



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

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

Certificate No.: **IECEX QPS 19.0025X** Page 1 of 4 [Certificate history:](#)
Issue 0 (2019-08-22)

Status: **Current** Issue No: 1

Date of Issue: 2023-03-28

Applicant: **Otis Instruments Inc.**
301 South Texas Avenue, Bryan
TX 77803, USA
United States of America

Equipment: **Toxic Gas Detector**

Optional accessory:

Type of Protection: **db, ia, mb**

Marking: OI-5900, OI-6000: 12-35 VDC at 1 Amp maximum
OI-6900: 3.6 VDC Lithium D-Cell
Ex db mb ia [ia Ga] IIB T6 Gb (models with antenna fitting)
or
Ex db mb IIB T6 Gb (models without antenna fitting)
-40°C ≤ Ta ≤ +54°C

Approved for issue on behalf of the IECEx
Certification Body:

D. Adams, P.Eng.

Position:

Manager, Hazardous Locations [Ex Equipment] Department

Signature:
(for printed version)

Date:
(for printed version)

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 www.iecex.com or use of this QR Code.



Certificate issued by:

QPS
Evaluation Services Inc.
81 Kelfield St
Unit 8
Toronto, Ontario M9W 5A3
Canada





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Manufacturer: **Otis Instruments Inc.**
301 South Texas Avenue, Bryan
TX 77803, USA
United States of America

Manufacturing locations:

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](#) Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

[IEC 60079-1:2014-06](#) Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

[IEC 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

[IEC 60079-18:2014](#) Explosive atmospheres – Part 18: Equipment protection by encapsulation "m"
Edition:4.0

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:

[CA/QPS/ExTR19.0022/00](#)

[CA/QPS/ExTR19.0022/01](#)

Quality Assessment Reports:

[NO/PRE/QAR16.0015/01](#)

[NO/PRE/QAR16.0015/02](#)

[NO/PRE/QAR16.0015/03](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

Toxic Gas detection Models OI-5900, OI-6000 and OI-6900 units are comprised of two cylindrical flame proof enclosures, a windowed main enclosure (OI-4000) and a sensor enclosure (OI-2000) that threads into the OI-4000 enclosure through one of three $\frac{3}{4}$ " – 14 NPT entries. Models OI-5900 and OI-6000 are DC powered by means of wire connection, and Model OI-6900 is battery powered by dual non-rechargeable 3.6V Lithium D-Cell. Models OI-5900 and OI-6900 are provided with an antenna coupler manufactured by Solexy wireless models (RXN3S0208RXN or RXN3S0208RXO) associated apparatus with an IECEX certification from Ex-Agencija. (HR/EXA/ExTR15.0015/00). Model OI-6000 the antenna coupler manufactured by Solexy wireless models (RXN3S0208RXN or RXN3S0208RXO) associated apparatus with an IECEX certification from Ex-Agencija (HR/EXA/ExTR15.0015/00) is optional.

An alternate flameproof enclosure manufactured by Limatherm, Model Number XD-Iwin certified under IECEX FTZU 12.0017U with a glass window may be used for the OI-4000 enclosure.

The OI-4000 main enclosure houses two PCB's a Control PCB (circular PCB) with an LCD display and either a relay or relay/radio board (rectangular PCB) depending on the configuration. The relay or relay/radio board mounts perpendicular to the control PCB and secured using L brackets. The PCB assembly is secured in the enclosure using two banana plugs/posts screwed in the Base Plate. If the radio option is used a IECEX Certified antenna coupler is threaded into one of the three OI-4000 $\frac{3}{4}$ " – 14 NPT entries.

The OI-2000 enclosure with sintered element integral to sensor cover and houses a sensor PCB and is electrically connected to the Control board by means of a ribbon cable.

The sensor detects the gas presence by a variety of means:

- Electrochemical – electrochemical reaction which produces a current proportional to the gas concentration.
- Catalytic Bead - that burns a little of the gas and produces a proportional electrical change in the sensor.
- Element Infrared – uses light spectrum analysis to determine the target gas concentration.
- Solid State – gas permeates the solid state material and changes the electrical characteristics of the material.
- Photo Ionization Detector – Uses photo ionization to detect volatile organic compounds and produces a proportional electrical change in the sensor.

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. When the equipment is supplied with a non-metallic aerial [antenna] connected to the antenna coupler, this aerial shall only be cleaned with a damp cloth.
2. The equipment shall be installed in such a way that the OI-2000 sensor housing is pointing down towards the ground.
3. For information on the dimension of the flameproof joints, the manufacturer shall be contacted.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

/00 - Original Report

/01 - Update ExTR package to include the addition of an alternative flameproof enclosure manufactured by Limatherm, Model Number XD-Iwin approved under IECEx Certificate FTZU 12.0017U and to include ExTR for National Deviations for the ATEX Directive.

Annex:

[IECEX QPS 19.00025X Annex 1.pdf](#)



QPS Evaluation Services Inc.

Testing, Certification and Field Evaluation Body
Accredited in Canada, the USA, and Internationally

ANNEX 1 to QPS 19.00025X Issue No. 0, Date: 2019-08-22

Markings and rate by model numbers:

Model number	Using antenna fitting		Markings	Rating	T ambient
	Yes	No			
OI-5900-X-X-O	X		Ex db mb ia [ia Ga] IIB T6 Gb	12-35 VDC at 1 Amp maximum	-40°C ≤ Ta ≤ +54°C
OI-6000-X-X-9-X-O	X		Ex db mb ia [ia Ga] IIB T6 Gb		
OI-6000-X-X-2-X-O	X		Ex db mb ia [ia Ga] IIB T6 Gb		
OI-6000-X-X-X-X-O		X	Ex db mb IIB T6 Gb		
OI-6900-X-X-O-X	X		Ex db mb ia [ia Ga] IIB T6 Gb	3.6 VDC Lithium D-Cell	

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