



Kieback&Peter

INTEGRATED

ROOM AUTOMATION

Intelligent – comfortable – energy efficient

ROOM AUTOMATION

INTELLIGENTLY INTEGRATED

Increasing comfort, lowering energy costs

Today, digital building automation is key to the successful and sustainable operation of any future-proof smart building. User comfort and energy efficiency are the focal point for architects, planners, and operators.

A central component of building automation is integrated room automation. With intelligent solutions, it ensures the smart interaction of heating, ventilation, air conditioning, lighting, and shading – cost-saving and demand-oriented. The networked system components are controlled to provide the user with a healthy and comfortable room environment all year round.

Demand-oriented function control

This ensures that systems such as heating and cooling always operate in harmony and that lighting and air conditioning account for the available natural resources including daylight, solar radiation, and fresh air. When a room is not in use, the active functions are automatically shut down to guarantee the lowest possible energy consumption. Depending on the type of building, the use of highly efficient building and room automation systems can save up to 50 percent of primary energy and significantly reduce CO₂ emissions while maximizing user comfort.



**Kieback&Peter –
Your reliable partner**

With our wealth of experience and know-how as a leading provider in the field of building automation, we provide you with comprehensive support at every step of our partnership – from planning and execution in compliance with standards and guidelines to smooth operation and value-preserving services throughout the entire building lifecycle.

ADVANTAGES OF ROOM AUTOMATION

The intelligent interaction of heating, ventilation, air conditioning, lighting, and shading reduces building operating costs, enhances comfort, and optimizes the building's energy and environmental balance. The result: an attractive property with increased value, ideally equipped for sustainability certifications.

Room automation from Kieback&Peter is based on a smart system of networked devices that communicate and coordinate across trades. The approach is decentralized intelligence, distributed to trade-spanning components for room climate, lighting, and shading. This enables the use of room automation solutions in residential, commercial, and functional buildings of all types and sizes whether for office buildings, hospitals, museums, schools, or shopping malls. Another advantage are the scalable solutions for individual rooms or multi-room zones, which can be altered, expanded, or adapted at any time. For example, in the event of a tenant change or room conversion.



Energy efficiency

Demand-driven room solutions optimize the building's energy efficiency and reduce climate-damaging CO₂ emissions. This saves operating costs and is a key element in achieving the highest energy efficiency class A in accordance with DIN ISO 521201. It's also a prerequisite for green building certification systems such as DGNB, LEED, or BREEAM.



Comfort

The smart networking of the automation functions ensures an optimal room climate with comfortable temperature, ideal air quality, and intelligent lighting control with reduced use of artificial light. A sunshade control system featuring automatic slat tracking and shading correction offers reliable glare protection with high daylight yield.



Flexibility

If the building or room use changes or performance requirements are expanded, the flexible and scalable systems can be quickly adapted to the new conditions – both in the conversion phase and during ongoing operation. The extensive product portfolio and intuitive operation provide individual solutions with user-friendly convenience.



