



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx PTB 12.0033 Issue No: 2 Certificate history:
Status: **Current** Page 1 of 5 Issue No. 2 (2016-09-29)
Date of Issue: **2016-09-29** Issue No. 1 (2015-03-05)
Applicant: **Brüel & Kjær Vibro GmbH** Issue No. 0 (2012-10-30)
Leydheckerstrasse 10
64293 Darmstadt
Germany
Equipment: **Acceleration sensor, type ASA-06x**
Optional accessory:
Type of Protection: **Intrinsic Safety**
Marking: Ex ia IIC T6 ... T1 Ga resp. Ex ia IIC T6 ... T1 Gb and Ex ia IIIC T145 °C Db

Approved for issue on behalf of the IECEx
Certification Body:

Dr.-Ing. F. Lienesch

Position:

Head of Department "Explosion Protection in Sensor Technology and Instrumentation"

Signature:
(for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

Physikalisch-Technische Bundesanstalt (PTB)
Bundesallee 100
38116 Braunschweig
Germany





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Manufacturer: **Brüel & Kjær Vibro GmbH**
Leydheckerstrasse 10
64293 Darmstadt
Germany

Additional Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Edition:6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-26 : 2006 Edition:2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

[DE/PTB/ExTR16.0039/00](#)

Quality Assessment Report:

[DE/PTB/QAR11.0003/02](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The acceleration sensor, type ASA-06x is used for the measurement of mechanical vibrations and for monitoring the bearing state of machines. It is designed as three variants, A (with open-ended cable), B (with screwed connection) and C (with plug Connection part welded onto the side of the enclosure).

The sensor is intended for application as EPL Ga or Gb equipment (gases, vapours, haze) or EPL Db (combustible dust-air-mixtures).

For further information reference is made to the annex.

CONDITIONS OF CERTIFICATION: NO



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

- Adaption to the current state of the standards
- IEC 60079-26 is no longer applicable
- Introduction of the new sensor, type ASA-066 (variant C)
- Extension of the permissible range of the ambient temperature to $-55\text{ }^{\circ}\text{C}$ for the sensors of types ASA-063, ASA-064, ASA-066 (new) and ASA-069
- Correction of a type designation in the electrical data given in the annex to issue 2 of the certificate
- Introduction of a groove on the surface of the housing of variant C to countersink fixing screws
- Introduction of an optional encapsulation applied additionally on the bottom side of the PCB
- Extension of the type code (ASA-06x-xxx/xxx/x)
- Alteration of the marking (specification of the temperature class range T6 ... T1, instead of only T6)
- The cable fixation in the plug connectors for variant C (ASA-064, ASA-066) may be designed in future as 3 variants (cf. description + drawing No. C105563.001, sheet 2). For this purpose also the casting compounds, types Delomonopox GE725 or QSIL553 may be used alternatively
- Changes of components on the PCB of the charge amplifier (C2A reduced from 100 pF to 91 pF, V4 changed to 2.2 V, V5 substituted by R11 (0 Ω))



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Additional information:

For thermal and electrical specifications reference is made to the Annex.

Annex:

[Annex to IECEx PTB 12.0033, issue-2.pdf](#)



Applicant: Brüel & Kjær Vibro GmbH
Electrical apparatus: Acceleration sensor, type ASA-06x

The acceleration sensor, type ASA-06x is used for the measurement of mechanical vibrations and for monitoring the bearing state of machines. It is designed as three variants, A (with open-ended cable), B (with screwed connection) and C (with side-mounted plug connector).

The sensor is intended for application in hazardous areas of categories 1G or 2G (gases, vapours, haze) or category 2D (combustible dust-air-mixtures).

For relationship between type code and variant reference is made to the following table:

Type	Variant
ASA-062 ASA-068	Variant A with permanently mounted cable
ASA-063 ASA-069	Variant B with plug connector
ASA-064 ASA-066	Variant C with side-mounted plug connector

Types ASA-062 and ASA-068 with permanently mounted cable (variant A)

Category 1G-equipment

When the acceleration sensor is installed in hazardous areas requiring category-1G equipment the following relationship between temperature class and permissible ambient temperature applies, as tabulated below.

Temperature class	$T_{amb, max}$
T6	-20 °C ... 50 °C
T5	-20 °C ... 60 °C
T4	-20 °C ... 90 °C
T3, T2, T1	-20 °C ... 125 °C

For applications requiring category-1G equipment, the process pressure of the media shall range from 0.8 to 1.1 bar. In case of a deviation from these conditions at the measuring sensor, it shall be considered that the acceleration sensor (even in case of failure) does not heat up by more than 16 K on the encapsulation surface and that the operating company is responsible for the safe operation of the system with respect to the pressures / temperatures of the materials used.



Category 2G- or 2D-equipment

When the acceleration sensor is installed in hazardous areas requiring category-2G equipment or in hazardous areas of category 2D where combustible dust-air-mixtures need to be assumed, the following relationship between temperature class, the permissible ambient temperature and the maximum surface temperature applies as tabulated below.

Temperature class	T _{amb, max.}	T _{surface, max}
T6	-20 °C ... 65 °C	85 °C
T5	-20 °C ... 80 °C	100 °C
T4	-20 °C ... 115 °C	125 °C
T3, T2, T1	-20 °C ... 125 °C	145 °C

**Types ASA-063 and ASA-069 with plug connector (design B) and
Type ASA-064 and ASA-066 with side-mounted plug connector (design C)**

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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 = 95 mA
P_i = 665 mW

L_i negligibly low

Types ASA-062 and ASA-068
with connecting cable

C_i = 15 nF with 10 m connecting cable
C_i = 22 nF with 50 m connecting cable

Types ASA-063 and ASA-069
with plug connector

C_i = 15 nF without connecting cable

Types ASA-064 and ASA-066
with side-mounted plug connector

Marking

Ex ia IIC T6 ... T1 Ga or
Ex ia IIC T6 ... T1 Gb or
Ex ia IIC T145 °C Db