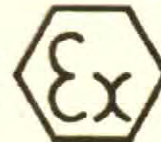


# 1 EC-TYPE EXAMINATION CERTIFICATE



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

3 EC-Type Examination Certificate No: **FM07ATEX0031X**

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

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 12<sup>th</sup> 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 50104:2004, 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 T4 Ta = -40°C to +60°C

**Andrew Was**  
**General Manager, FM Approvals Ltd.**

Issue date: **31<sup>st</sup> July 2007**



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

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# SCHEDULE



to EC-Type Examination Certificate No. FM07ATEX0031X

## 13 Description of Equipment or Protective System:

The Ultima XE sensor is a gas detector head which is supplied with one of three options:

- Combustible sensor, which is a catalytic sensor for monitoring 0-100% LEL methane-in-air or propane -in-air atmospheres. (Gas type; 31, 32, 33, 51, 52 or 53)

The Ultima XE Detector Head with the combustible sensor complies with EN 61779-1 and EN 61779-4 when connected to MSA control unit covered by FM07ATEX0001X or FM07ATEX0004X.

- 0-21 %O<sub>2</sub> sensor for monitoring oxygen concentration up to 21% v/v (Gas type; 13 or 14)  
- 0-10 %O<sub>2</sub> sensor for monitoring oxygen concentration up to 10% v/v (Gas type; 13 or 14)

The Ultima XE Detector Head with either O<sub>2</sub> sensor complies with EN 50271 and EN 50104 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 XE Sensor**

a = Gas Type: 13, 14, 31, 32, 33, 51, 52 or 53

b = Enclosure Type: 1 or 8

## 14 Special Conditions for Safe Use:

- 1) *In order to maintain the performance of the system for Gas Types 31, 32, 33, 38, 39, 51, 52 or 53 the control unit to which this instrument is connected shall also comply with the requirements of EN 61779-1, EN 61779-4 and EN 50271 as appropriate.*
- 2) *In order to maintain the performance of the system, for Gas Types 13 or 14, the sensor to which this instrument is connected shall also comply with the requirements of EN 50104 and EN 50271.*
- 3) *In order to maintain an ATEX compliant system, the control unit to which this instrument is connected to shall also be ATEX certified.*
- 4) *The flying leads of the Ultima XE sensor shall be suitably protected against mechanical damage and terminated within a terminal or junction facility suitable for the conditions of use.*

## 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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# SCHEDULE



to EC-Type Examination Certificate No. FM07ATEX0031X

## 17 Approved Drawings

Drawing No:	Revision	Title / Description
10000011755	3	PCBA: SENSOR INTERCONNECT, ULTIMA X
10000011779	5	WIRING SCHEMATIC, PCBA, CATALYTIC SNSR PREAMP, ULTIMA X
10000011782	0	WIRING SCHEMATIC, PCBA, INTERCONNECT, MAGELLAN
10000011799	12	PCBA: CATALYTIC CELL PREAMP, ULTIMA X
10000012201	1	HOUSING, SENSOR, EXPLOSION PROOF, ULTIMA X
10000012759	3	SENSOR BODY, EXPLOSION-PROOF, ULTIMA XE
10000014844	4	SENSOR BODY ASSEMBLY, EXPLOSION-PROOF, DOMESTIC
10000015016	2	REMOTE ENCLOSURE ASSEMBLY, ULTIMA XE
10000016666	0	PCB ARTWORK, CATALYTIC CELL, ULTIMA X
10000016669	0	PCB ARTWORK, SENSOR, INTERCONNECT, MAGELLAN
SK3098-1001	3 Draft 5	LABELS, FM APPROVALS ULTIMA X SERIES

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Supplement 1 to  
EC-Type Examination Certificate No. FM07ATEX0031X  
in accordance with Clause 6 of Annex III to Directive 94/9/EC.



Equipment or protective system:  
(Type Reference and Name)

**Ultima XE Sensor**

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 16<sup>th</sup> 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 T4 Ta = -40°C to +60°C IP66

17 **Approved Drawings**

The following drawings have been updated

Old Drawing No:	Rev	Title / Description
10000015016	4	Remote Enclosure Assembly, Ultima XE
10000011799	13	Printed Circuit Board Assembly, Ultima X, Catalytic Cell preamp
SK3098-1001	4 draft	Labels, FM Approvals, Ultima X Series

**Andrew Was**  
Certification Manager, FM Approvals Ltd.

Issue date: *16<sup>th</sup> November 2009.*



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Supplement 2 to  
 EC-Type Examination Certificate No. FM07ATEX0031X  
 in accordance with Clause 6 of Annex III to Directive 94/9/EC.

- 4 **Equipment or protective system:** (Type Reference and Name) **Ultima XE Sensor**
- 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:  
 3027754rev111104 dated 2 February 2012

**Description of the supplements and modifications:**

Introduction of an 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
10000012759	3	DELETED	SENSOR BODY, EXPLOSION-PROOF, ULTIMA XE
10000014844	4	DELETED	SENSOR BODY, ASSEMBLY, EXPLOSION-PROOF, DOMESTIC

**Mick Gower**  
**Deputy Certification Manager, FM Approvals Ltd.**

Issue date: 20<sup>th</sup> February 2012

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