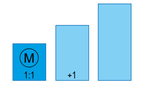
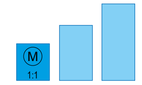
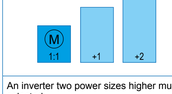
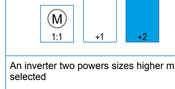
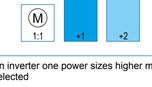
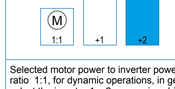
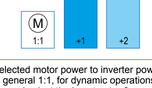
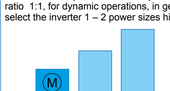
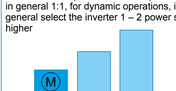
NORD DRIVE SOLUTIONS
FOR CONVEYOR BELT APPLICATIONS

DRIVESYSTEMS

Application	Applications	Description	The NORD solution	Gear unit	Braking resistor	Mech. holding brake	IE4 synchronous motors with inverters IE4: Classification of frequency inverters and motors	IE4: f [Hz]	IE4: Encoder	E2, IE3 asynchronous motors with inverters IE2 IE3: Inverter overload capacity	E2, IE3: f [Hz]
Incline or decline conveyor belts 	■ Parcel distribution centres ■ Baggage handling ■ Intralogistics ■ Material handling	Incline or decline conveyor belts: ■ Transporting general goods ■ Moving the goods to different heights ■ Continuous or intermittent transport	 NORDBLOC.1® 2-stage bevel gear units with IE2, IE3 or IE4 motor, direct or wall mounted inverter (NORDAC *FLEX*) or wall mounted field distributor (NORDAC *LINK*) **Energy efficient** ■ In compliance with the most stringent efficiency regulations ■ Reduces operating costs (TCO) ■ High efficiency, even in partial load and partial speeds **Reduction of variants** ■ Significant reduction of spare part stocks for the project ■ Large speed range through inverter technology **Easy to service and maintain** ■ Compact, space-saving design ■ 25% weight reduction due to aluminium housing ■ Service friendly through plug-and-play technology ■ Replacement of individual system components possible	■ Service factor (fb) > 1.6 ■ Note the installation position – for incline or decline conveyor belts, tilted mounting positions are possible after technical clarification ■ Hollow shaft > ø typically 25 – 30 mm (Post and Parcel) ø typically 30 – 40 mm (Airport)	External brake resistor recommended 	Recommended above 10° decline or incline, depending on load, ratio and conveyor belt construction – technical clarification necessary	Selected motor power to inverter power ratio 1:1, for highly dynamic operation, select the inverter 1 – 2 power sizes higher 	70 Hz (standard)	Not necessary Exception: highly dynamic operation	Selected motor power to inverter power ratio 1:1, for highly dynamic operation, select the inverter 1 – 2 power sizes higher 	50 Hz (standard) or 87 Hz With 87 Hz the power increases by a factor of 1.73. A larger inverter must be selected accordingly
Horizontal conveyor belts 	■ Parcel distribution centres ■ Baggage handling ■ Intralogistics ■ Material handling	Horizontal conveyor belts: ■ Horizontal transport of general goods ■ Internal transport of goods between individual storage processes ■ Usually fixed location ■ Fields of use are for incoming goods, warehousing, order picking and goods dispatch as well as for various system functions such as buffering, storage and distribution of conveyed material to various lines and conveyors ■ Continuous or intermittent transportation of product		■ Service factor (fb) > 1.6 ■ Hollow shaft > ø typically 25 – 30 mm (Post and Parcel) ø typically 30 – 40 mm (Airport)	Internal brake resistor 		Selected motor power to inverter power ratio 1:1, for highly dynamic operation, select the inverter 1 – 2 power sizes higher 		Not necessary Exception: highly dynamic operation	Selected motor power to inverter power ratio 1:1, for highly dynamic operation, select the inverter 1 – 2 power sizes higher 	
Mergers and diverters 	■ Parcel distribution centres ■ Baggage handling ■ Intralogistics ■ Material handling	Mergers and diverters: ■ Mergers guide several conveyor flows into an output line avoiding collisions ■ Diverters precisely alter the direction of flow of the material or sort it in intermittent operation ■ Cartons, containers, baggage or other individual goods are merged or diverted ■ Used in sorting and distribution systems ■ Highly dynamic applications with frequent start / stops		■ Service factor (fb) > 2 ■ Hollow shaft > ø typically 25 – 30 mm (Post and Parcel) ø typically 30 – 35 mm (Airport)	External brake resistor recommended 	Not necessary in general for inverter operation, as the motor is brought to a standstill in a controlled manner by the inverter.	An inverter two power sizes higher must be selected 		Always with incremental encoder	An inverter one power sizes higher must be selected 	
Indexing conveyors 	■ Parcel distribution centres ■ Baggage handling ■ Intralogistics ■ Material handling	Indexing conveyors (also known as gappers or metering belts): ■ Create defined gaps between packages which arrive with different spacings or close together ■ Ensure stabilisation of package speed ■ Flexible speed adjustment to change the throughput speed and gaps betweem items ■ Highly dynamic applications with frequent start / stops		■ Service factor (fb) > 2 ■ Hollow shaft > ø typically 25 – 30 mm (Post and Parcel) ø typically 30 – 35 mm (Airport)	External brake resistor recommended 		An inverter two powers sizes higher must be selected 		Always with incremental encoder	An inverter one power sizes higher must be selected 	
Curves 	■ Parcel distribution centres ■ Baggage handling ■ Intralogistics ■ Material handling	Curves: ■ Connection of sections which are at an angle to each other ■ Continuous or intermittent transport		■ Service factor (fb) > 1.6 ■ Hollow shaft > ø typically 25 – 30 mm (Post and Parcel) ø typically 30 – 40 mm (Airport)	Internal brake resistor 		Selected motor power to inverter power ratio 1:1, for dynamic operations, in general select the inverter 1 – 2 power sizes higher 		Not necessary Exception: highly dynamic operation	Selected motor power to inverter power ratio in general 1:1, for dynamic operations, in general select the inverter 1 – 2 power sizes higher 	

