



European
Explosions Protection
ATEX and EAC Ex





Industrial Gear Units



Geared Motors



Frequency Inverters and Motor Starters

- ▶ Headquarters and technology centre in Bargteheide near Hamburg.
- ▶ Innovative drive solutions for more than 100 branches of industry.
- ▶ 7 production locations with cutting edge technology produce gear units, motors and drive electronics for complete drive systems from a single source.
- ▶ NORD has 48 subsidiaries in 36 countries and further sales partners in more than 50 countries, providing local stocks, assembly centres, technical support and customer service.
- ▶ More than 4,700 employees throughout the world create customised solutions.



Headquarters in Bargteheide



Motor production



Motor assembly



Production and assembly

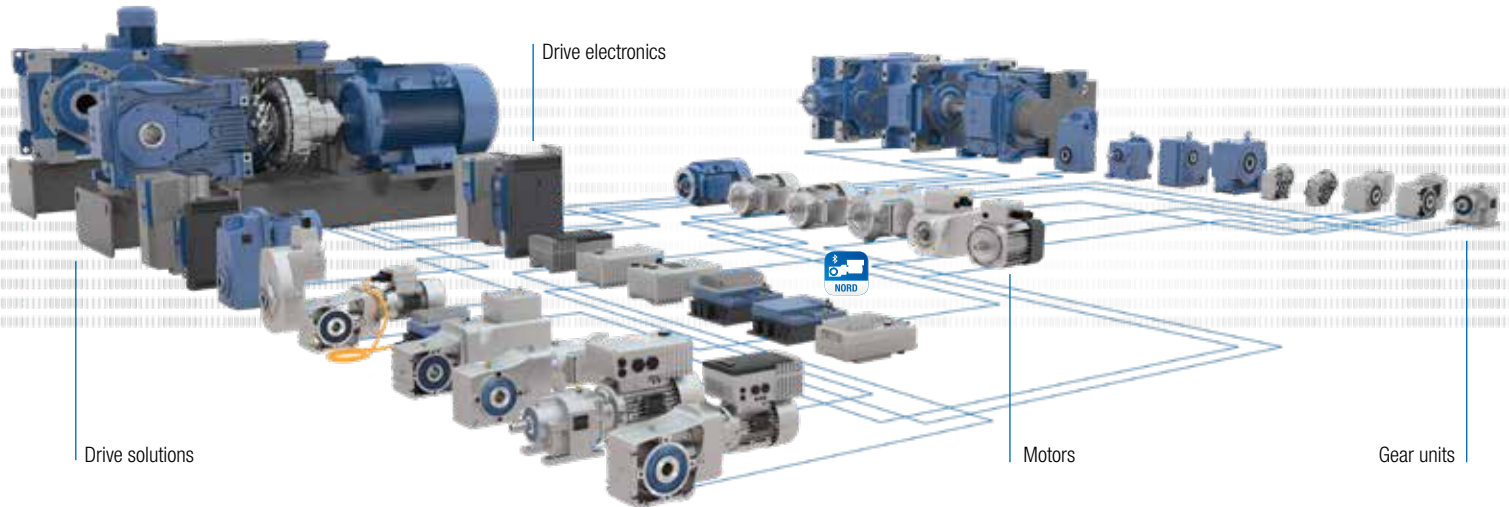


Gear unit production



Inverter production





Complete drive solutions from a single source

An optimum and individual drive solution can 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.



Our products are available in explosion-proof versions.

Safe

- ▶ Reliable products
- ▶ Coordinated components
- ▶ Own development and production

Flexible

- ▶ Modular products
- ▶ Scalable functions
- ▶ Large range of drive units
- ▶ Complete drive solutions
- ▶ Integrated customer logistics

International

- ▶ Globally networked organisation
- ▶ Local advice, assembly and service

NORD Ex drive solutions compliant with standards since 2003

NORD DRIVESYSTEMS is a certified manufacturer and has many years of experience with explosion protected drive technology.

Explosion protected drives from NORD DRIVESYSTEMS are being used in many fields and sectors of industrial application.

- ▶ EU Directive 2014/34/EU
- ▶ Certification by Physikalisch-Technische Bundesanstalt (PTB)
- ▶ Certification by DEKRA EXAM GmbH
- ▶ Certification by NANIO CCVE for EAC Ex

Ex-compliant modular system

- ▶ Complex combinations of products and options
- ▶ Motors
- ▶ Gear units
- ▶ Electronics

Gear units

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European Union – ATEX

With its directives and standards, the EU provides the basis for the safe operation of machines and systems in potentially explosive atmospheres under the keyword ATEX.

Area of validity EU member states, Norway, Switzerland and Turkey

Basis Technical standards based on EU standards.

Based on Directive 2014/34/EU relates to the application of mechanical and electrical devices in explosion hazard areas. (In addition to this directive, which directly relates to explosion protection, the Ecodesign and RoHS directives must a. o. also be complied with.)

