IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

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

Certificate No.:	IECEx TUN 05.0018X issue No.:5	Certificate history: Issue No. 5 (2017-7-31) Issue No. 4 (2008-10-17) Issue No. 3 (2008-10-17) Issue No. 2 (2007-11-22) Issue No. 1 (2006-12-13)
Status:	**Current**	
Date of Issue:	**2017-07-31** Page 1 of 6	

Applicant: **VEGA Grieshaber KG**
Am Hohenstein 13
77761 Schiltach
Germany

Equipment: **Capacitive continuous level measurement sensors type VEGACAL CL6*.DI ***H/P/F******
Optional accessory: --

Type of Protection: **Flameproof Enclosures and Intrinsic Safety**

Marking: Ex ia/db ia IIC T6 ... T1 Ga/Gb
Ex db ia IIC T6 ... T1 Gb

Approved for issue on behalf of the IECEx Certification Body: Andreas Meyer

Position: Head of IECEx CB

Signature: (for printed version)

Date: 2017-07-31

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Certificate issued by:

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Hanover Office
Am TÜV 1, 30519 Hannover
Germany

TÜV NORD

IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0018X

Date of Issue: **2017-07-31** Issue No.: **5**

Manufacturer: **VEGA Grieshaber KG**
Am Hohenstein 13
77761 Schiltach
Germany

Additional 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 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 60079-1 : 2014-06 Edition: 7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-26 : 2014-10 Edition: 3.0	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

IECEx ATR: **DE/TUN/ExTR08.0035/01** **IECEx QAR:** **DE/TUN/QAR06.0002/07**	File Reference: **17 217 204727** **16 216 178638**

IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0018X

Date of Issue: **2017-07-31** Issue No.: **5**

Schedule

EQUIPMENT:
Equipment and systems covered by this certificate are as follows:

The capacitive continuous level measurement sensors type VEGACAL CL6*.DI ***H/P/F**** are used for monitoring or control of filling levels in explosion hazardous areas.
The measuring media are allowed to be combustible liquids, gases, mists or vapours.
The capacitive continuous level measurement sensors type VEGACAL CL6*.DI ***H/P/F**** consist of an electronic housing for the barriers with an Ex-d connection room, an Ex-i connection room with inserted measuring electronics, a process adapting element and a measuring sensor.

Mechanical basic execution of the electrodes:

Type	Electrodes
VEGACAL CL62	partly insulated rod electrode, optionally with screening tube or concentric tube
VEGACAL CL63	fully insulated rod electrode, optionally plated
VEGACAL CL64	fully insulated rod electrode for viscous and adhesive filling materials
VEGACAL CL65	partly insulated cable electrode optionally with abrasion protection
VEGACAL CL66	fully insulated cable electrode

For further details see attachment.

SPECIFIC CONDITIONS OF USE: YES as shown below:

1.At the plastic parts of the capacitive continuous level measurement sensors there is a danger of ignition by electrostatic discharge. Observe manual of the manufacturer and warning label.
2.For zone 0/1 applications and at risks by pendulum or vibration the respective parts of the capacitive continuous level measurement sensors have to be secured effectively against these dangers. Observe manual of the manufacturer.
3.For zone 0/1 applications, at the metallic electrode parts of the capacitive continuous level measurement sensors made of light metal there is a danger of ignition by impact or friction. Observe manual of the manufacturer.
4.For zone 0/1 applications the medium tangent materials have to be resistant to the media.
5.The flameproof terminal box (Ex-d connection room) of this equipment must be provided with cable entries and filler plugs resp. conduits which are certified according to
IEC 60079-0 and IEC 60079-1.
6.The PA terminal of the capacitive continuous level measurement sensors with the barriers P2-2LH and KLEMP2-2LPAFFD (internal or external screw terminal) has to be connected with the potential equalization of the explosion hazardous area.

IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0018X

Date of Issue: **2017-07-31** Issue No.: **5**

EQUIPMENT(continued):

See attachment.

IECEx Certificate of Conformity

Certificate No: IECEx TUN 05.0018X Issue No: 5

Date of Issue: **2017-07-31** Page 5 of 6

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

-Standard update to IEC 60079-11 and IEC 60079-26
-Data from CoC TUN 05.0018 X (version "H") also valid for CoC TUN 05.0019 X (version "P/F")
-actual PLICSCOM module permissible to be installed; CoC TUN 16.0002 U
-new thermal data
-Ex-d-housing and installed barriers certfied according to CoC TUN 05.0015U, issue 08

IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0018X

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Additional information:

See attachment.

Annex: Attachment_VEGACAL_H_P_F_d ia_TUN05.0018X.pdf

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The capacitive continuous level measurement sensors type VEGACAL CL6*.DI ***H/P/F**** are used for monitoring or control of filling levels in explosion hazardous areas.
The measuring media are allowed to be combustible liquids, gases, mists or vapours.
The capacitive continuous level measurement sensors type VEGACAL CL6*.DI ***H/P/F**** consist of an electronic housing for the barriers with an Ex-d connection room, an Ex-i connection room with inserted measuring electronics, a process adapting element and a measuring sensor.

Mechanical basic execution of the electrodes:

Type	Electrodes
VEGACAL CL62	partly insulated rod electrode, optionally with screening tube or concentric tube
VEGACAL CL63	fully insulated rod electrode, optionally plated
VEGACAL CL64	fully insulated rod electrode for viscous and adhesive filling materials
VEGACAL CL65	partly insulated cable electrode optionally with abrasion protection
VEGACAL CL66	fully insulated cable electrode

Electrical data

Type VEGACAL CL6*.DI ***H**

Supply and signal circuit ……..... (Terminals 1[+], 2[-] in the Ex-d connection room)

with barrier P3-2LH:
U = 14 … 36 V d. c.
U_m = 253 V a. c.

with barrier P2-2LH:
U = 20 … 36 V d. c.
Um = 253 V a. c.

Operation and indication circuit ……. (Terminals 5, 6, 7, 8 or plug connection in the “i” connection room)

in type of protection „Intrinsic Safety“ Ex ia IIC

only for connection to the intrinsically safe circuit of the belonging external VEGA indication unit type VEGADIS61/81
The interconnection of the both intrinsically safe circuits was taken into account.
maximum values of the connection cable:
C_o = 2.4 µF
L_o = 160 µH

Operation and indication module circuit …… (Spring contacts in the housing for the electronics)

in type of protection „Intrinsic Safety“ Ex ia IIC only for connection to the VEGA operation and indication module (PLICSCOM)

Communication circuit ……. (I²C bus in the “i” connection room))

in type of protection „Intrinsic Safety“ Ex ia IIC

only for connection to the intrinsically safe signal circuit of the VEGA interface converter type VEGACONNECT

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If
- the VEGA interface converter type VEGACONNECT and
- the external VEGA indication unit type VEGADIS61/81

are connected, the following maximum values of the connection cable to the VEGADIS61/81 do result:

C_o = 2.8 µF
L_o = 100 µH

A length of the triax cable resp. coax cable between the housing for the electronics and the terminal housing of 10 m is permissible.

All intrinsically safe circuits of the capacitive continuous level measurement sensors with built-in barrier P3-2LH are safe galvanically separated from the non intrinsically safe supply and signal circuit and the parts which can be earthed.

All intrinsically safe circuits of the capacitive measuring probes with built-in barrier P2-2LH are galvanically connected with the earth potential (measuring circuit excluded).

Type VEGACAL CL6*.DI ***P/F****

Electrical data

Supply and signal circuit …… (Terminals Kl1/1, Kl1/2; "Ex d"-connection room)	with barrier P3-2LPAFF: U = 14 … 32 V d. c. U_m = 253 V a. c. with barrier KLEMP2-2LPAFFD: U = 16 … 32 V d. c. Um = 253 V a. c.
Operation and indication circuit …. (Terminals 5, 6, 7, 8 in the "Ex i"-connection room)	in type of protection „Intrinsic Safety "Ex ia IIC only for connection to the intrinsically safe circuit of the belonging external VEGA indication unit type VEGADIS61/81 The interconnection of the both intrinsically safe circuits was taken into account. maximum values of the connection cable: C_o = 2.4 µF L_o = 160 µH
Operation and indication module circuit …… (Spring contacts in the "Ex i"-connection room)	in type of protection „Intrinsic Safety" Ex ia IIC only for connection to the VEGA operation and indication module (PLICSCOM)
Communication circuit …….. (I^2C bus in the "Ex i"-connection room)	in type of protection „Intrinsic Safety" Ex ia IIC only for connection to the intrinsically safe signal circuit of the

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VEGA interface converter type VEGACONNECT

If
- the VEGA interface converter type VEGACONNECT and
- the external VEGA indication unit type VEGADIS61/81

are connected, the following maximum values of the connection cable to the VEGADIS61/81 do result:

C_o = 2.8 µF
L_o = 100 µH

A length of the triax cable resp. coax cable between the housing for the electronics and the terminal housing of 10 m is permissible.

All intrinsically safe circuits of the capacitive continuous level measurement sensors with built-in barrier P3-2LPAFF and P3-2LH are safe galvanically separated from the non intrinsically safe supply and signal circuit and the parts which can be earthed.

All intrinsically safe circuits of the capacitive measuring probes with built-in barrier KLEMP2-2LPAFFD and P2-2LH are galvanically connected with the earth potential (measuring circuit excluded).

Thermal data

Type VEGACAL CL6*.DI ***H****

If the capacitive continuous level measurement sensors are mounted in the partition wall between explosion hazardous areas which require apparatus of the category 1 (electrode) and category 2 (electronics), the permissible temperature range in the area of the electronics/of the medium dependent on the temperature class has to be taken from the following table:

Temperature class	Ambient temperature range	Medium temperature range at measuring sensor
T6	-40 °C … +46 °C	-20 °C …+60 °C
T5	-40 °C …+60 °C	
T4		
T3		
T2		
T1		

The electrodes of the capacitive continuous level measurement sensors are allowed to be operated in an explosion hazardous area, that requires apparatus of the category 1, only if atmospheric conditions exist (pressure from 0.8 bar to 1.1 bar).
If no explosion hazardous atmospheres exist, the permissible operating temperatures and pressures have to be taken from the manufacturer's data (manual).
If the sensors of the capacitive continuous level measurement sensors are operated at higher medium temperatures as listed in the a.m. table, measures have to be taken, that the danger of

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ignition caused by these hot surfaces is excluded. The max. permissible temperature on the electronics/housing must not exceed the values as mentioned in the a.m. table.

