Room automation for laboratories

Safety and a pleasant climate for
life sciences and the healthcare sector.

SAUTER
Creating Sustainable Environments.

A holistic solution for optimum **safety, comfort** and **efficiency in laboratories.**

Safety

Operational reliability under all conditions:

- Protection of the laboratory staff by complying with the safety requirements
- Fast and precise control of the volume flows and the room pressure
- Immediate detection and reporting of faults thanks to reliable monitoring and an efficient alarm concept
- Traceability of events and interventions via GMP-compliant monitoring system

Comfort

High comfort levels due to full regulation of comfort-related parameters:

- Constant sense of well-being thanks to stable temperatures and humidity regulation
- Increased ability to concentrate on the part of personnel due to the pleasant indoor air quality
- Silent regulation of the volume flow causes no acoustic disturbance
- Visual comfort thanks to integrated control of lighting and window blinds

Energy efficiency

Reduction in energy consumption by optimising the air preparation:

- Volume flow control with very low differential pressures
- Demand-led ventilation control
- Inclusion of the simultaneity factor
- Reduction in the volume of air in night and absence modes

Cost efficiency

Cost benefits through continuous solution from a single source:

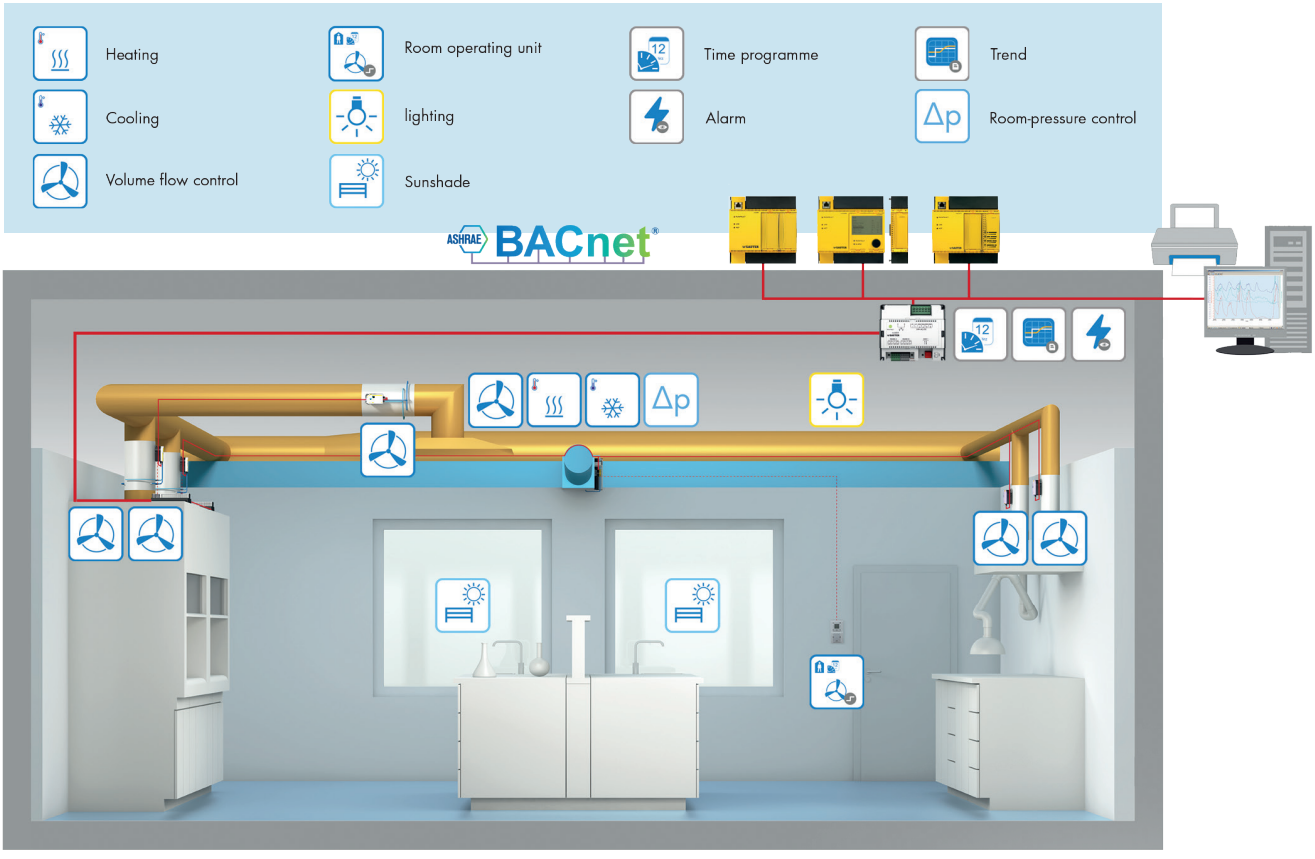
- Reduction in labour spent on planning and co-ordination
- Reduction in service and maintenance costs
- Easy adjustment of the system for a renovation or a change of usage

