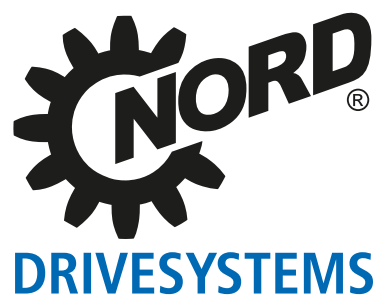


INTELLIGENT DRIVESYSTEMS, WORLDWIDE SERVICES



**DRIVE SOLUTIONS FOR
THE BULK GOODS INDUSTRY**



DRIVE SOLUTIONS FOR THE BULK GOODS 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.



Gear unit production



Motor production



Inverter production

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 4,000 employees throughout the world create customised solutions.



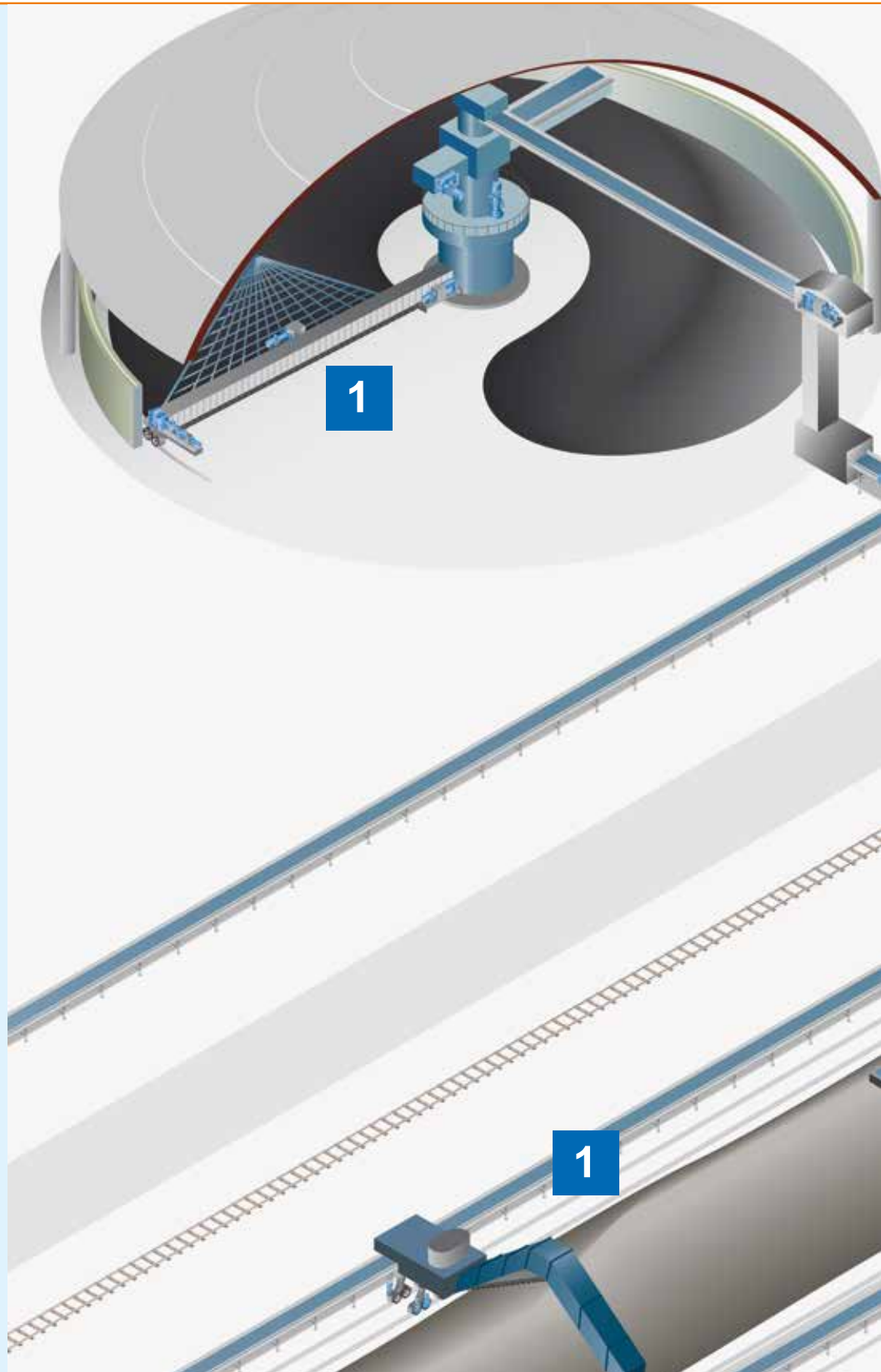
NORD DRIVE SOLUTIONS FOR THE BULK GOODS INDUSTRY

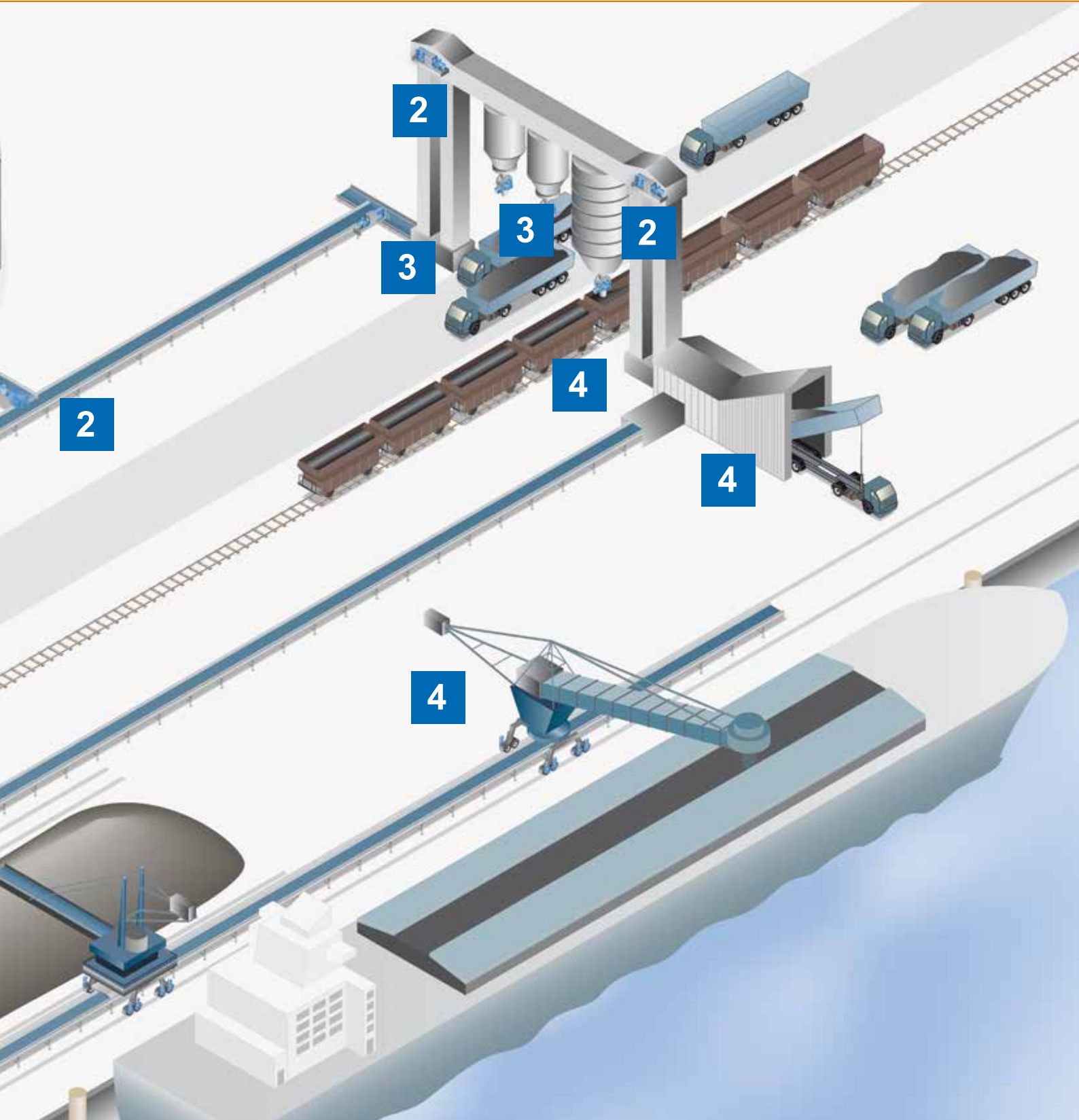
NORD DRIVESYSTEMS is one of the world's leading drive technology companies and provides solutions used in many sectors of the bulk goods industry.

