Energy efficiency
Hager solutions to optimise your energy consumption
By raising global awareness, the Kyoto Protocol has had a worldwide impact. As a result, thermal building regulations have emerged.

Today, Hager is at the heart of this issue. Its product and technology expertise, its interface role between the various actors, project managers and contracting authorities, and its ability to design solutions that meet users’ needs makes Hager a central player in the energy management market.

This document outlines Hager solutions to energy management for all your buildings in accordance with the new regulations. It also presents our solutions to help you create increasingly efficient buildings, for the benefit of their occupants and future generations.
Energy efficiency: what for?

During 2012 Climate Change Conference in Doha, Qatar, the United Nations committed to reduce greenhouse gases emissions by at least 18% below 1990 levels from 2013 to 2020. Buildings represent today 40% of total primary energy consumption.

To reduce our dependence to fossil fuels in the coming years, we need not only to find alternative energies but above all to limit our energy consumption.

This idea, considered a few years ago as an environmental concern, is becoming obviously an economical issue. Initial investment in buildings covers only less than 20% of the long term costs. The main long term costs are related to operation and maintenance of the buildings and energy consumption in the buildings contributes a large part of the operation cost.

More and more, design institutes are considering today the global life cycle costs to design and construct high-performance buildings. Detection, automation, visualisation… This brochure presents Hager solutions to support and motivate building owner and user to save energy… and money!
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Measuring to

Before implementing an action plan to make savings, take time to identify the items that use the most energy. Measurement campaigns provide a precise energy consumption analysis and, as such, the appropriate response.

Why should energy be measured?

At a time when energy is scarce and more expensive, reducing unnecessary costs has become a real priority. There is thus a need to identify any excessive usage or operating faults throughout the building and to take corrective action, addressing each area in turn.

Consumption can then be closely monitored in each area to identify actual need, potential sources of savings and help make the right decisions in terms of energy performance.

Providing information on energy consumption and encouraging users to adopt environmentally friendly behaviour can achieve energy savings of up to 10% *. 

10 %
improve decision-making

Hager, one step ahead

The smart metering device range by Hager allows to monitor different kind of energy (electricity, water, gas...) in the building.

- Measure and count: multi-function meters provide all necessary information for an optimised process and an intelligent plant control. The function scope can be widen thanks to modules mounted on the back of the device (e.g.: temperature, memory, communication...).

The KNX energy meters, with their high measurement accuracy, are recommended to be used for sub-metering. Total and partial consumption from main installation and individual areas, as well as instantly power data, can be sent periodically to the KNX bus.

- Visualisation and controlling: consumption, alarm signals and temperature are displayed via the Hager webservice. A clear representation of all conditions of the building and the central control of the KNX plants can be done with multi-functional tebis KNX visualisation.

All functions can be customised, for example:
• individual configuration and combination of process pictures by using an editor,
• implementation of own graphics,
• definition of the process parameters (e.g.: e-mail messaging in case of system fault),
• configuration of the time switch functions with the agenda program,
• visualisation of additional process contacts via OPC-connections.

* Source: French Environment and Energy Management Agency (ADEME)
To measure consumption, Hager provides a two-level solution

- A traditional solution, suitable for any type of installation. This can be built into conventional communication protocols (pulse, JBUS/modbus, IP).
- A KNX solution, unique on the market (installation of any KNX solution including metering).

Traditional solutions
Energy meter (ECxxx)

- EC051
- EC15x
- EC35x
- EC36x
- EC37x
- SM101C

Impulse output

KNX energy meter (TExxx)

- TE360
- TE370
- TE33x

Impulse inputs and/or

- TYC70xE
- TXA306

Communication protocol

- KNX

Other pulse meters: water, gas, calories...

IP gateway

- TH210

Communication protocol

- IP

Monitoring
Shedding light

Lighting is a source of comfort for users, but it is also a major expenditure item: two good reasons to control the situation to achieve energy savings.

**Why should lighting be managed?**

The requirements of the thermal building regulations have led to significant improvements in building insulation, with the knock-on effect that less energy is consumed for heating and air conditioning. Consequently, lighting (26% of consumption, on average) is a primary concern in commercial buildings.

Several alternatives are worth exploring to keep operating costs under control and to reduce consumption.

- Using electronic lights for comfort (efficient light source, quality of light, no glare)
- Switching lighting on at the right time: switching on lights only when necessary, and switching them off automatically when there is nobody in the room or when there is sufficient light. Here, the installation of presence detectors is an interesting option.
- Using lighting more efficiently while maintaining an optimum level of comfort and a pleasant atmosphere. Technical appliances can be used to vary the level of lighting depending on need: dimmers, detectors, remote controls.
- Identifying different lighting needs: highly frequented walk-through areas, working hours, natural lighting.

Lighting represents up to 40% of electricity consumption in offices.

After one year, 10 minutes of unnecessary lighting, 3 times a day, is the equivalent of 5 days of continuous lighting.*

40%
on savings

1. Indoor lighting

The presence detectors are able to detect if someone is in the room and switch the lights on or off accordingly.

The contactors and time switches allow to centralise the lighting function.

The dimmers allow to always have the right level of brightness in your room, all managed automatically.

* Source: French Environment and Energy Management Agency (ADEME)
2. Lighting for corridors and common areas

In passage areas, lighting is only needed for a short duration when someone is in. Detectors allow to switch on the lights when somebody enters the area. Thanks to their discreet design, they can be mounted anywhere, on the ceiling or on the walls.

