

Clever automation
KNX home and building control





KNX – the Smart side of the building saving energy while increasing comfort

KNX has long been established as the global standard for home and building automation. Controlling room climate, lighting, and blinds – all these are classic KNX functions. KNX technology is suited for functional buildings as well as for private homes. However, KNX is far more than just an installation system. It is as versatile as life itself.

KNX offers the technical opportunities to make a building a Smart Home or Smart Building, to use energy efficiently, and to increase comfort and quality of life. What you can do with KNX, and how you use KNX optimally for yourself and your customers, you will learn here.

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KNX – a technology and its unlimited possibilities

Whether universities, schools, or other administrative and office buildings, nursing homes and hospitals, museums, hotels, or private homes – KNX makes more of it. The advantage of a KNX installation is its versatility. Via KNX, all building functions can be linked, programmed, and controlled. Starting with heating, ventilation and room climate control via lighting and shading, up to alarm, safety and information systems. All these functions can be controlled automatically via intelligent sensors, manually at the control units inside the rooms or centrally via a visualisation – in the house or on the move via smartphone or tablet.



Theben, KNX and the KNX Association – the fieldbus and its history

KNX stands for "Konnex" or "Connectivity" (connection), and it is a fieldbus for building automation. KNX resulted from merging the European organisations EIBA, EHSA, and BCI, which strived for a common standard off the back of the existing field buses. Today, KNX is the global standard for house and building automation (ISO/IEC 14543). Worldwide, there are more than 90,000 trained KNX partners in 190 countries. The directives for KNX technology are defined and regulated by the KNX Association, to which today over 495 companies belong, worldwide. KNX thus stands for extremely high investment and future security.

Theben joined the association as one of the first members, and as a member of the Executive Committee, we actively influence the development of KNX technology. Since 2015, Theben is also a member of the KNX Technology Committee. In 2019, Theben was the first manufacturer to introduce KNX wireless actuators according to the Data Secure standard. Theben – a competent partner within KNX.

Further information at www.knx.org





KNX – sensors and actuators

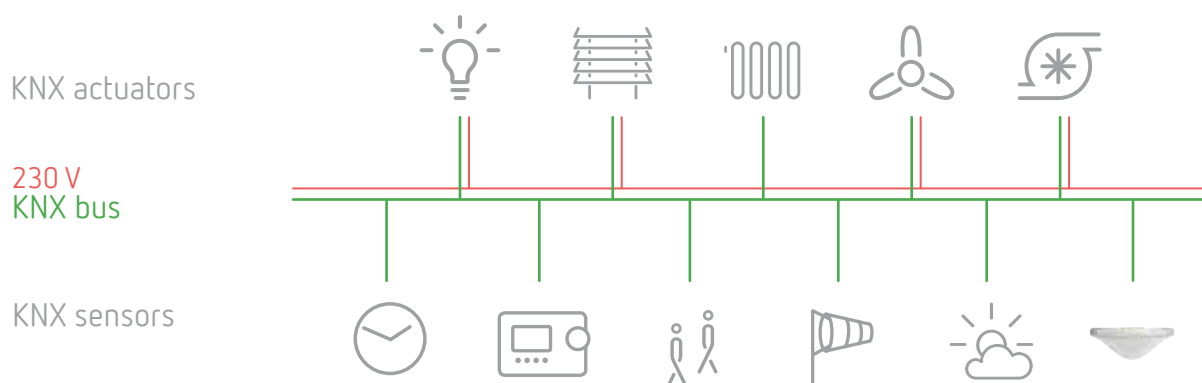
How everything interacts

KNX is like the body's nervous system, which is equipped with sensors and actuators. Everything the sensors detect is sent to the actuators, as a command. The actuators trigger the desired response: they switch on the light when it gets too dark, they activate the heating when it gets too cold and they control the blinds, when the sun gets too bright. The topology is extremely versatile: line, tree, or star structures are possible.

KNX devices are connected to the KNX bus which in many cases is also the power supply to the device, for example presence detectors. While in conventional systems control and energy distribution are interconnected, KNX participants communicate using their own line network.

The line network of a KNX installation is divided into sections, so-called lines, and structured hierarchically. The lines are logically and physically interconnected via line or area couplers. Each line has a power supply, which can supply up to 64 devices, depending on the individual design. A line can be extended with up to three line amplifiers by a further 64 devices each.

15 of these KNX lines make up one area. 15 areas can be linked with each other via an area line, the so-called "backbone". Minus the system components, up to 58,384 KNX devices can be installed in one system.





ETS – the software for every KNX installation

The KNX bus devices communicate via data telegrams. Assignment between the individual participants and configuration of the functions is made by using ETS, the "Engineering Tool Software".

The ETS has been created by the KNX Association and is constantly updated. It is the common base of all KNX installations. All KNX devices have to be certified by independent institutions. After successful certification, the device-specific data can be imported into the ETS. In this way, KNX installations can be implemented independent of the manufacturer.

Thus, ETS programming of a KNX building installation is as versatile as life itself. To tell when and what should take place and in which room, can be a complex task, which requires foresight and flexibility. The advantage of KNX: Functions of a system can be reprogrammed any time via the ETS.

Secure! KNX Data Secure

As the degree of networking in Smart Buildings increases, so do the requirements on the security of the individual systems. The KNX Association has responded to this with the new "KNX DATA Secure" standard.



KNX – simplifies planning and reduces the effort for complex actions

KNX – combines multiple trades

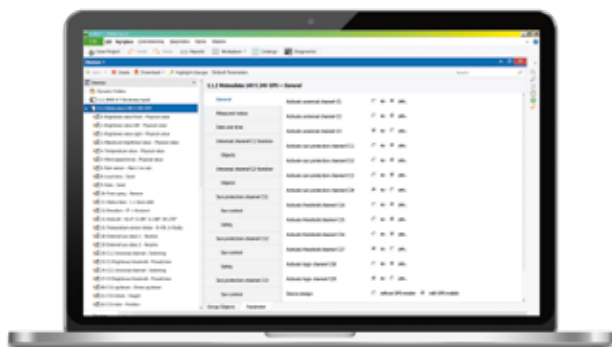
KNX – is open to changes and extensions

KNX – allows central visualisation and control of building functions

KNX – reduces operating and energy costs

KNX – increases living comfort and reduces energy consumption

KNX – offers extremely high security for the investment



LED – Energy saving with a bright future with some little quirks

LED sales have grown rapidly over recent years. Thanks to the improvements in the degree of efficiency and colour rendering index, there is almost no area of lighting where they are not present: as retrofit versions, they are a welcomed alternative to unpopular energy saving lamps. As illuminated strips and panels and panels, they can snuggle against every surface and thus allow completely new possibilities for light design. Even the first high-performance devices such as stage and studio spotlights are now available as LED version.

However, not every bulb can be easily replaced by an LED retrofit lamp. This may lead to some issues with existing installations, even with straight forward switching. The reason for this is the short but extremely high starting currents. They can be more than a thousand times the rated output. Contacts can burn-out or fuse as a result.

The challenge of LED's and how to deal with it



The difficulties with everyday tasks is surprising. There is as yet no standard for LED lamps and as such can lead to difficulties with switching and dimming some LED lamps.

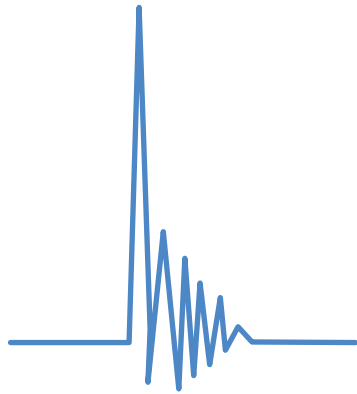
There are general guidelines for LED lamps that apply, from the version of socket base, to Lumens output and Wattage consumption. However other factors are not. As apposed to a classic lamp with a simple spiral wind, LED lamps include a lot of electronics for control. Every manufacturer can decide the layout of this themselves. The manufacturers of switching and dimming devices currently do not have any indications as to which type of electronics it is to control and how the lamp may behave. The respective standards currently only exist as a draft.

No standards available? Then we will test it ourselves!

If special switching loads for LED lamps and discharge lamps are not specified on a product, one must assume that the product has not been approved for this. However, the specifications for LED loads are not always helpful. Which switching currents does the device manufacturer assume? These may differ from lamp to lamp. You should also be careful when adding multiple LEDs. Several LEDs with low rated output may have higher switching currents in total than one single LED with the same total output.

In order to be able to specify the load specifications for switching devices and dimmers, Theben conducts ongoing measurements on all conventional retrofit lamps. During these tests, the switching devices run through at least 40,000 switching cycles. This allows us to make reliable statements for the switchable loads.

LED – low consumption when used Wasteful when switched on.



Hard work for the contacts Capacitive switching loads

How can an LED lamp that only has a few Watts rated output destroy a switching contact that is rated for a higher wattage? Upon closer inspection, the answer is found in the switching currents:

in light bulbs, the typical switching currents of the cold spiral coil cause a tenfold increase of the respective rated current. With LED lamps and energysaving lamps with their capacitive characteristics, one finds switching current pulses in the μs range that could be a thousand-fold and more of the rated current.

A measurement in our test laboratory authorised by the VDE has shown, that in a most unfavourable case, a 1.8 W LED lamp had a switching current of 19A. That is 1706 times the rated output!

How to switch LED lamps With the right contacts at the right time



10 A–10 AX
230 V~

Two contacts for all switching cases: Tungsten pre-contact

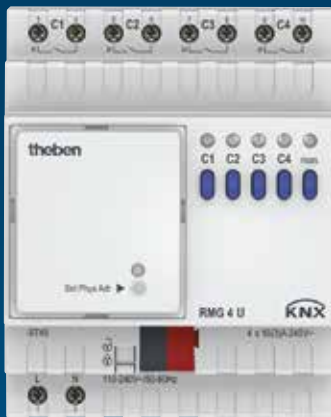
High currents require special contacts. Next to silver tin oxide (AgSnO_2), Theben uses a combination of two contacts that close one after another: the tungsten pre-contact. The leading contact comprises $<$ of high-Ohm and highly-resistant tungsten. It captures the starting current and limits it at the same time. The low-Ohm main contact remains unloaded from the switching peaks in such a manner. Theben uses these relays in the digital time switches TR 609 top2 S and SELEKTA 175 top2 as well as with the performance motion sensors theLuxa P and the presence detector theRonda P.

Switching precisely at a point: zero-cross switching

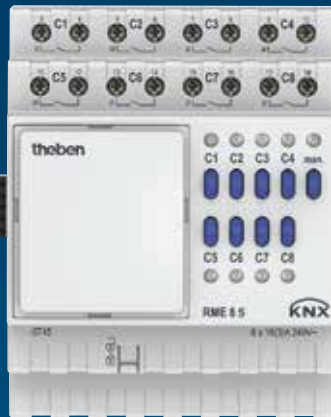


Switching devices that are designed for a C load generally deal with the switching currents in a better manner. In doing so, Theben uses a particularly efficient solution, such as a so-called zero-cross switching. This calculates the zero crossing of the sinus curve of the alternating voltage. At this moment, the switch-on current is minimum when switching. This protects the relay contact and extends its service life, even at nominally high switching loads. Almost all of the devices of the top2 series, the motion detector theLuxa S and the presence detector PlanoCentro are equipped with it.

More resilient, more reliable, stronger KNX dimming actuators



MIX2 base module RMG 4 U KNX



MIX2 extension module RME 8 S KNX



FIX1 actuator RM 8 T KNX

To cover all applications An overview of switching values

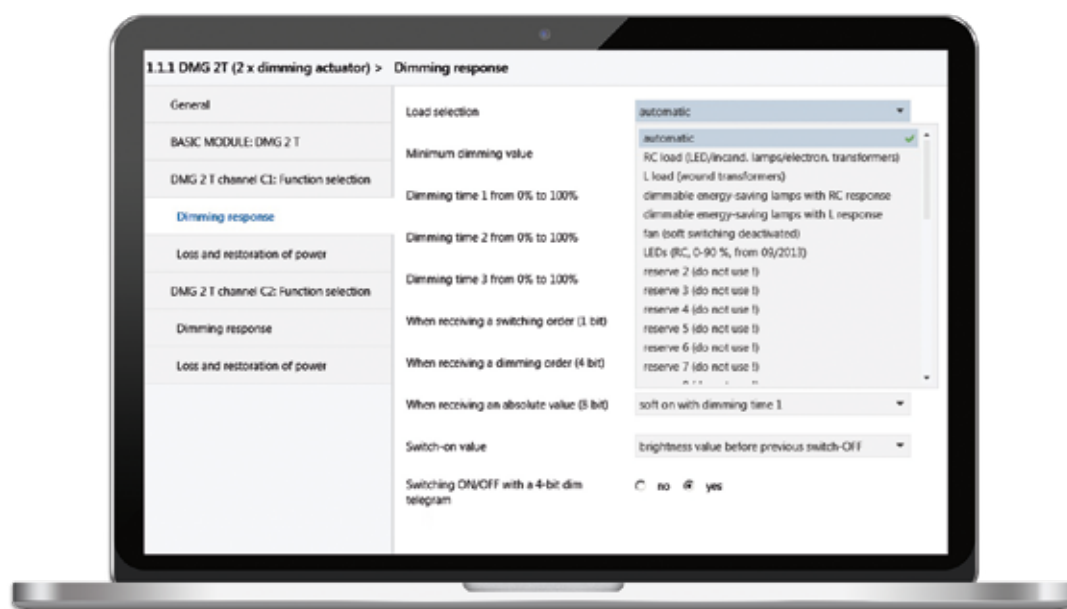
Quality has a price. But it pays for itself: Due to the high testing requirements in our company laboratory, e.g. 40,000 switching cycles, we are above the standard. This demand in quality is also confirmed by an external VDE test. This also applies to switching loads, from which the same is expected.

Switching actuators	Execution	Article-Number	Switching capacity
RMG 4 U KNX	Basic module	4930223	16 A max. 800 A/200 μ s 40.000 switching cycles at 140 μ F
RME 4 U KNX	Extension module	4930228	
RM 4 U KNX	Module FIX1	4940223	
RMG 4 I KNX, C-Last	Basic module	4930210	16 A max. 1500 A/200 μ s 40.000 switching cycles at 200 μ F*
RME 4 I KNX, C-Last	Extension module	4930215	
RM 4 I KNX, C-Last	Module FIX1	4940210	
RM 8 I KNX, C-Last	Module FIX2	4940215	25 A max. 1200 A/200 μ s
RM 4 H KNX	Module FIX1	4940212	
RM 8 H KNX	Module FIX2	4940217	
RMG 8 S KNX	Basic module	4930220	16 A max. 800 A/200 μ s 40.000 switching cycles at 140 μ F
RME 8 S KNX	Extension module	4930225	
RM 8 S KNX	Module FIX1	4940220	
RM 16 S KNX	Module FIX2	4940225	
Switching/blind actuators	Execution	Article-Number	Switching capacity
RMG 8 T KNX	Basic module 8-way switching or 4-way blind actuator	4930200	16 A max. 800 A/200 μ s 40.000 switching cycles t 140 μ F
RME 8 T KNX	Extension module 8-way switching or 4-way blind actuator	4930205	
RM 8 T KNX	Module FIX1 8-way switching or 4-way blind actuator	4940200	
RM 16 T KNX	Module FIX2 16-way switching or 8-way blind actuator	4940205	
Flush mounted actuators	Execution	Article-Number	Switching capacity
SU 1 KNX	Flush mounted switching actuator	4942520	16 A max. 740 A/200 μ s*
SU 1 RF KNX	Flush mounted wireless switching actuator	4941620	10 A max. 740 A/200 μ s*

* Thanks to optimised zero-cross switching

Dimming LEDs precisely Today and in the future

Whether you opt for the FIX series or the MIX series, with KNX universal dimming actuators from Theben you can steplessly dim LED, halogen and energy-saving lamps without any flickering. The only prerequisite is that the selected lamp is dimmable. In view of the increasing number of connected LED lamps with small wattages, multiple channels provide greater freedom of design.



