



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEX PTB 06.0099X	Page 1 of 4	<u>Certificate history:</u>
Status:	Current	Issue No: 2	Issue 1 (2014-03-17) Issue 0 (2006-12-27)
Date of Issue:	2022-06-30		
Applicant:	VEGA Grishaber KG Am Hohenstein 113 77761 Schiltach Germany		
Equipment:	Ultrasonic Sensor VEGASON type series SN6*(*)CI**H****		
Optional accessory:			
Type of Protection:	General Requirements, Intrinsic Safety, Equipment with equipment protection level (EPL) Ga		
Marking:	Ex ia IIC T6 Ga, Ga/Gb, Gb		

Approved for issue on behalf of the IECEx
Certification Body:

Dr.-Ing. Martin Thedens

Position:

**Head of Department "Explosion Protection in Sensor Technology
and Instrumentation"**

Signature:
(for printed version)

Thedens
M.S.

Date:
(for printed version)

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Certificate issued by:

Physikalisch-Technische Bundesanstalt (PTB)
Bundesallee 100
38116 Braunschweig
many





IECEx Certificate of Conformity

Certificate No.: **IECEx PTB 06.0099X**

Page 2 of 4

Date of issue: **2022-06-30**

Issue No: 2

Manufacturer: **VEGA Grieshaber KG**
Am Hohenstein 113
77761 Schiltach
Germany

Manufacturing
locations: **VEGA Americas, Inc**
4241 Allendorf Drive
Cincinnati, Ohio 45209
United States of America

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition: 7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "I"
Edition: 6.0

IEC 60079-26:2014-10 Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga
Edition: 3.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

DE/PTB/ExTR06.0112/02

Quality Assessment Report:

DE/TUN/QAR06.0002/10



IECEx Certificate of Conformity

Certificate No.: **IECEx PTB 06.0099X**

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Date of issue: **2022-06-30**

Issue No: 2

EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The ultrasonic sensors VEGASON type series SN6*(*)CI**H**** consist of an electronics housing with the associated evaluation electronics with built-in electronics insert with 4 .. 20 mA HART electronics, with a process connection element and a sensor, are installed for level measurement in hazardous areas requiring EPL Ga-, EPL Ga/Gb- or EPL Gb- equipment.

The adjustment and display module with the designation PLICSCOM or PLICSCOM(*)"B/W/U" (IECEx TUN 16.0002 U) or VEGACONNECT can be built into the housing for parameter adjustment or visualization, or the external display VEGADIS61/81 can be connected.

The working frequencies are 30 kHz for the ultrasonic sensor VEGASON type series SN62.CI**H**** and 50 kHz for the ultrasonic sensor VEGASON type series SN61.CI**H****.

For further information see annex.

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. The ultrasonic sensors VEGASON type series SN6*(*)CI**H**** 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 sensors with plastic enclosure, metal enclosure with display window, with enclosure parts made of plastic as well as sensors including surfaces that can become charged electrostatically (note warning label).
3. When used as EPL Ga- or EPL Ga/Gb equipment, the ultrasonic sensors shall be connected to the equipotential bonding conductor (contact resistance $\leq 1\text{M}\Omega$) (e.g. using the earthing terminal) in order to prevent metal elements from being charged electrostatically.
4. For applications where equipment of EPL Ga- or EPL Ga/Gb is required, all parts of the ultrasonic sensors which are in contact with the medium must only be used in such media, against which the materials are sufficiently resistant.



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Certificate No.: **IECEx PTB 06.0099X**

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Date of issue: 2022-06-30

Issue No: 2

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Update to latest version of standards indicated as associated with this ExTR.

Changes include an extension to the model code.

Consideration of the IECEx Certificate TUN 16.0002 U for the inclusion of display – and adjustment module PLICSCOM or PLICSCOM(*)-B/W/U* (IECEx TUN 16.0002U) in the "Ex-I" compartment with additional operating modes.