- Ceiling-mounted motion detectors
- IP55 wall-mounted motion detectors (standard or KNX)
- Presence detectors (standard or KNX)
- Berker by Hager designs KNX motion detectors
- Time lag switch

3. Lighting for covered and/or semi-covered parking areas

Detection is not the same when it comes to human beings or objects in motion. The range of detectors by Hager offers different kind of technologies adapted to the situation. For example, Hyper-Frequency technology is perfect for application in car parks. It can detect a moving object regardless of its temperature.

- IP54 hyper-frequency ceiling-mounted motion detectors
- IP55 wall-mounted motion detectors (standard or KNX)
Might it be about shop windows, glow sign boards or front of a house, there are different ways to adapt lighting timing and intensity. Outdoor and indoor lights can be managed automatically and on a regular basis, thanks to astro switches or time lag switches, or adapted to the current situation by detection of external constraints, using twilight switches or detectors.

**Exterior (shop windows, facades, signs, advertising screens...)**

- Astro switches
- Twilight switches and time switches (standard or KNX)
- Floodlight (standard or KNX)
- Centralised lighting + contactors + time switches
- Time lag switch
Hager offers a wide range of solutions to lighting management issues. The traditional and universal range of solutions is suitable for any type of installation. Efficient and economical, whether used for new buildings or renovation work.

The **KNX** solutions offers an answer to efficient thermal management requirements and exceed them in terms of flexibility, control on a zone-by-zone basis, by group of zones or globally, by remote control.

### Traditional solutions

<table>
<thead>
<tr>
<th>Push button switches</th>
<th>Motion detectors</th>
<th>IP55 wall-mounted detectors</th>
<th>IP54 motion detectors</th>
<th>Motion detectors</th>
<th>Presence detectors</th>
<th>DALI presence detectors</th>
<th>Presence detectors</th>
<th>Presence detectors 1/10V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berker by Hager designs</td>
<td>85341229</td>
<td>EE82x to EE87x</td>
<td>TRE50x-51x-700 (quicklink)</td>
<td>EE883</td>
<td>EE804 EE805</td>
<td>EE815</td>
<td>EE816</td>
<td>EE810 EE811</td>
</tr>
</tbody>
</table>

### Focus

- **Presence detector**
  - Ideal for individual offices and meeting rooms
  - Compact and discreet
  - Can be adjusted by remote control
  - ref. EE815

- **Hyper-frequency motion detector**
  - Ideal for sanitary facilities and covered parking areas
  - Independent temperature detection
  - IP54
  - ref. EE883
Focus

Savings through lighting control
- Centralised and automated lighting, an ideal solution for switching lights off at night,
- controlling and dimming lights,
- programming lighting scenarios depending on occupancy.
Aiming for

Windows are at the heart of building energy performance. The challenge is to know how to get the most out of natural light and heat. Simplicity and efficiency guide technical choices.

Why should shutters be managed?
Shutter control using a single, centralised or automatic motor offers advantages in various areas: it improves the thermal comfort of occupants in the building, maintains a pleasant interior temperature, takes advantage of free energy in winter and avoids the use of air conditioning currently present in most of the new buildings.

The fluorinated gases used in air conditioning systems are responsible for 2% of greenhouse gas emissions, but the damage they cause is much greater (their impact on global warming is 1,300 to 24,000 times higher than the impact of CO₂ and they have a very long lifetime). This is why they represent a real danger although they only represent a small percentage of the total GHG emissions.
Summer or winter, life is sweet!

The compact flush-mounted control offers you an easy control of your shutters and roller shutters. You can choose your design among the wide range of Berker by Hager designs. It can also be automatically managed through the weather station.

**Individual control**
- Control push-button for roller shutters (or wired) Berker R.3

**Centralised or automated controls**
- Centralised control for roller shutters Berker Q.1
- Programmable control for roller shutters Berker R.3
- Remote controls
- Automatic control depending on weather conditions (KNX TG053A weather station)

**Temperature controller**
- Temperature controller Berker Q.1
- Electronic time switch
- Window opening detector
Hager has designed two types of solutions to manage shutters. On the one hand, standard solutions, which are universal and economical, and, on the other, smart solutions for finely tuned, optimal control of blinds and shading devices.

**Traditional solutions**

Direct individual control (852411xx)

Centralised control and programming (857411xx)

**Focus**

Blind button
- memory function for automatic execution
- with labeling fields and operation LEDs
  ref. 751422xx

Blind time switch
- With display
- astro programme for sunrise/sundown switching
  ref. 857411xx
TXA022 - TXA023
TG053A
Output module TYA604 to TYA610
TXB202A

175143329 in Berker Q.1 frame
75142326 in Berker Q.1 frame
75662729 in Berker Q.1 frame

TRXxxx
TRE20x

TU406
85656283 in Berker R.3 frame
TR131B
A Hager solution for every building

In the commercial building market, the Hager brand is a leading supplier of customised solutions adapted to the needs, applications and configurations of all types of buildings.

Whether for hotels, nursing facilities, offices, shopping centres or even schools and collective housing, Hager meets the wide range of needs and requirements set out in thermal building regulations. Alongside project managers, contracting authorities and engineering specialists, our teams are part of the quality chain. Their objective is two-fold: to provide a good degree of comfort and an optimal energy performance rating.
Hager solutions for health care and nursing facilities

In health care and nursing facilities, a comfortable environment is an essential requirement. Everything is designed to make all residents feel at home.