NORD DRIVESYSTEMS provides:

- Extensive knowledge of applications and technical support
- Full featured drive solutions from a single source, consisting of gear units, motors, brakes and frequency inverters
- Strong global presence and service
- Experience from the installation of thousands of drive units in the bulk goods industry
- Wide range of products with high quality standards
- Great reliability, economy and service life
- Recognised product quality compliant with international standards

We know your business and precisely understand your requirements. We prefer long-term collaboration with our customers and partners. You can be confident that we will do everything that we can to reinforce the good reputation of your brand.





DRIVE SOLUTIONS FOR THE BULK GOODS INDUSTRY

With its expertise in the bulk goods industry, NORD DRIVESYSTEMS creates economic drive solutions that meet all current requirements.

NORD DRIVESYSTEMS supports you with:

DESIGN

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

COMMISSIONING

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

SERVICE

- Predictive maintenance
- Spare parts, express shipping
- Global presence
- 24/7 support

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



1 Storage

Bulk goods are intermediately stored (and homogenised) in storage compound systems (longitudinal or rotary blending beds) or silos/bunkers before they are conveyed to the next process step. Different bulk goods require different plant arrangements that need customised drives.

- All drives from a single source (geared motors, industrial gear units, planetary gear units)
- Optimally matched components (gear unit, motor, frequency inverter, couplings, brakes)
- Flexible implementation of customer-specific design specifications (e.g. drive pinions, motor swing bases)

2 Conveying

Conveyors differing with regard to the conveying direction (horizontal, vertical, inclining, declining), mass flow, conveyor length, and construction are needed to convey the bulk goods from process step to process step. Reliable and robust drives made by NORD DRIVESYSTEMS ensure an uninterrupted material flow.

- Reliable
- Easy to service and maintain
- Optimally matched components (gear unit, motor, frequency inverter, couplings, brakes)
- Customer-specific engineering

3 Weighing and metering

Before reaching the next process step, the bulk goods are usually metered (and weighed) to ensure the correct amount is added to the process. NORD drives can be controlled individually to intelligently adjust the mass flow - for precise, dynamic bulk goods infeed control.

- Dynamic
- With integrated PLC function
- Optimally matched components (gear unit, motor, frequency inverter, couplings, brakes)
- Flexible implementation of customer-specific process requirements (e.g. automatic blockage detection and elimination, automatic mass flow regulation)

4 Loading and unloading

Ships, trains and lorries must be loaded and unloaded for global bulk goods transport. Reliable NORD drives make sure this is done quickly and safely.

- All drives from a single source (geared motors, industrial gear units, planetary gear units)
- High system availability
- Optimally matched components (gear unit, motor, frequency inverter, couplings, brakes)
- Customer-specific engineering

NORD DRIVE SOLUTIONS

EFFICIENT, RELIABLE & PROVEN



Energy efficient

Drive solutions by NORD DRIVESYSTEMS are environmentally friendly and help reduce operating costs and minimise CO₂ emissions.

