

***merten***

CONTROL BUILDING FUNCTIONS FLEXIBLY, EASILY AND ECONOMICALLY | **KNX**

## HOW TO MAKE YOUR BUILDING “SMART”





# CAN ALL YOUR DEMANDS BE MET UNDER ONE ROOF?



Anyone planning to build a new private home or commercial building can expect more than just a lot of hard work. They also face the challenge of meeting any number of individual technical and financial requirements. And these demands have increased enormously in recent years. This is particularly true in the areas of building management and electrical installation, where many different factors have to be taken into account.

## Flexibility



Considering that most buildings are designed for use over several decades, it's inevitable that, sooner or later, the uses to which its rooms are put will change. The obvious solution: building functions which can be adapted to the needs of the user easily and cost-effectively, without tearing open walls and laying new cables.

## Comfort



Everyone nowadays expects more comfort and convenience in their domestic and working lives. A modern electrical installation that can be operated conveniently, simply and comfortably makes living and working just that much easier.

## Cost efficiency



Not only the one-off construction costs, but also the subsequent running costs are decisive in ensuring the cost efficiency of an investment of this kind. The following applies: the greater the flexibility with which building technology can react to new demands and be adapted to technical innovations, the greater its value for money. And when a growing environmental consciousness and increasing energy costs are taken into account, it is becoming ever clearer that building management must also incorporate intelligent solutions for energy efficiency as well.

## Safety and security



If a building is to be as safe as possible, building technology must be able to react quickly and intelligently in critical situations, whether someone is on the premises or not.

Given the extent and range of these different requirements, conventional electrical installations soon reach the limits of their capabilities. They can only do so much. As a result, adapting the use to which parts of the building are put can quickly prove costly, and coordinating the functioning of the different buildings is a major undertaking.

However, all this is no reason for you to change your plans. After all, there is an intelligent alternative to the conventional solution: KNX from Merten. Or to put it another way: clever buildings.

# KNX IN PRIVATE BUILDINGS

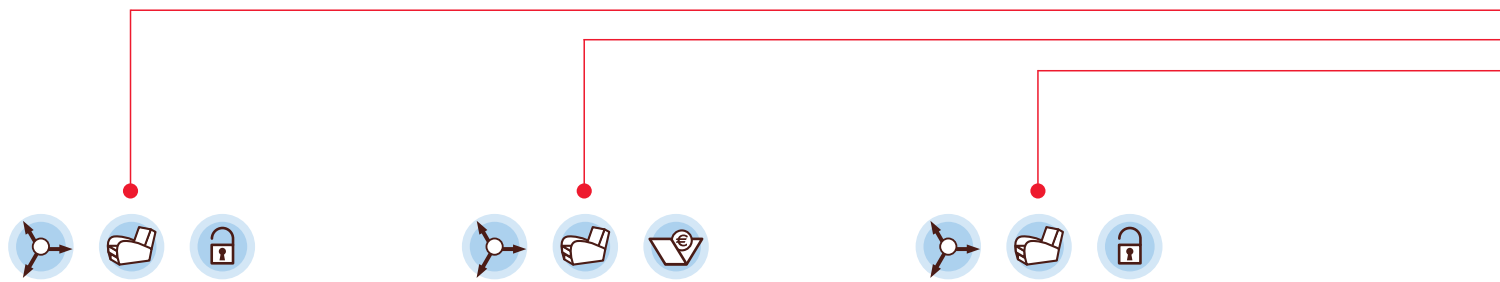
## LIVING THE GOOD LIFE

In terms of comfort, take the following example: Getting cosy in the evening no longer means going from one switch or thermostat to the next. Instead, simply press a single button to activate all the desired functions in one go: blinds are lowered, atmospheric lighting is switched on and the room is heated to just the

right temperature. Settings such as these (known as scenes) can be created exactly as you want them – and you can do so via remote control, PDA, touchscreen or PC.



PLANTEC with room temperature control unit



### Intelligent blind control:

- Central control of the electrically operated roller shutters and blinds in the study, parents' bedroom and children's room at the press of a button.
- Automatic protection from excessive sunlight or storms is provided by awnings and blinds that react to sun and wind sensors.
- Protection against burglary is provided by time-controlled roller shutters and blinds that also protect windows when nobody is at home.



