Heating, Cooling, Ventilation with KNX

Solutions and Products

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Networking of the room automation functions

Overview of heating, ventilation and air conditioning systems

In addition to classic lighting and sun protection control, applications for heating, ventilation and air conditioning (HVAC) in particular form an essential part of modern room and building automation. As a worldwide standard for home and building system technology, KNX also integrates further applications.
Considering that home and building automation accounts for 40 % of the total energy consumption, energy efficiency is paramount as well as an increase in comfort. The energy efficiency of buildings as well as the influence of building automation is described in the European standard EN 15232. The methods described there evaluate the influence of the building automation and the technical building management on the energy consumption. The standard classifies building automation and control systems into four energy efficiency classes A to D. While efficiency class C only requires the minimum legal standard without energy-saving automation, the networking of energy-efficient room automation functions is necessary for all applications (heating, cooling, ventilation, lighting and sun protection) and demand-oriented control to achieve class A.
KNX offers not only the technical requirement for the integration and communication of the different applications and products but has already shown in a variety of studies and projects that savings of 50 % to 60 % can be achieved through individual room control and ventilation control alone.
Through the networking of sensors, actuators and intelligent controllers via KNX, information and data can be simultaneously used in several applications. Presence detectors for example regulate the lighting not only dependent on daylight but provide the room climate control system and the sun protection system with important information about the occupation of the room. The previously separate light switches and room thermostats are merged into one room controller which can be used to control all the functions in a room.
The integration of the heating, ventilation and air conditioning technology in the home and building automation has long been part of the standard KNX applications. Currently over 70 manufacturers have registered KNX products with heating, ventilation and air conditioning applications with the KNX Association. You can find a selection of solutions and products in this brochure.

up to **40%**
with KNX shutter control

up to **50%**
with KNX single room control

up to **60%**
with KNX lighting control

up to **60%**
with KNX ventilation control

Individual room temperature control

Individual room temperature control offers the possibility of regulating the room temperature of a single room regardless of the temperature in other rooms. To do so, it is however necessary for the temperature in each room to be measured separately. The current controllers are mainly complete, aesthetically sophisticated room controllers which are not only used to measure the temperature and to set values but also to control all the other functions in a room. Some of the current controllers can also measure the CO_2 content and air humidity as well as support the heating and / or cooling operating modes. Via the networking of sensors and actuators in the room, the individual room temperature control also offers the option of including the status of presence detectors and window contacts and controlling the room temperature automatically dependent on the respective conditions. In projects that have already been implemented, energy savings of up to 50 % could be achieved with individual room temperature control based on KNX.

1 *Iddero: KNX 4.3" Touch Panel* **2** *Berker: KNX room controller with TFT display*
3 *Vitrum: Vitrum Clima Control* **4** *Basalte: Deseo temperature controller*

5 *Elsner Elektronik: Cala KNX Room Controller* **6** *MDT Technologies: Glass push button Smart II*
7 *ABB: ABB i-bus KNX Logic Controller ABA/S 1.2.1*

8 *Sauter: Room Controller ecos504/505* **9** *Bleu Comm Azur: realKNX Server*
10 *Siemens: Synco IC* **11** *Sinapsi: M-Bus/W.M-Bus Web Server*

Radiator and underfloor heating, cooling ceilings

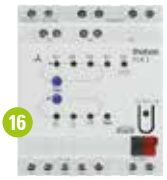
In radiator and underfloor heating, the centrally generated energy is transported with water to the required locations in the building via pumps and piping. Valves control the rate of flow in the individual heating circuits and thus the heat emission. Cooling ceilings function according to the same principle, the only difference being that cooled water is transported through the pipes and heat is extracted from the room via the cooling elements. The triggering of the valves is normally carried out via analogue thermoelectric or motor valve drives. Thermoelectric drives are connected cost-effectively to special KNX actuators which usually have multiple channels. Motor valve drives with an integrated KNX interface on the other hand have the benefit that the valves can be very precisely positioned and mostly have additional intelligence and diagnostic functions. Through bidirectional communication, it is furthermore possible to transfer both the current valve position and error messages via KNX.

12 *Insta Elektro: KNX Valve drive 1B*
13 *Ekinex by SBS: KNX mixing actuator*
14 *MDT Technologies: Heating actuator*

Fan coil controllers

The term “fan coil” means a convector fan which is typically used for cooling rooms. Applications are also possible in which the fan coil unit is used for heating or ventilation. Traditionally, a fan coil unit comprises a fan and a heating or cooling register (coil). The centrally produced cooling or heating capacity is routed through the building via the piping system and retrieved by each unit as required. As a general rule, one fan coil unit is installed per room. A benefit of fan coil control is the rapid availability of thermal energy or cooling capacity. It is therefore widely used in hotels and office buildings.

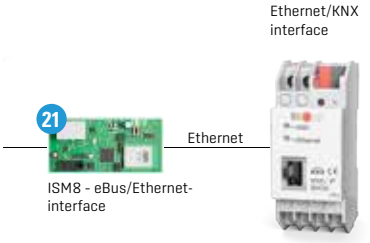
It is possible via KNX to separate the unit and the operation cost-effectively in terms of rooms. The control of the fan and the heating or cooling register is carried out via special KNX fan coil actuators in the unit while the operation is usually carried out via KNX room thermostats with extended functions and setting options.



15 *Jung: KNX Fan Coil Controller*
16 *Theben: Fan Coil Actuator FCA 2 KNX*

Interfaces to energy generation and distribution systems

With interfaces to energy generation systems such as condensing boilers (oil, gas, zeolite), heat pumps as well as solar thermal and photovoltaic systems, system operators have the option of finding out about the current state of their heating system using the KNX visualisation system, predefining setpoint values and setting operating modes. Fault signals are automatically transmitted to KNX and displayed so that the appropriate measures can be taken before any damage occurs. As the current heat requirement in the rooms can be communicated in most cases via the KNX gateway to the heating controllers, the heat generation must be precisely matched to the current demand.



17 *ISE Individuelle Software-Entwicklung: ise smart connect KNX Vaillant* **18** *Viessmann: Vitogate 200*
19 *Stiebel Eltron: Internet-Service-Gateway (ISG)* **20** *Bosch: Bosch Gateway KNX 10* **21** *Wolf: Wolf KNX interface kit*

Variable volume flow controller

With the variable volume flow controller (VAV), a centrally produced air flow is routed to the rooms and areas in which the air conditioning is regulated. The control of the amount of air and heat is carried out via flaps in the piping system. In most cases, the variable volume flow controller is decentralised and installed separately for each room so that only the required amount of energy is used to maintain the respective indoor room climate. Based on the recorded room conditions and the current air requirement, energetically intelligent and demand-controlled systems can be set up with KNX. A central control unit permanently monitors the flap positions of the individual VAV boxes via KNX. If the flaps destroy excessive inlet pressure, this is reduced. It is the aim to operate the system with the lowest possible pressure loss.

22 *Belimo Automation: VAV controller and actuators*
23 *Maico: KNX ventilation units with HR*

Room air control and interfaces to ventilation systems

To minimise the energy losses, new buildings are built increasingly airtight. If the natural ventilation no longer exists due to the design, monitored ventilation and extraction is required as otherwise consequential damage to people and buildings may arise and the occurrence of mould, spores and bacteria may be encouraged. When using automated ventilation, additional parameters such as the maintenance of limit values for the CO_2 content, the air humidity and the room temperature are taken into account. With active monitored ventilation and extraction, a central ventilation unit blows fresh air into the building/rooms. On the room side, the "consumed" air is extracted and discharged. With the optional heat recovery, the thermal energy is extracted from the discharged air e.g. via a cross-flow heat exchanger in order to warm up the "fresh" air with it. With this process, heat exchangers inside a building such as lighting, computers etc. can also be used for heating which contributes to an increase in energy savings. In addition to the baseline values, the values for the room temperature, air humidity and carbon dioxide content measured by the KNX individual room controllers and air quality sensors can be transferred via the KNX interfaces to the ventilation system and taken into account during the control. In the other direction, the ventilation system transfers status signals to KNX which for example signal the necessary replacement of ventilation filters.