- High efficiency helical and bevel gear units achieve optimum power transmission performance.
- NORD motors comply with international energy efficiency classes up to IE4.
- NORD frequency inverters have energy saving functions to effectively reduce energy consumption.
- NORD components are optimally matched to obtain ultimate efficiency.

Reliable

Reliability is our main focus when developing our 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.
- Highly precise gearing ensures minimum wear and a long service life.
- Efficient protection of drive system and plant by implementing couplings matched to the process and the gear unit (e.g. hydraulic couplings).
- The gear units are extraordinarily robust, run very quietly and have a particularly long service life.
- NORD frequency inverters are equipped with safety functions to protect the drive system electronically.

Tried-and-tested

Demanding ambient conditions are common in the bulk goods industry. This includes large temperature fluctuations, abrasive environments, and rough operating conditions. The reliability and cost-effectiveness of NORD solutions for these challenges have proven themselves in the bulk goods industry throughout the world.

- Full featured NORD drive solutions based on a modular system, consisting of frequency inverter, motor, gear unit, couplings, and brakes are selected as the basis.
- They are combined with solutions individually developed and designed according to customer requirements.

DER ANTRIEB

■ Reliable ■ Versatile ■ Global



The Gear Units

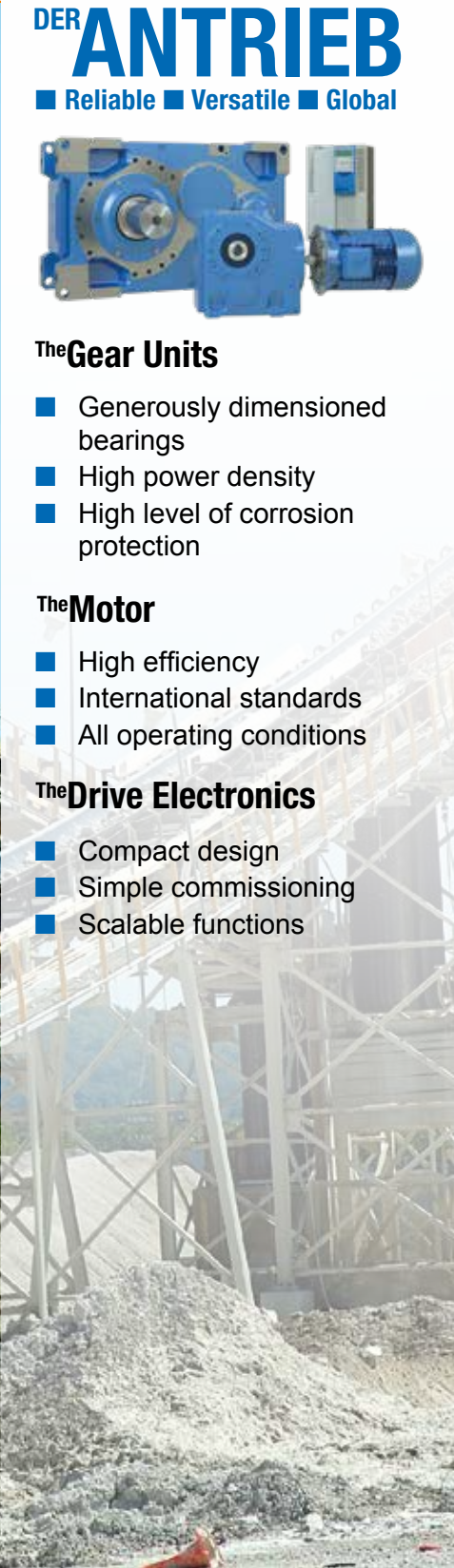
- Generously dimensioned bearings
- High power density
- High level of corrosion protection

The Motor

- High efficiency
- International standards
- All operating conditions

The Drive Electronics

- Compact design
- Simple commissioning
- Scalable functions



NORD DRIVE SOLUTIONS FOR THE BULK GOODS INDUSTRY



UNICASE bevel gear unit (Catalogue G1000)