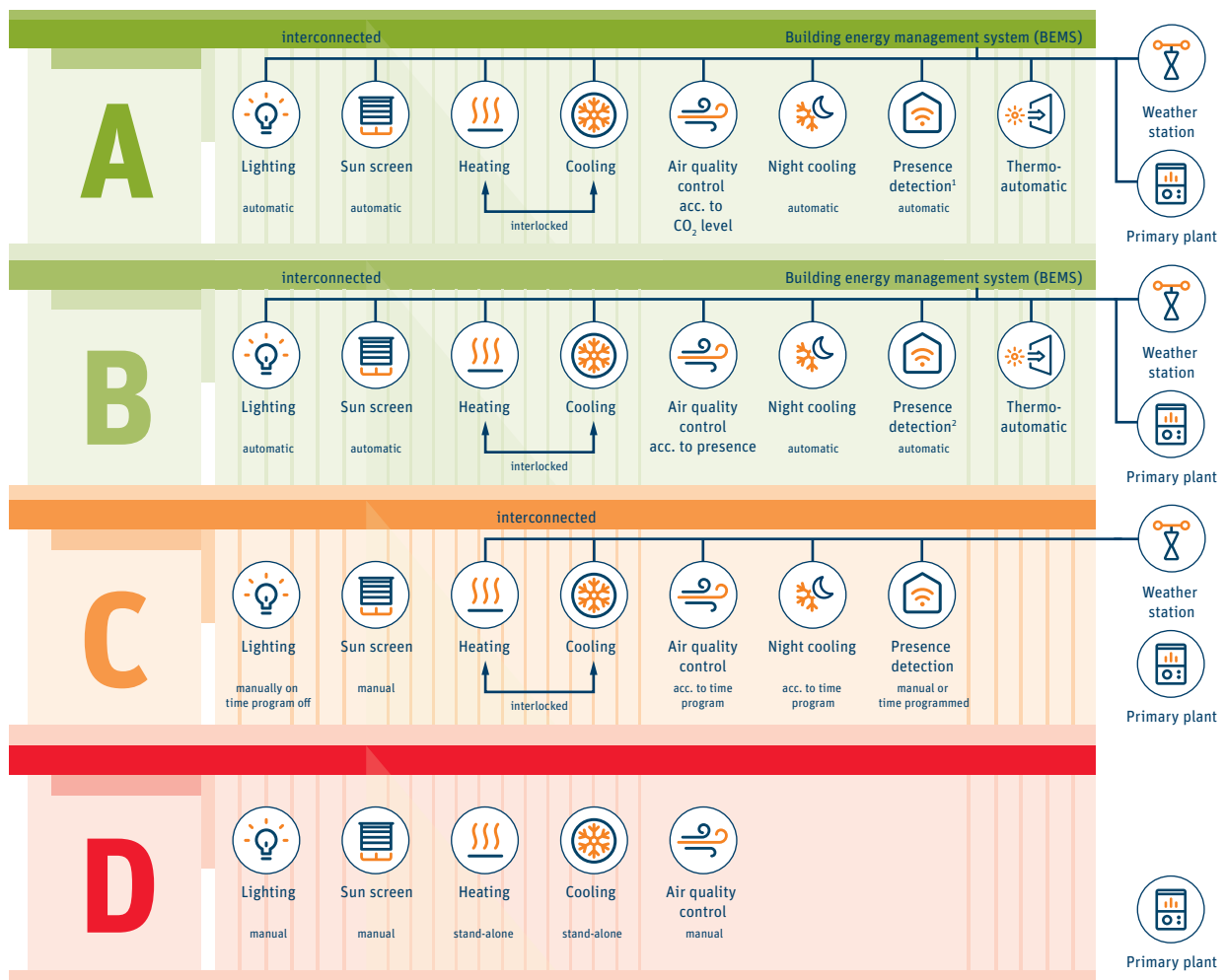
Cost savings

In addition to high energy efficiency, Kieback&Peter room automation solutions impress with simple and efficient handling, saving valuable time and costs – from installation and commissioning to daily use and maintenance. These benefits continue to pay off when the building is converted or retrofitted into an existing system.



Class regulated: Energy efficiency through room automation

The European standard DIN EN 15232 or DIN EN ISO 52120-1 describes four building automation efficiency classes (A, B, C, D), along with the minimum functions, that must be fulfilled to achieve each energy rating. Only the inclusion of room automation qualifies the building for classes A and B, which in turn are prerequisites for building certification according to DGNB, LEED or BREEAM.



1) Presence detection acts equally on lighting, sun protection, heating and cooling.
2) Function required for lighting, sun protection, recommended for heating and cooling.

FUNCTIONS OF ROOM AUTOMATION

Integrated room automation from Kieback&Peter is a cross-sectional technology that intelligently networks the room automation functions for heating, ventilation, air conditioning, lighting as well as sun protection and controls them according to demand. The goal: maximum user comfort and reduced energy consumption.

GENERAL FUNCTIONS

Operating and sensor information is evaluated via the four basic functions of time program, occupancy evaluation, room use according to “scenes”, and partition wall control. The data obtained is made available to the other room automation functions across all trades.

Time program

Includes defined weekday times of use for adapting the climate, lighting, and sun protection to the expected room use (e.g., according to a school timetable). Calendar-based daily, weekly, monthly, or annual programs can also be configured, including exceptions such as company vacations, public holidays, or opening hours.

Thermal automatic

Function for reducing heating and cooling energy requirements via solar shading in rooms that are occupied or not in use. For example, solar input via the windows is prevented in summer, but allowed for heating support in winter.

Controls via scenes

Lighting, sun protection and air conditioning settings can be configured for specified room uses and saved as "scenes". When required, the corresponding scene (e.g., "Conference") is called up and the lighting, blind position and temperature are set automatically.

Partition control

Adjacent rooms can be combined with mobile partition walls or divided into different areas. Configured as an open-plan room or individual segments in groups, these areas can be perfectly adapted to individual requirements.

Energy level

Depending on influencing variables from occupancy evaluation and time program, four energy levels with different setpoints are defined for the automation functions:

- PROTECTION: minimum energy consumption when the building is temporarily not in use, e.g., company holidays
- ECONOMY: energy-saving mode (night setback) for unused rooms, e.g., in the evening or on weekends
- PRE-COMFORT: energy-saving mode for short absences, which can be quickly reset to COMFORT
- COMFORT: temperature, air quality, lighting and sun protection are set to the room occupants present

Energy level with start optimization

The comfort temperature in the room is quickly achieved at the start of the usage time. For this purpose, the controller starts heating, cooling or ventilating at the latest possible time to ensure demand-based energy use.

