



Ex eb Motors Successor of the Ex e Motors

NORD supplies modern Ex eb motors from its own production, which comply with energy efficiency class IE2.

In many cases, due to their high efficiency and modern design, the commonly used reduction of the rated power is not necessary. These motors have type test certification from the PTB (Physikalisch-Technische Bundesanstalt).

PTB Certificates

NORD DRIVESYSTEMS explosion protected motors have the following type codes:

Type code

Size: 63 – 200					
Power code: S, M, L, A, X					
Efficiency class H = High (IE2)					
Number of poles					
ATEX category 2G, 3G					
Options					
80	L	H	/4	2G	...

Gas explosion protection

The Ex e motors listed comply with temperature classes T1, T2 and T2.

These motors may not be operated with frequency inverters.

Temperature classes

Use of a suitable soft starter is permissible. The permissible ambient temperature or cooling air temperature for NORD Ex e and Ex n motors is between -20°C and +40°C.

Notice
Not permitted for use with frequency inverters

These motors have the following features:

Features

- Housing material: Aluminium
- Protection class: IP55
- Insulation class: F
- Fan cowl material: Metal
- Fan material: Plastic;
above Size 132 metal
- Type plate material: Stainless steel (V2A)
- Cable gland:

63, 71:	1 x M25x1.25 II brass
80, 90:	1 x M25x1.5 II brass
100, 112:	1 x M32x1.5 II brass
132:	1 x M32x1.5 II brass
160, 180:	1 x M40x1.5 II brass
- Blind plugs:

63, 71:	3 x M25x1.25 & 2 x M12x1.5 II brass
80, 90:	3 x M25x1.5 & 2 x M12x1.5 II brass
100, 112:	3 x M32x1.5 & 2 x M12x1.5 II brass
132:	3 x M32x1.5 & 2 x M12x1.5 & 2 x M16x1.5 II brass
160, 180:	1 x M40x1.5 & 2 x M12x1.5 & 2 x M16x1.5 II brass




Gas Explosion protection „ATEX“



Ex eb Motors

II 2G Ex eb IIC T3 Gb






Type	P _N	n _N	M _N	I _N		cos φ	η	M _A /M _N	M _K /M _N	I _A /I _N	J		Time t _E	Time t _E
	[kW]	[rpm]	[Nm]	230/400 V	400/690 V		4/4xP _N [%]				[kgm ²]	* [kg]	T1/T2 [s]	T3 [s]
63S/4 2G	0.12	1355	0.85	0.99/0.57		0.63	49.7	2.7	2.7	2.7	0.00021	3.6	60/60	50
63L/4 2G	0.18	1370	1.25	1.49/0.86		0.54	55.4	2.5	2.6	3.0	0.00028	4.2	60/60	19
71S/4 2G	0.25	1389	1.72	1.52/0.88		0.68	65.0	2.2	2.2	3.8	0.00072	5.4	29/29	25
71L/4 2G	0.37	1397	2.53	2.25/1.30		0.63	67.5	2.0	2.4	4.3	0.00086	6.3	23/23	20
80SH/4 2G	0.55	1415	3.71	2.86/1.65		0.66	77.1	3.2	3.2	4.8	0.0014	8.0	45/45	40
80LH/4 2G	0.75	1400	5.12	3.55/2.05		0.68	79.6	3.0	3.1	4.9	0.0019	9.0	45/45	31
90SH/4 2G	1.10	1425	7.37	5.00/2.90		0.70	81.4	3.1	3.5	5.8	0.0034	12.0	24/24	21
90LH/4 2G	1.50	1425	10.0	7.53/4.35		0.65	83.6	3.3	3.5	5.6	0.0039	15.0	17/17	9
100LH/4 2G	2.20	1445	14.5	10.0/5.80	5.80/3.35	0.71	84.3	3.7	4.3	7.1	0.0075	21.0	18/18	13
100AH/4 2G	3.00	1450	19.8	12.6/7.30	7.30/4.21	0.76	85.5	2.4	3.6	6.5	0.0081	25.0	10/10	9
112MH/4 2G*	3.60	1445	23.8	13.9/8.00	8.00/4.64	0.77	86.2	3.4	4.0	8.3	0.014	28.0	14/14	6
132SH/4 2G	5.50	1460	36.0	20.8/12.0	12.0/6.93	0.77	87.7	3.1	3.5	7.7	0.032	42.0	14/14	9
132MH/4 2G*	7.50	1460	49.0	29.1/16.8	16.8/9.70	0.74	88.7	3.3	3.9	8.1	0.035	55.0	10/10	5
160MH/4 2G*	11.0	1470	71.5	39.0/22.5	22.5/13.0	0.82	89.8	2.9	3.4	8.6	0.067	93.0	12/12	5
160LH/4 2G	13.5	1470	87.7	45.9/26.5	26.5/15.3	0.85	90.4	3.32	3.85	9.53	0.092	122	14/14	6
180MH/4 2G*	15.0	1480	96.8		30.3/17.5	0.82	90.6	2.9	3.2	8.2	0.13	137	24/24	8
180LH/4 2G*	17.5	1478	113.1		34.5/19.9	0.84	91.0	2.9	3.2	8.2	0.16	155	23/23	7

