N° 33

SAUTER FACTS

The magazine for SAUTER customers

Building and energy management in one
Central, open and easy with SAUTER Vision Center 4.0

Overall integrated solution for compliance in clean rooms
Installation and supervision – SAUTER Clean Room Monitoring

The trademark of sustainable growth
Energy-efficient solutions from SAUTER in the highest building in Switzerland

Platinum for energy efficiency in Madrid
Refurbished office buildings – ready for the future

Excellent sustainability
Energy-plus building at Vienna TU

Environment & sustainability

Innovation

4 **SAUTER Vision Center 4.0 now with integrated energy management**
User-friendly all-rounder for every requirement in building and energy management

8 **New SAUTER ecos505 room controller communicates with all equipment systems**
A new member of the EY-modulo 5 system family

10 **Understanding, evaluating and optimising energy flows**
Now even easier with version 3.4 of SAUTER EMS Server and EMS Mobile

12 **One component instead of four**
New to the product range – a compact 6-way ball valve with additional benefits

14 **Preconfigured clean room monitoring solution for life sciences**
GMP requirements and FDA set-up "out of the box"

SAUTER highlights

16 **High building, low energy consumption**
Progressive energy and automation concept for the new headquarters of Roche in Basel

18 **The "new world of working" in Munich**
Comfort and energy efficiency also setting the tone at Microsoft's new German headquarters

20 **Comprehensive redesign – impressive energy efficiency**
LEED Platinum for modernised office buildings in Madrid

22 **Research meets green building expertise in Vienna**
The world's first energy-plus office building produces more energy than it consumes

24 **The next act at Solothurn city theatre**
Optimised climate in the baroque theatre provided by latest technology

26 **BREEAM excellence in the pioneering eco-district of Luxembourg**
PricewaterhouseCoopers halves its energy demand in this intelligent green building

28 **SAUTER's all-round solution for the DomAquarée in Berlin**
Building automation and facility management from a single source

30 **SAUTER addresses**

SAUTER
Creating Sustainable Environments.

Dear Customers and Business Partners, Dear Readers,

It is my pleasure to present this latest informative issue of our customer magazine. We have some interesting product news and also wish to share with you a number of very good customer references. We value the trust that you have invested in us in the projects we have carried out together. Our working relationship has contributed towards a successful last financial year, thus proving our stability and giving us a positive outlook for the future. This stability also motivates our workforce to complete more excellent projects with you.

The latest version of our building management software also uses consolidated data for energy management. SAUTER Vision Center is a modular, modern Building Energy Management System (BEMS) that meets the expectations of investors, owners and operators keen to run their properties in an energy-efficient and economical manner (p. 4).

For regulating heating and cooling installations in 4-pipe systems, our new 6-way ball valve combines four components in one. It saves space, installation time and cost. Furthermore, it works with absolute precision and reliability (p. 12).

Precision and reliability are also the primary characteristics of clean room monitoring solutions. For more than 30 years, SAUTER has been the expert in the control and monitoring of laboratories and clean rooms. These critical environments (CE) require clearly defined room climate conditions as well as adherence to regulatory provisions. We have developed our Clean Room Monitoring Solution (CRMS) for such environments. It is ready to use and FDA-compliant and provides an efficient, safe and cost-effective answer (p. 14).

The project highlights in this issue include the impressive new head office of the Roche pharmaceutical company in Basel. A progressive energy and automation concept ensures maximum energy efficiency over 41 storeys (p. 16). Read how Microsoft's German headquarters in Munich will operate in one of the most modern office buildings with LEED Platinum certification (p. 18). Or join us on a trip to Madrid where we will demonstrate one of the most advanced refurbishment projects from Torre Rioja (p. 20). You can also read about the high-tech renovation behind the scenes at the oldest baroque theatre in Switzerland, the BREEAM-certified head office of PricewaterhouseCoopers in Luxembourg, the award-winning energy-plus building at the Vienna University of Technology and SAUTER's all-inclusive FM services at the DomAquarée in Berlin.

Wishing you happy reading.

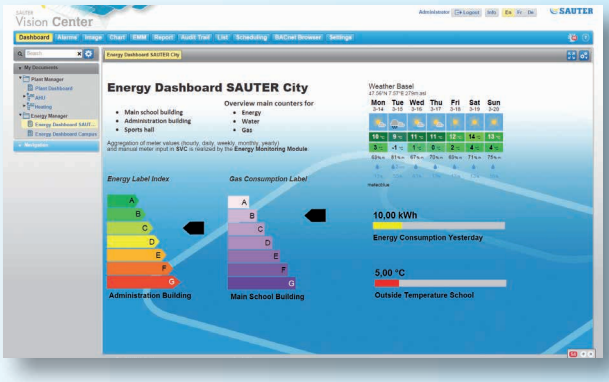
Yours, Werner Karlen, CEO

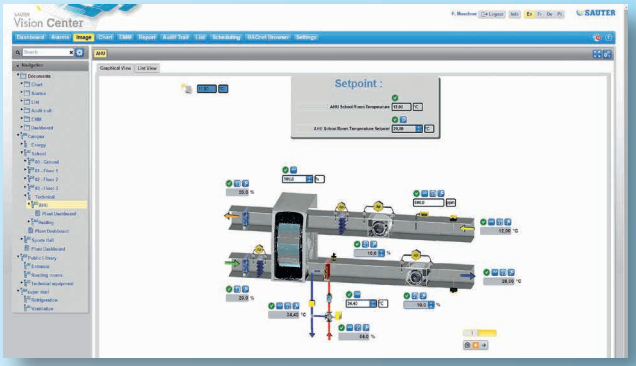
Central intelligence for integrated building and energy monitoring

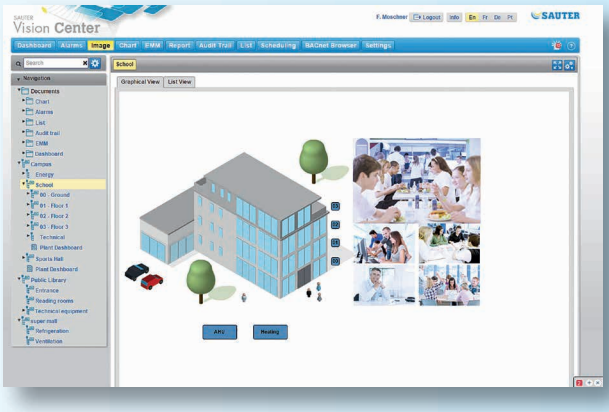
The SAUTER Vision Center 4.0 software, which also includes key functions for energy monitoring, is essential for modern facility managers. This user-friendly all-rounder is a higher-level control centre for individual buildings, entire real estate areas and multiple premises. It can also be operated from a mobile device.

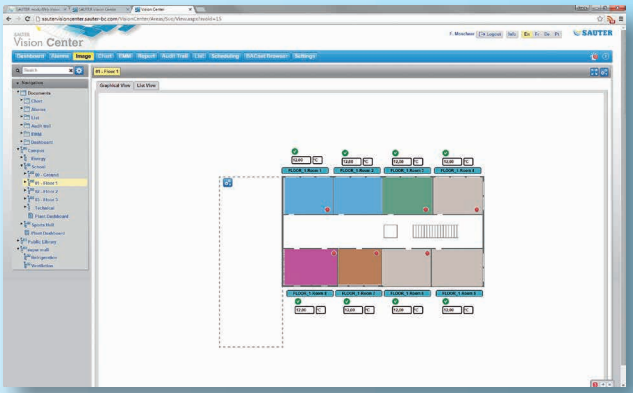
Modern building management relies on multifunctional software solutions that make it easier to visualise and run building operation. Operators have the full picture of a building and its data points and can run installations from their workplace or whilst on the move. Hence a tablet or smartphone also doubles as a practical control centre displaying all relevant system data and important events and alarms. Sophisticated error diagnosis and analysis are other effective tools for preventing further system malfunctions.

