



EXO4 2009

SCADA/HMI software

EXO4 2009 Edition 2. SCADA/HMI software for operator stations. EXO4 has a graphical user interface and all settings and commands are performed using the mouse and keyboard.

- Freely programmable Windows-based SCADA
- OPC communication with other brands of controllers
- Communication via BACnet possible
- Free version for up to 75 I/O:s

EXO4 is the operator program of the EXO system. It is a complete and powerful SCADA system that provides control and supervision of the various functions of a property, as well as the collected measurement data.

EXO4 allows an operator to monitor and control the system processes from a computer, monitor alarms and perform alarm maneuvers, display historical values in reports and charts.

EXO4 handles the requirements of different communication media, e.g. dial-up modems, satellite modems, TCP/IP etc.

The software is sold together with a matching hardware key.

Functions:

- Dynamic visualization of plants and processes
- Real-time curves and trends
- Time channel program
- Historical database
- Alarm and status supervision with three alarm priority levels
- Registration and handling of events
- Support for SQL
- Client-Server for large systems with many workstations
- Script language available

Software

EXO4 can be used together with Windows 2000, Windows XP, Windows Server 2003 and Microsoft Windows Vista.

- Alarms, data logging, time control and process windows supported
- Supports all kinds of communication media
- SQL-based database

Clear graphic design

All EXO4 window templates have a look according to the latest Regin graphic design.



EXO4 offers many possibilities to configure the SCADA design in a way that agrees with your wishes. Included on the EXO4 CD is Paint.Net, a free third-party tool for designing images. It comes with a large library of graphic symbols and SCADA pictures. EXO4 also includes support for animated symbols.

Five sizes of hardware keys

The EXO4 software is sold together with a matching hardware key, EXOkey, which protects the software from unauthorised copying. The size of the key depends on the requested number of I/O:s. It is available as a USB device in the models XS, S, M, L and XL.

Communication via BACnet possible

BACnet is a data communication protocol designed specifically to meet the communication needs of building automation systems. It is a European standard, a national standard in more than 30 countries, and an ISO global standard. Together with a BACnet OPC Server, the EXO4 OPC Client can communicate directly with BACnet compatible controllers of any brand.

Regin sells and supports the OPC server BACnet OPC Server from KepWare Inc. It is included on the EXO4 2009 Edition 2 CD.

See more in the section "Connection to controllers of other brands - OPC".

SQL-based database

SQL Server is a standard database, from which you can easily extract data and import these data into other applications. For example, you can collect data from controllers in a standard database via EXO4 and then create a report using any report program.

EXO4 is delivered with SQL Server Express 2005. It is a limited variant of the SQL Server. SQL Server Express allows a database size of 4 GB.

Connection to controllers of other brands - OPC

OPC is a standard for data exchange in automation applications. The purpose is to make it possible for project developers to combine OPC-compatible software and hardware from different suppliers in one project.

OPC utilises Microsoft's standard for communication between Windows programs, COM (Component Object Model). There is also a version of COM for data exchange between programs in different computers, DCOM, which can be used by OPC.

EXO4 2009 Edition 2 has an OPC client that can connect to other brands of hardware (works from versions with M-key and up). The OPC server makes it possible to read and write values from any OPC server that supports Data Access 2. This means you can connect a variety of controllers directly to EXO4, without using foreign SCADA software.

One EXO4 OPC client can communicate with multiple OPC servers of different brands simultaneously. Your existing controllers can be integrated in the Regin System. When your system continues to expand, you can install and integrate Regin controllers into the system without any limitations.

In EXO4 2009 Edition 1, it was possible to create alarm signals and log signals directly in EXO4. These signals can now be used for alarm generation and logging of signals in all units connected via OPC. At the same time, alarms and logs from EXO controllers are handled in the usual way.

