

How to make your building “smart”

Schneider Electric KNX



Control building functions easily, economically and flexibly

Schneider Electric KNX

Can all your demands be met under one roof?

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

Flexibility

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

Comfort

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

Complementary

Combining the Ultimate screwless flat plate range with KNX offers superior engineering and sleek, sophisticated style.



Cost efficiency

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

Safety and security

If a building is to be as safe as possible, building technology must be able to react quickly and intelligently in critical situations, whether someone is on the premises or not. Given the extent and range of these different requirements, conventional electrical installations soon reach the limits of their capabilities. They can only do so much. As a result, adapting the use to which parts of the building are put can quickly prove costly, and coordinating the functioning of the different buildings is a major undertaking.

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



Living the good life

Schneider Electric KNX in residential buildings

In terms of comfort, take the following example: Getting cosy in the evening no longer means going from one switch or thermostat to the next. Instead, simply press a single button to activate all the desired

functions in one go: blinds are lowered, atmospheric lighting is switched on and the room is heated to just the right temperature. Settings such as these (known as scenes) can be created exactly as you want them.



Wind sensor

Intelligent blind control:

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



2 gang push button with room temperature control unit and Ultimate stainless steel frame

Timed heating control:

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



4 gang push button plus with IR receiver and Ultimate polished brass frame

Individual lighting control:

- The "Central Off" switch at the entrance door deactivates all loads, such as the lighting or appliances connected to socket-outlets.
- Individual light settings, whenever and wherever you want. in the living room, dining room, for reading or while watching TV.
- If you hear things going bump in the night, just hit the "panic button" next to your bed to illuminate your house and garden with bright light.
- Keep burglars at bay by making it look as though someone is at home when you are absent or during long holidays.



Working made easy

Schneider Electric KNX in commercial buildings

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

In the presentation room, for example: At the touch of a single button, you can activate a whole series of functions in preparation for a presentation: groups of

luminaires are switched off or dimmed, the blinds and the projection screen are lowered to create the right conditions for the presentation, and the projector and microphone are switched on automatically. Finally, ventilation and heating create an optimal environment.

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



4-gang push-button and Ultimate stainless steel frame

Intelligent blind control:

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



2 gang push button with room temperature control unit and Ultimate pearl nickel frame

Individual heating control:

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



Presence detector with lighting control

Automatic lighting control:

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



180° 2.2M flush-mounted presence sensor

All buildings are made intelligent with KNX

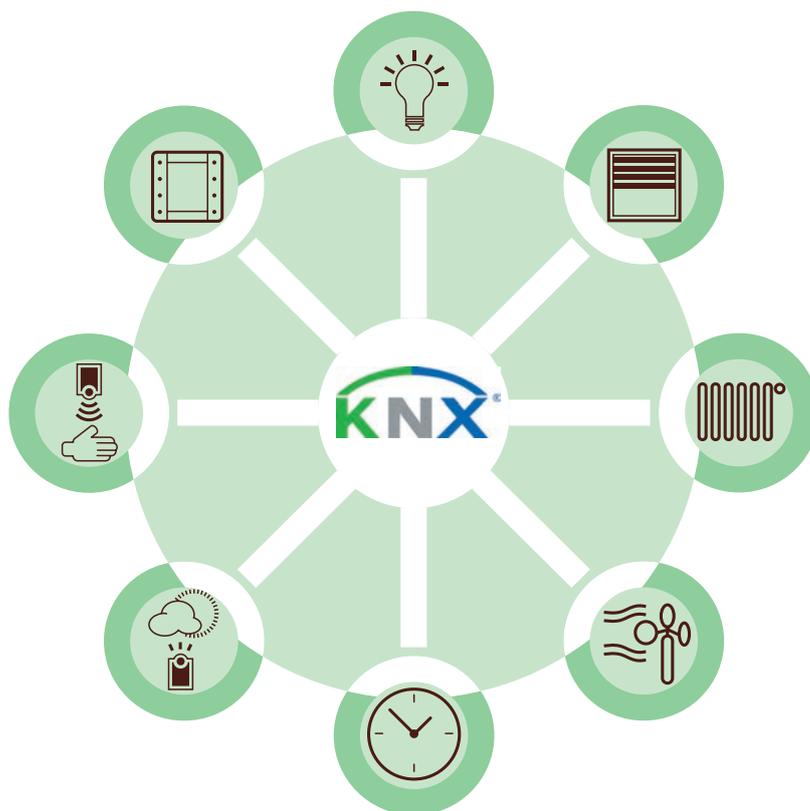
KNX Technology

The central idea of a standard for home automation and building control across different manufacturers was fundamentally moulded by Schneider Electric. Schneider Electric is one of the driving forces behind innovation and technology in building system technology. An initial complete product palette was already available in 1991. Nowadays, the Schneider Electric product range covers a full range of switch cabinet components, in addition to design and

function oriented control interfaces and sensors: universal dimming actuators, blind actuators, switch actuators, power supplies, binary inputs, gateways etc.

