



Translation

EC-Type Examination Certificate

(1)

(2)

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

(3)

BVS 08 ATEX E 130 X

(4)

Equipment: Axial fans type AVD-450 and AVD-650

(5)

Manufacturer: Bartec - Varnost d.o.o.

(6)

Address: 1410 Zagorje ob Savi

(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 BVS PP 100/193/08 EG and BVS PP 08.1057 EG.

(9)

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

- DIN EN 13463-1:2002, Non-electrical equipment for use in potentially explosive atmospheres, part 1: basic principles and requirements with corrigendum 1:2003
- DIN EN 13463-5:2004, Non-electrical equipment for use in potentially explosive atmospheres, part 5: protection by constructive safety "c"
- DIN EN 1710:2006, Equipment and components intended for use in potentially firedamp areas of subsurface mining
- CLC/TR 50404:2003, Electrostatics - Code of practice for the avoidance of hazards due to static electricity..
- EN 60079-0:2006 General requirements
- EN 60079-1:2004 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:



I M2 c (for the fan)

I M2 Ex de I (for the motor)

DEKRA EXAM GmbH

Bochum, dated 03. November 2008

Signed: Dr. Jockers

Certification body

Signed: Dr. Eickhoff

Special services unit

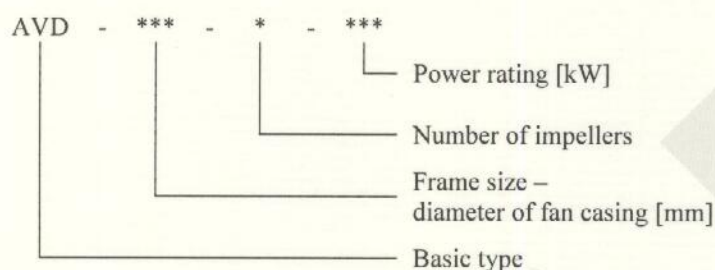
(13) Appendix to

(14) **EC-Type Examination Certificate**

BVS 08 ATEX E 130 X

(15) 15.1 Subject and type

Axial fan type AVD-450-2-7,5 (with motor type 4KTCR132*)
 Axial fan type AVD-650-1-18,5 (with motor type 4KTCR160*)
 Axial fan type AVD-650-2-30 (with motor type 3KTCR200*)



15.2 Description

The Axial Fan serves the air ventilation in firedamp areas of subsurface mining. The housing consists of three parts. In the middle housing there is the electric motor, which has been fixed firmly to the two fan housings with flanges. On the drive shaft there are one or two fan wheels, which are placed in a fan housing. The electric motor is cooled by the air passing through. The fan can be fixed to the already existing eye bolts or put on the existing skids. The junction box of the electric motor is situated outside the housing. The fan must be connected according to the operating instructions.

15.3 Parameters

Maximum rotational speed:

Axial fan type	Speed Torque per min ⁻¹
AVD-450-2-7,5	2910
AVD-650-1-18,5	2940
AVD-650-2-30	2934

(16) Test and assessment report

BVS PP 08.1057 EG as of 03.11.2008
 BVS PP 100/193/08 EG as of 30.10.2008

(17) Special conditions for safe use

The fan must be connected to the designated places to the operational potential equalisation in a way that the bleeder resistance against earth is $< 10^6 \Omega$.

After assembly of the running wheels, the fan must have a better wheel balancing quality than laid down in G 6.3 in accordance with DIN 1940-1:2003. The manufacturer has at least to examine the firmness of the running wheels and the free run in the equipment by a test run of the 1.15-fold of the maximum operation speed level of 60 seconds minimum. Alternatively, for continuously welded running wheels, a calculation of the firmness under adherence to 2/3 of the elastic limit can be sufficient.

The dimensions of the flameproof joints are in parts other than the relevant minimum or maximum values of IEC 60079-1:2004. For information on the dimensions of the flameproof joints contact the manufacturer.

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.

44809 Bochum, 03. November 2008
BVS-Ru / Her A 20070714

DEKRA EXAM GmbH



Certification body



Special services unit



1st Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate BVS 08 ATEX E 130 X

Equipment: Axial fan type AVD-450 and AVD-650

Manufacturer: Bartec - Varnost d.o.o.

Address: 1410 Zagorje ob Savi, Slovenia

Description

The Axial Fan serves the air ventilation in firedamp areas of subsurface mining. The housing consists of three parts. In the middle housing there is the electric motor, which has been fixed firmly to the two fan housings with flanges. On the drive shaft there are one or two fan wheels, which are placed in a fan housing. The electric motor is cooled by the air passing through. The fan can be fixed to the already existing eye bolt or put on the existing skids. The junction box of the electric motor is situated outside the housing. The fan must be connected according to the operating instructions.


The reason for this supplement is the update to the actual standards and the inclusion of a new enclosure with a diameter of 700 mm.

The axial fan can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report.

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 60079-0:2006	General requirements
EN 60079-1:2007	Flameproof enclosure
EN 60079-7:2007	Increased safety
DIN EN 13463-1:2009	Non-electrical equipment for use in potentially explosive atmospheres, part 1: basic principles and requirements
DIN EN 13463-5:2004	Non-electrical equipment for use in potentially explosive atmospheres, part 5: protection by constructive safety "c"
DIN EN 1710:2005+A1:2008	Equipment and components intended for use in potentially firedamp areas of subsurface mining
CLC/TR 50404:2003	Electrostatics – Code of practice for the avoidance of hazards due to static electricity

The marking of the equipment shall include the following:

 **I M2 Ex de I**

Parameters

Axial fan type	Motor type	Voltage [V]	Current [A]	I_A / I_N	UPM _{max} [1/min]	Pressure [Pa]	Air quantity [m ³ / min]
AVD-450-2-5.5	4KTCR 132*	Y 550	8.6	6.6	2923	1700	250
AVD-450-2-7.5	4KTCR 132*	Y 550	10	7.9	2910	1600	330
AVD-650-1-15	4KTCR 160*	Y 550	19.4	8	2945	2550	500
AVD-650-2-30	3KTCR 200*	Y 550	40	7.6	2950	4600	650
AVD-650-2-37	3KTCR 200*	Y 550	47.5	9	2964	4400	700
AVD-650-1-18.5	4KTCR 160*	Y 550	23.5	7.3	2940	3300	582
AVD-650-2-18.5	4KTCR 160*	Y 550	23.5	7.3	2940	3000	460
AVD-650-1-22	3KTCR 180*	Y 550	31	6.4	2931	2700	510
AVD-700-2-22	3KTCR 180*	Y 550	31	6.4	2931	3100	605
AVD-700-1-22	3KTCR 180*	Y 550	31	6.4	2931	2300	605
AVD-700-1-30	3KTCR 200*	Y 550	40	7.6	2950	2900	620
AVD-700-2-30	3KTCR 200*	Y 550	40	7.6	2950	3600	630
AVD-700-2-37	3KTCR 200*	Y 550	47.5	9	2964	4200	810

Special conditions for safe use

- The fan must be connected to the designated places to the operational potential equalisation in a way that the bleeder resistance against earth is $< 10^6 \Omega$.
- After assembly of the running wheels, the fan must have a better wheel balancing quality than laid down in G 6.3 in accordance with DIN 1940-1:2003. The manufacturer has at least to examine the firmness of the running wheels and the free run in the equipment by a test run of the 1.15-fold of the maximum operation speed level of 60 seconds minimum. Alternatively, for continuously welded running wheels, a calculation of the firmness under adherence to 2/3 of the elastic limit can be sufficient.
- 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.

Test and assessment report

BVS PP 08.1057 EG as of 03.03.2011 and BVS PP 100/193/08 EC as of 17.03.2010

DEKRA EXAM GmbH

Bochum, dated 03.03.2011

Signed: Simanski

Certification body

Signed: Dr. Eickhoff

Special services unit

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.

44809 Bochum, 03.03.2011

BVS-Kr/Schae A 20090850

DEKRA EXAM GmbH



Certification body



Special services unit