

# INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

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

Certificate No .:	IECEx PTB 16.0009X		Page 1 of 4	Certificate history:
Status:	Current		Issue No: 3	Issue 2 (2023-03-13) Issue 1 (2022-09-15)
Date of Issue:	2024-06-18			Issue 0 (2016-07-18)
Applicant:	VEGA Grieshaber KG Am Hohenstein 113, 77761 S Germany	Schiltach		
Equipment:	Conductive sensing probe	s type series E	L *Ex.****(*)*	
Optional accessory:				
Type of Protection:	General Requirements, Intr	insic Safety, E	quipment with Separation Elements or co	mbined Levels of Protection
Marking:	Ex ia IIC T6T1 Ga	or		
	Ex ia IIC T6T1 Ga/Gb	or		
	Ex ia IIC T6T1 Gb			
Approved for issue o	n behalf of the IECEx		DrIng. Martin Thedens	
Certification Body.			Used of Demonstrated IIC and a few Develo	dian in Oanan Tashaalama
Position:			and Instrumentation"	ction in Sensor Technology
Signature: (for printed version)				
Date: (for printed version)				
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Certificate issued	d by:			
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Certificate No.: Date of issue:	IECEx PTB 16.0009X 2024-06-18	Page 2 of Issue No:	4 3
Manufacturer:	VEGA Grieshaber KG Am Hohenstein 113 Schiltach 77761 Germany		
Manufacturing locations:	VEGA Grieshaber KG Am Hohenstein 113 Schiltach 77761 Germany	VEGA Americas, Inc. 3877 Mason Research Parkway Mason, OH 45036 United States of America	VEGA India Level and Pressure Measurement Pvt. Ltd. Plot No. 1, Gat No. 181, Village - Phulgaon, Tal. Haveli Pune 412216 India

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

#### STANDARDS :

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

IEC 60079-0:2017 Edition:7.0	Explosive atmospheres - Part 0: Equipment - General requirements
IEC 60079-11:2023 Edition:7.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-26:2021 Edition:4.0	Explosive atmospheres - Part 26: Equipment with Separation Elements or combined Levels of Protection

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

### TEST & ASSESSMENT REPORTS:

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

Test Reports:

DE/PTB/ExTR16.0020/01

DE/PTB/ExTR16.0020/02

Quality Assessment Report:

DE/TUN/QAR06.0002/13



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#### EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The conductive sensing probes, type series EL \*EX.\*\*\*\*(\*)\*, are used in conjunction with an evaluator for liquid level monitoring or control in potentially explosive atmospheres.

They consist of an adapter box with open-circuit monitoring resistor, the process connector, and the sensor designed as rod or cable variant.

For further details refer to the Annex.

#### SPECIFIC CONDITIONS OF USE: YES as shown below:

- Since the signal circuit of the conductive sensing probes of type series EL\*EX.\*\*\*\*(\*)\* is earthed by the medium, equipotential bonding has
  to be provided within the total installation area of the intrinsically safe signal circuit, both within and outside the potentially explosive
  atmosphere.
- The conductive sensing probes shall be installed in such a way that contact between the sensor and the tank wall is impossible with sufficient safety considering the tank installations and the flow conditions inside the tank. This applies, in particular, to sensors which are longer than 3 m.
- The conductive sensing probes with plastic enclosure and plastic elements include surfaces that could become charged electrostatically (note warning label).
- 4. For applications where equipment for zone 0 or zone 0/1 is required, all parts of the conductive sensing Probes, which are in contact with the medium, must only be used in such media, against which they are sufficiently resistant.



Date of issue:

# IECEx Certificate of Conformity

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

- · Adaption of the test specification regarding IEC 60079-11:2023, Edition 7
- Introduction of the new EL3-PERO variant
- · Introduction of alternative potting materials
- Temperature measurement for the use of the resistor variant without potting
- · Adaptation of the safety description, the operating instructions and the type label to the changes and corrections made

#### Annex:

CoCA16.0009X-A03.pdf





Applicant:

VEGA Grieshaber KG Am Hohenstein 113 77761 Schiltach, Germany

Electrical Apparatus:

Conductive sensing probes type series EL\*Ex.\*\*\*\*(\*)\*

# Description of equipment

The conductive sensing probes, type series EL \*Ex. \*\*\*\*(\*)\*, are used in conjunction with an evaluator for liquid level monitoring or control in potentially explosive atmospheres. They consist of an adapter box with open-circuit monitoring resistor, the process connector, and the sensor designed as rod or cable variant.

The conductive sensing probes type EL \*EX.\*\*\*\*(\*)\* will be assembled based on operating demand with the new line-break - monitoring resistors or with additional circuit SB1348.

# Zone 0-equipment

The level measuring devices are installed in potentially explosive atmospheres requiring Zone 0-equipment.

# Zone 0/1-equipment

The electronics housing is installed in potentially explosive atmospheres requiring Zone 1equipment. The process connectors are installed in the partition separating wall requiring Zone 0- or 1-equipment. The sensor is installed in the potentially explosive atmosphere for Zone 0-equipment.

