LUX ■ NEWS

The in-house magazine of B.E.G. Brück Electronic GmbH

NEW
KNX Generation 7
DALI Basics
NETx at the Head Office
at B.E.G.

PROJECTS
BNP Paribas Fortis
Simplastic
Torre Caleido
Bakkerij Wouters

ENVIRONMENT
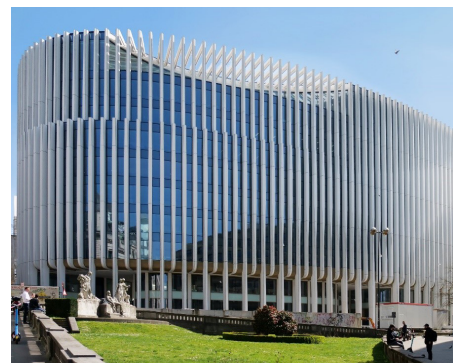
B.E.G.

Stephan Winkelmann, Director Marketing

Dear business partners,

The problems of climate change and the energy crisis will permanently determine our actions in the future. Since both topics are interdependent, they can only be tackled together.

The Government is forcing a rethink in the use of resources, among other things with the constant further development of the Building Energy Act (GebäudeEnergieGesetz, GEG). In the current version, valid since 1 January 2023, the further reduction of the permissible annual primary energy demand in new buildings from the previous 75 % of the reference building to 55 % goes hand in hand with this. The energy-reducing effects of the technologies used for lighting and control are included in the calculation model. In other words, lighting control was declared the reference technology!

In addition, the considerably higher requirements for building insulation and the use of systems for heat recovery ensure that the share of total energy consumption for heating and air-conditioning technology declines sharply - the relative share that lighting takes in primary energy consumption increases, as a consequence.

An optimal balance in the area of lighting is achieved by using LED technology in combination with daylight-dependent presence control. The highest savings potential is achieved in areas that are only rudimentarily used, such as logistics areas, traffic routes, sanitary rooms and outdoor areas. In comparison with a system from the 1980s, up to 80 % energy can be saved.

Through the additional networking of the trades on e.g. KNX or DALI basis and through the implementation of a software-based management system, all trades can access the presence information of the occupancy detectors. In this way, the information can be used across all trades to save energy. In this issue of **LUXONEWS** we also present the latest products in this area and give you practical examples based on references.

We hope you enjoy reading and, as always, look forward to receiving your suggestions and comments!
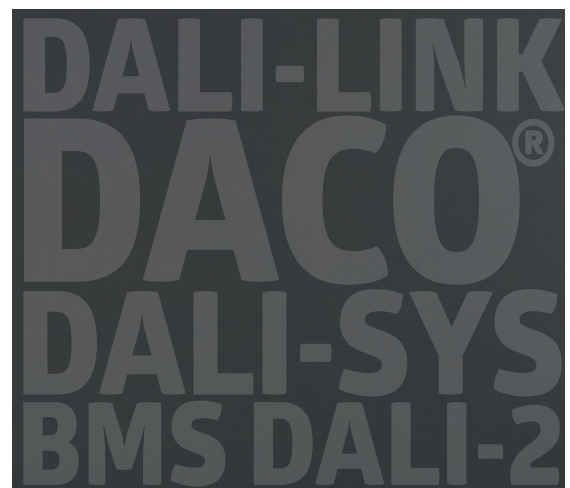
 Yours sincerely,

Stephan Winkelmann
Director Marketing

INDEX

INDEX

New:
KNX Generation 7

DALI Basics
Understanding DALI and avoiding mistakes

Colourful view at the B.E.G. headquarters

A wild meadow is being created on the B.E.G. site

Lindlar is located 30 km east of Cologne, close to the A4 motorway. In addition to the B.E.G. headquarters, more than 160 companies are active in the Klause industrial park. Despite the strong industry, the location is very close to nature.

Even on the large area of our B.E.G. company premises there are cosy, green corners that invite you to linger during break times. This offer is gladly accepted by the B.E.G. employees.

Mr. Brück has provided seating in the greenery, e.g., a garden shed and fragrant lavender beds. A highlight is our garden pond. If you circle it at midday, you will not only be accompanied by the splashing of the water fountain, but also by a swarm

of curious koi. From spring onwards, honey bees swarm out and find birch and apple trees on the grounds to pollinate,

collecting nectar from clover meadows and perennials.

We have transformed around 1,000 square metres of our lawn into a tall, species-rich flower meadow in 2022. High-quality seeds with annual and perennial plants native to the area were purchased from Rieger-Hofmann GmbH. Our gardener Smail invested several days in planting the flower meadow. A whole truckload of sand was needed to get the soil substrate lean.

Only on a nutrient-poor soil do the multitude of native wildflower species feel at home. Then it was time to wait. Many a person wondered about the rampant weeds until the first annual plants finally conquered the meadow in May. Red corn poppies, blue cornflowers, yellow pigweed, glueweed,

white yarrow, daisies and a few more bathed the meadow in a sea of colour.

Not only our honey bees benefited from the splendour of the flowers in front of their own hives. Numerous other animals from fat bumblebees, butterflies and their caterpillars, to a pair of rabbits and goldfinches frolicked in the meadow. With the height of summer came the drought. The meadow was mown to keep the area lean and to create light for the next season. We look forward to seeing how our patch of flower meadow develops next year.

How to pack efficiently

B.E.G. works with AutoStore

If you are on the road in Lindlar's Klause industrial estate, you can hardly miss the warehouse of B.E.G. Brück Electronic GmbH. Even today, the warehouse covers the area of a football field, of which the newest 2,000 square metres were only expanded in 2020 for the company's anniversary. More than 2 million products leave the halls of the electrical engineering company every year and are shipped to customers worldwide.

Effectiveness plays an essential role in the logistics sector. Only companies that optimise their logistics process in the best possible way, control it efficiently and eliminate sources of error, manage to meet the high customer demands and work economically.

One system that promises support here is the AutoStore. The semi-automatic storage system, which was only introduced in 2020, moved into the B.E.G. hall and has been supporting the entire logistics process ever since. There are a total of 5,000 container storage spaces here, stacked next to and on top of each other. These are automatically made available by the merchandise management system to the dispatch staff on an order-related basis for the compilation of the order.

Especially in recent years, the order volume has increased steadily. Therefore, it was a matter of course for us to support our employees in the best possible way and to relieve them by using the AutoStore. However,

they still play the decisive role when it comes to customer-friendly packaging. Every day, they label and ship around 150 parcels, which are packed with the help of the Auto-Store. We are proud to be able to offer our customers even faster delivery through the use of the semi-automated storage system and are excited to see how logistics centres of the future will develop.

BNP Paribas Fortis –
Intelligent building solutions for one of the most modern bank buildings in the capital of Europe

Around 2,000 international companies have their European headquarters in Brussels. In addition to its strategic and political importance, this makes the European capital one of the most important international financial centres. Therefore, it seems almost natural that the French-Belgian banking group BNP Paribas wanted to set an example with the construction of its new building in the financial centre.
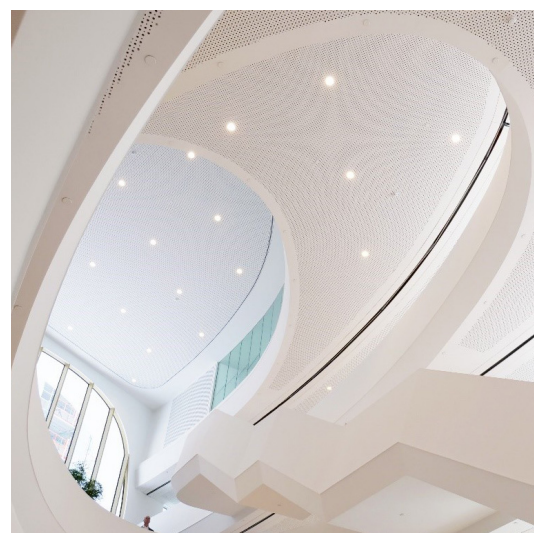
BNP Paribas decided that the greatest added value would be achieved by constructing a new building on the same site. The latest environmental and energy standards and a balance between ecological, economic, aesthetic and social aspects were to be incorporated into the building design. The previously existing bank building from the 1970s was outdated and did not meet the requirements.

