



# 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 BVS 05.0011X issue No.:3

Status: Current

Date of Issue: 2016-04-06 Page 1 of 5

Certificate history:  
Issue No. 3 (2016-4-6)  
Issue No. 2 (2012-8-9)  
Issue No. 1 (2009-3-23)  
Issue No. 0 (2005-11-23)

Applicant: **Dräger Safety AG & Co. KGaA**  
Revalstraße 1  
23560 Lübeck  
Germany

Electrical Apparatus: Gas sensor types IDS0001, IDS0002, IDS0011 and IDS0012 and gas sensing heads type ITR 0001, ITR0002, ITR 0010, ISH0001, ISH 0002 and type ISH 0010  
Optional accessory:


Type of Protection: Equipment protection by flameproof enclosures "d", Equipment dust ignition protection by enclosure "t", Equipment protection by increased safety "e"

Marking: Ex db IIC T6 Gb or Ex db eb IIC T6 Gb  
Ex tb IIIC T80°C Db

Approved for issue on behalf of the IECEx Certification Body: H.-Ch. Simanski

Position: Head of Certification Body

Signature:  
(for printed version)

  
6.4.2016

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

Certificate issued by:

DEKRA EXAM GmbH  
Dinnendahlstrasse 9  
44809 Bochum  
Germany

 **DEKRA**  
On the safe side.



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Manufacturer: **Dräger Safety AG & Co. KGaA**  
Revalstraße 1  
23560 Lübeck  
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:

<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 60079-31 : 2013</b> Edition: 2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
<b>IEC 60079-7 : 2015</b> Edition: 5.0	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

*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:

[DE/BVS/ExTR06.0028/03](#)

Quality Assessment Report:

[DE/BVS/QAR06.0001/11](#)



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## Schedule

### EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

#### Subject and type

See Annex

#### Description

The sensor types IDS 0001, IDS 0011, IDS 0002 and IDS 0012 in type of protection flameproof enclosure "d" serve for the measurement of combustible gases and vapours under atmospheric conditions. The sensors are suitable for operation in ambient temperatures from -40 °C to +65 °C.

The power of the sensors is supplied by non-intrinsically safe circuits via a cast resin cable feed through. The sensor types IDS 0011 and IDS 0012 are designed for mounting to enclosures with type of protection increased safety "e" that are certified for this purpose. The sensor types IDS 0001 and IDS 0002 are designed for mounting to enclosures with type of protection flameproof enclosure "d". The mechanical strength of the assembly as well as the flameproof properties of the connecting thread shall be verified by the type test of the enclosure to which the sensor is attached. The gas sensing head types ITR 0001 and ITR 0002 resp. ISH 0001 and ISH 0002 consist of a gas sensor of type IDS 0011 resp. IDS 0012 and an attached enclosure of type of protection increased safety "e". The gas sensing head types ITR 0001, ITR 0002, ISH 0001 and ISH 0002 serve for the measurement of combustible gases and vapours under atmospheric conditions and are suitable for operation in ambient temperature ranges from -40 °C to +65 °C.

The gas sensing head types ITR 0010 and ISH 0010 consist of a gas sensor of type IDS 0001 resp. IDS 0002 and an attached enclosure of type of protection flameproof enclosure "d". The gas sensing head types ITR 0010 and type ISH 0010 serve for the measurement of combustible gases and vapours under atmospheric conditions and are suitable for operation in ambient temperature ranges from -40 °C to +60 °C.

Listing of all components used referring to older standards

Subject and type	Certificate	Standards
Housing	IECEx PTB 09.0008 U <sup>1</sup>	IEC 60079-0:2011 Ed. 6 IEC 60079-7:2006 Ed. 4
Terminals	IECEx PTB 07.0007 U <sup>1</sup>	IEC 60079-0:2007 Ed. 5 IEC 60079-7:2006 Ed. 4
Terminals	IECEx PTB 04.0003 U <sup>1</sup>	IEC 60079-0:2011 Ed. 6 IEC 60079-7:2006 Ed. 4
Terminals	IECEx ULD 05.0008 U <sup>1</sup>	IEC 60079-0:2004 Ed. 4 IEC 60079-7:2001 Ed. 3

<sup>1</sup> No applicable technical differences

<sup>2</sup> Technical differences evaluated and found satisfactory

### CONDITIONS OF CERTIFICATION: YES as shown below:

- The gas sensor types IDS0001 resp. IDS0002 resp. IDS0011 resp. IDS0012 and gas sensing heads type ITR 0001 resp. ITR0002 resp. ISH0001 resp. ISH 0002 are usable for an ambient temperature range of -40 °C up to +65 °C.
- The gas sensing heads type ITR 0010 resp. type ISH 0010 are usable for an ambient temperature range of -40 °C up to +60 °C.
- The gas sensor types IDS 0001 and IDS 0002 (NPT thread) shall be connected to enclosures type of protection flameproof "d" whose internal free volume does not exceed 2 litres and whose reference pressure does not exceed 20 bar. The mechanical strength of the assembly as well as the flameproof properties of the connecting NPT thread shall be verified by the type test of the enclosure to which the sensor is attached.
- The gas sensor types IDS 0011 und IDS 0012 (metric thread) are suitable for mounting to enclosures of type of protection increased safety "e". The mechanical strength and the IP 6X grade of protection of the assembly shall be verified by the type test of the enclosure to which the sensor is attached.
- The clearances and creepage distances shall comply with the requirements of 4.3 (Table 1) and 4.4 of IEC 60079-7. The wiring and the connection of the wires of the sensor shall be performed according to 4.5, 4.7.2 and 4.8 of IEC 60079-7 mechanical protected and corresponding to the temperature resistance of the wire.
- The threaded joint between the gas sensor and enclosure shall be properly mounted and protected against unintended loosening.
- After assembly, the sensor housing shall be connected to potential ground of the enclosure in an electrostatically conductive manner (contact resistance < 10<sup>6</sup> Ohm). If equipotential bonding is necessary, it shall be provided by the assembly.



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## EQUIPMENT(continued):

### Parameters

#### 1. Supply of the gas sensors and gas sensing heads

Voltage	up to	30	V
Power	up to	2	W

#### 2. Supply of the gas sensors and gas sensing heads

Ambient temperature range for gas sensor types IDS 0001, IDS 0002, IDS 0011 and IDS 0012 as well as gas sensing heads types ITR 0001, ITR 0002, ISH 0001 and ISH 0002

-40 °C to +65 °C

Ambient temperature range for gas sensing heads type ITR 0010 and type ISH 0010

-40 °C to +60 °C

Gas sensor types IDS 0001, IDS 0011, IDS 0002 and IDS 0012:

Maximum temperature of cast resin at maximum allowed power and ambient temperature 75 °C

Maximum temperature of supply leads at maximum allowed power and ambient temperature 70 °C



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

- The updating of the applicable standards.
- Added types ITR 0010 and ISH 0010 with separately tested and certified flameproof enclosure IECEx CES 15.0012U.



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Annex

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Subject and type

Gas sensors type IDS 00\*\*



- 1 : measuring value in mA
- 2 : measuring value in mV

- 0 : Variant flameproof enclosure with 3/4" NPT thread
- 1 : Variant flameproof enclosure with M25 thread

Gas sensings head type I\*\* 00\*\*



- 01 : Bartec housing in type of protection increased safety
- 02 : Hawke housing in type of protection increased safety
- 10 : Cortem housing in type of protection flameproof enclosure

- SH : measuring value in mV
- TR : measuring value in mA