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GOVERNMENT APPROVED TEST LABORATORY
IN TERMS OF ARP 0108: "REGULATORY REQUIREMENTS FOR EXPLOSION PROTECTED APPARATUS"

IA CERTIFICATE

Date Issued: **30 May 2023**
*Expiry date: **30 May 2026**

Issue: 3

Ex – Type Examination Certificate

Certificate Number:	**S-XPL/20.0718 X**
Equipment:	**Capacitive continuous level measurement sensors**
Model / Type:	**VEGACAL CL6***
Supplied by:	**VEGA Grieshaber KG** **Am Hohenstein 113, 77761 Schiltach** **Germany**
Manufacturer:	**VEGA Grieshaber KG**
Serial No:	All serial numbers imported between issued- and expire date and all serial numbers covered by a valid report or acceptable product certification mark.

Supplied by
VEGA Grieshaber KG
Identified by Inspection Authority number
S-XPL/20.0718 X

And as described in the Explolabs file number **XPL/21518/20.0718 Issue 3** is hereby certified "Explosion Protected (Refer to clause 1, for Ex Rating)", having been examined and inspected in accordance with the relevant requirements of South African Standards.

SANS 60079-0: 2012 Ed 5 **IEC 60079-0: 2011 Ed 6**	Explosive atmospheres Part 0: Equipment — General requirements
SANS 60079-1: 2015 Ed 5 **IEC 60079-1: 2014 Ed 7**	Explosive atmospheres Part 1: Equipment protection by flameproof enclosures "d"
SANS 60079-11: 2012 Ed 4 **IEC 60079-11: 2011 Ed 6**	Explosive atmospheres Part 11: Equipment protection by intrinsic safety "i"
IEC/SANS 60079-26: 2014	Explosive atmospheres – Part 26: Equipment with equipment protection level (EPL) Ga
SANS 60079-31: 2014 **IEC 60079-31: 2013**	Explosive atmospheres Part 31: Equipment dust ignition protection by enclosure "t"

Risk of ignition provided:

Protection afforded	Equipment Protection Level (EPL) Group	Performance of protection	Conditions of operation	T class or Max Surface Temp (°C)
Very high	Ga Group II	Two independent means of protection or safe even when two faults occur independently of each other	Equipment remains functioning in zones 0, 1 and 2	See Table 1
Very high	Da Group III		Equipment remains functioning in zones 20, 21 and 22	
High	Gb Group II	Suitable for normal operation and frequently occurring disturbances or equipment where faults are normally taken into account	Equipment remains functioning in zones 1 and 2	
High	Db Group III		Equipment remains functioning in zones 21 and 22	

1. **GENERAL**
The marking of the Microwave sensors shall include the following:
Refer to Table 1 for Ex rating

The Capacitive continuous level measurement sensors had previously been certified by approved EC Type Examination Test laboratories as Refer to Table 1 for Ex rating (Certificate numbers as in Table). The marking of the Capacitive continuous level measurement sensors was assessed for compliance with the requirements of standards listed above and against the certificate submitted. The authenticity of the certificate was assessed as well.

The differences between the standards were evaluated and found to comply.

See Appendix of this certificate for list of certificates.

2. **SAFETY PARAMETERS**
Refer to Appendix, Table 3 of this certificate for complete Safety Parameters.

3. **INSTALLATION INSTRUCTIONS**
It is the manufacturer's responsibility to supply installation instructions with each unit offered for sale as required by IEC/SANS 60079-0 Clause 30.

4. **SPECIAL CONDITIONS FOR SAFE USE** *(denoted by X after certificate number)*
Explosion protected equipment used with special conditions of use are marked with an "X". Refer to Appendix, Table 2 of this certificate for complete special conditions of use.

5. **CONDITIONS OF CERTIFICATION**
All production units must be covered by a QAN (Quality Assurance Notification), Product Mark Scheme or batch evaluation.

