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Case Study: Integration of Air Conditioning Systems in KNX for hotel projects
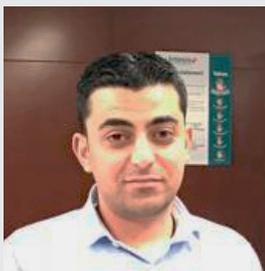
Solution:	KNX Multibrand Air-Conditioning Gateways
Country:	Saudi Arabia
Company:	Arabian Homes
Summary:	Arabian Homes uses Intesis KNX gateways for the integration of Air Conditioning Systems in their hotel projects

The effects

- Integration of different Air Conditioning brands to KNX for hotels.

- Energy savings: Reduction of energy consumption in hotels with the consequent decrease in electricity bill.

- Supervision and integral control of Air Conditioners.

"We have chosen Intesis solutions due to the compatibility and flexibility to control several air conditioning systems and the integration of their gateways with multiple drivers of home automation companies"

Sami Azmi, Business Developer Manager at Arabian Homes.

THE CHALLENGE FOR HOTELS

Many people, many rooms, many spaces… Hotels are a challenge for experts in energy savings and also for the budgets of their managers or owners. Reducing energy consumption in hotels is crucial since there are buildings with a high level of energy consumption.

A greater benefit can still be obtained, if this reduction is made in times of maximum hotel occupancy (summer holidays, Christmas, Easter and holidays, etc.), in which the hotel services are working at full capacity (laundries, kitchens, restaurants and dining rooms with extended hours, greater use of electricity and climate in the rooms, toilets, etc.).

The importance of choosing efficient Air Conditioning Systems:

The improvement of the energy efficiency of a hotel is a continuous commitment between achieving a reduction in energy consumption and not adversely affect the comfort of guests.

It is therefore about maintaining the quality of energy services in harmony with the interests of its customers. In addition to reducing the electricity bill also decreases the polluting effects and protects the environment.

It is estimated that the energy costs of hotels for Air Conditioning, lighting and water can be up to 25% their total expenses. Therefore there is obvious value in being able to control and monitor the equipment responsible for Air Conditioning, lighting and the generation of domestic hot water (DHW).

Within the energy costs of hotels, Air Conditioning is the biggest expense. On average, this expense represents more than 40% of total energy costs. Therefore, Air Conditioning improvements offer a greater potential for savings.

Choosing efficient Air Conditioning Systems is a vital decision since it is the main factor when it comes to achieving energy savings.

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Climatization in hotels:

There are different ways to optimize air conditioning in hotels. Air conditioning and heating control must be carried out both in common areas (living rooms, restaurants, reception, bathrooms, etc.) and in private areas (guest rooms).

At the Air Conditioning level, limiting the setpoint temperatures in public areas such as main rooms or large rooms can be very useful.

Also, limiting the setpoint temperatures in private areas is important, because, in many cases, hotel customers do not make proper use of system controls in their room. This causes misuse of the Air Conditioning and leads to overconsumption.

Using monitoring and control systems optimization of energy consumption, demonstrating immediate value. The management of consumption and real time energy control allows for identification and resolution of unnecessary consumption. Current control systems allow monitoring of a large number of variables including for example: setpoint temperature, open window, occupancy, scenes, etc.

Hotel projects in Saudi Arabia:

Arabian Homes founded in 2000 in Saudi Arabia is considered one of the pioneer companies in building projects. Thanks to their technical capacity and complete solutions for engineering, supply and installation of automation systems, they have broad experience in the integration of hotel projects.
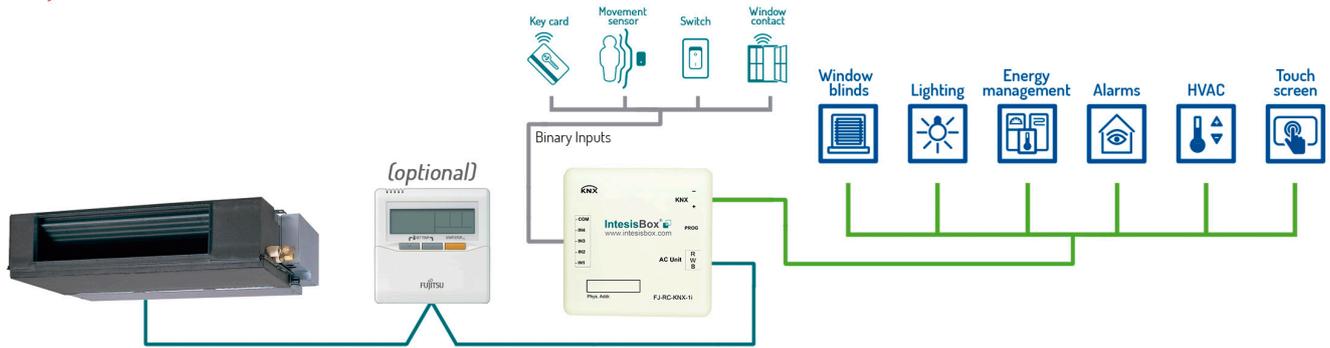
For Arabian Homes, the integration of air conditioning systems into KNX for their hotel projects was not easy. This was mainly due to the need to integrate a wide variety of air conditioning brands and the different requirements of each hotel project. In addition, the integration was more complicated due to the presence of different KNX manufacturers and the use by each of different types of KNX data (DPT). And finally, the objective of maintaining the comfort of users while obtaining energy savings.

Arabian Homes selected the Intesis gateways, which enable control of different brands and models of Air Conditioners, providing an interface for the integration of any AC within a hotel complex.

An example of some of the Arabian Homes hotel projects: **Hotel Verona, Daniat Makkah Hotels and Cecil Compound Villages.**

With the control and management of the air conditioning systems at these hotels, it has been possible to have a real time status of the Air Conditioning Systems, to monitor alarms and maintenance signals specific to the AC units and establish remote control of the entire building.

These tools ensure that the solution delivers energy savings with no compromise to guest comfort. Most of the air conditioners of the hotels are from the Fujistu and General Electric brands, the Hager KNX thermostats and a total of more than 1000 IntesisBox FJ-RC-KNX-1i gateways.

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How do Intesis Gateways help integration to KNX?

The Intesis gateways establishes communications to AC units for supervision and control by thermostats, tactile panels or KNX applications. There is also the possibility of having simultaneous control from KNX and the remote control of the AC manufacturer (since the Intesis gateways can work with or without the AC remote control).

In addition, the KNX Intesis gateways include binary inputs, offering the possibility of monitoring (card holder or presence sensors for occupancy) and window sensors, with standard sensors that are much more economical than KNX's own devices. For example: these inputs can be used to automatically manage turning the unit ON/OFF and adjust the setpoint temperature depending on whether or not there are people in the room. With this control capability, unnecessary electricity costs are avoided and great energy savings are achieved.

From a maintenance perspective, being able to monitor detailed information of errors and alarms in real time (like filter status) allows teams to take immediate action to resolve issues. Faster response to problems improves guest comfort and reduces repair expenses.

The integration of Air Conditioning Systems to KNX with Intesis gateways has enabled Arabian Homes to achieve great energy savings in their hotel projects, reducing energy consumption while simultaneously optimizing the comfort of hotel customers.

Intesis Air Conditioning Solutions

Along with the most important Air Conditioner manufacturers, Intesis offers high quality products for the integration of climate systems into BACnet, KNX, Modbus and 2,4 GHz wireless installations.
Enjoy the benefit of working with one of the pioneering companies in the field of Air Conditioning integration that offers highly reliable solutions developed jointly with the most relevant AC manufacturers.

Learn more on www.intesis.com or www.arabianhomes.sa

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