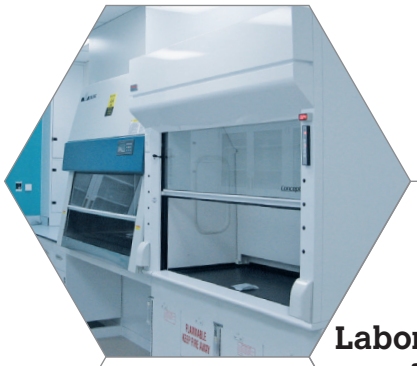
Innovation in the laboratory building – SAUTER always speaks **BACnet/IP.**

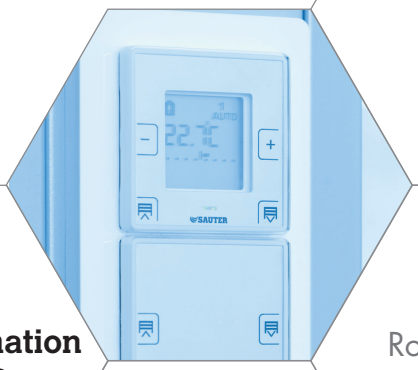
Our expertise is the integration of laboratories into a building management system.

The control and monitoring of laboratories and fume cupboards is always a part of the higher-level building management system. Therefore, it is important that the integration of the rooms into the system is complete and open. The laboratory automation stations from SAUTER certified as per BTL and EN 14175, which are based on the BACnet/IP protocol, enable simple, direct connection to the building automation network.

Data is transmitted quickly and reliably via Ethernet. This ensures that conditions will remain safe in your laboratories at all times. Our SAUTER Vision Center monitoring software visualises all information in a clear and structured manner. All relevant data and all user interventions are recorded in full in a database and cannot be manipulated.







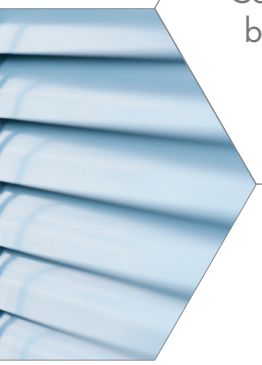
Open integration

Laboratory automation from SAUTER

Room temperature control

Control of window blinds & lighting

Room pressure control & monitoring



Room air balancing

SAUTER measures up to **your requirements.**

Optimal control thanks to proven technology.

Our customers' requirements are varied: from control in fume cupboards to pressure regulation of laboratory and clean rooms to ventilation of critical zones.

In order to fulfil the strict requirements of the operators and the legal regulations, fast communication is required. This is why SAUTER relies on the BACnet/IP protocol in order to control time-critical applications like room air balancing in the laboratory at all times. In addition, the room pressure, room temperature, window blinds and lighting are all reliably controlled and monitored.