- Ex standards for**
- ▶ Motors: EN 60079-0, EN 60079-7 and EN 60079-31
 - ▶ Inverters and starters: EN 60079-0:2009 and EN 60079-31:2009
 - ▶ Gear units: DIN EN ISO 80079-36 and DIN EN ISO 80079-37

Documents The suitability of the device for explosion protection is documented by:

- ▶ Type Test Certificate and Declaration of Conformity for Category 2 motors
- ▶ Declaration of Conformity for Category 3 motors
- ▶ Declaration of Conformity for Category 2 and 3 gear units

Official bodies involved:

- ▶ Physikalisch-Technische Bundesanstalt (PTB)
- ▶ DEKRA EXAM GmbH

Audits The production and quality control of NORD is audited at regular intervals by a Notified Body according to the regulations of 2014/34/EU.

Energy efficient motors

Energy efficiency requirements for motors:

The regulation (EU) 2019/1781 stipulates minimum efficiencies including explosion-proof motors.

Power [kW]	0,12...<0,75	0,75...1.000	0,12...1.000
07/2023 2,4,6 and 8-pole	IE2 Ex db Ex ec Ex tb Ex tc	IE3 Ex db Ex ec Ex tb Ex tc	IE2 Ex eb
07/2021 2,4,6 and 8-pole			



**Eurasian
Economic Union
EAC Ex**

EAC (abbreviation for Eurasian Conformity) is a label which states that a product complies with the specifications of the Eurasian Economic Union with regard to technical specification, labelling and documentation.

EAC Ex indicates conformity with the standard TR CU* 012/2011 „On safety of equipment intended for use in explosive atmospheres“. This contains technical specifications which are largely based on the IEC Ex as well as standards which are used in the EU.

Basis

TR CU* 012/2011 “On safety of equipment intended for use in explosive atmospheres”. Technical standards based on IEC standards (International Electrotechnical Commission), in particular IEC 60079, and ISO 80079. Products from NORD DRIVESYSTEMS compliant with EAC Ex are similarly tested and produced as products according to Directive 2014/34/EU ATEX.

**Certified
NORD products**

The conformity certification is completed in the form of NORD a declaration and certification. Products, their products production and quality management have been accepted and approved by the certifying body NANIO CCVE. The corresponding certificates can be found under: www.nord.com > [Documentation](#) > [Certificates](#)

Area of validity

Russia, Belarus, Armenia, Kazakhstan and Kyrgyzstan

*TR CU means „The technical regulation of the customs union“, in Cyrillic script „TP TC“

Standards for NORD Ex motors (applied standards)

FOCT standard	IEC standard
FOCT 31610.0-2014	IEC 6007-0:2011
FOCT P MЭK 60079-31-2013	IEC 60079-31:2013
FOCT P MЭK 60079-7-2012	IEC 60079-7:2006
FOCT 31610.15-2014	IEC 60079-15:2010

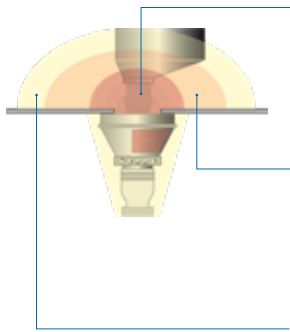
Variants



Directive	TR CU 012/2011	2014/34/EU – DIN EN ISO 80079-36
Labelling	II Gb c T4 X	II2G Ex h IIC T4 Gb
	II Gb c T3 X	II2G Ex h IIC T3 Gb
	II Gb c IIB T4 X	II2G Ex h IIB T4 Gb
	II Gb c IIB T3 X	II2G Ex h IIB T3 Gb
	III Db c T125°C X	II2D Ex h IIIC T125°C Db
	III Db c T140°C X	II2D Ex h IIIC T140°C Db
	II Gc T4 X	II3G Ex h IIC T4 Gc
	II Gc T3 X	II3G Ex h IIC T3 Gc
	III Dc T125°C X	II3D Ex h IIIC T125°C Dc
	III Dc T140°C X	II3D Ex h IIIC T140°C Dc

European Explosions Protection

Information about dust zones categorisation



Zone 20:

The area in which an explosive atmosphere in the form of a cloud of combustible dust in the air is present permanently, over a longer period of time, or frequently.

Zone 21:

The area in which an explosive atmosphere consisting of a mixture of air and inflammable dust can occasionally form during normal operation.

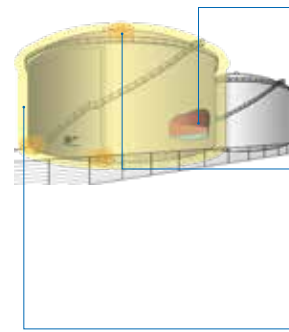
Zone 22:

The area in which, during normal operation, an explosive atmosphere in the form of a cloud of combustible dust in the air normally does not occur, and if so, only rarely or for a short time.