Wind sensor



### Timed heating control:

- Pleasant room temperatures via individual temperature control of the individual rooms.
- Heating costs reduced thanks to time control of the heating valves.
- A healthy sleeping climate due to automatic reduction of heating at night.
- Room temperature is automatically lowered when the windows are opened, leading to further reductions in heating costs.



Multi-function push-button, 2-gang with room temperature control unit, System Design



### Flexible building management:

- Building functions can be adapted flexibly if the room usage changes.
- Worldwide access to the entire building technology system via PDA, PC or touchscreen, allowing you to switch the heating from night operation to daytime operation before you return from holiday, for example.



merten@home via PDA



#### Comprehensive messages:

- Warnings about open windows and doors via information display at the front door.
- Forward messages to, for example, a security company or your neighbours via telephone.
- Intruder deterrence with movement detectors that switch on the lighting in and around the house.



#### Individual lighting control:

- The “Central Off” switch at the entrance door deactivates all loads, such as the lighting or appliances connected to socket-outlets.
- Individual light settings, whenever and wherever you want. in the living room, dining room, for reading or while watching TV. Easy to save and to activate. By remote control, for example, via PDA or via touchscreen.

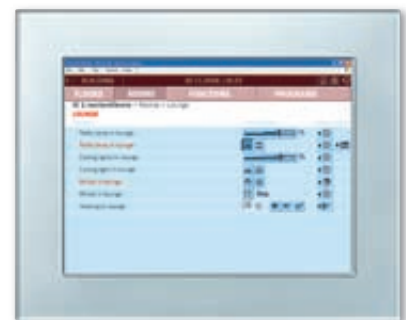
- If you hear things going bump in the night, just hit the “panic button” next to your bed to illuminate your house and garden with bright light.
- Keep burglars at bay by making it look as though someone is at home when you are absent or during long holidays.



Info display, System M



Push-button, 2-gang plus, System Design



IP Touch-Panel 10" Design M-PLAN

# KNX IN COMMERCIAL BUILDINGS

## WORKING MADE EASY

Flexibility and cost efficiency are particularly important when it comes to commercial buildings. This is where intelligent building management with KNX really comes into its own.

In the presentation room, for example: At the touch of a single button, you can activate a whole series of functions in preparation for a presentation: groups of luminaires are switched off or dim-

med, the blinds and the projection screen are lowered to create the right conditions for the presentation, and the projector and microphone are switched on automatically. And finally, ventilation and heating create an optimal environment.

Naturally, all these different functions can be adapted to meet specific requirements.



PLANTEC control and display unit



### Intelligent blind control:

- Automatic control of the sun awnings via light sensors in accordance with the current sunlight intensity.
- Automatic blind retraction via wind sensors during strong wind.
- Automatic adjustment of the blind slats in accordance with the current sunlight intensity.



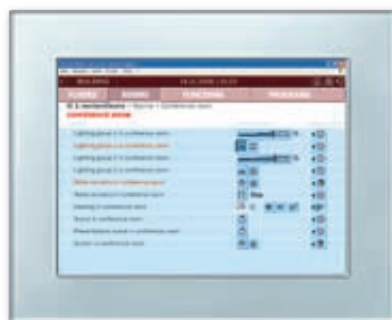
### Flexible building management:

- Flexible adaptation of the building functions when rooms are used for different purposes, e.g. after reorganisation or a move.
- Worldwide access to the entire building technology system via PDA, PC or touchscreen.
- Monitoring of windows and doors or underground car parks by sensors that signal all irregularities.

