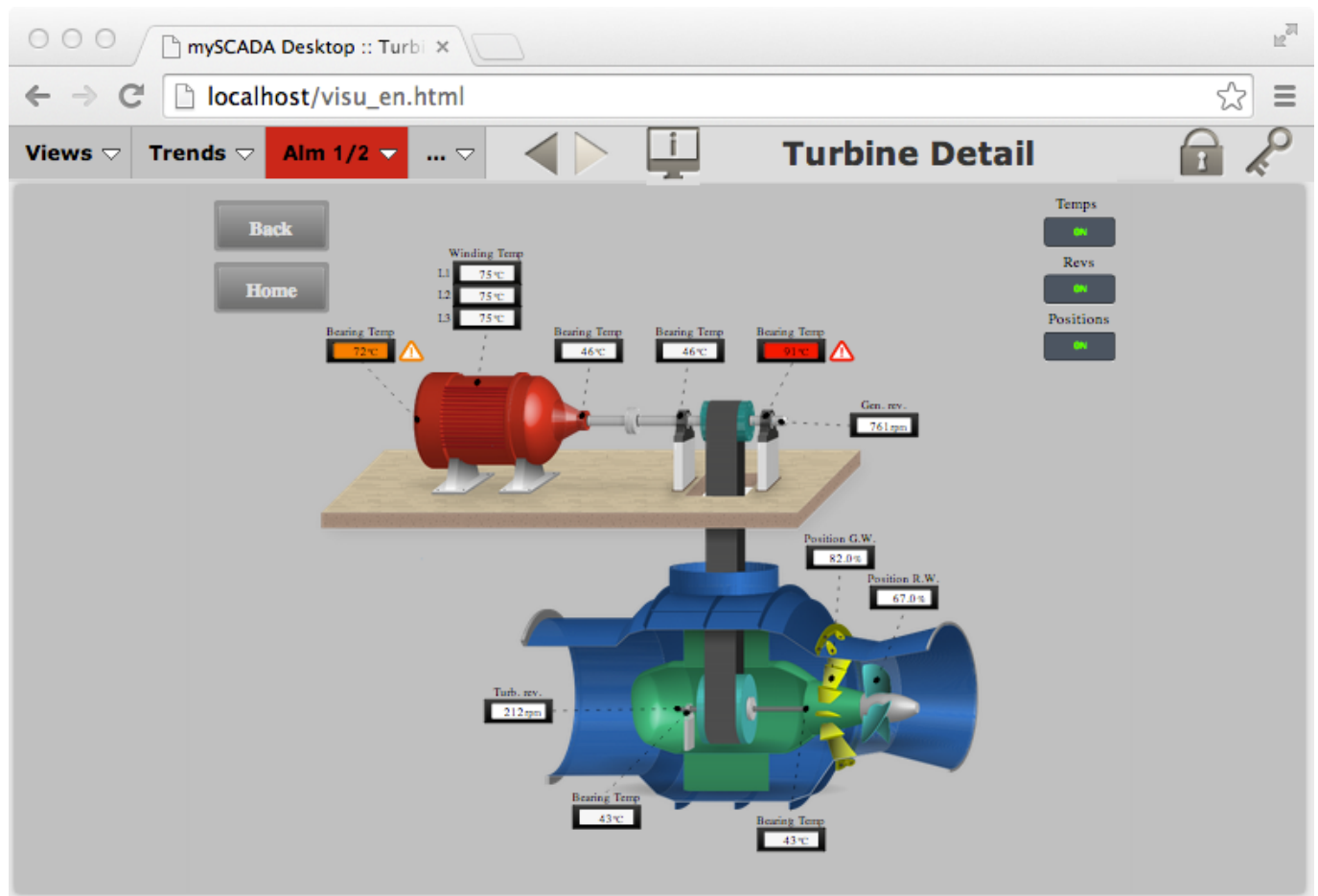
Version: 6.2.6

Date: 10.6.2014

The graphical user interface (GUI) of mySCADA system is based on standard web pages. That means any web browser installed in your computer, such as MS Internet Explorer, Apple Safari, Firefox, Chrome, etc. can view it. To access the GUI simply enter the correct IP address of the device in your web browser's Address Tool Bar.

5.1 The main screen - SCADA/HMI views, trends & alarms

Creating a visual representation of the system that the mySCADA will be monitoring simplifies the management of the project. Given the user the capability to create mimic graphics with animations, the observation of your systems operation can be done via a web browser installed in your computer.



The main toolbar is located in the upper part of the main screen and is divided into these parts:



1. **Main menu** in which you can switch between available visualization views, trends and active alarms stored in the particular mySCADA unit.
2. **Zoom slider** – Provided there a visualization showed in the web browser screen, it can be easily resized by sliding the zoom bar. When a view is large, it is possible to “zoom in” it in order to see the visualization view in more details. Drag the slider to the left to zoom out (shrink), or to the right to zoom in (enlarge). The actual level of zoom is indicated by percent (10% to 1000%).

TIP: You can also zoom using your mouse wheel or track pad.

3. **General menu settings** – By clicking on **Wrench tool** in the right corner of the main toolbar, you can login into the settings part of the mySCADA Box.