No less than 4,500 workplaces could be created on a total area of 100,000 sqm, about 70 % more than before. There is space for an auditorium, a conference centre, an underground car park for 268 cars, 40 motorbikes and 330 bicycles, and a shopping arcade. Investments in design, recreational spaces, connectivity and comfort ensure a pleasant stay at the new BNP Paribas Fortis headquarters.
In keeping with the sustainable concept, BNP Paribas Fortis received building automation via KNX and sensors from B.E.G. Networking of building components such as heating, air conditioning, blinds and lighting is now mandatory in Europe for buildings of this size. After all, where people spend the majority of their time, there is a high potential for development and savings.

In the BNP Paribas Fortis building, the two B.E.G. models PD2N-KNX and PD4N-KNX were chosen in particular. With two integrated light sensors, these KNX models achieve very precise light measurements. This makes them particularly suitable for interiors with difficult lighting situations, such as the corridors and striking staircases of BNP Paribas Fortis, where light enters from several window fronts at once.

A particularly high energy saving of about 80 % as well as a high hygiene quality can be achieved by presence detection in toilet rooms. Here, the Belgians relied on the B.E.G. PD3N detector. Light is switched on in these rooms without contact and only when people are present.

After a defined follow-up time, the lighting switches off automatically. The overall concept of the sustainable, green banking group headquarters also won over the MI-PIM Awards in Cannes. This recognises the world's most outstanding real estate projects. They are considered the best the industry has to offer. That the BNP Paribas Fortis building won the gold medal is a remarkable but well-deserved achievement. ◼

Simplastic – B.E.G. DALI-SYS in the production facility of the Portuguese industrial company


Simplastic specialises in thermoplastic injection moulding, assembly of components and finished products. Now the Portuguese company has built a new 10,000 sqm production facility. For lighting, natural daylight was to be incorporated in order to save energy. At the same time, manual override of the light values was to be made possible via the control centre or the respective machine operator.

Simplastic opted for the B.E.G. DALI-SYS lighting control system. DALI-SYS is a modular, networkable system that can be scaled as required. The components are addressable and operate according to the principle of distributed intelligence. DALI wiring is independent of group formation. This means that changes can be made quickly and easily without rewiring. With B.E.G. DALI-SYS, rooms, areas or even the entire building can be controlled with standard push-buttons or via PC / smartphone.

Simplastic has four large zones in the production hall, which are divided into further areas. Each sub-area and the associated groups are to be controlled manually by employees and also centrally (via PC and push-button). In addition, there is to be a night mode in which some luminaires are switched on at 20 %. To ensure this, PD4N DALI-SYS detectors, DALI-SYS push-button modules and other system devices are used in the four zones. ◼
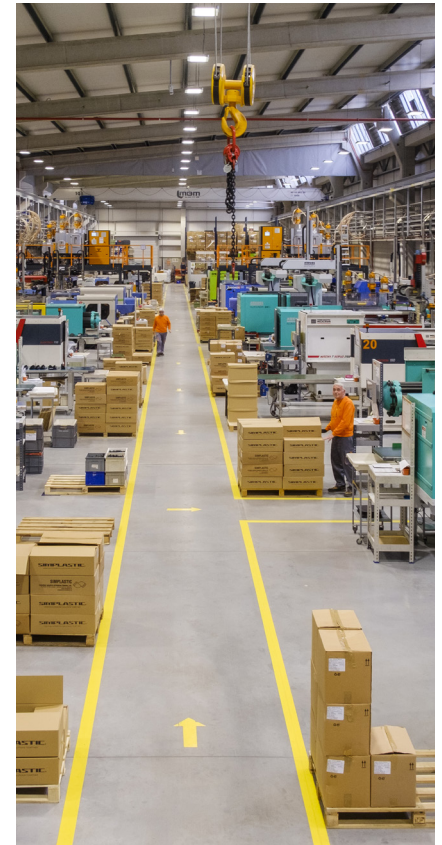
New: KNX Generation 7

B.E.G. presents a new KNX generation that, in addition to the proven functions of the previous models, contains innovations that make building automation easier than ever.

KNX Generation 7 inspires not only with KNX-Secure, but also with light to feel good, which is created through the use of HCL technology. Already in the previous generation KNX Generation 6, the light control was improved and the software-based control of the individual motion sensors was realised. This spares the installer the need to climb a ladder and the time-consuming installation of the lens cover.

The hardware is optionally available with an integrated microphone, a temperature sensor and internal LED for orientation and night light functions. In addition to the PIR sensors, acoustic signals can also be used for movement detection.

A new feature is that the optimum room climate is created in every room. The Generation 7 detectors convince with an integrated temperature sensor, through which individual room temperature control can be realised.

GEN7

An integrated offset control enables the setting of different brightness levels within a room. In addition, complex links can be created via the fully integrated logic module.
Maximum possibilities are also offered by the remote control options, with which keys for special functions can be freely programmed. Communication is bidirectional, which makes it easy to read out the detectors. The settings can be taken over and changed directly from the detector.

KNX Generation 7 - the secure solution for automated buildings!

Buildings should not only be intelligent, but also safe and secure. All KNX Generation 7 detectors therefore feature KNX-Secure, which prevents unauthorised access to the various KNX media.

May we introduce?
Our all-round talent for a healthy room climate: PD2N-KNXs-OCCULOG®-DX

The PD2N-KNXs-OCCULOG®-DX helps to increase concentration and well-being by reducing vapours and odours (VOC = volatile organic compounds). An LED traffic light with the colours green, yellow and red was installed in our KNX occupancy detector of Generation 7 for this purpose. When a critical value is reached, the device warns by changing colour. Measured values are sent to the bus and can be used for ventilation control, for example. The sensor also has reliable presence detection for efficient lighting control, whereby the light colour is regulated by means of integrated HCL control. The RGB control creates a feel-good atmosphere in the room via colour-matched ambient lighting. ■

Energy efficiency, atmosphere and flexibility for open-plan offices and function rooms

The new, Bluetooth-controlled B.E.G. PD4N sensor models

Today's electrical contractors planning lighting installations have to take into account not only current energy efficiency requirements but also modern workplace demands. Cost-efficient energy saving can be marketed to the building owner just as well as flexible solutions for any future uses. Such a modern system is made possible by the use of sensors. Here, B.E.G. Brück Electronic GmbH has expanded its popular PD4N occupancy and multi-sensor series with two new, Bluetooth-controlled Casambi versions: PD4N-CAS DALI-2 and PD4N-CAS can be quickly and easily operated wirelessly via the Casambi app.

In large rooms, there are often very different lighting situations. At window fronts, daylight illuminates the room; near interior walls, there are rather dark areas. Constant lighting conditions are desired, e.g. according to DIN EN 12464-1. B.E.G. Brück Electronic GmbH's PD4N sensors master such difficult lighting situations with no less than two light sensors. They ensure reliable constant lighting control. If areas are not being used, the lighting can be dimmed or switched off. This helps to reduce energy consumption and conserve luminaires. Building system technology is becoming more and more diverse, and so is B.E.G.'s range.

Now the Casambi versions PD4N-CAS and PD4N-CAS DALI-2 are coming onto the market. The built-in Bluetooth modules enable wireless control via the Casambi app. Following the enthusiastic acceptance of the Casambi-enabled PD4 models for halls and rooms with high ceilings in the previous year,

B.E.G. is expanding its product range with the Finnish partner.The prospects here are also promising: instead of switching light in open-plan offices and event rooms, it may now also be staged - light colour and intensity can be individually adjusted. The PD4N-CAS DALI-2 version has an integrated DALI-2 power supply to which DALI control gear can be directly connected. The individual devices, which are also visible as luminaires in the app, can be logically networked with each other. There is no need for a physical connection via the DALI bus. The PD4N-CAS model does not have a DALI-2 voltage supply, but otherwise has the same sensor functions. It can also be wirelessly linked to all devices after connection to mains voltage. The adaptability of PIR sensor sensitivity, reflection factor and the weighting of the two light sensors enables the optimum setting for every application. This opens up completely new freedom for lighting control. The Casambi app is used to control the

nearest device in the mesh network, which takes over communication with other devices. Desired lighting scenes and extensive automatic functions can be quickly realised via Casambi. In addition, other Casambi-enabled devices, such as wireless push-buttons, can also be integrated.