* 112MH/4 2G, 132MH/4 2G, 160MH/4 2G, 180MH/4 2G and 180LH/4 2G cannot be operated with the integrated temperature sensor (TF) as the sole protection of the motor.







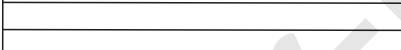




Thermal protection of the machine by means of direct temperature monitoring of the windings with a thermistor temperature sensor is permitted, if this is certified and stated on the rating plate.

No sole protection
via temperature sensor

		Getriebebau NORD GmbH & Co. KG 22939 Bargteheide / GERMANY				0102				08513450							
Type SK 112MH/4 2G TF								2019									
3 ~ Mot.		No. 200900815.200						12345678									
TH.Cl. 155(F)		IP55		S1		EN 60034 (H), (A)/EN 60079											
50 Hz		230/400 V Δ/Y				220-242/380-420 V Δ/Y											
		13,9/8,0 A		3,60 kW		PTB 14											
cos φ 0,77		1445 min ⁻¹		ATEX 3038/01													
Ex II 2G Ex eb II C T3 Gb								T1		T2		T3		T4		IE2=86,2%	
IA/IN: 8,3				tE [s]:				14		14		6		230/400 V Δ/Y			
PTC nur als zusätzlicher Schutz zulässig																	
																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	
<div></div>																	

Sole protection
via temperature sensor

		Getriebebau NORD GmbH & Co. KG 22939 Bargteheide / GERMANY				0102					
Type SK 80SH/4 2G TF								2019			
3 ~ Mot.		No. 200900815.100						12345678			
TH.Cl. 155(F)		IP55		S1		EN 60034 (H), (A)/EN 60079					
50 Hz		230/400 V Δ/Y				220-242/380-420 V Δ/Y					
		2,86/1,65 A		0,55 kW		PTB 08					
cos φ 0,66		1415 min ⁻¹		ATEX 3024/19							
 II 2G Ex eb II C T3 Gb		T1		T2		T3		T4		IE2=77,1%	
IA/IN: 4,3		tE [s]:		45		45		40		230/400 V Δ/Y	
TMS bei Angabe der ta-Zeit nur mit PTC-Auslösegerät nach											
 II (2)G PTC		DIN 44082		M90 - ta: 31 s							
											
											
											
www.nord.com											

Notice!

If the time t_A is not indicated on the type plate, the thermistor is not permissible as the sole means of protection.

It is essential that the motor is protected with a motor protection relay which has been approved by a testing facility.

The motor protection relay must be approved for the ignition protection class which is stated on the motor.

