# EXO4 2009

## User Guide

REGIN

THE CHALLENGER IN BUILDING AUTOMATION

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# Table of Contents

# *Chapter 1* **Introduction**

**User manual**

This manual is intended for users who work with EXO4 to supervise, control and make reports for a technical system. The text is quite general and does not describe a specific plant or window system. The integrator that has delivered the system may have given supplementary instructions.

**EXO4**

From the user's point of view, EXO4 is a ready-made program that, among other things, contains:

- Windows for monitoring and controlling the processes. These process windows contain process pictures, popup menus, and dynamic elements for displaying and, if required, changing values in the controllers, etc. Dynamic values in an open window are updated continuously when you have a connection to the controller whose values are displayed.
- The windows also contain buttons, click areas and popup menus to open other windows.
- Presentation of alarms and historical data

**Design**

In this manual, we use the graphic design for the EXO4 windows that we recommend. Your integrator may use another design.

**Work computers**

Besides a main computer, you may also have work computers. The work computers can display the same windows as the main computer and communicate with the controllers in the system via the main computer.

**Values**

Real-time values are transferred to EXO4 when required, for example, when the user opens a process window. Users with sufficient authority can change the values of parameters, setpoints, etc. in EXO4. All changes are immediately transferred to the controller.

**Alarms**

Alarms can be transferred e.g. at activation or at synchronization, which occurs at least once every 24 hours.

The alarms are stored in a database on the main computer and can also be sent to mobile phones, using SMS via Nimbus Alarm Server. The user can view the alarms in different report windows in EXO4, and also acknowledge, block and unblock the alarms.

**Historical data**

Logged data is stored in the controllers and is normally transferred to the EXO4 main computer at synchronization, once every 24 hours. The main computer stores the values in a database. The user can view the values in charts and other types of reports.

**Defragmentation**

A defragmentation of the database should be performed at least twice a year to avoid that the database gets full. Defragmentation is described in the chapter ***Maintenance***.

# *Chapter 2* Starting and Closing EXO4

## Starting EXO4

**Automatic start** Normally, your integrator has configured EXO4 to start automatically when Windows starts. This is necessary in order for the program to restart automatically after a power failure.

**Manual start** If you close EXO4, e.g. by mistake or after defragmentation of the database, you can start it with the shortcut Start EXO4 on the desktop.


**System window** When EXO4 has started, the system window described in the chapter ***System Window*** opens.

## Closing EXO4

**Closing** EXO4 is closed by clicking on the button to the right on the title bar, i.e. the red box, in the system window. The system window, which is described in the chapter with the same name, is the one that always opens first when you start EXO4. When you try to close EXO4, you will be asked if you really want to close EXO4.

**EXO4 functions** When EXO4 is closed, all functions that are managed by EXO4 are stopped. Functions that are being performed in the controllers are not affected, e.g. control and automation functions, alarm management and temporary storing of historical data. Normally, closing EXO4 does not cause any problems.

**Computer shut down** If the computer has to be shut down, e.g. for installing Windows Updates, EXO4 must always be closed before Windows is closed.

# *Chapter 3* **System Window**

**System window**

The EXO4 system window is opened when EXO4 Run is started. If the system window is closed, EXO4 will also close.

**Access level**

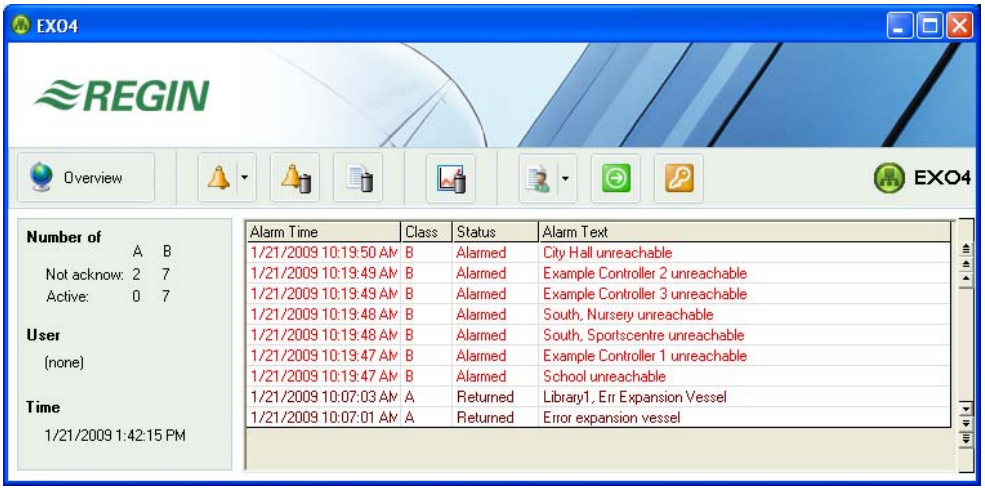
When EXO4 is started, the access level in EXO4 is *None*. Normally this means that you cannot make any maneuvers and, maybe, that some windows cannot be opened before you have logged on to EXO4.

**Logging on**

You get your access level by logging on with your ID and password. Logging on is described in the chapter ***Logging on/off*** and the access levels are described in the chapter ***Users***.

**Summary overview**

The system window provides an overview of the alarms in the system.




**Left frame**

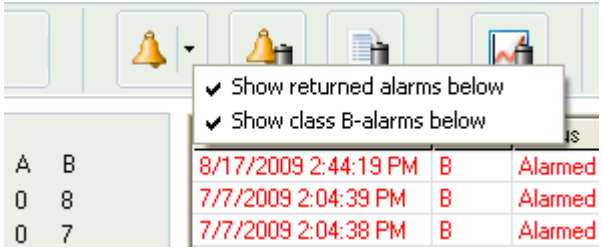
The left frame shows the number of active and not acknowledged alarms of class A and B. It also shows the logged on user and the time of the computer.

**Latest alarms**

The frame to the right shows a small alarm status report with a maximum of 10 active alarms. The user has limited possibilities to select which alarms should be shown by clicking on the button with the bell. The arrow to the right of the symbol indicates that a menu will open when the button is clicked.

By selecting or deselecting the menu items you have the following possibilities.

- ❑ Alarm points class A only or both class A and B.
- ❑ Alarm points with status alarmed or both statuses alarmed and returned.




**Toolbar**

At the top of the window there are buttons that opens other windows. The report windows are described in the following chapters.

Opens the overview window.

Opens the window Alarm Status Report. When you click on the arrow to the right of the button the alarm filtration menu described above opens.

Opens the window Alarm Events Report.

Opens the window Events Report.

Opens the window Historical Chart.

Opens the window User Log.

If you have logged on at the access level *Admin*, you can open a window that displays the users that are registered in EXO4 when you click on the arrow to the right of the symbol. In that case, you can also define and remove users. This is described in the chapter ***Users***.

Opens the log on dialog. Logging on is described in the chapter ***Logging on/off***.

Button used to log off from EXO4. Logging off is described in the chapter ***Logging on/off***.

To make maneuvers and, maybe, also for opening some windows, you have to log on. Logging on is described in the chapter ***Logging on/off***.

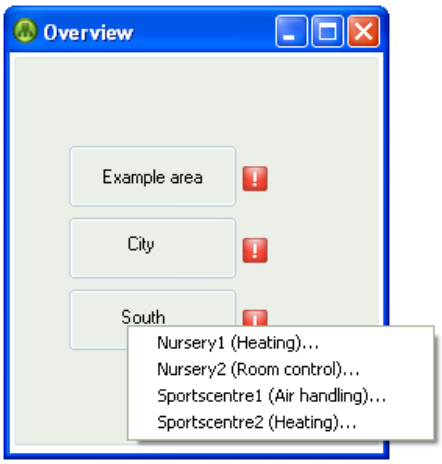
# *Chapter 4* **Overview Window**

**System window**

The system window contains the button **Overview**, which opens a window that displays the overview window of the project.

**Overview window**

The most important functions of the overview window are to provide a comprehensive picture of the plant, to offer access to process windows and display sum alarms.




**Buttons**

The window contains a number of "buttons" that open popup menus when clicked. Each button represents an area, and each command in the menus opens a corresponding process window.

**Alarm status**

To the right of each button, there is an alarm status symbol that shows the sum alarm status of the area. When the user clicks on the alarm status symbol, an alarm status report window for that area is opened. The alarm status symbols are described in the chapter ***Alarms and Events***.