For those who like to use luminaires, push-buttons and sensors within a pure Casambi network, the PD4N-CAS is the perfect device for use in large rooms. B.E.G. will be happy to advise you on your specific project. Please contact us!

B.E.G. presents occupancy detectors in new colours

Parts of the LUXOMAT®net detector range are now available in a total of three additional colour variants.
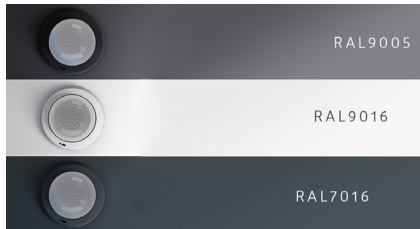
Pure white, traffic white, anthracite and deep black. These are popular colour shades that are always used in architecture. In addition to white, further colour shades can now be selected to meet architects' wishes.

In our projects, the need for occupancy detectors in traffic white or dark colours arose more and more frequently. Especially for large common rooms such as hotel lobbies or modern offices with black elements, which are often part of the modern industrial style, detectors are needed that integrate into the overall appearance of the room.

. For B.E.G., excellent service means implementing customer wishes. This is how the colour adaptations of the PD2N and PD4N detectors from the BMS DALI-2, DALI-LINK, DALI-SYS, DALI-Kompakt and KNX families came about. Thanks to the colour variant accessories, the products can be integrated even better into your building architecture in the future and are thus hardly noticeable.

All those who value an inconspicuous and modern look can now look forward to more design freedom. ▪

New edition of our brochures

The KNX brochure and the DALI brochure published by B.E.G. are so beautifully new.

KNX - In addition to the latest information on KNX Generation 7, HCL and KNX-Secure, the B.E.G. team is focusing on interactive features in the application examples, which can be discovered via QR code.

DALI - The DALI brochure answers all questions about professional lighting control.

"It was particularly important to us to emphasise the sustainability concept that we at B.E.G. pursue in all our projects, also in the new editions of the brochures. The cost of rising energy prices affects us all, which is why we want to show the savings potential for buildings as clearly as possible," says Christoph Börsch, Senior Product Manager KNX. ▪

We have even more news for you!

From now on, we will regularly send out the exclusive B.E.G. newsletter. Here you will not only get exciting insights behind the scenes, but you will also be the first to hear about our training dates, latest projects and products. We also report on the topic of energy saving and comfort with professional lighting control.

Would you like to stay up to date on all B.E.G. things? Then register here for our newsletter! By the way: we won't overflow your inbox - we promise! We look forward to hearing from you. From now on, the customer newsletter is also available in Spanish, Italian, English and Hungarian. ▪

Enormous savings potential in buildings

Saving energy with added comfort and safety is possible

Motion detector

Occupancy detector

Occupancy detector DALI

Occupancy detector HCL2
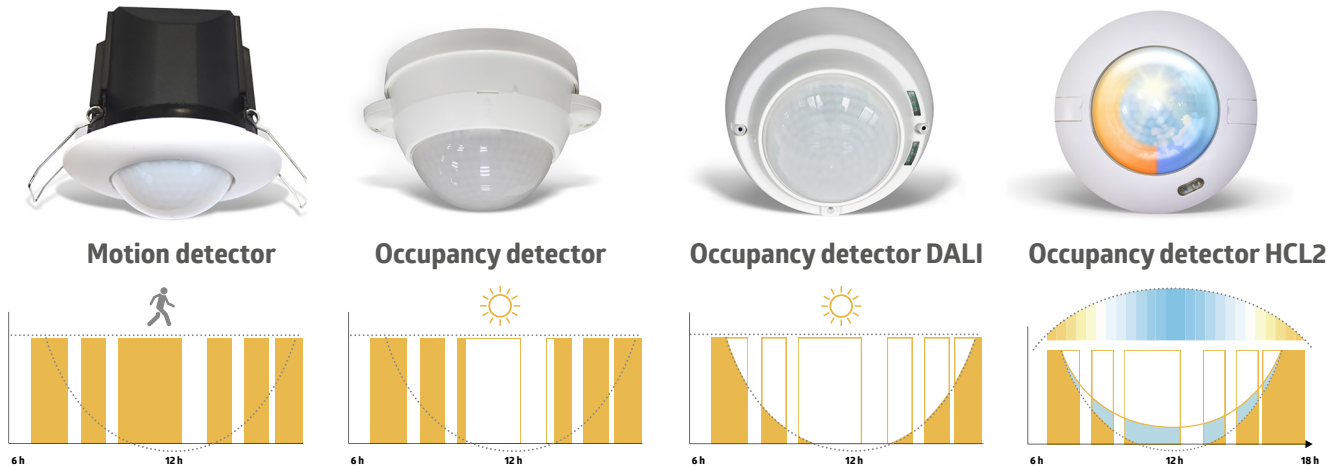
Buildings exposed as climate killers

The demand for environmentally friendly energy sources is huge. With 35 % of energy consumption and 38 % of global emissions, the construction and operation of buildings is the number one climate killer. This is according to the summary of the UN environment programme's Global Status Report 2020 for Buildings and Construction. Compared to the urgent need for optimisation, current investments in energy efficiency in the building sector are minimal. In 2020, the IEA estimates an investment growth of just 2 % worldwide. The only way to achieve climate neutrality is through fast, intelligent solutions. Some already exist - even those that are simple and inexpensive.

Intelligent lighting control

Lighting offers a high potential for optimisation in buildings. Intelligently controlling LED lighting with a sensor system saves additional energy. Here, on average, around 50 %, and depending on the type of room, up to 80 %, of the previous energy costs for lighting can be saved. The low investment costs of occupancy detectors pay for themselves very quickly through the energy savings and a longer service life of the luminaires. At the same time, the savings are accompanied by an increase in safety and comfort. How is this possible?

Motion detectors in corridors

How many corridors of public buildings are permanently lit during opening hours? Lights only where it is needed, is the idea behind the B.E.G. motion detector. It measures the natural infrared radiation of bodies, detects movement and switches on the light. It saves lighting during the periods when no one is moving in the room. Lights off in empty corridors saves energy without loss of comfort. On the contrary, there is no need to operate a wall switch for such rooms. This is hygienic and convenient.

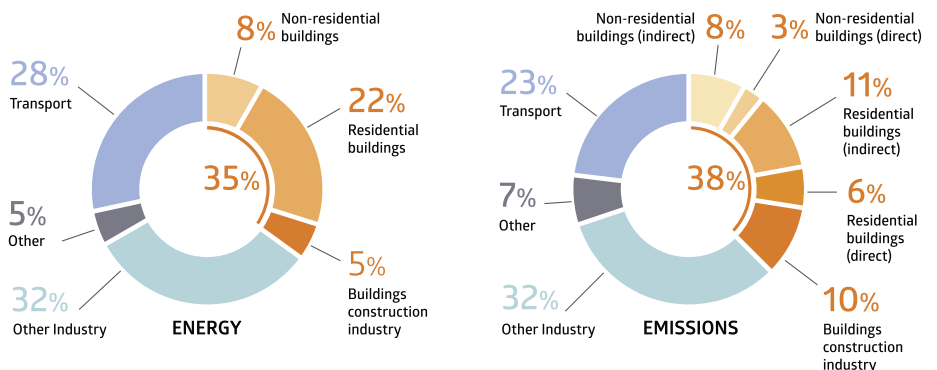## Occupancy detectors within a BUS system such as KNX or DALI

A further development of the motion detector is the occupancy detector. Occupancy detectors are used, for example, where people stay in rooms with daylight for a longer period of time and energy is to be saved. These can be classrooms, kindergartens, offices or conference rooms. Occupancy de-

tectors detect the slightest movements and also permanently measure the brightness. If there is sufficient daylight in a room, the detector automatically controls the lighting, i.e., the light is dimmed or switched off even if people are still in the room. This consistently and automatically saves energy. A high energy saving of 80 % is possible in public toilets, for example, where nobody wants to switch off the light. About 50 % can be achieved in offices where no one interrupts work when the sun illuminates the office.

