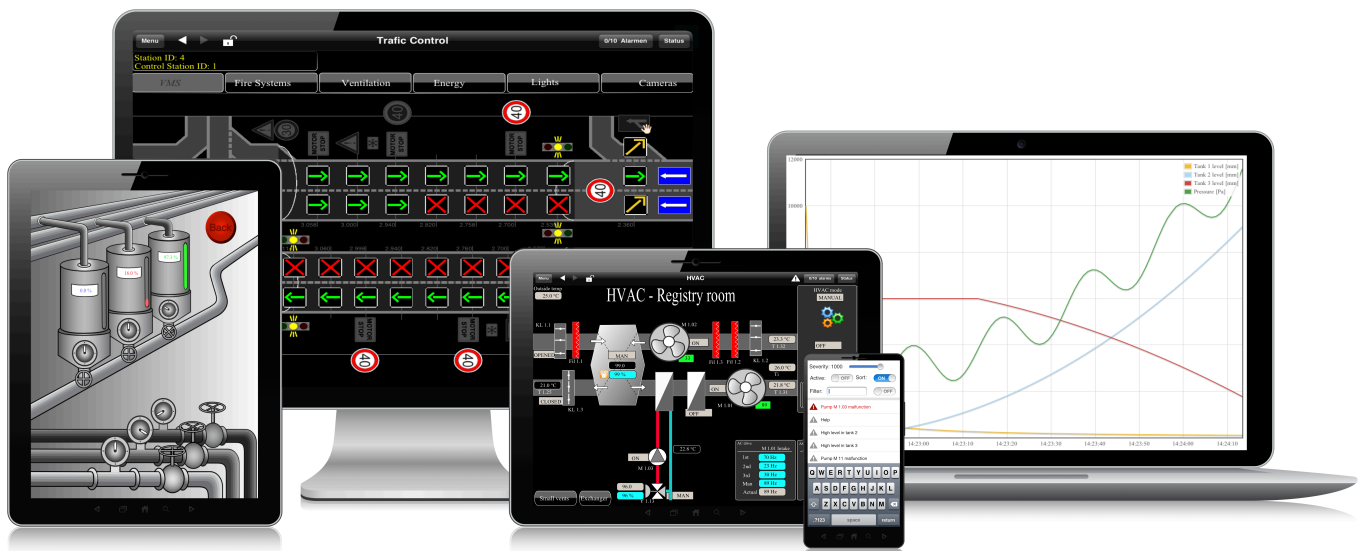# User Manual

Version: 7.0.0

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The graphical user interface (GUI) of mySCADA system is based on standard web pages, meaning that any web browser installed on 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 into the address bar in your web browser.