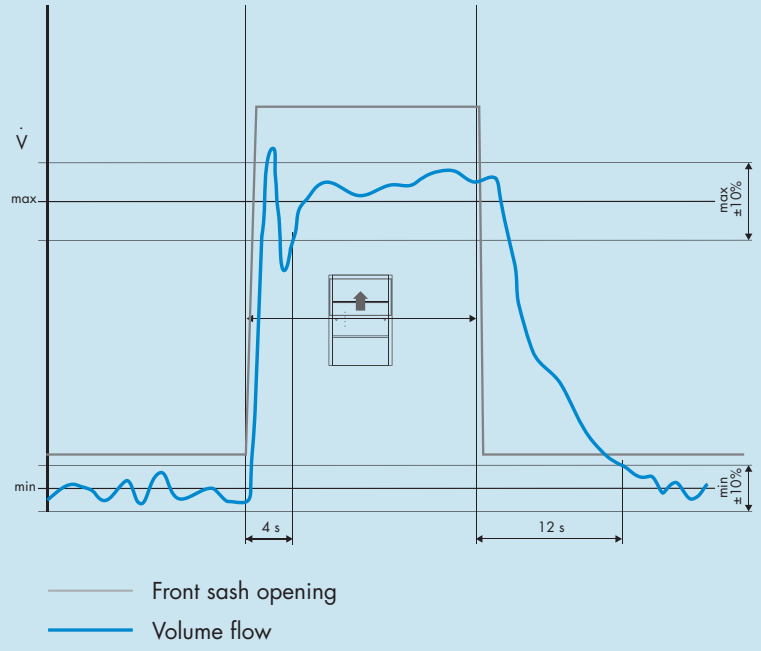
For safety in the workplace.

By controlling the supply and return air correctly, it is possible to prevent malfunctions during operation and to avoid the leakage and accumulation of harmful substances in the room air. When you decide in favour of SAUTER components, you are choosing reliability and precision.

Reliable control and monitoring.

The control speed required by European standard EN 14175-6 is reliably maintained thanks to the powerful control algorithm and the fast actuator of the SAUTER ASV215 VAV compact controller. The functional monitoring of the fume cupboard is carried out in accordance with EN 14175-2. This ensures that the laboratory personnel benefit from maximum safety, because the ventilation system and the relevant functions all operate correctly. If there is a risk of the fume cupboard operating in any way unsafely, this is signalled to the users both visually and audibly on the FCCP200 function indicator.

Volume flow time diagram as per EN 14175-6

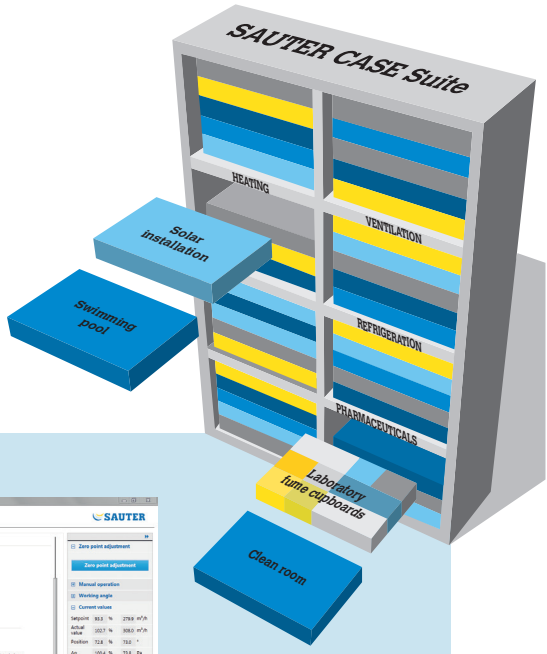


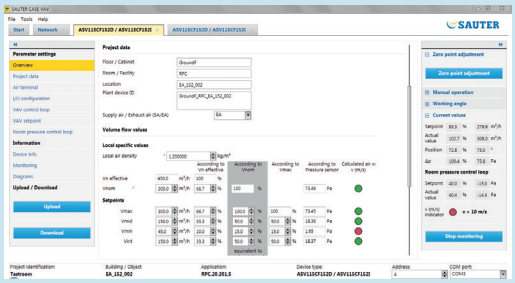
Time and cost savings thanks to **homogeneous system.**

Simple and functional.