Recommended OPC drivers

OPC drivers can be purchased from companies all over the world and integrated with EXO4. Regin recommends the following OPC drivers, which are compatible with the EXO system:

- **Modbus TCP/IP och Modbus Serial:** KepserverEx from Kepware Inc.
- **KNX/EIB:** NETxEIB OPC Server 3.0 from NETx Automation
- **LON:** Easylon OPC Server from Gesytec GmbH
- **Johnson N2:** Johnson EDE OPC Server from Johnson Control

There are pre-made templates in EXO4 for these OPC servers, which makes them easy to connect to the EXO4 OPC client.

More information

For more information, see the 2009-05-27 version of News in EXO 2009 and the EXO4 OPC Client Manual.

The OPC standard is specified and administered by the OPC Foundation. More information is available at www.opcfoundation.org.

Creating an EXO system

An EXO project is a plant consisting of a number of controllers, main computers, and a number of work computers. They all come together in a communication system. The entire project configuration is stored in a project folder with subfolders on the hard disk, which makes it easy to move a project from one PC to another without affecting other projects.

Structure

Projects are organised in a hierarchical structure. The project is the top level and can contain areas, stations, controllers and computers.

A project normally contains a main computer and a number of work computers that all have EXO4 installed.

A controller has a number of I/O points and up to three communication ports. The controllers control processes, collect data and generate alarms on errors, etc.

Controllers can be organised in stations. A station can consist of several controllers in a master/slave system. The master controller is generally connected to a main computer via e.g. a fixed cable, a TCP/IP network, a dial-up modem or a radio modem.

The maximum number of controllers/stations depends on the construction of the system.

Areas are in general used to group the project's stations and single controllers into geographical areas. The image below displays the areas South and North. These areas are part of an even larger area, City.

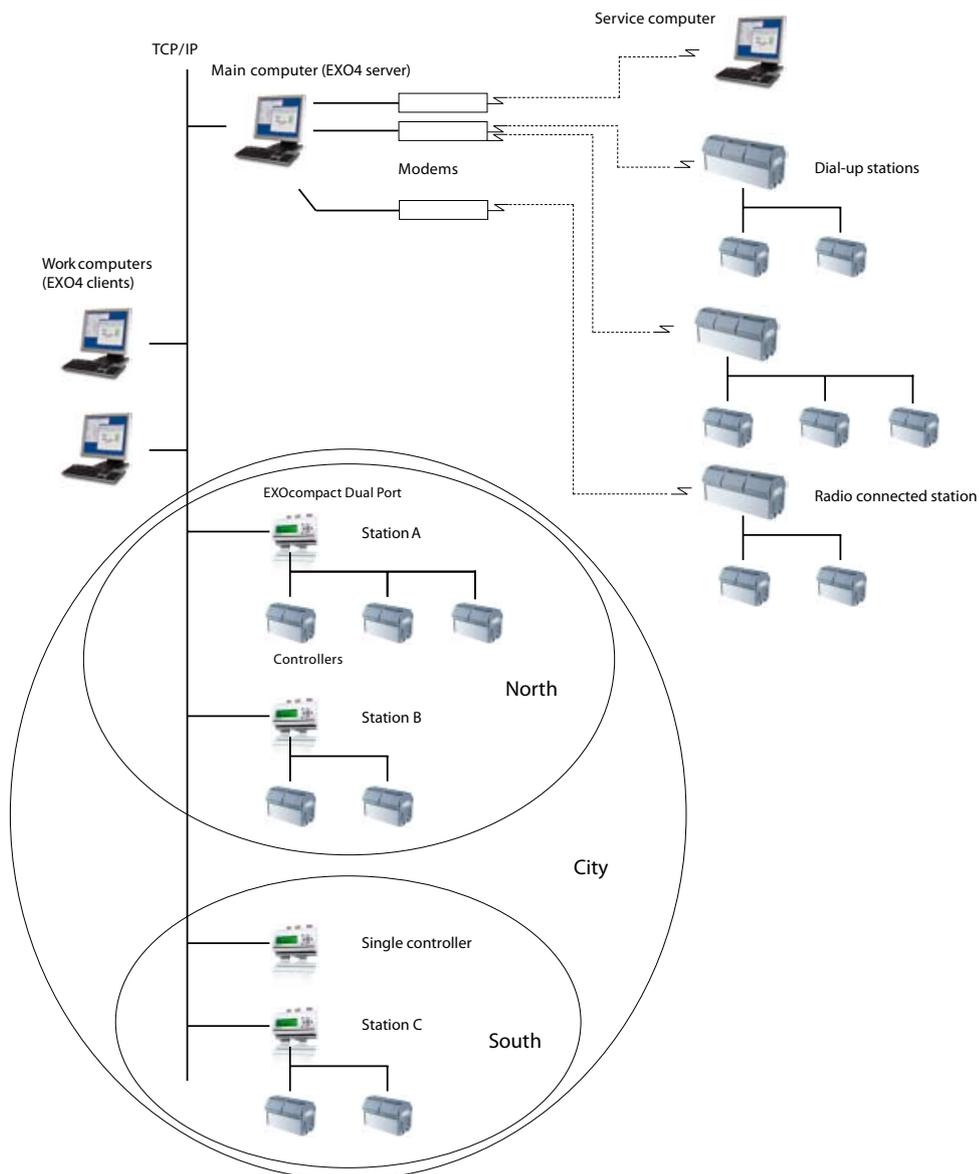
See the picture below.