Annex:

[Annex of IEC Ex Zertifikat.pdf](#)



Applicant: VEGA Grieshaber KG
Am Hohenstein 113
77761 Schiltach/Germany

Electrical Apparatus: **Ultrasonic sensor VEGASON type series
SN6*(*)CI**H****.**

Description:

The ultrasonic sensors VEGASON type series SN6*(*)CI**H**** consist of an electronics housing with the associated evaluation electronics with built-in electronics insert with 4 .. 20 mA HART electronics, with a process connection element and a sensor, are installed for level measurement in hazardous areas requiring EPL Ga-, EPL Ga/Gb- or EPL Gb- equipment. The adjustment and display module with the designation PLICSCOM or PLICSCOM(*)B/W/U* (IECEX TUN 16.0002 U) or VEGACONNECT can be built into the housing for parameter adjustment or visualization, or the external display VEGADIS61/81 can be connected.

The working frequencies are 30 kHz for the ultrasonic sensor VEGASON type series SN62.CI**H*** and 50 kHz for the ultrasonic sensor VEGASON type series SN61.CI**H***.

Extract from the type key:

VEGASON SN6*(*)C									
	a	\bar{a}	\bar{b}	\bar{c}	\bar{d}	\bar{e}	\bar{f}	\bar{g}	\bar{h}
aa:	Area of validity.								
	CI = IECEx Ex ia IIC T6...T1 Ga, Ga/Gb, Gb.								
	CX = ATEX II 1G, 1/2G, 2G Ex ia IIC T6...T1 Ga, Ga/Gb, Gb.								
	CM = ATEX with ship approval.								
b:	Version / Material								
c:	Process connection / Material.								
d:	Electronics.								
	H = 4... 20mA/ HART.								
e:	Enclosure / Protection.								
f:	Cable gland / Plug connection								
g:	Display / Adjustment module PLICSCOM.								
h:	Additional equipment.								

The full type code can be found in the safety instructions.



EPL Ga-equipment

The ultrasonic sensors are installed in potentially explosive atmospheres requiring EPL Ga-equipment.

EPL Ga/Gb equipment

The electronics housing is installed in potentially explosive atmospheres requiring EPL Gb equipment. The process connectors are installed in the partition separating areas requiring EPL Gb or Gaa equipment. The sensor is installed in the potentially explosive atmosphere for EPI Ga equipment.

EPL Gb equipment

The ultrasonic sensors are installed in potentially explosive atmospheres requiring EPL Gb equipment.

For the relationship between the temperature class, the maximum permissible temperature at the sensor and the maximum permissible ambient temperature for the electronic system, reference is made as follows:

Ultrasonic- sensors VEGASON SN6*(*).CIH****:**

For the relationship between the temperature class, the maximum permissible temperature at the sensor and the maximum permissible ambient temperature for the different type series VEGASON SN6*(*).CI**H**** must be observed from the safety instruction document no. 45487-DE, clause 12.

EPL Ga-Equipment

For applications requiring EPL Ga equipment, the media process pressure has to be between 80 kPa and 110 kPa (0,8 bar and 1,1 bar). For the process conditions without explosive mixtures, reference shall be made to the specifications provided by the manufacturer. For further information refer to the safety instruction document.

EPL Ga/Gb-equipment

The process pressure of the media for use with required EPL Ga/Gb-equipment must be in the range of 80 kPa and 110 kPa (0,8 bar and 1,1 bar).
When the ultrasonic sensors are operated with higher temperatures than indicated in the safety instructions, it shall be guaranteed by suitable measures that no ignition hazard is caused by hot surfaces. In this case the maximum permissible temperature at the electronics / the housing shall not exceed the respective values provided in the safety instructions. In the process it shall be considered that the measuring sensor (even in case of failure) does not show any self-heating and that the operator is responsible for the safe operation of the plant regarding the pressures / temperatures of the materials used. For further information refer to the safety instruction document.