Thermistor permissible as the sole protection

Notice
- if t_A is not stated
on the type plate



Gas Explosion protection „ATEX“



Options

NORD DRIVESYSTEMS high efficiency explosion protected motors are available with the following options:

Motor Option	Designation
KB	Condensation hole (closed)
RD	Protection Canopy
TF	Thermistor (Standard)
WE	Second shaft end
IP66	Protection class IP66
SOSP	Special voltages between 104 - 725 V
60Hz	Motor for 60 Hz mains operation

Documentation

Documentation

The correct operating and installation instructions B1091 are included in every delivery and can be viewed in advance at www.nord.com.

They are available in the following languages:

- Available languages

German, English, French, Spanish, Italian, Serbian, Chinese, Arabic, Brazilian/Portuguese, Dutch, Bulgarian Slovenian, Danish, Greek, Lithuanian, Turkish, Latvian, Romanian, Polish, Russian Slovakian, Czech, Finnish, Swedish, Hungarian, Croatian and Norwegian.

- Additions to the NORD portfolio

Ex eb motors of energy efficiency IE3, as well as motors with higher power ratings than motors produced by NORD, are purchased separately. The same applies to Ex ec motors which are to be operated on the frequency inverter.



Ex d and Ex de motors

No other explosion protected motors are offered on the market in a greater variety than pressure resistant encapsulated motors.

To make the advantages of this variety accessible to our customers, NORD DRIVESYSTEMS cooperates closely with various manufacturers. This enables us to provide our customers with an attractively priced and technically engaging drive, which realises the customer demand in the best possible way.

The standard version of these motors is as follows:

Standard version

- II 2G T4 de IIC T4 Gb as 4-pole version - suitable for mains and inverter operation.

The majority overview of motors does not indicate individual motor features in this catalogue. The following overview presents the range of product and draws attention to special features.

- Power range: 0.12 - 200 kW (in combination with industrial gear units up to 1000 kW)
- Number of poles: 2, 4, 6 and 8 pole as well as switchable poles for 4-2, 6-4, 8-4 and 8-6 pole
- Cast iron motors in the entire power range and die cast aluminium motors up to 4 kW are possible
- Energy efficiency class IE3 is standard.

Motor mounting on the gear unit is typically by means of IEC cylinders in use with IEC B5 standard motors for fast delivery.

Motor mounting - IEC cylinder

In many cases, the motor can also be mounted directly on the gear unit. This has advantages in thermally critical cases or to achieve high output speeds and larger adjustment ranges with inverter operation. This version also has advantages for confined installation spaces.

Direct motor mounting - Advantages

Pressure resistant encapsulated motors are suitable for gas and dust applications in combination with very low ambient temperatures of $< -20^{\circ}\text{C}$ to -40°C .

Pressure resistant encapsulated motors $< -20^{\circ}\text{C}$ to -40°C

High ambient temperatures of $> 40^{\circ}\text{C}$ to 60°C are also possible. In some cases, this results in a reduction in motor power and / or ISO H insulation.

$> 40^{\circ}\text{C}$ to 60°C

Further motor options which can be supplied on request:

Options on request

- Ex d version with pressure resistant terminal box encapsulation
- Protective or rain cover "RD"
- Foot-mounted version
- Temperature sensor for shut down in case of excess temperature "TF"
- Additional temperature sensors which switch at lower temperatures and are used as a warning. "2TF"
- PT100 for direct measurement of the winding temperature "PT100"
- ISO H
- Tropicalised installation
- External fan
- Special voltage "SOSP"
- IP66
- Standstill heating to prevent condensation "SH"
- Additional explosion protection for Zone 21 or Zone 22 "2D" / "3D"
- Brakes (various versions for combination with other options) as holding or working brakes "BRE"
- Incremental encoder "IG"
- Second shaft end, optionally with hand wheel "WE"
- Insulated bearings for inverter operation for motor sizes above Size 160

These special motors are marked accordingly with temperature specifications and are equipped with powerful standstill heaters.