EXO4 computers

For each computer type in an EXO4 network, an EXO4 computer must be created in Project Builder, the configuration environment of the EXO system. An EXO4 server (or Main computer) is an EXO4 computer with at least one of the following:

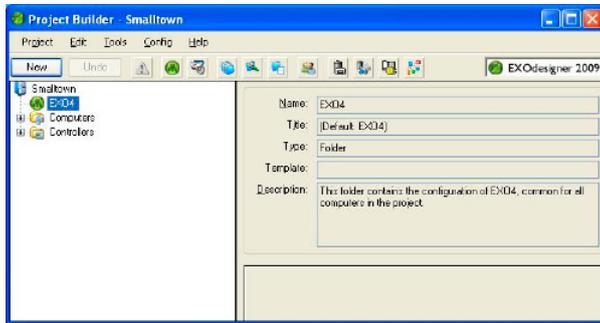
- Communication with controllers using a serial COM port or a USB port or a TCP/IP connection directly to the controllers **and/or**
- An EXO4 database on a local disk

An EXO4 client (or Work computer) does not have database or direct controller communication.



Configuring EXO4

EXO4 is configured in windows (so-called configuration tools) that are opened from Project Builder. The tools are normally opened by clicking on the buttons of the toolbar or by using the menu **Config**.



The toolbar

When EXO4 is selected in Project Builder, buttons with the following functions are displayed on the toolbar:

Button	Text	Description
	EXO4 Windows	Displays a list of the windows that are defined in the project. From this window you can start EXO4 Window Designer for the selected window.
	EXO4 Window Designer	Opens the configuration tool for EXO4 windows.
	EXO4 Menu Designer	Opens the configuration tool for menus for EXO4 windows.
	EXO4 Users	EXO4 Users is used to define users.
	Database Backup Script (of Main Computer)	Opens an editor with a script file that controls the copying of the database backup file to another media, e.g. to another computer in the network where backups are run regularly.
	EXO4 Action Categories	EXO4 Action Categories is used to configure actions (e.g. printouts) at different events.
	Nimbus Explorer (of Main Computer)	Opens the configuration tool for Nimbus Alarm Server.
	EXO4 Signals (of Main Computer)	The configuration tool for EXO4 Signals. EXO4 signals facilitate the transfer of variable values between controllers in different stations via EXO4.

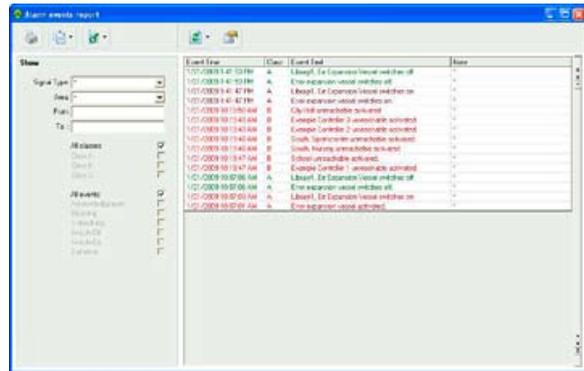
Designing and configuring EXO4 Windows

An EXO4 application contains a number of windows with process pictures, menus, and dynamic elements for displaying and changing values in controllers, etc.

Alarms and events

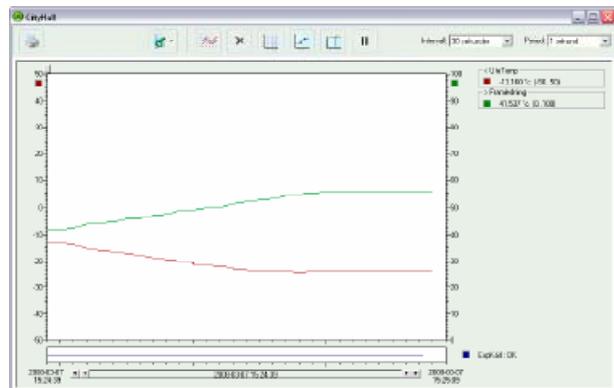
Alarm points and event points are defined and configured with the Alarms and Events tool.

All alarm events are always immediately transferred by notification from permanently connected stations and dial-up stations (while they are connected) to the main computer.



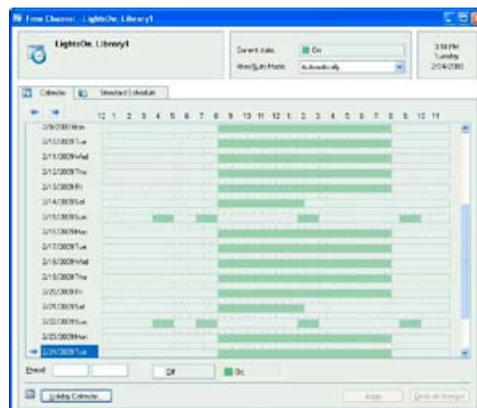
Logging

In EXO4, there are window templates for displaying historical curves and real-time charts.



Time control

Time schedules can be used for time control, i.e. switch-on/off of pumps, fans and lighting.



Configuring database maintenance

Database maintenance means purging old data, defragmenting, and backing up. It is important to purge and defrag the database regularly in order to prevent it from growing indefinitely.

In EXO4, database maintenance takes place automatically at certain times.

Defining operators

The operator's EXO4 runtime access controls the information that is displayed in the EXO4 windows, as well as the selection of commands that can be executed. The operator commands can be stored in an operator log.

Models

EXO4 version	Maximum number of I/O:s	Type	Model	Several computers connected in a network
EXO4 2009 XS7	300	USB	EXO4XS7USB-2009	Yes
EXO4 2009 S7	500	USB	EXO4S7USB-2009	Yes
EXO4 2009 M7	1000	USB	EXO4M7USB-2009	Yes
EXO4 2009 L7	3000	USB	EXO4L7USB-2009	Yes
EXO4 2009 XL7	No limit	USB	EXO4XL7USB-2009	Yes
No hardware key	75			No

Add-on programs for EXO4

EXOREport	Program for producing advanced diagrams and tables in an Excel environment
Nimbus Alarm Server	Software which sends alarms from your system via e-mail, sms, fax, etc.
EXOdesigner	Software tool for designing and configuring a complete EXO system
Arrigo	A powerful, web-based portal, which can be used for supervising operation, maintenance and administration of one or more properties

Product documentation

Document	Type
EXO System Manual	Manual describing the EXO system and how to configure it
Product sheet EXOkey	Information about hardware keys for EXO4
EXO4 OPC Client Manual	Manual with information about the EXO4 OPC Client

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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