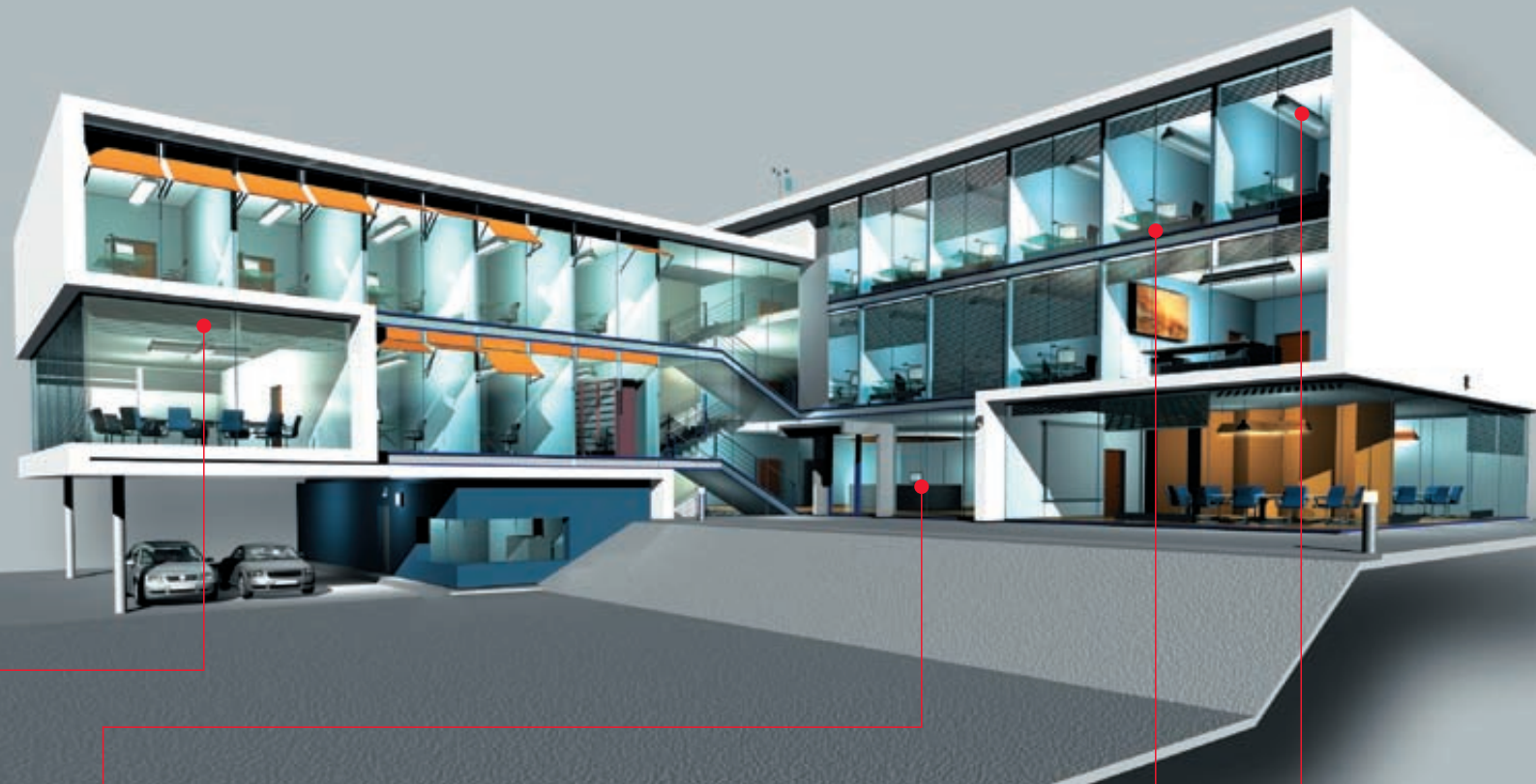
- Display of loads, performance curves and temperatures, immediate notification in the case of critical temperature overshoots and automatic shutdown of devices at risk.
- Display of fault signals and automatic forwarding of these signals to the responsible electrician or the building manager.
- Costly peak loads avoided since loads can be switched on and off in a systematic fashion.



Push-button, 4-gang, System M



merten@home via touchscreen



#### Individual heating control:

- Presence-dependent room heating.
- Immediate closure of the heating valve when a window is opened.
- Heat is supplied automatically at the exact time required and individually via controllable room temperature control units. No need to turn the radiators up and down manually.