24 *arcus-eds: KNX LUNOS-CONTROL4*
25 *Busch-Jaeger: KNX room temperature controller with CO_2 sensor*
26 *Hugo Müller: KNX air quality sensor*
27 *Vallox: VALLOX MV KNX bus module*

Interfaces to distributed air conditioning systems

Distributed air conditioning systems with split or monobloc devices form an individual concept for flexible room usage. In the case of split devices, the compression of the refrigerant is carried out outside while the air delivery, filtering and temperature control is carried out in the room that is to be cooled. In the case of monobloc devices, all the components are located in a single device indoors. The disadvantage is that the compressor is located in the room and represents a considerable source of noise compared to a split device. Moreover an exhaust hose is required to carry the warm air outside. The interfaces to the air conditioning systems are versatile. In addition to a few standardised interfaces, the manufacturers use a variety of proprietary hardware and protocol solutions. In spite of the variety of interfaces, special KNX gateways enable the integration of almost all the air conditioning devices into KNX.

28 *Weinzierl Engineering: KNX Modbus Gateway 886*
29 *Astrum: VFACE – Ultimate VRF Interface*
30 *Pulsar: THINKNX BRICKBOX*
31 *Intesis: IntesisBox Universal KNX AC Gateway*

Summary

As regards products, planners and installers can choose from over 7,000 certified KNX products which cover all the applications of heating, ventilation and air conditioning. The KNX worldwide standard thus offers the best requirements to improve the energy efficiency of buildings. In particular, the integral networking of energy-efficiency room automation functions of all the trades and demand-based control contribute significantly to energy savings in buildings.

KNX as a subsystem for price-sensitive solutions

KNX offers interesting solutions as a dedicated climate control system

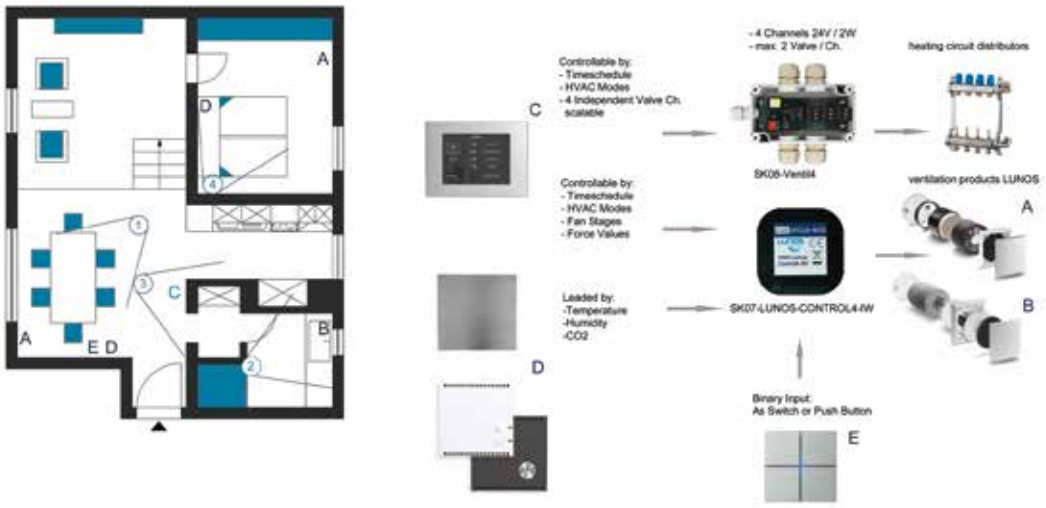
ARCUS-EDS GMBH Berlin Lichtenberg: This is a multiple family house with ten housing units. At an early decision stage the builder decided not to implement a KNX installation. The reason was the cost. The higher level of comfort would have been put on the rent and this was not wanted.

The situation changed partly during the course of the engineering planning. Due to KFW funding according to KFW70, ventilation with heat recovery was necessary in order to meet the KFW70 energy standard. The good thermal insulation and the air-tight outer shell of the building also incurred the risk of damage due to damp. The ventilation should therefore also be controlled by moisture and the room temperature in each room controlled separately. In this case, a conventional installation had no advantages compared to a KNX solution.

The KNX installation was designed as a separate ventilation and heating installation. The power supply comes from one 24 – 32 V DC supply per flat, using the auxiliary voltage wires. A separate power installation for the fan and valve controls was therefore omitted. The fans are controlled via "KNX-Lunos-Control4". The temperature control is carried out per room via room temperature controller "SK30-THC-CO2-PB", on which the fan speeds can also be set individually. The control of the 24 V valves of the floor heating system is implemented via "KNX-Ventil4" devices and the basic settings of the temperature and ventilation profiles are displayed on a 3.5" visualisation panel "Touch-IT Smart". We thus have a compact KNX system with comparable costs to other solutions.

Even if the basic installation is carried out in a conventional manner, the possibility of making use of the strengths of the KNX system can be found in housing construction. The user reactions are very positive. Some parties have already shown interest in extending the possibilities of the KNX installation for remote maintenance and Internet networking.

Contact: www.arcus-eds.de



A = LUNOS e² Set • B = RA 15-60 Exhaust • C = Touch-IT / C3 / Smart / NEO •
D = Sensors: temperature, humidity, CO_2, SK30-THC-CO_2 / NEO-THC-CO_2 / E = Various switch systems

Only as much as necessary, not as much as possible

DCV solution for demand-based ventilation

BELIMO AUTOMATION AG The DCV technology (Demand Controlled Ventilation) measures the conditions in a room and calculates the amount of air actually required. It is applied to regulate the fans according to the demand. Devices used are sensors and control devices for CO_2, VOC, temperature and so on. The required air volume is supplied to the room by precise volumetric flow controllers.

Performance adjustment of the fans via the ventilation system's actual demand

Efficient fan control is a vital part of a DCV system. Next to variable speed drive-controlled fans, EC fans are increasingly being implemented. To adapt the fan power made available to the ventilation system, the DCV system must gauge the ventilation system's requirements and set a suitable setpoint.

In a pressure feedback Fan Optimiser system, only as much pressure as required is produced to transport the current volume through the air duct system. The goal is to operate the system with the least pressure loss.

The Fan Optimiser function permanently monitors the damper positions of each VAV box. If the dampers eliminate the surplus of supply pressure, this pressure will be lowered – in contrast to the pressure-controlled systems where the supply pressure corresponds to the full load operation and thus not as much as possible.

System design of a pressure feedback Fan Optimiser system

If the system is configured as a bus system, or if a bus system is already installed, then there are basically no additional hardware costs. The volumetric flow controllers VAV-Compact KNX are integrated via KNX TP and the damper blade positions are evaluated by the Fan Optimiser application. The optimisation is calculated separately for supply and extract air and requires an opening angle of 80–90 %.

Bus-capable volumetric flow controller VAV-Compact

Potential savings – Case study

For a comparison in an office building the Fan Optimiser application was programmed into a DDC controller. The VAV controllers are connected to the DDC controller by bus communication. In addition to the Fan Optimiser, the system also has a conventional duct pressure control for taking comparative measurements. Either control function can be selected in order to compare the two strategies under identical operating conditions.

The measured current difference on the chosen day was an impressive saving of 64 %. Over the course of a year the savings would probably lie between 20 % and 50 %, depending on the system and the partial load conditions.