Efficiency, reliability, performance, simplicity and service: all these qualities are concentrated in Hager’s range of solutions for health care and nursing facilities. They form a comprehensive approach that aims to reconcile the comfort elderly people require with adaptable equipment and energy savings.

Synonymous with energy savings, lighting and HVAC control also ensure a comfortable and warm living environment. Our installations can be controlled remotely and thus reduce the user’s need to move around and physical effort.

As direct interfaces between the interior and exterior, glazed walls are the only elements of a building that can transfer solar gains. The idea is to take advantage of the natural light and heat to reduce the building’s heating and lighting consumption. Hager’s automatic blind control systems offer a two-fold benefit: taking advantage of the sun in winter to heat the building and providing protection against the sun’s rays in summer, thus keeping the premises cool.
Solutions for **health care and nursing facilities**

### Traditional solutions

#### Lighting control

<table>
<thead>
<tr>
<th>Switches</th>
<th>Dimmers</th>
<th>Motion detectors</th>
<th>Fitted ceiling-mounted presence detectors</th>
<th>Motion detectors</th>
<th>IP54 sealed hyper-frequency ceiling-mounted motion detectors</th>
<th>IP55 sealed wall-mounted motion detectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berker B.7</td>
<td>Berker B.7</td>
<td>Berker Q.1</td>
<td>EE815 (ON/OFF)</td>
<td>EE816 (DALI)</td>
<td>EE804</td>
<td>EE883</td>
</tr>
</tbody>
</table>

- Reception area: X
- Corridors, stairs, bedroom access: X, X, X
- Bedrooms: X, X, X
- Dining room: X, X
- Common room: X, X, X
- Staff offices: X, X
- Stairwells, basement corridors: X, X
- Plant room: X, X, X
- Exteriors: X

#### Control interfaces (lighting, shutters, HVAC)

<table>
<thead>
<tr>
<th>Berker Q.1 (lighting, shutters, ambiance/ scenarios ...*)</th>
<th>KNX Remote control</th>
<th>donovea kit</th>
<th>Berker Q.1 motion detector</th>
<th>Fitted ceiling-mounted presence detectors</th>
<th>TCC510S, TCC520E (ON/OFF)</th>
<th>TCC530E (dual-area control)</th>
<th>TCC521E (DALI)</th>
<th>TCC521E (DALI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7566272x</td>
<td>TU4xx</td>
<td>TJA451</td>
<td>85345129</td>
<td>EE805</td>
<td>EE883</td>
<td>EE82x to EE87x</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Reception area: X, X, X
- Corridors, stairs, bedroom access: X, X
- Bedrooms: X, X, X
- Dining room: X
- Common room: X, X, X
- Staff offices: X, X, X
- Stairwells, basement corridors: X
- Plant room: X, X, X
- Exteriors: X

* Can be controlled through mobile devices (iPhone, iPad,...)

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**KNX solutions**
<table>
<thead>
<tr>
<th>Shutter control</th>
<th>HVAC control</th>
<th>Metering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Astro switches, twilight switches, time switches</td>
<td>Roller shutter control push-button</td>
<td>Programmable room control</td>
</tr>
<tr>
<td>EHxxx, EEN10x, EGxxx, EE18x</td>
<td>Berker R.3 852411.xx</td>
<td>Berker Q.1 2049xxxx, 2034xxxx, 2030xxxx</td>
</tr>
</tbody>
</table>

- **Consumption metering system**

<table>
<thead>
<tr>
<th>Twilight switches, time switches</th>
<th>Dimmers</th>
<th>Weather station</th>
<th>Room thermostats</th>
<th>Window-opening detectors</th>
<th>Time switches</th>
<th>Energy meters</th>
</tr>
</thead>
<tbody>
<tr>
<td>TXA02x</td>
<td>TYA66x</td>
<td>TG053A</td>
<td>TX320</td>
<td>TXB30x or TRC301B (pay attention to the range)</td>
<td>TXA02x</td>
<td>TE3xx</td>
</tr>
</tbody>
</table>

- **Consumption metering system**

Add-ons

- **Energy distribution**
- **Cable management**
- **LED plinths**
- **Multi-outlet blocs**
- **Charging stations for electric vehicles**
In hotels, HVAC and lighting are the main energy consumption items after hot water. On average, lighting represents 42% of the electricity consumed by a hotel. Air conditioning also has a significant impact on the premises’ energy bill. Due to increasing energy costs, energy consumption must be reduced, whilst ensuring the safety and comfort of guests.

