

[1]

EU-TYPE EXAMINATION CERTIFICATE

[2] Product Intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

[3] EU-Type Examination Certificate Number: **DNV 21 ATEX 50821X** **Issue 0**

[4] Product: **Load cell with amplifier(s)**

[5] Manufacturer: **Vishay Nobel AB**

[6] Address: **Box 423
69127 Karlskoga
SWEDEN**

[7] This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] DNV Product Assurance AS, notified body number 2460, in accordance with Article 17 and Article 21 of Directive 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 confidential reports listed in item 16.

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with: **EN IEC 60079-0:2018, EN 60079-11: 2012 and EN 50303 :2000**

Where additional criteria beyond those given here have been used, they are listed at item 18 in the Schedule.

[10] If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

[11] This EU-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product in accordance to the Directive 2014/34/EU. 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:

	I 1 M1	Ex ia I Ma	- 45°C ≤ Ta ≤ +70°C
	II 1 G	Ex ia IIC T4 Ga	- 45°C ≤ Ta ≤ +70°C
	II 1 D	Ex ia IIIC T79°C Da	- 45°C ≤ Ta ≤ +70°C

Date of issue:
2021-06-04



Asle Kaastad
For DNV Product Assurance AS
The Certificate has been digitally signed.
See www.dnv.com/digitalsignatures for info



[13] **Schedule**

[14] **EU-Type Examination Certificate No:** DNV 21 ATEX 50821X Issue 0

[15] **Description of Product**

KxxD-RA(D) is a series of load cells, this certificate covers the KIMD and KOSD types. They incorporate resistive strain gauges, measuring the shear force, and types of replaceable signal conditioning amplifiers with 2-wire 4-20mA current loop output with HART communication and NAMUR high error signalling. Housed in an IP67 approved enclosure. These load cells are approved for use in an explosive gas and dust area, provided that suitable intrinsic safety barriers are used. Two different metallic cylinders are included: KOSD is made of metal and KIMD which also is made of metal but in addition have compound as a part of the external enclosure and therefore includes a Warning – Potential electrostatic hazard.

The load cell consists of replaceable amplifier, housed in the metallic cylinder ends, filled with casting compound. Three different end terminations are included: connector (LCAMP110), cable (LCAMP120) and blind (LCAMP130).

In addition the load cell can be equipped with either single or double Bridge.

Type designation

The KxxD load cell can be used with replaceable signal amplifiers as follows :

- KxxD-RA: Primary LCAMP110 with 4-pin M12 connector.
- KxxD-RA: Primary LCAMP120 with fixed shielded 4 wire cable.
- KxxD-RAD: Primary LCAMP110 or 120 and optional Secondary LCAMP110, 120 or blind 130.

The RA-versions have one electrical circuit and the RAD-version two separate electrical circuits. For the RAD-version the safety parameters are applicable to each circuit. Connection to indicator and power supply is made by two-wires in a common external connector or fixed cable for each amplifier.

Intrinsic Safety Parameters

Maximum input voltage: $U_i=30\text{ V}$
Maximum input current: $I_i=100\text{ mA}$
Maximum input power: $P_i=0.7\text{ W}$
Maximum internal capacitance: $C_i=57\text{ nF}$
Maximum internal inductance: $L_i=4.4\text{ }\mu\text{H}$

- Total cable capacitance must not exceed 9.0nF for use in Group IIC.
- Total cable capacitance must not exceed 503nF for use in Group IIB and Group III.
- Total cable capacitance must not exceed 3 μF for use in Group I.

Degrees of protection (IP Code)

IP67 according to IEC 60529.

Ambient temperature:

- 45°C \leq Ta \leq +70°C

Routine tests

None

[16] **Report No.:** 233865

[17] Specific Conditions of Use

1. The load cell shall only be connected to equipment that has adequate safety parameters according to the load cell's safety parameters [15].
2. The models KIMD-RA and KIMD-RAD have outside potted cavities. No rubbing on these non-metallic surfaces are allowed.
3. The free end of the connected external cable must be installed such that the terminations are afforded a degree of protection of at least IP20.
4. Use of secondary current loop output on primary side when using LCAMP110 or LCAMP120 as secondary amplifier on KxxD-RAD is not allowed.

Notes for manufacture, installation and operation:

- Additional manufacturing locations.
- Manufacturers HQ address:
Vishay Nobel AB
Skrantahöjdsvägen 40
691 46 Karlskoga
SWEDEN
- Manufacturers Production address:
Vishay Nobel AB
Gjuterigatan 12
693 35 Degerfors
SWEDEN

[18] Essential Health and Safety Requirements

Met by compliance with the requirements mentioned in item 9.

[19] Drawings and documents

Number	Title	Rev.	Date
270150	ATEX & IECEx DOCUMENT LIST	4	2021-04-29

[20] Certificate History

Issue	Description	Issue date	Report no.
0	Prime certificate released	2013-03-21	204789
1	Design optimization, none of the components on which the intrinsic safety depends were changed. Safety parameter Ci changed from 56.6nF to 57nF.	2013-07-09	240583
2	Minor changes of the design, mining approval and issue IECEx certificate.	2014-02-13	D0001187
3	Minor changes of the design and reduction of the ambient temperature from -40°C to -45°C.	2015-01-13	D0001187 Rev 1
0	Original issue, replaces Nemko 13ATEX1522X. Update to latest EN 60079-0:2018	2021-06-04	233865

END OF CERTIFICATE