6. MARKING

The following (or similar) information have to be clearly and permanently marked on all units:

Supplier	: VEGA Grieshaber KG
Manufacturer	: VEGA Grieshaber KG
Equipment	: Capacitive continuous level measurement sensors
Model/Type	: VEGACAL CL6*
Serial No.	: ---
Ex Rating	: Refer to Table 1 for Ex rating
IA Certificate No	: S-XPL/20.0718 X

This certification indicates compliance with R10.1 of the Mines Health and Safety Act and/or EMR 9(2) of the Occupational Health and Safety Act, provided that the apparatus is used as relevant in accordance with:

i) SANS 10086 and IEC/SANS 61241-14 requirements as applicable;
ii) Any conditions mentioned in the above report;
iii) Any relevant requirements and codes of practice enforced in terms of the Mine Health and Safety Act or Occupational Health and Safety Act; and
iv) Any restrictions and conditions enforced by the Chief Inspector of Mines or the Principal Inspector or the Chief Inspector: Occupational Health and Safety.
v) A revision certificate replaces all previous version of the certificate.
vi) * - Only covers equipment Imported between the "Issued" and "Expire" dates.
vii) If and when your QAN (Quality Assurance Notification) Certificate for your equipment manufacturer expires during the valid period of the IA Certification (issued for your equipment) and a new certificate is not submitted the existing IA Certification will then be cancelled. It is thus the client's responsibility to always submit the updated and valid QAN certificate(s) to Explolabs (Pty) Ltd

Responsible Testing Officer:

D Maree
Technical Specialist
EXPLOLABS EXPLOSION PREVENTION SERVICES

Table 1 - Marking					
No.	**EC Type Examination Certificate No.**	**Description**	**Manufacturer**	**Type/Model**	**Ex Rating**
1	EC-Type: IECEx TUN 05.0008X Issue No.: 6	Capacitive continuous level measurement sensor	VEGA Grieshaber KG	VEGACAL CL6*.CI ***H/X/P/F****	Ex ia IIC T6 ... T1 Ga, Ga/Gb, Gb
2	EC-Type: IECEx TUN 17.0006X Issue No.: 0	Capacitive continuous level measurement sensors	VEGA Grieshaber KG	VEGACAL CL6*.GI ***X/H****	Ex ia/tb IIIC TX °C Da/Db resp. Ex ia tb IIIC TX °C Db
3	EC-Type: IECEx TUN 05.0018X Issue No.: 6	Capacitive continuous level measurement sensors	VEGA Grieshaber KG	VEGACAL CL6*.DI ***H/P/F****	Ex ia/db ia IIC T6 ... T1 Ga/Gb Ex db ia IIC T6 ... T1 Gb
4	EC-Type: TÜV 05 ATEX 2799 X Issue 0	Capacitive continuous level measurement sensors	VEGA Grieshaber KG	VEGACAL CL6*.DX/DM***H/P/F****	Ex ia/db ia IIC T6 ... T1 Ga/Gb Ex db ia IIC T6 ... T1 Gb
5	EC-Type: TÜV 05 ATEX 2808 X Issue 0	Capacitive continuous level measurement sensors	VEGA Grieshaber KG	VEGACAL CL6*.CX/CA/CM/CK***H/X/P/F****	Ex ia IIC T6 ... T1 Ga, Ga/Gb, Gb
6	EC-Type: TÜV 17 ATEX 199562 X Issue 0	Capacitive continuous level measurement sensors	VEGA Grieshaber KG	VEGACAL CL6*.GX/CK***X/H***	Ex ia/tb, ia tb IIIC T65°C…T150°C Da/Db, Db Ex ia/tb, ia tb IIIC T65°C…T200°C Da/Db, Db

Table 2 - Special Conditions of Safe Use (X)

No.	EC Type Examination Certificate No.	Description	Special Conditions
1	EC-Type: IECEx TUN 05.0008X Issue No.: 6	Capacitive continuous level measurement sensor	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. For zone 0 resp. 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. For zone 0 resp. 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. For zone 0/1 applications the medium tangent materials have to be resistant to the media.
2	EC-Type: IECEx TUN 17.0006X Issue No.: 0	Capacitive continuous level measurement sensors	At the plastic parts of the capacitive level switches there is a danger of ignition by electrostatic discharge. Charge generating processes have to be avoided there. The cable entries and blanking elements in the housing have to be suitably certified for an operating temperature range of -40 °C to 80 °C or the cable entries and blanking elements of the manufacturer have to be used. At risks by pendulum or vibration the respective parts of the level switches have to be secured effectively against these dangers. The max. surface temperature for higher temperatures Tmed = 65 °C has to be taken from the "Thermal data" mentioned above and from the manual of the manufacturer.
3	EC-Type: IECEx TUN 05.0018X Issue No.: 6	Capacitive continuous level measurement sensors	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. 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. 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. For zone 0/1 applications the medium tangent materials have to be resistant to the media. 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. 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.
4	EC-Type: TÜV 05 ATEX 2799 X Issue 0	Capacitive continuous level measurement sensors	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. 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. 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. For zone 0/1 applications the medium tangent materials have to be resistant to the media. 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. 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.
5	EC-Type: TÜV 05 ATEX 2808 X Issue 0	Capacitive continuous level measurement sensors	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. For zone 0 resp. zone 0/1 applications and at risks by pendulum or vibration the respective parts of the capacitive continuous