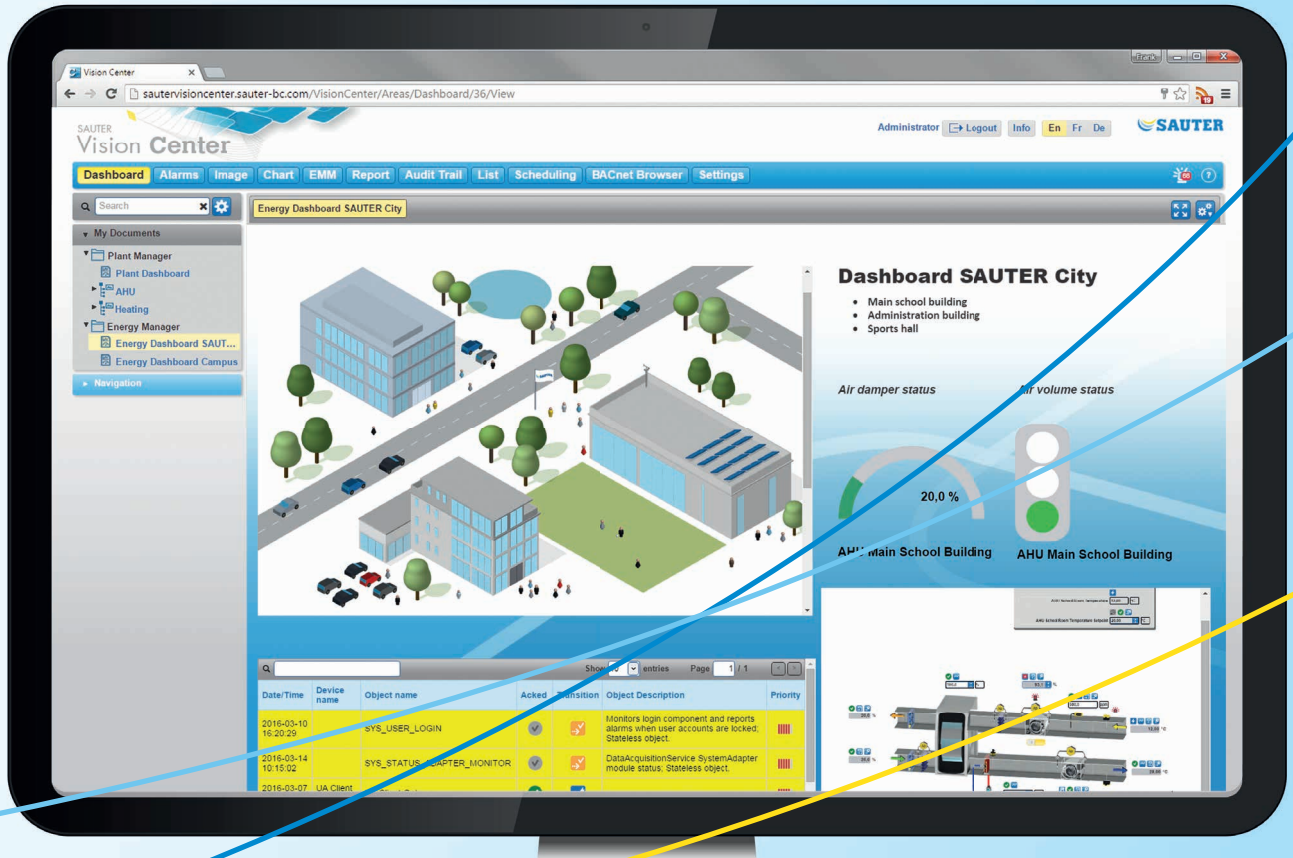
Energy monitoring integrated in building management (BEMS)
A central tool for running and visualising a building's operation, the building management system is also ideal for monitoring energy consumption and energy flows. With increasingly stricter energy directives and self-imposed targets for reducing energy consumption and CO_2 emissions, there is a clear trend towards integrated energy monitoring.


Vision Center
Energy Dashboard SAUTER City
Main school building
Administration building
Sports hall
Energy
Water
Gas
Energy Label Index
Gas Consumption Label
Administration Building
Main School Building
10,00 kWh
Energy Consumption Yesterday
5,00 °C
Outside Temperature School


Vision Center
Setpoint :


Vision Center
AHU
Heating


Vision Center


Vision Center
sautervisioncenter.sauter-bc.com/VisionCenter/Areas/Dashboard/36/View
Administrator
Logout
Info
En Fr De
SAUTER
Dashboard
Alarms
Image
Chart
EMM
Report
Audit Trail
List
Scheduling
BACnet Browser
Settings
Search
Energy Dashboard SAUTER City
My Documents
Plant Manager
Plant Dashboard
AHU
Heating
Energy Manager
Energy Dashboard SAUT...
Energy Dashboard Campus
Navigation
Dashboard SAUTER City
Main school building
Administration building
Sports hall
Air damper status
Air volume status
20,0 %
AHU Main School Building
Date/Time
Device name
Object name
Acked
Transition
Object Description
Priority
2016-03-10 16:20:29
SYS_USER_LOGIN
Monitors login component and reports alarms when user accounts are locked. Stateless object.
2016-03-14 10:15:02
SYS_STATUS_...DAPTER_MONITOR
DataAcquisitionService SystemAdapter module status. Stateless object.
2016-03-07
UA Client

With the optional energy management module, SAUTER Vision Center combines building management with the features of energy management in a single application. Both parts of this modular building and energy management solution (BEMS) take the same process data from a shared database. With many investors, owners and operators wishing to run their buildings in an energy-efficient and economical manner, SAUTER Vision Center provides the facility to do so.

A standardised and simple operating concept

As a facility manager, the modern caretaker is a service provider who's often responsible for numerous buildings or properties and therefore spends little time in an office. With SAUTER Vision Center, the entire building operation – from individual buildings to branch networks distributed internationally – can be monitored conveniently using one main system. Typical applications for this are office complexes, university and industrial campuses, airports, train stations and hospitals, etc.

SAUTER Vision Center is a browser-based solution and employs a uniform operating method optimised for different clients. Live data and historical charts can be accessed directly from the system diagram. HTML5 support and responsive design means operation between tablets, smartphones and PCs remains familiar and convenient.

State-of-the-art building management directly supports open communication standards such as BACnet and OPC-UA, enabling a wide range of subsystems to be added. And SAUTER Vision Center, of course, lets you connect systems based on SAUTER novaNet technology. This means that older installations can also be upgraded with modern building management solutions.

Flexible room automation

Building management solutions now have to provide building operators with more flexibility than ever. Turning individual offices into group offices or multispace areas, renovating buildings or adding further installations at a later date to a system shouldn't pose a problem – building management systems should facilitate this effortlessly.

With SAUTER Vision Center, it takes just a few clicks on the management interface to adjust a room's size and how it's used. You can move individual room segments easily with drag and drop. So when the needs of operators and users change, adapting the room automation is simple – especially if wireless EnOcean room operating units are installed.

The SAUTER Vision Center dashboard has a clear layout and can be customised without any special IT skills. It provides each user with precisely the information they need. Room comfort, energy consumption and various KPI displays allow errors to be detected quickly and indicate where improvements to operation are possible.

Efficient alarm management

Facility managers want to be able to address malfunctions promptly. SAUTER Vision Center can meet all of a company's requirements because the alarm management functions can be configured to the company's specific notification processes. If systems malfunction, duty personnel immediately receive alarms via e-mail or text message on their mobile phones.

If energy-related events occur – such as unusually increased consumption – the integrated energy monitor can trigger alarms. Furthermore, SAUTER Vision Center provides facility managers and servicing personnel with detailed alarm evaluations and alarm statistics that are generated automatically.

Security and compliance

The more building technology is interconnected, the more important IT security becomes. When some protocols and components are not encrypted, virtual private networks (VPNs) are deployed in which communication is protected. SAUTER Vision Center also allows the operator to set very high minimum requirements for authentication and password security.

Compliance is a key aspect of many applications in building and room automation. In life sciences, for example, data relating to temperature, humidity and air quality – as well as alterations to system settings – must often be recorded continuously in an audit trail. SAUTER Vision Center includes this function and therefore supports the directives for fulfilling FDA requirements.

A central hub for data

SAUTER Vision Center is the control centre and comprehensive monitoring solution for processing all data generated by installations, buildings and multiple premises. As an integrated building and energy management solution, this latest-generation software provides room management and energy monitoring functions. It also features higher-level information views and dashboards showing the most important key figures (KPIs) and related diagrams. Using one piece of software as the central intelligence and memory has distinct advantages – efficient building management and energy monitoring and easy management and training of users. Not forgetting the lower investment and software maintenance costs.

The ideal room controller for any system

SAUTER's new ecos505 BACnet room controller offers directly integrated interfaces for the open communication protocols DALI, KNX and SMI. New usage scenarios have been brought into the picture. Three new I/O modules have also been added to our portfolio of room automation solutions.

Simple, efficient and reliable regulation of the room climate, lighting and sunshading are essential when you're looking to operate your building in an energy-efficient manner. A single device, the new ecos505 room controller, is the mastermind behind the smart interaction between the different systems.

Intelligent communication

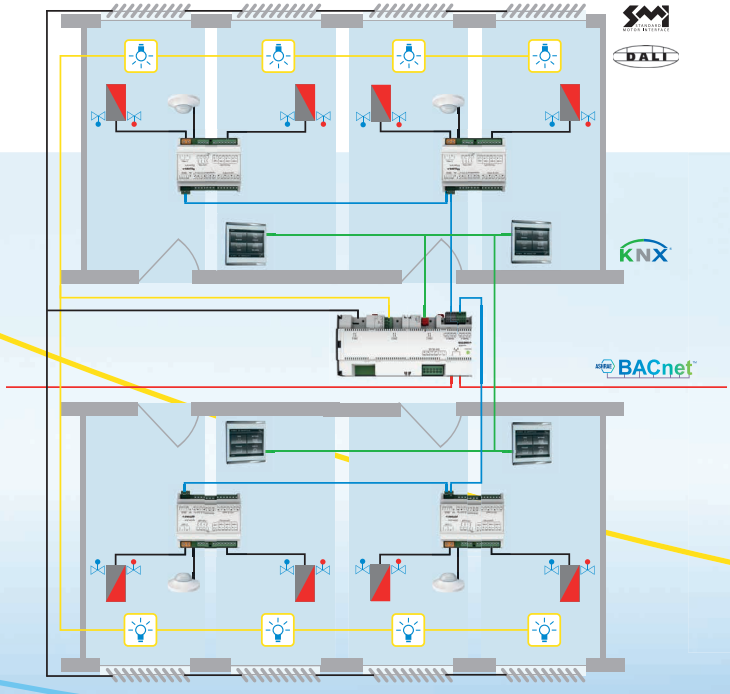
Who could be a better judge of the vast benefits of simultaneous digital communication between components than operators of large buildings and complexes? However, due to the large number of protocols involved, the reality is often that the desired level of integration cannot be achieved without using additional devices or gateways.

