

# 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: **FM07ATEX0001X**  
4 Equipment or protective system:  
(Type Reference and Name) **Ultima XL Control Unit**  
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 60079-11:2007, 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(2) G Ex d [ib] IIC T6 Ta = -40°C to +60°C IP66 (Calibration Option = 5)  
II 2 G Ex d IIC T6 Ta = -40°C to +60°C IP66 (Calibration Option = 0)

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



Issue date: **12<sup>th</sup> July 2007**

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FM Approvals Ltd. 1 Windsor Dials, Windsor, Berkshire, UK. SL4 1RS  
T: +44 (0) 1753 750 000 F: +44 (0) 1753 868 700 E-mail: [atex@fmapprovals.com](mailto:atex@fmapprovals.com) [www.fmglobal.com](http://www.fmglobal.com)



# SCHEDULE



Member of the FM Global Group

to EC-Type Examination Certificate No. FM07ATEX0001X

## 13 Description of Equipment or Protective System:

The Ultima XL Control Unit when used with a specified sensor forms the Ultima XL Gas Detector system.

The Ultima XL Control Unit provides a 4-20mA signal proportional to the concentration of the gas being measured and provides indications for Low and High Alarms. Communication between the Ultima XL Control Unit and the sensor is made using an MSA proprietary protocol.

The operating temperature range of the Ultima XL Control Unit is -40°C to +60°C

Electrical parameters

U = 8-30VDC I<sub>max</sub> = 600 mA

Energy Limitation Parameters

U<sub>o</sub> = 6.14VDC, I<sub>o</sub> = 170mA, C<sub>o</sub> = 34μF, L<sub>o</sub> = 1.3mH, P<sub>o</sub> = 260 mW

U<sub>m</sub> = 250VAC

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

- a) with the sensor 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) with the sensor mounted to a suitably certified junction box to allow remote gas detection, identified as model number A-UltimaX-L-b-H-d-D-f-1-0-i-00-00-l-m-n.

**Ultima XL Gas Detector system model number: A-UltimaX-L-b-H-d-e-f-1-0-i-00-00-l-m-n**

b = Gas Type: 13, 14, 31, 32, 33, 38, 39, 51, 52, 53, 58 or 59.

d = Enclosure Type: 2 or 3

e = Sensor Mounting Style: S or D.

f = Connections for Gas Sample Selection method: 0, 1, 2 or 3

i = Connection for external Power Supply Option: 0, 3 or 4.

l = Calibration Options: 0 or 5

m = A number indicating how the product is mounted.

n = Custom: 0 or T

## 14 Special Conditions for Safe Use:

- 1) Upon installation of the Ultima XL Control Unit, the label shall be permanently marked to show the type of explosion protection used for the installation.
- 2) In order to maintain the performance of the system for Gas Types 31, 32, 33, 38, 39, 51, 52, 53, 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.
- 3) 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 EN50104 and EN 50271.
- 4) 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.

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# SCHEDULE



to EC-Type Examination Certificate No. FM07ATEX0001X

## 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.

## 17 Approved Drawings

Drawing No:	Revision	Title / Description
10075573	1	Cup, Printed Circuit Board Assembly, XCOMMS
10075574	2	Bail, Wire, XCOMMS
10076639	2	PCBA, Ultima XL With Hart
10076640	1	Pcb, Ultima XL With Hart
10076888	1	Pcb Artwork, Hart Barrier
10076889	03/16/07	PCBA, Hart Barrier
10077029	1	Manual, Instruction, Ultima XL Xt Series Gas Monitors
10078236	1	XFMR: ISLN 2500 Vrms, Thru-Hole
10078707	03/13/07	Label, Instrument, XCOMMS
10078708	03/13/07	Label, Cover, Protective, XCOMMS
10078709	1	Plate, Na Approvals, W ISB, Ultima XL
10078710	1	Cup, Potting, Barrier PCBA, XCOMMS
10083176	2	Tag, Communications Port, Ultima XL
10084732	1	Plate, ATEX Approvals, W/ ISB, Ultima XL
10084733	1	Plate, ATEX Approvals, W/O ISB, Ultima XL
10084734	4/17/07	Plate, Na Approvals, W O ISB, Ultima XL
SK3073-1037	3/17/07	Wiring Schematic, Ultima XL With Hart
SK3098-1057	3/23/07	Fm Approvals, Control Drawing, Ultima XL
10000014124	5/2/02	Plug, 10 Position, 5.08mm Pitch, Green, For Screw Connection In Enclosed Housings
10000020781	1	Terminal Strip Assembly
10000014121	5/2/2002	Plug, Inverted, 10 Position, 5.08mm Pitch, With Pin Contacts
SK3098-1001	3	Labels FM Approvals, Ultima X series

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Supplement 1 to  
EC-Type Examination Certificate No. FM07ATEX0001X



in accordance with Clause 6 of Annex III to Directive 94/9/EC.

Equipment or protective system:  
(Type Reference and Name)

**Ultima XL Control Unit**

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 1 to Report No 3027754EC dated 9<sup>th</sup> August, 2007

Description of the supplements and modifications:

12 The marking of the equipment or protective system when fitted with this option shall include:



II 2(2) G Ex d [ib] IIC T6 Ta = -40°C to +60°C (Calibration Option = 5)  
II 2 G Ex d IIC T6 Ta = -40°C to +60°C (Calibration Option = 0)

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

Issue date:

*14<sup>th</sup> September 2007*



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Supplement 1 to  
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in accordance with Clause 6 of Annex III to Directive 94/9/EC.