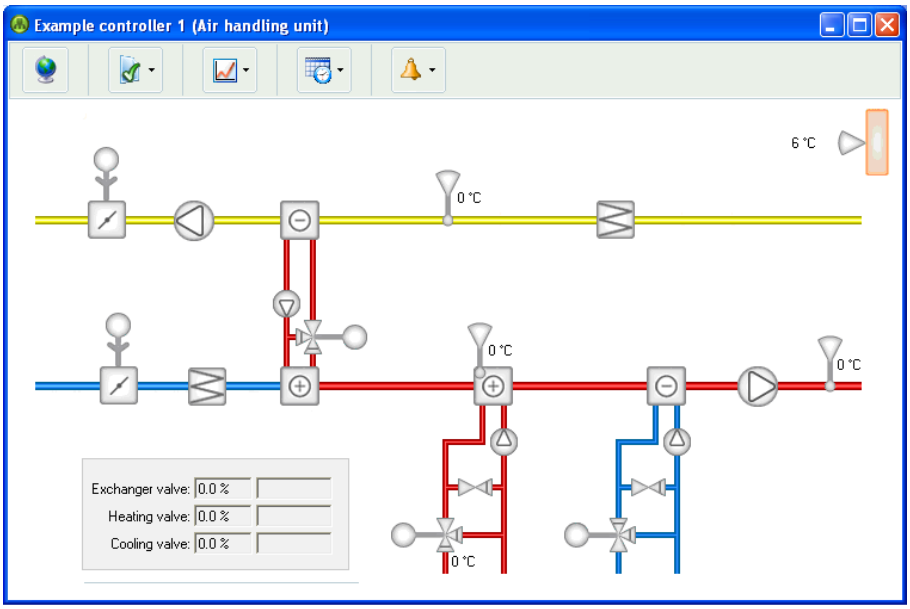
# *Chapter 5* **Process Windows**

**Technical parts**

Many windows in a project display an outline of the technical parts of the plant and its dynamic values.

**Example windows**

Below you can see an example of an Air Unit window.




**Background**

The EXO4 windows may have an unchangeable background composed of a process flow diagram or similar.

**Window elements**

The dynamic display, e.g. the display of real-time values in the controller, is presented in so-called window elements that can be placed on top of the static background. Some dynamic values can by modified by the user providing he has sufficient access level. The changed value is transferred to the controller, unless you press the key **Esc** to undo the maneuver.

**Toolbar**

Many windows have a toolbar with buttons and popup menus. Some of them open other windows. If the button has an arrow to the right of the symbol, a popup menu will be displayed when it is clicked.

The window above has the following buttons and popup menus.

Opens the overview window.

When you click on the Settings button, you can select windows where you can make settings, e.g. for supply fan and exhaust fan.

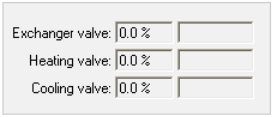
With the Charts button, you can select to open the windows Historic Chart and Real-time Chart. You can also select to read the historical logs before opening the Historic Chart window.

With the Time Settings button, you can open windows where you can make time settings for controlling e.g. fans and lights.

With the Alarm/Events button, you can open the windows Alarm Status Report, Alarm Events Report and Events Report.

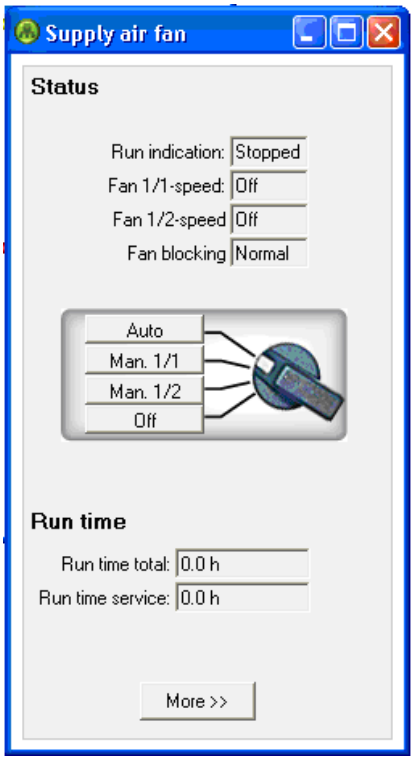
**Parameter frame**

In this window, there is a frame at the bottom of the window where some parameters can be set. As you can see, there are boxes for the values. This indicates that the values can be changed by the user. Values that cannot be changed looks as normal text, e.g. as the outdoor temperature value.




**Click areas**

In the above window, there are some click areas. If you for example click on the supply air fan, you can see the status of it and also make some settings. Clicking on the More>> button at the bottom of the window gives you the possibility to make more settings.



# *Chapter 6* **Alarms and Events**

**Reports** In EXO4 there are window templates for the display of alarm status, alarm events and digital events. The information in the reports is retrieved from the EXO4 database.

## Event Points

**Switch-on/off** Event points are used to register switch-on and switch-off of digital signals.

## Alarm Classes

**Alarm points** Each alarm point belongs to a so-called alarm class, class A, B or C.

**Degree of importance** The class is primarily used to indicate the degree of importance of the alarm. The alarm class A is the most important, while class C is the least important.

**Differences** There are also functional differences:

- The alarm classes A and B require that the alarm has returned **and** is acknowledged to return to the status **Normal** again. The alarm class C does not require acknowledgement, but can be acknowledged all the same.
- If Nimbus Alarm Server is used, the default is that SMS messages or e-mails are sent when alarms of the alarm class A are triggered. Nimbus Alarm Server can also be used for acknowledgements with re-calls.

## Alarm Status

**Alarm status** Alarm status denotes the current status of the alarm. There are five different statuses that often are displayed with symbols:

| | | |
|---|---|---|
|  | **Normal** | The initial state of the alarm point, i.e. no alarm is activated. |
|  | **Alarmed** | The status of the alarm point when the alarm has been triggered, i.e. an alarm is activated. |
|  | **Returned** | Class A and B alarms that have returned (no active alarm), but have not been acknowledged. |
|  | **Acknowledged** | An alarm point of class A or B that is still switched-on, but has been acknowledged. |
|  | **Blocked** | A temporarily blocked alarm point. Switch-on and switch-off are not registered. |

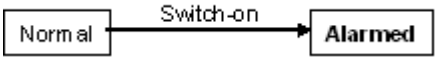
**Sum alarm status** Sum alarm status is the status of the alarm point that has the most severe alarm status. The standard EXO4 overview window displays the sum alarm status for areas.

# Alarm Events

**Alarm event**

An alarm event is a change of an alarm point's status. The most basic alarm events are switch-on and switch-off:

- **Switch-on**: An alarm is triggered, i.e. the alarm condition is switched on (becomes true), and the status of the alarm point becomes **Alarmed**.

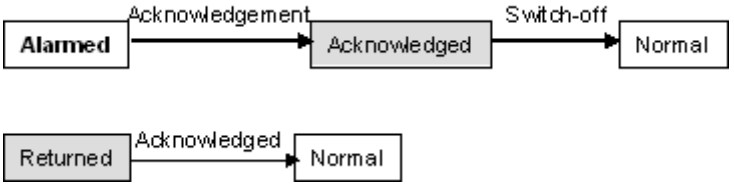



- **Switch-off**: An alarm is returned, i.e. the alarm condition is switched off (becomes false). When an alarm is switched off, the class of the alarm point determines what will happen:
  - Class C alarm points get the status **Normal** as do acknowledged alarms of the classes A and B.
  - Unacknowledged alarms of class A or B get the status **Returned**.

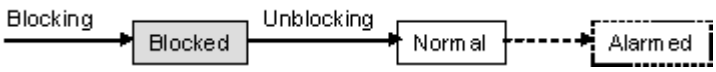

**Alarm maneuvers**

There are three types of alarm maneuvers: acknowledgement, blocking and unblocking. All three maneuvers are performed by the user, either on the controller's display or in EXO4. These three different maneuver types are also considered to be alarm events.

- **Acknowledgement**: When an alarm is acknowledged, the following will happen:
  - Not yet returned alarms get the status **Acknowledged**.
  - Returned alarms get the status **Normal**.




- **Blocking**: When an alarm is blocked, it will get the status **Blocked**. Switch-on, switch-off and acknowledgements will be ignored. The only alarm event that will be registered is unblocking.
- **Unblocking**: When a blocked alarm is unblocked it will get the status **Normal**. If the alarm is still switched on, it will get the status **Alarmed** (after the configured alarm delay time).



## Transferring to the Main Computer

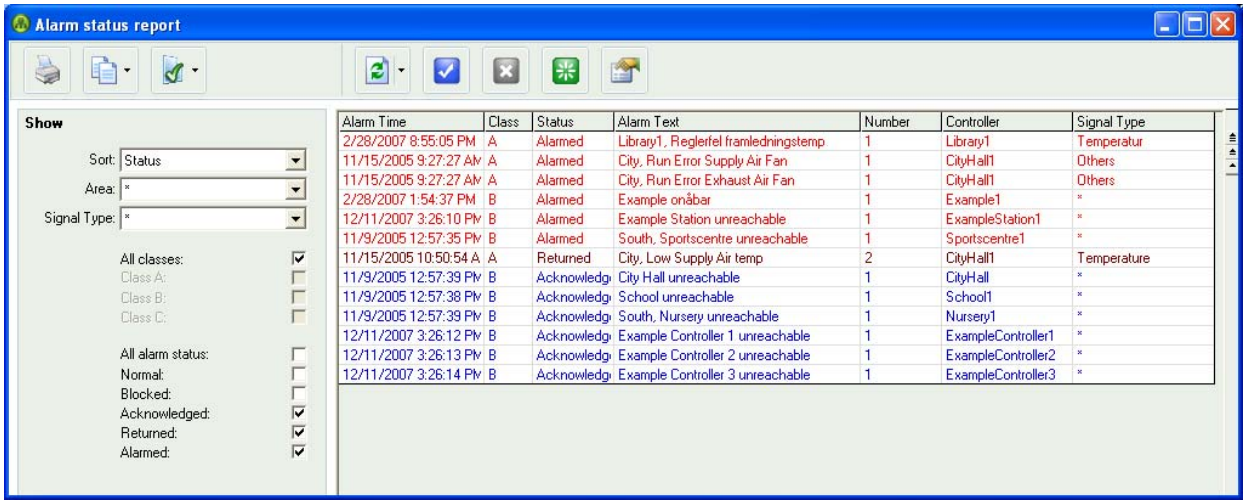
**Immediately** All alarm events are “immediately” transferred from permanently connected stations to the main computer. This is also the case for dial-up stations while they are connected.