Up to date with KNX adaptable dimming curves

KNX universal dimmer actuators from Theben go one step further: in the KNX programming software ETS, various dimming curves are stored, which correct the dimming response depending on the lamp used, thus ensuring stepless transitional dimming. Theben is currently the only manufacturer to offer you the possibility to adapt dimming curves individually to your lamps, to create a harmonious dimming response.

Another advantage is the high dimming output with up to 400 watts LED per channel. This output can even be increased to 800 watts by connecting 2 channels in parallel.

Continuous, flicker-free, harmonious KNX dimming actuators for small LED wattages



MIX2 range



Flush mounted actuators



FIX1 and FIX 2 range



Optimised for
small wattages

The times of high wattages are over. Today, the art is in dimming LEDs with small wattages. Thoben is keeping abreast of this trend and offers dimming actuators with a minimum load of just 2 watts.



Optimised
dimming
curves

In the KNX programming software ETS, various dimming curves are stored, which correct the dimming response appropriately depending on the lamp used, thus ensuring stepless dimming.



Fast
start-up

Quick function tests for start-up are possible via 4 buttons (25 %, 50 %, 75 %, and 100 %) even without bus connection. The bus module can be attached later.



Versatile
Scene function

The DMG 2 T KNX – similar to the RMG 8 S KNX switching actuator – can be used to save different scene functions.



KNX product range in detail



MIX2 actuators 16

FIX1 and 2 actuators 22

Wireless actuators 24

Push button iON 26

KNX presence and
motion detectors 28

Weather stations 42

LUXORliving
smart home system 44



KNX MIX2 actuators
complete, flexible, extendable

The Mix does it Only Theben offers this



Switching, dimming, controlling, regulating and also saving space in the distribution unit – not to mention time and money: The KNX MIX2 series from Theben makes it possible.

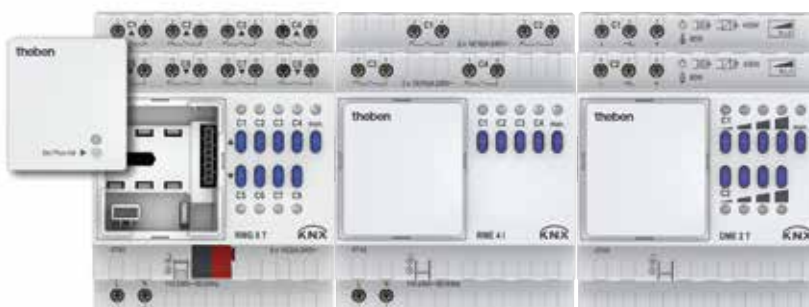
The complete range of KNX MIX2 actuators opens up new design options in the realm of building automation. All you need is a base module to which up to two extension modules can be connected. In this way, you triple the number of output channels for each bus device, and you can switch lights, dim the light, control sun protection or regulate the heating – using the modules of your choice. Window and door contacts, as well as switches and push buttons can be integrated via the binary input.

This clever combination saves space in the distribution unit, and money. Why: Only the KNX MIX2 base module has a bus coupler. It can be removed and is quickly and easily replaced, if required. It is also cheaper, because the extension devices can be easily connected to it. Only Theben offers this.

The KNX MIX2 series is ideal for the automation of rooms and single-family houses. For example, if you want to control lighting, sun protection, and heating.

As the degree of networking in smart buildings increases, so do the requirements on the security of the individual systems. The KNX Association has responded to this with the new "KNX

IP Secure" standard. KNX IP Secure in the Theben IP Secure Router KNX and IP Secure Interface KNX now ensures that messages sent via KNX devices in IP networks are authenticated and encrypted.



Removable intelligence:

Only the KNX MIX2 base module has a bus coupler to which the extension modules can be connected. If needed, it can be easily removed and replaced.

Mixing in series

Everything KNX desires



Base module (G)

+ maximum 2 extension modules (E)

MIX2 benefits at a glance

1. Removable bus coupler

The installer fits the base module (G), the system integrator configures the bus coupler – at the office, comfortable and practical. Just before start-up, the module is simply plugged in – done. That cost effective, because for installation and wiring it is not absolutely essential that an installer with bus knowledge be on site.

2. Inexpensive extension devices

As only the base module is fitted with a bus coupler, this reduces the costs for the extension devices (E) – and due to the saved system devices – by up to a third. It pays off. Especially in property construction. Add it up!

3. Flexible expandability

With KNX MIX2, controlling lighting, dimming, heating, climate or sun protection is never a problem, but desirable. With MIX2, you create an individual solution, which is customized to each room and its specific needs. Only Theben offers this flexibility.

4. Clearly arranged application

The configuration menus in the ETS are not only identically structured over all actuators, but also very clearly and intuitively arranged. This makes programming much easier: Projects are implemented easier, faster, and thus cheaper. Learn more about it on page 26.



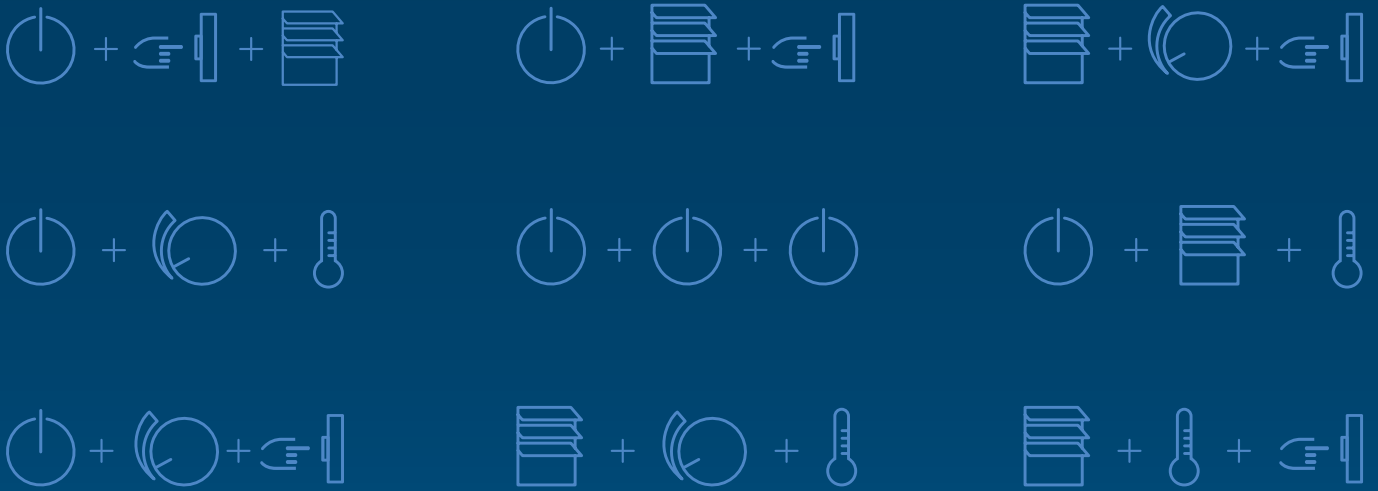
MIX2 actuators - the video
intelligent, flexible, expandable



In an easily understandable way, our MIX2 video shows you the various advantages of the MIX2 series.



www.youtube.com/TheThebenAG



A good mix – with 129 functions and up to 729 combinations



Switching

As you want

On/off with and without delay or staircase light with forewarning – as for instance the 4-fold C-load switch actuators – offer you new freedom of action on up to 12 channels. They feature current recognition and are designed for higher lamp loads.

Switch actuators

MIX2 RMG 4 U KNX
MIX2 RME 4 U KNX
MIX2 RMG 4 I KNX
MIX2 RME 4 I KNX
MIX2 RMG 8 S KNX
MIX2 RME 8 S KNX



Dimming

But right

No flickering, an attractive, evenly rising brightness level with all currently available LED lamps – Theben's universal dimming actuators have already proven themselves in the market. Without exception, they have been enthusiastically received. They are considered to be one of the best dimming actuators of all.

Dimming actuators

MIX2 DMG 2 T KNX
MIX2 DME 2 T KNX



Blinds

Flexible control

With the switch/blinds actuators you can switch and control as you like. From 4 to 8 or 12 blinds or 24 switching channels. Or mixed. Everything just with three modules. This gives you more freedom in the use of the channels because you can assign them as you please afterwards.

Switch/ blinds actuators

MIX2 RMG 8 T KNX
MIX2 RME 8 T KNX

Blinds actuators

MIX2 JMG 4 T KNX
MIX2 JME 4 T KNX
MIX2 JMG 4 T 24V KNX
MIX2 JME 4 T 24V KNX



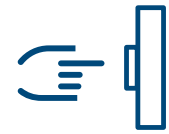
Heating

Can be so cheap

With the heating actuators, Theben offers you the possibility of capturing the temperature in the individual rooms with affordable temperature sensors. Temperature control takes place in the actuator itself, the set point parameter is, for instance, set centrally via the KNX visualisation theServa.

Heating actuators

MIX2 HMG 6 T KNX
MIX2 HME 6 T KNX



Binary inputs

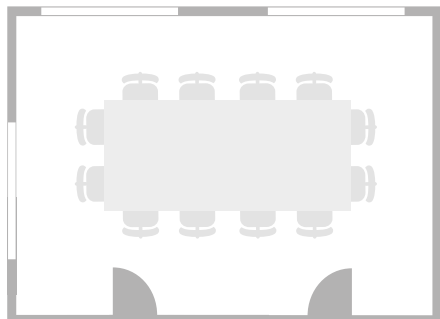
Universal usability

Theben binary inputs cover the full range of contacts and voltages – whether floating contacts, 24 V, or 230 V. Each of the binary inputs offers six channels. That means more flexibility and greater investment security. Also, for ease of maintenance or service, each channel can be tested via manual operation.

Binary inputs

MIX2 BMG 6 T KNX
MIX2 BME 6 T KNX

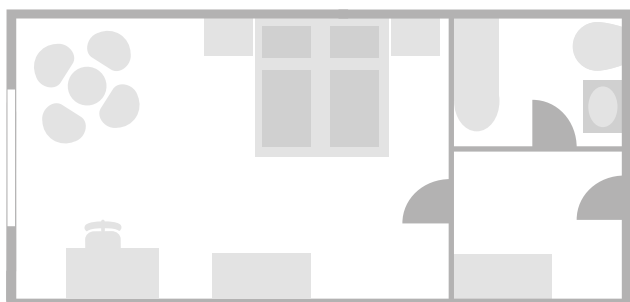
Exemplary room solution with MIX2 actuators



Conference room

1. Manual switching/dimming of lighting, blinds and sun protection
2. Message "room occupied"
3. Scene controls (incl. a scene for switching off, moving up and vacation of room)

Operation optional via conventional buttons with KNX button interface, via multifunction display VARIA 826 S KNX, or via KNX visualisation theServa.



Hotel room or apartment

1. Manual switching/dimming of lighting and blinds
2. Scene controls
3. Fan control
4. Central switching off via Hotel Card switch
5. Emergency alarm in the bathroom
6. Monitoring of windows for room climate control and outdoor monitoring
7. Message "Do not disturb" and "Clean"

Operation via conventional buttons with KNX button interface.




Floor of a single-family house

1. Manual switching/dimming of lighting
2. Fan control
3. Room heating control
4. Central switching off

Operation and temperature measurement via KNX button of various manufacturers.




 **Base module
RMG 4 U KNX**

- LED lighting of wall
- Message "Occupied"

 **Extension module
DME 2 T KNX**

- LED lighting ceiling

 **Extension module
JME 4 T KNX**

- Blinds/curtains
- External blinds



 **Base module
BMG 6 T KNX**

- Card switch (hotel)
- Emergency alarm in the bathroom
- Window contact


 **Extension module
RME 4 I KNX**

- Socket outlets left/right bed
- Socket outlet floor/table lamp
- LED lighting

 **Extension module
RME 8 T KNX**

- Corridor LED lighting
- Bathroom LED lighting
- Bathroom lighting, mirror
- Bathroom fan
- 2x blinds/curtains
- 2x messages



 **Base module
HMG 6 T KNX**

- 6x heating circuits for radiator or underfloor heating

 **Extension module
RME 8 S KNX**

- Sleeping room socket outlets, bed
- Sleeping room LED lighting
- Corridor LED lighting
- Bathroom LED lighting, ceiling
- Bathroom LED lighting, mirror
- Toilet lighting
- Toilet fan

 **Extension module
DME 2 T KNX**

- Children's room 1 LED lighting
- Children's room 2 LED lighting



Ready, steady, optimal
KNX FIX actuators for
functional buildings

Made for business

KNX actuators for the project sector



Those who like it compact and can go without flexibility will find the FIX1 and FIX2 simple actuators to be the perfect alternative for the MIX2 actuators. Moreover, an affordable one. For example, the switching/blinds actuator RM 16 T KNX with 16 relays can control mixed lights and blinds and is perfectly suited for use in property construction: for instance in office buildings, public buildings, educational facilities or hotels. Wherever lighting and sun protection control are required in one room.



Switching actuators

FIX1 RM 4 U KNX
 FIX1 RM 4 I KNX
 FIX2 RM 8 I KNX
 FIX1 RM 8 S KNX
 FIX2 RM 16 S KNX
 FIX1 RM 4 H KNX
 FIX2 RM 8 H KNX



Blinds actuators

FIX1 JM 4 T KNX
 FIX2 JM 8 T KNX
 FIX1 JM 4 T 24V KNX
 FIX2 JM 8 T 24V KNX



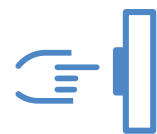
Dimming actuators

FIX1 DM 2 T KNX
 FIX2 DM 4 T KNX
 FIX1 DM 4-2 T KNX
 FIX2 DM 8-2 T KNX



Heating actuators

FIX1 HM 6 T KNX
 FIX2 HM 12 T KNX



Binary inputs

FIX1 BM 6 T KNX
 FIX2 BM 12 T KNX

Switch/ blinds actuators

FIX1 RM 8 T KNX
 FIX2 RM 16 T KNX



The smart flush-mounted solution KNX flush-mounted actuators

Secure communication with KNX Data Secure



The flush-mounted actuators in TP and RF versions support secure communication with encryption according to the "KNX Data Secure" standard. This standard effectively prevents interpretation and manipulation of the sent information. Thanks to their compact design, KNX flush-mounted actuators fit into any switch/junction box.

With the new wireless actuators that comply with the KNX standard "KNX RF1.R S-Mode", Theben offers a practical option to expand existing KNX systems in buildings without the need to invest much time or effort. In this way, extensions to buildings or functions can be easily integrated into the system at a later date

Thanks to the media coupler, you can easily link wired and wireless components.

Media coupler TP-RF KNX



Switching actuators

SU 1 KNX
SU 1 RF KNX



Blinds actuators

JU 1 KNX
JU 1 RF KNX



Dimming actuators

DU 1 KNX
DU 1 RF KNX



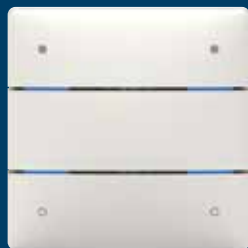
Heating actuators

HU 1 KNX
HU 1 RF KNX



Binary inputs

TU 4 RF KNX



iON KNX button and room controller

Looks great, works great

Simple operation Superb functionality



iON 102 KNX

1-way tactile sensor with two operating points and temperature sensor. Switching and dimming lights, control blinds, initiate and save scenes, measure temperature, manage colours, show status (multicolour LED)

iON 104 KNX

2-way tactile sensor with four operating points and temperature sensor. Switching and dimming lights, control blinds, initiate and save scenes, measure temperature, manage colours, show status (multicolour LED)

The new Theben iON KNX tactile sensors are an excellent alternative to the binary inputs available so far. iON tactile sensors are flexible and, thanks to their frameless design, cut a stylish figure in any room. And by the way, the KNX buttons support secure communication through KNX Data Secure.