If the capacitive continuous level measurement sensors are mounted in explosion hazardous areas which require apparatus of the category 2 the permissible temperature range in the area of the electronics/of the medium dependent on the temperature class has to be taken from the following table:

<table>
<tr><th rowspan="2">Temperature class</th><th rowspan="2">Ambient temperature range</th><th colspan="3">Medium temperature range at measuring sensor</th></tr>
<tr><th>PE insulation</th><th>PTFE insulation</th><th>PTFE insulation with temperature adapter</th></tr>
<tr><td>T6</td><td>-40 °C … +46 °C</td><td rowspan="6">-40 °C … +80 °C</td><td>-50 °C … +85 °C</td><td>-50 °C … +85 °C</td></tr>
<tr><td>T5</td><td rowspan="5">-40 °C … +60 °C</td><td>-50 °C … +100 °C</td><td>-50 °C … +100 °C</td></tr>
<tr><td>T4</td><td>-50 °C … +135 °C</td><td>-50 °C … +135 °C</td></tr>
<tr><td>T3</td><td rowspan="3">-50 °C … +150 °C</td><td rowspan="3">-50 °C … +200 °C</td></tr>
<tr><td>T2</td></tr>
<tr><td>T1</td></tr>
</table>

If the sensors of the capacitive continuous level measurement sensors are operated at higher medium temperatures as listed in the a.m. table, measures have to be taken, that the danger of ignition caused by these hot surfaces is excluded. The max. permissible temperature on the electronics/housing must not exceed the values as mentioned in the a.m. table.

Type VEGACAL CL6*.DI ***P/F****

If the capacitive continuous level measurement sensors are mounted in the partition wall between explosion hazardous areas which require apparatus of the category 1 (electrode) and category 2 (electronics), the permissible temperature range in the area of the electronics/of the medium dependent on the temperature class has to be taken from the following table:

<table>
<tr><th>Temperature class</th><th>Ambient temperature range</th><th>Medium temperature range at measuring sensor</th></tr>
<tr><td>T6</td><td>-40 °C … +38 °C</td><td rowspan="6">-20 °C …+60 °C</td></tr>
<tr><td>T5</td><td>-40 °C …+53 °C</td></tr>
<tr><td>T4</td><td rowspan="4">-40 °C …+60 °C</td></tr>
<tr><td>T3</td></tr>
<tr><td>T2</td></tr>
<tr><td>T1</td></tr>
</table>

The electrodes of capacitive continuous level measurement sensors are allowed to be operated in an explosion hazardous area, that requires apparatus of the category 1, only if atmospheric conditions exist (pressure from 0.8 bar to 1.1 bar).
If no explosion hazardous atmospheres exist, the permissible operating temperatures and pressures have to be taken from the manufacturer's data (manual).

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If the sensors of the capacitive continuous level measurement sensors are operated at higher medium temperatures as listed in the a.m. table, measures have to be taken, that the danger of ignition caused by these hot surfaces is excluded. The max. permissible temperature on the electronics/housing must not exceed the values as mentioned in the a.m. table.

If the capacitive continuous level measurement sensors are mounted in explosion hazardous areas which require apparatus of the category 2 the permissible temperature range in the area of the electronics/of the medium dependent on the temperature class has to be taken from the following table:

<table>
<tr><th rowspan="2">Temperature class</th><th rowspan="2">Ambient temperature range</th><th colspan="3">Medium temperature range at measuring sensor</th></tr>
<tr><th>PE insulation</th><th>PTFE insulation</th><th>PTFE insulation with temperature adapter</th></tr>
<tr><td>T6</td><td>-40 °C … +38 °C</td><td rowspan="6">-40 °C … +80 °C</td><td>-50 °C … +85 °C</td><td>-50 °C … +85 °C</td></tr>
<tr><td>T5</td><td>-40 °C … +53 °C</td><td>-50 °C … +100 °C</td><td>-50 °C … +100 °C</td></tr>
<tr><td>T4</td><td rowspan="3">-40 °C …+60 °C</td><td>-50 °C … +135 °C</td><td>-50 °C … +135 °C</td></tr>
<tr><td>T3</td><td rowspan="3">-50 °C … +150 °C</td><td rowspan="3">-50 °C … +200 °C</td></tr>
<tr><td>T2</td></tr>
<tr><td>T1</td></tr>
</table>

If the sensors of the capacitive continuous level measurement sensors are operated at higher medium temperatures as listed in the a.m. table, measures have to be taken, that the danger of ignition caused by these hot surfaces is excluded. The max. permissible temperature on the electronics/housing must not exceed the values as mentioned in the a.m. table.

Specific Conditions of Use

1. At the plastic parts of the capacitive continuous level measurement sensors there is a danger of ignition by electrostatic discharge. Observe manual of the manufacturer and warning label.
2. For zone 0/1 applications and at risks by pendulum or vibration the respective parts of the capacitive continuous level measurement sensors have to be secured effectively against these dangers. Observe manual of the manufacturer.
3. For zone 0/1 applications, at the metallic electrode parts of the capacitive continuous level measurement sensors made of light metal there is a danger of ignition by impact or friction. Observe manual of the manufacturer.
4. For zone 0/1 applications the medium tangent materials have to be resistant to the media.
5. The flameproof terminal box (Ex-d connection room) of this equipment must be provided with cable entries and filler plugs resp. conduits which are certified according to IEC 60079-0 and IEC 60079-1.

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6. The PA terminal of the capacitive continuous level measurement sensors with the barriers P2-2LH and KLEMP2-2LPAFFD (internal or external screw terminal) has to be connected with the potential equalization of the explosion hazardous area.

   Since the intrinsically safe circuits are galvanically connected with the earth potential, potential compensation has to exist in the complete course of the erection of the intrinsically safe operation and indication circuit.

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

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Certificate No.:	IECEx TUN 05.0018X	issue No.:4
Status:	**Current**	
Date of Issue:	**2008-10-17**	Page 1 of 6

Certificate history:
Issue No. 4 (2008-10-17)
Issue No. 3 (2008-10-17)
Issue No. 2 (2007-11-22)
Issue No. 1 (2006-12-13)

Applicant: **VEGA Grieshaber KG**
Am Hohenstein 13
77761 Schiltach
Germany

Electrical Apparatus: **Capacitive Measuring Probe type VEGACAL CL6*.DI***H******
Optional accessory: --

Type of Protection: **Flameproof Enclosures and Intrinsic Safety**

Marking: **Zone 0/1 Ex d ia IIC T6**

Approved for issue on behalf of the IECEx Certification Body: Karl-Heinz Schwedt

Position: Head of IECEx CB

Signature: (for printed version)

Date: 2008-10-17

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IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0018X

Date of Issue: **2008-10-17** Issue No.: **4**

Manufacturer: **VEGA Grieshaber KG**
Am Hohenstein 13
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 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 : 2004 Edition: 4.0	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
IEC 60079-1 : 2003 Edition: 5	Electrical apparatus for explosive gas atmospheres - Part 1: Flameproof enclosure 'd'
IEC 60079-11 : 2006 Edition: 5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-26 : 2004 Edition: 1	Electrical apparatus for explosve gas atmospheres - Part 26: Construction, test and marking of Group II Zone 0 electrical apparatus

*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

IECEx ATR:
DE/TUN/ExTR08.0035/00

File Reference:
08 204 554741

IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0018X

Date of Issue: **2008-10-17** Issue No.: **4**

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The capacitive measuring probes type VEGACAL CL6*.DI**HD* are used for monitoring or control of filling levels in explosi
The measuring media are allowed to be combustible liquids, gases, mists or vapours.
The capacitive measuring probes type VEGACAL CL6*.DI**HD* consist of an electronic housing for the barriers
with an Ex-d connection room, an Ex-i connection room with inserted measuring electronics,
a process adapting element and a measuring sensor.
Mechanical execution of the capacitive measuring probes:

type	electrodes
CL62.DI**HD*	partly insulated electrode, optionally with screening tube or concentric tube
CL63.DI**HD*	fully insulated electrode, optionally plated
CL64.DI**HD*	fully insulated electrode, optionally with screening tube, concentric tube or plated
CL65.DI**HD*	partly insulated cable electrode optionally with additionally insulated cable
CL66.DI**HD*	fully insulated cable electrode

CONDITIONS OF CERTIFICATION: YES as shown below:

Only changes regarding the formatting; see annexe

IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0018X

Date of Issue: **2008-10-17** Issue No.: **4**

EQUIPMENT(continued):

Only changes regarding the formatting; see annexe

IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0018X

Date of Issue: **2008-10-17** Issue No.: **4**

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

See annexe issue 3

IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0018X

Date of Issue: **2008-10-17** Issue No.: **4**

Additional information:

Only changes regarding the formatting; see annexe

Annexe: 3rd supplement_COC_VEGACAL CL6_DI_H.pdf, CoC IECEx TUN 05.0018X_complete inclusive of Special Conditions.p
1Erg_COC_CAL CL6-.DI--HD--.pdf

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IEC Certification Scheme for Explosive Atmospheres
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Certificate No.: IECEx TUN 05.0018X issue No.:3

Status: **Cancelled**

Date of Issue: **2008-10-17** Page 1 of 6

Applicant: **VEGA Grieshaber KG**
Am Hohenstein 13
77761 Schiltach
Germany

Certificate history:
Issue No. 4 (2008-10-17)
Issue No. 3 (2008-10-17)
Issue No. 2 (2007-11-22)
Issue No. 1 (2006-12-13)

Electrical Apparatus: **Capacitive Measuring Probe type VEGACAL CL6*.DI**HD***
Optional accessory: --

Type of Protection: **Flameproof Enclosures and Intrinsic Safety**

Marking: **Ex d ia IIC T6**

Approved for issue on behalf of the IECEx Certification Body: Karl-Heinz Schwedt

Position: Head of IECEx CB

Signature: (for printed version)

Date:

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IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0018X

Date of Issue: **2008-10-17** Issue No.: **3**

Page 2 of 6

Manufacturer: **VEGA Grieshaber KG**
Am Hohenstein 13
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 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:

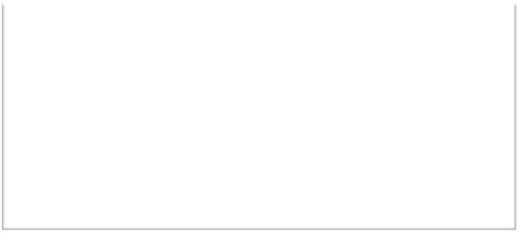
IEC 60079-0 : 2004 Edition: 4.0	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
IEC 60079-1 : 2003 Edition: 5	Electrical apparatus for explosive gas atmospheres - Part 1: Flameproof enclosure 'd'
IEC 60079-11 : 2006 Edition: 5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-26 : 2004 Edition: 1	Electrical apparatus for explosve gas atmospheres - Part 26: Construction, test and marking of Group II Zone 0 electrical apparatus

*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

IECEx ATR: **DE/TUN/ExTR08.0035/00**

File Reference: **08 204 554741**



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Certificate No.: IECEx TUN 05.0018X

Date of Issue: **2008-10-17** Issue No.: **3**

Page 3 of 6

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The capacitive measuring probes type VEGACAL CL6*.DI**HD* are used for monitoring or control of filling levels in explosic
The measuring media are allowed to be combustible liquids, gases, mists or vapours.
The capacitive measuring probes type VEGACAL CL6*.DI**HD* consist of an electronic housing for the barriers
with an Ex-d connection room, an Ex-i connection room with inserted measuring electronics,
a process adapting element and a measuring sensor.
Mechanical execution of the capacitive measuring probes:

type	electrodes
CL62.DI**HD*	partly insulated electrode, optionally with screening tube or concentric tube
CL63.DI**HD*	fully insulated electrode, optionally plated
CL64.DI**HD*	fully insulated electrode, optionally with screening tube, concentric tube or plated
CL65.DI**HD*	partly insulated cable electrode optionally with additionally insulated cable
CL66.DI**HD*	fully insulated cable electrode

CONDITIONS OF CERTIFICATION: YES as shown below:

Only changes regarding the formatting; see annexe

IECEx Certificate of Conformity

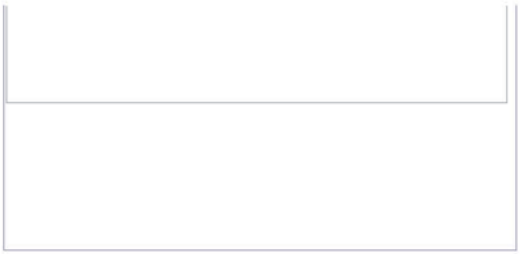
Certificate No.: IECEx TUN 05.0018X

Date of Issue: **2008-10-17** Issue No.: **3**

Page 4 of 6

EQUIPMENT(continued):

Only changes regarding the formatting; see annexe



IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0018X

Date of Issue: **2008-10-17** Issue No.: **3**

Page 5 of 6

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

See annexe for issue 2

IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0018X

Date of Issue: **2008-10-17** Issue No.: **3**

Page 6 of 6

Additional information:

Only changes regarding the formatting; see annexe

Annexe: 2nd supplement_COC_VEGACAL CL6_DI_H.pdf, CoC IECEx TUN 05.0018X_complete inclusive of Special Conditions.pdf, 1Erg_COC_CAL CL6-.DI--HD--.pdf

TÜV NORD CERT GmbH
Am TÜV 1
30519 Hannover

IECEx Certification Body

IECEx TR:	File reference:
DE/TUN/ExTR08.0035/00	08 204 554741
IECEx QAR:	File reference:
DE/QAR/TUN/06.0002/00	QAR/TUN/QAR06.0002/00

The capacitive measuring probes type VEGACAL CL6*.DI***H**** are used for monitoring or control of filling levels in explosion hazardous areas.
The measuring media are allowed to be combustible liquids, gases, mists or vapours.
The capacitive measuring probes type VEGACAL CL6*.DI***H**** consist of an electronic housing for the barrier with an Ex-d connection room, an Ex-i connection room with inserted measuring electronics, a process adapting element and a measuring sensor.

The changes refer to the type designation mentioned above, the mechanical construction, the temperature range in the area of the electronics/of the medium, the electrical data, the special conditions for safe use and the marking.
The marking reads as follows: Zone 0/1 Ex d ia IIC Tx (see tables for temperature ranges).

Type designation and mechanical execution of the measuring probes:

Type	Electrodes
CL62.DI***H****	partly insulated electrode, optionally with screening tube or concentric tube
CL63.DI***H****	fully insulated electrode, optionally plated
CL64.DI***H****	fully insulated electrode, optionally with screening tube, concentric tube or plated
CL65.DI***H****	partly insulated cable electrode optionally with additionally insulated cable
CL66.DI***H****	fully insulated cable electrode
CL69.DI***H****	fully insulated 2-rod electrode

If the capacitive measuring probes are mounted in explosion hazardous areas of the zone 1, the permissible temperature range in the area of the electronics/of the medium dependent on the temperature class has to be taken from the following table:

Temperature class	Ambient temperature range on the electronics/housing	Medium temperature range for electrodes with PE-insulation	Medium temperature range for other electrodes
T6	- 40°C... + 57°C	- 40°C... + 80°C	-50°C… +85 °C
T5	- 40°C... + 60°C	- 40°C... + 80°C	-50°C… +100 °C
T4	- 40°C... + 60°C	- 40°C... + 80°C	-50°C… +135 °C
T3*, T2*, T1*	- 40°C... + 60°C	- 40°C... + 80°C	-50°C… +150 °C

* with temperature adapter for medium temperatures > 150°C… 200°C

If the sensors of the capacitive measuring probes are operated at higher medium temperatures as listed in the a.m. table, measures have to be taken, that the danger of ignition caused by these hot surfaces is excluded. The max. permissible temperature on the electronics/housing must not exceed the values as mentioned in the a.m. table.

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If the capacitive measuring probes are mounted in the partition wall between explosion hazardous areas of the zone 0 (electrode) and zone 1 (electronics), the permissible temperature range in the area of the electronics/of the medium has to be taken from the following table:

Temperature class	Ambient temperature range	Medium temperature range
T6	-40 °C … +57 °C	-20°C … +60 °C
T5 … T1	-40 °C … +60 °C	-20°C … +60 °C

The electrodes of the capacitive measuring probes are allowed to be operated in an explosion hazardous area of the zone 0, only if atmospheric conditions exist (pressure from 0.8 bar to 1.1 bar).
If no explosion hazardous atmospheres exist, the permissible operating temperatures and pressures have to be taken from the manufacturer's data (manual).

If the sensors of the capacitive measuring probes are operated at higher medium temperatures as listed in the a.m. table, measures have to be taken, that the danger of ignition caused by these hot surfaces is excluded. The max. permissible temperature at the electronics/housing must not exceed the values as mentioned in the a.m. table.

Electrical data

Supply and signal circuit …… (Terminals Kl1/1, Kl1/2; Ex-d connection room)	U = 20 … 36 V d. c. Um = 253 V a. c.
PA terminal of the capacitive measuring probe with barrier P2-2LH …… (Screw terminal)	Connection to the potential equalisation in the explosion hazardous area
Operation and indication circuit …….. (Terminals 5, 6, 7, 8 in the "i"-connection room resp. plug connection)	in type of protection „Intrinsic Safety" Ex ia IIC only for connection to the intrinsically safe circuit of the belonging external VEGA indication unit type VEGADIS61 (IECEx PTB 06.0048) The interconnection of the both intrinsically safe circuits was taken into account. maximum values of the connection cable: Co = 2.4 µF Lo = 160 µH
Operation and indication module circuit …. (Spring contacts in the "i"-connection room)	in type of protection „Intrinsic Safety" Ex ia IIC only for connection to the VEGA operation and indication module (Plicscom)
Communication circuit …….. (I^2C bus in the "i"-connection room)	in type of protection „Intrinsic Safety" Ex ia IIC only for connection to the intrinsically safe signal circuit of the VEGA interface converter type VEGACONNECT

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If
- the VEGA interface converter type VEGACONNECT and
- the external VEGA indication unit type VEGADIS61 (IECEx PTB 06.0048)

are connected, the following maximum values of the connection cable to the VEGADIS61 do result:

C_o = 2.8 µF
L_o = 100 µH

A length of the triax cable resp. coax cable between the housing for the electronics and the terminal housing of 10 m is permissible.

All intrinsically safe circuits of the capacitive measuring probe with built-in barrier P2-2LH are galvanically connected with the earth potential (measuring circuit excluded)

Special conditions for safe use:

1. At the plastic parts of the capacitive measuring probes type VEGACAL CP6*.DI***H**** there is a danger of ignition by electrostatic discharge. Observe manual of the manufacturer and warning label.
2. For zone 0/1 applications and at risks by pendulum or vibration the respective parts of the capacitive measuring probes type VEGACAL CP65.DI***H**** and type VEGACAL CP66.DI***H**** have to be secured effectively against these dangers. Observe manual of the manufacturer.
3. For zone 0/1 applications, at the metallic electrode parts of the capacitive measuring probes type VEGACAL CP6*.DI***H**** made of light metal there is a danger of ignition by impact or friction. Observe manual of the manufacturer.
4. For zone 0/1 applications the medium tangent materials have to be resistant to the media.
5. The PA terminal of the capacitive measuring probes (internal or external screw terminal) has to be connected with the potential equalization of the explosion hazardous area.
6. The flameproof terminal box (Ex-d connection room) of this equipment must be provided with cable entries and filler plugs resp. conduits which are certified according to IEC 60 079-0 and IEC 60 079-1.
7. The connection cables, the cable entries and filler plugs resp. the conduits have to be suitable for the lowest ambient temperature.