**Spontaneous connection** Normally, dial-up stations connect spontaneously when an alarm is triggered.

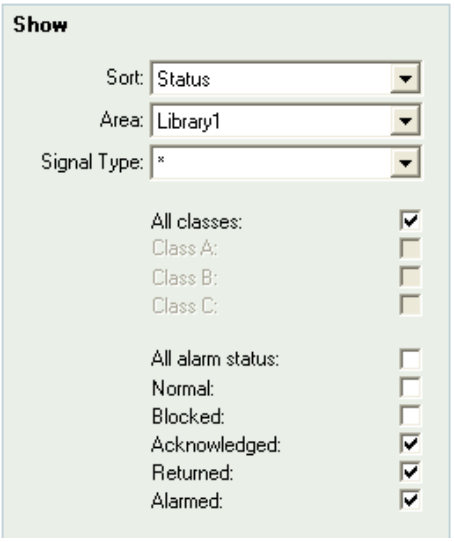
**Station synchronization** During a station synchronization, which normally takes place once every night, all events (alarm events and digital events) that are stored in the controller are transferred to the main computer for storage in the alarm database.

# Alarm Status Report

**Current status** The alarm status report displays the current status of the system’s alarm points.




**Limit and sort** The user can limit the range of selection from the database by specifying alarm class, alarm status, area and signal type. The alarms can be sorted on alarm status, number of triggered alarms, alarm time, alarm class, area and signal type.



**Toolbar**

The toolbar contains the following buttons:

Prints the alarm status report on the default printer.

Used to copy the report or export it to a file. The file will be saved in the folder **`EO4Lib\Data`** in your project folder, which normally is **`C:\EXO Projects\`***`ProjectName`*.

You can select whether the settings you have made will be remembered the next time you open the report or not.

When the selection has been changed, the user must click on the Refresh button in order to update the search result.

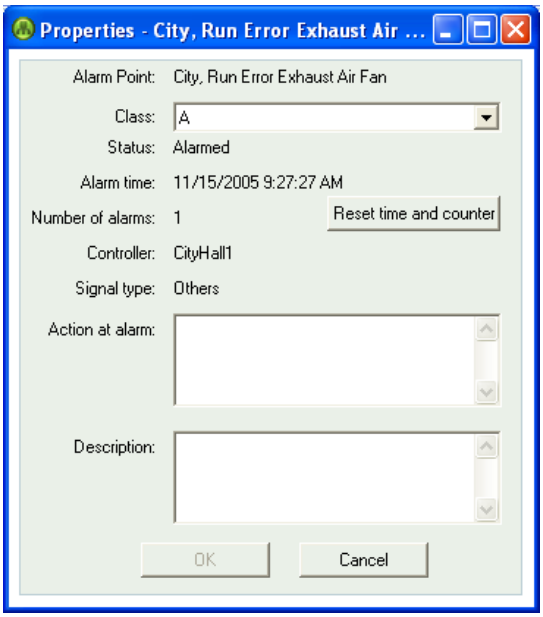
If Auto Refresh is selected, an automatic update of the search result will occur, either when the database has been changed due to events in the controllers, or because the filtration has been changed.


Acknowledges the selected alarm.

Blocks the selected alarm.

Unblocks the selected alarm.

Opens the window Properties with more detailed information about the selected alarm point.




The user may be able to change the class of an alarm point by just changing **Class** and clicking on **OK**.

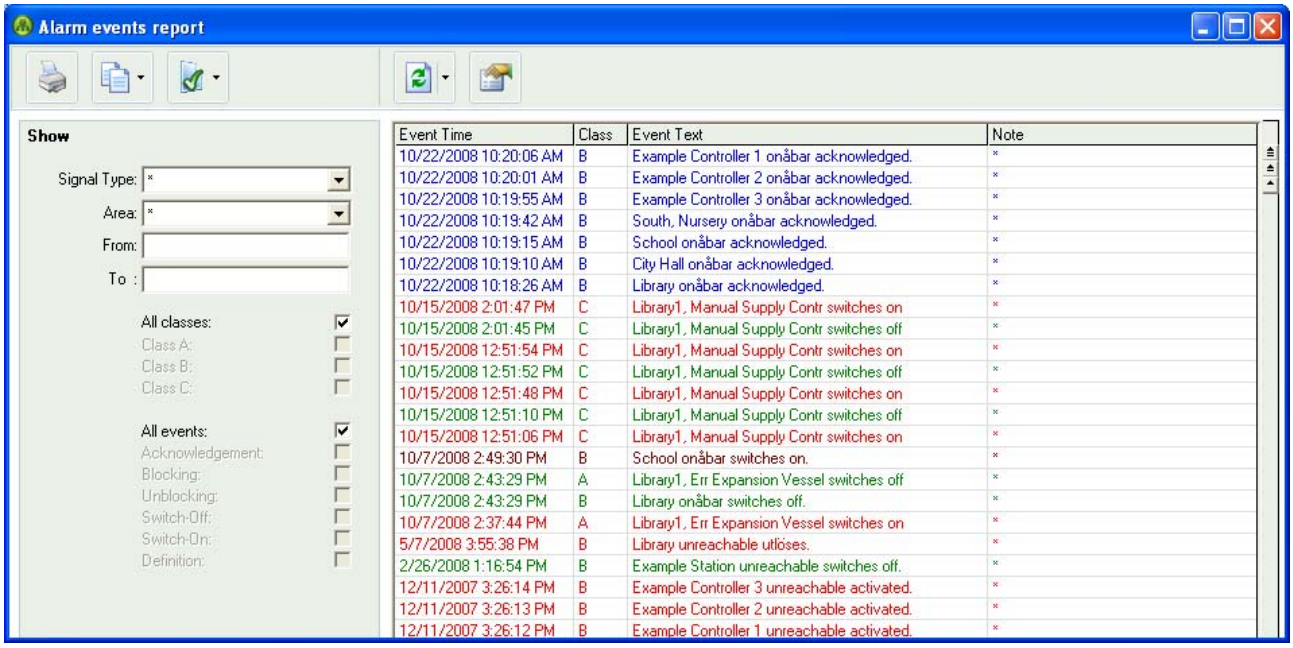
The button **Reset time and counter** resets the number of switch-ons for the selected alarm point.

The text boxes *Action at alarm* and *Description* are editable.

# Alarm Events Report

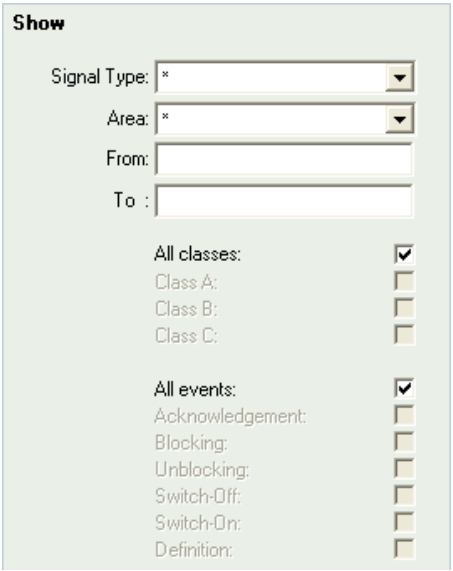
**History**

The alarm events report displays the history of the alarm points in the system. Each alarm point can occur many times in this type of report.




**Limit**

The user can limit the range of selection from the database by specifying alarm class, alarm events, area, signal type and time. If you choose a range other than the default range loaded when the window is opened, the database search may take longer due to the increased complexity of the search.




**Time**

The syntax for entering date and time corresponds to the default settings of the Windows Control Panel and is the same as the time indication in the column **Event Time**.

**Follow a certain signal**

The events of a particular signal can be followed by first selecting the signal and thereafter clicking on the menu item **Show selected signal only** at the button **Settings**. This method can be combined with other selections to limit the amount of information. Select the same menu item to return to normal display of events.

**Toolbar**

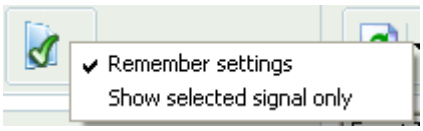
The toolbar contains the following buttons:

Prints the report on the default printer.

Used to copy the report or export it to a file. The file will be saved in the folder **`EO4Lib\Data`** in your project folder, which normally is **`C:\EXO Projects\`***`ProjectName`*.

