Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

(1) # EC-TYPE-EXAMINATION CERTIFICATE

(Translation)

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-type-examination Certificate Number:

PTB 04 ATEX 2005

(4) Equipment: Acceleration sensor, type ASA-02x

(5) Manufacturer: Brüel & Kjaer Vibro GmbH

(6) Address: Leydheckerstr. 10, 64293 Darmstadt, Germany

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC 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 confidential report PTB Ex 04-23509 .

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

EN 50014:1997 + A1 + A2 **EN 50020:2002**

(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 schedule to this certificate.

(11) This EC-type-examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to the 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:

Ex II 2 G EEx ia IIC T6/T5/T4

Zertifizierungsstelle Explosionsschutz
By order

Dr.-Ing. U. Gerlach

Braunschweig, February 18, 2004

SCHEDULE

EC-TYPE-EXAMINATION CERTIFICATE PTB 04 ATEX 2005

Description of equipment

The acceleration sensor, type ASA-02x is used for the measurement of mechanical vibrations and for the monitoring of the bearing state of machines.

The sensor is installed inside of hazardous areas.

For relationship of the temperature class and the permissible ranges of the ambient temperature reference is made to the following table.

temperature class	permissible range of the ambient temperature
T6	-20 ... +70 °C
T5	-20 ... +80 °C
T4	-20 ... +95 °C

Electrical data

Voltage supply. ..... type of protection Intrinsic Safety EEx ia IIC
Only for connection to a certified intrinsically safe circuit.
Maximum values:

U_i = 28 V
I_i = 70 mA
P_i = 500 mW
C_i = 33 nF
L_i = 0.1 mH

(16) Test report PTB Ex 04-23509

(17) Special conditions for safe use

none

(18) Essential health and safety requirements

met by compliance with the standards mentioned above

Zertifizierungsstelle Explosionsschutz
By order:

Dr.-Ing. U. Gerlach

Braunschweig, February 18, 2004

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

1. SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 04 ATEX 2005

(Translation)

Equipment: Acceleration sensor, type ASA-02x

Marking: ⟨Ex⟩ **II 2 G Ex ia IIC T6 or II 2 D Ex iaD 21 T145 °C**

Manufacturer: Brüel & Kjaer Vibro GmbH

Address: Leydheckerstr. 10, 64293 Darmstadt, Germany

Description of supplements and modifications

In the future the acceleration sensor, type ASA-02x may also be manufactured according to the documents listed in the test report. The modifications concern the internal and external construction.

The standards are adapted to the current state.

The electrical data are supplemented.

Electrical data

Supply circuit ..... type of protection Intrinsic Safety Ex ia IIC only for connection to a certified intrinsically safe circuit.

Maximum values

U_i = 28 V
I_i = 70 mA
P_i = 500 mW
L_i = 0.2 mH

For relationship between the type of the sensor, the length of the connecting cable and the effective total capacitance C_i, reference is made to the following table:

type of sensor	cable length [m]	C_i [nF]
ASA-022/050/0	5	33
ASA-022/100/0	10	33
ASA-022/150/0	15	35

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

1. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 04 ATEX 2005

ASA-022/200/0	20	36
ASA-022/250/0	25	38
ASA-022/300/0	30	40
ASA-022/350/0	35	41
ASA-022/400/0	40	43
ASA-022/450/0	45	44
ASA-022/500/0	50	46

All other specifications of the EC-type examination certificate apply without changes.

Applied standards

EN 60079-0:2006
EN 60079-11:2007

EN61241-0:2006
EN 61241-11:2006

Test report: PTB Ex 08-28008

Zertifizierungsstelle Explosionsschutz
By order:

Dr.-Ing. U. Johannsmeyer
Direktor und Professor

Braunschweig, February 29, 2008

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

2. SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 04 ATEX 2005

(Translation)

Equipment: Acceleration sensor, type ASA-02x

Marking: Ⓔx **II 2 G Ex ia IIC T6 or II 2 D Ex iaD A21 T145 °C**

Manufacturer: Brüel & Kjær Vibro GmbH

Address: Leydheckerstr. 10, 64293 Darmstadt, Germany

Description of supplements and modifications

In the future the acceleration sensor, type ASA-02 may also be manufactured according to the test documents listed in the test report.

The standards are adapted to the current state.

Further modifications have not been made.

All other specifications of the EC-type examination certificate including the 1st supplement apply without changes.

In the future the marking will read:

Ⓔx **II 2 G Ex ia IIC T6 Gb und II 2 D Ex ia IIIC T145 °C Db**

Applied standards

EN 60079-0:2009 EN 60079-11:2012

Test report: PTB Ex 12-22124

Zertifizierungssektor Explosionsschutz
On behalf of PTB:

Braunschweig, August 2, 2012

Dr.-Ing. U. Johannsmeyer
Direktor und Professor

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