

Room Automation Solutions

Freeing up space in building automation.



DEOS.AG

Technology for intelligent buildings

Room Automation Solutions

A clear trend – comprehensive solutions.

The trend is clear – to ensure energy optimization and increased comfort, operators and investors of intelligent buildings need comprehensive cross-sector solutions.

We achieve energy efficiency in each individual room throughout the entire building by reliably and precisely combining components. Our comprehensive single room unit makes it easy to achieve **energy savings up to 40%**.

Energy prices, growing demands for room comfort and sensibly handling natural resources make **cross-sector room automation** necessary.

The new **Room Automation Solutions** of DEOS AG combine **electrical installation** and **room air-conditioning** requirements into a state-of-the-art single room solution.

The advantages behind this combination make it easier for the user to operate the solutions as well as significantly optimize energy efficiency.



Comprehensive room automation

DEOS AG is responding to the demands of investors and building operators calling for new technical and efficient approaches with comprehensive room automation.



Advantages of the DEOS AG modular solution

- Flexible response to customer demands
- A perfectly matched range of products, with room controllers from DEOS development, IO modules, user programs and programming tools
- A wide range of interfaces, such as BACnet, KNX IP, MODBUS, DALI, DMX, etc.
- For hotels, office buildings, schools/universities and hospitals, for example
- Room automation functions implemented according to VDI 3813 as well as the criteria of the European standard EN 15232 for the energy efficiency of buildings

Room Automation Solutions

The perfect systematic match.

The **Room Automation Solutions** combine DEOS AG solution components into cross-sector networked room automation:

- End-to-end BACnet communication – as MS/TP or IP
- The solution covers all three levels – management, automation and field level
- Highly customizable – to meet the demands of various technical equipment in rooms or building sections
- Cost-effective modernization – thanks to gradual building modifications



The **Room Automation Solutions** offer modifiable solutions for the single room unit: whether you want to control the room temperature, ventilation, humidity or have room features for controlling lighting, sun shading, blinds, sockets, the DEOS AG individual room concept covers all your needs.

information

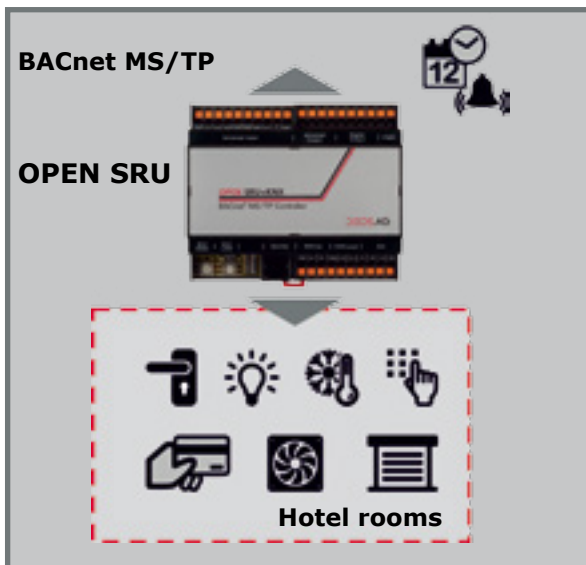
VAV (variable air volume) refers to a central room air-conditioning system. The task of a VAV system is to configure the desired room state using the volume flow control in the supply air channel. The demand-driven and energy efficient control of the air flow rate, temperature, CO₂ or humidity, for example, allows you can achieve optimum room conditions.

FCU (fan coil unit) refers to a device that is used locally. These devices consist of a fan and a heat exchanger that are used for cooling and heating.

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Our example for hotel rooms.

The full integration of air-conditioning, lighting and sun shading into an intelligent comprehensive solution: DEOS AG offers customizable solutions for a wide range of technical room requirements. An example of a hotel application is provided below.



Room requirement:

- Heating/cooling via a fan coil unit featuring 4 pipes, instead of radiators or mirror heating
- Centrally adjustable set-point temperature with individual adjustment options in the room
- Light control via room occupancy status
- Access controls, card holder, door sign control
- Sun shading control, manually and centrally controlled
- Control panel
- Trend, alarm and time programming
- Planned according to VDI 3813
- Desired energy class A according to EN 15232



Room climate: temperature control with heating/cooling function, locked



Room ventilation with optional air quality control



Lighting control, presence-dependent, delayed deactivation



Sun shading control: manually and via timer program



Time program, trend and event logging, alarm



Access controls, card holder



Control panel



Additional advantages

- **Plug and Play** – OPENproject, the project planning and configuration tool
- **Easy** – no programming experience required, only minimum training
- **Fast** – room planning, configuration, programming in less than 10 minutes
- **Qualitative** – less routine work and fewer sources of errors thanks to global parameterization
- **Optional** – customized adjustments with free programming
- **Modular** – expandable number of IO units via device options
- **Communicative** – via BACnet MS/TP or IP, KNX, KNX IP, DALI, MODBUS

Room Automation Solutions

Our controllers offer solutions.

The objective of a single room unit is to maintain the temperature via a set-point. VAV and FCU solutions are used to enable the system to achieve this comfort level in complex buildings using a wide range of identical or similar room applications. Typical applications include hotels, office buildings, schools/universities or hospitals.