Fields of application

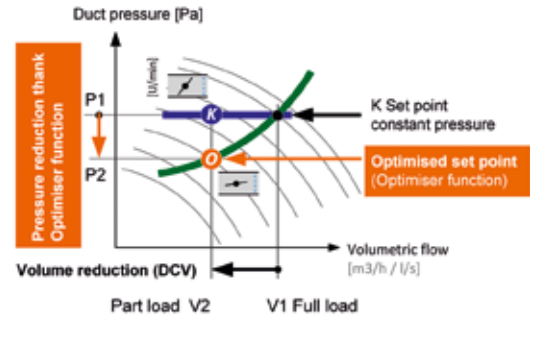
- VAV system in office buildings, hotels, hospitals, etc.
- Variable volume systems for controlled residential ventilation

Benefits of a Fan Optimiser system

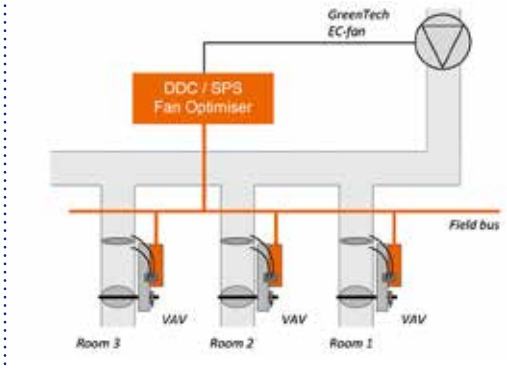
- Compliant with EN 15232, Class A
- No reduction in comfort
- Compensates for design errors
- Easy commissioning, finds its own operating point automatically
- Energy-optimised, minimal pressure loss
- Reduced noise, thanks to lower duct pressure
- Short payback time, low operating costs

Contact: www.belimo.eu

Operating points on the fan characteristics



Design of a Fan Optimiser application



Ambient Assisted Living (AAL) with KNX

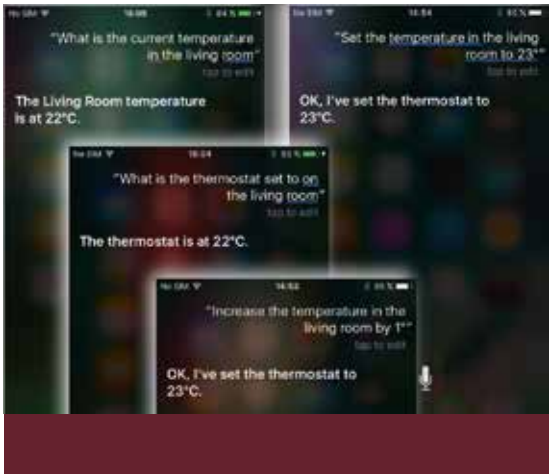
Augmented reality and voice control as most intuitive methods for HVAC interaction

A private villa in Eze (France): complete HVAC control with KNX components, configured exclusively with ETS

BLEU COMM AZUR SARL KNX allows the control of lighting, media, shutter and shading devices especially the integration of all types of HVAC functions in the home automation environment.

In the early days of KNX, some expensive and complicated software was needed to visualise the heating, cooling and electrical circuits. Today there are more intuitive ways to control the installed HVAC system. One of the most common ways is the use of smart phones and tablets. Already in 2012 it was possible to configure the whole smartphone user interface in ETS software using KNX proServ from Bleu Comm Azur. Independent of the screen resolution and operating system, the best display results are achieved with the iKnix apps. The same KNX proServ (product and ETS configuration) may now be used as the basis for even more powerful and intuitive control together with the new realKNX miniserver. The most impressive way is certainly using augmented reality. Actual values, setpoints and texts are shown by pointing with the smartphone camera to the object that has to be examined. Directly in the picture of the camera the messages are shown, or the buttons or sliders will appear to allow interaction. The links of web pages become accessible with even more information just by pointing the camera to a gauge, a control button or a regulator. Text information about states or critical situations are shown and parameters of heating and climate systems may be edited. Another method of intuitive control is using speech recognition. A very advanced development today is the world of "SIRI", which understands more than 40 languages and is a rising trend. Ask Siri about states, values or let her (or him) change parameters. No need to touch the phone, the pad or the watch – just say: "Hey Siri" and continue with your question or command. Siri is even capable of examining semantic contexts. You start to ask about the temperature in the living room, and then continue with other commands without specifying the room, as Siri remembers what you have been talking about. In the South of France, an exceptional villa has been equipped with these techniques. The heating and cooling system is based on a reversing heating pump, that acts on invisible fan coil units in every room. In winter time, the underfloor heating will guarantee a stable basic temperature and the fan coil will allow a fast temperature change if necessary. In summer, the fan coil units will work for cooling purposes. The residents are not interested in techniques. They just define a comfortable temperature according to the season. The room controllers come with a smart user interface from Elsner Elektronik (Corlo Touch) and are the size of a standard switch. They allow the control of lights, move the curtains, start music playlists and adjust the temperature. Additionally and completely intuitively all these functions are available on the smartphone app from iKnix. The augmented reality and HomeKit speech recognition functionality have been included with the standard software on the realKNX server by Bleu Comm Azur. All devices are completely configured in the ETS software, no export of data to third party software is necessary! The realKNX embedded miniserver works as a blackbox – and interacts directly as a bridge between KNX proServ and HomeKit. *Contact: www.proknx.com*

Siri voice control: An extremely intuitive user interface is vocally and visually answering spoken requests



A thinking home

Buderus heating system supplies heat as part of KNX home automation

BOSCH THERMOTECHNIK GMBH The home of Ute and Matthias Schmidt from Coburg (Germany) is unlike any other. Thanks to modern KNX standard home automation technology, their house "thinks" and acts automatically – the blinds close when they switch on the TV, the letterbox informs them when the post has been delivered and the socket with an iron plugged in switches off when nobody is in the room. This high level of comfort in the "smarthouse213" is increased even further by a Buderus heating system that is integrated into the home automation system and now also meets the design and technology standards of the house thanks to its new heat generator.

A new wall-mounted Logamax plus GB182i gas condensing boiler from the Buderus Titanium Line is at the heart of the heating system. It features a glass front, touch panel and Logamatic RC300 controller with EMS plus control system. The heating system is integrated into the home automation system via the Logamatic web KM200 Internet gateway on the one hand, connecting it to the LAN network. This allows Ute and Matthias to control their heating system and monitor the system parameters using the Buderus EasyControl app on their smartphone or tablet computer. The heating system is connected to the KNX bus via the KNX 10 gateway; in this way, it is connected not only to the control elements but also to all other components of the building technology system.

The line-based KNX building system bus is a global building automation standard. The KNX bus allows a virtually unlimited number of components such as heating, light, blinds, window contacts or weather station to be connected and centrally controlled. This reduces the cabling as the components are connected only to the KNX bus and information can be used for multiple purposes. KNX allows, for instance, the window contacts to be connected to the single-room control unit of the heating system. When open windows are detected, the room temperature control unit receives this information, switches to frost protection mode and closes the radiator valves. The Buderus heat generator is informed that no heat is needed and stops heating. This means that the heating system supplies energy only when it is actually needed.

The single-room control unit allows Ute and Matthias to set the desired temperatures for individual rooms manually. The fact that the heating system supplies heat as required independently of the outside temperature, helps save energy. "Requirement-based heating works better with KNX 10 than before, as the valve position of the radiators and the exact room temperature are now reported to the heat generator. The actual temperature can thus be compared with the desired temperature and the boiler 'knows' whether it should heat or not," Matthias Schmidt explains.

