Translation

(1) EC-Type Examination Certificate

TÜV NORD

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

(3) EC-Type Examination Certificate Number

TÜV 05 ATEX 2767 X

(4) Equipment: **Capacitive measuring probe type VEGACAL CL6*.C_**H****

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

(6) Address: **Am Hohenstein 113**
D-77761 Schiltach

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

(8) The TÜV NORD CERT GmbH & Co. KG, TÜV CERT-Certification Body, notified body number N° 0032 in accordance with Article 9 of the Council Directive of the EC of March 23, 1994 (94/9/EC), certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential report N° 05 YEX 551905

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

EN 50 014:1997 + A1 + A2 EN 50 020:2002 EN 50 284:1999

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-type examination certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment or protective system must include the following:

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

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Hanover, 2005-03-18

Head of the Certification Body

(13) **S C H E D U L E**

(14) **EC-Type Examination Certificate N° TÜV 05 ATEX 2767 X**

(15) Description of equipment

The capacitive measuring probes type VEGACAL CL6*.C_**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.

Mechanical execution of the capacitive measuring probes:

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

If the capacitive measuring probes are used in explosion hazardous areas requiring apparatus of category 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
T6	-20°C ... +41 °C	-20°C ... +41 °C
T5	-20°C ... +53 °C	-20°C ... +53 °C
T4, T3, T2, T1	-20°C ... +60 °C	-20°C ... +60 °C

The capacitive measuring probes 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).
At the maximum permissible ambient and medium temperatures the EN 1127-1:1999, section 6.4.2 was taken into account.

Schedule EC-Type Examination Certificate N° TÜV 05 ATEX 2767 X

If the capacitive measuring probes 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
T6	-40°C ... +57 °C	-20°C ... +60 °C
T5	-40°C ... +72 °C	-20°C ... +60 °C
T4, T3, T2, T1	-40°C ... +80 °C	-20°C ... +60 °C

The electrodes of the capacitive measuring probes 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 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 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:

temperature class	ambient temperature range	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... + 72°C	- 40°C... + 80°C	-50°C ... +100 °C
T4	- 40°C... + 80°C	- 40°C... + 80°C	-50°C ... +135 °C
T3*, T2*, T1*	- 40°C... + 80°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 Kl1[+], Kl2[-] in the housing for the electronics resp., in the execution with the 2 cell housing, in the terminal housing)	in type of protection „Intrinsic Safety" EEx ia IIC only for connection to a certified intrinsically safe circuit maximum values: U_i = 30 V I_i = 131 mA P_i = 983 mW characteristic line: linear The effective internal capacitances and inductances are negligibly small.
Operation and indication circuit (Terminals 5, 6, 7, 8 in the housing for the electronics resp., plug connection in the execution with the 2 cell housing)	in type of protection „Intrinsic Safety" EEx ia IIC only for connection to the intrinsically safe circuit of the belonging external VEGA indication unit type VEGADIS61 (PTB 02 ATEX 2136 X) 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 and additionally in the terminal housing in the execution with the 2 cell housing)	in type of protection „Intrinsic Safety" EEx ia IIC only for connection to the VEGA operation and indication module (Plicscom) In the execution with the 2 cell housing the VEGA operation and indication module may only be implemented either in the housing for the electronics or in the terminal housing.
Communication circuit (I^2C bus in the housing for the electronics and additionally in the terminal housing in the execution with the 2 cell housing)	in type of protection „Intrinsic Safety" EEx ia IIC only for connection to the intrinsically safe signal circuit of the VEGA interface converter type VEGACONNECT (PTB 01 ATEX 2007)

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.

The intrinsically safe supply and signal circuit is safe galvanically separated from the parts which can be earthed.

(16) The Test documents are listed in the test report N° 05 YEX 551905.

(17) Special conditions for safe use

1. At the plastic parts of the capacitive measuring probes type VEGACAL CP6*.C_**H** there is a danger of ignition by electrostatic discharge. Observe manual of the manufacturer and warning label.
2. For category 1 applications, at the metallic parts of the capacitive measuring probes type VEGACAL CP6*.C_**H** made of light metal there is a danger of ignition by impact or friction. Observe manual of the manufacturer.
3. For category 1 resp. category 1/category 2 applications and at risks by pendulum or vibration the respective parts of the capacitive measuring probes type capacitive measuring probes type VEGACAL CP65.C_**H** and type VEGACAL CP66.C_**H** have to be secured effectively against these dangers.