You can select whether the settings you have made will be remembered the next time you open the report or not.

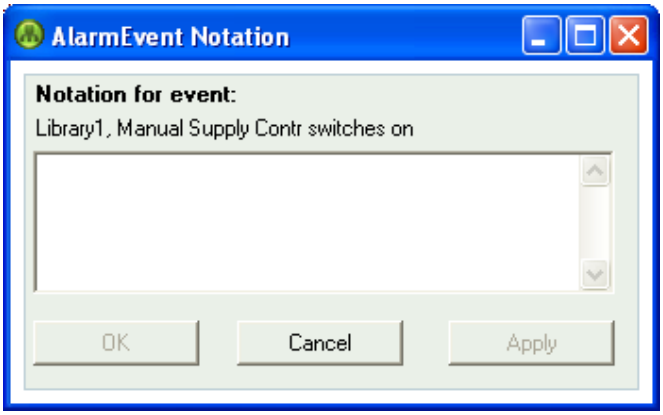
You can also select to show only the selected signal, i.e. the alarm events for this signal.




When the selection has been changed, the user must click on the Refresh button in order to update the search result.

If Auto Refresh is selected, an automatic update of the search result will occur, either when the database has been changed due to events in the controllers, or because the filtration has been changed.

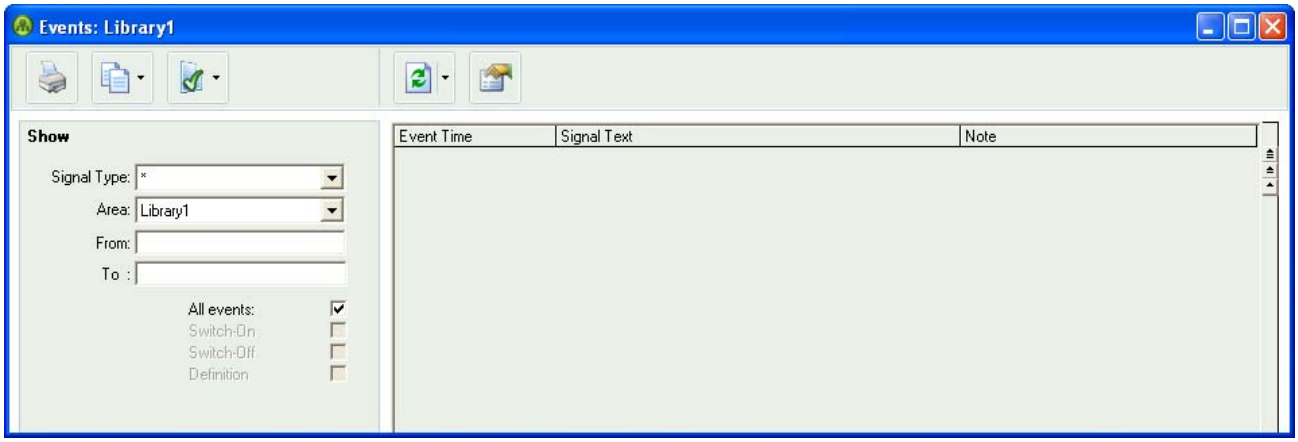

Opens the window AlarmEvent Notation, which allows editing a notation for the selected event. The notation is stored in the database.



# Events Report

**Digital events**

The events report displays the history of events for digital points in the system and looks just about the same as the Alarm Events Report. You can follow a certain signal, select to activate Auto Refresh and open a window where you can enter a notation for the selected signal.




**Limit**

The user can limit the range of selection by specifying type of events, area, signal type and time. If you choose a range other than the default range loaded when the window is opened, the database search may take longer due to the increased complexity of the search.

**Time**

The syntax for entering date and time corresponds to the default settings of the Windows Control Panel and is the same as the time indication in the column **Event Time**.

# *Chapter 7* **Charts**

## Polled Signals

**Real-time charts** Polled signals are measured values in the controller that EXO4 reads in real-time. The values are drawn directly into a real-time chart.

## Logged Signals

**Database** Logged signals are analog values that are saved in special logs in the controller in certain time periods. The main computer empties the logs on appropriate times to save the information in a database on the hard disk.

**Synchronization** Logged data is normally transferred to the main computer during synchronization. Synchronization is usually made once every night. The user can also normally order a manual synchronization when needed.

**Spontaneous connection** If, for some reason, the automatic synchronization fails, the station will make a spontaneous connection when a log is 80% full. The main computer will then empty the log.

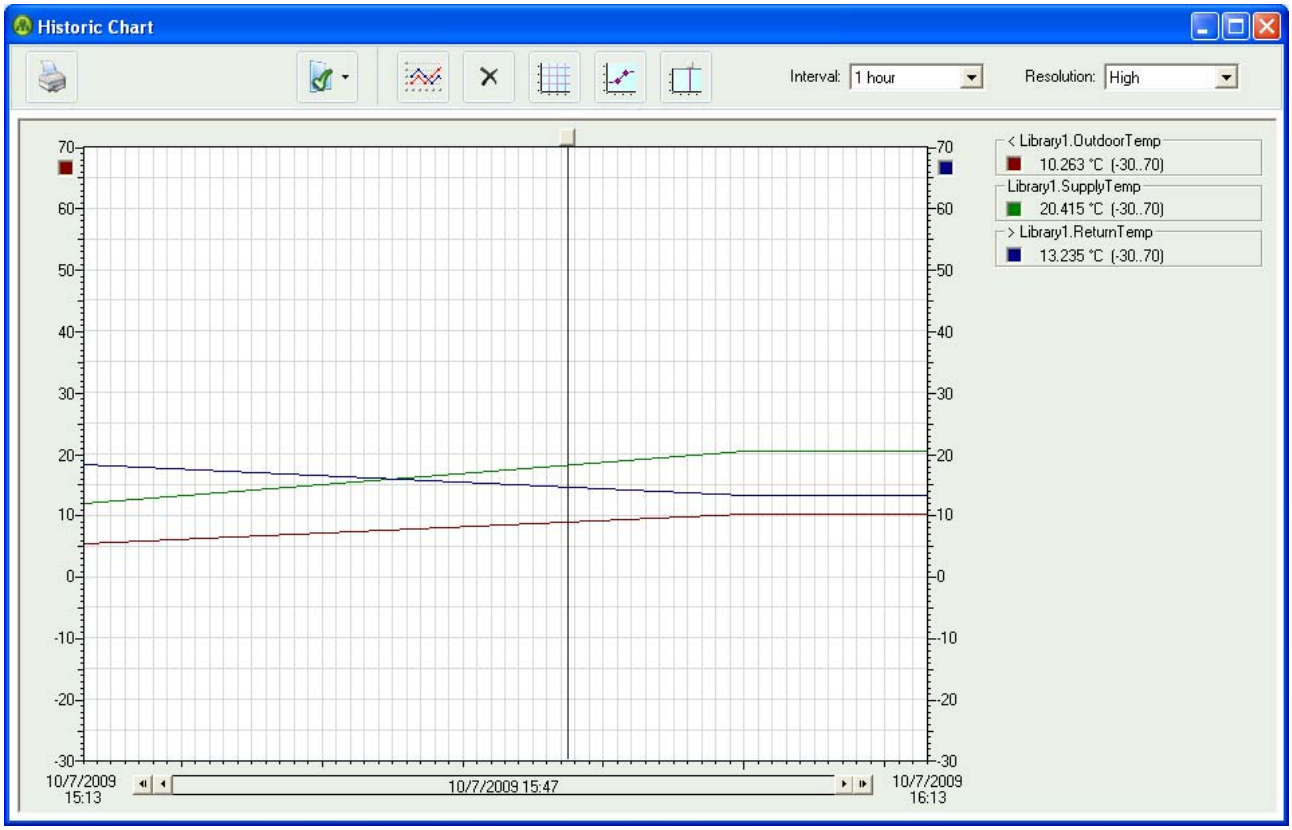
**Defragmentation** The database has to be defragmented regularly. This is described in the chapter ***Maintenance***.

**EXOreport** EXOreport can be used to create, display and print reports with logged historical values from the database.

## Charts

**Historical charts** In EXO4 there are window templates for displaying historical curves that retrieve values from the database.

**Real-time charts** In EXO4 there are also window templates for real-time charts that display polled signals.




# Historical Chart

**Use**

Historical charts are used to display historical curves whose analog or digital values are retrieved from the database.

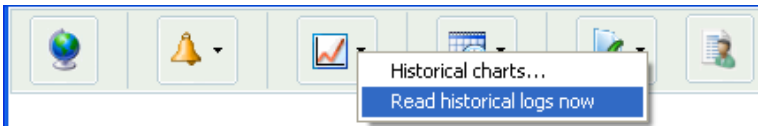
**Historical charts**

There are three types of historical charts with different restriction levels, depending on how much liberty the user has to choose which signals to display.

- The user cannot influence which signals will be displayed.
- The user can choose a maximum of 10 signals at a time from a list.
- The user can freely choose signals from the database. The user can select area, signal type and digital or analog data type.