ROOM CLIMATE

The temperature and air quality control functions ensure a comfortable room climate with optimal living or working conditions, depending on the room occupancy. Time- and demand-dependent control of heating, cooling and ventilation ensures that the desired temperature and air quality are achieved with optimized energy consumption.



Temperature control

The room temperature is controlled according to the measured temperature and the specified setpoint. In the event of a deviating value, the position of the heating or cooling valves and the fan speed of the ventilation unit are readjusted by means of a control signal.

Air quality control

The indoor air quality is optimized by means of volume flow-controlled supply air dampers. The method used determines the energy efficiency class:

- Without air quality measurement (energy efficiency class B): The quantity of fresh air supply is controlled according to the current energy level.
- With air quality measurement (energy efficiency class A): The amount of fresh air supply is measured continuously according to the current indoor air quality, measured by a CO₂/VOC sensor.

Summer compensation – outdoor temperature-dependent setpoint glide

In summer, the room temperature setpoint can be continuously adjusted to the outdoor temperature in a fixed ratio. This reduction in the difference between a room temperature of, for

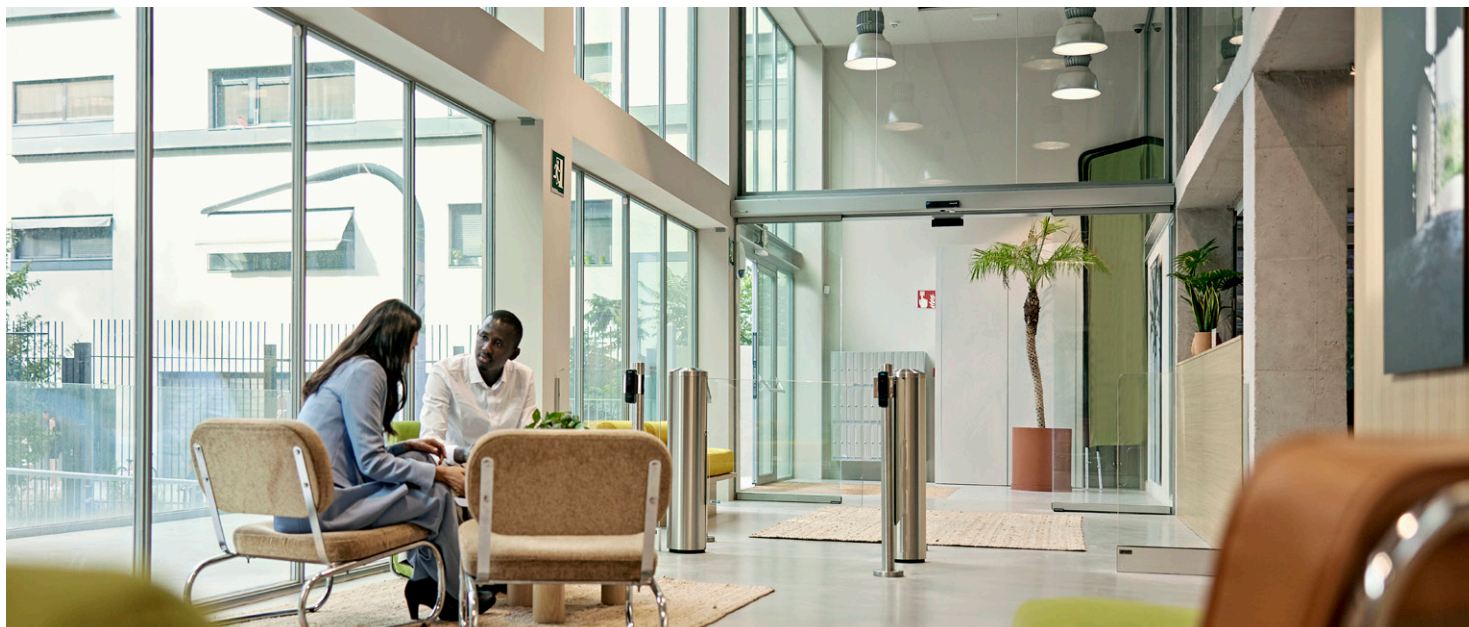
example, 21°C and an outside temperature of over 30°C offers noticeable advantages for individual well-being and impressive potential for cooling energy savings.

Free night cooling

On summer nights, the cooler outside air can be used to cool rooms without any additional energy input. For this purpose, motorized windows or ventilation flaps are opened by actuating command, regulating the room temperature into the comfort setpoint range.

Window monitoring with energy lock

When open windows are detected, e.g., via closing contacts, the energy supply for heating, cooling and ventilation systems is automatically restricted by closing the valves to prevent unnecessary energy losses. When the windows are closed, the energy supply is also switched back on automatically. In addition, the energy level function in PROTECTION mode ensures that the building structure remains protected.



LIGHTING

Demand- and use-oriented control of room lighting ensures greater comfort by enhancing working and living quality. In addition, demand-oriented lighting increases building safety, improves energy efficiency and reduces operating costs.