"smarthouse213" in Coburg was built in 2001.
All photos from: vor-ort-foto.de/Henning Rosenbusch

The home server on the ground floor serves as the central operation interface. The touch-screen computer allows Ute and Matthias to keep an eye on all components and settings and to adjust them at all times. Whenever they change a setting using for example the Buderus App EasyControl, the system transmits the information to the home server. But this is required very rarely: "The system responds to the information on the KNX bus, e.g. from the single-room control unit, the weather station or the window contacts and supplies heat whenever it is needed," says Matthias Schmidt. Apart from the home server, the four operating panels in the house or the RC300 control unit in the cellar may be used to control the building technology and the heating system. "The house turned out exactly the way we wanted it," says Ute Schmidt.

Contact: *www.buderus.de*

The home server is the central operation interface

Matthias Schmidt uses KNX and EasyControl

Optimal air quality in rooms with lots of people

More energy efficiency through KNX room temperature controller with CO_2 sensor

Optimal air quality in large rooms. *Photos: Busch-Jaeger*

BUSCH-JAEGER ELEKTRO GMBH Modern new builds have good thermal insulation thanks to energy-saving legislation. This insulation of windows, roofs and walls leads to very low air exchange values, with the benefit that energy is saved, but with the disadvantage of increased CO_2 concentrations indoors, alongside increased air humidity. That's why it is all the more important to control the fresh air supply as needed. The KNX room temperature controller with CO_2 sensor offers the optional solution.

Carbon dioxide is an odourless, tasteless gas. Especially in areas where lots of people convene, such as meeting rooms, conference rooms and classrooms, the carbon dioxide concentration in the air should not exceed 1,000 ppm. A CO_2 level of 400 ppm is normal for fresh, natural air outdoors. Concentrations below 1,000 ppm are harmless and require no corrective action. Precautions such as ventilating an area only need to be carried out when the level reaches a value between 1,000 and 2,000 ppm. At that point the air begins to feel stuffy and unpleasant. If the CO_2 level rises above 2,000 ppm, the area must be ventilated significantly and further measures must be looked into for the future.

An ideal KNX room temperature controller not only measures the temperature but also the air humidity, the carbon dioxide concentrations in the air and the air pressure. The CO_2 concentration depends on the air pressure, which in turn is determined by varying weather conditions (low and high pressure), changes in the altitude of the measuring location (meters above sea level), and also air flows. It is therefore important that the air pressure be taken into account when measuring concentrations of carbon dioxide in the air.

Room temperature controller used in the f u t u r e® linear switch range.

With KNX room climate control, it is precisely these factors (temperature, CO_2, air pressure and air humidity) that are recorded and controlled. Data for air quality and room temperature control are provided to the KNX bus. This data can be both visualised and used to control the heating and ventilation systems through upper and lower limits for the measured values. This means that, for example, if the CO_2 concentration is too high, ventilators in the room can be switched on or windows opened automatically. The quality of the air in the room is constantly recorded and monitored. No manual action is required thanks to the automation. This room climate control system is often used in high-traffic areas where the number of people frequently varies, such as in consumer markets, shopping centres, hotels, cinemas, theatres, hospitals and schools.

The figures show how important it is to have a good indoor environment: Europeans spend on average 90 percent of their time indoors – at home, at work, or in vehicles (car, bus, train). Indoor air plays an even bigger role in our health than outdoor air, which is often cited as a source of problems. For this reason, the air indoors should not be polluted with harmful substances. Good indoor air quality supports healthy well-being.

In purpose-built installations, the KNX room temperature controller with CO_2 sensor provides maximum energy efficiency, but keep in mind that detailed planning with a competent specialist is necessary.

Contact: *www.BUSCH-JAEGER.de*

Office building with high level of comfort and energy savings

Control signal for fan coils offers efficient control and noiseless fan operation

EKINEX ***Fan coil units are a very common and successful solution for room heating and cooling in functional buildings. In order to save energy and reduce the noise at workplaces, there is a growing demand for units equipped with brushless electronic motors and inverter boards. These types of devices need to be controlled by actuators which generate a 0–10 V control signal in order to allow a continuous air flow. In this project, KNX was chosen for its native interoperability and the availability of a new ekinex® solution for the 0–10 V control of fan coil units which made the integration of heating, cooling and ventilation in the building automation's overall concept much easier.***

The office building, whose project was focused on comfort and energy saving, was equipped with a building automation system based on KNX. It is located in the north west of Italy and has demanding heating and cooling requirements, due to the external temperatures ranging from -10°C in winter to over 35°C in summer. The HVAC solution includes the temperature regulation for the conveying fluids and the single-room air temperature control.

The production of hot and cold fluids occurs in the boiler room where a chiller and a boiler are installed; the correct temperature of the conveying fluid in winter is ensured by an ekinex® KNX mixing actuator. The device allows a climatic compensation based on the external air temperature; the value used by the mixing actuator is measured by a KNX weather station that also sends further information on the bus.

The control of the air temperature is achieved with the ekinex® fan coil actuators installed in the fan coil cabinets and ekinex® wall-mounted room temperature controllers. In some large rooms, the setpoint value for the regulation is obtained as a weighted average between the temperatures measured by the room temperature controller and the sensor integrated in an ekinex® KNX pushbutton used for the light switching. In service rooms, where no room temperature controllers are installed, the fan coil actuators also act as controllers, receiving the room temperature via a KNX temperature sensor. In this case setpoints and change of operating modes are received via KNX by the building supervision system.

ekinex® KNX fan coil actuator / controller mounted on a fan coil unit. A 0–10 V signal is generated to control the brushless motor with inverter board

An ekinex® KNX mixing actuator controls the servo motor of a mixing valve delivering the correct temperature to the fan coil circuits

The room control with the delégo app for mobile devices offers great user friendliness

End users can modify the setpoint of ± 2°C and manually control the fan speed

An ekinex® delégo supervision system allows users with iOS and Android smartphones to individually control room functions such as lighting and heating / cooling / ventilation with a simple and user-friendly app.

The ekinex® KNX fan coil actuators / controllers offer several functions to save energy, obtain a higher level of comfort and make the maintenance easier. A temperature sensor measures the coil temperature and is connected to an input of the device, configured as analogue; in the heating season, the fan start is delayed until the conveying fluid temperature at the coil reaches the configured threshold, in order to avoid an air flow at an uncomfortable temperature for the occupants. A window contact is connected to a second input, configured as digital, to automatically switch the operating mode each time a window is opened. In cooling mode, a third input is used to detect the status of the floating sensor in the drip tray, starting the condensate pump when necessary. A dedicated counter triggers a warning when the configured threshold for the total operating hours is reached, relaying the need to clean or replace the air filter.