Our lighting management solutions can potentially provide substantial energy savings. These solutions also contribute to the environmental commitment of hotels, which often aspire to a more eco-friendly approach. Programming lighting and varying the intensity of lighting, depending on the room, brings real added value and can showcase a building’s modernity.
### Solutions for hotels

#### Lighting control

<table>
<thead>
<tr>
<th></th>
<th>Traditional solutions</th>
<th>Control interfaces (lighting, shutters, HVAC)</th>
<th>Lighting control</th>
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<tr>
<td></td>
<td>Switches</td>
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<td>Dimmers</td>
</tr>
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<td>Reception area</td>
<td>Berker S.1</td>
<td>Berker B.7</td>
<td>Berker B.7</td>
</tr>
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<td>Corridors, stairs, bedroom access</td>
<td>X</td>
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</tr>
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<td>Meeting room</td>
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<tr>
<td>Staff offices</td>
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<td>X</td>
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<tr>
<td>Stairwells, basement corridors</td>
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<tr>
<td>Sanitary facilities</td>
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<td>X</td>
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<tr>
<td>(Semi-) covered parking</td>
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<tr>
<td>Plant room</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Exteriors</td>
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#### KNX solutions

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<th>IP55 sealed wall-mounted motion detectors</th>
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<tbody>
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<td>Reception area</td>
<td>7566272x TU4xx</td>
<td>TJA451</td>
<td>85345129</td>
<td>TCC510S, TCC520E (ON/OFF) TCC530E (dual-area control) TCC521E (DALI)</td>
<td>TRE5xx (pay attention to the range)</td>
</tr>
<tr>
<td>Corridors, stairs, bedroom access</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
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</tbody>
</table>

* Can be controlled through mobile devices (iPhone, iPad,...)
<table>
<thead>
<tr>
<th>Shutters control</th>
<th>HVAC control</th>
<th>Metering</th>
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<td>IP55 sealed wall-mounted motion detectors</td>
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<td>Berker R.3 852411xx</td>
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<tr>
<td></td>
<td>Berker Q.1 2049xxxx, 2034xxxx, 2030xxxx</td>
<td>ECxxx, SMxxx</td>
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</table>

Consumption metering system

Add-ons

- Energy distribution
- Cable management
- LED plinths
- Multi-outlet blocs
- Charging stations for electric vehicles

<table>
<thead>
<tr>
<th>Twilight switches, time switches</th>
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<th>Energy meters</th>
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<tr>
<td>TXA02x</td>
<td>TYA66x</td>
<td>TG053A</td>
<td>TX320</td>
<td>TXB30x or TRC301B (pay attention to the range)</td>
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<td>TE3xx</td>
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</table>

Consumption metering system
How can we improve our visibility, make the customer’s shopping experience more pleasurable, and still enjoy energy savings? A challenge for commercial premises where each sales point should showcase its offerings. Therefore, lighting represents a large share of a brand’s operating costs. Hager relies on its lighting management expertise and its teams of lighting designers to satisfy its clients’ needs. Given the complexity of a lighting project, our technicians provide their engineering expertise to design lighting for sales outlets and advise on the materials to be used.

This approach results in tailor-made solutions. The keyword is ‘flexibility’. Lighting equipment must be modular so that it can adapt to any rearrangement of sales outlets, furnishing codes and brand references. With our solutions, it is also possible to programme lighting scenarios based on sales outlet traffic. They implement information and communication technologies to customise and adapt lighting for commercial premises.

Hager solutions for commercial premises

A colourful display is not the only way to promote a sales area. Lighting is a key element to assert a brand’s identity. Hager solutions combine a modular system with energy savings.
Solutions for commercial premises

Traditional solutions

<table>
<thead>
<tr>
<th></th>
<th>Switches</th>
<th>Motion detectors</th>
<th>Fitted ceiling-mounted presence detectors</th>
<th>Ceiling-mounted presence detectors (very high level of detection)</th>
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<tbody>
<tr>
<td>Berker S.1</td>
<td>Berker Q.1 8534xxxx</td>
<td>EE815 (ON/OFF) EE816 (DALI)</td>
<td>EE810 EE811 EE812</td>
<td>EE804 EE805</td>
<td>EE883</td>
<td></td>
</tr>
</tbody>
</table>

Shop window / sign / facade
Sales area X
Offices X X X
Cloakrooms / sanitary facilities X X X X X
Storage area X X X
Exteriors

Control interfaces (lighting, shutters, HVAC)

<table>
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<tr>
<th></th>
<th>Berker Q.1 (lighting, shutters, ambiance/scenarios ...)</th>
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<td>TX510 (ON/OFF) TX511 (with regulation)</td>
<td>TRE5xx (pay attention to the range)</td>
</tr>
<tr>
<td>7566272x</td>
<td>TU4xx</td>
<td>TJA451</td>
<td>TX320 TXB30x or TXA02x TX211A TX511 (with OFF) TX510 (ON/OFF) TX511 (with regulation)</td>
<td>TCC510S, TCC520E (ON/OFF) TCC530E (dual-area control) TCC521E (DALI)</td>
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Shop window / sign / facade
Sales area X X X
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Cloakrooms / sanitary facilities X X X X X
Storage area X X X
Exteriors

* Can be controlled through mobile devices (iPhone, iPad,.....)
<table>
<thead>
<tr>
<th>Gestion de la luminosité</th>
<th>Confort d’été</th>
<th>Exteriors</th>
<th>Storage area</th>
<th>Cloakrooms / sanitary facilities</th>
<th>Offices</th>
<th>Sales area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimmers</td>
<td>Timer switches, twilight switches, push button</td>
<td>Programmable room thermostats</td>
<td>Energy meters, multi-function meters</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gestion du chauffage</th>
<th>Etanchéité à l’air</th>
<th>Pompe à chaleur</th>
<th>Consommation refroidissement</th>
<th>Consommation eau chaude</th>
<th>Consommation circuits pc</th>
<th>Consommation éclairage</th>
<th>Consommation eau</th>
<th>Borne de charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHxxx, EEN10x, EGxxx, EE18x</td>
<td>EVNxxx</td>
<td>Berker R.3 852411xx</td>
<td>Berker Q.1 2049xxxx, 2034xxxx, 2030xxxx</td>
<td>EE816, DALI</td>
<td>EE812</td>
<td>EE811</td>
<td>EE810</td>
<td>EE804</td>
</tr>
</tbody>
</table>

