Translation

(1) EC-Type Examination Certificate

(2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC

(3) No. of EC-Type Examination Certificate: **BVS 15 ATEX E 090 X**

(4) Equipment: **Direct current motor type d-G*Z 22***

(5) Manufacturer: **Winkelmann Elektromotoren GmbH & Co. KG**

(6) Address: **Im Neuen Felde 88-90, 29525 Uelzen, Germany**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this type examination certificate.

(8) The certification body of DEKRA EXAM GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council 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 Test and Assessment Report BVS PP 15.2155 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:

EN 60079-0:2012 + A11:2013	**General requirements**
EN 60079-1:2007	**Flameproof enclosure "d"**
EN 60079-7:2007	**Increased Safety "e"**

(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 appendix to this certificate.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to 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 2G Ex d IIA/IIB/IIC T3-T6 Gb or
II 2G Ex de IIA/IIB/IIC T3-T6 Gb

DEKRA EXAM GmbH
Bochum, dated 2015-08-21

Signed: Simanski
Certification body

Signed: Dr. Wittler
Special services unit

DEKRA EXAM GmbH, Dinnendahlstrasse 9, 44809 Bochum, Germany,
telephone +49.234.3696-105, Fax +49.234.3696-110, zs-exam@dekra.com

(13) Appendix to

(14) **EC-Type Examination Certificate**
BVS 15 ATEX E 090 X

(15) 15.1 Subject and type

Type d-GN*[1)]Z 22*[2)]

1) N = shunt-wound
Reg = series
F = flange
E = axial own surface cooling
(O) = axial forced surface cooling

2) Rotational speed number = number of poles e.g. 2 = 2 poles = 3000 min^{-1}

15.2 Description

The direct current motor type d-GN*Z 22* is designed in type of protection flameproof enclosure „d". The motor enclosure consists of a seamless steel tube and is closed with cast iron bearing shields.

The motor could be equipped with a separately certified terminal box in type of protection increased safety "e" (BVS 14 ATEX E 003 U) or in type of protection flameproof enclosure "d" (BVS 12 ATEX E 149 U or BVS 12 ATEX E 131 U). The connection between motor and terminal box is realized with separately certified bushings which can be used for this purpose.

The motor can be cooled in different ways: Own surface cooling or with separately certified external forced ventilation motor (CESI 01 ATEX 103).

15.3 Parameters

Electrical parameters

Circuit of the rotating electrical machine

Rated voltage	up to	575 +20/-20 %	V
Rated power	up to	29.6	kW
Rated rotational speed	up to	3600	min^{-1}
Duty type		S1/S2/S3	

Monitoring circuits
(S1 external cooling, S2 and S3)

Temperature sensor (ptc thermistor):
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.

U_{max} = 250 V AC or 24 / 48 V DC
I_{max} = 2.5 A

DAkkS Deutsche Akkreditierungsstelle D-ZE-12069-03-00

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Ambient temperature range, temperature class, gas group and surface temperature

The electrical data, the temperature class and the ambient temperature range of the respective version is determined by a routine test carried out by the manufacturer. The marking of the gas group IIA, IIB or IIC depends on the type of the painting.

The ambient temperature range is -20 °C … +40 °C. A special electrical and thermal design using suitable terminal boxes, materials and components allows extending this range up to -60 °C …+70 °C.

(16) Test and Assessment Report

BVS PP 15.2155 EG as of 2015-08-21

(17) Special conditions for safe use

17.1 The dimensions of the flameproof joints are in parts other than the relevant minimum or maximum values of EN 60079-1:2007. For information on the dimensions of the flameproof joints contact the manufacturer.

17.2 Fasteners with a screw quality of at least A4-70 have to be used for the closing of the flameproof enclosure. A related note has to be given in the manual of the complete rotating electrical machine.

17.3 If the temperature exceeds +100 °C at the end of the shaft, only metal fans are suitable for this purpose.

17.4 If the electrical machine will be cooled by forced ventilation, it has to be assured that the electrical machine can only run if the ventilation is running.

17.5 If the motor type d-GN*Z 22* is used for the gas group IIC, the painting of the enclosure must not be thicker than 0.2 mm according table 8 (EN 60079-0:2012).

17.6 If the motor type d-GN*Z 22* is used for the gas group IIA/IIB, the painting of the enclosure must not be thicker than 2 mm according table 8 (EN 60079-0:2012).

17.7 The monitoring circuits (ptc thermistor or bimetal switch) of the motor must be use with a functional tested trigger unit, for the duty type S1 external cooling, S2 or S3.

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA EXAM GmbH
44809 Bochum, 2015-08-21
BVS-Pz/Nu A 20110912

Certification body

Special services unit

DAkkS Deutsche Akkreditierungsstelle D-ZE-12069-01-00

DEKRA EXAM GmbH, Dinnendahlstrasse 9, 44809 Bochum, Germany,
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