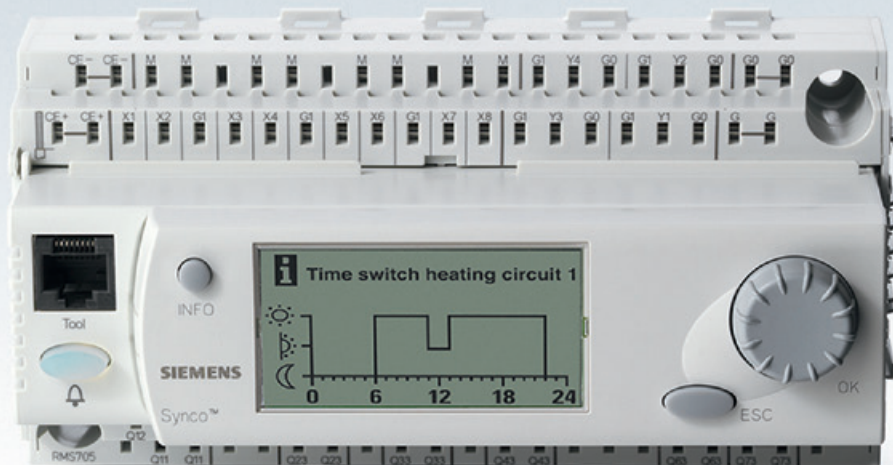


SIEMENS



HomeControl  
app for plant  
control



# Synco – simple and energy-efficient HVAC control

A comprehensive range of controllers, from stand-alone to communicating for any requirement

Answers for infrastructure and cities.



# Synco – enhanced comfort and energy efficiency

Buildings place different requirements on HVAC control systems depending on building size, life cycle, operating times and comfort needs.

Synco™ can be matched to all these requirements: The standard controllers offer maximum energy efficiency plus reliability and represent a product range of modular design. This means that Synco enables you to plan a versatile, cost- and energy-efficient HVAC control system and to straightforwardly install and commission it – with no need for programming.

In addition, functions like the energy indicator or the HomeControl app support your customers in monitoring and controlling their HVAC plant, facilitating energy-efficient operation.

# Simple, versatile and reliable

## Comprehensive product range

From basic temperature control to complete HVAC plant control – from heat or refrigeration generation control through distribution to individual room control: Synco offers an extensive range of standard controllers for all types of applications.

## Versatile and expandable for future use

Synco supports the entire life cycle of a building. Whether you change the usage of a building, in case of a staged construction or when you expand or modernize a plant – Synco is the ideal solution for you. Thanks to their modular concept and backward-compatible communication, the controllers can be expanded and adapted at any time. This means that the functionality of HVAC plants can grow depending on new requirements, and investments can be made in stages.

## Straightforward operation and quick commissioning

Synco excels in high levels of user and service friendliness, owing to straightforward and efficient operation. Proven and preprogrammed applications and energy saving functions are integrated, enabling you to save time and costs in terms of planning, engineering and commissioning.

## Competent support for your work

With Siemens, you have a strong and competent partner at your side. Backed by our in-depth know-how, we offer you extensive support for Synco – for example different training modules, e-learning as well as comprehensive technical documentation and application descriptions.

## Decades of experience and high quality standards

HVAC plant control is one of the challenges we have been facing for more than 70 years. The incremental development of our products benefits from our in-depth application know-how resulting from decades of practical experience and extensive research work.

We attach great importance to quality management and systematically subject our products to stringent tests. Controllers and their functions are thoroughly tested in our own HVAC laboratory. This ensures the highest levels of product quality and puts us in a position to work with you as your competent partner.