**Emptying logs**

The logs of the controllers are automatically emptied during a daily synchronization connection. Therefore, values that have been gathered after the latest synchronization are not yet in the database. Normally, you have the possibility to perform a manual synchronization in process windows.



# Real-time Chart

**Use**

Real-time charts are used to display real-time curves. The values are retrieved directly from the controller.

**Real-time charts**

There are two types of real-time charts with different restriction levels, depending on how much liberty the user has to choose which signals to display.

- The user cannot influence which signals will be displayed.
- The user can choose a maximum of 10 signals at a time from a list.

# Chart Windows

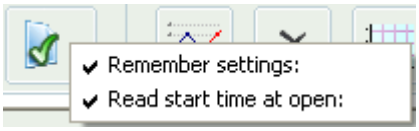
**Toolbar**

The toolbar in the historical chart and real-time chart windows contains the following buttons:

Prints the chart on the default printer.

You can select whether the settings you have made will be remembered the next time you open the chart or not.

You can also select to read the start time at open




Opens a window where you can select which signals you want to display. See below. This button is not available if the user cannot influence which signals to display.

Removes all signals from the chart. This button is not available if the user cannot influence which signals to display.

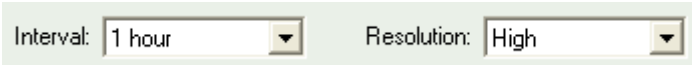
Inserts or removes a grid from the chart.

Inserts time markers that shows when the values have been read.

Inserts a measurement ruler in the chart. At the top of the chart, a little square with which you can move the ruler is displayed. The signals' values displayed to the right in the chart window will be the ones at the ruler.

**Interval and resolution**

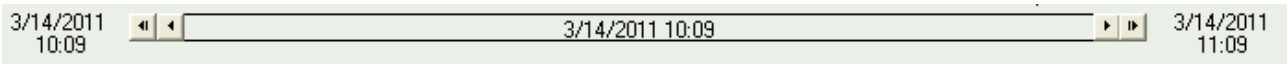
You can select the interval for the whole chart and the interval for reading.




The Low mode resolution is suitable when you want to browse through data quickly, and the High mode is suitable when you want to study a course of events in detail.

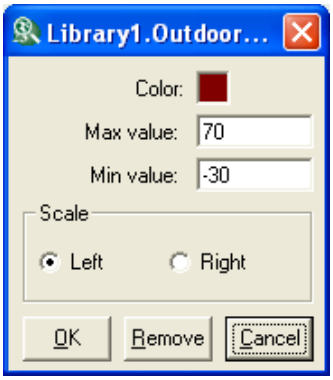
**Time ruler**

Below the chart, there is a time ruler for the x axis, which shows the chart's start time, the time at the measurement ruler and the stop time. There are also arrows that can be used to scroll between intervals.



**Scales**

The chart has two y-axis. Clicking on a signal name to the right in the window opens a dialog in which you can select to show the scale for this signal on one of the axis. In the same dialog, it is possible to change the signal's color and scale or to remove it from the chart.

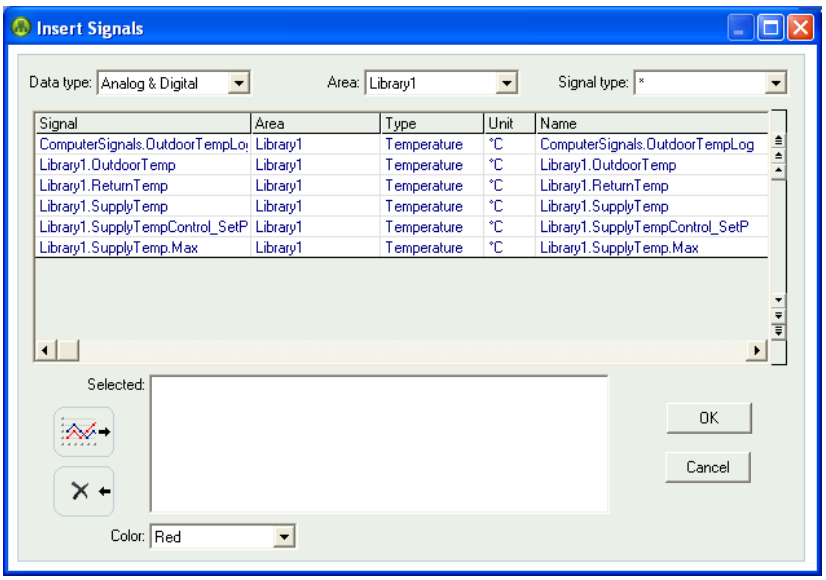


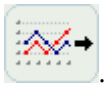

**Insert signals**

If the user can influence which signals to display, the signals are selected in the Insert Signals window. You can select and remove the signals you want to display in the chart from a list.

If a historical chart window is of the type that lets you choose signals from the database freely, you can select area, signal type and digital and/or analog data type. * means everything, i.e. no filtration.

The texts of analog signals are blue, and the texts of digital signals are black.




Select a signal in the list and click on the add signal button  . A maximum of 10 signals can be selected.

You can also choose which color a selected signal will have in the chart at the bottom of the window.

# *Chapter 8* Time Channels and Calendars

**Time channels** Time channels are used for time control of functions like e.g. fans and lights.

**Time channel** A time channel consists of a number of switch-on/off times for the various days of the week and holidays.

**Viewers** Time channel and calendar viewers show time channels and calendars graphically for the user.

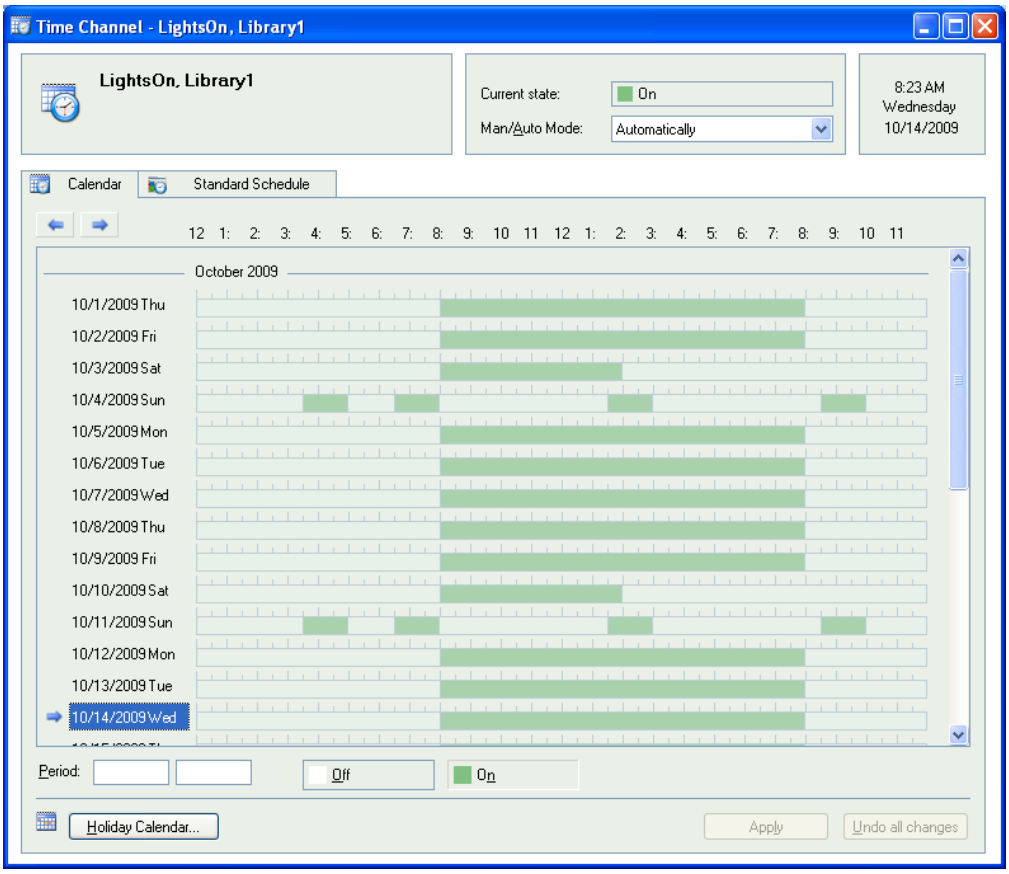
**Different types** There are two different types of time channels and calendars. The main difference between them is where they are created:

- ❑ Local time channels and calendars are created in the controllers.
- ❑ Central time channels and calendars are created in the main computer, i.e. they are not present in the controllers. Yet, they can be used to control signals etc. in the controllers.

**Two types** The viewers for the two types of time channels and calendars look quite similar. Often the user will not be aware of which type of viewer he is watching. The differences will however be described in the following sections.

## Time Channel Viewers

**Graphically** A time channel viewer shows one time channel graphically for the user. The user can change the time period settings, change the man/auto mode, etc. The below picture shows an example of the calendar tab in the time channel viewer.



