



Synco living – the energy-efficient home automation system

Simply beautiful and
beautifully simple



Answers for infrastructure.

SIEMENS



Synco living – save energy with attractive home automation

It's a very attractive way to save energy and costs: The Synco™ living home automation system helps you easily, comfortably control your heating, ventilation, and air conditioning systems as well as lights, blinds, and many other devices around your home. For you, that can mean up to 30% less heating energy used – and lower CO₂ emissions for your home. With the Synco living system, your home can achieve an Energy Efficiency Class A rating in accordance with EN 15232 "Energy Performance of Buildings – Impact of Building Automation and Building Management".

The innovative system design not only makes it especially simple to set optimal room conditions, but also harmoniously blends in into any surroundings, even into exclusive interiors. Synco living has won the red dot design award as well as the Architecture and Technology Innovation Prize.

What is Synco living?

■ A comprehensive product range to automate your home

Synco living is a comprehensive home automation system with a wide range of components. The system allows you to control your heating, ventilation, and air conditioning systems, conveniently switch electrical appliances on and off, and monitor the rooms of your home for smoke. The system also shows you which windows are open, tells you about the current outdoor temperature and barometric pressure, and provides an easy, convenient way to control lights and blinds.

Thanks to implementation of the internationally recognized KNX communication standard, electrical appliances, heating, ventilation, air conditioning systems, and household appliances from different manufacturers can communicate with each other. This also ensures the integration of any future comfort, security, and energy saving functions. Along with wireless KNX capabilities, the central control unit can communicate with other devices via a wired KNX connection.

■ The flexible system that protects your investment over the long term

With Synco living, you're prepared for anything: whether it's a new building or a refurbishment, the system can be easily integrated to optimally meet your needs. Whether you add on to your home later or change the usage of a room, you can simply adjust Synco living to the changes, e.g. by flexibly adding components.

■ The sum of comprehensive expertise and years of experience

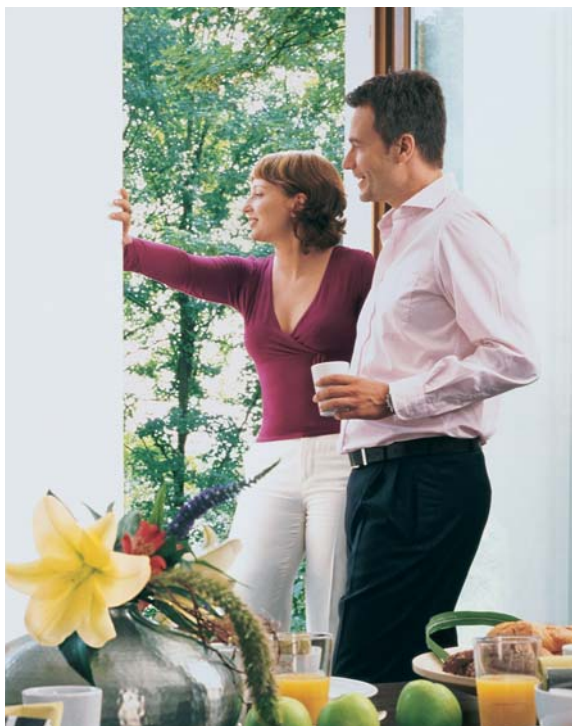
Synco living is backed by Siemens' comprehensive application expertise and practical knowledge. All of the system's components and functions are based on our extensive experience in building technology.

■ Support for every phase

Synco living reflects the rigorous customer focus that is Siemens' top priority whenever we develop new products. Synco living will meet your needs in every phase and support you with its high flexibility, functionality, and easy adaptability to any project – whether it's new construction, add-ons or renovations.

Highlights

- Significant energy and cost savings according to Energy Efficiency Class A as defined by EN 15232 – through intelligent control
- Easy operation and a high level of comfort – thanks to an intuitive user interface
- Complete home automation system – thanks to a comprehensive product range
- Extremely reliable – based on years of experience
- High flexibility for use in new buildings, add-ons, and renovations



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What can Synco living do?

Synco living can regulate, control, switch on, switch off, and display just about everything that makes life more comfortable for you.