(18) Essential Health and Safety Requirements

no additional ones

TÜV NORD

Translation

1. SUPPLEMENT

to Certificate No.	**TÜV 05 ATEX 2767 X**
Equipment:	Capacitive measuring probe type VEGACAL CL6*.C_**H**
Manufacturer:	VEGA Grieshaber KG
Address:	Am Hohenstein 113 D-77761 Schiltach
Order number:	8000553040
Date of issue:	2006-07-03

In the future, the capacitive measuring probes type VEGACAL CL6*.C_**H** are allowed to be manufactured according to the documents listed in the test report.
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.C_**H**	partly insulated electrode, optionally with screening tube or concentric tube
CL63.C_**H**	fully insulated electrode, optionally plated
CL64.C_**H**	fully insulated electrode, optionally with screening tube, concentric tube or plated
CL65.C_**H**	partly insulated cable electrode optionally with additionally insulated cable
CL66.C_**H**	fully insulated cable electrode
CL69.C_**H**	fully insulated 2-rod electrode

Electrical data

VEGACAL CL6*.C_H3*, VEGACAL CL6*.C_**H4*, VEGACAL CL6*.C_**H5***

Supply and signal circuit .....
(Connection cable at the housing for the electronics resp., in the execution with the 2 cell housing, at the terminal housing)

in type of protection „Intrinsic Safety“ EEx ia IIC
only for connection to a certified intrinsically safe circuit
maximum values:
U_i = 30 V
I_i = 131 mA
P_i = 983 mW
characteristic line: linear
The effective internal capacitances and inductances are negligibly small.

In the execution VEGACAL CL6*.C_**H3/4/5* a value of $Ci'_{wire/wire}$ = 58pF/m und $Ci'_{wire/shield}$ = 270pF/m has to be taken into account.
In the execution VEGACAL CL6*.C_**H3/4/5* a value of Li' = 55µH/m has to be taken into account.

Operation and indication circuit ..... (Terminals 5, 6, 7, 8 in the housing for the electronics resp., plug connection in the execution with the 2 cell housing)	in type of protection „Intrinsic Safety“ only for connection to the intrinsically safe circuit of the belonging external VEGA indication unit type VEGADIS61 (PTB 02 ATEX 2136 X) 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	EEx ia IIC
Communication circuit ..... (I^2C bus in the housing for the electronics and additionally in the terminal housing in the execution with the 2 cell housing)	in type of protection „Intrinsic Safety“ only for connection to the intrinsically safe signal circuit of the VEGA interface converter type VEGACONNECT (PTB 01 ATEX 2007)	EEx ia IIC

If
- the VEGA interface converter type VEGACONNECT 3 and
- the external VEGA indication unit type VEGADIS61

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.

The intrinsically safe supply and signal circuit is safe galvanically separated from the parts which can be earthed.

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

The equipment incl. of this supplement meets the requirements of these standards:

EN 50 014:1997 +A1+A2 EN 50 020:2002 EN 50 284:1999

(16) The test documents are listed in the test report No. 06 YEX 553040.

(17) Special conditions for safe use

no changes

(18) Essential Health and Safety Requirements

no additional ones

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, accredited by the central office of the countries for safety engineering (ZLS), Ident. Nr. 0044, legal successor of the TÜV NORD CERT GmbH & Co. KG Ident. Nr. 0032

The head of the certification body

Schwedt

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Translation

2. SUPPLEMENT

to Certificate No.	**TÜV 05 ATEX 2767 X**
Equipment:	Capacitive measuring probe type VEGACAL CL6*.C****H****
Manufacturer:	VEGA Grieshaber KG
Address:	Am Hohenstein 113 D-77761 Schiltach
Order number:	8000554574
Date of issue:	2008-07-02

In the future, the capacitive measuring probes type VEGACAL CL6*.C_**H** are also allowed to be manufactured according to the documents listed in the test report.
The changes refer to the type designation, the mechanical and electrical construction and the marking.

Mechanical execution of the measuring probes:

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

Electrical data

Supply and signal circuit .....
(Connection cable at the housing for the electronics resp., in the execution with the 2 cell housing, at the terminal housing)

in type of protection „Intrinsic Safety" Ex ia IIC
only for connection to a certified intrinsically safe circuit
maximum values:
U_i = 30 V
I_i = 131 mA
P_i = 983 mW
characteristic line: linear
The effective internal capacitances and inductances are negligibly small.

In the execution VEGACAL CL6*.C****H3/4/5/9*** a value of $Ci'_{wire/wire}$ = 58pF/m und $Ci'_{wire/shield}$ = 270pF/m has to be taken into account.
In the execution VEGACAL CL6*.C****H3/4/5/9*** a value of Li' = 55µH/m has to be taken into account.

