



# 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](http://www.iecex.com)

Certificate No.: **IECEX CES 17.0011X** issue No.: **0** Certificate history:

Status: **Current**

Date of Issue: **2017-04-26** Page 1 of 3

Applicant: **Sensitron S.r.l.**  
Viale della Repubblica, 48  
I- 20010 Cornaredo (MI)  
Italy

Equipment: **Gas detectors, series ST/\*\*/\***  
Optional accessory:

Type of Protection: **Flameproof enclosures 'd', Inherently safe optical radiation "op is", Dust ignition protection by enclosure 't'**

Marking: **Ex db IIC T6 or T5 or T4 Gb  
Ex db op is IIC T6 or T5 or T4 Gb (detectors with sensor head type C6 or C8) and  
Ex db IIC T6 or T5 Gb  
Ex tb IIC T85 °C or T100 °C Db  
IP65 (only model with GD Adapter)**

Approved for issue on behalf of the IECEx Certification Body: **Mirko Balaz**

Position: **Head of IECEx CB**

Signature: *(for printed version)*

Date:

26-4-2017

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](http://www.iecex.com).

Certificate issued by:

**CESI**  
Centro Elettrotecnico  
Sperimentale Italiano S.p.A.  
Via Rubattino 54  
20134 Milano  
Italy

**CESI** S.p.A.

Testing & Certification Division  
Business Area Certification  
Il Responsabile

(Roberto Piccin)

PAD B7008803 (2363823) - USO RISERVATO



# IECEX Certificate of Conformity

Certificate No.: IECEx CES 17.0011X

Date of Issue: 2017-04-26

Issue No.: 0

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Manufacturer: **Sensitron S.r.l.**  
Viale della Repubblica, 48  
I- 20010 Cornaredo (MI)  
Italy

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:

<b>IEC 60079-0 : 2011</b> Edition: 6.0	Explosive atmospheres - Part 0: General requirements
<b>IEC 60079-1 : 2014-06</b> Edition: 7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
<b>IEC 60079-28 : 2006-08</b> Edition: 1	Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
<b>IEC 60079-31 : 2013</b> Edition: 2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

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

#### TEST & ASSESSMENT REPORTS:

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

Test Report:  
[IT/CES/ExTR17.0012/00](#)

Quality Assessment Report:

[IT/CES/QAR07.0006/09](#)



# IECEx Certificate of Conformity

Certificate No.: IECEx CES 17.0011X

Date of Issue: 2017-04-26

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## Schedule

### EQUIPMENT:

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

The gas detectors series ST/\*\*/\* are devices used to detect the concentration of flammable and toxic gases or oxygen. In the standard configuration the detectors are composed by a sensor head containing the sensitive element coupled with an enclosure with type of protection Ex-d containing the electronic circuits for the elaboration/memorisation of signals or the terminal block. Configurations with two sensor heads coupled to the main enclosure are also possible. The flameproof enclosures and the different sensor heads are subject of a separate certification.

The sensor heads may be equipped with a device for the dust ingress protection (GD adapter). In this configuration the gas detectors are marked with EPL Db.

The gas detectors series ST/\*\*/\* are provided with a supplementary plate on which, in addition to the electrical parameters of circuits within the enclosure, is also specified the type of gas for which they are used.

For further information see Annex.

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

The installation, the operating, the maintenance and the repair of the ST/\*\*/\* equipment shall be in according to the safety instructions supplied by the Manufacturer.

The gas detectors shall be accompanied by a suitable documentation reporting the limit values of the operating temperature for the devices installed inside them.

Only the version with the GD adapter mounted on the sensor head are suitable to be used in presence of combustible dusts.

Membrane filter of the GD adapter must not be damaged, drilled or removed. Moreover it must never be touched with bare hands in order to avoid to damage of the filter.

For the gas detectors type ST/7W/\* and ST/8W/\*, with enclosures in epoxy coated aluminium, the risk of electrostatic charges has to be considered: the cleaning of the equipment must be done only with a damp cloth or antistatic products.

SE

Prot: B7008803

**Annex to certificate:**  
**Applicant:**

**IECEx CES 17.0011X Issue No.:0 of 2017-04-26**  
**Sensitron S.r.l.**

**Electrical Apparatus:**

**Viale della Repubblica, 48, I-20010 Cornaredo (MI), Italy**  
**Gas detectors, Series ST/\*\*/\***

## Description of equipment

The gas detectors series ST/\*\*/\* are devices used to detect the concentration of flammable and toxic gases or oxygen.

In the standard configuration the detectors are composed by a sensor head containing the sensitive element coupled with an enclosure with type of protection Ex-d containing the electronic circuits for the elaboration/memorisation of signals or the terminal block. Configurations with two sensor heads coupled to the main enclosure are also possible.

The flameproof enclosures and the different sensor heads are subject of a separate certification.