**Upper part** The upper part of the window shows the title, a description (if any), the current state and the man/auto mode of the time channel. It also shows the current time and date. In the viewer of a central time channel, it is the time of the main computer. In the viewer of a local time channel, it is the time of the controller.

**Tabs** Below the upper part of the window there are two tabs, **Calendar** and **Standard Schedule**.

**Button** The button **Holiday Calendar** at the bottom of the window can be used to open a **Calendar Viewer**.

**Apply** To apply changes made in the time channel viewer you have to press the button **Apply** at the bottom of the window.

### Man/auto mode

**Central** In the viewer of a central time channel, the user can change the man/auto mode directly by selecting either Manually On, Manually Off or Automatically. The state of the time channel will change immediately when the man/auto mode is changed.

**Local** In the viewer of a local time channel, the user can change the man/auto mode directly by selecting either Manually (On or Off), Temporarily forced (On or Off), or Automatically. The *Temporarily forced* mode means that the time channel will return to the automatic mode itself the next time the schedule of the time channel changes state. When the man/auto mode is changed, it might take up to one minute until the state of the time channel is changed in the controller.

## Calendar Tab

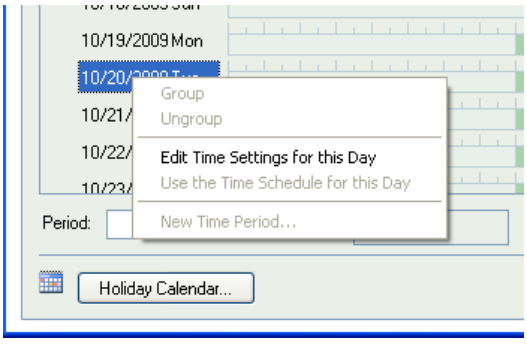
**Day plans** The calendar tab in the time channel viewer shows day plans for all days according to the standard time schedule and the holiday calendar. There is an example of the calendar tab above.

**Arrow buttons** You can view different months with the arrow buttons to the left above the calendar.

**Changes** The user can not do any changes on this tab in the viewer of a local time channel. In the viewer of a central time channel, the user can create special day plans.

### Special day plan

**Central** In the viewer of a central time channel, you can make special day plans. The day plans are normally disabled, but by right-clicking on the title for a day and selecting **Edit Time Setting for this Day**, the day plan becomes enabled and you can change the time periods by dragging the time bar with the mouse. It is also possible to create and delete time periods.

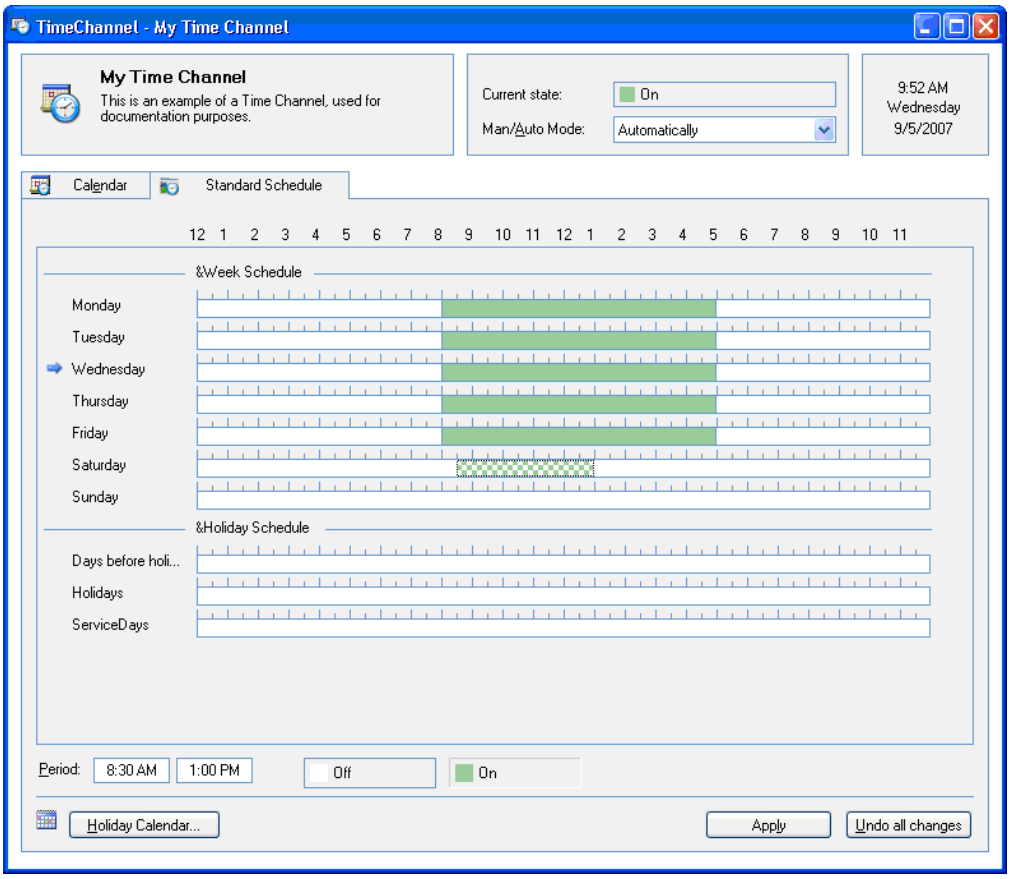



**Remove** To remove a special day plan, right-click on the day and select **Use the Time Schedule for this Day**. Old special day plans will be removed automatically after 1 year.

# Standard Schedule Tab

**Week days, holidays**

The standard schedule tab in the time channel viewer shows day plans for all days of the week (Week Schedule) and for holidays (Holiday Schedule). The viewer of a central time channel displays also special days that have been created in the viewer of a central calendar. Calendar viewers are described below.




**Time periods**

The user can change time periods by dragging the time bar with the mouse.

**New**

New time periods can be created by right-clicking on the name of the day and selecting **New Time Period**.

**Delete**

Time periods are deleted by right-clicking on the time bar and selecting **Delete**.

**Apply**

To apply changes made on the standard schedule tab you must press the button **Apply** at the bottom of the window. For local time channels it might take up to one minute until the state of the time channel is changed in the controller.

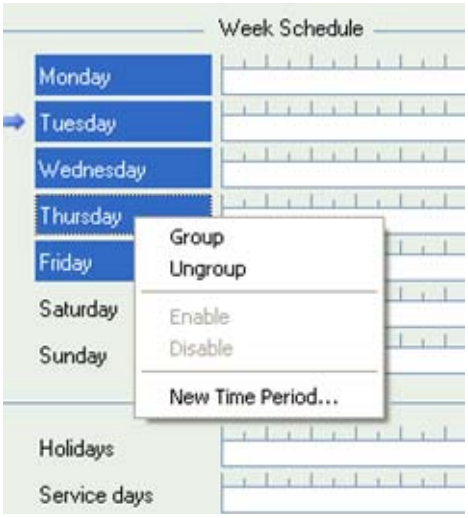
### Group/ungroup

**Central**

In the viewer of a central time channel, you have the possibility to group day plans. This is not possible in the viewer of a local time channels. Days might however be grouped in the controller, depending on how the day plans are configured in the controller.

**Group/ungroup**

Day plans are grouped and ungrouped by right-clicking the titles of the day plans. Time periods and/or day plans can be multi-selected by pressing the Shift or Ctrl key and then use the mouse.



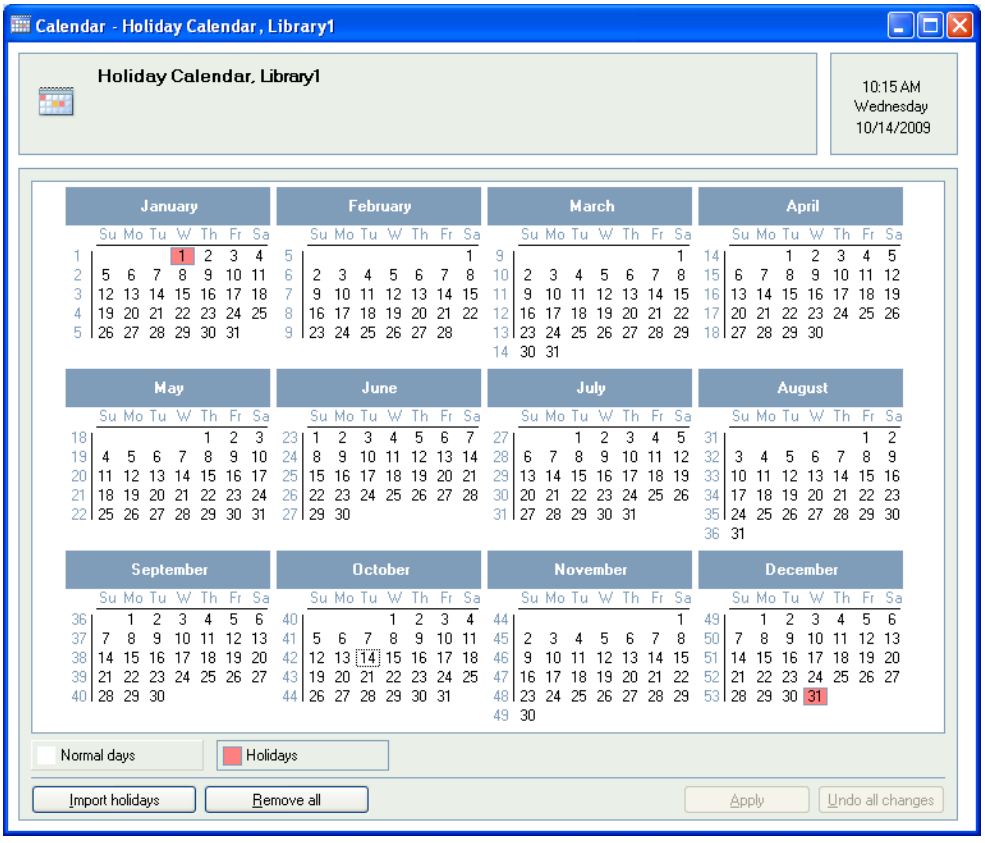

# Calendar Viewers

**Graphically**

Calendar Viewers show calendars graphically for the EXO4 user. The user can create and delete calendar days. Normally the viewers are used for holiday calendars.