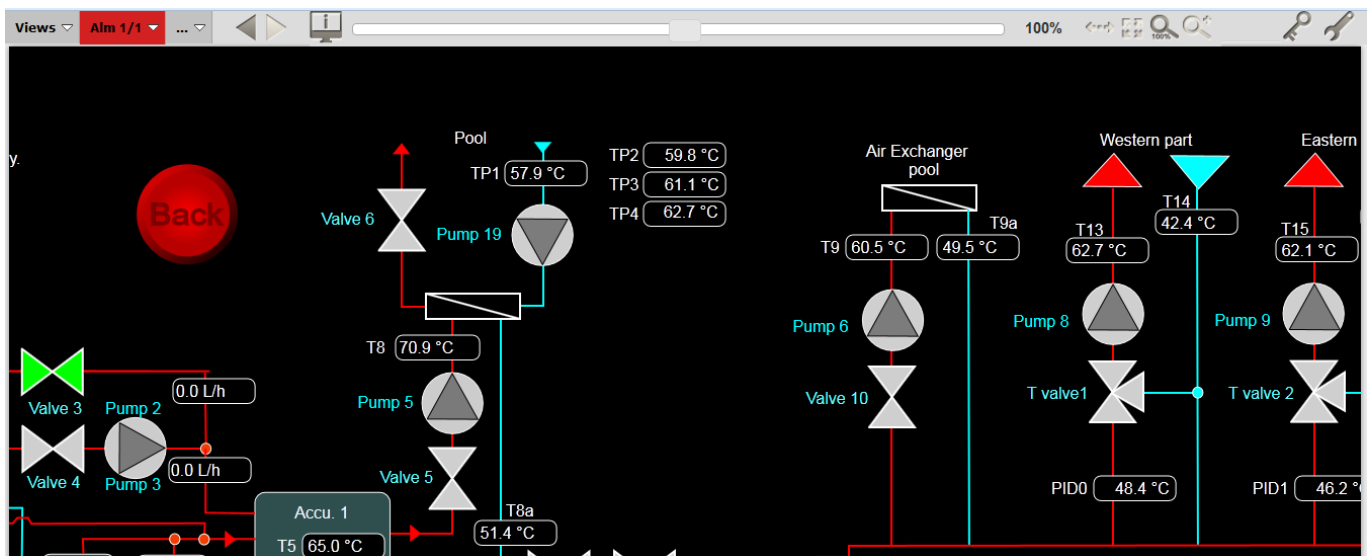
On the left and right of the zoom slider, there are three icons whose functions are described below:

Icon	Description
	By clicking on this icon you will get general information about the current loaded visualization view and its associated TAGs.
	The padlock shows whether writing into PLCs is allowed or not. Click on the padlock to lock/unlock writing.
	Allows login into HMI for registered users. Depending on the set rights, the logged user can view HMI, write values, acknowledge alarms and also set up advanced configuration. Users' accounts creation and management is described in manual for myPROJECT Designer.

5.1.1 Visualization views

The possibilities are virtually endless when choosing how you would like to represent the overall design of your system. Simple page elements are incorporated into the complete design and depending on the amount of effort put into the fabrication of the representation, a very detailed system imitation can be achieved.

Such detailed visualization screens can be easily created by a powerful software tool **myPROJECT Designer** which is available for downloading at www.myscada.org free of charge. The final result can, for example, look like this:



Once there is a visualization view showed, you can operate the zoom in four options (this is available in menu Mode):

Icon	Description
	Full width – visualization is enlarged/shrunk to fit the width of browser window
	Fit to page – a view is zoomed to show its entire content in the window
	Original size – zoom is set to 100%
	Manual size – a view can be resized using the zoom slider

Tip: you can also easily resize the view by turning a mouse wheel.



If you click on the the info icon you can see detailed info about the visualisation. This page contains global info (such as number of defined tags, refresh period ...), list of loaded tags and list of variables with their current values. It may be useful when you are debugging your project.

Info about view

Global preview

Number of defined tags	3
Refresh period	100ms
Data updated at	December 16 2013 12:39:17
Script status	OK

Tags list

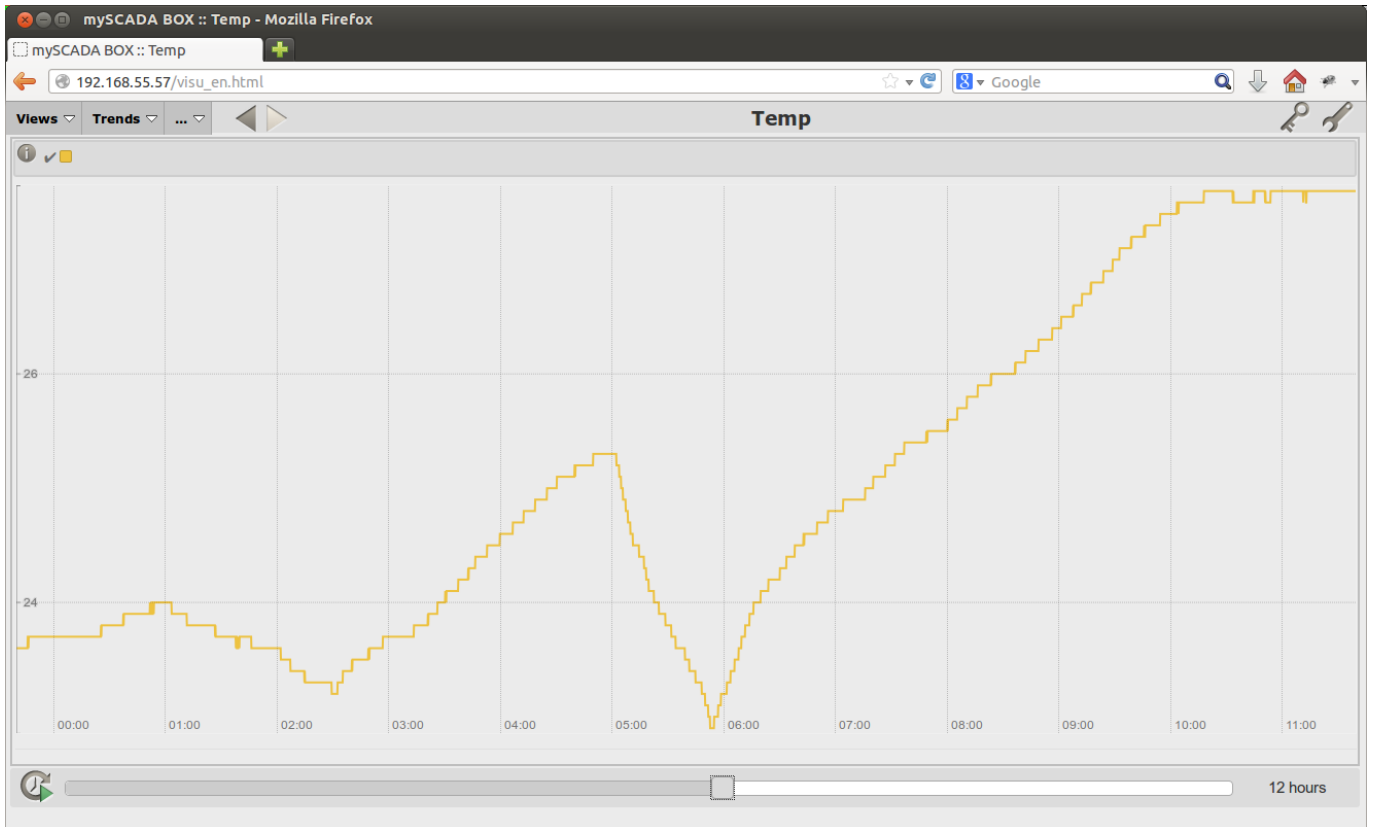
Tag address	PLC name	Value	On-line	Status
H:48	comet	27.6		OK
H:0.0	wago	0		OK
H:0.1	wago	0		OK

Variables

Name	Value
------	-------

5.1.2 Trends

Visualization of trends can be vital when monitoring your system. Trends allow tag values to depict certain patterns that may be dangerous. For trend correct operation, the recording of current and previous values is needed. The displayed data are loaded from the inner memory of the unit.

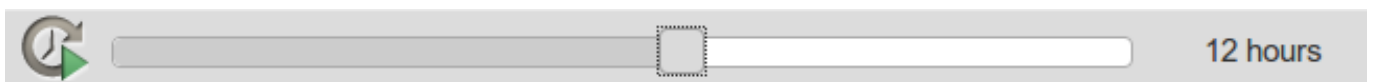


There are two possible ways how to visualize trends:

1. **Online** - data is shown starting from the current value
2. **History** - data is shown from a certain entered date

Online Mode:

Time range showed in a trend can be easily changed in the bar bellow the actual graph. Drag the slider to change the time range shown (from 1 minute up to 1 year)



Setting custom time interval:

When you click on a time interval on the right, you will be presented with a dialog enabling you to set up custom time interval for viewing.

Set interval
✕

0d 00:05:00

Days:

Hours:

Minutes:

Seconds:

History Mode:

Switch to history mode is done by clicking on the timer icon in the lower left corner.



In this mode, you can specify a date range in which data will be shown - click on a date to set:

A dialog box titled "Start time" with a close button (X) in the top right corner. Inside the dialog, there are two input fields labeled "From:" and "To:". Below these is a calendar for "June 2014". The calendar shows days of the week (Su, Mo, Tu, We, Th, Fr, Sa) and dates (1 to 30). The date "10" is highlighted. Below the calendar, there are time selection fields: "Time" (displaying "22:10:00"), "Hour", "Minute", and "Second", each with a corresponding input field and a slider. At the bottom, there are two buttons: "Now" and "Done".

By clicking on the left and right arrows, it is possible to change the date in accordance with already set Time range. Clicking on a left most arrow will show first records available, clicking on a right most icon will show latest records available. Again by clicking on a time interval on the right, you will be presented with a dialog enabling you to set up custom time interval for viewing.

Info: Maximum of 10 000 values can be shown in one trend at one time. If there is more than 10 000 values in selected Time range, the system will ask you to reduce the actual Time range.

Manual Y Axis Range

In regular operation, Y axis range is set to autoscale. You can set limits of Y axis range by enabling manual mode. To do so, click on a wrench icon located at top left corner, you will be presented with setup dialog.

5.1.3 Alarms

A crucial part of monitoring your system is being notified immediately when something unusual occurs. A tag reaching an undesired status will trigger an alarm. The information regarding this dangerous and/or important status will be delivered immediately to the device for timely and appropriate actions to take place.

