N° 32

SAUTER FACTS

The magazine for SAUTER customers

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Interview with Cleantech mastermind Nick Beglinger

Economical rotary actuator for all locations
Simply retrofit with SAUTER vialoq

State-of-the-art solution for valuable cultural artefacts
Building automation for the Berlin State Library

41% less energy
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SAUTER
Creating Sustainable Environments.

Dear Customers and Business Partners, Dear Readers,

Building automation and, in particular, room automation are more topical than ever. Self-regulating installations for lighting, blinds, heating/air-conditioning/ventilation – and the energy consumption measuring that accompanies them – are being used in more and more buildings. They provide people with a comfortable room climate and support building operators when doing their work.

A central nervous system is needed to control hundreds of lamps, blinds, water pumps, water valves, fans and air dampers. SAUTER is the leader in building management systems. And because energy prices are on an upward trend, the intelligent control of building technology is increasingly important for companies and institutions. The investments made are often recouped after just a few years.

For example, studies show that using presence sensors and lights dimmed depending on daylight can reduce lighting energy by 50%. For SAUTER customers, good value for money is important. Because the main purpose of building automation is to save on costs while simultaneously improving the well-being of the building users.

In this issue of SAUTER Facts, you'll find lots of exciting reports from the world of building and room automation. New room controllers that can do (almost) everything. Monitoring solutions for building technology and energy consumption that are easy to operate. And many examples of installations that we have recently carried out for our satisfied customers, and that we ourselves are very proud of.

Wishing you a most enjoyable read,

Werner Karlen, CEO

A clean energy strategy is possible

An interview with Nick Beglinger, co-founder and president of the swisscleantech business association and CEO and co-founder of the Foundation For Global Sustainability (FFGS)

The BP Energy Outlook forecasts that, by 2035, the world's energy consumption will have increased by 37%. What is causing this, and who is most responsible for this high level of growth?

Energy consumption is closely connected to economic development and consumer behaviour. Although significant progress is being made in the field of energy efficiency in many highly developed countries, energy demand is still growing fast in emerging countries – for example, when people there move from the country to the city, can afford a fridge, a TV or washing machine, replace their bike with a motorbike or car, eat more meat, etc. However, what is important here is not the increasing energy consumption itself, but the kind of energy used to meet this demand. It is becoming increasingly clear, in both highly developed and less developed countries, that the energy supply of the future will be, and also must be, renewable.

The lion's share of the world's energy consumption is still being provided by fossil fuels. How important will these energy sources be in the future?

The end is in sight for the era of fossil energy. The supply of fossil fuels has helped humanity to make great progress, but for decades the serious challenges it presents have been increasingly obvious. These challenges are partly geopolitical and partly ecological. The main factor, however, is climate change. Our past and present consumption of fossil energy is by far the greatest trigger of climate change. And now we know for sure: only by switching from fossil to renewable energy sources by 2050 will we manage to keep climate change below the important two-degree warming limit. So even now, every further investment in promoting fossil energy sources must be seen as a bad investment.

We keep hearing the clock's at "five to twelve". In your opinion, what measures are still required to get the world energy situation under control?

I'd say even it's already five past twelve. The climate is telling us very clearly how urgently we need to act. If we want to avoid exceeding the two-degree warming limit and thus prevent irreversible damage caused by climate change, it will be necessary to leave at least two thirds of the fossil energy resources, that we know of today, in the ground. To achieve this, we need an overall strategy with a whole package of targets and measures. The COP21 Climate Conference in December 2015 gives us the opportunity to forge an international agreement and lay an important foundation stone, so that we can reduce our fossil energy consumption drastically and implement a consistent change-over to renewable energy sources.

What role will sustainable methods play in the energy policy of the future?

I'm not sure that "sustainable methods" is the correct term here – particularly in the context of an "energy policy". We already have all the technologies and methods today needed to shape our energy requirements sustainably – i.e. using renewables. And this is without significant restrictions in the living standards of highly developed countries, and without limiting economic progress in emerging countries either. In 2014, sustainable energy sources enjoyed the highest levels of growth worldwide. However, to cover 100% of the world's energy demand from renewable sources by 2050, we need, along with technologies and methods, clear energy policy conditions that enable a systematic transformation of the energy system. First and foremost, the subsidies of around 600 billion today for fossil fuels must be quickly discontinued. These are providing incentives for the wrong route. Additionally, the economy and the consumer need incentive systems that apply the full cost approach to all energy forms and also include the price and quality of energy sources as decision-making criteria. This is the only way that fossil fuel use can be cut significantly and a phase-out of nuclear power and widespread usage of renewables can be brought about successfully. By far the most important incentive is a levy on CO_2 emissions.

What is your personal contribution to improving the world's energy situation?

In 2008, by setting up the Foundation For Global Sustainability (FFGS) and the swisscleantech business association, I committed myself 100% to sustainability. At that time I decided to invest all my resources and my every working hour in this cause. By using the force of a modern economy, I'd particularly like the political conditions to be defined that will make a sustainable energy supply possible. I also try to put sustainability into action on a day-to-day basis. I bike to work every day, my car runs on electricity, I heat with renewable energy and I also try to eat sustainably – i.e. using regional and seasonal produce and consuming little meat.

Green power for the SAUTER computer centre

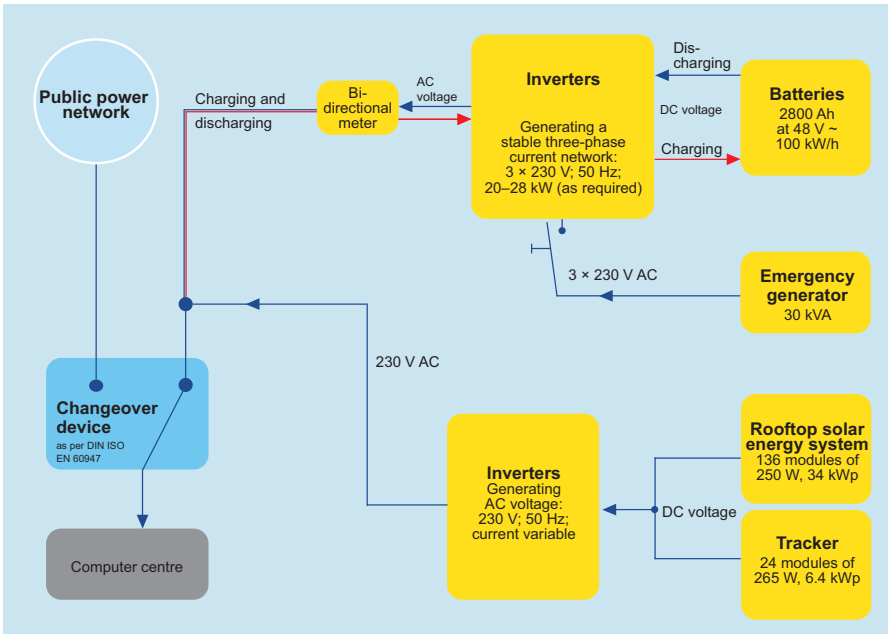
SAUTER products and services are synonymous with energy efficiency and sustainability. Which is why SAUTER Deutschland launched a solar energy project in its own IT department at its Freiburg headquarters – combining environmental considerations with economy. The company's own self-sufficient solar power system has supported the whole computer centre since October 2013, showcasing a number of very technically elegant solutions too.

