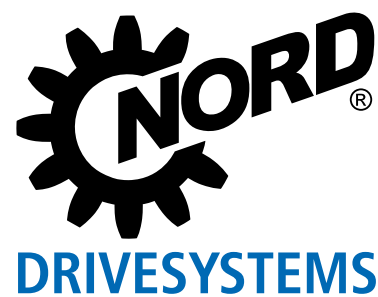


INTELLIGENT DRIVESYSTEMS, WORLDWIDE SERVICES



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**DRIVE SOLUTIONS FOR
BAGGAGE HANDLING SYSTEMS**



NORD DRIVE SOLUTIONS FOR THE AIRPORT INDUSTRY



NORD DRIVESYSTEMS Group

Headquarters and technology centre in Bargteheide, near Hamburg



Innovative drive solutions for more than 100 branches of industry

Mechanical products	Electrical products	Electronic products
Gear units	Motors	Frequency inverters, motor starters and field distributors

7 production locations with cutting-edge technology produce gear units, motors, inverters etc. for complete drive systems from a single source.



Subsidiaries and sales partners in 98 countries on 5 continents provide local stocks, assembly centres, technical support and customer service.



The map shown above is for information only and does not claim to be created for or applicable to any legal purpose. For this reason, we do not assume any liability for legality, correctness and completeness.

More than 3,900 employees throughout the world create customised solutions.



