



# 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.: **0**

Status: **Current**

Date of Issue: **2005-11-23** Page **1** of **4**

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

Electrical Apparatus: **Gas sensors type IDS 0001 or type IDS 0011 or type IDS 0002 or type IDS 0012 and  
Gas sensing heads type ITR 0001 or type ISH 0001**  
Optional accessory:

Type of Protection: **Flameproof enclosure, increased safety, dust protection**

Marking: **Ex d IIC T6 or Ex de IIC T6,  
DIP A21 IP 6X T80 °C**


Approved for issue on behalf of the IECEx  
Certification Body:

Dr. R. Jockers

Position:

Head of Certification Body

Signature:  
(for printed version)

  
23.11.2005

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:

**EXAM BBG Prüf- und Zertifizier  
GmbH**  
Dinnendahlstrasse 9  
44809 Bochum  
Germany





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

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 : 2004</b> Edition: 4.0	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
<b>IEC 60079-1 : 2003</b> Edition: 5	Electrical apparatus for explosive gas atmospheres - Part 1: Flameproof enclosure 'd'
<b>IEC 60079-7 : 2001</b> Edition: 3	Electrical apparatus for explosive gas atmospheres - Part 7: Increased safety 'e'
<b>IEC 61241-1-1 : 1999</b> Edition: 2	Electrical apparatus for use in the presence of combustible dust - Part 1-1: Electrical apparatus protected by enclosures and surface temperature limitation - Specification for apparatus

*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*

IECEX ATR:  
**DE/BVS/05/2134**

File Reference:  
**20040809**



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## Schedule

### EQUIPMENT:

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

#### Description:

The flameproof "d" sensor types IDS 0001, IDS 0011, IDS 0002, and IDS 0012 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 supply of the sensors is effected 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 NPT 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 ISH 0001 consist of a gas sensor of type IDS 0011 or IDS 0012, respectively, and an attached enclosure of type of protection increased safety "e" (type 07-5185-1100/7555) and is equipped with terminals that are certified for this purpose. The gas sensing head types ITR 0001 and ISH 0001 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.

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

#### Special conditions for safe use / Installation instructions:

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 and 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 4.4 (Table 1) and 4.5 of EN 60079-7. The wiring and the connection of the wires of the sensor shall be performed according to 4.3, 4.6.1 and 4.9 of EN 60079-7 mechanically 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):

### Type designation:

Gas sensor types IDS 0001, IDS 0001, IDS 0011, IDS 0002, and IDS 0012 as well as gas sensing head types ITR 0001 and ISH 0001.

Gas sensor types IDS 0011 and IDS 0012 with M25 thread for mounting to enclosures with type of protection increased safety "e".

Gas sensor types IDS 0001 and IDS 0002 with 3/4 " NPT thread for mounting to enclosures with type of protection flameproof enclosure "d".

Gas sensing head types ITR 0001 and ISH 0001 with an attached enclosure of type of protection increased safety "e".

### Parameters:

1. Supply of the gas sensors and gas sensing heads

voltage	up to	30 V
power	up to	2 W

2. Temperatures

Ambient temperature range for gas sensor types IDS 0001, IDS 0011, IDS 0002, and IDS 0012 as well as gas sensing head types ITR 0001, ISH 0001	-40 °C to + 65 °C
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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