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 IBE 24.0003X**	Page 1 of 3	Certificate history:
Status:	**Current**	Issue No: 0	
Date of Issue:	2025-02-11		
Applicant:	**BEN Buchele Elektromotorenwerke GmbH** Poppenreuther Str. 49a Nürnberg 90419 **Germany**		
Equipment:	**Electric Motor type dKD..280..-./.**		
Optional accessory:			
Type of Protection:	**Flameproof enclosure**		
Marking:	Ex db IIB T4 Gb or Ex db IIC T4 Gb -50 °C ≤ T_a ≤ +50 °C (max.; depends on type)		

Approved for issue on behalf of the IECEx Certification Body: **Dr.-Ing. Peter Cimalla**

Position: **Deputy Head of department Certification Body**

Signature: (for printed version)

Date: (for printed version) 2025-02-11

1. This certificate and schedule may only be reproduced in full.
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:

IBExU Institut für Sicherheitstechnik GmbH
Fuchsmühlenweg 7
09599 Freiberg
Germany

IECEx Certificate of Conformity

Manufacturer: **BEN Buchele Elektromotorenwerke GmbH**
Poppenreuther Str. 49a
Nürnberg 90419
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

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/IBE/ExTR24.0006/00

Quality Assessment Report:

DE/IBE/QAR24.0003/00

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The flameproof Electric Motor type dKD..280..-./. is a three-phase squirrel-cage rotor motor in surface-cooled grey cast iron design. It is additionally equipped with an electromechanical brake, a standstill heater and an incremental encoder. The brake must be energized to run the motor. Further, the electric motor is equipped with temperature limiters (PTC). Electrical connection is made via the flameproof terminal box.

Rated values and technical data

Rated voltage:	max. 690 V
Rated power:	max. 95 kW
Mode of operation:	S2, S3
Cooling method according to IEC 60034-6:	IC410 (non-ventilated)
Ambient temperature range:	-35 °C up to +50 °C standard -50 °C up to +50 °C special version
Property class fastening screws:	min. 8.8 according to ISO 4762
Spring set brake:	110 V DC, 1150 Nm
Standstill heater:	220 - 230 V, 180 W
Incremental encoder:	10 - 30 V DC

For details see annex.

SPECIFIC CONDITIONS OF USE: YES as shown below:
Repairs of the flameproof joints must be made in compliance with the constructive specifications provided by the manufacturer. Repairs must not be made on the basis of values specified in tables 2 and 3 of IEC 60079-1.

The Electric Motor can be used also in an extended ambient temperature range. This is specified on the type plate.

The inspection openings located in the brake cover must be closed during use in explosive atmospheres according to the operating instructions.

Unused openings for cable entries have to be permanently closed with suitable screw plugs confirmed for explosion protection according to IEC 60079-1, Annex C.

For application in potentially explosive atmospheres of Group IIB, the motor must not be exposed to high charging processes. For Group IIC applications, the motor must be installed in a way that it is not exposed to any electrostatic charging mechanisms. Cleaning is permitted only with a damp cloth.

Further specific conditions are given in the annex.

Annex:

Annex_IECEx_IBE_24.0003X.pdf

IECEx Certificate of Conformity - Annex

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Rated values and technical data

The specifications are valid on condition that the Electric Motors of this type do not exceed the safety-related maximum values and operating limits specified in this Annex with regard to the electrical and thermal design.

Motor type:	**dKDF 280M-6/...**	
Code:	**Ex db IIC T4 Gb**	
Rated voltage:	440	V
Rated frequency:	50/60	Hz
Max. rated power:	95	kW
Max. rated current:	178	A
Rated speed (60 Hz):	1190	min^{-1}
Pole number:	6	
Operation mode:	S2 – 30 min S3 – 25 %	
Cooling method:	IC410	
Max. ambient temperature:	50	°C
Temperature class:	T4	
Voltage spring set brake:	110	V DC
Torque spring set brake:	1150	Nm
Voltage standstill heater:	220 - 230	V
Power standstill heater:	180	W

The other electrical specifications are contained in the motor data sheet. The motors can be designed for rated voltages from 220 V up to 690 V. The related currents have to be converted in the reciprocal relation of the voltages. In comparison with the rated values the mains voltage may fluctuate up to ± 10 % in accordance with range B according to IEC 60034-1 and the mains frequency fluctuate up to ± 2 %.

The motors may be operated only in the operating mode and under the ambient conditions, for which they have been tested at the type verification. This applies also for operation on the frequency converter.

Specific conditions of use

- To comply with temperature class T4, the motors must be protected by a device for direct temperature control with a response temperature of max. 130 °C in addition to the thermally delayed overcurrent protection device. It consists of temperature sensors (PTC triplet) built into the winding and a certified release device.
- In frequency converter operation, the motors can be operated in a frequency up to 180 Hz (minimum switch frequency 2 kHz).
- When selecting the cable gland and connection cable, it must be ensured that they are suitable for an operating temperature of at least 80 °C as well as 85 °C. The corresponding information in the operating instructions must be observed.

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