Multi-function push-button, 4-gang with room temperature control unit, System Design



#### Automatic lighting control:

- Time-dependent, automatic switching off of light sources during work breaks or on weekends.
- Daylight-dependent adaptation of the lighting for optimum working conditions through light control. With intelligent heating control, energy costs can be reduced by up to 30%.
- Automatic lighting of corridors, staircase timers and rooms which are seldom used thanks to the ARGUS indoor movement detector.



ARGUS Presence with lighting control



ARGUS 180/2,20M UP, System M

## ALL BUILDINGS ARE MADE INTELLIGENT WITH KNX

### Merten – there from the start

The central idea of a standard for home automation and building control across different manufacturers was fundamentally moulded by Merten. Merten is one of the driving forces behind innovation and technology in building system technology. An initial complete product palette was already available in 1991. Nowadays, the Merten product range covers a full range of switch cabinet components in addition to design- and function-oriented control interfaces and sensors: universal dimming actuators, blind actuators, switch actuators, power supplies, binary inputs, gateways etc.

Further information about the worldwide standard for KNX building system technology can be obtained from the home page of the KNX Association ([www.konnex.org](http://www.konnex.org)) and the German EIBA ([www.eiba.de](http://www.eiba.de)). The use of intelligent KNX technology in the various types of buildings can be experienced online at [www.mymerten.com](http://www.mymerten.com).

### KNX – the only worldwide open standard for home automation and building system technology in accordance with EN 50090

**EN 50090** – the European norm for electrical installation technology for houses and buildings is based on the KNX standard. KNX is the only protocol that meets this norm.

### The success story of KNX in numbers:

- 103 member companies
- Represented in 70 countries
- Over 21,000 ETS users
- 100 training centres
- 40 partners from science and further education

Facts and figures which give you the security of investing in an established, future-oriented technology.



KNX unites functions under one roof which were previously controlled separately.

### Merten CD – Solutions for intelligent buildings

The CD graphically describes the benefits of intelligent KNX technology in different types of buildings: private homes, office buildings, hotels, hospitals, schools. Your customers can use the checklist to put their requirements in concrete terms.

It can be ordered free of charge by phoning 0049 2261 702289 or via email from [marketing@merten.de](mailto:marketing@merten.de).

Article number: 491911







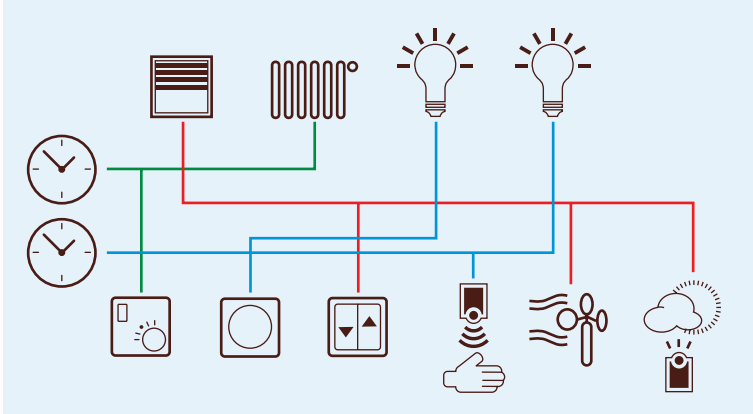
## KNX – simple, intelligent, proven.

With conventional electrical installations, you have to determine in advance how and where your building's switching systems will be installed, before construction even commences. But with KNX from Merten, you can keep your options open. That's because everything in the system can be changed or extended at any time – without the usual mess and without laying new cables.

In addition, all building technology devices and installations are connected via a single bus line. The bus line is laid in parallel to the 230 V power supply. When you activate a sensor (for example, a push-button), an actuator (e.g. the roller shutter control) will carry out all the switching commands required.

