

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 BKI 16.0002	Issue No: 0	Certificate history: Issue No. 0 (2016-10-27)
Status:	Current	Page 1 of 3	
Date of Issue:	2016-10-27		
Applicant:	NIVELCO Process Control Co. H-1043 Budapest, Dugonics utca 11. Hungary		
Equipment:	Vibration fork level switch family		
Optional accessory:	NIVOSWITCH R**-4**-*Ex		
Type of Protection:	General requirements,		
Marking:	Ex d IIB T6...T4 Ga/Gb $-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +70^{\circ}\text{C}$		

Approved for issue on behalf of the IECEx
Certification Body:

János Müllner

Position:

managing director

Signature:
(for printed version)

Date:

2016-10-27

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:

Testing Station for Explosion Proof Equipment
H 1037 BUDAPEST
MIKOVINY S.u. 2-4
Hungary





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Manufacturer: NIVELCO Process Control Co.
H-1043 Budapest, Dugonics utca 11.
Hungary

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 60079-1 : 2014-06 Edition:7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-26 : 2014-10 Edition:3.0	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:

[HU/BKI/ExTR16.0002/00](#)

Quality Assessment Report:

[HU/BKI/QAR09.0001/06](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The vibration forks type NIVOSWITCH R**-4**-*Ex are applicable for level switching tasks of liquids. The tuning fork shaped sensor device is a vibrating mechanical system, which is vibrated by a piezo-electric crystal on resonant frequency. The measured material arriving in the fork changes the frequency of tuning fork resp. the amplitude of vibration. In the presence of an appropriate amount of material, the electronics switches, driven an output relay.

See details in Addendum to IECEx BKI 16.0002.

CONDITIONS OF CERTIFICATION: NO

Annex:

[Addendum to IECEx BKI 16.0002.pdf](#)

1. Description

The vibration forks type NIVOSWITCH R**-4**-Ex are applicable for level switching tasks of liquids. The tuning fork shaped sensor device is a vibrating mechanical system, which is vibrated by a piezo-electric crystal on resonant frequency. The measured material arriving in the fork changes the frequency of tuning fork resp. the amplitude of vibration. In the presence of an appropriate amount of material, the electronics switches, driven an output relay.

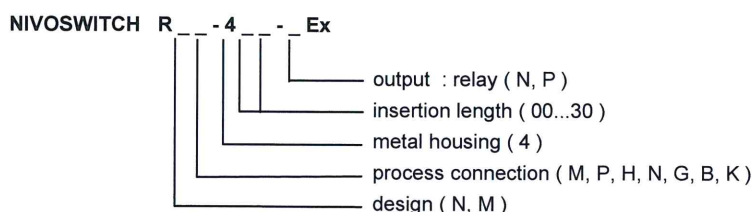
The apparatus consists of three main parts:

- housing of electronics, made of cast aluminium alloy
- encapsulated electronics
- stainless steel welded sensor enclosure with vibrating fork unit

The housing and the sensor enclosure are divided from each other with an explosion protective rated line bushing. Hence, they build two fully separated Ex d compartments.

Between the two compartments are a separation wall with wall thickness above 3 mm and an Ex d rated line bushing sealed with "O"-ring. The wall thickness of the stainless steel vibration probe is everywhere above 1 mm and since it does not contain ignition parts, this construction is fully in compliance with requirements of EPL Ga.

2. Type assortment



3. Electrical data

Supply voltage	20...250 VAC (50/60 Hz) or 20...36 VDC
Power consumption	AC: 1,2 VA ... 17 VA / DC: < 3 W
Type of relay output	one or two SPDT
Output rating	250 V AC, 8 A, AC 1 resp. 250 V AC, 8 A, AC 1
Electric shock protection:	I. class / earthing/ (IEC 60364-4-41)

4. Temperature range

- ambient temperature: -40°C ... +70°C
- medium temperature: according to table

temperature data	R**-4**N Ex , R**-4**P Ex			
medium temperature min. -40°C ... max. :	+70°C	+80°C	+95°C	+130°C
ambient temperature min. -40°C ... max. :	+65°C	+50°C	+65°C	+70°C
max. surface temperature of process connection	+70°C	+80°C	+95°C	+125°C
max. surface temperature	+75°C	+80°C	+95°C	+130°C
temperature class	T6		T5	T4

5. Ingress protection

The enclosure provides a degree of protection IP 67.

6. Special conditions for safe use: none

7. Manufacturer's Documents

Document Title:	Document Reference No.:	Rev.:	Date:
Technical description	RNM-400-NI-060-0M	0	2016.09.06.
Ex vibrating fork	RNM-410-NI-000-0X	0	2013.12.18.
Ex welded enclosure	RNM-410-NM-310-00	0	2016.10.12.
Ex. Data plate	RNM-400-NI-050-0L	0	2014.02.07.
Ex Threaded plug 1/2" NPT	TNP-561-8M-000-03	0	2004.12.15.
Ex. Printed cover	RNM-410-RF-400-00	0	2015.12.15.
Ex NIVOSWITCH RNM-400 R-card RNM4PR01.SCH electrical schematic diagram	RNM-400-PM-210-00 (RNM4PR01.SCH)	0	2016.09.14.
„R" card, parts list	RNM-400-PM-210-00		2016.09.14.



ADDENDUM TO IECEx CERTIFICATE OF CONFORMITY
IECEX BKI 16.0002

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Document Title:	Document Reference No.:	Rev.:	Date:
Ex NIVOSWITCH RNM-400 P-card RF400P01.SCH electrical schematic diagram	RFM-400-0M-212-00 (RF400P01.SCH)	0	2016.09.12.
„P” card, parts list	RFM-400-0M-212-00		2016.09.12.
Routine Test for NIVOSWITCH R__-4__-__Ex	RNM-400-PM-060-0U	1	2016.09.12.
User's Manual	rfm4000a0600h_04	04	2016.
Certificate of Conformity	IECEX EPS 11.0004X	Issue 1	2013.01.22.
Certificate of Conformity	IECEX EPS 13.0045U	Issue 0	2014.02.07.
Certificate of Conformity	IECEX PTB 06.0081 U	Issue 1	2012.01.27.
data sheet of installed materials resp. components	different		