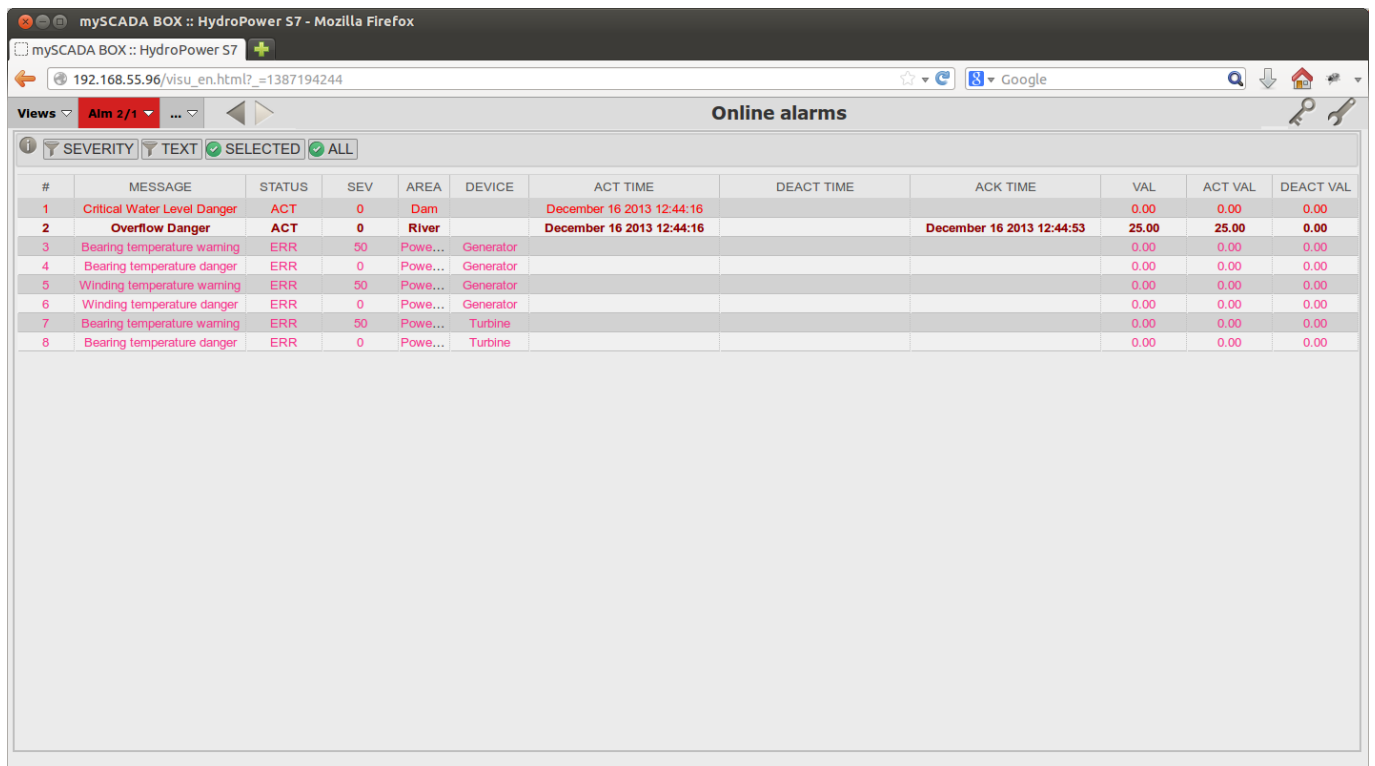
An alarm can signal that a device or process has ceased operating within acceptable, predefined limits, or it can indicate breakdown, wear, or a process malfunction. Often, it is also important to have a record of alarms and whether they have been acknowledged.

You can also set an acousting warning indicating that the alarm reached its severity level.

Online alarms

The alarm window allows the operator to perform a complete management of the technology alarms. The window allows you to visualize the alarms present in the technology or in a restricted area of the technology.

An alarm window can display all the alarms of a technology or only a set of them, arranged by areas defined by the programmer. If necessary, the operator can select the desired area, by clicking on the filter button and filling the area name.



#	MESSAGE	STATUS	SEV	AREA	DEVICE	ACT TIME	DEACT TIME	ACK TIME	VAL	ACT VAL	DEACT VAL
1	Critical Water Level Danger	ACT	0	Dam		December 16 2013 12:44:16			0.00	0.00	0.00
2	Overflow Danger	ACT	0	River		December 16 2013 12:44:16		December 16 2013 12:44:53	25.00	25.00	0.00
3	Bearing temperature warning	ERR	50	Powe...	Generator				0.00	0.00	0.00
4	Bearing temperature danger	ERR	0	Powe...	Generator				0.00	0.00	0.00
5	Winding temperature warning	ERR	50	Powe...	Generator				0.00	0.00	0.00
6	Winding temperature danger	ERR	0	Powe...	Generator				0.00	0.00	0.00
7	Bearing temperature warning	ERR	50	Powe...	Turbine				0.00	0.00	0.00
8	Bearing temperature danger	ERR	0	Powe...	Turbine				0.00	0.00	0.00

Alarm Acknowledgement

An operator can acknowledge HMI alarms displayed in an alarm window. Acknowledging an alarm does not correct the condition causing the alarm, but indicates that the operator is aware of the alarm.

To acknowledge concrete alarm/alarms, select it by clicking on desired row and press



button. To acknowledge all alarms press the



button.

Sorting and filtering at run time

By default, alarm information in an alarm summary is sorted first by date and time, then by severity, then by area name. This means that alarms are presented in chronological order: if two or more alarms have the same time and date, they are presented in order of severity. You can filter visible alarm by enabling severity or text filter. To do so, press these buttons:



History of alarms

mySCADA engine automatically logs your alarms into history. Every alarm action is logged with all relevant data such as current time (with precision to 1 millisecond). You can browse through alarm history in Alarm History Window. Aside of direct data browsing, you can also filter your data based on criteria and export shown alarms history to Excel.