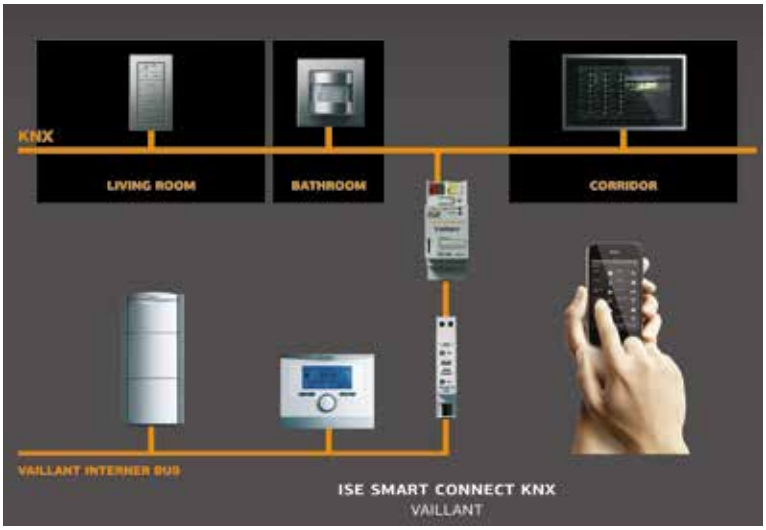
Contact: *www.ekinex.com*

Integration of heating systems into the KNX system

Connection between KNX and heating systems creates new possibilities

ISE INDIVIDUELLE SOFTWARE-ENTWICKLUNG GMBH

A new building near Dortmund, the house owner has fulfilled his dream of an intelligent house tailored to him and furnishes his home with KNX.
To further increase energy efficiency, the heating system was also integrated into the KNX system.
Thus, e.g. now also the heating system can switch to "standby mode". As a result, (if desired) the setpoint values for the room temperature are declined in all rooms and the heating capacity is reduced.
The energy yields of the heat pumps or the solar system can be processed in such a way that they can be easily viewed by a visualization.
The energy yields of the heat pumps and the solar system as well as information about the energy consumption are processed in such a way that a continuous overview of the yield and consumption can be visualized, changes can be detected and the consumption can be optimized.
Also, information about the heating system, e.g. service mode, error messages, date and time, outside temperature, system status are displayed, e.g. it can immediately be acted in the event of a fault.
In combination with the Vaillant multiMATIC 700 heating regulator, the ise smart connect KNX Vaillant and the ise adapter, you can now integrate the heating system, ventilation system and/or the yield and consumption values in building scenarios, visualization and facility management systems.



Possible application scenarios

- **Control the heating upon need:** From now on, times and setpoints for heating and domestic hot water can be configured and updated quickly and easily via a visualization or any other sensor device. This saves energy as the system only works if required.
- **Automatic ventilation:** The ventilation system starts automatically when leaving the house, the house owner returns to a pleasant room climate.
- **Short-term long night:** The automatic night operation mode can be delayed at your fingertip so your guests feel comfortable also later in the evening or even early in the morning.
- **Display yield and consumption values**
  Output values of solar system and heat pump
  Consumption values of water heating and heating (electricity, gas)

Contact: *www.ise.de*

New smart buildings on French HAGER production site

Integration of SAUTER BACnet/IP-KNX controllers and HAGER KNX devices

FR. SAUTER AG A specialist in electrical installation since 1955, Hager Group nowadays is a worldwide leading supplier of solutions and services for electrical installations in residential, commercial and industrial buildings. Hager Group is present with 28 production sites around the globe, and customers in more than 120 countries. The largest industrial site in the group – situated in Obernai (France) – is constantly on course for expansion. Since last year the new Hager FORUM provides a 6,500 m² open, collaborative space, where visitors can meet and exchange with Hager Group.

In 2016 two Hager office buildings were renewed and refurbished. SAUTER, in this case Sauter Régulation S.A.S., took over the challenge of this project. The SAUTER room controller "ecos504" and his bigger brother "ecos505" are BACnet Building Controllers for energy-efficient integration of all systems. Their digital communication features (BACnet / KNX / DALI / SMI / EnOcean) seamlessly combine automatic lighting and sun protection with room climate control. The KNX / TP-1 interface allows KNX touch panels, KNX actuators and sensors to be interlinked directly into the programmable BACnet / IP room controller. With the supported "KNX tunnelling" KNX devices are parameterised with ETS without additional KNX bus couplers. Used as a BACnet / IP-KNX gateway, the room controllers integrate KNX networks into the building and energy management system.

The Hager usage scenario was to link up the KNX protocol into the new building management system of the office buildings. The Hager WKT510 room units are directly joined onto the BACnet/IP layer via the SAUTER room automation station "EY-RC 504", without passing through third-party gateways.

With its special know-how in technical integration, namely the mastery of communication protocols, SAUTER was persuasive again. An identical BACnet/IP – KNX integration had already been set up successfully in the Obernai Management Meeting Room.

The implemented HVAC solution is managed by SAUTER EY-modulo 5 technology: modular, fast and universal. Modular automation stations, of the type "modu525", are used for climate control and ventilation – additionally equipped with user-oriented touchscreen control. The communication modules moduCom integrate systems and products from other manufacturers based on field-bus protocols such as Modbus or M-Bus such as the installed thermal energy meters.

EY-RC 504, Room automation station, ecos504

Room device Hager WKT510

Hager Forum in Obernai

The room automation stations "ecos504" are used for the control of chilled / heated ceilings with dew point monitor. The ceiling management is in dynamic switching mode: 6-way ball valves – B2KL – set up changeovers or steady control of heating / cooling circuits in a 4-pipe system; together with dynamic 2-way valves of the types VFL and VDL powered by 0 – 10 V servo motors. Supervision is carried out via SAUTER novaPro Enterprise – 20,000 variables are being monitored.

When planning demand-led room automation for energy-efficient building automation systems, the modular SAUTER solutions offer numerous flexible interaction implementations for astonishing smart possibilities.

Last but not least, a smart energy management also had to be established. The integration of meters into the SAUTER EMS software with around 300 variables is now monitored online and reported automatically.

With the simple and seamless but efficient BACnet / KNX architecture, SAUTER and Hager devices realised hand-in-hand a new generation of smart buildings with a comfortable room climate and minimum energy consumption on the Hager production site in France.

Contact: *www.sauter-controls.com*

Climate control in an aesthetically demanding penthouse

The Vitrum touch panel fulfills the high design requirements of the Milanese architect

For the realisation of the application, the Vitrum touch panel in the Glass Collection version has been selected.

VITRUM ***Functionality and design need not be in contradiction. The Italian manufacturer Vitrum has succeeded in developing HVAC solutions, which fit into aesthetically demanding environments, including all the functions of temperature management: Heating, Ventilation and Air Conditioning in home environments (HVAC).***

The penthouse in the centre of Milan (Italy) has been the perfect match between the aesthetic needs of the architect and the user-friendliness required by the owner. The integrators who installed the Vitrum Clima Control devices in all the environments of the apartment, like the temperature probe feature, fully integrated in the device, speaking with the entire KNX system to guarantee the perfect temperature condition and savings. "Vitrum Clima Control is simplified to the extreme to make the user experience easy and intuitive for anyone who approaches the device" said the architect. "This defines the real user experience and the company's philosophy and motto: Think Simple". When you approach the device, thanks to the proximity sensor, it tells you the detected temperature. This feature has been loved by the owner of the apartment who is impressed by the reaction of the device. His words definitely avoid any misunderstandings: "This gives you the chance on the one hand to avoid waste and on the other hand stops you from having to get up in the dark to make adjustments, because I hate when I'm trying to go to sleep and something's been left on". With a simple gesture you can adjust the temperature in the home environment and with a dedicated button set the speed of the air distribution fans.

During the installation, the customer and the architects followed all the programming of the Vitrum devices, configuring the functions of the third button available on the Clima Control device as required: calling up complex scenarios – including lighting or shutters – depending on the room. This full customisation of the devices was appreciated by the architect who could configure the colour of each button to better recognise its functionalities (e. g. magenta was adopted for the lighting scenario buttons, while the green was used to recognise if the time features were activated) or even to better match the architectural environment. Not all the functionalities have been used: you can even set the intensity of the low-consumption LED .

In this application Vitrum KNX Series was installed in the common Italian wall boxes. The installer has simply connected the 2-way KNX bus to the devices, secured the device to the wall box and applied the desired Vitrum Glass Collection aesthetic component (it is possible to choose between three different collections: Glass Collection, Tech Collection or Sense). Vitrum Clima Control was connected to Vitrum DIN rail modules for the management of fan coils with valves 0–10 V (but it is available even for ON / OFF 230 V).