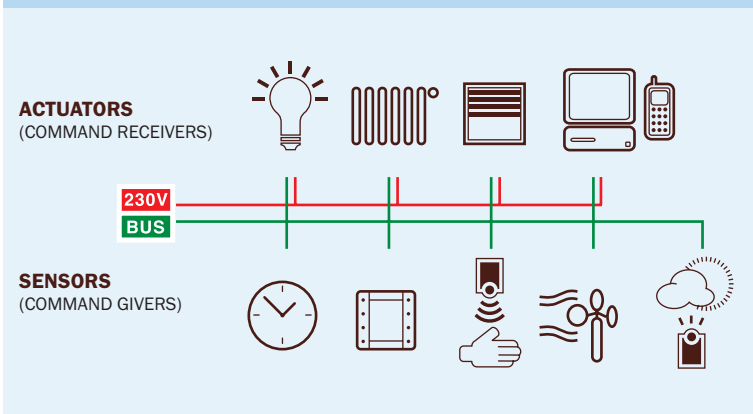
### The conventional solution:

many separate lines, meaning less flexibility.



### The intelligent solution:

KNX – one system, one standard, many multi-task functions for maximum flexibility.



# KNX IN COMPARISON

## LONG-TERM SAVINGS



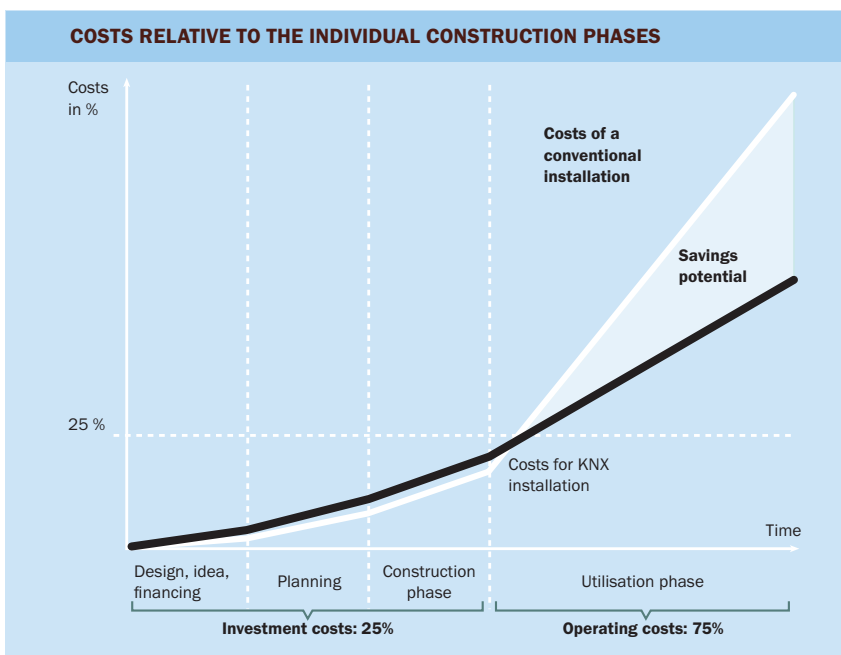
Intelligent building technology doesn't just offer you flexibility, convenience and security. It pays for itself as well. Over the long term, you could save up to 30% on the usual costs in comparison with conventional solutions.

Even though the cost of an KNX solution from Merten may seem more expensive than a conventional solution at the

planning and building stage, the costs fall dramatically when it comes into use.

The reason: initial investment costs account for only around 25% of the entire cost of a building, on average. The operating costs when the building is used, however, account for 75%. And this is where big savings can be made. Because as time goes by, what you need from your building management

will change. It may be that a private home will be inhabited by several generations. Or that rooms in commercial properties are put to different uses, due to reorganisation, new owners or new tenants.



When it comes to electrical installation, advance planning is everything. Before the first ceiling is constructed, a bus line should be incorporated as a precautionary measure. And wherever light switches, lamp outlets, socket-outlets etc. are

planned, the intelligent control cable should be laid parallel to the power cable. The cost is minimal, the benefit immense. You then have the freedom of interlinking your building technology functions at a later point. Your electrical installer will be able to retrofit KNX

control components at low cost and without having to break open the walls.



There are as many areas of application of KNX as there are possibilities offered by intelligent building management. Here is a small selection of projects we have realised. Further details and examples can be provided by your local Merten

representative. After all, we at Merten regard ourselves as a partner to all those involved in planning: investors, building owners, architects, electrical planners and electrical fitters.