Running computer centres, and in particular cooling the servers, devours large amounts of energy. As an environmentally-conscious company, SAUTER wanted to make a statement. And so it built a solar installation at the headquarters of SAUTER Deutschland, creating some of its own energy for the computer centre. SAUTER Deutschland's head of IT was the brains behind the overall project. He entrusted a number of theoretical and practical design tasks to his apprentice who then wrote an outstanding paper on the project, duly passing his electronics engineering exam. SAUTER Facility Management also had its own valuable input in the overall installation work on this solar energy system.

Solar power with a back-up network

Since autumn 2013, 136 solar modules covering a total area of 220 m² have provided total yearly output of more than 31 MWh. A tracker with a further 24 modules following the sun is also in operation. These modules not only produce about 40% extra power. They can also guarantee electricity production over a longer period of the day than fixed modules. The solar installation therefore generates around 65% of the computer centre's annual needs and avoids around 30 tonnes of CO_2 per year.

Even on an overcast winter's day, the system still produces ample electricity for the modules to provide 15% of the energy required. A battery system covers the rest. This could power the entire computer centre



Ecological and reliable – this is how the solar power system at SAUTER Deutschland's computer centre is structured.

for eight hours all on its own. And if this capacity were also exhausted, the system would automatically switch to the public power network. The computer centre can always fall back on the batteries if there is a power cut. They are never fully discharged during normal operation – the system switches to mains power at a charge level of 75%. As soon as the batteries are recharged, the system reverts back to Green Power. If the power outage drags on, the emergency generator also kicks in.

Inverters eliminating harmonics

Harmonics are a particular bugbear for an installation producing electricity. Harmonics are generated by consumers, for example the conventional switching power supplies used throughout the computer sector. While newer power supplies in some way address this problem, gaps in their use remain.

Because these types of consumers have continuous current spikes, their consumption behaviour is pulse-like. Each current spike causes harmonics representing a harmonic multiple of the 50 Hz alternating current (100 Hz, 150 Hz, 200 Hz, etc.). These oscillations are known as "dirty power" and not at all desirable. The very fact their behaviour is harmonic means the harmonics of all the current spikes match each other perfectly. This causes the oscillations' amplitudes to keep rising. And when multiple consumers of the same kind are brought together, this increase is intensified and the current curve is amplified. The result is a banging noise in the power unit.

This problem is the main reason why a simple generator isn't up to the mark for emergency power systems in computer centres. Consequently, SAUTER developers installed battery inverters in the system. They use their integrated transformers to smooth out the sinus curve again and thus eliminate the harmonics. This also allows the storage batteries to provide power. Thereby guaranteeing energy supply if there's a power cut or when there's not enough light hitting the solar modules. Another upside is the inverters can include the emergency generator too. This means that the computer centre is ensured an almost unlimited supply of energy.

A profitable investment in a sunny future

The whole installation, including battery modules, will have paid for itself in about nine years. In fact, its first year of operation has already led to savings of around 10,000 EUR in energy costs – while every year the environment is spared a CO_2-emissions equivalent of burning 12,000 litres of fuel. The maintenance of the batteries also has a plus side. It's automated using a specially designed ventilation and filling system which increases their service life compared to battery systems maintained manually. This long-lasting, efficient and ecological installation for supplying energy means SAUTER should reap rewards both now and in the future.

Efficiency and comfort in compact modules

The new SAUTER ecos504 room controller brings together wide-ranging functions in one tidy overall solution. It seamlessly combines room climate control with automation of sunshading and lights, resulting in both lower energy consumption and increased comfort.

In modern, well-insulated buildings, rooms often have to be cooled to create a comfortable climate. One way of making these buildings more energy-efficient is to optimise the sunshading. However, consumption can also be reduced significantly by using presence-dependent lighting control and demand-led ventilation of rooms.

Integration for twice the benefits

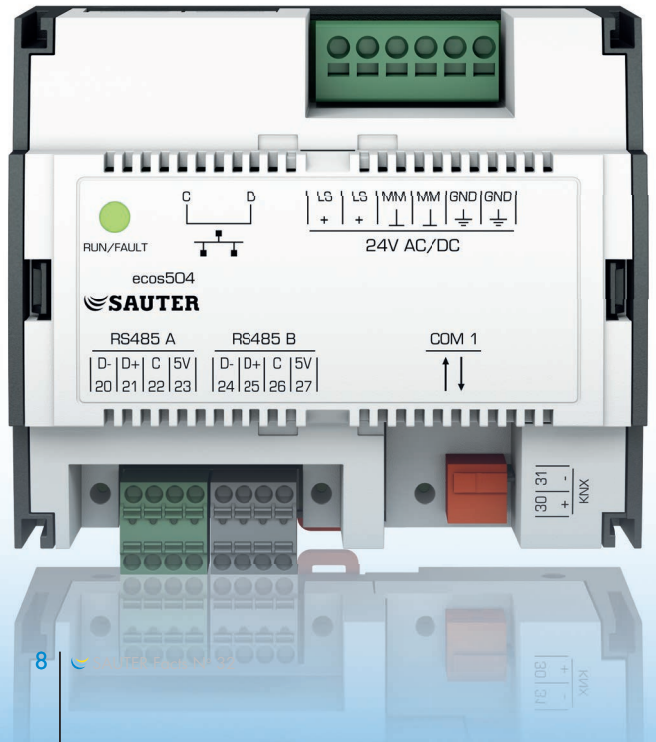
The new ecos504 room controller from SAUTER can combine all this in one neat package. It is the key component integrating the systems for room climate regulation, sunshading and lighting. It can become part and parcel of the building management system and automation of installations. For example, the SAUTER ecos504 actively assists heating and cooling using intelligent sunshade controls while simultaneously reporting energy demand to the primary installations.

However, all these functions and technical solutions are focused on the people living and working in the rooms. By greatly enhancing room conditions while also slashing energy consumption, the SAUTER ecos504 provides twofold benefits.

Flexible thanks to open communication

The SAUTER ecos504 is an addition to the EY-modulo 5 system family. Based on BACnet/IP profile B-BC, it guarantees efficient, delay-free communication on each level. Providing local historical data, schedules, calendars and COV reporting, it fulfils all the requirements for real interoperability.

