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 12.0002X

Issue No: 1

Certificate history:
Issue No. 1 (2019-03-06)
Issue No. 0 (2012-05-08)

Status: **Current**

Date of Issue: **2019-03-06**

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

Equipment: **Magnetostrictive 2-wire level transmitter family NIVOTRACK M**-5***-* Ex**

Optional accessory: - -

Type of Protection: **General requirements, Intrinsic safety "i", Flameproof enclosures "d"**

Marking:

Ex ia IIB T6...T5 Ga

Ex db IIB T6...T5 Gb

Ex db ia IIB T6 Ga/Gb

$-40\ °C \le T_{amb} \le +70\ °C$

$-25\ °C \le T_{amb} \le +70\ °C$ with LCD module

Approved for issue on behalf of the IECEx Certification Body: Edit Molnár

Position: Head of the Certification Body

Signature:
(for printed version)

Date: 2019-03-06

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.

Certificate issued by:

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

Robbanásbiztos Berendezések BKI Vizsgáló Állomása Ex

IECEx Certificate of Conformity

Certificate No:	IECEx BKI 12.0002X	Issue No: 1
Date of Issue:	2019-03-06	Page 2 of 5
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 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 : 2017 Edition:7.0	Explosive atmospheres - Part 0: Equipment - General requirements
IEC 60079-1 : 2014-06 Edition:7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-11 : 2011 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

*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/ExTR12.0002/00 HU/BKI/ExTR12.0002/01

Quality Assessment Report:

HU/BKI/QAR09.0001/09

IECEx Certificate of Conformity

Certificate No: IECEx BKI 12.0002X Issue No: 1

Date of Issue: 2019-03-06

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The NIVOTRACK M transmitter is a multifunction float-type level gauge, destined for high accuracy level metering of liquids in normal or potentially explosive environment.

See details in Addendum to IECEx BKI 12.0002.

SPECIFIC CONDITIONS OF USE: YES as shown below:

In case of Ex ia IIB T6…T5 Ga protected equipment version with alumimium alloy enclosure, the aluminum-content of enclosure exceeds the limit, thus the equipment must be protected against impact and friction effects.

The flameproof joints of equipment are not permitted to repair according to the requirements of chapter 5.1 of standard IEC 60079-1:2014.

The risk of electrostatic discharge must be minimized at installation, especially plastic covered equipment with order code starting with MEU or MGU may be electrostatically charged, therefore:

- Medium to measure must be electrically conductive and with specific resistance not exceeding the value of 10^4 Ω even on the most unfavourable places and under the most unfavourable conditions.
- Speed as well as way of filling and emptying should be chosen according to the medium.

IECEx Certificate of Conformity

Certificate No: IECEx BKI 12.0002X Issue No: 1

Date of Issue: 2019-03-06

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

Issue 1

- introducing the transmitter version with stainless steel housing (NIVOTRACK M**-7**-*)
- introducing the transmitter versions with Triclamp connections (NIVOTRACK M*J-***-*; NIVOTRACK M*M-***-*, NIVOTRACK M*O-***-*, NIVOTRACK M*P-***-*, NIVOTRACK M*R-***-*)
- introducing the transmitter verson with IP68 degree of protection type NIVOTRACK M**-***-9 (introducing the application of enclosure with IP68 protection for the types with Ex ia protection mode)
- extending the possible nominal length of the transmitters probe (code: G, H, J)
- modification of the type designation (see in addendum) because of introducing the transmitter version with stainless steel housing (NIVOTRACK M**-7**-*), introducing the transmitter versions with Triclamp connections (NIVOTRACK M*J-***-*; NIVOTRACK M*M-***-*, NIVOTRACK M*O-***-*, NIVOTRACK M*P-***-*, NIVOTRACK M*R-***-*), introducing the transmitter verson with IP68 degree of protection type NIVOTRACK M**-***-9 and introducing the transmitter versions with nominal length of probe G, H, J
- updating the manufacturer's technical documentation of the device concerning the application of transmitter versions with stainless steel housing, application of transmitters with Triclamp connection, application the extended nominal length of transmitter probe (code: G, H, J) and the application of IP68 enclosure for transmitters with Ex ia protection mode.

