



Translation

(1) **EC-Type Examination Certificate**

(2) **- Directive 94/9/EC -**

**Equipment and protective systems intended for use
in potentially explosive atmospheres**

(3) **DMT 01 ATEX E 105**

- (4) **Equipment:** Level limit switch ROTONIVO Type RN 300*
- (5) **Manufacturer:** UWT GmbH
- (6) **Address:** D 87488 Betzigau
- (7) The design and construction of this equipment and any acceptable variation thereto are specified in the schedule to this type examination certificate.
- (8) The certification body of Deutsche Montan Technologie GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.
The examination and test results are recorded in the test and assessment report BVS PP 01.2077 EG.
- (9) The Essential Health and Safety Requirements are assured by compliance with:
EN 50281-1-1:1998 Dust explosion protection
- (10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.
- (11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate
- (12) The marking of the equipment shall include the following:

II 1 / 2 D IP 6X T see 15.3.2

Deutsche Montan Technologie GmbH

Essen, dated 18. July 2001

Signed: Dill

Signed: Wenzel

DMT-Certification body

Head of special services unit



(13) Appendix to

(14) **EC-Type Examination Certificate**

DMT 01 ATEX E 105

(15) 15.1 Subject and type

Level limit switch ROTONIVO Type RN 300*

Model RN 3001	Shaft without pipe extension
Model RN 3002	Shaft with simple protective pipe, vertical installation
Model RN 3002-rope	Shaft with rope extension without protective pipe
Model RN 3003	Shaft with angular gear, horizontal installation
Model RN 3004	Shaft with reinforces protective pipe, flexible installation
Model RN 3005	Shaft with threaded bush without hexagonal
Model RN 3006	Shaft with small threaded bush, without protective pipe

15.2 Description

The Level limit switch ROTONIVO Type RN300* is used for the detection of the level in containers in which granular, powdery or sludge materials are stored.

It consists of an electronics enclosure conforming to category 2 and an extension part conforming to category 1.

A low revolution synchronous induction gearing motor drives a measuring vane which is fixed to a shaft and which stops as soon as it is covered with the bulk material. The freely suspended motor then operates a micro switch which stops the motor and triggers a signal in an electrical circuit. If the bulk material level drops, the rotating vane becomes free again, the motor will be drawn back by a tension spring to its initial position and will be switched on again.

The mechanical version varies according to the spatial and thermal requirements.

15.3.1 Electrical data

15.3.1.1 AC - version

Voltage	AC 24, 42 V, 48 V, 110...120 V, 220...240	V
Frequency	50 / 60	Hz
max. power dissipation	3,5	VA

15.3.1.2 DC-version

Voltage	DC	24	V
max. power dissipation		3	W

Maximum speed of rotating vane of both types 10 U/min

15.3.1.3 Contact rating of micro switches

	AC	DC	
max. voltage	250 V	300	V
max. current	2 A	2	A
max. switching power	600 VA	60	W
	at $\cos\varphi = 1$		

15.3.2 Thermal data

Permitted process temperature (extension category 1) with the use of a plastic vane	-25 °C...+ 90 °C
with the use of a plastic vane with measuring vane extension	-25 °C...+ 80 °C
with all other measuring vanes	-25 °C... +220 °C
Permitted ambient temperature (electronics enclosure category 2)	-25 °C...+ 70 °C
Permitted temperature at the threaded bush	-25 °C...+ 80 °C
Maximum surface temperature	see following tables

Table 1: Equipment with distanced electronic enclosure

Maximum surface temperature T	ambient temperature in Zone 21	process temperature in Zone 20
90 °C	70 °C	90 °C
100 °C	70 °C	100 °C
110 °C	70 °C	110 °C
120 °C	70 °C	120 °C
130 °C	70 °C	130 °C
140 °C	70 °C	140 °C
150 °C	70 °C	150 °C
160 °C	70 °C	160 °C
170 °C	70 °C	170 °C
180 °C	70 °C	180 °C
190 °C	70 °C	190 °C
200 °C	70 °C	200 °C
210 °C	70 °C	210 °C
220 °C	70 °C	220 °C

Table 2: Equipment with attached electronic enclosure

Maximum surface temperature T	ambient temperature in Zone 21	process temperature in Zone 20
64 °C	40 °C	50 °C
74 °C	50 °C	60 °C
84 °C	60 °C	70 °C
94 °C	70 °C	80 °C

15.3.3 Degree of protection according to EN 60529 IP 6X

15.3.4 Pressure

In applications where Category 1 or 1/2 devices are required: 0,8 to 1,1 bar

For other applications (for test purposes)
independent of the use of a shaft sealing ring: 1,8 bar

For use with a pressure resistant shaft sealing ring Type L
as per drawing No.: RN3Atex-1: 11 bar



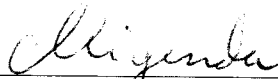
(16) Test and assessment report
BVS PP 01.2077 EG as of 18.07.2001

(17) Special conditions for safe use
None

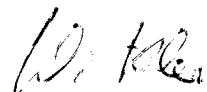
We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

45307 Essen, 16.04.2003
BVS-Hk/Ar

Deutsche Montan Technologie GmbH



DMT-Certification body



Head of special services unit



Translation



1st Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate DMT 01 ATEX E 105

Equipment: Level limit switch ROTONOVO Type 300*
Manufacturer: UWT Apparate GmbH
Address: D - 87488 Betzigau

Subject and Type

Model RN 3001	Shaft without pipe extension
Model RN 3002	Shaft with simple protective pipe, vertical installation
Model RN 3002-rope	Shaft with rope extension without protective pipe
Model RN 3003	Shaft with angular gear, horizontal installation
Model RN 3004	Shaft with reinforced protective pipe, flexible installation
Model RN 3005	Shaft with threaded bush without hexagonal
Model RN 3006	Shaft with small threaded bush, without protective pipe

Description

Additional to the already certified electronic units the multi-voltage unit according to the descriptive documents as mentioned in the pertinent test and assessment report can be used.

The level limit switch ROTONOVO Type 300* can also be carried out with the mechanical options according to the descriptive documents as mentioned in the pertinent test and assessment report.

This leads to the following changed parameters (Paragraph 15.3):

15.3.1 Electrical data

15.3.1.1 AC-version

voltage	AC 24 V, 42 V, 48 V, 110...120 V, 220...240	V
frequency	50 / 60	Hz
max. power dissipation	3,5	VA

15.3.1.2 DC-version

voltage	DC 24	V
max. power dissipation	3	W

multi voltage version

Supply	115 V, 50/60 Hz, 4	VA	or
	230 V, 50 Hz, 6	VA	or
	24 V, 2,5	W	



15.3.1.3 Multi voltage version

supply	115 V, 50/60 Hz, 4 VA	or
	230 V, 50 Hz, 6 VA	or
	24 V, 2,5 W	
max. rotations of the paddle in all versions	10 U/min	

15.3.1.4 Max. contact rating of the microswitch

	AC	DC
max. voltage	250 V	300 V
max. current	2 A	2 A
max. power	500 VA	60 W
	bei $\cos\phi = 1$	

15.3.2 Thermal data

permitted process temperature (extension category 1) using the plastic paddle	-25 °C... + 90 °C
using the plastic paddle with additional extension	-25 °C... + 80 °C
all other paddles	-25 °C... +220 °C
permitted ambient temperature (electronics enclosure category 2)	-25 °C... + 70 °C
permitted temperature at the threaded-bearing-bush	-25 °C... + 80 °C
maximum surface temperature	see following charts

Chart 1: Devices with electronics enclosure and threaded-bearing-bush separated

Max. surface temperature T	ambient temperature in zone 21	process temperature in zone 20
90 °C	70 °C	90 °C
100 °C	70 °C	100 °C
110 °C	70 °C	110 °C
120 °C	70 °C	120 °C
130 °C	70 °C	130 °C
140 °C	70 °C	140 °C
150 °C	70 °C	150 °C
160 °C	70 °C	160 °C
170 °C	70 °C	170 °C
180 °C	70 °C	180 °C
190 °C	70 °C	190 °C
200 °C	70 °C	200 °C
210 °C	70 °C	210 °C
220 °C	70 °C	220 °C



Chart 2: Devices with electronics enclosure and threaded-bearing-bush together

Max. surface temperature T	ambient temperature in zone 21	process temperature in zone 20
90 °C	40 °C	50 °C
100 °C	50 °C	60 °C
110 °C	60 °C	70 °C
120 °C	70 °C	80 °C

15.3.3 Degree of protection according to EN 60529 IP 6X

Test and assessment report

BVS PP 01.2077 EG as of 10.07.2002

Deutsche Montan Technologie GmbH

Essen, dated 10 July. 2002

signed: Jockers

DMT-Certification body

signed: Eickhoff

Head of special services unit

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

45307 Essen, 10. 07.2002

BVS-Hk/Mi A 20020334

Deutsche Montan Technologie GmbH

DMT-Certification body

Head of special services unit