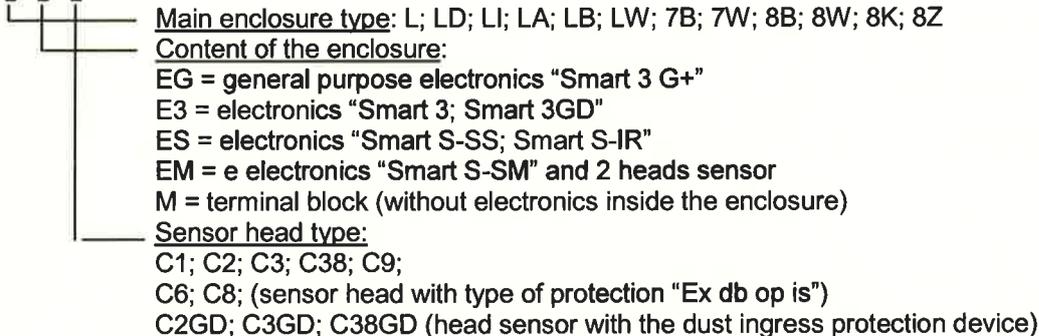
The sensor heads may be equipped with a device for the dust ingress protection (GD adapter). In this configuration the gas detectors are marked with EPL Db.

The devices installed within the flameproof enclosure shall comply with defined electrical/dimensional limits specified in the descriptive documents in order to ensure the maximum declared temperature-rise and the limitations assigned to the enclosure.

The gas detectors series ST/\*\*/\* are provided with a supplementary plate on which, in addition to the electrical parameters of circuits within the enclosure, is also specified the type of gas for which they are used.

The gas detectors series ST/\*\*/\* are identified by the following code:

ST/ \*\* / \*\* / \*



In case of detectors equipped with two sensor heads, the code field of the sensor head type contains the code of both heads.

The correspondence between the type of the main enclosure and the type of sensor head with the relevant certificates, as well as the complete code and detectors characteristics, are given in the **Manufacturer's documents**.

The identification code is reported on the plate fixed on the enclosure containing the electronic circuits.

## Electrical characteristics

- Maximum supply voltage: 28 Vdc
- Maximum absorbed current: 500 mA
- Maximum absorbed power <sup>[1]</sup>: 8.0 W
- Ambient temperature <sup>[2]</sup>: -40 / -20°C + +40/ +45/ +50 / +55/ +60°C
- Degree of protection (IEC 60529): IP 65 (only model with GD Adapter).

[1] The actual power absorbed by the equipment is function of the power dissipated within the sensor head and of the power absorbed by the electric circuits inside of the enclosure.

[2] The ambient temperature values above reported represent the upper and lower limits of the applicable temperature range, taking into account the constructional and functional characteristics of the gas detectors, as specified in the **Manufacturer's documents**.

PAD B7008803 (2363824) - USO RISERVATO

Prot: B7008803

**Annex to certificate:**

**IECEx CES 17.0011X Issue No.:0 of 2017-04-26**

**Applicant:**

**Sensitron S.r.l.**

**Viale della Repubblica, 48, I-20010 Cornaredo (MI), Italy**

**Electrical Apparatus:**

**Gas detectors, Series ST/\*\*/\***

### Marking

The gas detectors series ST/\*\*/\* shall be marked as follows:

**Ex db IIC T6 or T5 or T4 Gb**

**Ex db op is IIC T6 or T5 or T4 Gb** (detectors with sensor head type C6 or C8)

**Ex db IIC T6 or T5 Gb** (detectors with sensor head equipped by

**Ex tb IIIC T85 °C or T100 °C Db** the device for the dust ingress protection)

**IP65**

The temperature class and/or the maximum surface temperature assigned to the complete detector essentially depend on the temperature rise of the sensor head.

In the following table are reported the temperature class (for EPL Gb) and the maximum surface temperature (for EPL Db) in function of the maximum ambient temperature, of the type and of the power dissipated within the sensor head.

head sensor type	maximum power dissipated inside the sensor head [W]	maximum ambient temperature [°C]	temperature class (Gb)	maximum surface temperature (Db) [°]
C1	0.7	60	T6	--
C2 [*] C2GD	0.7	50	T6	T85 °C
		55	T6	T85 °C
		60	T5	T100 °C
C3 [*] C3GD	1.4	50	T6	T 85 °C
		55	T6	T85 °C
		60	T5	T100 °C
C38 (C3 long version) [*] C38GD	2.5	45	T6	T85 °C
		50	T5	T85°C
		60	T5	--
C6 (IR lamp)	0.9	60	T6	--
C6 (IR source)	0.9	60	T4	--
C8	2.5	40	T6	--
		50	T5	--
		60	T4	--
C9	2.5	60	T5	--

### Warning label

*"Warning - Do not open when energized"*

### Cable entries

The accessories used for the cable entries and to close the unused holes, shall be subject of a separate certification and shall guarantee the same type of protection and degree of protection (IP) foreseen for the equipment. Moreover the accessories shall be suitable to be use in the ambient temperature range assigned to the equipment.

If cylindrical threads are used, the coupling between the accessories and the enclosure shall be provided with block to prevent loosening.