The SAUTER ecos504 also supports the main standard protocols in room automation. This means you get the pick of the best from every area – KNX for integrating operating devices and actuators and the EnOcean wireless protocol for using cordless devices. In the future, DALI will be added for presence-dependent constant-light control and SMI for directly integrating comfort actuators for the sunshade. The result is an outstanding all-round solution that meets the high demands of room users, building operators and investors.



Freely scalable and highly versatile

The SAUTER ecos504 is designed as a modular station. It can be hooked up with remote ecoLink I/O modules from SAUTER as required. The planner therefore has maximum flexibility when connecting field devices and can cover the entire spectrum of options – from simple room control with a fan coil unit to a fully integrated solution with a controller.

Comprehensive libraries with room automation functions as per VDI 3813 are available for the engineering. The controller can also be freely programmed and customised using the SAUTER CASE Suite software. The system can work around a building's peculiarities and be easily extended later.

Rooms divided in modules

The SAUTER ecos504 supports up to eight fixed rooms or flexible room segments per controller. Because it's easy to combine segments, the SAUTER visualisation software lets you move walls with a click of the mouse. Even if the area is used for a different purpose, there are no downtimes and no rewiring is needed.

Despite offering more functions and higher performance, the SAUTER ecos504 is about a third of the size of its predecessor, the ecos500. The rail-mounted device with only six horizontal pitches is easily installed in dropped ceilings, raised floors or small distributors. Energy-efficient electricity supply modules come in various output classes for powering all the sensors and actuators in the room.

SAUTER visualisation solutions – one operating concept for all

User-friendly and compatible through all management levels, SAUTER's trusted operating and visualisation solutions work together in perfect harmony, with a standardised operating method adaptable to suit any target group.

Building operators, caretakers and tenants want to know everything going on. They want to save energy, live and work in a comfortable environment and be aware when something has gone wrong. And yet, their priorities and responsibilities differ substantially. Building operators are looking for the overall picture. Property or service technicians want quick access to alarms and parameters, or historical data to optimise the system. Important to building users is information on room climate and energy efficiency and regulating the temperature or sunshading.

Modern operating and visualisation solutions should therefore be flexible and centred around a user's specific needs. And supporting such diverse usage with visualisation solutions is something SAUTER does to a tee. Because SAUTER believes in uniform, easy-to-personalise operation and visualisation, energy-efficient building automation is intuitive and appealing to everyone. Whether on a room operating unit, cabinet, tablet or at a workplace in another city – any user group can see what they need to see.

A scalable solution for all automation systems

Each management level may require its own specific type of visualisation solution. This is where SAUTER fits the bill with an extensive range of compatible systems for management, operating and automation levels. From the same operating methods used throughout, it's obvious that SAUTER software solutions are related. That's why customers also enjoy the benefits of high-level scalability and reliable protection of their investments.

The standardised user interface on SAUTER moduWeb, moduWeb Vision – including the touch version – and Vision Center enables users to navigate their way through any SAUTER visualisation solution in no time. SAUTER EMS is no exception either and therefore allows intuitive energy management. Information from other makes of system can be fed in with ease using the BACnet open communication standard or the OPC Unified Architecture communication protocol.

Innovation

Public communication	SAUTER Green Building Monitor
Energy management	SAUTER EMS
Management level	SAUTER Vision Center
Local operating level	SAUTER moduWeb Vision
Automation level	SAUTER moduWeb

Individual benefits and greater efficiency overall

SAUTER operating and visualisation solutions are geared towards the user at each level. The system should adjust to the various needs every step of the way. And, as a whole, achieve what all users want – a significant reduction in energy consumption and energy costs and increased comfort for tenants.

SAUTER's operating and visualisation solutions

- SAUTER EMS and EMS Mobile for comprehensive energy management – with option of the SAUTER Green Building Monitor for public communication of highlights in performance
- SAUTER Vision Center, the modular building management software for individual or whole strings of buildings
- SAUTER moduWeb Vision, the compact, optional touch-optimised visualisation solution for various equipment systems or a single building
- SAUTER moduWeb, the transparent and user-friendly visualisation and operating system for HVAC installations

Shared advantages

- Easy to configure
- Target-group-oriented operation
- Investment protection through compatibility and scalability
- Third-party systems integrated via BACnet

Simpler installation and more performance

Reliable, economical actuators are the essence of energy-efficient flow control. And now SAUTER's trusty rotary actuators also come as vialoq versions with 15 Nm torque – the perfect choice, even for retrofitting projects.

Maximum dependability plus greater torque

What makes SAUTER rotary actuators so special is they're easy to handle, powerful and consume little energy. They are used for activating control units, such as control valves and butterfly valves, in heating, ventilation and air-conditioning systems. For control valves and butterfly valves combined with rotary actuators, SAUTER has now added the vialoq ADM322 model with 15 Nm nominal torque and holding torque to its product range. So SAUTER vialoq actuators provide reliability and economy in an even wider range of applications.

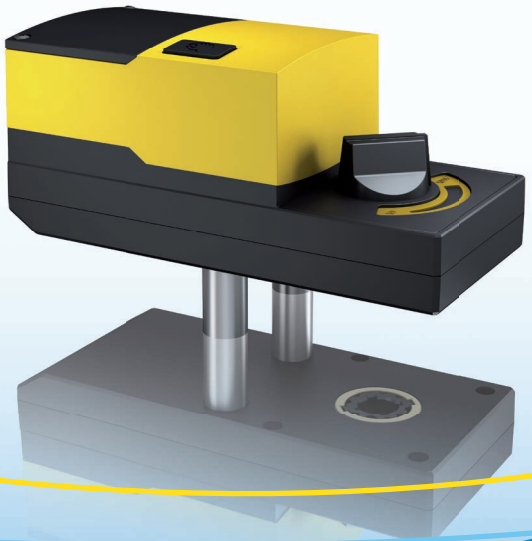
Electric cut-off to save energy

The SAUTER vialoq ADM322 actuator has a rotation angle of 90° (up to 95°). The running time can be adjusted individually. With an electronic, load-dependent cut-off facility, the built-in synchronous motor is extremely energy-efficient. And at less than 30 dB (A), the operating noise produced by the transmission system is kept at a pleasant minimum.

To position the control and butterfly valves and make manual adjustments, you simply disengage the transmission system. The sturdy construction of the actuator and its maintenance-free transmission system made of plastic ensure maximum precision.

