UNITED KINGDOM CONFORMITY ASSESSMENT

CERTIFICATE

(1) UK Type Examination

(2) **Product or Protective System Intended for use in Potentially Explosive Atmospheres - UKSI 2016:1107 (as amended) – Schedule 3A, Part 1**

(3) UK Type Examination Certificate Number: **DEKRA 22UKEX0123X** Issue Number: **0**

(4) Product: **Level limit switch type RFnivo RF 3100*, RF 3200*, RF 3300***

(5) Manufacturer: **UWT GmbH**

(6) Address: **Westendstraße 5, 87488 Betzigau, Germany**

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

(8) DEKRA Certification UK Ltd., Approved Body number 8505 in accordance with Regulation 42 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), 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 Schedule 1 of the Regulations.

The examination and test results are recorded in confidential report EX22080002-004 Rev 0.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0 : 2018 **EN 60079-7 : 2015 + A1+2018** **EN 60079-1 : 2014**
EN 60079-11 : 2012 **EN 60079-31 : 2014**

except in respect of those requirements listed at item 18 of the Schedule to this certificate.

(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 UK Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Regulations apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12) For marking please see section (15).

Date of certification: 18 November 2022

DEKRA Certification UK Ltd.

Abul Kashem
Certification Manager

UKAS PRODUCT CERTIFICATION 22815

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(13) # SCHEDULE

(14) **to UK Type Examination Certificate DEKRA 22UKEX0123X** Issue No. **0**

(15) The marking of the product shall include the following:

Compact version
(enclosure 2, 3 and 4)
II 1/2D Ex ia/tb IIIC T* Da/Db *see thermal data

enclosure d
II 2G Ex db ia IIC T* Gb or II 2G Ex db ia IIB T* Gb
II 1/2D Ex ia/tb IIIC T* Da/Db *see thermal data

enclosure de
II 2G Ex db eb ia IIC T* Gb or II 2G Ex db eb ia IIB T* Gb
II 1/2D Ex ia/tb IIIC T* Da/Db *see thermal data

Remote version
enclosure 2, 3 and 4
electronics enclosure
II 2D Ex tb [ia] IIIC T* Db * see thermal data

junction box + probe
II 1/2D Ex ia/tb IIIC T* Da/Db
II 1/2D Ex ia/tb IIIC T* Da/Db *see thermal data

Remote version
enclosure d
electronics enclosure
II 2G Ex db [ia] IIC T* Gb or II 2G Ex db [ia IIC] IIB T* Gb
II 2D Ex tb [ia] IIIC T* Db * see thermal data

junction box + probe
II 2G Ex ia IIC T* Gb
II 1/2D Ex ia/tb IIIC T* Da/Db *see thermal dat

Remote version
enclosure de
electronics enclosure
II 2G Ex db eb [ia] IIC T* Gb or II 2G Ex db eb [ia IIC] IIB T* Gb
II 2D Ex tb [ia] IIIC T* Db * see thermal data

junction box + probe
II II 2G Ex ia IIC T* Gb
II 1/2D Ex ia/tb IIIC T* Da/Db *see thermal data

Description
The level limit switch RFnivo RF 3*00* is used for level monitoring in all types of containers and silos. It can be used with all powdery and granulated bulk materials, slurry and liquids.

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An electric field is created between the probe and container wall to for monitoring the level. An increase of the dielectric constant due to the presence of material changes the electric field. This change is detected by the electronics and converted into an electrical output signal.

The unit consists of the probe extension (optional mounted to a pipe or extended by rod or rope), a process connection and a housing. The electronics is located inside the housing. The enclosure can be fixed directly (normal version) or by cable (max. cable length 25 m, remote version) to the process connection.