13. **Description**

Modification of the Model Code listing to permit alternative Gas Types to be used.

**COMBUSTIBLE GAS DETECTORS, Fixed**

**A-UltimaX-L-b-H-d-e-f-1-0-i-00-00-l-m-n, Ultima XL Control Unit**

II 2(2) G Ex d [ib] IIC T6 Ta = -40°C to +60°C IP66, for Calibration Option: 5

II 2 G Ex d IIC T6 Ta = -40°C to +60°C IP66, for Calibration Option: 0

b = Gas Type: Any two digit numeric code.

d = Enclosure Type: 2 or 3

e = Sensor Mounting Style: S or D.

f = Connections for Gas Sample Selection method: 0, 1, 2 or 3

i = Connection for external Power Supply Option: 0, 3 or 4.

l = Calibration Options: 0 or 5

m = A number indicating how the product is mounted.

n = Custom: 0 or T

*Specific Conditions of Use:*

- 1) Upon installation of the Ultima XL Control unit, the label shall be permanently marked to show the type explosion protection used for the installation.
- 2) This Approval does not include or imply Approval of all gas sensors. In order to maintain an FM Approved system, the sensor to which this instrument is connected must also be FM Approved.
- 3) The Ultima XL control unit complies with EN 61779-1 and EN 61779-4 when connected to a Detector Head that also has been evaluated to EN 61779-1 and EN 61779-4.

The Ultima XL Control Unit when used with a specified sensor forms the Ultima XL Gas Detector system.

The Ultima XL Control Unit provides a 4-20mA signal proportional to the concentration of the gas being measured and provides indications for Low and High Alarms. Communication between the Ultima XL Control Unit and the sensor is made using an MSA proprietary protocol.

The operating temperature range of the Ultima XL Control Unit is -40°C to +60°C

Electrical parameters

U = 8-30VDC I<sub>max</sub> = 600 mA

Energy Limitation Parameters

U<sub>o</sub> = 6.14VDC, I<sub>o</sub> = 170mA, C<sub>o</sub> = 34µF, L<sub>o</sub> = 1.3mH, P<sub>o</sub> = 260 mW

U<sub>m</sub> = 250VAC

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

- a) with the sensor 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) with the sensor mounted to a suitably certified junction box to allow remote gas detection, identified as model number A-UltimaX-L-b-H-d-D-f-1-0-i-00-00-l-m-n.

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Supplement 1 to  
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in accordance with Clause 6 of Annex III to Directive 94/9/EC.



**OXYGEN DEPLETION GAS DETECTORS, Fixed**

**A-UltimaX-L-b-H-d-e-f-1-0-i-00-00-l-m-n, Ultima XL Control Unit**

II 2(2) G Ex d [ib] IIC T6 Ta = -40°C to +60°C IP66, for Calibration Option: 5

II 2 G Ex d IIC T6 Ta = -40°C to +60°C IP66, for Calibration Option: 0

b = Gas Type: Any two digit numeric code

d = Enclosure Type: 2 or 3

e = Sensor Mounting Style: S or D.

f = Connections for Gas Sample Selection method: 0, 1, 2 or 3

i = Connection for external Power Supply Option: 0, 3 or 4.

l = Calibration Options: 0 or 5

m = A number indicating how the product is mounted.

n = Custom: 0 or T

*Entity Parameters*

$U_o = 6.14VDC$ ,  $I_o = 170mA$ ,  $C_o = 34\mu F$ ,  $L_o = 1.3mH$ ,  $P_o = 260 mW$

*Specific Conditions of Use:*

- 1) Upon installation of the Ultima XL Control unit, the label shall be permanently marked to show the type explosion protection used for the installation.
- 2) This Approval does not include or imply Approval of all gas sensors. In order to maintain an FM Approved system, the sensor to which this instrument is connected must also be FM Approved.
- 3) The Ultima XL control unit complies with EN 50271 when connected to a Detector Head that also has been evaluated to EN 50271.
- 4) The Ultima XL control unit complies with EN 50104 when connected to a Detector Head that also has been evaluated to EN 50104.

The Ultima XL Control Unit when used with a specified sensor forms the Ultima XL Gas Detector system.

The Ultima XL Control Unit provides a 4-20mA signal proportional to the concentration of the gas being measured and provides indications for Low and High Alarms. Communication between the Ultima XL Control Unit and the sensor is made using an MSA proprietary protocol.

The operating temperature range of the Ultima XL Control Unit is -40°C to +60°C

*Electrical parameters*

$U = 8-30VDC$   $I_{max} = 600 mA$

*Energy Limitation Parameters*

$U_o = 6.14VDC$ ,  $I_o = 170mA$ ,  $C_o = 34\mu F$ ,  $L_o = 1.3mH$ ,  $P_o = 260 mW$

$U_m = 250VAC$

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

- a) with the sensor mounted directly to the Ultima Control Unit housing via the ¼ 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) with the sensor mounted to a suitably certified junction box to allow remote gas detection, identified as model number A-UltimaX-L-b-H-d-D-f-1-0-i-00-00-l-m-n.

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Supplement 2 to  
EC-Type Examination Certificate No. FM07ATEX0001X  
in accordance with Clause 6 of Annex III to Directive 94/9/EC.



Equipment or protective system:  
(Type Reference and Name)

**Ultima XL Control Unit**

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:

17 **Approved Drawings**

The following drawings have been updated

Old Drawing No:	Rev	Title / Description
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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