EPL Gb-equipment

When the ultrasonic sensors are operated with higher temperatures than indicated in the safety instructions, it shall be guaranteed by suitable measures that no ignition hazard is caused by hot surfaces. In this case the maximum permissible temperature at the electronics / the housing shall not exceed the respective values provided in the safety instructions. In the process it shall be considered that the measuring sensor (even in case of failure) does not show any self-heating and that the operator is responsible for the safe operation of the plant regarding the pressures / temperatures of the materials used. For further information refer to the safety instruction document.

The operating conditions in operation without explosive mixtures can be found in the manufacturer's instructions. Further information can be found in the safety instructions.



Electrical data

Supply and signal circuit
(terminals 1[+] & 2[-] in the electronics compartment, for the 2-cell enclosure version in the terminal compartment)

Type of protection Intrinsic Safety Ex ia IIC
For connection to a certified intrinsically safe circuit.

Maximum values:

$$U_i = 30 \text{ V}$$

$$I_i = 131 \text{ mA}$$

$$P_i = 983 \text{ mW}$$

C_i negligibly low or in the version with permanent mounted connecting cable $C'_{i \text{ core/core}} = 150 \text{ pF/m}$,
 $C'_{i \text{ core/screen}} = 270 \text{ pF/m}$
 L_i negligibly low or in the version with permanent mounted connecting cable $L'_i = 55 \text{ }\mu\text{H/m}$

Control and display circuit
(terminals No. 5,6,7,8 in the electronics compartment or plug connector for the 2-cell version)

type of protection Intrinsic Safety Ex ia IIC
For connection to the intrinsically safe supply and signal circuit of the external VEGADIS81 display unit (IECEX PTB 06.0048X).

The rules for interconnection of intrinsically safe circuits between the ultrasonic sensor VEGASON type series SN6*.CI**H*** and the external VEGADIS81 display unit are complied with if the total inductance and capacitance of the connecting line between the ultrasonic sensor VEGASON type series SN6*.CI**H*** and VEGADIS81 $L_{\text{cable}} = 100 \text{ }\mu\text{H}$ and $C_{\text{cable}} = 2.8 \text{ }\mu\text{F}$ is not exceeded.
A control and display module (PLICSCOM or PLICSCOM 2) installed in the VEGASON type series SN6*.CI**H*** and a connected VEGACONNECT have been considered.

By using of the provided VEGA connecting cable between VEGASON type series SN6*.CI**H*** and the external display unit VEGADIS61/81 the following cable inductance and cable capacitance are taken into consideration from a length $> 50 \text{ m}$:

$$L'_i = 0.62 \text{ }\mu\text{H/m}$$

$$C'_{i \text{ core/core}} = 132 \text{ pF/m}$$

$$C'_{i \text{ core/screen}} = 208 \text{ pF/m}$$

$$C'_{i \text{ screen/screen}} = 192 \text{ pF/m}$$



Communication circuit
(I²C-bus socket in the electronics compartment, and additionally for the 2-cell housing version in the terminal compartment)

type of protection Intrinsic Safety Ex ia IIC
Only for connection to the intrinsically safe signal circuit of a VEGACONNECT interface converter (IECEx PTB 20.0007X).

Control and display module circuit
(spring contacts in the electronics compartment, additionally for the 2-cell housing version in the terminal compartment.)

type of protection Intrinsic Safety Ex ia IIC
For connection to the VEGA control and display module PLICSCOM or PLICSCOM*B/W/U (IECEx TUN 16.0002 U) or VEGACONNECT (IECEx PTB 20.0007X).
With the 2-cell housing version, the control and terminal display module may be housed either in the electronics compartment or the terminal compartment.

The metal elements of the ultrasonic sensors are electrically connected to the earth terminals.

The intrinsically safe supply and signal circuit is safely electrically isolated from elements that may be earthed.