**Add-ons**

- **Energy distribution**
- **Cable management**
- **LED plinths**
- **Multi-outlet blocs**
- **Charging stations for electric vehicles**

<table>
<thead>
<tr>
<th>Twilight switches, time switches</th>
<th>Dimmers</th>
<th>Weather station</th>
<th>Room thermostats</th>
<th>Window-opening detectors</th>
<th>Time switches</th>
<th>Energy meters</th>
</tr>
</thead>
<tbody>
<tr>
<td>TXA02x, TYA66x, TX211A, TYA670D</td>
<td>TG053A</td>
<td>TX320</td>
<td>TXB30x or TRC301B (pay attention to the range)</td>
<td>TXA02x, TE3xx</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Shutters control</th>
<th>HVAC control</th>
<th>Metering</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>X</td>
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</tbody>
</table>

**Consumption metering system**

<table>
<thead>
<tr>
<th>X</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>X</th>
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<tbody>
<tr>
<td>X</td>
<td>X</td>
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<td>X</td>
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**Add-ons**

- **Energy distribution**
- **Cable management**
- **LED plinths**
- **Multi-outlet blocs**
- **Charging stations for electric vehicles**
Hager teams have always responded to the same challenge: to satisfy the needs of companies that aspire to be socially responsible and environmentally friendly while adapting to their economic constraints. As such, our engineers provide support to implement efficient energy solutions in offices.

For computing hardware, our teams work at two levels. Firstly, to reduce consumption. Proposed measures generally include the implementation of automatic systems to switch off computer stations or smart plugs to avoid standby power consumption. Our approach also aims to implement appropriate metering systems. The goal is to monitor changes in consumption and encourage users to act responsibly.

Our solutions also extend to lighting, which is highly energy intensive. We recommend the use of presence and motion detectors to switch on lights at the right time and in the right place while ensuring the safety and comfort of users. Another strategic recommendation is to programme and regulate lighting to reduce unnecessary lighting expenses in unoccupied offices, for example.

Hager solutions for offices

IT equipment, screens, telephones and light sources: in a company, the multitude of equipment drives up energy bills. Metering and reducing consumption are clear objectives to control costs and increase competitiveness.
### Solutions for offices

#### Traditional solutions

<table>
<thead>
<tr>
<th></th>
<th>Switches</th>
<th>Motion detectors</th>
<th>Fitted ceiling-mounted presence detectors (high level of detection)</th>
<th>Ceiling-mounted presence detectors (very high level of detection)</th>
<th>Motion detectors</th>
<th>IP54 sealed hyper-frequency ceiling-mounted motion detectors</th>
<th>IP55 sealed wall-mounted motion detectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reception area</td>
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<td>X</td>
<td></td>
<td>X</td>
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<tr>
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<td>X</td>
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<tr>
<td>Individual offices</td>
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<td></td>
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<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stairwells, basement corridors</td>
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<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sanitary facilities</td>
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<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
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<td>Plant room</td>
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<td></td>
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<td>Exteriors</td>
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<td></td>
<td></td>
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</tr>
</tbody>
</table>

#### Control interfaces (lighting, shutters, HVAC)

<table>
<thead>
<tr>
<th></th>
<th>Berker Q.1</th>
<th>KNX Remote control</th>
<th>domovea kit*</th>
<th>Berker Q.1 motion detectors</th>
<th>Fitted ceiling-mounted presence detectors</th>
<th>Ceiling-mounted presence detectors (very high level of detection)</th>
<th>IP55 sealed wall-mounted motion detectors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8534xxxx</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EE15 (ON/ OFF) EE816 (DALI)</td>
<td></td>
<td>85345129</td>
<td>TCC510S, TCC520E (ON/ OFF), TCC530E (dual-area control), TCC521E (DALI)</td>
<td>TX510 (ON/ OFF), TX511 (with regulation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EE804 EE805</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EE883</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EE82x to EE87x</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>

#### Lighting control

<table>
<thead>
<tr>
<th></th>
<th>7566272x</th>
<th>TU4xx</th>
<th>TJA451</th>
<th>85345129</th>
<th>TCC510S, TCC520E (ON/ OFF), TCC530E (dual-area control), TCC521E (DALI)</th>
<th>TX510 (ON/ OFF), TX511 (with regulation)</th>
<th>TRECxX (pay attention to the range)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7566272x</td>
<td>TU4xx</td>
<td>TJA451</td>
<td>85345129</td>
<td>TCC510S, TCC520E (ON/ OFF), TCC530E (dual-area control), TCC521E (DALI)</td>
<td>TX510 (ON/ OFF), TX511 (with regulation)</td>
<td>TRECxX (pay attention to the range)</td>
</tr>
</tbody>
</table>

* Can be controlled through mobile devices (iPhone, iPad, ...)

