**SAUTER**

Creating Sustainable Environments.

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SAUTER Smart Shading Shade Correction: sun protection even easier and more practicable

Smart Shading stands for automated building sunshading. The application improves the use of daylight for optimum user comfort at maximum energy efficiency. SAUTER Smart Shading helps control the room climate, reduces the heating and cooling loads and lowers the operating costs for the air-conditioning.
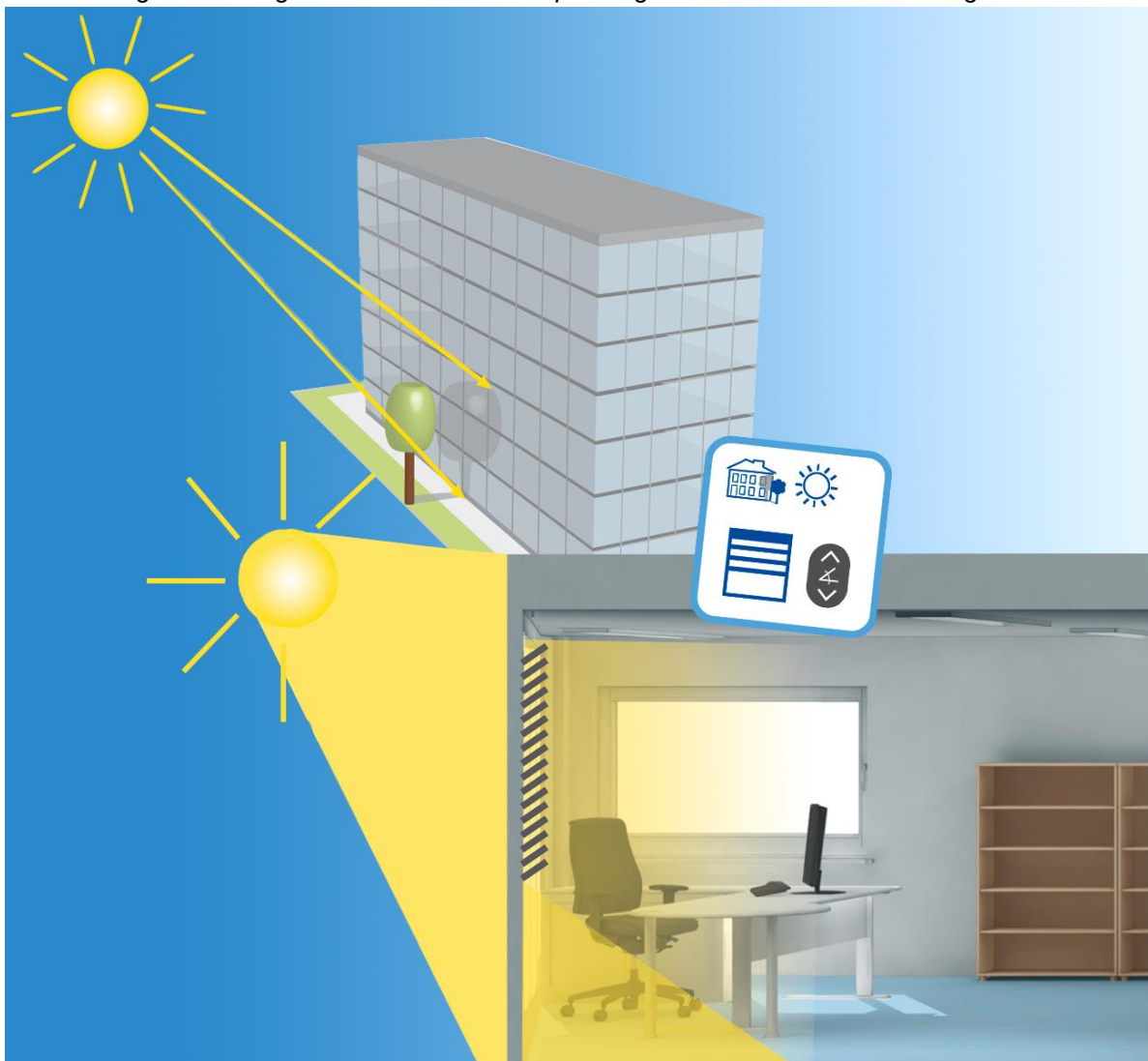
VDI 3813/3814 – Directives for building automation