See details in Addendum to IECEx BKI 12.0002X Issue 1

IECEx Certificate of Conformity

Certificate No: IECEx BKI 12.0002X Issue No: 1

Date of Issue: 2019-03-06 Page 5 of 5

Additional information:

See details in Addendum to IECEx BKI 12.0002X Issue 1

Annex:

Addendum to IECEx BKI 12.0002.pdf

Addendum to IECEx BKI 12.0002X Issue 1.pdf

1. Description

The NIVOTRACK M transmitter is a multifunction float-type level gauge, destined for high accuracy level metering of liquids in normal or potentially explosive environment. The output signal is 4...20 mA analogue current and/or digital HART communication. The enclosure of transmitter is made of painted cast aluminium alloy (Mg <6%). The float and the probe is made of stainless steel. The transmitter can be optionally equipped with LCD display module, in this case the cover includes a light-transmitting part made of glass. The equipment can be made with flexible or rigid tube.

2. Type assortment

NIVOTRACK M □□ - 5□□ - □ Ex

Type	Code
Transmitter	T
Transmitter+display	B
Transmitter PFA coated probe	E
Transmitter+display PFA coated probe	G
Transmitter mini	M
Transmitter mini + display	C

Probe / Process connection	Code
Tube 1" BSP	A
Tube 2" BSP	C
Tube 1" NPT	D
Tube 2" NPT	G
Tube, w/o process conn	U*
Flexible 2" BSP	K
Flexible 2" NPT	N
Flexible, w/o proc. conn.	Z
Rigid tube for NIVOFLIP, with clamp, without float	L

Code	Nominal length		Code
0	0 m	0 m	0
1	1 m	0.1 m	1
2	2 m	0.2 m	2
3	3 m	0.3 m	3
4	4 m	0.1 m	4
5	5 m	0.5 m	5
6	6 m	0.6 m	6
7	7 m	0.7 m	7
8	8 m	0.8 m	8
9	9 m	0.9 m	9
A	10 m		
B	11m		
C	12 m		
D	13 m		
E	14 m		
F	15 m		

Output / Resolution / Ex	Code
4 ... 20 mA / 0.1mm / Ex ia	5
4 ... 20 mA / 1mm / Ex ia	6
4 ... 20 mA, HART / 0.1mm / Ex ia	7
4 ... 20 mA, HART / 1mm / Ex ia	8
4 ... 20 mA / 0.1 mm / Ex d	A
4 ... 20 mA, HART / 0.1 mm / Ex d	B
4 ... 20 mA / 0.1mm / Ex ia +Ex d	C
4 ... 20 mA, HART / 0.1mm / Ex ia + Ex d	D

* Process connection to be ordered separately
(NOT ALL COMBINATIONS AVAILABLE!)

Note:
Transmitters with probe longer than 10m can be ordered only with intrinsically safe protection.

3 Electrical data

Type "Ex d" : U_{max}=12,5 ... 36 VDC
I_{max}=140 mA

Type "Ex ia" or "Ex d ia": Only for connection to a certified intrinsically safe circuit Ex ia IIB with the following maximum values:
U_i = 30 V
I_i = 140 mA
P_i = 1 W
$C_i \leq$ 15 nF
$L_i \leq$ 200 µH

4 Temperature range

-40°C ... +70°C
-25°C ... +70°C with LCD module

5 Ingress protection

The enclosure provides a degree of protection IP67.