Automatic lighting

In interior rooms with no windows, the automatic lighting switches the lighting on or off when it receives a signal from a presence detector. A switch-off delay prevents the light from switching off too quickly when leaving the room.

Day light switch

The artificial light is switched on during occupancy if the illuminance in the room falls below the setpoint value due to limited available daylight. If the outdoor brightness reaches the defined minimum illuminance value or the presence status changes, the artificial light is switched off again.

Constant light control

Maximum comfort and energy efficiency is achieved through the combination of daylight and artificial light with integrated sun and glare protection. The defined setpoint for the room brightness is constantly maintained through brightness sensors. If the proportion of daylight decreases, the artificial light is automatically brightened; if the daylight proportion increases, the artificial light is dimmed or switched off.

SUN SCREEN

An automatic sun shading control system with precise slat tracking is an important component in achieving energy efficiency classes A or B according to DIN EN ISO 52120-1 and VDI 3813. The indoor climate for building users is thus optimized all year round by means of demand-led heat input and daylight incidence – with perfect glare protection and visual contact with the outdoors as well as reduced energy consumption for heating, cooling and lighting systems.



Automatic twilight control

The sun protection system can be automatically positioned for different requirements depending on the outdoor brightness. For example, the "Closed" mode reduces room cooling via the windows at night, reduces the building's light emissions, or provides privacy at dusk when the lighting is switched on.

Automatic sun protection

For effective protection of room occupants from intense daylight, the sunshade moves to a defined anti-glare position based on a defined outdoor brightness value. If the brightness once again dips below this level, the blind moves back to its park position.

Priority control

The controller coordinates the various positioning commands for the blind in a prioritized sequence to prevent possible damage from collision with open windows, damage due to weather conditions, blocking during window cleaning, etc.

Weather protection

If sensors detect that specified limit values are exceeded, the sunshade moves to a suitable position to prevent damage from rain, wind or ice.

Slat tracking

The slat angle and height of the blinds are adjusted and tracked cyclically according to the sun's current position. This ensures the best possible glare protection with maximum daylight yield in the room.

Shading corrections

If windows are temporarily shaded by trees or surrounding buildings, the slats open or the sunshade temporarily moves into a park position to ensure the rooms are supplied with sufficient daylight.

ROOM AUTOMATION

SOLUTIONS AT A GLANCE

The Kieback&Peter product portfolio offers intelligent solutions for the most diverse requirements of integrated room automation, flexibly designed for scalability in new and existing buildings. With their outstanding performance and reliability, our controllers, operating systems, drives and sensors are made in Germany of the highest quality. They provide maximum usability and efficiency for operators and users.

- 1 Room controller for distributor box
- 2 Room controller for ceiling mounting
- 3 Room controller with touch control
- 4 Radio room unit
- 5 Radio room unit with LCD display
- 6 Room unit with touch display
- 7 Duct sensor
- 8 Radio window contacts
- 9 Actuator for zone valves
- 10 Actuators via bus communication
- 11 Rotary actuator for 6-way valves
- 12 Energy-autonomous radio actuator
- 13 Analog actuator
- 14 Battery powered radio actuator



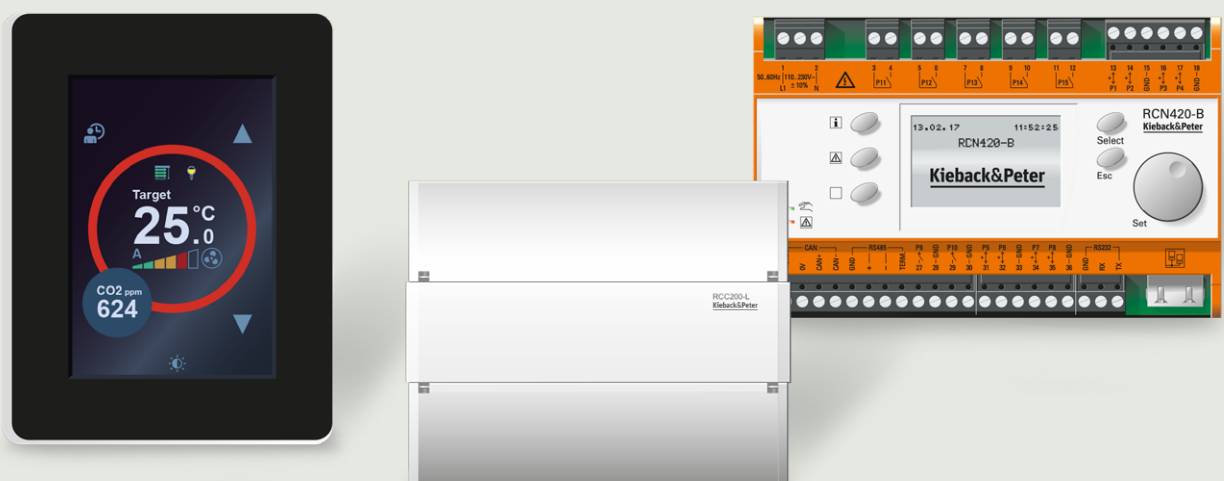
The smart components are designed so that HVAC, lighting, and sun protection systems are optimally controlled across all trades. This ensures that energy is only used when it is needed.