All specifications are recommendations based on Getriebebau NORD's experience. Project details need to be coordinated with NORD's sales department.

SK 250E NORDAC *LINK* Frequency inverters

- Protection class IP65 (up to 3 kW), IP55 (size 2)
- Simple commissioning and installation in the field
- All I/O, bus interface and power connections in plug-in version for easy commissioning and maintenance
- Extensive options e.g. key switch / maintenance switch, push buttons, potentiometers
- PLC functionality for drive-integrated functions
- Functions compatible with modular NORDAC *FLEX*
- AS Interface
- Safe stop with "Safe Torque Off" (STO) and "Safe Stop 1" (SS1) as per EN 61800-5-2
- Many bus systems based on field bus and Industrial Ethernet
- Local or remote control

Sizes	2
Voltage	3~ 380 – 500 V
Power	0.75 – 7.5 kW

NORD SYSTEM EXPERTISE
FOR DRIVE SOLUTIONS

Complete drive solutions from a single source

- Easy Engineering Tools
- Use of the NORD modular system
- Compliance with the most stringent energy efficiency regulations
- Reduction of variants to reduce costs
- TCO (Total Cost of Ownership) calculation for IE4 drive units
- Service and maintenance friendly solutions
- Features for Easy Commissioning
- Pre-parameterisation for commissioning possible
- Configurable inverters (key switch, manual operation switch, isolating switch)

Please contact your local NORD DRIVESYSTEMS representative.

NORD DRIVESYSTEMS Group

- Family business from Bargteheide near Hamburg with 4,000 employees
- Drive solutions for more than 100 branches of industry
- 7 production locations worldwide
- Present in 98 countries on 5 continents
- More information: www.nord.com