Operation and indication circuit ..... (Terminals 5, 6, 7, 8 in the housing for the electronics resp., plug connection in the execution with the 2 cell housing)	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 (PTB 02 ATEX 2136 X) 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
Communication circuit ..... (I^2C bus in the housing for the electronics and additionally in the terminal housing in the execution with the 2 cell housing)	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 (PTB 01 ATEX 2007 or PTB 07 ATEX 2013 X)

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

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.

The intrinsically safe supply and signal circuit is safe galvanically separated from the parts which can be earthed.

All other details apply unchanged for this supplement.

The equipment according to this supplement meets the requirements of these standards:

EN 60079-0:2006 EN 60079-11:2007 EN 60079-26:2004

(16) The test documents are listed in the test report No. 08 203 554574.

(17) Special conditions for safe use

1. At the plastic parts of the capacitive measuring probes type VEGACAL CP6*.C_**H** there is a danger of ignition by electrostatic discharge. Observe manual of the manufacturer and warning label.

2. For category 1 applications, at the metallic parts of the capacitive measuring probes type VEGACAL CP6*.C_**H** made of light metal there is a danger of ignition by impact or friction. Observe manual of the manufacturer.

3. For category 1 resp. category 1/category 2 applications and at risks by pendulum or vibration the respective parts of the capacitive measuring probes type capacitive measuring probes type VEGACAL CP65.C_**H** and type VEGACAL CP66.C_**H** have to be secured effectively against these dangers. Observe manual of the manufacturer.

(18) Essential Health and Safety Requirements

no additional ones

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The head of the certification body

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35326-EN-080801

Translation

3. SUPPLEMENT

to Certificate No.	**TÜV 05 ATEX 2767 X**
Equipment:	Capacitive measuring probe type VEGACAL CL6*.C****H****
Manufacturer:	VEGA Grieshaber KG
Address:	Am Hohenstein 113 77761 Schiltach
Order number:	8000555744
Date of issue:	2010-04-21

In the future, the capacitive measuring probes type VEGACAL CL6*.C****H**** are also allowed to be manufactured according to the documents listed in the test report.

The changes refer to the mechanical and electrical construction (new temperature adapter, 2 chamber housing made of plastics; new PLICSCOM module and minor changes at the HF board), the tables for temperature ranges as well as the marking.

This reads as follows:
II 1 G or II 1/2 G or II 2 G Ex ia IIC Tx Ga or Ga/Gb or Gb (Tx: See tables below).

If the capacitive measuring probes are used in explosion hazardous areas requiring apparatus of category 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
T6	-20 °C ... +38 °C	-20 °C ... +38 °C
T5	-20 °C ... +50 °C	-20 °C ... +50 °C
T4, T3, T2, T1	-20 °C ... +60 °C	-20 °C ... +60 °C

The capacitive measuring probes 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).
At the maximum permissible ambient and medium temperatures the
EN 1127-1:2007, section 6.4.2 was taken into account.

If the capacitive measuring probes 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
T6	-40 °C ... +54 °C	-20 °C ... +60 °C
T5	-40 °C ... +69 °C	-20 °C ... +60 °C
T4, T3, T2, T1	-40 °C ... +80 °C	-20 °C ... +60 °C

The electrodes of the capacitive measuring probes 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 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 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:

Temperature class	Ambient temperature range	Medium temperature range for electrodes with PE/PA-insulation	Medium temperature range for other electrodes
T6	- 40 °C... + 54 °C	- 40 °C... + 80°C	-50 °C ... +85 °C
T5	- 40 °C... + 69 °C	- 40 °C... + 80°C	-50 °C ... +100 °C
T4	- 40 °C... + 80 °C	- 40 °C... + 80°C	-50 °C ... +135 °C
T3*, T2*, T1*	- 40 °C... + 80 °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.

All other details remain unchanged.

The equipment according to this supplement meets the requirements of these standards:

EN 60079-0:2009 EN 60079-11:2007 EN 60079-26:2007
EN 1127-1:2007

(16) The test documents are listed in the test report No. 10 203 555744.

(17) Special conditions for safe use

1. At the plastic parts of the capacitive measuring probes type VEGACAL CP6*.C****H**** there is a danger of ignition by electrostatic discharge. Observe manual of the manufacturer and warning label.
2. For category 1 applications, at the metallic parts of the capacitive measuring probes type VEGACAL CP6*.C****H**** made of light metal there is a danger of ignition by impact or friction. Observe manual of the manufacturer.
3. For category 1 resp. category 1/category 2 applications and at risks by pendulum or vibration the respective parts of the capacitive measuring probes type capacitive measuring probes type VEGACAL CP65.C****H**** and type VEGACAL CP66.C****H**** have to be secured effectively against these dangers. Observe manual of the manufacturer.

(18) Essential Health and Safety Requirements

no additional ones

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