EPL IEC 60067-0	Device category 2014/34/EU	Applicable in zone	Presents of Ex atmospheres	Prevention of effective ignition sources
Dc	3D	22	rarely/briefly	in normal operation
Db	2D	21, 22	occasionally	even with normal malfunctions
Da*	1D*	20, 21, 22	permanently or frequently	even with rare malfunctions

*1D or Da is uncommon for electric motors

Information about gas zones categorisation



Zone 0:

The area in which an explosive atmosphere consisting of a mixture of air and flammable gases, vapours or aerosols is present constantly, over long periods or frequently.

Zone 1:

The area in which during normal operation an explosive atmosphere consisting of air and flammable gases, vapours or aerosols can form occasionally.

Zone 2:

The area in which an explosive atmosphere of air and combustible gases, vapours or aerosols normally does not occur, or if so, only occurs for a short time during normal operation.


EPL IEC 60067-0	Device category 2014/34/EU	Applicable in zone	Presents of Ex atmospheres	Prevention of effective ignition sources
Gc	3G	2	rarely/briefly	in normal operation
Gb	2G	1, 2	occasionally	even with normal malfunctions
Ga*	1G*	0, 1, 2	permanently or frequently	even with rare malfunctions

*1G or Ga is uncommon for electric motors

European Explosions Protection

Labelling for mechanical and electrical devices

- ▶ DIN EN ISO 80079-36/-37 for gear units
- ▶ EN 60079-ff for motors

 **II 2G Ex h IIC T4 Gb**

Device group (european)

I – Mining application mine gas and dust
 II – Other application gas and dust

Device category

Gases, mists, vapours Dusts
 2G – Zone 1 2D – Zone 21
 3G – Zone 2 3D – Zone 22
 (Zone 1/21 – occasionally explosive atmosphere)
 (Zone 2/22 – occasionally and briefly existing explosive atmosphere)

Ex standards

Labelling for Ex standards
 (standards of the EN 60079 series
 or DIN EN ISO 80079)

EPL (Equipment Protection Level)

Group I (mining)	Group II (gas etc.)	Group III (dust)
Ma – Protection level: very high	Ga – Protection level: very high	Da – Protection level: very high
Mb – Protection level: high	Gb – Protection level: high	Db – Protection level: high
	Gc – Protection level: increased	Dc – Protection level: increased

a – corresponds to Zone 0/20, b – corresponds to Zone 1/21, c – corresponds to Zone 2/22

Temperature classification of gas

T1 – ≤ 450° C
 T2 – ≤ 300° C
 T3 – ≤ 200° C
 T4 – ≤ 135° C

Surface temperatures for dusts

T 125° C
 T 140° C
 etc.

Categorisation of device groups (international)

Group I	Group II	Group III
I – typ. gas: Methan	IIA – typ. gas: Propane IIB – typ. gas: Ethylene IIC – typ. gas: Hydrogen & Acetylene	IIIA – flammable aerosols IIIB – flammable aerosols and non-conductive dust IIIC – flammable aerosols, non-conductive and conductive dust

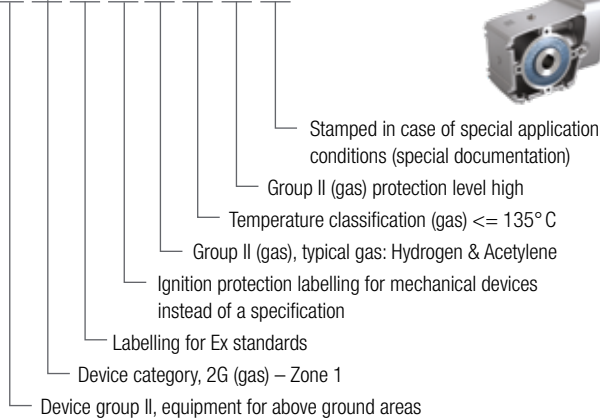
Type of ignition protection

Mechanical (Gear units DIN EN ISO 80079)	Electrical (Motors EN 60079)	Dusts
h – Basic labelling (Includes ignition protection types constructional safety c, monitoring of sources of ignition b and encapsulation with liquid k)	Gases e – Increased safety eb – Level eb “increased safety” ec – Level ec “non sparking” db – Pressure resistant db eb – Pressure resistant terminal box in variant eb	ta – for Zone 20 tb – for Zone 21 tc – for Zone 22

