

A world of difference

# Value-added comfort

Intelligent electrical installation technology makes living safer,  
life easier and the use of energy more efficient

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The networked home is not a vision of the future, rather it is reality, not least thanks to the intelligent house and building system technology of Busch-Jaeger Elektro GmbH. The ABB company offers innovative solutions and products allowing various home electrical systems to be flexibly connected and comfortably controlled via the existing electrical network. Atmospheric lighting, a constant comfortable temperature or monitoring of windows and doors are only some of the numerous functions provided by the system. Energy savings, simple installation and expandability provide added value in private homes as well as in commercial and public buildings, museums or hotels.

Safety, security, comfort, and efficiency are universal needs. This is especially true of the environment in which people spend a huge amount of time: their homes. The electrical installation plays a key role in meeting the requirements in terms of safety, security, comfort, economy and energy efficiency as numerous devices and functions within a house are electrically controlled and connected to a common infrastructure. Intelligent building system technology is capable of performing various functions for residents, enabling them to enjoy life in their homes in comfort and safety.

The basic idea behind this technology is to adapt electrical installations to the users' needs, providing simple operation, and not vice versa. Following are three examples of ways Busch-Jaeger's building system technology products are making these installations more user-friendly:

- Switching off the lights in a house before going to bed can now be done with the push of a button.
- Checking whether all the windows are closed is no longer necessary with intelligent technology.
- Blinds and heating need no longer be operated manually but can instead be controlled automatically in a safer and more economical way.

The basic idea behind the Busch-Jaeger intelligent building system technology is to adapt electrical installations to the users' needs, providing simple operation.

One of the many advantages of this future-safe technology is its ease of use. Most functions can be controlled by a simple touch of the central display and control unit, the Control Panel 1. It can be used to close all blinds in the house at once or to select the ideal illumination for reading or watching television.

Having the right light in the right place not only makes life more com-

fortable but also increases security. The ABB i-bus® EIB/KNX automatically switches on and off the light along the pathway and, with the help of motion detectors, provides guests with a warm welcome while deterring unwelcome visitors. Presence can be simulated via the lighting control during longer periods of absence.

Are all the skylights closed? Does the heating on the first floor need to be reduced? With modern electrical installation technology, these questions become redundant since these systems are constantly monitored by sensors: Room thermostats lower the temperature by some degrees when leaving the house or when windows are opened, and a central monitoring system checks whether all windows and doors are closed, doing away with the usual "inspection round." And if there are any suspicious sounds at night, a touch of the panic button will switch on all lights in the house.

But this is by far not all the technology has to offer in terms of safety and security. Automatic moisture monitoring in the kitchen and the basement helps to avoid unpleasant surprises, and smoke detectors alert residents of smoke and fire even when they are asleep.

The technology is easy to install and is designed to "grow" with increasing needs. For example, the comfort switch looks like a normal light switch but offers much more, combining several levels of comfort 2:

- Normal operation: The light is switched on and off as usual.
- Semi-automatic operation: The light is switched on automatically, but switched off manually.
- Timer operation: The light is switched on manually, but switched off automatically by a timer.
- Fully automatic operation: No manual switching is required.

Many demanding house owners also want an elegant design to go with the technology. One example is the "pure stainless steel" series of switches featuring an innovative surface finish. A special coating keeps fingerprints to a minimum.

### Modern times for a 1970s bungalow

The dream of a networked home is not reserved for new houses. It can also be implemented in older buildings without affecting their architectural appearance. A successful combination of state-of-the-art technology and 1970s architecture can be found in Ratingen near Düsseldorf in Germany, where a bungalow was brought into the modern age with the help of innovative technology 3.

Busch-Jaeger's intelligent building system technology allows multiple electrical devices to interact wherever and whenever the user requires.

At the heart of the building system technology, which is controlled via the ABB i-bus® EIB/KNX, is the Control Panel, combining attractive design with practical use. The panel serves as a central control and display element for various functions within the house, ranging from the consumer electronics via the lighting and blinds

1 The Control Panel serves as central user interface.



2 The comfort switch featuring four levels of functionality



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to the presence simulation. The Control Panel is complemented by the EIB sensor future® linear series, fitting perfectly into the modernized room concept.