As good as new – for less

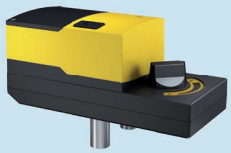
Fitting the actuator is quick and hassle-free. With lots of adapters to choose from, it's easy even to attach other makes of control valve. So when you need to swap or upgrade HVAC components, SAUTER's retrofit rotary actuators are the perfect choice – excellent quality and simple conversion. You can quickly and easily combine other brands of control unit with the right SAUTER vialoq rotary actuator (see illustration). Handy coding switches let you adjust the operation direction and running time of the components. And as many as five actuators can be operated in parallel.



The SAUTER ADM322 includes a potentiometer which detects the transmission system's current position. This feature is important when making modifications because you can also easily replace older, potentiometer-controlled transmission systems with SAUTER's vialoq rotary actuator. Yet another advantage are the integrated auxiliary contacts which also monitor the transmission system and provide a safeguard in case of an emergency.

Great versatility

Modernisation projects call for inexpensive and uncomplicated solutions. At the same time, the goal is always to reduce energy consumption and thereby lower operating costs. The new vialoq ADM322 rotary actuator from SAUTER fulfils these expectations across the board. Universally compatible as it is, it can be integrated in practically any installation.



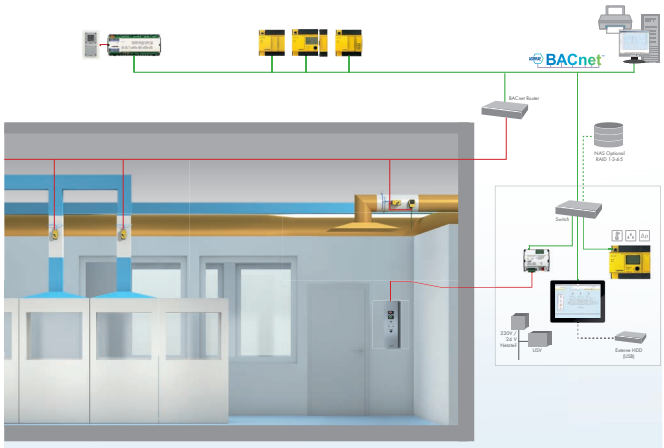
Control valves
- SAUTER
- Honeywell
- Danfoss
- Caleffi
- Coster

Butterfly valves
- SAUTER DN25...100

Innovation

Optimum volume flow provided by compact controller with BACnet MS/TP

The ASV115 VAV compact controller from SAUTER brings safety and efficiency to laboratories, clean rooms and hospitals. It now also supports BACnet MS/TP. Its many advantages are showcased in the "Fusionopolis" state-of-the-art research complex in Singapore.



Controlling the supply and return air in laboratories, clean rooms, hospital wards and operating theatres places huge demands on VAV controllers. Safety dictates, for example, that laboratories are operated at a slight negative pressure. Clean rooms, on the other hand, need over-pressure to stop particles from entering. It's essential that controllers are extremely reliable and accurate – even with contaminated media flows. And what is more, open BACnet communication – with its many benefits – is often used even in these very specific applications.

An all-rounder with open communication protocol

That's why the SAUTER ASV115 VAV controller now supports the BACnet MS/TP protocol, allowing volume flow control to be part of the building automation. When combined with a VAV box or a damper and flow probe, it can also tackle challenging tasks. All the key BACnet properties are available in read and write mode.

This outstanding solution is a unique combination of room pressure sensor and VAV controller in one compact component. Far less time is needed for wiring, installation and maintenance. With two integrated, independent control loops, it has also proven itself to be a great multitasker. Because the second control loop is freely configurable, the controller can be adjusted to wide-ranging customer applications.

Easy to install and set up

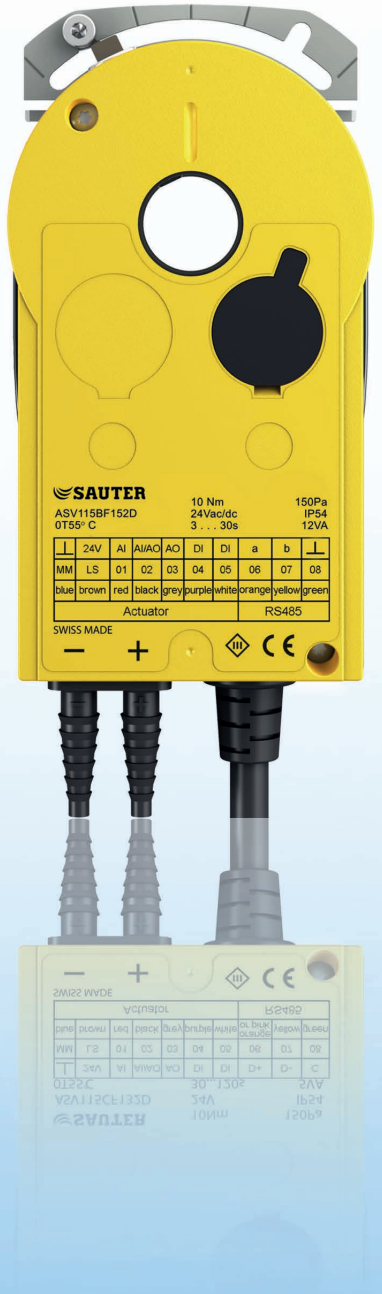
The SAUTER CASE VAV software lets you set the parameters centrally for the volume flow controller setpoints and BACnet functions. With this convenient tool and integrated BACnet browser you can change all the system's operation settings.

Featuring tried and tested technology, open BACnet functionality and user-friendly software, the ASV115 provides everything you need to integrate volume flow control in critical applications. And the prestigious "Fusionopolis" research complex in Singapore certainly shows what this controller is capable of.

Laboratory automation for Singapore's workshop of the future

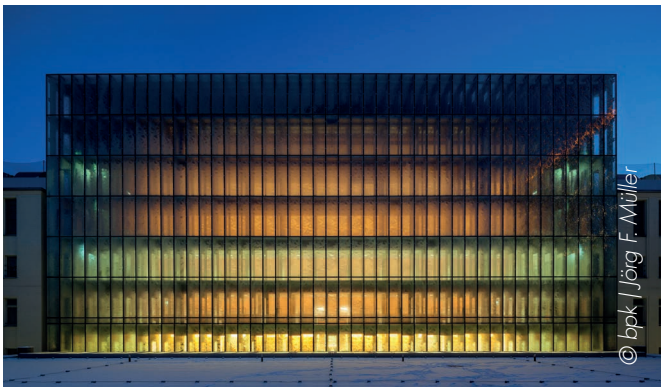
The laboratory and clean room automation systems in the two new buildings are fitted with SAUTER's ASV115 VAV controllers – 834 of them, in fact. The researchers and developers working there are exposed to various pathogens, chemicals and odours in their day-to-day activities. The VAV controllers in the fume cupboards, safety hoods and glove boxes therefore form the primary safety system. And because the sensor in SAUTER's compact VAV uses a static measurement process, dust-laden and chemically contaminated media is no problem either.