Concentrated work in classrooms or offices

300 lux is the illuminance for reading and writing work according to DIN 12464 for classrooms. But constant lighting conditions do not prevail in classrooms with three light ribbons: Seating areas on the window front benefit from natural daylight, whereas workplaces on the wall side tend to be

Global share of buildings and construction final energy and emissions, 2019

ENERGY

- 8% Non-residential buildings
- 22% Residential buildings
- 5% Buildings construction industry
- 32% Other Industry
- 5% Other
- 28% Transport
- 35%

EMISSIONS

- 8% Non-residential buildings (indirect)
- 3% Non-residential buildings (direct)
- 11% Residential buildings (indirect)
- 6% Residential buildings (direct)
- 10% Buildings construction industry
- 32% Other Industry
- 7% Other
- 23% Transport
- 38%

Global share of final energy and emissions from buildings and construction, 2019 Fig.: 2020 Global Status Report for Buildings and Construction, United Nations Environment Programme; adapted from "IEA World Energy Statistics and Balances" and "Energy Technology Perspectives" (IEA 2020d; IEA 2020b)

shaded. This can be remedied by controlling the lighting via DALI. DALI is the professional bus system for lighting control. It can be easily integrated into many public buildings without complex wiring. The ceiling-mounted B.E.G. PD4-M-DAA4G DALI occupancy detector has been designed for difficult lighting situations. It can be used, for example, to control the three lighting strips of a classroom differently so that a uniform illumination of 300 lux is possible. No one has to worry about saving energy any more: The sensor does this automatically by dimming and switching. In addition, the teacher's workstation in front of the class can be individually illuminated. This enables individual lighting atmospheres for presentations. The lighting can be controlled via the wall switch, a remote control or an app.

Increasing well-being with HCL

Modern lighting focuses on human needs. As recently as 2002, researchers discovered receptors in the human eye that influence the day-night rhythm and hormone release. Light with a warm colour temperature promotes melatonin release and thus relaxation. Cold white light promotes alertness and concentration. Human Centric Lighting (HCL) ensures a healthy biorhythm throughout the day. The natural colour change from a warm white in the morning to cool white midday light and back to warm evening light is now also simulated indoors. Not only the residents of senior citizens' homes benefit from this in everyday life, but also our children. Before toddlers take their afternoon nap in the kindergarten, for example, a warm colour temperature also helps them to relax. The B.E.G. DALI PD4-M-HCL2 occupancy detector can change the light colour of DALI luminaires with Tunable White function in addition to presence- and daylight-related lighting.

Feel good with KNX sensors – comfort in all areas

Anyone interested in a new building or renovation with new wiring should consider integrating a KNX bus system: Energy savings and the highest form of comfort are possible via KNX.
The PD2N-KNXs-OCCOLOG occupancy detector is the multi-talent for building automation. It can regulate the light colour by means of integrated HCL control. It also measures air quality, humidity and is a temperature controller at the same time. The lowering of the room temperature in case of absence, the switching on of an air-conditioning system or the automatic opening of windows in case of poor air quality can be triggered by follow-up programming.

Modern sensor technology for every building

No large building project is planned today without a building automation system. Our products are known for their high quality and functionality and are available for a wide range of applications. For complex projects in the commercial and public sectors, you can rely on the experience and support of B.E.G. Brück Electronic GmbH.

Torre Caleido

The fifth tower of the new business complex "Cuadro / Cinco Torres" in the north of Madrid

With a height of 181 m, the Torre Caleido is the seventh tallest building in Spain. It is the fifth tower in the up-and-coming business complex on the Paseo de la Castellana and, despite its impressive height, the smallest. This is because the architecture studios Fenwick Iribarren and Serrano-Suñer Arquitectura want to impress above all with design and modernity combined with a large green area. Two long main sections form the horizontal base of the tower.

The building has met LEED GOLD certification, among others by using natural light with the help of B.E.G's advanced lighting control system. Facial recognition, intelligently controlled lifts and air filtration and ventilation systems are incorporated.

It is expected that more than 3 million visitors will visit the 70,000 sqm Caleido complex annually.

The project, in the shape of an inverted T, will be divided into four areas:

- an educational area with 35 floors, which will be used by the IE Business School (Business School of the Instituto de Empresa) – a health area with a focus on wellness and fitness (Quirón Salud Clinic).
- an underground car park with over 2,000 parking spaces,
- a business area with restaurants and shops under the green roof of the horizontal part of the building.

Founded in 1973, IE Business School offers up to 6,000 students from 131 nations a place to learn in 64 flexible classrooms and 50,000 square metres of state-of-the-art technology. Around 75 % of the students come from abroad. The teaching institution offers several MBA programmes and is one of the leading and most innovative business schools worldwide. The university was ranked 6th in the world in Forbes' 2019 Best Business Schools List. In addition to classrooms, there are also special spaces, including a start-up area, an area for architecture and design projects and a large auditorium for 600 students. There are also sports facilities, meditation corners and exhibition areas, and a 7,000 square metre green space. They serve to promote or relax and take studying to a new level. "The first step towards your future" not only adorns the entrance, but is also lived at IE with this location.

B.E.G. gets the nod

The Spanish team from B.E.G. was able to prevail over competitors among the decision-makers and was allowed to participate in this extraordinary project. In addition to the IE Tower, the sports facilities, the swimming pool and the lifts were also equipped. The technology used in the Torre Caleido was KNX, a globally proven bus system within building automation. KNX enables the uniform networking and visualisation of intelligent devices.

The B.E.G. KNX occupancy detector **PICO-KNX-DX** was able to convince with its appearance, lightness and size in the Torre Caleido. The PICO is one of the smallest KNX detectors in the world.

Despite its diameter of only 33 mm, it has a range for motion detection of 10 m transversely, 6 m frontally

and 4 m for seated activities. This means that it detects even the smallest movements, such as the operation of a computer mouse. In addition to a light output (controllable or switchable) and a slave output for extending the detection range, the PICO-KNX-FC also has three HVAC outputs with which energy-intensive systems such as air-conditioning units can be controlled. The light output can be used both as an occupancy detector and as a twilight detector (motion-independent control/switching).

The B.E.G PICO-KNX-DX also has functions such as a temperature sensor, presence simulation, corridor function, orientation light function, short presence and self-adjustment of the follow-up time. The short presence, for example, can save additional energy. The follow-up time is reduced to an adjustable percentage if a room is only entered briefly, e.g. to fetch something. Starting with Generation 7 (2022), KNX-Secure, RGB and Human Centric Lighting will be supported in the B.E.G. KNX family. For the architect of the Torre Caleido, the small detector proved to be a stroke of luck. Since very large ceiling panels were used, it had to be ensured that the respective panel would not sag over time due to the weight of a detector. Weighing only 14 g, the B.E.G PICO-KNX-DX was ideal and was integrated in all rooms where detectors were planned. The flexibility of the functions was also convincing in the project planning. With the help of BIM, the building was digitally modelled in advance. BIM, Building Information Modelling, is a planning method that is increasingly becoming the standard in the planning of large projects worldwide. In the process, all alphanumeric properties of the planned building are represented. This data is automatically kept up-to-date. This gives all parties involved access to the current status of the planning and to background information on the basis of which further decisions can be made. B.E.G. makes the BIM data available for product information of many B.E.G. occupancy and motion detectors via its own website. The combination of bus systems can help to save costs. In the Torre Caleido, over 15,000 DALI luminaires were thus installed in addition to KNX. A gateway is used to control these with KNX. It connects the KNX bus with the DALI bus designed for lighting control. Each B.E.G DA64-230/KNX REG gateway can switch and dim up to 64 ECGs in 16 groups. Scene control of individual ECGs is also possible. In addition to RGB and Tunable White, the B.E.G. DA64-230/KNX REG gateway also supports the B.E.G. DALI-LINK multisensors.