■ Increasing comfort

Synco living can create the optimal cozy room climate as the system covers the following applications:

- Controlling individual rooms: up to 12 rooms with floor heating or radiators
- Heat generation: control of heating boiler to generate heat as needed by the rooms
- Domestic hot water regulation: to generate hot water for the entire home
- Ventilation control: for a ventilation system with up to three stages; control of kitchen exhaust hood
- Air conditioning control: remote control of an air conditioning unit

■ Improving security

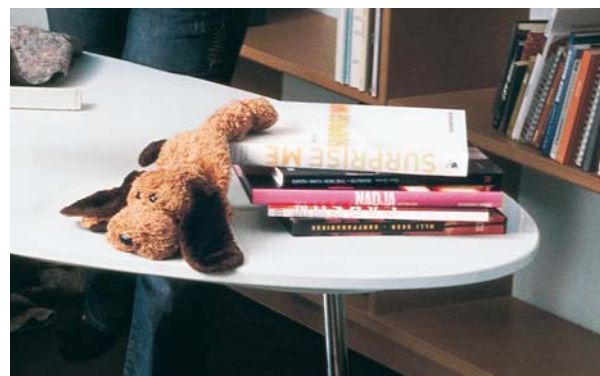
Integrating safety and security components into your system will improve your home's safety and efficiency. Components include:

- Smoke detection: integration of one smoke detector per room
- Window and door monitoring: monitoring of up to six windows per room and two doors per house/apartment













■ Enhancing convenience

You can also integrate electrical installations and devices to make daily life more convenient, e.g. thanks to the following applications:

- Lights and blinds: control of lights and blinds, including blanket commands like ALL OFF, scenes* etc.
- Wireless plug adapter: switching electrical appliances, such as coffee machine or indoor fountain, on and off and dimming lights





Central apartment unit		Multi-unit controller			
1		From the central apartment unit, you can easily control all functions in up to 12 rooms and review settings on the display.	7		The multi-unit controller can control up to two independent heat systems, e.g. radiator and floor heating, and a ventilation system with up to three stages.
Room unit		Radio-socket adapter, switch/dim			
2		The room unit measures and displays the room temperature and lets you change settings specifically for that room.	8		The radio-socket adapter enables you to remotely control plugged-in electrical appliances and to dim lights.
Room temperature sensor		Outdoor temperature sensor			
3		The room temperature sensor measures the room temperature.	9		The outdoor temperature sensor measures the outdoor temperature and barometric pressure.
Web server		Smoke detector			
4		The Web server connects the home automation system to the Internet, allowing you to access and operate the system remotely over the Web.	10		The smoke detector will detect any smoke and trigger an alarm.
Radiator control actuator		Lighting and blinds controls			
5		The radiator control actuator senses the room temperature, regulates the amount of water going into the radiators, and thereby controls the room temperature.	11		You can conveniently control lighting and blinds with wireless controls – centrally, locally in a room or as a scene.
Heating circuit controller		Door/window contact			
6		The heating circuit controller controls the amount of water going into the radiators and thereby the room temperature.	12		The door/window contact detects whether windows and doors are open or closed.



■ Facilitating operation

With Synco living, you can conveniently operate everything, e.g. via:

- Remote control: adjust lighting, blinds, and scenes conveniently from the couch
- Remote access: via PC or SmartPhone
- Time switching programs: individual for each room and each switching group**

* A "scene" is a group of different components (lights, blinds, etc.) that are activated by a single event, such as the push of a button when you leave the house, or by a time switching program. For example, you can turn off all lights and close all blinds by pushing a single button.

** A switching group is a set of different components that are triggered together – for example by a time switching program. The following functions can trigger a switching group: turn lights on/off or dim lights, turn electrical appliances on/off, open or close blinds, call up scenes.

Highlights

- Higher comfort – thanks to optimal control of heating and air conditioning
- Increased security – thanks to central monitoring of door and window contacts and smoke detection
- Expanded convenience – thanks to integration of lighting, blinds, and electrical appliances
- Simplified, easy operation – thanks to remote control and remote access



How will Synco living help me save energy?

Synco living handles many tasks for you that reduce your energy consumption. For example, when you leave your home the system automatically turns off all the lights and reduces the room temperature.

■ Intelligent control and automation saves thermal energy

The European Standard EN 15232 “Energy Performance of Buildings – Impact of Building Automation and Building Management” places building automation systems into energy efficiency classes A to D. The Synco living system achieves a class A energy efficiency rating. As oil and gas prices continue to rise, that translates into significantly lower energy bills – even in energy-efficient buildings with a large building envelope.