Special conditions for safe use

- 1) The ultrasonic sensors VEGASON type series SN6*(*)CI**H**** 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 sensors with plastic enclosure, metal enclosure with display window, with enclosure parts made of plastic as well as sensors including surfaces that can become charged electrostatically (note warning label).
- 3) When used as EPL Ga- or EPL Ga/Gb equipment, the ultrasonic sensors shall be connected to the equipotential bonding conductor (contact resistance $\leq 1\text{M}\Omega$) (e.g. using the earthing terminal) in order to prevent metal elements from being charged electrostatically.
- 4) For applications where equipment of EPL Ga or EPL Ga/Gb is required, all parts of the ultrasonic sensors which are in contact with the medium must only be used in such media, against which the materials are sufficiently resistant.



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INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

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Certificate No.: **IECEx PTB 06.0099X**

Issue No.: **0**

Status: **Current**

Date of Issue: **2006-12-27**

Page **1** of **3**

Applicant: **VEGA Grieshaber KG**
Am Hohenstein 113
77761 Schiltach
Germany

Electrical Apparatus: **Ultrasonic Sensor VEGASON60 type series SN6*.CI**H*****
Optional accessory:

Type of Protection: **General Requirements, Intrinsic Safety**

Marking: **Ex ia IIC T6**

Approved for issue on behalf of the IECEx
Certification Body:

Dr.-Ing. Ulrich Johannsmeyer

Position:

Department Head "Intrinsic Safety and Safety of
Systems"

Signature:
(for printed version)

Date:

2007-01-18

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Certificate issued by:

**Physikalisch-Technische
Bundesanstalt (PTB)**

Bundesallee 100
38116 Braunschweig
Germany

PTB



IECEx Certificate of Conformity

Certificate No.: **IECEx PTB 06.0099X**

Date of Issue: **2006-12-27**

Issue No.: **0**

Page **2** of **3**

Manufacturer: **VEGA Grieshaber KG**
Am Hohenstein 113
77761 Schiltach
Germany

Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacture's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2004 Edition: 4.0	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
IEC 60079-11 : 1999 Edition: 4	Electrical apparatus for explosive gas atmospheres - Part 11: Intrinsic safety 'i'

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

DE/PTB/EXTR06.0112/00

Quality Assessment Report:

DE/TUN/QAR06.0002/00



IECEx Certificate of Conformity

Certificate No.: **IECEx PTB 06.0099X**

Date of Issue: **2006-12-27**

Issue No.: **0**

Page **3** of **3**

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The Ultrasonic Sensor VEGASON60 type series SN61.CI**H*** and type series SN62.CI**H*** are level measure instruments and based on ultrasonic waves.

The Ultrasonic Sensors VEGASON60 are used for monitoring and control of filling levels in explosion hazardous areas. The enclosure may be optionally fitted with the control and display module "A/B module" or "PLICSCOM" for parameterisation or visualisation.

The Ultrasonic Sensors VEGASON60 consist of an electronic enclosure with the corresponding evaluation electronic, the process connector and the sensor. Two different sensor versions are possible. Both sensors are working as ultrasonic transmitter and receiver.

The Ultrasonic Sensor VEGASON60 type series SN6*.CI**H**** are 2-wire loop powered sensors. The working frequencies are 30kHz for the Ultrasonic Sensor VEGASON60 type series SN62.CI**H*** and 50kHz for the Ultrasonic Sensor VEGASON60 type series SN61.CI**H***.

For further information see annexe.

CONDITIONS OF CERTIFICATION: YES as shown below:

The ultrasonic sensor with plastic enclosure and parts of enclosures out of plastic als well as the sensors include surfaces that may become charged electrostatically (note warning label).

Annex to IECEx PTB 06.0099 X

Ultrasonic Sensor VEGASON60 type series SN6*.CI**H***

The Ultrasonic Sensor VEGASON60 type series SN61.CI**H*** and type series SN62.CI**H*** are level measure instruments and based on ultrasonic waves. The Ultrasonic Sensors VEGASON60 are used for monitoring and control of filling levels in explosion hazardous areas.

The enclosure may be optionally fitted with the control and display module "A/B module" or "PLICSCOM" for parameterisation or visualisation.