ROOM CONTROLLER

The room controller program for high-performance single- and multi-room solutions regulates all room automation functions that contribute to user comfort and energy efficiency: temperature, CO₂ level, humidity, lighting and sun protection.

Elegant room controllers from Kieback&Peter: Easy to install and operate, flexibly designed for a wide range of regulation and control tasks.





Installation in ceilings, walls or electrical distribution boards and simple operation via a touch panel ensure efficient use in a wide range of room uses and equipment variants.

Depending on the version, communication with other system components occurs via open bus (e.g., BACnet, Modbus, LON) or radio protocol standards (e.g., EnOcean, Bluetooth). This allows for the implementation of IoT solutions and solutions for simple bus communication in existing buildings. BTL, BAAC and BACnet certification also ensures secure interoperability and seamless integration, even in third-party systems.

Features and benefits

- Broad performance/application spectrum in room automation: temperature, CO₂ level, humidity, lighting, solar protection
- Mounting versions for walls, ceilings or electrical distribution boards
- Support of open communication protocols: bus (BACnet, Modbus, LON and many more), radio (EnOcean, Bluetooth)
- Intuitive operation via smartphone app or touch panel
- Integrated time program enables self-sufficient solutions independent of central building automation systems



Room unit with touch display

Powerful modules with integrated controller and multisensors as well as high-quality touch display.

- Operating/display variables: temperature, CO₂ level, presence, fan, time program
- Integrated sensors for temperature, CO₂ level, air humidity
- Communication: wired via bus protocol BACnet MS/TP



Room unit with LCD display

Elegant control units with information display via LCD.

- Operating/display sizes: temperature, presence, light, sun protection, automatic time program, scene control
- Integrated temperature sensor
- Communication: wired via bus protocol LON

ROOM UNITS

Slim, elegant design combined with a high degree of user comfort: Room units from Kieback&Peter can be quickly and easily integrated into any room environment with visual impact. Depending on the model, you can adapt the temperature, ventilation, lighting and sun shading individually to achieve the perfect room climate.

The different operating and display variables (e.g., operating modes, measured values and application parameters) are visualized on touchscreens, LCDs or LED displays. The room units communicate via radio (e.g., EnOcean and Bluetooth) or via cable (e.g., BACnet, Modbus, or LON). This wide range of variants guarantees solutions for the most diverse requirements and environments. Also provides the option of energy-autonomous installations with solar power supply for mounting on glass walls, for example.

Features and benefits

- Simple operation and timeless design
- Integration of different sensors
- Support of open communication protocols: bus (BACnet, Modbus, LON and many more), radio (EnOcean, Bluetooth)
- Energy-autonomous, radio installation with solar power supply
- Wide range of operating and display sizes



Solar radio room unit with LCD display

High-quality room control units with LCD display and wireless communication.

- Operating/display sizes: temperature, humidity
- Integrated sensors for temperature, humidity
- Communication: radio via EnOcean for easy integration into higher-level management systems
- Energy-autonomous model variants with solar power supply: simple installation with no complex wiring, e.g., for mounting on glass walls



Solar radio room unit

Space-saving, compact modules with radio communication.

- Operating/display variables: temperature, presence
- Integrated sensors for temperature, humidity
- Communication: radio via EnOcean for easy integration into higher-level management systems
- Energy-autonomous model variants with solar power supply: simple installation with no complex wiring, e.g., for mounting on glass walls



ROOM SENSORS

Room sensors from Kieback&Peter provide precise information on the measured variables required to effectively regulate room functions such as air quality, brightness and presence as an electrical analog or digital signal.

The portfolio ranges from room, ventilation duct and cable sensors to magnetic contact sensors and dew point monitors. The wide variety of mounting types and the option to communicate via different bus or radio protocols offer economical solutions for any project requirement. Also suitable for energy-autonomous solutions with no complicated wiring, e.g., for simple new installation or retrofitting in existing buildings.

Features and benefits

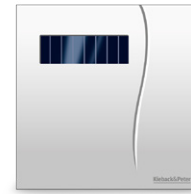
- Wide range of detectable measured variables, e.g., temperature, humidity, CO₂ level, presence and dew point
- Wall, ceiling, window or ventilation duct mounting capability
- Supports open communication protocols: bus (BACnet), radio (EnOcean, Bluetooth)
- Energy-autonomous solutions with no complicated wiring
- Fulfillment of high IP protection classes



Room sensors for wall mounting

Analog sensors with timelessly elegant design for harmonious integration into any room.