Thanks to intelligent, high-precision controls as well as automation and energy saving functions, Synco living can save you up to 30% on your energy costs – without sacrificing comfort. For example, the system prevents unnecessary heating during the night or when no one is home by reducing the room temperature.

■ Comfort that increases efficiency

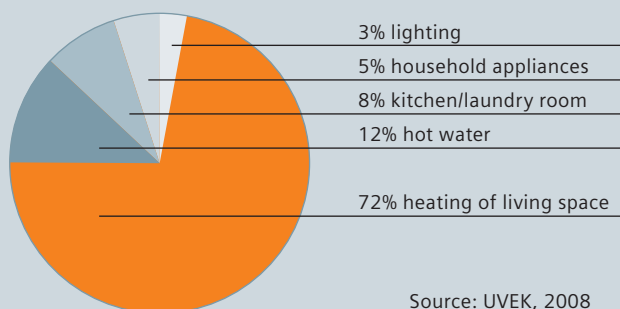
The high control quality of Synco living ensures an even, comfortable room temperature and high energy efficiency at the same time. You can also directly influence how much energy you use,

for example by reducing room temperature during time of absence and by adjusting the room temperature with a time switching program to fit your effective use times. And functions such as the automatic closing of all blinds are not only more convenient but save energy as well.

Whether at the central apartment unit, locally in individual rooms or location-independent and worldwide via PC or SmartPhone: Synco living is so simple to operate that you can easily set the entire system to be energy-efficient and to significantly reduce energy consumption throughout the building.

About three-quarters of all home energy consumption is related to home heating.

Energy consumption in private households, 2006



Source: UVEK, 2008

BACS Energy Performance Classes – EN 15232

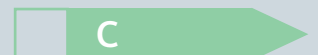
High energy performance
BACS and TBM



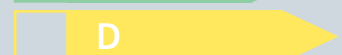
Advanced
BACS and TBM



Standard
BACS



Non-energy-efficient
BACS

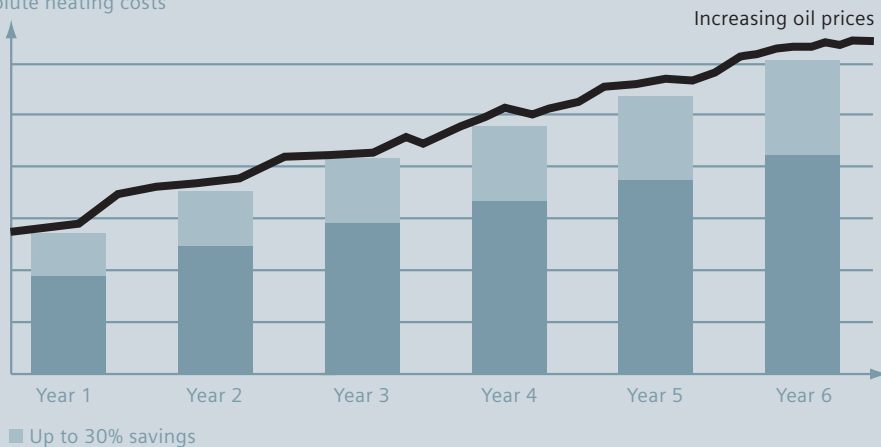


BACS
TBM

Building Automation and Control System
Technical Building Management System

Savings on heating oil

Absolute heating costs



As energy prices continue to rise, as indicated by the average European oil price trendline for 2002–2007, the savings that can be achieved with the Synco living system grow too.

Sample calculation:

Heated living area: 120 m²

Heat energy required: 80 kWh/m²

Potential energy savings: about 3,000 kWh

Reduction in CO₂ emissions: over 700 kg/year

You'll notice the energy you save in the form of lower heating oil and natural gas bills. And you'll continue to save even more as prices for heating oil and natural gas continue to rise. At the same time, your home's CO₂ emissions will significantly decrease and you'll make an important contribution to protecting the environment and slowing climate change. After all, natural gas generates emissions of 2 kg/m³, and petroleum generates as much as 2.65 kg/l.

■ Better than conventional thermostatic valves

Synco living gives you many advantages over thermostatic valves that are mounted directly on a radiator.

