

ENGINEERING
TOMORROW

Danfoss

Case story | VLT® Solutions

Powder mixing with
wireless PROFINET
– **productivity
has tripled**

200%
quality
improvement

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VLT® | VACON®

The Dutch powder mix provider Huijbregts Groep installed 96 VLT® AutomationDrives for a redesigned and highly automated mixing facility in Holland. This tripled the productivity, improved the quality 200 % and made work easier and safer for the employees.

Redesign

Powder mixing used to take place in manually loaded mixers, which involved moving the individual powders to the mixer and the finished, mixed, powders to a packaging area.

Wireless fieldbus

The new design has 24 mobile mixers of 1500 kg maximum capacity running on a common power rail mounted on the factory ceiling. Every mixer has an IP66 7.5 kW VLT® AutomationDrive on board, each connected to a PLC through wireless PROFINET.

Extra power supply

The IP66 housing allows mounting of an extra power supply for the wireless client that is also mounted on every mixer.

Positioning via Smart Logic Controller

Positioning of each mixer is handled by the VLT® Smart Logic Controller as they are moved around on automatic wagons, also connected to a PLC via wireless PROFINET. The wagons are also powered from the common rail in the ceiling.

Software to control logistics

A specially developed software system controls the wagons and the mixers are automatically placed at their correct filling stations, where each is filled automatically.

When filled, each wagon drives automatically towards the packaging department, connects itself and empties the ready mixed powder into the packaging machine. Emptied, the mixer is automatically moved to a dry or wet cleaning facility and waits for its next task.

Automation of the production was handled by JEKO Tech, and the Huijbregts Groep itself was responsible for engineering and construction.

“Danfoss has made their promise come true, and the support is good.”

JEKO Tech.



Operational improvements

- The new production process lasts 2 - 3 hours which is 1 - 2 hours faster than before.
- Since each powder is filled into the mixer automatically, the recipe is followed with greater accuracy than before - and this can be documented for quality management purposes.
- Due to the high degree of automation, capacity has tripled from 30 orders a day to around 100, and the entire production can be tracked and traced.
- The wireless Ethernet automation has made troubleshooting easier
- The cleaning cycle is reduced from 8 hours to 40 minutes, and the working conditions for the operator are improved.
- There is less transportation on the factory floor, fewer accidents, less damage - and fewer employees are needed.

De Huijbregts Groep

Much of the food that is consumed in the Netherlands contains colourings, aromatic substances and flavourings produced by the Huijbregts Groep.

De Huijbregts Groep offers service in powder logistics. It takes care of purchase, storage, mixing, and packaging, stock handling and distribution for the food industry.

The high innovative level of the Huijbregts Groep makes it possible to secure and protect both quality, food safety and taste.

Key benefits of the Danfoss solution for Huijbregts Groep

- IP66 enclosures resist 95 % humidity in the cleaning process
- Ability to add an extra power supply in the IP66 enclosure
- Wireless PROFINET
- VLT® Smart Logic Controller enabled the necessary positioning
- Cost-effective compared to solutions available from other suppliers

JEKO Tech BV

JEKO Tech BV is a small company that develops and implements industrial automation solutions.

These solutions include all kinds of production lines including PLCs, drives, robots, and camera techniques. Recently the company invented and patented "the robot bag-cutter".

The Huijbregts project fits perfectly within the JEKO mission of creating new high-tech systems. The solution was delivered in cooperation with distributor Ehrbecker Schiefelbusch.





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