Drawings

Title:	Drawing No.:	Rev. Level:	Date:
Technical drawings			
NIVOTRACK Ex 1-2drawing	MBK-505-6I-000-0X	rev. 0.	2012.01.12
NIVOTRACK Ex Assembled sensor	MBA-505-2M-100-00	rev. 0.	2011.11.29
Ex Data plate	MBA-505-6I-050-0L	rev. 0.	2012.01.09
Ex data label	MBA-505-6I-050-02	rev. 0.	2012.01.09
Wiring diagram	MBA-505-2M-040-01	rev. 0.	2011.11.29
Connection label	MBA-505-2M-400-01	rev. 0.	2011.11.29
Parts list			
Ex „B" card list of electrical components	MBA-305-2M-412-00	rev. 0.	2011.11.29
Ex „C" card list of electrical components	SEA-380-7M-211-00	rev. 0.	2011.02.01
Ex „J" card list of electrical components	MBA-505-2M-411-00	rev. 0.	2011.11.28
Ex „S" card list of electrical components	MBA-505-2M-110-00	rev. 0.	2011.09.16
Ex „A" card list of electrical components	SAP-300-0M-100-00	rev. 0.	2011.02.01
Circuit Diagrams			
Ex „B" PCB	MBA-305-2M-412-00	rev. 0.	2011.11.29
Ex „B" PCB foil side	MBA-305-2M-090-03	rev. 0.	2011.11.29
Ex „B" card schematic	MBA-305-2M-412-00	rev. 3.	2011.03.04
Ex „C" PCB	SEA-380-7M-211-00	rev. 0.	2007.06.12
Ex „C" PCB foil side 1-4	SEA-380-6M-090-01	rev. 0.	2007.06.07
Ex „C" card schematic	SEA-380-7M-211-00	rev. 9.	2011.02.01
Ex „J" PCB	MBA-505-2M-411-00	rev. 0.	2011.11.29
Ex „J" PCB foil side 1-4	MBA-505-2M-090-02	rev. 0.	2011.11.29
Ex „J" card schematic	MBA-505-2M-411-00	rev. 1.	2011.03.02
Ex „S" PCB	MBA-505-2M-110-00	rev. 1.	2011.11.29
Ex „S" PCB foil side	MBA-505-2M-090-01	rev. 0.	2011.11.29
Ex „S" card schematic	MBA-505-2M-110-00	rev. 1.	2011.12.01
Ex „A" PCB(SAP300)	SAP-300-0M-100-00	rev. 0.	2007.06.12
Ex „A" PCB foil side (SAP300)	SAP-300-0M-090-01	rev. 0.	2007.06.12
Ex „A" card schematic (SAP300)	SAP-300-0M-100-00	rev. 3.	2011.02.01
Routine test procedures			
Ex Routine test (ia)	MBA-505-2M-060-1U	rev. 0.	2011.11.21.
Ex Routine test (d)	MBA-505-2M-060-2U	rev. 0.	2011.11.21.
Ex Routine test (d ia)	MBA-505-2M-060-3U	rev. 0.	2011.11.21.
Operating instructions			
M500/600 Ex Technical description	MBA-505-6I-060-0M	rev. 0.	2011.11.21.
M500/600 Ex User's manual	mba5052a0600p_04	rev.4.	2011.11.21.
Manufacturer's declarations			
Declaration of Conformity	nivcei0mt500e_01	rev. 1.	2011.11.22.

1. Description

The following changes are introduced in this 1st issue of IECEx BKI 12.0002:

- updating the standards to the latest versions (IEC 60079-1: 2017, Ed 7.0; IEC 60079-1: 2014, Ed. 7.0)
- introducing the transmitter version with stainless steel housing (NIVOTRACK M**-7**-*)
- introducing the transmitter versions with Triclamp connections (NIVOTRACK M*J-***-*; NIVOTRACK M*M-***-*, NIVOTRACK M*O-***-*, NIVOTRACK M*P-***-*, NIVOTRACK M*R-***-*)
- introducing the transmitter verson with IP68 degree of protection type NIVOTRACK M**-***-9 (introducing the application of enclosure with IP68 protection for the types with Ex ia protection mode)
- extending the possible nominal length of the transmitters probe (code: G, H, J)
- modification of the type designation (see chapter 2 of this certificate addendum) because of introducing the transmitter version with stainless steel housing (NIVOTRACK M**-7**-*), introducing the transmitter versions with Triclamp connections (NIVOTRACK M*J-***-*; NIVOTRACK M*M-***-*, NIVOTRACK M*O-***-*, NIVOTRACK M*P-***-*, NIVOTRACK M*R-***-*), introducing the transmitter verson with IP68 degree of protection type NIVOTRACK M**-***-9 and introducing the transmitter versions with nominal length of probe G, H, J
- updating the manufacturer's technical documentation of the device concerning the application of transmitter versions with stainless steel housing, application of transmitters with Triclamp connection, application the extended nominal length of transmitter probe (code: G, H, J) and the application of IP68 enclosure for transmitters with Ex ia protection mode.

2. Type assortment

NIVOTRACK M ☐☐-☐☐☐-☐ Ex

Type	Code
Transmitter	T
Transmitter +display	B
Transmitter PFA coated probe	E
Transmitter +display PFA coated probe	G
Mini Transmitter	M
Mini Transmitter + Display	C

Probe / Process connection	Code
Tube 1" BSP	A
Tube 2" BSP	C
Tube 1" NPT	D
Tube 2" NPT	G
W/O process conn.*	U*
Flexible 2" BSP	K
Flexible 2" NPT	N
Cable without adjust. Unit	Z
Rigid tube for NivoFlip,with clamp, without float	L
Tube 1 ½" Triclamp	J
Tube 2" Triclamp	M
Tube 2 ½" Triclamp	O
Tube 3" Triclamp	P
Tube 4" Triclamp	R

Housing	Code
Aluminium	5
KO	7

Code	Nominal length		Code
0	0 m	0 m	0
1	1 m	0,1 m	1
2	2 m	0,2 m	2
3	3 m	0,3 m	3
4	4 m	0,1 m	4
5	5 m	0,5 m	5
6	6 m	0,6 m	6
7	7 m	0,7 m	7
8	8 m	0,8 m	8
9	9 m	0,9 m	9
A	10 m		
B	11 m		
C	12 m		
D	13 m		
E	14 m		
F	15 m		
G	16 m		
H	17 m		
J	18 m		

Output / Resolution / Ex	Code
4 ... 20 mA / 0,1 mm / Ex ia	5
4 ... 20 mA / 1 mm / Ex ia	6
4 ... 20 mA + HART / 0,1 mm / Ex ia	7
4 ... 20 mA + HART / 1 mm / Ex ia	8
4 ... 20 mA + HART / 0,1 mm / Ex ia IP68	9
4 ... 20 mA / 0,1 mm / Ex d	A
4 ... 20 mA + HART / 0,1 mm / Ex d	B
4 ... 20 mA / 0,1 mm /Ex d + Ex ia	C
4 ... 20 mA + HART / 0,1mm / Ex d + Ex ia	D

* Process connection to be ordered separately

Note: Transmitters with probe longer than 10m can be ordered only with intrinsically safe protection.

3. Electrical data

It is unchanged according to the base certificate IECEx BKI 12.0002 Issue 0., with the following additional data:
The limit data concerning intrinsic safety of the IP68 transmitter type NIVOTRACK M**-***-9:

Intrinsically safe type:
(+ and – terminals)

only for connection to a certified intrinsically safe circuit
Ex ia IIB with following maximum values:

U_i = 30 V
I_i = 140 mA
P_i = 1 W
C_i ≤ 25 nF
L_i ≤ 210 µH

Data of applied encapsulation mounted cable at equipment version M**-***-9 Ex:
maximum length : 20 m (L < 10 µH , C < 9 nF)

4. **Temperature range**
It is unchanged according to the base certificate IECEx BKI 12.0002 Issue 0.

5. **Ingress protection**
It is unchanged according to the base certificate IECEx BKI 12.0002 Issue 0, with the following additional data:
NIVOTRACK M**-***-9 Ex version: IP 68

6. **Special conditions for safe use (X)**
In case of Ex ia IIB T6…T5 Ga protected equipment version with aluminium alloy enclosure, the aluminium-content of enclosure exceeds the limit, thus the equipment must be protected against impact and friction effects.

The flameproof joints of equipment are not permitted to repair according to the requirements of chapter 5.1 of standard IEC 60079-1:2014.

The risk of electrostatic discharge must be minimized at installation, especially plastic covered equipment with order code starting with MEU or MGU may be electrostatically charged, therefore:
- Medium to measure must be electrically conductive and with specific resistance not exceeding the value of 10^4 Ω even on the most unfavourable places and under the most unfavourable conditions.
- Speed as well as way of filling and emptying should be chosen according to the medium.

7. **Drawings**

Title:	Drawing No.:	Rev. Level:	Date:
Technical descriptions, Operating instructions			
*Technical description NIVOTRACK M**-5**-*Ex (1st Supplement of IECEx BKI 12.0002) Magnetostrictive 2-wire level transmitter family	MBA-505-6I-060-0M	rev. 1.	2019.01.14.
*User's and programming manual 1/40...40/40 NIVOTRACK M-500/600, M-500 Ex 2 wire magnetostrictive level transmitter	mba5052a0600p_10	rev.10.	2019.01
Technical drawings			
*Ex magnetrostrictive level transmitter assembly drawing (1/2;2/2)	MBK-505-6M-000-EX	rev. 0.	2009.01.05
*Ex magnetrostrictive transmitter IECEx	MTA-505-9I-000-0X	rev.0.	2017.02.27
*Ex flameproof enclosure stainless steel	RNK-100-9M-000-EX	rev. 0.	2018.02.04
*Ex flameproof enclosure aluminium alloy	RNM-100-9M-000-EX	rev. 2.	2004.03.03
NIVOTRACK Ex Assembled sensor	MBA-505-2M-100-00	rev. 0.	2008.04.03
*Ex Data plate IECEx	MBA-505-6M-050-EL	rev. 0.	2019.02.04
Ex data label	MBA-505-6I-050-02	rev. 0.	2009.02.02
Wiring diagram	MBA-505-2M-040-01	rev. 0.	2009.01.05
Connection label	MBA-505-2M-400-01	rev. 0.	2010.09.15
*Ex assembled sensor 4" TRI-CLAMP	MBR.505-6M-300-00	rev. 0.	2019.01.03
Parts list			
*Ex „B" card list of electrical components	MBA-305-2M-412-00	-	see circuit drawing MBA-305-2M-412-00
*Ex „C" card list of electrical components	SEA-380-7M-211-00	-	see circuit drawing SEA-380-7M-211-00
*Ex „J" card list of electrical components	MBA-505-2M-411-00	-	see circuit drawing MBA-505-2M-411-00
*Ex „S" card list of electrical components	MBA-505-2M-110-00	-	see circuit drawing MBA-505-2M-110-00
*Ex „A" card list of electrical components	SAP-300-0M-100-00	-	see circuit drawing SAP-300-0M-100-00
Circuit Diagrams			
*Ex „B" board	MBA-305-2M-412-E0	rev. 1.	2006.10.04
*Ex „B" PCB foil side	MBA-305-2M-090-E3	rev. 0.	- (2019.02.25)
*Ex „B" card schematic	MBA-305-2M-412-00	rev. 1.	2016.03.09
*Ex „C" board	SEA-380-7M-211-E0	rev. 1.	2002.09.19
*Ex „C" PCB foil side 1-4	SEA-380-6M-090-E1	rev.1.	2002.09.19
*Ex „C" card schematic	SEA-380-7M-211-00	rev. 11.	2017.03.16
*Ex „J" board	MBA-505-2M-411-E0	rev. 2.	2009.01.05
*Ex „J" PCB foil side 1-2	MBA-505-2M-090-02	rev. 2.	2009.01.05
Ex „J" PCB foil side 3-4	MBA-505-2M-090-02	rev. 1.	2009.01.05
*Ex „J" card schematic	MBA-505-2M-411-00	rev. 4.	2017.03.13
*Ex „S" board	MBA-505-2M-110-E0	rev. 1.	2008.04.02
*Ex „S" PCB foil side	MBA-505-2M-090-E2	rev. 0.	2009.01.05

Title:	Drawing No.:	Rev. Level:	Date:
*Ex „S" card schematic	MBA-505-2M-110-00	rev.2.	2016.03.08
*Ex „A" board (SAP300)	SAP-300-0M-100-E0	rev. 0.	2010.09.19
*Ex „A" PCB foil side (SAP300)	SAP-300-0M-090-E1	rev. 0.	2010.09.19
*Ex „A" card schematic (SAP300)	SAP-300-0M-100-00	rev. 0.	2017.02.24
Routine test procedures			
Ex Routine test (ia)	MBA-505-2M-060-1U	rev. 0.	2016.03.09.
Ex Routine test (d)	MBA-505-2M-060-2U	rev. 0.	2016.03.09.
Ex Routine test (d ia)	MBA-505-2M-060-3U	rev. 0.	2016.03.09.
Test report			
*Test report IP 6X dust and IPX8 water protection test of magnetostrictive level tranmitter	28248398	-	2019.02.18

*Note: An * is included before the title of documents that are new or revised.*