Theben iON KNX tactile sensors and room controllers with integrated temperature sensor allow various functions in KNX installations to be triggered at the push of a button.

For example

- switching light on/off and dimming
- adjusting light colours and calling up lighting scenarios
- raising and lowering blinds
- triggering and saving user-specific scenarios
- operating central or group functions

Theben iON KNX tactile sensors are available in various versions: as 1-way (2 buttons), 2-way (4 buttons) and as a room controller with LCD display and Bluetooth interface. Depending on the device, up to 20 functions can be controlled with a single button. iON KNX tactile sensors stand out from the crowd thanks to their extensive functionality and exceptional ease of use. The iON 108 KNX room controller with LCD and integrated room thermostat features a Bluetooth interface to make it easier to use. All tactile sensors come with an integrated bus coupler and can be programmed without the ETS app.



iON 108 KNX

KNX room controller with 20 functions, LC display, room thermostat, app operation and two operating points. Switch light on and dim light, control blinds, initiate and save scenes, control temperature, manage colours, show status (LC display), Bluetooth interface for using the app





Elegant and
award winning
KNX presence and
motion detectors



KNX presence and motion detectors for energy-efficient lighting control



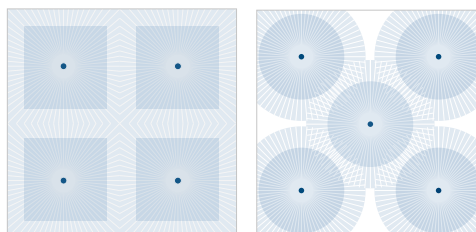
With the Theben presence detectors, you have every option for energy-efficient and intelligent lighting control. In addition to classic use for lighting control in offices, corridors and public buildings, you can also control heating and air-conditioning depending on presence. This lets you save energy costs and considerably reduce CO₂ emissions.

Our presence detectors work according to the same principle as motion detectors: They detect thermal radiation in their surroundings, that is in their detection area. If thermal radiation is detected in the detection area, for example caused by a person approaching the presence detector, the presence detector converts the radiation into a measurable, electric signal, and the light is switched on.

The difference between motion and presence detectors lies in the sensitivity of the sensors. Presence detectors have much more sensitive sensors than motion detectors and detect the smallest of movements. The sensitive sensors divide the detection area evenly into up to 1000 zones. Like on a chessboard, the zones run through the entire detection area. Even minimum changes in the thermal image, such as typing on the keyboard in an open-plan office, will be detected.

Light measurement is another difference. A motion detector measures brightness once, when the light is switched on because of a movement. Presence detectors measure the brightness permanently: If a set brightness value is exceeded, the presence detector switches the light off or dims it down – even if it detects movement.

In contrast to presence detectors with a circular detection area, presence detectors with a square detection area ensure optimum coverage of rooms without unnecessary overlapping or gaps.



KNX presence detectors, ideal for...

Conference room



theRonda S KNX FLAT
Circular detection area of up to Ø 9 m
Mounting height 2 - 4 m

Wet rooms



theRonda S KNX AP
Circular detection area of up to Ø 9 m
Mounting height 2 - 4 m

Entrance and warehouse



theRonda P KNX
Circular detection area of up to Ø 25 m
Mounting height 2 - 15 m

Individual offices



thePrema S KNX
Circular detection area of up to 8 x 8 m
Mounting height 2 - 3,5 m

Large offices



thePrema P KNX
Square detection area of up to 20 x 20 m
Mounting height 2 - 10 m

Classroom



PlanoCentro KNX
Square detection area of up to 10 x 10 m
Mounting height 2 - 3,5 m

Offices



PlanoSpot KNX
Square detection area of up to 8 x 8 m
Mounting height 2 - 3.5 m

Halls



thePassa KNX
Rectangular detection area of up to 5 x 30 m
Mounting height 2 - 15 m

Staircases



PresenceLight 360B-KNX
Rectangular detection area of up to 8 x 8 m
Mounting height 2 - 3.5 m

PresenceLight 180B-KNX
Semicircular detection area (180°) of up to Ø 16 m
Mounting height 1.6 - 2.2 m

KNX motion detectors, ideal for...

Outdoor facade



theLuxa P KNX
Circular detection area (300°) of up to 32 m
Montagehöhe 2 - 4 m

For safe and easy planning:

RELUX®
light simulation tools

RED CAD

Technical data see page 70

Light measurement in detail

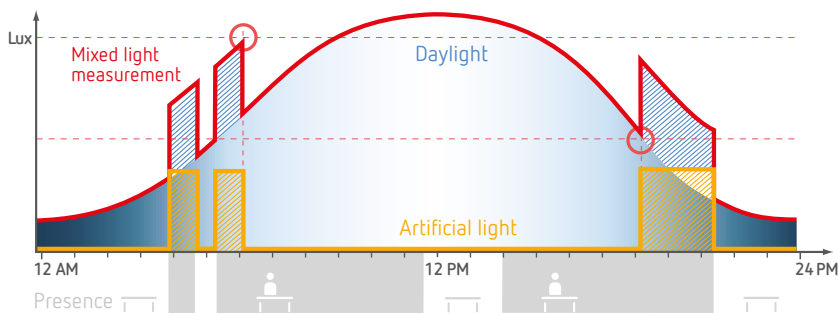
Lighting control using presence detectors is based on detected movement on the one hand and on light measurement on the other. Presence detectors permanently measure the brightness inside the room. Through this permanent light measurement, the presence detector is able not only to switch on artificial light when there is not

enough daylight, but also to switch it off again when there is sufficient daylight. It sounds very easy, but in fact the presence detector must be able to assess, whether there is enough daylight after switching off the artificial light.

Switching operation

During switching operation, the presence detector measures the sum of artificial light and daylight. In order to be able to switch off the artificial light at the right moment when there is increasing daylight, the presence detector must know the proportion of artificial light (see fig.). This value is automatically learned by the detector, by constantly analysing the switching proces

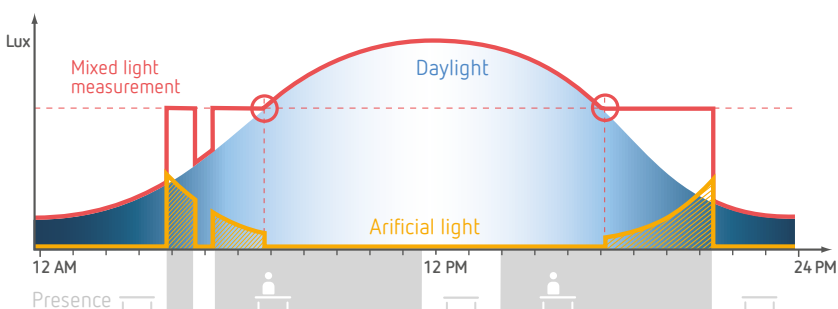
ses for the lighting in the room. This enables it to calculate the current daylight intensity at any time from the measured total brightness. The advantage of mixed light measurement is that it works with any light source – whether LEDs, halogen or fluorescent lamps. Mixed light measurement is the basis for constant light control.



Constant light control

With constant light measurement, the presence detector permanently measures the sum of natural and artificial light (see fig.). It determines the desired brightness value from these two light sources. On a misty or rainy morning the natural light is less. In this case, the presence detector increases the proportion of artificial light, in order to reach the desired brightness in the room.

If the sun breaks through in the course of the morning and there is more natural light through the windows, the presence detector reduces the proportion of artificial light. The brightness level in the room therefore remains constant, regardless of the amount of natural light. Typical applications: rooms in which a specific brightness level is required by law or standards.





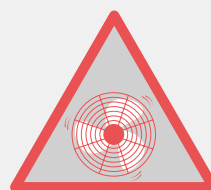
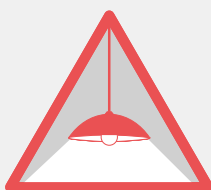
Planning and installation

Correct installation of presence detectors

To ensure optimum functionality of the presence detector and to avoid sources of interference, a number of factors must be considered during installation. For example, there should be nothing obstructing the presence detectors field of vision, such as suspended lamps, partitions, shelves or large plants. Sudden temperature changes in the surroundings of the presence detector

– for instance caused by switching fan heaters or fans on or off – simulate movement. Lamps which are switched on or off in the vicinity of the detection area (e.g. halogen lamps at a distance of less than 1 m) simulate movement and can lead to incorrect switching. Moving objects, such as machines and robots, simulate motion signals or temperature differences. However, slowly

warming objects, such as heat radiators (lateral distance from lines and radiators greater than 0.5 m), IT equipment (computers, monitors), sunny surfaces, or room ventilation systems do not disturb the function of the presence detector as long as the warm air is not directly pointed at the presence detector.



Note: Do not install presence detectors next to suspended lamps, partitions, shelves, indoor plants or devices with moving parts such as fans or machines.

Planning security with sensNORM

As a member of the European association and quality label sensNORM, Theben and other industry representatives are committed to greater transparency, quality and planning certainty for motion and presence detectors in building automation. Products carrying the sensNORM quality label have been tested in line with standardised test specifications, allowing consumers to make a cross-brand comparison they can rely on.

The measuring method according to sensNORM has established itself as an industrial standard and was included in the European standard IEC 63180.

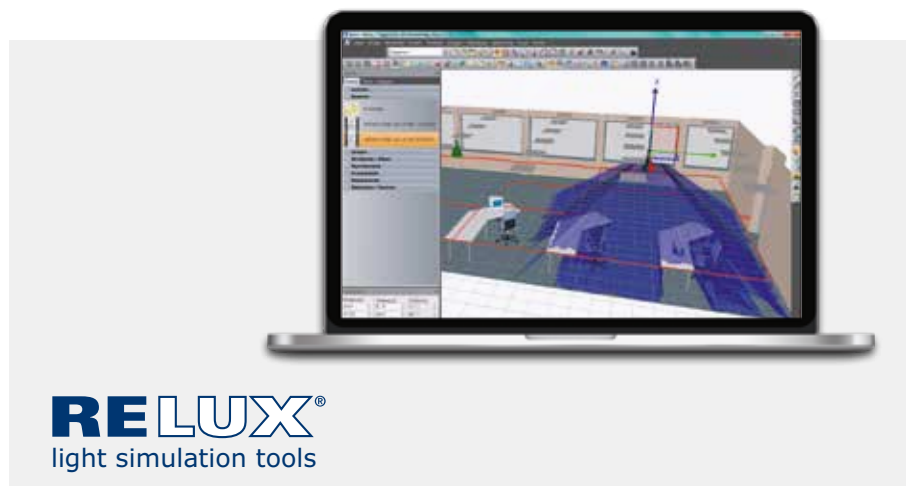
The measured detection areas according to sensNORM can be found in the data sheets of the respective products.



Free planning software for safe detector positioning

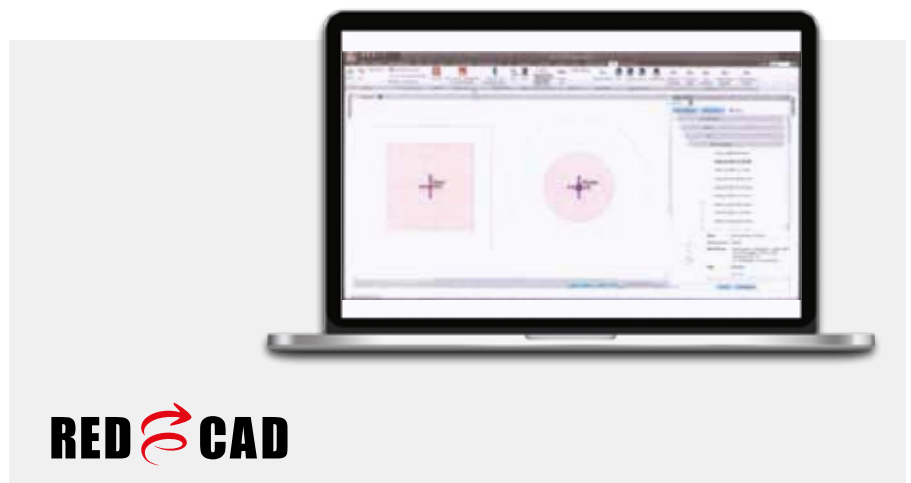
Customers wishing to position, use and control the light correctly right from the start will benefit from Relux light simulation, which is generally free of charge. Relux offers professional planning software for development and implementation of complex lighting control tasks. The software for planners, architects and light designers is based on lighting solutions from various manufacturers and is valued by its users around the globe. Theben is a Relux member in the sensors product group.

More info at www.relux.com



The RED CAD planning software can be used to create plans professionally and efficiently. Thanks to the integrated icon library with the proven Theben motion and presence detectors, the detection areas can be quickly and reliably included in the plans.

More info at www.redcad.eu/en/



Simple and efficient

Practical advantages of KNX presence detectors

Due to their very fine sensor technology, Theben KNX presence detectors detect even the smallest movements and temperature differences. In this way, they allow to exactly adjust light and climate to the needs of inhabitants and users. Depending on the model, the various presence detectors are available in the colours black, white, grey, silver or in special colours upon request.



Square detection-area

The square detection area is ideal for most rooms in which presence detectors are installed. In this way, the individual detectors can be perfectly arranged. Without any gap or unnecessary

overlapping. Without blind spots. This makes planning easier, reduces the installation effort, saves energy and lowers costs – because, due to the square detection area, usually fewer detectors are needed.



High installation height

Presence detectors in entrance halls or warehouses must reliably detect movements from a great height. The innovative optics ensure that the presence detector does not miss anything from an installation height of up to 15 m.



Easy to use remote control

With a remote control, certain settings, including activation of the programming mode, can be made and changed conveniently from the ground. This is faster, shortens the installation time and lowers costs. And, what's more, it's safer.





Most simple energy saving setting

"eco" stands for optimum switching behaviour. "eco plus" for maximum energy savings. By configuring, you decide what is best for you. Just as you want. Exactly how you need it. There is no easier way to save energy.



Configurable sensitivity

How sensitively presence detectors react to movements inside the room, is entirely up to you. The PIR sensors can be conveniently set using the remote control – according to the individual requirements of the users.



Room surveillance

A presence detector misses nothing. This is a particular advantage when the presence detector is integrated in the building system technology of large office or administration buildings. In this way, the building management always knows in which rooms people are still working.



Constant lighting control

The KNX versions feature constant lighting control, which permanently compares artificial light and daylight. They determine the desired brightness value from these two light sources. No matter how changeable the weather: The lighting conditions inside the room remain pleasantly constant.



Calibration of brightness measurement

The measured brightness value is influenced by the installation location, the incidence of light, the position of the sun, the weather conditions, as well as the reflection properties of the room and the furniture. The automatic calibration is carried out by the remote control, which has the luxmeter integrated right away. It is also possible to manually enter a lux value, or change the room correction factor. This calibration ensures that the set point value in lux will be exactly observed at each workplace.



Self-learning time delay

Depending on how people behave inside the room, the time delay changes automatically. If people hardly move or only rarely, the time delay is increased to up to 20 minutes. This saves energy, increases comfort and allows people to work in their most efficient way: active and lively or still and focused.



Illuminating short stays

In the event of a short stay, the light is only on for two minutes, because presence detectors "detect", whether and how long someone is in the room. This means that whoever enters the room for a short period of time does not automatically trigger the time delay that has been set and still does not have to go without light.



Innovative light measurement

The integrated, calibrated light measurement provides a reliable and continual measurement of the proportion of artificial and natural light. The presence detector measures the brightness by means of up to three directed light measurements, and can thus optimally respond to the diverse conditions inside the room. This ensures optimum lighting, even under difficult lighting conditions.