---

* KNX solutions
### Gestion de la luminosité

<table>
<thead>
<tr>
<th>Shutters control</th>
<th>HVAC control</th>
<th>Metering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Astro switches, twilight switches, time switches</td>
<td>Dimmers</td>
<td>Roller shutter control push-button</td>
</tr>
<tr>
<td>EHxxx, EEN10x, EGxxx, EE18x</td>
<td>EVNxxx</td>
<td>Berker R.3 852411xx</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Berker Q.1 2049xxxx, 2034xxxx, 2030xxxx</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ECxxx, SMxxx</td>
</tr>
</tbody>
</table>

### Gestion du chauffage

<table>
<thead>
<tr>
<th>Shutters control</th>
<th>HVAC control</th>
<th>Metering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twilight switches, time switches</td>
<td>Weather station</td>
<td>Room thermostats</td>
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<tr>
<td>Dimmers</td>
<td></td>
<td>Window-opening detectors</td>
</tr>
<tr>
<td>TXA02x</td>
<td>TYA66x</td>
<td>TG053A</td>
</tr>
<tr>
<td>TYA670D</td>
<td>TX320</td>
<td>TXB30x or TRC301B (pay attention to the range)</td>
</tr>
<tr>
<td>TX211A</td>
<td>TCC530E</td>
<td>TXA02x</td>
</tr>
<tr>
<td></td>
<td>TCC520E (ON/OFF)</td>
<td>TE3xx</td>
</tr>
</tbody>
</table>

###consommation system

<table>
<thead>
<tr>
<th>Shutters control</th>
<th>HVAC control</th>
<th>Metering</th>
</tr>
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<tbody>
<tr>
<td>Twilight switches, time switches</td>
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</tr>
<tr>
<td>TX211A</td>
<td>TCC530E</td>
<td>TXA02x</td>
</tr>
<tr>
<td></td>
<td>TCC520E (ON/OFF)</td>
<td>TE3xx</td>
</tr>
</tbody>
</table>

###Add-ons

- **Energy distribution**
- **Cable management**
- **LED plinths**
- **Multi-outlet blocs**
- **Charging stations for electric vehicles**
Comfort, flexibility and energy savings are at the heart of Hager’s solution for schools and universities. Above all, the idea is to create a bright and friendly environment encouraging discussion and exchange, teaching and learning: real, living spaces which can adapt to meet changing teaching requirements.

Here, the electrical architecture is particularly important. It must provide responses that are perfectly in line with the need for flexibility, taking into account the intermittent use of the premises and the desire to meet the challenges of sustainable development.

Lighting management systems developed by Hager are switch-operated with a device that automatically switches lighting off when the room is empty. These systems also allow students and teachers to select the lighting that best suits their activity – solutions that optimise working conditions and result in cost savings.

Our teams, experienced in managing major projects and mobilising resources, are also committed to deadlines. They work closely with clients, are readily available, responsive, methodological and rigorous, providing technological expertise and scheduling to ensure that all projects are successfully completed before the school year starts.

Because sustainability is also a question of education, it is important to offer users – pupils, teachers, administrative staff – a range of technical solutions for a comfortable and healthy environment without losing sight of the demand for overall savings.
Solutions for schools

**Lighting control**

### Traditional solutions

<table>
<thead>
<tr>
<th>Switches</th>
<th>Motion detectors</th>
<th>Fitted ceiling-mounted presence detectors</th>
<th>Ceiling-mounted presence detectors (very high level of detection)</th>
<th>Motion detectors</th>
<th>IP54 sealed hyper-frequency ceiling-mounted motion detectors</th>
<th>IP55 sealed wall-mounted motion detectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berker S.1 8534xxxx</td>
<td>Berker Q.1 EE815 (ON/OFF) EE816 (DALI) EE810 EE811 EE812</td>
<td>EE804 EE805 EE883</td>
<td>EE82x to EE87x</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Entrance hall**: X X X X
- **Corridors, stairs, access to classroom**: X X X X
- **Administration offices**: X X X X
- **Classrooms**: X X X X
- **Staff rooms**: X X X X
- **Locker rooms**: X X X X
- **Sanitary facilities**: X X X X X
- **Plant room**: X X X X
- **Exteriors**: X

### Control interfaces (lighting, shutters, HVAC)

**Berker Q.1** (lighting, shutters, ambiance scenarios ...)

<table>
<thead>
<tr>
<th>KnX remote control</th>
<th>domovea kit*</th>
<th>Berker Q.1 motion detectors</th>
<th>Fitted ceiling-mounted presence detectors</th>
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</tr>
</thead>
<tbody>
<tr>
<td>7566272x TU4xx TJA451</td>
<td>85345129 TCC510S, TCC520E (ON/OFF) TCC530E (dual-area control) TCC521E (DALI)</td>
<td>TX510 (ON/OFF) TX511 (with regulation)</td>
<td>TRE5xx (pay attention to the range)</td>
<td></td>
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</tbody>
</table>

- **Entrance hall**: X X X X
- **Corridors, stairs, access to classroom**: X X X X
- **Administration offices**: X X X X
- **Classrooms**: X X X X
- **Staff rooms**: X X X X
- **Locker rooms**: X X X X
- **Sanitary facilities**: X X X X
- **Plant room**: X X X X
- **Exteriors**: X

