

Case study | VLT® HVAC Drive FC 102

Danfoss ensures sustainable luxury in the heart of Sønderborg

In cooperation with Nordomatic, Danfoss Drives has created solutions that ensure a high level of comfort in an efficient manner at Hotel Alsik.

Luxury in a Southern Jutland setting

Since its opening in May 2019, the luxury Hotel Alsik in Sønderborg has been at the top of the list of Denmark's most inviting and exciting hotels. The hotel is characterized by its consistent Nordic design and natural materials, designed by Henning Larsen Architects, as well as an exquisite restaurant on the 17th floor with sweeping views of the city of Sønderborg.

This is, however, just a small detail compared with the tremendous work that Hotel Alsik does to create luxurious experiences for its guests, together with the strong focus on sustainability throughout.

Today, Alsik is 76% CO₂ neutral, which is reflected throughout the entirety of this magnificent hotel – in everything, from the energy-efficient solutions in the hotel rooms, the design of the building and the power supply to the 380 m² solar cells on the roof. The excess heat from the refrigeration systems is used for heating domestic hot water, which is stored and used as needed.

Even the cement is sustainable

Sustainability has been fundamental for Alsik right from cutting the first sod. Both the floors and ceilings are designed to make as much use of daylight as possible, the facade was created using recyclable aluminum, and the concrete is cast using natural materials that have a high thermal capacity. Hotel Alsik was built in compliance with BR2020, which means that since 2018, the hotel has complied with the energy requirements that will become applicable in 2020.

Hotel Alsik consists of 190 guest rooms, three restaurants, and a three-floor spa area. Very special solutions are required to ensure a high level of comfort while maintaining the strong focus on sustainability. According to Jacob Haulrich, Regional Manager at Nordomatic, this is where Danfoss Drives' energy-efficient solutions have contributed in the battle to become one of Denmark's most sustainable luxury hotels.



76 %
CO₂ neutral hotel

Hotel Alsik's conference department, restaurants and spa areas make use of central ventilation technology, where heating and cooling are adjusted via the Building Management System (BMS). In the hotel's nearly 200 rooms, decentralized ventilation systems are used. Each room has its own decentralized ventilation unit with air from the outside and heat recovery. These are connected with the hotel's booking system, so the rooms are heated to the right temperature before the guests arrive. Then the guests can adjust the temperature level to their ideal level of comfort. If a room is not booked, the temperature level is lowered, resulting in significant savings in consumed energy.

Economic and energy savings

For the supply of fresh air to the decentralized systems in the rooms, Hotel Alsik has 10 central ventilation systems that ensure fresh and clean air. These central systems run around the clock all year long and are therefore optimized for operation and maintenance savings. Danfoss Drives' VLT® HVAC Drive FC 102 is the perfect choice for reliable solutions in order to realize these low costs of ownership.

VLT® HVAC Drive FC 102 ensures an energy-efficient solution and enables central management and monitoring of all of the processes.



Jacob Haulrich, Nordomatic, continues: "We also use the new VLT® Pressure Transmitter PTU 025 pressure transmitter unit, which monitors air filter clogging and air volume through the ventilation fans. We can obtain the values via BACnet, and because this unit has four pressure transmitters, it has resulted in elimination of three pressure sensors, including cabling, per system".

An advantage of Danfoss' PTU 025 pressure transmitter is that it provides early and convenient warnings via the integrated filter monitoring, to avoid clogged filters, poor indoor climate and unnecessary energy consumption. Plus, it's also easy to install.



Danfoss is involved from start to finish

With guests throughout the year, it's essential that the technology works the way it should. Therefore, Danfoss Drives Service Partner STYREG has been involved in the startup at Hotel Alsik to ensure that the system solutions are optimized. A service technician could thus be on location quickly in order to ensure proactive service in the event of an incident.

Service from Danfoss Drives Service has proved its worth from the very start of the project: "For such a large project, it's only natural to meet some bumps along the way, but Danfoss Drives' service staff were ready to support us throughout the entire process", says Jacob Haulrich from Nordomatic. Thanks to the excellent cooperation between Danfoss and Nordomatic, the project has been a CO₂ neutral success.

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