The new ecos505 room controller is SAUTER's answer to this problem – a single device to integrate all systems. SAUTER ecos505 is not only the latest member of the EY-modulo 5 system family. Its communication abilities also allow the visualisation of many new technical uses. Systems planners can now integrate numerous systems with open, standardised protocols without any additional couplers. ecos505 brings together energy-efficient climate control with options for synchronised lighting and sunshading just when they're needed.

Digital integration

As the bigger brother of SAUTER's ecos504 room automation station, ecos505 boasts as many as three additional digital interfaces for open communication protocols such as DALI, KNX or SMI. The integrated DALI interface and DALI bus voltage supply effortlessly connect electronic ballasts, PIR sensors and multisensors to the room controller, thus providing presence-controlled lighting or constant-light control.

Innovation



The KNX interface fitted in the device enables standard KNX components from the electrical equipment system to be integrated and a KNX touch panel, or more KNX actuators and sensors, can also be accessed directly. This not only broadens potential applications greatly – you also have many more options when choosing your preferred style of switch, room multisensor or room operating unit. In addition, you can connect EnOcean room operating units and sensors wirelessly using the EnOcean interface.

SAUTER ecos505 is a freely programmable BACnet building controller (B-BC). Our CASE Suite engineering platform is ideal for configuring the controller, as well as the rest of the SAUTER EY-modulo 5 system range.

Greater flexibility with new I/O modules

New remote I/O modules for the EY-modulo 5 room automation stations allow planners to create more modular and flexible systems. SAUTER trusts in solutions with simple bus communication based on RS-485 and the efficient SLC.

SAUTER ecoLink514/515 are the perfect I/O modules for applications – such as fan coil units or heated and chilled ceilings. Now the module can also run on a 24 VDC power supply and the new digital MOS-FET outputs allow up to six thermal actuators to be operated with quasi-continuous PWM activation.

Another new arrival, the SAUTER ecoLink527 I/O module, is designed to activate up to four damper actuators, each with two feedback signals. Furthermore, because it supports pulse inputs of up to 10 Hz, ecoLink527 is ideal for taking energy measurements.

Smart interacting systems are possible with SAUTER ecos505's integrated control options. When planning demand-led room automation for energy-efficient building automation systems, the modular ecoLink modules offer you even more possibilities.

Overview of types

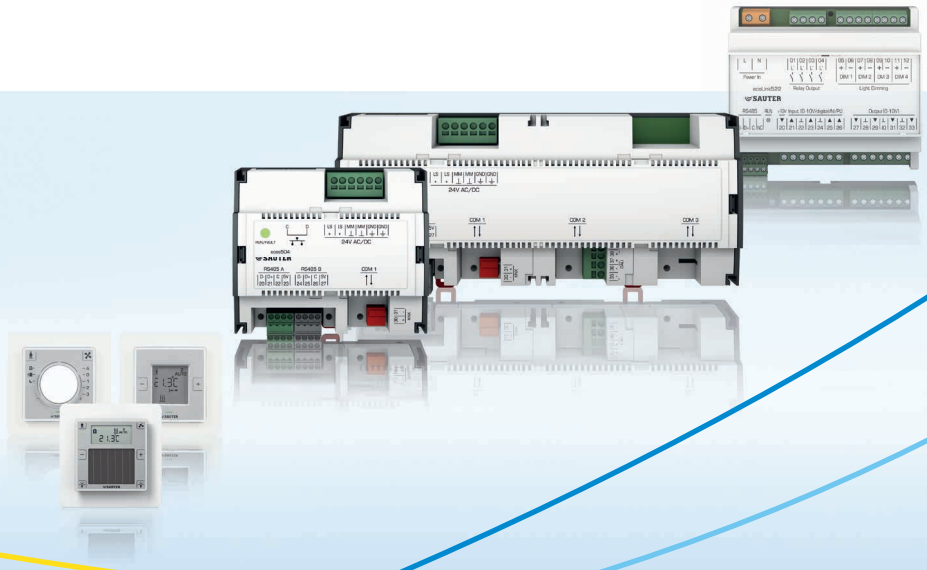
ecos504
105 × 90 × 58 mm

EY-RC504F001	8 segments
EY-RC504F011	8 segments, KNX
EY-RC504F021	8 segments, DALI

ecos505
210 × 90 × 58 mm

EY-RC505F031	8 segments, KNX, DALI
EY-RC505F051*	8 segments, SMI, DALI
EY-RC505F081	8 segments, 2 × DALI
EY-RC505F0A1	8 segments, KNX, 2 × DALI

*In preparation



The key to company-wide energy management

Version 3.4 of SAUTER EMS Server and EMS Mobile features a wide range of new methods and functions. These make it easier to evaluate and improve energy flows for an entire company. Having also expanded its product suite in energy data logging, SAUTER has the complete package for the energy management sector.

When buildings and properties are situated across a wide area, it takes more than simple diagrams to reveal the vast energy savings they have to offer. The latest versions of SAUTER EMS Server and EMS Mobile include many enhanced tools for quantifying and maximising energy efficiency.

Numerous visualisation methods now available

Energy data can now be represented in the form of Sankey diagrams. SAUTER EMS visualises energy flows – with different thicknesses signifying different flow volumes – to clearly show the energy streams in buildings or even production processes. The main inflows and outflows can be identified immediately, with flows indicated automatically by colour.

Another highlight of SAUTER EMS 3.4 is the option to derive polynomial regression lines from energy data. In contrast to linear regressions, the polynomial method allows users to determine, far more precisely, maximum values on a derived efficiency curve. The method is therefore valuable for establishing the energy signature of a system or component.

Carpet plots are an excellent way of analysing and optimising the behaviour of a system. The time frame could be a day or perhaps longer – such as a heating period, cooling period or even seasonal changes (spring and autumn). Here, for example, output and consumption values are visualised in different colours.

Finer details or the bigger picture

The new aggregation zoom function is useful for making detailed analyses. When you enlarge a view, the next smallest aggregation level is displayed automatically. You can therefore glide from monthly to weekly and daily views.

Energy managers can use the powerful portals of SAUTER EMS Server and EMS Mobile as a dashboard and access important key figures and tools directly. The software now includes the option for displaying and sorting the five "top consumers" in an overall view. The same feature can also be applied for different properties in order to sort them by consumption.

Selection of energy data loggers extended

With numerous communication options and an integrated firewall, SAUTER energy data loggers (EDLs) are the ideal data capture devices. They allow all local measured data and meters to be recorded on site – reliably and economically. The data is synchronised regularly with the EMS server and the measurements can be protected for several days. This acts as a safeguard in the event that connection to the server is interrupted.

The new SAUTER EDL600 and EDL1200 are replacing the EDL1000. They have new, powerful processors and join the EDL50 and EDL55 in the 50-to-10,000 data point range. Newly upgraded with version 8, the HTML5 web server enables you to set up and manage projects efficiently. Projects can even be integrated in the EMS portals in real time. This new web server version is available for all the energy data loggers specified above.

Basel
10.5°
25k
0M
1M
2M
3M
4M
5M
6M
7M
8M
9M
Wasserkraftwerk Pleidelsheim : Abfluss Wasser - Gesamt m3
Wasserkraftwerk Pleidelsheim Generatoren - Wirkenergie kWh
Wasserkraftwerk Pleidelsheim Generatoren - Wirkenergie kWh
Wasserkraftwerk Pleidelsheim Abfluss Wasser - Gesamt m3
Wasserkraftwerk Pleidelsheim Generatoren - Wirkenergie kWh
SAUTER
Lüftung
DELL

Compact and precise – the 6-way ball valve from SAUTER

Why fit four components when a single, compact version will be more effective and enables you to make great savings? The new 6-way ball valve from SAUTER brings huge advantages in planning, building and maintenance.

In large office buildings, where many parts form the heating and cooling systems, it's best to use as few zone valves as possible. Firstly, this reduces the space needed in the suspended ceilings, and also the materials and labour required for fitting the valves, actuators, controllers and wiring. Secondly, there is far less likelihood of problems occurring later due to installation errors.