In the corridors of the IE Tower, the light is controlled by the PICO-KNX-DX depending on daylight and presence. If no more movement is detected, the so-called orientation light is switched on. The lighting is dimmed down to a value of x % as soon as the room is no longer occupied. This state remains permanently until the next movement or the light is switched off after a preset time without detecting movement again. A calendar function can also be used to implement a night mode.. Especially in large projects such as the Caleido Tower, an orientation light is often used to visually illuminate the building. The lighting of the IE logo on the façade is automatically switched on in the evening by the B.E.G. KNX switching actuator SA 230/16/H/KNX REG with a calendar function. Individual luminaires are also switched on and off with switching actuators. This is done, for example, when illuminating screens for presentations or in technical rooms and cellars. With the calendar function, the light is automatically switched off at a preset time in the evenings when there are no more classes and, in addition, no movement is detected in the surrounding areas. This affects the refectory, for example, where the B.E.G. PICO-KNX-FC only functions as a twilight detector and thus only regulates the light to the desired brightness depending on the natural daylight.

The offices and meeting rooms were equipped with B.E.G. KNX occupancy detectors PICO-KNX-DX and B.E.G. KNX push-button interfaces PBM-KNX-DX-4W. The advantage of a push-button interface compared to KNX push-buttons is the free choice of switch programme. This means that the desired design and an interface with 4 channels for several rooms can be used. The detector can be operated in full automatic or semi-automatic mode. In the full automatic mode, the light switches on when there is movement and the brightness falls below the desired value.

The user can manually switch the light on or off or dim it by means of a push-button. In semi-automatic mode, the lighting is always switched on via the push-button. Then, as in full automatic mode, the follow-up time is restarted with each movement and the lighting is switched off after the follow-up time has elapsed (last movement + set time). At IE, it was decided to use the semi-automatic mode and the regular mode. This means that the lighting is regulated to the desired brightness value, e.g. 500 lux, depending on the daylight.

 If the amount of daylight increases, the amount of artificial light decreases accordingly and vice versa. If there is enough daylight, the artificial light is switched off in spite of movement and possibly switched on again later if the level falls below the set value.

In addition, the air-conditioning systems are also controlled according to movement in order to additionally save energy in the sunny Madrid. In October 2021, the IE Business School was opened in the Torre Caleido in the presence of Felipe VI, King of Spain, and António Guterres, Secretary General of the United Nations. The Secretary General describes the IE Tower as "a symbol of the importance of education, a place of learning, knowledge generation and answers to the challenges of humanity".

Agathe Jumpertz, Technical Sales at B.E.G.

Bakkerij Wouters

Bakkerij Wouters sells delicious baked goods at 14 locations in the province of Antwerp, Belgium. The chic administration building leaves nothing to be desired and receives a modern lighting control system with DALI-LINK.

The bakery chain's office space is also getting bigger, which benefits customer service and team management. The construction of the new administration building in Kalmthout is a major sign of growth and further development. The new administration building of Bakkerji Wouters, built in 2022, consists of two floors, with various offices on the ground floor and the showroom, counter and bar on the first floor.The aim of the project was to create a special atmosphere in the premises. Together with the client, the decision was made to use DALI-LINK - simple installation as well as control via a free app support the project team's decision. It was particularly important to the client that the lighting can be subdivided so that certain parts of the office are illuminated individually and at different intensities. A simple solution with far-reaching functionalities - that was the requirement set by the client. Sensors for daylight- and motion-dependent lighting control were integrated within the administrative headquarters. With Guided Light, the user is safely enveloped in a cloud of light as he makes his way through the building. Lighting scenes can be set quickly and easily. ■
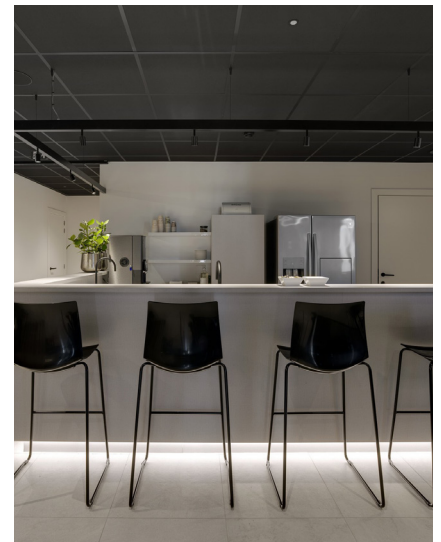
Understanding DALI and avoiding mistakes

The range of control systems and communication standards is very extensive and, for some, unmanageable at first. Anyone who is concerned with intelligent lighting control will become aware of DALI. This is because DALI is the widely used professional tool for lighting control, and DALI will certainly convince. DALI is robust, very installation-friendly and, under the new auspices of the "DALI Alliance" (DiiA - Digital Illumination Interface Alliance) almost four years ago, has been given a forward-looking stability and interoperability: With the DALI-2 standard, not only LED drivers but also control devices must henceforth comply with the certification. Device types such as push-buttons, light sensors or motion sensors are thus defined in the standard. This makes it possible to combine products from different manufacturers and put them into operation.

With our two-part DALI series, we would like to help you understand DALI and avoid or correct errors. Let's take a practical look at DALI.

A question of communication

The abbreviation DALI stands for "Digital Addressable Lighting Interface". In addition to the word "lighting", the "interface" is particularly noteworthy. In contrast to many other systems, DALI does not standardise the commissioning and application method, but only the communication.

Let's compare the devices that are networked via DALI with our linguistic means of communication. Communication involves not only speaking but also listening and understanding.

In the DALI world, there are controllers that have different capabilities. On the one hand, there are devices that can only issue a command to luminaires. This is where they differ from the DALI controllers that are capable of highly complex communication. Intelligently, these controllers manage processes of a DALI application and can themselves translate into other systems. A third product group has no means of communicating with products that are unknown to them. These third products may also be labelled as DALI devices, but work with many proprietary signals.

A typical communication problem occurs, for example, when in a decentralised control system (such as DALI-LINK), DALI broadcast sensors such as the B.E.G. PD4-M-DALI-DSI are connected (DALI compact detectors). Then there are two application controllers in a network that cannot communicate with each other. To avoid DALI errors, it is important to know what capabilities the devices have.

In the following, we will go into the most important categories and system properties.

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The application controller as a link in the system

There are **Sensors** such as occupancy sensors, push-button inputs or visualisations **Application controller Actuators** such as luminaires, relays and dimmers

While the sensors scan the environment, the actuators are the executing organ and react in the application. The link between sensor and actuator is the application controller. It takes over the control. The application controller processes all signals from the sensors and decides how the respective actuators should react. If a brightness sensor detects less light, for example, the sensor transmits these values to the application controller. The controller assigns a new dimming value to the actuator, the luminaire, in order to keep the illuminance constant.

Often a sensor and an application controller are built into one product, occasionally also an application controller and an actuator. A DALI product that combines all three properties would also be theoretically conceivable.

In practice, there are sensors that simultaneously provide an application controller in broadcast mode, e.g. the B.E.G. PD4-M-DALI/DSI-GH. This is particularly interesting for simple stand-alone applications without central functions. Only a little prior knowledge is required to put such applications into operation.

Figure 1: Application controller and sensors
For devices with an application controller, a differentiation is made between "single-master" and "multi-master"

Single- and Multi-Master

The name "single master" describes an application controller that manages and controls a system on its own. It does not accept any other application controllers on a line. In this case, it is also not permitted for participants of a DALI line to communicate independently on the line. An example of this is a sensor with an integrated application controller or a mere application controller that can issue commands to luminaires. A push-button or second sensor cannot be networked via DALI. The connection is usually made directly to the application controller. For the system integrator and electrical installer, such a solution is easy to put into operation. Multi-master operation (Figure 2, right) allows active communication on one line for several participants.