## Highlights

- Energy savings thanks to intelligent building automation
- Comprehensive product range for any requirements
- Versatility and expandability for future use
- Straightforward operation and quick commissioning
- Optimum control and fast setting options through remote plant access
- Superior support through a reliable partner
- Highest quality and reliability backed by decades of experience and high standards





## Control system for small to medium-size multipurpose buildings – communicating HVAC control for the entire building

Everything under one roof: apartments and offices, training rooms and shops

Synco 700	Synco RXB/RXL room controllers Synco RDG/RDF/RDU room thermostats	Synco operating
Versatile HVAC controller range of modular design	Enhanced comfort thanks to individual room climate	Efficient operation of plant including straightforward remote control
Control of: <ul style="list-style-type: none"> <li>– Heating</li> <li>– Ventilation</li> <li>– Air conditioning</li> <li>– Refrigeration</li> <li>– Distribution of heating and cooling energy</li> <li>– Primary energy plant</li> </ul>	Individual room control with: <ul style="list-style-type: none"> <li>– Fan coils</li> <li>– Radiators</li> <li>– Chilled ceiling</li> <li>– Variable air volume systems</li> <li>– Heat pumps</li> </ul>	Monitoring and remote control of plant: <ul style="list-style-type: none"> <li>– Alarm reporting via SMS or e-mail</li> <li>– Remote control of plant, e.g. via Web server</li> </ul>

Open **KNX communication** for optimum interplay between controllers with standardized data exchange

# Synco – everything for energy-efficient HVAC control

Intelligent and integrated building and room automation can produce considerable energy savings without sacrificing comfort.

## Energy savings thanks to intelligent building automation

The European Norm EN 15232 “Energy performance of buildings – Impact of building automation” subdivides building automation into four energy classes from A to D. Energy class A, for example, states that energy savings in office spaces can reach 30% in relation to the standard. Synco offers important prerequisites for ensuring compliance with energy class A.

Synco controllers exchange information on energy usage via KNX communication, thus making certain that the only plant components put into operation are those required for ensuring the desired comfort level: heating boilers, refrigeration machines, pumps and so on. The proven and programmed energy saving functions provided by all Synco controllers support energy-optimum operation of plant in every season.

Users and plant operators can greatly influence a building’s energy consumption by shutting down the plant during hours of non-occupancy, by setting adequate room temperatures and by matching the time program to the actual occupancy times. Synco supports users with intelligent functions like the energy indicator that automatically reports energetically unfavorable settings via e-mail or HomeControl app.

## Stand-alone controllers for small buildings and basic applications

### Synco 100

Temperature controller, sensor and control panel combined in one unit

Non-communicating control of:

- Heating
- Ventilation
- Domestic hot water

For non-communicating plants

### Synco 200

HVAC controller for all standard applications



## Energy efficiency based on eu.bac certification

Controls bearing the eu.bac certification label, such as Synco RXB and RXL, stand for tested quality, control accuracy and energy efficiency in compliance with the relevant European Norms and international test standards. The respective tests are conducted by independent, accredited test bodies on behalf of the European Building Automation and Controls Association (eu.bac).

A high level of control accuracy optimizes the room climate and does away with unnecessary readjustments of the room temperature setpoint. In heating plants a setpoint reduction of only 1 °C generates energy savings of up to 6%. In the case of a CA value (control accuracy) of 0.1 to 0.2 K, eu.bac-certified controllers ensure energy savings of up to 14% in comparison with non-certified controllers, depending on the climatic area in which they are used.

## Highlights

- Attaining energy class A and saving energy with Synco
- Energy efficiency thanks to energy saving functions and exchange of energy-related information via KNX
- Energy efficiency ensured by eu.bac-certified controllers

## BACS Energy Classes – EN 15232

High energy performance  
BACS and TBM

A

Advanced  
BACS and TBM

B

Standard  
BACS

C

Non-energy-efficient  
BACS

D

BACS Building Automation and Control System  
TBM Technical Building Management System

eu.bac certification stands for tested quality, control accuracy and energy efficiency

eu.bac





# Communicating HVAC control for the entire building

Small or medium-size multipurpose buildings often accommodate different types of premises, such as shops, offices and apartments. Synco ensures convenient and energy-efficient control of HVAC plant, irrespective of the type of application.

## Synco 700 – versatile HVAC controller range of modular design

Being the heart of the system, Synco 700 manages the primary energy plant, controls and monitors the HVAC plant and communicates via KNX. Installation and commissioning work can be performed quickly and efficiently: The extension modules simply click onto the controllers. Thanks to standard applications integrated in the controllers, there is no need for programming. The documentation gives you an overview of all integrated applications. Also, customized configurations can be made very straightforwardly.