Further information about the worldwide standard for KNX building system technology can be obtained from the home page of the KNX Association (www.konnex.org).

KNX unites functions under one roof which were previously controlled separately



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

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

The success story of KNX in numbers:

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

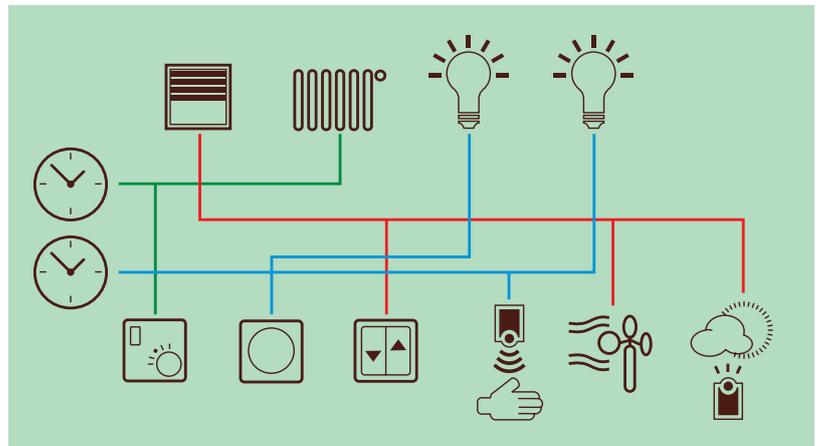
Facts and figures which give you the security of investing in an established, future-oriented technology.

Simple, intelligent, proven KNX Technology

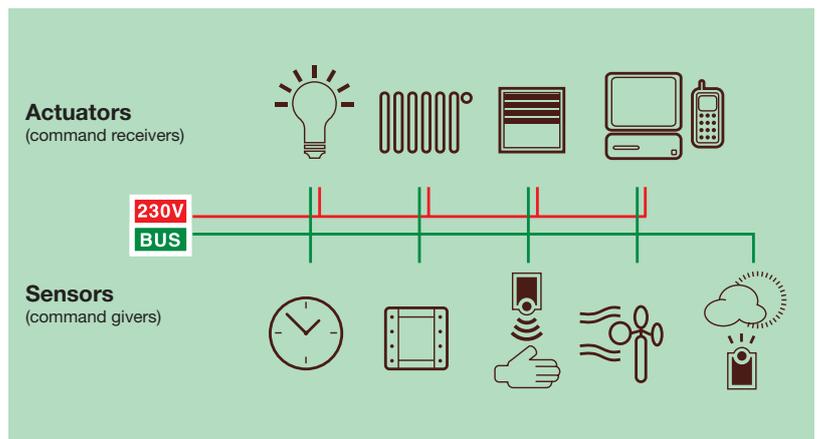
With conventional electrical installations, you have to determine in advance how and where your building's switching systems will be installed, before construction even commences, but with KNX from Schneider Electric, you can keep your options open. That's because everything in the system can be changed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