Administration & Office Buildings	Schools & Public Buildings	Banks & Commerce
<ul style="list-style-type: none"> <li>• Office block of the Dresdner Bank, Frankfurt, Germany</li> <li>• Formula 1 racing track in Shanghai, China</li> <li>• Exxon, Singapore</li> <li>• Cologne Tower in the Mediapark Cologne, Germany</li> <li>• Office administration building, Bayer AG, Leverkusen, Germany</li> <li>• CSC Ploenske, Wiesbaden, Germany</li> <li>• IG-Metall, Frankfurt, Germany</li> <li>• Mainterrassen, Frankfurt, Germany</li> <li>• Volvo Cars, Ghent, Belgium</li> <li>• Spreespeicher, Berlin, Germany</li> </ul>	<ul style="list-style-type: none"> <li>• Central Station NMBS/SNCB, Brussels, Belgium</li> <li>• Den Haag City Museum, Netherlands</li> <li>• Catholic Church of St. Ignatius, Singapore</li> <li>• Gustav-Adolf Church, Vienna, Austria</li> <li>• Uli-Schwarz-Institut, Shanghai, China</li> <li>• Technisches Hilfswerk (German disaster relief agency), Wangen, Germany</li> <li>• University of Hamburg, Germany</li> <li>• UFSIA University of Antwerp, Belgium</li> <li>• Elisabeth-Seidl-Stiftung, Berlin, Germany</li> <li>• Faculté Polytechnique, Mons, Belgium</li> </ul>	<ul style="list-style-type: none"> <li>• Sparkasse Hartberg, Austria</li> <li>• Sparkasse Lüneburg, Germany</li> <li>• Sparda-Bank Cologne, Germany</li> <li>• Kreissparkasse Pinneberg, Germany</li> <li>• Kreissparkasse Bad Segeberg, Germany</li> <li>• Volksbank Lohne, Germany</li> <li>• Spaarbeleg Nieuwegein, Netherlands</li> <li>• Provinzial Versicherung Kiel, Germany</li> </ul>
Hospitals and Retirement Homes	Hotels / Residential Complexes	Leisure Facilities
<ul style="list-style-type: none"> <li>• “de Groen Brug” Foundation Nursing Centre, Almelo, Netherlands</li> <li>• Hartberg Hospital, Austria</li> <li>• Kiel City Hospital, Germany</li> <li>• Bremen Central Hospital, Germany</li> <li>• Segeberg Clinics, Germany</li> <li>• Brandenburg Hospital, Germany</li> <li>• Suhl Hospital, Germany</li> <li>• Emden Home for the Disabled, Germany</li> <li>• Dinklage Nursing Home, Germany</li> </ul>	<ul style="list-style-type: none"> <li>• Regent Hotel, Singapore</li> <li>• Goldenhill Condominium, Singapore</li> <li>• Setia Residence Condominium, Singapore</li> <li>• Newton 18 Condominium, Singapore</li> <li>• Hotel PANORAMA Mals, Italy</li> <li>• Hotel Villa Brandauer Strobl am Wolfgangsee, Austria</li> <li>• Hotel Intercontinental, Frankfurt, Germany</li> <li>• Kempinski Grand Hotel Heiligendamm, Germany</li> <li>• South West Park Hotel, Nuremberg, Germany</li> <li>• Castle Bensberg, Germany</li> <li>• Seehotel Zeulenroda, Germany</li> </ul>	<ul style="list-style-type: none"> <li>• Leisure centre Perchtoldsdorf, Austria</li> <li>• Ship “Zeewoelf”, Enkhuizen, Netherlands</li> <li>• Harburg-Arcaden, Hamburg, Germany</li> <li>• Europacenter Berlin, Germany</li> <li>• Polo/Ralph Lauren, Munich, Germany</li> <li>• Kamp-Promenade, Osnabrück, Germany</li> <li>• Künzelsau swimming baths, Germany</li> <li>• Hofstelle Egg riding centre, Vierseithof Aldersbach, Germany</li> </ul>

***merten***

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