Four into one

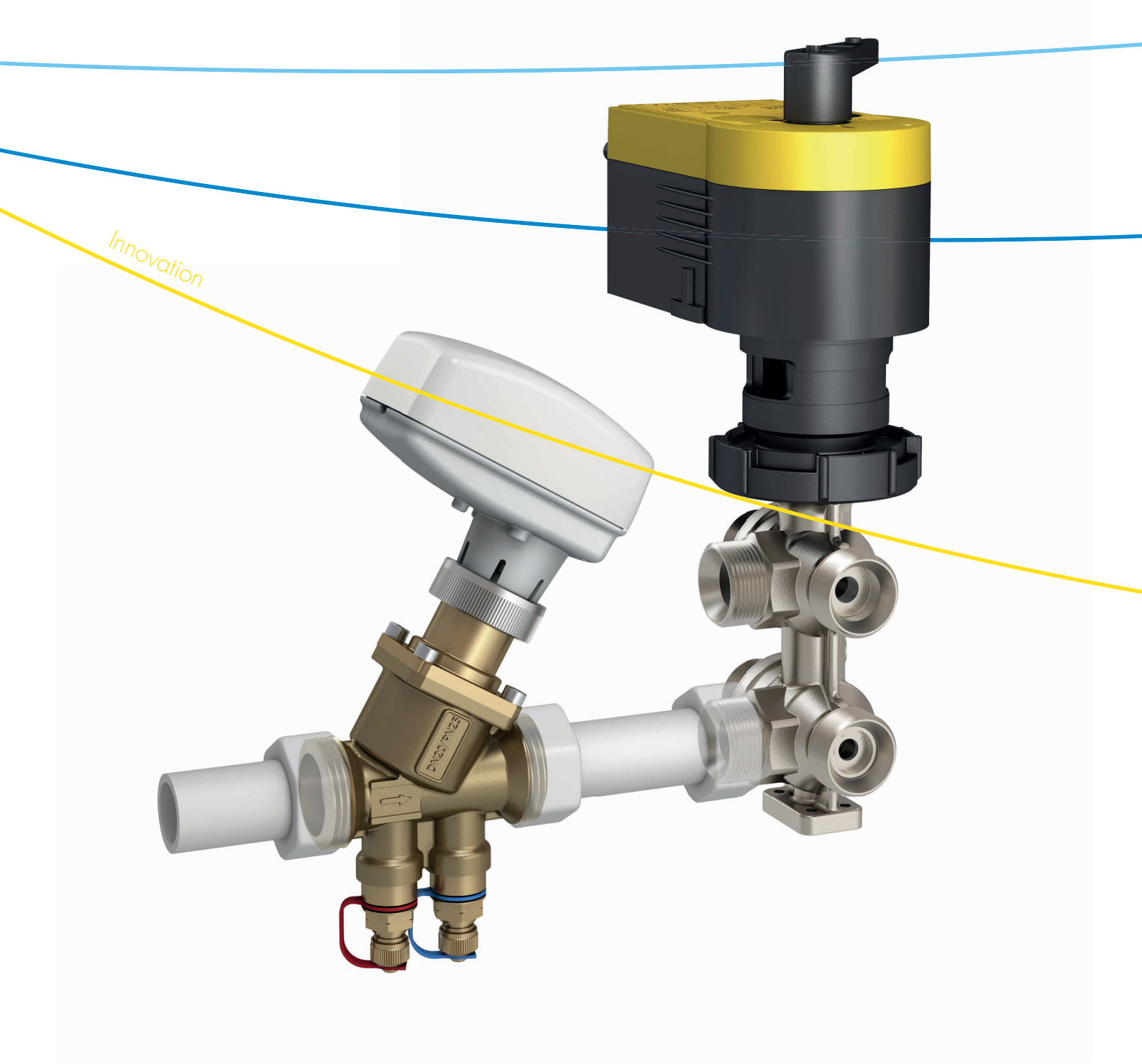
The new 6-way ball valve from SAUTER provides a compact, precise alternative for controlling heated and chilled ceilings and fan coils in 4-pipe systems. It doubles as a regulating valve or change-over valve. Conventional solutions may need as many as four 2-way valves, four actuators and two controllers. The SAUTER solution has just one 6-way ball valve and an actuator. In addition, due to its compact design, it can be easily positioned into any suspended ceiling!

Heating and cooling circuits safely kept apart

The 6-way ball valve, with a nominal diameter of DN 15 or DN 20, consists of two ball valves that are mechanically connected. The bores of the two balls are arranged at right angles, ensuring that the heating and cooling systems remain separate and do not leak into each other. The body is crafted from cast brass and the balls are made of brass, with chrome plating and a polished surface.

Excellent control

Varying apertures enable the maximum flow rate (kvs) to be adjusted precisely. Different kvs values for cooling and heating can be set in the one valve so that they always match the operating conditions. The result is more accurate and reliable control. Combine this with the SAUTER Valveco Compact – a pressure-independent, multifunction valve – and you have the perfect solution for hydraulic balancing.



One zone, one actuator

SAUTER's 6-way valve needs only one actuator. So, compared to a solution with four 2-way valves, this saves the cost of three data points. It's compatible with all the rotary actuators from SAUTER. When used with the SAUTER AKM115 actuator, for example, it takes a mere six seconds to switch over.

Easy fitting and dismantling

With its male thread, installing and removing the 6-way ball valve couldn't be simpler. And since you cannot accidentally reverse the valves, fitting errors are virtually impossible.

Ready to use – the monitoring solution for GMP environments

Statutory regulations and strict standards are very much the order of the day in the life sciences sector – even at room condition level. For this highly regulated environment, SAUTER has a preconfigured solution for monitoring clean rooms ensuring that these directives are adhered to.

In clean rooms, laboratories and research institutes, just a slight deviation in room conditions can have far-reaching consequences for product quality. For this reason, measurements of room pressure, room temperature, air flow, room humidity, door operation and particle concentration, etc. are subject to constant monitoring. Operators and users are therefore able to detect variations in room conditions quickly and act accordingly.

Economy and compliance with rules

The principles of the Good Manufacturing and Good Laboratory Practices (GMP and GLP) and other national and international rules, such as those of the American drug authority, the FDA, state that critical room parameters must be continuously monitored, controlled and archived. Where areas are strictly regulated, monitoring is a challenge in itself. Compliant documentation is also required and the entire system must be certified as suitable for its intended purpose. This increases expenditure greatly. Add to this "unknowns" from using untried individual solutions and costs can quickly escalate.

An overall integrated solution, considering statutory and operational requirements from the outset, can streamline this process significantly. In many environments, a standard system such as SAUTER's Clean Room Monitoring Solution (CRMS) – which is flexible – is therefore more likely to pass the grade and be economically viable than any other individually developed system.

GMP-tested hardware and software in one package

The SAUTER CRMS combines factory-tested hardware and software with standard-compatible pre-settings and comprehensive qualification documents, including standard operating procedures (SOPs) and operating and user instructions. All certificates and verifications are traceable. The standardised hardware of the solution comes

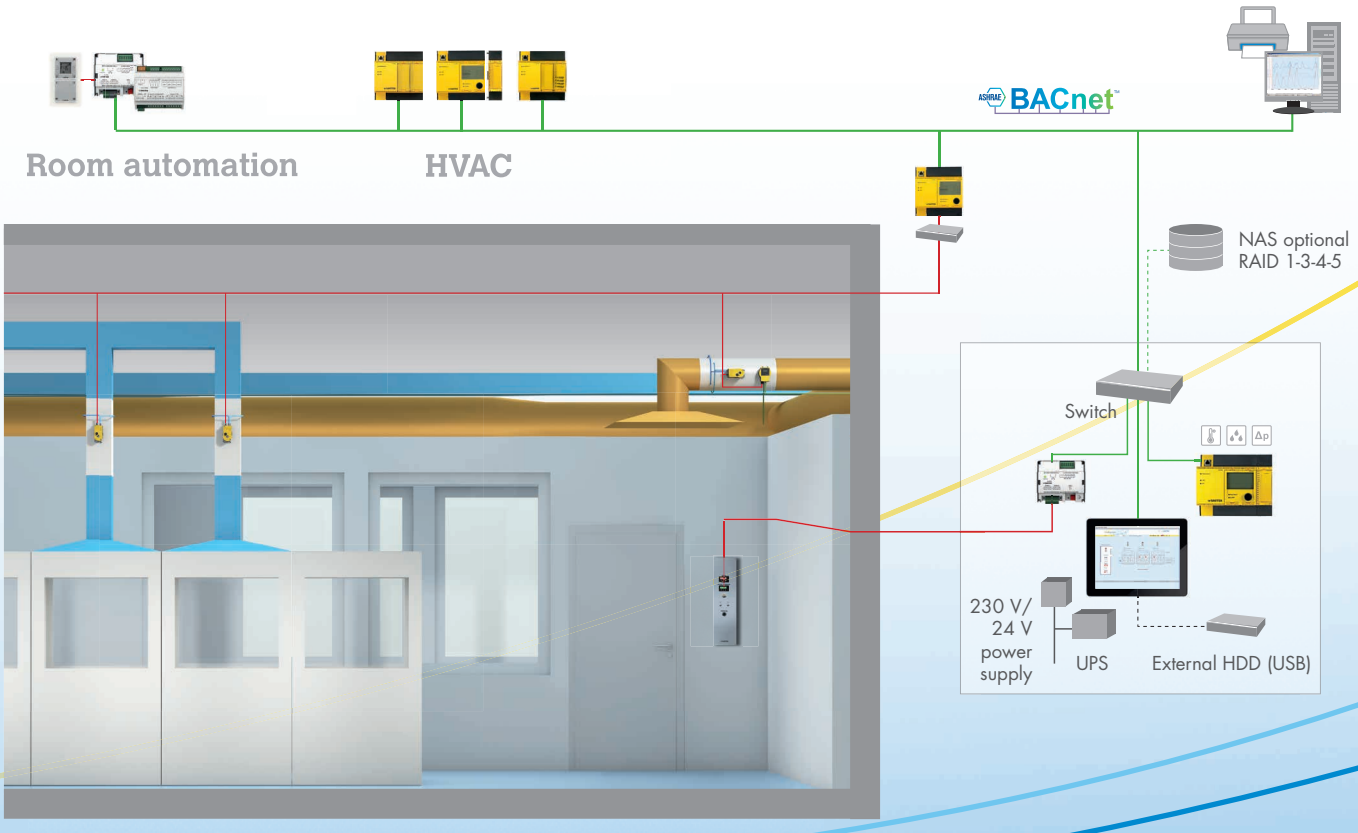
from SAUTER's well-established EY-modulo 5 range. The user-friendly management software, SAUTER novaPro Open, visualises and controls the whole system. To maintain configuration time to a minimum, SAUTER delivers the software "FDA-ready".