Main Screen - SCADA/HMI Views, Trends & Alarms

Creating a visual representation of the system that mySCADA Box should be monitoring simplifies the project management. With respect to the capability of mySCADA to create mimic graphics with animations, overview of your system operations can be done via a web browser installed on your computer.
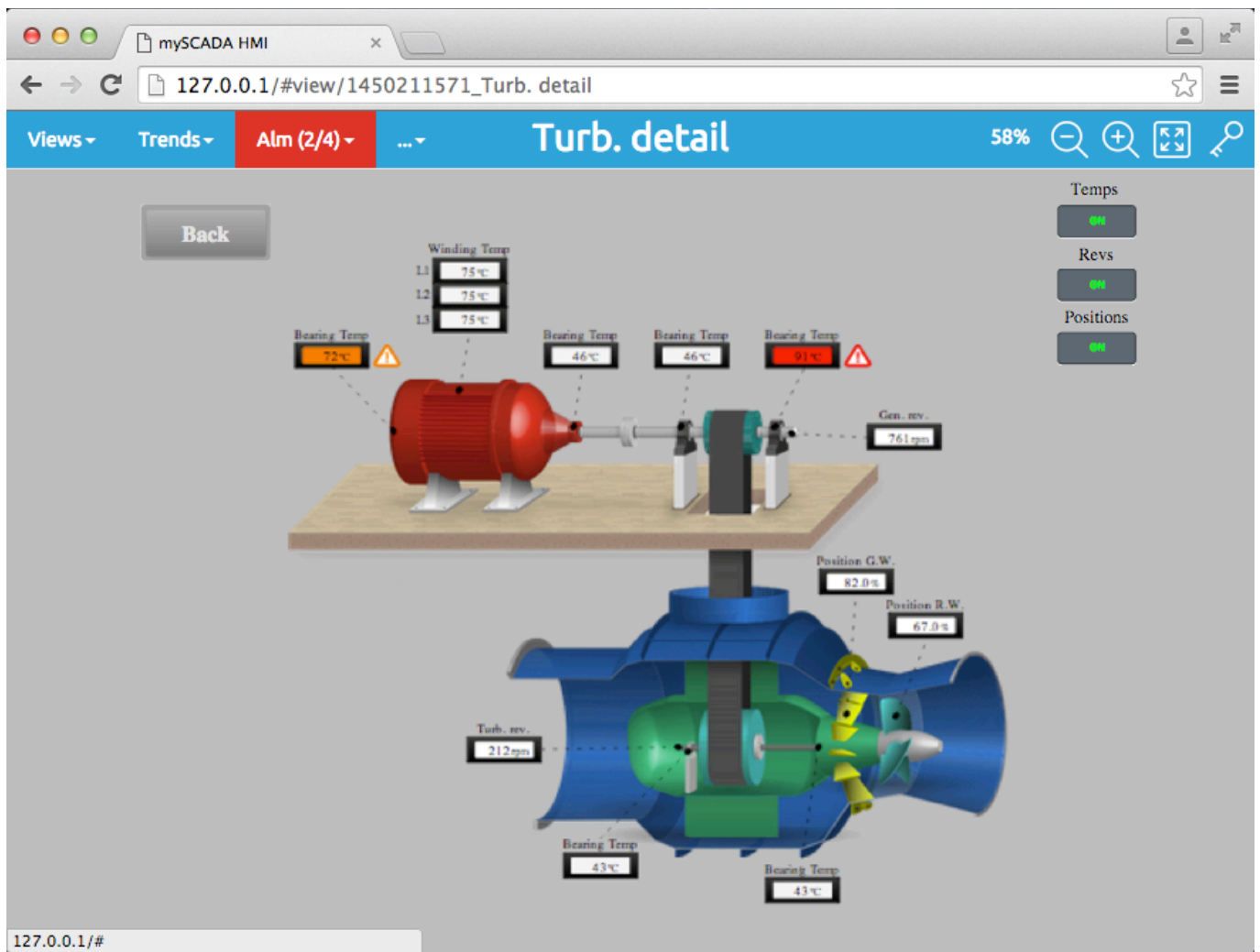
The main toolbar is located in the upper part of the main screen and is divided into these parts:

1. **Main menu** in which you can switch between available visualization views, trends and active alarms stored in the particular mySCADA Box unit.

2. **Zoom slider** – provided there is 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 the mouse scroll wheel or a track pad.*

3. **General menu settings** – By clicking on the monitor icon 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.
	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.

Visualization Views

The possibilities are virtually endless when it comes to choosing how you wish to represent the overall design of your system. Simple page elements are incorporated into a 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 sotware tool ***myPROJECT Designer*** which is available for downloading at *www.myscada.org* free of charge. The final result can, for example, look like following:
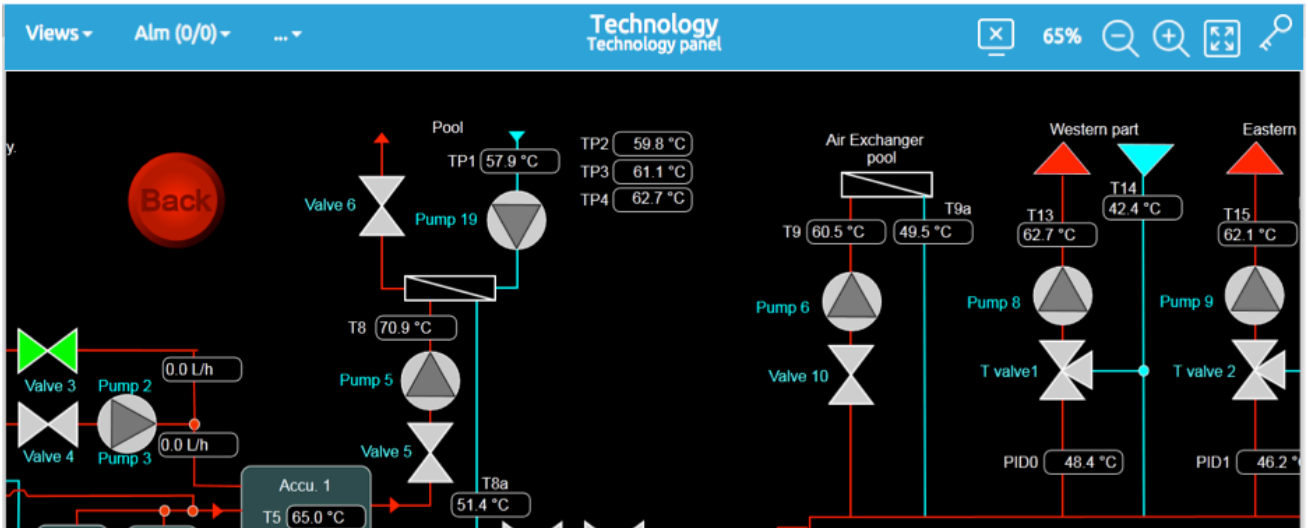
Once there is a visualization view showed, you can operate the zoom in two options (this is available in menu Mode):

