

# 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) Certificate of Conformity Number: **DEKRA 22UKEX0015X** Issue Number: **0**

(4) Product: **Level limit switch type ROTONIVO RN 300\*, RN 400\*, RN 600\***

(5) Manufacturer: **UWT GmbH**

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

(7) This product 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 EX22080002-001 Rev 0.

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

**EN IEC 60079-0 : 2018      EN 60079-1 : 2014**  
**EN 60079-7 : 2015 + A1 : 2018      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 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) The marking of the product shall include the following:



Type RN 300\*, RN 400\*  
**II 1/2D Ex ta/tb IIIC T\*°C Da/Db**

Type RN 600\*  
**II 2G Ex db IIC T\* Gb or II 2G Ex db eb IIC T\* Gb**  
**II 1/2D Ex ta/tb IIIC T\*°C Da/Db**

\* see thermal data

Date of certification: 23 August 2022



DEKRA Certification UK Ltd.

Certification Manager

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(13) **SCHEDULE**

(14) **to UK Type Examination Certificate DEKRA 22UKEX0015X Issue No. 0**

(15) **Description**

The level limit switch ROTONIVO RN 300\*, RN 400\* and RN 600\* is a modular concept of level limit switches. It is designed for monitoring the levels in any kind of containers, bins, silos, hoppers and pipes.

The level limit switch is able to detect many kinds of bulk materials which are grained, powdery or muddy.

In the housing the synchronous geared motor rotates a shaft (part of the extension) and a paddle mounted on this shaft. In the case of covering the paddle with bulk material the paddle is obstructed. These two operating conditions (rotating and obstructed) are analysed and covered into electrical output signals.

The whole unit consists of three subassemblies: an extension including a paddle with a shaft, a process connection to connect it to the bin and a housing which includes the motor, gear and electronic.

The types can vary in:

- the type of housing
- the cable entries
- the electronics
- the form of the extension
- the form of the process connection (for example different threaded bushes and flanges)
- the form and material of the paddle
- the materials for the process connection and the extension

The housing 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 sensor itself is situated in zone 1 or zone 20.

Subject and type:

Level limit switch ROTONIVO

Basic Type	Series RN 300*	Series RN 400*	Series RN 600*
Dedicated housing	Housing 3 or 4	Housing 3 or 4	Housing 2, d, de
Short extension length	RN 3001	RN 4001	RN 6001
Pipe extension vertical	RN 3002	-	RN 6002
Rope extension	RN 3002-rope	-	RN 6002-rope
Angled extension	RN 3003	-	RN 6003
Pipe extension horizontal	RN 3004	-	RN 6004
Extra short version	RN 3005	-	-



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**Technical data**

1. Electrical data

1.1 Supply		AC	24 V, 48 V, 115 V or 230 V $\pm 10\%$ *
			50/60 Hz
			4 VA
			or
		DC	24 V $\pm 15\%$ *, 2.5 W
			or
	universal voltage	DC	24 V $\pm 15\%$ *, 4 W or
		AC	22 ... 230V $\pm 10\%$ *, 50/60 Hz, 10 VA

\* inclusive 10 % acc. EN 61010

1.2 Signal and alarm output

Signal output

RN 300* and RN 400*:	max.	AC	250 V, 2 A, 500 VA (cos Phi=1)
	max.	DC	300 V, 2 A, 60 W

RN 600\*:

max.	AC	250 V, 5 A, non-inductive
max.	DC	30 V, 4 A, non-inductive
		Transistor, max. 0,4 A

or

Alarm output

RN 300* and RN 400*:	max.	AC	250 V, 2 A, 500 VA (cos Phi=1)
	max.	DC	300 V, 2 A, 60 W

RN 600\*:

max.	AC	250 V, 5 A, non-inductive
max.	DC	30 V, 4 A, non-inductive

1.3 Units with extra heat resistor  
Supply / resistance

AC	230 V / 22 k $\Omega$
AC	115 V / 5,6 k $\Omega$
AC	48 V / 1 k $\Omega$
AC	24 V / 220 $\Omega$
DC	24 V / 220 $\Omega$