- Synco living keeps the temperature almost perfectly constant within a narrow ± 0.2 °C range. Thermostatic valves, however, allow temperature deviations within a ± 1 °C range.
- Synco living automatically reduces the temperature at night. With thermostatic valves, you have to set each individual valve to accomplish this.
- Synco living detects open windows automatically and closes the heating valves after a preset period of time to avoid unnecessary heating. You have to manually adjust thermostatic valves to achieve the same result.

■ Savings at the touch of a button

To save energy whenever you leave your home, just press a button on the central apartment unit to:

- Turn off all lights and all plugged-in electrical appliances
- Lower all blinds
- Reduce the temperature level of the heating system e.g. from 21 °C to 19 °C
- Reduce ventilation to a lower level

■ Dimming reduces your power costs

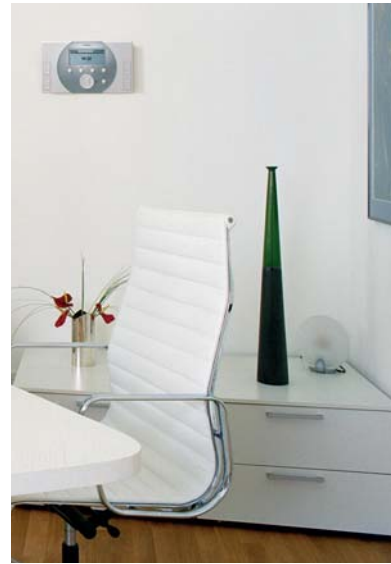
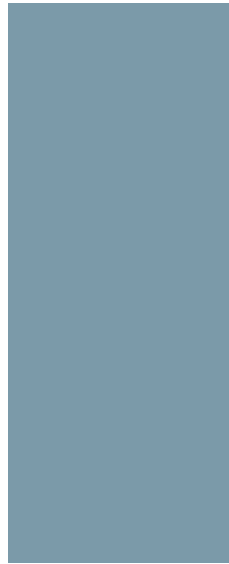
Synco living lets you dim individual lights – for longer bulb life as well as lower energy consumption.

Highlights

- Energy and cost savings of up to 30% – with extremely precise intelligent controls
- Lower energy consumption without sacrificing comfort
- Better performance than conventional thermostatic valves – thanks to extremely precise control
- Less energy costs – thanks to dimming of lights

Potential energy savings with Synco living

Individual room control	The central apartment unit lets you control up to 12 rooms independently of each other. You can select the desired room temperature (heating or cooling) for each room.	
Control quality	Synco living's heating controllers control heating very precisely in a narrow tolerance range of ± 0.2 °C. With a conventional thermostatic valve, the room temperature may swing between 19 °C and 21 °C, but with Synco living, the temperature will fluctuate only between 19.8 °C and 20.2 °C.	
User behavior	Potential energy savings also depend on user behavior. For example, users can increase their energy savings by closing blinds at night, by reducing the room temperature and ventilation when they are not home, by turning off lights at night and when they leave home, by dimming lights, and by reducing the default temperature.	



What added value am I getting?

Synco living can offer you higher comfort, reliability, safety, and flexibility – while reducing your costs.

More day-to-day comfort – with better reliability and safety

Synco living will save you a great deal of time, costs, and energy by acting as your reliable personal assistant. The system will adjust the blinds at your command and adjust the heating valves on your radiators at certain set times or depending on demand. Therefore manual adjustment is no longer needed. At the touch of a button, it will ensure that all lights in your home are reliably turned off at the same time. Synco living also monitors your windows and doors and indicates on the central apartment unit which ones are open, for example enabling you to quickly check everything before you leave home. So you have more time to spend on the things that really matter in life.

Future-proof thanks to international technology standards

International technology standards ensure that your system will be capable of handling new requirements for many years to come. You can add components to your system at any time and expand it to any rooms you may add on in the future. And our wireless technology means that you won't have to run any cables or make any holes in your walls or ceilings.

