

1 EC-TYPE EXAMINATION CERTIFICATE



2 **Equipment or Protective systems intended for use in Potentially Explosive Atmospheres - Directive 94/9/EC**

3 EC-Type Examination Certificate No: **FM07ATEX0032X**
4 Equipment or protective system: **Ultima XIR Sensor**
(Type Reference and Name)
5 Name of Applicant: **Mine Safety Appliances Co.**
6 Address of Applicant: **1000 Cranberry Woods Drive
Cranberry Township, PA 16066**

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and documents therein referred to.

8 FM Approvals Ltd, notified body number 1725 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in confidential report number 3027754EC dated 12th July 2007

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents: EN 60079-0:2006, EN 60079-1:2004, EN 60529:1991 + A1:2000, EN 50271:2002, EN 61779-1:2000, EN 61779-4:2000

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC-Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include:



II 2 G Ex d IIC T5 Ta = -40°C to +60°C

Andrew Was
General Manager, FM Approvals Ltd.

Issue date: **6th August 2007**

This certificate replaces any and all previously issued certificates with the above certificate number.



THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

FM Approvals Ltd. 1 Windsor Dials, Windsor, Berkshire, UK. SL4 1RS
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SCHEDULE



to EC-Type Examination Certificate No. FM07ATEX0032X

13 Description of Equipment or Protective System:

The Ultima XIR sensor is combustible gas sensor, using infrared gas technology for monitoring 0-100% LEL methane-in-air or propane -in-air atmospheres (Gas type; 38, 39, 58 or 59),

The Ultima XL Gas Detector system is available in two configurations.

- a) when mounted directly to the Ultima Control Unit housing via the ¾ NPT or M25 entries, identified as model number A-UltimaX-L-b-H-d-S-f-1-0-i-00-00-l-m-n or;
- b) when mounted remotely to the Ultima Control Unit housing, identified as model number A-UltimaX-L-b-H-d-D-f-1-0-i-00-00-l-m-n.

The Ultima XIR sensor complies with EN 61779-1 and EN 61779-4 when connected to MSA control unit covered by FM07ATEX0001X or FM07ATEX0004X.

The operating temperature range of the Detector Heads is -40°C to +60°C

A-UltX - Sens - a - b - 0, Ultima XIR Sensor

- a = Gas Type: 38, 39, 58 or 59
b = Enclosure Type: 9 or 10

14 Special Conditions for Safe Use:

- 1) *In order to maintain the performance of the system for Gas Types 38, 39, 58 or 59 the sensor to which this instrument is connected to shall also comply with the requirements of EN 61779-1, EN 61779-4 and EN 50271 as appropriate.*
- 2) *In order to maintain an ATEX compliant system, the sensor to which this instrument is connected to shall also be ATEX certified.*

15 Essential Health and Safety Requirements:

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

16 Test and Assessment Procedure and Conditions:

This EC-Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Ltd's ATEX Certification Scheme.

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Member of the FM Global Group

to EC-Type Examination Certificate No. FM07ATEX0032X

17 Approved Drawings

Drawing No:	Revision	Title / Description
10000011755	3	PCBA: SENSOR INTERCONNECT, ULTIMA X
10000013526	3	WIRING SCHEMATIC, ULTIMA XIR SENSOR PCB
10000013534	5	ENCLOSURE, UPPER, IRIS
10000013536	4	PCBA, ULTIMA XIR SENSOR
10000013573	3	FIXTURE, LOWER, IRIS
10000015391	0	REMOTE ENCLOSURE ASSEMBLY, ULTIMA XIR
SK3098-1001	3 Draft 5	LABELS, FM APPROVALS ULTIMA X SERIES

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Supplement 1 to
EC-Type Examination Certificate No. FM07ATEX0032X
in accordance with Clause 6 of Annex III to Directive 94/9/EC.



Equipment or protective system: **Ultima XIR Sensor**
(Type Reference and Name)

Name of Applicant: **Mine Safety Appliances Co.**

Address of Applicant: **1000 Cranberry Woods Drive
Cranberry Township, PA 16066**

The examination and test results are recorded in confidential report number Supplement 2 to Report No 3027754EC dated 16th November 2009.

Description of the supplements and modifications:

12 The marking of the equipment or protective system shall include:



II 2 G Ex d IIC T5 Ta = -40°C to +60°C, IP66

17 **Approved Drawings**

The following drawings have been updated

Old Drawing No:	Rev	Title / Description
10000015391	2	Remote Enclosure Assembly, Ultima XIR
SK3098-1001	4 draft	Labels, FM Approvals, Ultima X Series

Andrew Was
Certification Manager, FM Approvals Ltd.

Issue date: *16th November 2009.*



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Supplement 2 to
EC-Type Examination Certificate No. FM07ATEX0032X
in accordance with Clause 6 of Annex III to Directive 94/9/EC.

- 4 **Equipment or protective system:** **Ultima XIR Sensor**
(Type Reference and Name)
- 5 **Name of Applicant:** **Mine Safety Appliances Co.**
- 6 **Address of Applicant:** **1000 Cranberry Woods Drive**
Cranberry Township, PA 16066
USA

The examination and test results are recorded in confidential report number:
Supplement 3 to Report No 3027754EC dated 13 January 2012

Description of the supplements and modifications:

Minor Hardware changes to reduce the energy requirements of IR source.

17 Approved Drawings:

Drawing No:	Previous Revision	New Revision	Title / Description
10000013526	3	4	WIRING SCHEMATIC, ULTIMA XIR SENSOR PCB
10000013535	NONE	5	PCB, ULTIMA XIR SENSOR
10000013536	4	5	PCBA, ULTIMA XIR SENSOR
10000016670	NONE	1	PCB ARTWORK: ULTIMA XIR SENSOR
10000015064	NONE	8	ULTIMA XIR SENSOR BOARD FIRMWARE
SK3098-1001	4	5	LABELS: FM APPROVALS, ULTIMA X SERIES

Andrew Was
Certification Manager, FM Approvals Ltd.

Issue date: 31st January 2012

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Supplement 3 to
EC-Type Examination Certificate No. FM07ATEX0032X
in accordance with Clause 6 of Annex III to Directive 94/9/EC.

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- 5 **Name of Applicant:** Mine Safety Appliances Co.
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USA

The examination and test results are recorded in confidential report number:
3027754rev111104 dated 2 February 2012

Description of the supplements and modifications:

Introduction of alternative o-ring material.

17 Approved Drawings:

Drawing No:	Previous Revision	New Revision	Title / Description
SK3098-1109	NONE	1	UITIMA X SERIES APPROVAL DRAWING, FM APPROVALS
10000013534	5	DELETED	ENCLOSURE, UPPER, IRIS

Mick Gower
Deputy Certification Manager, FM Approvals Ltd.

Issue date: 20th February 2012

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