This is particularly interesting and important when it comes to commands that are time-critical. Such commands are needed, for example, for push-buttons, motion detectors, smartphones or similar. The actuator should react immediately as soon as someone presses a push-button or is detected by the motion detector
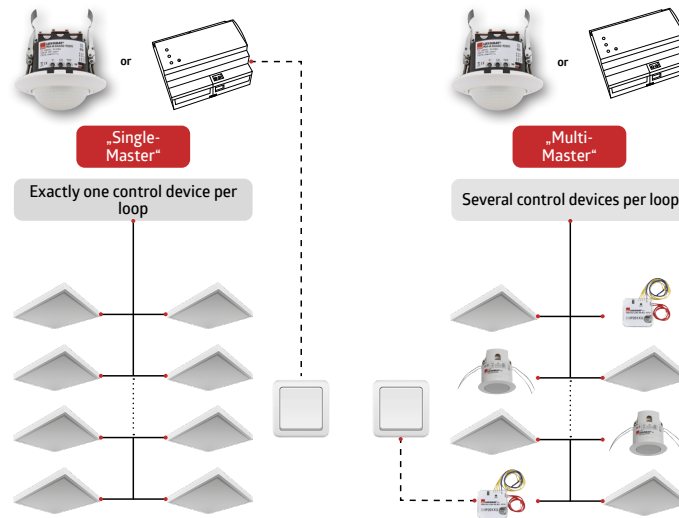
Figure 2, left: Single-master with exactly one control device on one line, right: multi-master with several control devices on one line

Central and distributed intelligence

If we now imagine that we have several multi-masters on a line that contain an additional application controller, we speak of distributed intelligence or decentralised control. Here it is crucial that in distributed intelligence the devices can work together. Examples of this are B.E.G. DALI-LINK and DALI-SYS. All participants are coordinated with each other and know how to work in detail. Distributed intelligence provides a significantly higher level of fail-safety. If an application controller fails, there is often another application controller that can ensure simple basic functions.

Since distributed intelligence is more expensive to develop, decentralised DALI systems are often not used. Most systems on the market are centrally oriented. Products from different manufacturers can therefore work together more easily because only one application controller makes the decisions. Sensors such as B.E.G. BMS DALI-2 operate in multi-master mode and supply all important information to the application controller

Broadcast and Multicast

When designing products, it must be checked whether the application controller supports only broadcast or also multicast telegrams. Broadcast are simple telegrams that distribute the command equally to all luminaires. Such a command could be "Switch all luminaires to 80%". With multicast, it is possible to define up to 16 groups and control them. A broadcast application controller such as the B.E.G. compact detector is easy to handle because no addressing or grouping is required. However, broadcast application controllers are not quite as flexible and versatile as a multicast system (e.g. B.E.G. DALI-LINK).
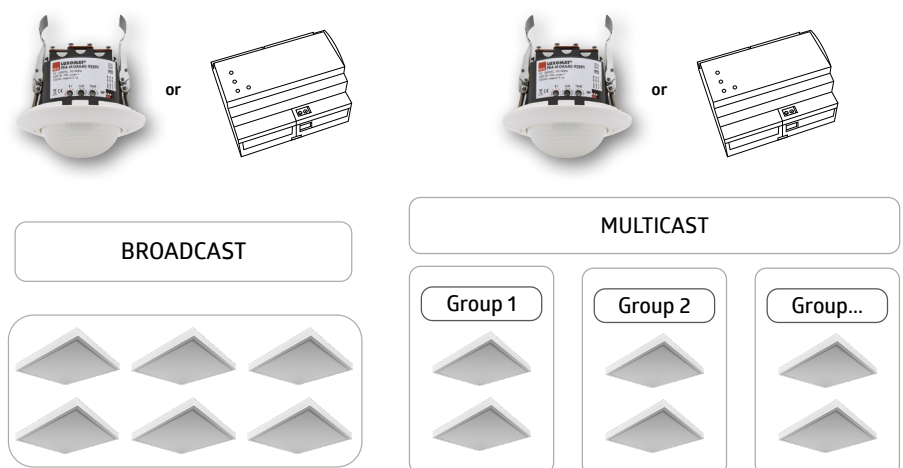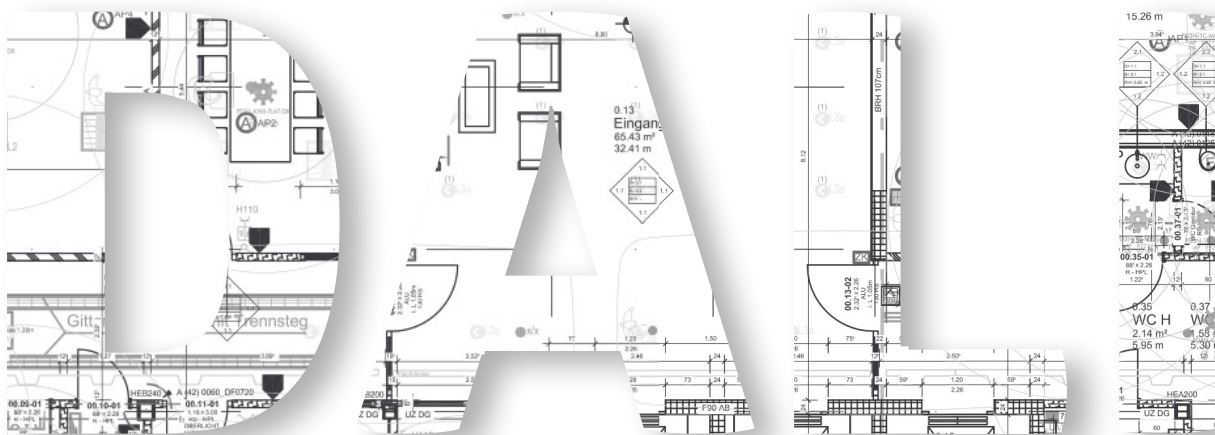

Figure 3, left: Via a broadcast telegram, all luminaires are assigned the same properties, right: With a multicast telegram, up to 16 groups with different properties can be defined.

Topology and technical properties

DALI is a system that is not prone to errors. This means that installation is very easy. DALI is protected against polarity reversal and does not require any shielding. DALI can be wired with NYM cable from a cross-section of 1.5 mm² up to a length of 300 m in a "free topology". No ring or meshed topologies may be used.

According to the current DALI-2 standard, the number of participants is limited to 64 actuators and 64 sensors/application controllers. These specified values cannot be achieved in reality for various reasons. Apart from high data traffic with many connected sensors, the main reason for reduced number of participants is the current.

DALI power supplies may deliver a maximum of 250 mA. Depending on the application and manufacturer, this value is usually between 100 mA and 240 mA. Often the application controllers already have an integrated power supply and a DALI power supply unit does not have to be connected separately.

Figure 4: Positioning DALI power supply unit, left: 230 V connection, right: DALI BUS-operated

In contrast to ECGs/control gear, sensors do not have a predefined maximum current. Here it is recommended to take the manufacturer's data sheet into account during planning. Typically, the values are between 5 and 10 mA. Ballasts for luminaires, however, are limited to a maximum current consumption of 2 mA. An example illustrates how the maximum number of participants is determined:

64	Control gear units at 2 mA	➜	128 mA
10	Multisensors at 8 mA	➜	80 mA
8	Button modules at 4 mA	➜	32 mA

If the current is cumulated, the required current finally amounts to 240 mA. Thus, a relatively large power supply unit is needed to meet this requirement. It should be emphasised that this design is by no means a planning recommendation. A reserve should always be provided. For this purpose, we suggest planning at least a buffer of 30 mA. The full use of 64 short addresses for the actuators should be avoided in order to be able to make smaller changes flexibly in the future. Thus, with a 240 mA DALI power supply unit, the following layout is conceivable:

60	Control gear units at 2 mA	➜	120 mA
7	Multisensors at 8 mA	➜	56 mA
8	Button modules at 4 mA	➜	32 mA

DALI – Avoid mistakes

The DALI lighting system is set up, but it doesn't work as it should? Then the search for the cause begins. We are happy to provide assistance with tips that will help you significantly during commissioning and installation testing.

Troubleshooting can be easy

We are often helpless in the face of modern, digital systems. They seem too complex compared to conventional systems. Start with simple troubleshooting by switching and measuring.