The VDI 3813 and 3814 Directives for building automation describe building automation functions for integrated room automation. In order to implement the complex function of the shadow correction for the sunshading functions of a building, external building data is combined with a wide range of calculations. SAUTER has added this shadow correction to the room automation functions and implemented it with its own new components.

VDI 3813 states that the shading function can be used in combination with the automatic solar control or automatic slat tracking. The shadow correction checks whether one or more windows which, for example, are assigned to a room, are temporarily shaded by surrounding building work or parts of their own building. In this case, the positioning command of the sunshading function is replaced by a defined home position that enables better daylight usage.

The implementation of this function requires comprehensive parameterisation of the surrounding shading objects. Using this data and the current position of the sun, the shadow correction calculates whether the respective window is being shaded or not. The calculations are made for the geographical location of the premises for one whole year at intervals of 15 minutes.

SAUTER shading program

The SAUTER Smart Shading function uses the new shading program to record the required parameters for the respective building one time using the 3D building data and the corresponding surrounding shading objects (for example, adjacent buildings). An integrated map representation simplifies the determination and entry of the location and orientation of the building and the shading objects. Additionally, the simulation of the facade is graphically supported, as well as the position and assignment of the window areas to the respective room axes of the ecos room controllers.

The shading program uses these parameters to calculate the shading for the respective room axes and creates the file (table) of the shading correction / shading status / switching times for the planned building, namely, the "shadow schedule".

Shadow Schedule

These location- and time-specific parameters are distributed to the autonomous SAUTER room controllers as the Shadow Schedule. The new Shadow Correction module is used in the ecos504/505 room controllers. This module evaluates the parameters to obtain the shadow status – shadow / no shadow – for the assigned room segments and the assigned window blinds.

Integration in BACnet

The shading status is incorporated in the BACnet priority array between the manual operation level and the automatic function of the sunshading. This ensures the manual control of the sunshading at all times, enabling it to be adjusted to the users' individual requirements. The window blinds in the rooms are activated either directly with the SAUTER ecoLink IO modules via relay contacts or digitally via the integrated KNX or SMI interface of the ecos504/505 room controllers and corresponding KNX actuators or SMI monitors.

SAUTER Smart Shading – another progressive contribution to the Smart Building with the SAUTER building and room automation system.

About SAUTER

As the leading provider of solutions for building automation technology in Green Buildings, SAUTER ensures good climate conditions and a sense of well-being in sustainable environments. SAUTER is a specialist in developing, producing and marketing products and systems for energy-efficient total solutions, and offers a comprehensive range of services to ensure the energy-optimised operation of buildings. Our products, solutions and services enable high energy efficiency throughout the entire life-cycle of a building – from planning and construction through to operation – in office and administrative buildings, research and educational facilities, hospitals, industrial buildings and laboratories, airports, leisure facilities, hotels and data centres. With over 100 years' experience and a track record of technological expertise, SAUTER is a proven system integrator that stands for continuous innovation and Swiss quality. SAUTER provides users and operators with an overview of energy flows and consumption, and therefore of the development of the costs involved.

The SAUTER Group

- Company active worldwide with headquarters in Basel, Switzerland
- Founded in 1910, it is built on more than 100 years of tradition and experience
- With more than 2,300 employees, it is present and active globally
- Complete building management solutions from a single source. Focus: maximum energy efficiency and sustainability
- Investment protection and operational reliability over the entire building life-cycle
- Technology leader in the building automation and system integration sector
- Member of eu.bac, BACnet Interest Group (BIG-EU), BACnet International, EnOcean Alliance
- Excellent references available at www.sauter-controls.com