

# Automation Systems for School Buildings

Smart solutions that boost efficiency and motivation



For more **comfort & transparency** in the classroom!

A photograph of four children running happily down a school hallway. From left to right: a boy in a white t-shirt and black pants, a girl in a blue polka-dot shirt and jeans, a girl in a pink shirt and jeans, and a boy in a striped shirt with yellow sleeves and jeans. They are all wearing backpacks and smiling broadly. The hallway has a brick wall on the left and an arched doorway in the background.

For more  
motivation!  
when Learning!

# Smart automation provides better atmosphere for learning

Poor air quality impairs the learning ability of school-children. Inefficiently controlled heating and ventilation systems cost a lot of money and harm the environment.

No wonder that improving the energy quality of school buildings and other educational facilities is one of the prime tasks for the public sector, school maintaining bodies and planners. After all, infants and adolescents will be spending even more time at school in the future.

Action is focused on making the rooms far more comfortable because that is key to effective learning and teaching.

To achieve this goal, the room air conditions have to be adjusted better to the various use scenarios, and external factors – such as weather and thermal building behaviour – have to be taken into account by using smart control systems. User friendliness and transparency must also be taken into account: only intuitive, practicable controllers which can be easily adapted to the timetable both centrally and decentrally will exploit the full potential for air quality and energy efficiency.

In everyday school life, transparency and clarity ensure that the installed systems will be accepted by teachers, caretakers and pupils and will lead to long-term success.

Modern room automation in schools needs to meet many requirements. It has to be efficient, reduce costs, conserve the environment and provide better air quality, more comfort and more convenience. What is needed is a flexible, transparent and easy-to-use system which can be integrated simply in the existing infrastructure of the buildings and will protect investments well into the future.

Saia PCD automation solutions from Saia Burgess Controls have been designed specifically with this requirements profile in mind. On the pages that follow, you will see why they are ideal for school buildings in particular.



«Building automation at schools provides a better atmosphere for learning and protects the wallets of school maintaining bodies in the long run.»

Prof. Michael Krödel,  
Rosenheim University of Applied Sciences





For clever  
answers to all  
questions!



# What room automation can achieve at schools

Automation solutions from Saia Burgess Controls will make classrooms more comfortable, help schoolchildren to learn better and also save energy. They meet the requirements of the public sector, school maintaining bodies, teachers and pupils alike. SBC's systems fit perfectly into the situation on site and ensure automated, efficient operation at all times. They are also flexible and easy to use, allowing targeted control on the school, building and classroom levels whenever needed.

## Optimum atmosphere for learning and complete transparency

More and more people in charge at schools now expect room air conditions to adapt optimally to needs as they arise. They want to be able to control these conditions for the entire building or for individual rooms locally or from a central point at any time. This is the only way to achieve the desired level of comfort and to conserve energy resources.

By choosing solutions from SBC, you get systems that have been designed to optimise room air conditions in line with varying use patterns. These systems adjust intelligently to the specific situation at hand. As they are based on open standards, it is also easy to integrate lighting and shading controls as well as meters to capture consumption data. This can turn the classroom into a «classy room» providing an optimum atmosphere for learning, whilst offering maximum flexibility and transparency for those in charge.

## Low costs and protection of the environment

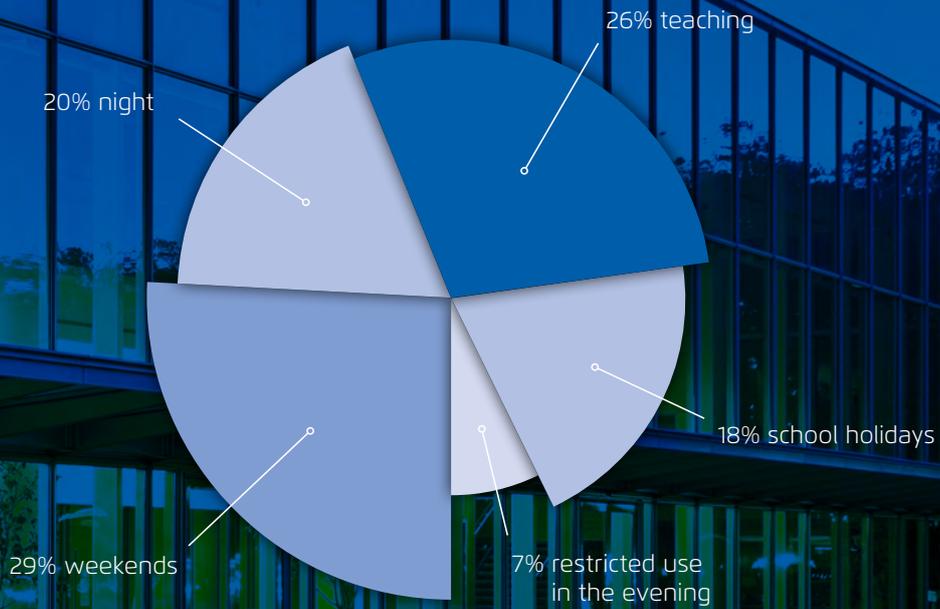
School maintaining bodies want planners and operators to boost the energy efficiency of school buildings to save costs and conserve resources.

