

CAN Newsletter Online

CAN NEWSLETTER MAGAZINE

CANopen in the food and beverage industry

Nord Drivesystems provides corrosion-protected solutions for the food and beverage industry without stainless steel. In those systems, CANopen frequency inverters are used.



(Source: Adobe Stock)

The complete article is published in the [March issue](#) of the CAN Newsletter magazine 2021. This is just an excerpt.

In the food industry, plant and machinery as well as the drive technology that is used must be protected against dirt, moisture, spray water, and aggressive media. However, painted systems are prone to even minor damage and do not offer permanent protection. Drive units made from stainless steel are relatively expensive. The NSD Tuph corrosion protection treatment from Nord is an alternative for aluminum drive housings that considerably prolongs the service life of the installed components in harsh environments. The surface protection can be combined with flexible modular drive products. The drive solutions are available in several sizes as worm gear, parallel gear, parallel shaft-gear or bevel gear units, completely available with a smooth motor and respective drive electronics.

As the drives' surfaces are exposed to scratches and impacts in industrial environments, even high-quality anti-corrosion coatings do not provide effective protection. Once the surface has been damaged, it is often infiltrated by corrosion and also repairs do not permanently help. According to Nord, with their treatment, the surface is more robust than a paint coating, and slight impairment remains limited to the damaged area. The NSD Tuph drives are not only suitable for hygienically sensitive applications in the food sector but also for various applications in process and pharmaceutical industries. They are typically used on conveyor belts, pumps, mixers or agitators, but also in water and sewage plants, and car wash facilities.

Food and beverage industry

Reliable drive solutions are an essential requirement for the entire value creation chain throughout the food and beverage industry. From storing, conveying, and processing of raw materials to process engineering and filling right up to packaging and logistics – drive systems tailored to the specific application are required. They need to balance hygiene requirements, technological requirements, and energy efficiency with product protection and demanding environmental conditions such as heat, cold, or moisture in an economical way. Nord Drivesystems, designs complete systems consisting of geared motors, frequency inverters, and software. A range of these frequency inverters use CANopen as communication protocol.



The NSD Tugh surface treatment provides corrosion protection for drive components in wash-down- optimized cast aluminum housings for the food and beverage industry (Source: Nord Drivesystems)

CANopen control cabinet inverters

The control cabinet inverters have a power range of up to 160 kW and can be adapted to customer applications. One of the latest frequency inverters of the company is the Nordac Pro SK 500P. It covers rated motor powers from 0,25 kW to 5,5 kW. Various device versions can be allocated to various application requirements. The inverter features Bluetooth and an SD memory card as a storage medium for parameters and operating data, as well as a USB interface, which enables parameterization of the inverter when the power is switched off.

As mentioned, it also provides a CANopen interface, supporting CiA 402 device profile for drives and motion control. The product can perform up to four gearmotor axis sequentially with positioning functions by reading the encoders of all four axis. Other features are an integrated PLC (programmable logic controller) for motor-related motion and logic control, a 200-% overload reserve for torque and speed performance, as well as sensorless current vector control for asynchronous and synchronous motors (open loop and closed loop).

The integrated brake chopper for four-quadrant operation is a part of the basic equipment for the entire series, so is the motor brake management, which is important, e.g. for lifting gear applications. Nord supplies the inverters with integrated STO and SS1. The integrated PLC processes the data from sensors and actuators and can autonomously initiate control sequences, as well as communicating drive and application data to a control center, networked components, or to cloud storage. This allows continuous condition monitoring and therefore forms the basis for predictive maintenance concepts as well as optimum plant dimensioning. This series is compatible with the SK 500E series.

The Nordac PRO SK 500E is customizable to drive applications. Its functionality can be extended with numerous plug-in option modules. For this inverter, various cooling concepts can be used to remove heat from the control cabinet and can be adapted to the requirements of the application with various option modules. Besides others, it provides CANopen (CiA 301 and CiA 402) as communication interface. CiA 301 is the CANopen application layer and communication profile.

If you would like to read the full article from Cindy Weissmueller (CAN Newsletter) you can [download](#) it free of charge or you [download the entire magazine](#).

[CW](#)