European Explosions Protection

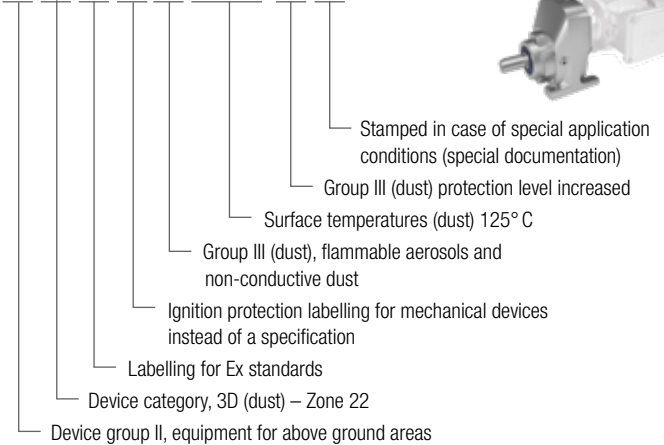
Gear unit label – example gas 2G

II 2G Ex h IIC T4 Gb X



Gear unit label – example dust 3D

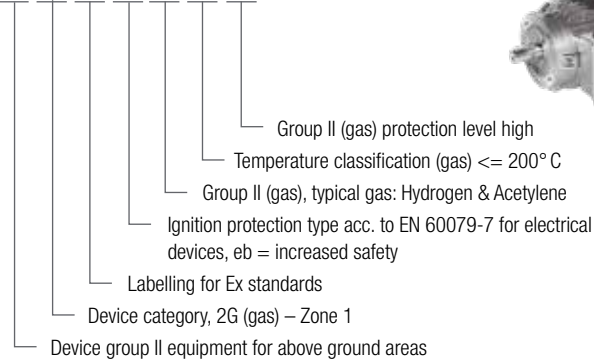
II 3D Ex h IIIC T125°C Dc X



European Explosions Protection

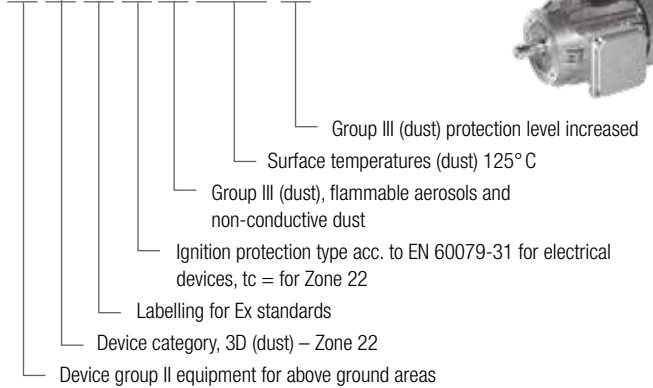
Motor label – example gas 2G

II 2G Ex eb IIC T3 Gb

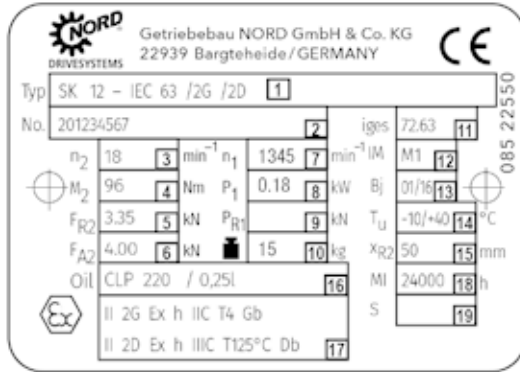


Motor label – example dust 3D

II 3D Ex tc IIIB T125°C Dc



Explanation type plate acc. to ATEX – example gear unit



Explanation

1	NORD gear unit type
2	Serial number
3	Rated speed of gear unit output shaft ¹⁾
4	Rated torque of gear unit output shaft
5	Max. permissible transverse force on the gear unit output shaft
6	Max. permissible axial force on the gear unit output shaft
7	Rated speed of the gear unit drive shaft or drive motor ¹⁾
8	Max. permissible drive power
9	Max. permissible transverse force on the gear unit drive shaft for option W
10	Weight

11	Overall gear unit ratio
12	Installation position
13	Year of manufacture
14	Permissible ambient temperature range
15	Max. dimension for the point of application of the transverse force F_{R2}
16	Lubricant type, viscosity and quantity
17	Labelling according to DIN EN ISO 80079-36: <ol style="list-style-type: none"> 1. Group (always II, not for mines) 2. Category (2G, 3G for gas or 2D, 3D for dust) 3. Labelling of non-electrical devices (Ex h) or ignition protection type if fitted (c) 4. Explosion group if present (Gas: IIC, IIB; Dust: IIIC, IIIB) 5. Temperature class (T1-T3 or T4 for gas) or max. surface temperature (e.g. 125°C for dust) or special max. surface temperature see special documentation 6. EPL (equipment protection level) Gb, Db, Gc, Dc 7. Note the special documentation and/or temperature measurement during commissioning (X)
18	Interval for general overhaul in operating hours or according to the specification of the dimensionless maintenance class CM
19	Number of the special documentation

1) The maximum permissible speeds are 10% above the rated speed if the maximum permissible drive power P1 is not exceeded.
If the fields F_{R1} , F_{R2} , and F_{A2} are empty, the forces are zero. If the field x_{R2} is empty, the point of application of force F_{R2} is central on the driven shaft journal.