Clever teach-in function

Lighting conditions change quickly – it is good if you can simply save them when they are exactly how you want them to be. With the clever teach-in function, the current lux value can be permanently saved. Without specialist knowledge. By the end user. It couldn't be easier.



Individual lighting scenarios

Bright daylight or softly dimmed light – you can choose between two lighting scenarios, which you can define whatever mood takes you. For example, in conference rooms where the light has to be dimmed for presentations. For exactly those lighting arrangements that are necessary in everyday situations. Settings can be made, saved and changed quickly and easily by using the remote control.



Intelligent parallel switching

Presence detectors allow for more than just increasing the detection area via master/slave switchings. Via master/master/parallel switchings, the lighting conditions can be set in the detection area of individual devices independently, and thus individually. This is an advantage if, for instance, in open-plan offices, different lighting conditions are to be balanced between areas close to windows and the room's interior.







Suitable for damp rooms

Presence and motion detectors with protection class IP 54 can also be used in damp rooms such as showers, changing rooms or toilets.

All functions at a glance

KNX presence and motion detectors

Functions	theRonda S360 KNX FLAT DE	theRonda S360 KNX AP	theRonda P360 KNX	thePrema S360 KNX
 Square detection area				●
 High installation height			●	
 Innovative light measurement				
 Calibration of brightness measurement	●	●	●	●
 Self-learning time delay				●
 Energy saving short stay	●	●	●	●
 Clever teach-in function	●	●	●	●
 Simplest energy-saving setting				●
 Configurable sensitivity	●	●	●	●
 Room monitoring				●
 Constant lighting control	●	●	●	●
 Easy to use remote control	●	●	●	●
 Individual lighting scenarios	●	●	●	●
 Parallel switching	●	●	●	●
 Suitable for damp rooms (presence detectors) or outdoor use (motion detectors)	①	●	①	

① IP54 when fitted

thePrema
P360 KNX

PlanoCentro
KNX

PlanoSpot
360 KNX

thePassa
P360 KNX

PresenceLight
360 KNX

PresenceLight
180 KNX

theLuxa
P300 KNX

●	●	●	●	●		
●			●			
●		●	●			
●	●	●	●	●	●	
●	●	●				
●	●	●	●	●	●	
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●		●				
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			①	●	●	●



KNX motion detectors for indoor use

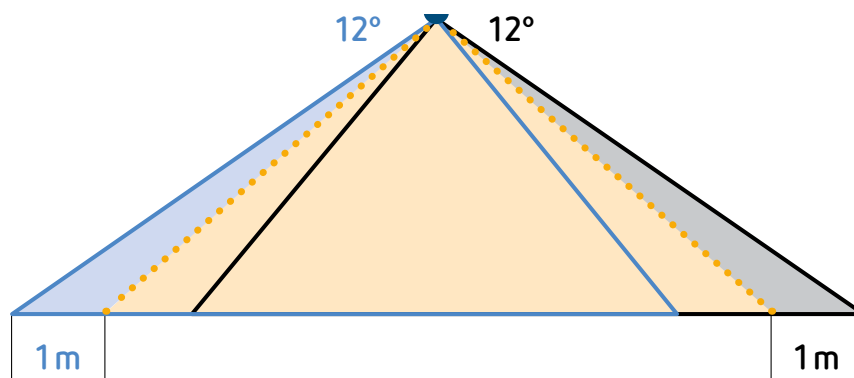
Room situations in offices are changing faster today than ever before. The PlanoSport from Theben is the first presence detector on the market with a mechanically moving detection area.

If the presence detectors are detecting too much at once, you can conveniently reduce its detection area by remote control or via ETS parameters. This makes PlanoSpot the ideal presence detector for spaces where a flexible floor plan is important. However, PlanoSpot can do even more, thanks to its three directed light measurements, it ensu-

res pleasant constant lighting conditions. In any weather and in any season. And even if no people are detected. A function ensuring comfortable lighting conditions, especially in museums, restaurants, hotels or open-plan offices.

Open for practically everything

Whether KNX or DALI, Theben offers a suitable version of the powerful presence detector for each of the two bus systems.* Please observe the notes at www.theben.de/planospot-dali-2



Movable detection area:

The mirror optics of the square detection area can be mechanically tilted by up to 12° to the left and to the right. As a result, the detection area can be displaced by up to ± 1 m in order to better detect modified layouts.



Original size

Thanks to its sophisticated mirror optics, the PlanoSpot is just 3 mm tall and 76 mm in diameter. It couldn't be any less obtrusive.

Flexible, flat, feature-rich PlanoSpot KNX



Advantages at a glance



Square detection area

The square detection area is ideal for most rooms in which presence detectors are used. In this way, the individual detectors can be perfectly arranged. Without any gap or unnecessary overlapping. Without blind spots. This makes planning easier, reduces the installation effort, saves energy and lowers costs – because, due to the square detection area, usually fewer detectors are needed.



Self-learning time delay

Depending on how people behave inside the room, the time delay changes automatically. If people hardly move or only rarely, the time delay is increased to up to 20 minutes. This saves energy, increases comfort and allows people to work in their most efficient way: active and lively or still and focused.



Three directed light measurements

PlanoSpot measures artificial light and daylight by means of three directed light measurements. The central light measurement detects the brightness directly below the detector, while the two other light measurements detect the brightness close to the window or in the interior. The result is optimum lighting conditions throughout the room.



Calibrated brightness measurements

Daylight incidence, reflective surfaces or stark colour contrasts in the interior architecture affect the lux value. So it's good to know that there is a room correction factor. This is used to adjust the brightness measurement value of the corresponding lighting channel automatically to the conditions in the room.



Safe, thanks to orientation lights

In buildings that you don't know very well, such as in hotel or hospital corridors, a dimmed orientation light makes you feel safe. If motion is detected, the lighting dims up to the configured set point value. After a defined time delay, the lighting is softly dimmed back down to the level of the orientation light.



KNX motion detectors for outdoor use

Comfort and safety – two aspects a KNX motion detector must cover. Nothing accomplishes these tasks better than theLuxa P300 KNX. Integrated in the KNX building system technology, it exactly detects, when it should guide the way.

Especially in larger areas, it is about detecting and automatically responding to streams of movements which have to be expected. For instance of employees, who enter the company premises in the early morning, and often leave late in the evening. Or employees and visitors of hotels, hospitals and administrative buildings. In all these cases, it is about the required control,

but also a predictive lighting of entrance halls, access routes and connecting passages.

theLuxa P300 KNX (protection class IP 55) is available in white or black, and can be installed at the wall or ceiling, thanks to its swivelling sensor head. With a 300° detection area of up to 16 m, and creep under

protection, theLuxa P300 KNX does not miss anything. Via the ETS, the motion detector can be easily integrated into the building automation, and it is easy to configure. Brightness thresholds, duty cycle, and sensitivity can easily be configured via the KNX visualisation theServa S110 KNX.



More flexible: ceiling and wall mounting

Thanks to its swivelling sensor head, theLuxa P300 KNX is also suited for ceiling installation. The motion detector and its included accessories (corner bracket, spacer frame) are available in white and in black.

Detecting everything in a wide range

theLuxa P300 KNX



Various functions with numerous advantages



Comprehensive motion channels

The four motion detector channels can be linked in a time-dependent manner for various lighting applications, such as switching or dimming, for instance as an orientation light. Functions, such as short-time presence, master/slave, fully automatic/semi-automatic device and two switchable time delays can be configured via ETS.



Flexible universal channels

The four universal channels respond, independent of movement, to temperature and/or brightness, and can thus be used as a twilight switch, for instance.



Independent logic channels

The "AND", "OR", and "XOR" operations of the four independent logic channels respond to current bus events. As initial object, switch commands, or percentage values can be sent, for example.



Various scene functions

theLuxa P300 KNX is an enrichment to any scene. The motion channel can be incorporated into scenes in a most versatile way: "locking", "permanent ON", "brightness threshold", and "change over time delay".



Precise time switch function

Functions, such as "locking", "permanent ON", "brightness threshold", and "change over time delay" can be called up in a time-dependent manner via the integrated time switch function with a simple weekly program.



Integrated temperature measurement

theLuxa P300 KNX has an integrated temperature sensor, which can be used for temperature-dependent operations.



Easy to use remote control

theLuxa P300 KNX supports remote operation. 2 scenes and numerous settings can be easily made from the ground. This is faster, shortens the installation time and lowers costs. And, it is safer.



Clever teach-in function

Lighting conditions change quickly - it is good if you can simply save them when they are exactly how you want them to be. With the clever teach-in function, the current lux value can be permanently saved.



Sensitive brightness sensor

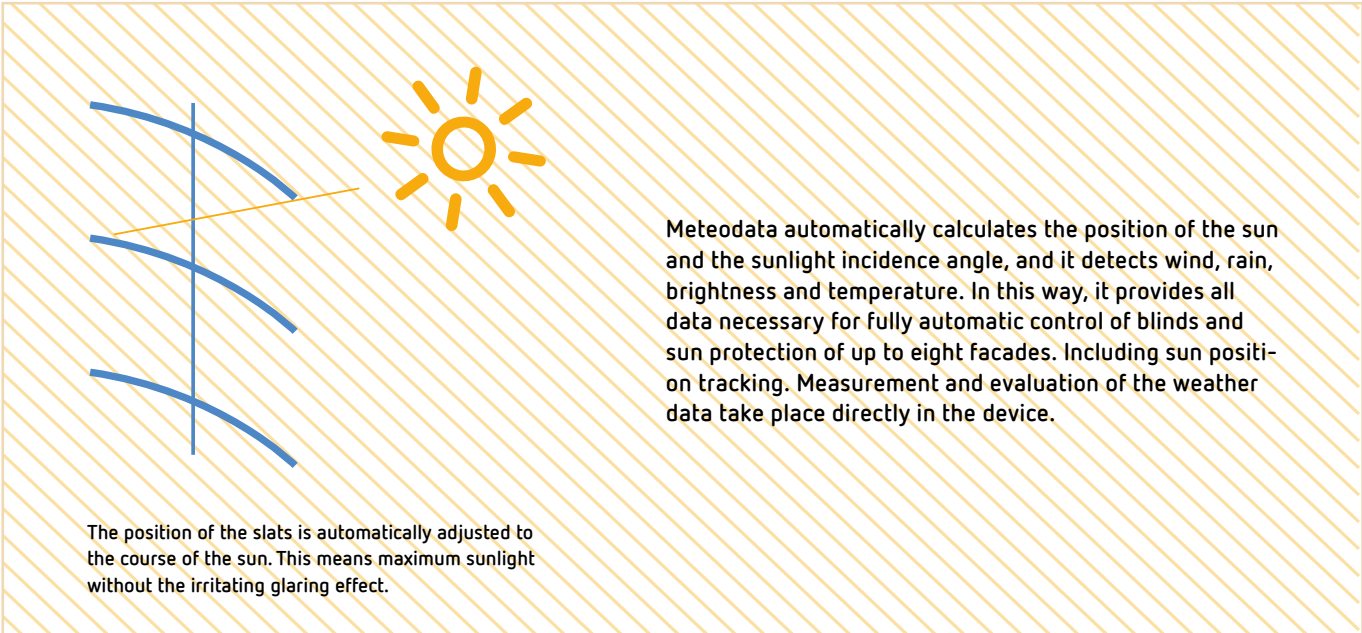
The motion detector has an integrated brightness sensor, which can be used as a twilight switch.

Summer, sun, sunshine

Meteodata weather station

The Meteodata weather station integrates harmoniously into any house façade made of timber, concrete, or Eternit and any colour scheme. The anemometer on the bottom detects wind, regardless of the wind direction, and it measures the wind speed, even in snow and ice. The capacitive rain sensor is resistant to dirt and reliably measures rainfall. In short: Our Meteodata weather station is a real all-rounder.

The Meteodata 140 S GPS KNX is equipped with an integrated GPS receiver, a heated rain sensor, three brightness sensors, six logic channels, as well as four additional threshold value channels for linking external KNX sensors. Meteodata KNX weather stations are also available as 24 V versions with and without GPS module, as well as a "basic" version without rain sensor.



The diagram illustrates the sun's position and its effect on window slats. A sun icon is shown on the right, with a line indicating its path. Three blue curved lines represent window slats, which are shown adjusting their angle to follow the sun's path. The background is a light orange grid.

Meteodata automatically calculates the position of the sun and the sunlight incidence angle, and it detects wind, rain, brightness and temperature. In this way, it provides all data necessary for fully automatic control of blinds and sun protection of up to eight facades. Including sun position tracking. Measurement and evaluation of the weather data take place directly in the device.

The position of the slats is automatically adjusted to the course of the sun. This means maximum sunlight without the irritating glaring effect.

For effective glare protection with sun position tracking



Reliable detection of the sun position



Precise temperature measurement



Capacitive rain measurement



Wind measurement independent of its direction



Whitepaper "Metodata weather station" Download now for free.

To find out how Metodata can help you make your customers' lives more comfortable and increase the revenue in your wallet, read our free whitepaper.

Read how the Metodata weather station functions and how you can benefit from it:

- All functions and advantages at a glance
- Practical examples
- Important information

www.theben.de/metadata-en



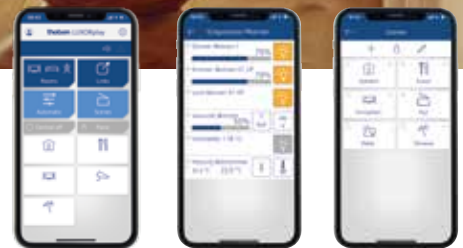
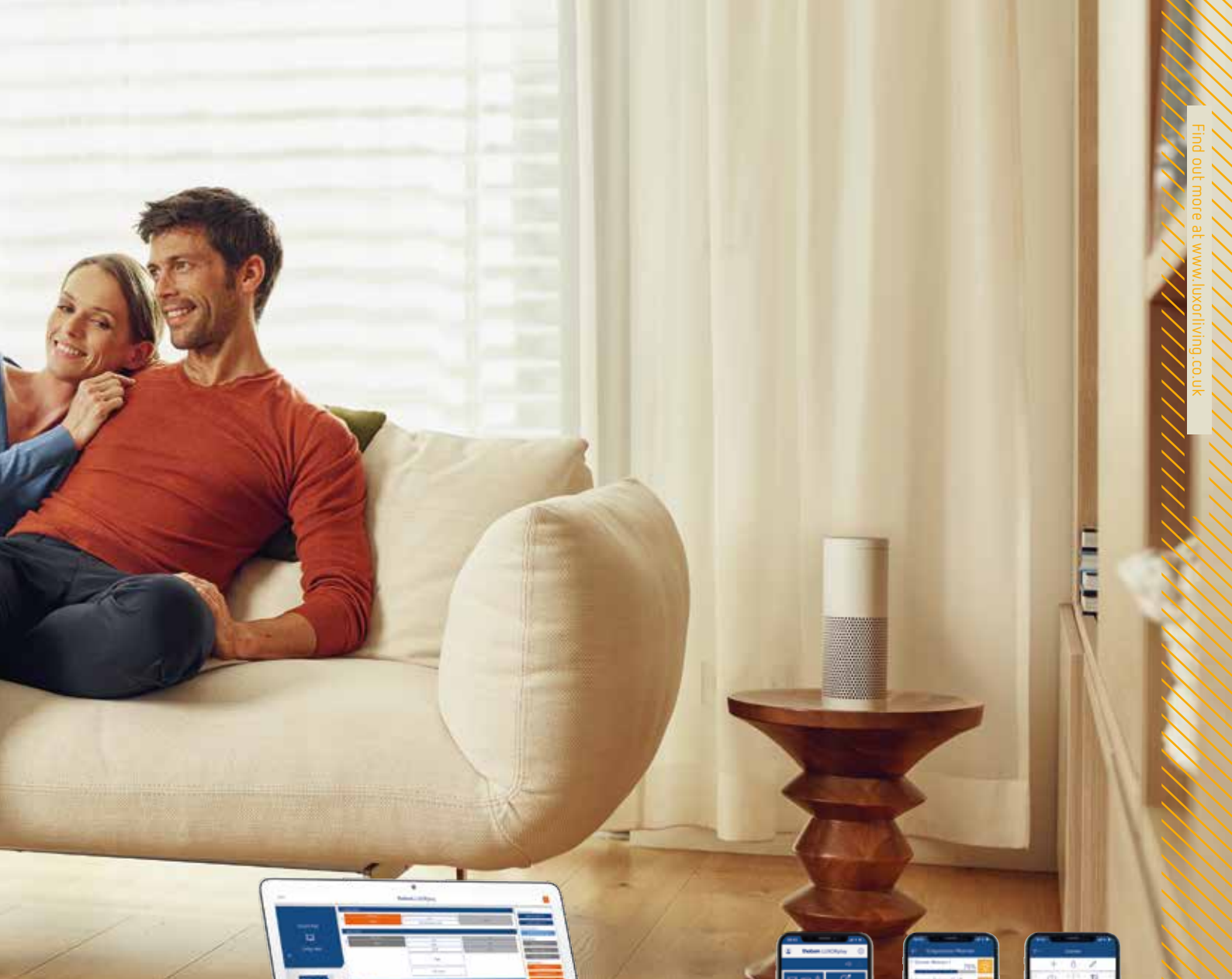


LUXORliving smart home solution The little brother of KNX

LUXORliving – easy to use

LUXORliving is the intuitive smart home system from Theben that offers all-round home comfort and does not overwhelm users with unnecessary functions. LUXORliving controls everything that matters: Switching lights on and off. Dimming. Regulating the heating and blinds. And the best thing: LUXORliving is so easy to assemble, install and use that you don't need a specialised fitter – unless you really want one! Simply wonderful. Simply LUXORliving.

