



(1) EC-TYPE-EXAMINATION CERTIFICATE (Translation)

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**



(3) EC-type-examination Certificate Number:

PTB 08 ATEX 3024

(4) Equipment: Three-phase motors for low voltage of types SK 80./2G.

(5) Manufacturer: Getriebebau Nord GmbH & Co. KG

(6) Address: Rudolf-Diesel-Str. 1, 22941 Bargteheide, Germany

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report PTB Ex 08-38076.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2006

EN 60079-7:2007

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-type-examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2 G Ex e II T1 - T4

Zertifizierungsstelle Explosionsschutz

Braunschweig, October 07, 2008

By order:

Dr.-Ing. F. Lienesch
Regierungsdirektor



sheet 1/3

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

SCHEDULE

(13)

(14) **EC-TYPE-EXAMINATION CERTIFICATE PTB 08 ATEX 3024**

(15) Description of equipment

The three-phase motors of types SK 80./2G. are designed to Increased Safety "e" type of protection. Their enclosures are made from cast aluminium and provide for attachment of terminal boxes. The squirrel-cage rotor is made from die cast aluminium. The shaft rotates in rolling bearings. Another option with a shaft end at the non-drive end is possible.

Cooling is achieved by heat exchange, using an external fan made from plastics, which has been separately tested, or from aluminium, and by using the motor housing surface.

The motors can be provided with PTC thermistor detectors as an additional or as the only motor protection together with a certified tripping unit.

Terminal boxes made from aluminium, which are designed for IP66 enclosure protection, are used for electric connection. The terminal boxes are equipped with separately certified terminals, cable glands, sealing plugs and separately tested gaskets.

Technical data

Main terminals	max. rated voltage	max. rated cross section
	630 V	4 mm ² or 6 mm ²
Aux. terminals	max. rated voltage	max. rated cross section
	400 V	2.5 mm ²

The admissible ambient temperature range is 40 °C down to -20 °C.

The electric motor data, including the specifications for compliance with the temperature class, are defined in a data sheet attached to the EC-Type-Examination Certificate.

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(17) Special conditions for safe use

none

Notes for manufacturing and operation

Due care must be taken that the temperatures accepted for the components used will not be exceeded.

Components attached or installed (terminal compartments, bushings, cable entry fittings, connectors) have to be of a technical standard that complies with the specifications on the cover sheet. They must be suited for the operating conditions, and be covered by a separate examination certificate. The special conditions specified for the components must be complied with and may have to be included in the type test.

(18) Essential health and safety requirements

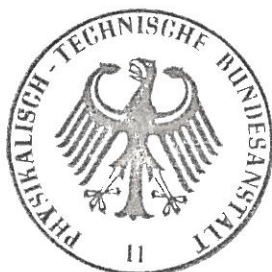
met by compliance with the standards mentioned above

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DATA SHEET 09 TO EC-TYPE-EXAMINATION CERTIFICATE PTB 08 ATEX 3024

Manufacturer **Getriebebau NORD GmbH & Co. KG, 22941 Bargteheide, Germany**

for the three-phase asynchronmotor type SK 80 S/4 2G TF

Ratings

This certificate is valid for the following designs providing the motors of this type differ only negligibly from the sample tested as regards the electrical and thermal stresses:

Power:		0.55		kW
Voltage:	105 - 115	380 - 420	655 - 725	V
Current:	5.8	1.6	0.93	A
Power factor:		0.7		
Frequency:		50		Hz
Speed: (motor)		1391		min ⁻¹
Duty Type:		S1		
I _A /I _N ratio:		4.3		
Thermal class:		F		

In addition to the above-mentioned voltages, intermediate values are also permissible. The associated currents are to be converted in the inverse ratio to the voltages. The mains voltage may vary by up to $\pm 5\%$ and the mains frequency by up to $\pm 2\%$ from the rated values, in keeping with range A according to IEC 60034-1.

The maximum rated voltage according to EN 60079-7:2003, clause 4.4, table 1 is 690 V +/- 10 % (range B). This includes a rated voltage of 725 V +/- 5 % (range A).

Temperature monitoring

For the selection of a current dependent time-lag protective device, the times t_E were determined as follows:

Temperature class:	T1	T2	T3	
Time t_E :	30	30	29	s

If embedded temperature sensors (PTC thermistors DIN 44 082-M110) are used together with a control unit tested for its function by a notified body the requirements of EN 60079-7, subclause 4.8.4 are also met for motors under locked-rotor conditions up to **temperature class T3**. For the mean value of the rated voltage and starting from the cold state (20 °C) the tripping time will be $t_A = 35.5$ s.

