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Individual LogiDrive  
drive systems



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Fast Return on  
Investment (ROI)



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Energy efficiency and  
variant reduction

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# Drive solutions for parcel distribution centres

Case study: DHL





**Intralogistics**  
Parcel distribution centres



**Motors**  
IE4 synchronous motors



**Gear units**  
Bevel gear unit and  
helical gear unit



**Frequency inverters**  
NORDAC LINK – SK 250E

[Application video](#)



## Project requirements

Since 1 August 2019, a new air freight hub at the Cologne Bonn Airport has been part of the DHL network. The logistics centre provides a warehouse space of 12,000 m<sup>2</sup> and a sorting capacity of 10,000 parcels per hour. A 400-metre main sorter and a 200-metre flyer sorter sort the different parcel sizes – 24 hours a day, six days a week. Added to this are conveyors with a total length of 2.5 km, which are operated by NORD drive systems with a belt speed of up to 2 m/s and an acceleration of up to 5 m/s<sup>2</sup>.

**Climate-friendly logistics.** As the world's leading logistics company, DHL assumes the responsibility to set a good example in terms of sustainability, and is investing heavily in environmentally friendly logistics solutions. For the conveyor belt motors, energy efficiency as well as short maintenance

intervals have also been the main requirement. 800 highly efficient, variant-reduced LogiDrive drive systems from NORD DRIVESYSTEMS guarantee energy-saving, reliable and low-maintenance operation. The drive solutions were individually tailored to DHL's customer requirements and enable an exceptional energy balance with optimum cost efficiency.

### **Reduced energy consumption and fast ROI.**

The operation of parcel distribution centres is energy-intensive. Highly efficient drive systems such as the NORD LogiDrive significantly reduce energy consumption and therefore CO<sub>2</sub> emissions. In this way, they decisively contribute to more sustainability and climate protection in logistics. Furthermore, a fast Return on Investment (ROI) is achieved due to their high efficiency.



## Customer profile

DHL is an internationally operating transport services provider and one of the world's leading logistics companies. By 2050, DHL wants to reduce its logistics-related emissions to zero. The topic of energy efficiency is therefore of highest priority. For the construction of the new air freight hub at the Cologne Bonn Airport, the focus has also been on latest technology and sustainable solutions.



## Application solution

The LogiDrive drive units from NORD are characterised by high efficiency, fast ramp times (up to 5 m/s<sup>2</sup>), compact design, minimum maintenance requirements and a long service life. They ensure energy-saving, safe and smooth operation at DHL.

**Highly efficient, variant-reduced LogiDrive drive systems.** The system uses a combination of an IE4 permanent magnet synchronous motor (rated powers from 1.1 up to 5.5 kW), a two-stage bevel gear unit or a helical gear unit and a NORDAC LINK frequency inverter, which is installed close to the motor. A variant with a helical gear unit is used for merge applications, which require particularly high dynamics and speeds. By using IE4 synchronous motors, the LogiDrive drive systems reveal their maximum savings potential in partial load and

partial speed ranges. This makes them suitable for reducing the number of variants and allows a significant reduction of costs throughout the product service life (TCO).

**Service-friendly plug-and-play technology.** All NORDAC LINK frequency inverter connections are made via simple plug connectors and have been individually configured for DHL. A total of 12 plugs are available for encoder feedback, safe stop and others. In addition, the frequency inverters are equipped with a maintenance switch and a key switch for setup operation. An integrated Ethernet-based bus system was also implemented. To complete the drive solution, NORD also supplied the cables. Potential sources of error were thus eliminated, facilitating commissioning.