Smart home system – it sounds like complicated programming and time-consuming training to use all the functions. This is not the case with LUXORliving. LUXORliving is the smart home system that is self-explanatory. It is easy to use and fun to try out all the functions. This isn't only true for residents – the installer will also find installing, programming and starting up the system a piece of cake.



LUXORplug for start-up

Easy to set up – the installation interface for Windows.

LUXORplug is the simple setup software from Theben. Windows-based – quick, safe, simple. No prior knowledge necessary.

LUXORplay for operation

Easy to control – the user interface for smartphones and tablets.

LUXORplay is the app for convenient, reliable and extremely easy operation of LUXORliving via a smartphone or tablet (for Android, iOS or Windows).



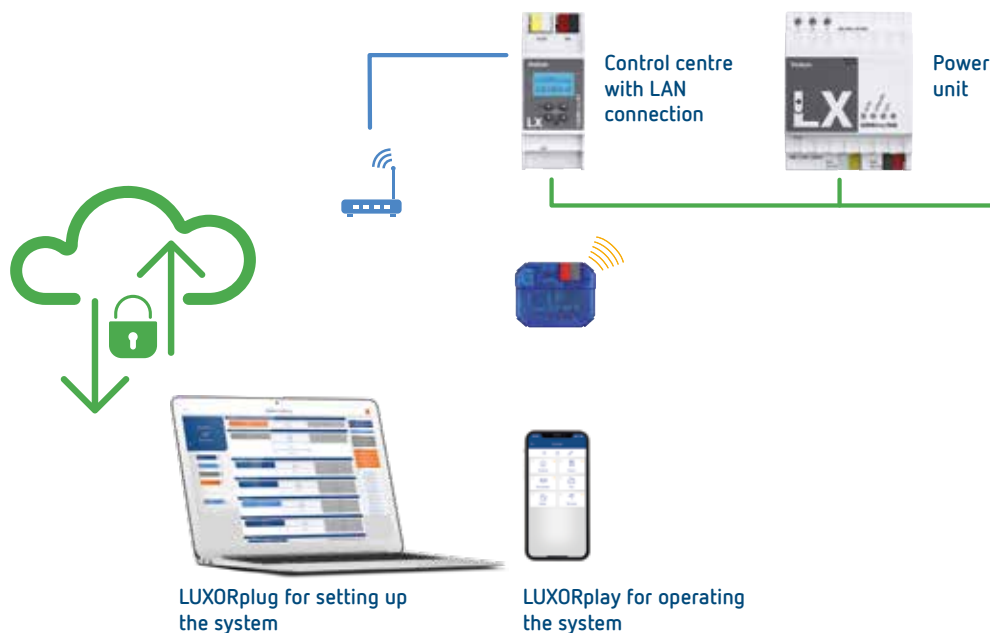
LUXORliving also executes your commands via voice control. The smart home system is compatible with Amazon Alexa and Google Assistant. It is also possible to integrate LUXORliving into the iHaus app. This allows interaction with various smart products and platforms. The integration of warning detectors via Ei Electronics ensures greater safety.

Simply flexible when it comes to setup.

LUXORliving – intuitive operation



Simply wire, set up, program and you're done. Or retrofit with wireless actuators. The visualisation is generated automatically. With LUXORplug, you can create the project file in an instant. Whether you are carrying out the installation at your office or directly on site, you have everything at your fingertips. And online via the Theben cloud, you have everything to hand with the LUXORplay app – total convenience on a smartphone or tablet.



Certified components

LUXORliving uses standard KNX communication, making it a secure investment that is fit for the future compared to proprietary systems. Updates ensure it is always at the cutting edge and the system is easy to extend if necessary. The show-stopper: LUXORliving has as much KNX as is needed and as little complexity as possible. That's what makes LUXORliving so incredibly simple. For the installer as well as for the user.



Simple start-up

You thought LUXOR was easy to install. LUXORliving is even easier. Easy to assemble, to wire and to set. Done. No ETS. No licence required. No prior knowledge either. Just go with your intuition – speedy, safe, successful.



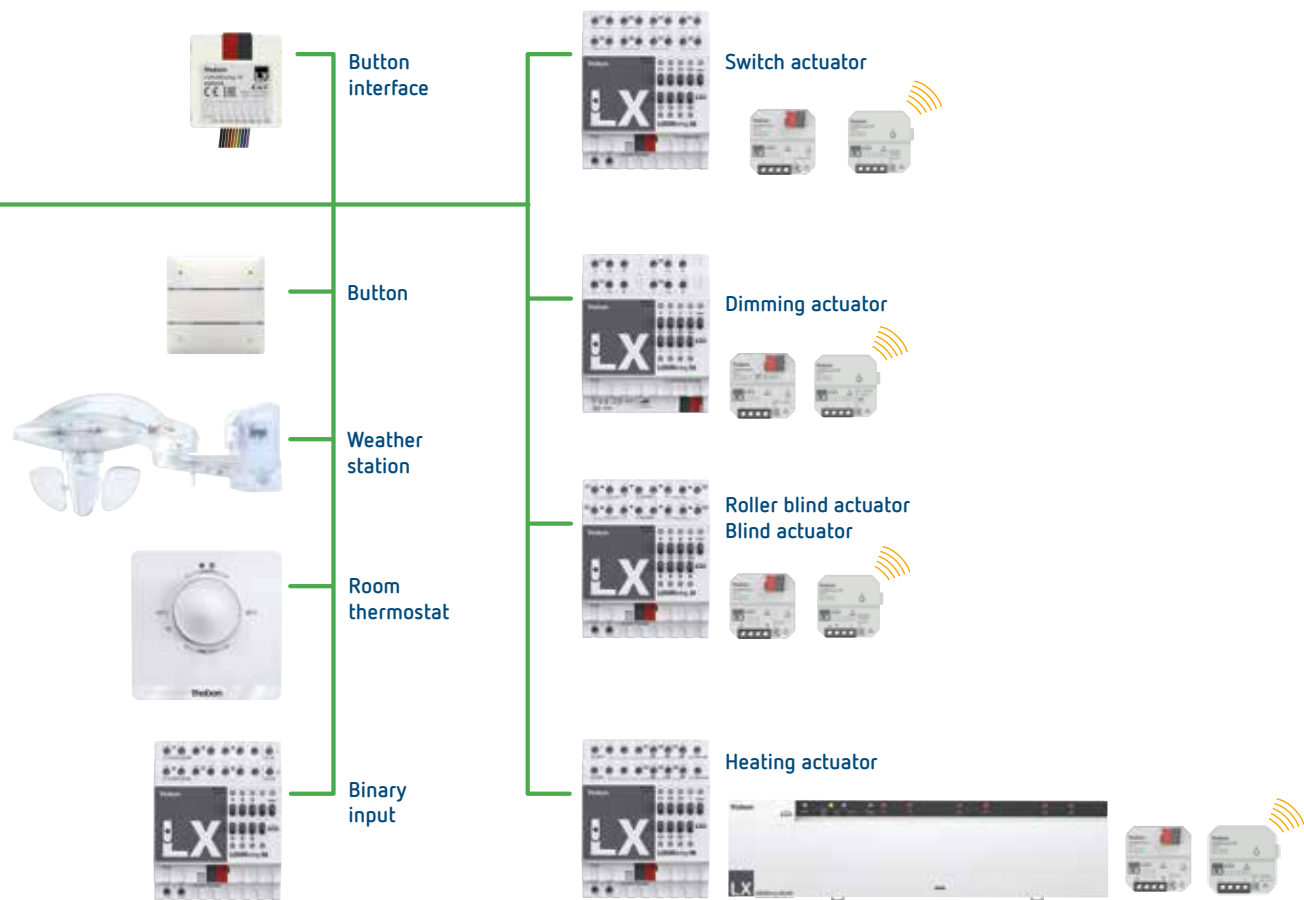
Flexible BUS wiring

In conventional setups, the functions are preset and fixed through the wiring. This is not the case with LUXORliving. Based on flexible BUS wiring, lights, roller blinds or other applications can be assigned to the buttons as you wish. This gives you leeway to change existing installations and reduces costs as fewer switches are needed.

Super simple when it comes to installation.

Old friends – installation with LUXORliving

With LUXORliving, everything becomes much simpler. But some things, such as the installation process, stay as simple as you've come to expect from Theben and LUXOR.



Free button selection

With many smart home systems the buttons are preset. This is not the case with LUXORliving. With this system, homeowners can choose for themselves whether they use the LUXORliving iON button or any other conventional button in connection with our binary inputs and button interfaces.



Clever presence simulation

When the occupants are at home, they use LUXORliving. When they're not at home, LUXORliving is of use to them. The clever smart home system makes sure that the lights come on and the blinds go down every evening, while the occupants can enjoy their holiday without having to worry.



Individual scenarios

Lighting moods and blind positions can of course be programmed freely and can be activated with a command as required. This means that each individual can create the scenarios of their choice.

Easy to use. In 6 steps.



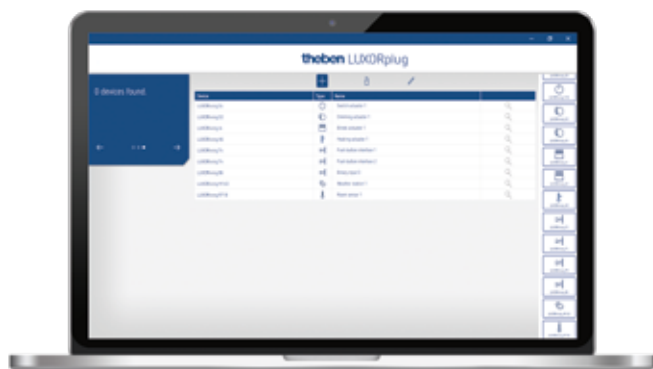
1. Start project

First, complete the formalities by entering all the relevant project information, such as the project name, builder, address and installer.



2. Create overview

Using drag & drop, you can add the rooms to the relevant floors and assign individual names.



3. Integrate devices

Devices that have already been installed can be imported, identified and named automatically. Or you can create the device list manually and offline.



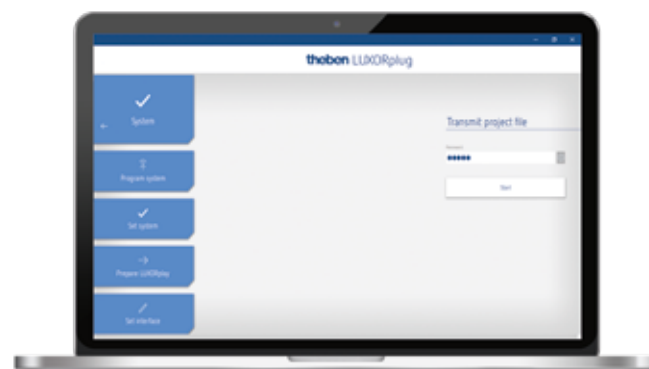
4. Define functions

Use drag & drop to add functions to the devices in each room. This determines which devices communicate with each other.



5. Program functions

These functions can be transferred at any time. The project planning does not have to be completely finished to program the devices.



6. Prepare visualisation

The project file is transmitted to the system control centre. The functions are then extremely easy to operate and configure using the LUXORplay app.

LUXORliving.

The complete range.

Function	Channels	Type	Item no.	
Button interface	2	LUXORliving T2	4800402	
	4	LUXORliving T4	4800404	
	4	LUXORliving T4 RF	4800604	NEW
	8	LUXORliving T8	4800408	
Switch actuator	1	LUXORliving S1	4800520	
	1	LUXORliving S1 RF	4800620	
	4	LUXORliving S4	4800420	
	8	LUXORliving S8	4800425	
Binary input	16	LUXORliving S16	4800429	
	6	LUXORliving B6	4800430	
Heating actuator	1	LUXORliving H1	4800540	
	1	LUXORliving H1 RF	4800640	NEW
	6	LUXORliving H6 24 V	4800441	
Blind actuator	6	LUXORliving H6	4800440	
	1	LUXORliving J1	4800550	
	1	LUXORliving J1 RF	4800650	
	4	LUXORliving J4	4800450	
Dimming actuator	8	LUXORliving J8	4800455	
	1	LUXORliving D1	4800570	
	1	LUXORliving D1 RF	4800670	
	2	LUXORliving D2	4800470	
Controls	4	LUXORliving D4	4800475	
	-	LUXORliving R718	4800480	
	2	LUXORliving iON2	4800412	NEW
	4	LUXORliving iON4	4800414	NEW
Weather station	10	LUXORliving iON8	4800418	
	-	LUXORliving M140	4800490	
	-	LUXORliving M100	4800491	
System control centre	-	LUXORliving M130	4800492	NEW
	-	LUXORliving IP1	4800495	
Power supply	-	LUXORliving P640	4800990	
Media coupler for RF devices	-	LUXORliving RF1	4800868	
Starter packages				
LUXORliving „Drives Basic“				
1x system control centre LUXORliving IP1, 1x power supply LUXORliving P640, 1x blind actuator LUXORliving J8, 4x push button interface LUXORliving T4			4990013	NEW
LUXORliving “Drives“				
1x system control centre LUXORliving IP1, 1x power supply LUXORliving P640, 1x weather station LUXORliving M140, 1x blind actuator LUXORliving J8, 2x push button interface LUXORliving T4			4990010	
LUXORliving “Lighting“				
1x system control centre LUXORliving IP1, 1x power supply LUXORliving P640, 1x switch actuator LUXORliving S8, 1x dimming actuator LUXORliving D4, 2x push button interface LUXORliving T4			4990011	
LUXORliving “Drives & Lighting“				
1x system control centre LUXORliving IP1, 1x power supply LUXORliving P640, 1x weather station LUXORliving M140, 1x switch actuator LUXORliving S8, 1x dimming actuator LUXORliving D4, 1x blind actuator LUXORliving J8, 4x push button interface LUXORliving T4			4990012	



For all occasions KNX solutions from Theben

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KNX lighting control from Theben creates emphasis and provides orientation

Twilight is predictable. In the morning, in the evening. One can adapt to it. It sounds simple, but it is not – especially if the KNX installation has to be programmed accordingly. Many parameters have to be observed. The season, sunrise and sunset, the daily brightness values, the weather conditions.

