

SIEMENS

The worldwide  
standard  
for home and  
building  
management

KNX®

# More efficiency in schools – with HVAC, lighting and security

Simply first class: Higher energy efficiency and more flexibility  
thanks to Synco HVAC controllers and GAMMA building control

Answers for infrastructure.



## Saving energy and staying flexible when school days are rough

Thanks to intelligent energy saving functions, GAMMA building control in connection with Synco™ heating, ventilation and air conditioning controllers lower the energy consumption of school buildings – and thus their operating costs. So, higher investments can be made in education, in spite of tight budgets. Also, the system components offer ease of use, ensure reliable operation and optimize the room climate in class and staff rooms, gymnasiums and auditoriums. This creates a better teaching and learning environment.

What's more, you benefit from high investment protection, because Synco HVAC controllers and GAMMA building control offer flexible adaptation to room usage changes, occupancy schedules or building extensions.

# Intelligence spreads

## Green efficiency for your school

In view of tight educational budgets and reduced budgets for schools, there is a demand for increased cost effectiveness. Cut your operating costs and attain energy class A with leading-edge building technology from Siemens: Synco and GAMMA prevent school buildings from wasting energy due to unnecessary lighting, heating and heat losses. This way, you save energy costs, leaving you more from your budget to improve the quality of teaching. At the same time, you help protect the environment – another investment in the next generation.

## Intelligent comfort when it comes to room climate and straightforward operation

Be it the well-being of students or staff, good air quality or as much as possible glare-free daylight – with GAMMA and Synco you create an excellent environment for teaching and learning. This enhances your pupils' or students' motivation and ability to concentrate, and contributes to the good reputation of your school. Owing to a wide choice of automatic functions, many manual interventions that could disturb lessons are no longer required. The user-friendly technology offers ease of operation for all parties involved.

## Flexible systems for diverse requirements

Varying room occupancy, gymnasiums with flexible space assignment or the integration of modern media technology – made easy when using GAMMA and Synco. Thanks to the worldwide KNX communication standard for building management, functions can often be easily reprogrammed – with no need for laying new wires. In addition, heating, ventilation, air conditioning, electrical and media devices of different vendors can communicate with each other, allowing other functions to be integrated at a later stage.

## Reliable, future-proof products from a single source

As a leading company in the field of building technology, Siemens offers you a comprehensive and consistent solution – from the production of heat/cooling energy to the distribution of thermal and electrical energy, tailored to the specific needs of your school project. Thanks to modular concepts and open communication, this solution can be modified or extended at any time, ensuring that you will be on the safe side in the future as well.

## Highlights

- Energy and cost savings thanks to automated control and energy saving functions
- Environmental protection owing to lower energy consumption
- Motivating, concentration-stimulating learning environment thanks to comfortable room climate
- Straightforward adaptations based on KNX when rooms are rearranged or requirements change
- Reliable, extendable products from a single source



Using the GAMMA building control and Synco controllers, your school building will satisfy all requirements with regard to security, economy and comfort – from the heating/refrigeration plant to the ventilation plant and from the class/staff rooms to the auditoriums, gymnasiums, workshops and laboratories, etc.

# Lower energy costs and optimum learning environment

Up to 45% en  
and daylight-



Up to 20% energy savings thanks to time- and presence-dependent temperature control



- 24-hour, 7-day and yearly time programs using occupancy schedules as a basis
- Presence-dependent room climate with presence detectors

Up to 30% energy savings thanks to individual room control and automatic exchange of data with heating/cooling plant

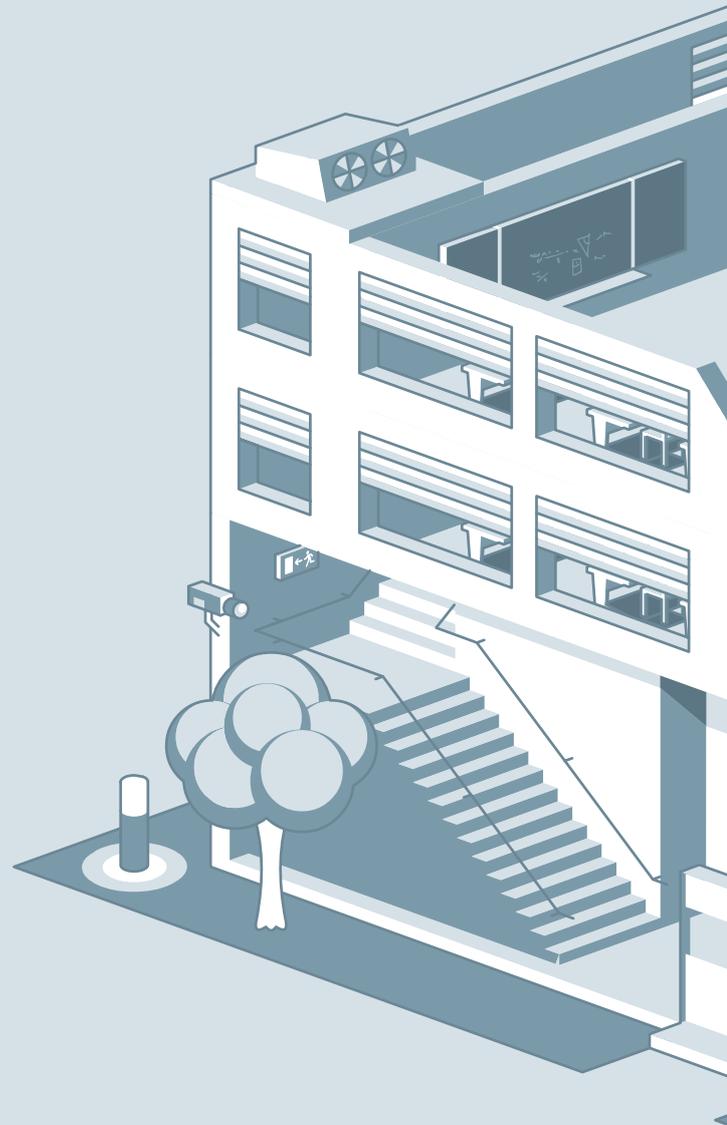


- Climate can be individually adjusted for every room
- Higher control accuracy owing to eu.bac-certified controllers
- Window contacts make certain that energy is not wasted