In its basic form, the entire SAUTER CRMS is housed in a cabinet with its own ventilation and temperature monitor. It can be operated online or using the integrated touch-panel PC. The built-in, ready-to-operate BACnet automation station records up to 50 room parameters, temporarily stores data and generates local alarm messages. Alarms can also be forwarded to mobile devices. Free assembly slots are provided for SAUTER's modu721 communication module enabling Modbus protocol-based systems to be connected. A separate UPS system also ensures that the power supply never fails.

You can combine multiple SAUTER CRMS to create one main system with a central server. A file server (NAS) with high-level reliability (RAID 1/5) can be added for enhanced security. Also available are stand-alone clean room panels containing calibrated sensors for important room conditions and a mute button for the alarm. These panels are connected to the SAUTER CRMS using an integrated remote I/O module (SAUTER ecoLink510).

Compliant monitoring is essential

SAUTER continuously develops its expertise in clean room automation to ensure that technical staff and quality and safety officers have just the tools they need. A preconfigured, finely tuned package, SAUTER CRMS brings this technical and regulatory know-how together. This means that operators and users have the powerful monitoring, analysis and reporting functions in SAUTER CRMS immediately at their fingertips.



Big, bold and economical – Made in Switzerland

With its new corporate headquarters, the Swiss pharmaceutical company Roche has brought an impressive new landmark to Basel's skyline. The 178-metre tower is Switzerland's tallest building. Making a tower of this magnitude energy-efficient is, of course, quite a challenge. "Building 1" had to meet specific demands in terms of functions and sustainability. This, however, presented an opportunity for SAUTER to showcase the qualities of its innovative building management solutions.

While it towers over Basel in impressive fashion, "Building 1" seems anything but excessive. Tapering to the top, the tower is home to the new corporate headquarters of the global pharmaceutical company Roche. With 41 storeys it offers enough space for 2,000 employees. Even though the building area – 74,200 m² in total – has to serve many different purposes, efficient operation was a priority for the architects and planners. They brought their ideas to life with a modular room design, SAUTER's room automation solution (BACnet-based) and particularly sustainable lighting, heating and cooling techniques.

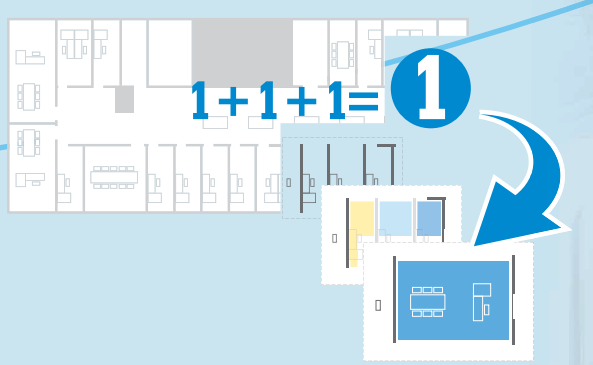
Flexibility is everything

Most of "Building 1" is devoted to modern office space. A modular interior allows single offices to be converted to group offices and vice versa. This is because Roche is keen to promote individual commitment and teamwork in equal measure. Room concepts of this kind, however, present a tremendous challenge as far as building and room automation are concerned.

The company has placed its trust in SAUTER's powerful building management software, novaPro Open. The software lets technical staff operate, monitor and maintain installations even if the room conditions continually change. The controls of each subsystem can

Main automation and integration data

Management level:	SAUTER novaPro Open with web server, SAUTER EMS
Automation level:	850 SAUTER ecos500 room automation stations
	110 SAUTER modu525 room automation stations
	1,630 SAUTER ecoLink remote I/O modules
	2,380 SAUTER ecoUnit EnOcean room operating units
	750 SAUTER ecoMod580 EnOcean wireless interfaces
	3,087 presence and light sensors
	11 touch panels and 5 workstations for operation
	115 SAUTER flexotron800 stand-alone controllers
Field level:	SAUTER field devices:
	280 dew point monitors
	500 temperature, pressure and humidity sensors
	120 EGQ CO_2 sensors
	100 VUP, VUE, BUE regulating valves
	120 ASV115 air-volume controllers
Protocols:	BACnet, DALI, LON, EnOcean, Modbus RTU, M-Bus
Integration:	Approx. 80 HVACSE systems
	Approx. 80 switching equipment combinations
	760 Warema LON blind controllers
	2,800 blinds
	4,500 DALI LED lamps
	12 Crestron/BACnet conferencing systems
	870 LON fire protection dampers
	3080 6-way ball valves heating/cooling
Data points:	Approx. 130,000



"Building 1" summarised

- Proprietor: F. Hoffmann-La Roche AG
- Architects: Herzog & de Meuron
- General contractor: Drees & Sommer
- 41 floors above ground, 178 m in height
- Around 2,000 workstations
- Auditorium with 500 seats
- Staff restaurant, cafeterias
- Accessible terraces
- 3,500 m^2 ground (94 m × 37 m)
- 74,200 m^2 gross floor area (above ground)
- 375,000 m^3 building volume (total)
- Minergie standard
- Earthquake-proof construction

be adapted to suit users' needs. It takes technicians just a few clicks to alter the system configuration to the current floor plan and therefore reduce the energy required by the different areas.

Lower energy consumption through modern technology

Roche has also opted for sustainable heating and cooling methods to minimise the energy consumed by the tower. This green building, which meets the Swiss Minergie standard, uses waste heat from the nearby Roche industrial site for heating, as well as ground water for cooling. Hot water is generated with a heat pump.

The versatility of the energy management system – SAUTER EMS – enables operating staff to closely monitor and analyse overall consumption at any time and, if necessary, take immediate action. The powerful combination of SAUTER novaPro Open and automation stations, creating the SAUTER system, regulates all the heating, ventilation and cooling installations. The entire building also has demand-led LED lighting technology and the façade blinds are controlled according to the position of the sun.

SAUTER ecos500 room automation stations always maintain comfortable temperatures and good air quality throughout the tower. When staff members leave their workstations, presence sensors automatically switch off the lights, ventilation, heating and cooling. In the auditorium the SAUTER solution uses CO_2 sensors to adapt the fresh air supply according to the number of people present in the hall.

Extremely sophisticated controls

The modular design of the Roche building also impresses on a smaller scale. The constant lights are controlled according to the level of daylight. Solar-powered SAUTER ecoUnit room operating units – with bi-directional wireless EnOcean technology – have been fitted to switch on the lights in each individual room segment. These operating devices also allow staff to control the room temperature and blinds segment by segment.

In the meeting rooms, the videoconferencing system is connected to the room automation system. This is a particularly intelligent function. When the videoconference is started from the BACnet/Crestron interface, SAUTER's intelligent automation solution switches the lighting to the pre-set level and dims the room with blinds and curtains as required.

A very green building indeed

Despite its dimensions, "Building 1" has been rated particularly energy-efficient. Switzerland's highest tower proves that size is not to be confused with high energy demand. Featuring a modern energy and automation concept, "Building 1" exceeds the requirements of the Minergie standard. Its secret lies in the smart use of resources and the ideal marriage of innovative technical solutions employed in the 41 storeys.

A new world of working in Munich

In mid-2016, 1,900 employees at Microsoft will be moving into its new German headquarters in Munich. As one of the most modern office buildings in Germany and offering multifunctional rooms and spaces, it represents the workplace of the future. LEED Platinum certification underscores the sustainability of this green building, and the integral room automation solution from SAUTER plays a major role in this achievement.

The cutting-edge, new atrium building at Parkstadt Schwabing in Munich has a floor space of around 31,000 m². Developed by the ARGENTA Group for Microsoft and other tenants, it radiates a transparent, friendly atmosphere. Reflecting the motto "A new world of working", it creates the perfect backdrop for modern-day staff collaboration, deploying the latest technology and fostering employees' skills. This is made possible through open spaces for project and team work, meeting places for exchanging ideas formally and informally and quiet areas in which to concentrate or simply relax.

Live integration in a mock-up construction

The building contractor opted for integrated, easy-to-use building management. This means that the office building operates at maximum energy efficiency and users enjoy a comfortable room climate.

After careful consideration, a modular, scalable solution based on SAUTER's EY-modulo 5 system range was chosen. It wasn't merely thorough planning and excellent references that won the clients over. With SAUTER also providing a sample version of the solution proposed, they could test the system live and see its performance and user-friendliness for themselves.

A web client for room users and facility managers

When the contractors selected the monitoring and control solution, key requirements included easy and direct operation of the building management system. This was achieved through smart integration of SAUTER Vision Center with SAUTER moduWeb Vision – providing users with the exact level of functionality needed.