Tip 1: Installation check by means of broadcast telegrams

The commands "Broadcast light on" or "Broadcast light off" are among the simplest DALI telegrams and enable a simple but effective installation check. By repeatedly switching all participants on or off, you can quickly determine whether the luminaires have a physical connection to the controller. Many controllers already have a push-button installed for this purpose, which you can use to switch the lighting of a DALI line without additional software. In case of anomalies, you can consider the following rule of thumb:

Luminaire always stays on = connection of the DALI line is not correct
Luminaire always remains off = connection of the power supply of the luminaire is not correct.

Tip 2: Put a diagnostic device in your tool bag

A diagnostic device can read out the settings of various devices on the bus and record telegrams by means of a monitor. It outputs an understandable translation. This means that a command such as "Group 1 - light to 80 % brightness" is easy to understand and can then be compared with the actual situation. In addition, it can be determined whether a luminaire is activated. If, for example, the light of a luminaire switches on without the diagnostic device recognising a command on the DALI bus, it is not the application controller that is causing the luminaire to switch on. You can find out which influences cause the luminaire to switch on, for example, in tips 5 and 6.

Tip 3: A Multimeter/voltage meter is still important

Even though a diagnostic device is required for accurate readings and analysis, you can use a multimeter to perform some installation checks.

1. Voltage difference:

The voltage difference between the DALI power supply unit and the DALI device furthest away must not be measured greater than 2V. If the difference is greater, the fault is often due to a line length that is too long, a cross-section that is too small or transition resistances at the terminals that are too high. Defective or impermissibly located devices on the DALI bus can cause the DALI voltage to drop.

2. Short-circuit:

A short-circuit on the line can easily be measured on the power supply unit while it is switched on. If the voltage is close to 0V DC, there is a short circuit.

Caution: During a telegram transmission, the voltage can fluctuate greatly. To get an unbiased result, make sure that during the test the application controller(s) do not transmit any or only little information.

Misunderstandings of the DALI participants

Even if at first glance it seems obvious to look for the cause of a conflict in the controller in a central control system, it often lies in the settings of the DALI participants.

Tip 4: Check the number of addresses of a luminaire

Your DALI commissioning system shows you 64 participants, but due to the typical localisation procedure (flashing) you cannot locate every luminaire? Maybe the number of channels of the ballasts does not match the planning. How many short addresses a luminaire needs depends essentially on which ballast is installed in the luminaire. A single luminaire may contain several ballasts that are directly wired together from the factory.

Or there are ballasts that have several channels - even if the luminaire itself does not need these channels. Make sure that the ballasts are provided by the luminaire supplier with the correct configuration. This will help you avoid basic errors. If an error occurs in the number of addresses, check the luminaires and their number of channels.

Tip 5: DALI setting within a ballast

System Failure Level, Power On Level, Minimal/Maximal Level and Fade Rate are just a few of the many possible parameters that can be set in a ballast.

These parameters occasionally have a higher priority than a telegram sent by the controller. For example, if the application controller controls that a luminaire dims to 100%, but in the ballast the luminaire has been limited to a maximum of 80%, only this 80% can be implemented. A diagnostic device helps to determine such undesired values. The diagnostic device can be used to check whether the telegram arrives at the luminaire with "light on 100 %" and how the individual luminaire was set

Tip 6: Luminaires are not controlled individually by DALI

DALI is a slow communication protocol. That is why it is very robust. To avoid luminaires in a room reacting at different speeds, luminaires in DALI are addressed with so-called group addresses. Almost all controllers use this method. If the light in a room is to be switched on via DALI, the controller simply sends a telegram to which all luminaires respond simultaneously. If users report that some luminaires switch on undesirably in the middle of the night, neither the controller nor the sensors are haunted.

As a rule, they transmit without error. An application controller rarely addresses luminaires individually. The scenario is explained by the fact that the luminaire loses the connection to the DALI bus for a brief moment. This causes the ballast to detect a fault and go into the so-called System Failure Level. This power value in the system failure level is usually 100 % in the factory setting. The luminaire continues to shine even if the connection to the DALI bus is re-established. Continuous row systems are very susceptible to this error because they are often just plugged in. However, if the connection has not snapped properly, for example, or if there are temperature differences or even small vibrations, the connection will become loose. The light switches on. Some controllers send the current set value every now and then, so the problem is minimised.

Note: As a rule, the system failure level should not be changed. Exceptions to this are bedroom luminaires, which could otherwise switch on during the night if the controller or power supply fails or if there is some other fault on the DALI bus ■

DALI devices from
different manufacturers

Finally, we explain how manufacturer-independent DALI devices can be planned.

Since the DALI-2 standardisation, there has been a product database on the official DiiA website that contains all registered products. Whether sensor, application controller or actuator - in the meantime, around two thousand DALI products are recorded in the database. These are described for planners and electrical installers with their compatibility to other DALI devices.

For example, it is very easy to determine whether a DALI controller from another manufacturer is compatible with the PD4N-BMS DALI-2 multi-master sensors from B.E.G. If you look at the sensor in the product database, you will find that it has been tested according to four DALI parts. Parts 101, 103, 303, 304 stand for the respective different requirements and communication standards that the sensor fulfils. On the website of the DALI Alliance there is also an overview graphic with a description of the most important parts. This overview shows that in addition to the general requirements for occupancy sensors, Part 303 and Part 304 are also supported. Part 303 stands for motion detection and part 304 again for a light sensor.

When searching for a controller that supports Part 303 and Part 304, we are now shown almost 60 application controllers. This ensures that the devices are compatible with each other.
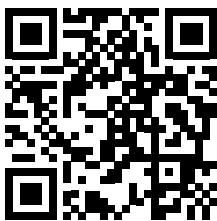
Try it out for yourself at:
https://www.dali-alliance.org/

Maintenance and servicing

A lighting installation is usually operated for decades. Over this period, minor failures can occur: A luminaire is defective, the sensor no longer detects people or the controller has a defect. Individual failures should not lead to a lighting system having to be completely replaced. It is much more important to document the system permanently so that individual devices can be replaced during decades of operation. The commissioning procedure for DALI is not standardised.

This means that the handling of maintenance and servicing is somewhat different for each system. This also means that the type of documentation can or should be different depending on the system. For example, if the system is a centralised system, it is often crucial that a backup of the controller is made. In the case of a decentralised system, it should be noted which task is assigned to the respective device in the system. If, for example, a sensor takes over the control algorithm, this must be documented. This documentation prevents a second sensor from being declared as the main sensor at the same time at a later date.

Since every system is maintained differently, the following content cannot necessarily be applied to every system. However, an attempt will be made to address a few generally applicable methods.

Tip 7: Write down short and group addresses
If the application controller does not only communicate

via broadcast telegrams, each device in a DALI application will have a short address and/or a group address. Even

though many controllers only manage and direct the addresses in the background, it is advanta-

because the application programme can get lost or the commissioning and software version is not at hand at the moment. In such cases, it is often sufficient to reinsert the short and group address of an ECG. If scenes are used in the application, make a note of these values as well. Some application controllers or commissioning tools already offer you the possibility of saving all important parameters in PDF format very easily.

1. Reading in and naming all DALI participants
2. Creation of the various groups
3. After parameterisation
4. Before initiating a fault analysis
5. Before replacing DALI devices
6. Before a system update. Of course, the safety points can be flexibly extended and are also highly dependent on the respective system. ■

Tip 8: DALI devices save settings

Each DALI device saves settings that can be read out. This means that if the application program is lost, the entire system does not have to be set up again. Especially with smaller applications, you get a good overview as soon as the existing DALI system is read out. By briefly locating the individual group addresses, it is possible to quickly find out the assigned room and the respective function. So if the assignment matrix of the short and group addresses gets lost, keep calm.

Tip 9: Frequent backup

As with office computer programmes, it is advantageous to save the application regularly. Make backup copies and create a separate backup at the following commissioning and maintenance points.

geous to make notes of all short and group addresses. Use a site plan or the unit list for this purpose, for example,

Daniel Grabasch, System consultant at B.E.G.