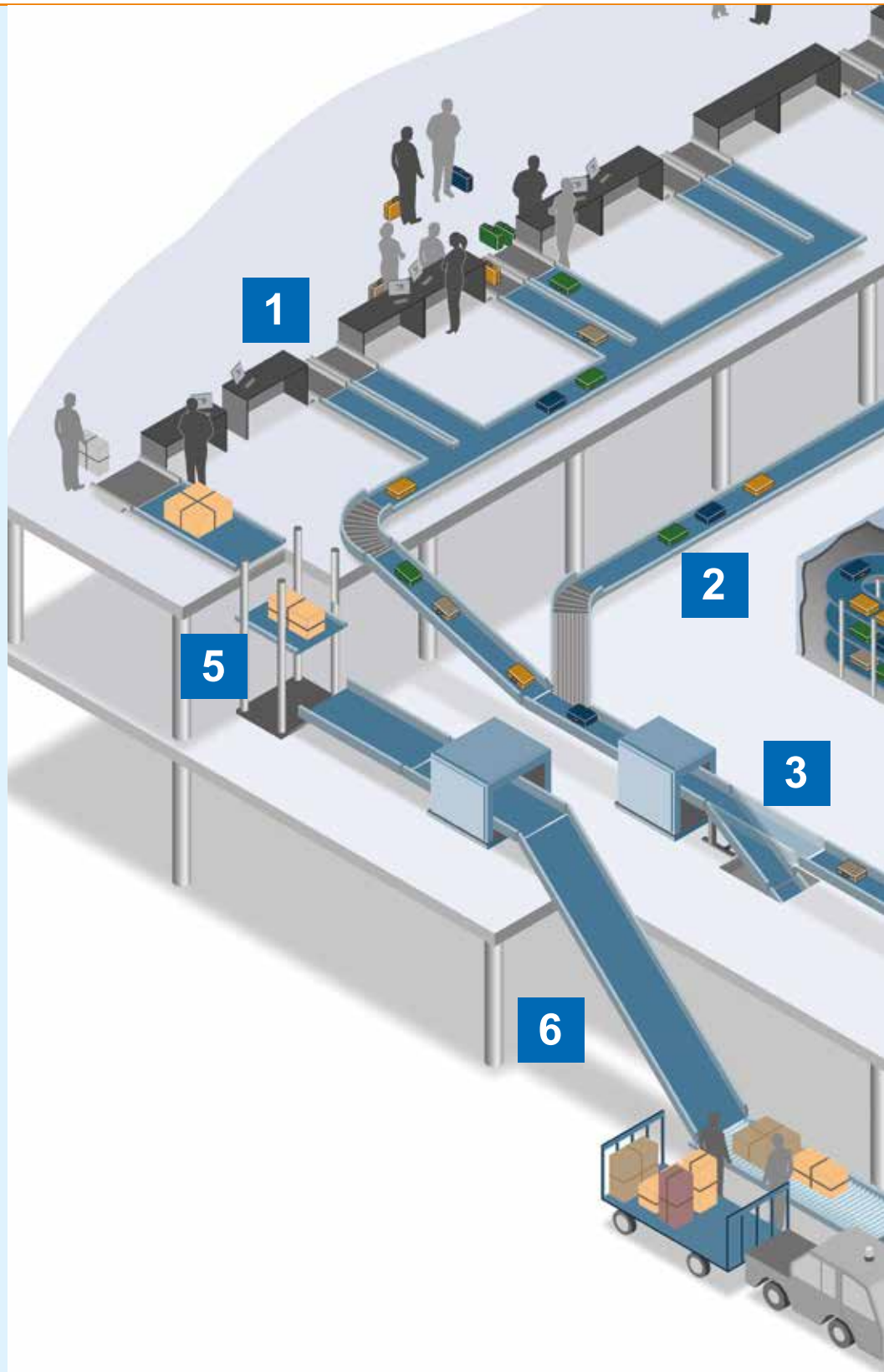
DRIVE SOLUTIONS FOR AUTOMATED BAGGAGE HANDLING SYSTEMS

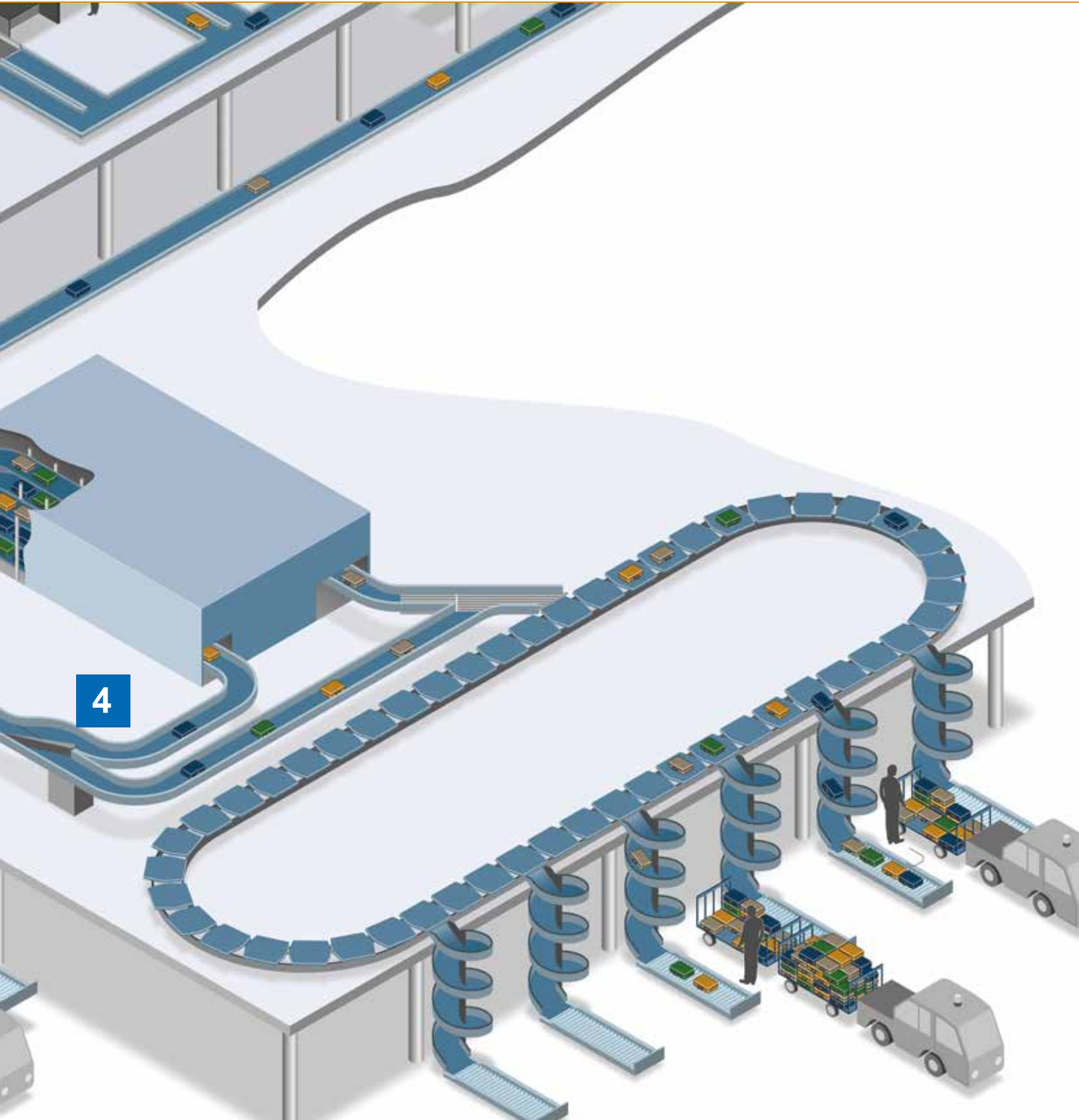
NORD DRIVESYSTEMS is one of the world's leading drive technology companies whose solutions are used in airports on all continents.