- Measured variables: temperature, humidity
- Mounting location: wall
- Communication: analog
- Timeless design and precise measurement to maintain a comfortable room climate



Solar radio room sensors

Variable and space-saving mountable sensors for the detection of room temperature and humidity.

- Measured variables: temperature, humidity
- Mounting location: wall
- Communication: Radio (EnOcean)
- Energy-autonomous, simple installation with solar supply and no complex wiring, perfect for use in renovation projects



Radio window contacts

Radio communication sensors for fast, easy window installation.

- Application: window condition monitoring
- Mounting location: window
- Communication: radio (EnOcean)
- Energy-autonomous, simple installation with solar supply and no complex wiring, perfect for use in renovation projects



Ventilation duct sensors

Robust multifunctional sensors for installation in ventilation ducts.

- Measured variables: temperature, humidity, CO₂ level
- Mounting location: ventilation duct
- Communication: analog or via bus protocol BACnet MS/TP for easy commissioning and reliable interoperability
- Fulfill at least IP65 protection class: reliable protection against condensation and dirt



Dew point monitor

Analog sensors for monitoring the dew point in chilled ceiling systems.

- Measured variables: dew point
- Mounting location: cooling ceiling system
- Communication: analog
- Precise measurements to detect the risk of condensation formation at an early stage

ACTUATORS

Accurate, reliable and flexible: smart drives for the energy-saving control of radiators, heated/cooling ceilings, convectors or for zone control. Can be used as a bus or radio solution.

The drives are designed for various communication protocols and can be controlled through room controllers or directly via the building automation system. Made in Germany of the highest quality, they are equipped for robust everyday use and provide precise control, maximum operational reliability and a long service life.

Features and benefits

- Areas of application: radiators, heated/cooling ceilings, convectors for circulating air, zone regulation
- Support of open communication protocols: bus (BACnet MS/TP, Modbus), radio (EnOcean)
- Volume flow determination to precisely analyze, e.g., the energy consumption per room
- Permanent hydraulic balancing of all utilities provides significant energy savings, since radiators, convectors, and chilled ceilings receive the same amount of energy
- Potential to connect further analog actuators for variably expandable system solutions
- Integrated room controller saves costs for additional hardware and installation
- High flexibility of control through room controllers or directly via the building automation system
- Versions with battery or external power supply available





MD15-BUS/MD50-BUS

Cable-based digital room actuators for energy-efficient control of valves on radiators and other systems.

- Application: radiators, heating/cooling ceiling systems, convectors for circulating air
- Communication: via bus protocols BACnet MS/TP and Modbus
- Integrated room controller saves costs for additional hardware and installation
- Volume flow determination, e.g., for room-by-room performance evaluation or exact analysis of energy consumption per room



MD15/MD50

Cable-based analog room actuators for energy-efficient control of valves on radiators and other systems.

- Application: radiators, heating/cooling ceiling systems, convectors for circulating air
- Communication: analog control of drives via room controllers
- Cost-effective solutions in combination with a room controller



Radio actuators for room and zone valves, MD15-Radio

Radio actuators for room or zone valves on radiators.

- Application: radiators
- Communication: radio via EnOcean
- Easy installation, perfectly suited for existing buildings
- Integrated room controller saves costs for additional hardware and installation
- Versions with battery or external power supply available



Energy-autonomous radio actuators, MD10-Radio

Energy-autonomous radio room actuators for energy-efficient control of radiator valves.

- Application: radiators
- Communication: radio via EnOcean
- Energy self-sufficient, as electrical energy is generated from the heating water by a thermogenerator
- Easy installation with no complex wiring, perfectly suited for existing buildings
- Direct communication with the room control unit, meaning no room controller required



Rotary actuators

Cable-based room actuators specially designed for heating/cooling ceiling system valves to control volume flows with precision and energy-efficiency.

- Application: heating/cooling ceiling systems
- Communication: cable-based control via analog signal 0/10 V
- Combination with a 6-way valve: only one actuator required to switch between heating and cooling while simultaneously controlling the flow rate



Actuator for zone valves, MF50-R

Specially tuned actuator for use with differential pressure-independent valves to ensure optimum hydraulic conditions in the zones of heating/cooling ceiling systems.