The integral solution from SAUTER

- SAUTER Vision Center management software and SAUTER moduWeb Vision operating and visualisation solution
- 280 SAUTER ecos504 and ecos500 room automation stations
- 350 SAUTER ecoLink522 remote I/O modules
- 450 SAUTER ecoUnit346 room operating units
- 150 SAUTER ecoUnit110 EnOcean room operating units

Operated intuitively, the SAUTER moduWeb Vision solution allows office users to adjust room conditions, such as temperature, lighting and sunshade, directly from the browser on their work PC or tablet. At overall system level, the SAUTER Vision Center (SVC) visualisation and control solution enables facility managers to regulate each HVAC installation from any location and at any time. And using the software links in SVC, technical staff can of course access the settings for tenant areas in SAUTER moduWeb Vision.

Lower running expenses through automation

To meet employees' individual needs, SAUTER room operating units (ecoUnit346) and cable-free models of the SAUTER ecoUnit110 – with EnOcean wireless technology – are also installed. In 800 or so rooms spread over the nine storeys – two underground and seven overground – 280 SAUTER ecos504 and ecos500 room automation stations create the ideal climate using the BACnet/IP network protocol.

With this "new world of working", building administrators also benefit. The solution offers, for example, demand- and presence-controlled lighting. Around 1,600 DALI light sensors automatically switch the energy-saving lights on and off. This ensures that there is always adequate lighting with minimum electricity consumption. SAUTER's integrated room automation package also regulates the heated and chilled ceilings and uses the sun's position to adjust the shading. Because all equipment systems are completely automated, running costs are reduced further.

Room climate and energy under control

In summer 2016, Microsoft will be moving into the new building. With SAUTER supplying the building and room automation systems, it will feature sustainability and optimum climate control. In the "new world of working" this intelligent solution provides employees with comfortable office conditions. As the LEED Platinum certification testifies, energy demand is kept to a minimum. All in all, a sustainable win-win situation.

LEED Platinum for refurbished office buildings in Madrid

Following a thorough modernisation, two well-known office buildings in Madrid have secured a place among the five most sustainable buildings in Spain. Taking around three years to complete, the conversion used state-of-the-art building methods and tried-and-tested building automation solutions from SAUTER. Even prior to reopening, the exemplary energy efficiency of the upgraded business properties was evident – they were awarded LEED Platinum pre-certification.

A large number of Madrid's employees work in the services sector in local and international companies. For this reason the city is particularly keen to push sustainable solutions during building and conversion of its many office spaces. And this is where companies such as Torre Rioja-Madrid S.A. excel. For more than 60 years now, the real estate company has invested in building and refurbishing large office areas as well as residential buildings, car parks and hotels. Torre Rioja sees innovative technologies as the key to maximising the energy efficiency of its properties.

An overall energy-efficient system

When selecting the building automation solutions for modernising buildings AA79 and AA81 in the Ciudad Lineal district of Madrid, the planners settled on SAUTER's trusted EY-modulo 5 systems. The conversion enables tenants to regulate the climate of individual areas. They can also use the main management software – SAUTER novaPro Open – to control the heating and cooling circuits on each floor of the buildings, the provision of hot and cold water and the many other facilities making up the buildings' technical systems.
Fourteen SAUTER modular automation stations (modu525) and around 600 SAUTER room automation stations (ecos500) are tasked with keeping energy consumption to a minimum. The SAUTER solution uses BACnet/IP to integrate third-party systems, such as heat meters, into the overall building automation system.

Optimum heat balance through modernisation

The five- and six-storey buildings each provide 20,000 m² of office space. Torre Rioja aimed to maximise resource efficiency over this large area and reduce the maintenance costs of the buildings. So, alongside the economical automation components from SAUTER, it

also adopted a number of special building features. For example, active façades made of glass ensuring an optimum heat balance. Furthermore, the two buildings meet some of their heating and electricity requirements with their own thermo-solar and photovoltaic systems.

Energy consumption can fluctuate significantly in larger office buildings. Employing an energy management system therefore provides major benefits. SAUTER had a solution that had proven itself time and again in similar buildings. Following an assessment, Torre Rioja opted for SAUTER here too. Data transferred in real time by SAUTER EMS enables building managers to monitor and evaluate all energy consumption levels flexibly and whenever needed. This user-friendly energy management solution gathers and compresses measurement data automatically and allows the main key figures to be processed centrally. SAUTER's integrated solution not only ensures the ideal room climate for individual users. The entire building also operates in an energy-efficient manner.

Winning awards even before completion

Sustainable conversion pays. Prior to completion of their refurbishment, buildings AA79 and AA81 were pre-certified to the LEED standard for sustainable buildings (core & shell) – they received the highest award of "Platinum". This means that the two office complexes are among the most sustainable buildings in Spain. Solid proof that progress and sustainability can go hand in hand.

Madrid – one of the world's most sustainable cities

The Arcadis Sustainable Cities Index for 2015 ranks Madrid fourth in the world for energy and environmental protection. This is no coincidence. The Spanish capital has been fostering sustainable development for years. The sustainability and environmental protection department specifically responsible for this not only promotes sustainable building projects. It is also giving its full backing to raising public awareness and to future-oriented training opportunities.

Prize-winning energy-plus building at Vienna TU

In October 2015, Vienna Technical University was awarded the Austrian State Prize for Environmental and Energy Technology. The prize-winning energy-plus building on the university campus is the first high-rise office building in the world to produce more energy than it consumes. Close scientific involvement and the green building expertise of SAUTER played key roles in the office tower achieving this all-round positive energy balance.

© TU Wien | Alexander David

© TU Wien | Matthias Heisler

In the centre of Vienna, amidst a group of older buildings, an office building of the Technical University (TU) rises into the air. Built in the 1960s, both the energy balance and infrastructure of this building on the Getreidemarkt campus were far behind the times. The building's owner, the Federal Real Estate Company – Bundesimmobiliengesellschaft or "BIG" – and its tenant, the university, therefore decided on a complete renovation as part of the "TU Univercity 2015" modernisation project.

Scientists at the TU were closely involved with the planning and conversion phases and used their findings for research purposes. The university wasn't intent on just a huge reduction in energy consumption. It aimed to go further still, converting the old high-rise into an energy-plus building.

Operating on 88 per cent less energy

To achieve a massive decrease in energy consumed by the building, the clients turned to an innovative concept from the R & D team. The idea was to install extremely powerful automation technology that, whenever possible, sources energy locally and continuously improves the efficiency of the whole system. So, before building work began, the project team analysed more than 9,300 devices and components, recorded their precise energy consumption and selected the most efficient for this development.

One result of this evaluation, for example, is that only energy-efficient computers and coffee-makers are available to staff and students. With savings such as these, and by employing both a dedicated energy management system and SAUTER's intelligent building management software (novaPro Open), the outcome was remarkable – the building's energy consumption was reduced by up to 88%.

Using local sources efficiently

To meet the energy-plus standard, the BIG and the university combined technical solutions with construction measures and local sources of energy. The waste heat from the IT servers, for instance, helps to heat the building and energy is recovered from the lift system. The modern glass façade has state-of-the-art heating, sunshading and lighting which keeps the temperature down in the building.

Particular reference should be made to the vast photovoltaic system on the roof and in the façade of the building – the section installed within the façade is the largest of its kind in Austria. The electricity produced by the high-rise fulfils its entire primary energy requirement. The surplus is available to the neighbouring buildings on the campus.

Ideal conditions for working and learning

Every day, around 800 employees and up to 1,800 students go in and out of the eleven-storey tower and the front building housing the main lecture hall. Along with individual offices and seminar rooms, the energy-plus high-rise also has library and student areas. SAUTER room automation stations (ecos500), that provide heat and ventilation exactly when needed, save energy and create the optimum climate. This means that even if rooms are full, students remain comfortable which aids their concentration.

SAUTER's management and visualisation software – novaPro Open – ensures the entire building automation system runs smoothly. Energy consumption is monitored constantly. If staff want to alter the climate conditions in a room, they simply use the SAUTER room operating unit (ecoUnit 3) to adjust the temperature, lighting or window blinds.

Groundbreaking energy-plus building

Vienna University of Technology wants to continue developing the innovative solutions born of this project, and the knowledge gained along the way, for use in future undertakings. "We are making technology tangible for people here with this extra innovation. We are seeing for ourselves what happens if you combine basic scientific principles, application-orientated research and concrete implementation. We're then able to pass on this added value to society," says TU Rector Sabine Seidler, summing up her objectives.

The award of the 2015 State Prize for Environmental and Energy Technology (category Research & Innovation) to this project demonstrates quite impressively that when science, research and innovative techniques work hand in hand, refurbishment can turn existing buildings into showcases of energy efficiency.

Facts & figures: Energy-plus office building of Vienna TU

Net floor area:	13,500 m² over 11 storeys
Usage:	Approx. 800 workplaces, capacity up to 1,800 persons
Energy generation:	Photovoltaic system with area of 2,199 m²; waste heat from servers used for heating building; energy recovered from the lift system
Construction:	Further development of passive house construction for high-rise office buildings
General planner:	Working group of architects Hiesmayr-Gallister-Kratochwil
Further info: (German and English)	www.univercity2015.at/plusenergiehochhaus

High tech behind the scenes at Switzerland's oldest baroque theatre

Solothurn city theatre has been returned to its former glory with a thorough overhaul. The aged building and its infrastructure were the reason for the general reconstruction. Since the theatre was reopened, SAUTER's cutting-edge solution has improved energy efficiency and provided music and theatre lovers – and the ensemble itself – with enhanced safety, improved air quality and comfort.