NORD DRIVESYSTEMS provides:

- Extensive knowledge of applications and technical support
- Complete drive solutions from a single source
- Strong global presence and service
- Thousands of installed drives in the airport industry
- Wide range of products with high quality standards
- Great reliability, economy and service life
- Recognised product quality compliant with international standards

Innovative drive solutions from NORD DRIVESYSTEMS are specifically designed for a wide range of baggage handling applications. We are perfectly familiar with your requirements at airports. Providing reliable technology and top quality service, we do everything we can to improve the public reputation of an airport and thus its success. We prefer long-term and trusting collaboration with our customers and partners.





APPLICATIONS IN BAGGAGE HANDLING SYSTEMS

With its specialised know-how in airport conveyor technology, **NORD DRIVESYSTEMS** creates economical drive solutions that meet all current and future requirements, tirelessly keeping baggage items in motion on continuously running conveyors.

NORD DRIVESYSTEMS is recognized in the airport industry by renowned international consultants and operators.



NORD DRIVESYSTEMS supports you with:

DESIGN

- myNORD
- Reduced number of variants
- Project design/optimisation
- Drive system design
- Application solutions
- Green solutions
- CAD drawings

COMMISSIONING

- Plug-and-Play
- Support
- Training
- Documentation
- Smart commissioning

SERVICE

- Predictive maintenance (PLC function)
- Spare parts, express shipping
- Global presence
- 24/7 support



NORD DRIVESYSTEMS is your worldwide project partner with subsidiaries and sales partners in 98 countries on 5 continents.

1 Check-In

The check-in conveyors ensure that baggage is rationally and effectively transported from the check-in counter to the flight operations area.

- Compact design
- Low noise

2 Belt conveyors

Belt conveyors transport baggage items of many different shapes in all directions.

- Easy to service and maintain
- Reduced number of variants
- Energy-efficient
- High overload capacity

3 Vertical switch point

Vertical sorting is an extremely efficient and economical procedure in situations where little floor space is available and the baggage volume is high.

- Precise positioning
- With integrated PLC function

4 Inward transfer conveyors

Transferring into and out of other belt conveyors makes it possible to index the baggage.

- Highly dynamic
- High overload capacity

5 Lift

Lifts that dynamically transport baggage are designed to optimise the time between incoming and outgoing delivery to the airlines.

- Precise positioning
- Highly dynamic
- High overload capacity

6 Inclined conveyors

In order to deal with height differences, drive units with a high degree of overloading capability, brake management and positioning control are required.

