

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 053 X**

(4) Equipment: **Brake-motors type B*Ex*** ***/**** ** - BM*****

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

(6) Address: **Goebenstraße 106, 32051 Herford, 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 15.2086 EG.

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

EN 60079-0:2012	General requirements
EN 60079-1:2007	Flameproof enclosure "d"
EN 60079-7:2007	Increased Safety "e"
EN 60079-31:2009	Protection by Enclosure "t"

(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 IIC T4-T6 Gb	or
	II 2G Ex d IIB T4-T6 Gb	or
	II 2G Ex de IIC T4-T6 Gb	or
	II 2G Ex de IIB T4-T6 Gb	resp.
	II 2D Ex tb IIIC T85°C - T135°C Db	

DEKRA EXAM GmbH
Bochum, dated 2015-05-08

Signed: Schumann

Signed: Dr. Wittler

Certification body

Special services unit

(13) Appendix to

(14) **EC-Type Examination Certificate**
BVS 15 ATEX E 053 X

(15) 15.1 Subject and type

Brake motor type B*Ex*** ***/**** ** - BM***

Type designation to B*¹⁾Ex***²⁾ ***³⁾/^{****4)} ***⁵⁾ - BM***⁶⁾

(Identifier for the type designation are only used when applicable)

¹⁾: Explosion group:

- B: Flameproof enclosure for group IIB
- C: Flameproof enclosure for group IIC

Explosion group or for potentially explosive dust atmosphere

- D: Flameproof enclosure for group IIC or applicable in the presence of combustible dust for group IIIC (e. g.: BDEx)

²⁾: Frame size of motor

71	71 mm
80	80 mm
90	90 mm
100	100 mm
112	112 mm
132	132 mm

³⁾: Identifier for Motor-variation

- z. B. M - M-variation, only one package length available
- z. B. MA - M-variation with package length MA or MB
- z. B. MBH - M-variation with package length MB and efficiency level detection
(all variations are also possible with package lengths K, L and S)

⁴⁾: Quantity of poles:

2, 4, 6, 8 to max. 12-8

⁵⁾: Identifier for motor protection

⁶⁾: Identifier for brake:

Torque, depending on brake settings

15.2 Description

The brake motors are an assembly of motors type D*Ex*** ***/**** ** (BVS 14 ATEX E 114 X) and the spring loaded brakes type 4BM ***/** (BVS 12 ATEX 043 U incl. 1st Supplement).

15.3 Parameters

Brake-motors

Rated voltage		up to	690	V AC
Rated rotational speed	500	up to	3600	min ⁻¹
Rated rotational speed (with converter)	48	up to	6000	min ⁻¹
Frequency (mains)			50 / 60	Hz
Frequency (converter)	5	up to	100	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

Brake

Rated voltage 24 VDC, 48 VDC, 180 VDC and 205 VDC

Size of the brake (suitable for motor frame size)	BM5 (71)	BM10 (80)	BM20 (90)	BM40 (100)	BM60 (112)	BM100 (132)
Power in Watt (at 20 °C)	22	28	34	42	50	76

Monitoring circuit

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 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

$$U_{\max} = 250 \text{ VAC}; I_{\max} = 10 \text{ A}$$

Thermal ratings

Type of protection	Explosion-group	Ambient temperature range	
		Lower limit	Upper limit
Ex d	IIC	-50 °C	60 °C
Ex d	IIB	-50 °C	85 °C
Ex de	IIB / IIC	-20 °C	60 °C
Ex tb	IIIC	-30 °C	85 °C

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) Test and Assessment Report

BVS PP 15.2086 EG as of 2015-05-08

(17) Special conditions for safe 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 2 of EN 60079-1:2007. For information of the dimensions of the flameproof joints contact the manufacturer.

Fasteners with a minimum yield stress of 640 N/mm^2 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.

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, 2015-05-08
BVS-Sit/Ma A 20150342



Certification body



Special services unit