

(1) EC-TYPE EXAMINATION CERTIFICATE**(2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC**

(3) EC-Type Examination Certificate Number: **KEMA 08ATEX0013** Issue Number: 1

(4) Equipment: **Servo Tank Gauge 6000 series**

(5) Manufacturer: **Varec, Inc.**

(6) Address: **5834 Peachtree Corners East, Norcross GA 30092, USA**

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

(8) KEMA Quality B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC 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 confidential test report number 2113048/2.

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

**EN 50014 : 1997 +A1, A2
EN 50020 : 2002**

**EN 50018 : 2000 +A1
EN 50284 : 1999**

(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 according to the 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 G EEx d IIB T6 or EEx d[ia] IIB T6
II 2 G EEx d IIB T6 or EEx d[ia] IIB T6**

This certificate is issued on 10 March 2008 and, as far as applicable, shall be revised before the date of cessation of presumption of conformity of (one of) the standards mentioned above as communicated in the Official Journal of the European Union.

KEMA Quality B.V.

C.G. van Es
Certification Manager



(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 08ATEX0013**

Issue No. 1

(15) **Description**

Servo Tank Gauge 6000 series Type N6005-..... detects the level and the density of a liquid medium, using the principle of displacement measurement.

The equipment is considered category 2G; for Type N6005-G..... and Type N6005-J..... the mounting flange and the inner part of the drum compartment are considered as category 1G.

For connection of an intrinsically safe device, e.g. for temperature measurement, a circuit in type of protection intrinsic safety is optionally integrated.

Ambient temperature range -40 °C to +60 °C.

Electrical data

Type N6005-H.....3... or Type N6005-J.....3...

Supply (terminals 1(L+), 2(N-) and 3(GND)):

U = 85 ... 253 Vac, max. 50 VA

Um = 253 Vac

Type N6005-F.....3... or Type N6005-G.....3...

Supply (terminals 1(L+), 2(N-) and 3(GND)):

U = 85 ... 264 Vac, max. 50 VA

Type N6005-H.....4... or Type N6005-J.....4...

Supply (terminals 1(L+), 2(N-) and 3(GND))

U = 19 ... 55 Vac, max. 50 VA or

U = 19 ... 62 Vdc, 50 W

Um = 253 Vac

Type N6005-F.....4... or Type N6005-G.....4...

Supply (Terminals 1(L+), 2(N-) and 3(GND))

U = 19 ... 55 Vac, max. 50 VA or

U = 19 ... 62 Vdc, 50W

Signal circuit (used in Type N6005-H..... or Type N6005-J.....)

Supply (terminals 4 - 23):

U = 24 V, max. 50 mA

Um = 253 Vac

(13) **SCHEDULE**

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Issue No. 1

Signal circuit (used in Type N6005-F..... or Type N6005-G.....)

Supply (terminals 4 – 23):
 $U = 24\text{V}$, max. 50 mA

Intrinsically safe device interface (HART communication, used in Type N6005-H..... or Type N6005-J.....)

Supply and signal input (terminals 24(+) and 25(-)):
in type of protection intrinsic safety EEx ia IIB, with the following maximum values:
 $U_o = 28,7\text{ V}$; $I_o = 114\text{ mA}$; $P_o = 816\text{ mW}$; $C_o = 615\text{ nF}$; $L_o = 10\text{ mH}$.

External RTD interface (used with internal temperature measuring device N453x, in Type N6005-H..... or Type N6005-J.....)

Supply and signal input (terminals 24(A), 25(B) and 26(b)):
in type of protection intrinsic safety EEx ia IIB, with the following maximum values:
 $U_o = 11,3\text{ V}$; $I_o = 81,6\text{ mA}$; $P_o = 406\text{ mW}$; $C_o = 1,3\text{ }\mu\text{F}$; $L_o = 4\text{ mH}$.

External device connection (used in Type N6005-F..... or Type N6005-G.....)

Supply (terminals 24(+) and 25(-)):
 $U = 28,7\text{ V}$

External RTD connection (used with internal temperature measurement device, in Type N6005-F..... or Type N6005-G.....)

Supply (Terminals 24(A), 25(B) and 26(b)):
 $U = 11,3\text{ V}$

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Issue No. 1

Installation instructions

Installation of the Servo Tank Gauge 6000 series is to be made so, that no weaving or rolling motion of the float can occur in operation causing a contact of the float with the tank wall.

All metal parts of the sensor and the transmitter shall be connected securely to the potential equalisation system within the hazardous area.

Cable connections

The cable entry devices (including the one for the optional intrinsically safe circuit) shall be certified in type of protection flameproof enclosure "d", suitable for the conditions of use and correctly installed.

The cables and the cable entry devices shall have a temperature rating of at least 80 °C.

Conduit connections

Certified sealing devices in type of protection flameproof enclosure "d", such as conduit seals with setting compound, shall be provided immediately to the entrance of the enclosure.

The wiring and setting compound in the conduit seals shall have a temperature rating of at least 80 °C.

Blanking elements, intended to close unused apertures, shall be certified in type of protection flameproof enclosure "d", suitable for the conditions of use and correctly installed.

Wiring of the intrinsically safe circuit

If the product is provided with the optional intrinsically safe device interface or temperature measurement circuit, the connection shall be made via a separate cable entry device and with a cable type permitted for that purpose. In addition, this intrinsically safe circuit shall be clearly marked, e.g. with light blue colour.

Routine tests

Routine tests according to Clause 16 of EN 50018 are not required since the type test has been made at a static pressure of four times the reference pressure.

(16) **Test Report**

KEMA No. 2113048/2.

(17) **Special conditions for safe use**

None.

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

Covered by the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. 2113048/2.