The intelligent building system technology allows multiple electrical devices to interact wherever and whenever the user requires. Dimming the light, closing the blinds, starting the home theater – one system does all. The elegant touchscreen shows up to ten panels, which can be selected with the touch of a finger or using a PDA stylus. Even special light scenes can be stored and retrieved on demand, putting the entire property into the center of an atmospheric light composition.

Intelligent building system technology is capable of performing various functions for residents, enabling them to enjoy life in their homes in comfort and safety.

### Putting art in the right light

Busch-Jaeger building system technology products can be found in numerous public and representative historical buildings where they are used for the creation of atmospheric light scenes. In the Würzburg Residence, for example, the visitor is greeted by a truly “imperial” sight upon entering the staircase 4: Up the white steps via the landing is the breathtaking, extensively restored fresco by the Venetian painter Giovanni Battista Tiepolo.

This unique eye-catcher is highlighted by a sophisticated illumination system

based on innovative building system technology from Busch-Jaeger. Specially designed luminaires and light bulbs put both the fresco and the staircase into the right light. The Busch-Jaeger Control Panel fits discreetly into even this special environment.

The illumination can be controlled automatically by means of signals from a meteorological station, or its intensity can be controlled individually. This is particularly useful for official receptions and larger events, since a solemn atmosphere requires appropriate lighting. Besides a number of other building functions, the technology also allows the ambient light atmosphere to be simply and quickly adapted to the respective situation.

### Maximum comfort for travelers

After 117 years, the Hotel de Saxe has returned to the Dresden Neumarkt, one of Europe’s most beautiful squares 5. Favorably situated opposite the famous Frauenkirche, the hotel belonging to the Steigenberger group has recently opened. With the exterior modeled after the original design, the first-class hotel offers luxurious comfort – with the help of modern building system technology from Busch-Jaeger.

The interior architects wanted the room concepts to be carried over to the visible parts of the electrical installation. After all, the switches for the hotel card and the lights are the first things a guest will notice when entering the room. The switches were selected from the Busch-Jaeger future® linear series whose unembellished design fits into the pure and subtle elegance of the Steigenberger house. The new hotel key card switch was used for the first time in this project.

The public areas of the four-star hotel make full use of modern electrical installation technology, too. An impressive glass dome spanning the lobby, bar and gallery immerses the entrance area into a friendly light during the day. In the evening, different light scenarios create an inviting mood. These scenarios are controlled via the ABB i-bus® EIB/KNX and are activated depending on the time of day.

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In nearly all areas of the Hotel de Saxe, Busch-Jaeger’s modern building system technology ensures comfort and provides atmospheric illumination. The great ballroom, for example, features a dividing wall showing digitally edited alienated sights of Dresden. As long as the wall is closed, the illumination of both parts is controlled separately; once the wall is opened, the switches on both sides of the wall control the lights in the entire room. Different light scenarios, for example for presentations or banquets, have been pre-programmed and stored allowing the right illumination to be activated at the touch of a button.

The lighting and the sun protection as well as the projection screen are operated by easy-to-use control panels. A few labeled buttons ensure that even novice users can quickly and easily manage the various technical possibilities. In addition, interfaces to the audio-visual equipment enable lighting control from the lectern, allowing simultaneous operation of the projector and dimming of the lights. To comply with individual needs, all luminaire groups can be controlled both manually and via the pre-defined scenarios, and can be dimmed individually.

3 Modernized bungalow in Ratingen, Germany



4 The Würzburg Residence



For maximum customer service, the system is connected to the Steigenberger internal computer network via the EIB/LAN interface, making light control possible from every staff PC. Even in the kitchen the ABB i-bus® EIB/KNX is present. The individual areas from the starter station to the patisserie are subdivided into different luminaire groups, which can be switched individually. This helps to save energy since only certain areas are staffed and thus need to be illuminated at any given time. The same applies to the staircases and corridors, which are illuminated with differing intensity throughout the day.

With its building system technology, the Busch-Jaeger products not only round off the design in the Hotel de Saxe, but also ensure modern comfort and efficient use of energy behind historic facades.

A unique installation of Busch-Jaeger building system technology is located at the Kiel Fjord in northern Germany where the prototype of the first floating low-energy house was launched.

#### Technology for a floating house

A unique installation of Busch-Jaeger building system technology is located at the Kiel Fjord in northern Germany where the prototype of the first float-

5 Hotel de Saxe in Dresden



ing low-energy house was launched. “Living on Water 1” is the first project of this kind to combine environmentally friendly construction methods, a regenerative energy supply and the modern installation systems of Busch-Jaeger 6.