- Easy to service and maintain
- Reduced number of variants
- Energy-efficient
- Precise positioning

EFFICIENT, RELIABLE & PROVEN DRIVE SOLUTIONS FOR AIRPORTS



Efficient

NORD drive solutions are environmentally friendly and help to minimise CO₂ emissions.

- NORD motors with low mass inertia are designed for inverter operation and comply with the latest international energy requirements.
- NORD frequency inverters ensure efficient operation, improved process control, and optimised motor performance.
- Easy to service and maintain, NORD drives reduce standstill times and thus contribute to an increased efficiency and availability of the entire system.

Reliable

It is vital to prevent breakdowns of baggage handling systems. For this reason, reliability is our main focus when developing drive solutions. All of our system components are precisely matched to each other and ensure smooth operation.

- UNICASE gear units ensure precise positioning of bearings and shafts.
- AUTOVENT™ ensures a leak free design.
- Precisely machined gear wheels with minimum wear are used.
- The gear units are extraordinarily robust, run very quietly and have a particularly long service life.
- NORD inverters electronically protect the drive system and can visualise the operating data.

Tried-and-tested

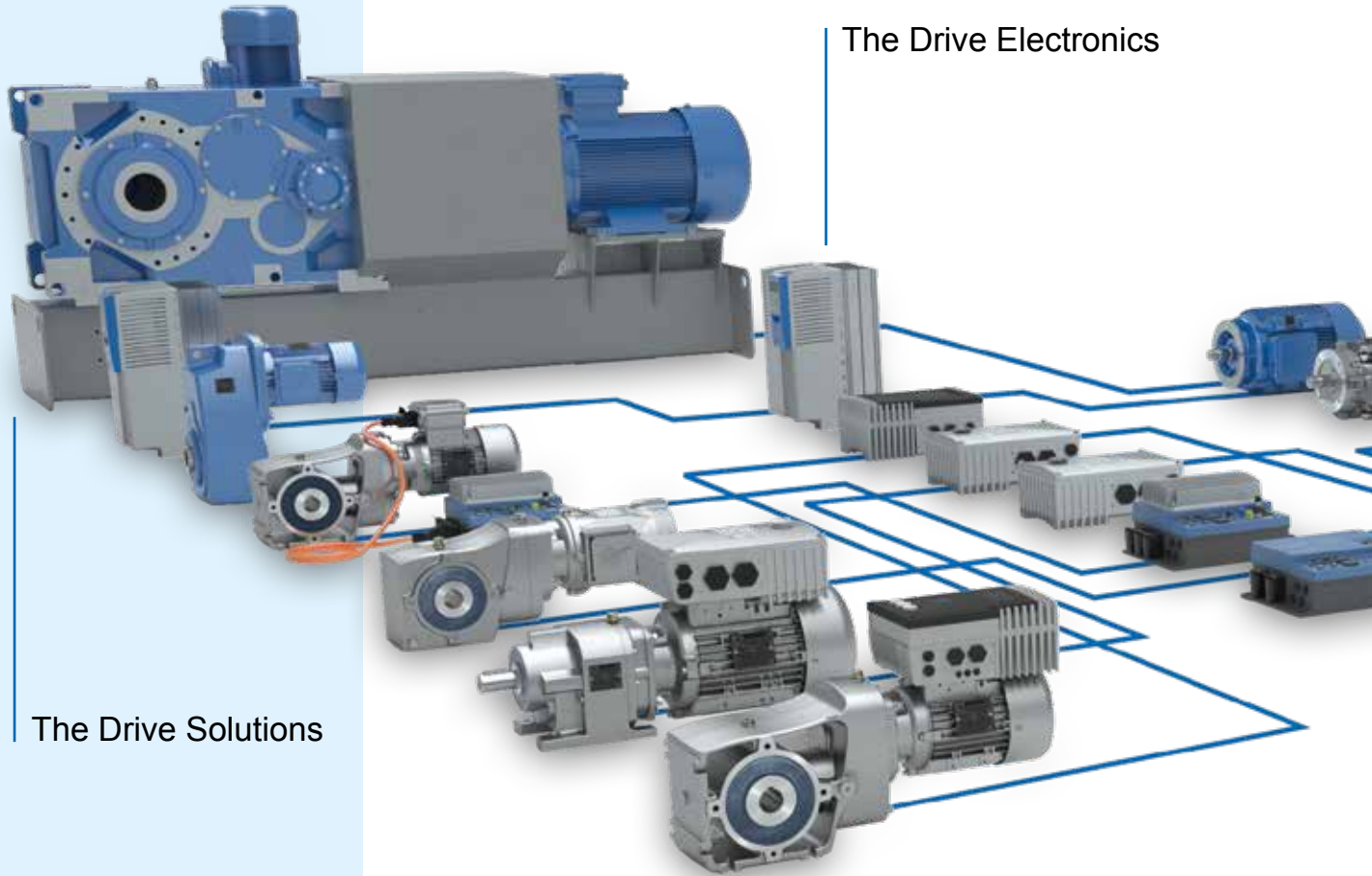
The reliability and cost-effectiveness of electronically controlled NORD conveyor drives have proven themselves at airports throughout the world. The systems combine high flexibility and tiered functional equipment with convenient operability. NORD drives ensure particularly high conveyance speeds that are more and more often required due to increased safety measures.