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

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

Certificate No.:	IECEx TUN 05.0018X issue No.:2	Certificate history Issue No. 2 (2007-11-22) Issue No. 1 (2006-12-13)
Status:	**Current**	
Date of Issue:	**2007-11-22** Page 1 of 6	
Applicant:	**VEGA Grieshaber KG** Am Hohenstein 13 77761 Schiltach **Germany**	
Electrical Apparatus: *Optional accessory:*	**Capacitive Measuring Probe type VEGACAL CL6*.DI**HD*** --	
Type of Protection:	**Flameproof Enclosures and Intrinsic Safety**	
Marking:	**Ex d ia IIC T6**	

Approved for issue on behalf of the IECEx Certification Body: Karl-Heinz Schwedt

Position: Head of IECEx CB

Signature: (for printed version)

Date: 2007-11-22

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2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by

TÜV NORD CERT GmbH & Co. KG
Am TUV1
D-30519 Hannover
Germany

TÜV NORD

IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0018X

Date of Issue: **2007-11-22** Issue No.: **2**

Manufacturer: **VEGA Grieshaber KG**
Am Hohenstein 13
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 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 : 2004 Edition: 4.0	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
IEC 60079-1 : 2003 Edition: 5	Electrical apparatus for explosive gas atmospheres - Part 1: Flameproof enclosure 'd'
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

IECEx ATR:	File Reference:
DE/TUN/05/551830	**05YEX551830**
DE/TUN/05/552075-1	**05YEX552075-1**

IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0018X

Date of Issue: **2007-11-22** Issue No.: **2**

Schedule

EQUIPMENT:
Equipment and systems covered by this certificate are as follows:

The capacitive measuring probes type VEGACAL CL6*.DI**HD* are used for monitoring or control of filling levels in explosion hazardous areas.
The measuring media are allowed to be combustible liquids, gases, mists or vapours.
The capacitive measuring probes type VEGACAL CL6*.DI**HD* consist of an electronic housing for the barriers
with an Ex-d connection room, an Ex-i connection room with inserted measuring electronics,
a process adapting element and a measuring sensor.
Mechanical execution of the capacitive measuring probes:

type	electrodes
CL62.DI**HD*	partly insulated electrode, optionally with screening tube or concentric tube
CL63.DI**HD*	fully insulated electrode, optionally plated
CL64.DI**HD*	fully insulated electrode, optionally with screening tube, concentric tube or plated
CL65.DI**HD*	partly insulated cable electrode optionally with additionally insulated cable
CL66.DI**HD*	fully insulated cable electrode

CONDITIONS OF CERTIFICATION: YES as shown below:

Only changes regarding the formatting; see annexe

IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0018X

Date of Issue: **2007-11-22** Issue No.: **2**

EQUIPMENT(continued):

Only changes regarding the formatting; see annexe

IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0018X

Date of Issue: **2007-11-22** Issue No.: **2**

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

Only changes regarding the formatting; see annexe

IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0018X

Date of Issue: **2007-11-22** Issue No.: **2**

Additional information:

Only changes regarding the formatting; see annexe

Annexe: CoC IECEx TUN 05.0018X_complete inclusive of Special Conditions.pdf, 1Erg_COC_CAL CL6- DI--HD-- pdf

TÜV NORD CERT GmbH
Am TÜV 1
30519 Hannover

Testing Laboratory Explosion Protected Equipment and Monitoring Devices

The capacitive measuring probes type VEGACAL CL6*.DI**HD* are used for monitoring or control of filling levels in explosion hazardous areas.
The measuring media are allowed to be combustible liquids, gases, mists or vapours.
The capacitive measuring probes type VEGACAL CL6*.DI**HD* consist of an electronic housing for the barriers with an Ex-d connection room, an Ex-i connection room with inserted measuring electronics, a process adapting element and a measuring sensor.

Mechanical execution of the capacitive measuring probes:

type	electrodes
CL62.DI**HD*	partly insulated electrode, optionally with screening tube or concentric tube
CL63.DI**HD*	fully insulated electrode, optionally plated
CL64.DI**HD*	fully insulated electrode, optionally with screening tube, concentric tube or plated
CL65.DI**HD*	partly insulated cable electrode optionally with additionally insulated cable
CL66.DI**HD*	fully insulated cable electrode

The permissible temperature range in the area of the electronics/of the medium dependent on the temperature class has to be taken from the following table:

temperature class	ambient temperature range on the electronics/housing	medium temperature range for electrodes with PE/PA-insulation	medium temperature range for other electrodes
T6	- 40°C... + 57°C	- 40°C... + 80°C	-50°C … +85 °C
T5	- 40°C... + 60°C	- 40°C... + 80°C	-50°C … +100 °C
T4	- 40°C... + 60°C	- 40°C... + 80°C	-50°C … +135 °C
T3*, T2*, T1*	- 40°C... + 60°C	- 40°C... + 80°C	-50°C … +150 °C

* with temperature adapter for medium temperatures > 150°C … 200°C

If the sensors of the capacitive measuring probes are operated at higher medium temperatures as listed in the a.m. table, measures have to be taken, that the danger of ignition caused by these hot surfaces is excluded. The max. permissible temperature on the electronics/housing must not exceed the values as mentioned in the a.m. table.

Electrical data

Supply and signal circuit (Terminals KI1/1, KI1/2; Ex-d connection room)	U = 20 … 36 V d. c. U_m = 253 V a. c.
PA terminal of the capacitive measuring probe with barrier P2-2LH (Screw terminal)	Connection to the potential equalisation in the explosion hazardous area
Operation and indication circuit (Terminals 5, 6, 7, 8 in the "i"-connection room resp., plug connection)	in type of protection „Intrinsic Safety" Ex ia IIC only for connection to the intrinsically safe circuit of the belonging external VEGA indication unit type VEGADIS61 The interconnection of the both intrinsically safe circuits was taken into account. maximum values of the connection cable: Co = 2.4 µF Lo = 160 µH

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30519 Hannover

Testing Laboratory Explosion Protected Equipment and Monitoring Devices

Operation and indication module circuit (Spring contacts in the "i"-connection room)	in type of protection „Intrinsic Safety" Ex ia IIC only for connection to the VEGA operation and indication module (Plicscom)
Communication circuit (I^2C bus in the "i"-connection room)	in type of protection „Intrinsic Safety" Ex ia IIC only for connection to the intrinsically safe signal circuit of the VEGA interface converter type VEGACONNECT

The VEGA interface converter may only be operated together with the capacitive measuring probe, if no explosion hazardous atmosphere exists.

A length of the triax cable resp. coax cable between the housing for the electronics and the terminal housing of 10 m is permissible.

All intrinsically safe circuits of the capacitive measuring probes with built-in barrier KLEMP2-2LHD are safe galvanically separated from the non intrinsically safe supply and signal circuit and the parts which can be earthed. All intrinsically safe circuits of the capacitive measuring probe with built-in barrier P2-2LH are galvanically connected with the earth potential (measuring circuit excluded).

Conditions of Certification

1. At the plastic parts of the capacitive measuring probes type VEGACAL CL6*.DI**HD* there is a danger of ignition by electrostatic discharge. Observe manual of the manufacturer and warning label.
2. The flameproof terminal box (Ex-d connection room) of this equipment must be provided with cable entries and filler plugs resp. conduits which are certified according to IEC 60 079-0 and IEC 60 079-1.
3. The connection cables, the cable entries and filler plugs resp. the conduits have to be suitable for the lowest ambient temperature.
4. The PA terminal of the capacitive measuring probes with the barrier P2-2LH (internal or external screw terminal) has to be connected with the potential equalization of the explosion hazardous area. Since the intrinsically safe circuits are galvanically connected with the earth potential, potential compensation has to exist in the complete course of the erection of the intrinsically safe operation and indication circuit.
5. The intrinsically signal circuit of the barrier type KLEMP2-2LHD is safe galvanically separated from the non intrinsically safe supply and signal circuit up to a peak crest value of the voltage of 375 V. The intrinsically safe signal circuit of the barrier type P2-2LH is galvanically connected with the earth potential.

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx TUN 05.0018X issue No.:1

Status: **Current**

Date of Issue: **2006-12-13** Page 1 of 6

Applicant: **VEGA Grieshaber KG**
Am Hohenstein 13
77761 Schiltach
Germany

Certificate history:
Issue No. 4 (2008-10-17)
Issue No. 3 (2008-10-17)
Issue No. 2 (2007-11-22)
Issue No. 1 (2006-12-13)

Electrical Apparatus: **Capacitive Measuring Probe type VEGACAL CL6*.DI**HD***
Optional accessory: --

Type of Protection: **Flameproof Enclosures and Intrinsic Safety**

Marking: **Ex d ia IIC T6**

Approved for issue on behalf of the IECEx Certification Body: Karl-Heinz Schwedt

Position: Head of IECEx CB

Signature: (for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

TÜV NORD CERT GmbH & Co. KG
Am TUV1
D-30519 Hannover
Germany

IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0018X

Date of Issue: **2006-12-13** Issue No.: **1**

Page 2 of 6

Manufacturer: **VEGA Grieshaber KG**
Am Hohenstein 13
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 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.

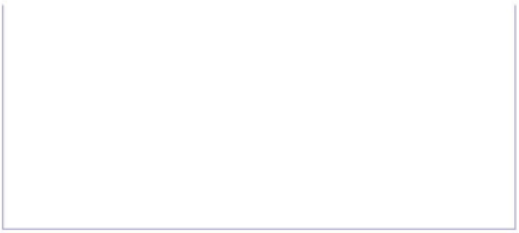
STANDARDS:
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2004 Edition: 4.0	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
IEC 60079-1 : 2003 Edition: 5	Electrical apparatus for explosive gas atmospheres - Part 1: Flameproof enclosure 'd'
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

IECEx ATR:	File Reference:
DE/TUN/05/551830	**05YEX551830**
DE/TUN/05/552075-1	**05YEX552075-1**



IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0018X

Date of Issue: **2006-12-13** Issue No.: **1**

Page 3 of 6

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The capacitive measuring probes type VEGACAL CL6*.DI**HD* are used for monitoring or control of filling levels in explosic
The measuring media are allowed to be combustible liquids, gases, mists or vapours.
The capacitive measuring probes type VEGACAL CL6*.DI**HD* consist of an electronic housing for the barriers with an Ex-
connection room with inserted measuring electronics, a process adapting element and a measuring sensor.
Mechanical execution of the capacitive measuring probes:

type	electrodes
CL62.DI**HD*	partly insulated electrode, optionally with screening tube or concentric tube
CL63.DI**HD*	fully insulated electrode, optionally plated
CL64.DI**HD*	fully insulated electrode, optionally with screening tube, concentric tube or plated
CL65.DI**HD*	partly insulated cable electrode optionally with additionally insulated cable
CL66.DI**HD*	fully insulated cable electrode

CONDITIONS OF CERTIFICATION: YES as shown below:

1. At the plastic parts of the capacitive measuring probes type VEGACAL CL6*.DI**HD* there is a danger of ig
manual of the manufacturer and warning label.
2. The flameproof terminal box (Ex-d connection room) of this equipment must be provided with cable entries and filler pl
IEC 60 079-0 and IEC 60 079-1.
3. The connection cables, the cable entries and filler plugs resp. the conduits have to be suitable for the lowest ambient t
4. The PA terminal of the capacitive measuring probes with the barrier P2-2LH (internal or external screw terminal) has t
the explosion hazardous area.
Since the intrinsically safe circuits are galvanically connected with the earth potential, potential compensation has to exist in
intrinsically safe operation and indication circuit.
5. The intrinsically signal circuit of the barrier type KLEMP2-2LHD is safe galvanically separated from the non intrinsically
value of the voltage of 375 V.
The intrinsically safe signal circuit of the barrier type P2-2LH is galvanically connected with the earth potential.

IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0018X

Date of Issue: **2006-12-13** Issue No.: **1**

Page 4 of 6

EQUIPMENT(continued):

The permissible temperature range in the area of the electronics/of the medium dependent on the temperature class has to be taken from the following table:

temperature class	ambient temperature range on the electronics/housing	medium temperature range for electrodes with PE/PA-insulation	medium tempera for other elec
T6	- 40°C... + 57°C	- 40°C... + 80°C	-50°C … +8
T5	- 40°C... + 60°C	- 40°C... + 80°C	-50°C … +1
T4	- 40°C... + 60°C	- 40°C... + 80°C	-50°C … +1
T3*, T2*, T1*	- 40°C... + 60°C	- 40°C... + 80°C	-50°C … +1

* with temperature adapter for medium temperatures > 150°C … 200°C

If the sensors of the capacitive measuring probes are operated at higher medium temperatures as listed in the a.m. table, measures have to be taken, that the danger of ignition caused by these hot surfaces is excluded. The max. permissible temperature on the electronics/housing must not exceed the values as mentioned in the a.m. table.

Electrical data

Supply and signal circuit (Terminals KI1/1, KI1/2; Ex-d connection room)	U = 20 … 36 V d. c. U_m = 253 V a. c.	
PA terminal of the capacitive measuring probe with barrier P2-2LH (Screw terminal)	Connection to the potential equalisation in the explosion hazardous area	
Operation and indication circuit (Terminals 5, 6, 7, 8 in the "i"-	in type of protection „Intrinsic Safety" Ex ia IIC only for connection to the intrinsically safe circuit of the	

connection room resp., plug connection)	belonging external VEGA indication unit type VEGADIS61 The interconnection of the both intrinsically safe circuits was taken into account. maximum values of the connection cable: Co = 2,4 µF Lo = 160 µH

IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0018X

Date of Issue: **2006-12-13** Issue No.: **1**

Page 5 of 6

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

See annexe

IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0018X

Date of Issue: **2006-12-13** Issue No.: **1**

Page 6 of 6

Additional information:

Operation and indication module circuit (Spring contacts in the "i"-connection room)	in type of protection „Intrinsic Safety" Ex ia IIC only for connection to the VEGA operation and indication mod (Plicscom)
Communication circuit (I^2C bus in the "i"-connection room)	in type of protection „Intrinsic Safety" Ex ia IIC only for connection to the intrinsically safe signal circuit of the interface converter type VEGACONNECT

The VEGA interface converter may only be operated together with the capacitive measuring probe, if no hazardous atmosphere exists.

A length of the triax cable resp. coax cable between the housing for the electronics and the terminal hou m is permissible.

All intrinsically safe circuits of the capacitive measuring probes with built-in barrier KLEMP2-2LHD are s galvanically separated from the non intrinsically safe supply and signal circuit and the parts which can b All intrinsically safe circuits of the capacitive measuring probe with built-in barrier P2-2LH are galvanicall connected with the earth potential (measuring circuit excluded).

Annexe: 1Erg_COC_CAL CL6- DI--HD--.pdf

TÜV NORD CERT GmbH & Co. KG
Am TÜV 1
30519 Hannover

Testing Laboratory Explosion Protected Equipment and Monitoring Devices

IECEx ATR:	File reference:
DE/TUN/ExTR06.0043/01	06 TUN 553278
IECEx QAR:	File reference:
DE/QAR/TUN/06.0002/00	QAR TUN 04.0002

The capacitive measuring probes type VEGACAL CL6*.DI**HD** are used for monitoring or control of filling levels in explosion hazardous areas.
The measuring media are allowed to be combustible liquids, gases, mists or vapours.

The changes refer to the mechanical and electrical construction of the measuring probes as well as to the electrical data.

Mechanical execution of the measuring probes

Type	Electrodes
CL62. DI **HD**	partly insulated electrode, optionally with screening tube or concentric tube
CL63. DI **HD**	fully insulated electrode, optionally plated
CL64. DI **HD**	fully insulated electrode, optionally with screening tube, concentric tube or plated
CL65. DI **HD**	partly insulated cable electrode optionally with additionally insulated cable
CL66. DI **HD**	fully insulated cable electrode
CL69. DI **HD**	fully insulated 2-rod electrode

Electrical data

Supply and signal circuit …….. (Terminals KI1/1, KI1/2; Ex-d connection room)	U = 20 … 36 V d. c. Um = 253 V a. c.
PA terminal of the capacitive measuring probe with barrier P2-2LH …….. (Screw terminal)	Connection to the potential equalisation in the explosion hazardous area

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30519 Hannover

Testing Laboratory Explosion Protected Equipment and Monitoring Devices

Operation and indication circuit …… (Terminals 5, 6, 7, 8 in the "i"-connection room resp., plug connection)	in type of protection „Intrinsic Safety" Ex ia IIC only for connection to the intrinsically safe circuit of the belonging external VEGA indication unit type VEGADIS61 (IECEx PTB 06.0048) The interconnection of the both intrinsically safe circuits was taken into account. maximum values of the connection cable: Co = 2.4 µF Lo = 160 µH
Operation and indication module circuit …. (Spring contacts in the "i"-connection room)	in type of protection „Intrinsic Safety" Ex ia IIC only for connection to the VEGA operation and indication module (Plicscom)
Communication circuit …….. (I²C bus in the "i"-connection room)	in type of protection „Intrinsic Safety" Ex ia IIC only for connection to the intrinsically safe signal circuit of the VEGA interface converter type VEGACONNECT

If
- the VEGA interface converter type VEGACONNECT and
- the external VEGA indication unit type VEGADIS61 (IECEx PTB 06.0048)

are connected, the following maximum values of the connection cable to the VEGADIS61 do result:

C_o = 2.8 µF
L_o = 100 µH

A length of the triax cable resp. coax cable between the housing for the electronics and the terminal housing of 10 m is permissible.

All intrinsically safe circuits of the capacitive measuring probes with built-in barrier KLEMP2-2LHD are safe galvanically separated from the non intrinsically safe supply and signal circuit and the parts which can be earthed.
All intrinsically safe circuits of the capacitive measuring probe with built-in barrier P2-2LH are galvanically connected with the earth potential (measuring circuit excluded)

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

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

Certificate No.:	IECEx TUN 05.0019X issue No.:3	Certificate history: Issue No. 3 (2014-8-7) Issue No. 2 (2008-10-17) Issue No. 1 (2006-11-7)
Status:	**Current**	
Date of Issue:	**2014-08-07** Page 1 of 4	

Applicant: **VEGA Grieshaber KG**
Am Hohenstein 13
77761 Schiltach
Germany

Electrical Apparatus: **Capacitive Measuring Probe type VEGACAL CL6*(*).DI***P/F****(*)(*)**
Optional accessory: --

Type of Protection: **Flameproof Enclosures and Intrinsic Safety**

Marking: Ex d ia IIC T6 Ga/Gb, Gb

Approved for issue on behalf of the IECEx Certification Body: Meyer

Position: Head of IECEx Certification Body

Signature: (for printed version)

Date: 2014-08-07

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IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0019X

Date of Issue: **2014-08-07** Issue No.: **3**

Manufacturer: **VEGA Grieshaber KG**
Am Hohenstein 13
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 60079-1 : 2007-04 Edition: 6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
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

IECEx ATR:
DE/TUN/ExTR 08.0036/01
IECEx QAR:
DE/TUN/QAR06.0002/05

File Reference:
14 217 141381

IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0019X

Date of Issue: **2014-08-07** Issue No.: **3**

Schedule

EQUIPMENT:
Equipment and systems covered by this certificate are as follows:

see annexe

CONDITIONS OF CERTIFICATION: YES as shown below:

see annexe

IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0019X

Date of Issue: **2014-08-07** Issue No.: **3**

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

see annexe

Annex: Annexe_COC_VEGACALC_issue 3_TUN05.0019X_.pdf

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IECEx TR:	File reference:
DE/TUN/ExTR08.0036/01	14 217 141381
IECEx QAR:	
DE/TUN/QAR/06.0002/05	

In the future, the following changes are performed for Capacitive Measuring Probe type VEGACAL CL6*(*).DI***P/F****(*)(*):

1. Update to actual standards
2. Changes regarding technical and electrical data
3. Changes regarding electric diagram
4. Changes to the layout
5. New components used
6. Application with PLICSCOM 02 added
7. Application with VEGADIS81 added
8. Introduction of new cables
9. Changes of the type code/marking
10. New manufacturing location added

Electrical data

Non-intrinsically safe circuits

VEGACAL CL6*(*).DI***H****(*)(*)	U	= 20 … 36 V DC
Supply and signal circuit	U_m	= 253 V AC
(terminal 1[+], 2[-] in the Ex-d connection compartment)		
VEGACAL CL6*(*).DI***P/F****(*)(*)	U	= 16 … 36 V DC
Supply and signal circuit	U_m	= 253 V AC
(terminal 1[+], 2[-] in the Ex-d connection compartment)		

Intrinsically safe circuits

Indicating and adjustment circuit: (terminals 5, 6, 7, 8 in Ex-i connection compartment or plug connection)	Ignition protection type intrinsic safety Ex ia IIC. For connection to the intrinsically safe circuit of the associated external indicating instrument VEGADIS 61 (IECEx PTB 06.0048). The rules for the interconnection of intrinsically safe circuits between VEGACAL CL6*(*).DI*** and the external indicating and adjustment unit VEGADIS 61are maintained if the total inductance and total capacitance of the connection cable between VEGACAL CL6*(*).DI*** and the external indicating unit VEGADIS 61/81 L_{cable}=100µH and

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	C_{cable}=2.8µF are not exceeded. The indication and adjustment module integrated in CL6*(*).DI*** and the connected VEGACONNECT are taken into account.
Communication circuit (I²C bus socket in “Ex-i” connection compartment)	In ignition protection intrinsic safety Ex ia IIC. Only for connection to the intrinsically safe signal circuit of a certified VEGA interface converter VEGACONNECT. The VEGA communication unit VEGACONNECT may only be operated on VEGACAL CL6*(*).DI***H/P/F****(*)(*), if there is no explosive atmosphere.
Indicating and adjustment module circuit (spring contacts in the “Ex i” connection compartment)	Ignition protection intrinsic safety Ex ia IIC. Only for connection to the indicating and adjustment module.
Capacitive measuring circuit: (separate electronics version)	Ignition protection intrinsic safety Ex ia IIC. For the version with separate housing the length of the triax or coax connection cable between electronics housing and electrode housing (remote housing) may not exceed 10 m.