- Application: heating/cooling ceiling systems
- Communication: cable-based control via the 0/10 V analog signal
- Equipment with energy storage: in the event of a power failure, the system automatically switches to the safety position

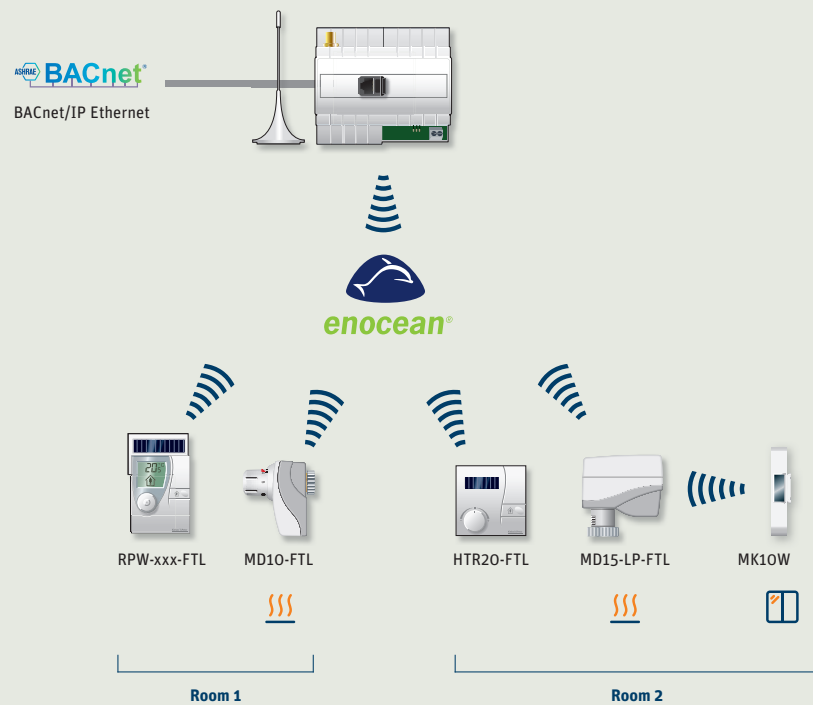
USE CASES

SYSTEM OVERVIEW

Energy harvesting, wireless solution

Room climate

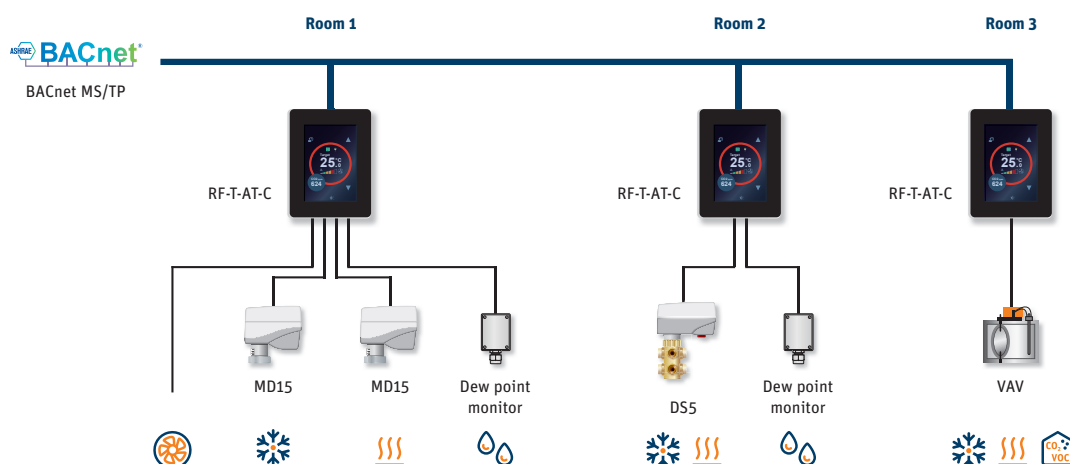
The energy harvesting and wireless solution perfectly suits as a retrofit solution to existing buildings. It communicates via radio and requires no power supply. Thanks to the self-learning system it automatically saves room occupancy data. Thus, time-program setting is not needed.