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DATA SHEET 10 TO EC-TYPE-EXAMINATION CERTIFICATE PTB 08 ATEX 3024

Manufacturer **Getriebebau NORD GmbH & Co. KG, 22941 Bargteheide, Germany**

for the three-phase asynchronous motor type SK 80S/4 2G TF

Ratings

This certificate is valid for the following designs providing the motors of this type differ only negligibly from the sample tested as regards the electrical and thermal stresses:

Power:		0.55		kW
Voltage:	105 - 115	416 - 460	655 - 725	V
Current:	5.7	1.46	0.92	A
Power factor:		0.7		
Frequency:		60		Hz
Speed: (motor)		1691		min ⁻¹
Duty Type:		S1		
I _A /I _N ratio:		4.7		
Thermal class:		F		

In addition to the above-mentioned voltages, intermediate values are also permissible. The associated currents are to be converted in the inverse ratio to the voltages. The mains voltage may vary by up to $\pm 5\%$ and the mains frequency by up to $\pm 2\%$ from the rated values, in keeping with range A according to IEC 60034-1.

The maximum rated voltage according to EN 60079-7:2003, clause 4.4, table 1 is 690 V $\pm 10\%$ (range B). This includes a rated voltage of 725 V $\pm 5\%$ (range A).

Temperature monitoring

For the selection of a current dependent time-lag protective device, the times t_E were determined as follows:

Temperature class:	T1	T2	T3	
Time t_E :	30	30	29	s

If embedded temperature sensors (PTC thermistors DIN 44 082-M110) are used together with a control unit tested for its function by a notified body the requirements of EN 60079-7, subclause 4.8.4 are also met for motors under locked-rotor conditions up to **temperature class T3**. For the mean value of the rated voltage and starting from the cold state (20 °C) the tripping time will be $t_A = 35$ s.

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DATA SHEET 11 TO EC-TYPE-EXAMINATION CERTIFICATE PTB 08 ATEX 3024

Manufacturer **Getriebebau NORD GmbH & Co. KG, 22941 Bargteheide, Germany**

for the three-phase asynchronmotor type SK 80L/4 2G TF

Ratings

This certificate is valid for the following designs providing the motors of this type differ only negligibly from the sample tested as regards the electrical and thermal stresses:

Power:			0.75			kW
Voltage:	105 - 115	218 - 242	380 - 420	655 - 725		V
Current:	7.9	3.8	2.18	1.26		A
Power factor:			0.68			
Frequency:			50			Hz
Speed: (motor)			1375 - 1414			min ⁻¹
Duty Type:			S1			
I _A /I _N ratio:			4.7			
Thermal class:			F			

In addition to the above-mentioned voltages, intermediate values are also permissible. The associated currents are to be converted in the inverse ratio to the voltages. The mains voltage may vary by up to $\pm 5\%$ and the mains frequency by up to $\pm 2\%$ from the rated values, in keeping with range A according to IEC 60034-1.

The maximum rated voltage according to EN 60079-7:2003, clause 4.4, table 1 is 690 V $\pm 10\%$ (range B). This includes a rated voltage of 725 V $\pm 5\%$ (range A).

Temperature monitoring

For the selection of a current dependent time-lag protective device, the times t_E were determined as follows:

Temperature class:	T1	T2	T3	
Time t_E :	23	23	20	s

If embedded temperature sensors (PTC thermistors DIN 44 082-M110) are used together with a control unit tested for its function by a notified body the requirements of EN 60079-7, subclause 4.8.4 are also met for motors under locked-rotor conditions up to **temperature class T3**. For the mean value of the rated voltage and starting from the cold state (20 °C) the tripping time will be $t_A = 24.5$ s.

Report PTB Ex 08-38127

Zertifizierungsstelle Explosionsschutz

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Braunschweig, October 07, 2008

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DATA SHEET 12 TO EC-TYPE-EXAMINATION CERTIFICATE PTB 08 ATEX 3024

Manufacturer **Getriebebau NORD GmbH & Co. KG, 22941 Bargteheide, Germany**

for the three-phase asynchronous motor type SK 80L/4 2G TF

Ratings

This certificate is valid for the following designs providing the motors of this type differ only negligibly from the sample tested as regards the electrical and thermal stresses:

Power:			0.75			kW
Voltage:	105 - 115	218 - 242	416 - 460	655 - 725		V
Current:	7.9	3.8	1.99	1.26		A
Power factor:			0.68			
Frequency:			60			Hz
Speed: (motor)			1675 - 1714			min ⁻¹
Duty Type:			S1			
I _A /I _N ratio:			5.1			
Thermal class:			F			

In addition to the above-mentioned voltages, intermediate values are also permissible. The associated currents are to be converted in the inverse ratio to the voltages. The mains voltage may vary by up to $\pm 5\%$ and the mains frequency by up to $\pm 2\%$ from the rated values, in keeping with range A according to IEC 60034-1.

The maximum rated voltage according to EN 60079-7:2003, clause 4.4, table 1 is 690 V $\pm 10\%$ (range B). This includes a rated voltage of 725 V $\pm 5\%$ (range A).

Temperature monitoring

For the selection of a current dependent time-lag protective device, the times t_E were determined as follows:

Temperature class:	T1	T2	T3	
Time t_E :	23	23	20	s

If embedded temperature sensors (PTC thermistors DIN 44 082-M110) are used together with a control unit tested for its function by a notified body the requirements of EN 60079-7, subclause 4.8.4 are also met for motors under locked-rotor conditions up to **temperature class T3**. For the mean value of the rated voltage and starting from the cold state (20 °C) the tripping time will be $t_A = 26.3$ s.

Report PTB Ex 08-38127

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