Highlights

- Enjoy more free time – thanks to automated processes
- Greater safety and security – thanks to central monitoring and display
- Outstanding flexibility and future adaptability based on international technology standards

	Conventional equipment	Synco living	Your benefits
Heating	Thermostats	Individual room controllers, time switching program, intelligent heating boiler controls	Comfort, cost savings
Ventilation	Standard three-phase switch	Time switching program, intelligent ventilation controls	Comfort, cost savings
Lighting	Standard light switches	Automated lighting controls, central operation, motion-sensitive lighting, scenes, presence simulation	Comfort, cost savings, safety
Blinds	Standard manual controls	Automated blind controls, central operation	Comfort, cost savings, safety
Safety	No safety features	Smoke detector, window and door monitoring, alarm signaling	Safety



Why can I feel so safe?

Because Synco living reliably alerts you and your family to possible dangers.

■ Door and window monitoring

Synco living monitors your doors and windows – and meticulous monitoring means more security for you. When you turn on the monitoring feature before leaving your home, the system will immediately show you where any windows are open. Closing and locking these windows will make it much more difficult for uninvited guests to enter your home.

■ Make it look like you're home, even when you're not

The illusion of someone at home also improves security: When you turn on Synco living's presence simulator before you leave home, the central apartment unit will turn lights on and off in different rooms of your house. This creates the impression that someone is at home. If someone nevertheless breaks in, through a door or window, Synco living will trigger an alarm.

■ Light up your house at the touch of a button

Bright lights, better security: What if you hear a strange noise at night and wonder what it is? Just press the panic button next to your bed, and every light in the house will come on. You can also program the panic button to raise your blinds and turn specific electric appliances on or off.

■ Get reliable warnings about possible fires in your home

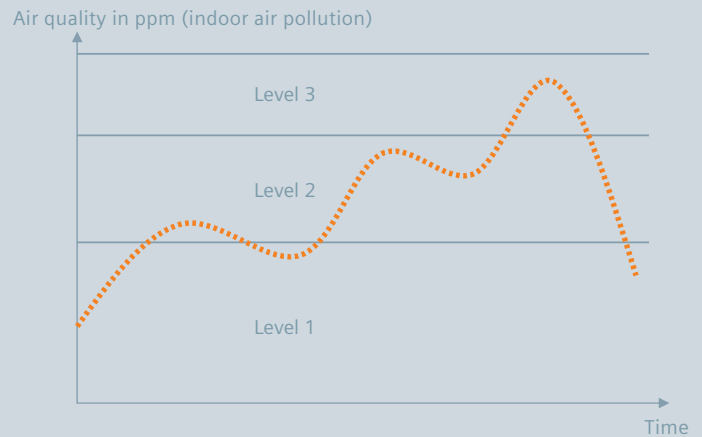
Synco living also alerts you immediately to any signs of fire. The smoke detector will sound off with a loud alarm in case of an emergency. If you have it set up to do so, the central apartment unit can also send an alarm via SMS, pager, or e-mail via the Web server.

Highlights

- Keep intruders out – thanks to door and window monitoring
- Scare intruders off – with presence simulation or by turning all lights on with the panic button
- Get reliable warning of a possible fire – by forwarding alarms from your smoke detector



Ventilation control based on indoor air quality



How does Synco living optimize my room climate?

Synco living provides each room with the exact amount of heat and fresh air you actually need – to make each room feel comfortable and to save energy.

■ Individually controlled room temperature

Keep things nice and warm in your living room – and a few degrees cooler in your bedroom. Synco living heats each of your rooms appropriately for the time of day and your personal needs. To do so, the system records the temperature in each room of your home and heats the room only as much as is actually necessary. Thanks to the system's extremely precise temperature control, the temperature you set is maintained very accurately. Synco living even uses a switching optimization feature to determine the ideal times to start and stop heating.

■ Optimally controlled ventilation

No overventilation means less heat losses and lower energy costs: Synco living lets you run your home ventilation devices* on a time-based or demand-based program. You can program the timer for each day of the week. You can also have Synco living control your ventilation depending on the relative humidity or air quality: For example, if the CO₂ level in your home exceeds a set value, ventilation will increase for a while.

■ Air conditioning just when you need it

Let Synco living control your air conditioning* – to keep your four walls cool and save energy at the same time. Depending on the outside temperature and your personal desired comfort level, the central apartment unit will direct your air conditioning system to turn on or off as needed. If someone opens a window in a room that has the air conditioning running, the central apartment unit will turn the air conditioning off. Once the window is closed, the central apartment unit will once again switch the air conditioning on. This keeps you comfortable while saving energy and costs.