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

The conventional solution: many separate lines, meaning less flexibility



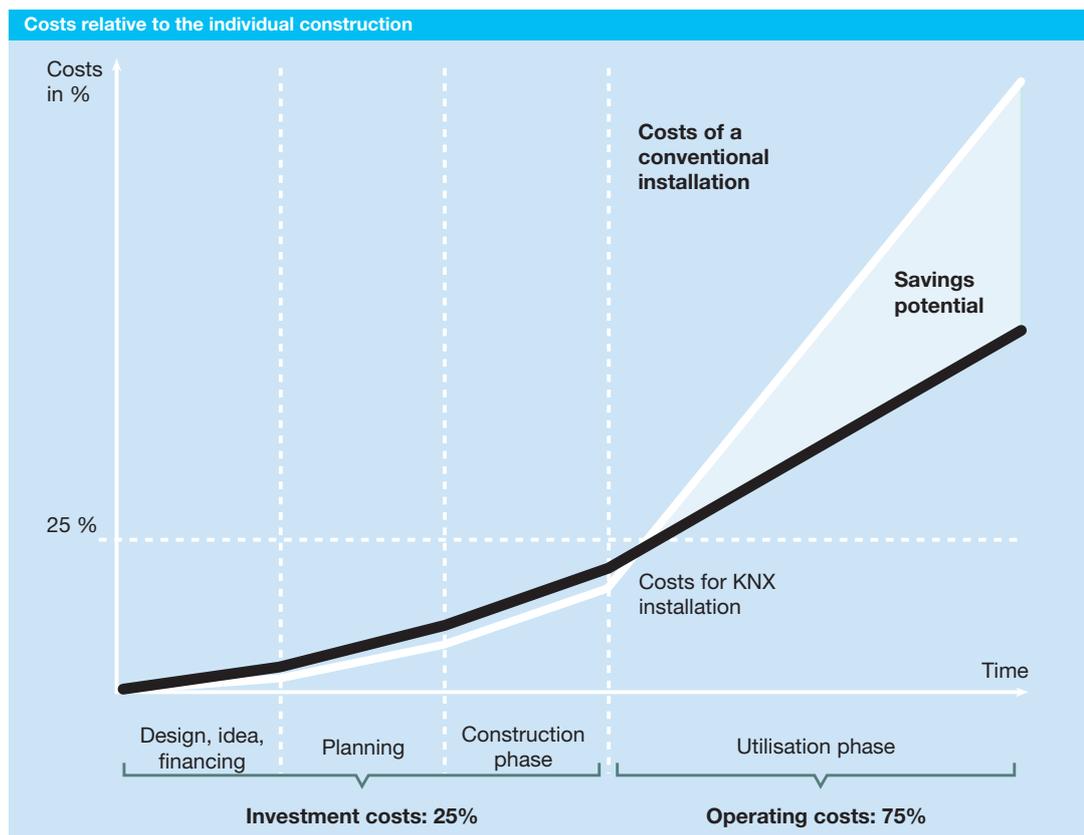
The intelligent solution: KNX – one system, one standard, many multi-task functions for maximum flexibility



Long term savings

**Schneider Electric KNX
in comparsion**

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



When it comes to electrical installation, advance planning is everything. Before the first ceiling is constructed, a bus line should be incorporated as a precautionary measure. And wherever light switches, lamp outlets, socket-outlets etc. are planned, the intelligent control cable should be laid parallel to the power cable. The cost is minimal, the benefit immense. You then have the freedom of interlinking your building technology functions at a later point.

Even though the cost of an KNX solution from Schneider Electric may seem more expensive than a conventional solution at the planning and building stage, the costs fall dramatically when it comes into use.

The reason: initial investment costs account for only around 25% of the entire cost of a building, on average. The operating costs when the building is used, however, account for 75%. And this is where big savings can be made. Because as time goes by, what you need from your building management will change. It may be that a private home will be inhabited by several generations. Or that rooms in commercial properties are put to different uses, due to reorganisation, new owners or new tenants.



Your electrical installer will be able to retrofit KNX control components at low cost and without having to break open the walls.

First-class references with outstanding design

**Schneider Electric KNX already
in action**

The British Library



To replace and upgrade its existing lighting-control system, the British Library opted for a system using KNX technology.

The existing system was replaced in stages and additional functions were included, such as DALI control, time-based scheduling, manual over-ride and field status such as real-time lamp failure. The system has facilities for constant light output, energy reduction and controlling blinds and screens in meeting rooms.

The KNX system connects all the risers in the basement with KNX bus that extends throughout the building. Delivering one system in such a large building (there is 112 000 m² of floor space) was achieved with an IP system using copper and fibre optics. Commissioning is carried out at night to avoid disruption.

Heathrow Terminal 5

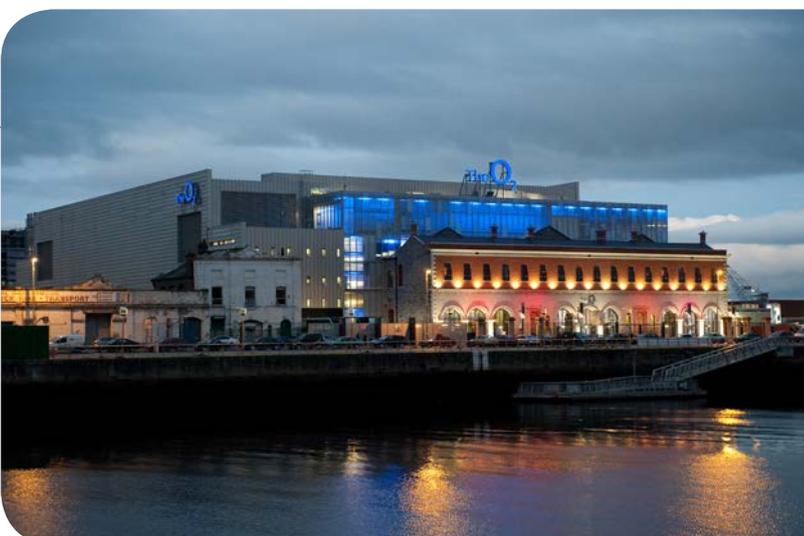


The Heathrow T5 Project consists of many different buildings and areas all forming part of a £4billion project to develop the UK's largest air terminal.

