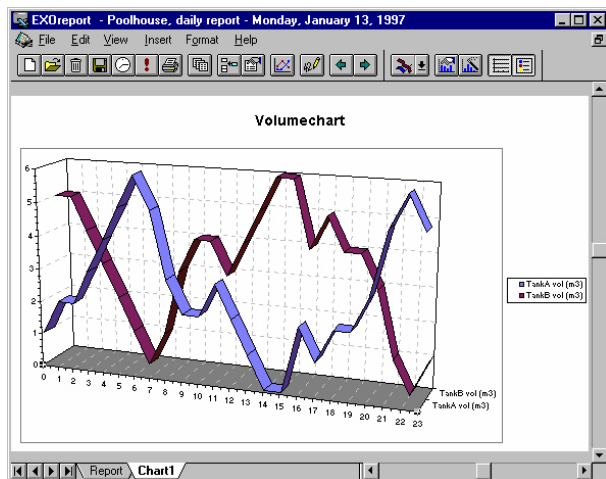# EXOreport

EXO software

Software for producing advanced diagrams and tables in an Excel environment.

- **Reports in Excel format**
- **Easy to use**
- **Daily / monthly / yearly reports**

- **Templates included**
- **Automatic printout possible**

EXOreport is an add-on program for EXO4 intended for processing, displaying and printing reports and charts that show runtime and measured values. EXOreport also includes functions for designing reports and freely deciding the design of the reports and their data contents.

User-friendly program
To produce a report, click on the relevant building, station, controller, air handling unit etc. and select the period you want the report to be shown (e.g. a week, month or year). The data can also be shown in an editable Excel format, by the press of a button.

What is a report?
The term report in EXOreport has a broad meaning, as forms for entering data and calculation of data are included. The reports are shown on the screen in the form of text, tables and charts of various types. All the reports can also be printed and exported to other programs.

The design of individual reports is not decided by the basic program EXOreport, but by the use of templates and forms used by the program for presentations. These templates and forms can either be chosen from the pre-made suggestions supplied with the program in the application library, or they may be customer specific.

Applications
Reports summarise various types of data, which may be used for/as:

- Reporting: Many different plants, e.g. plants with an environmental impact often require periodical reporting to various authorities.
- A basis for decisions: A building requires a lot of energy for heating, which can be seen in a report. The user can then decide on appropriate actions for energy saving.
- Follow-up: After measures have been taken, e.g. increased building insulation, the user can follow up the result with a report.
- Costs report: Reports can be used as a costs basis, for example to see how much energy a building owner has consumed in a given period.
- Technical maintenance: Pumps and other technical equipment start and stop continuously. After 100 start-ups it is time for maintenance and a report will show when it is time.
- Troubleshooting: Malfunctions in the plant will show up in a report.

Software
EXOreport can be used on Excel 2003, Excel 2007, Windows XP and Microsoft Windows Vista.

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Producing a report

The summary and display of a report can during runtime be initiated in several different ways. The most common way is to select the report in the program's report list, or by starting the report with a button or a menu command in the EXO4 window containing the process window or overview linked to the report.

EXOreport uses Microsoft Excel, which means that EXOreport can use data from and create Excel worksheets. During runtime, EXOreport adapts Excel's menus and toolbars to its own menus. The user can at any time activate Excel's menus and work with these.

In Excel 2007 the functions belonging to EXOreport can be found under the tab Add-Ins.

A report can consist of several sheets. The first sheet may show a table, the second a chart and the third something else.

Tools

There are a number of different tools for creating and building a report:

Reports Register Tool

Shows all existing reports in the current project. Use this tool to create new reports from existing report templates.

Report Tool

In this tool you build and configure a report by creating different controls, e.g. tables, columns, charts.

Parameters Tool

For making general settings for all reports in the current project.

The tools are started from the toolbox in EXOreport, which you open by selecting EXOreport Config in the EXO menu, in the Windows Start menu.

Templates

All reports are based on templates. There are various types:

- A template for a blank report
- Templates for half-finished reports, which require more work to be completed. This type of template is called a semi-product.
- Templates for ready-made reports, which only require that the signals used in the report are defined. This type of template is called a finished product.

There are a number of standard templates included in EXOreport. This information is intended particularly for project designers and programmers. The purpose of the general templates is to provide a good framework, facilitating the design of reports and giving them a uniform appearance.

Generating reports

Reports can be displayed on the computer screen or printed manually or automatically at pre-set intervals or times, as controlled by EXO4 or Windows.

Printouts can also be initiated by events in EXO4 and connected controllers. It is possible, for example, to have a controller calculate the degree of efficiency in a heat pump and then print a report with the results, when the calculation is complete.