- Mechatronic drive solutions from NORD DRIVESYSTEMS are based on 2-stage bevel gear motors featuring low weights and high efficiencies.
- In combination with wall-mounted or motor-mounted frequency inverters, they form efficient drive systems. NORD DRIVESYSTEMS also supplies a variety of bus system interfaces with the required cable connectors as well as the respective software.



- System solutions specially customised to airport requirements
- Simple commissioning
- Global NORD network
- Plug-and-Play systems
- Easy maintenance/service friendly
- Lower total costs over product service life
- Standardisation
- Energy savings
- Project support

COMPLETE DRIVE SOLUTIONS FROM A SINGLE SOURCE



The Drive Electronics

The Drive Solutions



Reliable gear units with one-piece UNICASE housing can cater for any load.

- 2-stage, high efficiency bevel gear design
- High power density
- Long service life



Powerful motors up to IE4 keep the drive systems moving in any operating situation.

- Designed in compliance with international standards
- High overload capacity
- Energy-efficient

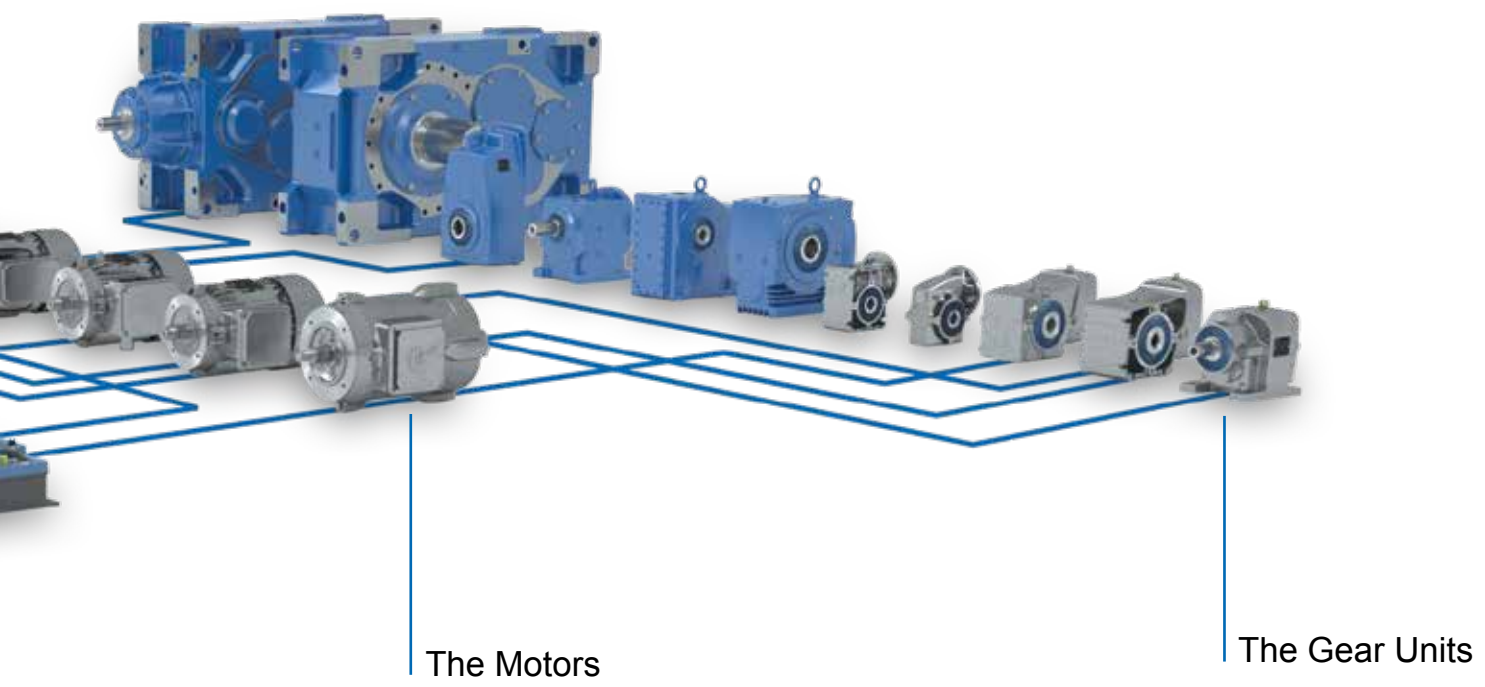


Intelligent drive electronics provide exactly the control facilities you need.

- Scalable functions
- Full field bus connection facilities
- Wide power range
- PLC integrated at no extra cost



An optimum and individual drive solution can therefore be created using the modular NORD system consisting of the gear unit, motor and drive electronics. Each of the variants combine: the highest product quality, short planning and assembly times, high delivery availability, and a good price/performance ratio.



Extensive communication options enable access to the drive units from all levels, providing a wide range of adjustments.

- All common bus systems
- Quick and simple commissioning with plug-in control box or using NORDCON software
- Convenient handheld console for local operation
- Optionally with intralogistics options



Switches and buttons are located directly on the drive units and enable direct starting, stopping or mode changes.

- Mains switch
- Selector switch for local or remote control
- Start/Stop and Forward/Reverse switch
- Energy-efficient



All interfaces designed for ease of operation. The drives can be easily configured and installed.

- Simple Plug-and-Play with all common quick connection plugs
- Plug-in supply cable and motor output
- Plug-in sensors and encoders
- Pre-assembled cables
- PLC integrated at no extra cost

NORD DRIVE SOLUTIONS FOR THE AIRPORT INDUSTRY



NORDAC START SK 135E motor starter (Flyer F3015)



- ✓ Integrated electronic brake rectifier
- ✓ Consistent parameter structure
- ✓ Reversing starter with soft start function

Voltage	3~ 200 – 240 V
	3~ 380 – 500 V
Power	0.12 – 3 kW or up to 7.5 kW

NORDAC BASE SK 180E frequency inverter (Flyer F3018)



- ✓ Stand-alone operation
- ✓ 4 parameter sets
- ✓ Sensorless current vector control (ISD control)
- ✓ Integrated PLC

Voltage	1~ 110 – 120 V
	1~ 200 – 240 V
	3~ 200 – 240 V
	3~ 380 – 500 V
Power	0.25 – 2.2 kW

NORDAC FLEX SK 200E frequency inverter (Flyer F3020)



- ✓ Energy-saving function
- ✓ Integrated POSICON positioning control
- ✓ Integrated PLC