But it is possible. Especially with Theben. For instance in front of entrances, accesses or on parking lots of companies, industrial plants, administrative buildings or housing areas. That is, in applications in which lighting is required especially at the start and end of work.

Here, KNX lighting controls from Theben create clear emphasis and provides orientation. Precisely then, when it is needed. Outdoor – and of course indoor.

Pioneering lighting concepts which are appreciated everywhere

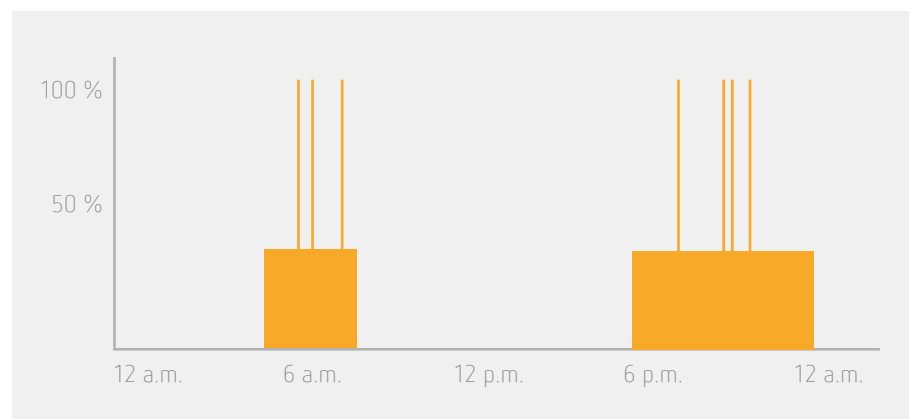


It feels good to come home, and the light goes on – long before you reach the door. It feels safe, to have orientation light in the garden or on the parking place. It is convenient to find the way in corridors of hotels or nursing homes during the night, because softly dimmed light never leaves you in the dark.

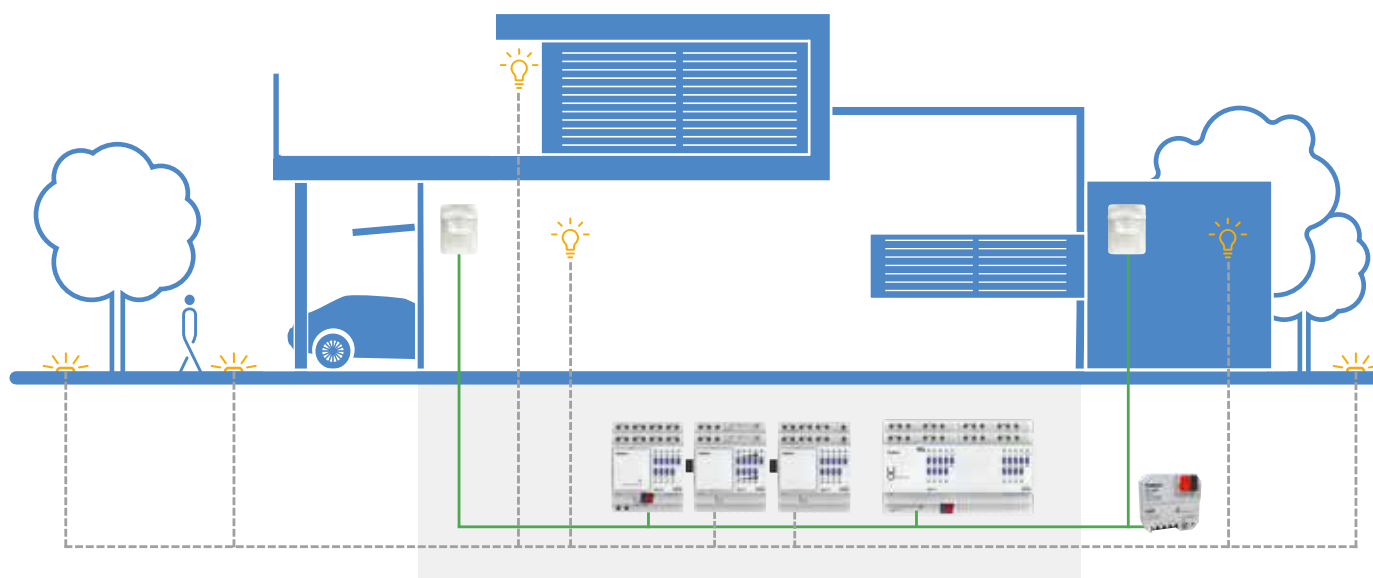
With Theben, comfort can be created easily – with theLuxa P KNX motion detectors and universal dimmer actuators, which always provide the desired brightness. Even at a specific period of time – in the morning, in the evening, or at night. Permanently or temporarily. With specific brightness values or with certain responses and time delays.

Basic principle of orientation light

In the morning and evening hours, a basic lighting of 40 % provides orientation. When motion is detected, the brightness is switched to 100 %. After a time delay, the lighting is softly dimmed down to the level of the orientation light.



Theben KNX lighting control for buildings and outside facilities



Benefits at a glance

1. Large detection area and universal applications

- The outdoor motion detector theLuxa P300 KNX has a large detection area of up to 16 m and a separate creep under protection.
- It is suited for ceiling installation and wall mounting. Corner brackets for the installation at inner and outer corners, as well as spacer frames for lateral cable routing are included in the scope of supply.

2. Sophisticated applications

- theLuxa P300 KNX features change over between alternative values for brightness and time delay, which allows different values to be considered for different times of the day and situations.
- The most important settings, such as brightness and time delay, can be changed during operation via the KNX objects.

3. High investment security

- In the KNX universal dimmer actuators, various dimming curves are stored, which correct the dimming response depending on the lamp used, thus ensuring stepless and flicker-free dimming of LED lamps.
- The dimming output is 400 W or 200 W per channel, depending on the device type. If a greater output is required, this can be doubled to 800 W or 400 W by connecting two channels in parallel.
- The KNX flush-mounted switch actuators, such as the SU 1 KNX, are also optimised for high inrush currents and offer flexible application options thanks to the integrated binary inputs.



Motion detector theLuxa P KNX responds to every movement

This motion detector has a very large detection area of up to 16 metres. An advantage, especially with large building complexes, because a few detectors will suffice, in order to cover large entrance areas, parking lots, or accesses. It can be mounted on walls, or ceilings. Many of its functions can be easily changed with theSenda remote control from the ground.



Dimming actuator DM 8-2 T KNX dims like no other

Whether you opt for the FIX series or the MIX series – with KNX universal dimmer actuators from Theben you can steplessly dim LED, halogen and energy-saving lamps without any flickering. The times of high wattages are over. Today, the art is in dimming LEDs with small wattages. Theben responds to this trend and offers dimming actuators with a minimum load of just 2 watts.



Switch actuator RMG 8 S KNX compact, flexible, extendable

The 8-channel switch actuator RMG 8 S KNX is just 4 modules wide and yet switches inrush currents of up to 800 A (200 μ s) per channel safely and reliably. The complete range of KNX MIX2 actuators opens up new design options

in the realm of building automation. All you need is a basic module to which up to two extension modules can be connected.



Flush-mounted switch actuator SU 1 KNX small but nice

Thanks to its compact design, the KNX flush-mounted switch actuator fits into any switch/distribution box and still switches inrush currents of up to 740 A reliably and safely. Two external inputs for connecting a button, signal contact or temperature sensor offer maximum flexibility.



Constant lighting conditions Implemented across systems

We all sense temperature differently. Similarly, we all sense brightness differently: Too bright or too dark are elastic terms, and are understood in a different way by each individual.

However, we all know that light is an important asset. For several years, a growing number of experts has pointed out the health aspects of poor lighting, in numerous studies.

The challenge has been clearly defined: On the one hand, it is important to save energy and to lower CO₂ emissions. On the other hand, we want to permanently create good lighting conditions, under which people can work in a focussed manner without health burden. Theben offers you the appropriate solution.

Energy saving interplay of two open standards



Whether open-plan offices, classrooms, or seminar rooms: Near the window it is bright, while it is darker inside the room. Dusk and dawn, or rainy weather increase the effect. KNX building automation with constant lighting control ensures homogenous and energy efficient lighting conditions, which incorporates the DALI lighting control.

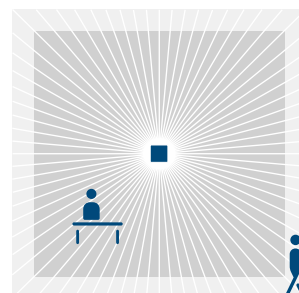
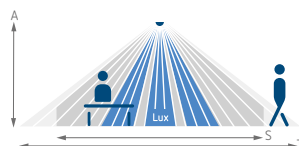
For this, Theben provides the two critical components: thePrema P360 KNX presence detectors, which optimally cover large rooms, thanks to their large and square detection area, and the DALI Gateway KNX, which forwards the KNX telegrams from the presence detectors to the DALI participants.

With the three directed light measurements, the brightness situation is exactly determined by thePrema P360 KNX. In this way, it is possible to implement a separate constant light control for each of the two groups of lights. The large saving potential: Thanks to the square detection area, less presence detectors usually cover the rooms better. This saves time and money for devices, installation and programming. Due to the exact light measurement and the corresponding lighting control via DALI Gateway KNX, highest energy efficiency is pre-programmed.

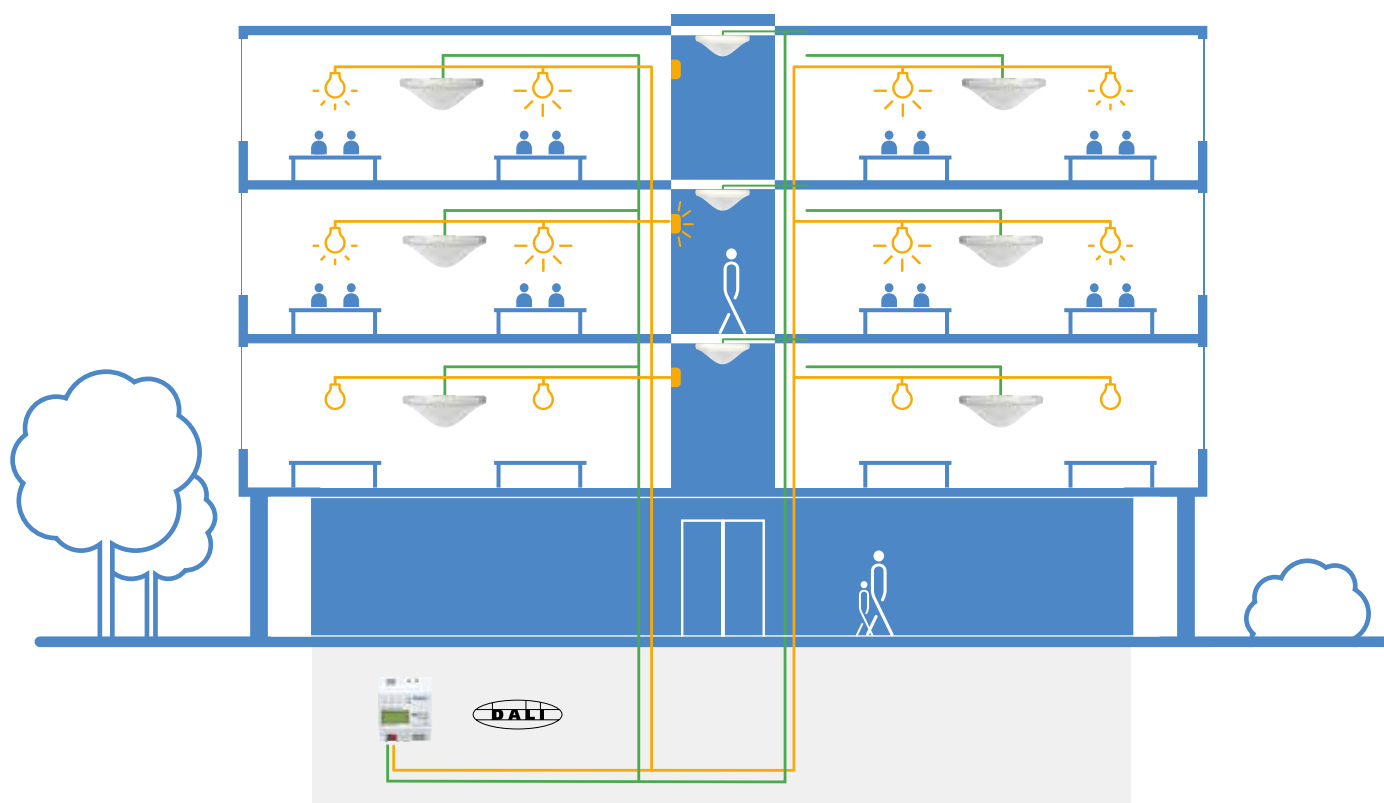
With the DALI Gateway KNX, 64 DALI participants can be divided into up to 16 group of lights. Between the lamps and the KNX building automation, information is exchanged bidirectionally. The advantage: The lamps cannot only be controlled, but failures of the EBs or lamps can be displayed in the KNX visualisation theServa.

Directed light measurement

Thanks to its differently aligned light measurement, the presence detector thePrema P detects the solar radiation and controls the lighting group near the window independently of the lighting group in the interior of the room.



Theben KNX brightness control in the functional building



Benefits at a glance

High detection quality

- The presence detectors thePrema P and theRonda P feature four, partly overlapping, passive infrared sensors. The overlapping ensures a very close-meshed coverage, which reliably even detects sedentary work with only little motion.
- For a flush ceiling installation, we recommend the PlanoCentro and PlanoSpot presence detectors with a structure height of only 3 mm and very good detection quality thanks to mirror optics. Also the new theRonda S360 FLAT, with a structure height of only 5 mm, is almost invisible.

Optimised energy consumption

- The functions "Short-term presence for passage ways" and "Adaptive time delay" optimise the energy savings and thus significantly reduce energy consumption.
- The light can be controlled fully automatically via the detector, depending on the individually desired setting. Or semi-automatically: Here, the light can be switched on via the light switch. Switching off is done by the presence detector.

Greater comfort and flexibility

- On the KNX presence detectors, the most important settings such as "time delay" and "brightness threshold" can be changed via KNX objects during operation.
- With the KNX plus DALI gateway, the lighting cannot only be switched and dimmed; thanks to support for Device Type 8 (DT8), colour and colour temperature control is also possible.
- The iON 108 KNX room controller can be used to operate and control the lighting. The up to 20 functions of the iON 108 KNX can be operated via button and display, as well as with an app.

Presence detector thePrema P KNX has everything under control

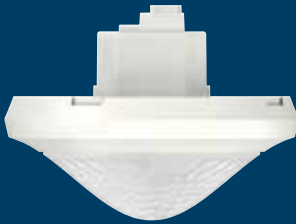


For safe and easy planning:



A 360° detection area of 10 x 10 metres, an adaptive 2-channel mixed light measurement, and 3 light channels – are only a few features which make thePrema P KNX the ideal presence detector for KNX building automation. The detector shows its brilliance when not only the lighting, but also heating, ventilation and air conditioning are controlled via its two separate presence channels.

Presence detector theRonda P KNX draws everyone into its circle



For safe and easy planning:



theRonda P KNX is an excellent addition to thePrema P KNX. Especially, if not only classrooms, but other large spaces, such as assembly halls, or the sports hall should be integrated into the KNX building automation. theRonda P KNX has a large, circular detection area of 25 m in diameter, and is suited for all applications with unusual room geometries, such as fan-shaped concert halls, or events halls. A possible mounting height of 2 - 15 m as well as the high IP protection class of IP 54 makes it an all-rounder.