The screenshot shows the 'Alarms history' window in the mySCADA BOX application. The window title is 'mySCADA BOX :: HydroPower S7 - Mozilla Firefox'. The address bar shows '192.168.55.96/visu_en.html?_id=1387194244'. The window contains a table of alarm history with columns: #, MESSAGE, STATUS, SEV, AREA, DEVICE, ACT TIME, DEACT TIME, ACK TIME, ACT VAL, DEACT VAL, and ACK VA. The table lists 10 alarm events, including 'Low Water Level Warning' and 'Overflow Danger'. The status of each alarm is indicated by a color-coded icon (ACT, DEA, ACK, SUP, UNS). The severity (SEV) is shown as a number (50, 0). The area (AREA) is 'River' or 'Dam'. The device (DEVICE) is 'River' or 'Dam'. The act time (ACT TIME) and deact time (DEACT TIME) are shown in blue text. The ack time (ACK TIME) is shown in blue text. The act value (ACT VAL), deact value (DEACT VAL), and ack value (ACK VA) are shown in blue text. The window also features a toolbar with buttons for ACT, DEA, ACK, SUP, UNS, SEVERITY, TEXT, and Export. A 'Views' dropdown menu is set to 'Alm 1/2'. A '1 hour' time range selector is visible at the bottom right.

#	MESSAGE	STATUS	SEV	AREA	DEVICE	ACT TIME	DEACT TIME	ACK TIME	ACT VAL	DEACT VAL	ACK VA
10	Low Water Level Warning	ACT	50	River		December 16 2013 12:57:35			10.00	21.00	10.00
9	Low Water Level Warning	DEA	50	Dam		December 16 2013 12:57:05	December 16 2013 12:57:25		9.00	35.00	0.00
8	Low Water Level Warning	DEA	50	River		December 16 2013 12:56:05	December 16 2013 12:57:05	December 16 2013 12:56:40	12.00	21.00	10.00
7	Low Water Level Warning	ACT	50	Dam		December 16 2013 12:57:05			9.00	0.00	0.00
6	Low Water Level Warning	ACK	50	River		December 16 2013 12:56:05		December 16 2013 12:56:40	12.00	0.00	10.00
5	Critical Water Level Danger	ACK	0	Dam		December 16 2013 12:44:16	December 16 2013 12:56:05	December 16 2013 12:56:40	0.00	38.00	42.00
4	Low Water Level Warning	ACT	50	River		December 16 2013 12:56:05			12.00	0.00	0.00
3	Overflow Danger	DEA	0	River		December 16 2013 12:44:16	December 16 2013 12:56:05	December 16 2013 12:44:53	25.00	12.00	25.00
2	Critical Water Level Danger	DEA	0	Dam		December 16 2013 12:44:16	December 16 2013 12:56:05		0.00	38.00	0.00
1	Overflow Danger	ACK	0	River		December 16 2013 12:44:16		December 16 2013 12:44:53	25.00	0.00	25.00

Figure 1 Browsing Alarms history

Setting View Options

You can control what columns will be visible in this window. To change settings, press the wrench tool icon in a top left corner. You will be presented with dialog enabling you to change the visibility of every column:

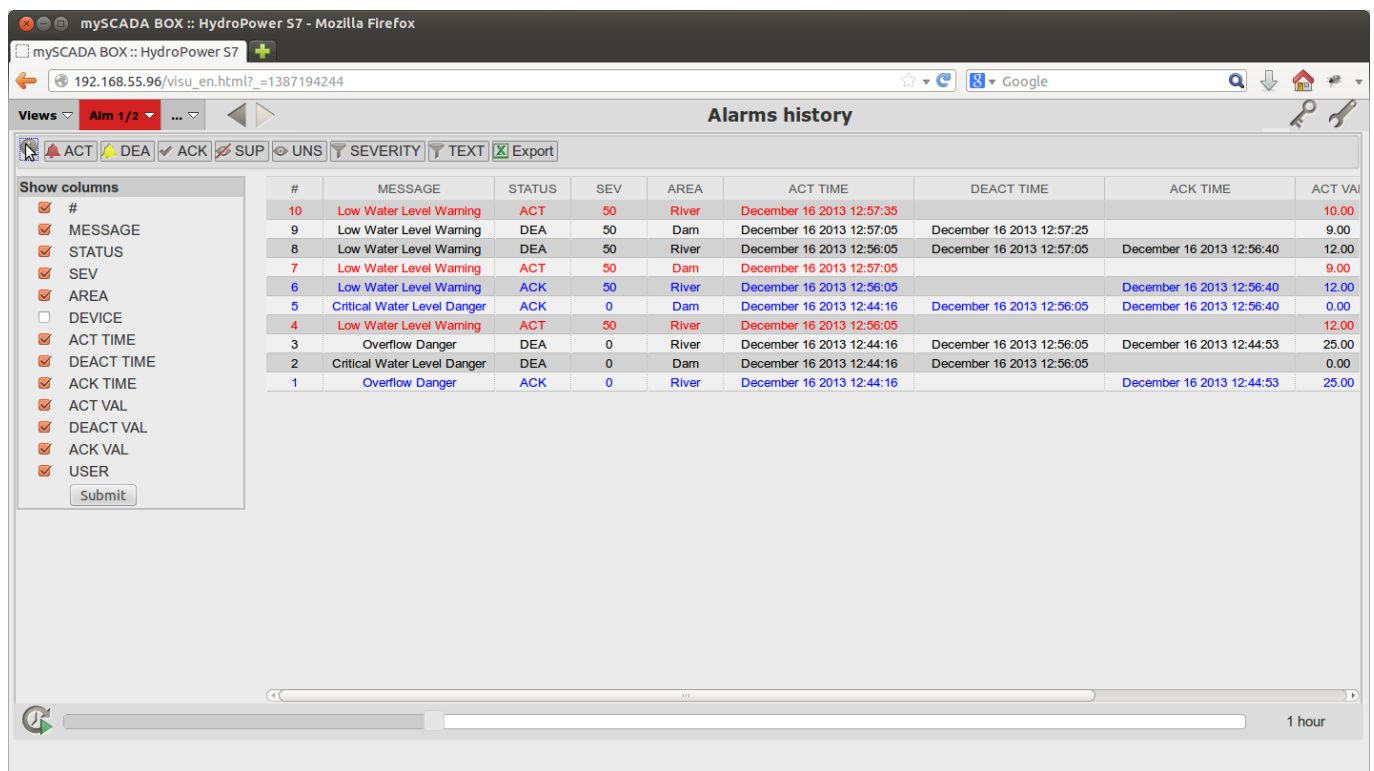


Figure 2 If you click on the info icon located in the left side of the toolbar, you can specify what columns will be visible.