The intrinsically safe circuits of the VEGACAL CL6*(*).DI***P/F****(*)(*) are reliably galvanically separated from the non-intrinsically safe signal and supply circuits and parts which can be grounded.

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Permissible ambient temperatures:

EPL-Ga/Gb instruments:

VEGACAL CL6*(*).DI*H****(*)(*)**

Temperature class	Permissible ambient temperature on the electronics	Permissible ambient temperature on the sensor
T6	-40°C … +57°C	-20°C … +60°C
T5 … T1	-40°C … +60°C	-20°C … +60°C

For applications requiring instruments EPL-Ga/Gb the pressure at the sensor probe must be between 0.8 bar to 1.1 bar.

The permissible operating temperatures and pressures without explosive atmosphere are mentioned in the respective manufacturer instructions for each probe type.

VEGACAL CL6*(*).DI*P/F****(*)(*)**

Temperature class	Permissible ambient temperature on the electronics	Permissible ambient temperature on the sensor
T6	-40°C … +38°C	-20°C … +60°C
T5	-40°C … +53°C	-20°C … +60°C
T4 … T1	-40°C … +60°C	-20°C … +60°C

For applications requiring instruments EPL-Ga/Gb the pressure at the sensor probe must be between 0.8 bar to 1.1 bar.

The permissible operating temperatures and pressures without explosive atmosphere are mentioned in the respective manufacturer instructions for each probe type.

EPL-Gb instruments:

VEGACAL CL6*(*).DI***H****(*)(*)

Temperature class	Permissible ambient temperature on the electronics	Permissible ambient temperature on the sensor with PE/PA insulation	Permissible ambient temperature on the other sensors without temperature adapter	Permissible ambient temperature on the other sensors with temperature adapter
T6	-40°C … +57°C	-40°C … +80°C	-50°C … +85°C	-50°C … +85°C
T5	-40°C … +60°C	-40°C … +80°C	-50°C … +100°C	-50°C … +100°C
T4	-40°C … +60°C	-40°C … +80°C	-50°C … +135°C	-50°C … +135°C
T3, T2, T1	-40°C … +60°C	-40°C … +80°C	-50°C … +150°C	-50°C … +200°C

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If the sensors of the capacitive probes are operated at temperatures higher than those specified in the above table, appropriate measures need to be performed that the danger of ignition caused by these hot surfaces is excluded.

The permissible operating temperatures and pressures without explosive atmosphere are mentioned in the respective manufacturer instructions for each probe type.

VEGACAL CL6*(*).DI*P/F****(*)(*)**

Temperatu re class	Permissible ambient temperature on the electronics	Permissible ambient temperature on the sensor with PE/PA insulation	Permissible ambient temperature on the other sensors without temperature adapter	Permissible ambient temperature on the other sensors with temperature adapter
T6	-40°C … +38°C	-40°C … +80°C	-50°C … +85°C	-50°C … +85°C
T5	-40°C … +53°C	-40°C … +80°C	-50°C … +100°C	-50°C … +100°C
T4	-40°C … +60°C	-40°C … +80°C	-50°C … +135°C	-50°C … +135°C
T3, T2, T1	-40°C … +60°C	-40°C … +80°C	-50°C … +150°C	-50°C … +200°C

If the sensors of the capacitive probes are operated at temperatures higher than those specified in the above table, appropriate measures need to be performed that the danger of ignition caused by these hot surfaces is excluded.

The permissible operating temperatures and pressures without explosive atmosphere are mentioned in the respective manufacturer instructions for each probe type.

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

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

Certificate No.:	IECEx TUN 05.0019X issue No.:2	Certificate history: Issue No. 2 (2008-10-17) Issue No. 1 (2006-11-7)
Status:	**Current**	
Date of Issue:	**2008-10-17**	Page 1 of 4

Applicant: **VEGA Grieshaber KG**
Am Hohenstein 13
77761 Schiltach
Germany

Electrical Apparatus: **Capacitive Measuring Probe type VEGACAL CL6*.DI***P/F*****
Optional accessory: --

Type of Protection: **Flameproof Enclosures and Intrinsic Safety**

Marking: **Zone 0/1 Ex d ia IIC T6**

Approved for issue on behalf of the IECEx Certification Body: Karl-Heinz Schwedt

Position: Head of IECEx CB

Signature: (for printed version)

Date: 2008-10-17

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IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0019X

Date of Issue: **2008-10-17** Issue No.: **2**

Manufacturer: **VEGA Grieshaber KG**
Am Hohenstein 13
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 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 : 2004 Edition: 4.0	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
IEC 60079-1 : 2003 Edition: 5	Electrical apparatus for explosive gas atmospheres - Part 1: Flameproof enclosure 'd'
IEC 60079-11 : 2006 Edition: 5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-26 : 2004 Edition: 1	Electrical apparatus for explosve gas atmospheres - Part 26: Construction, test and marking of Group II Zone 0 electrical apparatus

*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

IECEx ATR:
DE/TUN/ExTR 08.0036.00

File Reference:
08 204 554740

IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0019X

Date of Issue: **2008-10-17** Issue No.: **2**

Schedule

EQUIPMENT:
Equipment and systems covered by this certificate are as follows:

The capacitive measuring probes type VEGACAL CL6*.DI**P/FD* are used
for monitoring or control of filling levels in explosion hazardous areas.
The measuring media are allowed to be combustible liquids, gases, mists or vapours.
The capacitive measuring probes type VEGACAL CL6*.DI**P/FD* consist
of an electronic housing for the barriers with an Ex-d connection room,
an Ex-i connection room with inserted measuring electronics,
a process adapting element and a measuring sensor.
Mechanical execution of the capacitive measuring probes:

type	electrodes
CL62.D_**P/FD*	partly insulated electrode, optionally with screening tube or concentric tube
CL63.D_**P/FD*	fully insulated electrode, optionally plated
CL64.D_**P/FD*	fully insulated electrode, optionally with screening tube, concentric tube or plated
CL65.D_**P/FD*	partly insulated cable electrode optionally with additionally insulated cable
CL66.D_**P/FD*	fully insulated cable electrode

CONDITIONS OF CERTIFICATION: YES as shown below:

1. At the plastic parts of the capacitive measuring probes type VEGACALP CL6*.CI**P/FD* there is a danger of ignition by electrostatic discharge. Observe manual of the manufacturer and warning label.

2. The flameproof terminal box (Ex-d connection room) of this equipment must be provided with cable entries and filler plugs resp. conduits which are certified according to IEC 60 079-0 and IEC 60 079-1.

3. The connection cables, the cable entries and filler plugs resp. the conduits have to be suitable for the lowest ambient temperature.

IECEx Certificate of Conformity

Certificate No.: IECEx TUN 05.0019X

Date of Issue: **2008-10-17** Issue No.: **2**

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

See annexe

Annexe: 2nd supplement_COC_VEGACAL CL6_DI_P_F.pdf

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IECEx TR:	File reference:
DE/TUN/ExTR08.0036/00	08 204 554740
IECEx QAR:	File reference:
DE/QAR/TUN/06.0002/00	QAR/TUN/QAR06.0002/00

The capacitive measuring probes type VEGACAL CL6*.DI***P/F**** are used for monitoring or control of filling levels in explosion hazardous areas.
The measuring media are allowed to be combustible liquids, gases, mists or vapours.
The capacitive measuring probes type VEGACAL CL6*.DI***P/F**** consist of an electronic housing for the barrier with an Ex-d connection room, an Ex-i connection room with inserted measuring electronics, a process adapting element and a measuring sensor.

The changes refer to the type designation mentioned above, the mechanical construction, the temperature range in the area of the electronics/of the medium, the electrical data, the special conditions for safe use and the marking.
The marking reads as follows: Zone 0/1 Ex d ia IIC Tx (see tables for temperature ranges).

Type designation and mechanical execution of the measuring probes:

Type	Electrodes
CL62.DI***P/F****	partly insulated electrode, optionally with screening tube or concentric tube
CL63.DI*** P/F ****	fully insulated electrode, optionally plated
CL64.DI*** P/F ****	fully insulated electrode, optionally with screening tube, concentric tube or plated
CL65.DI*** P/F ****	partly insulated cable electrode optionally with additionally insulated cable
CL66.DI*** P/F ****	fully insulated cable electrode
CL69.DI*** P/F ****	fully insulated 2-rod electrode

If the capacitive measuring probes are mounted in explosion hazardous areas of the zone 1, the permissible temperature range in the area of the electronics/of the medium dependent on the temperature class has to be taken from the following table:

Temperature class	Ambient temperature range	Medium temperature range for electrodes with PE-insulation	Medium temperature range for other electrodes
T6	- 40°C... + 47°C	- 40°C... + 80°C	-50°C ... +85 °C
T5	- 40°C... + 60°C	- 40°C... + 80°C	-50°C ... +100 °C
T4	- 40°C... + 60°C	- 40°C... + 80°C	-50°C ... +135 °C
T3*, T2*, T1*	- 40°C... + 60°C	- 40°C... + 80°C	-50°C ... +150 °C

* with temperature adapter for medium temperatures > 150°C ... 200°C

If the sensors of the capacitive measuring probes are operated at higher medium temperatures as listed in the a.m. table, measures have to be taken, that the danger of ignition caused by these hot surfaces is excluded. The max. permissible temperature on the electronics/housing must not exceed the values as mentioned in the a.m. table.

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If the capacitive measuring probes are mounted in the partition wall between explosion hazardous areas of the zone 0 (electrode) and zone 1 (electronics), the permissible temperature range in the area of the electronics/of the medium has to be taken from the following table:

Temperature class	Ambient temperature range	Medium temperature range
T6	-40 °C ... +47 °C	-20°C ... +60 °C
T5	-40 °C ... +60 °C	-20°C ... +60 °C
T4, T3, T2, T1	-40 °C ... +60 °C	-20°C ... +60 °C

The electrodes of the capacitive measuring probes are allowed to be operated in an explosion hazardous area of the zone 0, only if atmospheric conditions exist (pressure from 0.8 bar to 1.1 bar).
If no explosion hazardous atmospheres exist, the permissible operating temperatures and pressures have to be taken from the manufacturer's data (manual).