Contact: *www.vitrum.com*

Energy plus fresh air

Vallox – smart ventilation for optimal air balance integration

VALLOX GMBH ***During the construction of a new residential building in Upper Bavaria, the intelligent networking of regenerative energy systems led to the building producing more energy than consumed for heating the building, heating the drinking water, ventilation technology and household usage. In addition to unconventional solutions such as a thermally active gravel trap under the house as a seasonal thermal store, the controlled ventilation with heat recovery contributes to maximising the energy efficiency and thermal comfort.***

"The result of the regenerative energy concept with the main components of solar energy, heat storage, heat pump and controlled ventilation with heat recovery is an energy-plus house", the client explains about the energy system of the house which was completed in the spring of 2014. The principle of retaining the energy expenditure for heating, cooling and airing the living space to an absolute minimum is based on intelligent home technology that is networked with KNX.

The main components of the implemented energy system are the seasonal storage of "waste heat from solar power" in a geothermal heat store, heat recovery from the indoor air and a salt water-brine/water heat pump. With the heat absorbers under the photovoltaic modules, twice the energy is produced because the heat absorption of the absorbers simultaneously cools the modules.

The generated solar power and the heat recovery from the indoor air are the energy types which are used immediately within this energy system, while the heat gained from cooling the module is used with a time delay as the principle is partially based on the timed displacement of energy generation and energy consumption through seasonal storage.

The Vallox ValloPlus 800 SE ventilation unit installed in the attic supplies the living spaces and offices with filtered and preheated fresh air. A structurally identical device supplies the bedrooms, bathroom and side rooms in the basement with fresh air; the operation of the ventilation unit is controlled via a humidity sensor for these areas. The ventilation units achieve a maximum air performance of 790 m³/h and transfer up to 90% of the thermal heat from the extracted air to the incoming air with a large heat exchanger.

Among the wishes of the open-minded clients for the energy-efficient building was having an overview of the networked building functions. A touchscreen display integrated in the wall on the ground floor displays the respective circuit and hydraulic diagrams of the individual building systems. From this panel, the occupants operate all the facilities from lighting to regulating the building control systems. To be able to measure the energy efficiency which can be achieved with the intelligent networked energy system, a total of 22 KNX sensors installed in the heat generation and distribution system record the room and medium temperatures as well as the flow rates and air flow volumes.

The building technology which has been refined for maximum energy efficiency and optimum indoor air hygiene saves energy costs and avoids emissions.

Contact: www.vallox.de

Under the sloping roof, there is space for the comfort system including the soundproof and thermally insulated connection lines for outdoor air and exhaust air, as well as extract air and supply air.

A touchscreen display visualises the setup and interplay of the energy system composed of photovoltaics, heat pump, geothermal heat and controlled ventilation. For the display and evaluation of operating data sensors placed throughout the system record the current actual values of temperatures, air flow and flow rates whose data is collated in the control cabinet.
Photos: Vallox GmbH

ABB i-bus KNX Logic Controller ABA/S 1.2.1

ABB The device convinces with a comprehensive functional library for all building applications. Many functions for HVAC applications are integrated, for instance the PID controller. You can create your own, customised function blocks and save them for use in other projects. In addition, the logic controller makes an impression with a simulation function, making sure that the logic controller performs all commands correctly before commissioning the device. The “Monitor” function allows you to connect to a device via LAN.

Contact: www.abb.com

KNX LUNOS-CONTROL4-IW

ARCUS-EDS The module KNX-LUNOS-Control4 is able to control the decentralised ventilation equipment from Lunos (www.lunos.de) via the KNX bus. Supported ventialtion units are e², ego with heat recovery, ventilation units Silvento FK, Ra 15-60 and ACM-Modul as pure exhaust air fan. Up to four ventilation devices are powered by a module. Several modules can be networked together via the KNX bus to allow a coordinated operation. A direct control of the ventilation units can be carried out by the existing switch / switch inputs.

Contact: www.arcus-eds.de

VFACE – Ultimate VRF Interface

ASTRUM VFace is an easy configurable VRV / VRF gateway for KNX projects, supports most of the existing brands and provides end users with full control of all indoor units via KNX or web interface. Easy integratation of VRF without any other equipment directly to KNX and simple configuration of all settings via the web interface. It can also be used remotely by web interface to control and monitor indoor units or to create timing scenes for indoor units. Moreover, VFace has a 7" touchscreen option that can be used as a central remote controller.

Contact: www.astrum.com.tr

Deseo temperature controller

BASALTE BVBA Basalte introduces the Deseo temperature controller, a comprehensive HVAC control that directly integrates with KNX home automation. Its elegant design and use of top-quality materials let HVAC control blend in any interior, thanks to the high-quality finishes like aluminium, bronze and glass. The internal temperature sensor and thermostat monitor heating, cooling and ventilation in the room. Its unique, user-friendly interface provides easy controls for setpoint, ventilation and modes. Combined with Basalte’s unique multi-touch functionalities, Deseo becomes the one-stop keypad for HVAC and rapid lighting control in your room.

Contact: www.basalte.be/en

VAV controller and actuators

BELIMO AUTOMATION AG The VAV-Compact is a cost-optimised unit comprising differential pressure sensor, controller and actuator and has been setting standards in volumetric flow control in rooms and zones since 1990. The VAV-Compact KNX can be directly linked to KNX TP networks and convinces with a comprehensive range of communication objects. This allows the control and operation of the air conditioning according to the actual demand. In addition, a sensor (0–10 V) or a switching contact can be connected. The KNX product range includes VAV controllers, actuators for air dampers and actuators for control valves (2-/3- and 6-way).

Contact: wwww.belimo.eu

KNX room controller with TFT display

BERKER The KNX room controller with TFT display and integrated bus coupling unit is an example of Berker's future philosophy on ergonomics and usability. The MMI (man machine interface), developed for installation at a height of 1.5 m, consists of a capacitive sensor surface combined with a single microswitch for haptic feedback. Swipe gestures allow users to access functions such as room temperature control, switch functions and status messages, which are shown on the colour TFT display. The black design (black when switched off) visually extends the room controller to become a three-dimensional object.

Contact: www.berker.de

realKNX Server

BLEU COMM AZUR SARL The newest version of realKNX server for controlling the KNX system using augmented reality is now also compatible with Apple's® HomeKit®. This opens a new intuitive dimension of KNX control by phone, watch and voice. Ask Siri questions like: "What is the current temperature in the kids' room?" and you will get the spoken and written answer: "The temperature is 22.3 degrees Celsius." In order to lower the setpoint, just say: "Decrease the temperature by 1.5 degrees!" Siri's semantic capabilities will make sure that you're still talking about the kids' room and will confirm: "The thermostat is set to 20.8 degrees Celsius." This feature is available in more than 40 languages. The realKNX server is based on the ProServ product database configured in ETS.

Contact: www.proknx.com

Bosch Gateway KNX 10

BOSCH Smart home and smart heating become one thanks to the Bosch KNX 10 gateway. Gas and oil heating systems as well as heat pumps from Buderus and Junkers equipped with the corresponding control technology and an Internet gateway may be connected to the KNX bus via the router and the KNX 10 – thus adding a heating control function to the smart home system if desired. The various settings of the heating device and the heat distribution can easily be controlled, visualised or changed. If an error occurs, the heating system forwards the corresponding error report directly to the KNX system. Should the performance of the KNX system be disturbed, the heating system will continue to perform steadily.