# Zone 1-equipment

The level measuring devices are installed in potentially explosive atmospheres requiring Zone 1-equipment.

For the relationship between the temperature class and the maximum permissible temperature at the sensor, as well as the maximum permissible ambient temperature for the electronics system reference is made to the following tables:

### Zone 0-equipment

Temperature class		Temperature at the	Ambient temperature for	
		sensor	the adapter box	
	Т6	-20 +56 °C	-20 +56 °C	
	T5, T4, T3, T2, T1	-20 +60 °C	-20 +60 °C	

The conductive probes may only be operated in a potentially explosive atmosphere requiring Zone 0-equipment if atmospheric conditions are present (pressure from 0.8 bar to 1.1 bar).

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# Zone 0/1-equipment

Temperature class	Temperature at the	Ambient temperature for
	sensor	the adapter box
Т6	-20 +60 °C	-40 +56 °C
T5	-20 +60 °C	-40 +71 °C
T4, T3, T2, T1	-20 +60 °C	-40 +85 °C

The conductive probes may only be operated in a potentially explosive atmosphere requiring Zone 0/1- equipment if atmospheric conditions are present (pressure from 0.8 bar to 1.1 bar).

### Zone 1-equipment

Temperature class	Temperature at the	Ambient temperature for
	sensor	the adapter box
Т6	-50 +80 °C	-40 +56 °C
T5	-50 +95 °C	-40 +71 °C
T4, T3, T2, T1	-50 +130 °C	-40 +85 °C

The operating conditions in operation without a potentially explosive atmosphere are to be taken from the corresponding manufacturer's specifications, e.g. the operating instructions.

### Electrical data

Signal Circuit (KL1, KL3, KL4, KL5) In type of protection Intrinsic Safety Ex ia IIC Only for connection to a certified, intrinsically safe circuit

Maximum values:  $U_i$ = 13V  $I_i$  = 60mA  $P_i$ = 200 mW

 $\label{eq:characteristic: Linear} \begin{array}{l} \mbox{The effective internal capacitance $C_i$ is negligibly small.} \\ \mbox{The effective internal inductance $L_i$ is negligibly small.} \end{array}$ 

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	INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres for rules and details of the IECEx Scheme visit www.iecex.com					
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Date of Issue:	2023-03-13					
Applicant:	VEGA Grieshaber KG Am Hohenstein 113, 77761 S Germany	chiltach				
Equipment:	Conductive sensing probes	type series EL	*Ex.****(*)*			
Optional accessory:						
Type of Protection:	General Requirements, Intri apparatus of Group II intene	insic Safety, Re ded for use in Z	quirements for co one 0	nstruction, test a	nd marking of electric	al
Marking:	Ex ia IIC T6T1 Ga	or				
	Ex ia IIC T6T1 Ga/Gb	or				
	Ex ia IIC T6T1 Gb					
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Approved for issue or Certification Body:	n behalf of the IECEx		DrIng. Martin	Thedens	Protocilian In Oran	Technology
Position: Head of Department "Explosion Protection in Sensor Technology and Instrumentation"						
Signature: (for printed version)						
Date: (for printed version)			/ 14.3.	23		
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Certificate issued by: Physikalisch-Technische Bundesanstalt (PTB) Bundesallee 100 anti 6 Braunschweig Physikalisch-Technische Bundesanetalt Braunschweig und Berlin						

IECEx		IECEx Certificate			
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Certificate No .:	IECEx PTB 16.0009X	Page 2 of 4			
Date of issue:	2023-03-13	Issue No: 2			
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Manufacturer:	VEGA Grieshaber KG Am Hohenstein 113, 77761 Schilt Germany	ach			
Manufacturing locations:		а. С			
This certificate is issi IEC Standard list bel found to comply with Rules, IECEx 02 and	ued as verification that a sample(s), ow and that the manufacturer's qua the IECEx Quality system requirem I Operational Documents as amend	representative of production, was assessed and tested and found to comply with the ity system, relating to the Ex products covered by this certificate, was assessed and ents.This certificate is granted subject to the conditions as set out in IECEx Scheme ad			
<b>STANDARDS</b> : The equipment and a to comply with the fo	any acceptable variations to it specil llowing standards	ied in the schedule of this certificate and the identified documents, was found			
IEC 60079-0:2017 Edition:7.0	Explosive atmospheres - Part 0: E	quipment - General requirements			
IEC 60079-11:2011 Edition:6.0	Explosive atmospheres - Part 11:	Equipment protection by intrinsic safety "i"			
IEC 60079-26:2021-02 Edition:4.0	Explosive atmospheres - Part 26:	Equipment with Separation Elements or combined Levels of Protection			
	This Certificate <b>does not</b> indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.				
TEST & ASSESSMENT REPORTS: A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:					
Test Report:		÷			
DE/PTB/ExTR16.002	DE/PTB/ExTR16.0020/01				
Quality Assessment Report:					

DE/TUN/QAR06.0002/12



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Date of issue:

2023-03-13

Issue No: 2

#### EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The conductive sensing probes, type series EL \*EX.\*\*\*\*(\*)\*, are used in conjunction with an evaluator for liquid level monitoring or control in potentially explosive atmospheres.