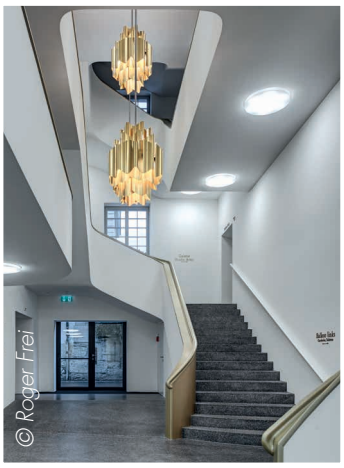
© Roger Frei

Obsolete stage technology, poor air, inefficient heating and even inadequate fire protection – these are just a few of the shortcomings that plagued the time-honoured theatre in the centre of Solothurn's old town. Solving these problems and recapturing the prestige of this beloved baroque theatre was not an easy task. Extensive changes were needed to the building and infrastructure which were, in places, in a very bad state. SAUTER was commissioned with upgrading the outdated building automation system, using an economical solution tailored to the operator's requirements.

SAUTER software – a well-practised ensemble

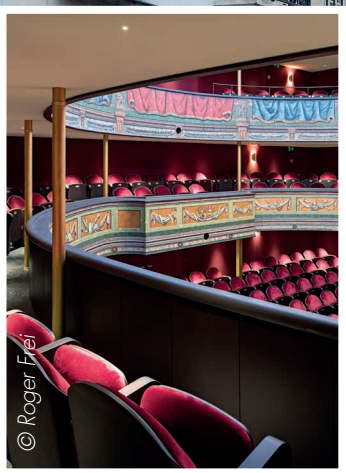
The interior of the theatre is extensive, across numerous storeys and building sections. The city of Solothurn wanted a simple overall solution that monitored and controlled the heating and ventilation centrally. Built around the BACnet/IP open communication protocol and compatible with many components and systems, the SAUTER EY-modulo 5 system range was perfect for the task.

© Roger Frei



© Roger Frei

© Roger Frei



© Roger Frei

SAUTER installed its web-based management software, SAUTER moduWeb Vision. Providing optimum visualisation and operation, it allows the theatre's facility management to monitor and control the building automation installations efficiently and from a central point. To match the package precisely to the situation on the ground, the project team turned to the extensive features of the SAUTER CASE Suite function library.

Directing everything via touchscreen

SAUTER's visualisation solution – moduWeb Vision – uses BACnet/IP to link all the SAUTER EY-modulo 5 components in one precisely coordinated system. Should any malfunctions occur, the software notifies the person on duty thus enabling them to take immediate action. SAUTER moduWeb Vision can be accessed from a touch panel on the top floor to regulate the heating and ventilation in the whole auditorium. The technical room has a PC for operating the building management software over a web browser. The automation system can also be accessed anywhere using a remote connection.

SAUTER's trusted automation products from the EY-modulo 5 range are located in five cabinets in different storeys and sections of the building. From there they regulate the energy flows to the heating, cooling and interior air systems.

An effective performance

To ensure a constant supply of fresh air to audiences – even when the house is full and temperatures are high – the theatre employs CO_2-based ventilation. In addition, as part of the upgrade, underfloor heating was installed. This is also controlled by SAUTER automation stations. A heat supply network and demand-led regulation through SAUTER components mean far fewer resources are used for the heating. And last but not least, the solution has improved the fire protection in the building. In the event of a fire, the building automation system will activate the smoke extraction system, increasing the safety of the audience.

By renovating the theatre and using SAUTER's modern building management solution, Solothurn city theatre fulfilled a number of goals – more comfort for its patrons, improved energy efficiency for the operator and greater safety for the audience and theatre staff.

Refurbishment with historical encore

The renovation of Switzerland's oldest baroque theatre also brought to light a treasure from the past: hidden beneath many layers of paint were valuable frescos depicting historical motifs from the theatrical world.

BREEAM building for an ecological showcase city district in Luxembourg

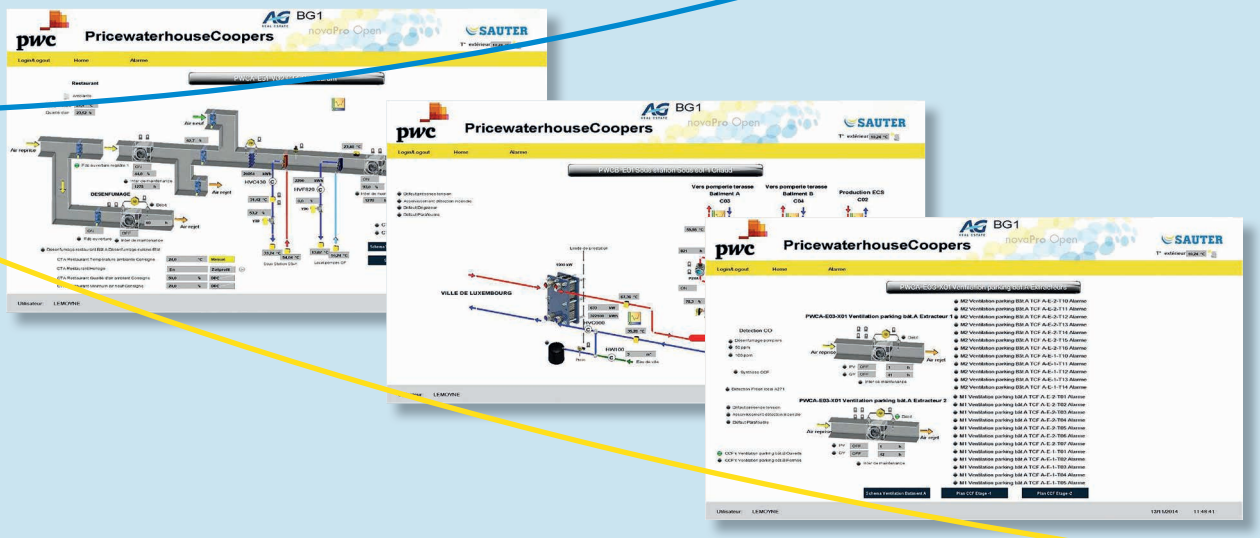
On the southern rim of Luxembourg a mammoth project is underway to create a new city district. In autumn 2015, the first building was completed in the emerging Ban de Gasperich quarter. The open construction of the "Crystal Park" is an inspiration to the 2,600 or so PricewaterhouseCoopers (PwC) employees working there. Its extremely efficient energy recovery system is also a huge success.

Inaugurated in autumn 2015, the Crystal Park has a modern, friendly aesthetic. Visually impressive, in a combination of wood and glass, its six storeys bring together a variety of uses – office space, meeting places, a restaurant, an auditorium for 200 people, a sports hall and a bar. Designed as a green building, it is the first construction in the planned Ban de Gasperich district.

As a recognised expert in planning and carrying out energy-efficient building automation solutions, SAUTER contributed its extensive know-how and tried-and-tested systems. Offering excellent value for money and working hand in hand with the engineering office and installation partner, SAUTER certainly has not disappointed the client.

Intelligent energy recovery

To maintain the tenants' resource consumption at a minimum, the planners of the Crystal Park were particularly keen to utilise an energy recovery process. The user-friendly SAUTER EMS energy management solution monitors energy and water consumption in the new building. Modbus and M-Bus protocols seamlessly integrate more than 200 energy meters in the management system. Consumption is displayed transparently and enables data for the green building to be consolidated and benchmarked. The sustainability manager can therefore correct where necessary and optimise where possible.



Using BACnet, the other equipment facilities are dovetailed with the controls (SAUTER EY-modulo 5 automation stations) and guarantee maximum reliability through the alarm function. Cold generators are integrated in the system with Modbus and ensure a comfortably cool climate inside, even if it's exceptionally warm outside. The Crystal Park uses the waste heat produced by the computer centre for the heating of the building. This alone allows the new building to meet a third of its heat requirement. PricewaterhouseCoopers has therefore been able to halve its energy demand per square metre compared to its previous location.

Natural light and heat used to the fore

Enveloped in glass and wood, the Crystal Park utilises the thermal benefits of the innovative double façade and efficiently optimises the cold and heat insulation. SAUTER room automation controllers (ecos 2) provide a cosy room climate and also operate the lighting and sun-shade facilities.

The building management system – SAUTER novaPro Open – ensures building operators can monitor and control the building automation systems from wherever they are.

Occupancy sensors are fitted which allow room conditions to be regulated as required. This means that artificial lighting, temperature and air control are only activated when rooms are occupied. SAUTER room operating units (EYB 252) are also installed so that staff can make further climate adjustments in their offices.

Award for environmental commitment

As the first building in the new showcase eco-district of Luxembourg, the Crystal Park has set a clear standard. The building was awarded the BREEAM "excellent" seal of quality. Highlights contributing to this award included the intelligent solution for energy recovery and efficient use of natural resources. This green building therefore demonstrates impressively that comfort and sustainability are the hallmarks of a modern working environment and, with innovative technologies in place, economic benefits are also possible.

Extremely prestigious city project

On an area covering around 80 hectares, Luxembourg is developing a new eco-district at the south of the city. Ban de Gasperich is a modern fusion of work, leisure and residential spaces. By 2025, the green quarter is to provide offices for around 20,000 people, 100,000 m² of residential area, schools, shopping centres and an emergency service centre. The German Sustainable Building Council (DGNB) has pre-certified Ban de Gasperich with its highest "Gold" award for sustainable spatial planning.

