

## Case story

# VLT® drive has delivered **reliable, low-energy** ventilation for **40 years**

**Did you know that Danfoss was the first company in the world to mass produce static AC drives in 1968? The first was named VLT® 5.**

**For more than 40 years, one of these VLT® 5 drives has been in constant operation, ensuring reliable, hygienic ventilation, and a good working climate for the employees in an industrial kitchen run by the Municipality of Tønder in Denmark.**

### Repaid at least 15 times

The VLT® 5 drive has saved approximately 300,000 kWh in energy consumption over a 40-year period, and repaid the original investment at least 15 times.

### Greater energy savings

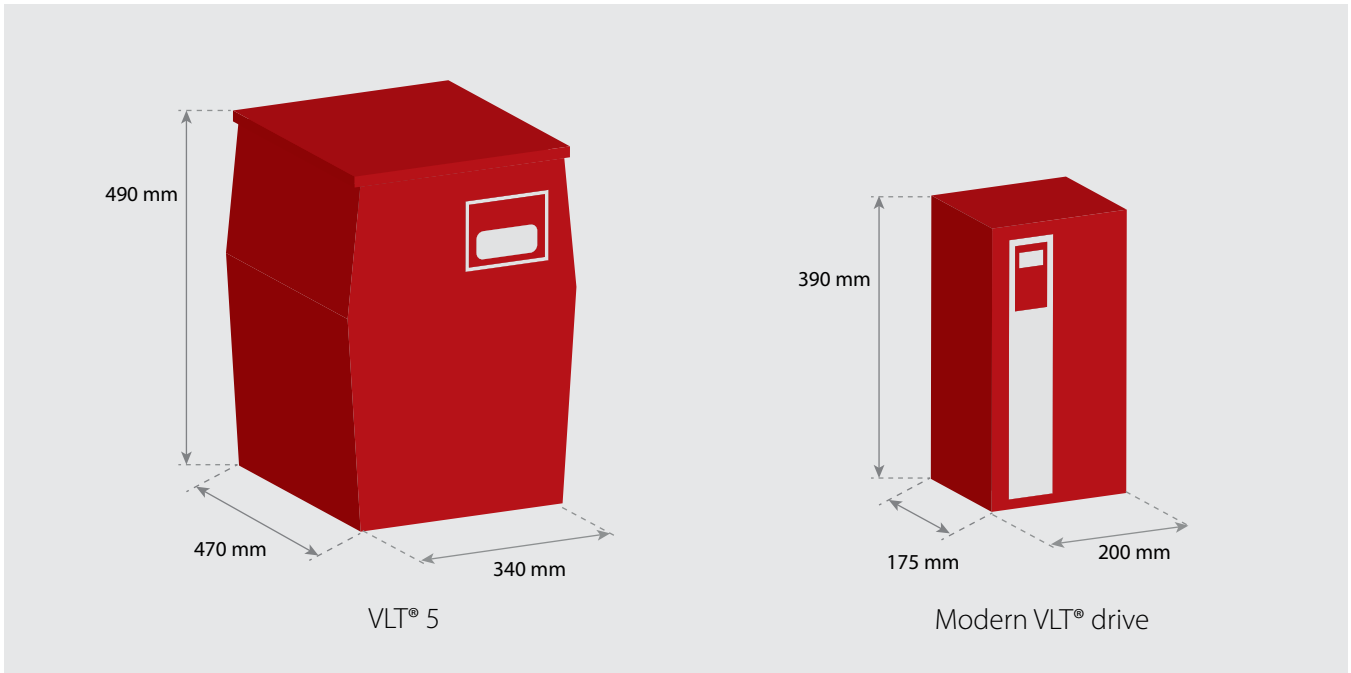
Until now, air has been supplied to the premises via a simple speed control supply and exhaust ventilation system, with no heat recovery. However,

modern ventilation system technology is much more effective, minimizing heat loss via the use of heat recovery exchangers.

The kitchen ventilation system has therefore been upgraded to perform heat recovery using rotary heat exchangers. The 40 year old VLT® 5 drives has been replaced by modern HVAC-dedicated drives, so future energy savings will be even greater.

Investment  
repaid

**15**  
times



**Reliable**

Kim Lilliendahl Tygesen, Energy Consultant at the Municipality of Tønder, explains why they once again chose Danfoss Drives to supply drives for its ventilation system: “As with our VLT® 5, we count on reliable and energy-saving operation as a result of the new Danfoss Drives frequency converters.”

The upgrade project includes a renovation of the ventilation room

for the industrial kitchen and a new ventilation system for the basement and nearby dermatology clinic. Predicted annual energy savings are 390,000 kWh, with annual savings in operating costs of DKK 596,700, compared to traditional fixed speed ventilation. These savings deliver a return on investment within only one year.

**Save even more energy**

Back in the days when the VLT® 5 drive was installed, it was state of the art technology. Today VLT® products are even more compact, saving even more energy and money.

The extreme compactness of modern drives also enables side-by-side wall or cabinet mounting. Comparing the VLT® 5 drive to its current equivalent, the volume reduction is a massive 80%.

*The new ventilation system includes a renovation of the ventilation room for the industrial kitchen, as well as a new ventilation system for the basement and nearby dermatology clinic*



Modern VLT® drives also provide a diverse range of safety and equipment protection features such as EMC compliance to Category C1, seismic resistance, No Flow, Dry Pump and Fire Mode functionality. Multiple fieldbus protocol compatibility delivers unequaled flexibility in connectivity. Designers are free to choose the best motor for the application, because VLT® and VACON® drives fit all motor types, such as the permanent magnet motors operating in this installation.

Using only one type of AC drive to control the different motors on site facilitates cost savings in design and in interface complexity reduction. Spare parts management and maintenance are simplified, and training costs drop as a result of the common interface across all VLT® drives.

Danfoss is the global expert in HVAC drives, and has supplied a range of industries with more than 2.5 million dedicated VLT® and VACON® HVAC drives since 1986, when the first dedicated VLT® HVAC Drive was launched.



*This VLT® 5 drive model in aluminium housing was introduced in 1973. At the Municipality of Tønder in Denmark it has ensured reliable, low-energy ventilation for more than 40 years.*

*Kim Lilliendahl Tygesen, Energy Consultant at the Municipality of Tønder*

**Kim Lilliendahl Tygesen, Energy Consultant at the Municipality of Tønder:**  
***“As with our VLT® 5, we count on reliable and energy-saving operation as a result of modern Danfoss drives.”***

***“We have chosen Danfoss drives in our system upgrade, because we get a reliable and energy saving operation”***