They consist of an adapter box with open-circuit monitoring resistor, the process connector, and the sensor designed as rod or cable variant.

Futher details see Annex.

SPECIFIC CONDITIONS OF USE: YES as shown below:

Special conditions of safe use apply and are specified in the annex to the Certificate which is available from the On-Line Version.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above) Update of IEC 60079-26 to Edition 4

Annex:

CoCA16.0009X-02.pdf





Applicant:

VEGA Grieshaber KG Am Hohenstein 113 77761 Schiltach, Germany

Electrical Apparatus: Conductive sensing probes type series EL \*Ex.\*\*\*\*(\*)\*

#### Description of equipment

The conductive sensing probes, type series EL \*Ex. \*\*\*\*(\*)\*, are used in conjunction with an evaluator for liquid level monitoring or control in potentially explosive atmospheres. They consist of an adapter box with open-circuit monitoring resistor, the process connector, and the sensor designed as rod or cable variant

The conductive sensing probes type EL \*EX.\*\*\*\*(\*)\* will be assembled based on operating demand with the new line-break - monitoring resistors or with additional circuit SB1348.

#### Category 1-equipment

The level measuring devices are installed in potentially explosive atmospheres requiring Category 1-equipment.

#### Category 1/2-equipment

The electronics housing is installed in potentially explosive atmospheres requiring Category 2-equipment. The process connectors are installed in the partition separating wall requiring Category 1- or 2-equipment. The sensor is installed in the potentially explosive atmosphere for Category 1-equipment.

#### Category 2-equipment

The level measuring devices are installed in potentially explosive atmospheres requiring Category 2-equipment.

For the relationship between the temperature and the maximum permissible temperature at the sensor, as well as the maximum permissible ambient temperature for the electronics system will be remain recognized in this context, reference is made to the following tables:

### Category-1 equipment

Temperature class	Temperature at the sensor	Ambient temperature for	
		the adapter box	
Т6	-20 +56 °C	-20 +56 °C	
T5, T4, T3, T2, T1	-20 +60 °C	-20 +60 °C	

The conductive probes may only be operated in a potentially explosive atmosphere requiring category 1 equipment if atmospheric conditions are present (pressure from 0.8 bar to 1.1 bar).

The operating conditions in operation without a potentially explosive atmosphere are to be taken from the corresponding manufacturer's specifications, e.g. the operating instructions.

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### Category-1/2 equipment

Temperature class	Temperature at the sensor	Ambient temperature for the adapter box
Т6	-20 +60 °C	-40 +56 °C
T5	-20 +60 °C	-40 +71 °C
T4, T3, T2, T1	-20 +60 °C	-40 +85 °C

The conductive probes may only be operated in a potentially explosive atmosphere requiring category 1/2 equipment if atmospheric conditions are present (pressure from 0.8 bar to 1.1 bar).

The operating conditions in operation without a potentially explosive atmosphere are to be taken from the corresponding manufacturer's specifications, e.g. the operating instructions.

# Category-2 equipment

Temperature class	Temperature at the sensor	Ambient temperature for the adapter box
T6	-50 +80 °C	-40 +56 °C
T5	-50 +80 °C	-40 +71 °C
T4, T3, T2, T1	-50 +80 °C	-40 +85 °C

The operating conditions in operation without a potentially explosive atmosphere are to be taken from the corresponding manufacturer's specifications, e.g. the operating instructions.

#### Electrical Data

Signal Circuit (KL1, KL3, KL4, KL5) In type of protection Intrinsic Safety Ex ia IIC Only for connection to a certified, intrinsically safe circuit Maximum values:

U<sub>i</sub>= 13 V I<sub>i</sub> = 60 mA

 $P_i = 200 \text{ mW}$ 

Characteristic: Linear

The effective internal capacitance  $C_i$  is negligibly small. The effective internal inductance  $L_i$  is negligibly small.

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#### Special conditions for safe use

- Since the signal circuit of the conductive sensing probes of type series EL\*EX.\*\*\*\*(\*)\*
  is earthed by the medium, equipotential bonding has to be provided within the total
  installation area of the intrinsically safe signal circuit, both within and outside the potentially explosive atmosphere.
- 2. The conductive sensing probes shall be installed in such a way that contact between the sensor and the tank wall is impossible with sufficient safety considering the tank installations and the flow conditions inside the tank. This applies, in particular, to sensors which are longer than 3 m.
- The conductive sensing probes with plastic enclosure and plastic elements include surfaces that could become charged electrostatically (note warning label).
- 4. For applications where equipment of category 1 or category 1/2 is required, all parts of the conductive sensing Probes, which are in contact with the medium, must only be used in such media, against which they are sufficiently resistant.

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