NETx at the headquarters of B.E.G. Brück Electronic GmbH

Climate protection, efficiency, comfort and flexibility through building automation

The path to climate neutrality is through building automation solutions. This is where the greatest potential lies, because the construction and operation of buildings is the number one climate killer, accounting for 38 percent of global emissions.

Building automation means an investment in the future. Those who previously thought that the extraordinary gains in comfort and safety were a "nice-to-have" - one could do without sensors, actuators and software, but after many years of tried and tested electrical installations many are now convinced by the urgent need for flexibility, cost efficiency and energy savings.

Building automation makes the use of a building a lot more flexible. Control can take place digitally. Changes can be implemented quickly and cost-effectively with less effort.

In a building in which sensors perceive their environment, energy can be saved in areas where no use takes place. In addition, weather data and existing lighting conditions can be incorporated to prevent energy waste. The savings also mean an increase in comfort for the building user, because there is no need to worry about functionalities such as air conditioning, lighting or security as everything runs automatically. Since renewable energies are not sufficient to satisfy the current hunger for energy, this is a key to achieving the climate goals.

There is also plenty of potential lying dormant in industrial and administrative buildings. The buildings of B.E.G. Brück Electronic GmbH in Lindlar, for example, are becoming a showcase for energy efficiency thanks to our server solution and the use of state-of-the-art building systems technology. Here, geothermal heat pump, ventilation, photovoltaic system, blinds, lighting, access and security areas form a single automation system.

Regardless of complexity, all projects require control logic to unleash the true benefits of a building automation system. In the B.E.G. buildings, the geothermal

system is controlled via ModBus, the photovoltaic system via BACNet. Air quality, air-conditioning, shading, the control of the gate system and accesses are controlled via KNX, the lighting control via the in-house DALI-SYS. In the high-bay warehouse, the wireless Casambi is also used due to its flexibility. Different communication protocols and bus systems such as Modbus, BACnet, KNX, DALI and Casambi become a functional unit under NetX via our ROUTER2-DALI-SYS-BACnet-REG router.

The NetX building management system delivers a good overall result at B.E.G. in Lindlar. Heating, shading, excluding unused areas, increasing security, improving comfort - all this is implemented here.

B.E.G. employees have an individual access chip. This chip opens and closes the access gate to the premises and activates the room air conditioning when a building area is opened.

The administration building consists mainly of offices.

In the offices, PD11-KNXs-FLAT-DX are used and provide increased comfort. The PD11 controls the lighting. This changes the light colour during the course of the day and thus supports the natural biorhythm of the employees. Especially in the dark winter months, the Human Centric Lighting function ensures a fresh start to the day.

The B.E.G. WS-VOC-HVAC-KNX wall sensor not only controls temperature and humidity. It ensures fresh, oxygen-rich air in the office rooms. In the process, it measures the proportion of volatile organic components - VOCs for short. These include adhesives and chemicals that are emitted from walls, floors and furniture and can lead to sick building syndrome, i.e., nausea and feelings of illness. Human exhalations such as the smell of sweat, sulphurous compounds, essential oils, perfume, hair-

spray and deodorant are also VOCs. If there are too many of these VOCs in a room, it is automatically ventilated. The sensors are also used in the conference rooms of B.E.G., where many people spend long periods of time and where permanently fresh air increases the ability to concentrate and the sense of well-being.

The new DALI/KNX-Gateway DA64-230/KNX REG, Art.-No. 93302

Hygienic and particularly energy-saving lighting of the sanitary facilities is implemented via the Indoor 180-KNX-DX. It reacts to movements and then switches on the light. It also has a noise detection system. This means that it also detects a presence in individual cubicles. During periods of non-use, luminaires remain switched off. By adjusting the BMS server via our KNX IP router IP-LK in connection with the blind actuator SBA4-230/10/H/KNXREG and our

into the DALI bus in addition to luminaires. This new solution reduces the installation effort. Detectors no longer have to run via the KNX bus, but can be connected directly to the DALI bus. This eliminates the need for additional KNX cables.

PD34-KNX-GH-DX, Art.-No. 93399

The right B.E.G. detector for every situation. The KNX occupancy detector with integrated KNX bus coupler is specially designed for high-bay warehouses.

The external telescopic light sensor, which can be mechanically adjusted to a mounting height of between 5 and 16 m, provides application-specific light measurement there. The PD4N masters difficult lighting situations with internal and external light sensors.

KNX weather station, the building automation is adjusted to the course of the sun. In this way, we achieve shading and pleasant climate inside the building during summer. In winter, the blinds provide additional thermal insulation.

A mixture of KNX, DALI and Casambi is installed in the B.E.G. warehouse building.
In the high-bay warehouse area, our PD4-GH detectors with their excellent daylight-dependent regulation in combination with our DA64-230/KNX REG DALI/KNX Gateway help to ensure that optimum lighting conditions are always available. Guided Light is the innovative lighting guidance system from B.E.G. DALI-SYS. The light accompanies the user through the warehouse like a cloud of light. Thanks to sensor coordination across groups and even lines, the light is fully activated in the area where the user is located. The surrounding areas dim to a fixed orientation light value. As a result, the user never has a completely dark aarea in their field of vision: all adjacent, visible aisles are illuminated with orientation light. In all unused areas, the light is automatically switched off and energy is saved.
All the different systems are controlled by a server located at each site and combined with a higher-level server installed in the administration building. This allows

the greatest possible degree of fail-safety through the use of several controllers as well as a maximum degree of control at the same time, and this is location-independent. The user only needs an internet-capable end device (smartphone, tablet, notebook) with a pre-installed browser and a secure connection. One of the greatest security factors, however, is always the careful handling of access to the system. As great as the security may be, be it through a fingerprint sensor on the mobile phone, two-factor authentication or even a palm vein scanner to gain access to the server, the human being remains as a security risk. That is why it is important to train the responsible people how to access safely and securely. In this context, B.E.G not only stands for intelligent and high-quality products and solutions, but also for knowledge transfer and further services.

B.E.G. will be happy to provide advice for your specific project. Please contact your local B.E.G. representative.

The DALI/KNX Gateway reduces costs and simplifies installation
B.E.G. has launched its new DALI/KNX Gateway that can integrate motion and occupancy detectors as well as push-buttons

KNX-Detector

FAQ – Frequently asked questions

Hauke Kürten, System consultant NETx/KNX/DALI,
Technical Sales/Projects at B.E.G.

How does "Master - Slave" work correctly?

Two group addresses are required for the master-slave functions. The first group address is used to connect the slave output of the slave sensor to the slave input of the master device. This address is used to transmit the movement information. The second group address is used to connect the reset output from the master and the reset input from the slave. This address is used to reset the slave. The locking time of the slave detector must also be taken into account. This should be approximately half the follow-up time of the master. To realise the master-slave function, use our "ST" and "DX" version detectors.

The light value should be output cyclically on the bus, how can I realise this?

To output the light value cyclically on the KNX bus, you have to change the light measurement from "natural and artificial light" to "mixed light". The reason for this is that with "natural and artificial light" the respective proportion of light would first have to be calculated. However, this can lead to implausible values, which is why the cyclical sending of values is deactivated for "natural and artificial light".

I would like to be able to set and read out the lux set value and the follow-up time via visualisation, is this possible?

In general, the communication objects that are used to write to the detector are not intended to be read out. Nevertheless, it is possible by setting the R flag. However, we generally recommend that you only adjust the flags if you are absolutely sure about using them.

I have adjusted the set value of the detectors, now the detector no longer switches on the lighting

When adjusting the lux set value, be careful not to set it too low. In most cases, correcting the value upwards will restore functionality. Unfortunately, a lux set value of 10-50 lux makes no sense because a hysteresis of 50 lux is stored in the detector to compensate for fluctuations caused by passing clouds and other short-term changes. For detailed information regarding set values in buildings, please feel free to contact us.

I am looking for a KNX product database for a detector or actuator.

Enter the product's article number in the search mask at the top of our website. When the product page opens, scroll down. Under the item "Downloads" you can download the product database on the shelf. If it is not available there because it is an older device, you will find the product database under the tab "Service", "Downloads", "Product database KNX".

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