



Edge

computing in
the drive ensures
smart and simple
condition-based
monitoring

ENGINEERING
TOMORROW



Case story | VLT® AutomationDrive FC 302

Brewing up **real change**

The situation

Industry terms like “smart maintenance” and the “factory of tomorrow” have become part of the everyday lexicon.

They are terms which represent the end goal for any business – a highly efficient and well-run operation. But that’s not to say they come without hurdles: the shift from theory to practice for food and beverage manufacturers transitioning to a smart factory model... well, it can feel like more of a giant leap than a step.

However, despite the challenges, brewing company HEINEKEN Netherlands Supply decided that to secure a more solid and sustainable future, it had to step into unknown territory and embrace innovation...

...Using Danfoss VLT® drives with integrated condition-based monitoring (CBM) capabilities to reach its goals.

The challenge

With the European beer market expected to grow 15.2% by 2025, HEINEKEN understands that to meet demand, its production line must always be up to the task – with all assets expected to deliver a consistently reliable and excellent performance.

However, at Den Bosch brewery, the first location to receive an upgrade, the tough working environment posed several challenges: with every machine fault that occurred prior to Danfoss Drives' input resulting in costly and lengthy periods of downtime due to:

- All operations taking place in wet and harsh conditions
- All electrical motors being concealed and hard to reach in case of emergency

With this in mind, Danfoss Drives was tasked with helping HEINEKEN integrate condition-based monitoring into its procedures to:

- **Increase uptime**
- **Lower overheads**
- **Improve management of spare parts and stock**
- **Access new levels of machine data**
- **Boost application and system performance**

“CBM is a great addition to an already very good drive. Now, HEINEKEN is standardized on the VLT® AutomationDrive FC 302.”

Jan Brouwers, Detail Engineer
at HEINEKEN's Den Bosch brewery

**221.6m
hectoliters**

**Consolidated beer
volume sold by
HEINEKEN in 2020**



The solution

In August 2019 Danfoss Drives proposed HEINEKEN install VLT® drives with embedded intelligence, connectivity, and sensor capabilities. Installation was carried out with support from local application and Global Product Management experts provided by Danfoss Drives, as well as a vibration expert from Hansford Sensors.

Condition-based monitoring signals were then integrated into the brewery’s maintenance system via edge computing, allowing the drives to operate independently of the cloud or any PLC – and minimizing the risk of operational complexities.

What else?

The brewery received 4-20 mA vibration sensors from Hansford Sensors, and Danfoss Drives provided additional support with project scoping, commissioning, and training, as well as holding “voice of the customer” workshops to determine the best solution for HEINEKEN’s needs.

The VLT® drives also support pre-existing communication interfaces and software such as fieldbus, local control panels, and VLT® Motion Control Tool MCT 10, meaning HEINEKEN did not have to invest in a new parallel system as part of the upgrade.

Why choose integrated condition-based monitoring?

Focus of monitoring	Action	Value
Stator winding	Early detection of any winding faults	<ul style="list-style-type: none">• Improvements in motor uptime regardless of harsh operating conditions• Avoidance of “sudden death” scenario
Vibration	Permanent monitoring of vibration and speed	<ul style="list-style-type: none">• Greater availability of critical data, thereby enabling condition-based monitoring of applications
Load envelope	Early detection of unexpected torque changes in an application	<ul style="list-style-type: none">• Smarter and more accurate maintenance strategy resulting in minimal risk of critical fault occurrence

The outcome

The VLT® Motion Control Tool MCT 10 plug-in proved to be a real game changer, enabling seamless commissioning with consistent parameter settings. And so, with the power to gather more critical application data in real time than ever before – and thanks to the efforts of Danfoss Drives – HEINEKEN was able to optimize its Den Bosch production line while solving all its pain points and building a total value proposition.

In addition, Danfoss Drives' digital expertise enabled HEINEKEN to go on and retrofit the rest of its drives in the rest of its facilities with condition-based monitoring functionality.

And though people will always play a pivotal role on the ground at Den Bosch – as a matter of fact, learning how to fix issues themselves rather than calling in outside help – their jobs will now be easier and more efficient while requiring less of them.

In conclusion, the Den Bosch upgrade shows that condition-based monitoring is no longer a premium product meant for a few critical assets, but an affordable solution available for all – thanks to Danfoss Drives' innovative and forward-thinking approach.

“When development of the Den Bosch production line was being discussed, we had to decide whether we would use CBM to monitor the installed base or if we would stick to the old routine of stocking spare pumps. Our conclusion? We found CBM to be the perfect solution.”

Jan Brouwers, Detail Engineer
at HEINEKEN's Den Bosch brewery

15.2%

expected growth
in European beer
market by 2025

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