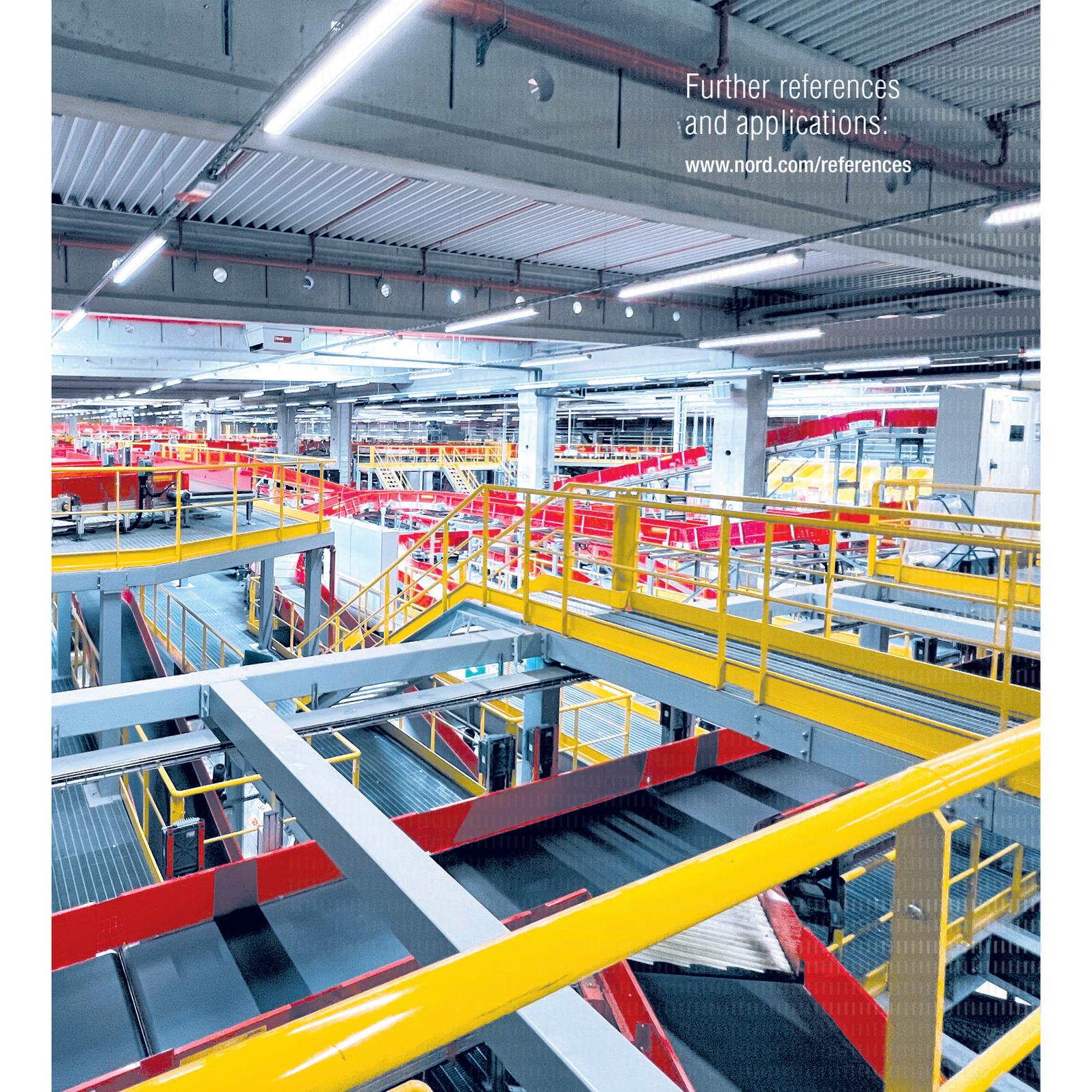
## Reduce drive variants

*The reduction of motor variants was very important for us. We were able to reduce 27 variants to 10. This makes work much easier for us.*



## The project at a glance

Highly efficient drive solutions from NORD DRIVESYSTEMS support DHL on its way to climate-friendly logistics. A total of 800 LogiDrive drive systems and 268 stand-alone motors are used in the hub at the Cologne Bonn Airport in various applications, such as curved conveyors, conveyor belts, mergers/pushers, vertical conveyors, telescopic conveyors and lifters.



Further references  
and applications:  
[www.nord.com/references](http://www.nord.com/references)

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