Example gear unit type label acc. to EAC Ex



Example gear unit type label (Variants)

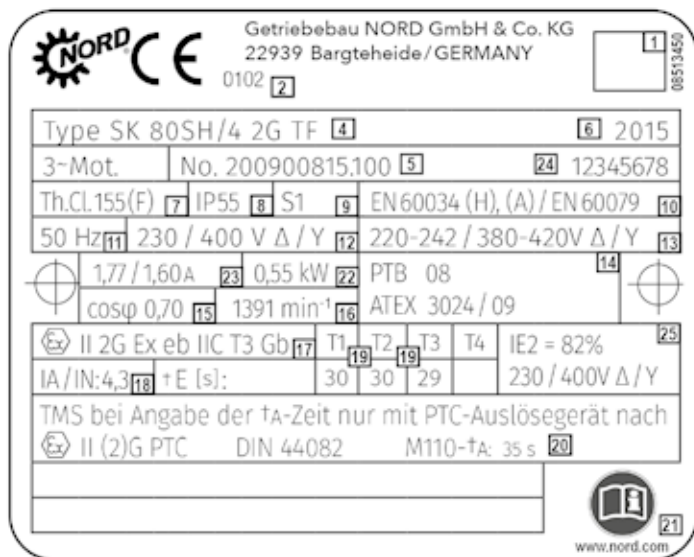




Directive	TR CU 012/2011	2014/34/EU – DIN EN ISO 80079-36
Labelling	II Gb c T4 X	II2G Ex h IIC T4 Gb
	II Gb c T3 X	II2G Ex h IIC T3 Gb
	II Gb c IIB T4 X	II2G Ex h IIB T4 Gb
	II Gb c IIB T3 X	II2G Ex h IIB T3 Gb
	III Db c T125°C X	II2D Ex h IIIC T125°C Db
	III Db c T140°C X	II2D Ex h IIIC T140°C Db
	II Gc T4 X	II3G Ex h IIC T4 Gc
	II Gc T3 X	II3G Ex h IIC T3 Gc
	III Dc T125°C X	II3D Ex h IIIC T125°C Dc
	III Dc T140°C X	II3D Ex h IIIC T140°C Dc




EAC Ex gear units always have two type plates. One type plate complies with ATEX Directive 2014/34/EU and the relevant standards; the second type plate contains the additional specifications according to Directive TR CU 012/2011.

European Explosions Protection

Explanation type plate Ex eb motors acc. to EN 60079-7






 Getriebebau NORD GmbH & Co. KG
 22939 Bargteheide/GERMANY
 0102 2
1 08513450

Type SK 80SH/4 2G TF 4		6 2015	
3-Mot.	No. 200900815.100 5	24 12345678	
Th.Cl.155(F) 7	IP55 8	S1 9	EN 60034 (H),(A) / EN 60079 10
50 Hz 11	230 / 400 V Δ / Y 12	220-242 / 380-420V Δ / Y 13	
ϕ 1,77 / 1,60A 23	0,55 kW 22	PTB 08 14	ϕ
cosφ 0,70 15	1391 min ⁻¹ 16	ATEX 3024 / 09	
 II 2G Ex eb IIC T3 Gb 17	T1 19	T2 19	T3 T4
IE2 = 82% 25	IA / IN: 4,3 18 + E [s]: 30 30 29 230 / 400V Δ / Y		
TMS bei Angabe der tA-Zeit nur mit PTC-Auslösegerät nach  II (2)G PTC DIN 44082 M110-tA: 35 s 20			
			 21

www.nord.com

1	Data Matrix Code	
2	ID of the notified body	20
3	Number of phases	
4	Type designation	
5	Order number / motor number	21
6	Year of manufacture	
7	Heat class of insulation system	22
8	IP protection class	23
9	Operating mode	24
10	Standards	25
11	Rated frequencies	
12	Mains voltage	
13	Permissible voltage range	
14	EC prototype test certificate number	
15	Power factor	
16	Speed	
17	Explosion protection designation	
18	Start-up current / rated current	
19	tE times	

Note: TMS if the tA time is specified only with PTC triggering device acc. to:  II (2)G PTC DIN 44082

Notice! Pay attention to operating instructions B1091

Rated power (mechanical power delivered to shaft)