The residential building features a modern wood and glass construction and is carried by a floating steel body submersed in the water. The required energy is generated with the help of a roof-mounted photovoltaic plant, a heat exchanger beneath the floating house and a wood pellet oven located in the winter garden.

The heavily glassed “villa on the water” offers a year-round, unspoiled view of nature’s spectacles. The house features 140 square meters of covered living space, including outdoor terraces on three floors or decks. A modern interior and precious materials complete the clear design language of the exterior architecture.

The high standards placed on the furnishing are reflected in the building system technology, which – as specified by the owner – was not to fall short of the standards offered by an exclusive land-based residential house. The ABB i-bus® EIB/KNX system forms the basis for the flexible networking and comfortable control of the lighting, heating, ventilation and safety/security equipment in the floating house.

Here again, the Busch-Jaeger Control Panel serves as a stylish control element. Centrally located in the kitchen

area, it fits elegantly into the modern, functional interior architecture. In the main menu, the LCD shows the entire deck structure of the floating house from the lower deck to the sun terrace.

The use of the panel is simple and intuitive: A touch of the screen directly leads to an overview of the individual functions of the room showing the current conditions, such as temperature values, which can then be changed with a tip of the finger.

The ABB i-bus® EIB/KNX system forms the basis for the flexible networking and comfortable control of the lighting, heating, ventilation and safety/security equipment in the floating house.

Light, heating, cooling, time, temperature, disturbance indication – the versatility of the Control Panel is unmatched. One of the functions that makes living in the floating house comfortable is the control of different light scenes. The main deck accommodates the living area, including the winter garden, kitchen and bathroom as well as a sun deck, which can also be used as a jetty for a yacht. As all areas are amply equipped with lighting elements, atmospheric light scenarios can be programmed for every situation. While bright lighting is

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6 The "floating house" pilot project



needed in the kitchen in the evening, the dining area and the winter garden are immersed in warm, indirect light, accentuated by ceiling-mounted luminaires above the dining table. In addition, exterior luminaires on the glass facade and the terraces create a pleasant ambience.

This is only one of many possible scenarios that can be activated with the touch of a button on the Control Panel. All functions, such as lighting, heating or home electronics, can also be operated with the remote control or the control elements on the devices. In addition, the multi-functional display and control device serves as a "notification center," visually and acoustically indicating the triggering of security equipment such as motion detectors or window contacts.

At the same time, the security devices increase comfort: The motion detectors automatically switch on the light for residents coming home or guests visiting the floating house. The kitchen area is illuminated upon entering as well, which is particularly convenient when arriving with no hands free to switch on the light.

When it gets cold, the floating house turns into a cozy home while the ABB i-bus® EIB/KNX and the Control Panel make sure that the heating is regulated efficiently and in line with the demand. The values can be individually displayed, pre-programmed

and changed for each room. In addition, the temperature in the individual areas on deck can be controlled directly using the room thermostats.

The intelligent building system technology is able to detect energy-savings potential even without any user input. Window contacts, for example, indicate open windows. In this case, the heating is reduced automatically to anti-icing level. With the help of the absence function, the system is shut down to a pre-determined value.

**The technology is able to detect energy-savings potential even without any user input.**

In addition to the central Control Panel, EIB sensors located in each room help to control the lighting, security equipment or consumer electronics according to the residents' needs. The single and multiple operating elements feature inscribable, freely programmable, illuminated toggle switches. In the winter garden, for example, quadruple sensors offer numerous possibilities: While the upper four buttons can be used to control the lights, the lower buttons are for window control functions.

Finally, to complete this picture of comfort, music can be played in every

room using the Busch-AudioWorld® system. The appropriate speaker components offer the highest stereo quality in even the smallest rooms. The blending of architectural features and building technology in a spectacular setting as implemented in the "Living on Water 1" project has opened up new possibilities both aesthetically and technically.

#### Comfort includes efficiency

Rising energy prices and the current climate discussion have increased the interest in energy savings. Modern building system technology plays an important role in this area as it allows, among other things, automated and efficient heating control.

ABB has developed many products and systems that offer new functionalities while simultaneously increasing the user's comfort. Flexibility and versatility are just two strengths of the Busch-Jaeger building system technology, which has successfully and gracefully illuminated new and old buildings alike, and has increased comfort, safety and security – efficiently.

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#### Further reading

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