

Translation

# EU-Type Examination Certificate Supplement 2

Change to Directive 2014/34/EU

Equipment intended for use in potentially explosive atmospheres  
Directive 2014/34/EU

EU-Type Examination Certificate Number: **BVS 14 ATEX E 114 X**

Product: **Flameproof electric motors type D\*Ex\*\*\* \*\*\*/\*\*\*\* \*\***

Manufacturer: **Herforder Elektromotoren-Werke GmbH & Co. KG**

Address: **Goebenstraße 106, 32051 Herford, Germany**

This supplementary certificate extends EC-Type Examination Certificate No. BVS 14 ATEX E 114 X to apply to products designed and constructed in accordance with the specification set out in the appendix of the said certificate but having any acceptable variations specified in the appendix to this certificate and the documents referred to therein.

DEKRA Testing and Certification GmbH, Notified Body number 0158, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products 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 No. BVS PP 14.2163 EU.

The Essential Health and Safety Requirements are assured in consideration of:

**EN IEC 60079-0:2018**

**EN 60079-1:2014**

**EN IEC 60079-7:2015 + A1:2018**

**EN 60079-31:2014**

**General requirements**

**Flameproof enclosure "d"**

**Increased Safety "e"**

**Protection by Enclosure "t"**

If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Special Conditions for Use specified in the appendix to this certificate.

This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

The marking of the product shall include the following:



**II 2G Ex db IIC T\* Gb**  
**II 2G Ex db IIB T\* Gb**  
**II 2D Ex tb IIIC T\*°C Db**

or

**Ex db eb IIC T\* Gb**  
**Ex db eb IIB T\* Gb**

or

\* See clause "Parameters"

DEKRA Testing and Certification GmbH  
Bochum, 2021-06-14

Signed: Jörg-Timm Kilisch

Managing Director



## 13 Appendix

## 14 EU-Type Examination Certificate

### BVS 14 ATEX E 114 X Supplement 2

## 15 Product description

### 15.1 Subject and type

Flameproof electric motors type D\*Ex\*\*\* \*\*\*/\*\*\*\* \*\*

Type designation to D\*<sup>1)</sup>Ex\*<sup>2)</sup>\*<sup>2)</sup>\*<sup>3)</sup>\*<sup>3)</sup>/\*<sup>4)</sup>\*<sup>4)</sup>\*<sup>4)</sup> \*<sup>5)</sup>\*<sup>5)</sup>\*<sup>5)</sup>

#### 1): Explosion Group

B: Flameproof enclosure for Group IIB

C: Flameproof enclosure for Group IIC

D: Flameproof enclosure for Group IIC and applicable in presence of combustible dust

#### 2): Frame size

71	71 mm
80	80 mm
90	90 mm
100	100 mm
112	112 mm
132	132 mm
160	160 mm
180	180 mm
200	200 mm
225	225 mm

#### 3): Identifier for Motor-variation

#### 4): Quantity of poles

#### 5): Identifier for temperature control

### 15.2 Description

With this supplement the certificate is changed to Directive 2014/34/EU.

(Annotation: In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary Certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.)

#### Reasons for this supplement:

- Change to Directive 2014/34/EU
- Updating to the current version of standards, therefore the marking of the devices will be modified.
- Further motor variants added
- Larger terminal box for motor sizes 180 – 225 removed



## Description of Product

The enclosure of the flameproof electric motor is made of cast iron and has a mounting place for terminal boxes.

The shaft will be fixed with ball bearings.

The shaft sealing of the flameproof electric motor is realised by non-metallic sealing rings, for use in areas requiring EPL Db.

A terminal compartment in type of protection Flameproof Enclosure "d", Increased Safety "e" or Protection by Enclosure "tb" or a direct cable entry is used for electrical connection of the motor. For electric power input into the motor compartment, separately certified cable glands or line bushings are used.

The cooling of the motor is realised by an external fan that is made of steel, aluminium or plastic. The fan can be driven by the electrical machine itself or by a separately certified forced ventilation motor.

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

For direct temperature monitoring the winding of the motor is equipped with temperature sensors (thermistors according DIN 44081 or DIN 44082). The sensors are connected in series. Optionally the temperature monitoring of the winding can be realised by thermal switches / bimetal switches.

Optionally the temperature at the bearings could be monitored separately certified resistance thermometers (Pt100).

The sensors respectively the thermometers shall be connected to a trigger unit which is certified for this purpose.

The maximum permissible ambient temperatures are -50 °C to 85 °C. This temperature range may be limited as a result of the selected terminal boxes and components, or the electrical design.

## 15.3 Parameters

### 15.3.1 Electrical parameters

#### Circuits of the flameproof electric motors

Rated voltage				
Frame size 71 - 225		up to	690	V AC
Rated rotational speed	500	up to	3600	min <sup>-1</sup>
Rated rotational speed (with converter)	48	up to	6000	min <sup>-1</sup>
Frequency (mains)			50 / 60	Hz
Frequency (converter)				
Frame size 71 - 160	5	up to	100	Hz
Frame size 180 - 225	5	up to	87	Hz
Duty type	S1	up to	S9	

#### Rated power

Frame size		50 Hz		60 Hz	
71	up to	0.55	kW	0.66	kW
80	up to	1.1	kW	1.3	kW
90	up to	2.2	kW	2.6	kW
100	up to	3	kW	3.6	kW
112	up to	4	kW	4.8	kW
132	up to	7.5	kW	9	kW
160	up to	18.5	kW	21	kW
180	up to	22	kW	26	kW
200	up to	37	kW	42	kW
225	up to	45.5	kW	52	kW



### Monitoring circuits

Temperature sensors (ptc thermistors)	According to the specifications given in the certificate of the trigger unit and the electrical design.
Circuits of the resistance thermometer (Pt100)	According to the specifications given in the test report of the respective electrical design.
Bimetal switch	According to the specifications given in the test report of the respective electrical design.

### 15.3.2 Thermal ratings

Type of protection	Explosion Group	Lower limit	Upper limit
Ex db			
Standard stator housing	IIC	-50 °C	60 °C
	IIB	-50 °C	85 °C
Extended stator housing FS71 – FS132	IIC	-20 °C	60 °C
	IIB	-20 °C	85 °C
Extended stator housing FS160 – FS225	IIC	-50 °C	60 °C
	IIB	-50 °C	85 °C
Ex db eb	IIB / IIC	-20 °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.

#### Ambient temperature range, temperature class and surface temperature

The electrical data, the temperature class, the surface temperature and the ambient temperature range of the respective version is determined by a routine test carried out by the manufacturer.

### 16 Report Number

BVS PP 14.2163 EU, as of 2021-06-14

### 17 Special Conditions for Use

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 3 of EN 60079-1:2014. For information of the dimensions of the flameproof joints contact the manufacturer.

Fasteners with a minimum yield stress of 640 N/mm<sup>2</sup> must be used for the closing of the flameproof enclosure.

Motors which have to be equipped with a direct temperature control must be monitored by a separate certified trigger unit.

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.



18 **Essential Health and Safety Requirements**

The Essential Health and Safety Requirements are covered by the standards listed under item 9.

19 **Drawings and Documents**

Drawings and documents are listed in the confidential report.

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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 Testing and Certification GmbH  
Bochum, 2021-06-14  
BVS-Hn/Mu A20210470

  
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Managing Director