Single room solution

Room climate

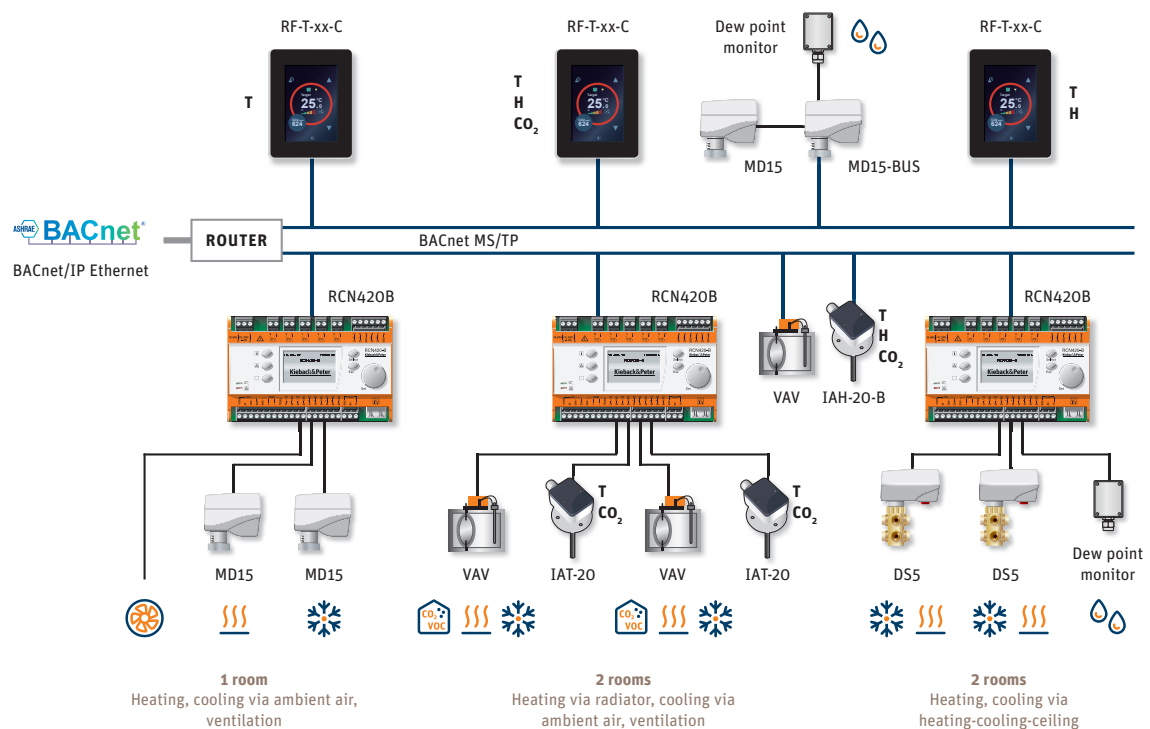
Room controller with integrated sensors and room control: for heating, cooling and recirculation units. Control of air quality via variable volume flow controller. The dew point monitor against condensation on the cooling ceiling. Comfort operation via touch control panel.



Two rooms solution

Room climate

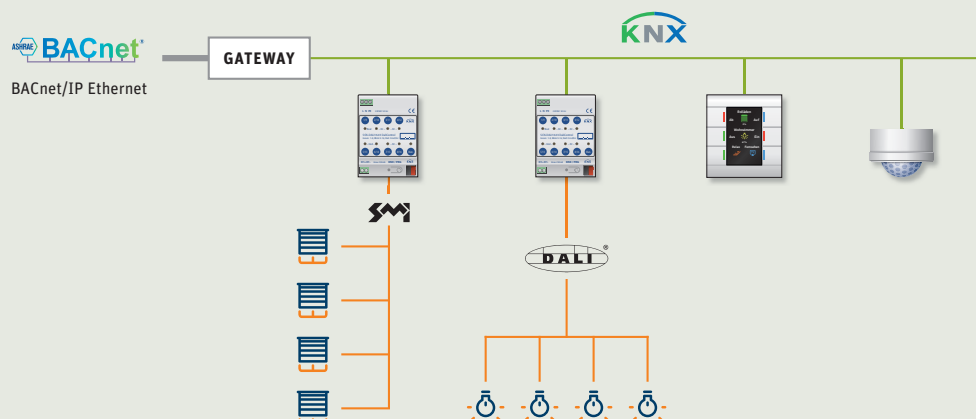
Room controller for ceiling mounting with drives and room operation via bus communication sensors for heating and cooling. Control of air quality via variable volume flow controller. Dew point monitor prevents condensation on the cooling ceiling. Comfort operation via touch control panel.



Multi room solution

Lighting and sun protection

Constant light control with presence/brightness sensor as well as blind control.





KIEBACK&PETER – A STRONG PARTNER AT YOUR SIDE

As a strong partner, we ensure your project success with expert knowledge and a holistic customer and service orientation. We support commercial and public buildings over the entire life cycle – on-site, via remote access, and through central service facilities with around 50 branches all over the world.

Our experienced engineers, technicians, and consultants work with passion and care to customize solutions for every phase of your building life cycle – from planning and implementation to smooth operation and system maintenance.



1. Planning and development

Gain valuable support and advice from our service team at any time – whether planning a new building automation system or migrating existing systems for future-proofing. We show you how to make your buildings more comfortable with intelligent automation solutions and how to meet the highest energy and safety standards. If needed, we can also support you in the use of subsidies.



2. Construction, installation, and commissioning

Performance you can depend on from day one. Our experienced project managers coordinate the trades required for your Kieback&Peter solution directly at your site. Experienced service technicians then take over the installation and commissioning of hardware and software – including an on-site system briefing.



3. Operation, maintenance, and optimization

Our service staff are also passionate about existing plants, managing maintenance and repairs and providing valuable advice on operation and optimization options. Detailed information on functions and handling can be provided by our personnel upon request.



4. Training

Do you want to better understand the complexity of building automation systems and optimize the use of equipment?

Reach out to your Kieback&Peter contact person to learn more about the workshops we offer in your region.



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