Highlights

- Customized room temperature for every room – thanks to intelligent individual room control
- Optimal air quality at lower energy costs – thanks to time-based or demand-based ventilation control
- Efficient, energy-saving air conditioning – thanks to optimized actuation of the air conditioning system

* Synco living can control most commercially available ventilation and air conditioning systems. However, you should have your systems checked by a specialist to ensure compatibility.



Why does Synco living control lighting and blinds?

Imagine being able to turn all the lights in your home on or off and raise all the blinds at once in the morning – Synco living makes your everyday tasks simpler.

■ For convenient control of your lights

The easy way to save electricity and not have to check the house: Are you going to bed and want to be sure that all the lights are turned off? Pushing a single button on your remote control turns off all the lights in your home. Or perhaps you'd like to leave the hall light on for a while at night? Thanks to a time-based program, Synco living switches off the hall light at a defined time.

■ Create the right mood for any room

Set the perfect scene with the push of a button: Synco living lets you trigger multiple actions in a room – such as lowering all the blinds and dimming the lights at the same time – by pushing a button. You can save these settings as a scene at the central apartment unit or on the remote control and review or change them whenever needed.

■ For automatic ups and downs

Save yourself a lot of steps: Synco living can automatically raise and lower your blinds at preset times every day. It's easy to set the times at the central apartment unit. This saves you from having to walk through every room in your home and do it yourself. The remote control also offers you ease of use: You can conveniently control the blinds from the couch, and you can override the time-based program whenever you want and raise or lower the blinds earlier or later than planned.

Highlights

- Know immediately that all lights are turned off – with one touch of a button
- Increase everyday comfort – thanks to preprogrammed scenes for various situations
- Save time and avoid tedious walks around your home – thanks to timed automatic raising and lowering of all blinds



Quick-access keys for:

- Domestic hot water and ventilation
- “Not at home” mode and monitoring
- Expanded comfort
- Operational mode
- Information

Navigation keys:
Use the navigation keys to enter your settings. You’ll quickly learn your way around the system, thanks to clear, easy-to-understand prompts.

Universal key pairs:
Define and execute scenes, such as “TV scene”: Push one button on the central apartment unit to dim the lights to 30% and lower the blinds – and settle in for a cozy evening of TV.

Why is Synco living so simple for me?

Thanks to our clearly labeled menus and settings, Synco living is so simple that you can set everything yourself.

■ No technician needed to change your settings

Quickly make any needed changes yourself: Adjust an existing Synco living system to new routines and schedules using the central apartment unit. There’s no need for a PC or any tools. Whether you want to adjust heating, cooling, or ventilation – the intuitive keys and simple menus on the central apartment unit make it simple for you to change your system settings quickly, easily, and without making a service call.

■ Just set everything to “not at home”

Quickly set every room to an energy-saving mode: The central apartment unit gives you quick and easy access to all functions. For example, press just one button as you’re headed out the door, and Synco living will switch to “not at home” mode and show you where any windows in your home are still open.

■ Change settings remotely

Change what’s going on at home even when you’re not there. You can use a PC or SmartPhone to change the settings of your Synco living system online, for example if you forgot to turn down the heat or turn off the lights.

■ Expanded comfort and convenience are easy to add

Since most components have wireless receivers and are battery-operated, it’s easy to add on to your system – without opening up any of your walls. That means no dust, no dirt, no mess! And you can integrate radio-socket adapters, for example, with your central apartment unit by simply pushing a button – and so connect your electrical devices and lights to Synco living.

Highlights

- Easy to use – thanks to clearly marked keys and intuitive menus
- Quick activation of “not at home” mode – thanks to a preprogrammed key
- Make changes remotely – thanks to remote access via PC or SmartPhone
- Quick, easy, and straightforward add-ons – thanks to wireless communications



How can I remotely access Synco living?

Using a PC or SmartPhone, you can access your Synco living system remotely via Web server to make changes even when you're not at home.

■ Everything under control via PC or SmartPhone

Play it safe and eliminate worry by using online control and operation capabilities to remotely access your system. For example, you might be away from home and ask yourself, "Did I turn the alarm on? Did I leave any lights on? Did I remember to set the sprinkler system? Did I forget to turn the coffee machine off?"

Just use your SmartPhone or PC with Internet access to dial into your Synco living system via the Web server – and review all your settings.