If the sensors of the capacitive measuring probes are operated at higher medium temperatures as listed in the a.m. table, measures have to be taken, that the danger of ignition caused by these hot surfaces is excluded. The max. permissible temperature at the electronics/housing must not exceed the values as mentioned in the a.m. table.

Electrical data

Supply and signal circuit ..... (Terminals KI1[+], KI2[-]; Ex-d connection room)	U = 16 ... 32 V d. c. U_m = 253 V a. c.
PA terminal of the capacitive measuring probe with barrier KLEMP2-2LPA/FFD ..... (Screw terminal)	Connection to the potential equalisation in the explosion hazardous area
Operation and indication circuit ..... (Terminals 5, 6, 7, 8 in the "i"-connection room resp. plug connection)	in type of protection „Intrinsic Safety" Ex ia IIC only for connection to the intrinsically safe circuit of the belonging external VEGA indication unit type VEGADIS61 (IECEx PTB 06.0048) The interconnection of the both intrinsically safe circuits was taken into account. maximum values of the connection cable: C_o = 2.4 µF L_o = 160 µH
Operation and indication module circuit ..... (Spring contacts in the "i"-connection room)	in type of protection „Intrinsic Safety" Ex ia IIC only for connection to the VEGA operation and indication module (Plicscom)
Communication circuit ..... (I^2C bus in the "i"-connection room)	in type of protection „Intrinsic Safety" Ex ia IIC only for connection to the intrinsically safe signal circuit of the VEGA interface converter type VEGACONNECT

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If
- the VEGA interface converter type VEGACONNECT and
- the external VEGA indication unit type VEGADIS61 (IECEx PTB 06.0048)

are connected, the following maximum values of the connection cable to the VEGADIS61 do result:

C_o = 2.8 µF
L_o = 100 µH

A length of the triax cable resp. coax cable between the housing for the electronics and the terminal housing of 10 m is permissible.

All intrinsically safe circuits of the capacitive measuring probe with built-in barrier KLEMP2-2LPA/FFD are galvanically connected with the earth potential (measuring circuit excluded)

Special conditions for safe use:

1. At the plastic parts of the capacitive measuring probes type VEGACAL CP6*.DI*** P/F **** there is a danger of ignition by electrostatic discharge. Observe manual of the manufacturer and warning label.
2. For zone 0/1 applications and at risks by pendulum or vibration the respective parts of the capacitive measuring probes type VEGACAL CP65.DI*** P/F **** and type VEGACAL CP66.DI*** P/F **** have to be secured effectively against these dangers. Observe manual of the manufacturer.
3. For zone 0/1 applications, at the metallic electrode parts of the capacitive measuring probes type VEGACAL CP6*.DI*** P/F **** made of light metal there is a danger of ignition by impact or friction. Observe manual of the manufacturer.
4. For zone 0/1 applications the medium tangent materials have to be resistant to the media.
5. The PA terminal of the capacitive measuring probes (internal or external screw terminal) has to be connected with the potential equalization of the explosion hazardous area.
6. The flameproof terminal box (Ex-d connection room) of this equipment must be provided with cable entries and filler plugs resp. conduits which are certified according to IEC 60 079-0 and IEC 60 079-1.
7. The connection cables, the cable entries and filler plugs resp. the conduits have to be suitable for the lowest ambient temperature.

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IECEx TR:	File reference:
DE/TUN/ExTR08.0036/00	08 204 554740
IECEx QAR:	File reference:
DE/QAR/TUN/06.0002/00	QAR/TUN/QAR06.0002/00

The capacitive measuring probes type VEGACAL CL6*.DI***P/F**** are used for monitoring or control of filling levels in explosion hazardous areas.
The measuring media are allowed to be combustible liquids, gases, mists or vapours.
The capacitive measuring probes type VEGACAL CL6*.DI***P/F**** consist of an electronic housing for the barrier with an Ex-d connection room, an Ex-i connection room with inserted measuring electronics, a process adapting element and a measuring sensor.

The changes refer to the type designation mentioned above, the mechanical construction, the temperature range in the area of the electronics/of the medium, the electrical data, the special conditions for safe use and the marking.
The marking reads as follows: Zone 0/1 Ex d ia IIC Tx (see tables for temperature ranges).

Type designation and mechanical execution of the measuring probes:

Type	Electrodes
CL62.DI***P/F****	partly insulated electrode, optionally with screening tube or concentric tube
CL63.DI*** P/F ****	fully insulated electrode, optionally plated
CL64.DI*** P/F ****	fully insulated electrode, optionally with screening tube, concentric tube or plated
CL65.DI*** P/F ****	partly insulated cable electrode optionally with additionally insulated cable
CL66.DI*** P/F ****	fully insulated cable electrode
CL69.DI*** P/F ****	fully insulated 2-rod electrode

If the capacitive measuring probes are mounted in explosion hazardous areas of the zone 1, the permissible temperature range in the area of the electronics/of the medium dependent on the temperature class has to be taken from the following table:

Temperature class	Ambient temperature range	Medium temperature range for electrodes with PE-insulation	Medium temperature range for other electrodes
T6	- 40°C... + 47°C	- 40°C... + 80°C	-50°C… +85 °C
T5	- 40°C... + 60°C	- 40°C... + 80°C	-50°C… +100 °C
T4	- 40°C... + 60°C	- 40°C... + 80°C	-50°C… +135 °C
T3*, T2*, T1*	- 40°C... + 60°C	- 40°C... + 80°C	-50°C… +150 °C

***** with temperature adapter for medium temperatures > 150°C… 200°C

If the sensors of the capacitive measuring probes are operated at higher medium temperatures as listed in the a.m. table, measures have to be taken, that the danger of ignition caused by these hot surfaces is excluded. The max. permissible temperature on the electronics/housing must not exceed the values as mentioned in the a.m. table.

If the capacitive measuring probes are mounted in the partition wall between explosion hazardous areas of the zone 0 (electrode) and zone 1 (electronics), the permissible temperature range in the area of the electronics/of the medium has to be taken from the following table:

Temperature class	Ambient temperature range	Medium temperature range
T6	-40 °C … +47 °C	-20°C … +60 °C
T5	-40 °C … +60 °C	-20°C … +60 °C
T4, T3, T2, T1	-40 °C … +60 °C	-20°C … +60 °C

The electrodes of the capacitive measuring probes are allowed to be operated in an explosion hazardous area of the zone 0, only if atmospheric conditions exist (pressure from 0.8 bar to 1.1 bar).
If no explosion hazardous atmospheres exist, the permissible operating temperatures and pressures have to be taken from the manufacturer's data (manual).

If the sensors of the capacitive measuring probes are operated at higher medium temperatures as listed in the a.m. table, measures have to be taken, that the danger of ignition caused by these hot surfaces is excluded. The max. permissible temperature at the electronics/housing must not exceed the values as mentioned in the a.m. table.

Electrical data

Supply and signal circuit ……..…. (Terminals Kl1[+], Kl2[-]; Ex-d connection room)	U = 16… 32 V d. c. U_m = 253 V a. c.
PA terminal of the capacitive measuring probe with barrier KLEMP2-2LPA/FFD ……. (Screw terminal)	Connection to the potential equalisation in the explosion hazardous area
Operation and indication circuit …….. (Terminals 5, 6, 7, 8 in the “i”-connection room resp. plug connection)	in type of protection „Intrinsic Safety“ Ex ia IIC only for connection to the intrinsically safe circuit of the belonging external VEGA indication unit type VEGADIS61 (IECEx PTB 06.0048) The interconnection of the both intrinsically safe circuits was taken into account. maximum values of the connection cable: C_o = 2.4 µF L_o = 160 µH
Operation and indication module circuit …... (Spring contacts in the “i”-connection room)	in type of protection „Intrinsic Safety“ Ex ia IIC only for connection to the VEGA operation and indication module (Plicscom)
Communication circuit …….. (I²C bus in the “i”-connection room)	in type of protection „Intrinsic Safety“ Ex ia IIC only for connection to the intrinsically safe signal circuit of the VEGA interface converter type VEGACONNECT

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If
- the VEGA interface converter type VEGACONNECT and
- the external VEGA indication unit type VEGADIS61 (IECEx PTB 06.0048)

are connected, the following maximum values of the connection cable to the VEGADIS61 do result:

C_o = 2.8 µF
L_o = 100 µH

A length of the triax cable resp. coax cable between the housing for the electronics and the terminal housing of 10 m is permissible.

All intrinsically safe circuits of the capacitive measuring probe with built-in barrier KLEMP2-2LPA/FFD are galvanically connected with the earth potential (measuring circuit excluded)

Special conditions for safe use:

1. At the plastic parts of the capacitive measuring probes type VEGACAL CP6*.DI*** P/F **** there is a danger of ignition by electrostatic discharge. Observe manual of the manufacturer and warning label.
2. For zone 0/1 applications and at risks by pendulum or vibration the respective parts of the capacitive measuring probes type VEGACAL CP65.DI*** P/F **** and type VEGACAL CP66.DI*** P/F **** have to be secured effectively against these dangers. Observe manual of the manufacturer.
3. For zone 0/1 applications, at the metallic electrode parts of the capacitive measuring probes type VEGACAL CP6*.DI*** P/F **** made of light metal there is a danger of ignition by impact or friction. Observe manual of the manufacturer.
4. For zone 0/1 applications the medium tangent materials have to be resistant to the media.
5. The PA terminal of the capacitive measuring probes (internal or external screw terminal) has to be connected with the potential equalization of the explosion hazardous area.
6. The flameproof terminal box (Ex-d connection room) of this equipment must be provided with cable entries and filler plugs resp. conduits which are certified according to IEC 60 079-0 and IEC 60 079-1.
7. The connection cables, the cable entries and filler plugs resp. the conduits have to be suitable for the lowest ambient temperature.