1.4 Rotational speed of the motor max. 6 rds/min

2 Thermal data

2.1 Housing directly mounted to the process connection

permitted ambient temperature at the electronics enclosure

plastic enclosure without / with heating	-20 °C $\leq$ Tamb $\leq$ +30 °C up to +60 °C
metal enclosure without heating	-20 °C $\leq$ Tamb $\leq$ +30 °C up to +60 °C
metal enclosure with heating	-40 °C $\leq$ Tamb $\leq$ +30 °C up to +60 °C



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max. surface temperature and temperature class:

max. T <sub>amb</sub>	max. T <sub>process</sub>	max. surface temperature T <sub>surface</sub> (EPL Db)	max. surface temperature T <sub>200</sub> (EPL Da)	Temperature-class
30 °C	50 °C	90 °C 120 °C <sup>1)</sup>	90 °C 120 °C <sup>1)</sup>	T5 T4 <sup>1)</sup>
40 °C	60 °C	100 °C 120 °C <sup>1)</sup>	100 °C 120 °C <sup>1)</sup>	T4
50 °C	70 °C	110 °C 120 °C <sup>1)</sup>	110 °C 120 °C <sup>1)</sup>	T4
60 °C	80 °C	120 °C	120 °C	T4

<sup>1)</sup> data for universal voltage version which is equipped with a thermo fuse of 117 °C

permitted temperature at the sensor

process connection metal

-40 °C up to +80 °C

plastic process connection

-20 °C up to +80 °C

2.2 Housing mounted to the process connection with temperature adapter

permitted ambient temperature at the electronics enclosure

plastic enclosure without / with heating

-20 °C ≤ T<sub>amb</sub> ≤ +60 °C

metal enclosure without heating

-20 °C ≤ T<sub>amb</sub> ≤ +60 °C

metal enclosure with heating

-40 °C ≤ T<sub>amb</sub> ≤ +60 °C

max. surface temperature and temperature class:

max. T <sub>amb</sub>	max. T <sub>process</sub>	max. surface temperature T <sub>surface</sub> (EPL Db)	max. surface temperature T <sub>200</sub> (EPL Da)	Temperature-class
60 °C	90 °C	120 °C	120 °C	T4
60 °C	100 °C	120 °C	120 °C	T4
60 °C	110 °C	120 °C	120 °C	T4
60 °C	120 °C	120 °C	120 °C	T4
60 °C	130 °C	130 °C	130 °C	T4
60 °C	140 °C	140 °C	140 °C	T3
60 °C	150 °C	150 °C	150 °C	T3
60 °C	160 °C	160 °C	160 °C	T3
60 °C	170 °C	170 °C	170 °C	T3
60 °C	180 °C	180 °C	180 °C	T3
60 °C	190 °C	190 °C	190 °C	T3
60 °C	200 °C	200 °C	200 °C	T2
60 °C	210 °C	210 °C	210 °C	T2
60 °C	220 °C	220 °C	220 °C	T2
60 °C	230 °C	230 °C	230 °C	T2
60 °C	240 °C	240 °C	240 °C	T2
60 °C	250 °C	250 °C	250 °C	T2

permitted temperature at the sensor

process connection metal

-40 °C up to +250 °C

3. Degree of protection according to IEC 60529

enclosure

IP6x

terminal department in type of protection Increased Safety "e"

IP66



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**Installation instructions**

The installation instructions as provided by the manufacturer shall be followed in detail in order to assure safe functioning of the product, taking into account the local installation rules.

(16) **Report Number**

EX22080002-001 Rev 0.

(17) **Specific conditions of use**

- The flameproof joints are not intended to be repaired.
- The apparatus shall be installed in 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 report.

(19) **Test documentation**

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