Icon	Description
	Fit to page – a view is zoomed to show its entire content in the window
	Manual size – a view can be resized using the zoom slider

Tip: *You can also easily resize the view by the mouse scrolling wheel.*

If you press **SHIFT+D** you can see detailed info about the visualisation. This page contains global info (such as number of definied 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 buttons

View scripts info

View script status	December 29, 2015 15:13:31 OK
function init() status	December 29, 2015 15:13:31 OK
function periodic() status	December 29, 2015 15:13:43 OK

Connections

Connection with id 0			
Tag	Value	Loaded from stack	Status
val@script	1	December 29, 2015 15:13:43	OK

View script variables

Type	Name	Value

System variables

Name	Value
myscadaRunCount	12
myscadaLoggedUser	"admin"
myscadaLoggedUserLevel	9
myscadaActiveAlarmsCount	0
myscadaNonAckAlarmsCount	0

Trends

Visualization of trends can be vital when monitoring your system. Trends allow tag values to depict certain, potentially dangerous patterns. For a correct trend operation, the recording of the current and previous values is needed. The displayed data are loaded from the inner unit memory.
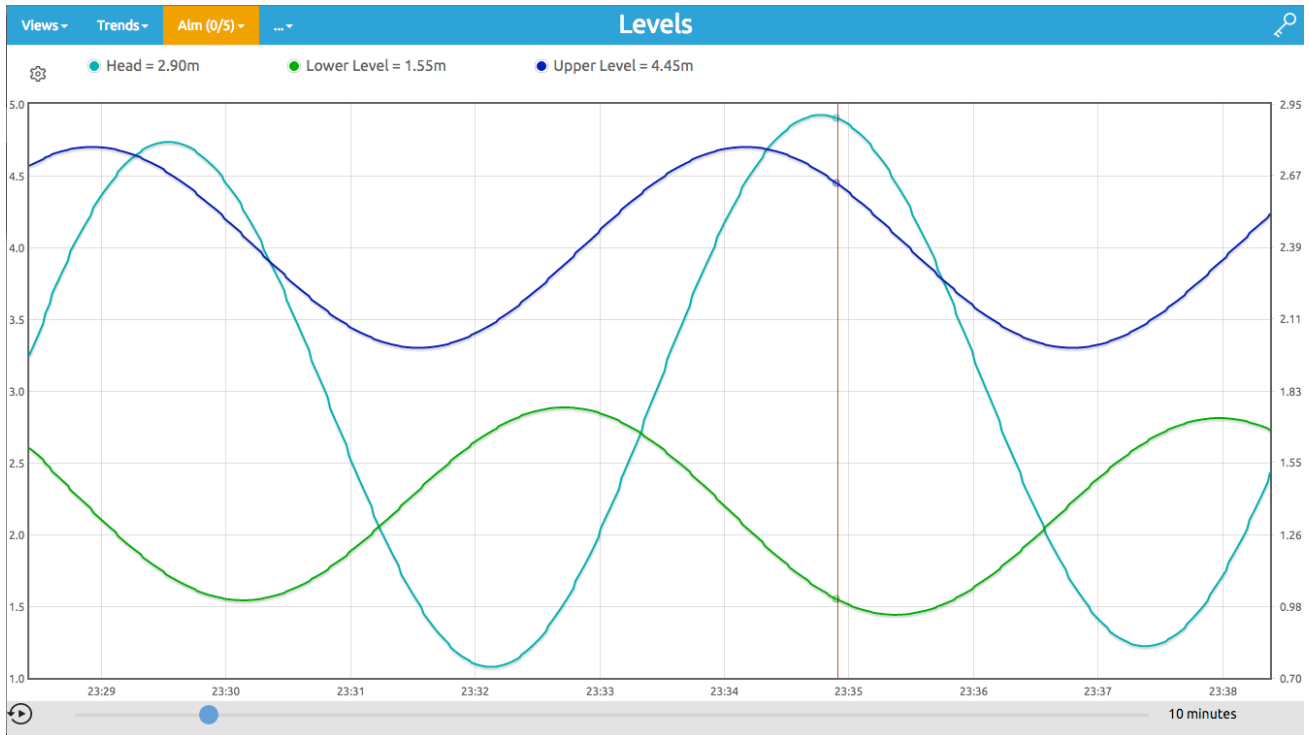
There are two possible ways how to visualize trends:

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.

History Mode:

Switch to the 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:

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

TIP: The maximum of 10 000 values can be shown in one trend at one time. If there is more than 10 000 values in a selected Time range, the system will ask you to reduce the current Time range.

Alarms

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

Alarms can signal that some device or process has ceased operating within acceptable, predefined limits, or they can indicate breakdown, wear, or a process malfunction. Often, it is also important to have a record of the 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.

The alarm window displays all the alarms of 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.

Alarm Acknowledgement

The operator can acknowledge HMI alarms displayed in the alarm window. Acknowledging the alarms does not correct their causes, but indicates that the operator is aware of them.

Sorting and Filtering in run-time

By default, the alarm information in the alarm summary is firstly sorted by the date and time, then by severity and the area name.

This means that alarms are presented in a chronological order i.e. if two or more alarms have the same time and date, they will be presented in order of severity; if any alarms have the same time and date and the same severity, then they will be sorted by the area name

History 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 the alarm history in the Alarm History Window. Aside of direct data browsing, you can also filter your data based on criteria and export the shown alarms history into MS Excel.

#	MESSAGE	STATUS	SEV	AREA	DEVICE	ACT TIME	DEACT TIME	ACK TIME	ACT VAL	DEACT VAL
6	Generator disconnec...	ACT	0	Hydro p...	Electrics	December 8, 2015 01:...			0.0	1.0
5	Low Head	ACT	0	Hydro p...	Levels	December 8, 2015 01:...			0.7	1.2
4	Generator disconnec...	DEACT	0	Hydro p...	Electrics	December 8, 2015 01:...	December 8, 2015 01:...		0.0	1.0
3	Low Head	DEACT	0	Hydro p...	Levels	December 8, 2015 01:...	December 8, 2015 01:...		0.0	1.2
2	Generator disconnec...	ACT	0	Hydro p...	Electrics	December 8, 2015 01:...			0.0	0.0
1	Low Head	ACT	0	Hydro p...	Levels	December 8, 2015 01:...			0.0	0.0

1 minute

Severity

Alarms can range in severity from 0 (the most severe) up to 4 byte unsigned integer value (the least severe), to indicate different levels of importance. For example, an alarm with severity of 10 might be warning that a tank is half full of liquid, while severity of 5 indicates that the tank is about to overflow. Both alarms monitor the same tag but have different severity levels.

When you are setting up the alarm severity, you need to specify what the severity levels mean and what actions they will trigger. Severity determines the order in which alarms are displayed in the alarm banner.

Alarm Areas

The alarms can be grouped into different areas so that they can be displayed in the alarm window, based on the area they belong to. This may be helpful for dividing the alarms by the plant zones they come from.

Message

The alarm messages report information about alarms.

Device

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

Changing Date & Time

To change the date or intervals of shown results, use the bottom time toolbar.

