Innovative Control Technology
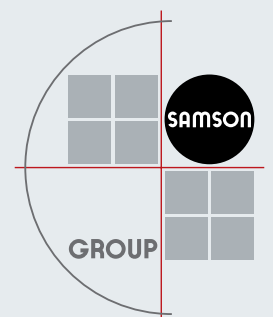
SAMSON

Element Frankfurt Airport Hotel: a First in Europe

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SAMSON GROUP

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The Element Frankfurt Airport Hotel is located just a few minutes away from Frankfurt airport. It is the first hotel that the Element brand, known as a pioneer in sustainable, environmentally friendly and efficient design and operation of hotels, has opened in Europe. The "green" brand has the LEED (Leadership in Energy and Environmental Design) certification, a US energy and environment standard recognized worldwide. Sustainability is also apparent in the SAMSON building automation systems, which are well equipped for any future requirements of the hotel.

In cooperation with selected partners, SAMSON implemented a particularly efficient and cost-effective technical solution based on the SAMSON product portfolio. A tailor-made approach was implemented to meet the special customer requirements, including safety-related control of the smoke control system with special fire matrix and operator panel, the fire damper bus system, BACnet, KNX, Modbus and meter bus connections as well as a server-based building automation system. Each of the five information centers is connected to the certified BACnet operator workstation by one TROVIS 6610 CPU Module. All data from the complex system are clearly visualized by dynamic plant schemes in the centralized building automation system for the operators. In addition to controlling the central heating and ventilation systems, operators can directly access any hotel room.

In total, the system reads, processes and issues around 7,200 physical and communication data points. All information centers come with an integrated 15" touch panel PC for clear indication of operating states as well as safe and intuitive operation directly on site. To maintain the high hygienic quality of

the domestic hot water, the TROVIS 6600 Automation System monitors the temperature across the different lines and flushes them depending on the temperature and according to schedule. All relevant data are transmitted to the building automation system. This procedure is particularly cost effective as only the required amount of water is replaced and no additional personnel cost are incurred.

The TROVIS 6600 Automation System prevents every hotel room from being underheated or overheated. On top, it monitors the set point temperature to match the selected operating mode. Any switchovers of the permissible limits that may be necessary to match the active operating mode are transmitted to the Daikin room controllers via BACnet.

A carbon monoxide alarm system is installed in the underground car park. Any alarms from this area of the hotel are integrated into the central alarm management system. The wa-ter, electricity and heat energy consumptions are visualized in the energy management system and saved with the relevant historical data.

A flexible bus network with BACnet controllers is used to monitor and actuate the 529 motorized fire dampers.

The smoke control systems is controlled in accordance with IEC 61508 (SIL). It includes 26 smoke dampers installed on the basement floor and two separate roof-mounted fans to exhaust smoke from the interior rooms in the North/South basement. All control data are also transmitted using BACnet.

The SAMSON BACnet building controller used is tested according to DIN EN ISO 164845:2012 and complies with AMEV profile AS-B (and thus also with profile AS-A).

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