* Can be controlled through mobile devices (iPhone, iPad,...)
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<th>Energy distribution</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Twilight switches, time switches</td>
<td>TXA02X</td>
<td>TYA66x, TYA67x, TX211A</td>
<td>TG053A</td>
<td>TX320</td>
<td>TXB30x or TRC301B (pay attention to the range)</td>
</tr>
<tr>
<td>Shutters control</td>
<td>TXA02X</td>
<td>TE3xx</td>
<td>Energy meters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HVAC control</td>
<td>TXA02X</td>
<td>TE3xx</td>
<td>Energy meters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metering</td>
<td>TXA02X</td>
<td>TE3xx</td>
<td>Energy meters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Astro switches, twilight switches, time switches</td>
<td>EHXXX, EEN10x, EGXXX, EE18x</td>
<td>Berker R.3 852411xx</td>
<td>Berker Q.1 2049xxxx, 2034xxxx, 2030xxxx</td>
<td>ECXXX, SMXXX</td>
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</tr>
<tr>
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<td>TXA02X</td>
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<td>Energy meters</td>
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<td></td>
</tr>
</tbody>
</table>
In a collective building, the challenge of reducing energy use often conflicts with the reality of daily life. How much heat should be provided for all residents? How can users who are not concerned with the energy bill be motivated? How can the costly behaviour of certain people be avoided?

The most pragmatic and efficient solution consists in automating the programming and regulation of heating. This automatically lowers the set point temperature, in one or several areas, when people are sleeping or absent, every day of the week.

Installing meters and sensors communicating with the KNX protocol makes analysing and monitoring consumption easier. Occupants can use a touch panel interface to monitor their energy expenditure and optimise their budget via recommendations from the Hager platform, which collects and interprets the data.

As part of a high-quality approach to collective buildings, Hager also provides standardised and reproducible solutions that speed up project implementation and completion. Design and development use industrialised processes that reduce the leadtime for completing operations.

Modern residences can be extremely energy efficient. But between theory and practice, what are the best solutions to achieve these objectives? In this sector, Hager has always been an innovative player, placing the emphasis on automation and smart systems for continuous consumption.
### Solutions for collective, tourism, senior

#### Traditional solutions

<table>
<thead>
<tr>
<th>Area/Location</th>
<th>Switches</th>
<th>Motion detectors</th>
<th>Dimmers</th>
<th>Fitted ceiling-mounted presence detectors</th>
<th>Motion detectors</th>
<th>IP54 sealed hyper-frequency ceiling-mounted motion detectors</th>
<th>IP54 sealed wall-mounted motion detectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reception area</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corridors, stairs, access to apartments</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apartments</td>
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</tr>
<tr>
<td>Playroom</td>
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<td>X</td>
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<td></td>
</tr>
<tr>
<td>Staff offices</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
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<td></td>
</tr>
<tr>
<td>Stairwells, basement corridors</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Plant room, cellars</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exteriors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

#### Control interfaces (lighting, shutters, HVAC)

<table>
<thead>
<tr>
<th>Area/Location</th>
<th>Berker Q.1 (lighting, shutters, ambiance/ scenarios …)</th>
<th>KNX remote control</th>
<th>domovea kit*</th>
<th>Berker Q.1 motion detectors</th>
<th>Fitted ceiling-mounted presence detectors</th>
<th>TCC510S, TCC520E (ON/OFF)</th>
<th>TCC530E (dual-area regulation)</th>
<th>TCC521E (DALI)</th>
<th>IP55 sealed wall-mounted motion detectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reception area</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corridors, stairs, access to apartments</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apartments</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Playroom</td>
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<td>X</td>
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<td></td>
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</tr>
<tr>
<td>Staff offices</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
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<td></td>
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<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>* Can be controlled through mobile devices (iPhone, iPad,...)</td>
</tr>
</tbody>
</table>

#### Lighting control

- 7566272x
- TU4xx
- TJA451
- 85345129
- EE815 (ON/OFF)
- EE816 (DALI)
- EE804
- EE805
- EE883
- EE82x to EE87x

- Berker B.7 8534xxxx
- Berker Q.1 11371909
- Berker B.7 EE815 (ON/OFF) EE816 (DALI)
- EE804 EE805
- EE883
- EE82x to EE87x

* Can be controlled through mobile devices (iPhone, iPad,...)
### Gestion de la luminosité

- Astro switches, twilight switches, time switches
- Roller shutter control push-button
- Programmable room thermostats
- Energy meters, multi-function meters

<table>
<thead>
<tr>
<th>Shutters control</th>
<th>HVAC control</th>
<th>Metering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Astro switches, twilight switches, time switches</td>
<td>Roller shutter control push-button</td>
<td>Programmable room thermostats</td>
</tr>
<tr>
<td>Energy meters, multi-function meters</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Citizen and student residences

- Astrox, EEN10x, E18x
- Berker R.3
- Berker Q.1
- ECxxx, SMxxx

**Add-ons**

- **Energy distribution**
- **Cable management**
- **LED plinths**
- **Multi-outlet blocs**
- **Charging stations for electric vehicles**

<table>
<thead>
<tr>
<th>Twilight switches, time switches</th>
<th>Dimmers</th>
<th>Weather station</th>
<th>Room thermostats with generic PB</th>
<th>Window-opening detectors</th>
<th>Time switches</th>
<th>Energy meters</th>
</tr>
</thead>
<tbody>
<tr>
<td>TXA02x</td>
<td>TYA66x</td>
<td>TG053A</td>
<td>TX320</td>
<td>TXB30x or TRC301B (pay attention to the range)</td>
<td>TXA02x</td>
<td>TE3xx</td>
</tr>
</tbody>
</table>