**Open**

The viewers can be opened from the time channel viewers with the button **Holiday Calendar** at the bottom of the windows.




**Upper part**

The upper part of the window shows the title, a description (if any). It also shows the current time and date. For the viewer of a central calendar, it is the time of the main computer. For the viewer of a local calendar, it is the time of the controller.

**Create and delete**

The user can create and delete calendar days with the mouse. Select a day type with one of the day type buttons below the calendar, and click on the days that should belong to that day type.

**Apply**

To apply the changes, you must press the button **Apply** at the bottom of the window.

### Removal

**Central** In viewers of central calendars, old calendar days will be removed automatically after 1 year.

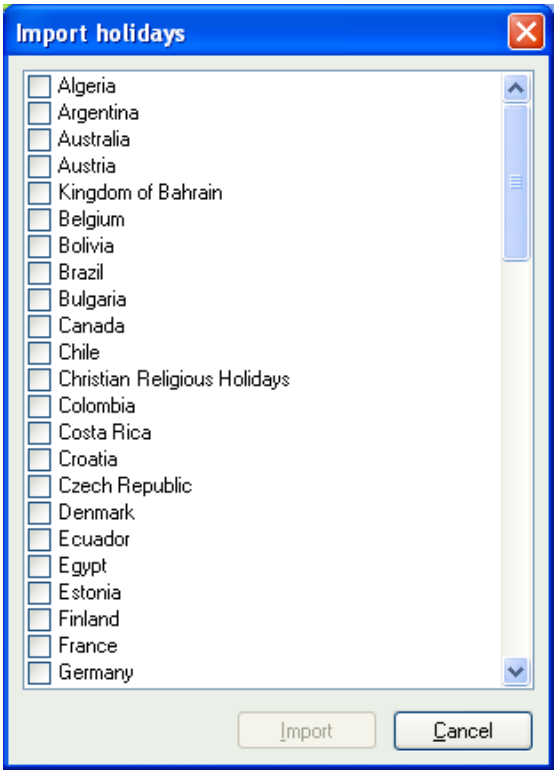
**Local** The calendar in the controllers handles years. This means that the days configured as holidays will be holidays every year in the viewer of a local calendar.

### Import holidays

**Import holidays** You can import all holidays with the button **Import holidays**. Select your country and press **Import**.

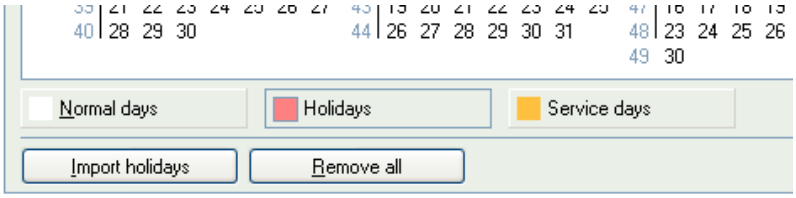
**Central** In a central calendar, all official holidays several years ahead will be created in the calendar.

**Local** In a local calendar, all official holidays the current year will be created in the calendar, but the days configured as holidays will be holidays every year




### Service days

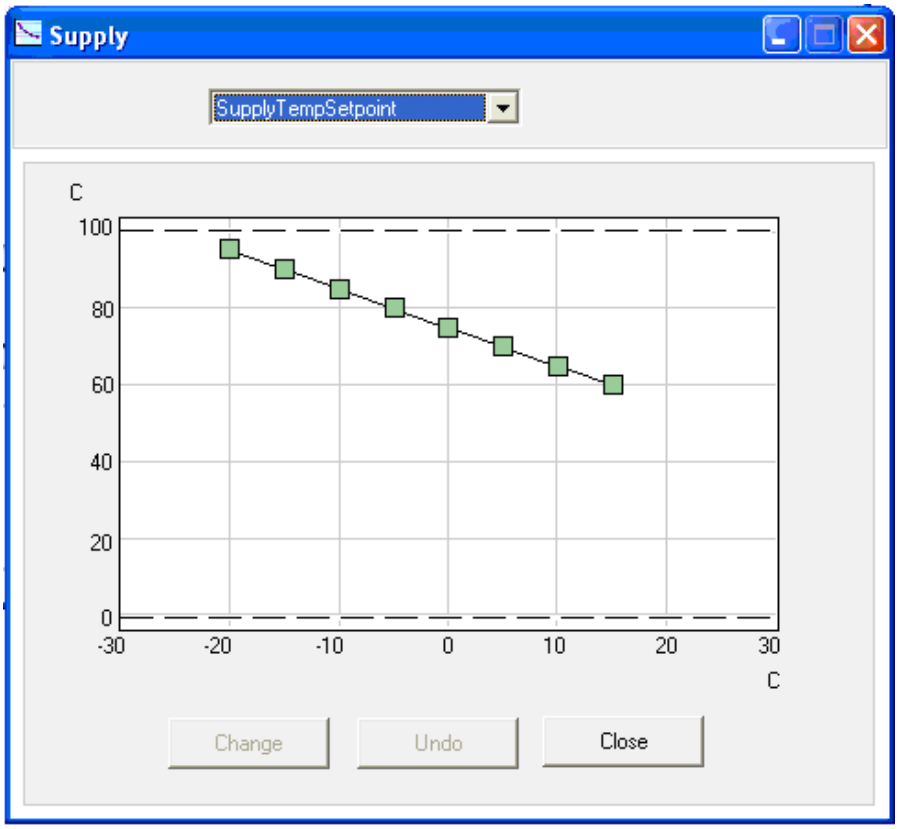
**Service days** The viewer of a central calendar has, besides the day types normal days and holidays, the day type service days. Service days will be yellow in the time channel viewer.



# *Chapter 9* **Control Curves Viewer**

**Curve points**

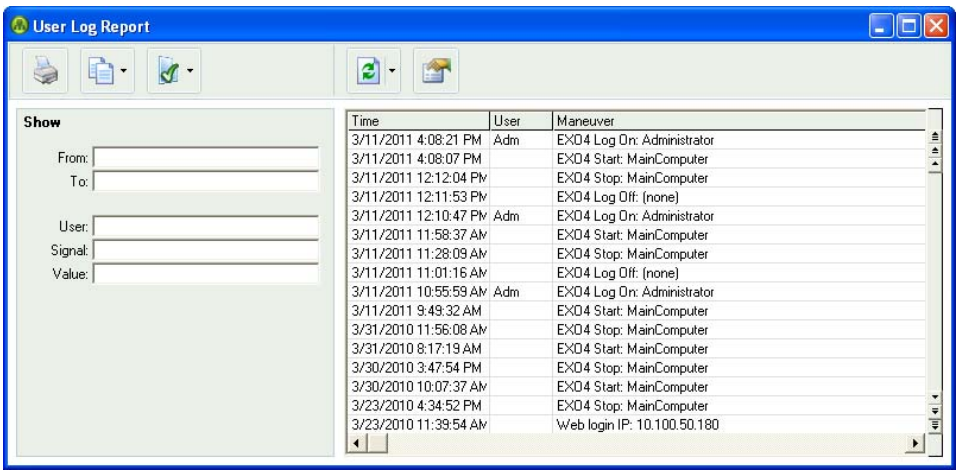
**Control Curves Viewer** is a program for changing and displaying curve points in EXO4, e.g. to make a curve that adjust the supply temperature to the outdoor temperature in a heating system.



# *Chapter 10* **User Log Report**

**Open**

The User Log Report is opened with the button  in the System window.




**Limit selection**

The user can limit the selection from the database by specifying user, signal, value, and time span.

**Date/time**

The syntax for input of date/time is the same as the syntax for the time indications in the Time column (which corresponds to the settings in the Windows Control Panel).

**Wildcards**

The input fields User, Signal and Value allow the use of so-called wildcards '*'. If you for example want to view all maneuvers done in the controller Library1, you enter Library1* in the input field Signal.

**Toolbar**

The toolbar contains the following buttons:

Prints the user log report on the default printer.