Examples

Here are a few examples of reports that can be created using EXOreport.

Example 1 - Report showing collected values

The report below shows monthly consumption for two meters in House 3. The meters can be automatically read or manually read and entered. In both cases, the report can be configured so that values, after authorization check, can be entered or changed directly in the report, in which case the values in the database are also changed.


Example 2 - Energy Consumption Report

This report uses a form built as a report class. At every printout the report is filled in with the data linked with the current object. This is in turn decided by the row selected in the report list that was chosen to start the printing. You might say that the Start row has a report definition belonging to it, which contains the information needed to fill the form according to requirements.

There is also, in the same report, a bar chart showing the relationships between consumption, normalized consumption and budget, according to the following:
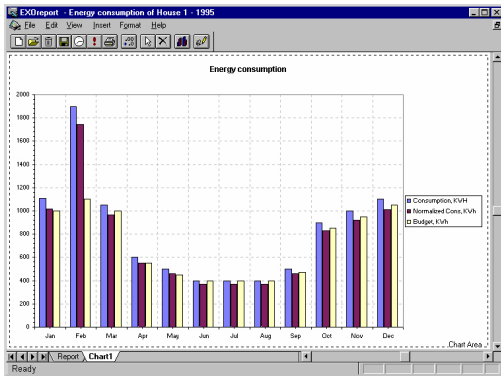
Example 3 - Monthly Report

An example of a report for a pump station is shown below. The report shows days and has the interval one month.


Example 4 - Manual Signal Choice in the Report

The configuration window in example 3 shows that a template can be made for a number of different signals, which do not all need to be used for individual objects. The signals belonging to a particular object are entered at the same time as the object's other parameters are being defined, as in the example.

In some cases, it may be preferable to select different signals directly in a report for e.g. certain columns, for e.g. comparisons, leakage checks, energy optimisation etc. This is possible in EXOreport.

A report with signals configured for choice of database signals in table 1 is shown below.

The user can easily add or delete signals in individual columns.
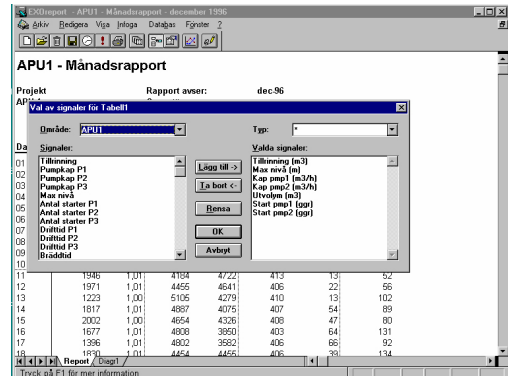
Example 5 - Curve Chart

A curve chart is shown below. The diagrams get their data from visible or invisible columns. The same options concerning signal choices etc, apply here too. Diagrams can, of course, show both collected, entered and calculated values.
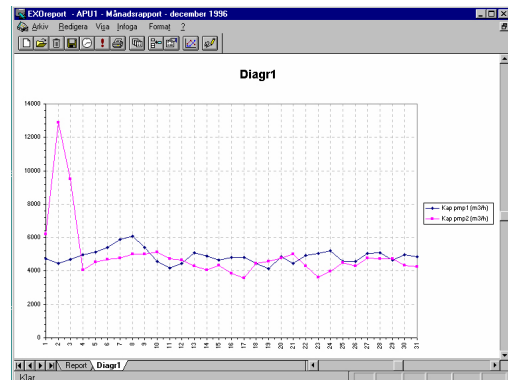
Example 6 - Calculated Report

The diagram below reads one year of daily average temperatures and shows the number of days that fall into temperature intervals of 10°C around the given values on the x axis.
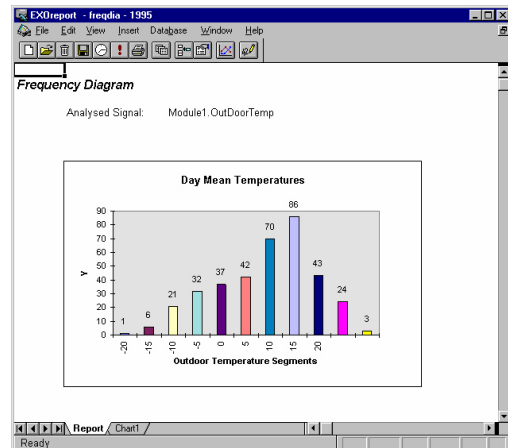
Product documentation

Document	Type
EXOreport 2010	Manual describing how to install, use and configure EXOreport

The product documentation is available for download from Regin's ftp server. It is intended for our system customers, who need to share files with us, for example at technical support. Contact one of our sales engineers for access via your own password.

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