Voltage	1~ 110 – 120 V
	1~ 200 – 240 V
	3~ 200 – 240 V
	3~ 380 – 500 V
Power	0.25 – 22 kW

NORDAC LINK SK 250E field distributor (Flyer F3025)



- ✓ Frequency inverter or motor starter
- ✓ All connections in plug-in version for easy commissioning and maintenance
- ✓ PLC functionality for drive-integrated functions

Voltage	3~ 380 – 500 V
Power	Frequency inverters 0.75 – 7.5 kW
	Motor starters 0.12 – 3 kW

UNICASE helical gear units (Catalogue G1000)



- ✓ Foot- or flange-mounted
- ✓ Long life, low maintenance
- ✓ Optimum sealing
- ✓ UNICASE housing

Power	0.12 – 160 kW
Torque	10 – 26,000 Nm
Speed ratio	1.35:1 – 14,340.31:1

UNICASE parallel shaft gear units (Catalogue G1000)



- ✓ Foot-, flange- or hollow shaft-mounted
- ✓ Hollow or solid shaft
- ✓ Compact design
- ✓ UNICASE housing

Power	0.12 – 200 kW
Torque	110 – 100,000 Nm
Speed ratio	4.03:1 – 6,616.79:1

NORDBLOC.1® 2-stage bevel gear units (Catalogue G1014)



- ✓ Foot-, flange- or shaft-mounted
- ✓ Hollow or solid shaft
- ✓ UNICASE cast-iron housing

Power	0.12 – 9.2 kW
Torque	50 – 660 Nm
Speed ratio	3.03:1 – 70:1

UNIVERSAL SI worm gear units (Catalogue G1035)



- ✓ Modular
- ✓ Universal mounting options
- ✓ Life-long lubrication

Power	0.12 – 4.0 kW
Torque	21 – 427 Nm
Speed ratio	5.00:1 – 3,000.00:1

Motors



IE3 motors from 0.12 kW (size 63) IE4 synchronous and asynchronous motors



International energy efficiency standards

- EU: IE1 – IE4 as per IEC 60034-30
- US: ee labelling as per EISA 2007 (Dept. of Energy)
- CA: CSA energy verified as per EER 2010
- CN: CEL as per GB 18613
- KR: KEL as per REELS 2010
- BR: Alto Rendimento as per Decreto n° 4.508
- AU: MEPS as per AS/NZS 1359.5



In combination with motor and motor control system in accordance with Ecodesign directive EN50598

THE SOLUTION FOR AIRPORT BAGGAGE HANDLING



LogiDrive



- High-efficiency 2-stage bevel gear unit
- IE4 PMSM synchronous motor
- Power plug connector
- M12 slots
- Incremental encoders
- Pre-assembled cables
- High potential overload capacity
- Standardised hollow shaft diameter

The LogiDrive solution from NORD DRIVESYSTEMS reduces planning and commissioning effort:

- NORD inverters for intralogistics and airport applications can control both synchronous and asynchronous motors.
- Simple planning with identical housing dimensions for synchronous and asynchronous motors

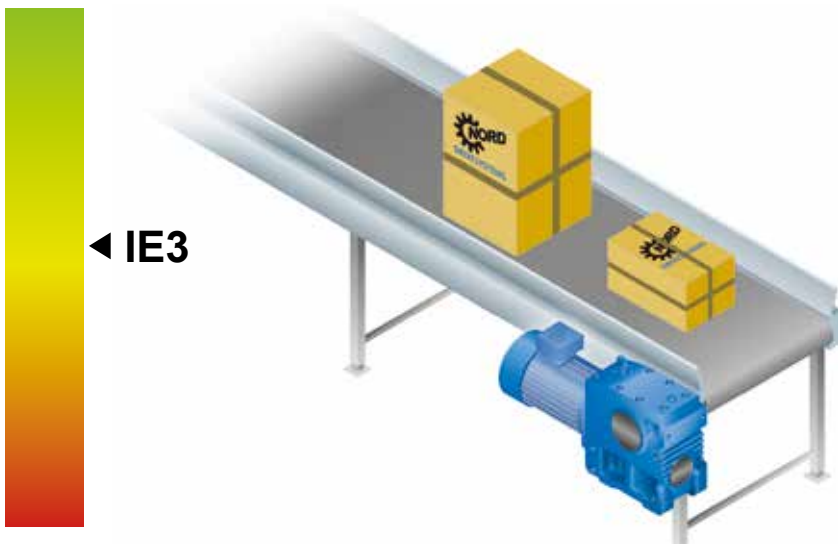
COMPARISON		
Motor size	IE3 asynchronous	IE4 synchronous
Size 80	0.75 kW	1.1 / 1.5 kW
Size 90	1.1 / 1.5 kW	1.5 / 2.2 / 3.0 kW
Size 100	2.2 / 3.0 kW	3.0 / 4.0 / 5.5 kW