Thanks to their compact DIN design and the use of state-of-the-art cage terminals, Synco 700 controllers save you space and costs when mounted in control panels.







Plants with a Web server offer your customers ultra-modern comfort: They can check the status of their HVAC plant from under-way via the HomeControl app or Web access and adapt, for example, the room temperature.



#### Synco room controllers and room thermostats

Synco RXB/RXL controllers and RDG/RDF/RDU thermostats ensure the correct room temperature at the right time in the most simple way.

Thus, a comfortable room climate as the basis for maximum efficiency is ensured at all times, from the workplace to the conference room.

The RDG/RDF/RDU room thermostats stand out through their modern design as well as their innovative features. Thanks to their large display and intuitive operating concept, the thermostats also deliver a high level of user friendliness.

#### Monitored energy efficiency

The energy indicator monitors defined end user settings, shows exceeded limit values and reports them to the residents periodically via e-mail or app. A leaf symbol shows the energy status for each setting: Green means that the setting is correct from an energetic point of view; orange signals that a setting is energetically unfavorable. This way, each deviation is made transparent and visible at all times.

#### Highlights

- Efficient installation thanks to flexibly applicable and modular HVAC controller range
- Enhanced comfort owing to individual room climate
- More comfort in living spaces
- Efficient operation of plant due to remote control from any location
- Quick commissioning with practical support functions
- Higher energy efficiency as a result of reminder function and reporting of energetically unfavorable conditions

# One system for all types of applications

## Synco operating – efficient operation of plant with straightforward remote control

Thanks to Synco's Web server, plant operation and monitoring can be effected from a PC or smartphone at any time and from any location. An alarm system delivers fault status or maintenance messages in due time, also via SMS or e-mail, if required. The app allows your customers operation from underway or from the sofa.

## Synco tool – support functions for quick commissioning

To facilitate commissioning, the Synco tool offers you a host of help functions and choices: Diagnostics including trending, for example, straightforward fault tracing thanks to access to all data points of all controllers, saving all settings on the PC, or printing commissioning reports.

## Simple concept for opening communication

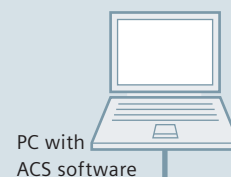
With Synco, opening and starting communication is child's play: Simply interconnect the units, activate the bus power supply on the controller and set the device address. All relevant settings can be made directly via local operation.

## Open data exchange via KNX standard bus, irrespective of supplier

The KNX standard bus facilitates interconnections of HVAC, lighting and blind control, for instance, regardless of the supplier – for simultaneous control of the ventilation system and of lighting via presence detectors, for example.

### Synco tool

For commissioning and diagnostics



PC with ACS software



Control and switching unit for heating, ventilation and air conditioning plants

Synco 700

### Universal controllers

<b>RMU710</b>	modular universal controller, 1 control loop
<b>RMU720</b>	modular universal controller, 2 control loops
<b>RMU730</b>	modular universal controller, 3 control loops
<b>RMS705</b>	switching and monitoring device

### Universal extension modules (for all types of controllers)

<b>RMZ785</b>	universal module
<b>RMZ787</b>	universal module
<b>RMZ788</b>	universal module

### Operator units (for all types of controllers)

<b>RMZ790</b>	plug-in type operator unit
<b>RMZ791</b>	detached operator unit (3 m)
<b>RMZ792</b>	bus operator unit

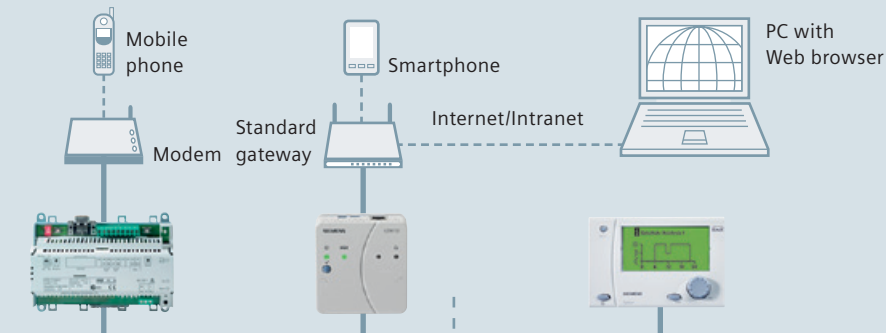
### Field devices

<b>GDB181.1E/KN</b>	VAV compact controller (5 Nm)
<b>GLB181.1E/KN</b>	VAV compact controller (10 Nm)