SAUTER ASV115 volume flow controllers activate the supply and return air in the laboratories and clean rooms as and when needed. This ensures the air pressure is always kept at the right level. In fact, SAUTER's VAV controllers measure the differential pressure to an accuracy of <1 Pa. This in turn allows operators to set low values for the set-back mode and therefore save energy. Which all means that the SAUTER automation solution doesn't just fit perfectly in the building automation system at "Fusionopolis". It also makes an active contribution to the sustainability goals that Singapore set itself when developing this new building complex.



Berlin's literary treasures protected by reliable building automation

The Berlin State Library houses more than eleven million books. To preserve these valuable and highly sensitive cultural artefacts, the optimum climate conditions must be achieved. When one of the library's two locations was renovated – without interrupting operations – SAUTER's experience of building automation solutions for museums and archives came to the fore.



For more than 350 years, the Berlin State Library – part of the Prussian Cultural Heritage Foundation and the largest academic universal library in Germany – has been collecting printed matter and other materials, often unique, in its special collections. These include manuscripts, autographs, documents people have bequeathed and maps. With locations in both Unter den Linden and Potsdamer Strasse in the middle of Berlin, the Berlin State Library enjoys worldwide renown due to its vast, wide-ranging collection.

Renovation and reconstruction

To make the library fit for today's requirements, between 2008 and 2013 the first building section at Unter den Linden was totally renovated and upgraded. The library even stayed in operation during the work. Alongside workplaces for around 400 employees, the renovated and expanded building now also has common rooms, open-shelf libraries, depositories for sensitive works and a large library museum.

The reading room, completely destroyed in World War II, has also been replaced by a new building at the centre of the old ones. This covers an area of 9,000 m² and has 250 reading places.

The site on Potsdamer Strasse had its own thorough revamp in previous years. Here, the room air installations in the building were renewed, for example.

Building automation meeting stringent demands

A key objective was to update the building technology systems and put in place a flexible automation system to control the climate inside the library. The building operators wanted facilities that ensured its valuable cultural assets were held in the correct climatic conditions at all times of the year. Different rooms are also used in different ways. And so conditions had to be adapted here too.

Having already installed many building automation systems in museums and archives, SAUTER was happy to take up the challenge of providing an intelligent solution using its well-established technology. Which means that numerous compact stations and room controllers and automation stations – that can be expanded in modules – now create the best climate for the valuable cultural artefacts at both the library's sites.

Energy-efficient through and through

SAUTER used BACnet to integrate a number of components and those systems produced by other companies. Around 22,000 data points in all from the two locations are shown dynamically and visualised on the SCADA management software.

Because data is transferred in real time over the Modbus interface, all energy consumption can be flexibly monitored and analysed further. The solution therefore not only helps to provide the ideal room climate for users and the precious documents. The entire operation is also energy-efficient.

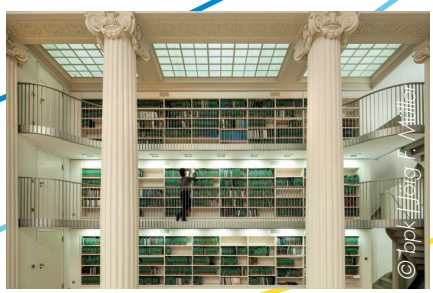
Redundancy for maximum reliability

Protecting the highly sensitive works is where SAUTER's flexible automation solution shows its mettle. Covering an area of 3,000 m^2, the depositories are kept at a constant temperature and humidity. All the technical systems in the depositories are set up redundantly. This ensures conditions are maintained even if there is a malfunction. Ideal conditions for preserving these valuable cultural assets for coming generations!

The Prussian Cultural Heritage Foundation

The Berlin State Library is an institution of the Prussian Cultural Heritage Foundation. It fulfils the task of collecting and providing access to national and world heritage artefacts, and preserving them in the long term. The Foundation possesses valuable museum, library and archive materials as well as art and academic collections. www.preussischer-kulturbesitz.de

SAUTER highlights



State-of-the-art building management in Barcelona's World Trade Center

In the year 1999, the World Trade Center (or WTCB) was inaugurated right at the port of Barcelona. Under its roofs, the impressive four-building business centre harbours a wealth of different facilities such as a five-star hotel, a congress centre and three office buildings. Right from the start, the office buildings have been regulated, controlled and monitored using building management systems from SAUTER. And now the building technology has been modernised. Thanks to SAUTER's energy management tools, operating costs have been reduced a great deal.

Since the opening of the WTCB, modules of varying sizes have been available for rent – together they make up around 40,000 square metres worth of office space. From the very beginning, the landlords have therefore made it a priority to ensure that each office can be regulated independently – a requirement which SAUTER's automation systems have been fulfilling in every respect since the late 1990s.

The ageing building technology in the office spaces was modernised in 2012 and the new SAUTER EY-modulo 5 system with its native BACnet functionality has been in use ever since. The system's processing speed and operating reliability have been increased with this change. SAUTER has also upped the scope of the building control system from 15,000 data points to 64,000 data points. The novaPro Open building management software and an alarm module facilitate efficient monitoring. When an alarm is triggered, the operators immediately receive an e-mail notification.

Increasing energy efficiency with SAUTER

In addition to being in charge of building control, for three years now SAUTER has also been in charge of energy management for the World Trade Center. Through various steps to optimise the system, energy consumption was reduced by over 41% – from approximately 9,700 kWh in 2011 to about 5,650 kWh in 2014 – which, needless to say, means a significant amount of money saved.

This was achieved by employing the SAUTER EMS energy management solution, which continuously monitors the overall energy consumption of the installations. EMS also maintains a constant protocol of the WTCB's essential energy variables. These include the energy required for air conditioning, heating, lighting or for warming and cooling water.

A major advantage of this system is that the consumption rates are listed separately per building or retail space. This allows SAUTER to provide customised suggestions for improving room control and adjust the settings to best suit each individual user's requirements.

Building management in the cloud

The management at the WTCB chose a while ago to employ cloud-based solutions for the systems installed inside the building complex (building technology, telecommunications, internet, etc.). A cloud version of the EMS energy management system is already up and running and a move from locally operated to remotely operated systems is being considered for the integrated SAUTER novaPro Open management system. The latest version of novaPro Open is specifically geared to working in a cloud environment – now the communication processes are so far developed that data can be called up from any location and using any device.

Breaking ground at the Mediterranean

Fast-forward to 15 years after the inauguration, the World Trade Center Barcelona maintains its status as a prominent reference object for commercial buildings. SAUTER building automation plays a significant role in ensuring that this property will also be a forerunner in future.