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<tr>
<td>TXA02x</td>
<td>TYA66x</td>
<td>TG053A</td>
</tr>
</tbody>
</table>

- Consumption metering system
- X

**Charging stations for electric vehicles**

- TXA02x
- TXA02x
- TXA02x

**Multi-outlet blocs**

- TYA66x
- TG053A
- TX320

**Energy distribution**

- TXA02x
- TXA02x
- TXA02x

**Cable management**

- TYA66x
- TG053A
- TX320

**LED plinths**

- TXA02x
- TXA02x
- TXA02x

**Multi-outlet blocs**

- TYA66x
- TG053A
- TX320

**Charging stations for electric vehicles**

- TXA02x
- TXA02x
- TXA02x

**Multi-outlet blocs**

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- TG053A
- TX320

**Charging stations for electric vehicles**

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- TXA02x

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- TX320

**Charging stations for electric vehicles**

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- TG053A
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**Charging stations for electric vehicles**

- TXA02x
- TXA02x
- TXA02x

**Multi-outlet blocs**

- TYA66x
- TG053A
- TX320

**Charging stations for electric vehicles**

- TXA02x
- TXA02x
- TXA02x
On course for performance

From electrical cabinets to wall appliances and metering solutions, Hager provides a comprehensive range of solutions for commercial sector buildings. Its aim is to optimise the energy performance of electrical systems.

Encompassing both power and protection, Hager solutions are a guarantee of unfailing quality, safety and reliability. Every effort is made to facilitate day-to-day tasks, whether it be during installation or start-up. The range of equipment, including modular protection devices, cabinets and enclosures, is designed to safely distribute electrical energy. It is accompanied by the construction of low-voltage distribution boards and switchboards in all tertiary service buildings. The same rationale of safety and simplicity applies when implementing our range of wiring ducts, columns and multi-outlet blocs. Products can be customised and meet the high requirements for cable
management in complex configurations. The flexibility of installations remains our goal: bringing energy and data to the right location. Wall-mounted devices provide maximum comfort and modularity. Functionality and fast installation are the main strengths of Hager’s range, whether for new buildings or for renovation work. In addition to these products, we offer a service to support user mobility. We provide charging stations for electric vehicles designed for use in public areas and private properties.
In the age of smart buildings

Farewell to the passive user! A new type of consumer is emerging: one who is forward looking and active. Home automation has begun. This technology, which combines automation techniques, IT and electronics, is now being incorporated into buildings to make them smarter. The possibility to programme, control and manage these devices with a view to consuming less energy offers many advantages.

Hager’s tebis KNX home automation system handles all electrical functions in the building to ensure they interact according to need. Flexible and modular, they can be configured to adapt to changes in the building or the occupants’ needs.

Our smart solutions, shared by one or more buildings and developed using the KNX protocol, have also allowed new services to emerge. Measurement and control tools are designed to manage buildings more efficiently. Reflecting the technical expertise of the Hager Group, our smart solutions focus on four areas: facade management, lighting management, energy management and display.

How does it work?

In a smart installation, control and power are separated. Receivers are controlled by output products. The wire or radio bus connects the products to collect control information. Control components connected to voltage-free inputs operate at an extra-low safety voltage. Push buttons and presence detectors are used throughout the building.

More energy savings

With its new dimmers, Hager offers a range of low consumption devices. As an example, the consumption for the TXA210N is only 0.31W. You can save up to 90% energy! For KNX installations, TXA628C is equipped with an eco-mode which allows to reduce the consumption of the device by switching off LED, activating sleep mode for microcontroller...
A reliable partner

Hager is an independent, family-owned company, which now has a worldwide presence. The company bases its development on innovation and its proximity to commercial partners.

A pioneering company, now a supplier of complete solutions

Since its inception, Hager has coupled its development with a consistent, sustainably innovative approach. Each year, the group spends roughly 5% of its turnover to further develop its range of products and production systems.

Local partner, global player

Do you have a project? Hager can support you. The Group can provide all the products required and, thanks to its international production capacity, leadtimes and coordination efforts are reduced, thus ensuring your project can be successfully completed. No matter how complex your project, we are able to respond by working together.
From 1996 to today

Hager has diversified to offer complete solutions.

The company has acquired:
- Tehalit, a company specialising in cable management systems and dado trunking
- Flash, an electronic components maker
- Weber, a company making switching gear
- Berker, a switch manufacturer
- Elcom, a specialist for modern communication systems and creative entryway design.

1970
Hager designs and launches the first modular circuit breaker on the French market.

1988
Hager offers solutions for power distribution in business premises and tertiary buildings.

1991
By developing tebis, Hager becomes a pioneer in the development of smart installation systems, which go on to revolutionise the world of home automation.

Hager has been an innovative company for more than 50 years. This success can be attributed, first and foremost, to our employees, who are guided by team spirit and a constant concern for customer satisfaction. We form a community, sharing essential values: courage, authenticity and integrity. This company culture is built around our local teams, who are determined to prepare for the future in a rapidly changing market.

Indeed, the demands of modern life and energy efficiency are just as important as the challenge of independence at home, and building automation. All these changes offer numerous opportunities. The employees at Hager are just as well aware of the challenges as they are focused on providing smart solutions and customised services.

Our strength is the spirit of enterprise

Daniel Hager, CEO