Table 2 - Special Conditions of Safe Use (X)			
No.	**EC Type Examination Certificate No.**	**Description**	**Special Conditions**
			level measurement sensors have to be secured effectively against these dangers. Observe manual of the manufacturer. For zone 0 resp. 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. For zone 0/1 applications the medium tangent materials have to be resistant to the media.
6	EC-Type: TÜV 17 ATEX 199562 X Issue 0	Capacitive continuous level measurement sensors	At the plastic parts of the capacitive level switches there is a danger of ignition by electrostatic discharge. Charge generating processes have to be avoided there. The cable entries and blanking elements in the housing have to be suitably certified for an operating temperature range of -40 °C to 80 °C or the cable entries and blanking elements of the manufacturer have to be used. At risks by pendulum or vibration the respective parts of the level switches have to be secured effectively against these dangers. The max. surface temperature for higher temperatures Tmed = 65 °C has to be taken from the "Thermal data" mentioned above and from the manual of the manufacturer.

Table 3 - Safety parameters

No.	EC Type Examination Certificate No.	Description	Safety Parameters	
1	EC-Type: IECEx TUN 05.0008X Issue No.: 6	Capacitive continuous level measurement sensor	**Type VEGACAL CL6*.CI ***X****** Supply and signal circuit ..... (Terminals Kl1[+], Kl2[-] in the electronics compartment of the single chamber housing or in the terminal compartment of the double chamber housing)	in type of protection „Intrinsic Safety“ Ex ia IIC only for connection to a certified intrinsically safe circuit maximum values: Ui = 30 V Ii = 131 mA Pi = 983 mW characteristic line: linear effective internal capacitance: 3 nF The effective internal inductances are negligibly small.
			Type VEGACAL CL6*.CI ***H**** Supply and signal circuit ..... (Terminals Kl1[+], Kl2[-] in the electronics compartment of the single chamber housing or in the terminal compartment of the double chamber housing)	in type of protection „Intrinsic Safety“ Ex ia IIC only for connection to a certified intrinsically safe circuit maximum values: Ui = 30 V Ii = 131 mA Pi = 983 mW characteristic line: linear The effective internal capacitance and inductances are negligibly small. At connected electronics PLICSZEKX: Effective internal inductance: 5 µH
			Type VEGACAL CL6*.CI ***P/F**** Supply and signal circuit ..... (Terminals Kl1[+], Kl2[-] in the electronics compartment of the single chamber housing or in the terminal compartment of the double chamber housing)	in type of protection „Intrinsic Safety“ Ex ia IIC maximum values: Ui = 17.5 V Ii = 500 mA Pi = 5.5 W The apparatus is suitable for connection to a fieldbus system according to the FISCO concept (IEC 60 079-27), e. g. Profibus PA or Foundation Fieldbus. or Ui = 24 V Ii = 250 mA Pi = 1.2 W The effective internal capacitance is negligibly small. Effective internal inductance: 5 µH At connected electronics PLICSZEKX: Effective internal inductance: 10 µH
			The intrinsically safe supply and signal circuit is safe galvanically separated from the parts which can be earthed. **Type VEGACAL CL6*.CI ***H/P/F****** Operation and indication circuit …….. (Terminals 5, 6, 7, 8 in the electronics compartment of the single chamber housing or in the terminal compartment of the double chamber 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 VEGADIS61/81 The interconnection of the both intrinsically safe circuits was taken into account. maximum values of the connection cable: Co = 2.4 µF

Table 3 - Safety parameters

No.	EC Type Examination Certificate No.	Description	Safety Parameters
			Operation and indication module circuit …… (Spring contacts in the electronics compartment of the single chamber housing or in the terminal compartment of the double chamber housing) Lo = 160 µH 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 electronics compartment of the single chamber housing or in the terminal compartment of the double chamber 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 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: Co = 2.8 µF Lo = 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.
2	EC-Type: IECEx TUN 17.0006X Issue No.: 0	Capacitive continuous level measurement sensors	**Type VEGACAL CL6*.GI ***X**** Supply and signal circuit (Terminals KI1[+], KI2[-] in the housing for the electronics resp., in the execution with the 2 chamber housing, in the terminal housing) in type of protection „Intrinsic Safety" Ex ia IIC only for connection to a certified intrinsically safe circuit maximum values: Ui = 30 V Ii = 131 mA Pi = 983 mW characteristic line: linear effective internal capacitance: 3 nF The effective internal inductances are negligibly small. In execution with 2 chamber housing and electronics PLICSZEKX: effective internal capacitance: 3 nF effective internal inductance: 5 µH **Type VEGACAL CL6*.GI ***H**** Supply and signal circuit (Terminals KI1[+], KI2[-] in the housing for the electronics resp., in the execution with the 2 chamber housing, in the terminal housing) in type of protection „Intrinsic Safety" Ex ia IIC only for connection to a certified intrinsically safe circuit maximum values: Ui = 30 V Ii = 131 mA Pi = 983 mW characteristic line: linear The effective internal capacitances and inductances are negligibly small. In execution with 2 chamber housing and electronics

Table 3 - Safety parameters

No.	EC Type Examination Certificate No.	Description	Safety Parameters	
			Type VEGACAL CL6*.GI ***H/X** Operation and indication circuit .... (Terminals 5, 6, 7, 8 in the housing for the electronics resp., in the execution with the 2 chamber housing, in the terminal housing)	PLICSZEKX: The effective internal capacitances are negligibly small. effective internal inductance: 5 µH 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: Co = 2.4 µF Lo = 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)
3	EC-Type: IECEx TUN 05.0018X Issue No.: 6	Capacitive continuous level measurement sensors	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. Um = 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: Co = 2.4 µF Lo = 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
			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: Co = 2.8 µF Lo = 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	

Table 3 - Safety parameters

No.	EC Type Examination Certificate No.	Description	Safety Parameters
			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**** — with barrier P3-2LPAFF: Supply and signal circuit …….. (Terminals KI1/1, KI1/2; "Ex d"-connection room) — U = 14 … 32 V d. c. Um = 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: Co = 2.4 µF Lo = 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 …….. (I²C 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 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: Co = 2.8 µF Lo = 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).
4	EC-Type: TÜV 05 ATEX 2799 X Issue 0	Capacitive continuous level measurement sensors	**Type VEGACAL CL6*.DX/DM ***H****** Supply and signal circuit (Terminals 1 [+], 2 [-] in the Ex-d connection room) — With barrier P3-2LH: U = 14 … 36 V d.c. Um = 253 V a.c. With barrier P2-2LH: U = 20 … 36 V d.c. Um = 253 V a.c.

Table 3 - Safety parameters

No.	EC Type Examination Certificate No.	Description	Safety Parameters
			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 induction unit type VEGADIS61/81. The interconnection of both the intrinsically safe circuit 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 housing for the electronics): In type o 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 o 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 are connected, the following maximum values of the connection cable to the VEGDIS61/81 do result: Co = 2.8 µF Lo = 100 µH A length of the triax cable resp. coax cable between the housing for the electronics and the terminal housing of the 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*.DX/DM ***P/F**
			Supply and signal circuit (Terminals KI1/1, KI1/2; in the Ex-d connection room): <u>With barrier P3-2LPAFF:</u> U = 14 … 32 V d.c. Um = 253 V a.c. <u>With barrier KLEMP2-2LPAFFD:</u> U = 16 … 32 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

Table 3 - Safety parameters

No.	EC Type Examination Certificate No.	Description	Safety Parameters
			belonging external VEGA induction unit type VEGADIS61/81. The interconnection of both the intrinsically safe circuit 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 Ex-i connection room) — In type o 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 o 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 are connected, the following maximum values of the connection cable to the VEGDIS61/81 do result: Co = 2.8 µF Lo = 100 µH A length of the triax cable resp. coax cable between the housing for the electronics and the terminal housing of the 10 m is permissible. All intrinsically safe circuits of the capacitive continuous level measurement sensors with built-in barrier P3-2LPAFF 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 are galvanically connected with the earth potential (measuring circuit excluded).
5	EC-Type: TÜV 05 ATEX 2808 X Issue 0	Capacitive continuous level measurement sensors	**Type VEGACAL CL6*.CX/CA/CM/CK ***X****** Supply and signal circuit (Terminals KI1[+], KI2[-] in the electronics compartment of the single chamber housing or in the terminal compartment of the double chamber housing) — In type of protection Intrinsic Safety Ex ia IIC Only for connection to a certified intrinsically safe circuit Maximum values: Ui = 30 V Ii = 131 mA Pi = 983 mW Characteristic line: linear Effective internal capacitance: 3nF The effective internal inductances are negligibly small. **Type VEGACAL CL6*.CX/CA/CM/CK ***H****** Supply and signal circuit (Terminals KI1[+], KI2[-] in the electronics — In type of protection Intrinsic Safety Ex ia IIC Only for connection to a certified intrinsically safe circuit