A KNX DALI lighting control and monitoring system was extensively used for this project, including site-wide communication over the common IP data network. Over 150,000 DALI luminaires are connected, controlled and monitored by this system, including the emergency lighting testing and monitoring.

In accordance with the strict BAA requirement to build a world-class low energy terminal, the system has been developed to optimise energy efficiency. The scheme includes daylight linked constant lighting control, presence detection, time scheduling of loads, and intelligent lighting control with dimming, along with the monitoring of lifts, escalators, disabled toilet alarms and plant.

O2 Dublin Arena



This integrated control solution for lighting delivers KNX/DALI colour-change functionality and testing for emergency lighting. The creation of a perception of the venue as energy conscious was achieved using a sustainable KNX design. Cutting-edge building services were integral to the relaunch of O2, with lighting playing a major role, and lighting control being used in a practical sense.

The KNX/DALI solution includes building-wide lighting-scene control for public areas controlled via local touchscreens and a central headend. There is local scene control and dimming in the private bars, as well as local control in all back-of-house areas for over-riding the lighting condition.

The use of KNX technology reduced cabling requirements. The lighting-control strategy was proven to reduce energy consumption by up to 60%, with presence detection and lux sensors using lighting only when required. Installation and commissioning work was completed in five months.

Range overview

KNX push buttons & sensors	Glossy	Matt	
	Polar white	Anthracite	Aluminium
Push buttons			
1 gang push button plus	MTN617119	MTN627514	MTN627560
2 gang push button plus	MTN617219	MTN627614	MTN627660
4 gang push button plus	MTN617419	MTN627814	MTN627860
4 gang push button plus with IR receiver	MTN617519	MTN627914	MTN627960
Labelling sheets for push buttons	MTN618319	-	MTN618320
Labelling sheets for push-button with IR receiver	MTN618419	-	MTN618420
Sensors & room temperature controllers			
Presence 180° 2.2m detector	MTN630419	MTN630614	MTN630660
180° 2.2m indoor movement detector	MTN631619	-	-
180/2.20 m flush-mounted	MTN631719	-	-
180, flush-mounted	-	MTN632614	MTN632660
180/2.20 m flush-mounted	-	MTN632714	MTN632760
Object Room Temperature Control unit	MTN62210319	MTN62210414	MTN62210460
Room Temperature Control unit with display	MTN62410319	MTN62410414	MTN62410460
Multi Function 2 gang push button with Room Temperature Control unit	MTN62120319	MTN62120414	MTN62120460

All KNX push buttons & sensors need to be installed with a KNX frame

Ultimate KNX frames for push buttons & sensors

Frames for KNX push buttons & sensors	Stainless Steel	Painted White	Pearl Nickel	Polished Brass	Polished Chrome	Black Nickel
Ultimate screwless flat plate frame	GU8434PW	GU8434PW	GU8434PN	GU8434PB	MTN627514	GU8434BN



Stainless steel



Painted white



Pearl nickel



Polished brass



Polished chrome



Black nickel

Indoor presence detectors	Polar white	Aluminium
Indoor 360° basic presence detector	MTN630719	MTN630760
Indoor 360° presence detector	MTN630819	MTN630860
Presence with light control and IR receiver	MTN630919	MTN630960
Outdoor 220° movement detector	MTN632519	MTN632569
IR remote control	MTN570222	
Presence housing	MTN550619	
CO ₂ , humidity & temperature sensor - surface mount	MTN60050001	
Presence detector & light level sensor	MTN69010000	
Housing for presence detector - surface mount	MTN69010001	
Multi-sensor cable 15m RJ12-M8	MTN69010003	
Multi-sensor extension cable 15m M8-M8 4-pole	MTN69010005	
Outdoor sensors		
Wind sensor with 0-10V interface	MTN663591	
Wind sensor with 0-10V interface and heating	MTN663592	
Brightness sensor	MTN663593	
Twilight sensor	MTN663594	
Rain sensor	MTN663595	
Temperature sensor	MTN663596	
Weather combi-sensor DCF-77	MTN663692	
Basic weather station	MTN663990	
Brightness and temperature sensor	MTN663991	