DEOS AG offers a special selection of specifically matched solutions for this:

1 VAV controller and control unit

- Project-specific configurable controller
- Available with native BACnet MS/TP or MODBUS
- Connection of room thermostats
- Up to 4 inputs and 6 outputs

About the room control unit

- Central cabling to the control unit
- Stand-alone, timer control, etc.
- 24 volt AC operation
- Up to 3 inputs and 6 outputs

3 SRU Single Room Unit

- Freely programmable as a native BACnet controller
- Integrated BACnet MS/TP and optional KNX interfaces
- 8 universal inputs, 4 universal outputs and 4 digital outputs
- 2 digital outputs with high current design
- Direct connection of sensors
- Backup/restore – Minimum downtimes thanks to the fast replacement of room controllers
- Optional: The number of IO units can be expanded with a corresponding selection of models

2 FCU controller and control unit

- Available with native BACnet MS/TP or MODBUS
- Connection of room thermostats
- 24, 120 or 240 volt AC operation
- Up to 10 inputs and 15 outputs

About the room control unit

- Direct control line between the FCU controller and room control unit
- Available as BACnet or stand-alone version
- 24 volt AC operation, up to 3 inputs and 6 outputs



Room Automation Solutions

OPENproject – Engineering made easy.

Our objective is to save our customers time-consuming routine work, thus allowing them to save valuable programming time and costs. The new **OPENproject** configuration and programming tool helps customers achieve this.

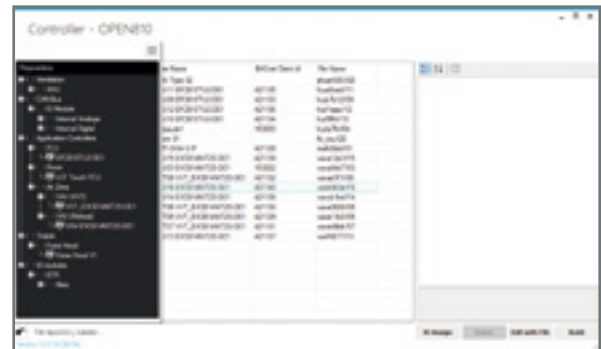
- 1** **OPENproject** provides you with comprehensive options for the fast configuration and automatic programming of the OPEN EMS for all functional modules throughout the entire building. For example, you can control the temperature, ventilation, humidity in the heating, ventilation and air-conditioning system as well as the room control for controlling the lighting, blinds and sockets. You can comprehensively plan and implement everything with **OPENproject**.

Engineering made easy

The entire project planning and programming is carried out in a state-of-the-art design using drop-down menus and checkboxes. You use the DEOS AG **macro library** for this. The effortless connection of additional individual **customer libraries** allows you to increase your range of functions.

OPENproject enables end-to-end object-oriented programming **based on BACnet** and currently includes the applications:

- Ventilation systems, rooftop units
- VAV and FCU systems
- Lighting (Light Management Solutions)
- Energy monitoring and
- Energy optimization through calculation objects



OPENproject automatically creates the controller program. All controllers throughout the entire building are programmed in the same step. This saves valuable time and increases the programming quality. In addition, **OPENproject** also supports you with the following steps:

- Setting up projects: selecting the type and number of all room controllers in the building
- Creating and searching for the DDC (main station) as well as selecting FUP pages
- BACnet server and client configuration
- MODBUS master configuration of the individual slave devices
- Automatic creation of 3D graphic overview pages as well as navigation pages
- Optional: customization through free programming with DEOS FUP XL

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OPENproject – Function overview.

The **OPENproject** is provided for **free** with the OPEN EMS system. This also enables you to efficiently deploy personnel thanks to state-of-the-art two-stage programming: the programmer sets up the project and customizes it if necessary. The commissioning can be performed on-site through easy configuration steps. Please don't hesitate to contact experts at DEOS AG for complex individual customer requirements. We are always happy to support you with your project.

2 The application automatically created by **OPENproject** can be visualized during run-time using **OPENview ControlPanel** as well as a standard browser.

Changes made to the configuration for the rooms and zones are performed within seconds for the entire building. You only need to select the function.

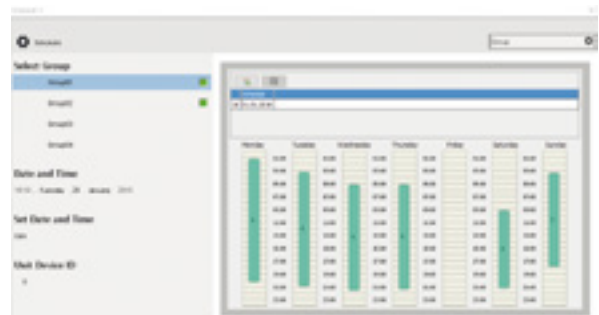


The **Room Automation Solutions** offer additional straightforward useful functions:

- Cloning function – for fast global parameterization
- Graphic around-the-clock trend history
- BACnet trend objects preassembled in the controller
- BACnet scheduler functions and calculation objects
- BACnet DataCenter – the DEOS BACnet browser
- Graphic adjustments and configurations via checkboxes

3 The **Room Automation Solutions** offer a number of practical additional functions, such as the **schedule for synchronization groups**:

This allows you to consolidate rooms or zones into various groups. For example, you can use a desired timer control to **simultaneously** perform functions according to the weekly calendar or timeframe for a specific number of rooms in the building.



Comprehensive room automation

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DEOS AG is a technology leader and innovator for building automation. We have been developing and distributing our own products and solutions for nearly 50 years. Our vision is to strike the perfect balance between intelligent and comprehensive **D**igital **E**nergy **O**ptimization **S**ystems for building automation, comfort, energy efficiency and cost transparency.

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