20 to 70% energy savings thanks to demand-controlled ventilation



- Ideal amounts of fresh air at the right temperature level – at any time
- Optimum learning conditions



Energy savings thanks to time-, presence- and daylight-dependent lighting control

- Automatic control of lighting
- Optimum light conditions at all times
- Only as much as necessary artificial light guaranteed by constant light control



Up to 30% energy savings thanks to time- and daylight-dependent shading control

- Automatic control of shading
- Maximum proportion of glare-free daylight ensured by sun tracking control
- Selectable proportion of sunlight through shadow outline tracking



Straightforward management and monitoring of energy efficiency

- Energy indicator reports unfavorable settings via e-mail or HomeControl app
- Easy operation by caretaker or service personnel via the Internet from any location



Thanks to the possibility of plant monitoring from a remote location, on-call service on duty in some other public building can monitor the school building during the night. This requires no costly extra installations.



## When it comes to security – simply first class

### Automatic security functions

At the end of the school day or in the evening, the building switches automatically to a secure operating state: blinds down, lighting off, workshops and laboratories shut down and monitoring activated. This means that information is delivered on open windows, skylights or exterior doors. In the case of strong winds, blinds are immediately raised and the skylights shut.

In the event of fire, electrical consumers are immediately shut down and escape route lighting is switched on. In addition, air dampers are shut and fans are deactivated. If smoke occurs, the air dampers are opened and the fans activated to ensure smoke extraction.

### Security thanks to remote monitoring

Web-based visualization on a PC or control panel shows all important information about the building, including alarm and operating state messages such as lamp failures or brightness levels of lamps.

The energy indicator monitors defined settings made for heating, ventilation and air conditioning, shows limit value violations and transmits the respective signals periodically via e-mail or app. Recipient is the school's caretaker or, during the night, on-call service on duty in some other school or public building. This ensures a quick response, prevents or reduces damage and guarantees reliable and efficient operation. And there is no need to install special alarm devices: Every time a lamp is switched or a window or an exterior door opened, an alarm message is triggered in the plant's monitoring state, which can be forwarded via SMS or e-mail.

### Secure lighting

Presence-dependent corridor lighting ensures the right light level at the right time. Outdoor and pathway lighting can be switched depending on brightness, motion or time.

### Highlights

- Higher security level with no need for extra personnel thanks to automatic security functions and remote monitoring
- Interventions can be made faster owing to notification of malfunctions, deviations, access, etc., via e-mail, app or SMS
- Lower risk of accidents thanks to efficient corridor, pathway and escape route lighting

eu.bac



The eu.bac Association is a European association of product and system suppliers and service providers operating in the field of home and building management and measurement and control for buildings. Certification by eu.bac stands for tested quality, control accuracy and energy efficiency.



## Everything for security, efficiency and flexibility

General	The different areas
<b>Energy efficiency, economy and comfort</b>	<b>Class rooms</b>
Time- and presence-dependent temperature control	Scene control in media technology
Individual temperature control for every room	Time- and/or presence-dependent temperature control
Demand-controlled ventilation	Demand-controlled ventilation
Economy mode when window is left open	Automatic control of lighting
Energy indicator and HomeControl app	Automatic control of shading
Control of lighting: – Control via time programs – Presence-dependent control – Constant light control	<b>Auditorium/gymnasium/event zone</b>
Control of shading: – Sun tracking control – Shadow outline tracking	Common control of building functions and media technology
<b>Security</b>	Basic stage and scene control
Secure building operating state at the end of the school day or during the night	Individual room control
Indication of open windows, skylights or exterior doors	Automatic control of lighting
Automatic security program in the event of strong winds	Automatic control of shading
Automatic response in the event of fire alarm (control of fire protection dampers)	<b>Staff rooms</b>
Comprehensive visualization, on site or with external on-call service	Scene control in media technology
Display of operating states and fault status messages	Individual room control
Monitoring without special alarm system	Presence-dependent control of lighting
Alerting via SMS or e-mail	Automatic control of shading
Presence-dependent corridor lighting	<b>Sanitary area</b>
Brightness-, motion- and/or time-dependent outdoor and pathway lighting	Presence-controlled extract air plant
	Presence-dependent control of lighting
	<b>Caretaker's office</b>
	Central operator station with optional remote access
	Straightforward visualization of all relevant areas
	Alarm messages directly to the office or via SMS

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The information in this document contains general descriptions of technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.

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#### **Answers for infrastructure.**

Our world is undergoing changes that force us to think in new ways: demographic change, urbanization, global warming and resource shortages. Maximum efficiency has top priority – and not only where energy is concerned. In addition, we need to increase comfort for the well-being of users. Also, our need for safety and security is constantly

growing. For our customers, success is defined by how well they manage these challenges. Siemens has the answers.

**“We are the preferred partner for energy-efficient, safe and secure buildings and infrastructure.”**