The laboratory automation system from SAUTER offers you a homogeneous system, from the fume cupboard to the management level. This reduces the number of people involved in the project and, therefore, the planning and co-ordination expense.

The networking of the automation stations is greatly simplified by the ready-to-plug method of connection. The automation functions can also be programmed and put into operation very efficiently using the proven solutions and tools of the SAUTER CASE Suite engineering software. This considerably speeds up the project, from the planning stage right through to the actual hand-over.





With SAUTER you improve your **energy efficiency.**

In this way you protect the environment and reduce consumption and costs.

A very important part of SAUTER's philosophy is to reduce energy consumption in buildings. The SAUTER ECO[10] programme supports you in your efforts to cut energy costs and actively protect the environment. Our solutions for laboratory buildings also make an important contribution towards achieving this objective.

Optimising with SAUTER products.

In a laboratory, fume cupboards are the greatest consumers of energy due to the volume of air used. That's why we use our optimisation strategies to target the use of the right air volume at the right place and at the right time. SAUTER achieves this, for example, by reducing the volume flow in the fume cupboard in the night and absence modes, and limiting the maximum volume flow of return air from the laboratory. These measures help to lower your running costs significantly.

1. Centralisation and visualisation of information
2. Comparison with internal and external benchmarks
3. Customised energy concept
4. Showing the options for alternative energy
5. Marked reduction in emissions
6. Use of ground-breaking, interconnected products and solutions
7. Interconnection of all equipment via open, flexible systems
8. Technological harmonisation of the building shell, automation system and installation technology
9. Helping the users to adopt energy-conscious behaviour

Control low **differential pressures.** **Reduce** air quantity. 10. Guaranteed **reduction** in operating costs.

Maximum savings with maximum safety.

With its innovative differential-pressure sensor, the ASV215 VAV compact controller has unbeatable control quality. This enables considerable energy savings.

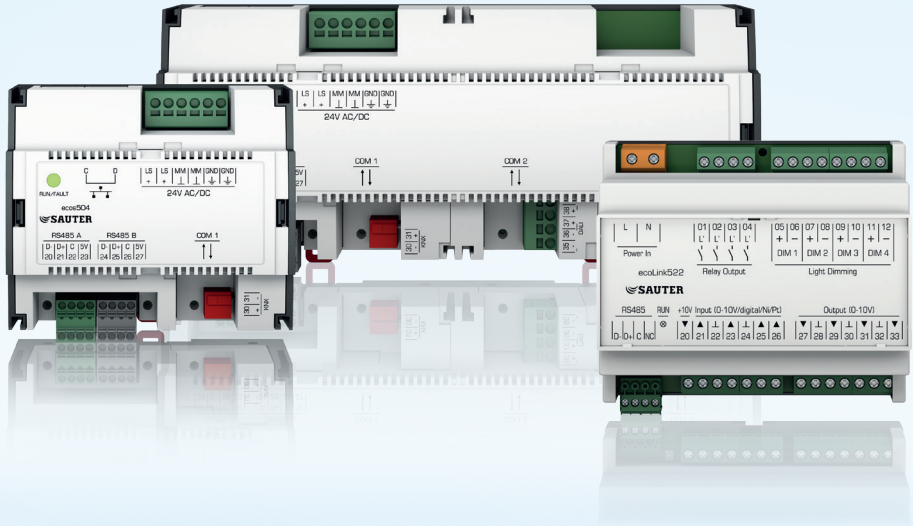
This integrated device component ensures stable control down to a differential pressure of 1 Pa. This allows you to achieve maximum savings while benefiting from maximum safety.