Automation solutions from SBC take all relevant parameters into account – such as air quality, indoor and outdoor temperature, thermal building behaviour and the use situation. This data is used to control the heating and ventilation systems in such a way as to maximise efficiency. Furthermore, this enables the slashing of energy costs, often reducing them by as much as a double-digit percentage, and meet government requirements. The money saved is available for other important investments.

## Complete flexibility and certainty for the future

No matter whether buildings are being renovated or erected, planners and integrators demand individuality and flexibility. SBC offers smart systems which are ideal for use in schools and other educational establishments and enable other systems to be integrated without difficulty because they are based on open standards. They are compatible with over half a dozen common protocols and can be configured via a web interface, making them even more flexible. On top of that, Saia PCD systems give you certainty for the future: their compatibility and portability across generations mean that you can adjust your solution to changed requirements at any time.

## Actual times of use at schools\*



Schools only operate in normal mode for 26% of the time. For the remaining 74% of the time, needs-based control has the potential for huge savings.

For clarity  
when it comes to  
room air conditions!

\* Source: Fraunhofer Institute for Building Physics, "Besseres Lernen in energieeffizienten Schulen", Stuttgart, 2010

# Needs-based control and complete transparency

Control and ease of use are key to the success of the measures in schools and public buildings. With Saia PCD automation stations, you can clearly define who can manipulate the systems and in what way. You make these settings via an intuitive graphical user interface – conveniently via a robust, local touch panel or on a web basis via a smartphone, tablet or PC. In addition, you can visualise all parameters at central points such as the assembly hall or office. This provides transparency and ensures that everyone concerned has the necessary information and is aware of matters.

## Open standards and competent partners

The major benefits of systems from Saia Burgess Controls include their flexibility and connectivity. Saia PCD models are based on open technology that incorporates all relevant interfaces, providing you with transparency, openness and combinability across all levels. This makes it easier for you to integrate both existing and third-party systems.

A broad network of skilled planners and integrators is available to support you in projects. When you opt for SBC, you always have a partner that has in-depth experience in your area and can look after you locally.

## Flexible planning and easy start-up

Open standards across all levels of the integration pyramid make SBC's solutions particularly attractive for planners and integrators, too. Systems can be installed and started up reliably and conveniently via a web interface. In addition, all Saia PCD controllers are freely programmable and feature extensive web and IT functions. As a result, they can be tailored optimally to user requirements, integrated easily in existing IT infrastructures and combined flexibly with other equipment.