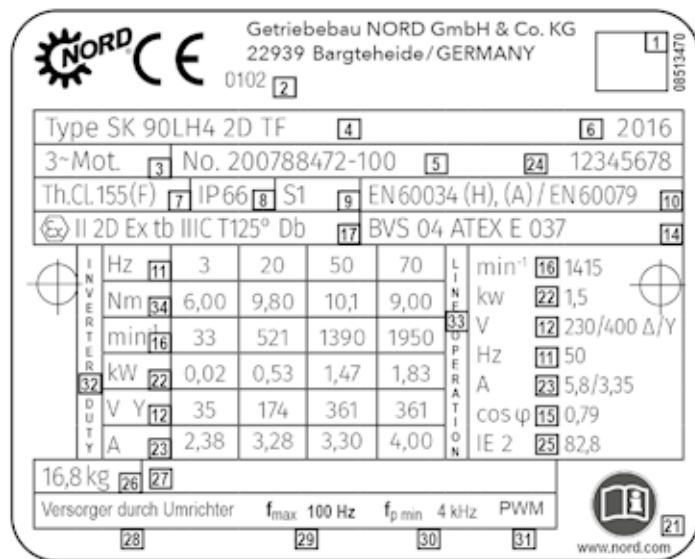
Rated current at operating point



Individual serial number


Efficiency

European Explosions Protection


Explosion type plate motors (Ex tb, Ex tc) acc. to EN 60079-7 for FU operation





 Getriebebau NORD GmbH & Co. KG
 22939 Bargteheide/GERMANY
 0102 2
1 08513470

Type SK 90LH4 2D TF 4		6		2016	
3~Mot. 3		No. 200788472-100 5		24	
Th.CL155(F) 7		IP66 8		S1 9	
		EN60034 (H), (A) / EN60079 10			
 17		BVS 04 ATEX E 037 14			

INVERTER DUTY	Hz 11	3	20	50	70	LINE OPERATION	min ⁻¹ 16	1415
	Nm 34	6,00	9,80	10,1	9,00		kw 22	1,5
	min ⁻¹ 16	33	521	1390	1950		V 12	230/400 Δ/Y
	kw 22	0,02	0,53	1,47	1,83		Hz 11	50
	V Y 12	35	174	361	361		A 23	5,8/3,35
A 23	2,38	3,28	3,30	4,00	cos φ 15	0,79	IE 2 25	82,8

16,8 kg 26 27
 Versorger durch Umrichter f_{max} 100 Hz $f_{p min}$ 4 kHz PWM 21
28 29 30 31  www.nord.com

Example type plate Ex tb

1	Data matrix code
2	Code number of notified body (only for Ex tb)
3	Number of phases
4	Type designation
5	Order number / motor number
6	Year of manufacture
7	Thermal class of insulation system
8	IP protection class
9	Operating mode
10	Standard specifications
11	Stator frequency
12	Stator voltage
14	EU type-examination certificate number
15	Power factor
16	Speed
17	Explosion protection marking
21	Notice! Pay attention to operating instructions B1091
22	Nominal power (mechanical shaft power)
23	Nominal current in operating point
24	Individual serial number
25	Efficiency
26	Weight
27	Information on brake (option with Ex tc only)
28	Note: Supply by frequency inverter
29	Maximum permitted stator frequency
30	Minimum pulse frequency of frequency inverter
31	Modulation procedure of frequency inverter
32	Data field for operation with frequency inverters
33	Data field for mains operation
34	Nominal torque on the motor shaft

Example motor type label acc. to EAC Ex



Explosion protected gear units which are intended for use in the region of the Eurasian Economic Union have an additional type plate which indicates use in explosion hazard areas with EAC labelling according to EAC Ex.

These motors have always two type plates. One type plate complies with ATEX Directive 2014/34/EU and the relevant standards from the standard series EN 60079; the second type plate contains the additional specifications according to Directive TR CU 012/2011.

ГОСТ standard	IEC standard
ГОСТ 31610.0-2014	IEC 6007-0:2011
ГОСТ P МЭК 60079-31-2013	IEC 60079-31:2013
ГОСТ P МЭК 60079-7-2012	IEC 60079-7:2006
ГОСТ 31610.15-2014	IEC 60079-15:2010

Hybrid mixtures

In rare cases, e.g. in mining, a mixture of flammable dust and flammable gas may occur – so-called hybrid mixtures. In the case of mining, this would typically be a mixture of methane, coal dust and air.

In view of the large number of flammable gases, dust and their resulting mixtures, the potential hazards are extremely numerous and complex. The selection of a suitable drive can therefore not be made without the precise analysis of the situation on site. It must be acknowledged that a drive which can be used safely in a pure gas or dust atmosphere cannot provide an adequate level of safety in an environment with a hybrid mixture. Currently no standard exists which provides specifications for the technical design of motors or gear units in environments with hybrid mixtures. NORD DRIVESYSTEMS therefore does not offer motors or gear units for this purpose.

For logistical reasons it may be advisable to use a drive unit which can be used in either an explosive gas or dust atmosphere. Such drives are offered by NORD in 2G/2D and 3G/3D combinations.

Example for an ATEX gear unit type label that may be used either/or in a 2G and also in a 2D atmosphere.



Caution: EAC Ex

NORD DRIVESYSTEMS does not offer Ex drives according to EAC Ex that are labelled for gas and dust Ex protection.