The Ultrasonic Sensors VEGASON60 consist of an electronic enclosure with the corresponding evaluation electronic, the process connector and the sensor. Two different sensor versions are possible. Both sensors are working as ultrasonic transmitter and receiver.

The Ultrasonic Sensor VEGASON60 are 2-wire loop powered sensors. The working frequencies are 30kHz for the Ultrasonic Sensor VEGASON60 type series SN62.CI**H*** and 50kHz for the Ultrasonic Sensor VEGASON60 type series SN61.CI**H***.

Type code

VEGASON61

Approval

CI IECEx Ex ia IIC T6

Version/Material/Process temperature
A Standard / -20... +80°C

Process connection/Material
G Threads G1½A, PVDF
N Threads 1½ NPT, PVDF

Electronics
H 4...20mA HART®
P Profibus PA
F Foundation Fieldbus

Housing/Protection
3 Aluminium/IP68
4 Aluminium double chamber /IP68
5 Stainless steel 316L /IP68
K Plastic/IP66/IP67
A Aluminium/IP66/IP67
D Aluminium double chamber/IP66/IP67
V Stainless steel 316L/IP66/IP67

Cable entry/Plug connection
M M20x1.5/without
N ½NPT/without

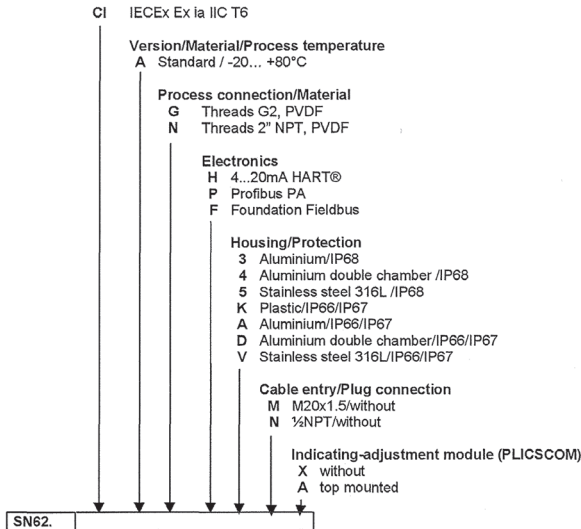
Indicating-adjustment module (PLICSCOM)
X without
A top mounted

SN61.

Annex to IECEx PTB 06.0099 X

VEGASON62

Approval



For the relationship between the temperature class and the maximum permissible temperature at the sensor and the maximum permissible ambient temperature for the electronic system, reference is made to the following table.

temperature class	temperature at the sensor	ambient temperature for the electronic system
T6	-20 ... +74 °C	-40 ... +57 °C
T5	-20 ... +89 °C	-40 ... +72 °C
T4, T3, T2, T1	-20 ... +90 °C	-40 ... +85 °C

When the ultrasonic sensor VEGASON60 type series SN6*.CI**H*** 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 surfaces. 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 manufacturer.

Annex to IECEx PTB 06.0099 X

Electrical data

Supply and signal circuit
(terminals 1[+] & 2[-] in the electronics compartment, for the 2-cell enclosure version in the terminal compartment)

Type of protection Intrinsic Safety Ex ia IIC
For connection to a certified intrinsically safe circuit.

Maximum values:

$U_i = 30 \text{ V}$

$I_i = 131 \text{ mA}$

$P_i = 983 \text{ mW}$

C_i , negligibly low or in the version VEGASON60 type series SN6*.CI**H3/4/5*** $C'_{i \text{ core/core}} = 58 \text{ pF/m}$, $C'_{i \text{ core/screen}} = 270 \text{ pF/m}$

L_i , negligibly low or in the version VEGASON60 type series SN6*.CI**H3/4/5*** $L'_i = 55 \text{ } \mu\text{H/m}$

Control and display circuit
(terminals No. 5,6,7,8 in the electronics compartment, for plug connector for the 2-cell version)

type of protection Intrinsic Safety Ex ia IIC
For connection to the intrinsically safe supply and signal circuit of the external VEGADIS61 display unit (IECEx PTB 06.0048).