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

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

Certificate No.: **IECEx TUN 05.0019X** Issue No.: **1**

Status: **Current**

Date of Issue: **2006-11-07** Page **1** of **6**

Applicant: **VEGA Grieshaber KG**
Am Hohenstein 13
77761 Schiltach
Germany

Electrical Apparatus: **Capacitive Measuring Probe type VEGACAL CL6*.DI**P/FD***
Optional accessory: **–**

Type of Protection: **Flameproof Enclosures and Intrinsic Safety**

Marking: **Ex d ia IIC T6**

Approved for issue on behalf of the IECEx Certification Body: Karl-Heinz Schwedt

Position: Head of IECEx CB

Signature:
(for printed version) _____

Date: _____

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

TÜV NORD CERT GmbH & Co. KG
Am TÜV 1
D-30519 Hannover
Germany

TÜV NORD

IECEx Certificate of Conformity

Certificate No.: **IECEx TUN 05.0019X**

Date of Issue: **2006-11-07** Issue No.: **1**

Manufacturer: **VEGA Grieshaber KG**
Am Hohenstein 13
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'rs 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 60079-1 : 2003 Edition: 5	Electrical apparatus for explosive gas atmospheres - Part 1: Flameproof enclosure 'd'
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

IECEx ATR:	File Reference:
DE/TUN/05/551830	**05YEX551830**
DE/TUN/05/552076-1	**05YEX552076-1**

IECEx Certificate of Conformity

Certificate No.: **IECEx TUN 05.0019X**

Date of Issue: **2006-11-07** Issue No.: **1**

Schedule

EQUIPMENT:
Equipment and systems covered by this certificate are as follows:

The capacitive measuring probes type VEGACAL CL6*.DI**P/FD* are used

for monitoring or control of filling levels in explosion hazardous areas.
The measuring media are allowed to be combustible liquids, gases, mists or vapours.
The capacitive measuring probes type VEGACAL CL6*.DI**P/FD* consist
of an electronic housing for the barriers with an Ex-d connection room,
an Ex-i connection room with inserted measuring electronics,
a process adapting element and a measuring sensor.
Mechanical execution of the capacitive measuring probes:

type	electrodes
CL62.D_**P/FD*	partly insulated electrode, optionally with screening tube or concentric tube
CL63.D_**P/FD*	fully insulated electrode, optionally plated
CL64.D_**P/FD*	fully insulated electrode, optionally with screening tube, concentric tube or plated
CL65.D_**P/FD*	partly insulated cable electrode optionally with additionally insulated cable
CL66.D_**P/FD*	fully insulated cable electrode

CONDITIONS OF CERTIFICATION: YES as shown below:

1. At the plastic parts of the capacitive measuring probes type

VEGACALP CL6*.CI**P/FD* there is a danger of ignition by electrostatic discharge.
Observe manual of the manufacturer and warning label.

2. The flameproof terminal box (Ex-d connection room) of this equipment must be provided with cable entries and filler plugs resp. conduits which are certified according to IEC 60 079-0 and IEC 60 079-1.

3. The connection cables, the cable entries and filler plugs resp. the conduits have to be suitable for the lowest ambient temperature.

IECEx Certificate of Conformity

Certificate No.: **IECEx TUN 05.0019X**

Date of Issue: **2006-11-07** Issue No.: **1**

EQUIPMENT(continued):

The permissible temperature range in the area of the electronics/of the medium dependent on the temperature class has to be taken from the following table:

temperature class	ambient temperature range on the electronics/housing	medium temperature range for electrodes with PE/PA-insulation	medium temperature range for other electrodes
T6	- 40°C... + 47°C	- 40°C... + 80°C	-50°C ... +85 °C
T5	- 40°C... + 60°C	- 40°C... + 80°C	-50°C ... +100 °C
T4	- 40°C... + 60°C	- 40°C... + 80°C	-50°C ... +135 °C
T3*, T2*, T1*	- 40°C... + 60°C	- 40°C... + 80°C	-50°C ... +150 °C

* with temperature adapter for medium temperatures > 150°C ... 200°C

If the sensors of the capacitive measuring probes are operated at higher medium temperatures as listed in the a.m. table, measures have to be taken, that the danger of ignition caused by these hot surfaces is excluded. The max. permissible temperature on the electronics/housing must not exceed the values as mentioned in the a.m. table.

Electrical data

Supply and signal circuit (Terminals KI1/1, KI1/2; Ex-d connection room)

U = 9 ... 36 V d. c.
U_m = 253 V a. c.

Operation and indication circuit (Terminals 5, 6, 7, 8 resp. plug connection in the "i"-connection room)

in type of protection „Intrinsic Safety " Ex ia IIC
only for connection to the intrinsically safe circuit of the belonging external VEGA indication unit type VEGADIS61
The interconnection of the both intrinsically safe circuits was taken into account.
maximum values of the connection cable:
C_o = 2,4 µF
L_o = 160 µH

Operation and indication module circuit (Spring contacts in the "i"-connection room)

in type of protection „Intrinsic Safety" Ex ia IIC
only for connection to the VEGA operation and indication module (Plicscom)

IECEx Certificate of Conformity

Certificate No.: **IECEx TUN 05.0019X**

Date of Issue: **2006-11-07** Issue No.: **1**

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

See annexe

IECEx Certificate of Conformity

Certificate No.: **IECEx TUN 05.0019X**

Date of Issue: **2006-11-07** Issue No.: **1**

Additional information:

Communication circuit (I²C bus in the "i"-connection room)	in type of protection „Intrinsic Safety" Ex ia IIC only for connection to the intrinsically safe signal circuit of the VEGA interface converter type VEGACONNECT3

The VEGA interface converter may only be operated together with the capacitive measuring probe, if no explosion hazardous atmosphere exists.

A length of the triax cable resp. coax cable between the housing for the electronics and the terminal housing of 10 m is permissible.

All intrinsically safe circuits of the capacitive measuring probes with built-in barrier KLEMP2-2LPAD are safe galvanically separated from the non intrinsically safe supply and signal circuit and the parts which can be earthed.

Annexe: CAL CL6-.DI--P-FD--_1Erg.pdf

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30519 Hannover

Testing Laboratory Explosion Protected Equipment and Monitoring Devices

IECEx ATR:	File reference:
DE/TUN/ExTR06.0042/01	06 TUN 553280
IECEx QAR:	File reference:
DE/QAR/TUN/06.0002/00	QAR/TUN/QAR06.0002/00

The capacitive measuring probes type VEGACAL CL6*.DI**P/FD** are used for monitoring or control of filling levels in explosion hazardous areas.
The measuring media are allowed to be combustible liquids, gases, mists or vapours.

The changes refer to the mechanical and electrical construction of the measuring probes as well as to the electrical data.

Mechanical execution of the measuring probes

Type	Electrodes
CL62.DI**P/FD**	partly insulated electrode, optionally with screening tube or concentric tube
CL63.DI**P/FD**	fully insulated electrode, optionally plated
CL64.DI**P/FD**	fully insulated electrode, optionally with screening tube, concentric tube or plated
CL65.DI**P/FD**	partly insulated cable electrode optionally with additionally insulated cable
CL66.DI**P/FD**	fully insulated cable electrode
CL69.DI**P/FD**	fully insulated 2-rod electrode

Electrical data

Supply and signal circuit ..... $U = 16 \ldots 32$ V d. c.
(Terminals KI1[+], KI2[-]; $U_m = 253$ V a. c.
Ex-d connection room)

PA terminal ..... Connection to the potential equalisation in the explosion hazardous area

Operation and indication circuit ..... in type of protection „Intrinsic Safety" Ex ia IIC
(Terminals 5, 6, 7, 8
resp.
plug connection
in the "i" connection room)

only for connection to the intrinsically safe circuit of the belonging external VEGA indication unit type VEGADIS61
(IECEx PTB 06.0048)
The interconnection of the both intrinsically safe circuits was taken into account.
maximum values of the connection cable:
$C_o = 2.4$ µF
$L_o = 160$ µH

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Testing Laboratory Explosion Protected Equipment and Monitoring Devices

Communication circuit ..... in type of protection „Intrinsic Safety" Ex ia IIC
(I^2C bus in the "i" connection room)
only for connection to the intrinsically safe signal circuit
of the VEGA interface converter type VEGACONNECT3

If
- the VEGA interface converter type VEGACONNECT3 and
- the external VEGA indication unit type VEGADIS61 (IECEx PTB 06.0048)

are connected, the following maximum values of the connection cable to the VEGADIS61 do result:

C_o = 2.8 µF
L_o = 100 µH

All other details as well as the "Special conditions for safe" use apply unchanged for this supplement.

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Testing Laboratory Explosion Protected Equipment and Monitoring Devices

IECEx ATR:	File reference:
DE/TUN/ExTR06.0042/01	06 TUN 553280
IECEx QAR:	File reference:
DE/QAR/TUN/06.0002/00	QAR/TUN/QAR06.0002/00

The capacitive measuring probes type VEGACAL CL6*.DI**P/FD** are used for monitoring or control of filling levels in explosion hazardous areas.
The measuring media are allowed to be combustible liquids, gases, mists or vapours.

The changes refer to the mechanical and electrical construction of the measuring probes as well as to the electrical data.

Mechanical execution of the measuring probes

Type	Electrodes
CL62.DI**P/FD**	partly insulated electrode, optionally with screening tube or concentric tube
CL63.DI**P/FD**	fully insulated electrode, optionally plated
CL64.DI**P/FD**	fully insulated electrode, optionally with screening tube, concentric tube or plated
CL65.DI**P/FD**	partly insulated cable electrode optionally with additionally insulated cable
CL66.DI**P/FD**	fully insulated cable electrode
CL69.DI**P/FD**	fully insulated 2-rod electrode

Electrical data

Supply and signal circuit …… U = 16… 32 V d. c.
(Terminals Kl1[+], Kl2[-]; U_m = 253 V a. c.
Ex-d connection room)

PA terminal …….. Connection to the potential equalisation in the explosion hazardous area

Operation and indication circuit ..... in type of protection „Intrinsic Safety“ Ex ia IIC
(Terminals 5, 6, 7, 8
resp.
plug connection
in the “i” connection room)

only for connection to the intrinsically safe circuit of the belonging external VEGA indication unit type VEGADIS61
(IECEx PTB 06.0048)
The interconnection of the both intrinsically safe circuits was taken into account.
maximum values of the connection cable:
C_o = 2.4 µF
L_o = 160 µH

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Testing Laboratory Explosion Protected Equipment and Monitoring Devices

Communication circuit ..... in type of protection „Intrinsic Safety“ Ex ia IIC
(I²C bus in the “i” connection room)

only for connection to the intrinsically safe signal circuit
of the VEGA interface converter type VEGACONNECT3

If
- the VEGA interface converter type VEGACONNECT3 and
- the external VEGA indication unit type VEGADIS61 (IECEx PTB 06.0048)

are connected, the following maximum values of the connection cable to the VEGADIS61 do result:

C_o = 2.8 µF
L_o = 100 µH

All other details as well as the “Special conditions for safe” use apply unchanged for this supplement.