EY-modulo 5 provides Swiss Ornithological Institute with optimum room climate

After taking almost two years to build, the Swiss Ornithological Institute celebrated the opening of its new visitors' centre. The first three-story wattle and daub building in Switzerland, it is testimony to both great architecture and SAUTER energy and room climate technology.

For many years, the Swiss Ornithological Institute has promoted the protection of its domestic bird life. The recently opened visitors' centre at its headquarters in Sempach, near Lucerne, lets bird enthusiasts get even closer to the world of our feathered friends. Enclosed by spacious park grounds and Lake Sempach, this construction made principally of clay and wood has raised the bar in environmentally friendly building. It meets the Minergie-P ecological standard for low energy consumption and use of eco-friendly building materials. The self-supporting external walls of the building are constructed entirely of rammed earth. Along with wood, this is one of the oldest building materials in the world, and its heat-storing and air-regulating properties ensure its continued popularity.

Sustainable room climate thanks to SAUTER technology

When it commissioned the new visitors' centre, the Ornithological Institute focused not only on the most natural building materials possible and on sustainable construction. The desire for a renewable energy source for the building was also a major consideration. SAUTER was able to oblige by using geothermal probe drilling. After a significant initial outlay, the visitors' centre has done away with fossil fuels completely. A system installed in the floor now enables the building to be heated or cooled as required.

In the centre, SAUTER products from its EY-modulo 5 system range control the room climate. Just one cabinet and three modulo stations are needed to regulate the temperature, air quality and humidity in all the rooms. Intelligent functions make sure the automation meets the specific requirements of the different rooms – exhibition room, cinema and Singfonie* room. SAUTER moduWeb Vision – the visualisation solution – enhances further the permanent climate control installation. This gives the option of remote operation because use of moduWeb Vision isn't just limited to a desktop PC, but can also be used via touch panels (e.g. on a cabinet) or on the move with tablets and smart phones.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The alarm function on moduWeb Vision ensures operating faults are reported immediately. If, for example, there's a heat pump malfunction or a frost or fire alarm, the person in charge is alerted straight away by e-mail or text. The same applies if system thresholds are breached. So with SAUTER's EY-modulo 5 and moduWeb Vision installed, visitors to the Swiss Ornithological Institute are guaranteed the best possible room climate.

** Singfonie*
A mechanical theatre on singing. The Singfonie introduces visitors to the soundscape and communication of domestic birds, unravelling the secrets of the language of birds.

Swiss Ornithological Institute, Sempach

The Ornithological Institute on Lake Sempach has existed since 1924, and since 1954 it has been a non-profit foundation financed mainly through donations. It fulfils a variety of tasks:

- Monitoring domestic bird life
- Researching the habits and behaviour of birds in the wild
- Researching the causes of threats to these birds
- Implementing protection and care measures

www.vogelwarte.ch

Sustainable office space in the heart of Budapest

Using resources sparingly and looking after the environment is a top priority at the Váci Greens office complex in Budapest. An intelligent building automation solution from SAUTER is responsible for energy-efficient operation in the project's newest building.

The office building complex Váci Greens, which is being built in several stages, is located in Budapest's business district and was designed as a Green Building. Geared to sustainability in all respects, the structures already in place are leading by example, showing excellent (and certified) resource efficiency. In June 2015, Váci Greens Building C, the second of five planned buildings, opened its doors for the first time. Modern building materials and SAUTER's innovative building automation solutions keep the new building's energy consumption at a minimum.

Going green – from construction to everyday operation

Ensuring that Váci Greens Building C fulfils the demanding requirements for Green Buildings was a priority even in the early stages of development. During the construction phase, specific measures were adopted to make sure that demolition and excavated waste were dealt with in a responsible manner. Sustainable materials were incorporated wherever possible – 85% of the carpets were made from recycled materials, for example.

Many other measures, such as the use of building materials with excellent insulation properties, efficient heat recovery in the ventilation systems, and resource-sparing building automation technologies were employed to improve the energy consumption levels. And to save water, the green areas are irrigated using rain water.

An integrated solution for better energy efficiency

In total, Váci Greens Building C includes 17,374 m² of office space spread out over six floors plus parking areas for cars and bicycles on three subterranean floors. The building provides space for up to 1,800 people. SAUTER novaPro Open, the intelligent building management system, was installed to ensure that the operators have a complete overview of the building's energy and media consumption. So from day one, the operators are well informed and can devise and implement measures to continually improve the building's energy efficiency.

The integrated building automation solution from SAUTER is based on BACnet and includes nine modular SAUTER modu525 automation stations and over 100 powerful SAUTER ecos500 room automation stations. Together, these systems make for very energy-efficient room automation – be it through demand-controlled air-conditioning and sunshading or by using DALI interfaces to ensure that the office spaces are only illuminated when a person is actually present.

Other companies' systems are connected seamlessly to the SAUTER solution using BACnet. Meters installed all around the building monitor power consumption while 120 control elements permit the operator to monitor water heater data for the whole building. In total, there are 20,600 data points mapped in SAUTER novaPro Open.

Excellent marks for BREEAM

Focusing on handling resources with the highest possible efficiency is more than just lip service at Váci Greens. The first building of the complex was certified according to the BREEAM Code for Sustainable Buildings – better yet, it was awarded the mark "Excellent". The owner-operators of the building plan to attain this certificate for Váci Greens Building C too. The odds are looking good that Váci Greens will still be able to call itself Budapest's most environmentally-friendly rentable office space in future.

Energy management cockpits for MAN Truck & Bus

MAN, the leading commercial vehicle company, was on the lookout for an energy management solution for their site in Steyr, Austria. SAUTER EMS has been providing a detailed insight into the energy consumption of the factory and enabling it to optimise emission levels and costs.

Development and production of commercial vehicles has been a tradition in Steyr for almost a century. In addition to manufacturing driver's cabs and components, the plant in Steyr also produces MAN's light and medium-sized trucks.

More horsepower, more efficiency

Of late, a lot of significant changes have been made at the MAN Truck & Bus factory in Austria. To boot, the entire company is pursuing an ambitious climate protection strategy. So increasing the energy efficiency of the 500,000 m² location is very much a priority for the management team in Steyr.

SAUTER has contributed its vast know-how and trusted building automation technology. Today, more than 65,000 data points are included in MAN's building management software of choice, SAUTER novaPro Open. To improve the site's energy efficiency from the ground up, MAN has also recently enlisted the help of the SAUTER EMS energy management solution.

Measuring and improving

MAN is pursuing ambitious climate protection goals. One of them is to reduce its CO_2 emissions by 25% by 2020 as compared to 2008. To become certified according to ISO management system standard 14001 and the Eco-Management and Audit Scheme (EMAS), MAN has to show that they are fulfilling their environmental targets.

SAUTER EMS provides the transparency needed and a concise overview of energy consumption and CO_2 emission levels – demonstrating how efficiency has increased and costs have fallen. Numerous standard reports and more comprehensive analysis options are available to this end. This is part of the requirements for the audit. Another winning argument in SAUTER's favour was the high degree of compatibility with the pre-existing measuring point structure and automation technology on site. Aside from the functionality itself, MAN also plumped for the system because all the functions can be controlled from any computer via a web interface.

Energy used more efficiently

Energy data for the individual production modules can be managed centrally using the measurement data, key figures and reference values collected for the MAN branch in Steyr. SAUTER EMS promotes efficient energy management by making data analysis quick and easy and providing meaningful results.

Different users can be given different user rights. For instance, large-scale consumers in the factory get access to their own portal – their individual "cockpit" – which only includes the data and functions relevant for them. The management at MAN values this flexible structure and SAUTER EMS's many options to adapt to situations and changes. Consumption and costs can be effortlessly divided among consumers and cost centres using SAUTER EMS.

Setting goals for savings and measuring progress

International rating agencies count MAN among the most sustainable automotive and engineering companies in the world. This honour is the fruit of a consistent strategy with ambitious targets. But you can only improve what you can measure. Thanks to SAUTER EMS, the managers at MAN are able to analyse the energy efficiency of the factory in Steyr and prove their progress on the basis of the comprehensive information it yields.

DZ BANK in Hanover gets energy management and cost transparency

The Deutsche Zentral cooperative bank has given the building automation systems at its Hanover branch a big make-over – even while keeping the bank still running. Installing the SAUTER EMS energy management solution means that energy flows can be easily monitored and the building climate finely regulated.

For over a century, the Deutsche Zentral cooperative bank, aka DZ BANK, has been operating in German and international markets. Headquartered in Frankfurt am Main, the institution is committed to sustainable projects and is keen to make its branches energy-efficient – hence the refurbishment it undertook in Hanover last year. Upgrading and expanding the existing room automation system means the building climate can be controlled accurately. At the same time, SAUTER's intelligent EMS solution helps improve energy efficiency and cut CO_2 emissions.

Opting to extend and retrofit instead of replacing

DZ BANK was hugely in favour of retaining the existing cabinets, sensors and valves during the modernisation. SAUTER therefore expanded the building automation facilities taking the infrastructure of the previous control system as the foundation.

Well-established solutions – SAUTER novaPro Open and SAUTER EMS – have stepped up to the plate. SAUTER also re-equipped the mechanical equipment rooms with components from its modular system family, EY-modulo 5. The result being a room climate that constantly adapts to conditions. Many valve fittings were also given a new lease of life – simply by replacing the old valve actuators with SAUTER's versatile Retrofit line.

SAUTER EMS increasing energy efficiency

True to DZ Bank's sustainability goals, another prime reason for the expansion was to boost energy efficiency. To improve monitoring and control at the Hanover branch, the SAUTER EMS energy management solution includes, for example, 142 consumption meters for measuring heat, cold, electricity and water.

The state-of-the-art software collects and compresses all the measurement data. Seamless integration of the system means the main performance indicators can be monitored centrally in real time and all the installations flexibly and precisely controlled. SAUTER EMS provides a transparent display of the energy consumption, creating the ideal conditions for reducing CO_2 emissions at the branch.

Working professionally without disruptions

The building in Hanover had to be refurbished quickly. So it was decided to perform "open-heart surgery" – i.e. refurbish the bank while it remained in operation. There was to be minimum impact on the day-to-day work of the bank's employees and the other tenants in the building. With the client, planning office and contractors all working professionally together, this was indeed possible. And with DZ BANK bringing in all parties directly affected at an early stage, the project was in fact very well received.

Almost a year on from the start of the project, the employees and tenants in the bank's building in Hanover are benefitting from an optimised room climate. And the icing on the cake? SAUTER's comprehensive solution lets DZ BANK document the branch's energy efficiency in detail and therefore increase it sustainably.

© DZ BANK, Hannover

A better climate for Oslo's historical shopping paradise

Historical charm and future-proof technology are not a contradiction. In the recently renovated Steen & Strøm Magasin department store in the middle of the Norwegian capital, Oslo, building automation by SAUTER is ensuring optimum climate conditions.

Steen & Strøm Magasin was the first modern department store in Norway. With its art nouveau architecture and impressive glass roof, the 1929 building was modelled on the "Grand Magasins" of Paris. The Steen & Strøm Magasin enticed customers with its huge selection and hitherto unknown comfort. It also had Norway's first escalator, quickly making it a big attraction.

A new era of comfort and consumerism

The shopping centre in the Steen & Strøm Magasin comprises six upper storeys and two basements. The three storeys above this are given over to office space. In recent years, it became increasingly clear in both areas that the energy consumption and comfort were no longer up to the high standards of the investors and users.

The greatest challenges were presented by the high indoor temperature due to the lighting and the temperature differences between the warmer upper stories and the cool basements. The room climate needs of the shopping areas also differed from those of the offices. During a comprehensive renovation, SAUTER was able to adapt the building and room automation to the requirements of the 21st century.

A generation change in building automation

The completely BACnet-capable components of the SAUTER EY-modulo 5 system family make it easy to create a comfortable, optimally adjusted room climate everywhere in the historical premises and seamlessly integrate all the equipment systems. In the shopping area, a new VRF system for heating and cooling has been added to the existing lighting and fan coil units. Furthermore, 21 new ventilation systems with heat pumps balance the temperature differences in the building.

Dispersed SAUTER ecos500 room automation stations ensure energy-optimised room control. The solution uses BACnet/IP to enable direct integration of third-party systems. The temperature control in the shopping area and the room temperature and air flow control in the offices can therefore work together with the ventilation system. DALI is also used to integrate the lighting control in the offices into the room automation. To allow the flexibility of free room division, SAUTER ecoUnit 1 room operating units are used with EnOcean wireless technology. The modular SAUTER modu525 automation stations control the overall system and provide an optimum energy flow.

State-of-the-art visualisation and monitoring

The SAUTER Vision Center visualisation and monitoring software meets the current requirements of a mobile generation of users. Basic functions such as creating alarm and data point lists, and graphics and reports, can easily be customised. With the pre-installed functions as standard, the building operators can obtain an overview at any time.

Clear 3-D graphics represent the installation in a way that even non-technicians can understand. The completely web-based system does not require any additional plug-ins and can be opened in every browser. In the case of a notification, a report with values and graphics is supplied immediately. The technician can then react at once on a tablet or smartphone, no matter where he or she is.

Connecting the past and the future

Using BACnet/IP, the SAUTER products seamlessly integrate into the existing installation – from the preparation to the controlling and the monitoring. The focus is on the most energy-efficient control, so that both resources and costs can be saved in the future.

