



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx BVS 25.0024X** Page 1 of 3 [Certificate history:](#)

Status: **Current** Issue No: 0

Date of Issue: 2025-05-19

Applicant: **Herforder Elektromotoren-Werke GmbH & Co. KG**
Goebenstraße 106
32051 Herford
Germany

Equipment: **Flameproof electric motors type D*Ex 63 **/*** ***

Optional accessory:

Type of Protection: **Flameproof enclosure "d"**

Marking: Ex db IIC T* Gb or Ex db eb IIC T* Gb or
Ex db IIB T* Gb or Ex db eb IIB T* Gb
Ex tb IIIC T*°C Db or Ex tb IIIB T*°C Db

* See general product information "parameters"

Approved for issue on behalf of the IECEx
Certification Body:

Dr Michael Wittler

Position:

Deputy Head of Certification Body

Signature:
(for printed version)

Date:
(for printed version)

2025-05-19

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2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.



Certificate issued by:

DEKRA Testing and Certification GmbH
Certification Body
Dinnendahlstrasse 9
44809 Bochum
Germany





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Manufacturer: **Herforder Elektromotoren-Werke GmbH & Co. KG**
Goebenstraße 106
32051 Herford
Germany

Manufacturing
locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-1:2014 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

IEC 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

DE/BVS/ExTR25.0026/00

Quality Assessment Report:

DE/BVS/QAR14.0009/08



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

see Annex

SPECIFIC CONDITIONS OF USE: YES as shown below:

- The lengths of the flameproof joints are in parts longer and the gaps of the flameproof joints are in parts smaller than the values of table 2 and 3 of IEC 60079-1:2014. For information of the dimensions of the flameproof joints contact the manufacturer.

- Parts that have to meet the requirements of flameproof enclosure have to be fastened by means of steel screws of strength category 10.9 (900 N/mm²) minimum.

- If the motor is not coated by the manufacturer, one of the following conditions must be observed when applying the coating / coating system:

Group I and Group II:

- Surface resistance $\leq 1 \text{ G}\Omega$ measured at (50 +/- 5% rel. humidity) or
- Surface resistance $\leq 100 \text{ G}\Omega$ measured at (30 +/- 5% rel. humidity) or
- Breakdown voltage $\leq 4 \text{ kV}$ or
- Layer thickness $\leq 200 \text{ }\mu\text{m}$

Group III:

- Surface resistance $\leq 1 \text{ G}\Omega$ measured at (50 +/- 5% rel. humidity) or
- Surface resistance $\leq 100 \text{ G}\Omega$ measured at (30 +/- 5% rel. humidity) or
- Breakdown voltage $\leq 4 \text{ kV}$

- If the motor has to be controlled by PTC-thermistors, these sensors have to be connected to a trigger unit suitable for this purpose.

- In case of converter supply:

The rotating electrical machine must be operated with a voltage source converter with pulse width modulation regarding the electrical parameters according to clause "General product information: Parameters".

Before setting-up operation, it must be ensured that no inverter-related overvoltages with a peak value of more than 1350 V occur at the motor terminals.

Annex:

[BVS_25_0024X_HEW_Annex.pdf](#)



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General product information:

Subject and Type

Flameproof electric motors type D^{*1)}Ex 63 ^{**2)}/^{***3)} ^{*4)}

<u>Asterisk</u>	<u>Description</u>
1	Explosion Group B: IIB C: IIC D: IIIC
2	Motor version code (package length and efficiency) LH: Version with package length L and efficiency code H KH: Version with package length K and efficiency code H
3	Number of poles
4	Temperature monitoring code K: PTC thermistor T: Thermal switch / bimetal switch

Description

The enclosures of the flameproof electric motors are made of cast iron.

The terminal box is casted on directly. The shaft is supported by ball bearings.

For the electrical connection of the motor, the terminal box is optionally designed in the type of protection flameproof enclosure “d” or increased safety “e” respectively protection by enclosure “t”.

In the variant with terminal box in type of protection increased safety “e”, the motor compartment is separated from the terminal compartment by a separately certified line bushing.

The motors are connected via separately certified cable glands suitable for this purpose.

The cooling of the motor is realised by an external fan that is made of plastic. The fan is driven by the electrical machine itself.

Optionally a space heater can be mounted inside the stator housing.

For direct temperature control the windings of the motor are equipped with PTC-thermistors which are connected in series. The sensors are connected to a suitable trigger unit. Optionally, the temperature monitoring of the windings can also be realized with thermal switches / bimetal switches.

The maximum permissible ambient temperature range is -30 °C to 85 °C. This temperature range may be limited as a result of the selected terminal boxes and components, or the electrical design.

The electric motors are suitable for operation on the 50/60 Hz mains as well as for operation with a voltage intermediate circuit inverter with pulse width modulation in the frequency range of 5-100 Hz.

Listing of all components used referring to older standards

None



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Parameters

Electrical parameters

Circuits of the flameproof electric motors

Rated voltage ¹⁾		up to	690	V AC
Rated power		up to	0.3	kW
Rated rotational speed	500	up to	3600	min ⁻¹
Rated rotational speed (with converter)	60	up to	6000	min ⁻¹
Frequency (mains)			50 / 60	Hz
Frequency (converter)	5	up to	100	Hz
Duty type	S1	up to	S9	
Class of insulation			F	

- ¹⁾ In case of converter-fed: Voltage of the fundamental wave measured at the motor terminals.
This voltage must not be decreased by 10 %, taken into account the minimum converter input voltage and the voltage drop caused by the supply line and an optional sinus filter.

Monitoring circuits

Temperature sensors (ptc thermistors)	According to the specifications given in the certificate of the trigger unit and the electrical design.
Bimetal switch	According to the specifications given in the certificate of the trigger unit and the electrical design.

Electrical parameters (converter)

Voltage intermediate circuit inverter with pulse width modulation (PWM)

Maximum permitted input voltage	Rated voltage of the motor	V
Minimum switching frequency (for low-voltage 2-level converter)	4	kHz
Current limiting value	1.5x I _N	A
Maximum overload time / permitted time for operation below the minimum output frequency ²⁾	60	s
Output frequency	up to 100	Hz

- ²⁾ After each overload period, a cooling period is required and must be in minimum 3 times the overload time.
During the cooling period, the motor current and torque must remain below the limit of permitted continuous load ability.

Thermal ratings

Type of protection	Ambient temperature		
	Explosion Group	Lower limit	Upper limit
Ex db	IIC	-30 °C	60 °C
	IIB	-30 °C	85 °C
Ex db eb	IIB / IIC	-30 °C	60 °C
Ex tb	IIIC	-30 °C	85 °C

The stated ambient temperature ranges may be limited as a result of the selected terminal box, components, sealing materials or by the electrical ratings. The permissible ambient temperature range is marked on the name plate.



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Ambient temperature range, temperature class and surface temperature

Temperature class	T6 up to T4
Surface temperature	up to 135° C

The values valid for the respective construction are indicated on the name plate and the datasheet of the motor.