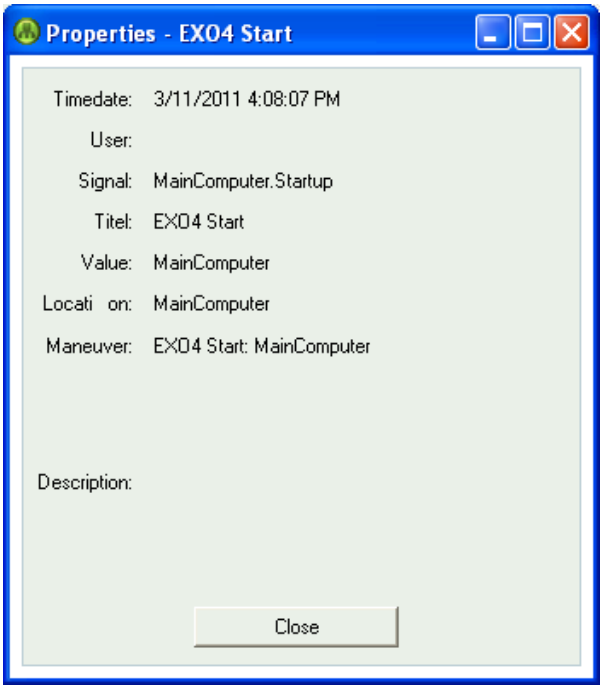
Used to copy the report or export it to a file. The file will be saved in the folder **`EO4Lib\Data`** in your project folder, which normally is **`C:\EXO Projects\`***`ProjectName`*.

You can select whether the settings you have made will be remembered the next time you open the report or not.

When the selection has been changed, the user must click on the Refresh button in order to update the search result.

If the Refresh button's popup menu item **Auto Refresh** is activated, the search result will automatically be updated when new maneuvers occur or when the filter criteria is changed. It is not advisable to use Auto update if all maneuvers are stored in EXO4.


Opens the window Properties with more detailed information about the selected maneuver.


Properties - EXO4 Start
Timedate: 3/11/2011 4:08:07 PM
User:
Signal: MainComputer.Startup
Titel: EXO4 Start
Value: MainComputer
Locati on: MainComputer
Maneuver: EXO4 Start: MainComputer
Description:
Close

# *Chapter 11* **Logging on/off**

**Buttons**

The system window has a toolbar at the top including the buttons **Log on** and **Log off**.

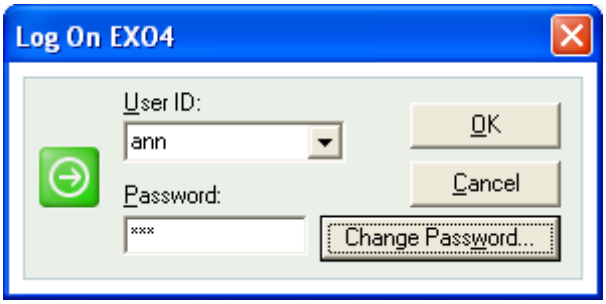
Log on

Log off

## Logging on

**Log on button**

When you click on the button **Log on**, the dialog Log On EXO4 is opened.




**Password**

Select your User ID and enter your password. An error message will appear if the password is incorrect.

**One user**

Only one person at a time can be logged on on the same computer.

**Access level**

After logging on, the user will get access to EXO4 according to his access level. The access levels in EXO4 are described in the chapter ***Users***.

**Changing password**

You can change your password by clicking on the button **Change Password** in the Log On dialog.


**Enter and confirm**

Enter your new password and confirm it in the Change Password dialog.

## Logging off

**Logging off**

When you have finished working in EXO4, you should log off. Click on the **Log off** button in the system window. You have to confirm that you want to log off.


**Not logging off** If you neglect to log off, the system will be vulnerable to unauthorized access. If the user log is used, the logged on user will be held responsible for maneuvers made during this time.

**Automatically** When the computer has been idle for a certain time, normally 10 minutes, the user will be logged off automatically.

You should always log off when you have finished working in EXO4. Otherwise, anyone have access to the system at your access level.

# Chapter 12 Users

## Access Levels in EXO4

**EXO4 access** The user's access level in EXO4 determines which windows can be displayed, which maneuvers can be performed, and how much information is displayed in a window.

**Levels** The levels in the level based access control system of EXO4 are:

- ❑ (None)
- ❑ Guest
- ❑ Operator
- ❑ Service
- ❑ Admin

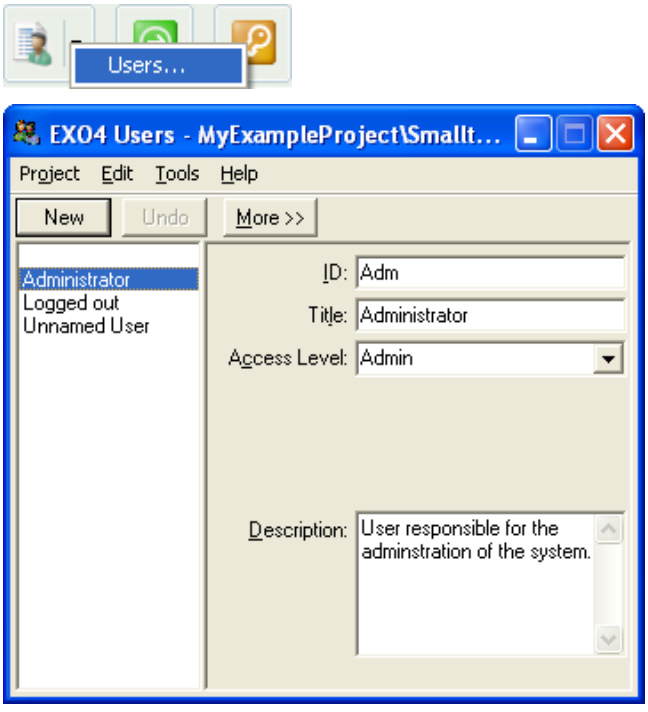
**Standard windows** All standard EXO4 windows are designed to require at least the access level *Operator* for all maneuvers.

**Integrator decides** The integrator of the EXO4 system decides however which access level users must have to make maneuvers, open windows, etc.

**(None)** The access level (None) is the access level when nobody is logged on.

## Users in EXO4

**Users** The project's EXO4 users are defined in the tool EXO4 Users, which a user with the access level *Admin* can open with the popup menu command **Users…** in the system window toolbar.



**Logged out**

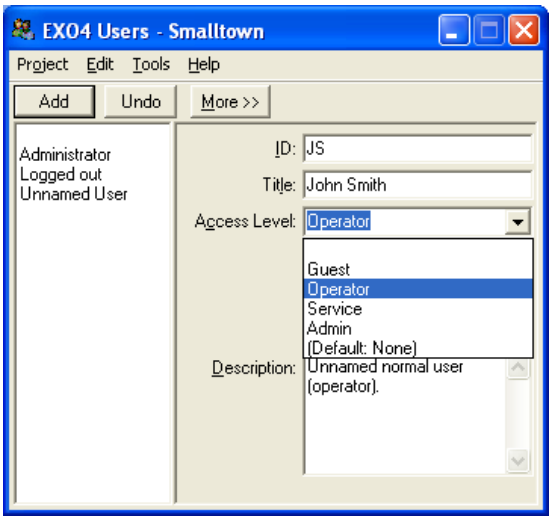
The pre-defined user *Logged out* with the access level None indicates which access level the user is granted when nobody is logged on.

## Defining Users

**Defining**

A new user is defined in the following way:

- ❑ Click on the button **New** in EXO4 Users.
- ❑ Enter an ID for the new user. The ID should not contain e.g. spaces.
- ❑ Enter a title. The title can be the full name of the new user.
- ❑ Select the access level of the new user.
- ❑ If you wish, you can give a description of the user.
- ❑ Click on the button **Add**.
- ❑ Save the new configuration by selecting the menu command **Project – Save**. If you did not save the configuration, you will be asked if you want to save it when you close EXO4 Users.




**Password**

A new user will always get the password **exo**. This password should be changed as soon as possible. See the chapter ***Logging on/off***.

## Removing Users

**Deleting**

A selected user in EXO4 Users is removed with the menu command **Edit – Delete** or with the **Del** key.

# *Chapter 13* **Maintenance**

## Defragmentation of the Database

**Regularly**

If a database, e.g. with historical data, is continuously written to, its size will increase indefinitely, even if the amount of data is constant. To avoid this, the database must be defragmented regularly.

**Automatic**

By default, a limited defragmentation is performed once a week.

**Manual**

A more extensive defragmentation should be performed at least twice a year. This defragmentation is performed manually for SQL Server Express, MSDE and automatically handled SQL Server databases in the following way:

- ❑ Close EXO4 Run by closing the system window.
- ❑ The defragmentation can be started with the shortcut **Defragment EXO4 Database** on the desktop.


The defragmentation can take up to one hour depending on the size of the database and its level of fragmentation. The time needed decreases by performing the defragmentation often.

- ❑ Start EXO4 Run with the shortcut on the desktop.


The database should be defragmented at least twice a year to decrease the size of the database.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