Severity

- Alarms can range in severity from 0 (most severe) up to 4 byte unsigned integer value (least severe), to indicate different levels of importance. For example, a severity 10 alarm might warn that a tank is half full of liquid, while a severity 5 alarm indicates that the tank is about to overflow. Both alarms monitor the same tag but have different severity levels.
- When you set up alarm severity, you specify what the severity levels mean and what actions they will trigger. Severity determines the order in which alarms are displayed in an alarm banner.

Alarm Areas

The alarms can be grouped in different areas so that they can be displayed in the alarm window based on the area they belong to. This may be helpful to enable you to divide the alarms according to the different plant zones they come from.

Message

Alarm messages report information about alarms.

Device

You can define multiple alarms for a single device. In live alarm view or during a browsing of alarm history, you can filter your data based on device value.

Changing date and time:

To change a date or interval of shown results, use a bottom time toolbar.

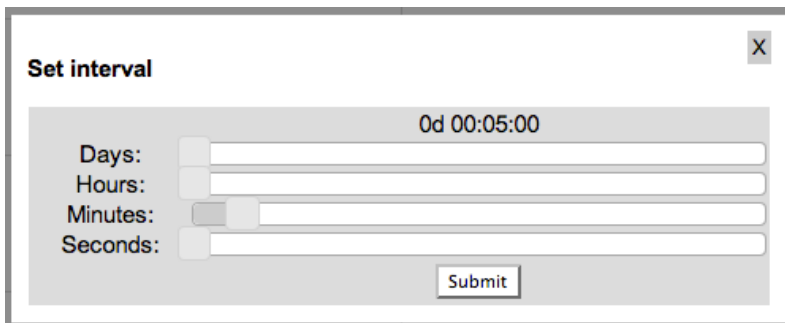


You can specify a date range in which data will be shown - click on a date to set:

The screenshot shows a dialog box titled "Start time" with a close button (X) in the top right corner. Inside the dialog, there are two input fields labeled "From:" and "To:". Below these is a calendar for "June 2014". The calendar has a grid with days of the week (Su, Mo, Tu, We, Th, Fr, Sa) and dates (1 to 30). The date "10" is highlighted. Below the calendar, there are input fields for "Time", "Hour", "Minute", and "Second". The "Time" field is set to "22:10:00". At the bottom of the dialog, there are two buttons: "Now" and "Done".

By clicking on the left and right arrows, it is possible to change the date in accordance with already set Time range. Clicking on a left most arrow will show first records available, clicking on a right most icon will show latest records available.

By clicking on a time interval on the right, you will be presented with a dialog enabling you to set up custom time interval for viewing.



Set interval [X]

0d 00:05:00

Days:

Hours:

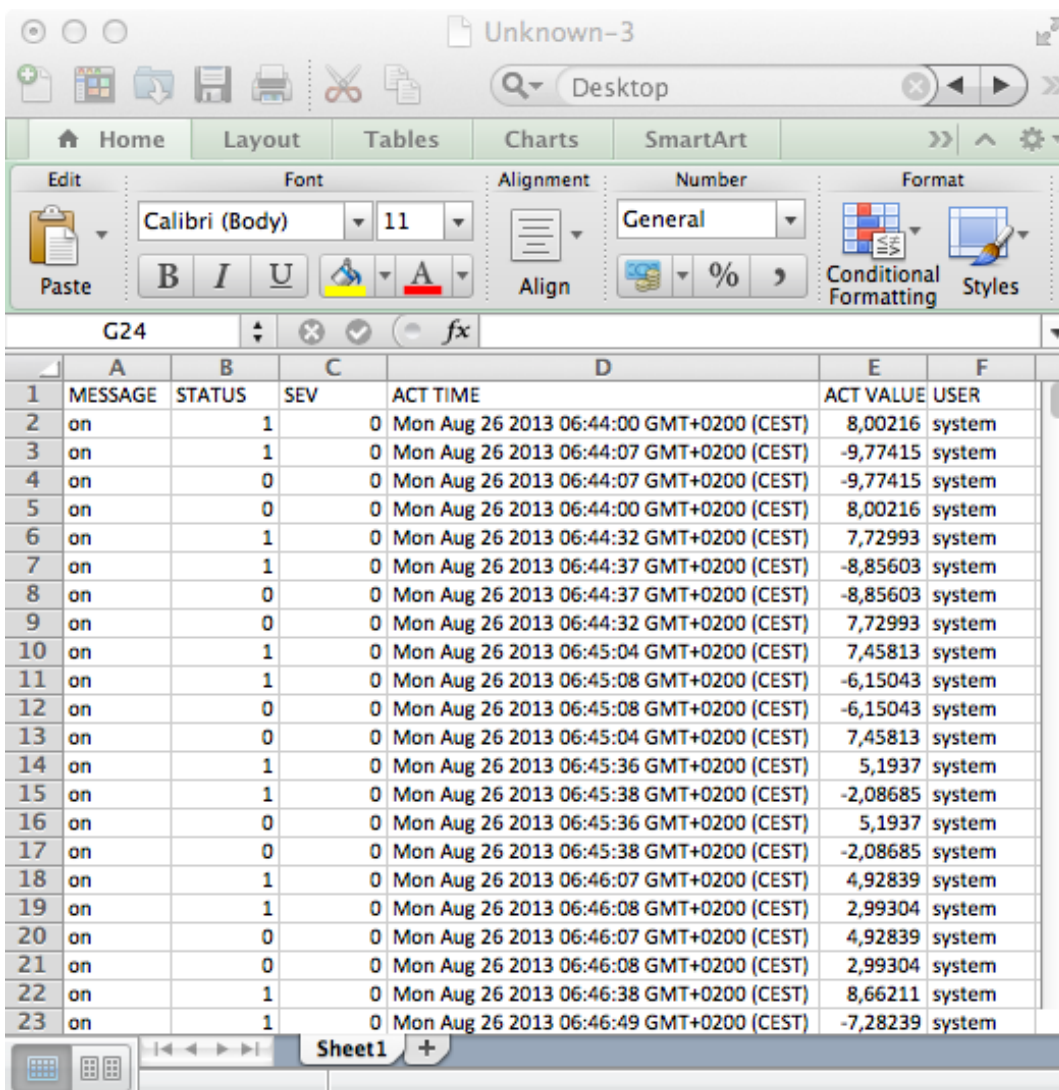
Minutes:

Seconds:

Info: Maximum number of shown rows is limited by a LIMIT button located at the top bar. You can change this value any time during viewing a data.

Export to MS Excel

Aside of data preview, you can export the data into MS Excel. To do so, press the export button located at the top tool bar

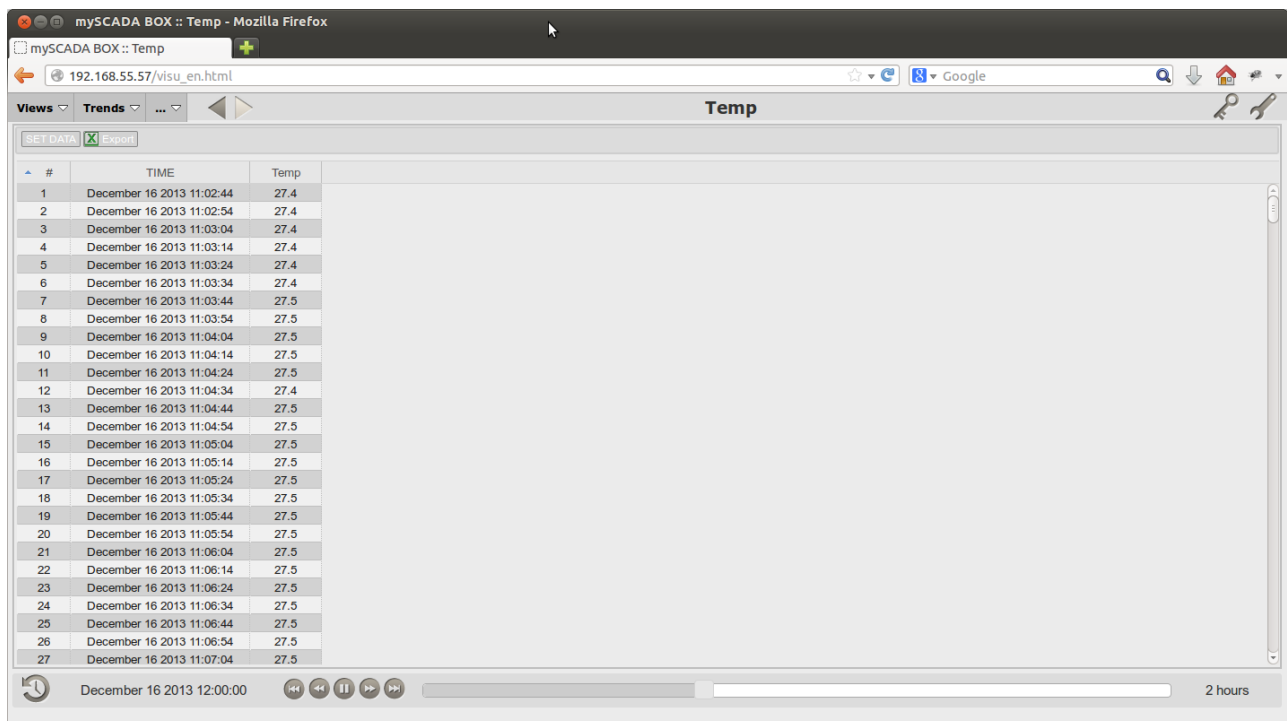


	A	B	C	D	E	F
	MESSAGE	STATUS	SEV	ACT TIME	ACT VALUE	USER
1	on	1	0	Mon Aug 26 2013 06:44:00 GMT+0200 (CEST)	8,00216	system
2	on	1	0	Mon Aug 26 2013 06:44:07 GMT+0200 (CEST)	-9,77415	system
3	on	0	0	Mon Aug 26 2013 06:44:07 GMT+0200 (CEST)	-9,77415	system
4	on	0	0	Mon Aug 26 2013 06:44:00 GMT+0200 (CEST)	8,00216	system
5	on	1	0	Mon Aug 26 2013 06:44:32 GMT+0200 (CEST)	7,72993	system
6	on	1	0	Mon Aug 26 2013 06:44:37 GMT+0200 (CEST)	-8,85603	system
7	on	0	0	Mon Aug 26 2013 06:44:37 GMT+0200 (CEST)	-8,85603	system
8	on	0	0	Mon Aug 26 2013 06:44:32 GMT+0200 (CEST)	7,72993	system
9	on	1	0	Mon Aug 26 2013 06:45:04 GMT+0200 (CEST)	7,45813	system
10	on	1	0	Mon Aug 26 2013 06:45:08 GMT+0200 (CEST)	-6,15043	system
11	on	0	0	Mon Aug 26 2013 06:45:08 GMT+0200 (CEST)	-6,15043	system
12	on	0	0	Mon Aug 26 2013 06:45:04 GMT+0200 (CEST)	7,45813	system
13	on	1	0	Mon Aug 26 2013 06:45:36 GMT+0200 (CEST)	5,1937	system
14	on	1	0	Mon Aug 26 2013 06:45:38 GMT+0200 (CEST)	-2,08685	system
15	on	0	0	Mon Aug 26 2013 06:45:36 GMT+0200 (CEST)	5,1937	system
16	on	0	0	Mon Aug 26 2013 06:45:38 GMT+0200 (CEST)	-2,08685	system
17	on	1	0	Mon Aug 26 2013 06:46:07 GMT+0200 (CEST)	4,92839	system
18	on	1	0	Mon Aug 26 2013 06:46:08 GMT+0200 (CEST)	2,99304	system
19	on	0	0	Mon Aug 26 2013 06:46:07 GMT+0200 (CEST)	4,92839	system
20	on	0	0	Mon Aug 26 2013 06:46:08 GMT+0200 (CEST)	2,99304	system
21	on	1	0	Mon Aug 26 2013 06:46:38 GMT+0200 (CEST)	8,66211	system
22	on	1	0	Mon Aug 26 2013 06:46:49 GMT+0200 (CEST)	-7,28239	system
23	on	1	0	Mon Aug 26 2013 06:46:49 GMT+0200 (CEST)	-7,28239	system

Data-Log Views

You can log eventually any data or information available in mySCADA. For user convenience and easy access the data are grouped into so called "Data Logs". You can think of data log as a collection of similar data. It can be for example a set of temperatures read each second from a PLC, a motor start up voltage and current logged each 100 milliseconds, run hours of machinery, operators' actions, or computed production statistics.

Each data log can have defined multiple Data-Log Views. Data-Logs are thus viewed in a tabular form represented by one or multiple Data-Log Views. Data-Log Views are accessible from the main menu by clicking on "...".

