



Lighting and air conditioning control with presence detectors and CO₂ sensors



Quality from the country

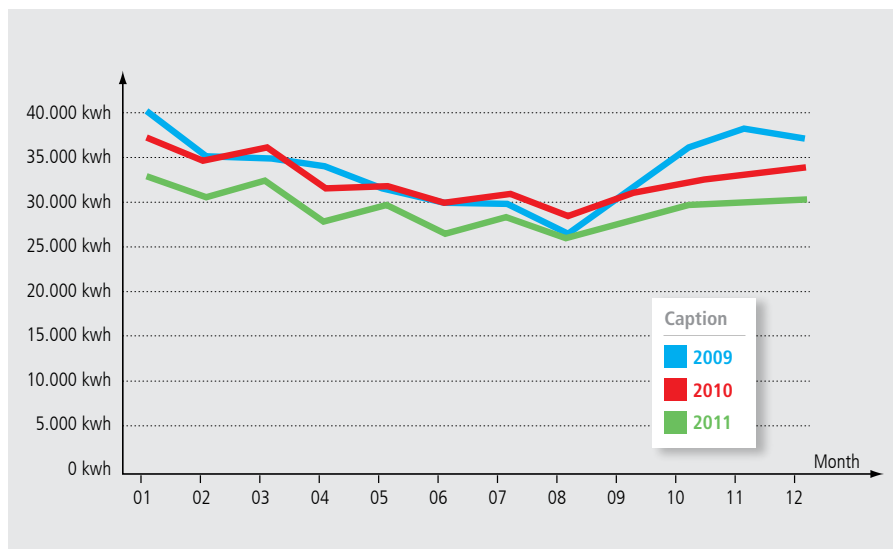
Why go miles and miles? Bernd Rentschler was always keen to use control devices from Theben AG. They are ideal for the requirements in public buildings in the Zoller-nalb district. Another element of his principles is to take a look at the manufacturers in the region and use their products where they fit the bill in terms of function and quality. In his big project for the Balingen district administration complex, he opted for the installation of over 200 ThebenHTS presence detectors in his role as head electrician. They provide the required control of lighting, heating and ventilation. The rural district at the foot of the Hohenzollern castle benefits from the efficient use of energy and its employees and visitors from optimum lighting and ventilation. Even in the large meeting room, an AMUN 716 R CO₂-Sensor from Haigerloch provides an "excellent climate" for the local politicians.

Function

- Efficient lighting control as required
- Accurate presence monitoring in offices
- Suitable for corridors
- Can be used for heating and blinds
- Interface for small controller
- Air conditioning in meeting rooms

Solution

- Square 8 x 8 metre detection area with ECO-IR 360-24V
- Rectangular detection area for corridors up to 30 metres long
- HVAC control with separate run-on time
- Operating voltage 24 V AC/DC
- Floating relay contacts
- AMUN 716 R CO₂ sensor with 2 switching outputs CO₂ and 3 x 0–10 V outputs for CO₂, temperature and relative humidity



The presence-dependent lighting and ventilation control reduced the peak load from 150 KW to 12 KW/month.

Multi use of functions

The offices, meeting rooms, corridors etc all enjoy comfortable and efficient lighting. Automatic controls and systems control technology have also been achieved. Bernd Rentschler had already used ThebenHTS presence detectors in schools.

That's why presence detectors like the ECO-IR 360-24V now control the lighting in the district administration buildings. At the same time, features like accurate daylight measurement, adjustable brightness values and self-learning switch-off delay are a positive benefit. It is switched on manually. The lighting switches itself off if there is enough daylight or if the room is empty. The presence signal from the HVAC contact, which switches independently of the brightness level, moves the heating from standby to comfort mode or back. The appropriate blinds go up if nobody in the room needs shade in order to maximise use of the available solar heat on cold days. Another, clever energy-saving idea is the automatic switching off of monitors at work

"We've had positive experiences with the 8 x 8 metre detection area of the ECO-IR 360 presence detector from ThebenHTS in schools."

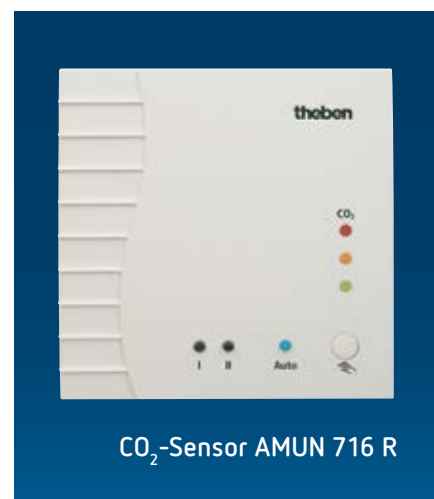
Bernd Rentschler
Head of Building Management Balingen
district administration

stations via presence contacts. A small controller (SPS) is used to link the functions. This is connected to the building systems technology via an IP interface and data network. "We now have central control of room functions using conventional devices," said Bernd Rentschler pleased with the simple but effective networking.

Drop in ventilation loss

The compact passage 24 V presence detector automatically provides good illumination for the requisite lighting of corridors and staircases. The rectangular detection area of the presence detector with its special detection quality is ideal for use in long corridors.

Bernd Rentschler considers air conditioning control in meeting rooms using the AMUN 716 R CO₂ sensor to be a "wonderful solution". Before that, the ventilation was always running during meetings. Heat recovery does retrieve 80 per cent the ventilation losses. The ventilation loss is now further reduced as the ventilation switches on and off as required. "I'm extremely satisfied", he said in his summary of automation using the CO₂ sensor and the ThebenHTS presence detectors. The whole retrofit helped to reduce the peak load from 150 KW to 102 KW/month.



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| Customer | Balingen district administration Zollernalb district Germany |
| Project | Presence-dependent lighting and air conditioning control |
| Planning & Integration | Department for building management and technology Chief electrician Bernd Rentschler Balingen district administration Elektrotechnik Hörter & Jenter Balingen Germany |

Image source: Elmo Schwandke, Geretsried

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