The rules for interconnection of intrinsically safe circuits between the ultrasonic sensor VEGASON60 type series SN6*.CI**H*** and the external VEGADIS61 display unit are complied with if the total inductance and capacitance of the connecting line between the ultrasonic sensor VEGASON60 type series SN6*.CI**H*** and VEGADIS61 $L_{\text{cable}} = 100 \text{ } \mu\text{H}$ and $C_{\text{cable}} = 2.8 \text{ } \mu\text{F}$ is not exceeded.

A control and display module (A/B module or PLICSCOM) installed in the VEGASON60 type series SN6*.CI**H*** and a connected VEGACONNECT3 have been considered.

Communication circuit
(I²C-bus socket in the electronics compartment, and additionally for the 2-cell housing version in the terminal compartment)

type of protection Intrinsic Safety Ex ia IIC
Only for connection to the intrinsically safe signal circuit of a VEGACONNECT3 interface converter.

Control and display module circuit
(spring contacts in the electronics compartment, additionally for the 2-cell housing version in the terminal compartment.)

type of protection Intrinsic Safety Ex ia IIC
Only for connection to the VEGA control and display module (A/B module or PLICSCOM).
With the 2-cell housing version, the control and terminal display module may be housed either in the electronics compartment or the terminal compartment.

The metal elements of the ultrasonic sensors VEGASON60 type series SN6*.CI**H*** are electrically connected to the earth terminals.

The intrinsically safe supply and signal circuit is safely electrically isolated from elements that may be earthed.



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

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Certificate No.:	IECEx PTB 06.0099X	Issue No.:	1	Certificate history: Issue No. 1 (2014-3-17) Issue No. 0 (2006-12-27)
Status:	Current			
Date of Issue:	2014-03-17	Page	1 of 4	
Applicant:	VEGA Grieshaber KG Am Hohenstein 113 77761 Schiltach Germany			
Electrical Apparatus:	Ultrasonic Sensor VEGASON6* type series SN6*.CI**H***			
Optional accessory:				
Type of Protection:	General Requirements, Intrinsic Safety, Equipment with equipment protection level (EPL) Ga			
Marking:	Ex ia IIC T6 Ga, Ga/Gb, Gb			
Approved for issue on behalf of the IECEx Certification Body:	Dr.-Ing. Ulrich Johannsmeyer			
Position:	Department Head "Explosion Protection in Sensor Technology and Instrumentation"			
Signature: (for printed version)				
Date:	2014-03-26			

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3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

Physikalisch-Technische Bundesanstalt (PTB)
Bundesallee 100
38116 Braunschweig
Germany





IECEx Certificate of Conformity

Certificate No.: IECEx PTB 06.0099X

Date of Issue: 2014-03-17

Issue No.: 1

Page 2 of 4

Manufacturer: **VEGA Grieshaber KG**
Am Hohenstein 113
77761 Schiltach
Germany

Additional Manufacturing
location(s):

VEGA Americas, Inc
4241 Allendorf Drive
Cincinnati, Ohio 45209
United States of America

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "I"
IEC 60079-26 : 2006 Edition: 2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:
[DE/PTB/EXTR06.0112/01](#)

Quality Assessment Report:
[DE/TUN/QAR06.0002/05](#)



IECEx Certificate of Conformity

Certificate No.: IECEx PTB 06.0099X

Date of Issue: 2014-03-17

Issue No.: 1

Page 3 of 4

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The Ultrasonic Sensor VEGASON6* type series SN61.CI**H*** and type series SN62.CI**H*** are level measure instruments and based on ultrasonic waves.

The Ultrasonic Sensors VEGASON6* are used for monitoring and control of filling levels in explosion hazardous areas.

The enclosure may be optionally fitted with the control and display module "PLICSCOM" or "PLICSCOM2" for parameterisation or visualisation.

The Ultrasonic Sensors VEGASON6* consist of an electronic enclosure with the corresponding evaluation electronic, the process connector and the sensor. Two different sensor versions are possible. Both sensors are working as ultrasonic transmitter and receiver.