Contact: www.buderus.de/knx and www.junkers.com/knx

KNX room temperature controller with CO_2 sensor

Photo: Busch-Jaeger

BUSCH-JAEGER ELEKTRO GMBH The KNX room temperature controller with CO_2 sensor from Busch-Jaeger measures the carbon dioxide in the air, as well as the air humidity, air pressure and temperature. All four values are shown on the display. Upper and lower limits for CO_2 and air humidity can be configured using the related application. If the carbon dioxide threshold is exceeded, the display changes from white to red. The room temperature controller is supplied with a recessed universal input that has up to five potential-free binary input ports, where if desired one can be used as an analogue input and two can be used to connect a temperature sensor input.

Contact: www.busch-jaeger.de

KNX mixing actuator

EKINEX® BY SBS EK-HH1-TP is a KNX bus device for the control of three floating points or 0–10 V servo-motors for mixing valves. The flow temperature of the conveying fluid is configurable at a fixed point, with external climatic compensation and with external climatic compensation plus internal recalibration. The parameters are configurable separately for heating and cooling. It is particularly suitable for underfloor or ceiling heating as well as cooling radiant panel applications in combination with ekinex® thermostats provided with a humidity sensor. A 0–10 V output allows the remote setting of a heat pump temperature setpoint value. Startup function for radiant floors while concrete is drying according to EN 1264 standard.

Contact: www.ekinex.com

Cala KNX Room Controller

ELSNER ELEKTRONIK GMBH The ambient climate controller Cala KNX has a touch display and sensors for monitoring of temperature, air humidity and CO_2. Various sensor combinations permit a very specific application. The device is installed in standard 55 mm switch series. In addition to control functions for temperature and ventilation, Cala KNX offers calculation of mixed values, an energy-saving summer compensation function for cooling, logic gates and multifunctional modules for data transformation. On the screen, the user can set the ambient temperature and read current data. At the same time, it is a touch switch and shows operating elements for lighting, shading and windows depending on the individual configuration.

Contact: www.elsner-elektronik.de

KNX Air quality sensor

HUGO MÜLLER The air quality sensor (AQS) GS 41.00 KNX offers detection of the air quality (atmospheric pressure compensated CO_2 concentration, temperature, relative humidity), as well as air quality control functions. The sensors are commonly found in office buildings, schools and private homes. Due to wall-mounted housing, ideal sensor positioning is possible. In addition, the two-part device setup guarantees an easy installation. Manual adjustment of setpoint temperature (range: +/- 3°C) is available via an integrated touch panel. Various options and parameters within the ETS application offer adaption to multiple solutions. *Contact: www.hugo-mueller.de*

KNX 4.3" Touch Panel

IDDERO Iddero Verso is a versatile KNX room controller with 4.3" capacitive touch panel. It is available in white or black glass and can be installed in portrait or landscape mode. The unit features two independent thermostats, a built-in temperature sensor and four multifunction inputs that can be used to connect additional temperature probes. The visualisation supports up to 48 configurable functions, which can be arranged in six control pages. Advanced customisation options, including custom background images, make it possible to adapt the interface to any location or ambience. Other functions include touch gestures, weekly time schedules, alarm monitoring, or an internal scene controller. *Contact: www.verso.iddero.com*

KNX Valve drive 1B

INSTA ELEKTRO GMBH The KNX valve drive with its integrated room heating / cooling controller is suitable for efficient room temperature management. The intelligent valve purge function enables maintenance-free operation. Mounted on common thermostat valve bases (heaters, radiators, convectors, heating circuit manifolds for underfloor heatings, etc.) the valve drive evaluates an automatic setting of the valve lift and displays its position mechanically. Besides an integrated temperature sensor, the valve drive comes with a binary input by which e. g. a window contact can be evaluated potential-free. Optionally, an external temperature sensor or a dew sensor can be connected. *Contact: www.insta.de/en*

Universal KNX AC Gateway

INTESIS The IntesisBox universal AC gateway IS-IR-KNX-1i is compatible with more than 40 different air conditioning brands and stands out as the only one in the market that offers control and monitoring of the system (bidirectional). The device is installed next to the air conditioner and sends commands using infrared codes. Thanks to a built-in infrared receiver, it can also capture the changes made by the user through its own AC IR remote controller and show them in KNX. The IS-IR-KNX-1i is powered from the KNX bus, has a built-in room temperature sensor and two binary inputs for additional functions. The ETS plug-in allows to choose different DPTs in order to completely fit with your KNX project.

Contact: www.intesisbox.com

ise smart connect KNX Vaillant

ISE INDIVIDUELLE SOFTWARE-ENTWICKLUNG GMBH Vaillant heating systems can now be controlled by KNX. From now on, the ise smart connect KNX Vaillant in conjunction with the Vaillant multimatic controller allows the perfect integration into the KNX system. You can control several heating zones, temperature setpoints, domestic hot water and also your ventilation. System information like maintenance mode, error messages, system status or outside temperatures can be shown conveniently via KNX. An overview about your energy yield of your solar system or heat pump can be shown as well as the heat recovery of the ventilation system or the energy consumption for domestic hot water and heating. *Contact: www.ise.de/en*

KNX Fan Coil Controller

ALBRECHT JUNG GMBH & CO. KG presents the new KNX guest room temperature controller, specifically for use in hotel rooms. Clear symbols on the display and sensor buttons enable intuitive operation by the guest. The required climate is selected from four different operation modes and also automated. The exclusive "Eco" mode meets the requirements for increased energy efficiency. In addition, the thermostat is persuasive due to its conservative design. The display dims down in sleep mode and the operating LED only lights up extremely discretely so that the guest's sleep is not disturbed.

Contact: www.jung.de

KNX Ventilation Units with HR

MAICO ELEKTROAPPARATE-FABRIK GMBH Centralised, highly-efficient ventilation units WS 160, WS 170, WS 320 and WS 470 with EC fans and constant volumetric flow regulation, KNX connection, bypass and cross-counterflow exchanger, air volume 40 – 470 m³ / h, integrated web server and MAICO app (air@home) for mobile unit control, live reports via web tool, DIBT approval and passive house certificate.

Contact: www.maico-ventilatoren.com

KNX single room temperature control with MDT glass push button Smart II and MDT heating actuator

MDT TECHNOLOGIES GMBH The combination of the new glass push button Smart II and the reliable MDT heating actuator allows you to design and visualise an efficient and modern single room temperature control. The glass push button Smart II with integrated temperature sensor is used to adjust and to visualise the given value and the operation mode of the heating. The MDT heating actuator with integrated PI temperature controller regulates up to eight independent circuits and provides several additional functions. Secondary to its function as operating unit for the temperature controller, the glass push button Smart II can be used with twelve button functions (switching, dimming, shutter operation with displaying symbols and text).

Contact: www.mdt.de

THINKNX BRICKBOX

PULSAR ENGINEERING SRL ThinKnx Brickbox is a KNX gateway that enables a bidirectional connection to KNX plants of systems that do not natively support this protocol. It is possible to send commands to systems like HVAC, systems based on other buses such as Modbus, security panels, audio sources etc. In case of Mitsubishi HVAC integration, KNX groups can be associated to all its functionalities, as setpoint temperatures and also feedbacks can be received on KNX. In this way you can easily control air conditioning directly from wall buttons or other KNX devices. Brickbox is also able to collect data coming from any source and to send it as tables or charts via email to multiple recipients. It can check plant integrity by means of testing functions and can send alerts.

Contact: www.thinknx.com

Room controller ecos504/505

FR. SAUTER AG The ecos504/505 is a BACnet Building Controller (B-BC) for energy-efficient integration of all systems. Its digital communication features (BACnet / KNX / DALI / SMI / EnOcean) seamlessly combines automatic lighting and sun protection control into room climate control. The KNX / TP-1 interface allows KNX touch panels, KNX actuators and sensors to be interlinked directly at the programmable BACnet / IP room controller. KNX devices with ETS are parameterised by the supported "KNX tunnelling" without additional KNX bus couplers. Used as a BACnet / IP-KNX gateway, the room controller integrates KNX networks into the building and energy management system.

