



# TYPE APPROVAL CERTIFICATE

Certificate No:  
**TAA00001MH**  
Revision No:  
**1**

## This is to certify:

That the Level Switches

with type designation(s)  
**NIVOMAG MK\*-2\*\*-\* (Ex) and MK\*-3\*\*-\* (Ex) Magnetic Floating Level Switch**

Issued to

**Nivelco Ipari Elektronika Zrt.**  
**Budapest, Hungary**

is found to comply with

**DNV rules for classification – Ships, offshore units, and high speed and light craft**

## Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

## Location classes:

Temperature	D
Humidity	B
Vibration	A
EMC	Not relevant
Enclosure	B, D for MKU-2** and MKU-3**

Issued at **Høvik** on **2022-12-21**

for **DNV**

This Certificate is valid until **2027-06-30**.

DNV local unit: **Budapest**

Approval Engineer: **Ståle Sneen**

**Frederik Tore Elter**  
**Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.  
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Form code: TA 251

Revision: 2022-09

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## Product description

NIVOMAG MK\*-2\*\*-\* (/Ex) and MK\*-3\*\*-\* (/Ex) magnetic float level switch.

Switch: 1 or 2 micro-switches with 1 closing and 1 opening contact  
Switching power:  
Standard version: 250 V AC12 10 A; 220 V DC13 0.6 A  
Ex-version: 250 V AC12 2.5A; 220 V DC13 0.3 A

Cable NSSHOEU-J 05x1,5 GE or other cables of NSSHöu-J type are approved for integrated use with NIVOMAG MKU, MKV, MKZ models.

## Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

## Application/Limitation

Maximum horizontal float arm length covered by this Type Approval is 300 mm.

Level switches with a vertical floater over 1000 mm should be provided with an additional guide or fixing.

Ex installations to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

Ex-certification is not covered by this certificate and the following paragraph, which is for information only, is based on information received from the manufacturer, but not verified by DNV.

Information on Ex-Certification received from manufacturer – Not verified by DNV		
Equipment	Marking	Certificate No.
MK*-***-** Ex	Ⓔ II 1/2 G Ex d e mb IIC T6...T2 Ga/Gb	BKI 16 ATEX 0013 X

## Type Approval documentation

### Test reports:

No.: 221-051-07346 by Hungarian Institute for Testing and Certification of Electrical Equipment (MEEI), dated 10/01/1995.

No.: 221-051-07408 by MEEI, dated 31/01/1995.

No.: 28202818 001 by MEEI, dated 2006-10-03.

No.: 28203174 001 by MEEI, dated 2006-12-04.

No.: 28202614 001 by MEEI, dated 2006-10-02.

No.: 59/2005 by Institute of Materials and Environmental Chemistry, Chemical Research Center, Hungarian Academy of Sciences, dated August 2, 2005.

No.: I:\PISTAMK\NORSJE01.DOC and H:\meresiut\Mk\_2\MK2V0A00.DOC by Nivelco, dated 17.05.2006.

### Ex-certificate:

No.: BKI 16 ATEX 0013 X issued 2016 April 8.

### Technical documentation issued by Nivelco:

Binder No. MKA-210-1M-060-0M dated 2006-05-19.

Drawing No. MKA-210-0M-100-01 rev. 0.

Drawing No. MKA-210-0N-000-00 rev. 0.

Drawing No. MKA-210-9M-100-01 rev. 0.

Drawing No. MKA-210-9M-200-00 rev. 1.

Drawing No. MKA-210-9N-000-00 rev. 1.

Drawing No. MKU-210-0N-000-00 rev. 0.

Drawing No. MKU-210-9N-000-00 rev. 1.

Drawing No. MKA-210-0M-051-01 rev. 1.

Drawing No. MKA-210-9M-011-03 rev. 0.

Drawing No. MKA-210-9M-100-03 rev. 0.

Drawing No. MKA-210-0M-000-02 rev. 8.

Drawing No. MKA-210-0N-050-01 rev. 1.

Drawing No. MKA-210-9N-050-01 rev. 1.

Drawing No. MKA-210-0M-051-00 rev. 1 – Type table MK.

Drawing No. MKA-310-0M-050-01 rev. 0 – Data label MK3.

Drawing No. MKA-310-0M-000-00 rev. 0 – Assembly Floating level-switch MK3.

Drawing No. MKU-310-0M-000-00 rev. 0 – Assembly Floating level-switch Underwater design MK3.  
Drawing No. MKA-310-9M-050-01 rev. 0 – Data label Ex MK3.  
Drawing No. MKA-310-9M-000-00 rev. 0 – Assembly Ex. Floating level-switch MK3.  
Drawing No. MKU-310-9M-000-00 rev. 0 – Assembly Ex. Floating level-switch Underwater design MK3.  
MK-200 Magnetic Floating Level Switch User's Manual mka2100a0600h\_10.  
Data sheet for Rubber insulated wire NSSHÖU-J/-O acc. to VDE 0250 T. 812 (DBL\_NSSHÖU.PDF dtd. 2008-07-15).  
Type approval renewal assessment report for TAA00001MH, DNV Budapest 2022-08-10.

### Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021.

### Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number
- power supply ratings

### Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE