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 17.0004X

Issue No: 0

Certificate history:
Issue No. 0 (2017-08-29)

Status: **Current**

Date of Issue: **2017-08-29**

Applicant: **KOBOLD Messring GmbH**
Nordring 22-24,
65719, Hofheim am Taunus
Germany

Equipment: **Two-wire non-contact microwave level transmitter family type NRM-******

Optional accessory:

Type of Protection: **General requirements, Equipment protection by intrinsic safety "i"**

Marking:

Ex ia IIB T6…T5 Ga/Gb	**(with plastic housing)**
Ex ia IIB T6…T5 Ga	**(integrated, with plastic housing)**
Ex ia IIB T6…T4 Ga	**(metal housing)**
Ex ia IIB T6…T3 Ga	**(metal housing, high temp.)**
Ex ia IIIC T85°C…T110°C Da/Db	**(metal housing)**
Ex ia IIIC T85°C…T180°C Da/Db	**(metal housing, high temp.)**

see Clause 4 on of Addendum about temperature classes

-20 °C ≤ T_{amb} ≤ +60 °C

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

Position: Head of the Certification Body

Signature:
(for printed version)

Date:

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 17.0004X Issue No: 0

Date of Issue: **2017-08-29** Page 2 of 3

Manufacturer: **KOBOLD Messring GmbH**
Nordring 22-24,
65719, Hofheim am Taunus
Germany

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 60079-11 : 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/ExTR17.0003/00

Quality Assessment Report:

DE/BVS/QAR09.0001/08

IECEx Certificate of Conformity

Certificate No: IECEx BKI 17.0004X Issue No: 0

Date of Issue: **2017-08-29**

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The level transmitter type NRM-****** is a Pulse Burst Radar operating at 24 GHz (K-band) microwave frequency. The instruments are designed for high precision level measurement in large storage tanks containing bulk solids or liquids.
The equipment is available in two different type of protection: “Ex ia IIB” for explosive gas atmospheres and “Ex ia IIIC” for combustible dust atmospheres.

See details in Addendum to IECEx BKI 17.0004X.

SPECIFIC CONDITIONS OF USE: YES as shown below:

Type “Ex ia” protected equipment for IIB gas sub-group, with plastic housing:
Because the enclosure of electronic circuits is made of plastic, the surface can be cleaned only with damp cloth to avoid electrostatic charge.

Type “Ex ia” protected equipment for IIB gas sub-group, with aluminium housing:
Because the enclosure of electronic circuits is made of aluminium, if it is mounted in an area where the apparatus has an equipment protection level Ga, it must be installed to avoid the event of rare incidents, ignition sources due to impact and friction sparks.

Annex:

Addendum to IECEx BKI 17.0004X.pdf

1. Description

The level transmitter type NRM-****** is a Pulse Burst Radar operating at 24 GHz (K-band) microwave frequency. The instruments are designed for high precision level measurement in large storage tanks containing bulk solids or liquids. The operation of the non-contact microwave level transmitters is based on the measurement of the time of flight of the reflected signals, so-called the Time Domain Reflectometry (TDR) method. The time of flight of the reflected signal is measured and processed by the electronics, and then this is converted to distance, level or volume proportional data which can be 4–20 mA analogue, or digital transmitted signal by HART communication.
The equipment is available in two different type of protection: “Ex ia IIB” for explosive gas atmospheres and “Ex ia IIIC” for combustible dust atmospheres.

2. Type assortment

NRM-

Options
0 without option

Version, approval
0I without display, IECEx (Ex ia IIB)
03 without display, IECEx (Ex ia IIIC)*
1I with display, IECEx (Ex ia IIB)
13 with display, IECEx (Ex ia IIIC)*
HI without display, high temperature, IECEx (Ex ia IIB)
H3 without display, high temperature, IECEx (Ex ia IIIC)*
DI with display, high temperature, IECEx (Ex ia IIB)
D3 with display, high temperature, IECEx (Ex ia IIIC)*
PI without display, integrated, IECEx (Ex ia IIB)

Process connection

R80	BSP (DN40)	**ABB**	3” RF, PP
R90	BSP (DN50)	**ACP**	4” RF, PP
FBE	DN 80 PN25, 1.4571	**ADP**	5” RF, PP
FCE	DN 100 PN25, 1.4571	**AEP**	6”RF, PP
FDE	DN 125 PN25, 1.4571	**JBE**	JIS 10K80A, 1.4571
FEE	DN 150 PN25, 1.4571	**JCE**	JIS 10K100A, 1.4571
FBP	DN 80, PP	**JDE**	JIS 10K125A, 1.4571
FCP	DN 100, PP	**JEE**	JIS 10K150A, 1.4571
FDP	DN 125, PP	**N80**	NPT, DN40
FEP	DN 150, PP	**N90**	NPT, DN50
ABE	3” RF 150 psi, 1.4571	**JBP**	JIS 80A , PP
ACE	4” RF 150 psi, 1.4571	**JCP**	JIS 100A, PP
ADE	5” RF 150 psi, 1.4571	**JDP**	JIS 125A, PP
AEE	6” RF 150 psi, 1.4571	**JEP**	JIS 150A, PP

Antenna, housing material
M 1.4571; Plastic housing (PBT)
S 1.4571; Aluminium housing
K 1.4571; Stainless steel housing

Antenna, diameter
A DN40 / 1½”
B DN50 / 2”
C DN80 / 3”
D DN150 / 6”
E DN250 / 10”
F Planar / 2” **
G Planar / 122 mm **

Type (4, 7)
4 compact version
7 integrated version

* only with aluminium or stainless steel housing
** only with plastic housing

3. Electrical data

- Intrinsically safe type: (+ and – terminals) — only for connection to a certified intrinsically safe circuit [Ex ia Ga] IIB with following maximum values:

U_i =	30 V
I_i =	140 mA
P_i =	1 W
C_i ≤	16 nF (with cable: 30 nF)
L_i ≤	200 µH

- Output:
  - analogue: 4 - 20 mA (3.9 – 20.5 mA)
  - digital communication HART: minimal terminal resistor: 250 Ohm

4. Temperature range

TEMPERATURE DATA	EXPLOSIVE GAS ATMOSPHERES							COMBUSTIBLE DUST ATMOSPHERES			
	PLASTIC HOUSING		METAL HOUSING					METAL HOUSING			
						HIGH TEMP.					HIGH TEMP.
	Ex ia IIB		Ex ia IIB					Ex ia IIIC			
maximum permissible medium temperature	+80°C	+95°C	+80°C	+95°C	+100°C	+130°C	+180°C	+80°C	+95°C	+100°C	+180°C
maximum permissible ambient temperature	+60°C										
maximum created surface temperature	+80°C	+95°C	+80°C	+95°C	+100°C	+130°C	+133°C	+80°C	+95°C	+100°C	+133°C
temperature class	**T6**	**T5**	**T6**	**T5**	**T4**	**T4**	**T3**	**T85°C**	**T100°C**	**T110°C**	**T180°C**

5. Ingress protection

The enclosure provides a degree of protection IP67.

6. Special conditions for safe use

Type “Ex ia” protected equipment for IIB gas sub-group, with plastic housing:
Because the enclosure of electronic circuits is made of plastic, the surface can be cleaned only with damp cloth to avoid electrostatic charge.

Type “Ex ia” protected equipment for IIB gas sub-group, with aluminium housing:
Because the enclosure of electronic circuits is made of aluminium, if it is mounted in an area where the apparatus has an equipment protection level Ga, it must be installed to avoid the event of rare incidents, ignition sources due to impact and friction sparks.

7. Manufacturer’s Documents

Title:	Drawing No.:	Rev.:	Date:
KOBOLD IECEx (NRM-7) Ex data plate	WPM-140-9V-050-01	Version 0.	2017.08.10.
KOBOLD IECEx (NRM-4) Ex data plate	WES-140-9V-050-01	Version 0.	2017.08.10.
Operating instructions	NRM K01/0617	Rev3.	2017 August
Cross reference codes	-	324.001_0	2017.07.10
Letter of Consent	-	-	2017.05.23