



(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 02 ATEX 2140

(4) Equipment: Eddy-current sensor, type INA-xxx

(5) Manufacturer: Brüel & Kjær 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 02-22280.

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

EN 50014:1997 + A1 + A2

EN 50020:1994

(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.

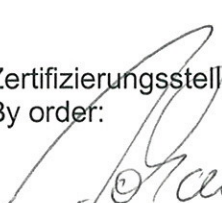
(11) This EC-type-examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

 **II 2 G EEx ib IIC T6**

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, November 25, 2002


Dr.-Ing. U. Johannsmeyer
Regierungsdirektor



SCHEDULE

(13)

(14) **EC-TYPE-EXAMINATION CERTIFICATE PTB 02 ATEX 2140**

(15) Description of equipment

The eddy-current sensor, type INA-xxx is used for position measurement in combination with stationary or portable measuring devices depending on it's design.

The sensor is intended for use inside hazardous areas.

The assignment of the temperature class to the permissible ambient temperature shall be taken from the following table:

temperature class	T _{amb} max.
T6	60 °C
T5	75 °C
T4	110 °C

Electrical data

Supply circuit type of protection Intrinsic Safety EEx ib IIC
for connection to a certified intrinsically safe circuit
only

Maximum values:

U_i = 30 V
I_i = 100 mA
P_i = 500 mW
L_i = 0.5 mH
C_i = 24 nF

(16) Test report PTB Ex 02-22280


(17) Special conditions for safe use

none

- (18) Essential health and safety requirements
met by the standards quoted

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, November 25, 2002


Dr.-Ing. U. Johannsmeyer
Regierungsdirektor



1. SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 02 ATEX 2140

(Translation)

Equipment: Eddy-current sensor, type INA-xxx

Marking: II 2 G Ex ib IIC T6 or II 2 D Ex ibD 21 T135 °C

Manufacturer: Brüel & Kjaer Vibro GmbH

Address: Leydheckerstr. 10, 64293 Darmstadt, Germany

Description of supplements and modifications

In the future the eddy-current sensor, type INA-xxx 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 types of protection are supplemented.

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

$$U_i = 30 \text{ V}$$

$$I_i = 100 \text{ mA}$$

$$P_i = 500 \text{ mW}$$

$$C_i = 38 \text{ nF}$$

$$L_i = 0.6 \text{ mH}$$

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]
INA-../50/..	5	24

1. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 02 ATEX 2140

INA-../100/..	10	24
INA-../150/..	15	26
INA-../200/..	20	28
INA-../250/..	25	29
INA-../300/..	30	31
INA-../350/..	35	33
INA-../400/..	40	34
INA-../450/..	45	36
INA-../500/..	50	38

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

Applied standards

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

EN 61241-0:2006
EN 61241-11:2006

Test report: PTB Ex 08-28009

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, February 29, 2008


Dr.-Ing. U. Johannsmeyer
Direktor und Professor



2. SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 02 ATEX 2140

(Translation)

Equipment: Eddy-current sensor, type INA-xxx

Marking:  II 2 G Ex ib IIC T6 or II 2 D Ex ibD 21 T135 °C

Manufacturer: Brüel & Kjær Vibro GmbH

Address: Leydheckerstr. 10, 64293 Darmstadt, Germany

Description of supplements and modifications

In the future the eddy-current sensor, type INA-xxx 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:

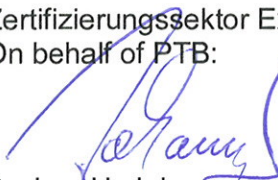
 II 2 G Ex ib IIC T6 Gb and II 2 D Ex ib IIC T135 °C Db

Applied standards

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

Test report: PTB Ex 12-22123

Zertifizierungssektor Explosionschutz
On behalf of PTB:


Dr.-Ing. U. Johannsmeyer
Direktor und Professor



Braunschweig, August 2, 2012

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3. SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 02 ATEX 2140 (Translation)

Equipment: Eddy-current sensor, type INA-xxx

Marking:  II 2 G Ex ib IIC T6 Gb or II 2 D Ex ib IIIC T135 °C Db

Manufacturer: Brüel & Kjær Vibro GmbH

Address: Leydheckerstr. 10, 64293 Darmstadt, Germany

Description of supplements and modifications

In the future the eddy-current sensor, type INA-xxx may also be manufactured and operated according to the test documents listed in the test report. The modifications concern the adaption to the current state of the standards and, therefore, the revision of the type label (designation of manufacturer address).

Technical modifications have not been made.

In the future the marking will read:

 II 2 G Ex ib IIC T6 ... T4 Gb or II 2 D Ex ib IIIC T135°C Db

All other specifications of the EC-type examination certificate including the 1st and 2nd supplement apply without changes also to this 3rd supplement.

Applied standards

EN 60079-0:2012 + A11:2013

EN 60079-11:2012

Test report: PTB Ex 15-24260

Konformitätsbewertungsstelle - Sektor Explosionsschutz

Braunschweig, June 29, 2015

On behalf of PTB:


Dr.-Ing. U. Johannsmeyer
Direktor und Professor



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EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.