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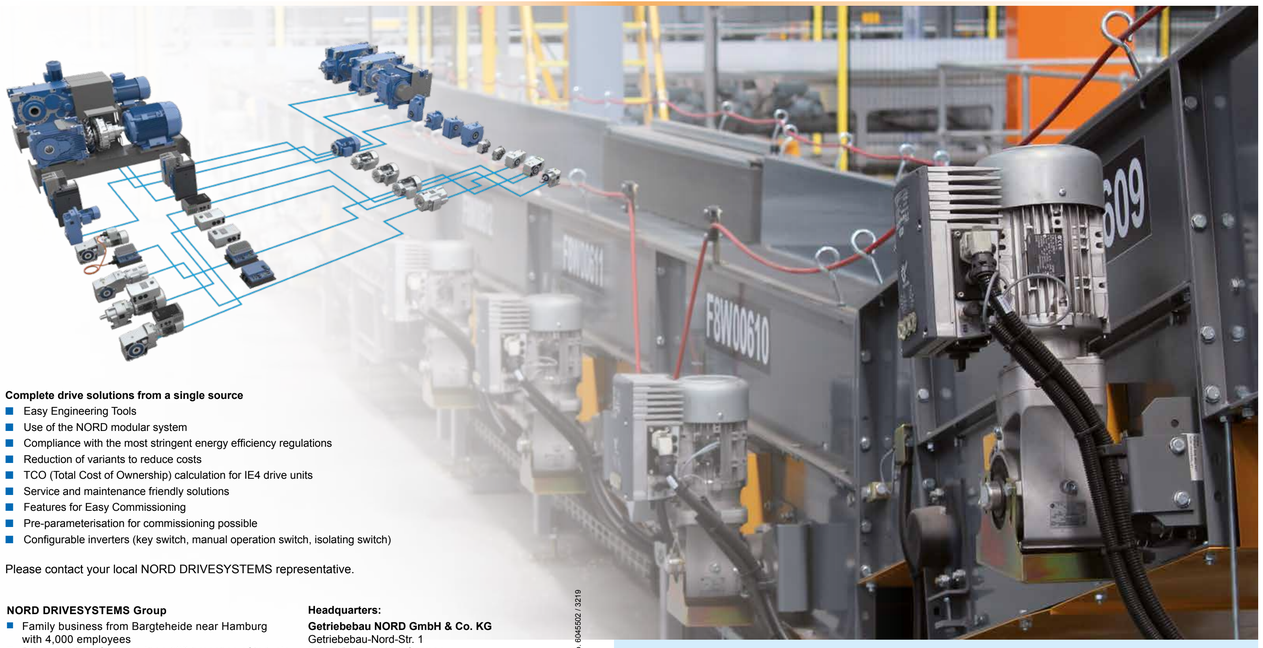
AS0302 Part No. 6045602 /3219

NORD DRIVE SOLUTIONS
FOR CONVEYOR BELT APPLICATIONS



Intelligent drive solutions for decline, incline and horizontal conveyor belts, mergers and diverters, indexing conveyors and curves

COMPLETE DRIVE SOLUTIONS
FROM A SINGLE SOURCE

NORDBLOC.1® 2-stage bevel gear units

- Foot, flange or face mounted
- Hollow or solid shaft
- UNICASE housing
- Aluminium housing
- nsd tupH (optional)

Sizes	6
Power	0.12 – 9.2 kW
Torque	50 – 660 Nm
Ratio	3.03:1 – 70:1

Motors

IE2 IE3 IE4 IES2

- IE2/IE3 motors
- IE4 synchronous and asynchronous motors
- IES2 in combination with motor and motor control system in accordance with Ecodesign directive EN 50598
- Overload of up to 300 % for short periods

International energy efficiency standards

- EU: IE1 – IE4 as per IEC 60034-30
- US: Labelling according to EISA 2014
- 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 nº 4.508
- AU: MEPS as per AS/NZS 1359.5

SK 200E NORDAC *FLEX* Frequency inverters

- Sensorless current vector control (ISD control)
- PLC functionality for drive-integrated functions
- Integrated POSICON positioning control
- Safe stop with "Safe Torque Off" (STO) and "Safe Stop 1" (SS1) as per EN 61800-5-2
- ASM and PMSM motor operation
- Energy-saving function
- Motor or wall mounting
- IP55 (optional IP66)
- AS interface integrated in SK 22xE and SK 23xE
- Many bus systems based on field bus and Industrial Ethernet
- Decentralised modules combined as asystem
- Extendable according to customer specification
- POSICON with absolute encoder

Sizes	4
Voltage	1~ 110 – 120 V 1~ 200 – 240 V 3~ 200 – 240 V 3~ 380 – 500 V
Power	0.25 – 22 kW