System devices REG-K

Fan coil actuator	MTN645094	Accessories	
Dimming actuator 2x230/300 W	MTN646630	Valve adapter VA50 for thermoelectric valve drive	MTN639150
Logic Module Basic	MTN676090	Valve adapter VA78 for thermoelectric valve drive	MTN639178
Timer	MTN677290	Valve adapter VA80 for thermoelectric valve drive	MTN639180
DALI gateway	MTN680191	Programming magnet	MTN639190
Coupler	MTN680204	Mast and corner fastening for basic weather station	MTN663992
IP router	MTN680329	Lead gel battery, 7.2 Ah	MTN668990
USB interface	MTN681829	Lead gel battery 18Ah	MTN668991
Weather station 4-gang	MTN682991	Bus connecting terminal	MTN689701
Labelling software	MTN615022	Branch terminal	MTN689702

Switch, blind & heating actuators REG-K	Switch contacts			
	2	4	8	12
Switch actuator 230V 16A with manual mode	MTN647393	MTN647593	MTN647893	MTN648493
Switch actuator 230V 16A with manual mode & current detection	MTN647395	MTN647595	MTN647895	MTN648495
Switch actuator 230V 10A with manual mode	MTN649202	MTN649204	MTN649208	MTN649212
Switch actuator 230V 6A			MTN646808	
Switch actuator, flush-mounted 230V 16A	MTN629993			
Switch actuator 16A FM with 2 inputs	MTN60030001			
Switch actuator 2x6A FM with 2 inputs	MTN60030002			
Blind / roller shutter drives				
Blind actuator 6A		MTN646704		
Blind actuator 24V 6A with manual mode		MTN648704		
Blind actuator 10A with manual mode	MTN649802	MTN649804	MTN649808	
Blind / switch actuator 16 loads 10A with manual mode			MTN649908	
Blind / switch actuator 24 loads 10A with manual mode				MTN649912
Blind actuator FM with 3 inputs	MTN60030004			
Heating actuator FM with 3 Inputs	MTN60030005			
Blind & heating actuator FM with 3 inputs	MTN60030006			
Roller shutter actuator 4x/10 with manual mode	MTN649704			
Heating actuator 6x230/0.05 A	MTN645129			

Push button interfaces	2 gang	4 gang
Push button interface plus - polar white	MTN670802	MTN670804
Binary inputs REG-K	Inputs	
	4	8
Binary input 10V	MTN644492	MTN644592
Binary input 230V	MTN644992	MTN644692
Binary input 24V	MTN644892	MTN644792

Push button interfaces	Output current		
	160mA	320mA	640mA
Power supply with emergency input	MTN683816	MTN683832	MTN683890
REG emergency power supply	MTN683901		
Power supply	MTN684016	MTN684032	MTN684064
	DC 0.4A	DC 1.25A	AC 1A
Power supply 24V	MTN693003	MTN693004	MTN663529

Control units REG-K	1 gang		3 gang		
Control unit 0-10 V with manual mode	MTN647091		MTN646991		
Universal dimming actuators REG-K	1000W	150W	250W	300W	500W
Universal dimming actuator 230V	MTN649310	MTN649315	MTN649325	MTN649330	MTN649350
Universal dim actuator FM 50-210W with 2 inputs	MTN60030003				
Analogue modules REG-K	Input	Input module	Actuator	Actuator module	
Analogue 4 gang	MTN682191	MTN682192	MTN682291	MTN682292	
Valve actuators	230V		24V		
Thermoelectric valve drive	MTN639125		MTN639126		
Valve Drive with Status LED and 2 Inputs	MTN69210001				



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As a global specialist in energy management with operations in more than 100 countries, Schneider Electric offers integrated solutions across multiple market segments, including leadership positions in energy and infrastructure, industrial processes, building automation, and data centres/networks, as well as a broad presence in residential applications.

Focused on making energy safe, reliable, and efficient, the company's 110,000 plus employees achieved sales of 19.6 billion euros in 2010, through an active commitment to help individuals and organisations "Make the most of their energy."

We are changing our brand names and becoming one Schneider Electric. You'll get the same great quality products, but from one name you can remember and trust. This provides you and your customers with the reassurance associated with Schneider Electric.

Some of our market leading brands have already become Schneider Electric including **Merlin Gerin, Telemecanique, Square D, GET, Mita, Sarel, Himel, Thorsman, Tower** and **TAC**.

Working as one Schneider Electric makes it clearer that our ranges are highly compatible for integrated solutions.

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