■ Stay aware of what's going on at home

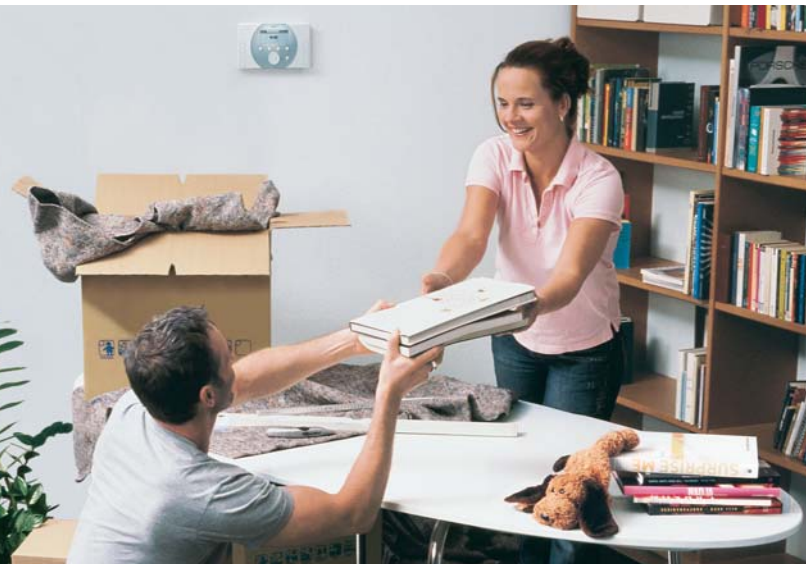
Get more time to react in an emergency: The remote connection means you'll never miss any incidents or alarms. If your heating stops working while you're away, for example, Synco living will automatically inform you by SMS or e-mail. You can react immediately and take action to solve the problem.

■ Have everything just the way you want it when you get home

Your home can literally give you a warm welcome. If you're planning to head for your vacation home in the winter, you can use Synco living's remote access feature to ensure that the outside lights will be on and the rooms will be warm and cozy when you arrive.

Highlights

- Tremendous security and independence – thanks to quick online monitoring and operation of your home automation system
- Get more time to react – thanks to forwarding of alarms via Web server
- Increased comfort – thanks to remote heating and lighting in advance of your arrival



What else do I have to know?

With Synco living, you're playing it safe when it comes to wireless communications, battery-operated devices, and noise associated with system operations.

■ Minimal wireless communications

Synco living was developed to minimize the impact of wireless communications on human health. The system therefore uses the 868-MHz frequency band. Devices that transmit on these frequencies may not spend more than 36 seconds per hour communicating with other devices. That means the impact of wireless communication associated with living in a Synco living-equipped single-family home for 15 years is equal to the load associated with talking for just one minute on a cell phone (depending on the reception quality).

■ Long battery life

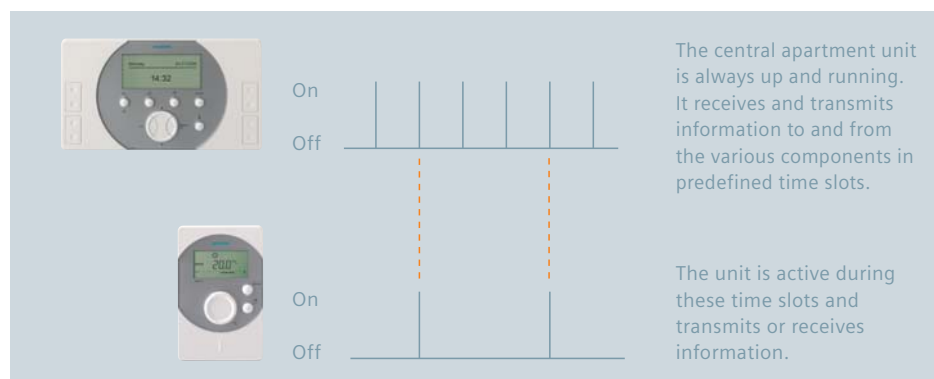
Commercially available batteries and low power consumption: Nearly all battery-operated components use inexpensive AA batteries that only need to be changed every three years. The batteries for the safety and security components even last as long as five years. The central apartment unit will display several weeks in advance when you need to replace batteries.