- ✓ High axial torques
- ✓ High axial and radial loads
- ✓ Long life, low maintenance
- ✓ UNICASE housing

Power	0.12 – 200 kW
Torque	180 – 50,000 Nm
Speed ratio	8.04:1 – 13,432.68:1

UNICASE parallel shaft gear units (Catalogue G1000)



- ✓ Foot mounted, flange mounted 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

MAXXDRIVE® industrial gear units (Catalogue G1050)



- ✓ All bearing points and sealing surfaces are machined in a single operation
- ✓ Foot mounted, flange mounted or hollow shaft mounted
- ✓ Long life, low maintenance
- ✓ Parallel axis and right-angled gear units
- ✓ UNICASE housing
- ✓ Helical gear units and bevel gear units

Power	1.5 – 4,000 kW
Torque	15,000 – 250,000 Nm
Speed ratio	5.60:1 – 30,000:1

NORDAC FLEX frequency inverter SK 200E (Catalogue F3020)

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

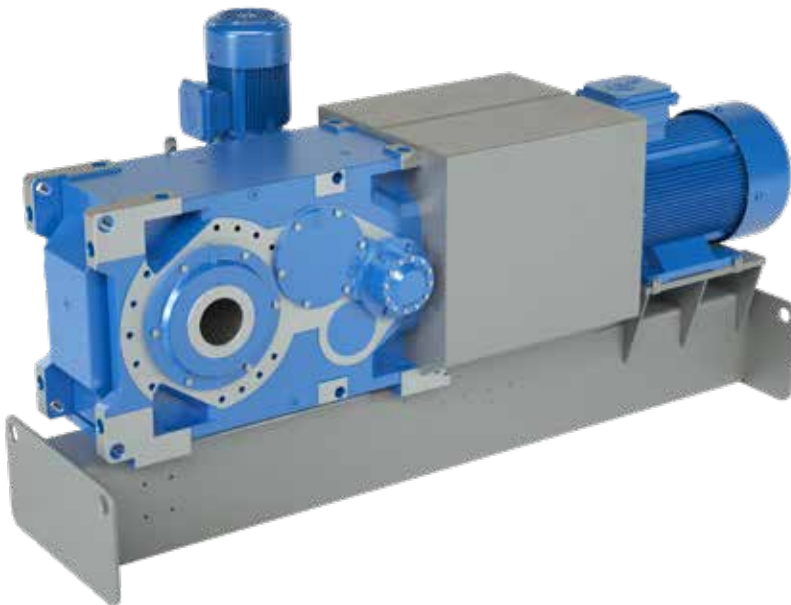
Voltage	1~ 110 – 120 V
	1~ 200 – 240 V
	3~ 200 – 240 V
	3~ 380 – 500 V
Power	0.25 – 22 kW

NORDAC PRO frequency inverter SK 500E (Catalogue F3050)

- ✓ 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 – 480 V
Power	0.25 – 160 kW

NORD DRIVESYSTEMS offers complete drive solutions from a single source.

**NORD EXPLOSION PROTECTED DRIVE SOLUTIONS**

Drive systems for explosion hazard areas of Zones 1, 2, 21, or 22

NORD DRIVESYSTEMS supplies customised explosion protected motors and geared motors.

Systems based on top quality components are designed according to application in compliance with specific customer requests.

- Versions and equipment according to individual requirements
- Configuration processes validated according to ISO 9001
- Safe, SAP-supported modular system

Dust explosion protected motors

According to Category 2D or 3D for Zone 21 or 22

acc. to EN 60079-31

Ignition protection class Ex t (protection with housing)

Dust explosion protected gear units

According to Category 2D or 3D for Zone 21 or 22

acc. to EN 13463

Ignition protection class c (constructional safety)

With its drive solution expertise in the bulk goods industry, NORD DRIVESYSTEMS creates economic drive solutions that meet all current requirements.



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