## Synco operating

Efficient operation of plant including alarm reporting



The world's only open standard for home and building control – ISO/IEC 14543-3



Control and switching unit for heating, ventilation and air conditioning plants



Central control unit and room controller for individual room climate



Synco RXB/RXL room controllers, Synco RDG/RDF/RDU room thermostats

### Heating controllers

- RMH760** modular heating controller
- RMK770** boiler sequence controller

### Extension modules for heating controllers

- RMZ782** heating circuit module
- RMZ783** DHW module
- RMZ787** universal module
- RMZ789** universal module

### Room unit

- QAW740** room unit

### Synco operating

- OZW771** central communication unit
- OZW772** Web server (Ethernet)

### Synco tool

- OCI700.1** service tool
- ACS790** commissioning software

### Central control unit

- RMB795**
- Central control unit for room controllers

### Room controllers

- RXB21.1, RXL21.1, RXB22.1, RXL22.1, RXB39.1, RXL39.1**
- Fan coil units
- RXB24.1, RXL24.1**
- Chilled ceiling or radiator

### Room thermostats

- RDG100KN**
- Fan coil units
- Universal system, chilled/heated ceiling and radiator
- RDG400KN**
- Variable air volume system
- RDF600KN**
- Fan coil units
- Heat pump systems
- RDF301, RDF301.50**
- Fan coil units
- Heat pump systems
- Semi flush mount
- RDU341**
- Variable air volume system
- Semi flush mount



# Stand-alone controllers – Synco 100 and Synco 200

Smaller non-residential buildings often demand simple autonomous systems. Here, the main requirements are affordably priced installation, straightforward commissioning and operation, rather than future extensions.

## **Synco 100 – temperature controller, sensor and control panel combined in one unit**

Synco 100 affords optimum and favorably priced temperature control of smaller premises and plants. Installation is extremely simple. The controller with its integrated temperature sensor is fitted directly on the plant and operates as an immersion, room or air duct temperature controller.

Commissioning and operation are very easy. You feed power to the controller, connect the actuators and the plant is ready to operate. So the effort required for installation and material is extremely small – and there is no need for special training courses.

## **Synco 100 controllers**

- RLE132 immersion temperature controller, 3-position signal
- RLE162 immersion temperature controller, DC 0...10 V signal
- RLA162 room temperature controller
- RLA162.1 room temperature controller
- RLM162 air duct temperature controller





### Synco 200 – universal HVAC controllers

Synco 200 controls temperature, humidity, pressure and other HVAC-specific measuring variables. The main areas of application include basic ventilation, air conditioning and chilled water plants.

You benefit from more than 140 proven, preprogrammed and completely documented standard applications. The controller's compact design and state-of-the-art cage terminals enable the units to be mounted in control panels at low cost and where space is limited. This makes installation extremely efficient and affordably priced.

### Synco 200 controllers

- RLU202 universal controller (2 DO)
- RLU220 universal controller (2 AO)
- RLU222 universal controller (2 AO, 2 DO)
- RLU232 universal controller (3 AO, 2 DO)
- RLU236 universal controller (3 AO, 6 DO)

DO: Digital Output  
AO: Analog Output

### Highlights

- Affordably priced and reliable controllers for basic HVAC applications

#### Synco 100

- Simple, cost-efficient installation due to compact design and direct mounting (no control panel required)
- Quick commissioning thanks to minimum wiring effort

#### Synco 200

- Cost-saving installation technique
- Convenient commissioning with more than 140 preprogrammed and documented applications





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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 and cities.**

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 trusted technology partner for energy-efficient, safe and secure buildings and infrastructure.”**