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

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

By clicking on the time interval on the right, you will be presented a dialog enabling you to set up a custom time interval for viewing.
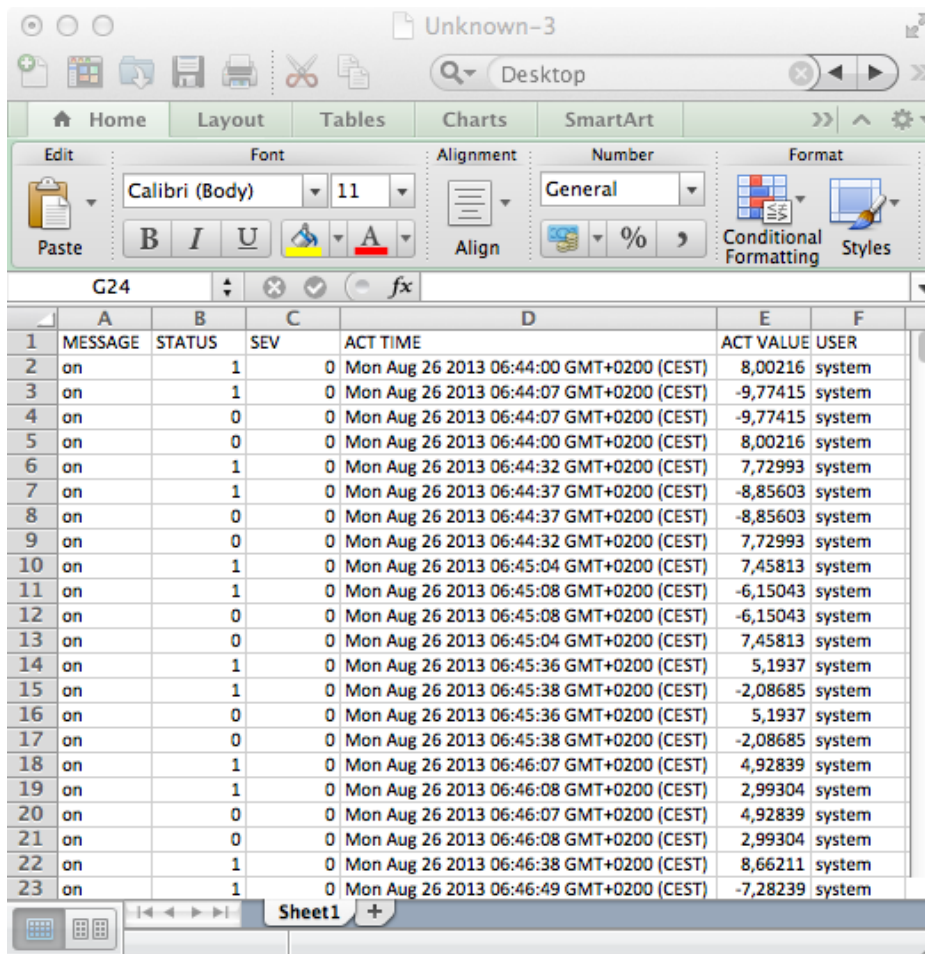
TIP: *The maximum number of shown rows is limited by the LIMIT button, located on the top bar. You can change this value any time during viewing the data.*

Export to MS Excel

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

Data-Log Views

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

Each data log can have defined multiple Data-Log Views. The 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 "**…**" button.

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 a 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.
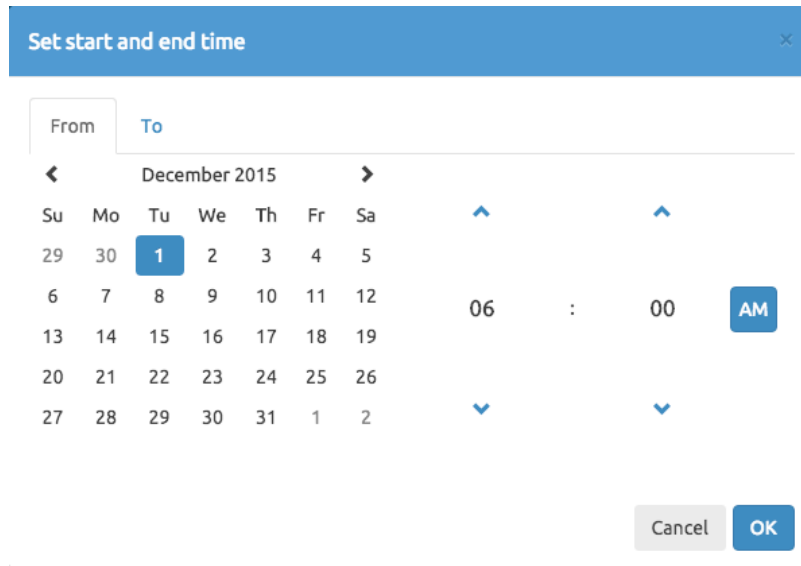
History Mode:

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:

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.

TIP: 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.