### Air quality in the classroom\*



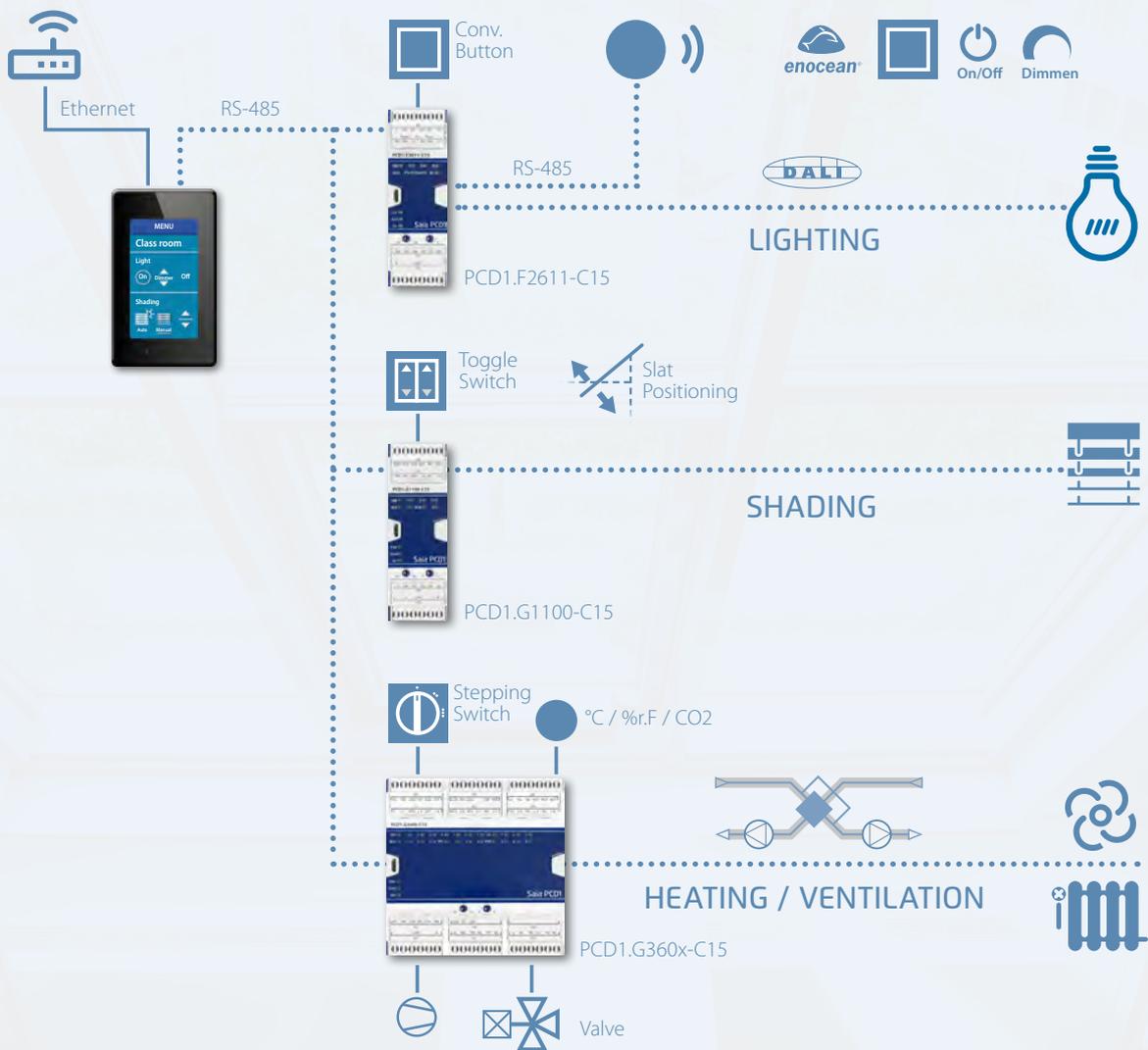
Without a fresh air supply, a CO<sub>2</sub> level of 1,500 ppm is reached in a classroom of 30 schoolchildren after just 25 minutes. The Pettenkofer limit for «good air» (hygienically harmless) stands at 1,000 ppm. Ventilation behaviour should be checked and, if the level is 1,000 ppm or more, action should be taken to improve it.

\* Source: Fraunhofer Institute for Building Physics, «Besseres Lernen in energieeffizienten Schulen», Stuttgart, 2010

## What Saia PCD® room automation can do in schools

Here is an example of how room and zone automation can work in a classroom or training room. The freely programmable E-Line modules from Saia Burgess Controls enable you to control heating, ventilation, air condition-

ing, lighting and shading flexibly. Operating is based on web technology and can be freely customised. For example, an intuitive, programmable Saia PCD touch panel can be used.



# Automation is catching on



## Smart automation stations

Saia Burgess Controls can deliver all products for effective and convenient automation of buildings, ranging from the freely programmable Saia PCD1, 2 and 3 instrumentation and control devices to the compact Saia PCD1 E-Line, which is very easy to install thanks to its push-in terminals.



## Clever handling via web HMI

We offer everything you need to easily operate and reliably visualise your installations – from programmable and non-programmable panels to Windows-based systems. These products mean you can keep track of your systems and room air conditions at all times.



## Precise consumption data capture

No matter whether electricity, water, gas or heating is involved, our S-Monitoring solutions enable you to analyse the efficiency of your systems exactly and to optimise the use of resources. This applies equally to new installations and retrofits consisting of just a few measuring points or thousands of them.



## Powerful components

We have an extensive portfolio of accessories – ranging from power supply units, field devices such as sensors, drives, valves, frequency converters to switches and isolating amplifiers – and thus everything you need to automate school buildings.

# What speaks for cooperation with Saia Burgess Controls

Saia Burgess Controls stands for flexible automation solutions based on open standards. SBC develops, manufactures and markets modular open- and closed-loop control products for buildings, infrastructure and industry.

Our products are characterised by durability, compatibility and portability. They help to increase sustainability, convenience, energy efficiency and profitability throughout their life cycle for all parties involved – partners, planners, operators and users.

With our range of products and services, we are one of the pillars of the Automation and Control Systems (ACS) division of the Honeywell Group, to which we belong. The goal of ACS is to increase profitability, efficiency and safety and to conserve the environment through automation technology and services. Our products set standards in this field. Together with Honeywell, we have the financial basis to support large-scale projects at any time and at any place and have the logistics to be present wherever our products are needed.



«For us, systems from Saia Burgess Controls are first choice in school buildings because of their open standards in particular. There is almost nothing that cannot be integrated. In addition, the graphical user interface can be set up to meet the needs of local users perfectly.»

Christoph Raucher,  
Raucher Building Automation GmbH







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