Scope of delivery gear units for ATEX and EAC Ex

UNICASE helical gear units (Catalogue G1000)



Power: 0.12 – 160 kW
Torque: 10 – 26,000 Nm
Labelling: II 2G.../ II 3G...
II 2D.../ II 3D...

NORDBLOC.1® helical gear units (Catalogue G1000)



Power: 0.12 – 37 kW
Torque: 30 – 3,300 Nm
Labelling: II 2G.../ II 3G...
II 2D.../ II 3D...

UNICASE parallel shaft gear units (Catalogue G1000)



Power: 0.12 – 200 kW
Torque: 110 – 100,000 Nm
Labelling: II 2G.../ II 3G...
II 2D.../ II 3D...

UNICASE worm gear units (Catalogue G1000)



Power: 0.12 – 15 kW
Torque: 93 – 3,058 Nm
Labelling: II 2G.../ II 3G...
II 2D.../ II 3D...

UNICASE bevel gear units (Catalogue G1000)



Power: 0.12 – 200 kW
Torque: 180 – 50,000 Nm
Labelling: II 2G.../ II 3G...
II 2D.../ II 3D...

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



Power: 0.12 – 9.2 kW
Torque: 50 – 660 Nm
Labelling: II 2G.../ II 3G...
II 2D.../ II 3D...

UNIVERSAL SI/SMI worm gear units (Catalogue G1035)



Power: 0.12 – 4.0 kW
Torque: 21 – 427 Nm
Labelling: II 2G.../ II 3G...
II 2D.../ II 3D...
SMI gearboxes are only for
category 3D/3G approved

MAXXDRIVE® industrial gear units (Catalogue G1050)



Power: 1.5 – 6,000 kW
Torque: 15,000 – 282,000 Nm
Labelling: II 2G.../ II 3G...
II 2D.../ II 3D...

Scope of delivery motors for ATEX and EAC Ex

Dust explosion protected motors (Catalogue G2122)



Sizes: 2D: 63 – 180 / 3D: 63 – 250
 Power: 2D: 0.12 – 22 kW / 3D: 0.12 – 55 kW

- ▶ Zone 21, device category 2D, Ex tb 125°C
- ▶ Zone 22, device category 3D, Ex tb 125°C
- ▶ Direct and IEC mounting

Gas explosion protected motors (Catalogue G2122)



Sizes: 63 – 180
 Power: 0.12 – 17.5 kW

- ▶ Zone 1, device category 2G, Exe T3
- ▶ Zone 2, device category 3G, Exn T3
- ▶ Direct and IEC mounting

NORD DRIVESYSTEMS also offers motors from other renowned manufacturers for greater powers and other requirements. Direct mounting to the gear unit is often possible in such a case.

Scope of delivery drive electronics for ATEX and EAC Ex

NORDAC *BASE SK 180E* (Catalogue E3000)



Power: 0.25 – 2.2 kW

Labelling: II 3D Ex tc IIIB T125°C Dc X
 II 3D Ex tc IIIC T125°C Dc X

NORDAC *FLEX SK 200E* (Catalogue E3000)



Power: 0.25 – 7.5 kW

Labelling: II 3D Ex tc IIIB T125°C Dc X
 II 3D Ex tc IIIC T125°C Dc X

NORDAC *START SK 135E* (Catalogue E3000)



Power: 0.12 – 7.5 kW

Labelling: II 3D Ex tc IIIB T125°C Dc X
 II 3D Ex tc IIIC T125°C Dc X

Application example for dust explosion protection



Raw materials are not only ground but also refined in various processes in the Arnreiter Mill in Austria. For this, the highly automated company uses machines for steaming, flaking, crushing, grinding, extruding, roasting, cooling, drying and peeling. Such processing aims at changing the shape and property of the mill material to improve its storage life, digestibility, baking characteristics, and to reduce its bitterness.

Comprehensive conveyor applications

Versatile conveyor technology with flexible drive solutions is necessary between each of the numerous systems to efficiently convey pourable and freely flowing media. The company, consequently striving for sustainable production, needed robust drives requiring only little maintenance that have a long service life and also are capable of ensuring high-quality products by reliable, continuous operation.

Hazard from dust

The electrical drive technology used here must be explosion protected because the environment is contaminated with dust particles resulting from fine grinding of the raw material. Belt and bucket elevators driven by a wide range of mechanical, electrical and electronic NORD gear motors convey the raw materials from silos in the upper storeys to the processing stations. The media are then conveyed through a pipe system with an overall length of 2,500 m. A cyclone separator filters dust, husks and other lightweight components out of the grain and discharges them via a screw conveyor. Product discharge and volumetric metering occurs with star wheel metering devices. Small components can be added via micro metering.

Durable mechanics

Geared motors from NORD DRIVESYSTEMS are also used for all of these conveyor and distribution systems. The high production quality of the NORD drives is the key for minimum maintenance requirements.