As happy as a fish in water

Mention the name DomAquarée and an exclusive address in Berlin comes to mind. Since its opening in 2004, this modern building complex has been home to a host of companies, shops and restaurants, a hotel, museum and even an enormous aquarium. SAUTER is not only responsible for the whole building automation system – it now also controls the technical facility management.

At one time the River Spree was adorned by the Palasthotel, one of the most renowned buildings in East Berlin. Today, the location is taken up by the popular and vibrant DomAquarée CityQuartier. The four modern buildings, situated right next to the river, have a total area of 72,000 m^2 and accommodate numerous companies, around 30 gastronomic businesses, a four-star hotel, museum and the largest free-standing aquarium in the world. A particular attraction is the glass lift that ascends through the 14-metre-high column of water. And fans of modern living might find themselves interested in one of the 75 apartments.

The buildings are encased in Spanish limestone and, from the outset, SAUTER has created a comfortable climate on every level using reliable automation solutions. The property specialist, Union Investment Real Estate, also recently commissioned SAUTER to handle the facility management side. In addition to many years of success working together, SAUTER FM secured the contract in part due to its very cost-effective tender and superlative knowledge of the conditions on site.

Full FM package right round the clock

SAUTER looks after the DomAquarée's tenants and users with its range of services in technical facility management. Through constant monitoring, SAUTER FM ensures that all heating and cooling equipment is available, conditioned air is provided, electrical energy is supplied and the higher-level building automation technology runs smoothly. As a specialist in energy efficiency, SAUTER will advise tenants, if requested, on how to get the best out of their systems and installations.

© Eric Poncer/Vxla, Wikimedia Commons

© Kyrkk, Wikimedia Commons

Particularly impressive is the management of the river water cooling system that supplies, for example, the enormous aquarium. If this facility were to fail, it would be unpleasant not just for the people using the buildings – in a worst-case scenario it could also mean the death of the 1,500 or so fish that live in the AquaDom. Managing this cooling system requires exceptional care and know-how.

The ideal climate for every tenant

The tenants of the DomAquarée are varied and, hence, the specific requirements in terms of room climate are also diverse. Whilst good air circulation is highly important to the eating establishments, demand-controlled air conditioning is crucial to the hotel. To monitor each system and fulfil the various requirements in the DomAquarée, SAUTER has installed its trusted management and visualisation software, SAUTER novaPro Open. This greatly assists the facility managers in their duties – system monitoring, operational management, analysis and ensuring that control of the installations is at an optimum. Intelligent visualisation shows, in real time, the status of each equipment system, thereby enabling rapid intervention if required.

Everything from one source

In choosing SAUTER, DomAquarée has secured itself a reliable partner with unrivalled expertise in building automation and excellent service in technical facility management. True to the principle of "everything from one source", SAUTER provides the fashionable building complex with the complete package. For one simple reason – when it comes to the important issues of operational and energy efficiency, the specialists at SAUTER are as happy as fish in water.

SAUTER addresses

SAUTER Deutschland
Sauter-Cumulus GmbH
Hans-Bunte-Str. 15
DE-79108 Freiburg i. Br.
Tel. +49 761 510 50
Fax +49 761 510 52 34
www.sauter-cumulus.com

Sauter FM GmbH
Werner-Haas-Str. 8-10
DE-86153 Augsburg
Tel. +49 821 906 73 0
Fax +49 821 906 73 129
www.sauter-fm.de

SAUTER Schweiz
Sauter Building Control Schweiz AG
Kägenstrasse 17
CH-4153 Reinach BL 1
Tel. +41 61 717 75 75
Fax +41 61 717 75 00
www.sauter-building-control.ch

SAUTER Österreich
Sauter Mess- u. Regeltechnik GmbH
Niedermoserstrasse 11
A-1220 Wien
Tel. +43 1 250 230
Fax +43 1 259 95 35
www.sauter-controls.at

SAUTER France
Sauter Régulation S.A.S.
56, rue de Jean Monnet
F-68057 Mulhouse Cedex
Tel. +33 3 89 59 32 66
Fax +33 3 89 59 40 42
www.sauter.fr

SAUTER Luxembourg
Sauter Régulation S.A.S.
1 rue de Turi
LU-3378 LIVANGE
Tél. +35 2 26 67 18 80
Fax +35 2 26 67 18 81
www.sauter.fr

SAUTER Nederland
Sauter Building Control Nederland B.V.
Gyroscoopweg 144a
Postbus 20613
NL-1001 NP Amsterdam
Tel. +31 20 5876 700
Fax +31 20 5876 769
www.sauter.nl

SAUTER U.K.
Sauter Automation Ltd.
Inova House Hampshire
Int'l Business Park
Crockford Lane, Chineham
UK-Basingstoke RG24 8GG
Tel. +44 1256 37 44 00
Fax +44 1256 37 44 55
www.sauterautomation.co.uk

SAUTER España
Sauter Ibérica S.A.
Ctra. Hospitalet, 147–149
Parque Empresarial City Park
Edificio Londres
E-08940 Cornellà de Llobregat (Barcelona)
Tel. +34 93 432 95 00
Fax +34 93 432 09 08
www.sauteriberica.com

SAUTER Portugal
Sauter Ibérica S.A.
Rua Henrique Callado, 8 - Edifício Orange
Fracção A03
Leião-Porto Salvo
PT-2740-303 Oeiras
Tel. +351 21 441 18 27
Fax +351 21 441 18 48
www.sauteriberica.com

SAUTER Italia
Sauter Italia S.p.A.
Via Dei Lavoratori, 131
I-20092 Cinisello Balsamo (MI)
Tel. +39 02 280 481
Fax +39 02 280 482 80
www.sauteritalia.it

SAUTER Belgium
N.V. Sauter Controls S.A.
't Hofveld 6-B-2
B-1702 Groot Bijgaarden
Tel. +32 2 460 04 16
Fax +32 2 460 58 97
www.sauter-controls.com

SAUTER Česká republika
Sauter Automation Spol. s.r.o.
Pod Čimickým hájem 13 a 15
CZ-18100 Praha 8
Tel. +42 02 660 12 111
www.sauter.cz

SAUTER Magyarország
Sauter Automatikai Kft.
Fogarasi u. 2-6.III. em.
H-1148 Budapest
Tel. +36 1 470 1000
Fax +36 1 467 9000
www.sauter.hu

SAUTER Polska
Sauter Automatyka Sp. z o.o.
ul. Rzymowskiego 31
PL-02-697 Warszawa
Tel. +48 22 853 02 92
Fax +48 22 853 02 93
www.sauter.pl

SAUTER Slovensko
Sauter Building Control Slovakia spol. s r.o.
Einsteinova 23
SK-85101 Bratislava
Tel. +421 2 6252 5544
www.sauter.sk

SAUTER Sverige
Sauter Automation AB
Krossgatan 22B
S-16250 Vällingby
Tel. +46 8 620 35 00
Fax +46 8 739 86 26
www.sauter.se

SAUTER Srbija
Sauter Building Control Serbia d.o.o.
Prote Mateje 64
SRB-11000 Beograd
Tel. +381 11 3 863 963; 3 086 157
Fax +381 11 3 086 159
www.sauter.rs

SAUTER Romania
Sauter Control srl
Str. Agricultori Nr. 86, Ap.1 Parter
RO-010654 Bucuresti / Sector 2
Tel. +40 21 323 31 65
Fax +40 21 323 31 66
www.sauter-control.ro

SAUTER Middle East
Sauter Middle East FZC (Joint Venture)
PO Box: 7969
AE-SAIF ZONE Sharjah
Tel. +971 6 557 8404
Fax +971 6 557 8405
www.sauter-controls.com

SAUTER China
Sauter (Beijing) Co. Ltd. (Joint Venture)
Suite 1703, Tower A
G.T. International Centre, Building No.1
A3 Yongandongli
Jianguomenwai Avenue
RC-Beijing 100022
Tel. +86 10 5879 4358
Fax +86 10 5879 4362
www.sauter.com.cn

SAUTER Korea
LS Sauter Co., Ltd.
No. 903, Jei Platz 459-11
Gasan-dong
Geumcheon-gu
KR-Seoul, 153-792
Tel. +82-2-3442 5544
Fax +82-2-3442 5546
www.sauter.co.kr

SAUTER International
Sauter Building Control International GmbH
Hans-Bunte-Str. 15
DE-79108 Freiburg i. Br.
Tel. +49 761 510 50
Fax +49 761 510 54 20
www.sauter-controls.com

SAUTER Head Office
Fr. Sauter AG · Im Surinam 55 · CH-4016 Basel
Tel. +41 61 695 55 55 · Fax +41 61 695 55 10
www.sauter-controls.com

Publishing details SAUTER Facts · The magazine for SAUTER customers · **Concept** Corporate Communication Management SAUTER Head Office · **Printers** Hornberger Druck GmbH · Maulburg · **Paper** LuxoSatin · FSC certified · **Content** Werner Karlen, Dorothée Kössler, int/ext Communications · **Translation** RWS Group Deutschland GmbH · Berlin · **Title** Roche "Building 1" · Basel · © Juri Weiss · **Issue** Spring 2016 · SAUTER Facts is published in German, Dutch, English, French, Italian and Spanish · Reprinting allowed with acknowledgement of source

www.sauter-controls.com

70011660003

SAUTER
Creating Sustainable Environments.