Use of IE4 synchronous motors minimises overall costs during service life. NORD IE4 motors achieve considerably greater efficiency and a fast return on investment (ROI).

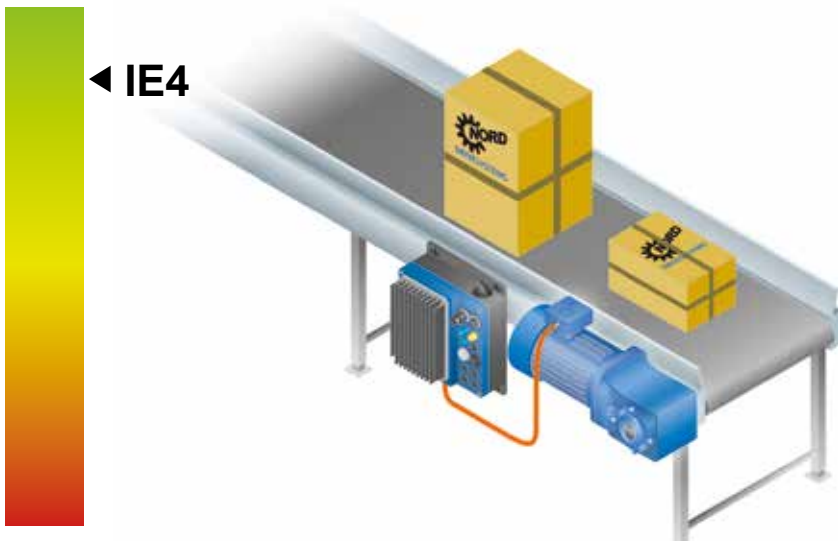


Motor-mounted version

Efficiency under partial load and at partial speed



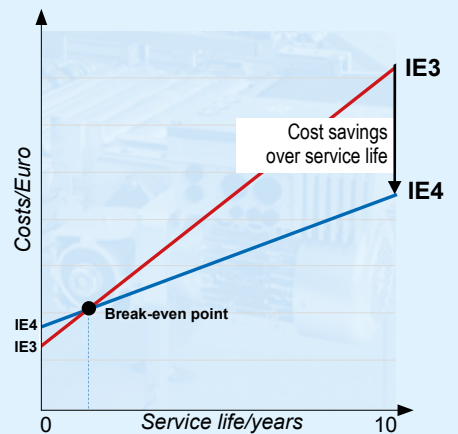
◀ IE3



◀ IE4

Total Cost of Ownership (TCO)

IE4 synchronous motors reveal their full potential in applications with a partial load range and low speed ranges. By using IE4 synchronous motors, airports can achieve significant cost reductions.




IE4 synchronous motors achieve high cost reductions over their entire service life and a quick break-even point with just a small additional investment.



means energy efficiency:

- By compliance with the most stringent efficiency regulations
- Considerably reduces TCO
- High efficiency, even in partial load ranges and at low speeds thanks to PMSM technology



Baggage handling, boarding bridges, moving walkways, or large hangar gates: NORD DRIVESYSTEMS offer the ideal drive solution for every application.

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