DALI-Gateway KNX plus Light and automation



The DALI Gateway KNX plus combines the DALI protocol of digital lighting control with the building automation across rooms. It controls up to 64 operating units with DALI interface, individually or in groups. Start-up can be performed either via ETS 5 (DCA) or via the integrated web interface with a mobile device. Another highlight is the support of DALI DT8, which allows control of colour and colour temperature.

Room controller iON 108 KNX Design meets ease of use



On the iON 108 KNX room controller, an icon can be selected from a library for each of the up to 20 functions. The icon can be complemented by suitable function names, and it shows the current status. This greatly simplifies operation and navigation on the room controller. Operation is made even easier by access via App. The integrated Bluetooth interface establishes a comfortable as well as secure connection between the iON 108 KNX and smartphone or tablet.

Push button interface TA 4 S KNX Intervention desired



In some cases it makes sense to be able to manually intervene into an automatic lighting control. For instance, in order to permanently switch on or off the light at the blackboard in the classroom. The push button interface with 4 binary inputs provides the option of using conventional push buttons and switches.



Theben KNX blind controls

Position of the sun, sunlight, and blinds which always respond correctly

The sun rises in the east and sets in the west – but in between and over the year, it shows a surprisingly variable course, which has different effects on houses, functional buildings, and the people who live and work inside.

For some people it is quickly too warm, others are blinded by the glare of the sunlight. Those who want to create constant lighting and temperature conditions, and ensure an efficient working atmosphere, find exactly the right components in the KNX building automation from Theben, which counteract the complex interplay of sun position, azimuth, and elevation: sun protection with sun position tracking.

All this is also energy efficient: Because in winter, solar energy is used to reduce heating costs, and in summer, the cooling load is reduced by correct shading.

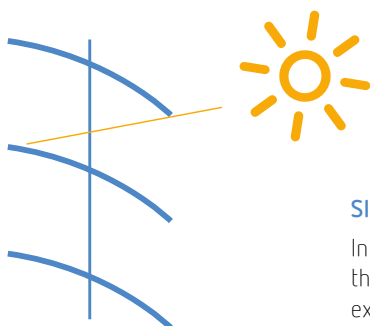
Sun position tracking for better glare protection



The temperature is 21 degrees Celsius, the wind speed is 7.5 kilometres per hour, it is very bright and there is no rain – in short: It is a beautiful sunny day. Data like this is sent by Meteodata 140 S GPS KNX to the Theben multifunction display VARIA 826 S KNX inside the individual rooms and to the MIX2 blinds actuators in the switch cabinet – and shading in accordance with the supplied GPS positioning is done.

Basically, it is all just a question of programming: What is the position of the facade in relation to the course of the sun? At which time of the day does the sun appear in the defined protection zone, and when does it leave it? And, how does it change its position in the course of the day and in the course of the year? The elevation shows the height of the sun, the azimuth shows the direction, from which the sunlight comes. The interplay of GPS weather station, multifunction display and KNX MIX2 blinds actuator reliably ensures that there are always pleasant lighting conditions on the sunny side of the facade – without dazzling. One should not forget the positive effect on climate control, since an accurate shading protects against overheating and reduces energy costs for cooling control. All this, of course with highest safety: Because during storm, ice, and frost, the blinds move up automatically.

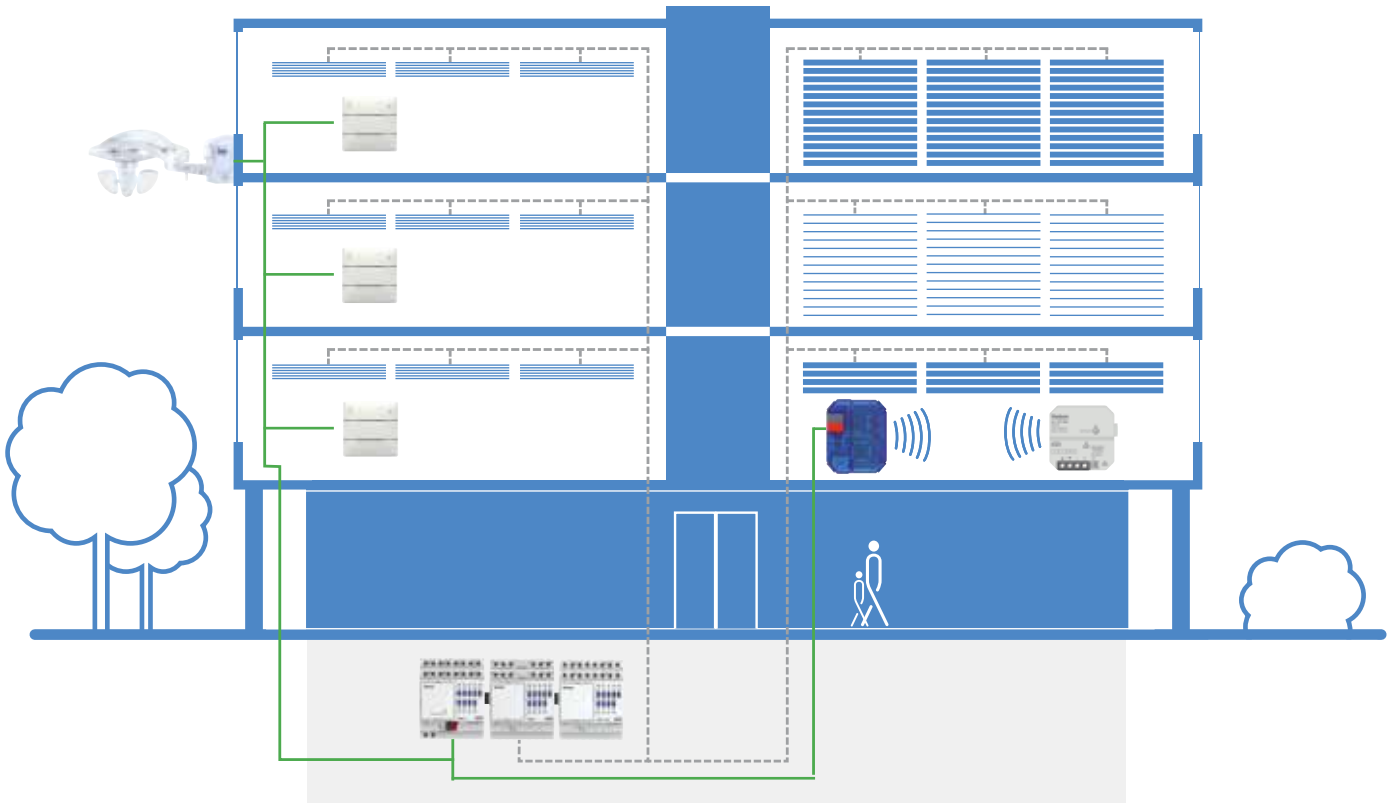
The advantage of the Theben KNX solution: In contrast to other suppliers, the measured data is processed directly inside the weather station. An additional module is not necessary.



Slat adjustment

In case of high solar radiation, the position of the slats is automatically adjusted to the course of the sun. Dazzling and directly incident sunlight is thus avoided, without excluding the daylight completely.

Theben KNX blind controls go with the sun



Benefits at a glance

1. Less components – reduced costs

- In contrast to most other suppliers, the processing of the measured data and sun position tracking takes place directly inside the KNX weather station Meteodata 140 S GPS KNX. An additional control module is not necessary.
- The weather station protects the awnings against frost, storm or rain, and moves them into a safe position.
- Passive houses with internal blinds benefit from blinds actuator JMG 4 T 24 V: The 24 V version is ideal for this type of application.

2. Adaptable

- Through the transparent housing of the KNX Meteodata weather station, the background colour of the facade shines through, so the weather station harmoniously blends with its surroundings.
- Retrofitting is also possible with the KNX wireless actuators, simply and without the need for extensive wiring. Communication with KNX Data Secure encryption offers maximum security.
- Maximum flexibility is provided by the switch/blinds actuators of the MIX2 and FIX series. The outputs of the 8- and 16-channel actuators allow an individual use as switching or blinds channel. This allows you to control drives and also switch consumers cost-efficiently with just one device.

3. Energy saving comfort

- The sun position tracking ensures very pleasant and glare-free working.
- The heating and cooling support contributes to reducing the energy consumption during each season.

Weather station Meteodata 140 S GPS KNX exactly calculates the position of the sun



The incorporation of combined sensor, weather station and integrated GPS receiver makes Meteodata 140 S GPS KNX a true weather expert. Azimuth and elevation are calculated automatically. Temperature, rain, wind, and brightness are exactly detected. Thanks to the three brightness sensors, the weather station is suited for sun protection control of up to eight facades.

Tactile sensor iON 104 KNX timeless design meets advanced functionality



The iON KNX tactile sensors with integrated bus coupler enable secure start-up and communication by supporting KNX Data Secure. For the control of multiple functions: switching, dimming, blinds, value indications, operating mode, scene, colour control or sequence. With the integrated temperature sensor, room temperature regulation via the heating actuators is also possible. States are indicated by multi-coloured status LEDs with adjustable or automatically controlled brightness. A transparent cover allows individual labelling of the buttons.

Wireless blinds actuator JU 1 RF KNX Minimum installation effort – maximum safety



The wireless blinds actuator controls the drives of blinds, roller blinds, sun and shade protection devices, skylights and ventilation flaps. Buttons, window contacts or a temperature sensor can be directly linked with the system via the two integrated inputs. The actuator also features integrated heating/cooling support and automatic ventilation. Ideal, when it comes to perfectly tuned lighting, room temperature, and sun protection.

Universal actuator RMG 8 T KNX It's all in the MIX



With the KNX MIX 2 actuators, various combinations of basic module and extensions are possible. The universal actuator adds even more variety to the system, as the channels can be used either as switch outputs or for the control of drives. These switch/blinds actuators are also available in the FIX series.



Theben KNX room climate control Fresh air with a climate control that keeps two eyes on it

Basically, it is like a story from the text book: It is hot, the air is stuffy – and no one can concentrate. A standard situation in any classroom. People who have to study need fresh air. A KNX controlled climate from Theben ensures exactly this.

How? Via a nice side effect: Because the KNX climate control from Theben determines the room temperature and measures CO₂, this allows conclusions concerning the oxygen content. In this way, it not only provides comfortable heat, but also indicates when fresh air should be let in.

And everyone benefits: not only students, teachers, and school, but also the building owner – and everyone who specifies, installs and maintains this clever type of building automation.

Educationally valuable: temperature control with CO₂ measurement



A KNX installation only makes real sense if it is used for building automation across rooms. For instance, for temperature control in six classrooms. No matter whether the control is centralised or decentralised. Theben has the right solution with various designs of heating actuators.

In the classrooms, the CO₂ sensor AMUN 716 S KNX measures the room temperature, the relative humidity, as well as the CO₂ content of the air. The heating actuator in turn controls the heating in coordination with the indoor and outdoor temperature.

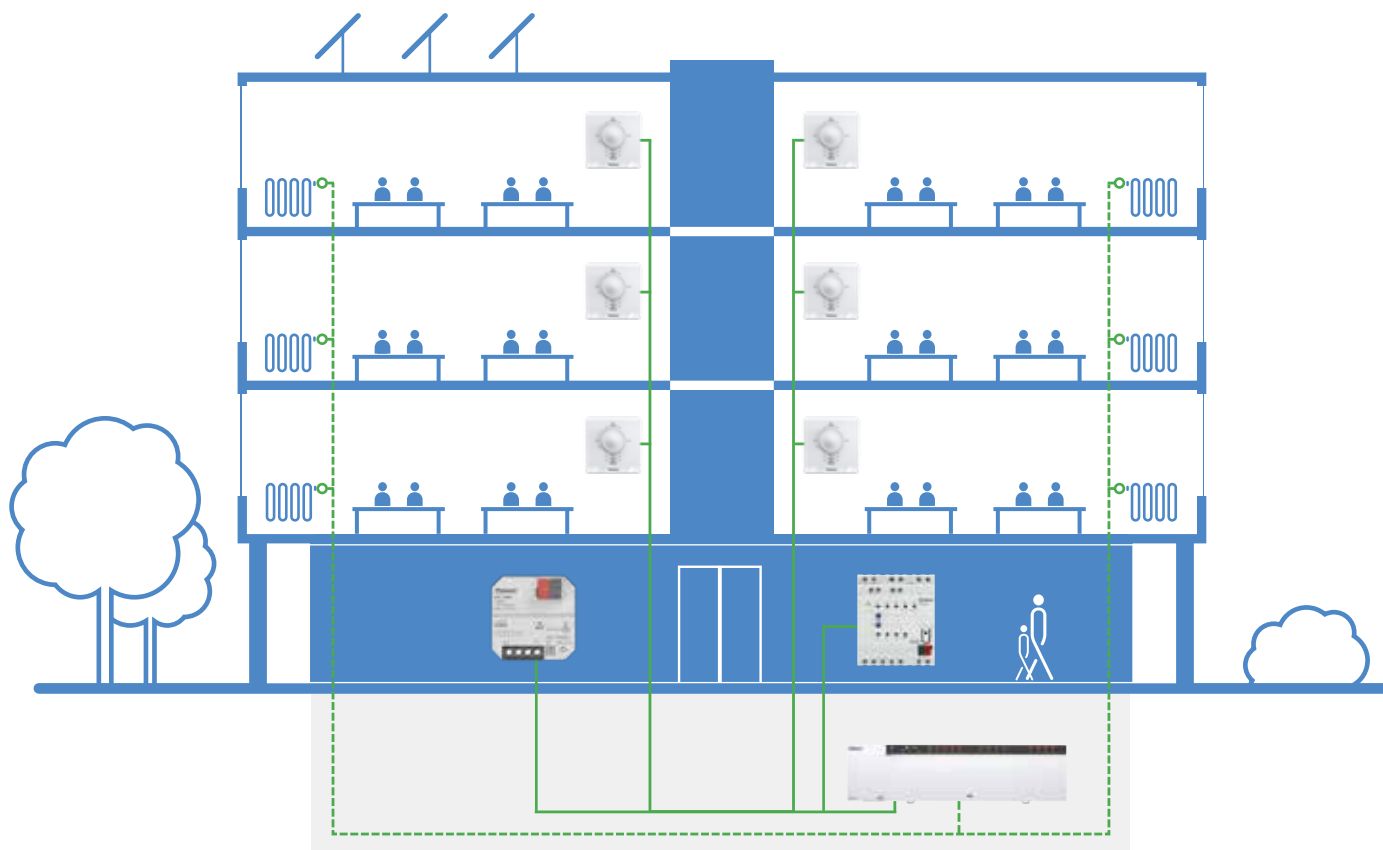
With Theben fan coil actuators, you do not have to decide between heating or cooling: the fan coil provides both options, depending on installation type. And the fan coil actuator can regulate both. This means Theben offers you investment security and flexibility.

In mild weather, the system switches to summer mode and reduces the energy consumption. If a window is opened, frost protection mode starts. Comfort mode is activated by pressing the presence button. In each situation, the students inside the classrooms enjoy constantly pleasant temperatures. Additionally, the room sensor indicates the air quality via CO₂ measurement, and lets you know when it is time to air the room again. The heating control can be controlled via multifunction display VARIA 826 S KNX, or theServa. The system can be extended to up to twelve additional rooms.

350	1.000	4.000	5.000	50.000	100.000	200.000
Outside air	Sense of poor air quality	Badly ventilated room	Occupational exposure limit (OEL)	Human exhalation rate	Extinction of a candle flame	Fatal danger

The AMUN 716 KNX CO₂ room air sensor also measures air humidity and temperature, apart from the CO₂ concentration in the range of 300–5.000 ppm.