Comprehensive explosion protection

Arnreiter received Category 3D devices for operation in Ex Zone 22. Apart from geared motors, NORD DRIVESYSTEMS also supplied integrated decentralised systems including drive controllers, ensuring the explosion protection for complete systems: both the geared motors and the frequency inverters – in mechatronic units and for installation in control cabinets – are offered in explosion-protected versions. Every month, NORD DRIVESYSTEMS produces more than 1,500 dust or gas explosion protected drive systems for use in Zones 1, 2, 21 and 22.

The full CS0014_ARNREITER case study is available from www.nord.com.

Enquiry process

myNORD

The online product configurator available in the myNORD customer portal (www.nord.com > myNORD) lets you select drives conveniently. You can also select Ex drives with options.

- ▶ Precise configuration
- ▶ Direct generation of CAD-data (3D models, dimensioned drawings, outline drawings)
- ▶ Create own offers online

It must be emphasised that the configurator indicates whether or not a selected drive unit is Ex compliant. Price information as well as an enquiry/order form are also included.

In case configuration is not possible via myNORD, you can go to www.nord.com > Documentation > Forms to download the general enquiry form. In this case, the NORD contact person will select the drive and check it for conformity.

Please note that in both cases the operator, the plant constructor or the person charged with certification must define the zones.

NORD DRIVESYSTEMS cannot submit a quotation if the required zone is not known.



Important standards outside Europe

IECEx

Area of validity IEC Ex is an international standard that is used, for example, in Australia and New Zealand.

Basis Technical standards are based on IEC standards (International Electrotechnical Commission)

Regulation IECEx 01 IEC Scheme for the Certification to Standards for Electrical Equipment for „Explosive Atmospheres (IEC Ex Scheme) – Basic Rules“ and

IECEx 02 IEC Scheme for the Certification to Standards for Electrical Equipment for „Explosive Atmospheres (IEC Ex Scheme) – Rules of Procedure“



Area of validity CCC Ex is a standard to be complied with in the People's Republic of China for explosion-proof motors.

Basis Since 1.10.2020, all motors in China that are suitable for use in potentially explosive applications will be subject to CCC Ex-certification obligation. This applies both to motors that are imported China as well as those that are put into operation in China. The regulation applies to both gas and dust explosion protection and to all zones.

Regulation CNCA-C23-01:2019 - Compulsory Certification Rules - Explosion protected electrical equipment (also known as CCC Ex).

Note All explosion-proof motors must comply with the IE3 (Grade 3) efficiency regulations!

Important standards outside Europe

NEC 500 HazLoc

NFPA CODE 70

Area of validity NEC 500 is a standard that is used in the USA as well as for old plants in Canada.

Basis Technical standards are based on specifications of the National Fire Protection Association. The techniques and systems used deviate greatly from those of the IEC/ATEX specifications.

The differences lie, for example, in the classification of potentially explosive atmospheres, the design of the equipment and the installation of the electrical systems.

Foundation Article 500 – General requirements for Divisions of the Class I, II and III
Article 501 – Requirements for Divisions of the Class I
Article 502 – Requirements for Divisions of the Class II
Article 503 – Requirements for Divisions of the Class III

NEC 500 HazLoc

NFPA CODE 70

Division and Class Class I: Gases, vapours or mist
Class II: Dusts

Division 1 (gas and dust) Areas in which dangerous concentrations of flammable gases or vapours:

- ▶ May be present under normal operating conditions
- ▶ May occur frequently during repair and maintenance work
- ▶ Can occur in the event of operational malfunctions or faults and at the same time faults occur in the electrical equipment which lead to a source of ignition

For Division 1, the hazard is probably „Hazard Likely“.

Division 2 (gas and dust) Areas in which dangerous concentrations of flammable gases or vapours are in closed containers or systems kept and which can only be released under fault conditions.

For Division 2, the hazard /endangerment is rather improbable „Hazard Unlikely“.

- ▶ Gas groups: A, B, C and D
- ▶ Dust groups: E, F and G

Class III

Lint and fibres

- ▶ Division 1: Areas where flammable lint and fibres are produced or are produced or processed
- ▶ Division 2: Areas where combustible fibres are stored or handled other than in the manufacturing process

Notes

Further NORD documents and materials on explosion protection:

G2122 Catalogue Explosion Protection

B2000 Operating and assembly instructions Gear units

B2050 Operating and assembly Instructions Industrial Gear units

B1091 Operating and assembly instructions Motors

B1091-1 Planning guideline for motors in FI operation for category 2D/3D

Warning! Please heed the generally applicable standards and guidelines!

The present manual contains excerpts and information taken from standards and guidelines on European explosion protection. It is specially adapted to the products offered by NORD DRIVESYSTEMS and does not claim to be complete. The knowledge of the present document does not absolve the user from thoroughly studying and adhering to all relevant standards and guidelines.

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