The Ultrasonic Sensor VEGASON6* type series SN6*.CI**H*** are 2-wire loop powered sensors. The working frequencies are 30kHz for the Ultrasonic Sensor VEGASON6* type series SN62.CI**H*** and 50kHz for the Ultrasonic Sensor VEGASON6* type series SN61.CI**H***.

For further information see annexe.

CONDITIONS OF CERTIFICATION: YES as shown below:

1. If used as a EPL-Ga equipment the ultrasonic sensors VEGASON6* type series SN6*.CI**H*** 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 and parts of enclosures out of plastic as well as the sensors include surfaces that may become charged electrostatically (note warning label).
3. In case of danger of mechanical damage of the sound transducer the ultrasonic sensors VEGASON shall be installed in such a way that the sound transducer is protected against mechanical damage from the environment.



IECEx Certificate of Conformity

Certificate No.: IECEx PTB 06.0099X

Date of Issue: 2014-03-17

Issue No.: 1

Page 4 of 4

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

- 1) The standards were updated as listed under item STANDARDS
- 2) Electronic components of the Two-Wire power supply NTP2-2LHART were replaced by equivalent parts.
- 3) The electronics of the control and display module PLICSCOM has been adapted and is now called PLICSCOM2.
- 4) The control and display module VEGADIS61 according to the IECEx PTB 06.0048 Issue no. 1 is extended to the version VEGADIS61/81.
- 5) For the versions with permanent mounted connector cable, a new cable will be used. The electrical data were adjusted. See the section below "Electrical Data".

Annex: Annex IECEx PTB 060099 Issue1.pdf



Equipment: Ultrasonic Sensor VEGASON6* type series SN6*.CI**H***
Manufacturer: VEGA Grieshaber KG
Address: Am Hohenstein 113, 77761 Schiltach, Germany

Description of equipment

The Ultrasonic Sensor VEGASON6* type series SN61.CI**H*** and type series SN62.CI**H*** are level measure instruments and based on ultrasonic waves. The Ultrasonic Sensors VEGASON are used for monitoring and control of filling levels in explosion hazardous areas.
The enclosure may be optionally fitted with the control and display module "A/B module" or "PLICSCOM" for parameterisation or visualisation.

The Ultrasonic Sensors VEGASON consist of an electronic enclosure with the corresponding evaluation electronic, the process connector and the sensor. Two different sensor versions are possible. Both sensors are working as ultrasonic transmitter and receiver.

The Ultrasonic Sensor VEGASON are 2-wire loop powered sensors. The working frequencies are 30kHz for the Ultrasonic Sensor VEGASON62 type series SN62.CI**H*** and 50kHz for the Ultrasonic Sensor VEGASON61 type series SN61.CI**H***.

Type code

VEGASON61

Approval

CI IECEx Ex ia IIC T6

Version/Material/Process temperature

A Standard / -20... +80°C

Process connection/Material

G Threads G1½A, PVDF
N Threads 1½ NPT, PVDF

Electronics

H 4...20mA HART®
P Profibus PA
F Foundation Fieldbus

Housing/Protection

3 Aluminium/IP68
4 Aluminium double chamber /IP68
5 Stainless steel 316L /IP68
K Plastic/IP66/IP67
A Aluminium/IP66/IP67
D Aluminium double chamber/IP66/IP67
V Stainless steel 316L/IP66/IP67

Cable entry/Plug connection

M M20x1.5/without
N ½NPT/without

Indicating-adjustment module (PLICSCOM)

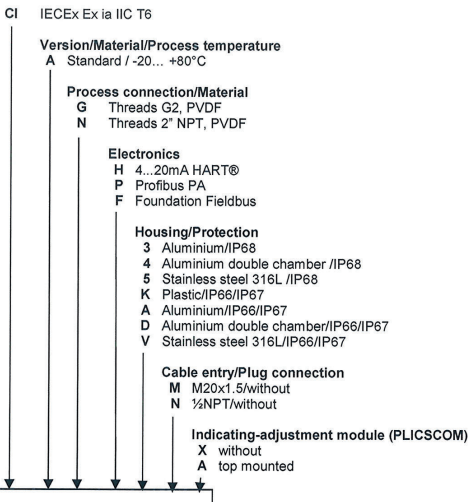
X without
A top mounted

SN61.