■ Whisper-quiet operation

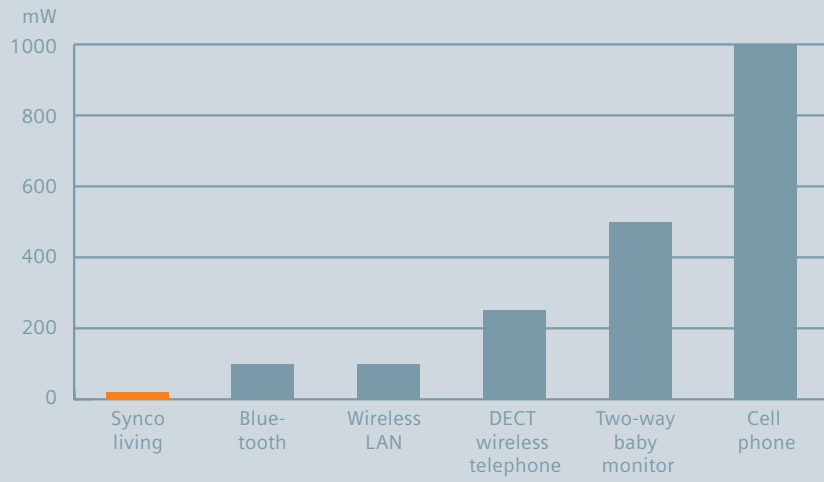
A high level of comfort thanks to especially quiet operation: Synco living's radiator control actuator makes almost no audible sound. Its actuation signal is no louder than a person breathing. And the actuator operates only when the room temperature deviates from the set value.

Highlights

- Minimum impact of wireless communication – thanks to very low frequency and short duration of signals
- Long-lasting battery operation – thanks to low energy consumption and use of regular, common alkaline batteries
- Excellent functional reliability – thanks to advance notification when batteries need to be replaced
- Excellent comfort – thanks to especially quiet operation



Maximum transmission strength of typical household appliances



Answers for infrastructure.

■ Megatrends driving the future

The megatrends – demographic change, urbanization, climate change and globalization – are shaping the world today. These have an unprecedented impact on our lives and on vital sectors of our economy.

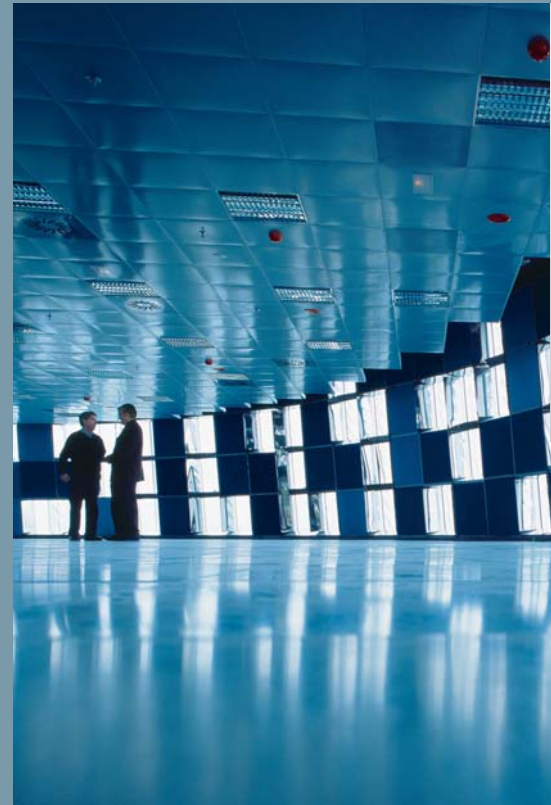
■ Innovative technologies to answer the associated toughest questions

Throughout a 160-year history of proven research and engineering talent, with more than 50,000 active patents, Siemens has continuously provided its customers with innovations in the areas of healthcare, energy, industry and infrastructure – globally and locally.

■ Increase productivity and efficiency through complete building life cycle management

Building Technologies offers intelligent integrated solutions for industry, commercial and residential buildings and public infrastructure. Over the entire facility's life cycle, our comprehensive and environmentally conscious portfolio of products, systems, solutions and services in the fields of electrical installation technology, building automation, fire safety and electronic security, ensures the:

- optimum comfort and highest energy efficiency in buildings,
- safety and security for people, processes and assets,
- increased business productivity.



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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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