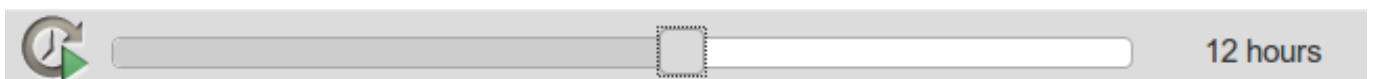


There are two possible ways how to operate Data-Log views:

1. **Online** - data is shown starting from the current value
2. **History** - data is shown from a certain entered date

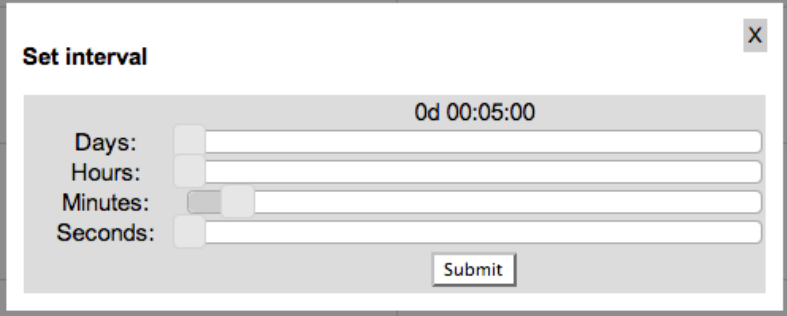
Online Mode:

Time range showed in a data-log can be easily changed in the bar bellow the actual graph. Drag the slider to change the time range shown (from 1 minute up to 1 year)



Setting custom time interval:

When you click on a time interval on the right, you will be presented with a dialog enabling you to set up custom time interval for viewing.

A dialog box titled "Set interval" with a close button (X) in the top right corner. The dialog contains a summary of the current interval "0d 00:05:00" and four input fields for "Days:", "Hours:", "Minutes:", and "Seconds:". Each field has a small slider control to its left. A "Submit" button is located at the bottom right of the input fields.

History Mode:

Switch to history mode is done by clicking on the timer icon in the lower left corner.

A horizontal bar representing the History Mode interface. On the left, there is a circular timer icon. To its right, the text "From: June 10 2014 22:10:00" and "To: June 10 2014 22:15:00" is displayed. In the center, there are five circular navigation buttons: a double left arrow, a single left arrow, a pause symbol, a single right arrow, and a double right arrow. To the right of these buttons is a horizontal slider bar. On the far right, the text "5 minutes" is shown.

In this mode, you can specify a date range in which data will be shown - click on a date to set:

Start time

From:

To:

June 2014

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

Time

22:10:00

Hour

Minute

Second

Now

Done

By clicking on the left and right arrows, it is possible to change the date in accordance with already set Time range. Clicking on a left most arrow will show first records available, clicking on a right most icon will show latest records available. Again by clicking on a time interval on the right, you will be presented with a dialog enabling you to set up custom time interval for viewing.

Info: Maximum number of shown rows is limited by a LIMIT button located at the top bar. You can change this value any time during viewing a data.

Export to MS Excel

Aside of data preview, you can export the data into MS Excel. To do so, press the export button located at the top tool bar.