Contact: www.sauter-controls.com

Synco IC

SIEMENS AG Synco IC is a cloud-based system working on a mobile, tablets or PC and providing a complete plant overview from anywhere, anytime. Remote access greatly reduces site travel and enhances energy-efficient operation. Connecting a building is easy and takes just a few minutes. The system configuration as well as fault diagnosis and intervention can be done remotely; and multiple sites can be controlled centrally. At one glance, the most important information about the plant is visible and allows users to quickly correct the settings with a click of the mouse.

Contact: www.siemens.com

M-Bus / W.M-Bus Web Server

SINAPSI SRL SIN.EQRTUEVO1T is a web server with integrated datalogger to acquire data from sinapsitech® smart repeaters, which collects information from devices that use wireless M-Bus protocol such as meters, heat cost allocators, digital and analogue I/O, probes. It also integrates a 20-devices M-Bus port for wired application. SIN.EQRTUEVO1T is SSL compliant and can manage up to 500 meters providing storage of daily readings for ten years. The web interface allows report generating, M-Bus network setup and I/O management. The B.M.S. version allows an easy integration into most complete and complex building automation systems, making communication available via TCP / IP in KNX, BACNET and ModBus protocols.

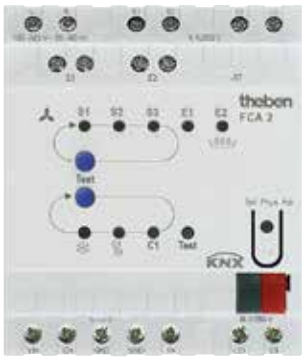
Contact: www.sinapsitech.it

Internet-Service-Gateway (ISG)

STIEBEL ELTRON GMBH & CO. KG Virtually all Stiebel Eltron heat pumps can be conveniently integrated in a KNX building management system via the Internet-Service-Gateway (ISG). KNX IP capability is installed as a software extension – an approved KNX product – via remote access by customer service. Around 100 operating parameters and appliance data are then available via KNX IP. The current version 2 includes integration of a smart grid interface (SG READY) to allow the heat pump, independently of manufacturer, to be connected to the KNX system. This interface can also be used to optimise consumption of privately generated electricity from the photovoltaic system.

Contact: www.stiebel-eltron.de

Fan Coil Actuator FCA 2 KNX



THEBEN AG With the new fan coil actuator FCA 2 KNX, Theben presents a fan coil actuator for efficient heating control. It supports two- and four-pipe systems and is, for instance, optimally suited for use in hotel rooms, office buildings, and apartment complexes. Proportionally controllable control valves and fan (0–10 V) ensure precise temperature control. Via the switch outputs, the fan can be controlled in three increments. Two inputs can be used for condensation monitoring and for connecting an external temperature sensor or window contact. The KNX actuator can be used universally for voltages from 100–240 V and 50–60 Hz. Thanks to the adjustable restart delay, small split units can also be controlled. *Contact: www.theben.de*

VALLOX MV KNX Bus Module

VALLOX GMBH The VALLOX MV KNX bus module is used for the monitoring, control and scanning of device data on the KNX bus level. The digitally controllable MyVallox devices enable integration into the building services management system (MyVallox Home) depending on requirements or operation via the Internet with mobile terminal devices (MyVallox Cloud). Through integration into a KNX smart home concept, the MV ventilation devices can be triggered by KNX via the VALLOX MV bus module.

Contact: www.vallox.de

Vitogate 200

VIESSMANN WERKE GMBH & CO. KG Vitogate 200 makes data exchange between Vitotronic heating control units and home automation systems possible with the KNX protocol. The home automation system thus provides homeowners with the option of keeping up-to-date on the current status of their heating system and inputting settings, such as target values for room temperatures. As the current heat demand in the occupied spaces can be reported to the heating control unit via the gateway, it is possible to adjust the heat generated exactly to this demand. Utilising Vitogate 200 therefore saves energy. *Contact: www.viessmann.de*

Vitrum Clima Control

VITRUM Vitrum Clima Control is the panel control that allows the whole spectrum of temperature management: Heating, Ventilation and Air Conditioning in home environments (HVAC). Through its alphanumeric display, it allows you to view the detected temperature or set the desired setpoint. You can configure with a simple touch not only the temperature, but also the fan speed of the air distribution in each room. Vitrum Clima Control is equipped with a proximity sensor to ensure optimum energy efficiency and its RGB LED touch buttons can be configured by ETS.

Contact: www.vitrum.com

KNX Modbus Gateway 886

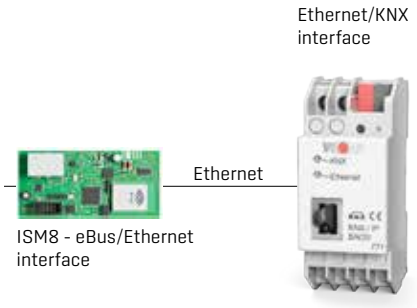
WEINZIERL ENGINEERING GMBH Modbus is still widely used in the field of heating and ventilation in building control. The KNX Modbus Gateway 886 allows an easy integration of non-KNX devices which support the Modbus RTU protocol on RS-485. The gateway can act as a Modbus master as well as a slave. Modbus data is mapped to KNX communication objects and vice-versa to KNX data point types. The assignment between KNX objects and Modbus registers can be configured via parameters in ETS® software. The device is for rail mounting with a width of only one unit (18 mm). The KNX part is powered from the bus, the Modbus part requires an external power supply of 12–24 V DC. Three dual-coloured LED on the front of the device visualise the connection and operation state.

Contact: www.weinzierl.de

Wolf KNX interface kit

WOLF GMBH The Wolf KNX interface kit (consisting of eBus / Ethernet-interface module and Ethernet / KNX interface module) makes it possible to integrate Wolf system components into the KNX building automation system. In this way, all gas and oil condensing boilers with BlueStream® (CGB-2, CGS-2, CGW-2, CSZ-2, MGK-2, TOB), plus the BWL-1S split air source heat pump, can be integrated. It is also possible to integrate additional components such as the MM mixer module, the KM cascade module, the SM1 / SM2 solar collectors and the mechanical air handling unit from the CWL Excellent series.

Contact: www.wolf-heiztechnik.de



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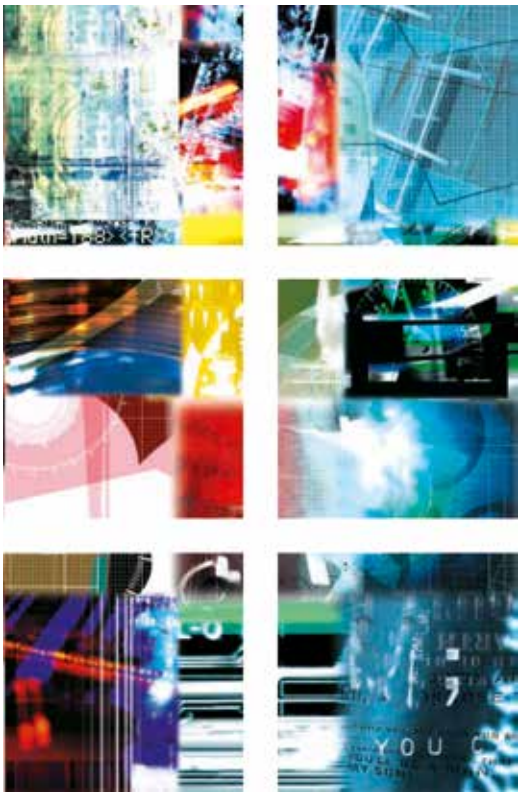

www.knx.org

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