VEGASON62

Approval



For the relationship between the temperature class and the maximum permissible temperature at the sensor and the maximum permissible ambient temperature for the electronic system, reference is made to the following table.

temperature class	temperature at the sensor	ambient temperature for the electronic system
T6	-20 ... +74 °C	-40 ... +57 °C
T5	-20 ... +89 °C	-40 ... +72 °C
T4, T3, T2, T1	-20 ... +90 °C	-40 ... +85 °C

When the ultrasonic sensor VEGASON6* type series SN6*.CI**H*** 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 surfaces. 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 manufacturer.



Electrical data

Supply and signal circuit
(terminals 1[+] & 2[-] in the electronics compartment, for the 2-cell enclosure version in the terminal compartment)

Type of protection Intrinsic Safety Ex ia IIC
For connection to a certified intrinsically safe circuit.

Maximum values:

$U_i = 30 \text{ V}$

$I_i = 131 \text{ mA}$

$P_i = 983 \text{ mW}$

C_i negligibly low or in the version with permanent mounted connecting cable $C'_{i \text{ core/core}} = 150 \text{ pF/m}$,

$C'_{i \text{ core/screen}} = 270 \text{ pF/m}$

L_i negligibly low or in the version with permanent mounted connecting cable $L'_i = 55 \text{ µH/m}$

Control and display circuit
(terminals No. 5,6,7,8 in the electronics compartment or plug connector for the 2-cell version)

Type of protection Intrinsic Safety Ex ia IIC
For connection to the intrinsically safe supply and signal circuit of the external VEGADIS61/81 display unit (IECEx PTB 06.0048).

The rules for interconnection of intrinsically safe circuits between the ultrasonic sensor VEGASON6* type series SN6*.CI**H*** and the external VEGADIS61/81 display unit are complied with if the total inductance and capacitance of the connecting line between the ultrasonic sensor VEGASON6* type series SN6*.CI**H*** and VEGADIS61/81 $L_{\text{cable}} = 100 \text{ µH}$ and $C_{\text{cable}} = 2.8 \text{ µF}$ is not exceeded.

A control and display module (PLICSCOM or PLICSCOM2) installed in the VEGASON6* type series SN6*.CI**H*** and a connected VEGACONNECT have been considered.

When using a longer cable length than 50 m of the delivered VEGA connection cable between VEGASON6* type series SN6*.CI**H*** and the external display unit VEGADIS61/81 the following L_i and C_i of the cable needs to be considered.

$L_i = 0.62 \text{ µH/m}$

$C'_{i \text{ core/core}} = 0.132 \text{ pF/m}$

$C'_{i \text{ core/screen}} = 208 \text{ pF/m}$

$C'_{i \text{ screen/screen}} = 192 \text{ pF/m}$

Communication circuit
(I²C-bus socket in the electronics compartment, and additionally for the 2-cell housing version in the terminal compartment)

Type of protection Intrinsic Safety Ex ia IIC
Only for connection to the intrinsically safe signal circuit of a VEGACONNECT interface converter.

Control and display module circuit
(spring contacts in the electronics compartment, additionally for the 2-cell housing version in the terminal compartment.)

Type of protection Intrinsic Safety Ex ia IIC
Only for connection to the VEGA control and display module (PLICSCOM or PLICSCOM2).
With the 2-cell housing version, the control and terminal display module may be housed either in the electronics compartment or the terminal compartment.



The metal elements of the ultrasonic sensors VEGASON6* type series SN6*.CI**H*** are electrically connected to the earth terminals.

The intrinsically safe supply and signal circuit is safely electrically isolated from elements that may be earthed.