Theben KNX room climate control considers temperature, air quality, and energy consumption



Benefits at a glance

1. Less devices, less installation effort

- Each of our latest heating actuators features an independent and fully-fledged room thermostat for each channel. The room temperature is transmitted to the heating actuator by the respective AMUN 716 S KNX CO2 sensor in the individual rooms. This reduces equipment costs, since a separate room thermostat is not needed for each room.
- The installation effort can be considerably reduced by using the flush-mounted heating actuator HU 1 KNX or the wireless version HU 1 RF KNX. Both devices also support secure communication according to the KNX Data Secure standard.

2. Securely monitored

- The FCA 2 KNX fan coil actuator has 2 inputs for condensation monitoring and for connecting an external temperature sensor or window contact.
- All our latest heating actuators have protection against overload and short circuit, because: Better safe than sorry.

3. Universally usable

- The FCA 2 KNX supports both 2-pipe and 4-pipe systems. The 2-pipe system allows for demand-based heating or cooling. The 4-pipe system consists of a separate flow and return for the heating and cooling system. The valves are controlled via 0-10 V outputs, the fan either switching or also via 0-10 V.
- The HMT 12 S KNX can be used to control either 12 x 24 V or 0-10 V actuators.



Room air sensor AMUN 716 S KNX exactly detects the air quality

The AMUN 716 S KNX CO2 sensor monitors CO2 levels in schools and classrooms, in offices and meeting rooms, or in passive and low-energy buildings. Thanks to the integrated temperature controller, it is ideal for efficiently controlling the room temperature and for controlling ventilation systems in KNX building automation, depending on the air in the room. With the universal mounting plate, the AMUN 716 S KNX can be installed on the wall or a switch box.



Flush-mounted heating actuator HU 1 KNX Quick and easy to install

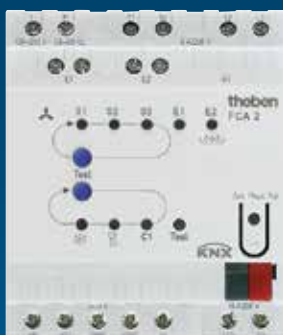
With the KNX flush-mounted heating actuator HU 1 KNX, costly wiring in the control cabinet is no longer necessary. Two binary inputs per device, one of which can be combined with a temperature sensor, as well as power supply via bus voltage.



Heating actuator HMT 12 S KNX variably controls heat and cold

The KNX heating actuator HMT 12 S KNX from Theben can be easily installed near the heating circuit manifold using a mounting rail. It offers a large number of high-performance functions, which significantly increase the energy efficiency of the heating system:

- Demand-based adjustment of the flow temperature
- No KNX room thermostat required
- Variable output signal
- Demand-dependent control
- Practical protection functions



Fan coil actuator FCA 2 KNX switches correctly, automatically

The fan coil actuator FCA 2 KNC offers everything that you would expect from a heating control: Thanks to proportional control valves (1-10 V), the temperature can be increased or decreased to a precise degree. Ideal for hotel rooms, office buildings and apartment complexes.

The two inputs offer the possibility to connect an external temperature sensor or window contact and monitor the condensate. The FCA 2 KNX supports both 2-pipe and 4-pipe systems and can also control small split units.

Cleverly automated KNX home and building automation



Actuators

Switch actuators

Operating voltage	Medium	Frequency	Installation-width	Max. cable-cross section	Type of contact	Inrush current	Resistive load	LED lamp > 2 W	Configuration type	Number of channels	Type	Item no.
110–240 V AC		50–60 Hz	4 units		No contact, 16 A (cos φ = 1), 3 A (cos φ = 0.6)	max. 800 A/ 200 μs	3680 W	600 W	MIX2 base module*	4	RMG 4 U KNX	4930223
–		MIX2 extension module							4930228			
110–240 V AC		FIX1 module							4940223			
–	TP1-256	50–60 Hz	4 units	Solid: 0.5 mm ² to 6 mm ²	No contact, 16 A (cos φ = 1), 3 A (cos φ = 0.6)	max. 1500 A/ 200 μs	3680 W	850 W	MIX2 base module*	4	RMG 4 I KNX	4930210
–		MIX2 extension module							4930215			
110–240 V AC		FIX1 module							4940210			
–		FIX2 module							4940215			
–		FIX1 module							4940212			
–		–	4 units	strand with crimp terminal: 0.5 mm ² to 4 mm ²	No contact, 25 A (cos φ = 1), 10 A (cos φ = 0.6)	max. 1200 A/ 200 μs	4800 W	850 W	FIX2 module	8	RM 8 H KNX	4940217
110–240 V AC		MIX2 base module*							4930220			
–		MIX2 extension module							4930225			
–		FIX1 module							4940220			
110–240 V AC		FIX2 module							4940225			



Switch/blind actuators

Operating voltage	Medium	Frequency	Installation-width	Max. cable-cross section	Type of contact	Inrush current	Resistive load	LED lamp > 2 W	Configuration type	Number of channels	Type	Item no.
110–240 V AC		50–60 Hz	4 units	Solid: 0.5 mm ² to 6 mm ²	No contact, 16 A (cos φ = 1), 3 A (cos φ = 0.6)	max. 800 A/ 200 μs	3680 W	600 W	MIX2 base module*	8	RMG 8 T KNX	4930200
–		MIX2 extension module							4930205			
110–240 V AC		FIX1 module							4940200			
–	TP1-256	50–60 Hz	4 units	Solid: 0.5 mm ² to 6 mm ²	no contact, 16 A (cos φ = 1), 3 A (cos φ = 0.6)	max. 800 A/ 200 μs	3680 W	600 W	MIX2 base module*	8	RM 8 T KNX	4940200
110–240 V AC		MIX2 extension module							4940200			
110–240 V AC		50–60 Hz	8 units	strand with crimp terminal: 0.5 mm ² to 4 mm ²	Changeover contact, 6 A (cos φ = 1)				FIX2 module	16	RM 16 T KNX	4940205
–		FIX2 module							4940205			



Blind actuators

Operating voltage	Medium	Frequency	Installation-width	Max. cable-cross section	Type of contact	Inrush current	Resistive load	LED lamp > 2 W	Configuration type	Number of channels	Type	Item no.
110–240 V AC		–	4 units		no contact, 6 A (cos φ = 1)				MIX2 base module*	4	JMG 4 T KNX	4930250
–		MIX2 extension module							4930255			
110–240 V AC		FIX1 module							4940250			
–	TP1-256	50–60 Hz	4 units	Solid: 0.5 mm ² to 6 mm ²	no contact, 6 A (cos φ = 1)				FIX2 module	8	JM 8 T KNX	4940255
110–240 V AC		MIX2 base module*							4930260			
–		MIX2 extension module							4930265			
–		FIX1 module							4940260			
110–240 V AC		FIX2 module							4940265			



Dimming actuators

Operating voltage	Medium	Frequency	Installation-width	Max. cable-cross section	Dimming output LED per channel	Dimming output LED in parallel operation	Configuration type	Number of channels	Type	Item no.
230 V AC	TP1-256	50 Hz	4 units	Solid: 0.5 mm ² to 6 mm ² strand with crimp terminal: 0.5 mm ² to 4 mm ²	Trailing edge (RC-mode) typ. 400 W	Trailing edge (RC-mode) typ. 800 W	MIX2 base module*	2	DMG 2 T KNX	4930270
			4 units				MIX2 extension module	2	DME 2 T KNX	4930275
			4 units				FIX1 module	2	DM 2 T KNX	4940270
			8 units				FIX2-Modul	4	DM 4 T KNX	4940275
			4 units				FIX1 module	4	DM 4-2 T KNX	4940280
230 – 240 V AC		50 – 60 Hz	8 units		Trailing edge (RC-mode) typ. 200 W	FIX2 module	8	DM 8-2 T KNX	4940285	



Heating actuators

Operating voltage	Medium	Frequency	Installation-width	Max. cable-cross section	Switch output pump	Number of actuators/channel	Configuration type	Number of channels	Type	Item no.
110 – 240 V AC		50 – 60 Hz	4 units	Solid: 0.5 mm ² to 6 mm ²	–	1 actuator 24V AC or 5 actuators 230 V AC	MIX2 base module*	6	HMG 6 T KNX	4930240
–		–	4 units	strand with crimp terminal: 0.5 mm ² to 4 mm ²			MIX2 extension module	6	HME 6 T KNX	4930245
110 – 240 V AC	TP1-256	50 – 60 Hz	4 units				FIX1 module	6	HM 6 T KNX	4940240
			4 units				FIX2 module	12	HM 12 T KNX	4940245
230 – 240 V AC		50 – 60 Hz	290 mm	0.2 mm ² to 1.5 mm ²			5 A, 240 V AC floating	2 actuators 24V DC or 0 – 10 V DC	Heating actuator	6
								12	HMT 12 S KNX	4900374



Flush mounted actuators

Operating voltage	Medium	Frequency	Installation-width	Max. cable-cross section	Type of contact	Inrush current	LED lamp > 2 W	Configuration type	Number of channels	Type	Item no.
KNX bus voltage	TP1-256	44.5 x 44.6	Solid: 0.5 mm ² to 4 mm ²	16 A	max. 740 A/200 µs	600 W	Switch actuator	1	SU 1 KNX	4942520	
				2 x 10 A		30 W	Blind actuator	1	JU 1 KNX	4942550	
				230 V, 50 – 60 Hz		Trailing edge (RC-Mode) typ. 250 W	Dimming actuator	1	DU 1 KNX	4942570	
			to 2.5 mm ²	230 V, 1 A, 50 – 60 Hz	max. 4 actuators (Alpha 5)		Heating actuator	1	HU 1 KNX	4942540	



Flush mounted KNX RF

Operating voltage	Medium	Frequency	Installation-width	Max. cable-cross section	Type of contact	Inrush current	LED lamp > 2 W	Configuration type	Number of channels	Type	Item no.
230 – 240 V AC	RF1 R	50 – 60 Hz	46.6 x 44.8	Solid: 0.5 mm ² to 4 mm ² strand with crimp terminal: 0.5 mm ² to 2.5 mm ²	10 A	max. 740 A/200 µs	600 W	Switch actuator	1	SU 1 RF KNX	4941620
		50 – 60 Hz			5 A	–	–	Blind actuator	1	JU 1 RF KNX	4941650
		50/60 Hz			–	–	Trailing edge (RC-Mode) typ. 250 W	Dimming actuator	1	DU 1 RF KNX	4941670
		50/60 Hz			1 A	max. 4 actuators (Alpha 5)		Heating actuator	1	HU 1 RF KNX	4941640
		50 – 60 Hz			–	–		Sensor interface	1	TU 4 RF KNX	4961604
KNX bus voltage	TP1-256 RF1 R		40 x 48				Media coupler		Media coupler TP-RF KNX	9070868	



Weather stations

Operating voltage	Medium	Frequency	Brightness measurement range	Temperature measurement range	Wind velocity measurement range	GPS module integrated	Detection	Type	Item no.
15 – 34 V DC		–				–	Wind, rain, brightness, temperature	Meleodata 140 S 24V KNX	1409201
15 – 34 V DC		–				✓	Wind, rain, brightness, temperature, time	Meleodata 140 S 24V GPS KNX	1409204
110 – 230 V AC	TP1-256	50 – 60 Hz	1 – 100.0000 lx	–30 °C...+60 °C	2 – 30 m/s	–	Wind, rain, brightness, temperature	Meleodata 140 S KNX	1409207
110 – 230 V AC		50 – 60 Hz				✓	Wind, rain, brightness, temperature, time	Meleodata 140 S GPS KNX	1409208
KNX bus voltage		–				–	Wind, brightness, temperature	Meleodata 140 basic KNX	1409205














* Up to 2 extension modules can be connected to one basic module.



Presence and motion detectors

KNX presence detectors for indoor use

	Detection area lateral walking installation height 3m	Detection area seated installation height 3 m	Installation height	Channels	Type of installation	Brightness setting range	Light time delay	Protection rating (when installed)	Type	Item no.
	■ 49 m² 7 x 7 m	■ 25 m² 5 x 5 m	2–3.5 m	2 x light 2 x presence		5–3000 lx		IP 40	thePrema S360 KNX UP	2079500
	■ 81 m² 9 x 9 m	■ 49 m² 7 x 7 m	2–10 m	3 x light 2 x presence	UP (DE & AP with accessories)				thePrema P360 KNX UP	2079000
	● 452 m² Ø 24 m	● 28 m² Ø 6 m	2–15 m						theRonda P360 KNX UP	2089000
	■ 135 m² 30 x 4,5 m			2 x light 2 x presence				IP 54	thePassa P360 KNX UP	2019300
	● 50 m² Ø 8 m	● 13 m² Ø 4 m	2–4 m		AP	10–3000 lx	30 s – 60 min		theRonda S360 KNX AP	2089550
					DE				theRonda S360 KNX FLAT DE	2089560
	■ 49 m² 7 x 7 m	■ 20 m² 4,5 x 4,5 m		3 x light 2 x presence	DE (AP with accessories)			IP 20	PlanoSpot 360 KNX DE	2039100
	■ 81 m² 9 x 9 m	■ 49 m² 7 x 7 m	2–3.5 m		DE			IP 40	PlanoCentro EWH-A KNX	2059102
	■ 49 m² 7 x 7 m	■ 20 m² 4,5 x 4,5 m		2 x light 2 x presence	UP (AP with accessories)	5–2000 lx			PlanoCentro UWH-A KNX	2059202
								IP 54	PresenceLight 360-B KNX	2009000
	● 100 m² 8 m (at 2.2 m height)	■ 25 m² 7 m x 3,5 m (at 2.2 m height)	1.6–2.2 m		UP wall (AP with accessories)				PresenceLight 180-B KNX	2009050

KNX motion detector for outdoor use

	Detection area lateral walking installation height 3m	Detection area seated installation height 3 m	Installation height	Channels	Type of installation	Brightness setting range	Light time delay	Protection rating	Type	Artikel-Nr.
	Ø 32 m		2–4 m	4 x light	Wall mounting or ceiling installation	1–3000 lx	1 s – 60 min	IP 55	theLuxe P300 KNX WH	1019610

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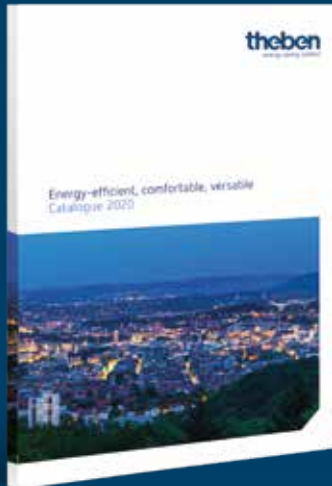
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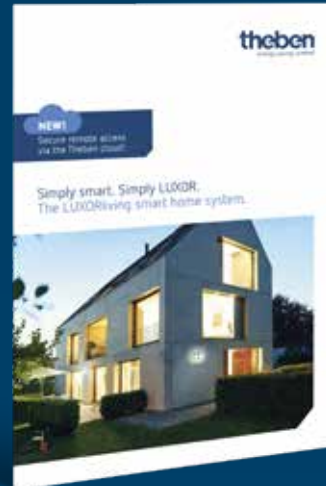
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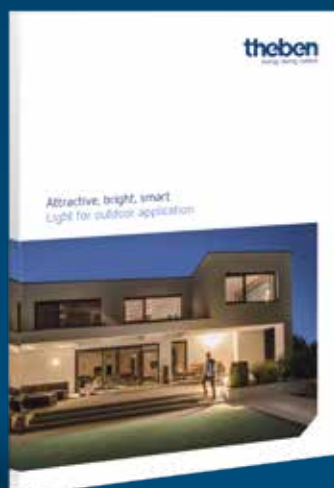
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