

Translation, original language: German

(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 06ATEX0232 X** Issue Number: 1

(4) Equipment: **Ultrasonic sensor, type VEGASON SONS6\*.E\*E\*  
With integrated electronic assemblies SN61-63H**

(5) Manufacturer: **VEGA Grieshaber KG**

(6) Address: **Am Hohenstein 113, 77761 Schiltach, Germany**

(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 no. 2095552.

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

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

**EN 50020 : 2002**

**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.

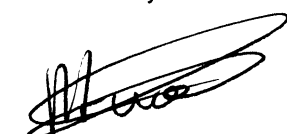
(12) The marking of the equipment shall include the following:



**II 1 G EEx ia IIC T6 or  
II 1/2 G EEx ia IIC T6 or  
II 2 G EEx ia IIC T6**

This certificate is issued on 20 November 2006 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.



P.T. van Nijen  
Certification Manager



(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 06ATEX0232 X** Issue No. 1

(15) **Description**

The ultrasonic sensors type VEGASONS SON6\*.E\*E\* with integrated electronic assemblies SN61-63H are used for fluid level measurement in potentially explosive atmospheres.

The ultrasonic sensor consists of an electronics enclosure with the corresponding conversion electronics, the process connector and the sensor.

Category 1 apparatus

The ultrasonic sensors are installed in potentially explosive atmospheres requiring category 1 equipment.

Category 1/2 apparatus

The electronics enclosure is installed in a potentially explosive atmosphere requiring category 2 equipment. The process connectors are installed in the boundary wall separating areas requiring category 2 or category 1 equipment. The measuring sensor is installed in an area requiring category 1 equipment.

Category 2 apparatus

The ultrasonic sensors are installed in potentially explosive atmospheres requiring category 2 equipment.

The relation between the temperature class, the maximum permissible temperature at the measuring sensor and the maximum permissible ambient temperature for the electronics is given in the following tables:

Category 1 apparatus

Temperature class	Temperature at the sensor	Ambient temperature for the electronics
T6	-20 °C ... +41 °C	-20 °C ... +41 °C
T5	-20 °C ... +53 °C	-20 °C ... +53 °C
T4, T3, T2, T1	-20 °C ... +60 °C	-20 °C ... +60 °C

For applications requiring category 1 equipment, the media process pressure has to be between 0,8 bar and 1,1 bar. The specified permissible ambient temperatures are based on the 80% rule in section 6.4.2 of EN 1127-1. For the operating conditions without explosive mixtures, reference shall be made to the specifications provided by the manufacturer.

(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 06ATEX0232 X** Issue No. 1

Category 1/2 apparatus

Temperature class	Temperature at the sensor	Ambient temperature for the electronics
T6	-20 °C ... +58 °C	-40 °C ... +57 °C
T5	-20 °C ... +60 °C	-40 °C ... +72 °C
T4, T3, T2, T1	-20 °C ... +60 °C	-40 °C ... +80 °C

For applications requiring category 1 equipment, the media process pressure has to be between 0,8 bar and 1,1 bar. The specified permissible ambient temperatures are based on the 80% rule in section 6.4.2 of EN 1127-1.

When the ultrasonic sensors VEGASON type SON6\*.E\*E\* are operated with higher temperatures than indicated in the table above, it shall be guaranteed by suitable measures, taking into account a temperature rise of the sensor of 6 K, that no ignition hazard is caused by such hot surface. In this case the temperature at the electronics housing shall not exceed the respective values of the table above.

For the operating conditions without explosive mixtures, reference shall be made to the specifications provided by the manufacturer.

Category 2 apparatus

Temperature class	Temperature at the sensor	Ambient temperature for the electronics
T6	-20 °C ... +74 °C	-40 °C ... +57 °C
T5	-20 °C ... +80 °C	-40 °C ... +72 °C
T4, T3, T2, T1	-20 °C ... +80 °C	-40 °C ... +80 °C

When the ultrasonic sensors VEGASON type SON6\*.E\*E\* are operated with higher temperatures than indicated in the table above, it shall be guaranteed by suitable measures, taking into account a temperature rise of the sensor of 6 K, that no ignition hazard is caused by such hot surface. In this case the temperature at the electronics housing shall not exceed the respective values of the table above.

For the permissible operating temperatures and pressures, reference shall be made to the specifications provided by the manufacturers.



(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 06ATEX0232 X** Issue No. 1

**Electrical data**

Supply and signal circuit ..... in type of protection intrinsic safety  
(Terminals 1[+], 2[-] in the Ex i EEx ia IIC, only for connection to a certified  
terminal compartment) intrinsically safe circuit, with the following  
maximum values:

$U_i$	=	30	V
$I_i$	=	131	mA
$P_i$	=	983	mW
$C_i$	=	0	nF
$L_i$	=	0	$\mu$ H

Control and display module circuit in type of protection intrinsic safety EEx ia IIC,  
(spring contacts in the Ex i only for connection to the VEGA control and  
terminal compartment) display module PLICSCOM in the Ex i terminal  
compartment.

The intrinsically safe circuit is safely electrically isolated from parts that can be earthed.

The metal parts of the Vibration Limit Switches are electrically connected to the internal and the external earthing terminal.

(16) **Test Report**

KEMA No. 2095552.

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

1. When used as a category 1 equipment the ultrasonic sensor with integrated electronic assemblies SN61-63H, which include the material aluminium, shall be installed in such a way that sparking as a result of impact or friction between aluminium and steel (with the exception of stainless steel, if the presence of rust particles can be excluded) is excluded.
2. The ultrasonic sensor with plastic enclosure or with parts of enclosure made out of plastic as well as the sensor, include surfaces that can become charged electrostatically (note warning label).

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

Assured by compliance with the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. 2095552.