Table 3 - Safety parameters

No.	EC Type Examination Certificate No.	Description	Safety Parameters	
			compartment of the single chamber housing or in the terminal compartment of the double chamber housing)	Maximum values: Ui = 30 V Ii = 131 mA Pi = 983 mW Characteristic line: linear The effective internal capacitance and inductances are negligibly small. At connected electronics PLICSZEKX: Effective internal inductance: 5 µH.
			Type VEGACAL CL6*.CX/CA/CM/CK ***P/F**	
			Supply and signal circuit (Terminals KI1[+], KI2[-] in the electronics compartment of the single chamber housing or in the terminal compartment of the double chamber housing)	In type of protection Intrinsic Safety Ex ia IIC Maximum values: Ui = 17.5 V Ii = 500 mA Pi = 5.5 W The apparatus is suitable for connection to a fieldbus system according to the FISCO concept (IEC 60079-27), e.g. Profibus PA or Foundation Fieldbus. Or Ui = 24 V Ii = 250 mA Pi = 1.2 W The effective internal capacitance is negligibly small. Effective internal inductance: 5 µH At connected electronics PLICSZEKX: Effective internal inductance: 10 µH
			The intrinsically safe supply and signal circuit is safe galvanically separated from the parts which can be earthed.	
			Type VEGACAL CL6*.CX/CA/CM/CK ***H/P/F**	
			Operation and induction circuit (Terminals 5, 6, 7, 8 in the electronics compartment of the single chamber housing or in the terminal compartment of the double chamber 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 VEGADIS61/81 The inter connection 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 electronics compartment of the single chamber housing or in the terminal compartment of the double chamber housing)	In type of protection Intrinsic Safety Ex ia IIC Only for connection to the VEGA operation and indication module (PLICSCOM)

This certificate supersedes all previous documents bearing the reference no XPL/21518/20.0718 Issue 2.

Table 3 - Safety parameters

No.	EC Type Examination Certificate No.	Description	Safety Parameters
			Communication circuit (I2C bus in the electronics compartment of the single chamber housing or in the terminal compartment of the double chamber 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 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 VEGDIS61/81 do result: Co = 2.8 µF Lo = 100 µH A length of the triax cable resp. coax cable between the housing for the electronics and the terminal housing of the 10 m is permissible.
6	EC-Type: TÜV 17 ATEX 199562 X Issue 0	Capacitive continuous level measurement sensors	**Type VEGACAL CL6*.GX/CK ***X ****** Supply and signal circuit (Terminals KI1[+], KI2[-] in the electronics compartment of the single chamber housing or in the terminal compartment of the double chamber housing) — In type of protection Intrinsic Safety Ex ia IIC. Only for connection to a certified Intrinsically safe circuit maximum values: Ui = 30 V, Ii = 131 mA, Pi = 983 mW, Characteristic line: linear, Effective internal capacitance: 3 nF, The effective internal inductances are negligibly small. In execution with 2 chamber housing and electronics PLICSZEKX: Effective internal capacitance: 3 nF, Effective internal inductance: 5 µH **Type VEGACAL CL6*.GX/CK ***H****** Supply and signal circuit (Terminals KI1[+], KI2[-] in the electronics compartment of the single chamber housing or in the terminal compartment of the double chamber housing) — In type of protection Intrinsic Safety Ex ia IIC. Only for connection to a certified Intrinsically safe circuit maximum values: Ui = 30 V, Ii = 131 mA, Pi = 983 mW, Characteristic line: linear, The effective internal capacitances and inductances are negligibly small. In execution with 2 chamber housing and electronics PLICSZEKX: The effective internal capacitances are negligibly small. Effective internal inductances: 5 µH

Table 3 - Safety parameters

No.	EC Type Examination Certificate No.	Description	Safety Parameters	
			Type VEGACAL CL6*.GX/CK ***H/X**	
			Operation and indication circuit (Terminals 5, 6, 7, 8 in the housing for the electronics resp., in the exclusion with the 2 chamber housing, in the terminal 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 VEGADIS61/81 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 housing for the electronics)	In type of protection Intrinsic Safety Ex ia IIC Only for connection to the VEGA operation and indication module (PLICSCOM).