The general design of the devices can vary in:

- the type of enclosure
- the cable inlets
- the electronics
- the form of the extension
- the form of the process connection (for example different threaded bushes and flanges)
- the materials for the extension, process connection and housing
- different options

The enclosure can be in type of protection flameproof enclosure “d” or “de” (dependent on the variant) for use in zone 1 – areas or protected by enclosure “t” for use in zone 21 – areas.
The probe extension itself is always situated in zone 1 or zone 20.
Depending on the bushing the equipment is suitable for use in gas group IIB or IIC.

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Parameters

1. Electrical data

1.1 Nominal voltage AC 21 up to 230 V +/-10%*, 50-60 Hz, max. 1.5 VA
or DC 21 up to 230 V +/-10%*, max. 1.5 W
* incl. +/-10% of EN 61010

Max. voltage	U_m	AC	265	V

1.2 Signal output AC max. 250 V, 5 A non-inductive
DC max. 30 V, 5 A non-inductive

Max. voltage	U_m	AC	265	V

1.3 Sensor circuit (Internally, type of protection Ex ia IIC, max. cable length for remote version 25 m)

Voltage	U_o	2.5	V
Current	I_o	183	mA
Power	P_o	129	mW

2. Thermal data

2.1 Compact version

T_{amb}	max. $T_{Process}$	max. surface temperature $T_{surface}$ (EPL Db)	max. surface temperature T_{200} (EPL Da)	Temperature-class (EPL Gb)
-20 °C…+70 °C (1)	80 °C	120 °C	120 °C	T4
-40 °C…+70 °C (2)	120 °C	120 °C	120 °C	T4
-40 °C…+60 °C (3)	250 °C	250 °C	250 °C	T2
	445 °C (4)	445 °C (4)	445 °C (3)	T1 (4)

(1) For versions with plastic enclosure (housing 4)
(2) For versions with metallic enclosure (housing 2 or 3)
(3) For versions with metallic enclosure (housing d or de)
(4) only with RFnivo RF 3300*

The max. surface temperature at the electronics enclosure is limited to 120 °C by a thermo fuse.

2.2 Remote Version

2.2.1 Electronics enclosure

T_{amb}	max. surface temperature $T_{surface}$ (EPL Db)	Temperature-class (EPL Gb)
-20 °C…+70 °C (1) -40 °C…+70 °C (2) -40 °C…+60 °C (3)	120 °C	T4

(1) For versions with plastic enclosure (housing 4)
(2) For versions with metallic enclosure (housing 2 or 3)
(3) For versions with metallic enclosure (housing d or de)

The max. surface temperature at the electronics enclosure is limited to 120 °C by a thermo fuse.

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2.2.2 Junction box + probe

T_{amb}	max. $T_{Process}$	max. surface temperature $T_{surface}$ (EPL Db)	max. surface temperature T_{200} (EPL Da)	Temperature-class (EPL Gb)
-20 °C…+70 °C (1) -40 °C…+70 °C (2)	80 °C	80 °C	80 °C	T6
	120 °C	120 °C	120 °C	T4
	250 °C	250 °C	250 °C	T2
	445 °C (4)	445 °C (4)	445 °C (4)	T1 (4)

(1) For versions with plastic enclosure (junction box 4)
(2) For versions with metallic enclosure (junction box 3)
(4) only with RFnivo RF 3300*

Installation instructions

The instructions provided with the product shall be followed in detail to assure safe operation.

(16) **Report Number**

EX22080002-004 Rev 0.

(17) **Specific conditions of use**

1. For remote version: Along the intrinsically safe circuit between electronics enclosure and probe equipotential equalization must exist.

2. The apparatus shall be installed in a way that danger caused by electrostatic charges is avoided.

(18) **Essential Health and Safety Requirements**

In addition to the Essential Health and Safety Requirements covered by the standards listed at item 9, all other requirements are demonstrated in the relevant reports.

(19) **Test documentation**

Technical Construction File, consisting of certificates, diagrams, equipment lay-out, manual and operating instructions, material specifictions etc., all on file at DEKRA Certification UK Ltd.