The prerequisite for safe and precise control: **SAUTER component technology.**

ecos504/505 laboratory automation station

The powerful automation station is certified according to the BACnet standard and has the following functions as a BACnet Building Controller (B-BC):

- Part of the SAUTER EY-modulo 5 system family
- BACnet/IP Building Controller, B-BC profile
- Freely programmable with SAUTER CASE Suite
- Modular function library for
  - Fume-cupboard control
  - Room-air synchronisation
  - Room-pressure control
  - Heating/cooling
  - Lighting
  - Sunshading
- RS-485/SLC bus extension interfaces for room operating units, I/O modules and EnOcean
- KNX/TP interface
- DALI interface, integrated bus power supply
- SMI interface
- Integrated Ethernet 2-port switch for daisy chain wiring
- 24 V AC/DC power supply



ASV215 compact VAV controller

The compact damper actuator impresses with some extraordinary features:

- Configurable running times of 3 to 15 seconds thanks to brushless DC motor
- With 10 Nm torque, it is also suitable for large VAV boxes
- Long serviceable life even if used in extreme conditions thanks to electronic and mechanical torque limitation
- Freely configurable inputs and outputs for different applications
- Integrated static differential-pressure sensor that can be used in contaminated extract air, with any fitting position for the VAV box
- Measurement range 150 Pa or 300 Pa
- Highest measuring accuracy even if the differential pressure is very low (as little as 1 Pa), e.g. for night set-back mode with minimal volume flows
- 2 bus protocols (BACnet MS/TP and SLC) with up to 115 kbps for optimum system integration
- Pluggable connection terminals for fast fitting

EGP100 differential pressure transducer

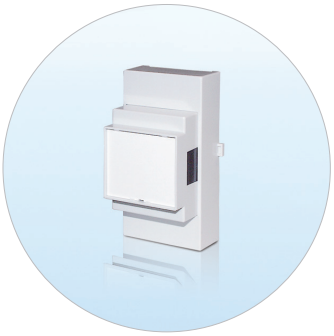
The differential pressure transducer is used to measure and monitor the room pressure in laboratories. It measures very small differential pressures and air flows:

- Configurable measuring range for recording positive and negative pressures up to ±150 Pa
- Stable and precise measurement of differential pressure
- Adjustment and visualisation of the measurements using software
- Automatic voltage/current change-over of the output signal
- With display and LED status indicator
- High IP protection for use in critical environments

SVU100 air-flow transducer

The air-flow transducer is used to measure the air inflow speed for fume cupboards with horizontal and vertical front sashes:

- Easy to install in the roof of the fume cupboard
- Flow measurement for air speeds of up to 1.3 m/s
- Reliable detection of the flow direction
- Integrated particle filter to prevent contamination of the measuring element



SGU100 sash sensor

The sash sensor detects the vertical front sash position on every type of fume cupboard:

- Easy to install on the counterweight of the front sash
- Measurement range of up to 2 m with excellent reproducibility
- Measurement system not subject to wear: low life-cycle costs
- Integrated alarm contacts for excess travel: reduced installation costs and increased operational reliability
- Self-monitoring function

FCCP200 function indicator

The function indicator, as per EN 14175, enables safe operation of your fume cupboard – simply, flexibly and conveniently:

- ASV215 and SGU100 configured without direct access to the device
- Fast and error-free installation thanks to plug technology
- Bus interface
- Touch operation
- Display

SAUTER is the expert for **room automation in laboratories.**

Benefit from our expertise and more than 100 years of experience in measuring and control technology.

Choose SAUTER. For more than 40 years, we have been creating pleasant conditions in living spaces the world over with innovative building automation. We have made it our mission to reduce your costs and your CO_2 emissions. Both you and the environment benefit from this. With the right functions for your laboratory, you can take important steps towards greater energy efficiency. Start now.

The advantages.	How you benefit.
+ Open BACnet technology	► Investment protection and easy expansion
+ Interface-free BACnet system from a single source – from the fume cupboard to the building automation and visualisation	► Reduced costs through elimination of coordination work required for multiple suppliers
+ EN 14175 certified fume-cupboard control	► Safety-tested for your laboratory staff
+ Integrated laboratory automation via integration of the lighting and sunshade control as per VDI 3813	► Sustainable reduction of operating costs by up to 70% via demand-oriented control
+ Modular system structure	► Expansions or conversions can be implemented with very little money or time
+ Precise, fast pressure and volume flow control	► Safe operation of the laboratory in all operating states

Systems

Components

Services

Facility Management

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