



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

Certificate No.: **IECEX TSA 07.0032X** issue No.:2

Status: **Current**

Certificate history:
Issue No. 2 (2010-4-27)
Issue No. 1 (2008-2-1)
Issue No. 0 (2007-7-23)

Date of Issue: **2010-04-27** Page 1 of 4

Applicant: **RAE Systems**
3775 North First Street
San Jose
California 95134
United States of America

Electrical Apparatus: **Wireless Single Gas Detector FTD-2000**
Optional accessory:

Type of Protection: **Ex ia**

Marking: **RAE Systems**
FTD-2000
Ex ia IIC T4 (-40°C ≤ Ta ≤ + 50°C) IP55
Ex ia I IP55 (-40°C ≤ Ta ≤ + 50°C)
IECEX TSA 07.0032X
Serial No. XXX-XXXXXX

Approved for issue on behalf of the IECEx
Certification Body:

Ujen Singh

Position:

Quality and Certification Manager

Signature:
(for printed version)

Date:

27 APRIL 2010

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:

TestSafe Australia
919 Londonderry Road
Londonderry NSW 2753
Australia





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Manufacturer: **RAE Systems**
3775 North First Street
San Jose
California 95134
United States of America

Manufacturing location(s):
RAE Systems
3775 North First Street
San Jose, California 95134
United States of America
RAE Systems (Shanghai)
No. 788 Zhaoxian Road
Jia Ding, Shanghai
China

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:

IEC 60079-0 : 2004 Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
Edition: 4.0
IEC 60079-11 : 2006 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition: 5

*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:

AU/TSA/ExTR07.0029/00
AU/TSA/ExTR07.0029/01
AU/TSA/ExTR10.0013/00

Quality Assessment Report:
NO/DNV/QAR06.0003/01
NO/DNV/QAR06.0004/01



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Wireless Single Gas Detector FTD – 2000 is a single toxic gas detector integrated with a wireless mesh network enabled transmission radio module. It can work as a fixed device. It has a LCD display, three push buttons and a opening for the buzzer sound out put. On the top of the enclosure there is a threaded connector for the antenna and at the bottom of the enclosure there are two openings covered with threaded caps. The larger opening is for the D size battery replacement and the smaller opening is for the gas sensor. The apparatus is powered by a single D size, Lithium-thionyl Chloride, non rechargeable cell.

The circuit consists of three printed circuit boards. The FTD-2000 main board, FTD-2000 sensor board and the RF module.

CONDITIONS OF CERTIFICATION: YES as shown below:

Refer to the annexes for the conditions of certification.



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

Refer to the annexes of the certificate.



IECEX Certificate of Conformity Annexe

Annexe for Certificate No.:	IECEX TSA 07.0032X	Issue No.:	2
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Changes relating to Issue 2:

1. R3, R4 changed from 1.2 Ω to 1 Ω ;
2. Optionally, F2 and R9 can be removed, and L2 is jumped with 0 Ω resistor;
3. Changed ambient temperature range from “-20 $^{\circ}\text{C}$ to + 50 $^{\circ}\text{C}$ ” to “-40 $^{\circ}\text{C}$ to + 50 $^{\circ}\text{C}$ ”;
4. Define input entity parameters for 3.6 V external power supply;
5. Changed IP20 to IP55;
6. Added Group I application.

The changes have been assessed in Test Report 32247 (AU/TSA/ExTR10.0013/00).

Drawing list pertaining to Issue 2 of this Certificate:

Document No.	Sheets	Document Title	Issue	Date (yyyy/mm/dd)
D01-1100-000	5	MeshGuard (FTD-2000) Main Board	3	2010/02/25
D01-1100-BOM-CSA	2	MeshGuard Main Board BOM	5	2010/02/25
D01-xxxx-IEC	1	FTD-2000 Nameplate	C	2010/03/10
500-0111-000	1	Battery, Lithium, Non-rechargeable, 3.6V, Size D	A	2007/07/08

Conditions of Certification pertaining to Issue 2 of this Certificate:

1. The conditions of manufacture and condition of safe use remain unchanged from the issue 0 except using external power supply.
2. The following parameters shall be taken into account when using external power supply:

Maximum Input Voltage U_i	3.6 V d.c.
Maximum Internal Capacitance C_i	63 μF
Maximum Internal Inductance L_i/R_i	3.5 $\mu\text{H} / \Omega$

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