DEKR. DEKRA D

Translation

EU-Type Examination Certificate Supplement 1

Change to Directive 2014/34/EU

- 2 Equipment intended for use in potentially explosive atmospheres Directive 2014/34/EU
- EU-Type Examination Certificate Number: BVS 15 ATEX E 075 X 3
- Product: Flameproof electric motors type 3KTC 180-225

3KTCR 180-225-**, 3KTCP 180-225 and 4KTC 250-315, 4KTCR 250-315-**, 4KTCP 250-315

- 5 Manufacturer: BARTEC VARNOST, d.o.o.
- 6 Address: Cesta 9. avgusta 59, 1410 Zagorje ob Savi, Slovenia
- This supplementary certificate extends EC-Type Examination Certificate No. BVS 15 ATEX E 075 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 EXAM GmbH, Notified Body number 0158, in accordance with Article 17 of Directive 8 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 15.2162 EU

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018 General requirements Flameproof enclosure "d" EN 60079-1:2014 Increased Safety "e" EN 60079-7:2015

Except in respect of those requirements listed under item/18 of the appendix

- 10 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 11 product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.
- 12 The marking of the product shall include the following:

II 2G Ex db IIC T* Gb or II 2G Ex db eb IIC T* Gb or II 2G Ex db eb IIB T* Gb II 2G Ex db IIB T* Gb or OF IM2 Ex db eb I Mb IM2 ExdbI Mb or

*) see parameters

DEKRA Testing and Certification GmbH Bochum, 2019-07-03

Signed: Jörg-Timm Kilisch

Managing Director

Page 1 of 5 of BVS 15 ATEX E 075 X / N1 This certificate may only be reproduced in its entirety and without any change.



- 13 Appendix
- 14 EU-Type Examination Certificate

BVS 15 ATEX E 075 X Supplement 1

- 15 **Product description**
- 15.1 Subject and type

Flameproof electric motors type 3KTC 180-225, 3KTCR 180-225, 3KTCP 180-225 and 4KTC 250-315, 4KTCR 250-315, 4KTCP 250-315

Type designation to $^{*1)}KT^{*2)*3}$ $^{*4)*4)*4}$ $^{*5)*5}$ $^{*6)}/^{*6}$ _ $^{*7)*7}$

- 1): Motor generation
 - 3: Third generation
 - 4: Fourth generation
- 2): Explosion Group
 - B: Flameproof enclosure for Group IIB
 - C: Flameproof enclosure for Group IIC
- 3): Enclosure variant
 - R: Mining motor with standard housing
 - P: Mining motor with screened housing
- 4): Frame size
 - 180 180 mm
 - 200 200 mm
 - 225 225 mm
 - 250 250 mm
 - 280 280 mm
 - 315 315 mm
- 5): Length of stator assembly
- 6): Quantity of poles
- 7): Swan neck execution

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 the supplement:

- Change to the new Directive 2014/34/EU
- Update to the current standards
- Version with extended connecting tube between connection box and motor (swan neck execution)



DEKRA S

(DAkkS

Description of Product

The enclosures of the flameproof electric motors are made of welded steel and cast iron and have a mounting place for terminal boxes.

The shaft will be fixed with ball bearings.

A terminal compartment in type of protection Flameproof Enclosure "d" or Increased Safety "e" 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 conductor bushings are used.

The cooling of the motor is realised by an external fan that is made of steel or aluminium (only Group II). The fan is driven by the electrical machine itself.

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 respectively DIN 44082). The sensors are connected in series.

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

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

The maximum permissible ambient temperatures are -50 °C to 60 °C. This temperature range may be limited as a result of the selected terminal boxes and components, or the electrical design.

If the motor is converter-fed the converter must be of type voltage-source converter with pulse width modulation.

The motor is also available in a version with extended connecting tube between connection box and motor.

15.3 Parameters

15.3.1 Electrical parameters

15.3.1.1 Circuits of the flameproof electric motors

Rated voltage 1////////////////////////////////////	7777777777			[[[]]]
3KTC 180 – 225		///up to	690	VAC
3KTCR(P) 180 - 225; 4KTC 250 - 315; 4KTCR(P) 250 - 315		/// up to	1100	VAC
Rated rotational speed	/////////500///	///up to	3600	min-1
Rated rotational speed (with converter)	//////////150///	up to	5800	min-1
Frequency (mains)		///////////////////////////////////////	50 / 60	/Hz/
Frequency (converter)	///////////////////////////////////////	///up to	////87	Hz
Duty type	/////////S1////	/// up to	S9	1111

Rated power		///////////////////////////////////////		
Frame size		7//		
180	up to // 2:	2 kW		
200	up to 3	7 kW		
225	up to 4	5 kW		
250	up to 5	5 kW		
280	up to 9) kW		
315	up to 250) kW		

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.

DEKRA Testing and Ce

CRA D

DEKRA

KRA D

D DEKR

EKRA D D DEKR DEKRA D

15.3.1.2 Electrical parameters (voltage-source converter)

Maximum permitted input voltage	Rated voltage of the motor V	
Minimum switching frequency	1.2	kHz
Current limiting value	1.5 × I _N	
Maximum overload time / Time for	60	S
operation below minimum frequency ²		
Output frequency	up to 87	Hz

The maximum overload time and the permitted time for operation below the minimum output frequency are in relation with a period of 10 minutes.

15.3.1.3 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.	

15.3.2 Thermal ratings

Permitted ambient	temperature range		
Motor type	Group II Ex db	Group II Ex db eb	Group I Ex db / Ex db eb
3KTC180 - 225			///////////////////////////////////////
4KTC250 - 315			<i>/\///////////////////////////////////</i>
3KTCR180 - 225	F0 °C < T < 160 °C	55 15 7 T 7 150 150	X///ab/ab/14/11/14/14
4KTCR250 - 315	-50 °C ≤ T _a ≤ +60 °C	-20 °C ≤ T _a ≤ +60 °C//	///-20 °C ≤ T _a ≤ +40 °C
3KTCP180 - 225		X2222000000000000000000000000000000000	<i>N/////################################</i>
4KTCP250 - 315		<i>/////////////////////////////////////</i>	<i>N//////###############################</i>

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 15.2162 EU, as of 2019-07-03

17 Special Conditions for Use

- 17.1 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 EN 60079-1:2014. For information of the dimensions of the flameproof joints contact the manufacturer.
- 17.2 Fasteners with a minimum yield stress of 640 N/mm² 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.
- 17.4 Before setting-up operation it has to be ensured that no inadmissible over voltage caused by converter supply may occur at the terminals of the motor.

Clearances and creepage distances inside the terminal box do not permit an overvoltage cause by the converter which increase:

- 3.1 x U_N for rated voltages ≤ 600 V
- 2.04 x U_N for rated voltages > 600 V and ≤ 1100 V

The insulating system of the motor may require an additional limitation of a periodic over voltage.

Page 4 of 5 of BVS 15 ATEX E 075 X / N1
This certificate may only be reproduced in its entirety and without any change.



18 Essential Health and Safety Requirements

The Essential Health and Safety Requirements are covered by the standards listed under item 9. For this product the standard EN IEC 60079-0:2018 is equivalent to the harmonized standard EN 60079-0:2012 + A11:2013 in terms of safety.

19 Drawings and Documents

Drawings and documents are listed in the confidential report.

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, 2019-07-03 BVS-Wlo/Mu A 20180372

Managing Director