Facility management for Italian pharmaceutical logistics specialist

Reliable and safe operation of their warehouses is of prime importance to the logistics provider STM Group. And making no compromises in this requirement, the specialist in temperature-controlled pharmaceutical logistics is a firm believer in SAUTER Facility Management (FM).

Shipping and storage of pharmaceuticals and cosmetics are subject to extremely strict controls. To prevent these sensitive products being degraded along the way, the entire supply chain must be perfectly coordinated – from delivery of the raw materials to shipping to the consumer.

While facility management plays a central role in achieving this, it usually isn't one of the strong suits of logistics companies. Bringing to the table a wealth of experience in technical building management and maintaining, cleaning and repairing commercial buildings, SAUTER is the perfect partner for STM Group.

Sensitive products in good hands

STM Group specialises in services for the pharmaceuticals and cosmetics supply chain. In Italy, the group runs three logistics platforms. These include a total of six warehouses comprising upwards of 29,500 m^2 of air-conditioned space (1,550 m^2 of which is used as office space). The company also has facilities at two locations where completed products are repackaged.

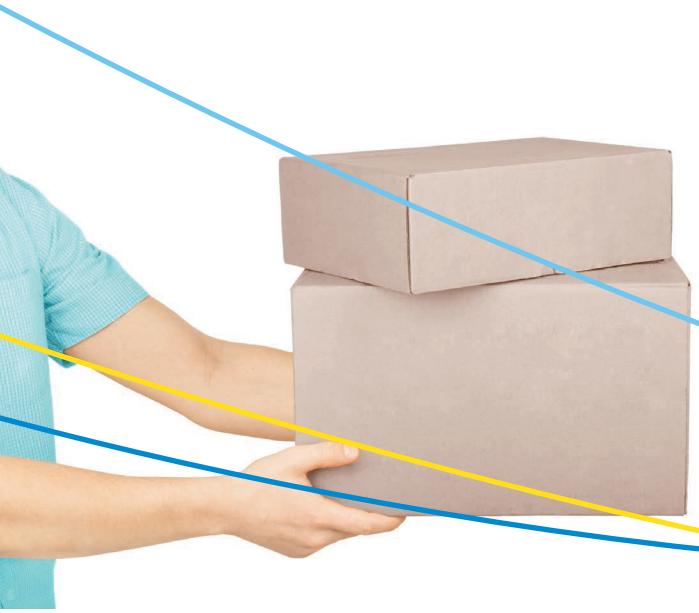
Sensitive products can be stored at a specific temperature in STM Group's custom storage spaces – where the temperature is controlled and maintained. This brings into play certain requirements for building technology and facility management. After all, pharmaceuticals worth more than 40 million EUR are stored in some of the refrigerated rooms.

The technical building management system, for instance, must ensure that some of the cold storage cells keep the medicines at a temperature between 2°C and 8°C.

Utmost reliability and technical know-how

While SAUTER had previously upgraded some of the office and storage space with building management and automation solutions, as of early 2015, STM Group has added a new dimension to the cooperation – facility management at two of its locations near Milan. SAUTER's services here include technical management of the air-conditioning and cooling systems, validating the systems to standards set by pharmaceutical regulatory authorities as well as cleaning the offices.

SAUTER has proven to be a reliable partner and so management at STM Group has entrusted it with more and more tasks. As a facility management specialist and provider of technical solutions, SAUTER has also made a lasting impression with just the right mix of competencies.



Short response times and greater efficiency

To react quickly to malfunctions, SAUTER FM guarantees STM Group a response time of no more than four hours, any time of day or night. When called for, SAUTER facility management staff go to the site immediately to identify and eliminate the source of the problem, therefore preventing goods being damaged. A ticketing system is currently in the planning phase – and this will make SAUTER FM even more adept at meeting STM Group's needs.

Problem-solving aside, sustainable building management is another key issue for STM Group and SAUTER. By constantly monitoring the performance of the installations, the operators of the logistics platforms not only improve the consumption of energy and other resources considerably, they are also able to reduce costs.

© Faruk Pinjo

"Using resources efficiently is a priority for us."

The Donau Zentrum in Vienna pursues a sustainable strategy and has been awarded the mark "Excellent" according to the standard BREEAM In-Use. And to date – on the back of more than 25 years of successful cooperation in building automation – SAUTER has also been providing facility management services to the operator for more than five years. Matthias Franta, the Centre Manager, and Thomas Fiedler, PMPS Manager at the Donau Zentrum, spoke to SAUTER Facts about their expectations and priorities in this area.

Matthias Franta

Thomas Fiedler

For over five years, SAUTER FM has been lending professional support to the Donau Zentrum. What are the deciding factors behind the success of this longstanding cooperation?
It's actually been more than 25 years in the field of control technology. All work has been carried out on time and to our complete satisfaction, so we've been very happy in recent years with the way the facility is being managed. In fact, our expectations have always been fulfilled, specifically with respect to the high standards we set for sustainability, service quality and response time.

Facility management is also always relevant from an economic perspective; how can SAUTER FM contribute to the creation of value at the Donau Zentrum in your opinion?
As far as we're concerned, SAUTER is adding value with sustainable projects and by maintaining the value of our installations. We make it a priority to use resources efficiently and tap their full potential, so we can offer the best possible service while building on sustainable solutions. As SAUTER is also in close contact with our customers – the tenants and visitors of our shopping centre – the facility management staff, with their work and the way they present themselves, make a significant contribution to the overall success of the Donau Zentrum.

SAUTER strives for energy-conscious and smooth operation as well as increased efficiency and reliability around the clock. What benefits does on-site technical FM offer you?
Our main objective is to ensure that our customers and shop partners are 100% satisfied with our services, because that's what smooth operation on every level means to us.

In personal communication we, at SAUTER, attach great importance to short, direct lines. What do you, as a customer, value most about the close-knit cooperation with the SAUTER FM team?
As you have already touched upon in the question, we find it important to work with short and direct lines of communication. The fact that we have a project manager on location and equipped to make decisions autonomously is key to achieving this objective.

The Donau Zentrum in Vienna offers its visitors an extraordinary shopping experience over an area of 130,000 m². It has relied on SAUTER solutions for over 25 years. Building on this success, the centre management also tasked SAUTER, five years ago, with providing all-round facility management services, ensuring the shopping centre runs like clockwork.

Technical facility management from SAUTER means that the premises operate smoothly, safely and efficiently 24/7. Along with maintenance work on the building technology systems, SAUTER's experienced team is responsible for event management, renovation management, organising the fire protection and following up guaranties.

Energy-conscious facility management comes from SAUTER specialists with in-depth knowledge of the property. They are in charge of operational energy management of the Donau Zentrum and can monitor energy consumption and optimise it according to the client's wishes.

Infrastructural facility management is provided by SAUTER's on-site team who tend to the plants and green areas.

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